

### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES) (Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: University Storage  
 Address: 305 Masonic Road - Erwin, NC Zip Code: 28339  
 Owner/Authorized Agent: Bartfoot Phone # (910) 890 - 3256 E-Mail: wrbartfoot@yahoo.com  
 Owned By:  City/County  Private  State  
 Code Enforcement Jurisdiction:  City  County  State

**CONTACT:**

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural					
Civil					
Electrical					
Fire Alarm					
Plumbing					
Mechanical					
Sprinkler-Standpipe					
Structural	<u>BETCO, Inc.</u>	<u>Gilbert</u>	<u>026413</u>	<u>(704) 872-9909</u>	<u>chrisg@betcoinc.com</u>
Retaining Walls >5' High					
Other					

*"Others" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)*

**2018 NC CODE FOR:**  New Construction  Addition  Renovation  
 1<sup>st</sup> Time Interior Completion  
 Shell/Core  
 Phased Construction - Shell/Core

**2018 NC EXISTING BUILDING CODE:**  Prescriptive  Chapter 14  
 Alteration:  Level I  Level II  Level III  
 Historic Property  Change of Use

CONSTRUCTED/DATE: \_\_\_\_\_ ORIGINAL OCCUPANCY(S) (Ch. 3): \_\_\_\_\_  
 RENOVATED: (date) \_\_\_\_\_ CURRENT OCCUPANCY(S) (Ch. 3): \_\_\_\_\_

**RISK CATEGORY (table 1604.5)** Current:  I  II  III  IV  
 Proposed:  I  II  III  IV

**BASIC BUILDING DATA**  
 Construction Type:  I-A  II-A  III-A  IV  V-A  
 (check all that apply)  I-B  II-B  III-B  V-B  
 Sprinklers:  No  Partial  Yes  NFPA 13  NFPA 13R  NFPA 13D  
 Standpipes:  No  Yes  Class I  II  III  IV  Dry  Wet  
 Fire District:  No  Yes (Primary)  Flood Hazard Area:  No  Yes  
 Special Inspections Required:  No  Yes

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

**Gross Building Area:**

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	RENO/ALTER (SQ FT)	SUB-TOTAL
0 <sup>th</sup> Floor				
1 <sup>st</sup> Floor				
2 <sup>nd</sup> Floor				
3 <sup>rd</sup> Floor				
Mezzanine				
Basement				
TOTAL:		<u>19,845</u>		<u>19,845</u>

**ALLOWABLE AREA**  
 Primary Occupancy Classification: **SELECT ONE**  
 Assembly  A-1  A-2  A-3  A-4  A-5  
 Business  B-1  B-2  
 Educational  E-1  E-2  
 Factory  F-1  F-2  
 Hazardous  H-1  H-2  H-3  H-4  H-5  H-5-HPM  
 Institutional  I-1  I-2  I-3  I-4  
 Mercantile  M-1  M-2  M-3  M-4  
 Residential  R-1  R-2  R-3  R-4  
 Storage  S-1  S-2  S-3  S-4  S-5  
 Utility and Miscellaneous  U-1  U-2  U-3  U-4  U-5

**Occupancy Revised to:** S-1 - C.J.G. 4-10-23

**Accessory Occupancy Classifications:** Not Applicable  
**Incidental Uses (Table 509.9):** Not Applicable  
**Special Uses (Chapter 4 - List Code Sections):** Not Applicable  
**Special Provisions (Chapter 5 - List Code Sections):** Not Applicable  
**Mixed Occupancy:**  No  Yes Separation: N/A Hz. Exception: Not Applicable

Non-Separated Use (508.3)  
 The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.  
 Separated Use (508.4)  
 See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

**MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT**

**Thermal Zone**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_

**Interior design conditions**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_  
 relative humidity: \_\_\_\_\_

**Building heating load:** \_\_\_\_\_  
**Building cooling load:** \_\_\_\_\_

**Mechanical Spacing Conditioning System**  
 Utilizing:  A  B  C  D  
 description of unit: \_\_\_\_\_  
 heating efficiency: \_\_\_\_\_  
 cooling efficiency: \_\_\_\_\_  
 size category of unit: \_\_\_\_\_  
 Boiler: \_\_\_\_\_  
 Chiller: \_\_\_\_\_  
 Size category, if oversized, state reason: \_\_\_\_\_  
 Equipment category, if oversized, state reason: \_\_\_\_\_

**List equipment efficiencies:** \_\_\_\_\_

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS ELECTRICAL DESIGN (PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

**ELECTRICAL SYSTEM AND EQUIPMENT**

**Method of Compliance:** Energy Code:  Prescriptive  Performance  
 ASHRAE 90.1:  Prescriptive  Performance

**Lighting schedule (each fixture type)**  
 lamp type required in fixture: \_\_\_\_\_  
 number of lamps in fixture: \_\_\_\_\_  
 ballast type used in the fixture: \_\_\_\_\_  
 number of ballasts in fixture: \_\_\_\_\_  
 total wattage per fixture: \_\_\_\_\_  
 total interior wattage specified vs. allowed (whole building or space by space): \_\_\_\_\_  
 total exterior wattage specified vs. allowed

**Additional Efficiency Package Options**  
 (When using the 2018 NCCES, not required for ASHRAE 90.1)  
 C406.2 More Efficient Mechanical Equipment  
 C406.3 Reduced Lighting Power Density  
 C406.4 Enhanced Digital Lighting Controls  
 C406.5 On-Site Renewable Energy  
 C406.6 Dedicated Outdoor Air System  
 C406.7 Reduced Energy Use in Service Water Heating

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### ENERGY REQUIREMENTS

The following data shall be considered minimum and any special attributes required to meet the North Carolina Energy Conservation Code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code:  No  Yes (The remainder of this section is not applicable)  
 Exempt Building:  No  Yes (Provide Code or Statutory reference)

**Climate Zone:**  3A  4A  5A

**Method of Compliance: Energy Code**  Performance  Prescriptive  
 ASHRAE 90.1  Performance  Prescriptive  
 (If "Other" specify source here)

**THERMAL ENVELOPE (Prescriptive method only)**

**Roof/ceiling Assembly (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Skylights in each assembly: \_\_\_\_\_  
 U-Value of skylight: \_\_\_\_\_  
 Total square footage of skylights in each assembly: \_\_\_\_\_

**Exterior Walls (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Operable windows or doors with glazing:  
 U-Value of assembly: \_\_\_\_\_  
 Solar heat gain coefficient: \_\_\_\_\_  
 Projection factor: \_\_\_\_\_  
 Door R-Value: \_\_\_\_\_

**Walls below grade (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_

**Floors over unconditioned space (each assembly)**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_

**Floors slab on grade**  
 Description of assembly: \_\_\_\_\_  
 U-Value of total assembly: \_\_\_\_\_  
 R-Value of insulation: \_\_\_\_\_  
 Horizontal/Vertical requirement: \_\_\_\_\_  
 Slab Head: \_\_\_\_\_

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS (PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

**DESIGN LOADS:**

**Importance Factors:** Snow (ls) 1 Seismic (ls) 1

**Live Loads:** Roof 20 psf Mezzanine N/A psf Floor 125 psf

**Ground Snow Load:** 10 psf

**Wind Load:** Ultimate Wind Speed 119 mph (ASCE-7) Exposure Category B

**SEISMIC DESIGN CATEGORY:**  A  B  C  D

Provide the following Seismic Design Parameters:  
 Risk Category (Table 1604.5)  I  II  III  IV  
 Data Source:  Field Test  Prescriptive  Historical Data  
 Spectral Response Acceleration 18.3 %  
 Site Classification (ASCE-7)  A  B  C  D  E  F  
 See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

**Basic structural system**  
 Bearing Wall  Dual w/Special Moment Frame  
 Building Frame  Dual w/Intermediate RC or Special Steel  
 Moment Frame  Inverted Penulata

**Analysis Procedure:**  Simplified  Equivalent Lateral Force  Dynamic  
 Architectural, Mechanical, Components anchored?  Yes  No

**LATERAL DESIGN CONTROL:** Earthquake  Wind

**SOIL BEARING CAPACITIES:**  
 Field Test (provide copy of test report) \_\_\_\_\_ psf  
 Presumptive Bearing capacity 3000 psf  
 Pile size, type, and capacity \_\_\_\_\_ psf

**Engineer's Seal on this sheet is limited to the Structural Design information ONLY.**

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS MECHANICAL DESIGN (PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

**MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT**

**Thermal Zone**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_

**Interior design conditions**  
 winter dry bulb: \_\_\_\_\_  
 summer dry bulb: \_\_\_\_\_  
 relative humidity: \_\_\_\_\_

**Building heating load:** \_\_\_\_\_  
**Building cooling load:** \_\_\_\_\_

**Mechanical Spacing Conditioning System**  
 Utilizing:  A  B  C  D  
 description of unit: \_\_\_\_\_  
 heating efficiency: \_\_\_\_\_  
 cooling efficiency: \_\_\_\_\_  
 size category of unit: \_\_\_\_\_  
 Boiler: \_\_\_\_\_  
 Chiller: \_\_\_\_\_  
 Size category, if oversized, state reason: \_\_\_\_\_  
 Equipment category, if oversized, state reason: \_\_\_\_\_

**List equipment efficiencies:** \_\_\_\_\_

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### 2018 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS ELECTRICAL DESIGN (PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

**ELECTRICAL SYSTEM AND EQUIPMENT**

**Method of Compliance:** Energy Code:  Prescriptive  Performance  
 ASHRAE 90.1:  Prescriptive  Performance

**Lighting schedule (each fixture type)**  
 lamp type required in fixture: \_\_\_\_\_  
 number of lamps in fixture: \_\_\_\_\_  
 ballast type used in the fixture: \_\_\_\_\_  
 number of ballasts in fixture: \_\_\_\_\_  
 total wattage per fixture: \_\_\_\_\_  
 total interior wattage specified vs. allowed (whole building or space by space): \_\_\_\_\_  
 total exterior wattage specified vs. allowed

**Additional Efficiency Package Options**  
 (When using the 2018 NCCES, not required for ASHRAE 90.1)  
 C406.2 More Efficient Mechanical Equipment  
 C406.3 Reduced Lighting Power Density  
 C406.4 Enhanced Digital Lighting Controls  
 C406.5 On-Site Renewable Energy  
 C406.6 Dedicated Outdoor Air System  
 C406.7 Reduced Energy Use in Service Water Heating

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### LIFE SAFETY SYSTEM REQUIREMENTS

**Emergency Lighting:**  No  Yes  
 Exit Signs:  No  Yes  
 Fire Alarm:  No  Yes  
 Smoke Detection System:  No  Yes  Partial  
 Carbon Monoxide Detection:  No  Yes

**LIFE SAFETY PLAN REQUIREMENTS**

Life Safety Plan Sheet #: \_\_\_\_\_  
 Fire and/or smoke rated wall locations (Chapter 7)  
 Assumed and real property line locations (if not on the site plan)  
 Exterior wall opening area with respect to distance to assumed property lines (705.8)  
 Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)  
 Occupant loads for each area  
 Exit access trav. distances (1017)  
 Common path of travel distances (1006.2.1 & 2006.3.2(1))  
 Dead end lengths (1020.4)  
 Clear exit widths for each exit door  
 Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)  
 Actual occupant load for each exit door  
 A separate schematic plan indicating where the rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.  
 Location of doors with panic hardware (1010.1.10)  
 Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)  
 Location of doors with electromagnetic egress locks (1010.1.9.9)  
 The square footage of each fire area (202)  
 The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)  
 Location of emergency escape windows (1009)  
 Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Tab/Note \_\_\_\_\_ Title \_\_\_\_\_

**ACCESSIBLE DWELLING UNITS**  
 (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYP. A UNITS REQUIRED	TYP. A UNITS PROVIDED	TYP. B UNITS REQUIRED	TYP. B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

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### (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS	15' WALKWAY AND 5' ACCESS	
TOTAL					

**PLUMBING FIXTURE REQUIREMENTS**  
 (TABLE 2902.1)

USE	WATER FIXTURES			URINALS			LAVATORIES			SHOWERS			DRAINAGE FIXTURES		
	MALE	FEMALE	SINKS	MALE	FEMALE	SINKS	1" FLOW	REGULAR	ACCESSIBLE	REGULAR	ACCESSIBLE	REGULAR	ACCESSIBLE		
SPACES															
NEW															
TOTAL															

**SPECIAL APPROVALS**  
 Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

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 228 Commerce Blvd.  
 Statesville, NC 28625  
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REVISIONS	DATE	BY
GENERAL REVISIONS	04/10/2023	IS

DATE: 10/14/2022  
 DRAWN BY: DPP  
 SCALE: AS NOTED  
 APPROVED BY: \_\_\_\_\_

**BETCO**  
 228 COMMERCE BLVD  
 STATESVILLE, NC 28625  
 (800)654-7813

PROJECT NAME: UNIVERSITY STORAGE  
 PROJECT ADDRESS: ERWIN, NC 28339  
 OWNER: UNIVERSITY STORAGE, LLC  
 SHEET TITLE: APPENDIX B

PROJECT NO: NC22329  
 DRAWING NUMBER: CV1.1





## UNIVERSITY STORAGE

ERWIN, NC

### SUBMITTED TO :

UNIVERSITY STORAGE, LLC  
 ATTN: ROBERT BAREFOOT  
 165 SOMMERVILLE PARK ROAD  
 RALEIGH, NC 27603

WIND LOAD DESIGN DATA:	
BASIC WIND SPEED:	119 (V-ult) MPH
WIND IMPORTANCE FACTOR (I):	1.0
OCCUPANCY CATEGORY:	II
WIND EXPOSURE:	B
INTERNAL PRESSURE COEFFICIENT:	± 0.18

SNOW LOAD DESIGN DATA:	
GROUND SNOW LOAD (Pg):	10 psf
FLAT-ROOF SNOW LOAD (Pf):	10 psf
SNOW EXPOSURE FACTOR (Ce):	1.0
SNOW LOAD IMPORTANCE FACTOR (I):	1.0
THERMAL FACTOR (Ct):	1.2

EARTHQUAKE LOAD DESIGN DATA:	
- OCCUPANCY CATEGORY:	II
- SEISMIC IMPORTANCE FACTOR (I):	1.0
- SEISMIC DESIGN CATEGORY:	C
- ANALYSIS PROCEDURE:	EQUIVALENT LATERAL FORCE PROCEDURE (ASCE 7-10 SECTION 12.8)
- BASIC SEISMIC-FORCE-RESISTING SYSTEM:	STEEL SYSTEMS NOT SPECIFICALLY DESIGNED FOR SEISMIC RESISTANCE
- SITE CLASS:	D
- DESIGN BASE SHEAR (V):	10.41 <sup>k</sup>
- RESPONSE MODIFICATION FACTOR (R):	3.0
- SEISMIC RESPONSE COEFFICIENT (CS):	0.065
- MAPPED SPECTRAL RESPONSE ACCELERATION:	(S <sub>g</sub> ): 18.3% G
	(S <sub>1</sub> ): 8.6% G
- SPECTRAL RESPONSE COEFFICIENTS:	(S <sub>0g</sub> ): 19.5% G
	(S <sub>01</sub> ): 13.7% G

### BUILDING DATA :

BUILDING DESCRIPTION : METAL BUILDING BOLTED TO CONCRETE SLAB FOUNDATION.

BUILDING SIZE : 124' x 164' (VARIES) = 19,845 sq. ft. (APPROX.)

PARKING DATA : SEE SITE PLAN BY OTHERS

BUILDING CODE : THE 2018 NORTH CAROLINA STATE BUILDING CODE

DESIGN CRITERIA : THESE BUILDINGS HAVE BEEN DESIGNED TO CONFORM TO THE STRUCTURAL REQUIREMENTS OF THE 2018 NORTH CAROLINA STATE BUILDING CODE.

THESE BUILDINGS HAVE BEEN DESIGNED FOR THE FOLLOWING LIVE LOADINGS IN ADDITION TO THE DEAD LOADINGS :

ROOF LIVE LOADING : 20 PSF  
 FLOOR LIVE LOADING: 125 PSF  
 USE GROUP: S-1  
 TYPE OF CONSTRUCTION II-B

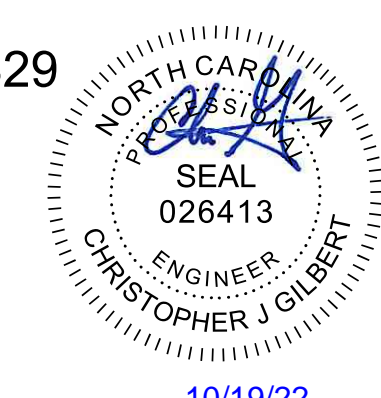
IT IS THE RESPONSIBILITY OF THE BUYER / OWNER TO VERIFY THE FIREWALL, LIVE LOAD AND WIND LOAD REQUIREMENTS WITH THE LOCAL CODE AUTHORITY.

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 Statesville, NC 28625  
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SCHEDULE OF DRAWINGS	
DRAWING NO.	DESCRIPTION
CV1	COVER SHEET
CV1.1	APPENDIX B
CV2	NOTES
CV6	STANDARD FASTENERS
CV7	ANCHOR INSTALLATION
CV12	FIRE SPRINKLER ATTACHMENT NOTES
S0.1	SCHEDULES
S0.2	SCHEDULES
S1.1	FLOOR PLAN
S4.1	ROOF FRAMING PLAN
S5.1	ROOF PANEL PLAN
S6.1	EXTERIOR ELEVATIONS
S7.1	BUILDING SECTION
S7.2	BUILDING SECTION
SD2	FOUNDATION DETAILS 1-20
SD4	FRAMING DETAILS 1-20
SD4	FRAMING DETAILS 21-30
SD4	FRAMING DETAILS 31-34
SD5	ROOF FRAMING DETAIL 1-12
SD5	ROOF FRAMING DETAIL 13-26
SD6	HALLWAY DETAILS 1-13
SD7	WALL SECTIONS 1-4
SD8.1	316 ROOF INSTALLATION
SD8.2	316 ROOF RIDGE INSTALLATION
SD8.3	GUTTER AND SCULPTURED RAKE TRIM INSTALLATION
F1.1	FOUNDATION FOOTING PLAN
F1.2	SAWCUT PLAN

ERECTION DRAWINGS				
ERC010X	ERC200X	ERC420X	ERC619X	ERC752X
ERC015X	ERC201X	ERC500X	ERC620X	ERC753X
ERC016X	ERC202X	ERC505NXT	ERC621X	ERC754X
ERC100X	ERC203X	ERC507NXT	ERC622X	ERC800X
ERC105X	ERC204X	ERC515X	ERC623X	ERC900X
ERC106X	ERC206X	ERC600X	ERC624X	ERC901X
ERC110X	ERC207X	ERC601X	ERC625X	ERC902X
ERC112X	ERC208X	ERC602X	ERC626X	ERC903X
ERC115X	ERC209X	ERC603X	ERC630X	ERC904X
ERC120X	ERC250X	ERC604X	ERC631X	ERC905X
ERC130X	ERC250XFHP	ERC605X	ERC652X	ERC907X
ERC150X	ERC251X	ERC606X	ERC700X	ERC908X
ERC151X	ERC251XFHP	ERC607X	ERC710X	ERC910X
ERC152X	ERC252X	ERC608X	ERC711X	ERC911X
ERC153X	ERC251XFHP	ERC609X	ERC712X	ERC912X
ERC154X	ERC253X	ERC610X	ERC713X	ERC913X
ERC155X	ERC254X	ERC611X	ERC720X	ERC914X
ERC175X	ERC255X	ERC612X	ERC725X	ERC915X
ERC176X	ERC256X	ERC613X	ERC730X	ERC916X
ERC177X	ERC257X	ERC614X	ERC731X	ERC917X
ERC178X	ERC258X	ERC615X	ERC731XFHP	ERC918X
ERC179X	ERC302X	ERC616X	ERC732X	ERC919X
ERC180X	ERC303X	ERC617X	ERC732XFHP	
ERC181X	ERC410NXT	ERC618X	ERC750X	
ERC182X	(UD)	ERC618XALT	ERC751X	

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**GENERAL NOTES:**

- CONCRETE FOUNDATIONS AND FLOOR SLAB ARE TO BE SUPPLIED AND INSTALLED BY OTHERS. WEIR ANCHORS FOR INTERIOR AND EXTERIOR FOOTINGS SUPPLIED AND INSTALLED BY BETCO.
- EXTERIOR OPENINGS, NOT DESIGNATED AS DOOR LOCATIONS, TO BE COMPLETED USING EXTERIOR WALL PANELS FURNISHED BY BETCO.
- USE DOW 761 SILICONE CALK AND 1/2" WIDE BUTYL RUBBER TAPE SEALANT FOR ROOF INSTALLATION. USE DOW 799 SILICONE CALK AT DOWNPOUT/ DRAIN GUTTER JOINT.
- INTERIOR PARTITIONS PERPENDICULAR TO ROOF BEAMS MUST BE COMPLETED BEFORE ROOF PANELS ARE INSTALLED. USE PARTITION FRAMING TO PLUMB AND SQUARE COLUMNS AND HEADER SECTIONS. CHECK BUILDING WIDTH AT TOP OF COLUMNS PRIOR TO ROOF INSTALLATION.
- THOROUGHLY SWEEP ROOF PANELS FOLLOWING INSTALLATION TO REMOVE METAL DRILLINGS.
- THIS DESIGN IS BASED ON USING ONLY METAL BUILDING COMPONENTS WHICH ARE PROPRIETARY TO BETCO. FURTHER, THE PROFESSIONAL ENGINEERS SEAL IS INVALID UNLESS OFF-BETCO METAL BUILDING COMPONENTS ARE UTILIZED.
- METAL STUDS (IF APPLICABLE) MAY REQUIRE FIELD CUTTING DEPENDENT UPON THE LEAVE HEIGHT OF THE STRUCTURE.
- UNIT SIZES SHOWN ARE NOMINAL. ACTUAL CLEAR DIMENSIONS INSIDE UNITS MAY VARY ACCORDING TO FIELD CONDITION OF COMPONENTS.
- THESE DRAWINGS ARE THE PROPERTY OF BETCO, INC. AND MAY NOT BE USED OR REPRODUCED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF BETCO, INC.
- THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH AND COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.
- THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL SLEEVES, PADS, DEPRESSIONS, OPENINGS, ETC. AS REQUIRED BY THE VARIOUS TRADES.

**STRUCTURAL STEEL:**

- ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
  - WIDE FLANGE SHAPES ASTM A992, 345 KSI
  - TUBULAR SHAPES ASTM A500 GRADE B 46 KSI
  - ANGLES, PLATES AND CHANNELS ASTM A36, 250 KSI
  - STEEL PIPE ASTM A53
  - MISCELLANEOUS ASTM A108
- ALL SHOP AND FIELD WELDING SHALL BE BY A CERTIFIED WELDER AND SHALL CONFORM TO AWS STANDARD D1.
- ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE AS MODIFIED IN THESE NOTES AND THE PRODUCT SPECIFICATIONS.
- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION.
- FABRICATOR IS RESPONSIBLE FOR THE DESIGN OF CONNECTIONS NOT DESIGNED ON THE STRUCTURAL DRAWINGS. FOR THE PURPOSE OF CONNECTION DESIGN, FABRICATOR SHALL RETAIN A PROFESSIONAL ENGINEER.
- GENERALLY, CONNECTIONS SHOWN ON THE DRAWINGS ARE SCHEMATIC AND ARE INTENDED TO SHOW THE RELATIONSHIP OF THE MEMBERS.
- MEMBER FORCES AND REACTIONS SHOWN HAVE BEEN REDUCED TO CONFORMANCE TO CODE PROVISIONS RELATED TO COMBINATIONS OF LOADS THAT INCLUDE WIND AND SEISMIC FORCES. NO FURTHER REDUCTIONS IN FORCES OR INCREASES IN ALLOWABLE STRESSES ARE PERMITTED.
- CONNECTIONS MAY BE BOLTED OR WELDED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- SLIP CRITICAL CONNECTIONS WITH A325/BOLTS SHALL BE USED IN ALL BOLTED MOMENT PLATE CONNECTIONS. OVERSIZED OR LONG-SLOTTED HOLES ARE PERMITTED.
- BEARING TYPE CONNECTIONS WITH A325/BOLTS SHALL BE USED IN ALL OTHER BOLTED CONNECTIONS. OVERSIZED AND LONG-SLOTTED HOLES ARE NOT PERMITTED UNLESS OTHERWISE NOTED. IN SINGLE PLATE CONNECTIONS ONLY BEARING TYPE FASTENERS ARE PERMITTED. FASTENERS SHALL NOT BE TORQUED, AND SHORT SLOTTED HOLES ARE REQUIRED.
- ANCHOR RODS OR OTHER RODS, WHERE INDICATED, SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE NOTED.
- PROTRUDING BOLT HEADS, SHAFTS OR NUTS SHALL NOT EXCEED NOR PROTRUDE THE APPLICATION OF ARCHITECTURAL FINISHES OR PLACEMENT OF STEEL. TEXT AT ITS CORRECT LOCATION AND ELEVATION.
- CONNECTION DESIGNER IS RESPONSIBLE FOR VERIFYING THE AXIAL CAPACITY AFTER A SECTION IS REDUCED FOR BOLT HOLES. MEMBER SIZE MAY BE INCREASED OR PLATES ADDED TO MAINTAIN REQUIRED CAPACITY.
- SHOP DRAWINGS SHALL INDICATE THE TYPE OF BOLT USED IN EACH CONNECTION, ALLOWABLE VALUES FOR THE VARIOUS BOLT TYPES AND CAPACITY OF EACH CONNECTION SHOWN.
- SHOP DRAWINGS SHALL INDICATE WELD TYPE, REQUIRED ELECTRODES AND CAPACITY FOR EACH CONNECTION DETAILED ON THE SHOP DRAWINGS.
- ELECTRODES FOR WELDING SHALL COMPLY WITH THE REQUIREMENTS OF AWS D1.1 TABLE 4.1.1.
- SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- NO FINAL BOLTING OR WELDING SHALL BE PERFORMED UNTIL AS MUCH OF THE STRUCTURE AS WILL BE STIFFENED THEREBY HAS BEEN PROPERLY ALIGNED.
- MINIMUM PLATE THICKNESS SHALL BE 1/4". MINIMUM BOLT DIAMETER SHALL BE 3/4". MINIMUM SHOP WELD SHALL BE 3/16" FILLET, AND MINIMUM FIELD WELD SHALL BE 1/4" FILLET UNLESS OTHERWISE NOTED.
- ALL RE-ENTRANT CORNERS (SUCH AS COPES AND BLOCKS) SHALL BE CUT AND SHAPED NOTCH FREE WITH A RADIUS OF AT LEAST 1/2".
- FIELD USE OF GAS CUTTING TORCHES IS PROHIBITED FOR CORRECTING FABRICATION ERRORS IN PRIMARY STRUCTURAL FRAMING.
- STEEL DECK SHALL BE SECURELY ATTACHED TO SUPPORTING MEMBERS AS DETAILED.
- FABRICATE ALL BEAMS WITH MILL CAMBERS UP.

**CONSTRUCTION AND SAFETY:**

- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SAFETY REGULATIONS, PROGRAMS AND PRECAUTIONS RELATED TO ALL WORK ON THIS PROJECT.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF PERSONS AND PROPERTY EITHER ON OR ADJACENT TO THE PROJECT AND SHALL PROTECT SAME AGAINST INJURY, DAMAGE OR LOSS.
- MEANS AND METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIALS ARE SOLELY THE CONTRACTOR'S RESPONSIBILITY.
- STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE DRAWINGS OF OTHER CONSULTANTS AND TRADES. THE CONTRACTOR SHALL COORDINATE THE VARIOUS REQUIREMENTS.
- NO OPENINGS NOR ANY CHANGES IN SIZE, DIMENSION OR LOCATION SHALL BE MADE IN ANY STRUCTURAL ELEMENTS WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON THE STRUCTURE. SUCH LOADS SHALL NOT EXCEED THE CAPACITY OF THE STRUCTURE AT ANY TIME.
- THE STRUCTURE IS DESIGNED TO FUNCTION AS A LIMIT UPON COMPLETION, AND ANY TEMPORARY BRACING OR SUPPORT REQUIRED TO ACCOMMODATE THE CONTRACTOR'S MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL INFORM THE STRUCTURAL ENGINEER, CLEARLY AND EXPLICITLY IN WRITING, OF ANY DEVIATION OR SUBSTITUTION OF REQUIREMENTS OF THE CONTRACT DOCUMENTS. CONTRACTOR IS NOT RELIEVED OF ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS BY VIRTUE OF THE STRUCTURAL ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS CLEARLY AND EXPLICITLY INFORMED THE STRUCTURAL ENGINEER IN WRITING OF ANY DEVIATIONS OR SUBSTITUTIONS AT THE TIME OF SUBMISSION, AND THE STRUCTURAL ENGINEER HAS GIVEN WRITTEN APPROVAL FOR THE SPECIFIC DEVIATIONS OR SUBSTITUTIONS.
- ALL THINGS WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS OR AMBIGUITIES IN THE DRAWINGS OR SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER. CORRECTIONS OR WRITTEN INTERPRETATIONS SHALL BE ISSUED BEFORE AFFECTED WORK MAY PROCEED.
- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH NEW WORK IN AREAS AFFECTED BY THE EXISTING CONDITIONS. STRUCTURAL ENGINEER SHALL BE INFORMED IN WRITING OF CONTACTS BEFORE EXISTING AND PROPOSED NEW CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS SHOWN ON THE CONTRACT DOCUMENTS, INCONSISTENCIES BETWEEN THE STRUCTURAL DRAWINGS OR BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER CONTRACT, SHOP, FABRICATION, OR OTHER DRAWINGS OR INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH AFFECTED WORK.
- DO NOT SCALE THESE DRAWINGS, USE THE DIMENSIONS SHOWN.

**CONCRETE:**

- SUBMIT WRITTEN REPORTS OF EACH PROPOSED CONCRETE DESIGN MIX NOT LESS THAN 15 DAYS PRIOR TO THE START OF WORK. DESIGN MIXES PREPARED MORE THAN TWELVE (12) MONTHS PRIOR TO THE DATE THE SUBMITTAL ARE NOT PERMITTED.
- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-14).
- ALL CONCRETE SHALL BE TESTED BY AN INDEPENDENT TESTING AGENCY FOR STANDARD PARAMETERS (SLUMP, COMPRESSIVE STRENGTH, ETC.) TWO COPIES OF ALL REPORTS SHALL BE SUBMITTED TO THE ENGINEER ARCHITECT.
- ALL NORMAL WEIGHT CONCRETE SHALL HAVE ASTM C-33 AGGREGATE WITH MAXIMUM UNIT WEIGHT OF 150 PCF. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3000 PSI AT 28 DAYS. MINIMUM FOR FOUNDATIONS AND SLABS ON GRADE. ALL CONCRETE FOR FLOOR SLABS ON METAL DECK FORMS SHALL BE NORMAL WEIGHT CONCRETE WITH COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- MIX DESIGNS, INCLUDING WATER CEMENT RATIOS AND SLUMPS, SHALL BE PREPARED IN ACCORDANCE WITH MOST CURRENT ACI 301 CHAPTER 3, EXCEPT WHERE NOTED OTHERWISE IN THE PROJECT SPECIFICATIONS. CEMENT SHALL CONFORM TO ASTM C 150 TYPE 1 OR AT CONTRACTOR'S OPTION, ASTM C 595 TYPE 1P WHERE FLY ASH IS PERMITTED. NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C 33 AGGREGATE WITH MAXIMUM UNIT WEIGHT OF 150 PCF AND LIGHT WEIGHT CONCRETE SHALL CONFORM TO ASTM C 330 AGGREGATE. NO ADMIXTURES CONTAINING CALCIUM CHLORIDE SHALL BE PERMITTED IN ANY CONCRETE.
- AGGREGATE SIZES SHALL BE:
  - FORMED CONCRETE ELEMENTS, U.N.O. #67 STONE (3/4" MAX)
  - GRADE SLABS AND EARTH FORMED ELEMENTS #57 STONE (1" MAX)
  - COARSE MASONRY GROUT REQUIRED #48 STONE (3/4" MAX)
  - FINE MASONRY GROUT REQUIRED #8 STONE (3/8" MAX)
- WATER REDUCING ADMIXTURE SHALL BE USED IN ALL CONCRETE.
- AIR ENTRAINING ADMIXTURE IN ACCORDANCE WITH ACI 301-84 TABLE 3.4.1, SHALL BE USED IN ALL CONCRETE EXPOSED TO FREEZING AND THAWING DURING CONSTRUCTION OR SERVICE CONDITIONS.
- WATER CEMENT RATIO SHALL NOT EXCEED 0.45 FOR ANY CONCRETE SUBJECTED TO FREEZING/THAWING.
- ALL PUMPED CONCRETE SHALL HAVE A WATER CEMENT RATIO LESS THAN 0.45 AND SHALL CONTAIN A HIGH RANGE WATER REDUCING ADMIXTURE (SUPERPLASTICIZER).
- IN NO CASE SHALL A WATER CEMENT RATIO EXCEED THE FOLLOWING:
  - ALL FOUNDATION CONCRETE 1:3:3 @ 0.55 MAX. W/C RATIO
  - EXTERIOR PAVING CONCRETE 1:3:3 @ 0.50 MAX. W/C RATIO
  - ALL EXPOSED CIP CURABLE MEMS, ETC. @ 3500 PSI @ 0.45 MAX. W/C RATIO
  - SLABS ON GRADE @ 3000 PSI @ 0.45 MAX. W/C RATIO
- LIQUID MEMBRANE CURING COMPOUND WITH A MINIMUM 30% SOLIDS CONTENT SHALL BE APPLIED AFTER COMPLETION OF FINISHING TO ALL CONCRETE FLATWORK AND WALLS, U.N.O. OTHER THAN FOOTINGS AND GRADE BEAMS.
- FLOORS IN AREAS RECEIVING QUARRY TILE, CERAMIC TILE AND LIQUID FLOOR HARDENER SHALL BE CURED WITH DISPENSING LIQUID MEMBRANE CURING COMPOUND OR WET CURED BY USE OF MOISTURE RETAINING COVER. DISPENSING CURING COMPOUND SHALL BE THOROUGHLY BROOMED AND WASHED OFF PRIOR TO APPLICATION OF FLOOR FINISH.
- USE A NON-CORROSIVE, NON-CHLORIDE ACCELERATING ADMIXTURE IN CONCRETE EXPOSED TO TEMPERATURES BELOW 40 DEGREES F. UNIFORMITY OF THE WATER AND AGGREGATES TO A TEMPERATURE OF NOT LESS THAN 50 DEGREES F. PLANT AND CURE CONCRETE IN ACCORDANCE WITH ACI 308.
- ALL CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS SHALL BE INCORPORATED INTO THE STRUCTURE UNLESS THEIR ELIMINATION IS APPROVED BY THE STRUCTURAL ENGINEER.
- REINFORCING IN ALL ABUTTING CONNECTIONS, INCLUDING FOOTINGS, SHALL BE CONTINUOUS THROUGH OR AROUND ALL CORNERS OR INTERSECTIONS. DOWELS OR SPLICES SHALL BE EQUAL IN SIZE AND SPACING TO THE REINFORCING IN THE ABUTTING MEMBERS.
- REFER TO ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW OPENINGS, DRIPS, REGLETS, WASHES, MASONRY ANCHORS, BRICK LEVLE ELEVATIONS, SLAB DEPRESSIONS AND MISCELLANEOUS EMBEDDED ITEMS (E.G., ANCHORS, ANGLES, ETC.).
- FORMS FOR ROUND COLUMNS SHALL BE ONE PIECE FIBERGLASS FORM TO PRODUCE SMOOTH FINISH ON EXPOSED COLUMNS.
- REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE FINISHES. WHERE FINISH IS NOT SPECIFIED, CONFORM TO REQUIREMENTS OF ACI 308.
- BASE PLATES, ANCHOR RODS, SUPPORT ANCHORS AND OTHER STEEL EXPOSED TO EARTH OR GRANULAR FILL SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
- FINISHING TOLERANCE SHALL BE WITHIN CLASS B IN ACCORDANCE WITH ACI 301 AND CONSIDERATION SHALL BE GIVEN TO SEQUENCING OF CONCRETE PLACEMENT TO FACILITATE CONTROL OF FINISH ELEVATIONS.
- NON-SHRINK GROUT SHALL BE PRE-MIXED, NON-CORROSIVE, NON-METALLIC, NON-STAINING CONTAINING SILICA SANDS, PORTLAND CEMENT, SHRINKAGE COMPENSATING AND WATER REDUCING AGENTS. SPREAD SHALL NOT REQUIRE THE ADDITION OF WATER. MINIMUM COMPRESSIVE STRENGTH SHALL BE 5000 PSI AFTER ONE DAY AND 1000 PSI AFTER 28 DAYS. GROUT SHALL BE FREE OF GAS PRODUCING OR AIR RELEASING AGENTS AND CONTAIN NO CORROSIVE ION. ALUMINUM OR ZINCUM.
- PROVIDE CONCRETE GROUT, NOT MORTAR, FOR REINFORCING MASONRY UNITS, AND BOND BEAMS WHERE INDICATED ON DRAWINGS OR AS SCHEDULED.
- TOLERANCE FOR ANCHOR RODS AND OTHER EMBEDDED ITEMS SHALL BE PER THE AISC CODE OF STANDARD PRACTICE SECTION 7.5.
- UNLESS OTHERWISE SHOWN IN THE ARCHITECTURAL DRAWINGS, PROVIDE 3/4" CHAMFERS AT ALL COLUMN, WALL, SLAB, OR BEAM EDGES THAT ARE EXPOSED TO VIEW IN THE FINISHED STRUCTURE.

**BRICK VENEER - STEEL STUD WALLS:**

- AIR SPACE:
  - 2 in (51 mm) MINIMUM AIR SPACE RECOMMENDED + 1 in (25.4 mm) MINIMUM AIR SPACE REQUIRED
  - 4 in (101.6 mm) MAXIMUM DISTANCE REQUIRED BETWEEN BACK OF BRICK VENEER AND STEEL FRAMING UNLESS ANCHORS ARE RATIONALLY DESIGNED.
- FLASHING:
  - DO NOT STOP FLASHING BEHIND FACE OF THE BRICKWORK.
  - PLACE FLASHING AT ALL POINTS WHERE AIR SPACE IS INTERRUPTED.
  - EXTEND FLASHING VERTICALLY UP THE BALCONY TO 200 mm MINIMUM HEIGHT.
  - LAP FLASHING 6 in (152 mm) MINIMUM HEIGHT UNDER WATER-RESISTANT BARRIER OR BEHIND SHEATHING ABOVE GRADE.
  - INSTALL BASE FLASHING MINIMUM 6 in (152 mm) ABOVE GRADE.
  - TURN UP FLASHING ENDS INTO HEAD JOINT A MINIMUM OF 1 in (25.4 mm) FOR FORM END DAM.
- WEEDS:
  - OPEN HEAD JOINT WEEDS SPACED AT NO MORE THAN 24 in (610 mm) O.C. RECOMMENDED.
  - MOST BUILDING CODES PERMIT WEEDS NO LESS THAN 3/4 in (19 mm) DIAMETER AND SPACED NO MORE THAN 36 in (914 mm) O.C.
  - WICK AND TUBE WEED SPACING RECOMMENDED AT NO MORE THAN 16 in (406 mm) O.C.
- ANCHORS:
  - CORRUGATED ANCHORS NOT PERMITTED WITH STEEL STUD BLOCKING.
  - MINIMUM W/ 7 (9 gage) ADJUSTABLE WIRE ANCHORS, HOT-DIPPED GALVANIZED, TWO PICE PER ASTM A155 CLASS B.
  - VERTICAL SPACING MAXIMUM 16 in (406 mm) O.C.
  - HORIZONTAL SPACING MAXIMUM 24 in (610 mm) O.C.
  - SECURELY ATTACH ANCHORS TO THE STEEL STUDS THROUGH THE SHEATHING, NOT THE SHEATHING ALONE.
- SHELF ANGLES AND UNTELS:
  - SHELF ANGLE LOCATED ABOVE THE HEIGHT LIMIT MAY SUPPORT NO MORE THAN 1 STORY OF BRICK.
  - SIZE HORIZONTAL LEG OF ALL SHELF ANGLES AND UNTELS TO PROVIDE MINIMUM BEARING OF 2X THICKNESS OF THE BRICK.
- SHEATHING:
  - EXTERIOR GRADE GLASS FIBER MAT FACED SHEATHING OR CEMENT BOARD, MINIMUM 1/2 in (12.7 mm) THICK.
- WATER-RESISTANT BARRIER: SEE ARCHITECTURAL.
- STEEL STUDS:
  - GALVANIZED STEEL STUDS WITH MINIMUM G-60 COATING.
  - RESTRICT ALLOWABLE OUT-OF-PLANE DEFLECTION OF STEEL STUDS TO 1/1600 USING SERVICE LEVEL LOADS.
  - MINIMUM (8 in) x (1 1/2 in) STUDS FOR EXTERIOR WALLS.
  - DO NOT FIELD WELD STEEL STUDS.
- MORTAR:
  - COMPLY WITH ASTM C270.
  - TYPE IS RECOMMENDED - TYPE S ALTERNATE.
- EXPANSION JOINTS:
  - PROVIDE VERTICAL AND HORIZONTAL EXPANSION JOINTS THROUGH BRICK VENEER.

**FOUNDATIONS:**

- PRESUMED SOIL BEARING CAPACITY IS 3000psf ON FIRM VIRGIN SOIL OR COMPACTED ENGINEERED FILL. BEARING CAPACITY SHALL BE VERIFIED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR TO PLACING FOOTING CONCRETE.
- TOP OF FOOTING ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD IN ACCORDANCE WITH THE GUY LINE SET FORTH IN THE DRAWINGS AND SPECIFICATIONS.
- FILL MATERIAL SHALL BE FREE OF ROOTS, WOOD OR OTHER ORGANIC MATERIAL, AND COMPLY WITH THE REQUIREMENTS OF THE GEOTECHNICAL REPORT. MATERIALS USED FOR FILL UNDER FOOTINGS AND WITHIN BUILDING LIMITS SHALL BE TESTED AND APPROVED FOR THE USE BY THE GEOTECHNICAL TESTING AGENCY.
- ALL FILL MATERIALS SHALL BE SELECTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. MATERIALS SHALL BE CLEAN, LOW PLASTICITY SOIL WITH A PLASTICITY INDEX OF 10 OR LESS (MAXIMUM OF 10); LIQUID LIMIT OF 45 OR LESS (MAXIMUM OF 45); UNIT WEIGHT OF 120 PCF (45 PCF), AND SHALL BE FREE OF FIBROUS ORGANIC MATERIALS. PARTIALLY WEATHERED ROCK MATERIALS MAY BE USED FOR STRUCTURAL FILL PROVIDED THE MATERIAL CAN BE REDUCED TO MAXIMUM DIMENSIONS OF 6 INCHES.
- FILL PLACED BELOW FOOTING BASE ELEVATION AND WITHIN THE TOP 12 INCHES OF SOIL SUB GRADE BELOW PAVEMENTS SHALL BE COMPACTED TO AT LEAST 98 PERCENT OF THE MATERIAL'S MAXIMUM DENSITY PER ASTM D698. FILL PLACED ABOVE FOOTING ELEVATION FOR SUPPORT OF THE LIGHTLY LOADED FLOOR SLABS (50 PSF OR LESS) OR MORE THAN 12 INCHES FROM THE FINISHED SUB GRADE LEVEL, WITHIN THE PAVEMENT AREAS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY PER ASTM D698. THE FILL SHALL BE PLACED AND COMPACTED AT MOISTURE CONTENTS WITHIN A RANGE OF 10 PERCENT BELOW TO 10 PERCENT ABOVE THE MATERIAL'S 50 PERCENT MOISTURE CONTENT PER ASTM D698.
- UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT THE STRUCTURAL ENGINEER'S APPROVAL.
- CONTRACTOR SHALL REMOVE AND REPLACE UNACCEPTABLE SOILS IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. ALL SOILS WITH PLASTICITY INDEXES GREATER THAN 10 SHALL BE REMOVED TO A DEPTH OF NOT LESS THAN 3" OR GREATER AS DIRECTED BY THE GEOTECHNICAL ENGINEER WHERE SUCH MATERIAL OCCURS BELOW FOUNDATION.
- FOUNDATION WALLS RETAINING EARTH SHALL BE BRACED AGAINST BACK FILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE.
- FOUNDATION WALLS OR GRADE BEAMS HAVING EARTH PLACED ON EACH SIDE SHALL HAVE BOTH FILLED SIMULTANEOUSLY TO MAINTAIN A COMMON ELEVATION.
- DO NOT PLACE CONCRETE IN AN EXCAVATION CONTAINING ICE, FROST, FROZEN GROUND OR FREE WATER. FROZEN SUB GRADES MUST BE THAWED AND RECOMPACTED PRIOR TO PLACING CONCRETE.
- EARTH FORMED FOOTINGS SHALL CONFORM TO THE SHAPE, LINES, AND DIMENSIONS AS SHOWN ON THE FOUNDATION PLAN. ALL WATER SHALL BE REMOVED BEFORE DEPOSITING CONCRETE.
- BEFORE PLACING CONCRETE, ALL EMBEDDED ITEMS SHALL BE PROPERLY LOCATED, ACCURATELY POSITIONED, AND MAINTAINED SECURELY IN PLACE.
- THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION, AND ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- PERIMETER FOUNDATION MUST NOT EXCEED 14" ELEVATION VARIATION ALONG ANY 50' DISTANCE OF BUILDING LENGTH.
- THE AMERICAN CONCRETE INSTITUTE DOES NOT RECOGNIZE FIBERGLASS AS A SUBSTITUTE FOR WIRE MESH REINFORCED CONCRETE WHEN SUBJECT TO TENSILE STRESS.
- SAW CUT CONTROL JOINTS IN SLAB SURFACE AS SHOWN ON PLANS. OFFSET CUTS 2'-8" MINIMUM FROM INTERIOR COLUMN LINES.
- PERIMETER FOUNDATION TO EXTEND BELOW FRONT LINE. VERIFY REQUIRED DEPTH WITH LOCAL BUILDING OFFICIALS PRIOR TO PROCEEDING WITH FOUNDATION WORK AND NOTIFY ENGINEER OF DEVIATION FROM DRAWING.

**REINFORCING STEEL:**

- REINFORCING STEEL SHALL BE NEW BILLET STEEL, DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60 (Fy=60,000 PSI).
- FIELD BENDING OF CONCRETE REINFORCING STEEL IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
- ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI 318-14 AND DETAILING MANUAL-1994 AND THE "CRSI MANUAL OF STANDARD PRACTICE", LATEST EDITION.
- PLACE REINFORCEMENT AND TIES IN GROUT SPACES PRIOR TO POURING.
- CONCRETE COVERAGE OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE UNLESS NOTED OTHERWISE:
  - FOOTING AND GRADE BEAMS IN GROUND CONTACT: 3 INCHES
  - BEAMS AND COLUMNS: 1 INCH
  - SLABS, WALLS AND JOISTS: 3/4 INCH - NOT EXPOSED TO WEATHER
  - SLABS ON GRADE: 2 INCHES FROM TOP
  - FORMED SURFACES IN GROUND CONTACT: 2 INCHES
- DEVELOPMENT LENGTHS AND LAP SPICES SHALL BE IN ACCORDANCE WITH ACI 318-14 CHAPTER 12 AND AS INDICATED ON THE DRAWINGS. WHERE SPICES ARE NOT CALLED OUT ON THE DRAWINGS, USE CLASS "B", BUT IN NO CASE SHALL ANY SPICE BE LESS THAN 12 INCHES FOR BARS AS INDICATED BELOW THE BASIC DEVELOPMENT LENGTH SHALL BE MULTIPLIED BY THE FACTORS AS INDICATED FOR TENSION OR COMPRESSION AND THEN ROUNDED UP TO THE NEAREST WHOLE INCH. THE FACTORS INDICATED BELOW ARE CUMULATIVE FOR EACH OF THE CONDITIONS APPLICABLE.
  - WELDED WIRE MESH FABRIC SHALL CONFORM TO ASTM A184 AND A185 RESPECTIVELY AND BE LAPPED UP AT ALL SPICES.
  - ALL REINFORCING TERMINATING AT THE TOPS OF COLUMNS AND PLASTERS SHALL BE HOOKED UNLESS OTHERWISE NOTED.
  - SUBMIT SHOP DRAWINGS FOR FABRICATION, BENDING, AND PLACEMENT OF CONCRETE REINFORCEMENT. COMPLY WITH ACI DETAILING MANUAL (1994) SHOWING BAR SCHEDULES, STRIP SPACING, DIAGRAMS OF BENT BARS, ARRANGEMENT OF CONCRETE REINFORCEMENT, INCLUDE SPECIAL REINFORCEMENT REQUIRED AT OPENINGS THROUGH CONCRETE STRUCTURES, INCLUDE ALL ACCESSORIES SPECIFICALLY REQUIRED TO SUPPORT REINFORCING.
  - SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMISSION. DRAWINGS SHALL BEAR THE CONTRACTOR'S APPROVAL, STAMP ACCEPTING RESPONSIBILITY FOR DIMENSIONS, QUANTITIES AND COORDINATION WITH THE OTHER TRADES.
  - CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER AND TESTING AGENCY A MINIMUM OF 48 HOURS PRIOR TO ALL CONCRETE POURS IN ORDER TO PERMIT REINFORCING STEEL REVIEW AS REQUIRED BY THE INSPECTION SCHEDULE.
  - REINFORCING IN ALL CONTIGUOUS STRIP FOOTINGS SHALL HAVE CORNER BARS OR DOWELS PROVIDE AT ALL CORNERS AND INTERSECTIONS.

**Table 7 – Tension Development and Lap Splice Lengths for Bars in Walls, Slabs and Footings (ACI 25.4.2.3) f<sub>t</sub> = 3,000 psi**

Bar Size	Lap Class	Concrete Cover = 0.75 in.		Concrete Cover = 1.50 in.		Concrete Cover = 2.00 in.		Concrete Cover = 3.00 in.	
		Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated
#3	A	12	12	12	12	12	12	12	12
	B	12	12	12	12	12	12	12	12
#4	A	22	17	25	17	25	20	17	13
	B	22	17	25	17	25	20	17	13
#5	A	43	33	56	26	70	34	26	20
	B	43	33	56	26	70	34	26	20
#6	A	69	53	80	43	99	49	38	29
	B	69	53	80	43	99	49	38	29
#7	A	90	69	117	54	150	72	84	49
	B	90	69	117	54	150	72	84	49
#8	A	111	86	146	78	191	95	111	63
	B	111	86	146	78	191	95	111	63
#9	A	154	120	178	106	243	121	144	87
	B	154	120	178	106	243	121	144	87
#10	A	175	135	195	114	270	135	162	99
	B	175	135	195	114	270	135	162	99
#11	A	195	145	215	125	290	145	174	103
	B	195	145	215	125	290	145	174	103

**Table 7 – Tension Development and Lap Splice Lengths for Bars in Walls, Slabs and Footings (ACI 25.4.2.3) f<sub>t</sub> = 4,000 psi**

Bar Size	Lap Class	Concrete Cover = 0.75 in.		Concrete Cover = 1.50 in.		Concrete Cover = 2.00 in.		Concrete Cover = 3.00 in.	
		Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated
#3	A	12	12	12	12	12	12	12	12
	B	12	12	12	12	12	12	12	12
#4	A	19	15	24	15	24	17	15	12
	B	19	15	24	15	24	17	15	12
#5	A	36	28	47	24	58	28	24	19
	B	36	28	47	24	58	28	24	19
#6	A	57	45	69	37	86	43	37	29
	B	57	45	69	37	86	43	37	29
#7	A	78	60	90	49	111	54	49	38
	B	78	60	90	49	111	54	49	38
#8	A	99	77	111	60	141	70	81	47
	B	99	77	111	60	141	70	81	47
#9	A	120	93	135	74	171	86	93	61
	B	120	93	135	74	171	86	93	61
#10	A	150	113	165	97	210	113	126	81
	B	150	113	165	97	210	113	126	81
#11	A	165	127	190	109	240	127	146	102
	B	165	127	190	109	240	127	146	102

**Notes:**

- Tabulated values are based on a minimum yield strength of 60,000 psi and normal-weight concrete. Lengths are in inches.
- Tension development lengths and tension lap splice lengths are calculated per ACI 318-14, Sections 25.4.2.3 and 25.5.1, respectively, with bar sizes limited to #3 through #11.
- When the variable "c" from ACI 25.4.2.3 was calculated, it was assumed that concrete cover controlled. That is, c - c-spacing was assumed to be greater than 1.0 d<sub>b</sub> plus twice the concrete cover.
- Lap splice lengths (minimum of 12 inches) are multiples of tension development lengths; Class A = 1.0 d<sub>b</sub> and Class B = 1.3 d<sub>b</sub> (ACI 318 25.5.1). When determining the lap splice length, d<sub>b</sub> is calculated without the 12-inch minimum of ACI 25.4.2.1.
- Top bars are horizontal bars with more than 12 inches of concrete cast below the bars.
- For epoxy-coated bars, if the c - c-spacing is at least 7.0 d<sub>b</sub> and the concrete cover is at least 3.0 d<sub>b</sub>, then lengths may be multiplied by 0.918 (for top bars) or 0.8 for other bars.
- For Grade 75 reinforcing bars, multiply the tabulated values by 1.25. For Grade 80 reinforcing bars, multiply the tabulated values by 1.33.
- For lightweight concrete, divide the tabulated values by 0.75.

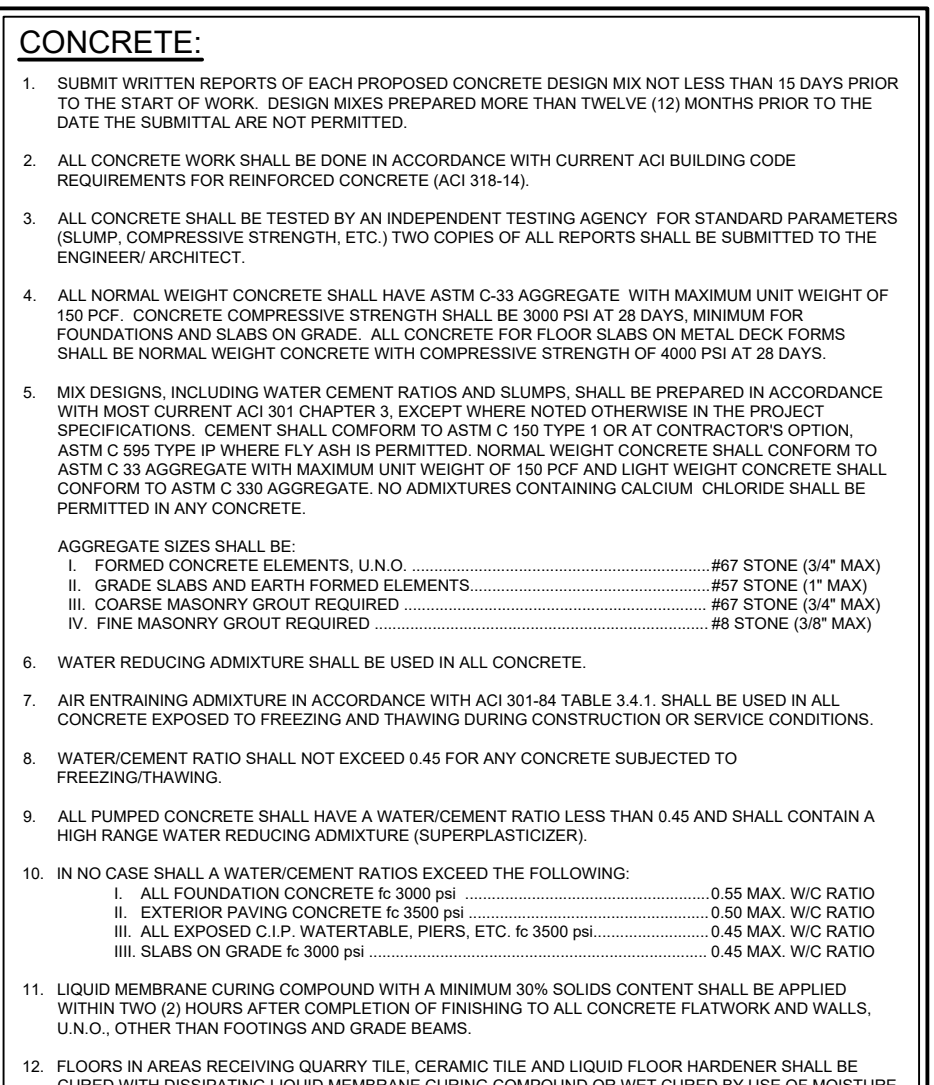


Table 25.3.1 - Standard hook geometry for development of deformed bars in tension.

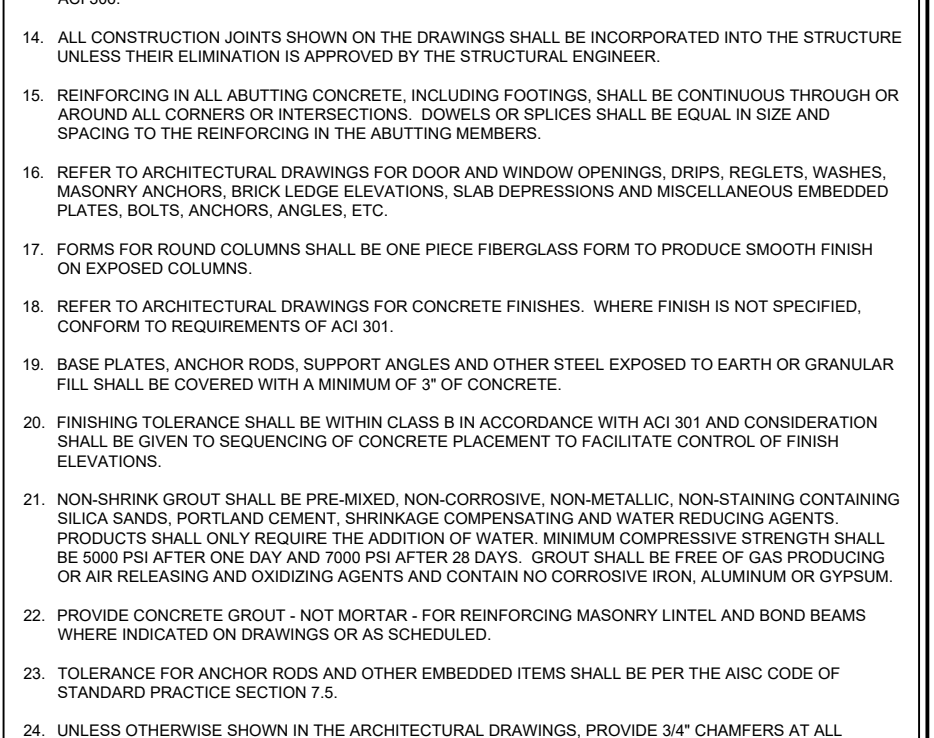
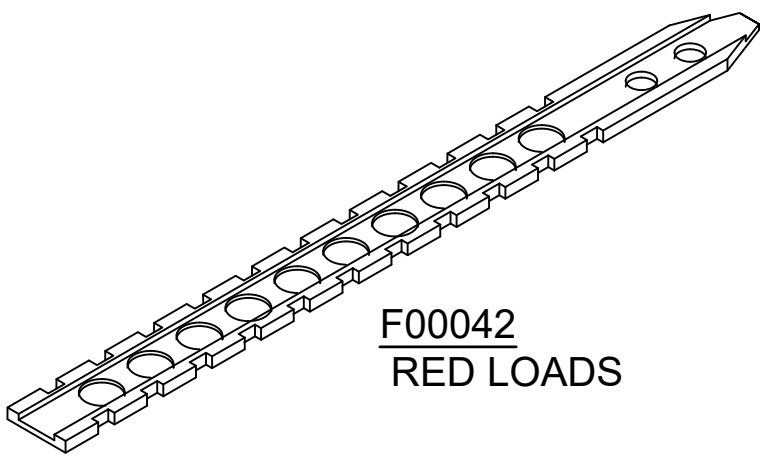
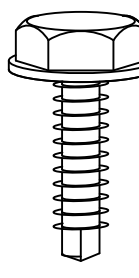
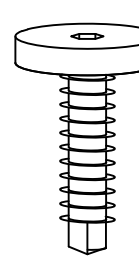
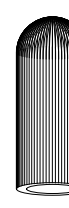
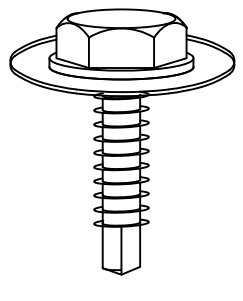
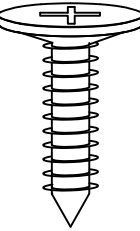
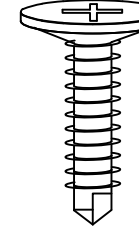
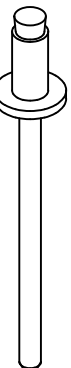
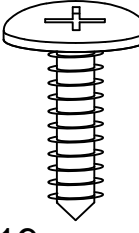
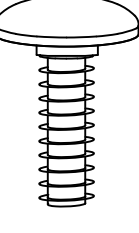

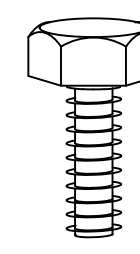
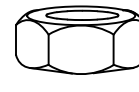
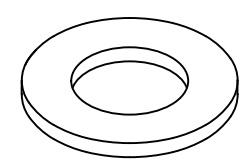
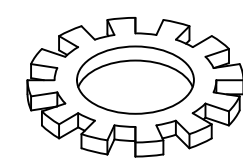
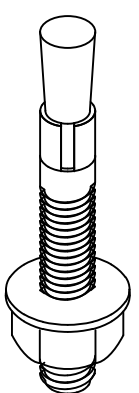
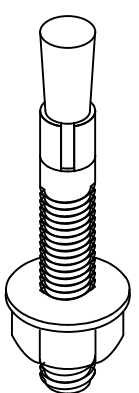
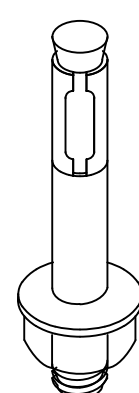
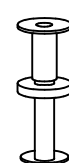


Table 25.3.2 - Minimum inside bend diameters and standard hook geometry for stirrups, ties, and hoops.

**Table 7 – Tension Development and Lap Splice Lengths for Bars in Walls, Slabs and Footings (ACI 25.4.2.3) f<sub>t</sub> = 3,000 psi**

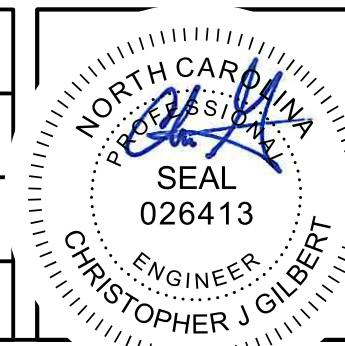
Bar Size	Lap Class	Concrete Cover = 0.75 in.		Concrete Cover = 1.50 in.		Concrete Cover = 2.00 in.		Concrete Cover = 3.00 in.	
		Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	Epoxy-Coated	Uncoated	E



 F00042 RED LOADS	 F10006 #10 X 5/8" SDF F10039 #10 X 1 1/4" SDF F12017 #12 X 7/8" SDF F12072 #12 X 24 X 1 1/4" SDF	 F10008 #10 X 5/8" TORX HEAD SDF	 F10040 "GAMCO" #760404 AYDIN MOLDED DEVICE	 F12009 #12 X 1" SDF W/ WASHER F14010 #14 X 7/8" SDF W/ WASHER F14011 #14 X 7/8" SDF W/ WASHER NOTE COLOR REQUIRED F16010 #17 X 1" "FAT BOY"	 F12014 GYPSUM BOARD SCREW SHARP END	 F12041 GYPSUM BOARD SCREW DRILL END	
 F13046 1/8" POP RIVET NOTE COLOR REQUIRED	 F14019 #14 X 1 1/4" TAP SCREW	 F19001 3/16"Ø X 3/4" CARRIAGE BOLT F25006 1/4"Ø X 3/4" CARRIAGE BOLT	 F19002 3/16"Ø KEPNUT F25005 1/4"Ø KEPNUT	 F38070 3/8"Ø X 3/4" BOLT F50091 1/2"Ø X 1" BOLT	 F38071 3/8"Ø NUT F50092 1/2"Ø NUT	 F38080 3/8"Ø WASHER F50049 1/2"Ø WASHER	 F38081 3/8"Ø STAR WASHER
		 F38003 3/8"Ø X 3" WEDGE ANCHOR F50001 1/2"Ø X 3 3/4" WEDGE ANCHOR F50065 1/2"Ø X 2 3/4" WEDGE ANCHOR F50024 5/8"Ø X 6" WEDGE ANCHOR	 F75032 3/4"Ø X 8" WEDGE ANCHOR	 F50125 1/2"Ø X 2 1/4" SLEEVE ANCHOR F50018 1/2"Ø X 4" SLEEVE ANCHOR	 F88053 7/8"Ø POWDER DRIVEN FASTENER		

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REVISIONS:	
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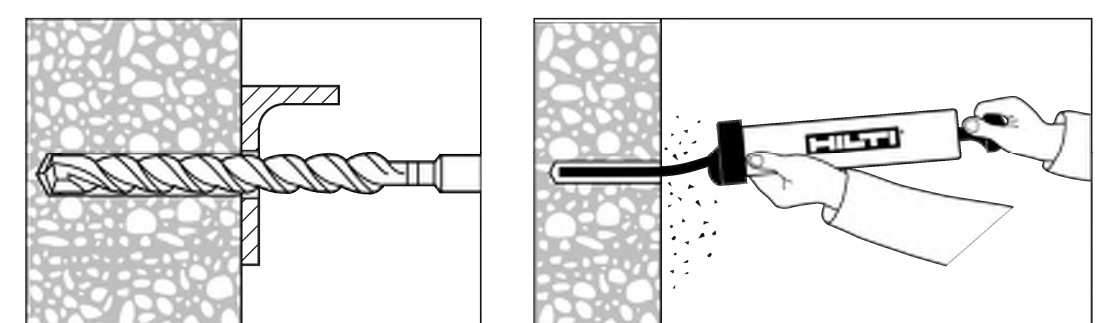
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STATESVILLE, NC 28625  
(800)654-7813

PROJECT NAME:	UNIVERSITY STORAGE
PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	STANDARD FASTENERS
PROJECT NO.:	NC22329
DRAWING NUMBER:	CV6



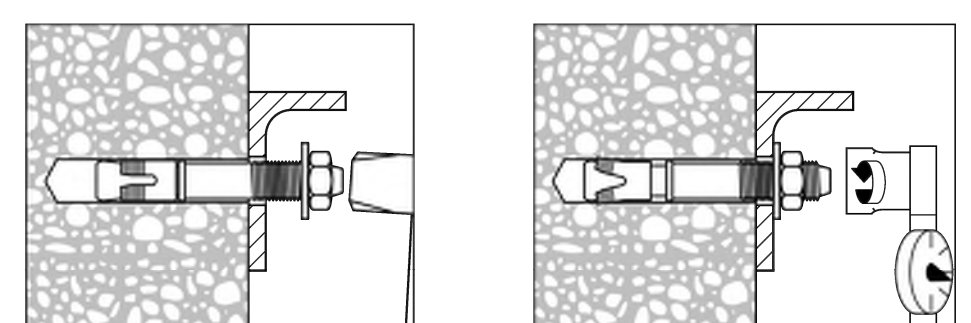
**3.3.4 KWIK Bolt TZ Expansion Anchor**

**3.3.4.4 KWIK Bolt TZ Anchor Installation Instructions into normal-weight and lightweight concrete**



1. Hammer drill a hole to the same nominal diameter as the KWIK Bolt TZ. The minimum hole depth must conform with the instructions for use adhered to the packaging and the ICC-ES evaluation report, if applicable. The fixture may be used as a drilling template to ensure proper anchor location.

2. Clean hole.



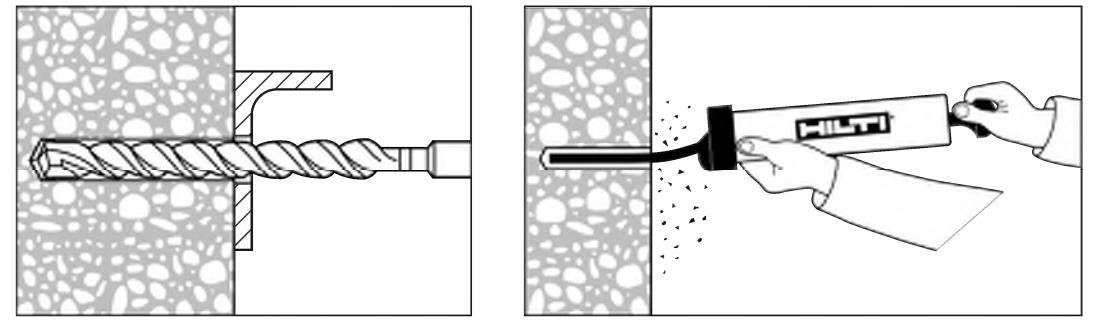
3. Drive the KWIK Bolt TZ into the hole using a hammer. The anchor must be driven until at least 4 threads are below the surface of the fixture.

4. Tighten the nut to the installation torque.

SETTING INFORMATION	Units	Normal Anchor Diameter (In.)			
		3/8	1/2	5/8	3/4
Installation torque	ft*lb	25	40	60	110
	(Nm)	34	54	81	149

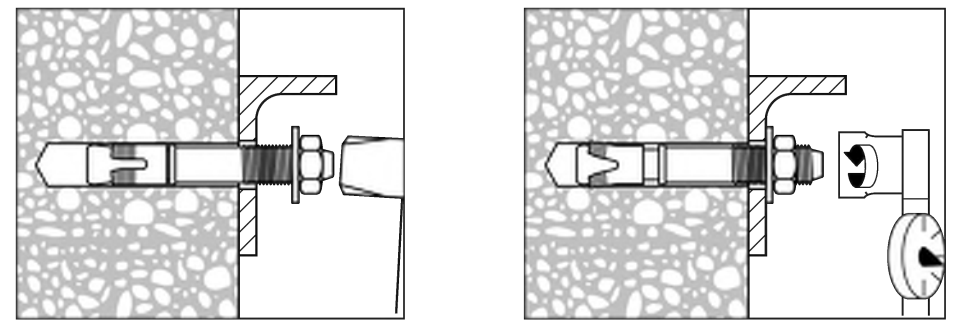
**KWIK Bolt 3 Expansion Anchor 3.3.6**

**3.3.6.5 Installation Instructions**



1. Hammer drill a hole to the same nominal diameter as the KWIK Bolt 3. The hole depth must exceed the anchor embedment by at least one diameter. The fixture may be used as a drilling template to ensure proper anchor location.

2. Clean hole.



3. Drive the KWIK Bolt 3 into the hole using a hammer. The anchor must be driven until at least 6 threads are below the surface of the fixture.

4. Tighten the nut to the installation torque.

DESIGN INFORMATION	Units	Normal Anchor Diameter (In.)				
		1/4	3/8	1/2	5/8	3/4
Installation torque	ft*lb	4	20	40	60	110
	(Nm)	5	27	54	81	149

**3.3.6 KWIK HUS-EZ (KH-EZ) Carbon Steel Screw Anchor**

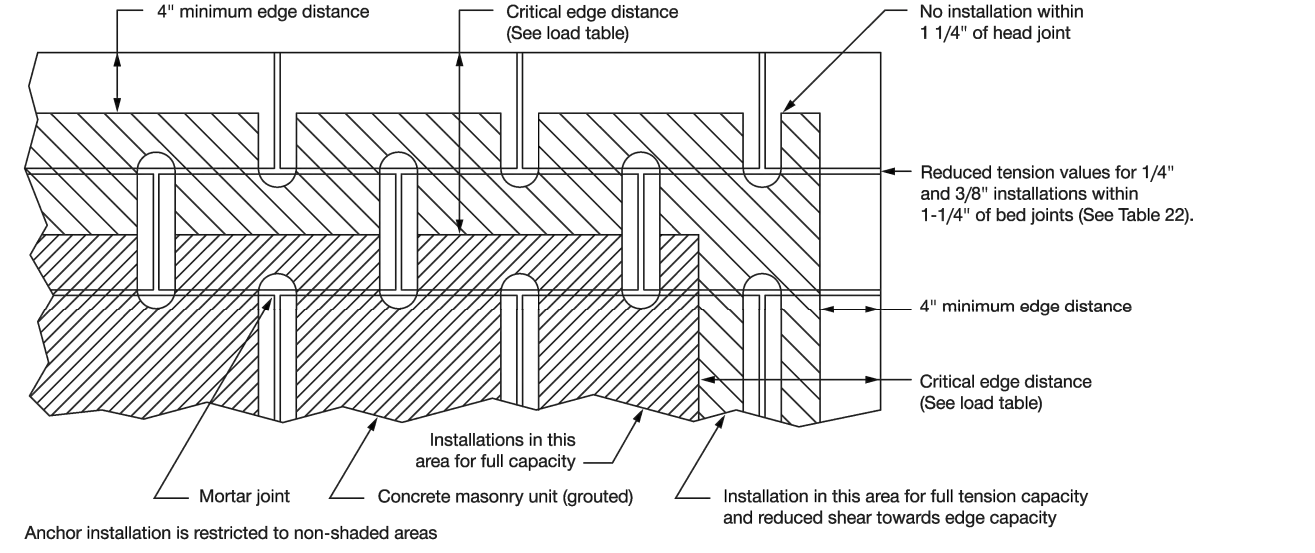


Figure 5 - Acceptable locations (shaded areas) for Hilti KWIK HUS-EZ anchors in grout-filled concrete masonry

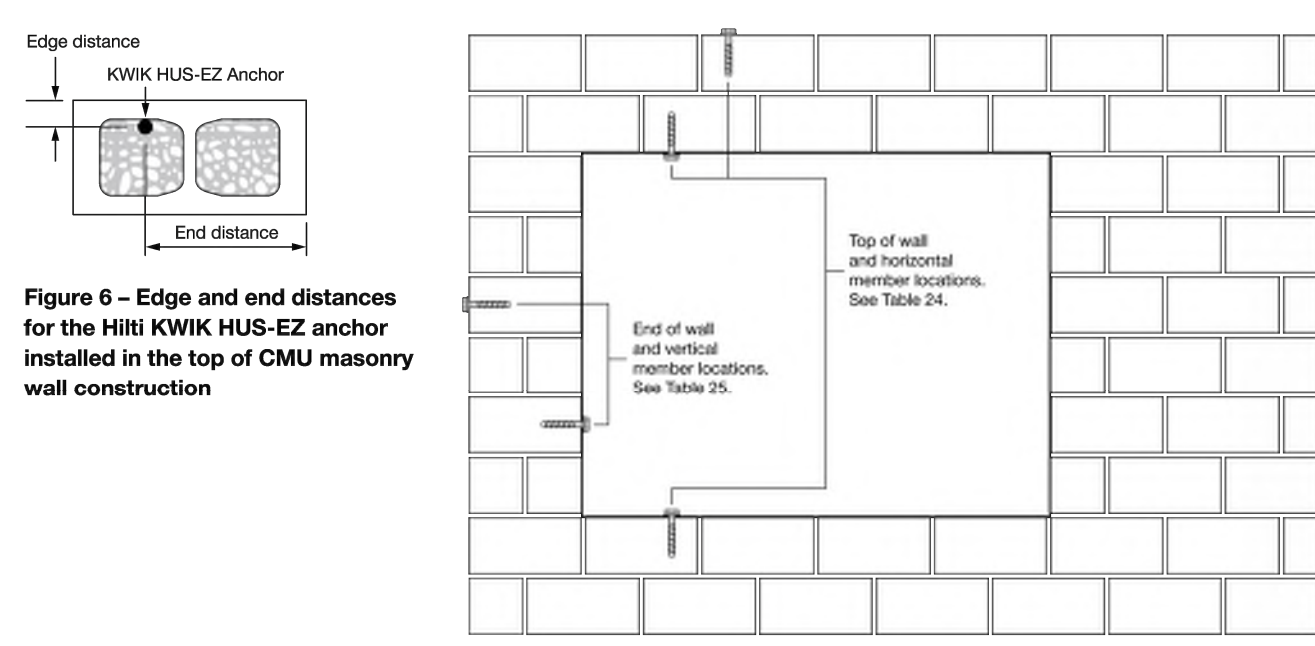


Figure 6 - Edge and end distances for the Hilti KWIK HUS-EZ anchor installed in the top of CMU masonry wall construction

SETTING INFORMATION	Units	Normal Anchor Diameter (In.)			
		3/8	1/2	5/8	3/4
Installation torque	ft*lb	40	45	85	115
Impact wrench torque rating	ft*lb	114	450	137	450
Normal embedment	in.	1 - 5/8	2 - 1/2	3 - 1/4	2 - 1/4
Minimum hole depth	in.	1 - 7/8	2 - 3/4	3 - 1/2	2 - 5/8

**KWIK HUS-EZ (KH-EZ) Carbon Steel Screw Anchor 3.3.5**

Table 8 - KWIK HUS-EZ Allowable Loads Installed in Top of Grout-Filled Concrete Masonry Construction (lb)

Anchor Diameter (inches)	Minimum Embedment Depth (inches)	Minimum Edge Distance (inches)	Minimum Spacing (inches)	Minimum End Distance (inches)	Tension		Shear	
					Perpendicular to Edge of Masonry Wall	Parallel to Edge of Masonry Wall		
1/2	4 1/4	1 3/4	8	4	680	365	1110	
5/8	5	1 3/4	10	5	1310	365	1165	

1 All values are for anchors installed in fully grouted masonry with minimum masonry prism strength of 1500psi. Concrete masonry units shall be light-weight or normal-weight.

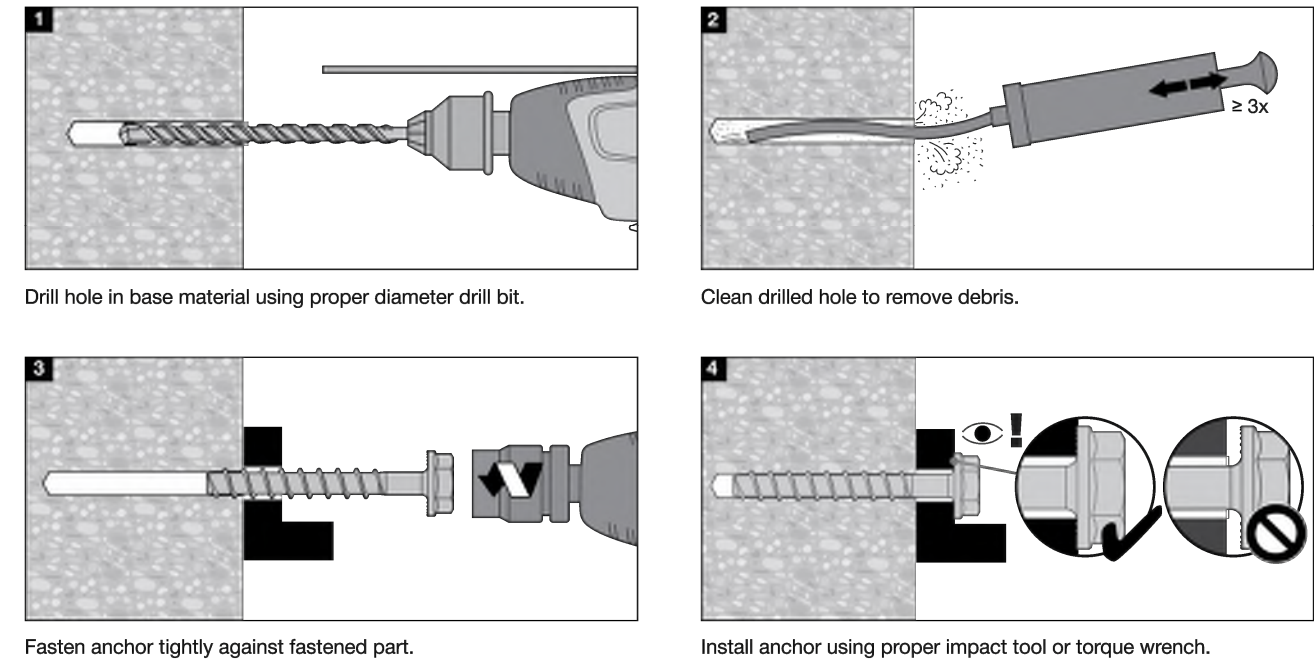
2 Embedment depth is measured from the top of the masonry construction.

3 For combined loading: For 1/4" diameter -  $\frac{T_{tension}}{T_{ultimate}} + \frac{V_{shear}}{V_{ultimate}} \leq 1$  For 3/8" - 3/4" diameter -  $\left(\frac{T_{tension}}{T_{ultimate}}\right)^{1.5} + \left(\frac{V_{shear}}{V_{ultimate}}\right)^{1.5} \leq 1$

**3.3.5.4 Installation Instructions**

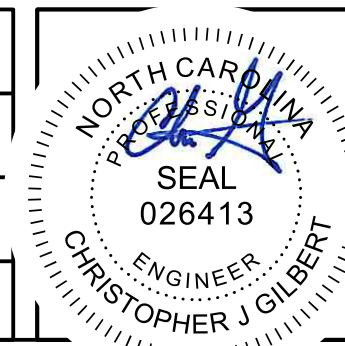
Drill holes in base material using carbide-tipped masonry drill bits complying with ANSI B212.15-1994. The nominal drill bit diameter must be equal to that of the anchor. The minimum drilled hole depth is given in Table 1. Prior to installation, dust and debris must be removed from the drilled hole using a hand pump, compressed air or a vacuum. The anchor must be installed into the predrilled hole using a powered impact wrench or installed with a torque wrench until the proper nominal embedment depth is obtained. The impact wrench

torque,  $T_{impact}$ , and installation torque,  $T_{inst}$ , for the manual torque wrench must be in accordance with Table 1. The KWIK HUS-EZ (KH-EZ) may be loosened by a maximum of one turn and reinstalled with a socket wrench or powered impact wrench to facilitate fixture attachment or realignment. For member thickness and edge distance restrictions for installations into the soffit of concrete on steel deck assemblies, see Figure 2.



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REVISIONS	DATE	BY

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 APPROVED BY: [Signature]

PROJECT NAME: UNIVERSITY STORAGE  
 PROJECT ADDRESS: ERWIN, NC 28339  
 OWNER: UNIVERSITY STORAGE, LLC  
 SHEET TITLE: ANCHOR INSTALLATION  
 PROJECT NO: NC22329  
 DRAWING NUMBER: CV7











### StiffClip® HE Installation Instructions: Header Connector

**StiffClip® HE(L) or HE(H)**  
(for use with typical boxed header)

**StiffClip® HE(S)**  
(for use with JamStud® header)

Install four (4) StiffClip HE per opening. Refer to design drawings for fastener type and quantity required.

Attach StiffClip HE to jamb with required number of screws.

Place boxed header on shelf tabs of each StiffClip HE.

Place JamStud® header on shelf tabs of each StiffClip HE.

Attach shelf ledge to header with required number of screws.

Attach bottom angle to jamb with required number of screws.

Consider using TSN's JamStud® in place of all window or door jamb studs for added quality. For Installation, Technical or Submittal questions, contact The Steel Network at (888) 474-4876 or email us at [support@steelnetwork.com](mailto:support@steelnetwork.com). Visit [www.steelnetwork.com](http://www.steelnetwork.com) and discover the value of each TSN solution.

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Products on this page are designed and manufactured for the specific purposes show, and should not be used in other applications unless approved by a qualified design professional. All modifications to products or changes in installation procedures should be made by a qualified design professional. The performance of such modified products or altered installation procedures is the sole responsibility of the design professional or installation contractor. The installation contractor is responsible for installing all products in accordance with relevant specifications and building codes.

### PLAN ABBREVIATIONS

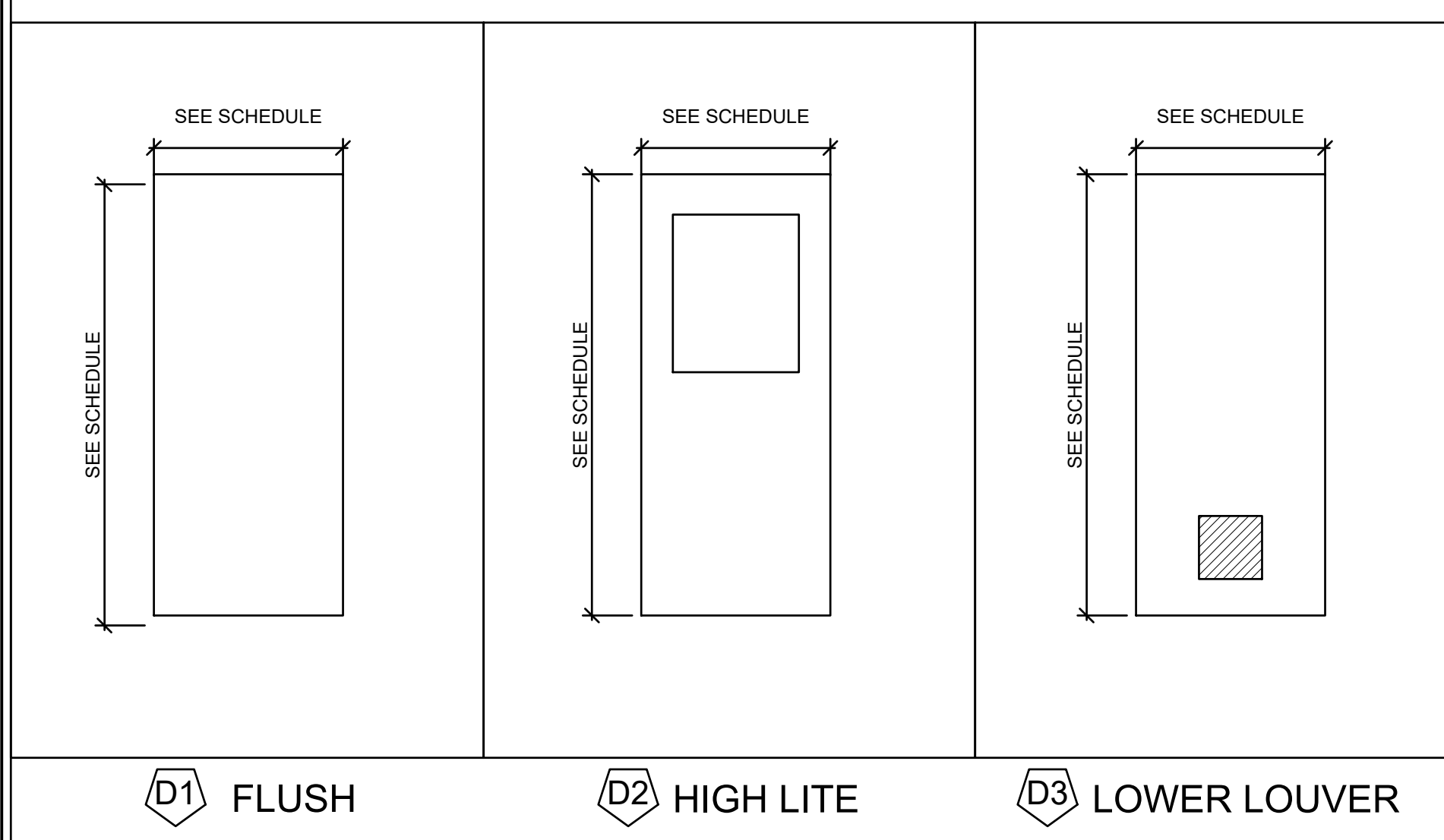
ABV - ABOVE	ID - INSIDE DIAMETER
AFF - ABOVE FINISH FLOOR	INT - INTERIOR
ALT - ALTERNATE	INSUL - INSULATION
AMB - AIR/MOISTURE BARRIER	JT - JOINT
BLDG - BUILDING	LF - LINEAR FOOT
BM - BEAM	LLH - LONG LEG HORIZONTAL
BOT - BOTTOM	LLV - LONG LEG VERTICAL
BOS - BOTTOM OF STEEL	LP - LOW POINT
CJ - CONTROL JOINT	MATL - MATERIAL
CLR - CLEAR	MAX - MAXIMUM
CMU - CONCRETE MASON UNIT	MFR - MANUFACTURER
COL - COLUMN	MIN - MINIMUM
CONC - CONCRETE	MISC - MISCELLANEOUS
CONT - CONTINUOUS	NTS - NOT TO SCALE
DBL - DOUBLE	OC - ON CENTER
DIA - DIAMETER	OD - OUTSIDE DIAMETER
DIM - DIMENSION	OPP - OPPOSITE
DN - DOWN	QTY - QUANTITY
DSP - DOWNSPOUT	REINF - REINFORCEMENT
DWG - DRAWING	REQD - REQUIRED
EA - EACH	REV - REVISION
EIFS - EXTERIOR INSULATION AND FINISH SYSTEM	RO - ROUGH OPENING
EJ - EXPANSION JOINT	SAF - SELF ADHERED FLASHING
ELEV / EL - ELEVATION	SF - SQUARE FOOT
EPDM - ETHYLENE PROPYLENE DIENE MONOMER	SIM - SIMILAR
EQ - EQUAL	SPM - SINGLE PLY MEMBRANE
EW - EACH WAY	STD - STANDARD
EXP - EXPANSION	STL - STEEL
EXT - EXTERIOR	TOM - TOP OF MASONRY
FF - FINISH FLOOR	TOP - TOP OF PURLIN
FLR - FLOOR	TOS - TOP OF STEEL
FOC - FACE OF CONCRETE	TOW - TOP OF WALL
FOM - FACE OF MASONRY	TYP - TYPICAL
FOS - FACE OF STEEL/STUD/SLAB	UON - UNLESS OTHERWISE NOTED
FT - FEET	VERT - VERTICAL
GA - GAUGE	W/O - WITHOUT
GALV - GALVANIZED	WRB - WATER RESISTIVE BARRIER
GYP - GYPSUM	WWF - WELDED WIRE FABRIC
HGT - HEIGHT	
HOR - HORIZONTAL	
HP - HIGHPOINT	
HR - HOUR	

### DOOR SCHEDULE

NO.	TYPE	DIMENSIONS				FRAME				LABEL	SWING	AUTOMATIC CLOSER	LOUVER	LITE KIT	HARDWARE	REMARKS
		WIDTH	HEIGHT	MATERIAL	THICK	MATERIAL	SILL	THROAT	DEPTH							
D10204	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10206	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10194	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10205	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10195	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10207	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10282	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10283	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10280	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10281	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10220	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	LH	YES	NO	NO	L-1	
D10221	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	7.14"		1-1/2 HR	RH	YES	NO	NO	L-1	
D10287	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	RH	YES	NO	NO	L-1		
D10288	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	LH	YES	NO	NO	L-1		
D10289	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	RH	YES	NO	NO	L-1		
D10270	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	LH	YES	NO	NO	L-1		
D10275	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	RH	YES	NO	NO	L-1		
D10276	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	N/A	5.34"	3 HR	LH	YES	NO	NO	L-1		
D31001	D2	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	110"	NO	W-1	L-1	
D31002	D2	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	W-1	L-1	
D31003	D2	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	90"	NO	W-1	L-1	
D31004	D2	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	W-1	L-1	
D31005	D2	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	110"	NO	W-1	L-1	
D31006	D2	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	W-1	L-1	
D31007	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	110"	NO	NO	L-1	
D31008	D1	4'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	NO	L-1	
D31009	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	110"	NO	NO	L-1	
D31010	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	NO	L-1	
D31011	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	RH	110"	NO	NO	L-1	
D31012	D1	3'-0"	7'-0"	H.M.	1.34"	H.M.	S-1	N/A	5.34"	N/A	LH	110"	NO	NO	L-1	
D10034	D1	3'-0"	7'-0"	R.D.C.	1"	N/A	N/A	N/A	N/A	N/A	LH	NO	NO	NO	L-2	
D10034	D1	3'-0"	7'-0"	R.D.C.	1"	N/A	N/A	N/A	N/A	N/A	RH	NO	NO	NO	L-2	
D10043	D3	3'-0"	7'-0"	S.M.	1"	N/A	N/A	N/A	N/A	N/A	LH	NO	LVR-1	NO	L-2	
D10043	D3	3'-0"	7'-0"	S.M.	1"	N/A	N/A	N/A	N/A	N/A	RH	NO	LVR-1	NO	L-2	

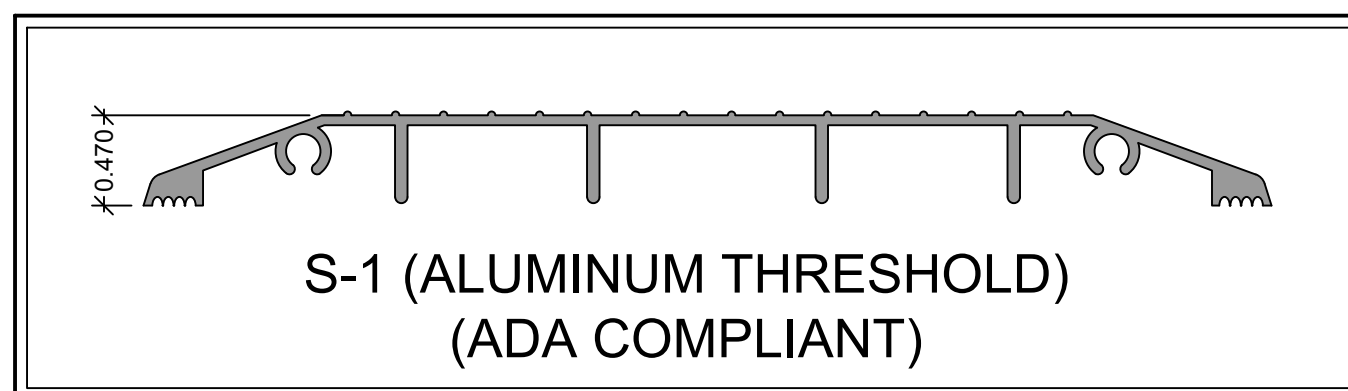
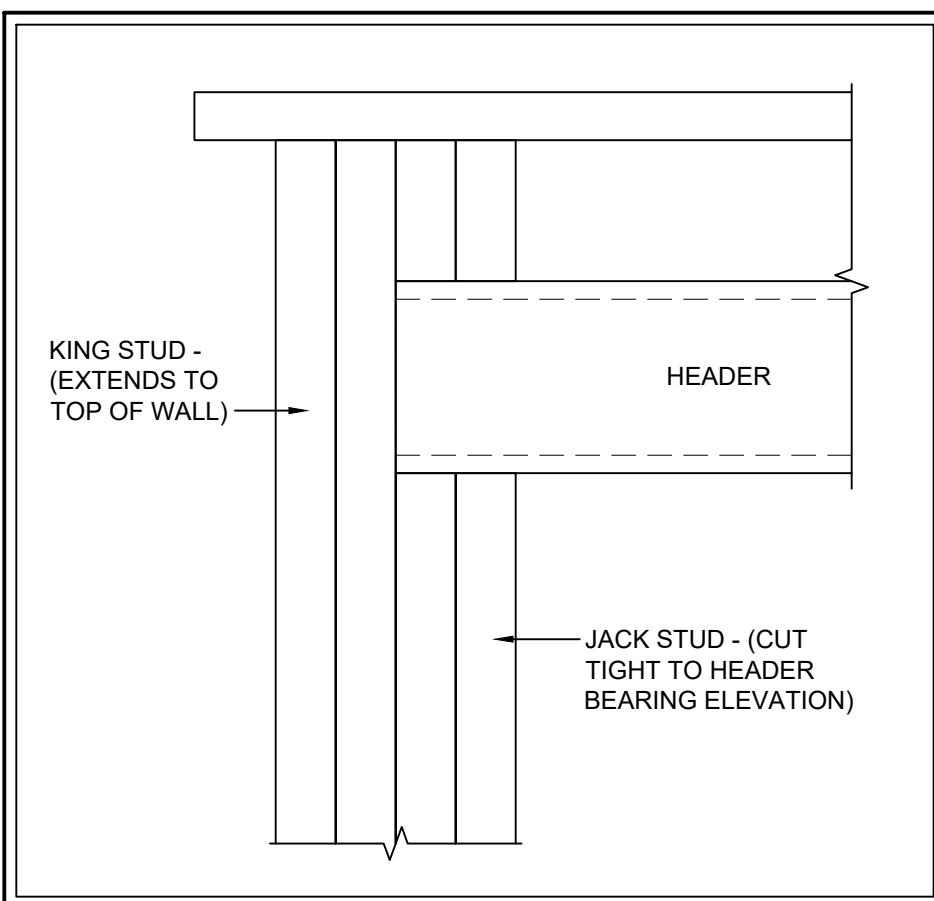
**NOTE:**  
**FIRE RATED DOORS:**  
 TO DETERMINE RIGHT OR LEFT-HAND SWING:  
 AS THE DOOR OPENS TOWARDS YOU:  
 IF HINGES ON RIGHT - LEFT-HAND SWING  
 IF HINGES ON LEFT - RIGHT-HAND SWING  
**NON RATED DOORS:**  
 TO DETERMINE RIGHT OR LEFT-HAND SWING:  
 AS THE DOOR OPENS TOWARDS YOU:  
 IF HINGES ON RIGHT - RIGHT-HAND SWING  
 IF HINGES ON LEFT - LEFT-HAND SWING

### DOOR TYPES



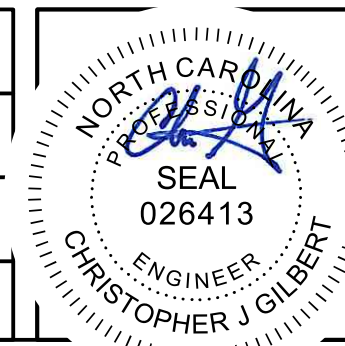
### DOOR SCHEDULE ABBREVIATIONS

H.M. - HOLLOW METAL
L-1 - LEVER/LEVER LOCKSET THAT DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE
L-2 - ROLL UP DOOR LATCH
LVR-1 - 12" x 12" VENTED LOUVER
LH - LEFT-HANDED
RH - RIGHT HANDED
R.D.C. - ROLL UP DOOR CURTAIN
N/A - NOT APPLICABLE
S-1 - ADA COMPLIANT THRESHOLD, SEE DRAWING ON THIS SHEET.
S.M. - SHEET METAL
W-1 - 20" x 24" LITE KIT WITH TEMPERED GLASS.



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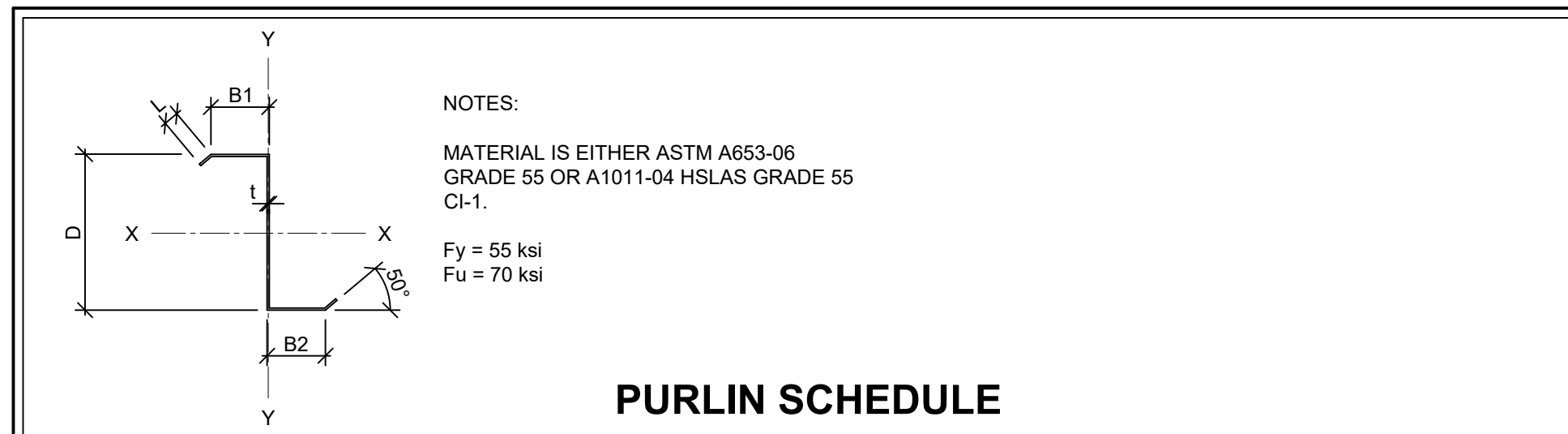


DATE:	10/14/2022
DRAWN BY:	DPP
SCALE:	AS NOTED
APPROVED BY:	
REVISIONS:	
DATE:	
BY:	

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 228 COMMERCE BLVD.  
 STATESVILLE, NC 28625  
 (800)654-7813

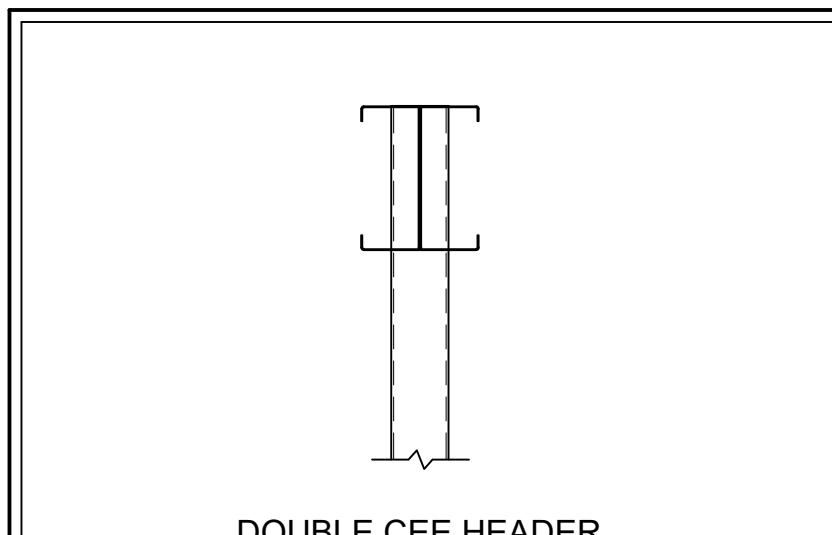
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	SCHEDULES
PROJECT NO.:	NC22329
DRAWING NUMBER:	S0.1



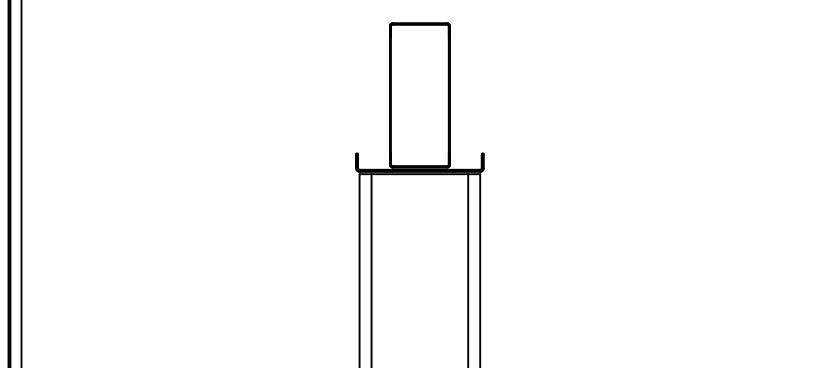


**PURLIN SCHEDULE**

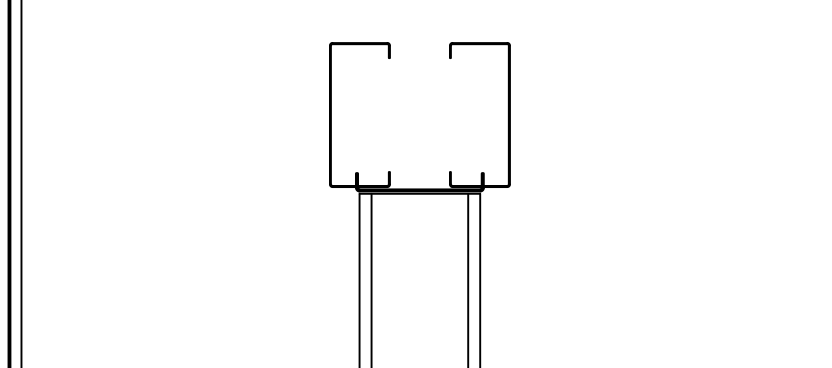
SECTION NAME	DIMENSIONAL PROPERTIES				SECTION NAME	DIMENSIONAL PROPERTIES			
	D x B1 x B2 (in)	GAGE	THICKNESS (in)	LIP (in)		D x B1 x B2 (in)	GAGE	THICKNESS (in)	LIP (in)
4.0 x 3.5 Z16	4.0 x 3.125 x 3.375	16	0.059	0.911	8.0 x 3.0 Z16	8.0 x 2.625 x 2.875	16	0.059	0.911
4.0 x 3.5 Z14	4.0 x 3.125 x 3.375	14	0.070	0.930	8.0 x 3.0 Z14	8.0 x 2.625 x 2.875	14	0.070	0.930
4.0 x 3.5 Z12	4.0 x 3.125 x 3.375	12	0.105	0.990	8.0 x 3.0 Z12	8.0 x 2.625 x 2.875	12	0.105	0.990
4.0 x 3.0 Z16	4.0 x 2.625 x 2.875	16	0.059	0.911	9.0 x 3.5 Z16	9.0 x 3.125 x 3.375	16	0.059	0.911
4.0 x 3.0 Z14	4.0 x 2.625 x 2.875	14	0.070	0.930	9.0 x 3.5 Z14	9.0 x 3.125 x 3.375	14	0.070	0.930
4.0 x 3.0 Z12	4.0 x 2.625 x 2.875	12	0.105	0.990	9.0 x 3.5 Z12	9.0 x 3.125 x 3.375	12	0.105	0.990
5.0 x 3.5 Z16	5.0 x 3.125 x 3.375	16	0.059	0.911	9.0 x 3.0 Z16	9.0 x 2.625 x 2.875	16	0.059	0.911
5.0 x 3.5 Z14	5.0 x 3.125 x 3.375	14	0.070	0.930	9.0 x 3.0 Z14	9.0 x 2.625 x 2.875	14	0.070	0.930
5.0 x 3.5 Z12	5.0 x 3.125 x 3.375	12	0.105	0.990	9.0 x 3.0 Z12	9.0 x 2.625 x 2.875	12	0.105	0.990
5.0 x 3.0 Z16	5.0 x 2.625 x 2.875	16	0.059	0.911	10.0 x 3.5 Z16	10.0 x 3.125 x 3.375	16	0.059	0.911
5.0 x 3.0 Z14	5.0 x 2.625 x 2.875	14	0.070	0.930	10.0 x 3.5 Z14	10.0 x 3.125 x 3.375	14	0.070	0.930
5.0 x 3.0 Z12	5.0 x 2.625 x 2.875	12	0.105	0.990	10.0 x 3.5 Z12	10.0 x 3.125 x 3.375	12	0.105	0.990
6.0 x 3.5 Z16	6.0 x 3.125 x 3.375	16	0.059	0.911	10.0 x 3.0 Z16	10.0 x 2.625 x 2.875	16	0.059	0.911
6.0 x 3.5 Z14	6.0 x 3.125 x 3.375	14	0.070	0.930	10.0 x 3.0 Z14	10.0 x 2.625 x 2.875	14	0.070	0.930
6.0 x 3.5 Z12	6.0 x 3.125 x 3.375	12	0.105	0.990	10.0 x 3.0 Z12	10.0 x 2.625 x 2.875	12	0.105	0.990
6.0 x 3.0 Z16	6.0 x 2.625 x 2.875	16	0.059	0.911	11.0 x 3.5 Z16	11.0 x 3.125 x 3.375	16	0.059	0.911
6.0 x 3.0 Z14	6.0 x 2.625 x 2.875	14	0.070	0.930	11.0 x 3.5 Z14	11.0 x 3.125 x 3.375	14	0.070	0.930
6.0 x 3.0 Z12	6.0 x 2.625 x 2.875	12	0.105	0.990	11.0 x 3.5 Z12	11.0 x 3.125 x 3.375	12	0.105	0.990
7.0 x 3.5 Z16	7.0 x 3.125 x 3.375	16	0.059	0.911	11.0 x 3.0 Z16	11.0 x 2.625 x 2.875	16	0.059	0.911
7.0 x 3.5 Z14	7.0 x 3.125 x 3.375	14	0.070	0.930	11.0 x 3.0 Z14	11.0 x 2.625 x 2.875	14	0.070	0.930
7.0 x 3.5 Z12	7.0 x 3.125 x 3.375	12	0.105	0.990	11.0 x 3.0 Z12	11.0 x 2.625 x 2.875	12	0.105	0.990
7.0 x 3.0 Z16	7.0 x 2.625 x 2.875	16	0.059	0.911	12.0 x 3.5 Z16	12.0 x 3.125 x 3.375	16	0.059	0.911
7.0 x 3.0 Z14	7.0 x 2.625 x 2.875	14	0.070	0.930	12.0 x 3.5 Z14	12.0 x 3.125 x 3.375	14	0.070	0.930
7.0 x 3.0 Z12	7.0 x 2.625 x 2.875	12	0.105	0.990	12.0 x 3.5 Z12	12.0 x 3.125 x 3.375	12	0.105	0.990
8.0 x 3.5 Z16	8.0 x 3.125 x 3.375	16	0.059	0.911	12.0 x 3.0 Z16	12.0 x 2.625 x 2.875	16	0.059	0.911
8.0 x 3.5 Z14	8.0 x 3.125 x 3.375	14	0.070	0.930	12.0 x 3.0 Z14	12.0 x 2.625 x 2.875	14	0.070	0.930
8.0 x 3.5 Z12	8.0 x 3.125 x 3.375	12	0.105	0.990	12.0 x 3.0 Z12	12.0 x 2.625 x 2.875	12	0.105	0.990



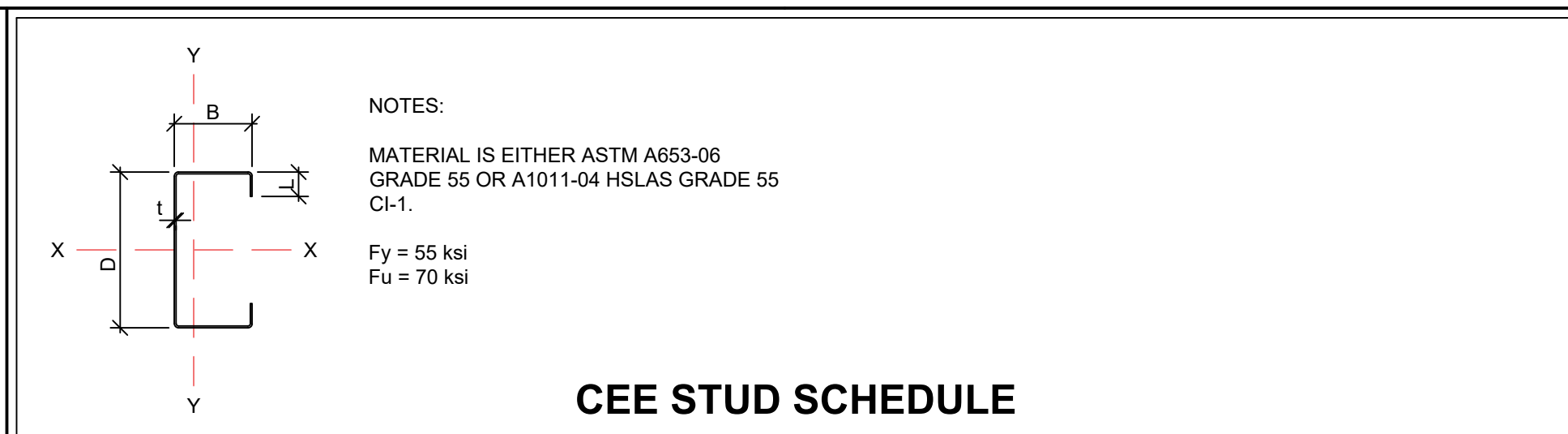
**DOUBLE CEE HEADER**  
**DH 6 x 2.5 C 14**



**EXTERIOR DOUBLE CEE HEADER**  
**EH 8 x 3.0 C 12**

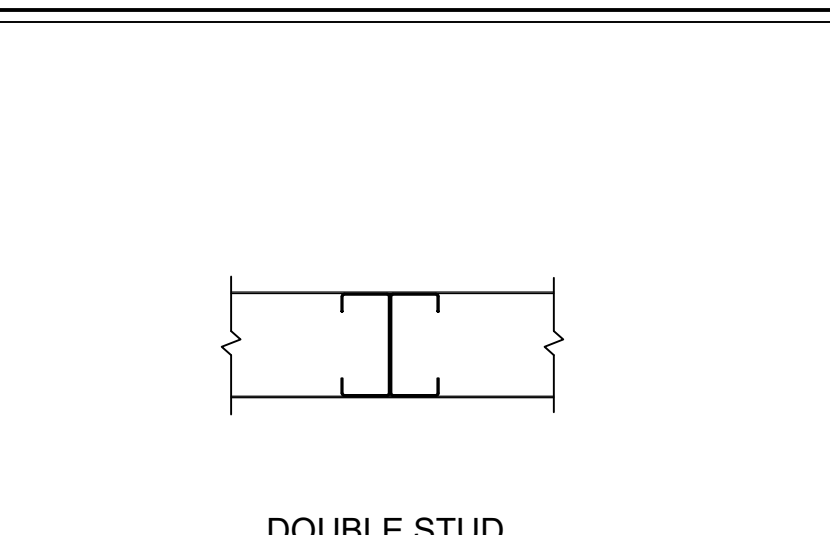


**BOX HEADER**  
**BH 8 x 3.0 C 12**

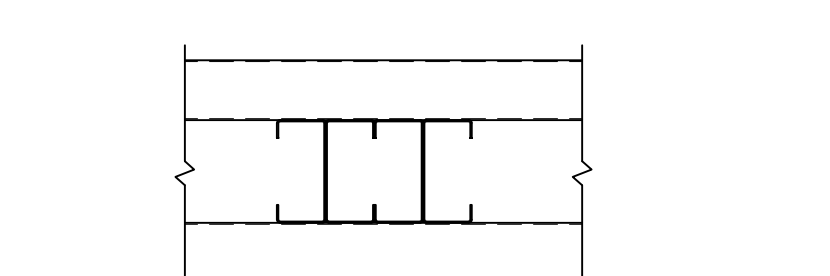


**CEE STUD SCHEDULE**

SECTION NAME	DIMENSIONAL PROPERTIES				SECTION NAME	DIMENSIONAL PROPERTIES			
	D x B (in)	GAGE	THICKNESS (in)	LIP (in)		D x B (in)	GAGE	THICKNESS (in)	LIP (in)
4.0 x 2.0 C16	4.0 x 2.0	16	0.059	0.773	9.0 x 2.5 C16	9.0 x 2.5	16	0.059	0.773
4.0 x 2.0 C14	4.0 x 2.0	14	0.070	0.800	9.0 x 2.5 C14	9.0 x 2.5	14	0.070	0.800
4.0 x 2.0 C12	4.0 x 2.0	12	0.105	0.885	9.0 x 2.5 C12	9.0 x 2.5	12	0.105	0.885
4.0 x 2.5 C16	4.0 x 2.5	16	0.059	0.773	9.0 x 3.0 C16	9.0 x 3.0	16	0.059	0.773
4.0 x 2.5 C14	4.0 x 2.5	14	0.070	0.800	9.0 x 3.0 C14	9.0 x 3.0	14	0.070	0.800
4.0 x 2.5 C12	4.0 x 2.5	12	0.105	0.885	9.0 x 3.0 C12	9.0 x 3.0	12	0.105	0.885
5.0 x 2.5 C16	5.0 x 2.5	16	0.059	0.773	10.0 x 2.0 C16	10.0 x 2.0	16	0.059	0.773
5.0 x 2.5 C14	5.0 x 2.5	14	0.070	0.800	10.0 x 2.0 C14	10.0 x 2.0	14	0.070	0.800
5.0 x 2.5 C12	5.0 x 2.5	12	0.105	0.885	10.0 x 2.0 C12	10.0 x 2.0	12	0.105	0.885
6.0 x 2.5 C16	6.0 x 2.5	16	0.059	0.773	10.0 x 2.5 C16	10.0 x 2.5	16	0.059	0.773
6.0 x 2.5 C14	6.0 x 2.5	14	0.070	0.800	10.0 x 2.5 C14	10.0 x 2.5	14	0.070	0.800
6.0 x 2.5 C12	6.0 x 2.5	12	0.105	0.885	10.0 x 2.5 C12	10.0 x 2.5	12	0.105	0.885
6.0 x 3.0 C16	6.0 x 3.0	16	0.059	0.773	10.0 x 3.0 C16	10.0 x 3.0	16	0.059	0.773
6.0 x 3.0 C14	6.0 x 3.0	14	0.070	0.800	10.0 x 3.0 C14	10.0 x 3.0	14	0.070	0.800
6.0 x 3.0 C12	6.0 x 3.0	12	0.105	0.885	10.0 x 3.0 C12	10.0 x 3.0	12	0.105	0.885
6.0 x 3.5 C16	6.0 x 3.5	16	0.059	0.773	10.0 x 3.5 C16	10.0 x 3.5	16	0.059	0.773
6.0 x 3.5 C14	6.0 x 3.5	14	0.070	0.800	10.0 x 3.5 C14	10.0 x 3.5	14	0.070	0.800
6.0 x 3.5 C12	6.0 x 3.5	12	0.105	0.885	10.0 x 3.5 C12	10.0 x 3.5	12	0.105	0.885
6.0 x 4.0 C16	6.0 x 4.0	16	0.059	0.773	10.0 x 4.0 C16	10.0 x 4.0	16	0.059	0.773
6.0 x 4.0 C14	6.0 x 4.0	14	0.070	0.800	10.0 x 4.0 C14	10.0 x 4.0	14	0.070	0.800
6.0 x 4.0 C12	6.0 x 4.0	12	0.105	0.885	10.0 x 4.0 C12	10.0 x 4.0	12	0.105	0.885
7.0 x 2.5 C16	7.0 x 2.5	16	0.059	0.773	11.0 x 2.5 C16	11.0 x 2.5	16	0.059	0.773
7.0 x 2.5 C14	7.0 x 2.5	14	0.070	0.800	11.0 x 2.5 C14	11.0 x 2.5	14	0.070	0.800
7.0 x 2.5 C12	7.0 x 2.5	12	0.105	0.885	11.0 x 2.5 C12	11.0 x 2.5	12	0.105	0.885
7.0 x 3.0 C16	7.0 x 3.0	16	0.059	0.773	11.0 x 3.0 C16	11.0 x 3.0	16	0.059	0.773
7.0 x 3.0 C14	7.0 x 3.0	14	0.070	0.800	11.0 x 3.0 C14	11.0 x 3.0	14	0.070	0.800
7.0 x 3.0 C12	7.0 x 3.0	12	0.105	0.885	11.0 x 3.0 C12	11.0 x 3.0	12	0.105	0.885
7.0 x 4.0 C16	7.0 x 4.0	16	0.059	0.773	11.0 x 3.5 C16	11.0 x 3.5	16	0.059	0.773
7.0 x 4.0 C14	7.0 x 4.0	14	0.070	0.800	11.0 x 3.5 C14	11.0 x 3.5	14	0.070	0.800
7.0 x 4.0 C12	7.0 x 4.0	12	0.105	0.885	11.0 x 3.5 C12	11.0 x 3.5	12	0.105	0.885
8.0 x 2.5 C16	8.0 x 2.5	16	0.059	0.773	12.0 x 2.5 C16	12.0 x 2.5	16	0.059	0.773
8.0 x 2.5 C14	8.0 x 2.5	14	0.070	0.800	12.0 x 2.5 C14	12.0 x 2.5	14	0.070	0.800
8.0 x 2.5 C12	8.0 x 2.5	12	0.105	0.885	12.0 x 2.5 C12	12.0 x 2.5	12	0.105	0.885
8.0 x 3.0 C16	8.0 x 3.0	16	0.059	0.773	12.0 x 3.0 C16	12.0 x 3.0	16	0.059	0.773
8.0 x 3.0 C14	8.0 x 3.0	14	0.070	0.800	12.0 x 3.0 C14	12.0 x 3.0	14	0.070	0.800
8.0 x 3.0 C12	8.0 x 3.0	12	0.105	0.885	12.0 x 3.0 C12	12.0 x 3.0	12	0.105	0.885
8.0 x 3.5 C16	8.0 x 3.5	16	0.059	0.773	12.0 x 3.5 C16	12.0 x 3.5	16	0.059	0.773
8.0 x 3.5 C14	8.0 x 3.5	14	0.070	0.800	12.0 x 3.5 C14	12.0 x 3.5	14	0.070	0.800
8.0 x 3.5 C12	8.0 x 3.5	12	0.105	0.885	12.0 x 3.5 C12	12.0 x 3.5	12	0.105	0.885
8.0 x 4.0 C16	8.0 x 4.0	16	0.059	0.773	12.0 x 4.0 C16	12.0 x 4.0	16	0.059	0.773
8.0 x 4.0 C14	8.0 x 4.0	14	0.070	0.800	12.0 x 4.0 C14	12.0 x 4.0	14	0.070	0.800
8.0 x 4.0 C12	8.0 x 4.0	12	0.105	0.885	12.0 x 4.0 C12	12.0 x 4.0	12	0.105	0.885



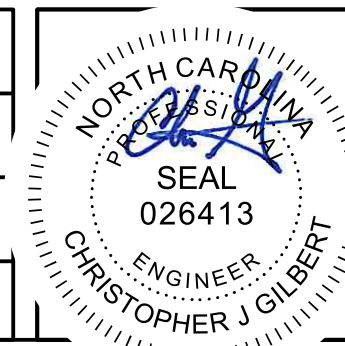
**DOUBLE STUD**  
**DS 4 x 2.5 C 12**



**GANG OF FOUR STUDS**  
**4S 4 x 2.5 C 12**

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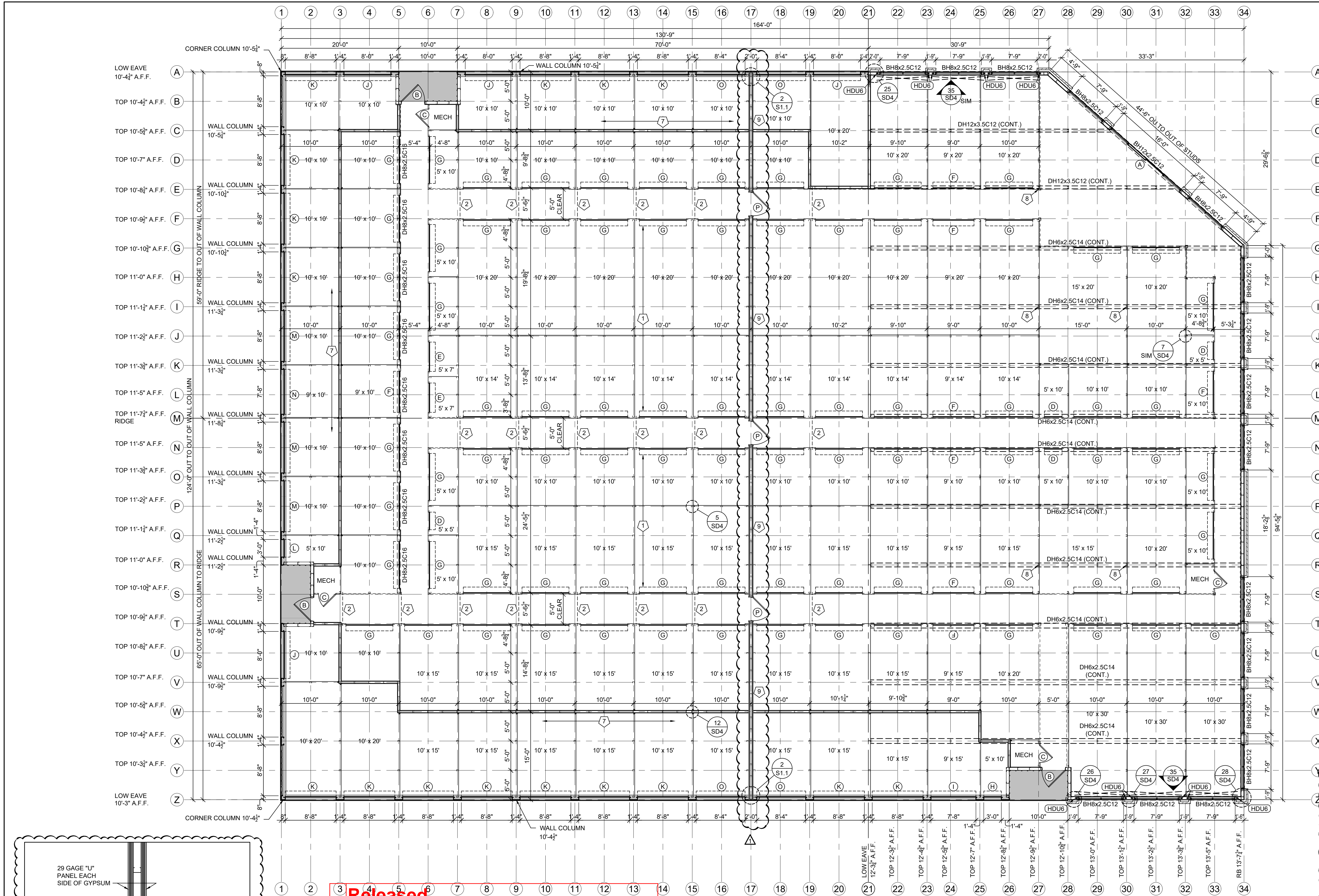


DATE:	10/14/2022
DRAWN BY:	DPP
SCALE:	AS NOTED
APPROVED BY:	
REVISIONS:	
DATE:	BY:



PROJECT NAME:	UNIVERSITY STORAGE
PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	SCHEDULES
PROJECT NO.:	NC22329
DRAWING NUMBER:	S0.2





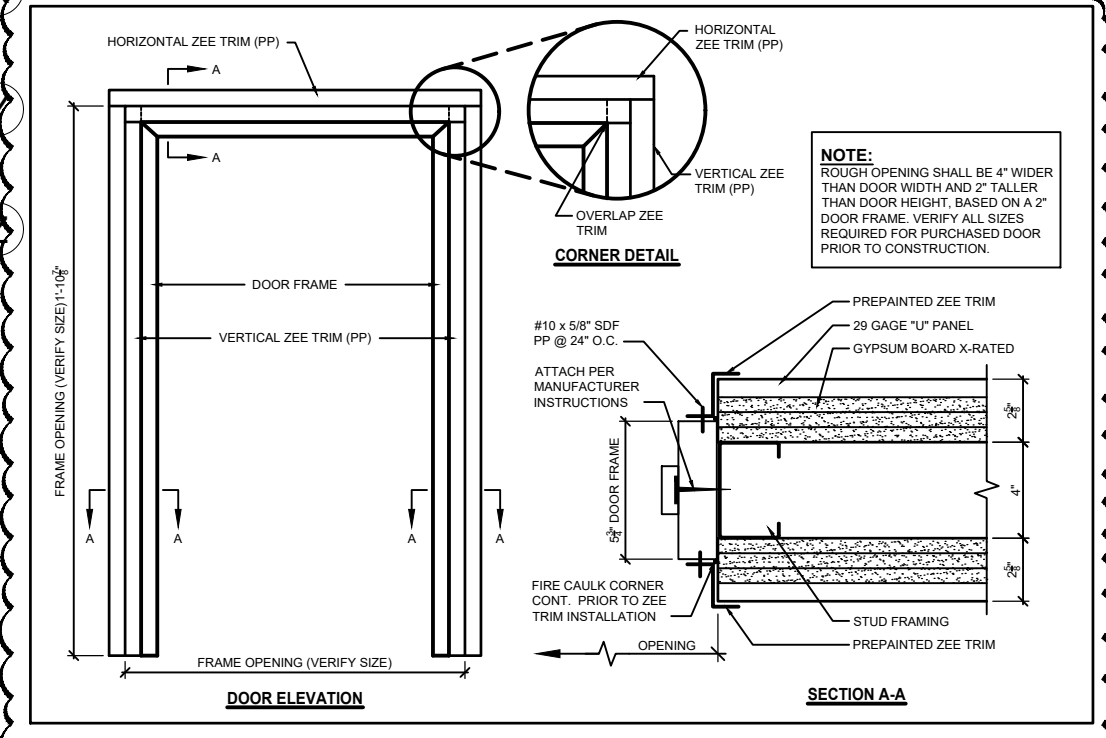
- FLOOR FRAMING NOTES:**
- 4x2.5C16GA INTERIOR POST. SECURE TO BASE CLIP (#S90012GA). ANCHOR TO SLAB WITH 2" x 3" KB-T22 (2" EMBEDMENT).
  - 4x2.5C16GA CROSS BEAM @ HALLWAY - 5'-9" LONG (TYP.) - SECURE EACH END TO FLANGE OF INTERIOR POST WITH (3 EA) #12 SDF.
  - PERIMETER WALL STUDS SHALL BE 6x2.5C16GA AT 2'-0" O.C. MAXIMUM. PERIMETER WALLS TO HAVE 600T300-68 TOP TRACK CONTINUOUS & 600T300-54 BASE TRACK CONTINUOUS. BLOCK WALL @ 5'-0" O.C. (REF. 1/SD4).
  - PONY COLUMN FOR HEADER TO STUD CONNECTION. (REF. 24/SD5)
  - FOR ADDITIONAL TYPICAL DETAILING REQUIREMENTS OF STUD FRAMING, REF SD4 SHEETS.
  - ANCHOR ALL BASE TRACKS WITH 1/2" DIAMETER HILTI (CS) KB-T22 W/ 2" EFFECTIVE EMBED LOCATED 2'-6" OC AT INTERIOR AND 2'-0" OC AT EXTERIOR WALLS. INSTALLATION SHALL BE IN ACCORDANCE WITH HILTI RECOMMENDATIONS.
  - CLIMATE CONTROLLED WALLS TO BE 4x2.5C16GA @ 30" O.C. WITH 400T300-54 TRACK CONTINUOUS, TOP AND BOTTOM. PROVIDE CONTINUOUS HORIZONTAL PBU LINER PANELS ON BOTH FACES FOR FULL HEIGHT OF WALL.
  - 4x2.5C12GA INTERIOR POST. SECURE TO BASE CLIP (HTT5) WITH (26) EACH #10 SDF. ANCHOR TO SLAB WITH 2" x 6" KB-T22 (4" EMBEDMENT MIN).
  - 3-HOUR FIRE BARRIER - UL419 - FRAME WITH 4x2.5C16 STUDS @ 24" O.C. 3 LAYERS TYPE "X" GYPSUM OF EACH SIDE OF STUD. COVER WITH 29 GAGE U PANEL LINER. REF. CV9 FOR UL.

**DOOR SCHEDULE**

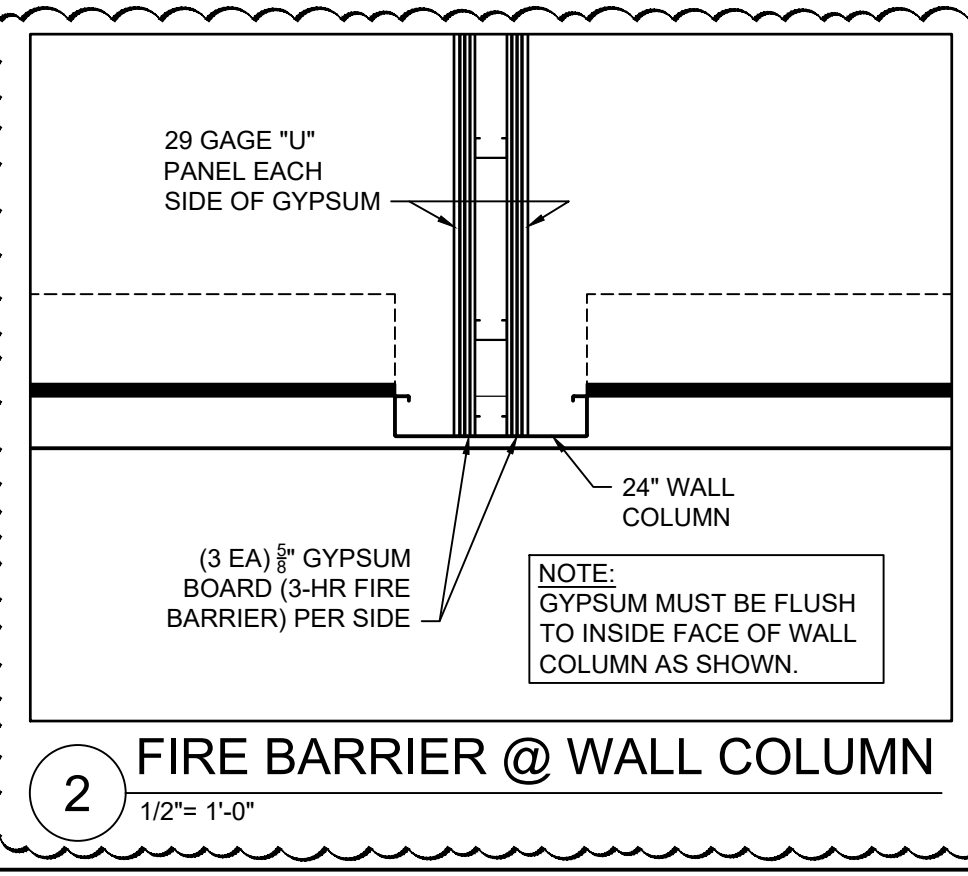
ID	DOOR SIZE	TYPE
(A)	3'-0" x 7'-0" MIN.	NOT BY BETCO
(B)	4'-0" x 7'-0"	PERSONNEL DOOR - 1/2 GLASS
(C)	3'-0" x 7'-0"	SWING DOOR
(D)	3'-0" x 7'-0"	INTERIOR ROLL-UP
(E)	5'-0" x 7'-0"	INTERIOR ROLL-UP
(F)	7'-0" x 7'-0"	INTERIOR ROLL-UP
(G)	8'-0" x 7'-0"	INTERIOR ROLL-UP
(H)	3'-0" x 8'-3"	EXTERIOR ROLL-UP
(I)	7'-8" x 8'-3"	EXTERIOR ROLL-UP
(J)	8'-0" x 8'-3"	EXTERIOR ROLL-UP
(K)	8'-8" x 8'-3"	EXTERIOR ROLL-UP
(L)	3'-0" x 9'-0"	EXTERIOR ROLL-UP
(M)	8'-8" x 9'-0"	EXTERIOR ROLL-UP
(N)	7'-8" x 9'-0"	EXTERIOR ROLL-UP
(O)	8'-4" x 8'-3"	EXTERIOR ROLL-UP
(P)	4'-0" x 7'-0"	3-HOUR FIRE RATED DOOR

JAMB	ROLL-UP HEADER	SWING DOOR HEADER
8'-0"	12"	10 1/2"

- LEGEND**
- (C1) HSS 12x12 1/2 COLUMN
  - BH BOX HEADER (REF. S0.2)
  - DH DOUBLE HEADER (REF. S0.2)
  - (X) INDICATES PLAN NOTE REFERRAL. SEE CORRESPONDING PLAN NOTE
  - ( ) INDICATES WALL COLUMN, SEE PLAN FOR SIZE
  - TOP TOP OF PURLIN
  - TOW TOP OF WALL
  - ( ) 4" x 12GA "X" BRACE ON INSIDE FACE OF STUDS, COVER WITH PBU LINER
  - (HDU6) S/HDU6 SIMPSON HOLDOWN WITH A 2" x 6" KB-T22 (4" EMBED).



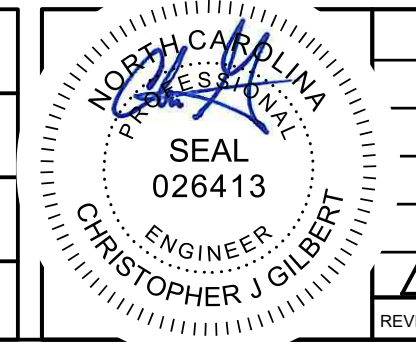
**3-HR FIRE RATED DOOR INSTALLATION DETAIL**  
1-1/2" = 1'-0"



**FIRE BARRIER @ WALL COLUMN**  
1/2" = 1'-0"

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**1 FLOOR PLAN**  
1/8" = 1'-0"



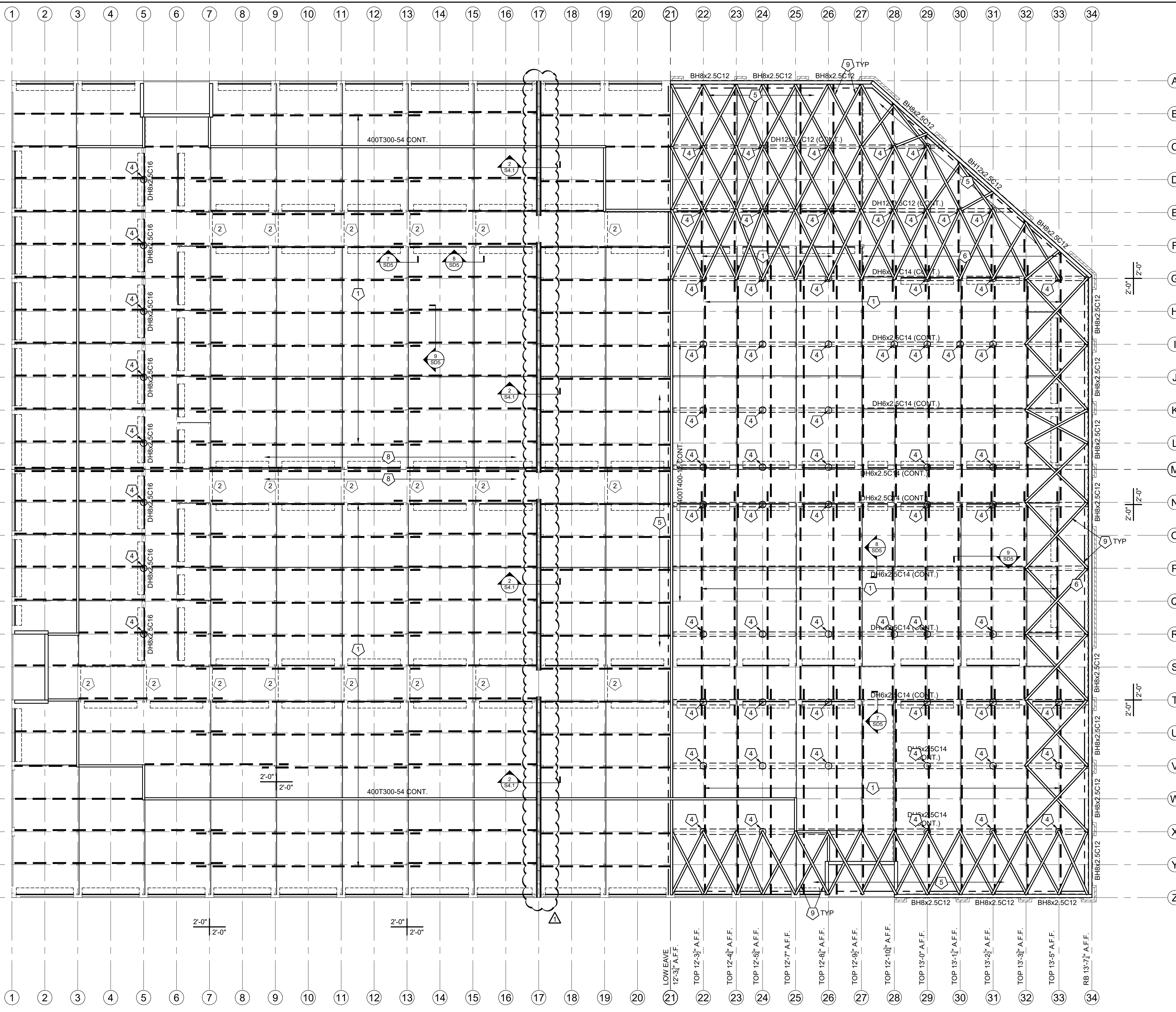
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SCALE:	AS NOTED
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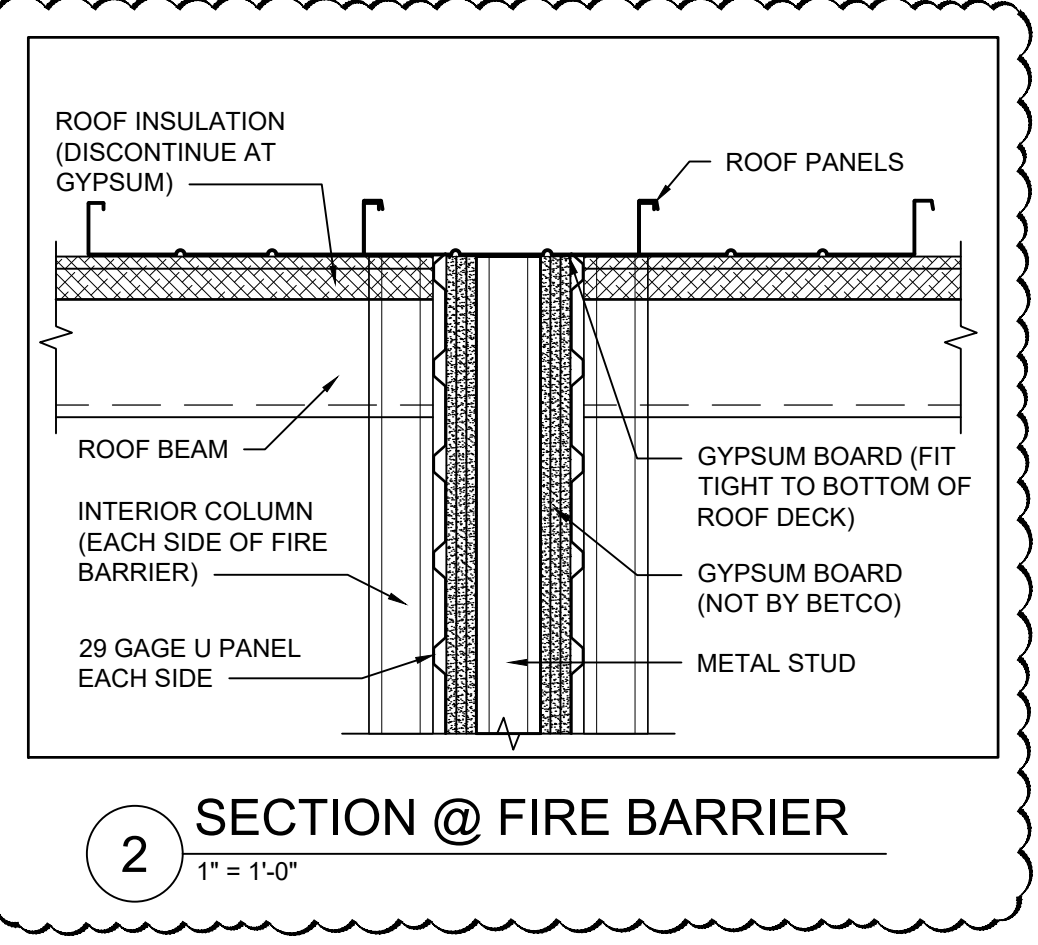
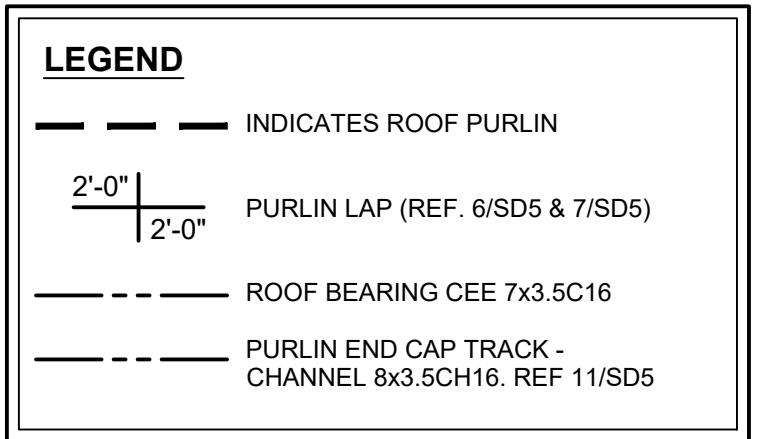
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PROJECT NAME:	UNIVERSITY STORAGE
PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	FLOOR PLAN
PROJECT NO.:	NC22329
DRAWING NUMBER:	S1.1





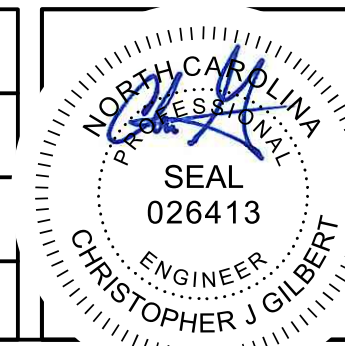
- ROOF FRAMING PLAN NOTES:**
- PURLINS TO BE 8x3.5Z16GA CONTINUOUS.
  - NOT USED.
  - PONY COLUMN FOR PURLIN ATTACHMENT. REF. 14/SD5
  - PURLIN END CAP TRACK - REF 13/SD5.
  - ROOF BEARING CEE - 8x2.5C16GA.
  - 8 x 3.5Z12GA
  - ROOF BEARING CEE (7x3.5C16GA)
  - ROOF BEARING CEE @ RIDGE- 8x3.5C16GA.
  - 4" x 17GA FLAT STRAP (MUST BE INSTALLED TIGHT) W/(6 EA) #12 SDF EACH END.



**1 ROOF FRAMING PLAN**  
1/8" = 1'-0"

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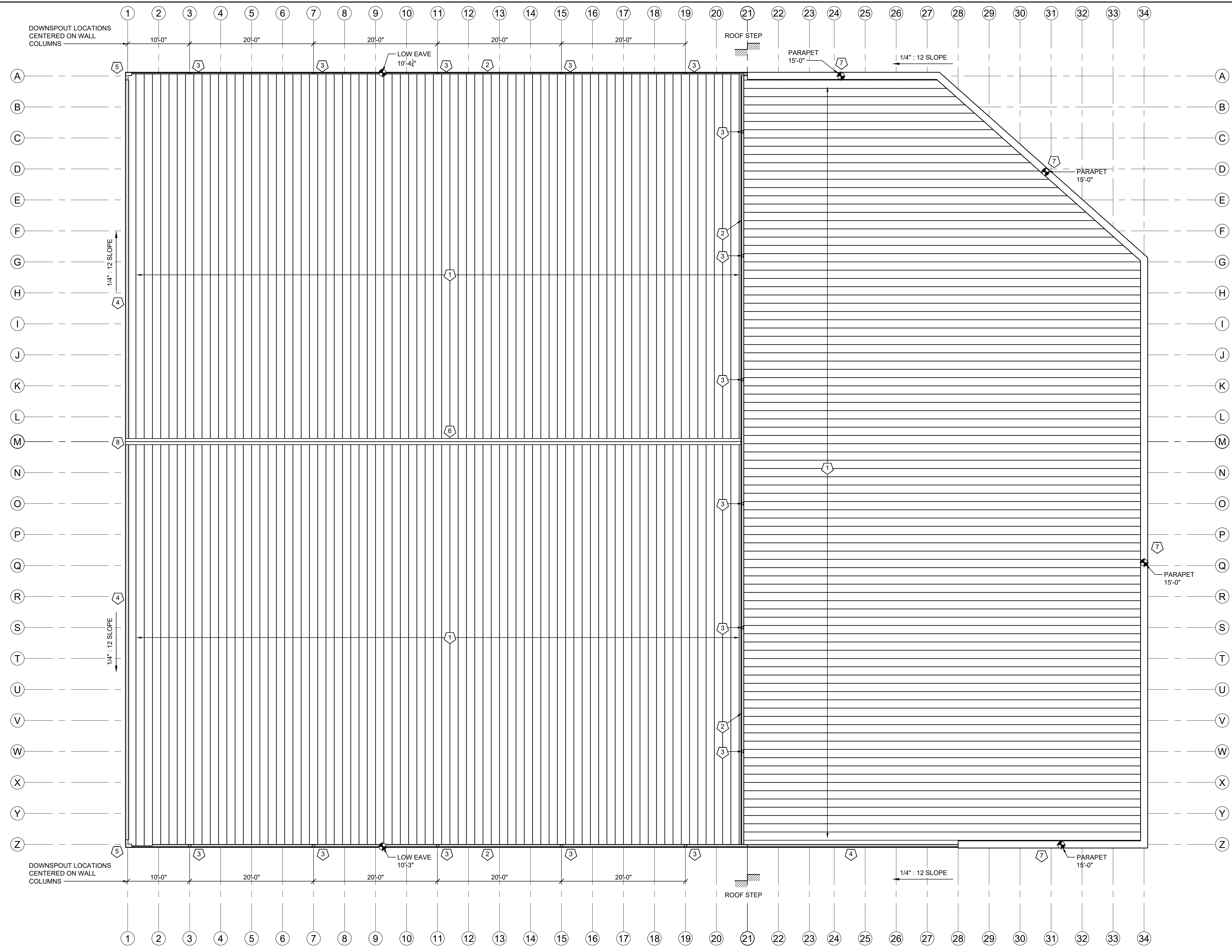


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REVISIONS:	
	FIREWALL ADDITION

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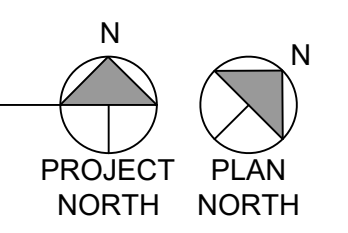
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	ROOF FRAMING PLAN
PROJECT NO.:	NC22329
DRAWING NUMBER:	S4.1





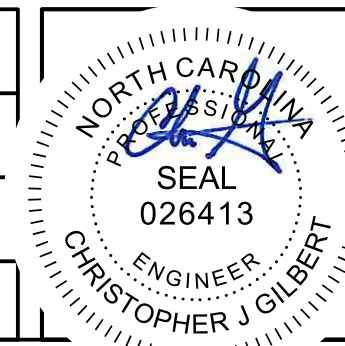
- ROOF PANEL PLAN NOTES:** (#)
1. BETCO 316 ROOF PANEL - 16" WIDE x 24 GA
  2. GUTTER.
  3. DOWNSPOUT.
  4. SCULPTURED RAKE TRIM.
  5. OUTSIDE CORNER BOX.
  6. RIDGE CAP.
  7. PARAPET CAPS (NOT BY BETCO).
  8. PEAK BOX.

**1 ROOF PANEL PLAN**  
1/8" = 1'-0"



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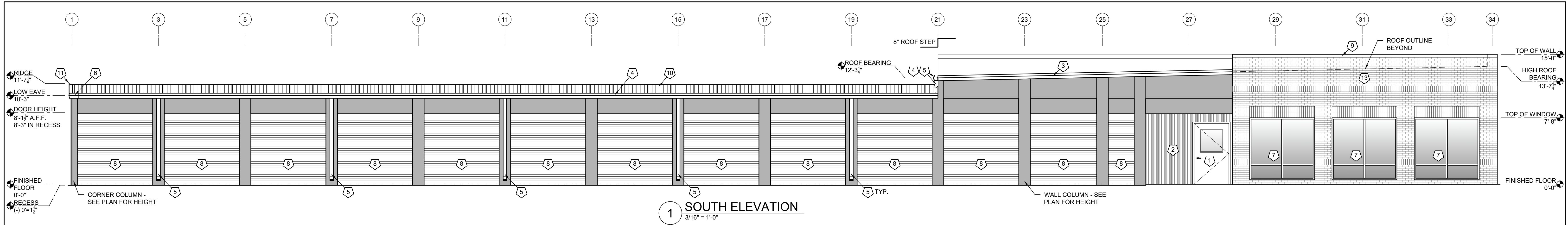
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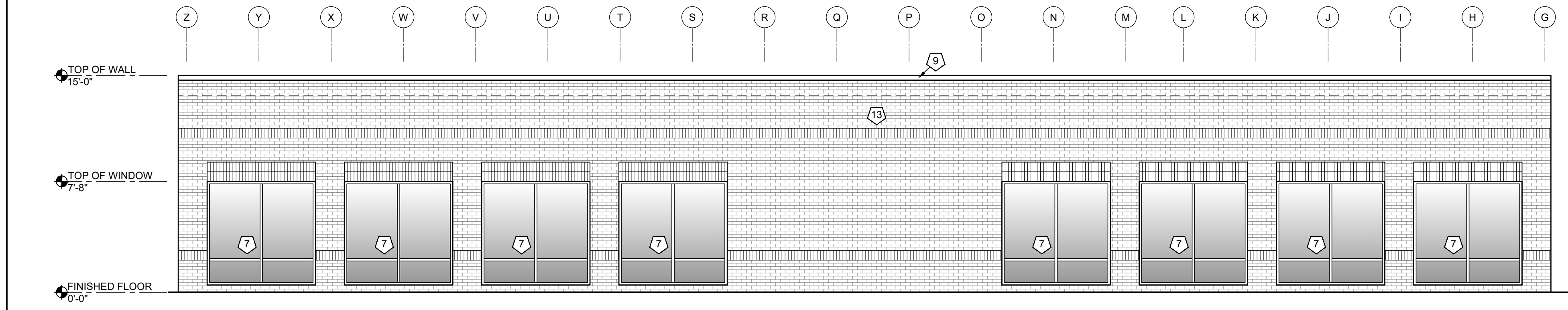


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OWNER: UNIVERSITY STORAGE, LLC	PROJECT NO: NC22329
SHEET TITLE: ROOF PANEL PLAN	DRAWING NUMBER: S5.1

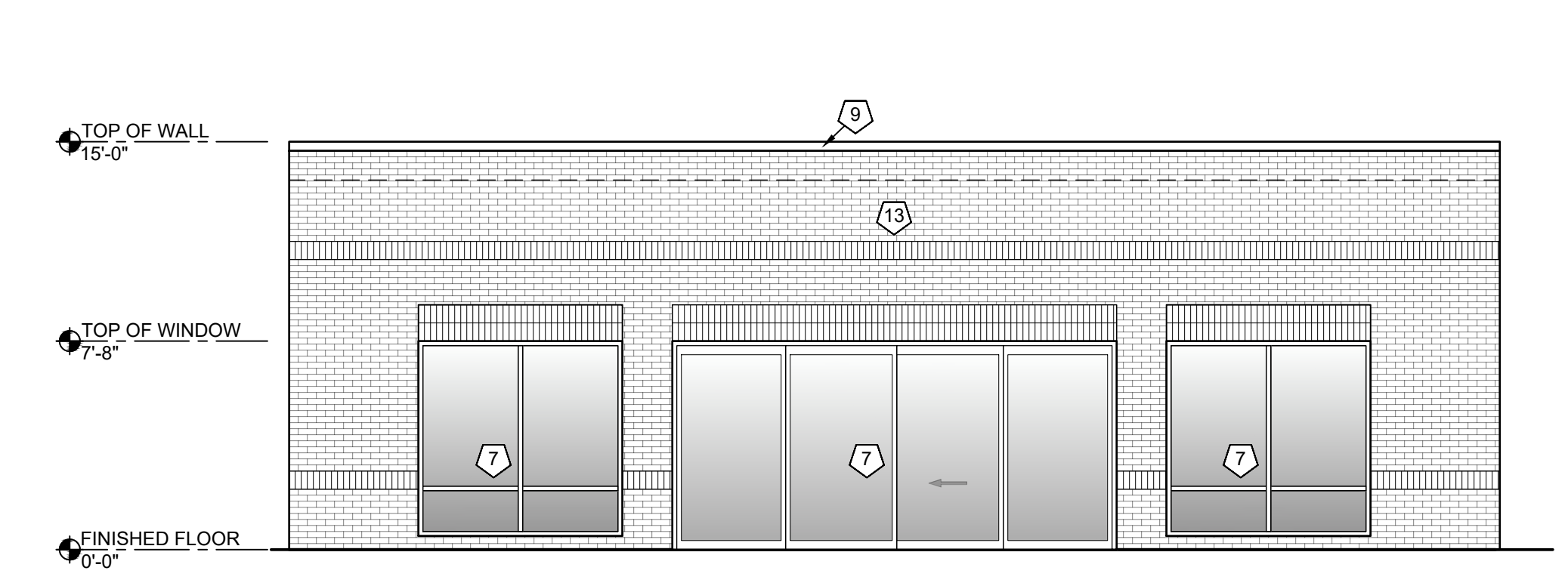




1 SOUTH ELEVATION  
3/16" = 1'-0"

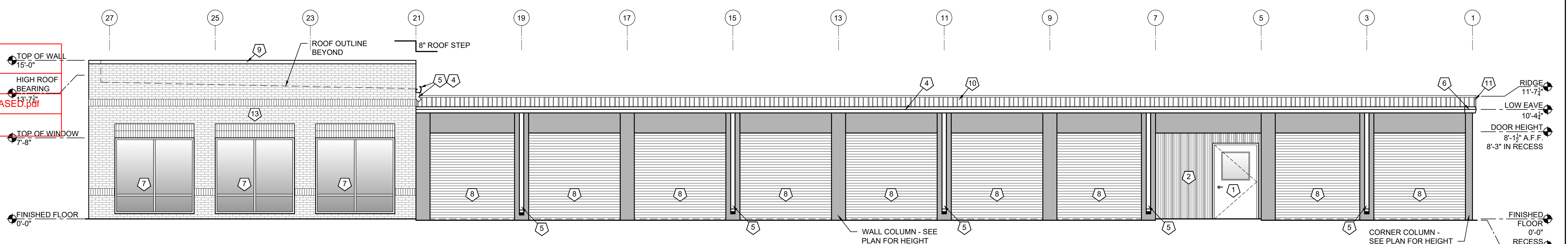


2 EAST ELEVATION  
3/16" = 1'-0"



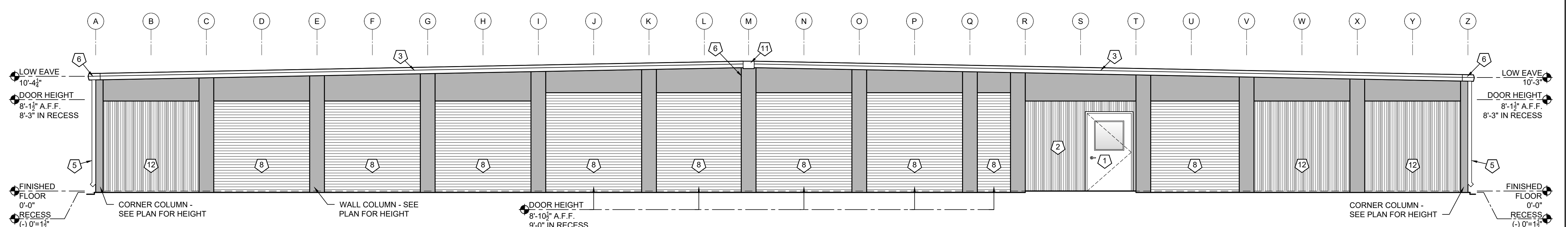
3 NORTHEAST ELEVATION  
3/16" = 1'-0"

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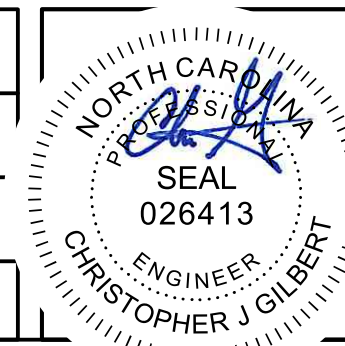
4 NORTH ELEVATION  
3/16" = 1'-0"

- NOTES:**
- 1 PERSONNEL DOOR - (SEE PLAN FOR SIZE) DOOR TO BE EQUIPPED WITH THE FOLLOWING:
    1. LEVER/LEVER LOCKSET THAT DO NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.
    2. ADA COMPLIANT THRESHOLD.
    3. HARDWARE INSTALLED BETWEEN 34" MIN. & 48" MAX ABOVE FINISHED FLOOR.
    4. LOCKSET PERMITTED TO BE EQUIPPED WITH KEY OPERATED LOCKING DEVICE FROM THE EGRESS SIDE PROVIDED:
      - a. THE LOCKING DEVICE IS READILY DISTINGUISHABLE AS LOCKED.
      - b. READILY VISIBLE, DURABLE SIGN IS POSTED ON THE EGRESS SIDE ON OR ADJACENT TO THE DOOR STATING: **THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.** THE SIGN SHALL BE IN LETTERS 1 INCH (25MM) HIGH ON A CONTRASTING BACKGROUND.
      - c. THE USE OF THE KEY-OPERATED LOCKING DEVICE IS REVOKABLE BY THE BUILDING OFFICIAL FOR DUE CAUSE.
  - 2 PREPAINTED METAL PANEL (BY BETCO).
  - 3 PREPAINTED SCULPTURED RAKE TRIM (BY BETCO).
  - 4 PREPAINTED GUTTER (BY BETCO).
  - 5 PREPAINTED DOWNSPOUT (BY BETCO).
  - 6 PREPAINTED OUTSIDE CORNER BOX (BY BETCO).
  - 7 STOREFRONT / WINDOW (NOT BY BETCO) - GC TO COORD W/ ARCH / OWNER.
  - 8 EXTERIOR ROLL UP DOORS.
  - 9 PARAPET CAP (NOT BY BETCO).
  - 10 316 STANDING SEAM METAL ROOF (BY BETCO).
  - 11 PREPAINTED PEAK BOX (BY BETCO).
  - 12 PREPAINTED 236R WALL PANEL (BY BETCO).
  - 13 BRICK VENEER (NOT BY BETCO).



5 WEST ELEVATION  
3/16" = 1'-0"

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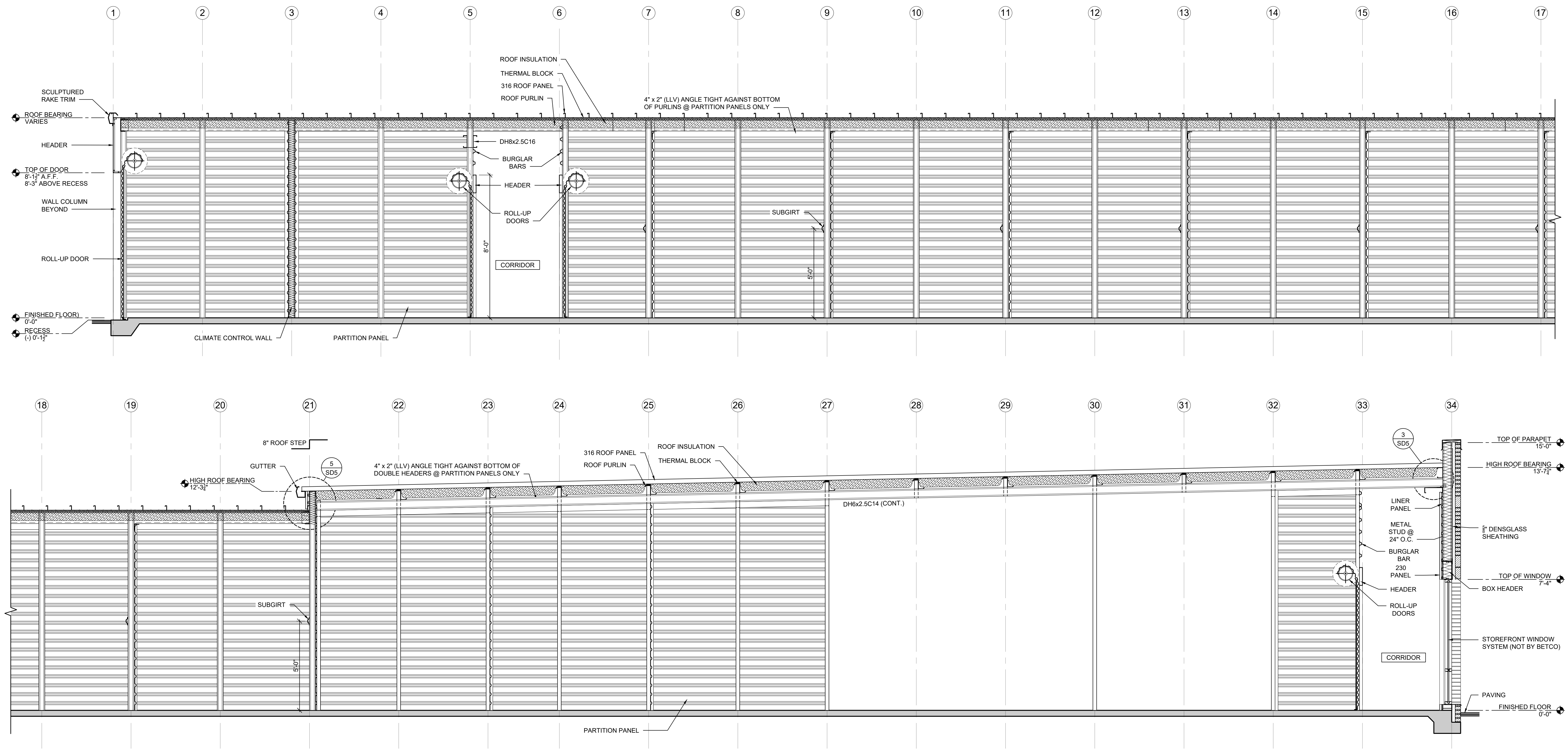
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OWNER: UNIVERSITY STORAGE, LLC	SHEET TITLE: EXTERIOR ELEVATIONS

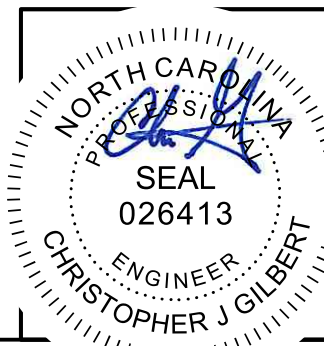




1 BUILDING SECTION @ GRID "J"  
 3/8" = 1'-0" (LOOKING NORTH)

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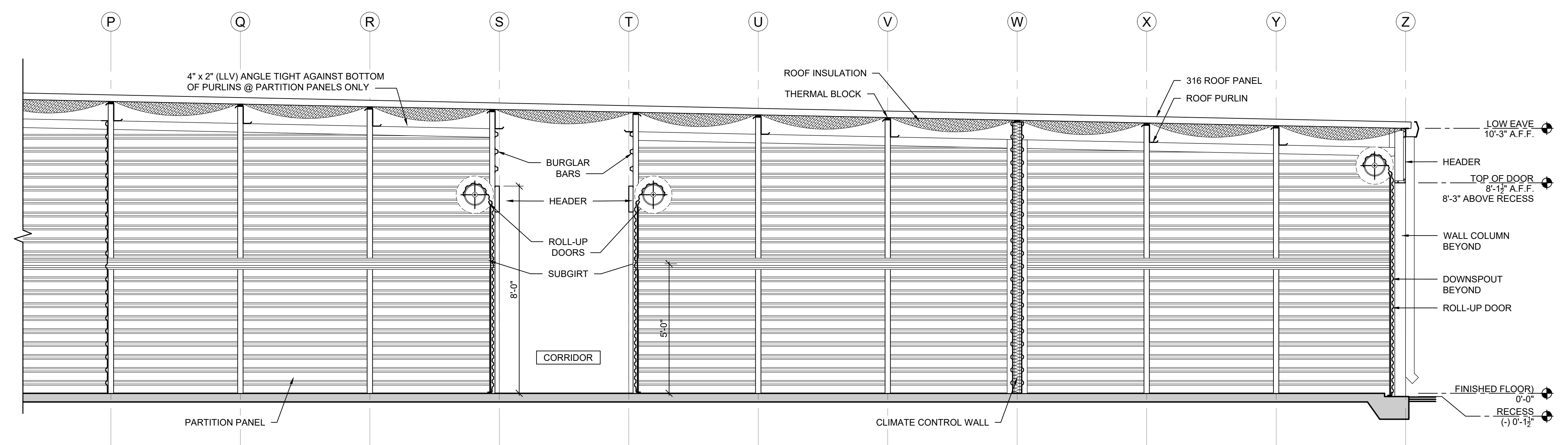
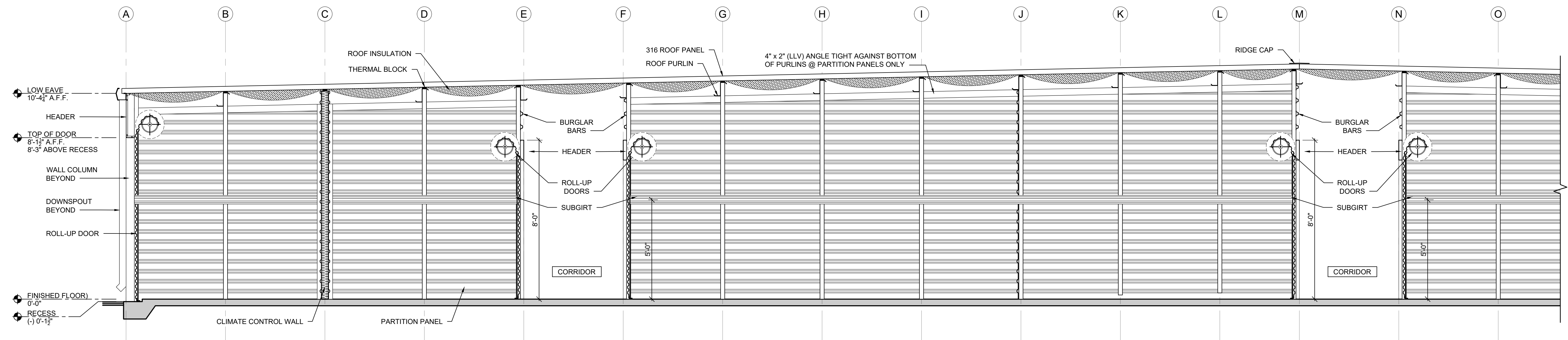


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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	BUILDING SECTION
PROJECT NO.:	NC22329
DRAWING NUMBER:	S7.1

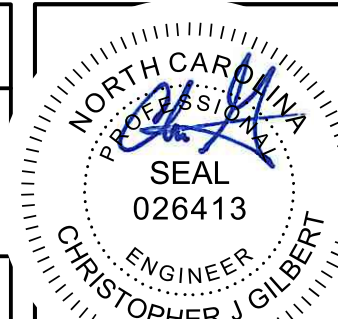




1 BUILDING SECTION @ GRID "11"  
 3/8" = 1'-0" (LOOKING EAST)

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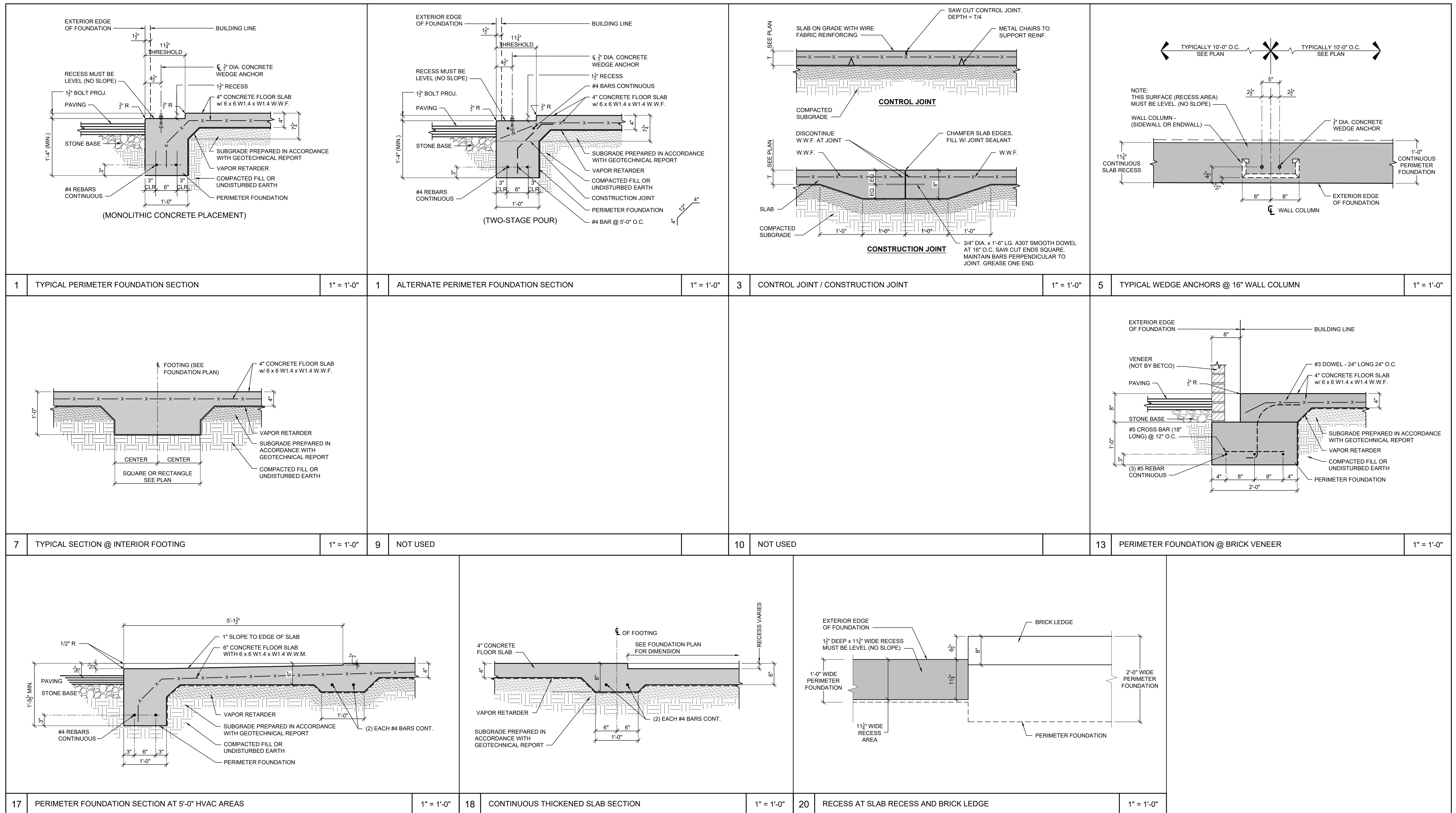


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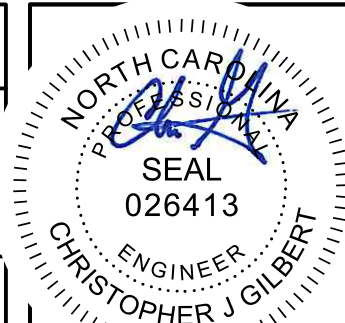
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OWNER:	UNIVERSITY STORAGE, LLC
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PROJECT NO.:	NC22329
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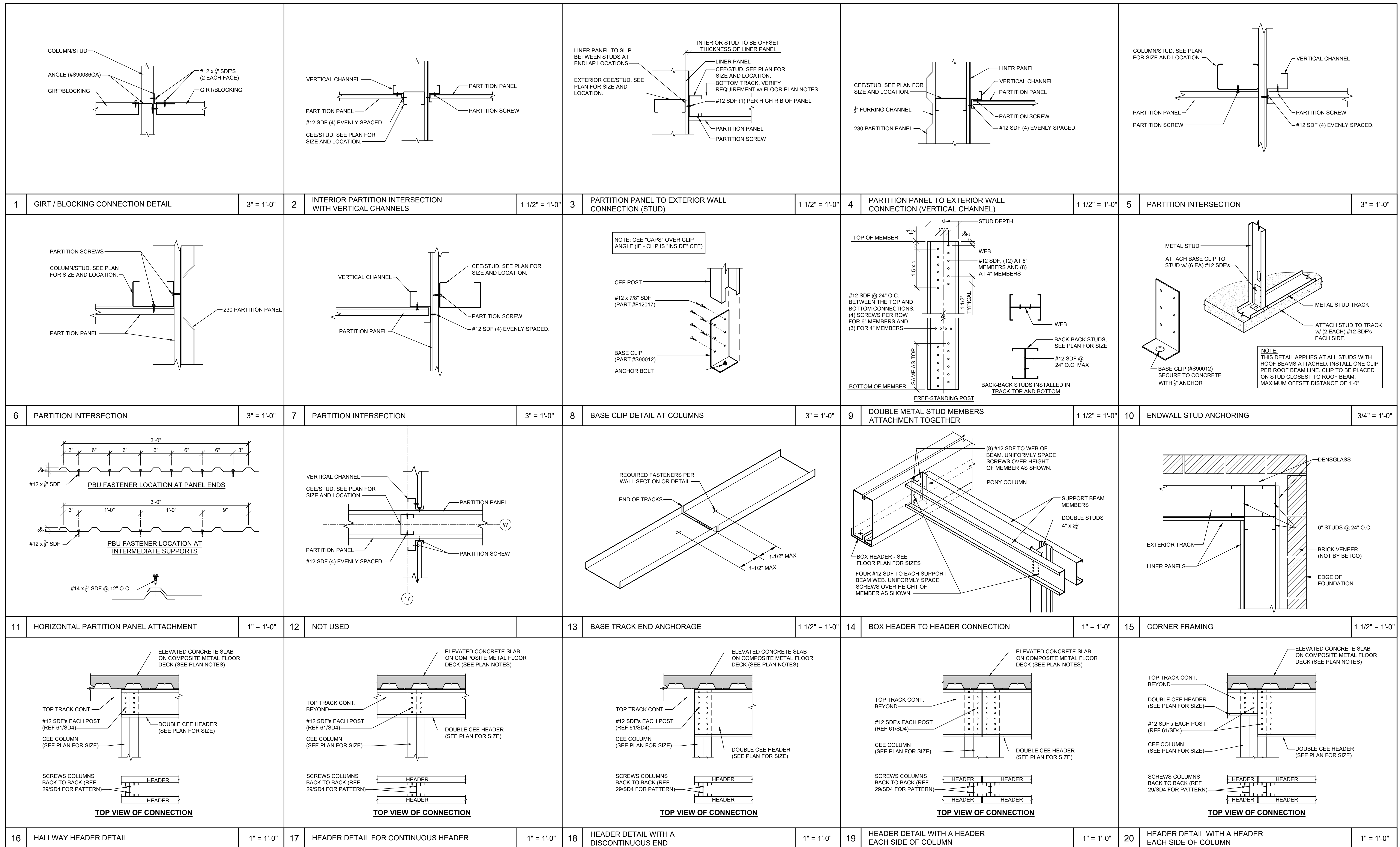


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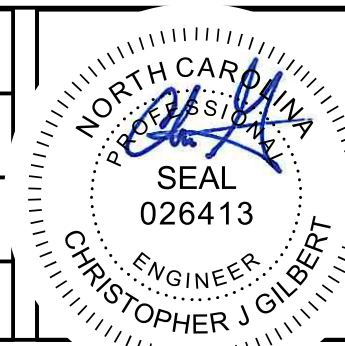
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	FOUNDATION DETAIL 1-20
PROJECT NO.:	NC22329
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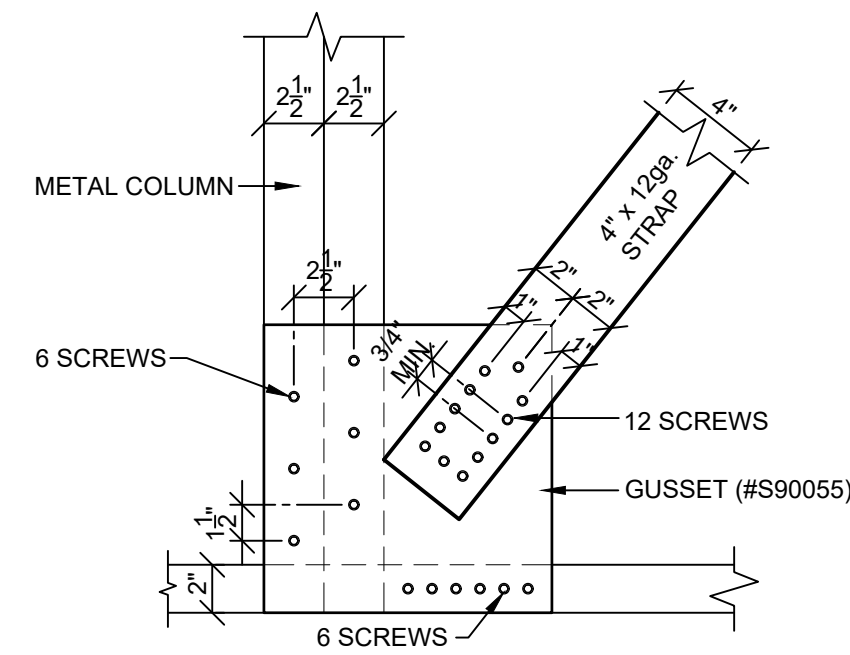


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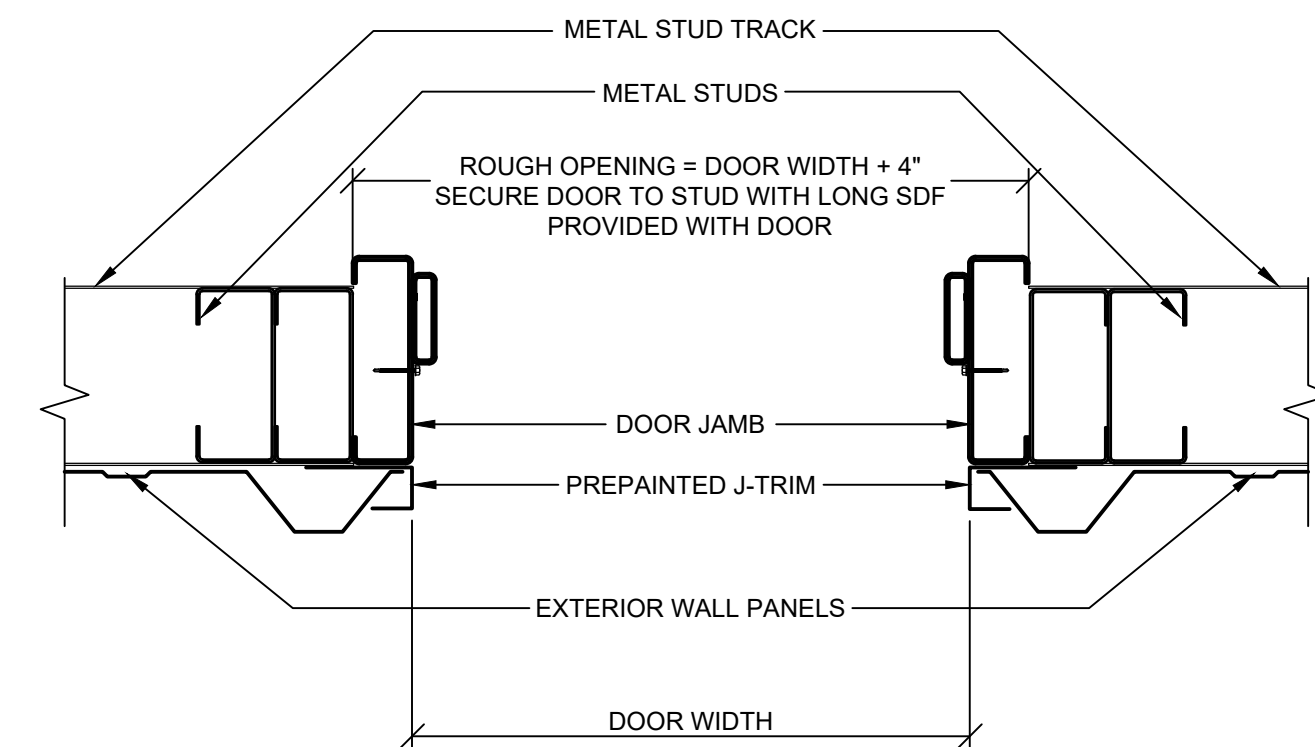
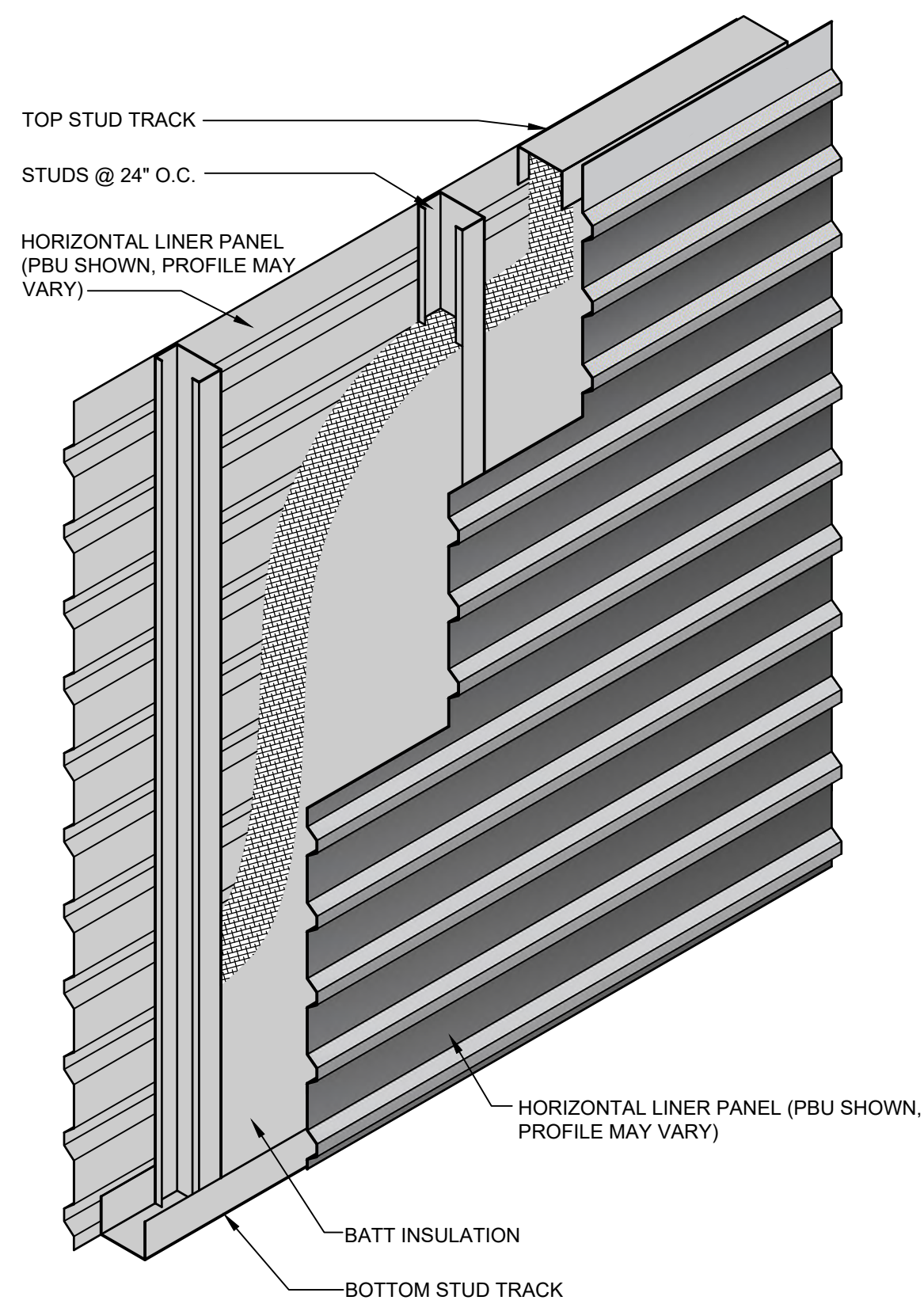
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	FRAMING DETAILS 1-20
PROJECT NO.:	NC22329
DRAWING NUMBER:	SD4

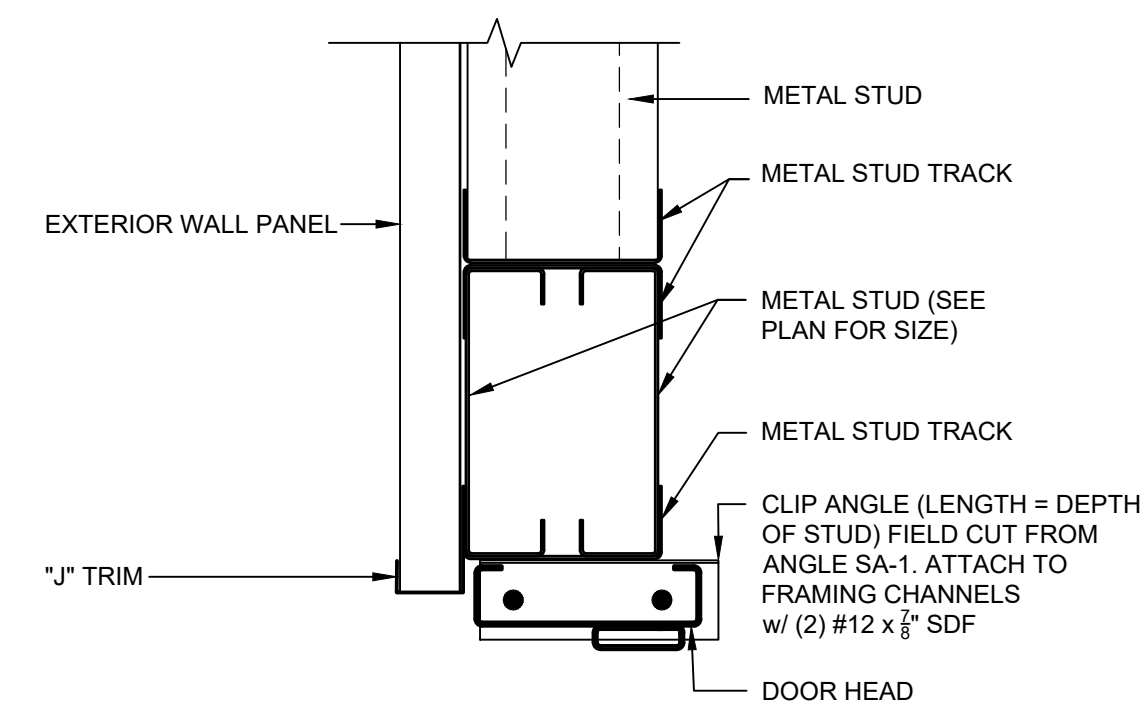




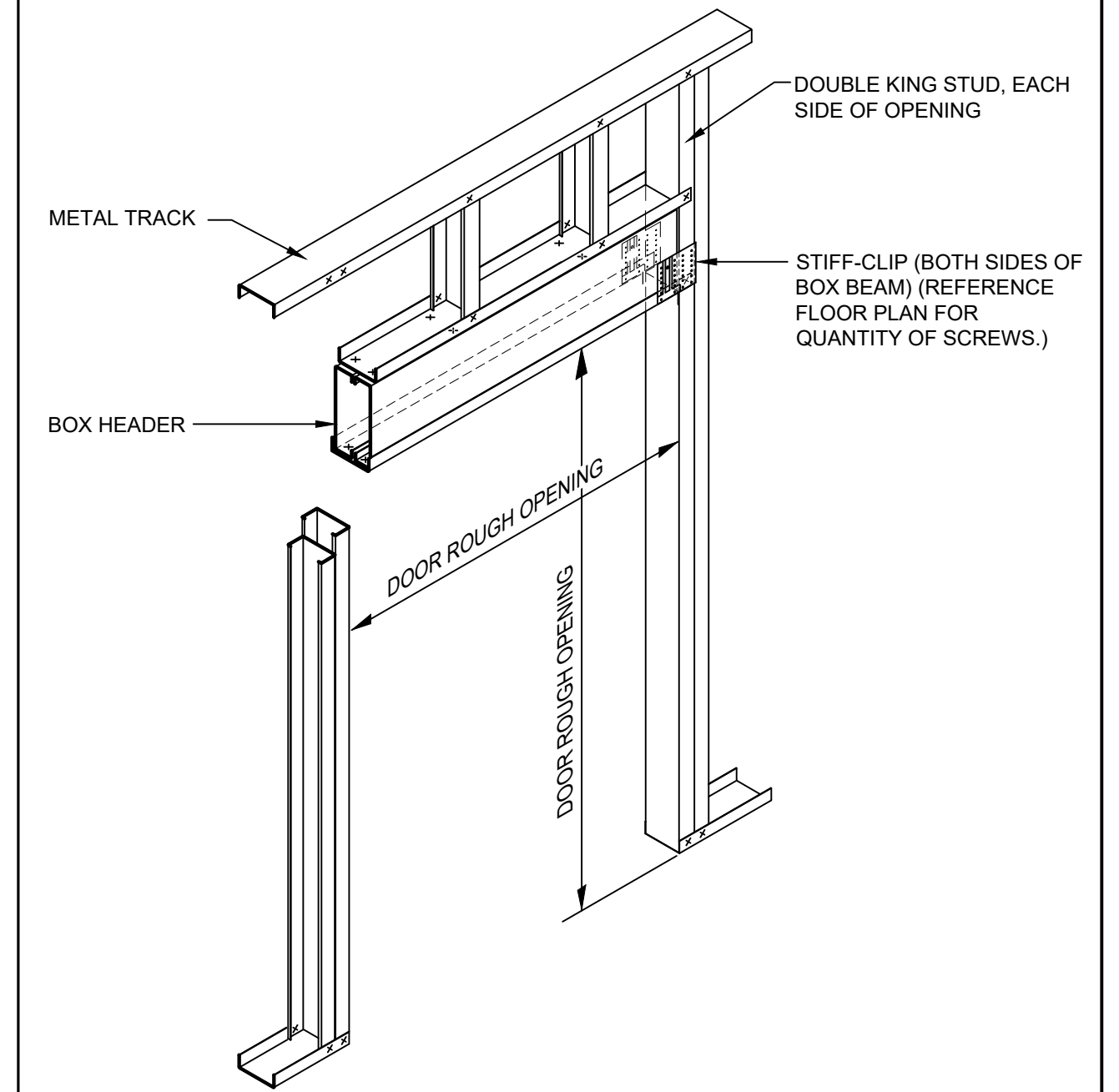
NOTE: SCREWS TO BE #12 x 7/8" LONG SDF



TYPICAL DOOR JAMB DETAIL  
PLAN VIEW



TYPICAL DOOR HEADER DETAIL  
SECTION VIEW



21 4" STRAP @ 12" x 12" GUSSET @ DOUBLE STUD

1 1/2" = 1'-0"

22 INSULATED CLIMATE CONTROL WALL PBU PANEL

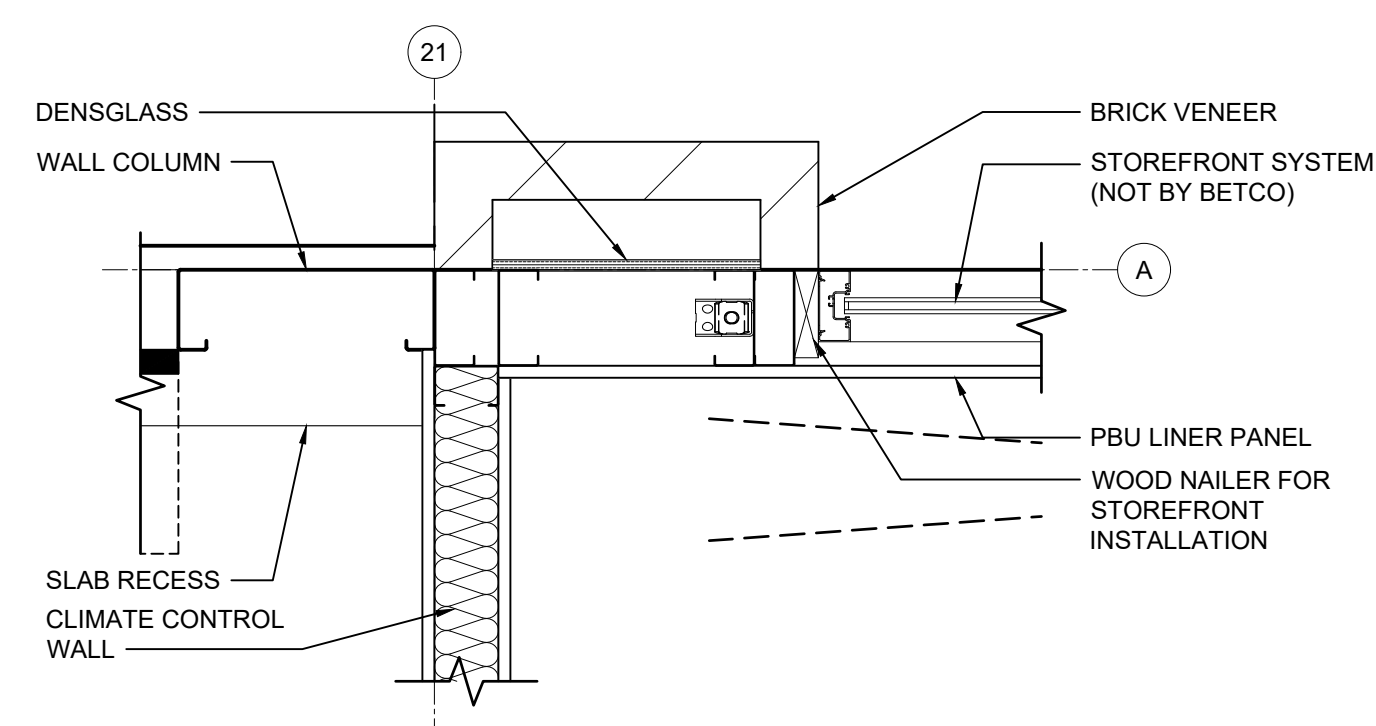
1" = 1'-0"

23 EXTERIOR DOOR ASSEMBLY

3" = 1'-0"

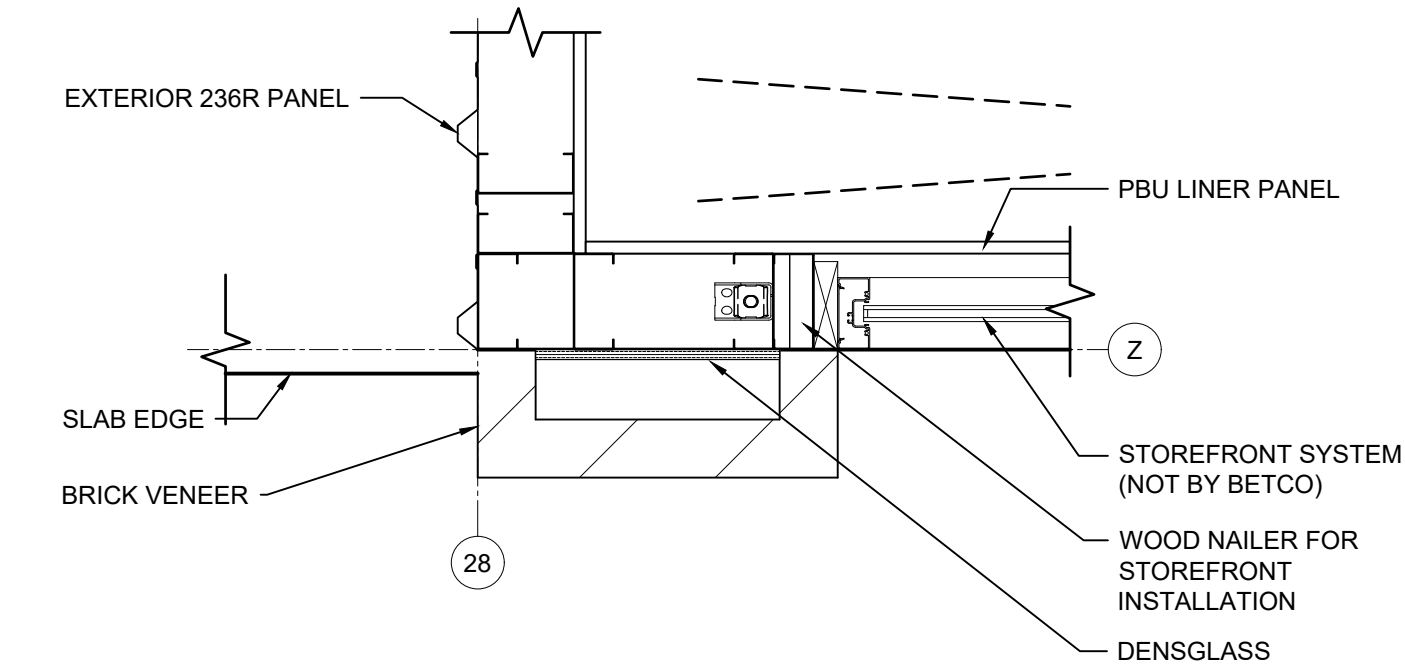
24 DOOR FRAMING BOX HEADER DETAIL (TRADITIONAL HEADER WITH STIFFCLIP SUPPORT)

1/2" = 1'-0"



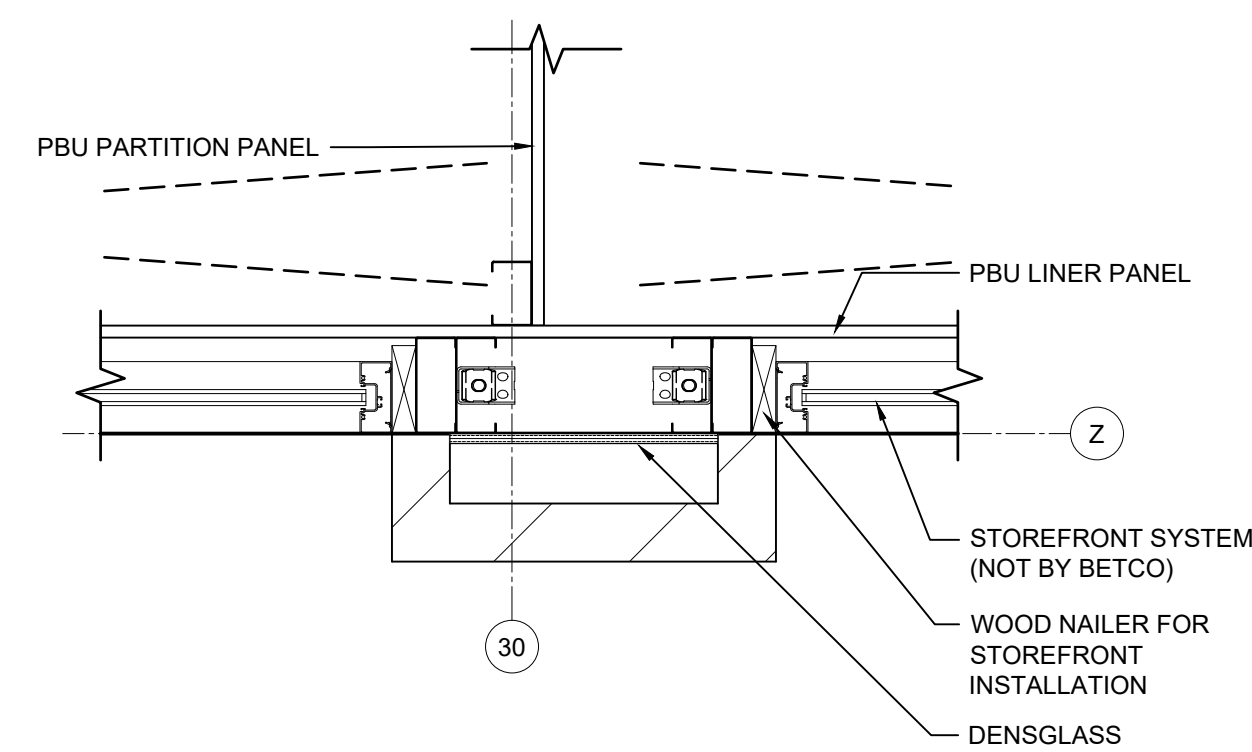
25 WALL COLUMN - STUDWALL INTERSECTION

1" = 1'-0"



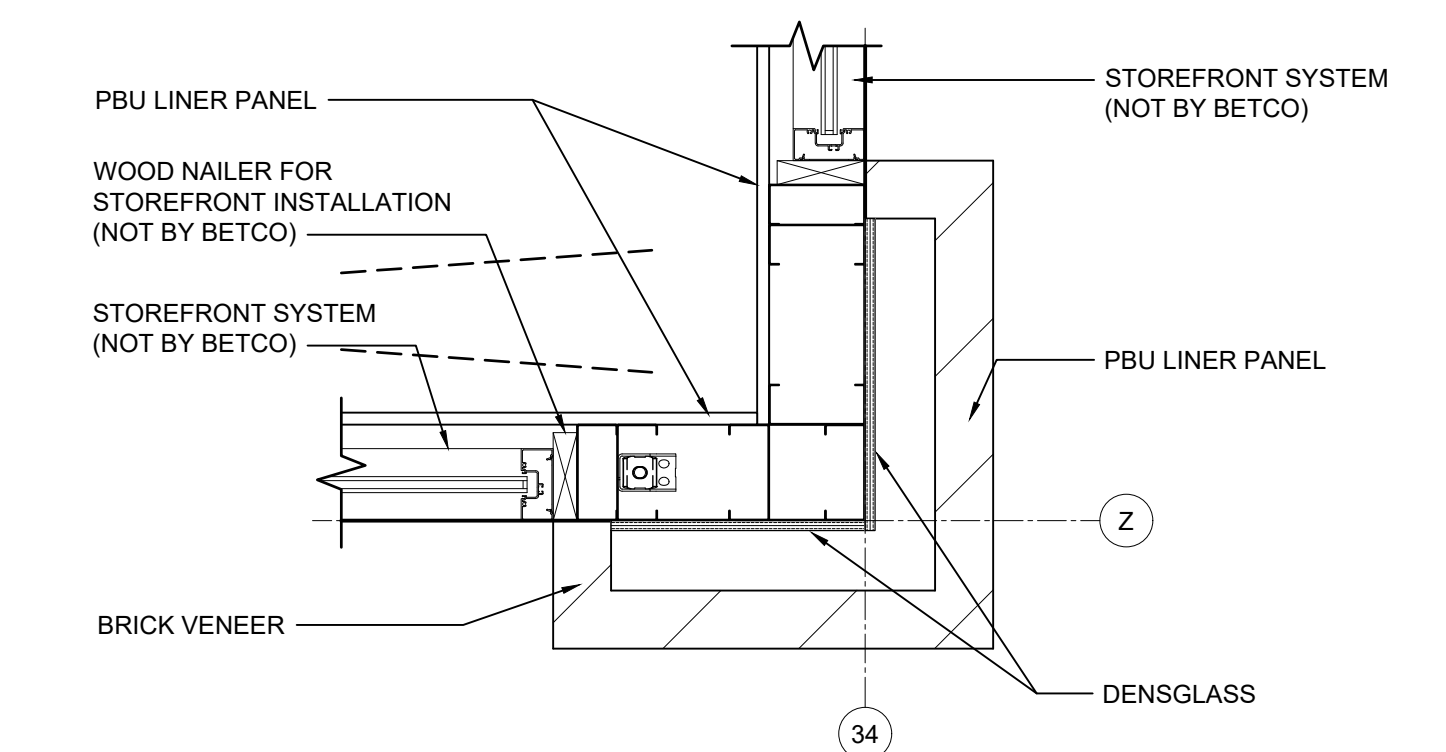
26 CORNER FRAMING AT ALCOVE

1" = 1'-0"



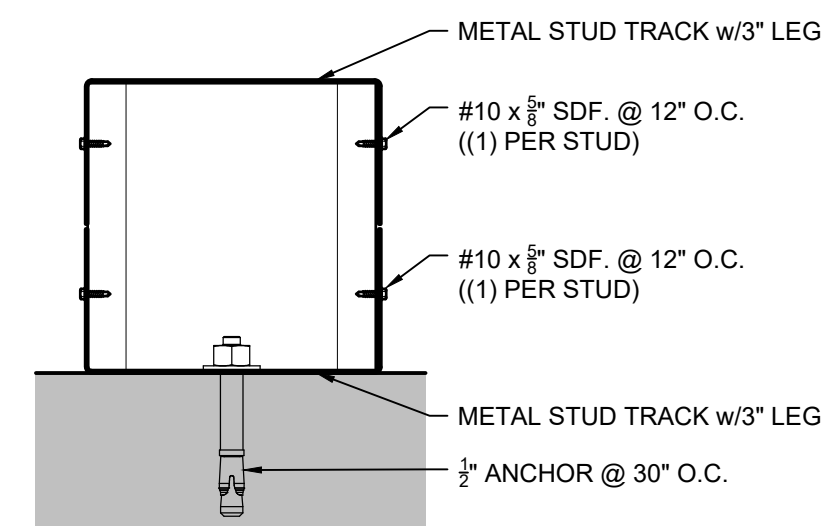
27 CORNER FRAMING AT ALCOVE

1" = 1'-0"



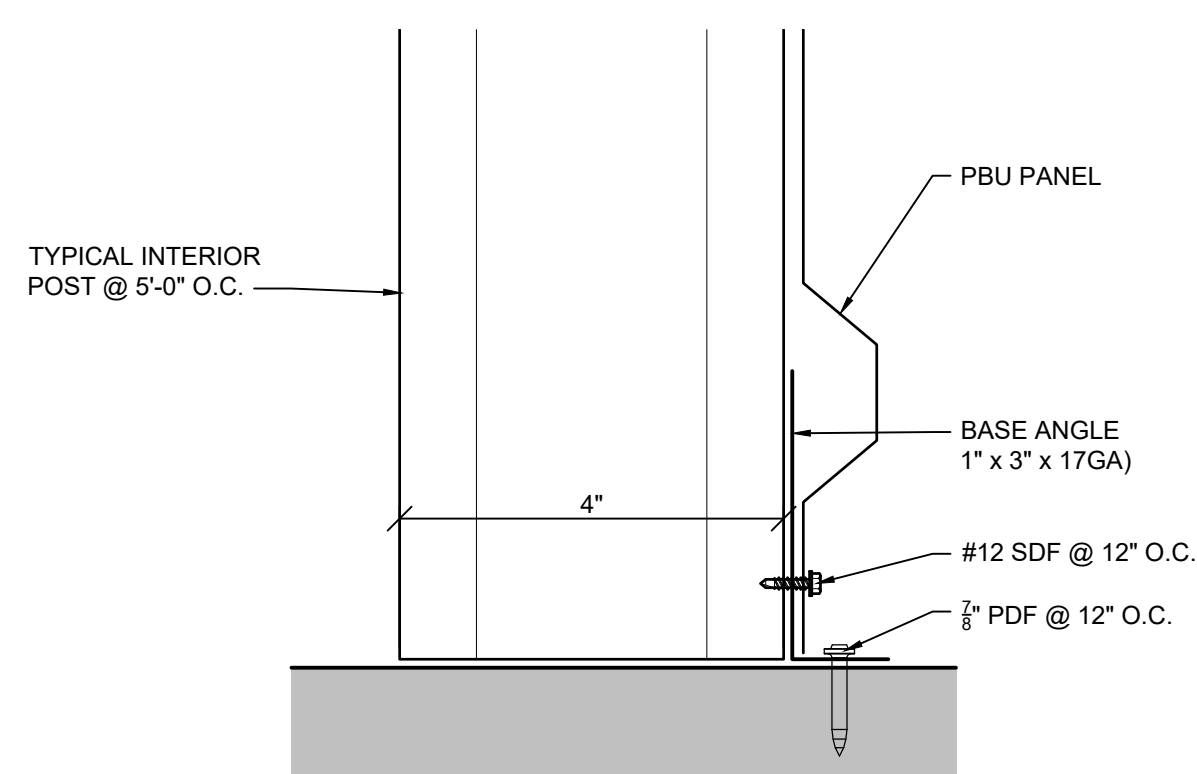
28 CORNER FRAMING AT ALCOVE

1" = 1'-0"



29 WINDOW SILL DETAIL

HALF SCALE



30 POST ANCHOR DETAIL

HALF SCALE

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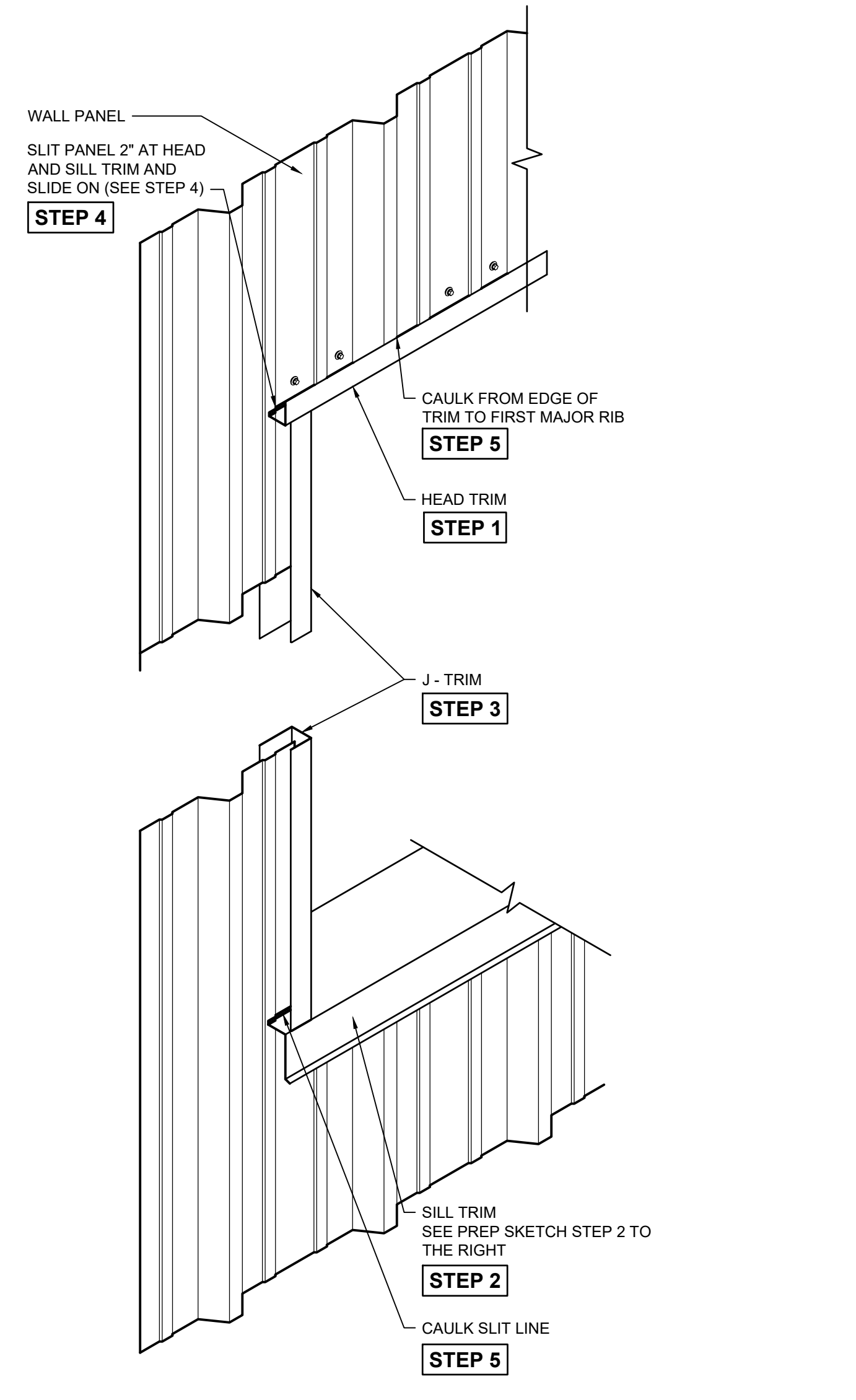


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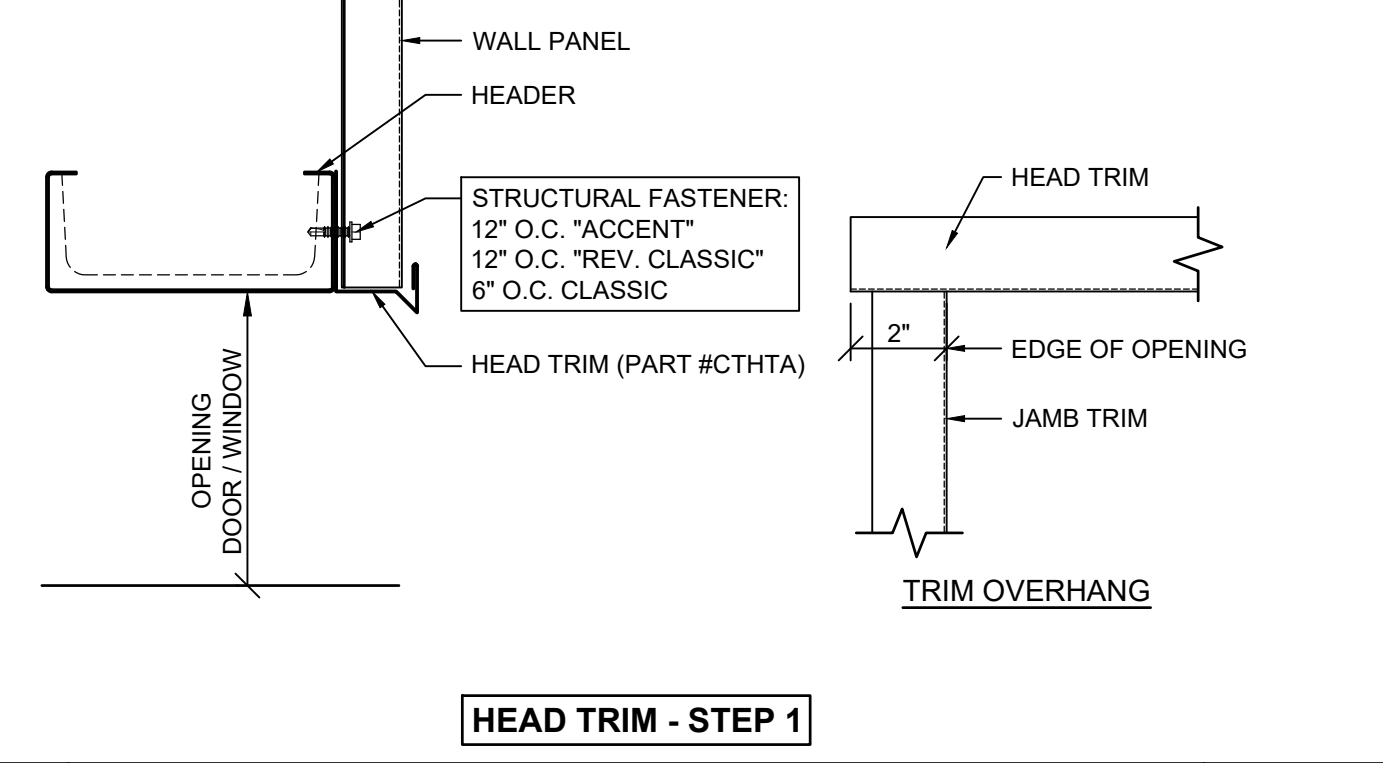


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PROJECT ADDRESS: ERWIN, NC 28339  
OWNER: UNIVERSITY STORAGE, LLC  
PROJECT NO: NC22329  
SHEET TITLE: FRAMING DETAILS 21-30  
DRAWING NUMBER: SD4

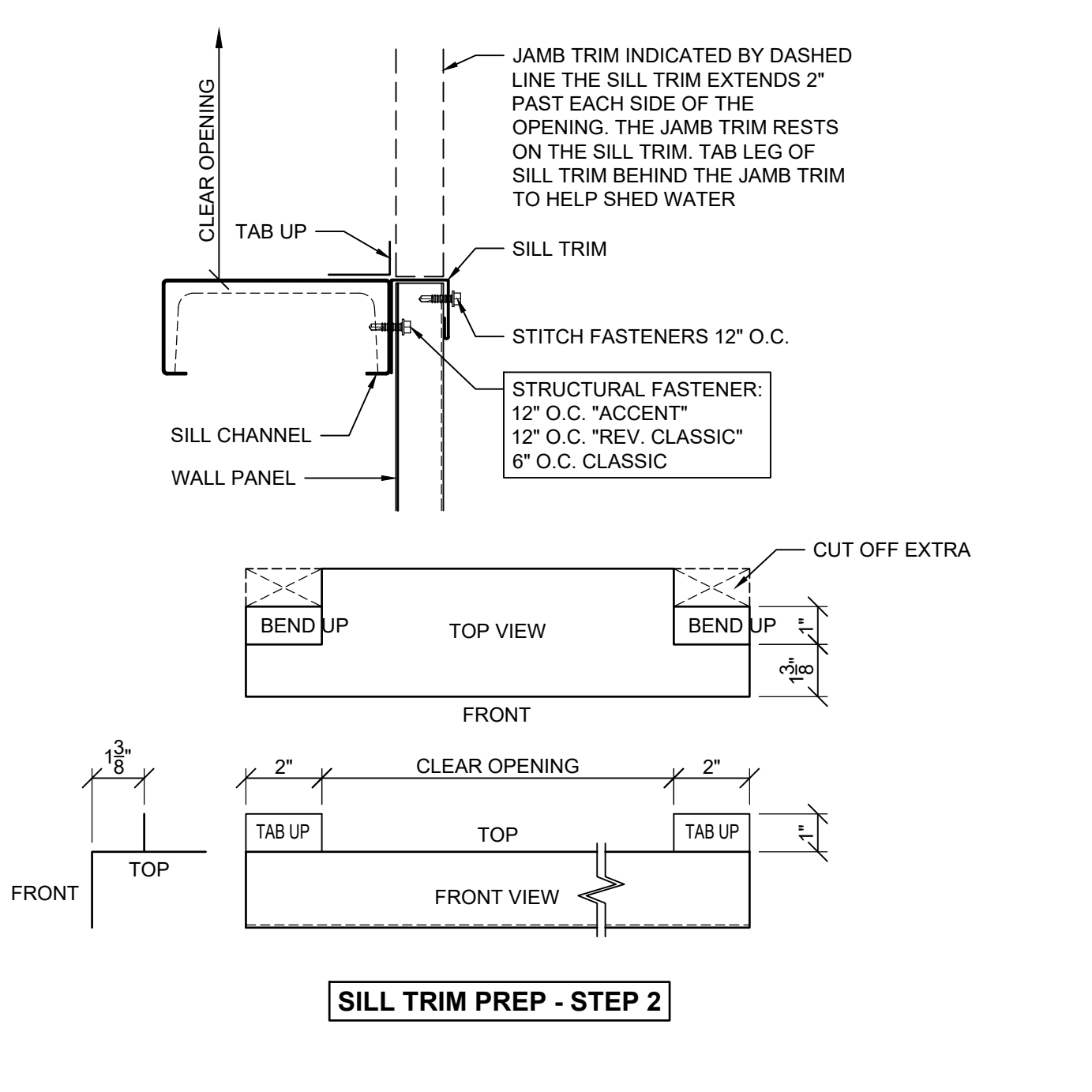




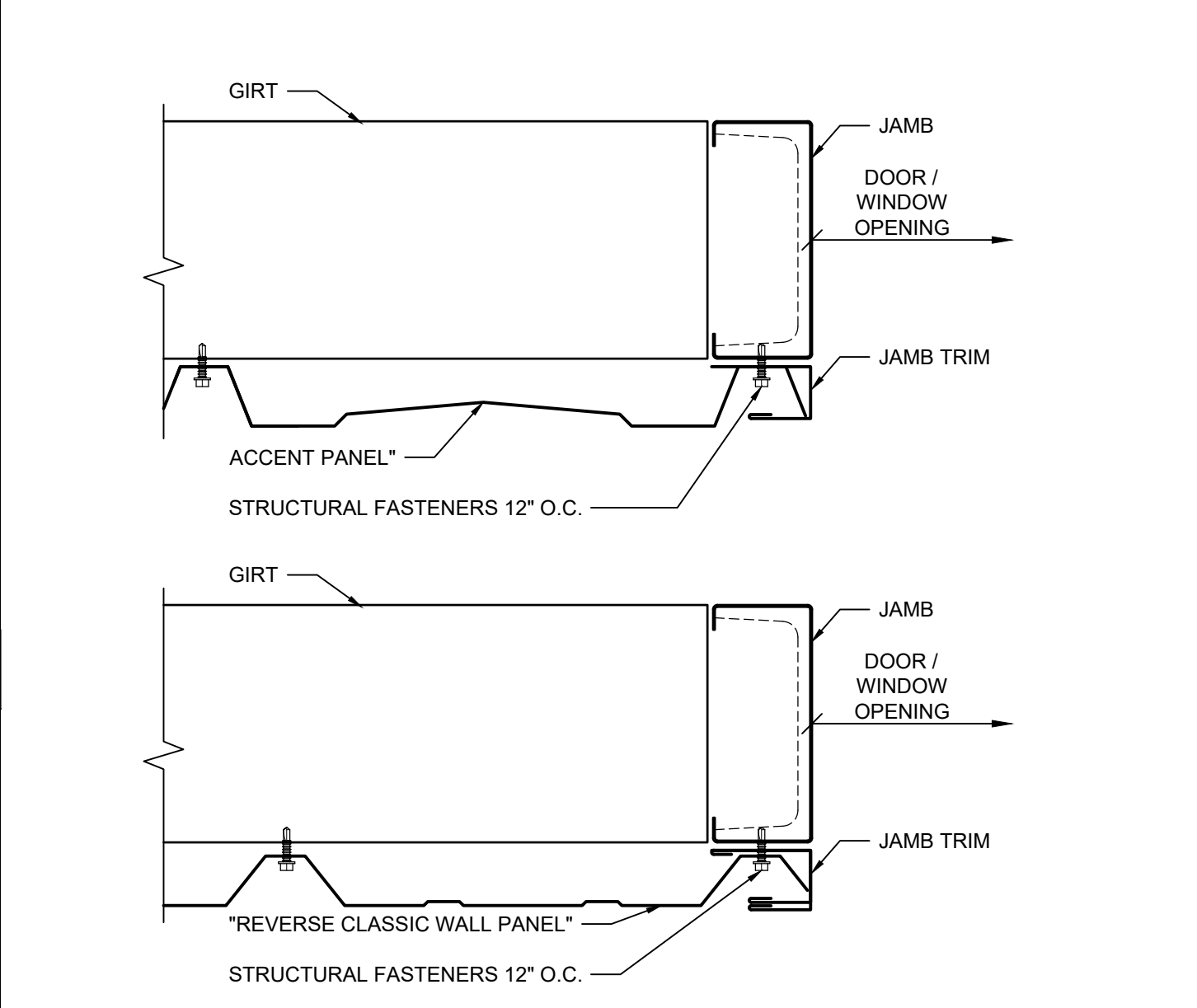
31 WINDOW FRAMED OPENING TRIM DETAIL 1 1/2"=1'-0"



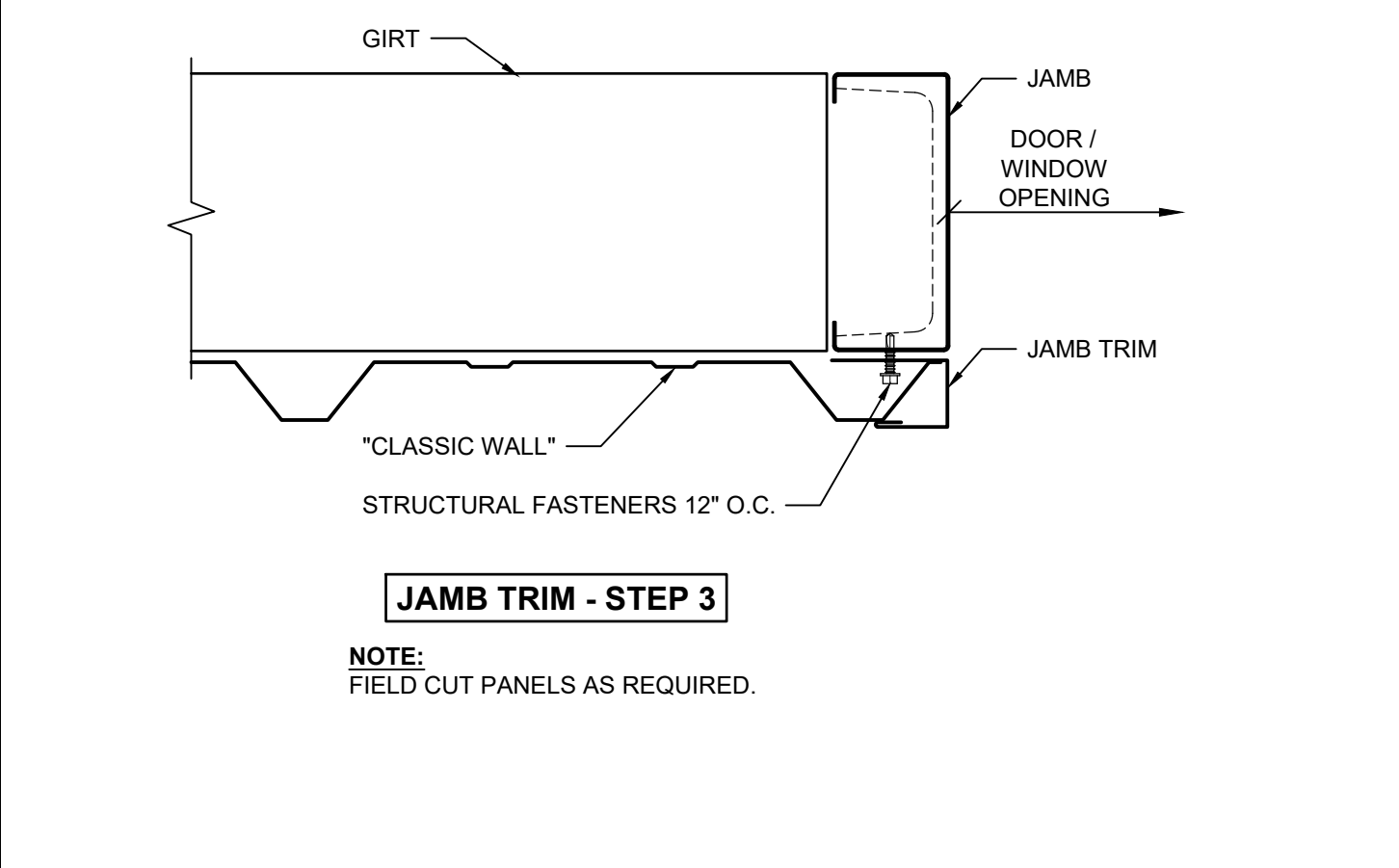
32 STEP 1 - HEAD TRIM 3"=1'-0"



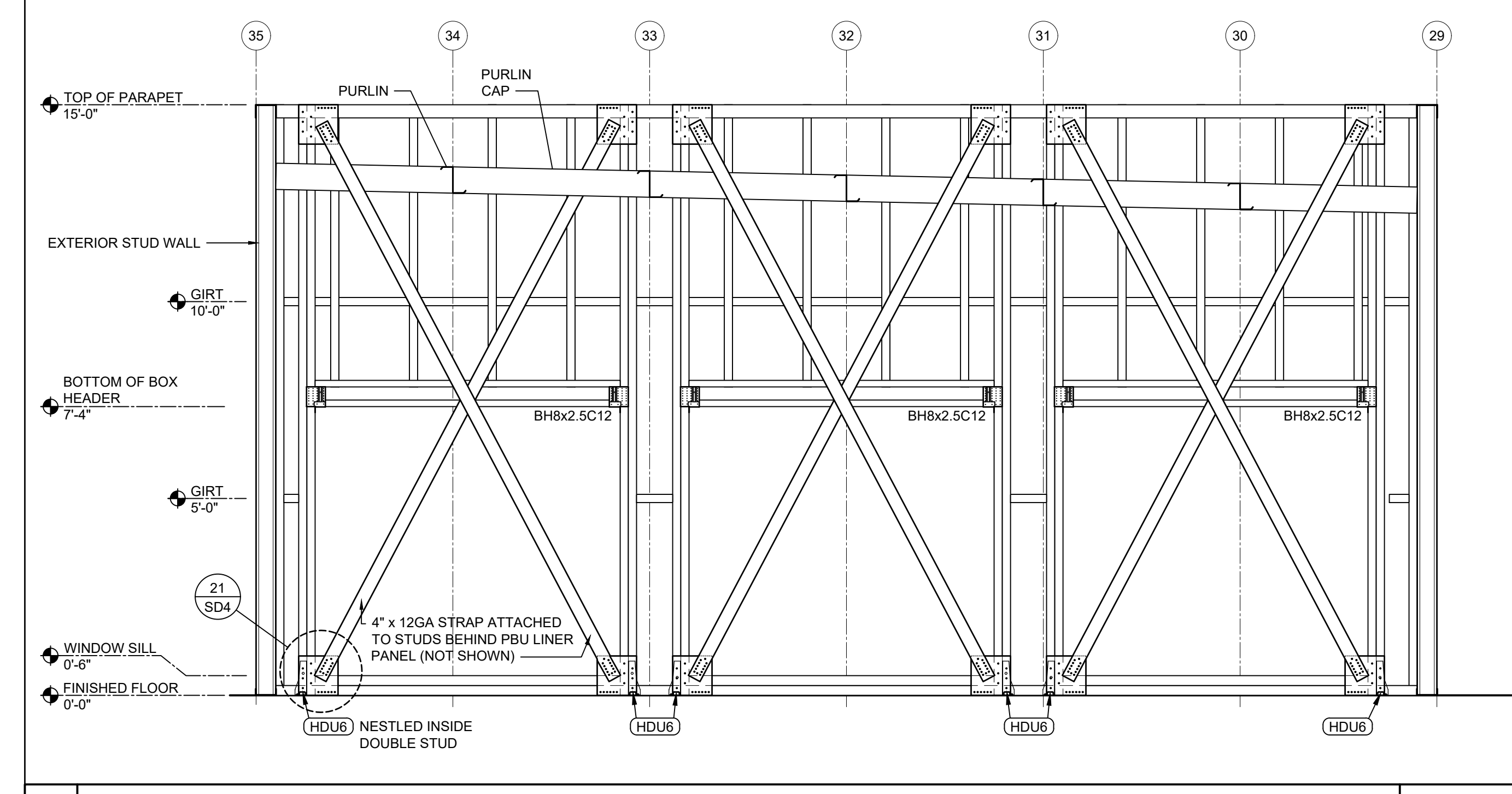
32 STEP 2 - SILL TRIM PREP 3"=1'-0"



33 STEP 3 - JAMB TRIM 3"=1'-0"



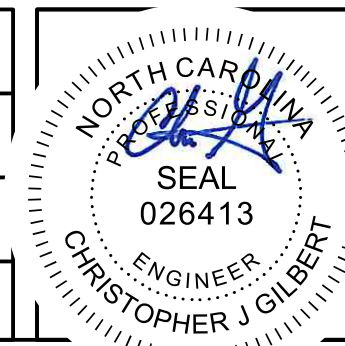
34 STEP 4 - PANEL SLIT 3"=1'-0"



35 FRAMING ELEVATION @ PARAPET 3/8"=1'-0"

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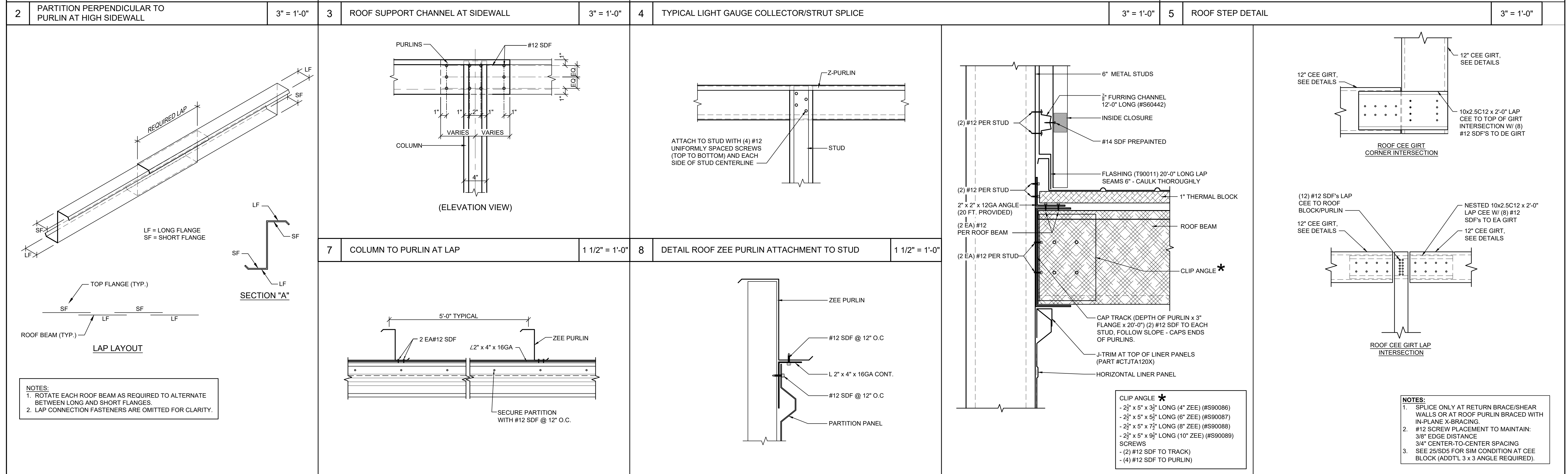
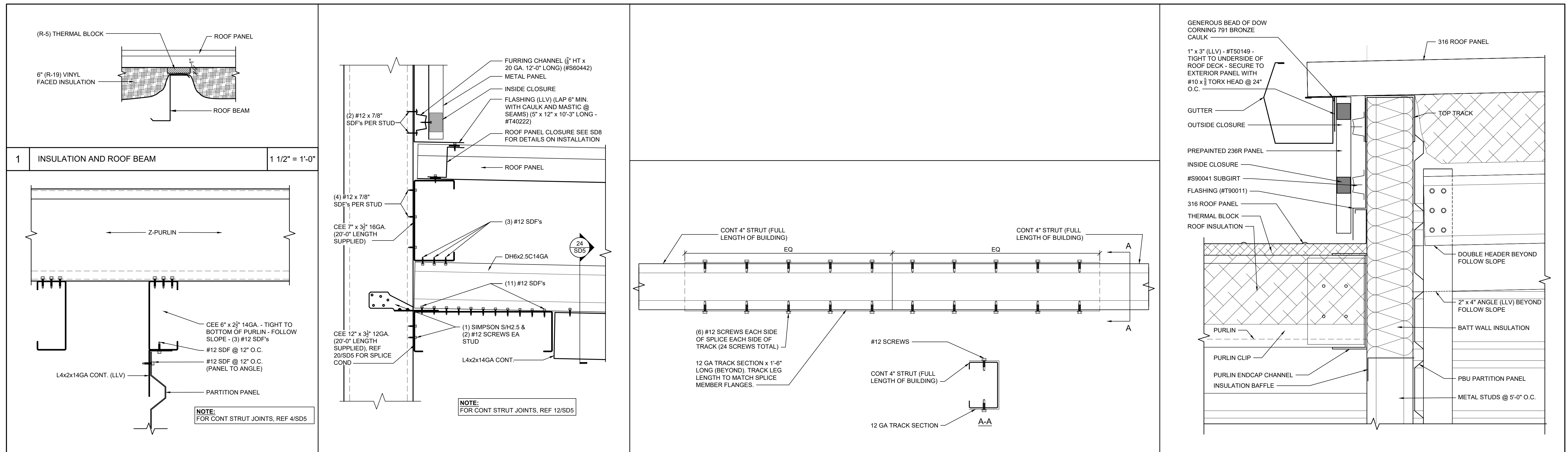


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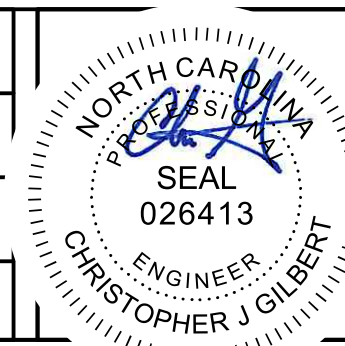
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	FRAMING DETAILS 31-35
PROJECT NO.:	NC22329
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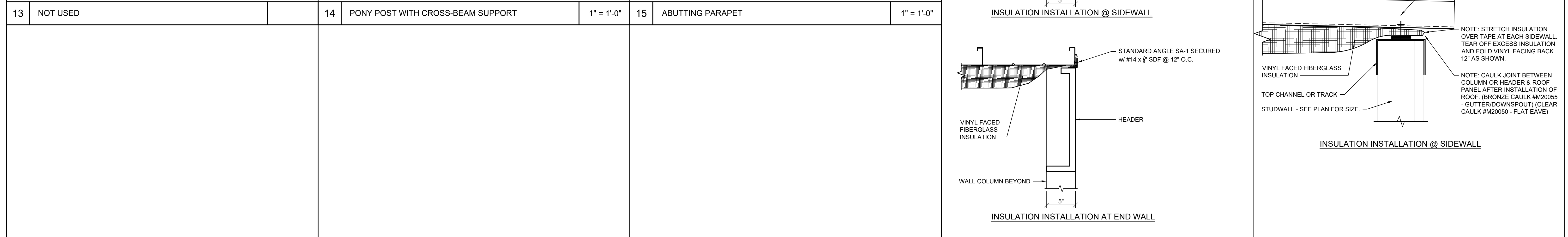
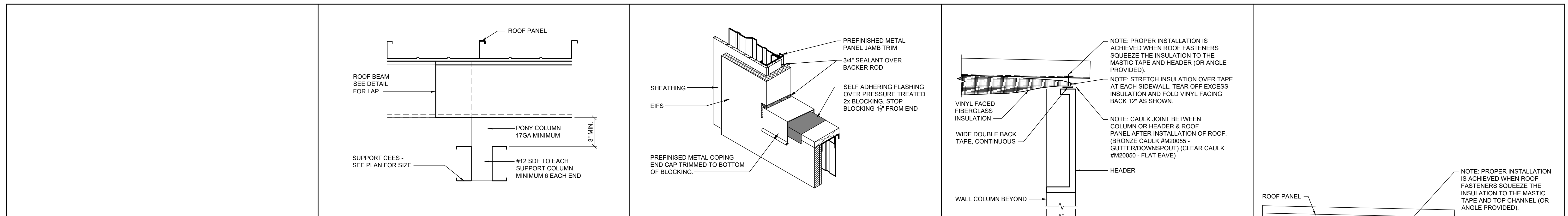


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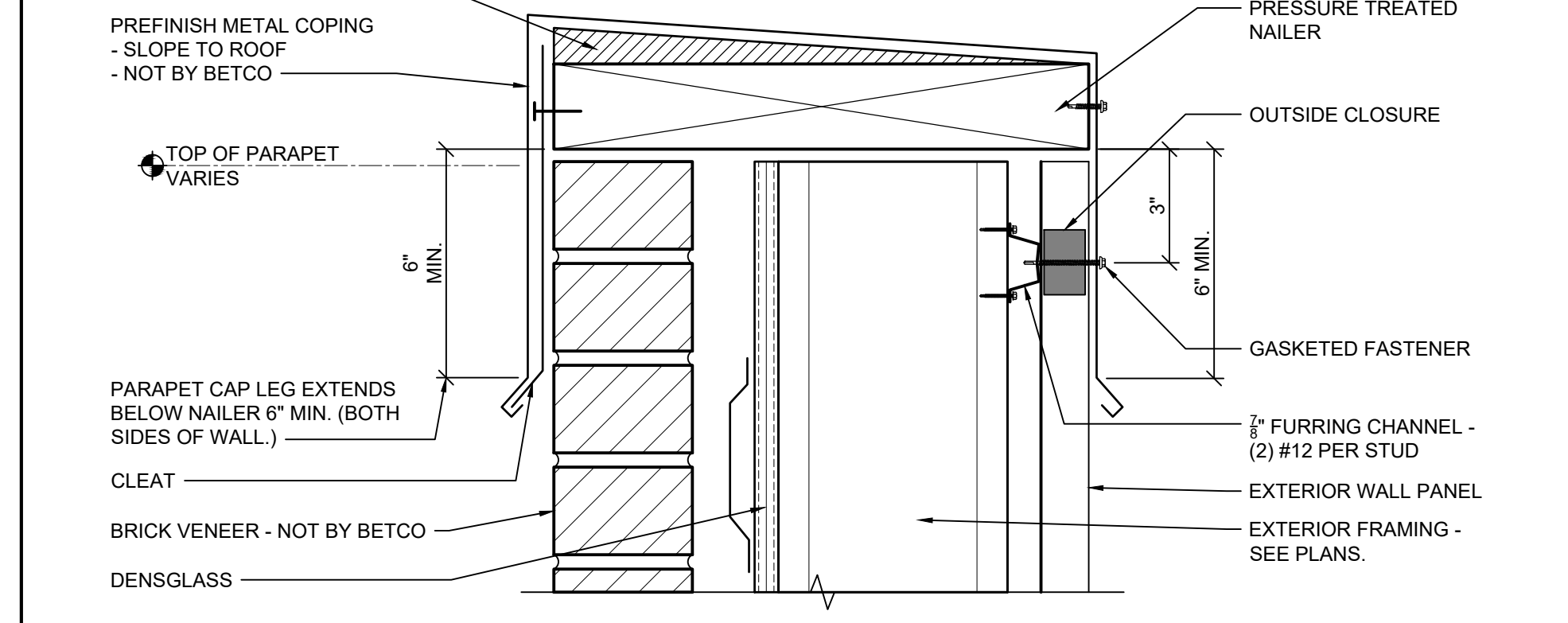
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PROJECT ADDRESS:	ERWIN, NC 28339
OWNER:	UNIVERSITY STORAGE, LLC
SHEET TITLE:	ROOF FRAMING DETAILS 1-12
PROJECT NO.:	NC22329
DRAWING NUMBER:	SD5





13	NOT USED	14	PONY POST WITH CROSS-BEAM SUPPORT	1" = 1'-0"	15	ABUTTING PARAPET	1" = 1'-0"
----	----------	----	-----------------------------------	------------	----	------------------	------------

16	NOT USED	17	NOT USED	18	NOT USED	19	INSULATION INSTALLATION @ 316 ROOF - HEADER	1 1/2" = 1'-0"	20	INSULATION INSTALLATION @ 316 ROOF - STUDWALL	3" = 1'-0"
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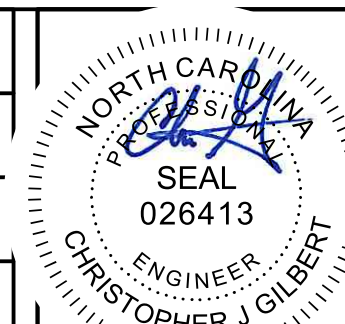
21	TOP OF PARAPET	3" = 1'-0"
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25	NOT USED	26	ROOF BEAM CONNECTION AT TOP OF EXTERIOR STUD WALL	1" = 1'-0"
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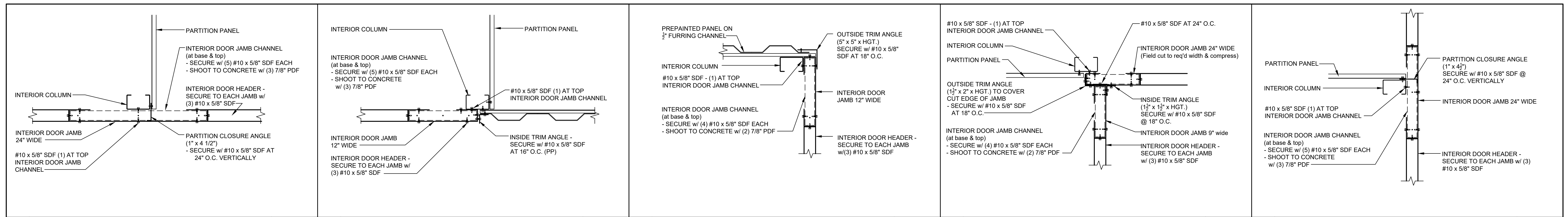


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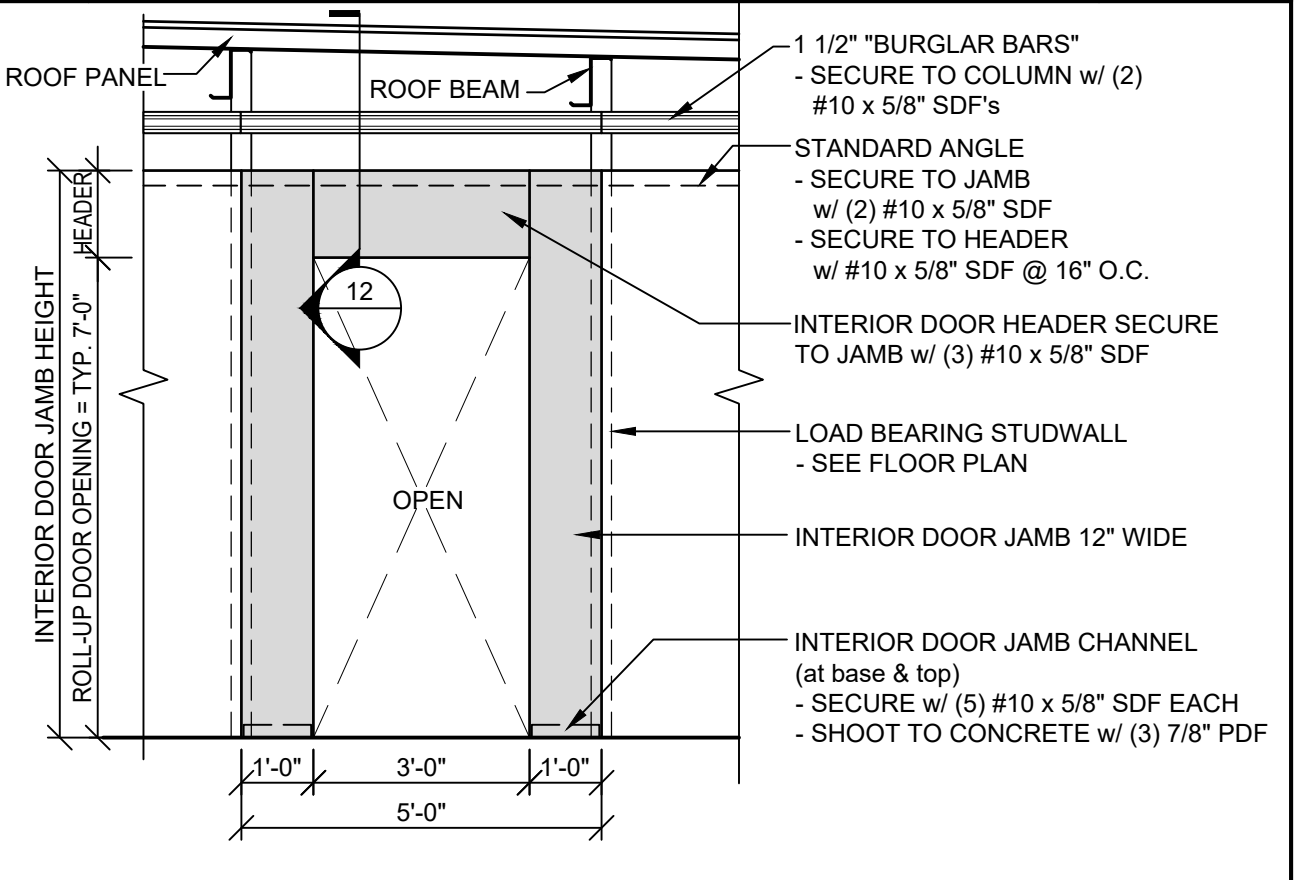
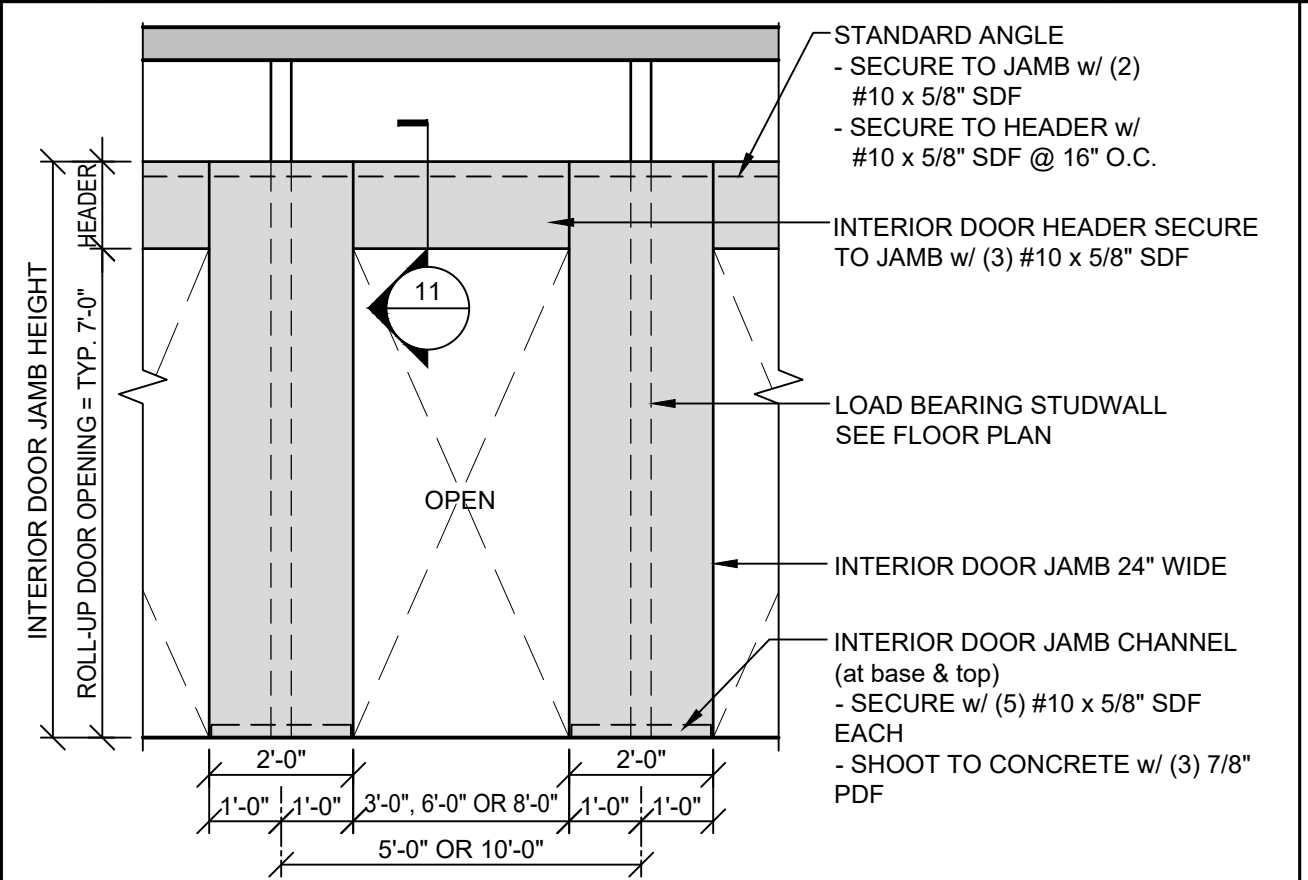
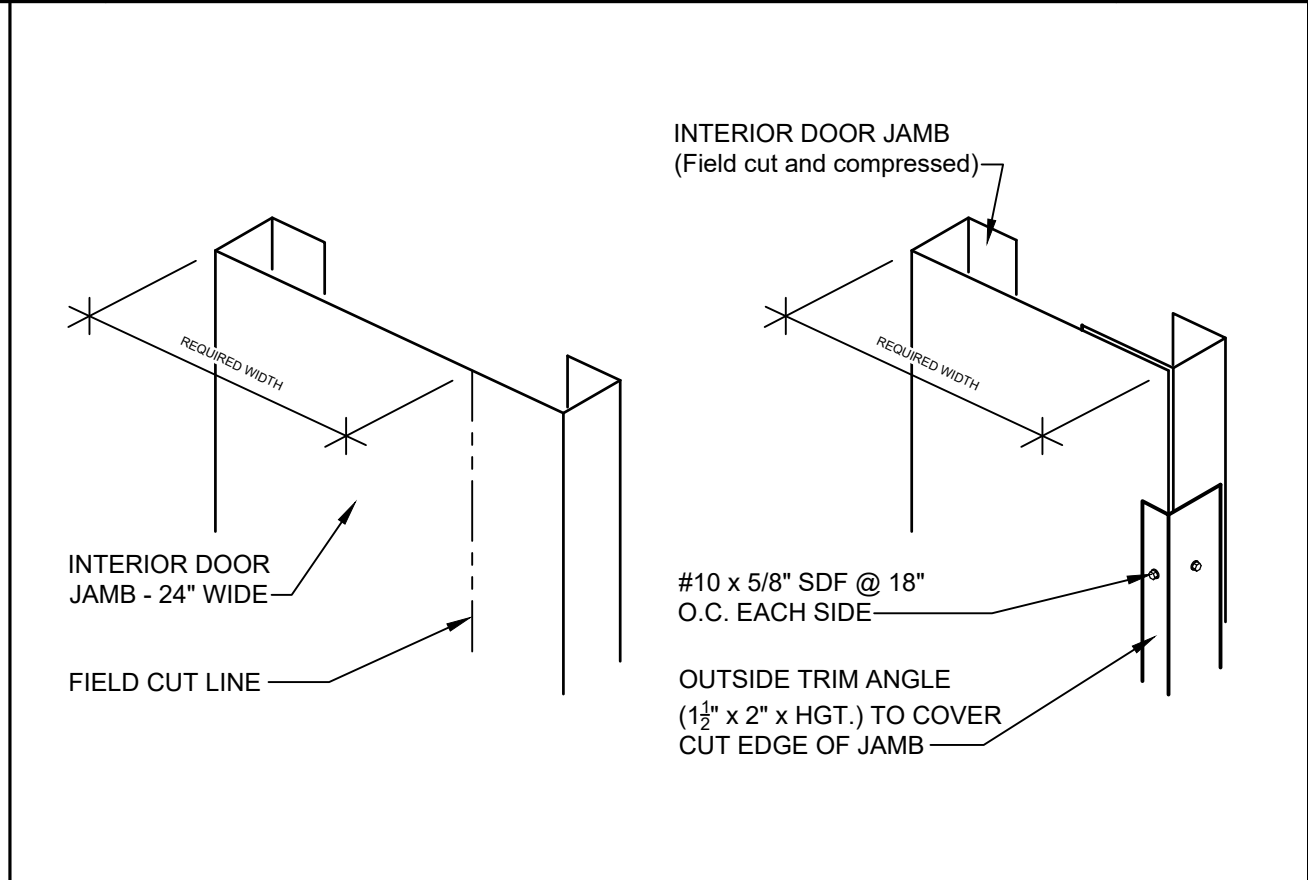
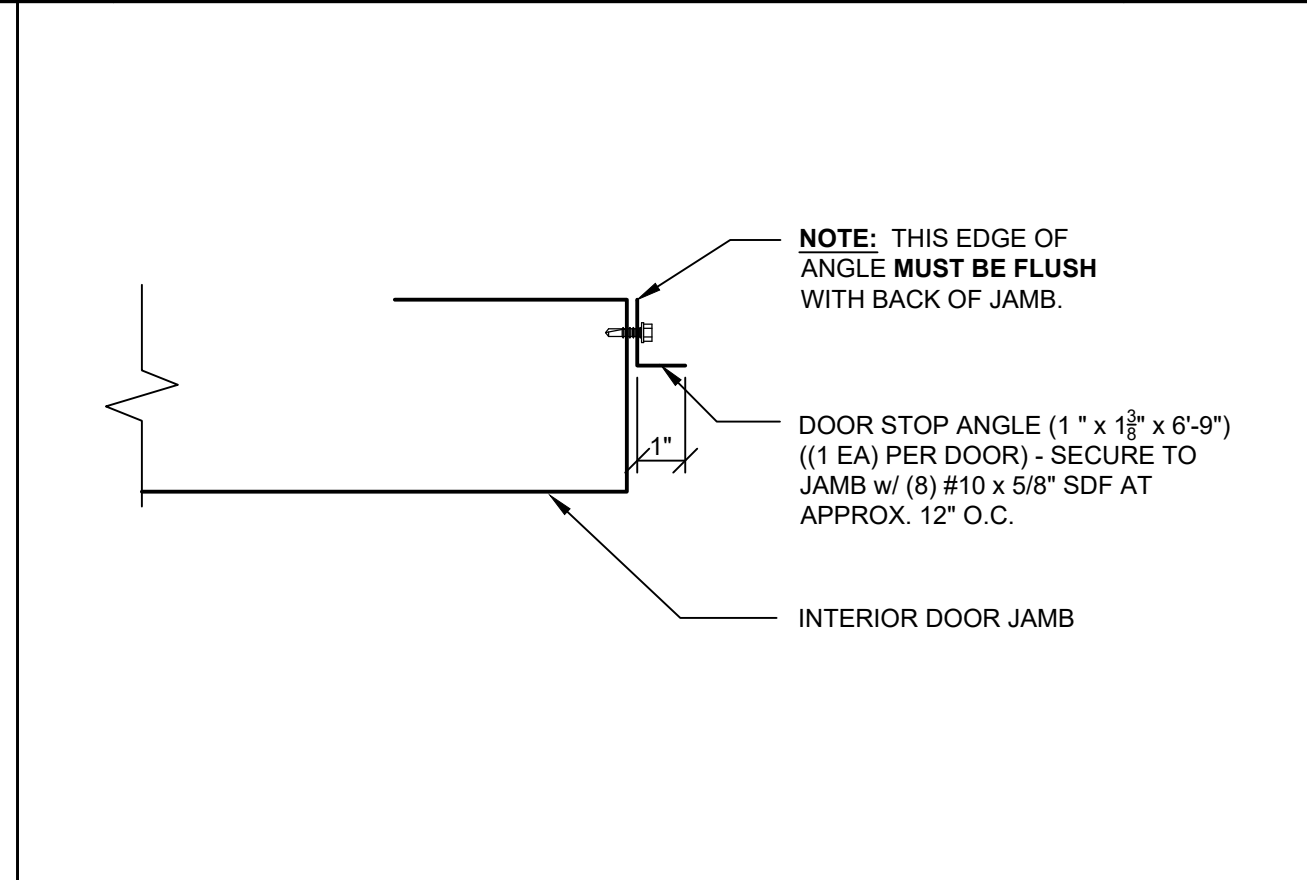
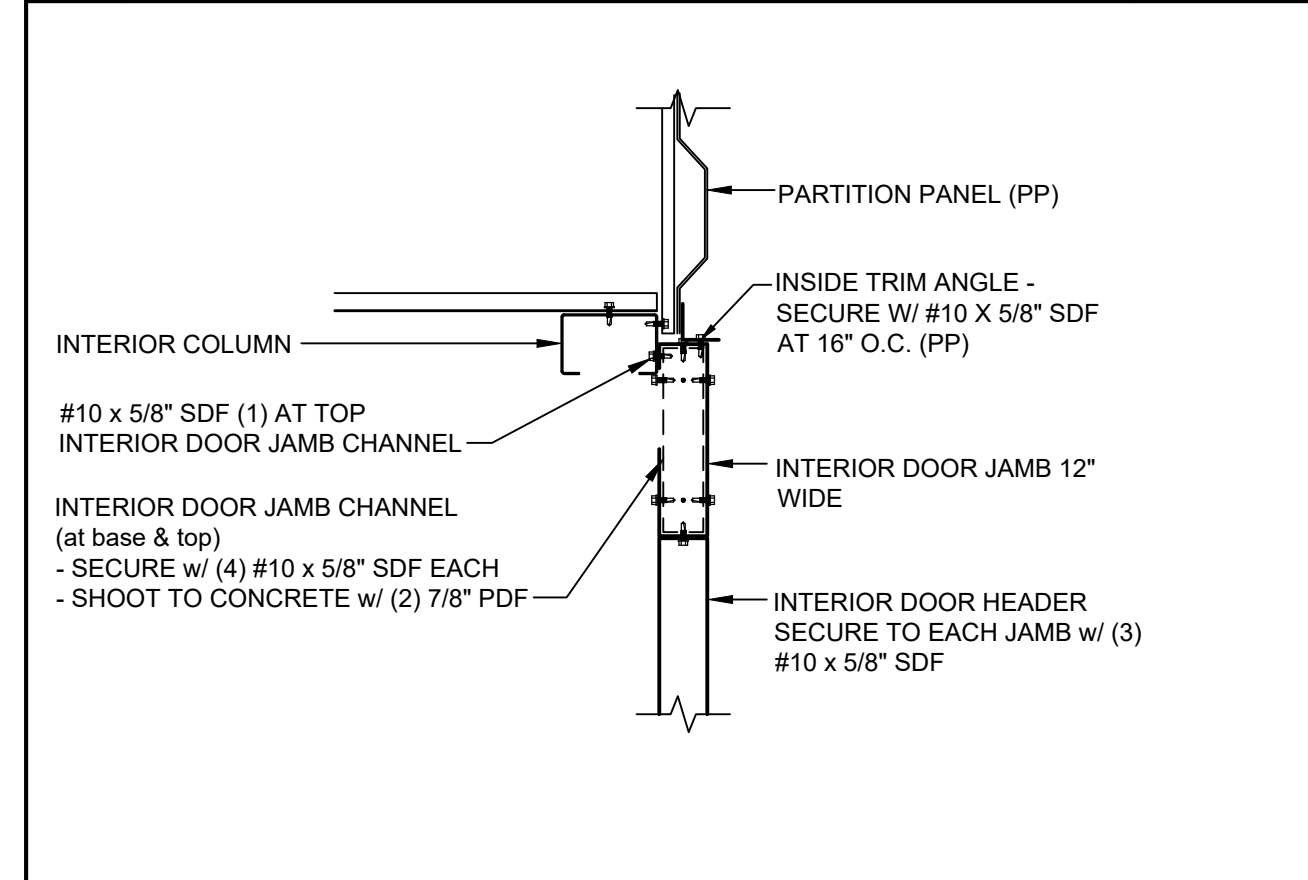
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PROJECT NO.:	NC22329
DRAWING NUMBER:	SD5





1 DOOR JAMB CONNECTION AT INTERIOR COLUMN 1 1/2" = 1'-0" 2 DOOR JAMB CONNECTION AT INTERIOR COLUMN & PARTITON PANEL 1 1/2" = 1'-0" 3 DOOR JAMB CONNECTION AT OUTSIDE CORNER 1 1/2" = 1'-0" 4 DOOR JAMB CONNECTION AT INSIDE CORNER 1 1/2" = 1'-0" 5 DOOR JAMB CONNECTION AT INTERIOR COLUMN 1 1/2" = 1'-0"



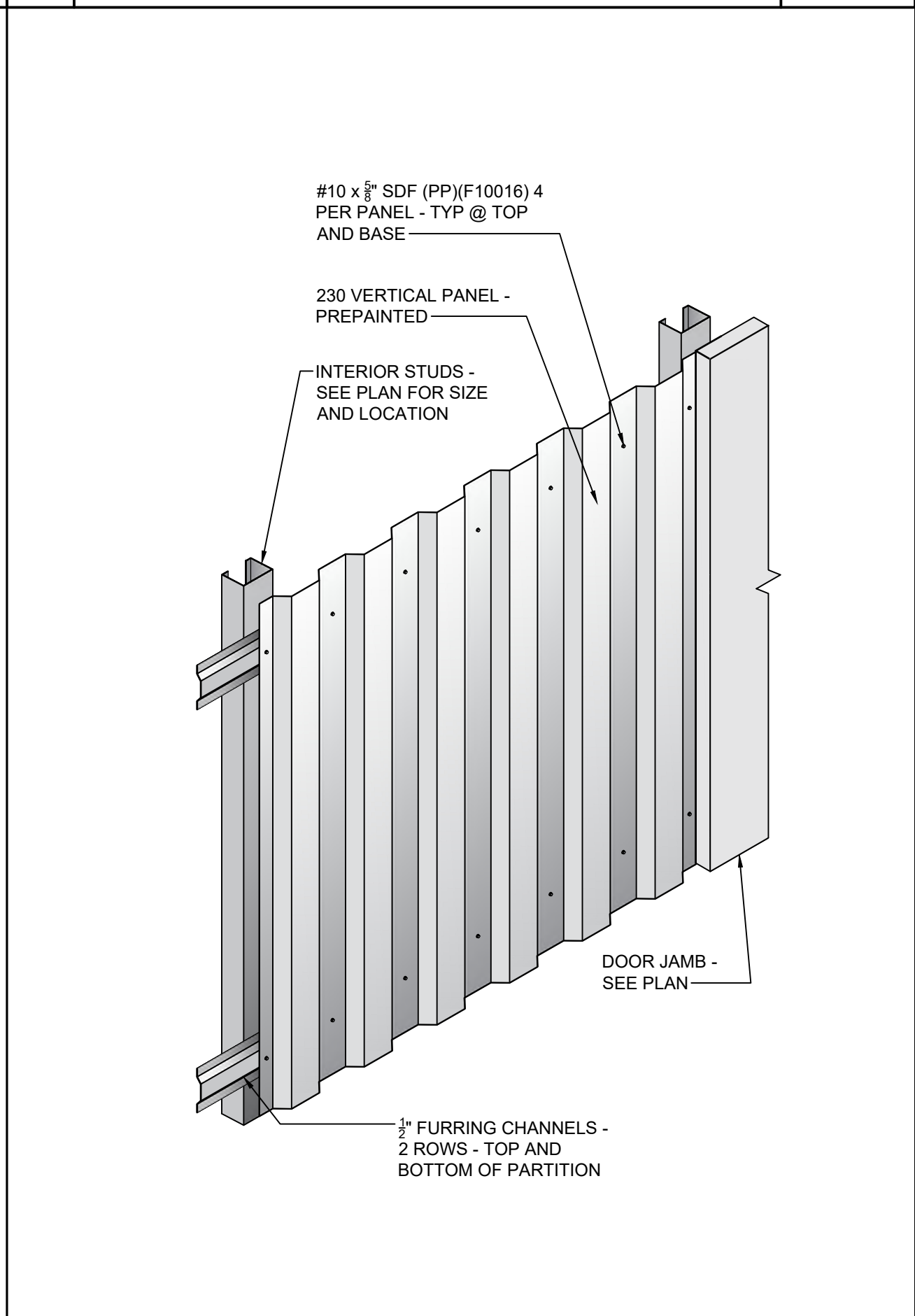
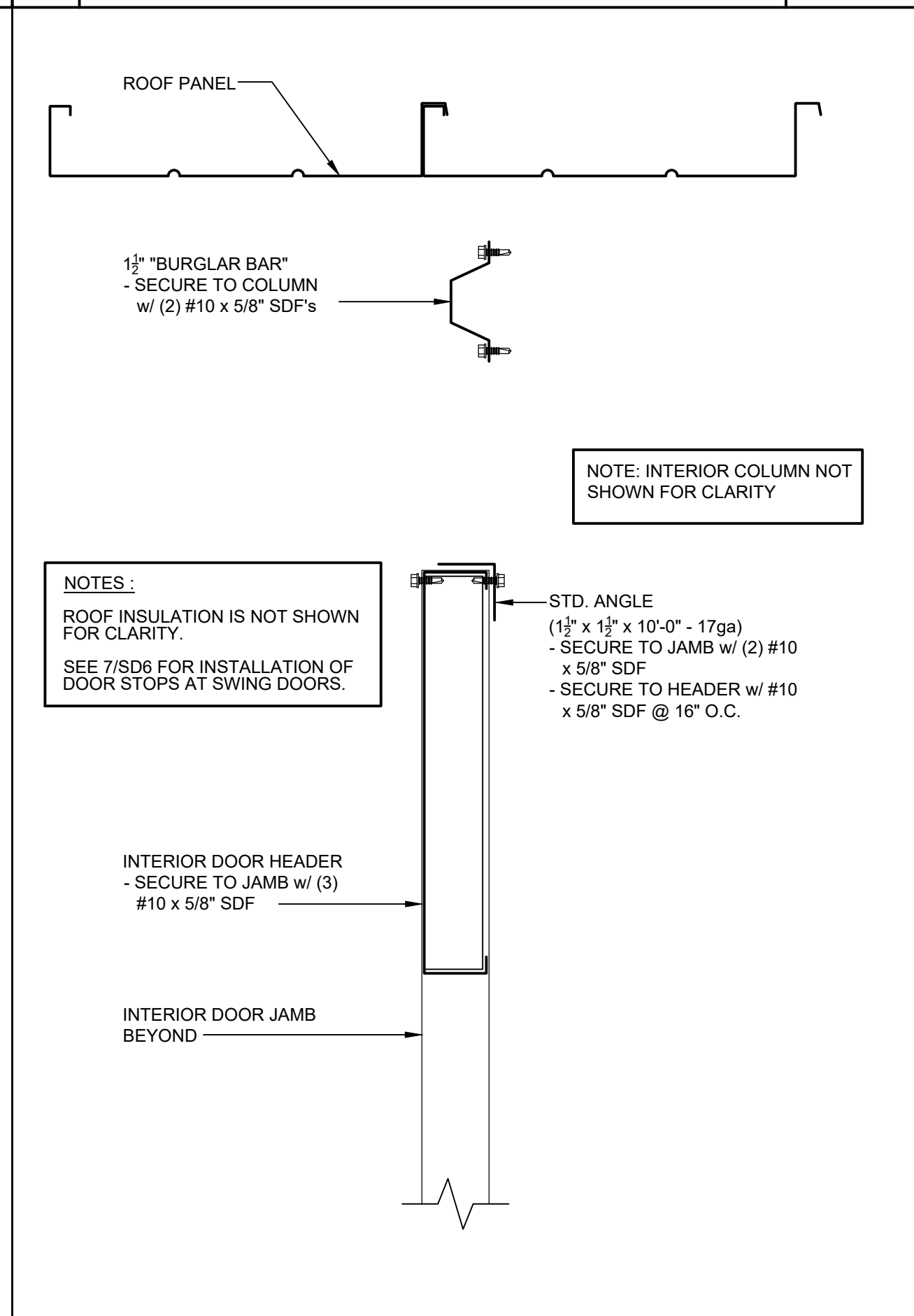
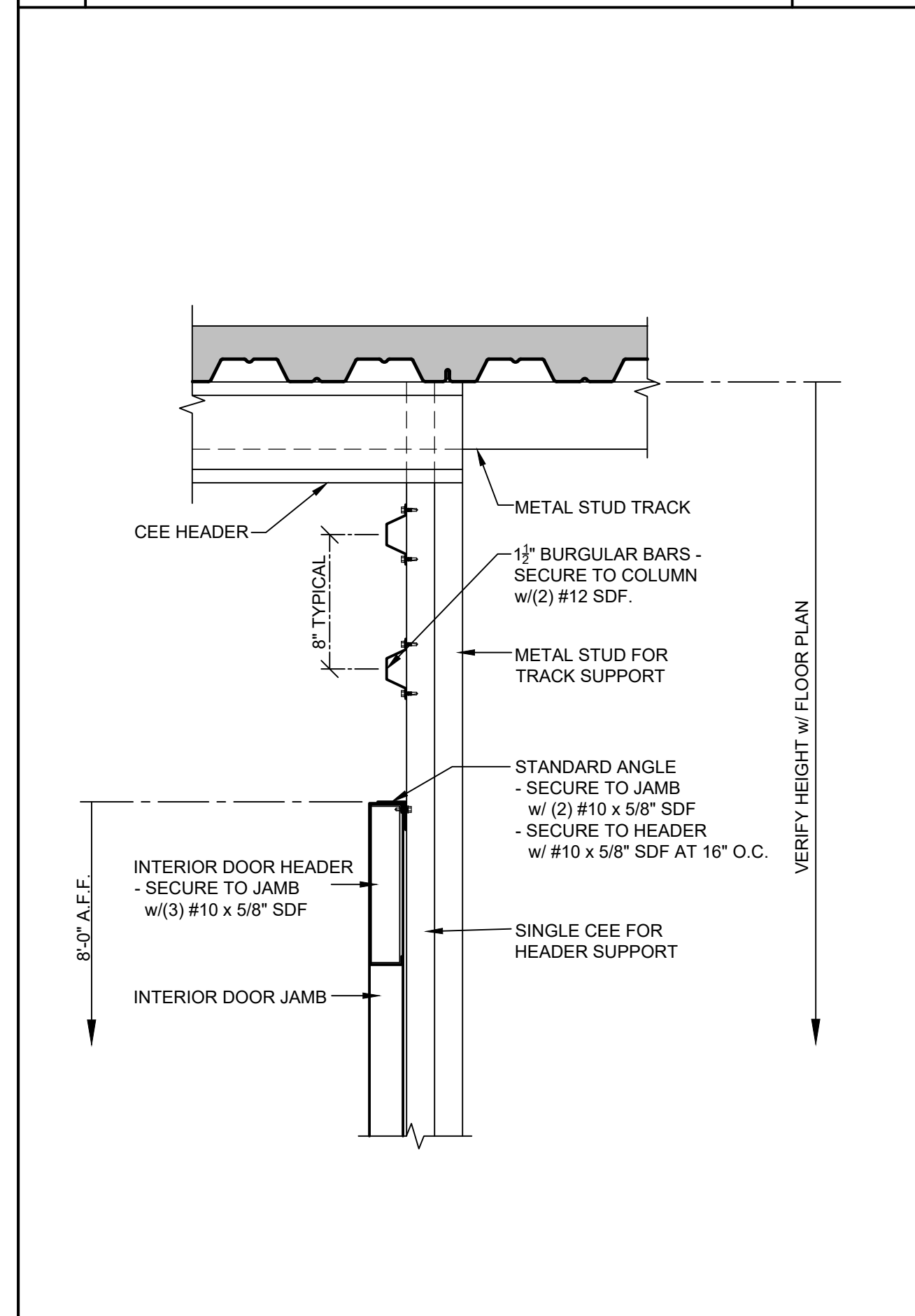
6 DOOR JAMB CONNECTION AT INTERIOR COLUMN AND PARTITION PANEL 1 1/2" = 1'-0"

7 DETAIL FOR THE ADDITION OF DOOR STOPS AT AN INTERIOR SWING DOOR 3" = 1'-0"

8 DETAIL FOR THE FIELD CUTTING AND COMPRESSION OF INTERIOR DOOR JAMBS 1 1/2" = 1'-0"

9 ELEVATION OF INTERIOR DOOR FRAMING 3/8" = 1'-0"

10 ELEVATION OF INTERIOR DOOR FRAMING PERPENDICULAR TO ROOF BEAM 3/8" = 1'-0"



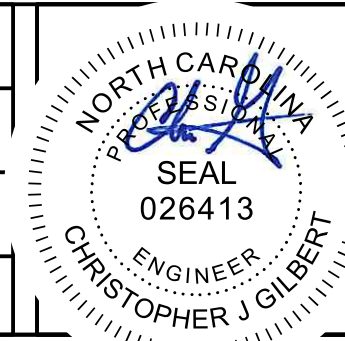
11 HEADER SECTION @ LOWER LEVEL - PERPENDICULAR TO FLOOR DECK 1 1/2" = 1'-0"

12 HEADER SECTION AT UPPER LEVEL 3" = 1'-0"

13 ISOMETRIC - 230 PARTITION PANEL @ HALLWAY 3/4" = 1'-0"

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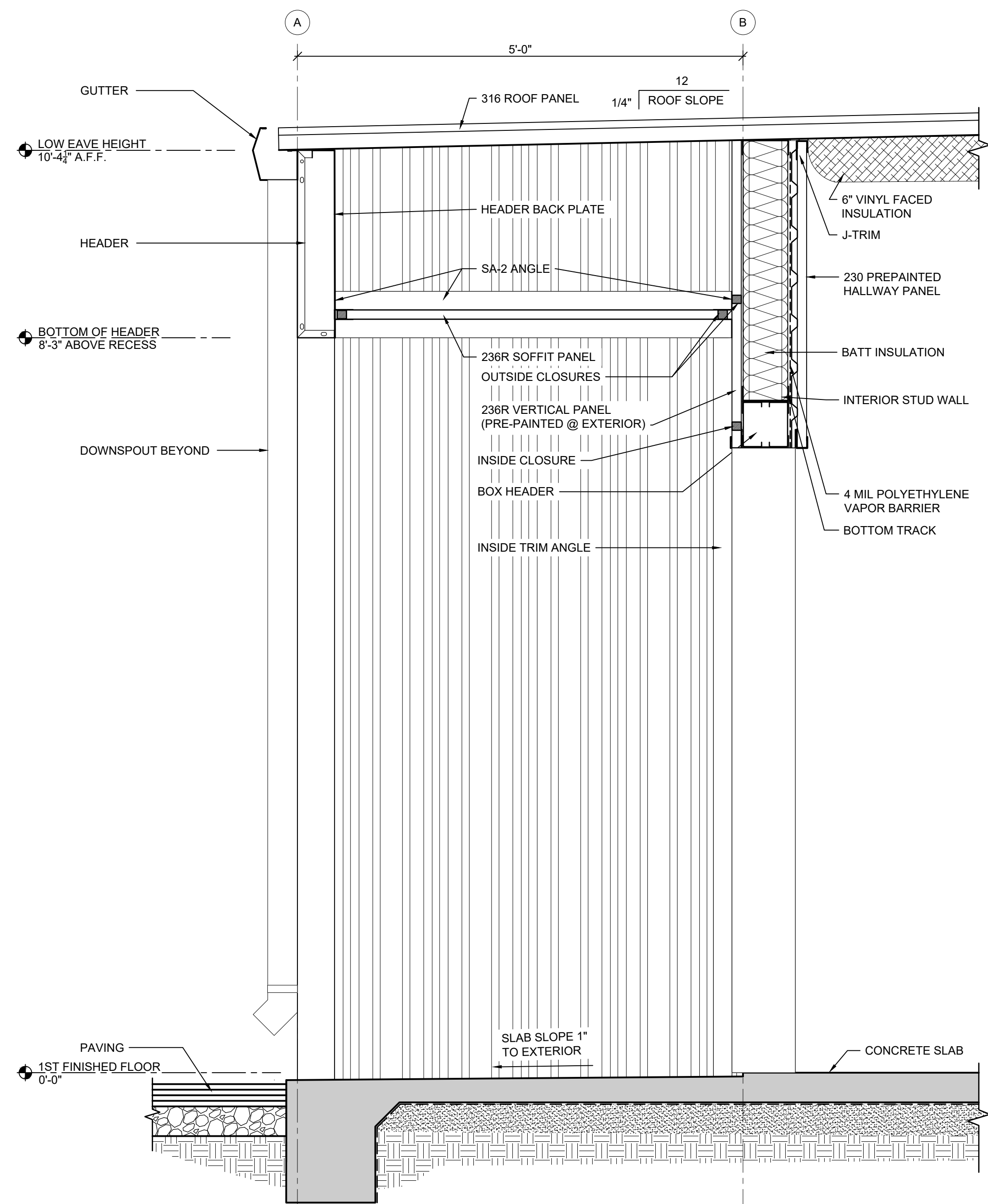


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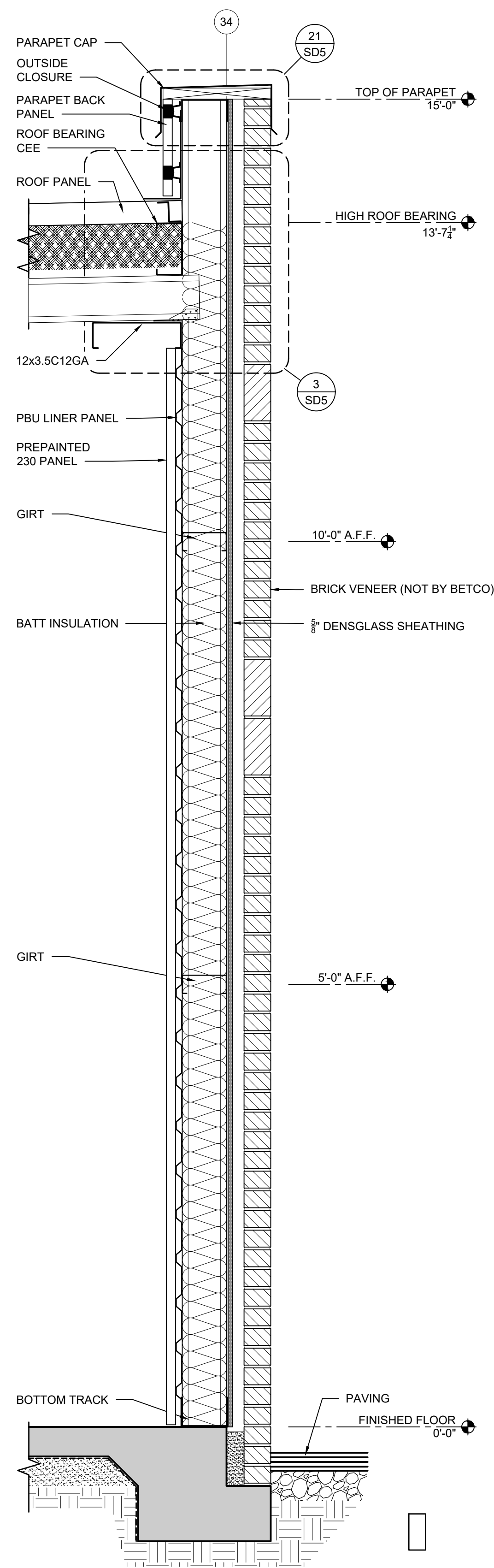
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PROJECT NO.:	NC22329
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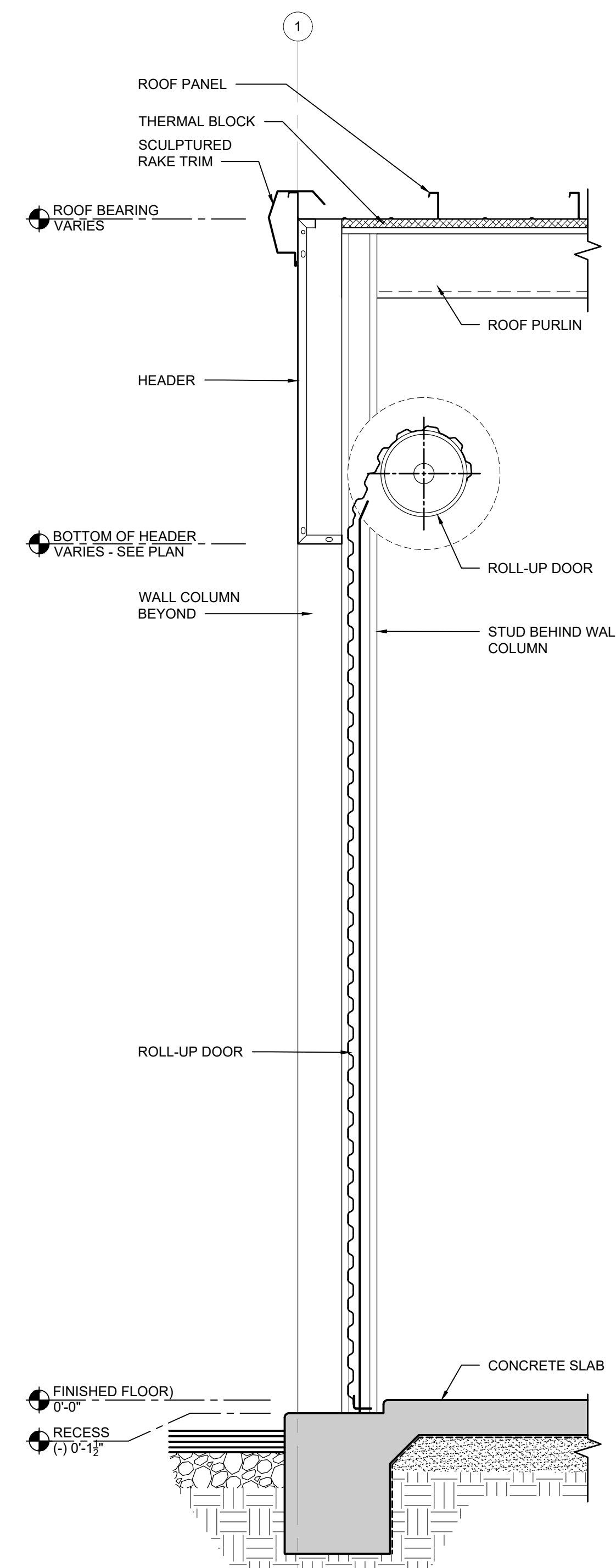
4 SIDEWALL SECTION @ ALCOVE

1" = 1'-0"



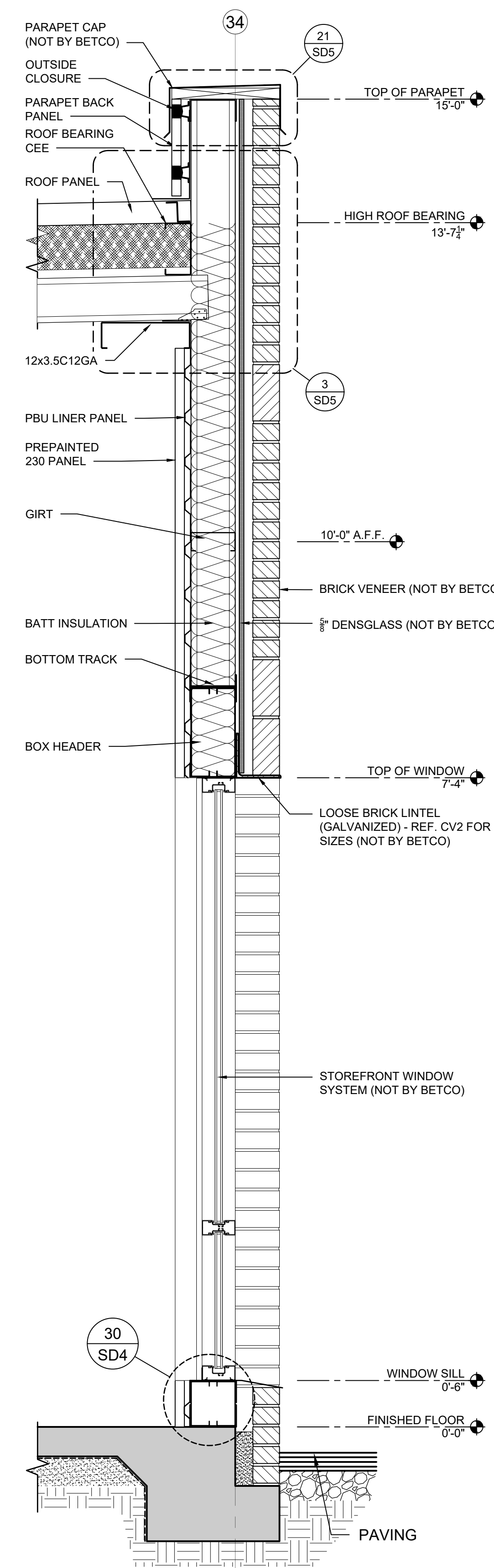
3 ENDWALL SECTION

1" = 1'-0"



2 ENDWALL SECTION AT EXTERIOR ROLL-UP DOOR

1" = 1'-0"



1 ENDWALL SECTION AT WINDOWS

1" = 1'-0"

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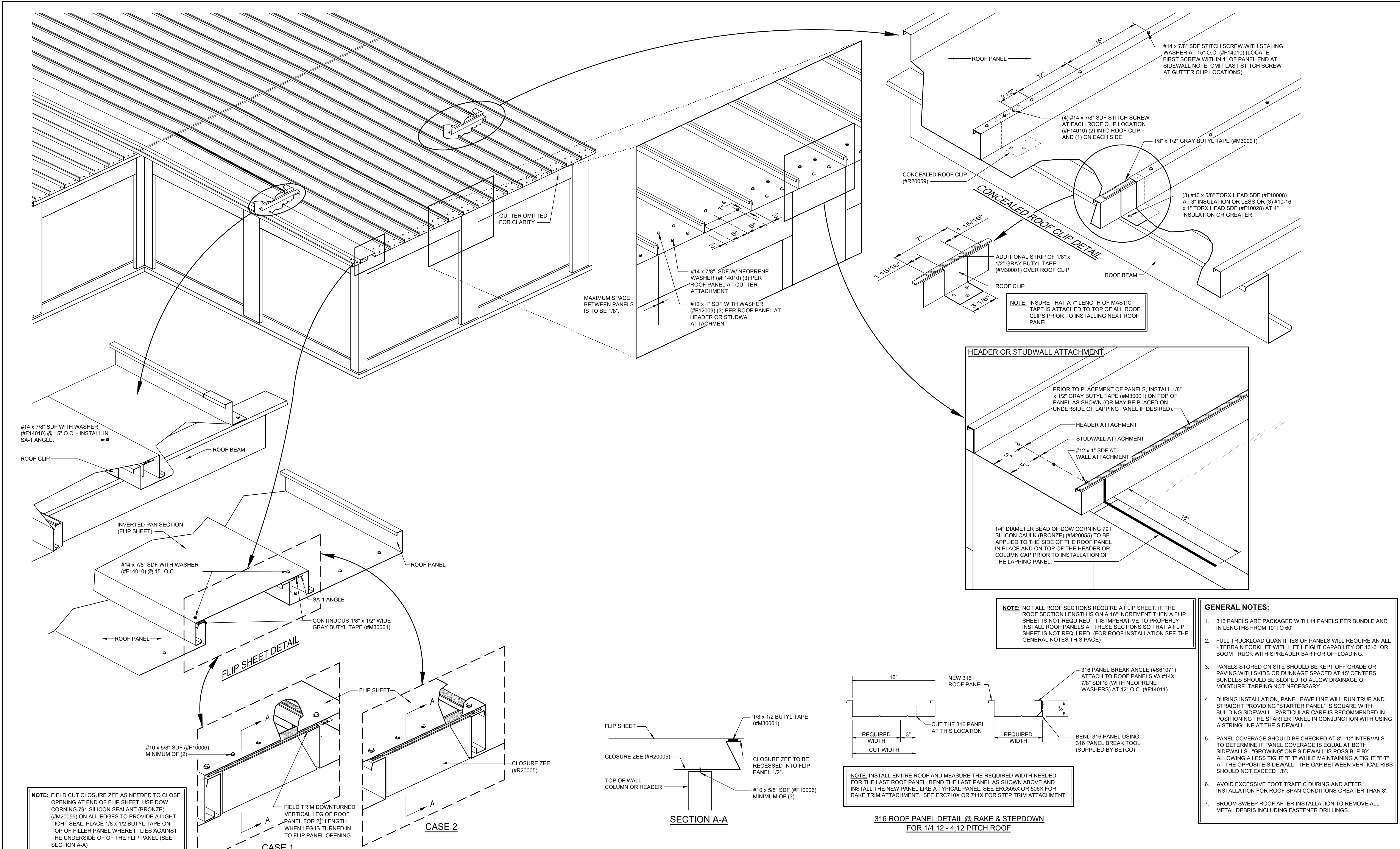
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OWNER: UNIVERSITY STORAGE, LLC	PROJECT NO: NC22329
SHEET TITLE: WALL SECTIONS 1-4	DRAWING NUMBER: SD7





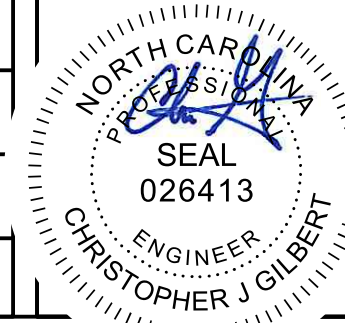
**NOTE:** FIELD CUT CLOSURE ZEE AS NEEDED TO CLOSE OPENING AT END OF FLIP SHEET. USE DOW CORNING 791 SILICON SEALANT (BRONZE) (#M20055) ON ALL EDGES TO PROVIDE A LIGHT TIGHT SEAL. PLACE 1/8" x 1/2" BUTYL TAPE ON TOP OF FILLER PANEL WHERE IT LIES AGAINST THE UNDERSIDE OF THE FLIP PANEL (SEE SECTION A-A)

**NOTE:** NOT ALL ROOF SECTIONS REQUIRE A FLIP SHEET. IF THE ROOF SECTION LENGTH IS ON A 16" INCREMENT THEN A FLIP SHEET IS NOT REQUIRED. IT IS IMPERATIVE TO PROPERLY INSTALL ROOF PANELS AT THESE SECTIONS SO THAT A FLIP SHEET IS NOT REQUIRED. (FOR ROOF INSTALLATION SEE THE GENERAL NOTES THIS PAGE)

- GENERAL NOTES:**
- 316 PANELS ARE PACKAGED WITH 14 PANELS PER BUNDLE AND IN LENGTHS FROM 10' TO 60'.
  - FULL TRUCKLOAD QUANTITIES OF PANELS WILL REQUIRE AN ALL-TERRAIN FORKLIFT WITH LIFT HEIGHT CAPABILITY OF 13'-6" OR BOOM TRUCK WITH SPREADER BAR FOR OFFLOADING.
  - PANELS STORED ON SITE SHOULD BE KEPT OFF GRADE OR PAVING WITH SKIDS OR DUNNAGE SPACED AT 15" CENTERS. BUNDLES SHOULD BE SLOPED TO ALLOW DRAINAGE OF MOISTURE. TARPING NOT NECESSARY.
  - DURING INSTALLATION, PANEL EAVE LINE WILL RUN TRUE AND STRAIGHT PROVIDING "STARTER PANEL" IS SQUARE WITH BUILDING SIDEWALL. PARTICULAR CARE IS RECOMMENDED IN POSITIONING THE STARTER PANEL IN CONJUNCTION WITH USING A STRINGLINE AT THE SIDEWALL.
  - PANEL COVERAGE SHOULD BE CHECKED AT 8' - 12' INTERVALS TO DETERMINE IF PANEL COVERAGE IS EQUAL AT BOTH SIDEWALLS. "GROWING" ONE SIDEWALL IS POSSIBLE BY ALLOWING A LESS TIGHT "FIT" WHILE MAINTAINING A TIGHT "FIT" AT THE OPPOSITE SIDEWALL. THE GAP BETWEEN VERTICAL RIBS SHOULD NOT EXCEED 1/8".
  - AVOID EXCESSIVE FOOT TRAFFIC DURING AND AFTER INSTALLATION FOR ROOF SPAN CONDITIONS GREATER THAN 8'.
  - BROOM SWEEP ROOF AFTER INSTALLATION TO REMOVE ALL METAL DEBRIS INCLUDING FASTENER DRILLINGS.

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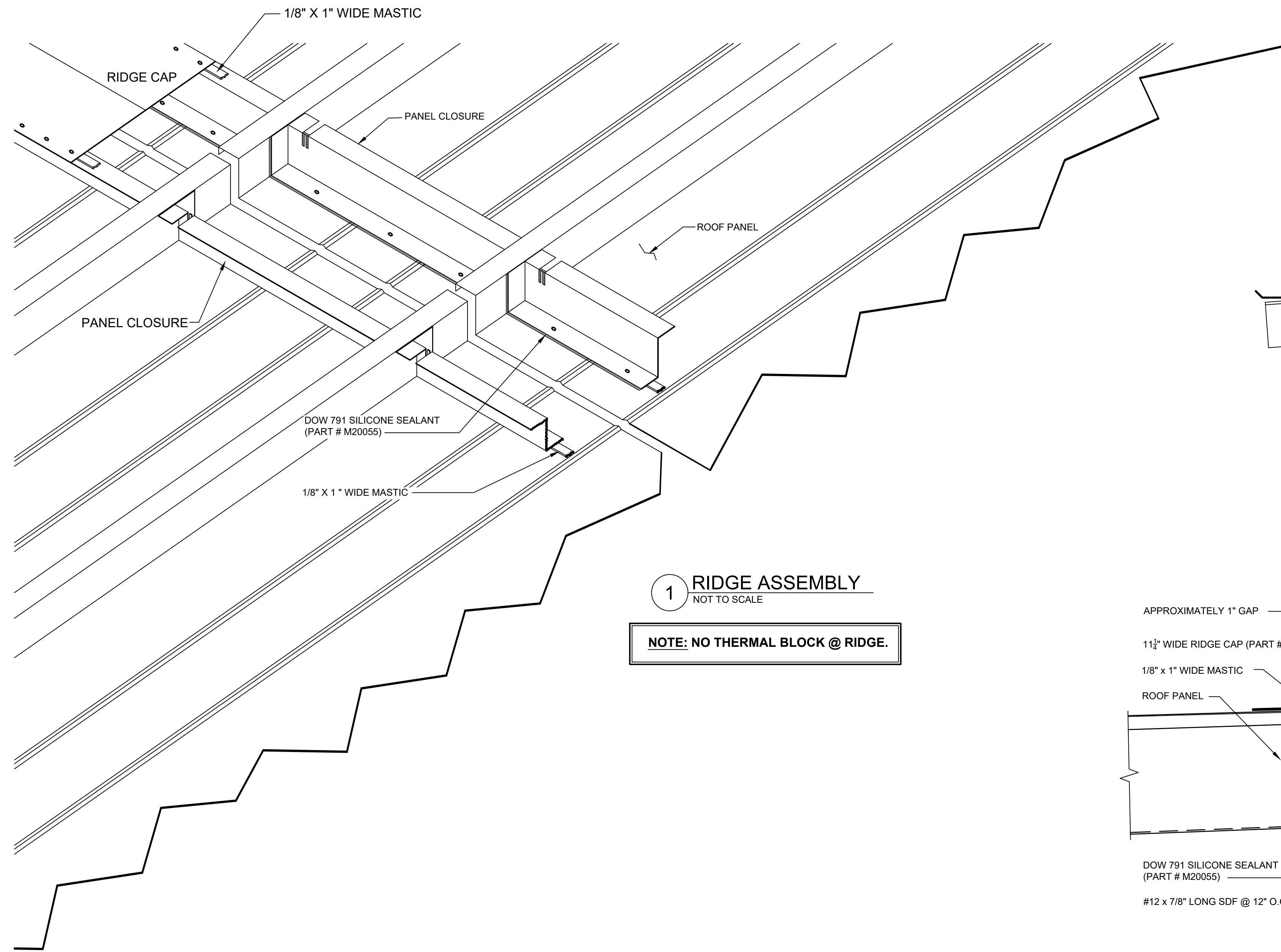


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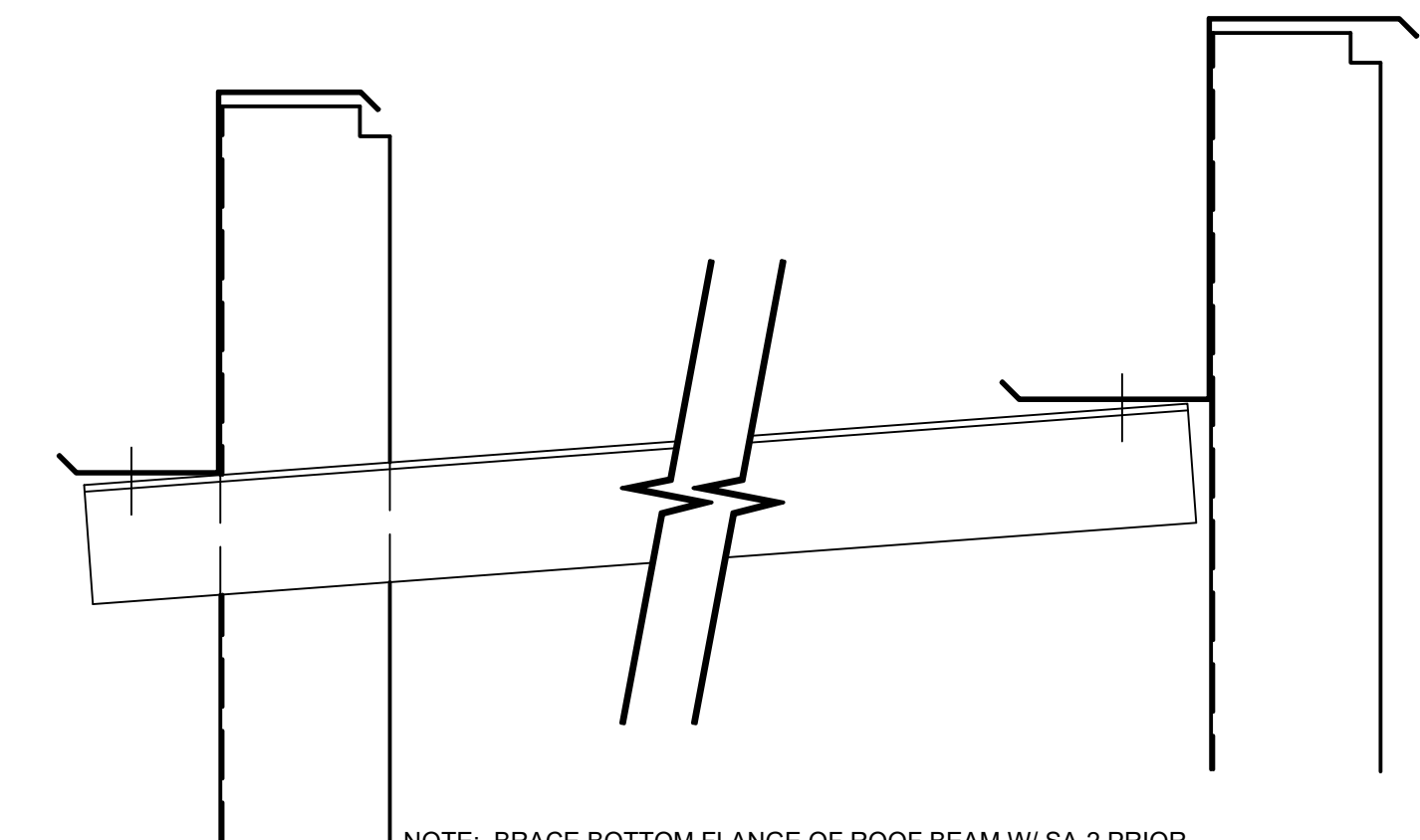
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SHEET TITLE:	316 ROOF INSTALLATION
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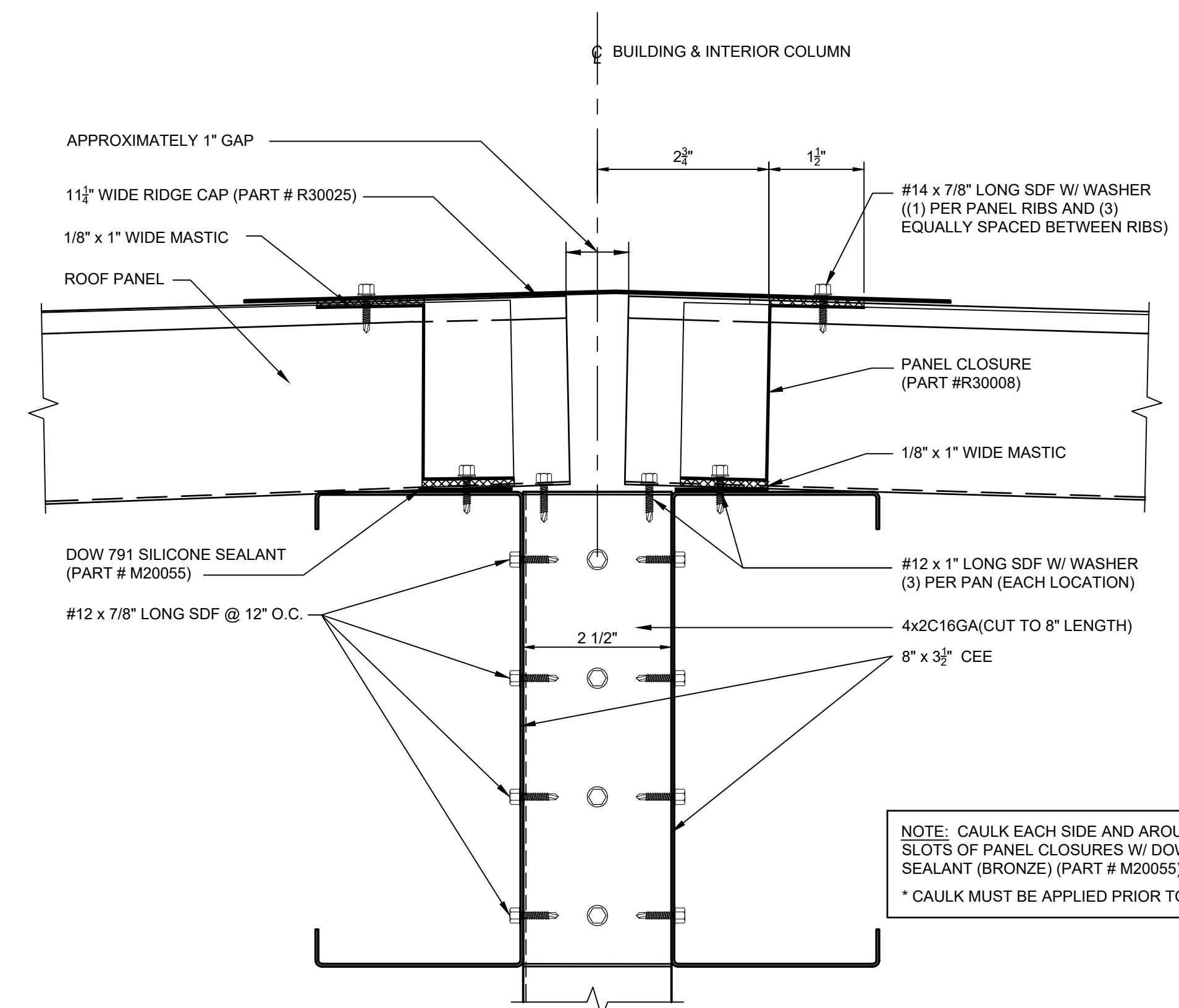


**1 RIDGE ASSEMBLY**  
NOT TO SCALE

**NOTE: NO THERMAL BLOCK @ RIDGE.**



**NOTE:** BRACE BOTTOM FLANGE OF ROOF BEAM W/ SA-2 PRIOR TO INSTALLING ROOF, TO KEEP BEAM FROM TWISTING. BRACE CAN BE REMOVED AFTER ROOF IS INSTALLED.

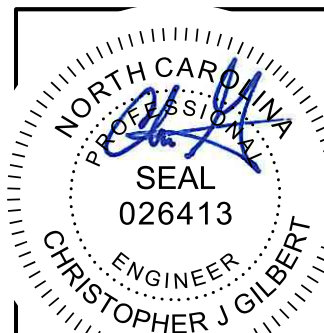


**NOTE:** CAULK EACH SIDE AND AROUND PANEL RELIEF SLOTS OF PANEL CLOSURES W/ DOW 791 SILICONE SEALANT (BRONZE) (PART # M20055)  
\* CAULK MUST BE APPLIED PRIOR TO INSTALLING RIDGE CAP.

**2 SECTION @ RIDGE CAP**  
HALF SCALE

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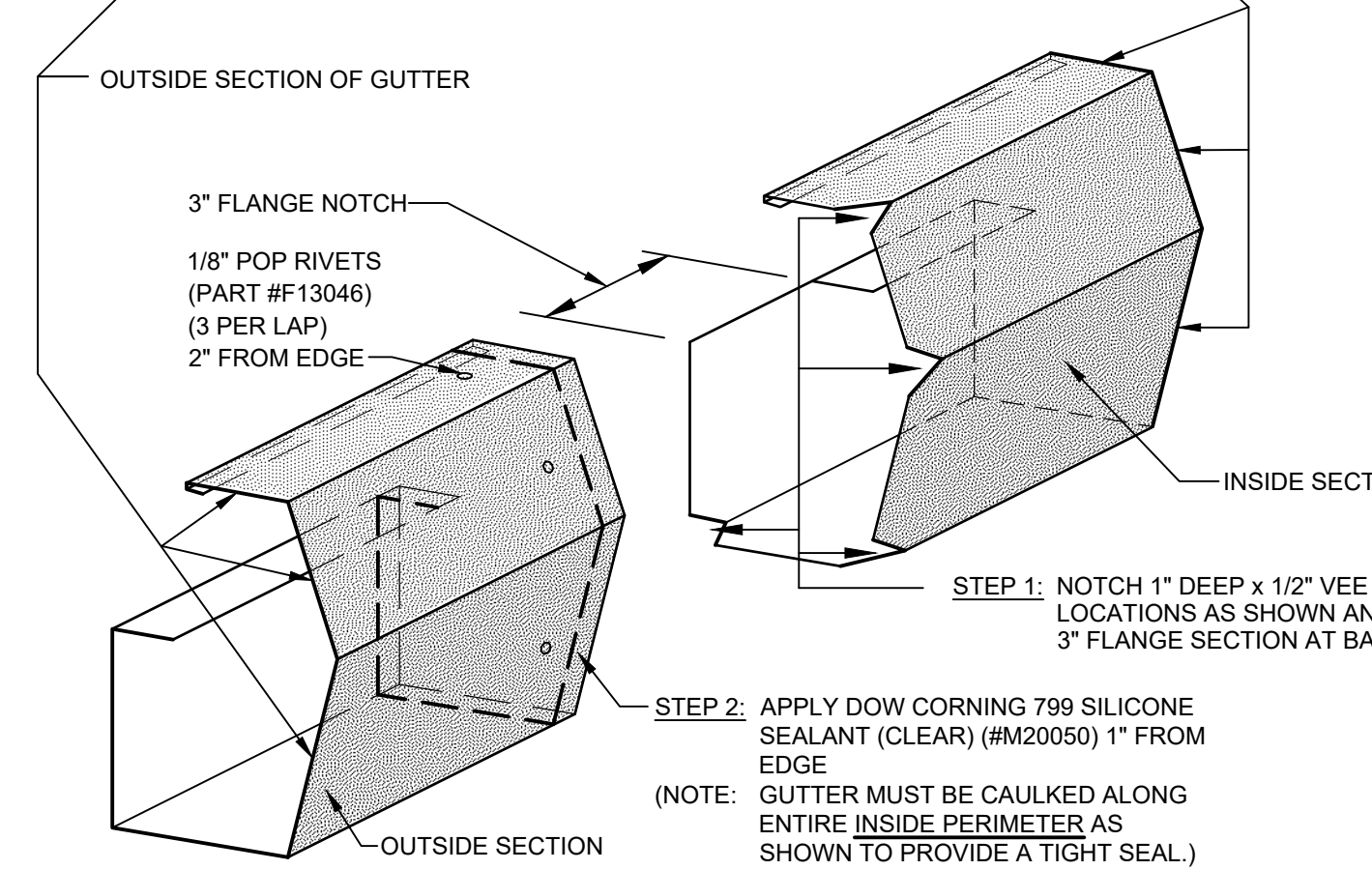
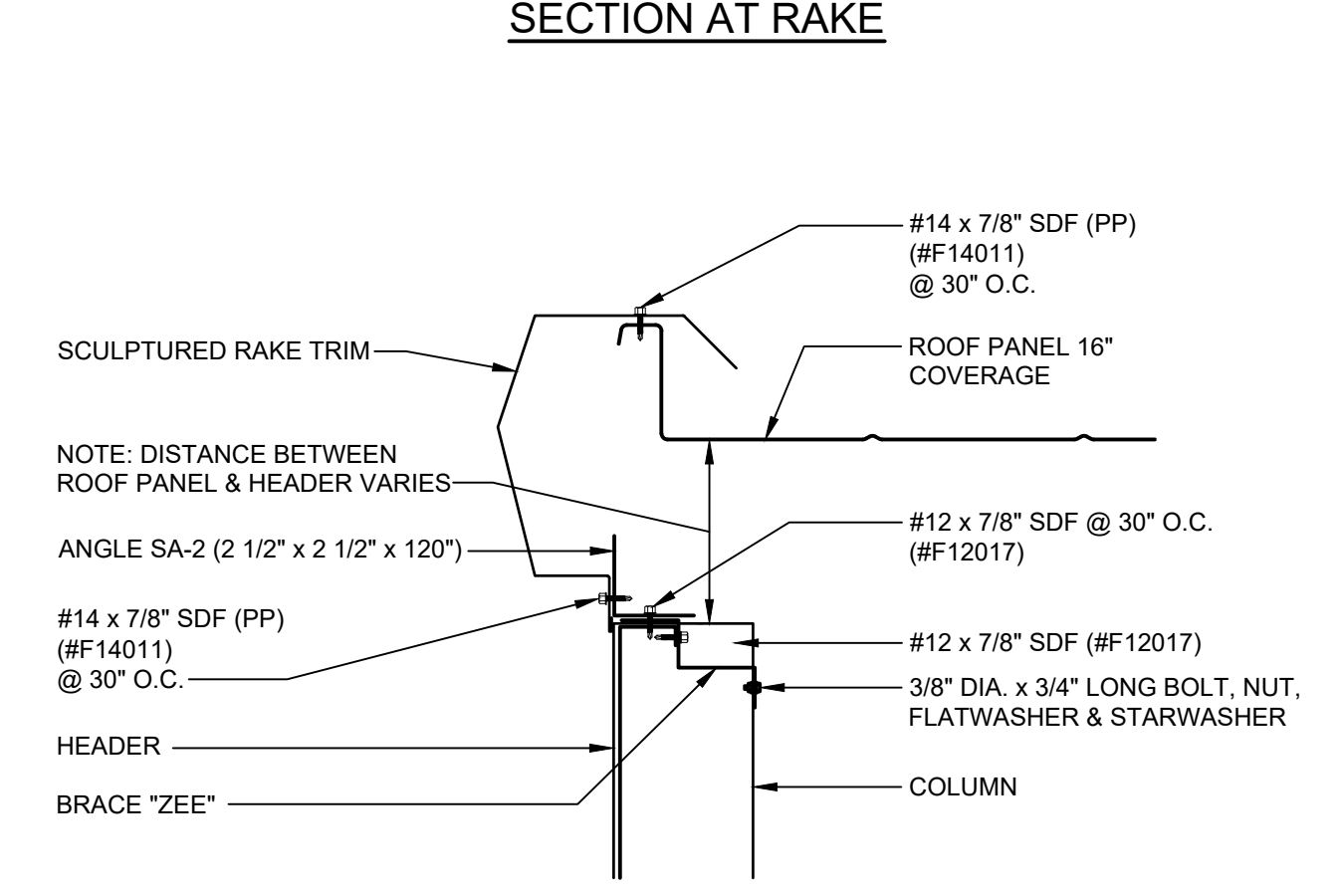
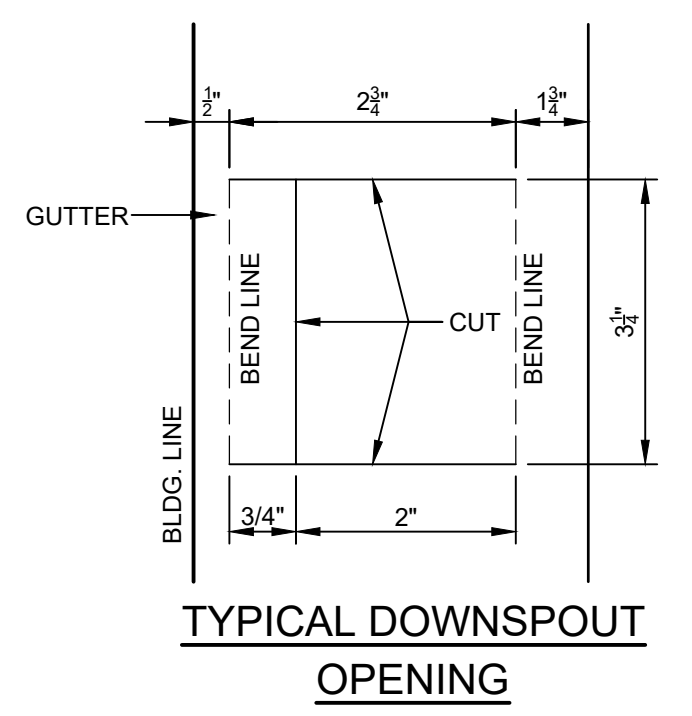
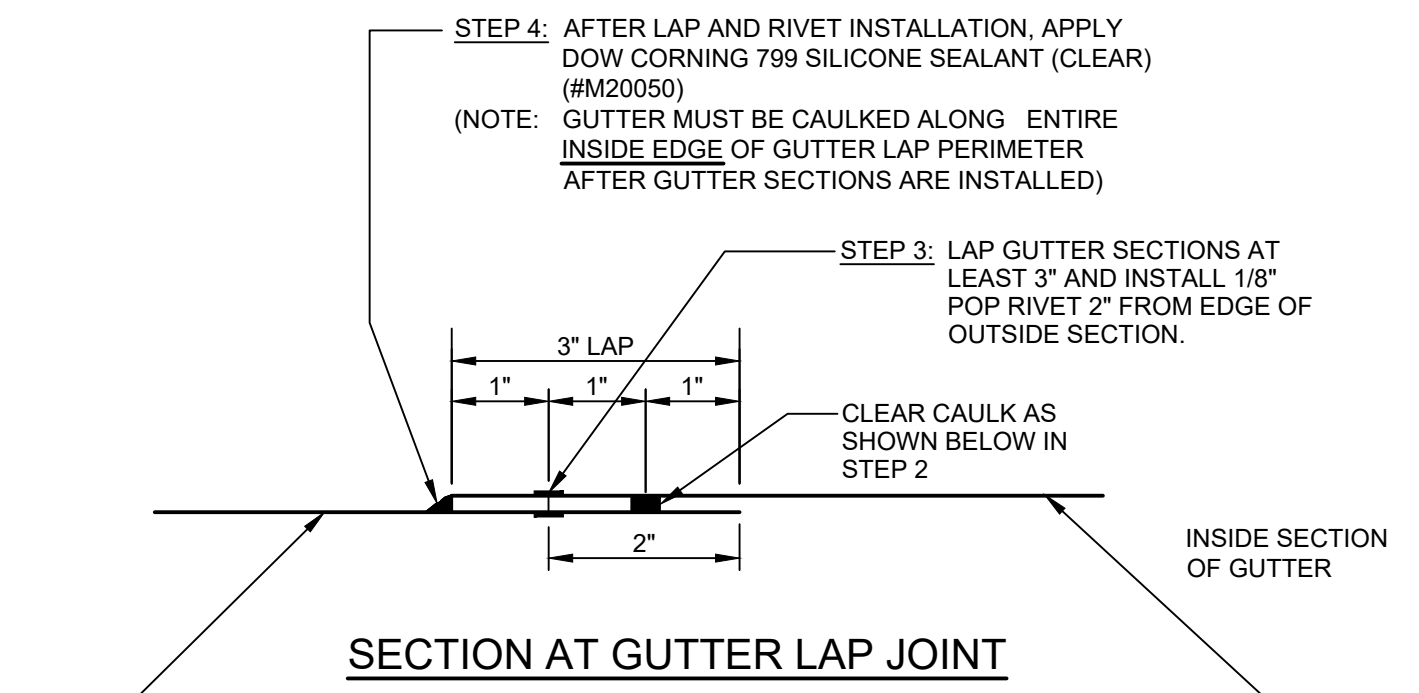
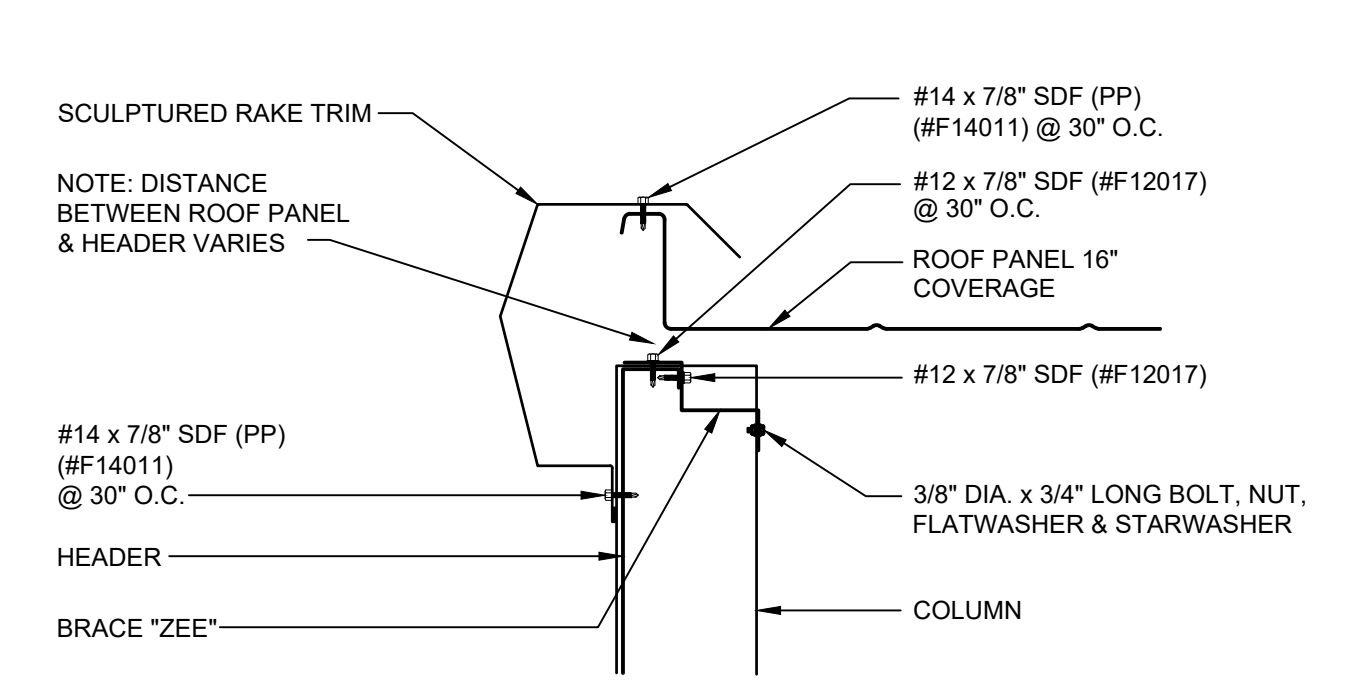
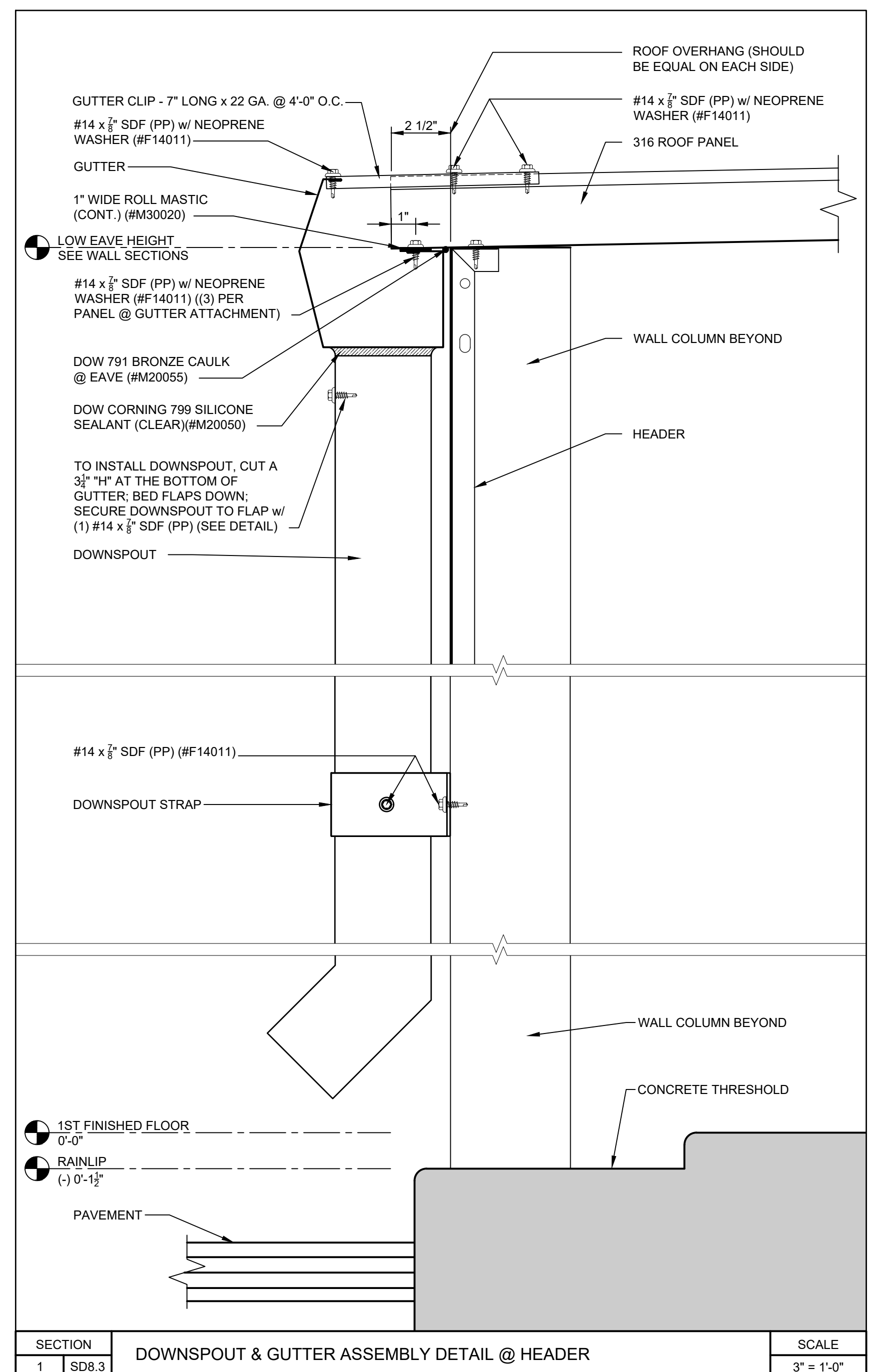
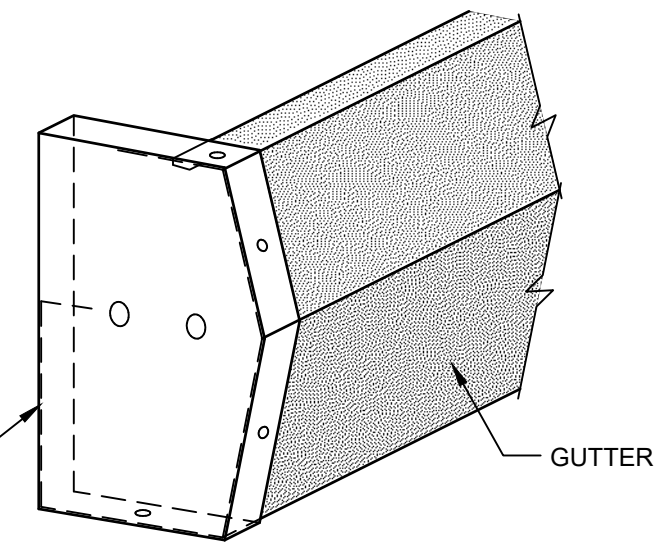
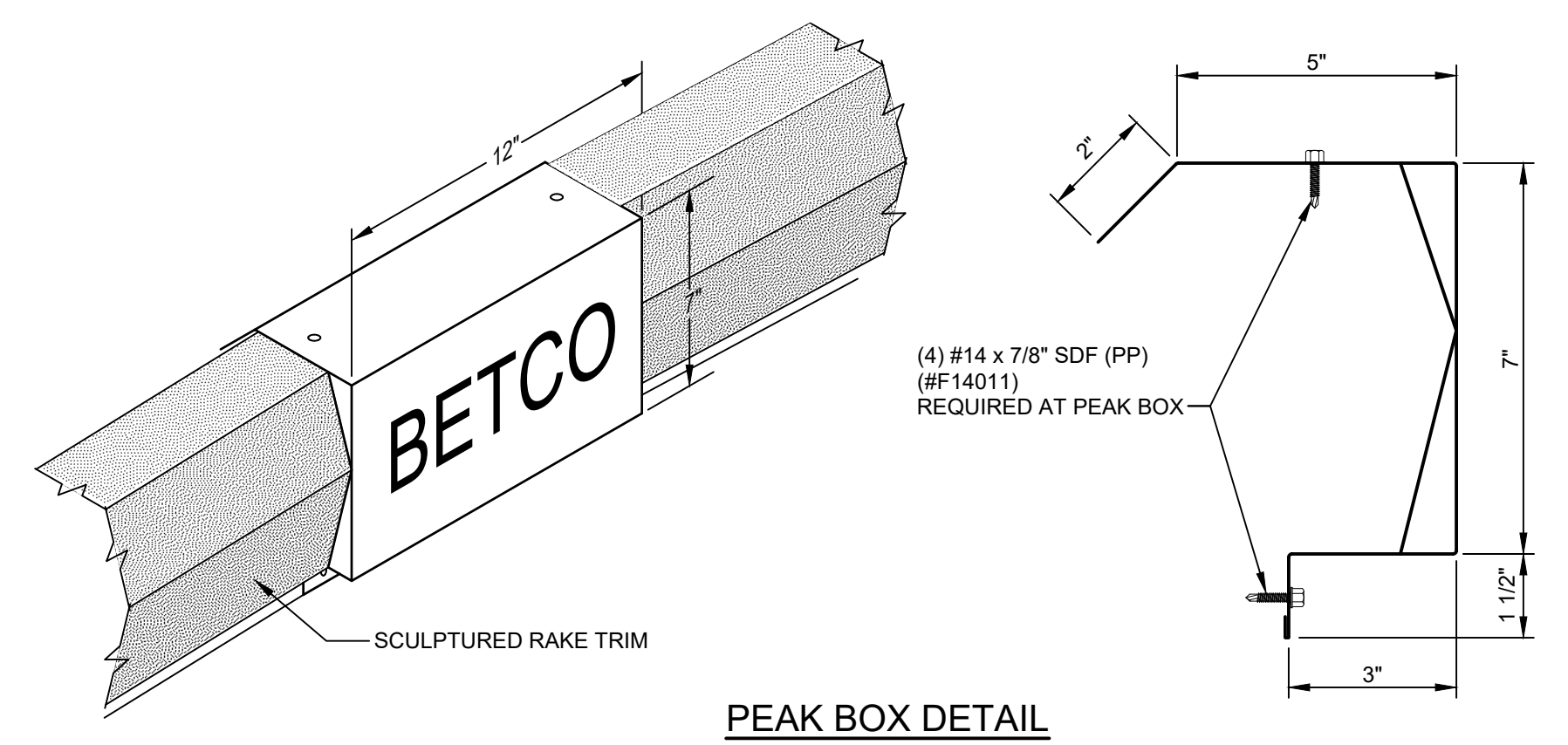
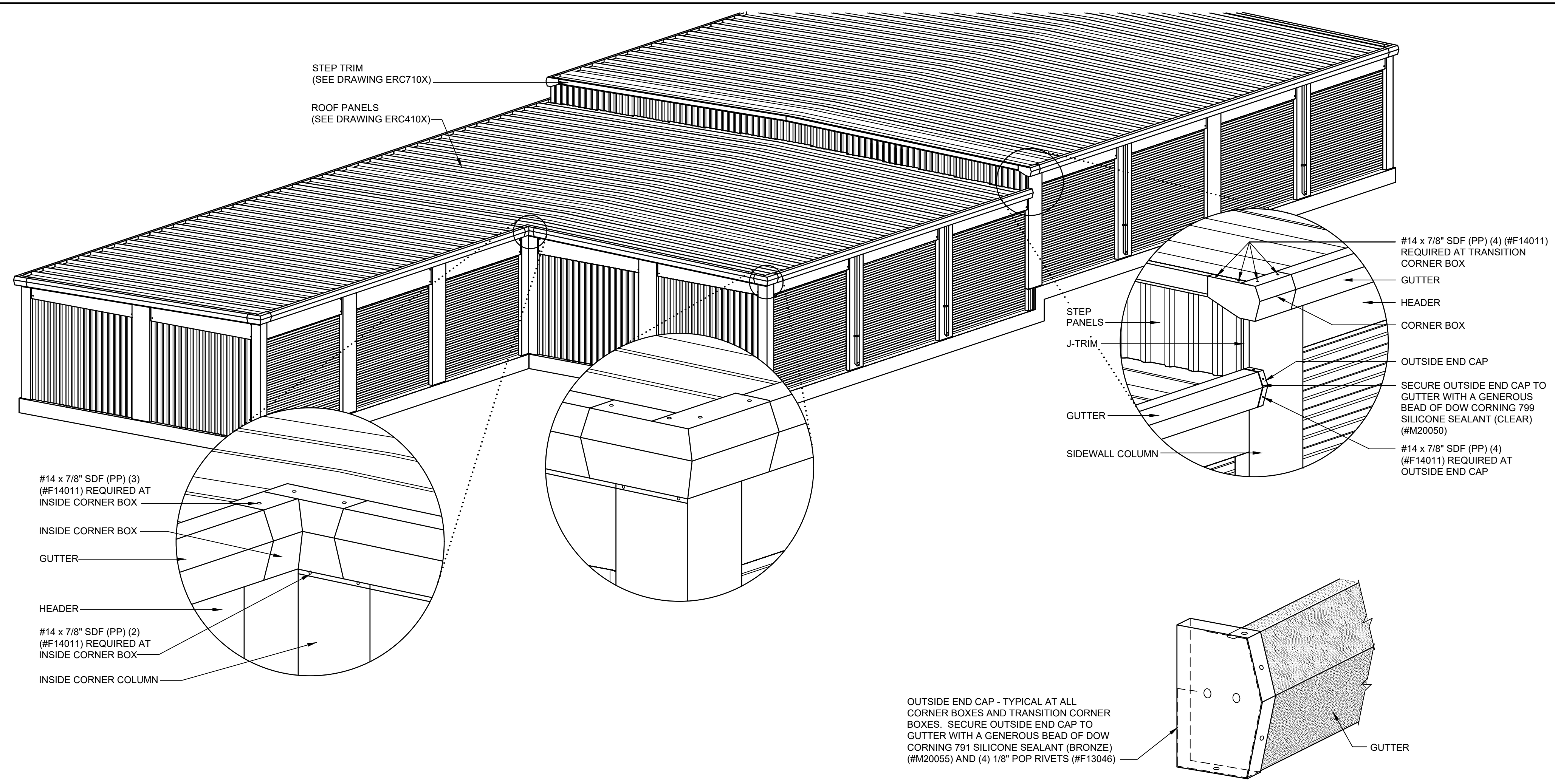


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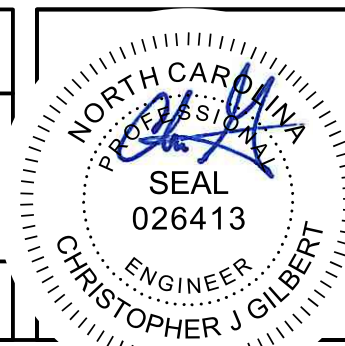




NOTE: SHOWN FOR A 3" X 4" DOWNSPOUT ADJUST ACCORDINGLY PER COMPONENTS.

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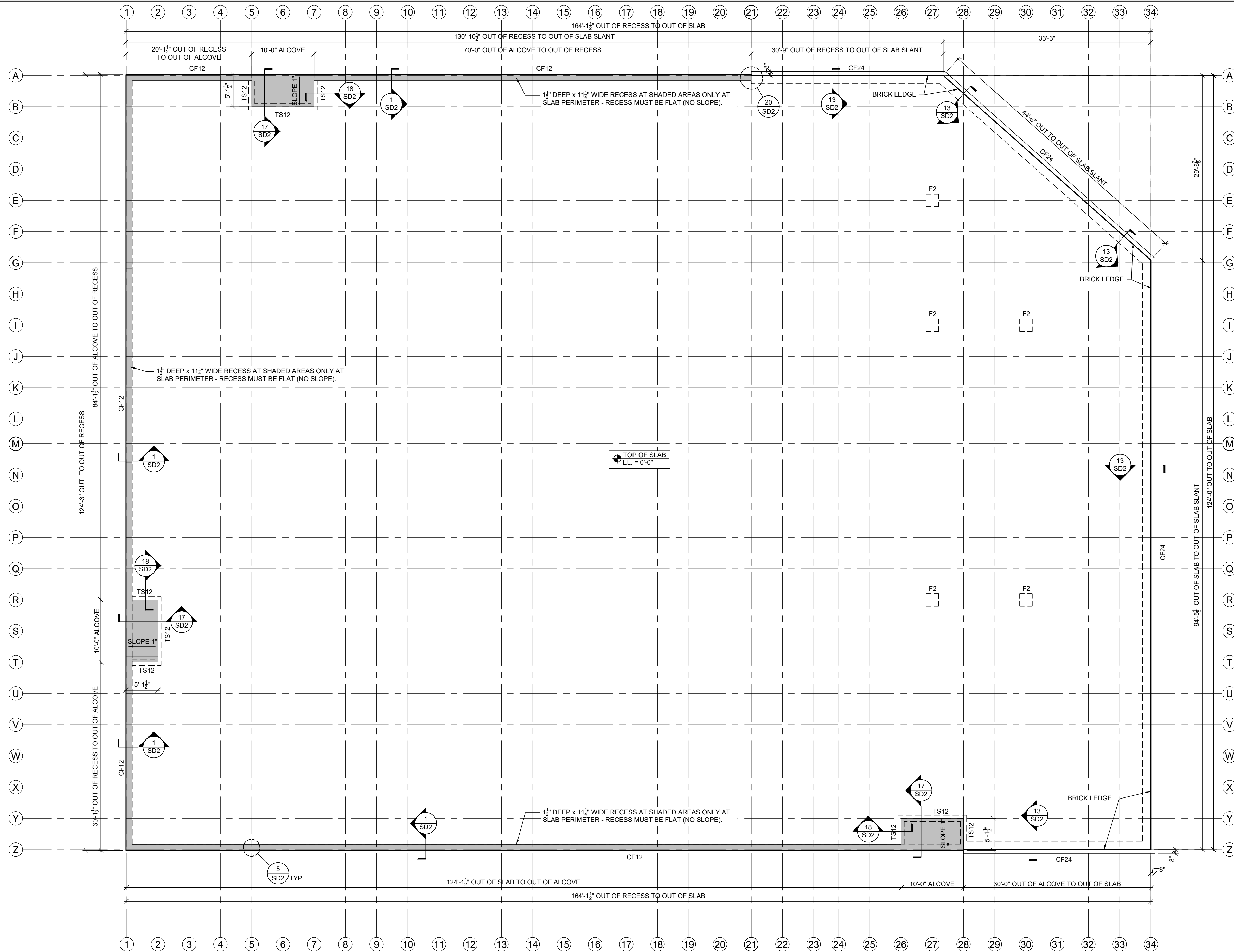


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PROJECT NO: NC22329  
DRAWING NUMBER: SD8.3  
SHEET TITLE: GUTTER AND SCULPTURED RAKE TRIM INSTALLATION





**FOUNDATION PLAN NOTES:**

- 4" CONCRETE SLAB WITH 6 x 6 W1.4 x W1.4 W.W.M. (UNO ON PLAN) PLACED ON 10 MIL VAPOR RETARDER. PROVIDE COMPACTED GRANULAR FILL BELOW SLAB IN ACCORDANCE WITH GEOTECHNICAL REPORT REQUIREMENTS.
- COORDINATE ALL SLAB ON GRADE DEPRESSIONS WITH ARCHITECTURAL DRAWINGS.
- COORDINATE ALL PLUMBING INVERTS AND LOCATIONS WITH PLUMBING AND SITE DRAWINGS.

**VAPOR RETARDER NOTES:**

- MINIMUM 10 MIL PLASTIC SHEET COMPLYING WITH ASTM E1745, CLASS A. INSTALL IN ACCORDANCE WITH ASTM E1643. LAP JOINTS MINIMUM 6". AND SEAL JOINTS, PERIMETER AND PENETRATIONS WITH MANUFACTURER'S RECOMMENDED MASTIC OR TAPE.

**FOOTING SCHEDULE:**

CF12 = CONTINUOUS FOOTING 1'-0" WIDE x 1'-4" MIN. DEEP WITH (2) EACH #4 BARS CONTINUOUS.

CF24 = CONTINUOUS FOOTING 2'-0" WIDE x 1'-0" MIN. DEEP WITH (3) EACH #5 BARS CONTINUOUS AND #5 CROSS BARS @ 12" O.C.

TS12 = THICKENED SLAB 1'-0" WIDE x 0'-8" DEEP WITH (2) EACH #4 BARS CONTINUOUS.

F2 = INTERIOR COLUMN FOOTING. 2'-0" x 2'-0" x 1'-0" DEEP. REF 7/SD2.

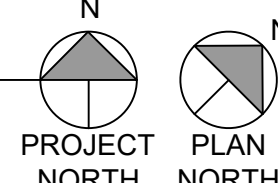
ZERO DATUM FOR ALL ELEVATIONS GIVEN ON STRUCTURAL DRAWING IS TOP OF FINISHED FLOOR. REFER TO CIVIL DRAWINGS FOR ACTUAL ELEVATION.

**NOTE:**

**FROST PROTECTION.** EXCEPT WHERE OTHERWISE PROTECTED FROM FROST, FOUNDATIONS AND OTHER PERMANENT SUPPORTS OF BUILDINGS AND STRUCTURES SHALL BE PROTECTED FROM FROST BY ONE OR MORE OF THE FOLLOWING METHODS:

- EXTENDING BELOW THE FROST LINE OF THE LOCALITY.
- CONSTRUCTING IN ACCORDANCE WITH ASCE 32.
- ERECTING ON SOLID ROCK.

1 FOUNDATION PLAN  
1/8" = 1'-0"



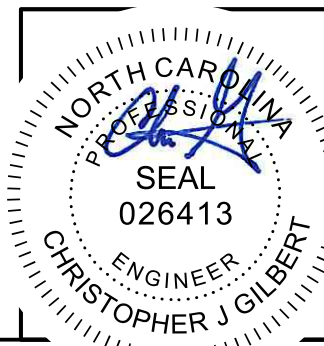
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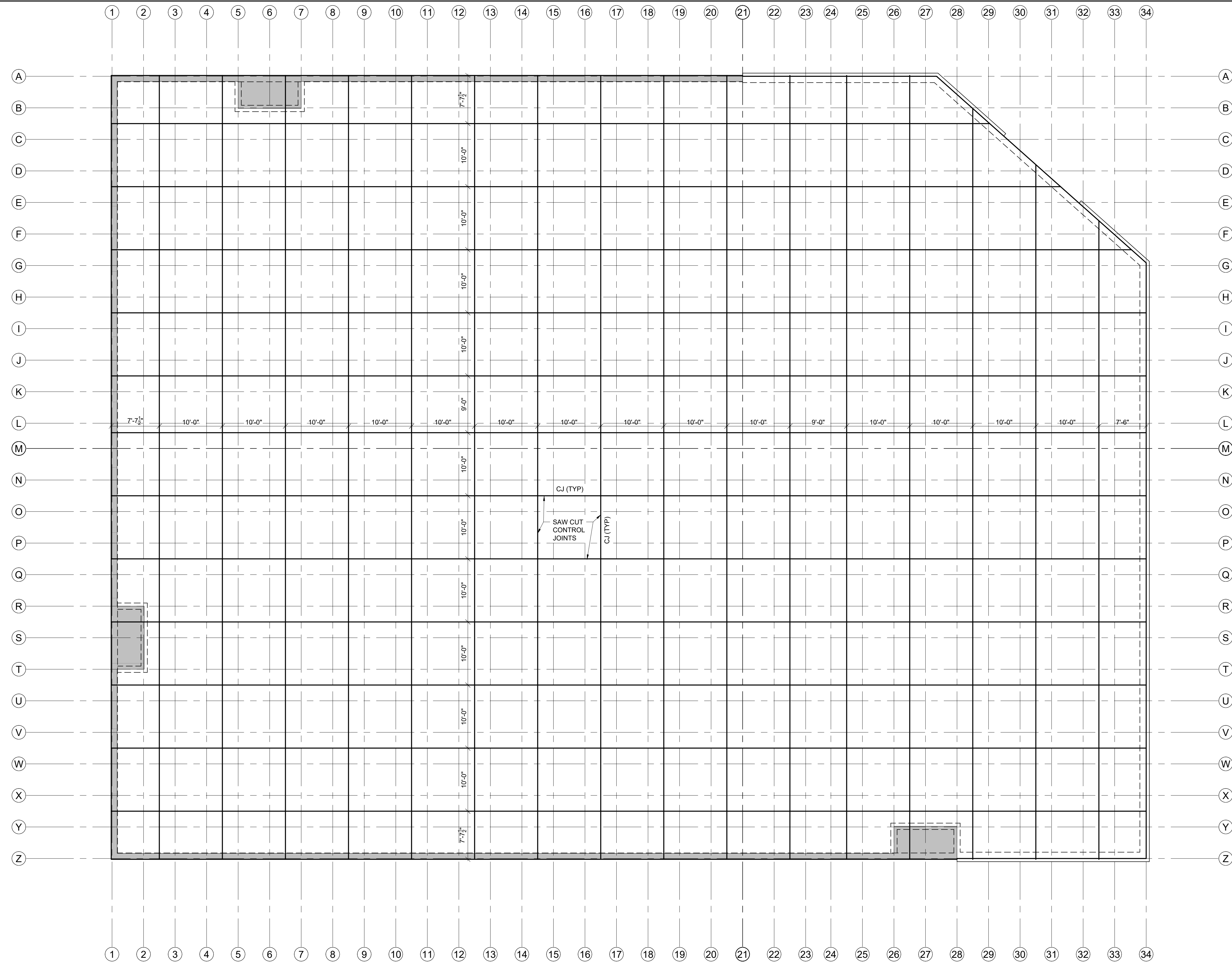
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SHEET TITLE:	FOUNDATION PLAN
PROJECT NO.:	NC22329
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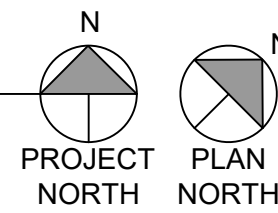




**NOTE TO OWNER / CONTRACTOR:**

- DO NOT CUT SAW JOINTS ALONG COLUMN LINES. DOING SO WILL REDUCE THE STRUCTURAL CAPACITY OF THE BUILDING ANCHORAGE TO THE CONCRETE AND MAY RESULT IN ADDITIONAL MATERIAL AND LABOR CHARGES. SAW CUTS MUST BE OFFSET 2'-6" MINIMUM FROM COLUMN LINES.
- WEDGE ANCHORS ARE PROVIDED BY BETCO. CAST-IN-PLACE EMBEDDED ANCHOR BOLTS IN SLAB PROVIDED BY BETCO AND INSTALLED BY OTHERS.
- SEE OWNER FOR BUILDING ORIENTATION ON SITE.
- OWNER AND/OR CONTRACTOR SHALL PLACE CONTROL JOINTS/EXPANSION JOINTS IN THE RETAINING WALLS AT THEIR DISCRETION. FOUNDATION RETAINING WALLS TYPICALLY DO NOT UTILIZE THEM DUE TO WATERPROOFING CONCERNS, AND SINCE THE BELOW GRADE WALLS ARE AT RELATIVELY CONSTANT TEMPERATURE AND MOISTURE CONDITIONS.

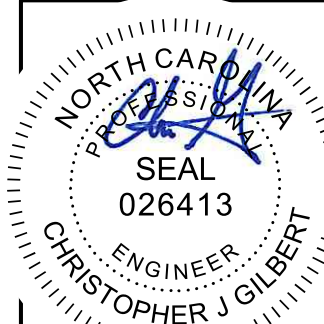
**1 SAW CUT PLAN**  
1/8" = 1'-0"



SAW CUT CONTROL JOINTS IN SLAB SURFACE AT APPROXIMATELY 10'-0" INTERVALS  
OFFSET CUTS 2'-6" MINIMUM FROM INTERIOR COLUMN LINES.

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SHEET TITLE:	SAW CUT PLAN
PROJECT NO.:	NC22329
DRAWING NUMBER:	F1.2



**LIFE SAFETY PLAN REQUIREMENTS:**

- ☒ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) – SEE NOTE 1
- ☒ ASSUMED AND REAL PROPERTY LINE LOCATIONS – SEE NOTE 2
- ☒ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) – SEE NOTE 3
- ☒ OCCUPANCY TYPES FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATION (TABLE 1004.1.2)
- ☒ OCCUPANT LOADS FOR EACH AREA
- ☒ EXIT ACCESS TRAVEL DISTANCES (1017)
- ☒ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
- ☒ DEAD END LENGTHS (1020.4) – SEE NOTE 4
- ☒ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
- ☒ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
- ☒ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
- ☒ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND/OR ROOF STRUCTURE IS PROVIDED FOR PURPOSES OF OCCUPANCY SEPARATION. SEE NOTE 5
- ☒ LOCATION OF DOORS WITH PANIC HARDWARE (1008.1.10) – SEE NOTE 6
- ☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1008.1.9.7) – SEE NOTE 7
- ☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1008.1.9.8) – SEE NOTE 7
- ☒ LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES – SEE NOTE 7
- ☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1029) – SEE NOTE 7
- ☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (902) – SEE NOTE 8
- ☒ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) – SEE NOTE 9
- ☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

**LIFE SAFETY PLAN NOTES:**

1. SEE LEGEND FOR RATED WALLS.
2. ALL ASSUMED AND REAL PROPERTY LINES  $\geq 20'$
3. ASSUMED PROPERTY LINES = 19'; UNLIMITED; 705.8.1 EXC. 2
4. NO DEAD ENDS
5. NO RATING REQUIRED FOR THIS STRUCTURE.
6. PANIC HARDWARE NOT REQUIRED.
7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS
8. FIRE AREAS DO NOT EXCEED CODE ALLOWANCE
9. BUILDING MEETS CODE REQUIREMENTS WITHOUT SUBDIVISION INTO SMOKE COMPARTMENTS; NO SMOKE COMPARTMENTS

**EXIT REQUIREMENTS:  
NUMBER AND ARRANGEMENTS OF EXITS**

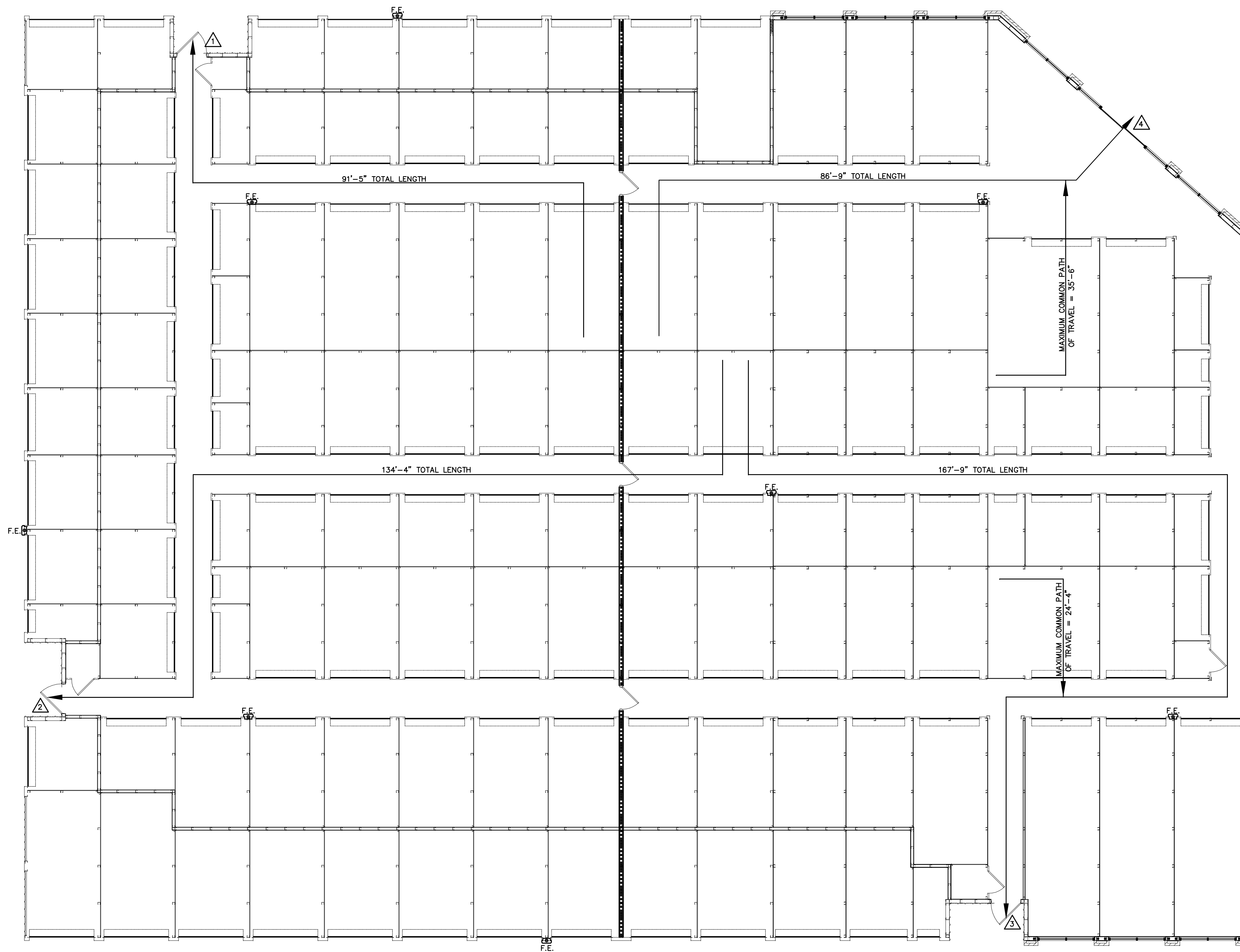
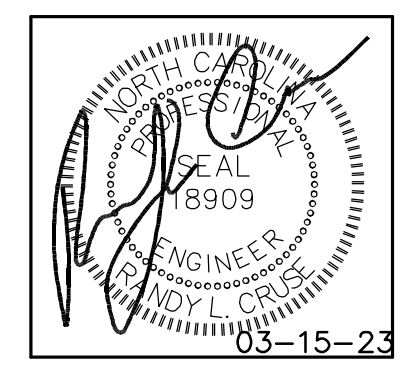
FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM <sup>2</sup> NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS <sup>1,3</sup> (SECTION 1016-1021)	
	REQ'D.	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
S-1	2	4	200'	167'-9"	102'-10"	157'-6"

1. CORRIDOR DEAD ENDS (SECTION 1020.4)
2. BUILDINGS W/SINGLE EXITS (TABLE 1006.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

**EXIT WIDTH**

USE GROUP OR SPACE DESCRIPTION	EXIT WIDTH (in)					
	(a) AREA <sup>1</sup> SQ. FT.	(b) AREA <sup>1</sup> PER OCCUPANT (TABLE 1004.1.2)	(c) CALCULATED OCCUPANT LOAD (a/b)	EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)	REQUIRED WIDTH (SECTION 1005.1) (a/b) x c	ACTUAL WIDTH SHOWN ON PLANS
S-1 LESS 3,800	15,900	500 GROSS	32	N/A	.2	N/A
NON-CONDITIONED						
TOTAL	19,700					

1. SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE. SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002, DEFINED IN CHAPTER 2)
2. MINIMUM STAIRWAY WIDTH (SECTION 1011.2); MIN. CORRIDOR WIDTH (SECTION 1020.2); MIN. DOOR WIDTH (SECTION 1010.1.1)
3. MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024)
4. SEE SECTION 1005.6 FOR CONVERGING EXITS.
5. THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.5)
6. ASSEMBLY OCCUPANCIES (SECTION 1029)



MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.1)

- ▲ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 8 PEOPLE  
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.
- ▲ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 8 PEOPLE  
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- ▲ 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 8 PERSON  
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM CAPACITY OF EXIT.

**REVISION 1**  
ADDED 3 HR RATED WALL  
FIRE DAMPERS AND TRANSFER  
GRILLES

**PLANS FOR:**  
**UNIVERSITY STORAGE**  
**HWY 421**  
**ERWIN, NORTH CAROLINA**

REVISIONS	
NO.	DATE
1	03-15-23

**Cruse And Associates, P.A.**  
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 Durham, North Carolina 28334  
 P.O. Box 1429  
 P.E.: (919) 892-4429  
 F.A.S.: (919) 892-5162  
 LICENSE NO.: C-1721

**NOTE:**  
AREA/ROOM/SPACE DESIGNATIONS USED ON LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE SAFETY PLAN ONLY, AND ARE NOT INDICATIVE OF ANY ACTUAL SPACE DESIGNATIONS USED ELSEWHERE.

**LEGEND**  
 F.E. FIRE EXTINGUISHER AND CABINET CLASS ABC 10 POUNDS

**NOTE:** EXIT REQUIREMENTS CALCULATED ONLY FOR CONDITIONED AREAS. ALL OTHER AREAS HAVE DIRECT EXIT TO EXTERIOR.

**LIFE SAFETY PLAN BUILDING "1"**  
 SCALE: 1/8" = 1'-0"

**LEGEND**  
 ..... 3 HOUR FIRE BARRIER WALL (U419)

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 JOB NO. 22-15

SHEET NO.  
**LS-1 OF 1**







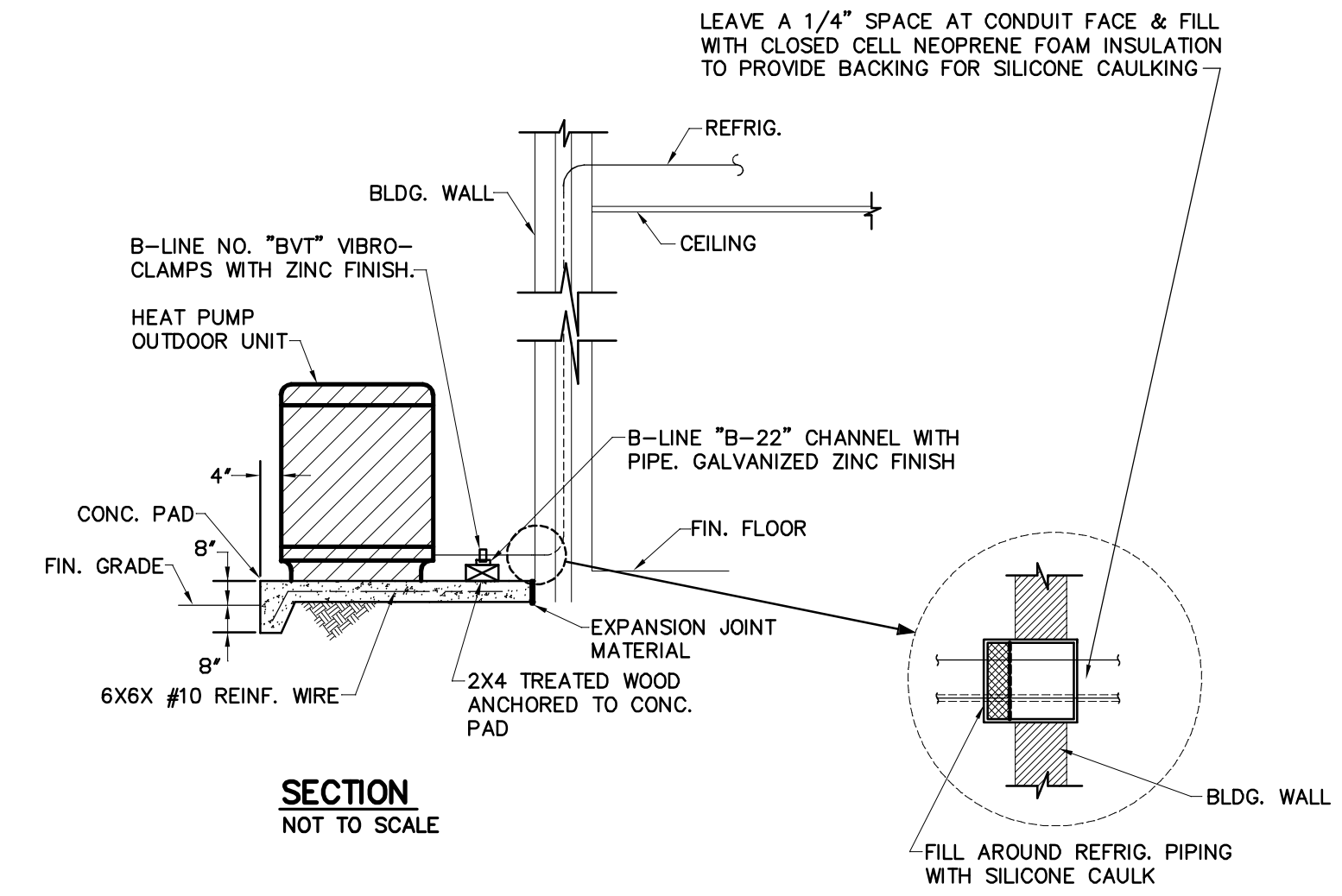
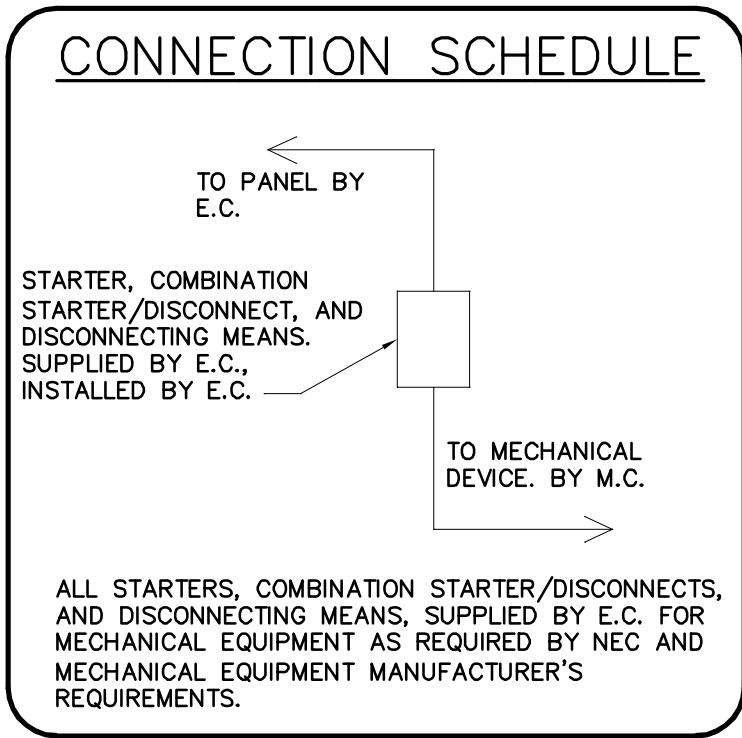
AIR HANDLER UNIT																		
AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	OUTSIDE AIR (CFM)	CFM	UNIT FLA	REF LINES		SEER	HTR KW (240)	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		HSPF	MIN. CIRC. AMPACITY	M.O.C.P.
								GAS	LIQ.			TOTAL	SENS.	HIGH	LOW			
AHU-1,2	TRANE	TEM4AOC49M41	240/1/60	.46	-	1400	32.0	7/8	3/8	15.5	7.68	42.0	31.8	38.7	25.1	9.0	48	50
AHU-3,4	TRANE	TEM4AOC61M51	240/1/60	.46	-	2000	32.0	1-1/8	3/8	14.5	7.68	56.8	42.8	54.9	36.2	8.5	48	50

\*\* PROVIDE OUTDOOR THERMOSTAT TO LOCK OUT SUPPLEMENTAL ELECTRIC HEAT AT OUTDOOR TEMPERATURES ABOVE 40F.

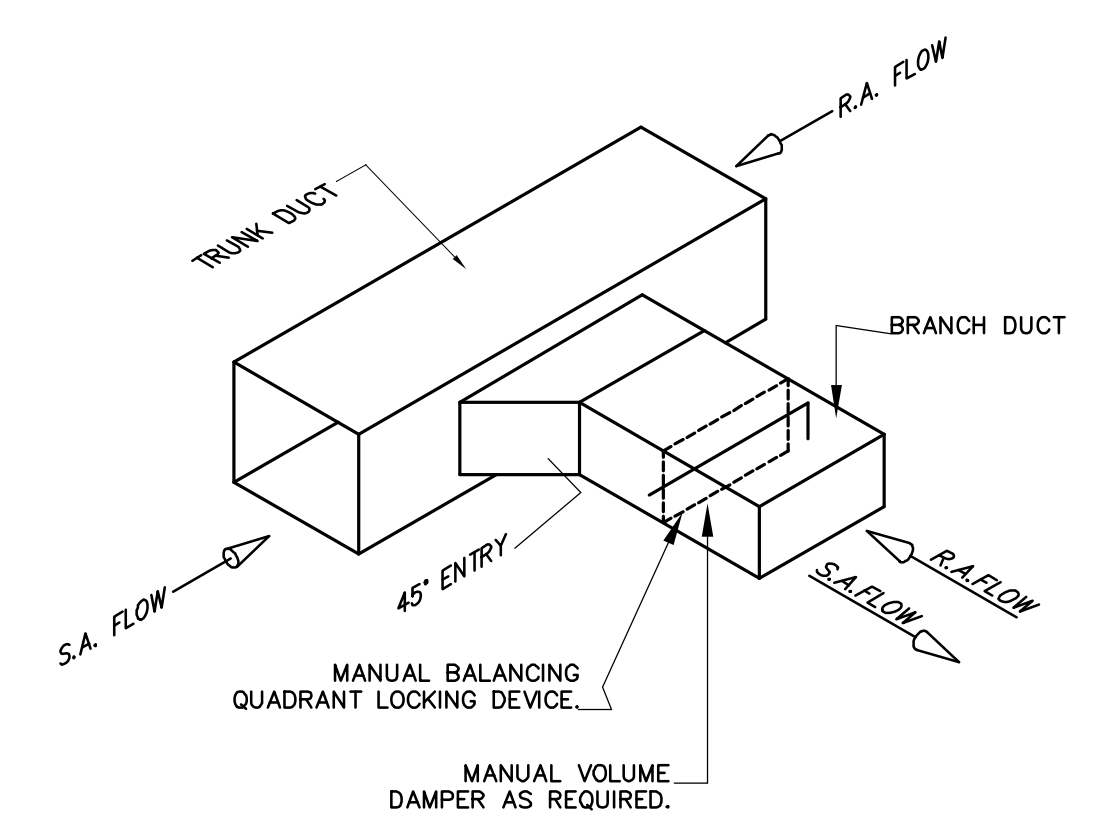
SPLIT SYSTEM HEAT PUMP UNITS									
MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.	ACCESSORIES	
HP-1,2	TRANE	4TWR5042H1000A	240/1/60	1	22	35	17.7	EXCLUDE 8,18	
HP-3,4	TRANE	4TWR5060H1000A	240/1/60	1	32	50	26.5	EXCLUDE 8,18	

ACCESSORIES

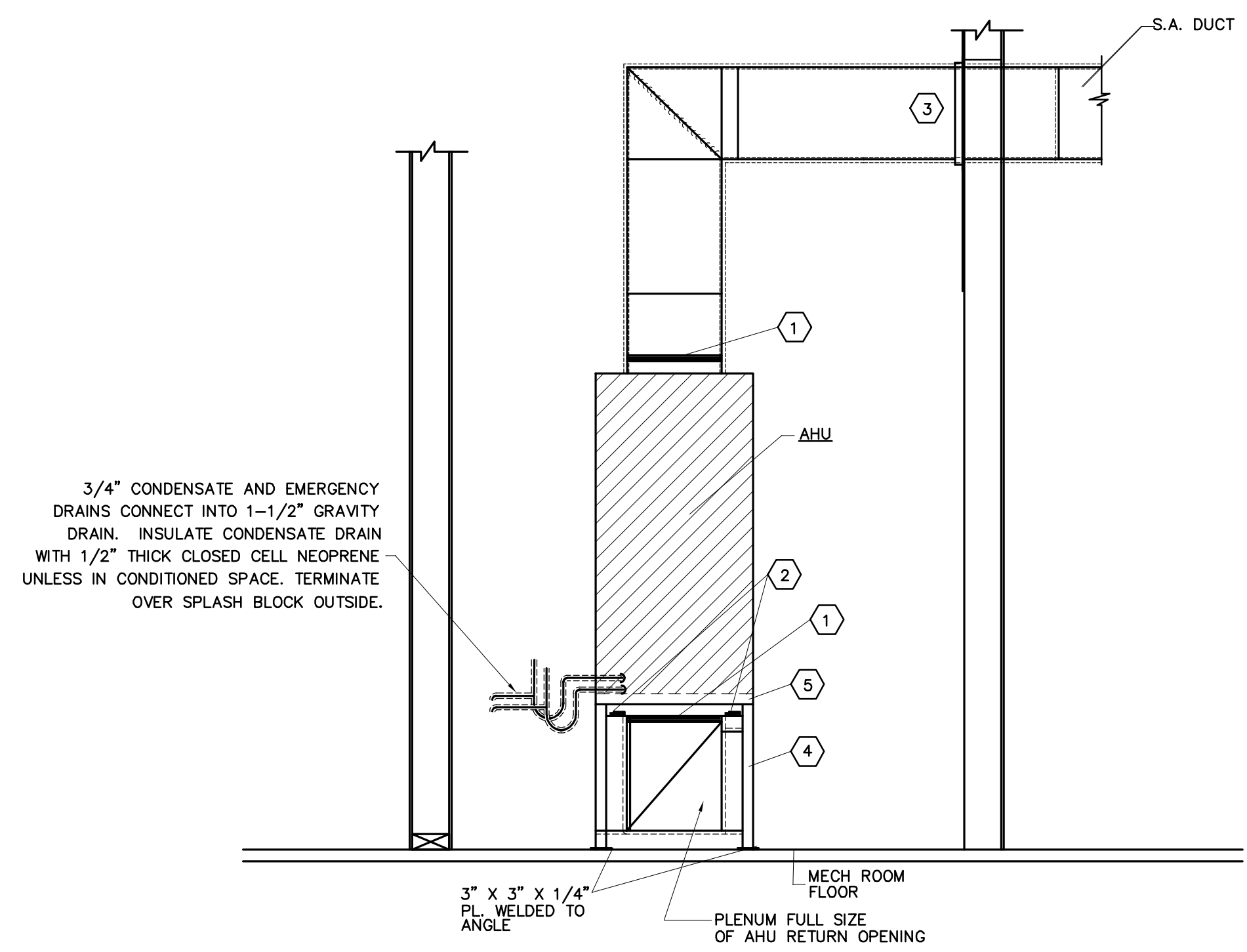
- |                               |  |  |
|-------------------------------|--|--|
| 1 TIME-DELAY RELAY            | 7 LIQUID SOLENOID VALVE                                  | 13 DISCHARGE LINE MUFFLER                  |
| 2 CYCLE PROTECTOR             | 8 LOW-AMBIENT CONTROLLER                                 | 14 SUCTION AND LIQUID LINE SHUT OFF VALVES |
| 3 EVAPORATOR FREEZE PROTECTOR | 9 FILTER DRIER (LIQUID LINE)                             | 15 THERMOSTAT (SEE NOTE)                   |
| 4 ISOLATION RELAY             | 10 OUTDOOR T-STAT TO LOCK OUT AUX. HT. (SET @ 40° F ADJ) | 16 SUPPORT FEET                            |
| 5 TXV                         | 11 LOW PRESSURE CONTROL                                  | 17 COIL GUARDS                             |
| 6 HIGH PRESSURE SWITCH        | 12 CRANKCASE HEATER                                      | 18 HUMIDISTAT                              |
- COOLING CAPACITY @ 80 DEG. F DB/67 DEG WB AIR ENTERING INDOOR UNIT & 95 DEG. F DB AIR ENTERING OUTDOOR UNIT  
HEATING CAPACITY: HIGH TEMP = 70 DEG F DB INDOOR EAT & 47 DEG F DB/43 DEG F WB AIR ENTERING OUTDOOR UNIT  
LOW TEMP = 70 DEG F DB INDOOR EAT & 17 DEG F DB/15 DEG F WB ENTERING OUTDOOR UNIT
- T-STAT: THE NUMBER OF STAGES OF HEATING/COOLING SHALL MATCH THE NUMBER OF STAGES OF HEAT AVAILABLE IN THE HPIU OR THE NUMBER OF STAGES OF COOLING AVAILABLE IN THE HPOU. PROVIDE WITH T-STAT; 7 DAY PROGRAMMABLE, DIGITAL.



**DETAIL-TYPICAL HEAT PUMP OUTDOOR UNIT**  
NOT TO SCALE



**BRANCH DUCT TAKE-OFF DETAIL**  
NOT TO SCALE



**TYPICAL DETAIL AT FLOOR MOUNTED AHU**  
NOT TO SCALE

- NOTES:**
- |  |                     |
|--|---------------------|
| 1 FLEXIBLE CONNECTION  | 5 1" PLEATED FILTER |
| 2 NEOPRENE-IN-SHEAR VIBRATION ISOLATORS  | 6 NOTE DELETED      |
| 3 SHEET METAL COLLAR AT WALL PENETRATION   |                     |
| 4 1-1/2" X 1-1/2" X 3/16" ANGLE HPIU SUPPORT STAND WITH ALL WELDED CONSTRUCTION. PAINT WITH 1 COAT OF PRIMER AND FINISH WITH (2) COATS GRAY HIGH GLOSS MACHINE ENAMEL, MARTIN SENOIR OR EQUAL. |                     |
- PROVIDE PROGRAMMABLE THERMOSTAT FOR EACH SYSTEM.

- MECHANICAL NOTES (GENERAL)**
- DUCTWORK LAYOUTS ARE SCHEMATIC. ALL RISES, DROPS, OFFSETS, AND TRANSITIONS REQUIRED BUT ARE NOT SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
  - DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH SMACNA STANDARDS FOR LOW VELOCITY DUCTWORK. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE RUNOUTS SHALL NOT EXCEED 15' AND SHALL NOT BE USED TO FORM ELBOWS. CONNECTIONS FROM RECTANGULAR TO ROUND DUCT SHALL BE MADE WITH MANUFACTURED 45 DEG. LATERAL TAPS.
  - ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
  - ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS, UNLESS NOTED OTHERWISE. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL TURNING VANES. DUCT SIZES SHOWN ARE NET INTERIOR DIMENSIONS.
  - THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
  - THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
  - IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE AND INTENT MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE THE ENGINEER SCALED DRAWINGS OF ALL MECHANICAL DRAWINGS.
  - ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
  - PROVIDE FACTORY OR FIELD INSTALLED DRAIN PANS UNDER ALL COOLING COIL UNITS. INSTALL DRAIN PAN FLOAT TO SHUT DOWN UNIT FAN IN EVENT THAT CONDENSATE BEGINS TO FILL EMERGENCY DRAIN PAN. RUN ALL CONDENSATE DRAIN LINES TO APPROPRIATE DRAIN.

**METHOD OF COMPLIANCE:**  
PRESCRIPTIVE  ENERGY COST BUDGET

**THERMAL ZONE 4A - HARNETT COUNTY, NC**

**EXTERIOR DESIGN CONDITIONS**  
WINTER DRY BULB 16 DEG. F.  
SUMMER DRY BULB 93 DEG. F.

**INTERIOR DESIGN CONDITIONS**  
WINTER DRY BULB 59 DEG. F.  
SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

**BUILDING HEATING LOAD** 98 MBH

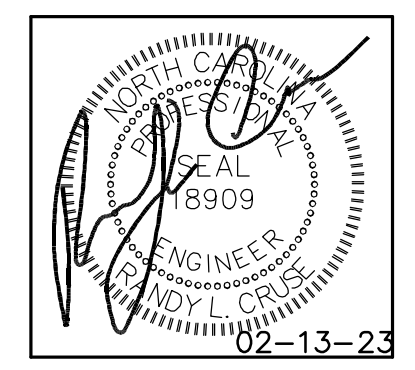
**BUILDING COOLING LOAD** 17 TONS

**MECHANICAL SPACE CONDITIONING SYSTEM**

UNITARY	DESCRIPTION OF UNIT - HEAT PUMP
	HEATING EFFICIENCY - 8.5 HSPF
	COOLING EFFICIENCY - 14.5 SEER
	SIZE CATEGORY OF UNIT - <65K

BOILER—NOT APPLICABLE IN THIS PROJECT  
CHILLER—NOT APPLICABLE IN THIS PROJECT

**LIST EQUIPMENT EFFICIENCIES**



PLANS FOR:  
**UNIVERSITY STORAGE**  
HWY 421  
ERWIN, NORTH CAROLINA

**REVISIONS**

NO.	DESCRIPTION

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