

GENERAL STRUCTURAL NOTES

1. 2018 International Building Code Design Criteria (ASCE 7-16)

- A. Roof Dead Load 5 psf
- B. Roof Live Load 20 psf
- C. Roof Snow Load Data
 - Ground Snow Load P_g 57.0 psf
 - Flat-Roof Snow Load P_f 57.5 psf
 - Slope Factor C_s 1.0
 - Exposure Factor C_e 1.0
 - Importance Factor I_s 1.2
 - Thermal Factor C_t 1.2
- D. Rainfall Intensity 1.5 Inches Per Hour
- E. Wind Design Data
 - Basic Design Wind Speed V 115 mph
 - Nominal Design Wind Speed V_{nd} 89 mph
 - Risk Category IV
 - Exposure C
- F. Component & Cladding 49.0 psf Roof 39.1 psf Wall
- G. Earthquake Design Data
 - Risk Category IV
 - Importance Factor I_e 1.5
 - Mapped Spectral Parameters
 - S_s 1.250g
 - S_1 0.500g
 - Site Class D (Default)
 - Design Spectral Parameters
 - S_{ps} 0.833g
 - S_{p1} 0.533g
 - Seismic Design Category D
 - Seismic Force Resisting System Steel ordinary moment frames
 - Seismic Response Coefficient C_s 0.357
 - Response Modification Factor R 3.5
 - Analysis Procedure Equivalent Lateral Force Procedure
- H. Frost Depth As Required Per Local Requirements

2. Structural Steel

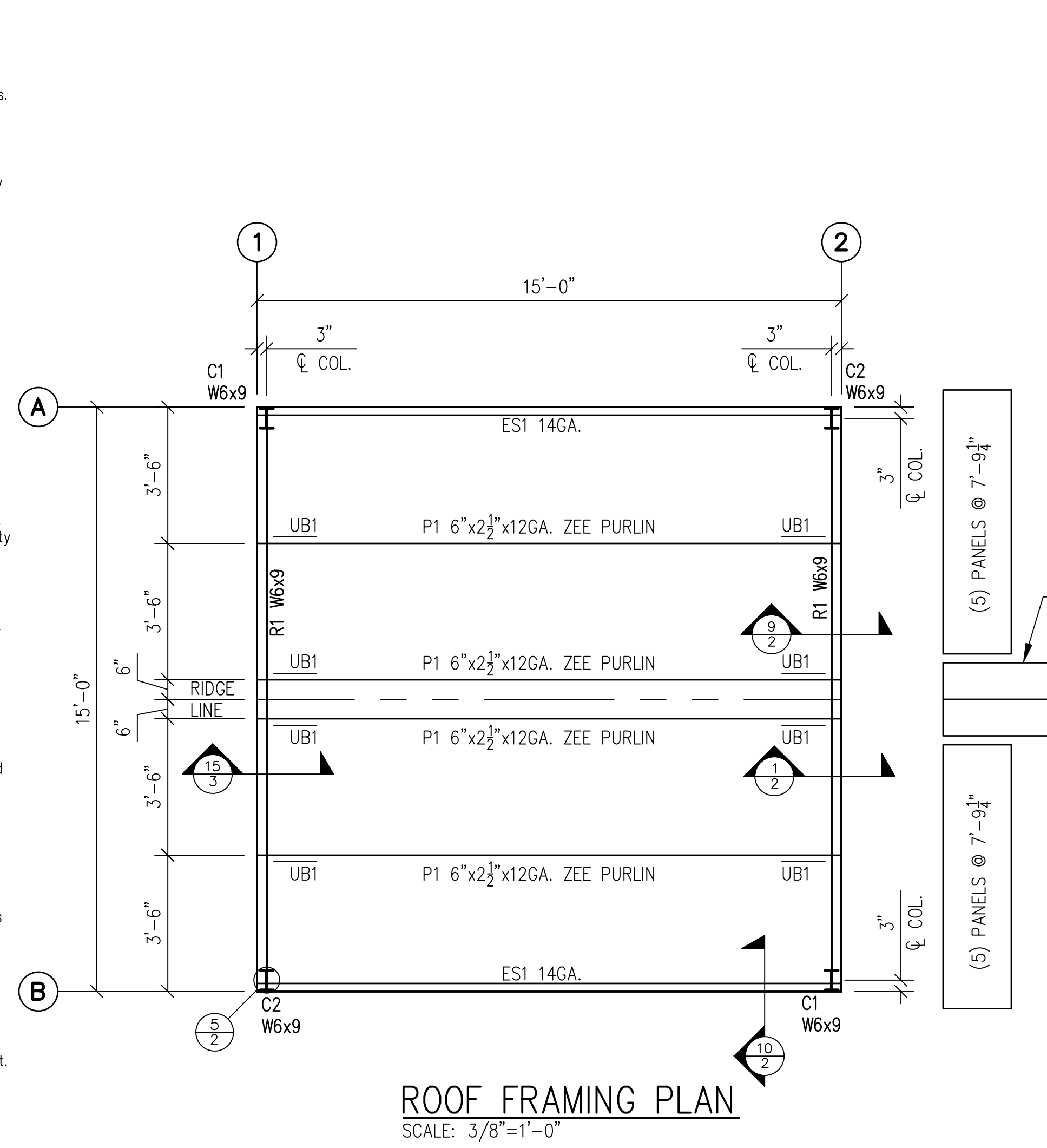
- A. Material:
 - i. Angles, Plates, and Channels: ASTM A36 ($F_y = 36$ k.s.i.)
 - ii. Wide Flanges: ASTM A992 ($F_y = 50$ k.s.i.)
 - iii. Tubes (HSS): ASTM A500, Grade B ($F_y = 46$ k.s.i.)
 - iv. Pipes: ASTM A53, Grade B ($F_y = 35$ k.s.i.)
- B. Fabrication and construction shall comply with the latest edition of the following Codes and Standards:
 - i. American Institute of Steel Construction (AISC) "Specification for Structural Steel Buildings." (360-10)
 - ii. AISC "Seismic Provisions for Structural Steel Buildings," including supplement No. 1 (341-10)
 - iii. AISC "Code of Standard Practice."
 - iv. RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts."
 - v. Steel Joist Institute (SJI), "Standard Specifications and Code of Standard Practice."
 - vi. American Welding Society (AWS), Structural Welding Code (specific items do not apply when they conflict with the AISC requirements).
 - vii. American Iron and Steel Institute (AISI), "Specification for the Design of Cold-Formed Steel Structural Members."
- C. Welding:
 - i. Certification of Welders: All shop and field welding shall be executed by AWS certified welders. Certification shall be considered current if dated within the past 12 months. Welders will be considered certified if they have been certified by AWS and their work records are current within every six month period thereafter as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the inspector prior to beginning work.
 - ii. Electrodes: E-70XX or as noted otherwise. E-60XX may be used for welding steel floor and roof decks.
 - iii. Minimum Welds: All intersecting steel shapes which are not bolted shall be connected by a fillet weld all around, unless noted otherwise.
 - iv. Welded reinforcing bars shall be ASTM A706 Grade 60.
- D. Bolted Connections:
 - i. Use ASTM A325N bolts for hot-rolled steel to steel (e.g. girder to column, rafter to column/cap plate, beam to beam, etc.) connections unless noted otherwise in the drawings. All connections shall conform to the RCSC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".
 - ii. A325 bolts shall be pretensioned using an acceptable method such as "Turn of the Nut" as per the RCSC Specification Section 8.2 at all 8-bolt wide flange to wide flange ridge and haunch connections only.
 - iii. All other A325 bolts shall be fully tightened to the "Snug Tight" condition in accordance with the RCSC Specification Section 8.1.
- E. Provide full height web stiffener plates to each side of all beams bearing on top of columns. Plate thickness shall match the thickness of the beam web except that the thickness need not exceed 1/4" unless noted otherwise on drawings.
- F. All structural steel, except plates embedded in concrete or masonry, to have one coat (min.) of gray shop primer, 1.5 mil minimum thickness.
- G. Cold Formed Girts & Purlins:
 - i. All cold formed cees, zees, and eave struts shall be MBCI standard or equal.
 - ii. All girt and purlin connection bolts shall be GR-5 or equal.
- H. Use 26 gage roof and wall panels with trims as required.
- J. Flange braces as shown by marks UB and FB to be 2"x2"x3/16" angle.
- K. Steel Stairs, Handrails, and Guardrails
 - i. Design of steel stairs, handrails, and guardrails is not by Mountain View Engineering.
 - ii. All stairs, handrails, and guardrails shall comply with the requirements of the 2015 IBC unless noted otherwise in the project specifications.
 - iii. The fabricator shall be responsible for the design and certification of all steel stairs, handrails, and guardrails, including member sizes and connection details.
 - iv. See the architectural plans for all stair information including, but not limited to, stair layout, dimensions, and style.

3. Miscellaneous

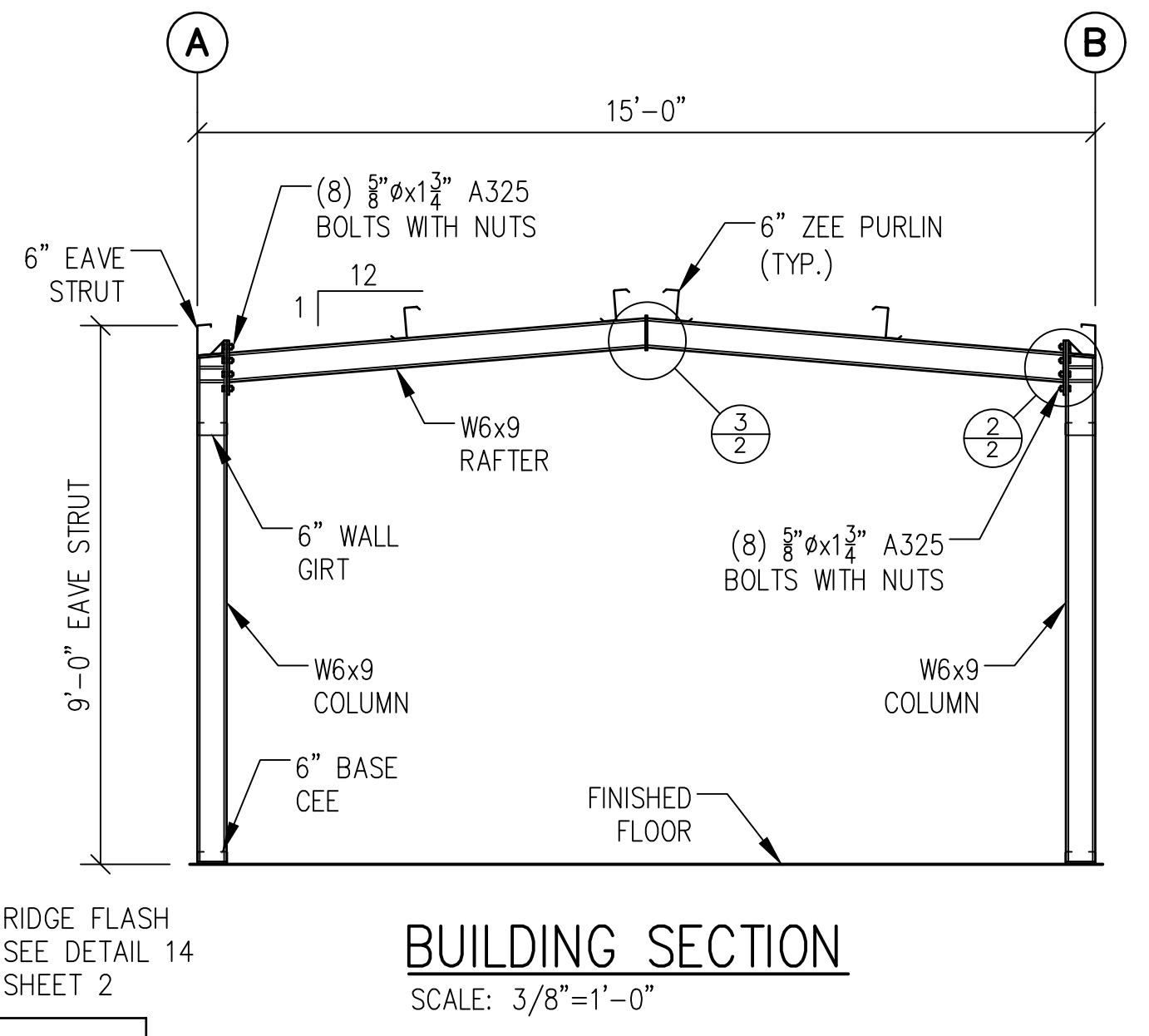
- A. The project specifications are not superseded by the General Structural Notes. Notes and details on the drawings shall take precedence over General Structural Notes and typical details. Should any of the detailed instructions shown on the plans conflict with the General Structural Notes, or with each other, the strictest provisions shall govern.
- B. It is solely the responsibility of each contractor to follow all applicable safety codes and regulations during all phases of construction. The engineer is not engaged in, and does not supervise, construction.
- C. Erection, Shoring, and Bracing
 - i. It is the contractor's responsibility to determine erection procedures and sequence, and to ensure the stability of the building and its component parts during erection.
 - ii. It is solely the contractor's responsibility to provide any temporary shoring, bracing, guys, and tie downs that may be necessary to provide adequate vertical and lateral support. Such material is not shown on the drawings. Shoring and bracing shall remain in place until all permanent members are in place and all final connections are completed, including all roof and floor attachments.
 - iii. The building shall not be considered stable until all connections are complete.
 - iv. The engineer has no expertise in, and takes no responsibility for, construction means and methods or job site safety during construction. Approval of submittals made by the contractor which may contain information related to construction methods or safety issues, or participation in meetings where such issues might be discussed, shall not be construed as voluntary assumption by the engineer of any responsibility for safety procedures.
- D. Equipment framing loads, openings, and structure in any way related to mechanical, plumbing, or electrical requirements are shown for bidding purposes only. The contractor shall coordinate this information with the involved trades before proceeding with such portion of the work. Excess cost related to variation in these requirements shall be borne by the appropriate contractor.
- E. The contractor shall notify engineer of any variations in dimensions.
- F. The engineer is not responsible for any deviations from these plans unless such changes are authorized in writing by the engineer.

4. Special Inspections

- A. Special inspections, as required by Section 1705 of the IBC, shall be provided by an independent agency employed by the owner unless waived by the building official. The contractor shall coordinate and cooperate with the required inspections. Items requiring special inspection are:
 - i. Steel Construction (AISC 360-16 Chapter N)
 - a. Field welding (if any is used).
 - b. High-strength bolts (if any are used).
 - ii. Concrete Construction (IBC 1705.3)
 - a. Special inspections of concrete footings, grade beams, walls, and slabs are not required as per Exceptions 1, 2, 3, 3, 4, & 5 to IBC Section 1705.3. Third party special inspection of reinforcing placement need only be performed where specifically required by the building official.
 - b. Special inspection of anchor rods/bolts is required per IBC Table 1705.3. Special inspection may be waived subject to the approval of the building official.
 - c. Special inspection of rebar welding is required (if any is used).
- B. Special inspector must be qualified and approved by local building department.



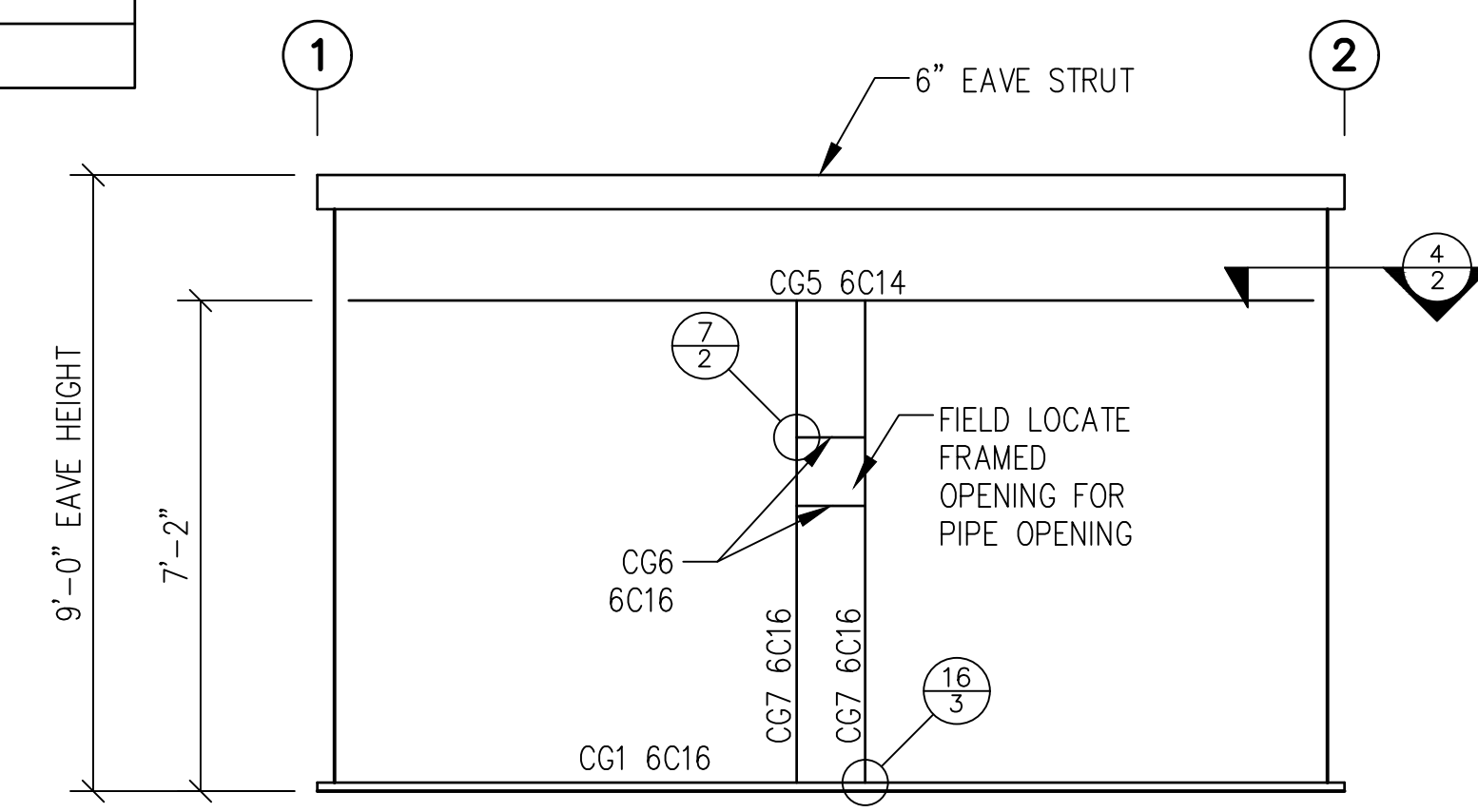
ROOF FRAMING PLAN
SCALE: 3/8"=1'-0"



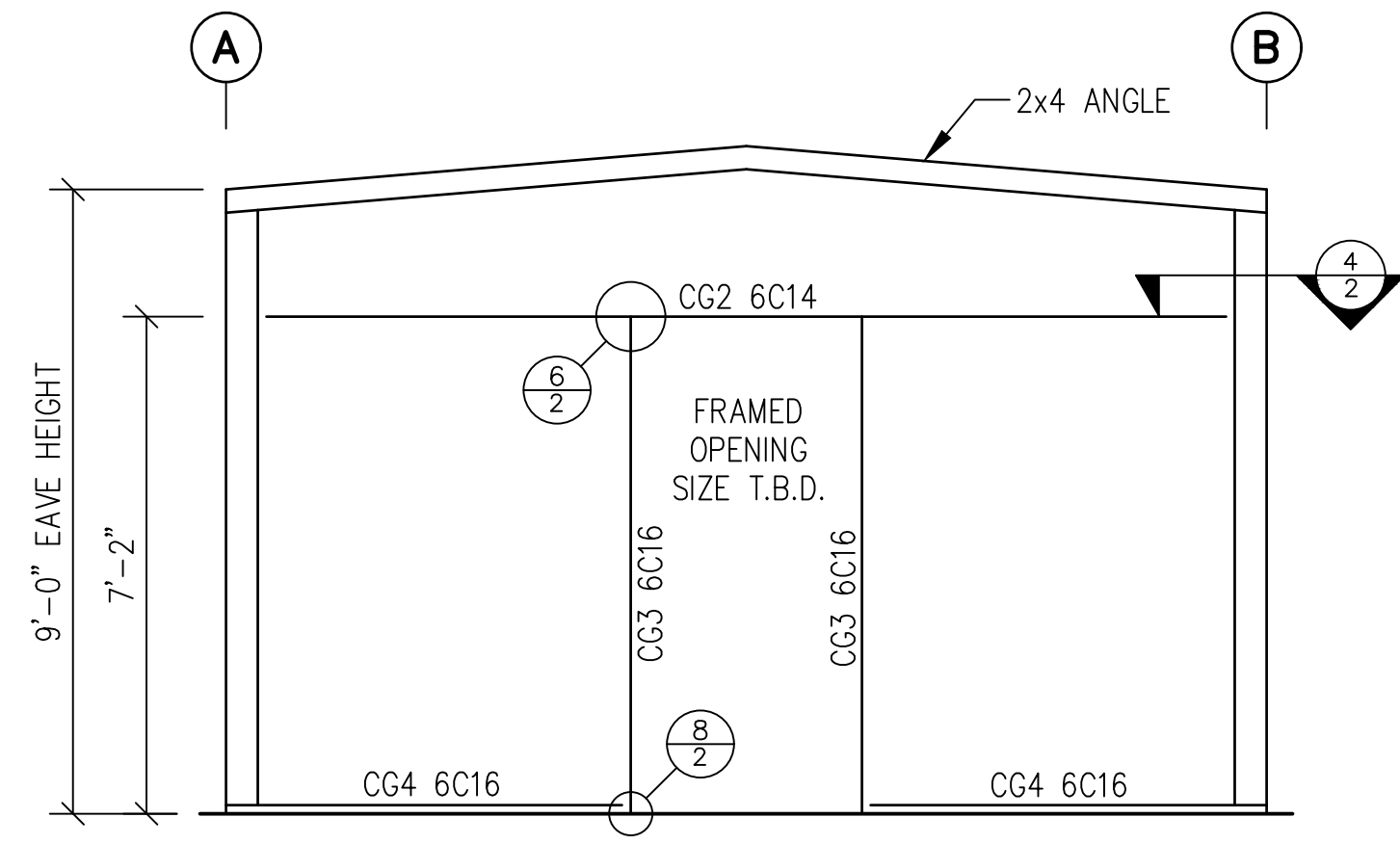
BUILDING SECTION
SCALE: 3/8"=1'-0"

PAIN COLOR FOR ROOF, WALLS AND TRIMS WILL BE MBCI SADDLE TAN.

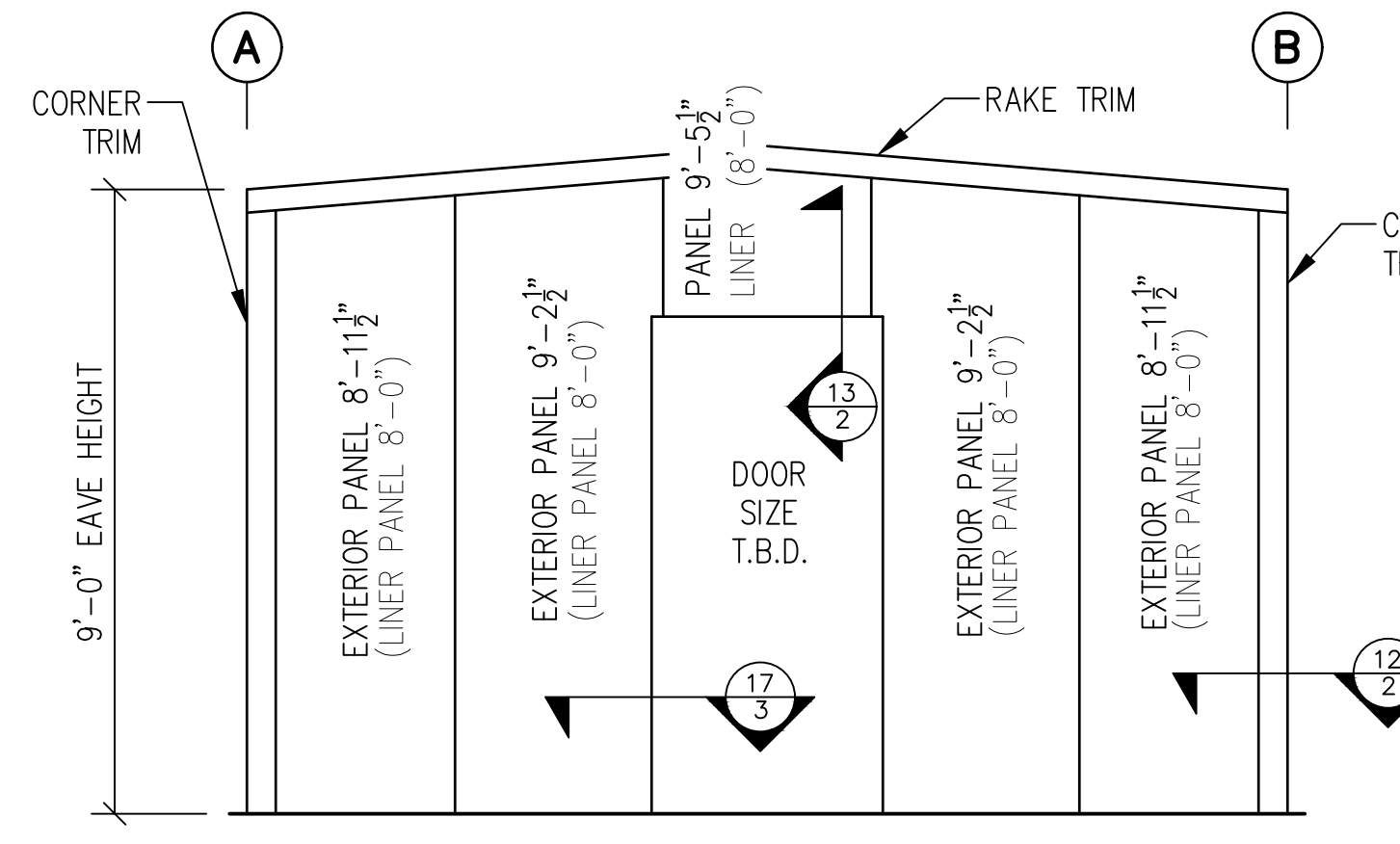
NOTES:
1: GRID LINES ARE AT STEEL LINE.
2: OUTSIDE OF CONCRETE IS 1 1/2" OUT FROM STEEL LINE.



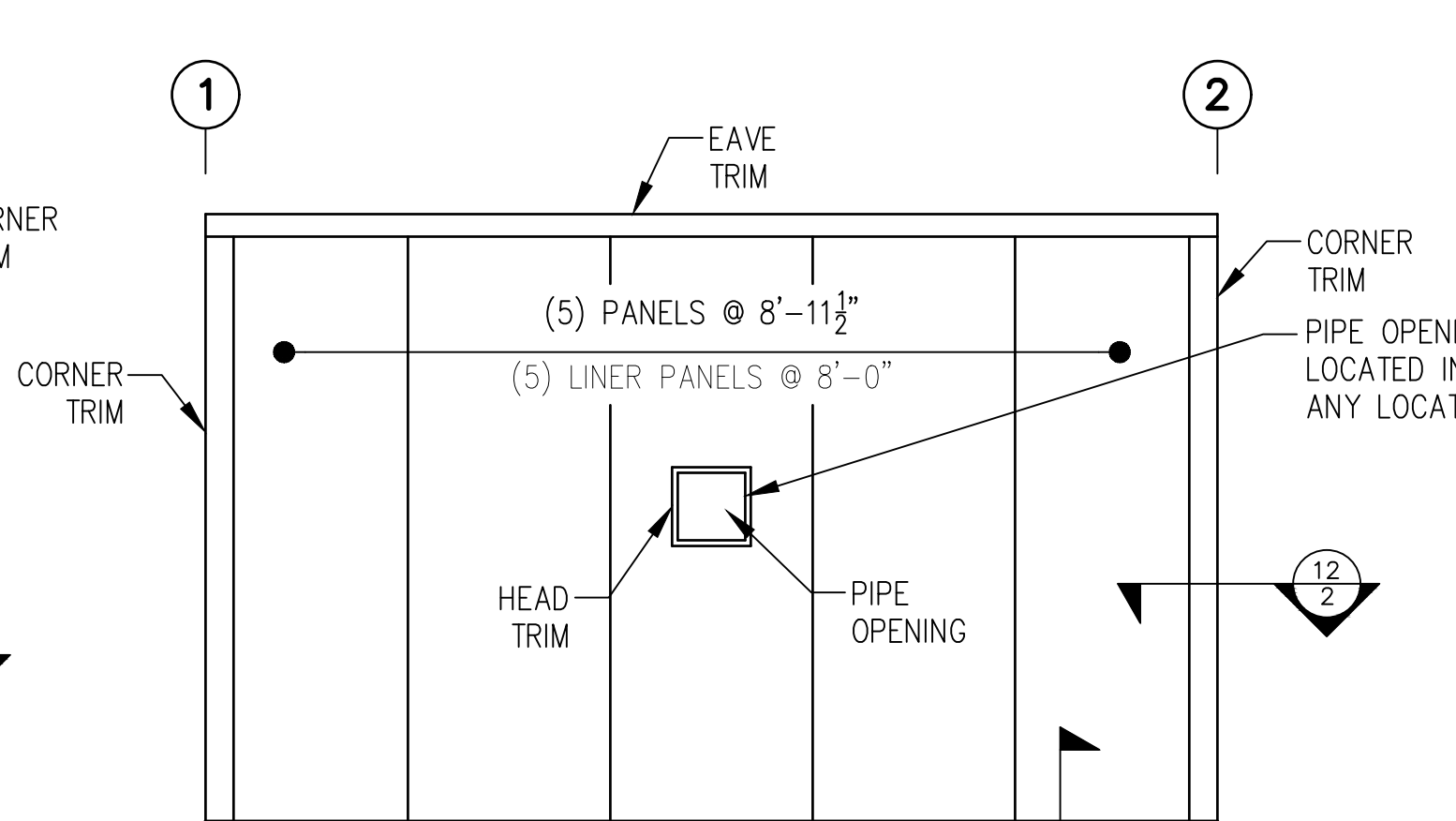
FRAMING AT LINE A AND B
SCALE: 3/8"=1'-0"



FRAMING AT LINES 1 AND 2
SCALE: 3/8"=1'-0"



SHEETING AT LINES 1 AND 2
SCALE: 3/8"=1'-0"



SHEETING AT LINES A AND B
SCALE: 3/8"=1'-0"



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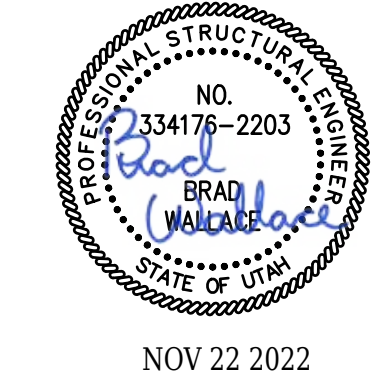
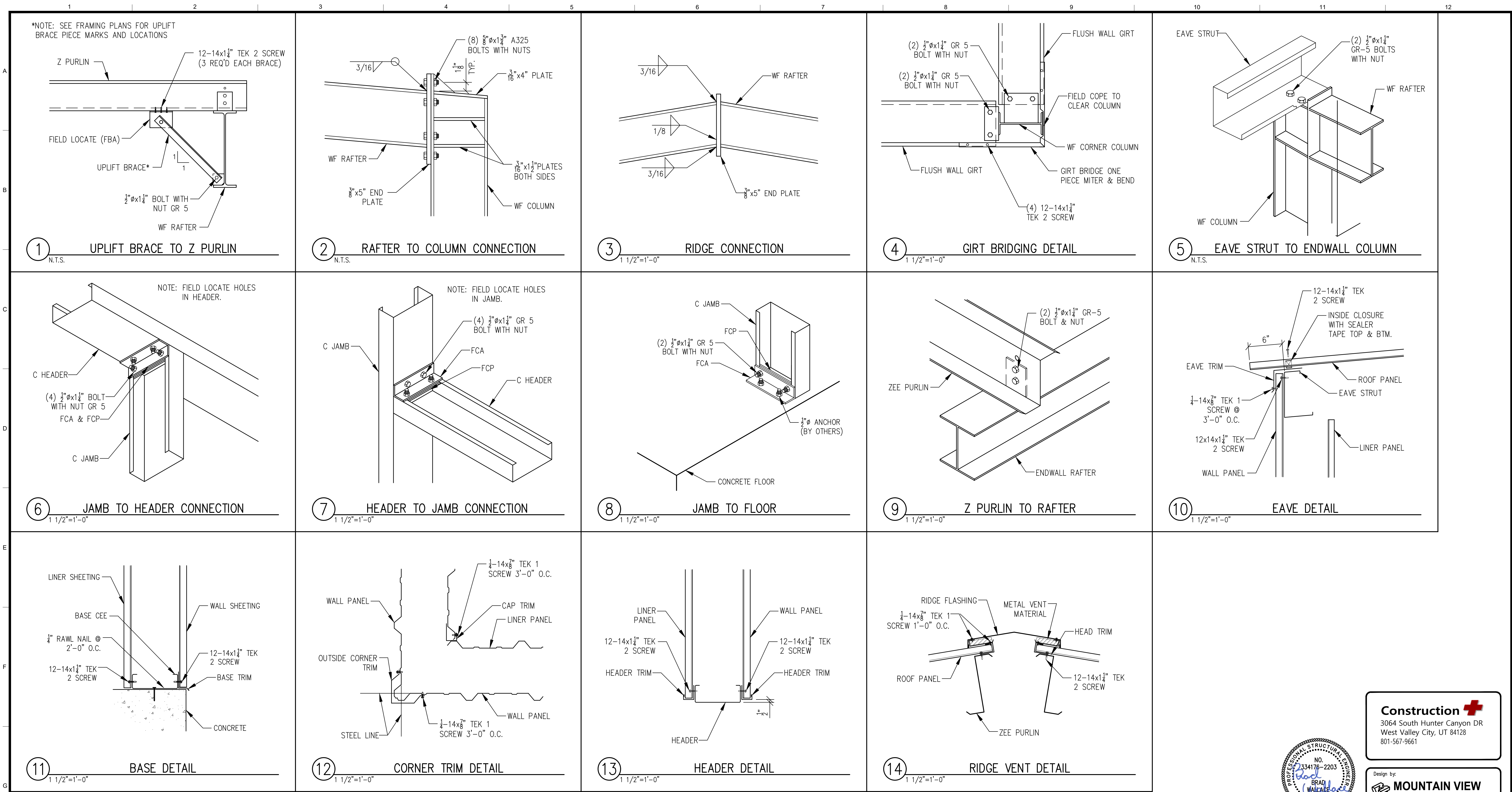
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M/E JOB NUMBER:
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REFERENCE DRAWINGS			WORK ORDERS		REVISIONS				ENGINEERING RECORD		LINE NUMBER: FACILITY: TITLE: DESCRIPTION: ADDRESS:
DRAWING NUMBER	REV	DRAWING DESCRIPTION	WO NUMBER	DESCRIPTION	NO	DESCRIPTION	DATE	BY	CHECK	DRAWN BY: T.W.	
					0	ISSUE FOR CONSTRUCTION	11-22-22	T.W.		CHECKED BY: E. BUSH	STANDARD DRAWING DOMINION ENERGY 15'-0" x 15'-0" BUILDING NOTES, PLANS, ELEVATIONS, AND SECTION
										PROJECT ENGR: B. WALLACE	
										SURVEYOR:	
										ENGR MNGR: W. RADFORD	
										CONSTR MNGR:	

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SECTION: VARIES T VARIES R VARIES
ELEVATION: VARIES
LAT: VARIES LONG: VARIES
SCALE: AS NOTED

CITY VARIES	COUNTY VARIES	STATE UTAH
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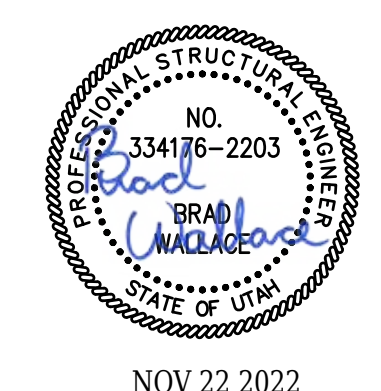
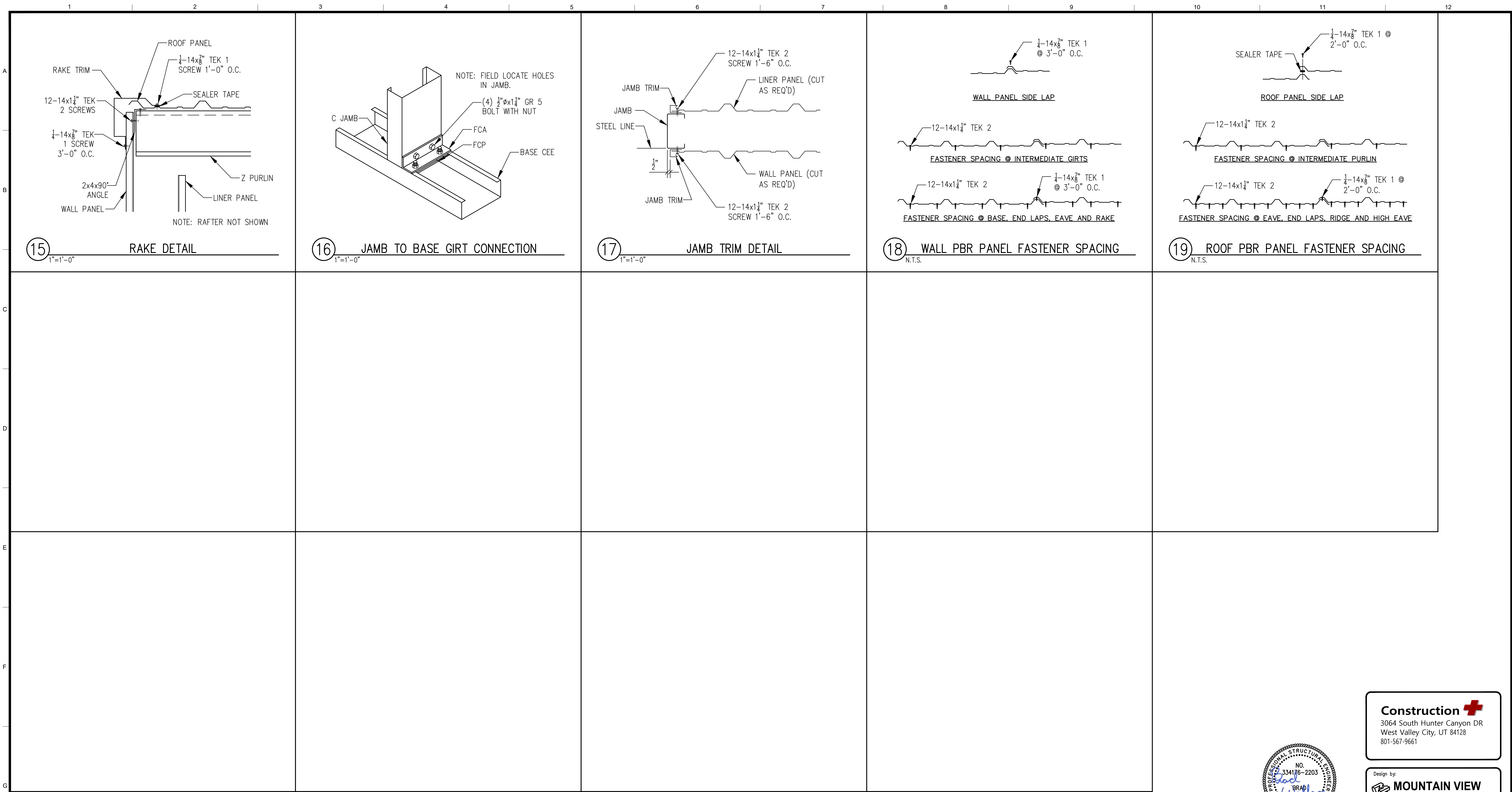
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 SCALE: AS NOTED

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CITY:	VARIES	COUNTY:	VARIES	STATE:	UTAH		
DRAWING NUMBER:	DE-V-BLD-CCS-012			SHEET:	2 OF 4		
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			VARIABLES	VARIABLES	0	ISSUE FOR CONSTRUCTION	11-22-22	T.W.		T.W.	E. BUSH	B. WALLACE	

DOMINION ENERGY UTAH

SECTION: VARIES TVARIES RVARIES
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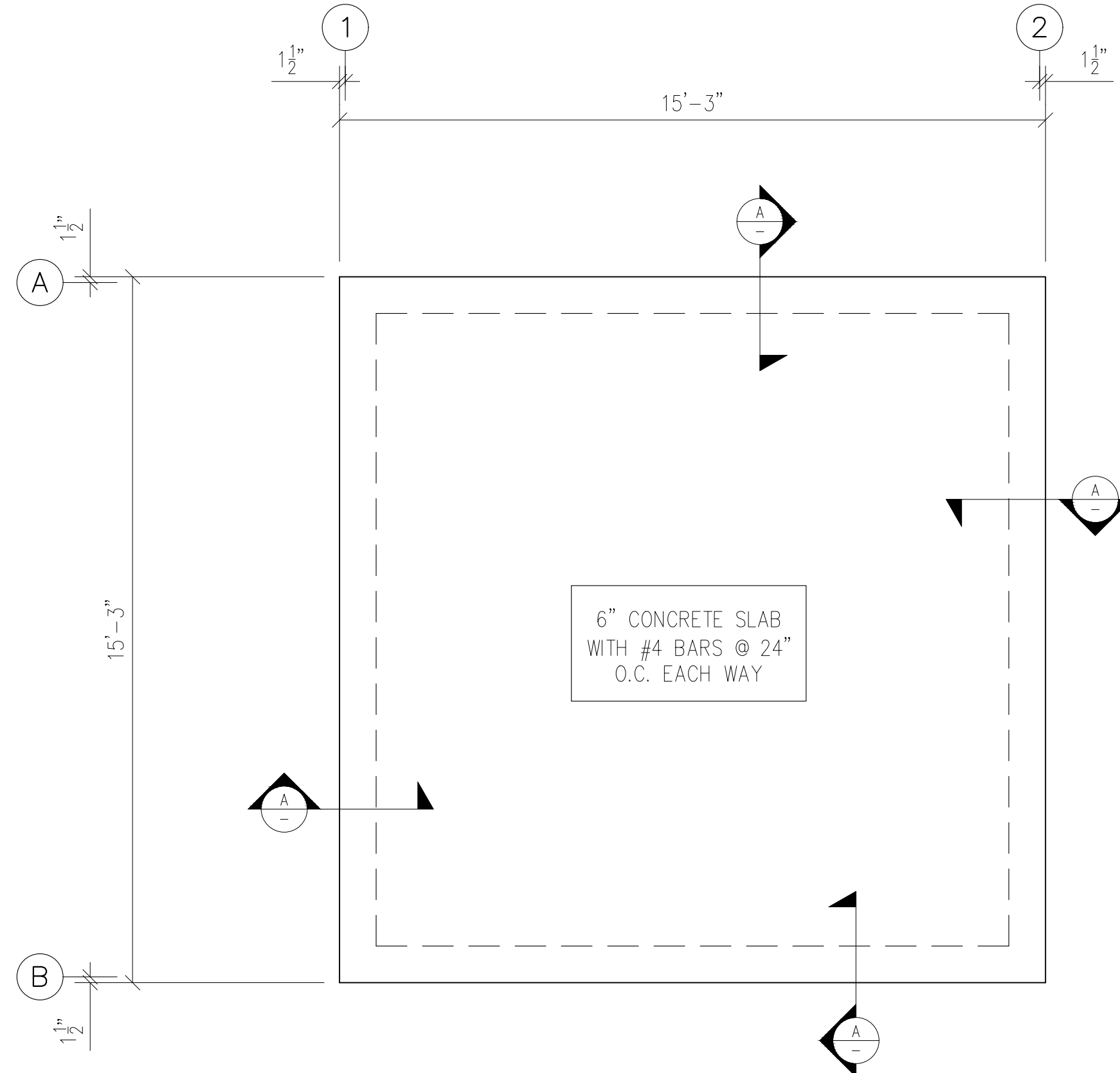
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DESCRIPTION:	DETAILS
ADDRESS:	
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DRAWING NUMBER:	DE-V-BLD-CCS-012
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DOMINION ENERGY UTAH

FOUNDATION NOTES

1. Earthwork
 - A. Foundation Design Values (assumed)
 - i. Allowable Soil Bearing Pressure - 1500 psf
 - ii. Coefficient of Friction - 0.25
 - iii. Passive Earth Pressure - 150 psf/ft of depth
 - B. The building pad area shall be stripped of all frozen soil, debris, vegetation, and topsoil. All fill soils and any remaining loose natural soils shall be excavated to expose suitable natural soils.
 - C. Proof roll the entire building pad area to locate and remove all soft spots. Replace with compacted structural fill.
 - D. Place all footings and slabs on undisturbed natural soil or on properly compacted structural fill. Contractor shall verify that soil under footings is suitable to support footings.
 - E. Structural Fill: Structural fill should consist of well-graded sandy gravels with a maximum particle size of 3 inches and 5 to 15 percent fines (materials passing the No. 200 sieve). The liquid limit of fines should not exceed 35 and the plasticity index should be below 15. All fill soils should be free from topsoils, highly organic material, frozen soil, and other deleterious materials. Structural fill should be placed in maximum 8-inch thick loose lifts at a moisture content within 2 percent of optimum and compacted to at least 95 percent of modified proctor density (ASTM D1557) under the building and 95 percent under concrete flatwork.
 - F. It is the responsibility of the contractor to ensure that the depth of the bottom of the foundation is far enough below the adjacent grade to ensure adequate frost protection.
2. Concrete and Reinforcement
 - A. Material Standards
 - i. Concrete
 - a. Footings and foundation walls - $f_c = 3000$ p.s.i.
 - b. Slabs on grade - $f_c = 3500$ p.s.i.
 - ** Concrete has been designed using $f_c = 2500$ p.s.i. Special Inspection not required unless noted otherwise, see Special Inspection Notes.
 - c. Normal weight aggregates - ASTM C33
 - ii. Cement
 - a. Use Type I/II cement as per ASTM C150
 - b. Air-entraining admixtures (where required) - ASTM C260
 - c. Calcium chloride shall not be used.
 - iii. Reinforcing
 - a. Rebar - ASTM A615 Grade 60 ($F_y = 60$ ksi)
 - b. Welded wire - ASTM A1064
 - c. Epoxy - Simpson SET-XP (ICC-ES ESR-2508) or Hilti HIT-RE 500-SD (ICC-ES ESR-2322)
 - iv. Anchor Rods/Bolts
 - a. $\frac{3}{8}$ " ϕ Simpson Titen HD 6" min. embedment.
 - B. Detail reinforcing to comply with ACI 315 "Manual of Standard Practice for Detailing Reinforcing Concrete Structures" and the Concrete Reinforcing Steel Institute (CRSI) recommendations.
 - i. Minimum clear concrete cover for reinforcement shall be as follows unless noted otherwise:
 - a. Concrete cast directly against and permanently exposed to earth - 3"
 - b. Concrete exposed to weather or earth:
 1. #5 bars or smaller - $1\frac{1}{2}$ "
 2. #6 bars or larger - 2"
 - c. Concrete not exposed to weather or in contact with the ground - $2\frac{3}{4}$ "
 - d. Slabs on grade - as shown in details, $\frac{3}{4}$ " min. from top of slabs not exposed to weather
 - ii. Lap Splice Lengths (unless noted otherwise)
 - a. $f_c = 2500-3500$ p.s.i.
 1. #6 and smaller - 36 bar diameters
 2. #7 and larger - 45 bar diameters
 - b. $f_c = 4000$ p.s.i. or greater
 1. #6 and smaller - 29 bar diameters
 2. #7 and larger - 36 bar diameters
 - c. Lap splice lengths may be decreased by 25% for slabs on grade and horizontal wall reinforcing.
 - d. Increase lap splice lengths by 50% where epoxy coated bars are used.
 - iii. Stagger splices in walls so that no two adjacent bars are spliced in the same location, unless shown otherwise.
 - iv. Make all bars continuous around corners or provide corner bars of equal size and spacing.
 - v. Vertical bars in walls, grade beams, and piers to terminate in footings with ACI standard hooks (12 bar diameters) to within 4" of the bottom of the footing unless noted otherwise.
 - vi. Horizontal wall reinforcing shall terminate at the ends of walls with a 90 degree hook plus a 6 bar diameter extension, unless shown otherwise.
 - vii. Horizontal wall reinforcing shall be continuous through construction and control joints.
 - viii. Splices in horizontal reinforcement shall be staggered. Splices in two curtains (where used) shall not occur in the same location.
 - ix. Use chairs or other support devices as required for proper clearance.
 - x. Unless noted otherwise, openings in walls shall be reinforced with #5 bar on all sides of the opening. Reinforcing shall extend 24" min. past the edge of the opening. For one layer of wall reinforcing provide (1) #5 bar around openings, for two layers provide (2) #5 bars.
 - C. Slabs and grade beams shall not have joints in a horizontal plane. All reinforcement shall be continuous through all construction joints.
 - D. Floor slab thickness and reinforcing shown in these drawings are adequate to support typical uniform loads only. Mountain View Engineering has not designed the slab for any specific concentrated forces such as those from vehicles, storage racks, or heavy equipment (unless noted otherwise).
 - E. Welding of rebar is not allowed unless specifically indicated in the drawings. All embedments, reinforcing, and dowels shall be securely tied to framework or to adjacent reinforcing prior to placement of the concrete. Tack welding of rebar joints in grade beams, walls, or cages is not allowed. Where welding of rebar is shown in the drawings, all rebar to be welded shall be ASTM A706 Grade 60.

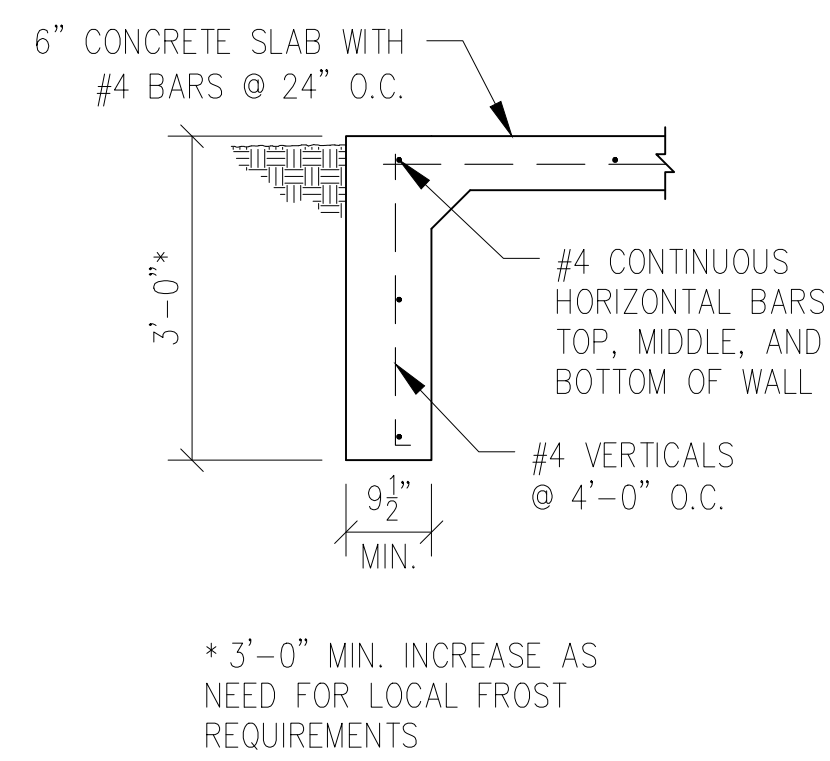


FOUNDATION PLAN
SCALE: 3/8"=1'-0"

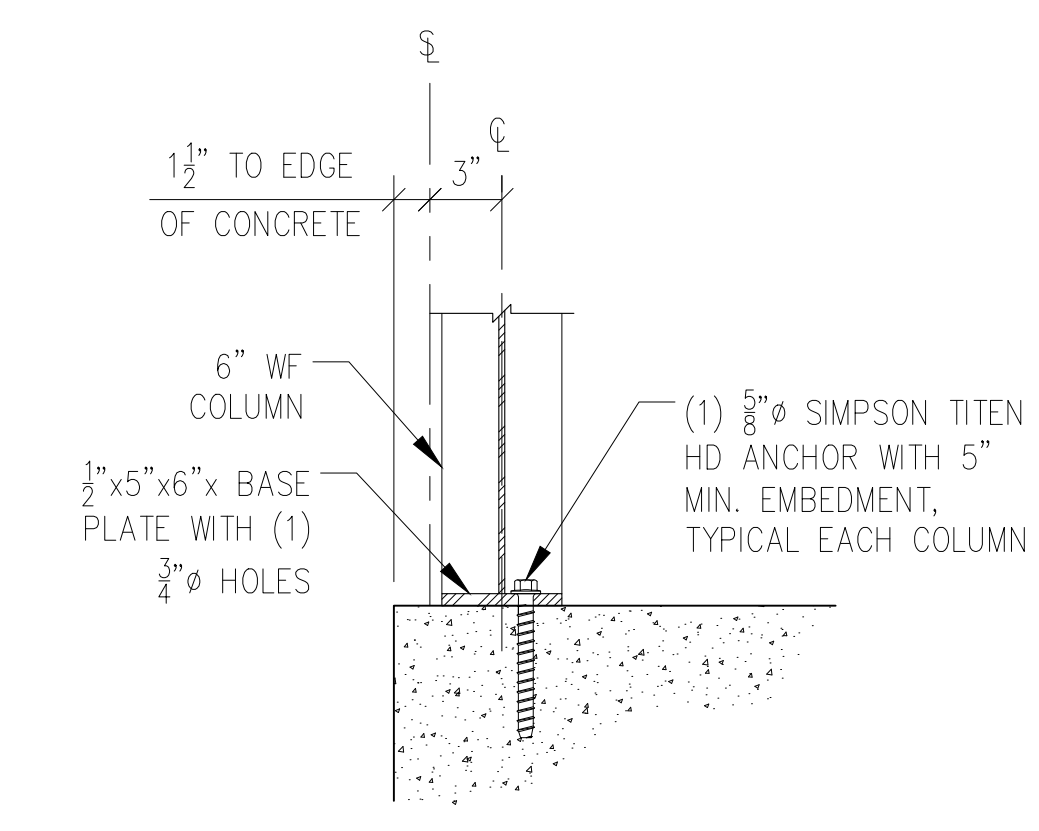
(F1) INDICATES APPLICABLE FOOTING DETAIL.

FOUNDATION LOADS (AT EACH COLUMN) ASD
UP 800 lbs
DOWN 2900 lbs
SHEAR 640 lbs

NOTES:
1: GRID LINES ARE AT STEEL LINE.
2: OUTSIDE OF CONCRETE IS $1\frac{1}{2}$ " OUT FROM STEEL LINE.

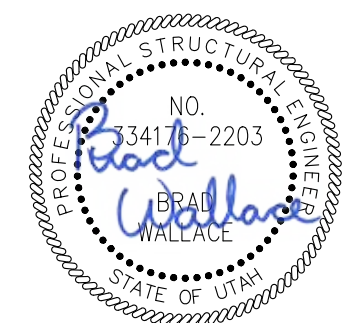


(A) PERIMETER GRADE BEAM DETAIL
1/2"=1'-0"



(B) ANCHOR ROD DETAIL
1 1/2"=1'-0"

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				0	ISSUE FOR CONSTRUCTION	11-22-22	T.W.		CHECKED BY: E. BUSH
									PROJECT ENGR: B. WALLACE
									SURVEYOR:
									ENGR MNGR: W. RADFORD
									CONSTR MNGR:

Dominion Energy
DOMINION ENERGY UTAH
SECTION: VARIES TVARIES RVARIES
ELEVATION: VARIES
LAT: VARIES LONG: VARIES
SCALE: AS NOTED

LINE NUMBER:	STANDARD DRAWING		
FACILITY:	DOMINION ENERGY 15'-0" x 15'-0" BUILDING		
TITLE:	FOUNDATION PLAN, DETAILS, & NOTES		
DESCRIPTION:			
ADDRESS:			
CITY VARIES	COUNTY VARIES	STATE UTAH	
DRAWING NUMBER		SHEET	REVISION
DE-V-BLD-CCS-012		4 OF 4	0

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