

A. GENERAL NOTES

- All construction shall conform to the Design Codes in Section "C. Design Criteria," including all applicable standards and documents referenced within those codes.
- Plan and detail notes provided on specific sheets within these drawings supplement information in these General Notes. Always coordinate the requirements of these notes with what is shown within the drawings.
- Unless noted specifically on a plan, all floor plans show framing for the floor indicated and vertical framing (walls, openings, posts, columns) above that floor. The roof plan shows roof framing only.
- Contract Document Coordination:
  - The drawings contained herein are intended to be utilized in conjunction with other design consultant's drawings (architectural, civil, mechanical, etc.). It is the responsibility of the Contractor to coordinate the requirements of the drawings into their shop drawings and construction.
  - Refer to the architectural, mechanical, electrical, and civil drawings for location and size of block outs, inserts, openings, curbs, bases & pads, and dimensions not shown on these drawings.
  - Refer to the architectural drawings for size and location of doors and window openings, exterior wall assemblies, and floor, wall, and roof finishes. Refer to the mechanical and electrical drawings for additional information including locations of mechanical units, generators, etc.
  - Omissions or conflicts between various elements of the drawings, notes and details shall be brought to the attention of the structural engineer and resolved before proceeding with the work.
- Use of Drawings in Construction:
  - The Contractor shall verify all dimensions and conditions at the job site before commencing work and shall report any discrepancies to the engineer responsible for the design of that work.
  - Do not use scaled dimensions; use written dimensions or, where no dimension is provided, consult the structural engineer for clarification before proceeding with the work.
    - Where member locations are not specifically dimensioned, members are either located on columns lines or are equally spaced between located members.
  - Details and keynotes shown shall be incorporated into the project at all appropriate locations, whether or not they are specifically referenced on the drawings.
  - McClure may provide the contractor with electronic files for their convenience and use in the preparation of shop drawings. These electronic files are not construction documents; the contractor is not relieved of his/her duty to fully comply with the contract documents, including the need to confirm and coordinate all dimensions and details, take field measurements, verify field conditions, and coordinate the contractor's work with that of other contractors for the project.
- Changes During Construction:
  - Openings shall not be cut or otherwise made in any structural member unless that opening is specifically shown on these drawings. The Contractor shall seek approval in writing from the structural engineer for any design incorporating additional openings.
  - Support details shown for Architectural, Mechanical, Electrical, and Plumbing equipment as well as elevators is based upon available information from the manufacturer (if any). The Contractor shall coordinate requirements of actual equipment supplied with details and shall provide any additional framing required.
  - The Contractor has the responsibility to notify the structural engineer of any architectural, mechanical, electrical, or plumbing load imposed on the structure that is not documented on the Contract Documents or differs from what is originally shown. Provide documentation of location, load, size, and anchorage of all undocumented loads in excess of 250 lbs.
- Construction Sequence and Methods:
  - These drawings and the related Specifications represent the finished structure and, except where specifically shown, do not indicate the method or means of construction. Loads on the structure during construction shall not exceed the design loads indicated in Section "C. Design Criteria" as a maximum. The Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques, and sequence.
  - The Contractor is responsible for compliance with all applicable job-related safety standards proceeding from governing organizations (e.g. OSHA).
  - It is the responsibility of the Contractor to ensure the stability of the structural elements during construction as a result of means and sequence by providing shoring, bracing, etc., as required.
    - Stability considerations should include all applicable temporary construction and environmental loads per ASCE 37 which may include wind and seismic forces.
    - Temporary bracing shall remain in place until positive connection is made between the braced element and the floor/roof diaphragm or foundation above and below, and those diaphragms in turn are structurally complete and connected to the vertical elements of the lateral force resisting system. This is a means and methods item.
    - The Contractor may at their discretion employ a Specialty Structural Engineer, licensed in the state where the project is located, for the design of any temporary bracing, lifting, rigging, and shoring. Any sealed drawings, calculations, reports, etc. prepared for construction stability shall be submitted to the structural engineer for review.
  - The Contractor shall consider the effects of thermal movements due to hot or cold weather construction and the potential for extreme temperature variations before the structure is complete.
  - The Contractor is responsible for the protection and repair of any adjacent existing structures, surfaces, and areas which may be damaged as a result of the work.

B. STRUCTURAL ENGINEERING DESIGN NARRATIVE

- McClure Engineering Company (McClure, MEC) is the Structural Engineer of Record (EOR) responsible for the documentation of structural design criteria, strength and stability of the primary vertical and lateral load-carrying systems in their completed form, and conformance of the structural design to the applicable building codes. These drawings produced by McClure convey the structural engineering design for the project, which includes the following components and systems:
  - Foundations consisting of trench footings and isolated column footings.
  - Slabs on grade.
  - Residential tower framing above the slab on grade consisting of:
    - Load-bearing wood wall and opening framing.
    - Gypcrete over wood T&G Sheathing over wood joists, floor and roof trusses.
  - Structural steel framing identified on the drawings.
  - Masonry Elevator tower.
  - The lateral force resisting system of the structure consisting of sheathed gypsum and wood shear walls and wood sheathed diaphragms.
- The following items are Deferred Submittals. Framing intent and additional requirements for these structural components are provided within these drawings:
  - Structural steel connections – see general notes section "Structural Steel" | see S001 for applicable design criteria.
  - Structural steel stair framing and connections – see general notes section "Structural Steel" | see S001 for applicable design criteria.
  - Wood Floor & Roof Trusses" – see general notes section "Wood Framing and Fastening" | see S002 for applicable design criteria.
  - Connections of Wood Trusses to the supporting structure".
  - All premanufactured canopy and awning framing including connections to the structure.

\* Reference section "D. Submittal Requirements." Coordinate requirements of these drawings with those of other design consultant drawings and the Project Specifications.

- The following items are specifically excluded from McClure's design scope as represented on these drawings:
  - Requirements for fire rating of assemblies or fire protection of structural members.
  - Global stability of soil mass.
  - Any exterior slabs, bollards, curbs, and any enclosures not shown on these drawings.
  - Interior non-load-bearing wood wall or ceiling framing.
  - Means and methods items including but not limited to: shoring design, formwork design, and temporary bracing.

C. DESIGN CRITERIA

- Design Codes:
  - International Building Code: IBC 2018
  - Minimum Design Loads for Buildings and Other Structures: ASCE 7-16
- Design Loads:
  - Dead Loads
    - Floors = 35 psf
    - Exterior Walls (Stone Siding) = 47 psf
    - Exterior Walls (Other Siding) = 13 psf
    - Roof = 20 psf plus mechanical equipment shown on roof plan
  - Live Loads (reducible per code UNO)
    - Residential = 40 psf
    - Corridors/Public Areas = 100 psf
    - Mechanical/Storage = 125 psf (non-reducible)
    - Typical Roof = 20 psf
  - Roof Snow Load
    - Ground Snow Load ( $p_g$ ) = 5 psf
  - Wind Load
    - Basic Design Wind Speed,  $V$  = 106 mph (3 sec. Gust)
    - ASD Wind Speed,  $V_{asd}$  = 82.1 mph
    - Risk Category = II
    - Wind Exposure = C
    - Internal pressure Coefficient ( $GCF_p$ ) =  $\pm 0.18$
    - Components and Cladding (psf):

Zone	A=10ft <sup>2</sup>	A=50 ft <sup>2</sup>	A=100 ft <sup>2</sup>
1	+16/-46	+16/-39	+16/-36
2	+18/-61	+18/-52	+18/-48
3	+16/-43	+16/-45	+16/-57
4	+26/-29	+24/-26	+23/-25
5	+26/-35	+24/-30	+23/-28
    - Notes:
      - A is the Effective Wind Area as defined in ASCE 7 Ch. 26.
      - Linear interpolation between tabulated values is permitted.
      - Elements with Tributary Area ( $A_t$ ) > 700 ft<sup>2</sup> shall be permitted to be designed using provisions for MWFRS.
  - Earthquake Load
    - Risk Category = II
    - Seismic Importance Factor ( $I_p$ ) = 1.0
    - $S_s = 0.08g$   $S_d = 0.049g$
    - Soil Site Class: D (per Geotechnical Report)
    - $S_{DS} = 0.085$   $S_{D1} = 0.078$
    - Seismic Design Category B
    - Basic Seismic Force Resisting System(s)
      - Light-Frame Walls With Shear Panels – all other materials (ASCE 7 Table 12.2-1 Line A.17)
      - $R = 2.0$   $\Omega_e = 2.0$   $C_u = 2.0$   $C_s = 0.043$
    - Design Base Shear,  $V = C_u \times W$
    - Analysis Procedure = Equivalent Lateral Force Procedure (ASCE 7-16 Chapter 12.8)
  - Rain Load
    - Rain Intensity (i) = 8.61 in/hr
  - Allowable Deflections:

	Total Load	Live/Snow/Wind Load	Absolute Maximum
Floor Joists/Trusses	L/360	L/480	1"
Roof Joists/Trusses	L/240	L/360	1.5"
Wall Framing (flexible finish)	L/240	L/360	0.75"
Wall Framing (brittle/brick finish)	L/360	L/360	0.5"

Cantilever deflection limits are the more restrictive of 2 x the appropriate L/--- limit (e.g. 2L/360 = L/180) or absolute maximum value listed above, measured at the tip of the cantilever U.N.O.
  - Soil Properties:
    - Soil properties are based on the project geotechnical report entitled Geotechnical Exploration Red Cedar Multifamily prepared by UES on December 12, 2024 (herein known as "Geotechnical Report").
    - Allowable Soil Bearing Pressure = 1500 psf
    - Minimum Embedment below Finished Grade = 18 inches

D. SUBMITTAL REQUIREMENTS

- Submittal Procedures:
  - The Contractor shall provide all submittals in PDF format unless otherwise requested or indicated in the Project Specifications.
  - All submittals must be reviewed by the Contractor prior to McClure's review. The Contractor is responsible for reviewing each submittal for basic coordination with these drawings and to verify that all the required components of the submittal are incorporated. The submittal must bear the electronic review stamp of the Contractor before McClure will proceed with the review.
  - Incomplete submittals or submittals not meeting the requirements of this section will not be reviewed. McClure will notify the contractor that the submittal is incomplete or unacceptable and that resubmission is required.
    - Submittals requiring engineering calculations for all or a portion of the work are considered incomplete without the sealed calculations and will not be reviewed.
    - Shop Drawings shall be original drawings. Submissions incorporating any portion or reproduction of the contract documents will not be reviewed.
    - Deferred Submittals not meeting the seal requirements of section D.2.b are considered incomplete and will not be reviewed.
    - Resubmittals with comments from a previous review left unaddressed or without any response will not be reviewed.
  - Allow two weeks for review of all submittals unless an agreement for expedited review is made in writing by McClure.
  - McClure's submittal review scope of work includes a single submittal review and one review of the revised submittal if required (two reviews total of the same submittal). Time required for more than two reviews of a submittal is considered an additional service and will be billed hourly. McClure reserves the right to withhold review of a submittal surpassing this allowance until proper billing to the responsible party can be established.
  - Submittals must be returned to the Contractor by McClure bearing a stamp marked "Reviewed No Exception Taken" or "Reviewed With Comments/Exceptions" prior to proceeding with the work. Submittals marked "Reject/Resubmit" must be revised according to the comments provided prior to commencing with the respective scope of work.
- Deferred Submittals:
  - See Section "B. Engineering Design Narrative" for the list of items considered Deferred Submittals.
  - Deferred Submittals shall bear the seal of a professional engineer licensed in the state where the project is located. If the project requires a licensed Structural Engineer (S.E.) as the Engineer of Record according to state laws, the same qualification level applies to the engineer sealing the Deferred Submittals.
  - Deferred Submittal items shall not be installed until the Deferred Submittal documents have been approved by the Building Official.
- Submittal List:
  - Submittals (product data, test records, shop drawings, and/or calculations) are required for the following:

Submittal Name	Items Required:				
	Product Data	Shop Drawings	Test Records	Engineering Drawings	Engineering Calculations
1. Concrete Mix Designs	X		X		
2. Concrete Break Reports			X		
3. Concrete Reinforcing Layout		X			
4. Concrete Anchor Bolts & Embedded Plates	X	X			
5. Concrete & CMU Anchors (Post-Installed)	X				
6. Post-Installed Anchor Substitutions	X				X
7. Post-Installed Connection Geometry Alteration (if used)	X			X	X
8. Masonry Wall Materials	X		X		
9. Masonry Reinforcing		X			
10. Structural Steel Framing	X	X			X
11. Structural Steel Framing Connections		X			
12. Metal Canopies & Awnings	X	X			X
13. Wood Framing Materials	X			X	
14. Wood Floor & Roof Trusses incl. Reactions				X	X
15. Wood Truss Connections to Supporting Structure				X	X
16. Specialty Wood Fasteners	X				
17. All Cladding Systems & Attachments as Identified in the Architectural Drawings (if used)	X			X	X

- "Product Data" may indicate mill certifications, material data sheets, Evaluation Service Reports (ESRs), etc. See requirements of each material section of the general notes for further information.
  - Where "Engineering Drawings" and/or "Engineering Calculations" are indicated, the submittal must comply with the requirements of item "2. Deferred Submittals" above.
- Submittals For Record:
    - The following items impact the structural design and therefore must be submitted to the engineer; however, they do not require review. They will be returned stamped as "Received For Record".
      - Elevator Shop Drawings with Loads to Structure
      - Mechanical Equipment Shop Drawings with Weight
      - Brick & Stone Veneer with Weight

E. CONCRETE

- Reinforced concrete shall have the following minimum 28 day compressive strengths:
  - Slab on grade, unless noted otherwise 4000 psi normal weight
  - Foundations 5000 psi normal weight
- All concrete exposed to weather shall have 6% (~ 1%) air entrainment.
- Submit mix designs for all concrete mixes prior to placement. All submittals shall include the following:
  - Batch quantities including admixture dosage rates.
  - Strength test results for trial mixes.
  - Aggregate source(s) and gradation(s).
  - Product data for cement, fly ash and other cementitious materials.
  - Product data for all admixtures.
- Provide protection for reinforcing bars as follows:
  - Concrete cast against and permanently exposed to earth 3"
  - Concrete exposed to earth and weather (formed)
    - #5 and smaller 1-1/2"
    - #6 and larger 2"
  - Concrete not exposed to weather and not in contact with ground:
    - Slabs and walls 3/4"
    - Beams and columns 1-1/2"
- Interface of all slab and beam construction joints shall be roughened with 1/4" amplitude. Surface of construction joints shall be clean and free of laitance. Immediately before new concrete is placed, construction joints shall be wetted and standing water removed.
- Construction joints in walls shall be keyed and placed at locations approved by the Architect and Structural Engineer.
- Provide control joints in all retaining walls at 15 ft to 20 ft intervals.
- Provide PVC waterstops in all below grade construction joints and at other locations as shown.
- Provide compressible filler and sealant in all slab-on-grade and wall and column interfaces that are not dowelled together.
- All column pockets shall be filled with concrete after column is erected.
- Sleeves and openings in slabs not shown on structural drawings or outside the parameters of typical sleeve details are not permitted, unless approved by the Structural Engineer.
- Conduit and pipes embedded in slabs, walls, or grade beams shall be no larger in outside dimension than 1/3 the overall member thickness and shall be placed no closer than 3 diameters or widths on center.
- Provide concrete housekeeping pads under all mechanical, plumbing, fire protection, and electrical equipment per plans. Pads shall extend beyond equipment a nominal 6" on all sides. Apply a bonding agent to existing concrete slab prior to pouring of housekeeping pad. Provide reinforcing per details.
- At floor drains, locally slope floor towards drain. See architectural and plumbing drawings for drain locations.
- Foundation walls shall be temporarily braced until positive attachment is made to floor framing per details. This is a means and methods item.

Slab on Grade

- Slab shall be constructed as shown on plans.
- Slab-on-grade shall be founded on 6" deep 3/4" clean aggregate base.
- The upper 24" of subgrade beneath the slab on grade shall consist of low volume change material such as rollstone or wastelime. Granular fill shall be compacted to a minimum of 95% of the ASTM D698 maximum dry Standard Proctor density. The 6" aggregate base shall be included in the 24" depth required for the low volume change layer.
- Between the slab-on-grade and the subgrade, install a 15mil vapor barrier with taped edges.
- Provide joints at 30 x slab thickness (+/-) in both directions and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays, etc.). Submit control joint layout to Architect for any exposed concrete surface.
- Saw cut control joints shall be done late enough to prevent raveling of the cut edges and early enough to prevent cracking of the slab ahead of the saw blade.
- Concrete slab to be cured according to ACI Standards. Concrete slab cure to be compatible with any sealer, grout, or adhesive that may be used on the floor later.
- At floor drains, locally slope floor towards drain. See architectural and plumbing drawings for drain locations.

Subsurface Requirements

- Foundation design is based on geotechnical report by UES, dated December 09, 2024.
- A geotechnical representative shall be retained on site for all construction activity to verify that all proper requirements have been met to meet the design requirements outlined in the geotechnical report. Representative shall be UES or someone familiar with all documents of the geotechnical investigation provided for the project.
- Geotechnical Report requires moisture conditioned soils up to 10ft below final grade.
- The Contractor shall provide dewatering of excavations from surface water and ground water. Do not place concrete if water is present at base of excavation.
- Geotechnical Testing Agency Requirements
  - If the geotechnical representative on site takes exception to anything in the Geotechnical Report and requires additional field investigation to clarify those expectations, the cost of such investigation shall be included in the additional fee for field quality control and testing and identified as such. All other exceptions, the cost of such investigation shall be included in the additional fee for field quality control and testing and identified as such. All other exceptions shall be documented and approved by the geotechnical engineer.
  - The geotechnical representative must have read all documents pertaining to the geotechnical report for the project and understood and accepted the criteria contained in the report.
- The geotechnical representative must understand and be able to make decisions affecting the work for field observations and conditions described in the report during construction. The representative must be capable of advising the owner or contractor for procedures regarding, but not limited to: sub-grade preparation, dewatering activities, and other construction considerations.

F. REINFORCING FOR CONCRETE

- General
  - All reinforcing steel to be ASTM A615, Grade 60, deformed bars, unless noted otherwise.
    - Any reinforcing to be welded shall be ASTM A706 and welded with E80 electrodes.
    - Alternatively, ASTM A615 reinforcing may be welded with E90 electrodes and proper preheat according to AWS D1.4.
    - E70 electrodes are not permitted for welding rebar.
  - Welded wire fabric shall be plain wire conforming to ASTM A1064. Welded wire fabric shall be in flat sheets.
  - All reinforcing bars to be detailed and placed in accordance with the ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures" specifications.
  - All reinforcing, including dowels, shall be securely tied and cast with the lower member. Placing reinforcing after concrete has been placed will not be permitted.
  - Field bending of reinforcing partially embedded in concrete will not be allowed unless specifically noted on the drawings or approved by the Structural Engineer.
  - All reinforcing bars shall be contact lap spliced or dowelled as follows, unless noted otherwise:

Tension Development and Splice Lengths for $f_c = 5,000$ psi									
Bar Size	Development		Class "B" Splice		Standard 90 deg. Hook		Embed Length	Leg Length	Bend Dia.
	Top Bar	Other Bar	Top Bar	Other Bar	Top Bar	Other Bar			
#3	17	13	22	17	6	6	2-1/4		
#4	22	17	29	22	6	8	3		
#5	28	22	36	28	8	10	3-3/4		
#6	33	26	43	33	9	12	4-1/2		
#7	49	37	63	49	11	14	5-1/4		
#8	55	43	72	55	12	16	6		
#9	63	48	81	63	14	19	9-1/2		

- Straight development and Class "B" splice lengths shown in above tables are based on uncoated bars assuming center-to-center bar spacing  $\geq 3d$ , without ties or stirrups or  $\geq 2d$ , with ties or stirrups, and bar clear cover  $\geq 1.0d$ . Normal weight concrete as well as no transverse reinforcing are both assumed.
- Standard 90 deg. hook embedment lengths are based on bar side cover  $\geq 2.5"$  and bar end cover  $\geq 2"$  without ties around hook.
- For special seismic considerations, refer to ACI 318 Code Chapter 21.
- All tension splices shall be Class "B" splices unless noted otherwise on plans.

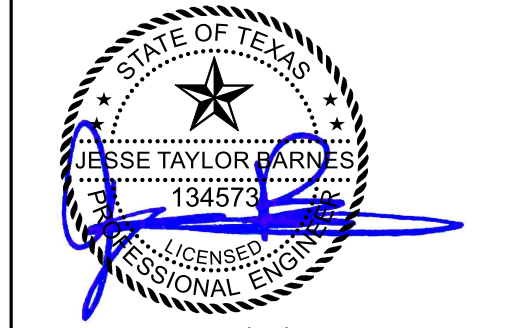
Tension Development and Splice Lengths for $f_c = 4,000$ psi									
Bar Size	Development		Class "B" Splice		Standard 90 deg. Hook		Embed Length	Leg Length	Bend Dia.
	Top Bar	Other Bar	Top Bar	Other Bar	Top Bar	Other Bar			
#3	19	15	24	19	6	6	2-1/4		
#4	25	19	32	25	7	8	3		
#5	31	24	40	31	9	10	3-3/4		
#6	37	29	48	37	10	12	4-1/2		
#7	54	42	70	54	12	14	5-1/4		
#8	62	48	80	62	14	16	6		
#9	70	54	91	70	15	19	9-1/2		

- Straight development and Class "B" splice lengths shown in above tables are based on uncoated bars assuming center-to-center bar spacing  $\geq 3d$ , without ties or stirrups or  $\geq 2d$ , with ties or stirrups, and bar clear cover  $\geq 1.0d$ . Normal weight concrete as well as no transverse reinforcing are both assumed.
  - Standard 90 deg. hook embedment lengths are based on bar side cover  $\geq 2.5"$  and bar end cover  $\geq 2"$  without ties around hook.
  - For special seismic considerations, refer to ACI 318 Code Chapter 21.
  - All tension splices shall be Class "B" splices unless noted otherwise on plans.
- All welded wire fabric shall be lapped 12" or 48 wire diameters, whichever is greater.
  - Provide (2) #5 x 6'-0" diaphragms at all corners of openings and re-entrant corners, unless noted otherwise.
  - Dowels between foundation and walls shall be installed and shall be the same grade, size, and spacing as the vertical wall reinforcing, unless noted otherwise.
  - Provide corner bars to match longitudinal reinforcing in all footings. Provide (2) corner bars at tee intersections.
  - Provide 250 pounds of miscellaneous straight bar reinforcing (#4 & #5) to be used in field for special conditions. Labor for placing same to be included.
- Slabs and Slabs-on-Grade
    - All slabs on grade to be reinforced with 6x6 – W2.9xW2.9 welded wire fabric, unless noted otherwise.
  - Walls
    - Provide corner bars in the outside face and at wall intersections to match horizontal wall bars. Use (3) #5 vertical construction rods at corners.
    - Minimum reinforcing shall be as follows for each wall thickness, unless noted otherwise:
      - 6" wall – #4@16 one layer
      - 8" wall – #4@12 one layer
      - 10" wall – #4@18 Ea. Face
      - 12" wall – #5@18 Ea. Face
    - Provide #5 at 12" o.c. each way unless noted otherwise.



NOTICE:  
McClure Engineering Co. is not responsible or liable for any issues, claims, damages, or losses (collectively, "Losses") which arise from failure to follow these Plans, Specifications, and the engineering intent they convey, or for Losses which arise from failure to obtain and/or follow the engineers' or surveyors' guidance with respect to any alleged errors, omissions, inconsistencies, ambiguities, or conflicts contained within the Plans or Specifications.

TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



03/24/2025  
JESSE BARNES, PE  
NO. 134573  
EXP. MARCH 31, 2025

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.

No.	Description	Date

PROJECT NUMBER: 2024002546  
SET ISSUE DATE: 03/25/2025

ENGINEER: IWC  
DRAWN BY: CEL  
CHECKED BY: MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
GENERAL NOTES

DRAWING NO.  
S001



#### G. WOOD FRAMING AND CONNECTIONS

- Install rough carpentry according to the American Institute of Timber Construction Manual.
- Material:
  - Sawn lumber
    - Sawn lumber shall be grade stamped and visually graded with maximum 19% moisture content.
    - All members shall meet strength requirements in NDS "National Design Specification for Wood Construction".
    - Joists, rafters, and nailers with nominal depth 8" or less shall be Southern Pine (SP) or Douglas Fir-Larch (DFL), No. 2 or better.
    - Joists, rafters, and nailers with nominal depth greater than 8" shall be Southern Pine (SP) or Douglas Fir-Larch (DFL), No. 1 or better.
    - All exterior posts shall be Western Red Cedar No. 2 or better.
    - Bearing and shear wall studs, and wall plates, shall be Douglas Fir-Larch (DFL), No. 2 or better.
  - Structural Composite Lumber
    - SCL shall meet material specifications in ASTM D5456
    - SCL shall include laminated veneer lumber (LVL), laminated strand lumber (LSL), oriented strand lumber (OSL) and parallel strand lumber (PSL)
    - All LVL shall be stress class 2.0E-2600F.
    - Other SCL materials shall be graded as indicated on the plans.
  - Glued-laminated timber (Glulam) shall be manufactured and identified as required in ANSI/AITC A-190.1 and ASTM D3737.
  - Glulam shall be graded as indicated on the plans.
  - Structural Panels
    - All plywood or oriented strand board (OSB) panels shall meet the strength requirements in Department of Commerce (DOC) PS 1 and PS 2 or ANSI/APA PRP 210.
    - All structural panels (walls, floor and roof) shall meet the Structural 1 grading standard
  - Connectors and Fasteners
    - Material connectors and associated fasteners used for the applications indicated shall meet the following minimum standards:
      - Untreated Lumber
        - Connectors .....ASTM A653 G90
        - Bolts and Anchor Rods .....ASTM F1554 G36
        - Nails and Staples .....ASTM F1667
      - Sodium Borate (SBX) Pressure Treated Lumber
        - Connectors .....ASTM A653 G90
        - Bolts .....ASTM A307
        - Anchor Rods .....ASTM F1554 Gr 55
        - Nails and Staples .....ASTM F1667 with A153 Hot Dipped Galvanized
      - All Other Pressure Treated Lumber (e.g. ACQ-C, ACQ-D, CA-B, CBA-A, ACZA)
        - Connectors .....AISI SS Type 304 or 316
        - Bolts .....ASTM A193, GrB7
        - Anchor Rods .....ASTM A193, GrB7
        - Nails and Staples .....ASTM F1667 using AISI Type 304 or 316 Stainless Steel
      - Fasteners utilizing dissimilar materials are prohibited.
      - Power driven fasteners shall comply with NES NER-272.
      - Fastener installation whether power driven or otherwise shall be in accordance with the Building Code and the manufacturer's recommendations. In general fastener heads shall be installed nominally flush with the outer ply of the connection. Sheathing and support framing damaged by overdriven fasteners shall be removed and replaced.
      - Aluminum fasteners and flashing shall not be in contact with pressure treated lumber.
- General:
  - All light framed wood construction shall be fastened as indicated on the plans. Connections not detailed shall be fastened in accordance with the table below.
  - All framing in direct contact with water, soil, concrete, masonry, or permanently exposed to weather shall be preservative treated lumber in accordance with the AWPA Standard U1 and M4
  - All framing indicated to be fire-retardant treated or fire resistive on the drawings (Architectural or Structural) shall comply with AWPA U1 UCFA, Type A or ICC-ES ESR 2645 and shall have UL FR-3 surface burning characteristics.
  - All wood shall be stored on site and protected from the elements to prevent warping, cupping, bowing, crooking and twisting. Use only material that is straight. All stored wood shall be held off the ground with sacrificial damage blocks.
  - Wood connectors shall be installed to prevent wood from splitting or damaging either member.
  - Use 4x4, 4x6 and 6x6 columns as shown on plans. Built-up sections of 2x studs shall not be substituted for timber posts.
  - All multi-ply beams, joists and headers shall be fastened together.
    - Fasten sawn lumber members per schedule below.
    - Fasten structural composite lumber per manufacturer's literature.
  - Standard cut washers shall be used under bolt heads and nuts bearing against wood, unless noted otherwise per shear wall anchorage details.
  - Wall studs are designed based on being fully braced by sheathing. Design of temporary or permanent blocking or bridging for support of construction loads by unsheathed walls is the responsibility of the contractor.
  - Wood joists shall bear on the full width of supporting members (stud walls, beams, nailers, etc.) unless noted otherwise.
  - Subject to compliance with the project requirements, wood connectors, joist hangers, post caps and bases, holdowns, and related hardware shall be manufactured by Simpson Strong-Tie Company, Inc. San Leandro, CA.
    - Contractor shall follow the manufacturer's latest recommendations for installation of connectors.
    - Other manufacturers may be acceptable. Submit substitution request demonstrating that the proposed hardware has the same or greater capacity for each connection. Allow two weeks for review.
  - All beams and joists not bearing on supporting members shall be framed with Simpson joist hangers. Use LU (or equal) for single joists and type LUS for double joists, unless noted otherwise. The joist hangers shall be installed using nails or screws supplied by the hanger manufacturer as required for the hanger type.
  - Bottom plates of all bearing walls on concrete shall be anchored with 5/8" diameter x 6" screw anchors spaced not more than 4'-0" o.c., unless noted otherwise. Sill plate anchors shall be located a maximum of 1'-0" from corners, ends of walls and sill plate splices. Provide (2) anchors minimum in each sill plate segment Refer to plans and details for shear wall anchorage requirements.
  - Nailers shall be anchored to steel beams and columns with 1/2" diameter A307 bolts with required washers at a maximum spacing of 24" on center (alternate sides), unless noted otherwise.
  - Wall studs, jamb studs, and beam support studs shall have adequate vertical blocking installed to transfer all vertical loads to the foundation.
- Wood Floor and Roof Trusses:
  - Provide wood trusses capable of withstanding the design loads within the limits and under the conditions indicated. Truss design shall be in accordance with the Building Code and TPI 1 Nation Design Standard for Metal Plate Connected Wood Truss Construction.
  - Wood trusses shall be of sawn lumber with 2x nominal thickness.
  - In addition to the loads indicated, wood trusses shall be designed for all applicable wind, seismic, and snow (including drift) loads required by Building Code and noted in plan. Truss design and shop drawing preparation shall be supervised by a registered professional engineer licensed in the state where the project is located.
  - Submittals shall be signed and sealed and include comprehensive truss layout plans, design calculations that indicate species and grades of lumber, design stresses, size and type of connector plates used.
  - Fabricator shall determine truss diagonal locations. Truss configurations shown on drawings are diagrammatic only. Bearing points shall coincide with intersections of diagonals and chords.
  - Truss member design shall consider unbalanced snow load with full dead load, as well as full dead and snow load.
  - Roof trusses shall be designed for the following:
    - Dead load = 12 psf
    - Live load = 20 psf on the top chord horizontal projection
    - Dead load = 9 psf on the bottom chord
    - Wind uplift = 41 psf. (See S001 "C. Design Criteria)
    - End / Gable Wind Load = ±22 psf
  - Floor trusses shall be designed for the following loads:
    - Dead Load = 35 psf
    - Live Load = 40 psf. Private Rooms, offices and corridors serving them
    - = 100 psf. Common and public areas, including stairs and landings
    - = 125 psf. Mechanical and communication rooms
  - The maximum allowable deflection shall be:
    - Roof Trusses: Total Load: L/240, Roof Live or Snow Load: L/360
    - Floor Trusses: Total Load: L/360, Live Load: L/480
  - The manufacturer shall provide all open web trusses and accessories as shown on the structural and architectural drawings and as required for a complete project.
- All truss to truss connections and truss to supporting member connections shall be designed and detailed by the truss supplier and the size and type of connectors included in the shop drawing submittal. Coordinate size, species and grade of supporting chord and web members with the truss hanger selected.
- All temporary and permanent bracing shall be in accordance with the TPI standards for bracing. The bracing shall be furnished and installed by the Contractor. Do not use ceilings as uplift bracing at truss bottom chord.
- Girder trusses shown on drawings shall be designed to carry concentrated reactions from supported members.
- Wood trusses shall be handled and erected in accordance with TPI HIB-91. Trusses shall be unloaded and stored in bundles in an upright position out of contact with the ground until ready for installation.
- Any damage to the trusses shall be brought to the immediate attention of the Structural Engineer and truss supplier. Field repair and modification of trusses shall not be made with prior written approval from the supplier, except for nominal trimming to correct length where such trimming will not impair the load carrying capacity of the truss.

#### H. WOOD SHRINKAGE

- IBC 2304.3.3 requires that architectural, mechanical, electrical, and plumbing systems be designed to accommodate movement due to shrinkage. McClure Engineering Co. takes no responsibility for the naturally occurring shrinking that will occur.
- Estimated values are based upon the following moisture content:
  - At installation (MC) = 19%
  - At equilibrium (EMC) = 8%
- The following recommendations are intended to minimize the potential issues associated to wood shrinkage. Implementation and liability are ultimately up to the contractor or design professional responsible for the impacted trade.
  - Mechanical, Electrical, Plumbing
    - Allow construction gaps in the wood framing to close by delaying installation of MEP as long as possible to allow for additional dead load to be installed.
    - Provide oversized or long slotted holes at pipe penetrations. Holes must be within conformance of typical penetration details.
    - Rigid connections shall be adjusted before completion of construction of closing of wall and ceiling assemblies.
    - All vertical sheet metal down spouts shall have intermediate slip joints.
    - Roof Drains shall utilize adjustable fittings. Fittings must be adjusted at the completion of construction and then as required to maintain proper drainage.
  - Architectural Considerations
    - Stucco, EIFS and brittle finishes shall have horizontal expansion joints, slip joints with appropriate waterproofing.
    - Brick and stone finishes shall have ties that accommodate differential movement.
    - Provide adjustable thresholds or transitions at rigid transitions such as CMU or concrete stair and elevator shafts.

#### I. WOOD SHRINKAGE CONT.

- Construction tolerance
  - Limit shortening due to nesting by cutting all studs level square and tight against plates.
- Structural wood panels shall have 1/4" relief gaps at each floor to limit bulging.
- Floor sheathing shall have 1/8" gaps on all sides during installation to accommodate movement.
- Shear wall hold downs shall be check and retightened immediately prior to sheathing walls.
- Delay gyp topping around concrete and CMU stair or elevator shafts until completion of construction.
- Material storage
  - Stored materials shall be covered and elevation from the elements.
  - Do not allow water to pond on floor sheathing. Provide drain holes if required to allow water to quickly drain if water does temporarily pond.
- Post occupancy
  - McClure recommends a review of roof drains every 3 months for the first 24 months of occupancy and then annually. Adjust drains as required to maintain watertight integrity.
  - McClure recommends review of joints at exterior doors, windows and finish transitions. Waterproof as needed where original joints fail per the architect's recommendations.
  - Remedial self-leveling work may be required around concrete or CMU stair and elevator towers to accommodate shrinkage.

#### J. CONCRETE MASONRY

- All construction shall comply with applicable provisions of the following latest ACI standards:
  - ACI 530/ASCE 52/TMS 402 – Building Code Requirements for Masonry Structures.
  - ACI 530.1/ASCE 6/TMS 602– Specifications for Masonry Structures.
  - IBC Chapter 21 Masonry
- Concrete block units shall conform to the requirements for Grade N Type 1, load-bearing normal-weight units per ASTM C-90. Use Grade S blocks below grade. All below grade block shall be solid grouted.
- Net area compressive strength of masonry,  $f_m = 1,500$  psi.
- Standard units shall have nominal face dimensions of 16 x 8 inches high. The minimum compressive strength of the masonry units shall be as follows:

	Net Area Compressive Strength Of Masonry ( $f_m$ psi)	Net Area Compressive Strength Of Concrete Masonry Units (psi)
	1,500	Type M or S mortar 2000 Type N mortar 2000
- Mortar for unit masonry shall be proportioned per ASTM C270. The minimum mortar compressive strength is as follows:
  - Type S: 1,800 psi
  - Type M: 2,500 psi
- Grout for unit masonry shall be proportioned per ASTM C476. The minimum grout compressive strength is the larger of 2,000 psi or  $f_m$ .
- Maximum coarse aggregate size is 3/8".
- Reinforce all CMU walls with vertical rebar full height, centered in cell as shown on the drawings. Grout reinforced cells solid.
  - When reinforcing is not specified, provide #5 @ 48" o.c. minimum.
- All vertical cells to be filled shall have vertical alignment to maintain an unobstructed cell area not less than 2 in. x 3 in.
- All bond beams shall be grouted solid and reinforced.
  - Provide bent dowels at all wall intersections – one per bond beam at corners, and two at tee intersections.
- Provide bond beams at all walls supporting roof and floor slabs.
- Grout solid under all beams and lintels for full height of wall.
- All masonry walls shall have ladder type horizontal joint reinforcement with two 9 gage wires spaced at 16" o.c. vertically, unless noted otherwise.
  - All wall intersections shall be reinforced with prefabricated tee or corner units.
- Use low lift method of grouting. Maximum grout lift = 5'-0". Alternative methods of grouting may be acceptable. Submit method for approval two weeks in advance.
- Masonry reinforcing lap lengths shall be as follows:

	Masonry Strength, $f_m$ (psi)
Bar Size	#3 1,500
#3	12"
#4	16"
#5	28"
#6	52"
#7	63"
#8	72"
#9	82"

Notes:  
1. Development length is based on 2 1/2" masonry cover for all bars. Use bar spacers to maintain cover.
- Brace all masonry walls until roof and roof framing and metal deck are installed.
  - Design and installation of bracing is the responsibility of the masonry contractor.
  - Submit bracing plan for review.
- When grouting is stopped for more than one hour, horizontal construction joints shall be formed by stopping the pour of grout 1'-12" below the top of the uppermost course.
- Provide control joints in wall every 40 ft. Provide vertical reinforcing in first cell each side of control joint. Do not locate control joint within 2'-0" of end or opening.
- Conduit pipes and sleeves in masonry shall not displace more than 2 percent of the net cross-sectional area and shall be placed no closer than 3 diameters or widths on center.

#### K. WOOD FRAMING AND CONNECTIONS

Schedule of minimum nailing for standard connections <sup>1</sup>													
Connection <sup>2,3</sup>	Number, or spacing, of fasteners required per connection												
	Nail lengths are minimum, nominal lengths, in inches.												
	Nail shank diameters are minimum, nominal diameters, in inches.												
	3 1/2 x	3 x	3 1/4 x	3 x	2 1/2 x	3 1/4 x	3 x	2 1/4 x	2 x	2 1/4 x	2 1/4 x		
	0.162	0.148	0.131	0.131	0.131	0.120	0.120	0.113	0.113	0.105	0.099		
Equiv. Common Nail	16d	10d			8d				6d				
Floor Framing													
Joist to band joist	3	5	5	5	N/A	6	6	N/A	N/A	N/A	N/A	N/A	N/A
Ledger strip	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Joist to sill or girder	3	3	3	3	3	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Blocking between joist or rafter to top plate	3	3	3	3	4	3	4	N/A	N/A	N/A	N/A	N/A	N/A
Bridging to joist	N/A	N/A	N/A	N/A	N/A	2	3	3	3	4	3	4	
Rim joist to top plate	8" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.	6" o.c.	4" o.c.	6" o.c.	3" o.c.	3" o.c.	3" o.c.	3" o.c.
Built-up Girders & Beams													
- Spacing along edges	24" o.c.	24" o.c.	24" o.c.	24" o.c.	16" o.c.	16" o.c.	16" o.c.	N/A	N/A	N/A	N/A	N/A	N/A
- # at ends & splices	3	3	3	3	3	4	3						
Ceiling and Roof Framing													
Ceiling joists to plate	3	4	5	5	5	5	5	6	N/A	N/A	N/A	N/A	N/A
Ceiling joists, laps over partitions	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Ceiling joist to parallel rafter	3	4	4	4	6	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Collar tie to rafter	3	3	4	4	5	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Jack rafter to hip, toe-nailed	3	3	4	4	5	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Jack rafter to hip, face nailed	2	3	3	3	3	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Roof rafter to plate	3	3	3	3	3	4	4	5	5	5	6		
Roof rafter to 2-by ridge beam (driven through beam into end of ridge)	2	3	3	3		4	4	N/A	N/A	N/A	N/A	N/A	N/A
Roof rafter to 2-by ridge beam (toe-nail rafter to beam)	2	3	3	3	3	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Wall Framing													
Top or sole plate to stud (End nailed)	2	3	3	3	5	4	4	N/A	N/A	N/A	N/A	N/A	N/A
Stud to top or sole plate (toe-nailed)	2	3	3	3	5	4	4	5	5	5	5		
Cap/top plate laps and intersections (each side of lap)	2	3	3	3	4	3	3	N/A	N/A	N/A	N/A	N/A	N/A
Diagonal bracing	2	2	2	2	2	3	3	3	3	4	4	4	4
Sole plate to joist or blocking @ braced panels (number per 16" joist space)	2	3	3	4		4	4	N/A	N/A	N/A	N/A	N/A	N/A
Sole plate to joist or blocking	16" o.c.	8" o.c.	8" o.c.	8" o.c.	6" o.c.	8" o.c.	8" o.c.	N/A	N/A	N/A	N/A	N/A	N/A
Double top plate	16" o.c.	16" o.c.	12" o.c.	12" o.c.	12" o.c.	8" o.c.	12" o.c.	12" o.c.	N/A	N/A	N/A	N/A	N/A
Double studs	12" o.c.	12" o.c.	8" o.c.	8" o.c.	8" o.c.	8" o.c.	8" o.c.	N/A	N/A	N/A	N/A	N/A	N/A
Corner studs	24" o.c.	16" o.c.	16" o.c.	16" o.c.	16" o.c.	8" o.c.	12" o.c.	12" o.c.	N/A	N/A	N/A	N/A	N/A

N/A – Fastener not applicable to connection  
<sup>1</sup>This fastening schedule applies to framing members having an actual thickness of 1 1/2" (Nominal "2-by" lumber)  
<sup>2</sup>Fastenings listed above may also be used for other connections that are not listed but that have the same configuration and the same code requirement for fastener quantity/spacing and fastener size (pennyweight and style, e.g., 8d common, "S-penny common nail").  
<sup>3</sup>Fastening schedule only applies to buildings of conventional wood frame construction. Connections of shear walls and floor and roof diaphragms shall be as shown on the drawings.

#### L. POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY

- Post installed anchors shall be expansion, adhesive, or screw anchors as indicated in the details, unless noted otherwise. Only use the anchor type indicated. All anchors on the project of each type must be the same manufacturer, see below for substitution requirements.
  - Expansion anchors:
    - Concrete:
      - Hilti Kwik Bolt TZ (ICC-ES ESR1917).
      - Hilti Strong-Bolt Z (ICC-ES ESR3037).
      - DeWalt Power-Stub+ SD2 (ICC-ES ESR2502).
    - Grout-filled Concrete Masonry:
      - Hilti Kwik Bolt Z (ICC-ES ESR1385).
      - Simpson Strong-Bolt Z (IES ESR0240).
      - DeWalt Power-Stub+ SD1 (ICC-ES ESR2966).

#### M. POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY CONT.

- Adhesive anchors (threaded rods shall be ASTM A193 B7 for all anchors):
    - Concrete:
      - Hilti HIT RE 500-SD (ICC-ES ESR2322) or Hilti HIT-HY 200 (ICC-ES ESR3187).
      - Simpson AT-XP (UES ER263), SET-XP (ICC-ES ESR2508) or ET-HP (ICC-ES ESR3372)
      - DeWalt Pure 110+ (ICC-ES ESR3298), PE1000+ (ICC-ES ESR2583), Pure 50+ (ICC-ES ESR3576), AC 200+ (ICC-ES ESR4027), or AC100+ Gold (ICC-ES ESR2582)
    - Solid grouted concrete masonry:
      - Hilti HIT-HY 70 anchor adhesive (ICC-ES ESR3342).
      - Simpson AT-XP (UES ER0281), SET-XP (UES ER0285) or ET-HP (UES ER0241)
      - AC100+ Gold (ICC-ES ESR3200)
    - Hollow concrete or multi-wythe clay masonry:
      - Hilti HIT-HY 70 with screen tubes (ICC-ES ESR3342).
      - Simpson SET-XP (UES ER0285)
      - AC100+ Gold with screen tubes (ICC-ES ESR3200)
  - Screw anchors:
    - Concrete:
      - Hilti Kwik HUS EZ (ICC-ES ESR3027)
      - DeWalt Wedge-Bolt+ (ICC-ES ESR2526)
    - Grout-filled concrete masonry:
      - Hilti Kwik HUS EZ (ICC-ES ESR3056)
      - DeWalt Wedge Bolt+ (ICC-ES ESR1678)
- Post-installed anchors shall only be used where specified in the drawings. The Contractor shall obtain approval from the engineer prior to using post-installing anchors for missing or misplaced cast-in-place anchors.
  - All personnel installing anchors shall be trained and certified by the anchoring system manufacturer or by ACI. Contractor shall submit current certifications for all personnel. ACI certification required for all personnel installing adhesive anchors in a horizontal or overhead conditions. If a failure occurs at any time during testing or construction, personnel shall be retrained and recertified.
  - Installation:
    - Do not cut existing reinforcing.
    - The hole through the supported steel member shall be 1/16" larger in diameter (1/8" for screw anchors) than the anchor unless noted otherwise. Use plate washers with a standard size hole welded to steel members where oversized holes must be used.
    - Holes shall be drilled per the manufacturer's written instructions as outlined in the ESR.
    - Where applicable, installation shall follow cleaning procedure indicated in the ESR. Holes shall be made with a hammer drill. Use of a core drill is not allowed.
  - Special inspection shall be provided for all post installed anchors as required by the building code and/or ICC-ES report. Written special inspection reports shall be submitted to the registered design professional in responsible charge by the special inspector. The reports shall record and report the following as a minimum:
    - One of every ten anchors installed by each technician in locations listed below shall be randomly tested in direct tension. At least one anchor shall be tested on each day that anchors are installed.
      - Test anchors in the following locations:
        - Shear wall hold down anchors.
        - Shear wall sill plate anchors.
        - Braced frame base plate anchors.
      - Anchors supporting dead or live loads in tension.
    - Test anchor to twice the allowable tension load as provided in the ESR. Test load shall not exceed 80 percent of the yield strength of the anchor ( $0.8 \times A_n \times F_u$ ).
    - Post-installed anchors shall not be tested using a torque wrench.
    - If any anchor fails quality control testing, all anchors of the same type shall be randomly tested until (10) consecutive anchors pass. Resume normal frequency after this with approval of the engineer. The failed anchor(s) shall be removed and the affected area patched per engineer's direction. Consult the engineer for anchor replacement instructions. The cost for additional work and testing required due to anchor failure is the responsibility of the installing contractor.
  - Prior to and during installation of anchors, inspection and report shall include:
    - Installer shall have reviewed manufacturer's ESR report and written installation procedures and has been certified by the manufacturer or ACI.
    - General concrete or CMU block conditions (cracked or un-cracked, wet or dry, grouted or hollow, etc).
    - Whether manufacturer's written procedures for preparation of hole were followed. Indicate if hole is wet or dry.
    - Whether hole was made with a hammer drill.
    - Whether manufacturer's written procedures for anchor installation were followed.
    - Embedment depth and concrete or block thickness.
    - Anchor diameter, length and type.
  - After installing anchors, inspection and report shall include:
    - All test locations.
    - Anchor size and/or type.
    - Applied load, loading procedure, load increments and rate of loading.
    - Mode of failure.
    - Photographs of test equipment and typical failures.
  - Substitution requests for products other than those listed above shall be submitted to the engineer with calculations that are prepared and sealed by a registered structural engineer at least two weeks prior to scheduled installations. Calculations shall demonstrate that the substituted product will achieve an equivalent capacity using the appropriate design procedure required by the building code. Product ICC-ES code reports shall be included with the submittal package.

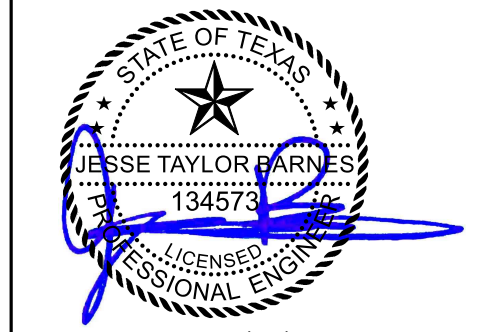
#### N. STRUCTURAL STEEL

- Materials:
  - Materials shall conform to the following, unless noted otherwise.
    - Rolled WF shapes .....ASTM A992
    - Plates and Angles .....ASTM A572 Grade 50
    - Channels .....ASTM A36
    - HSS: Rectangular .....ASTM A500, Grade C
    - HSS: Round .....ASTM A500, Grade C
    - Bolts .....ASTM F3122
      - All bolts shall be Grade A325 or F1852, UNO
      - Bolts designed as "A490" shall be Grade A490 or F2280
    - Nuts .....ASTM A563 DH or A194
    - Washers .....ASTM F436
    - Anchor Bolts .....ASTM F1554 Grade 36, UNO
    - Threaded Rod .....ASTM A36
    - Studs .....ASTM A108, Type B Nelson headed shear stud connectors or equal.
    - Electrodes .....Matching weld metal, 70 ksi minimum strength.
  - Finishes
    - Prepare all surfaces that will be exposed in accordance with SSPC SP3 "Power Tool Cleaning".
    - Do not prime surfaces to be fireproofed, field welded, in contact with concrete, or high-strength bolted.
    - All exterior steel components exposed to view or weather shall be galvanized in accordance with ASTM A123 for framing members and ASTM A153 for bolts and threaded fasteners.
    - All exterior welded connections shall be cold galvanized in accordance with ASTM A780.
- Fabricator:
  - Steel Fabricator shall be AISC Certified.
  - Structural members shall be detailed, fabricated, and erected in accordance with the latest edition AISC 303 "Code of Standard Practice for Steel Buildings and Bridges."
  - Structural steel fabrication drawings must be submitted to the engineer for review prior to fabrication.
  - The Fabricator shall engage a professional engineer registered in the state where the project is located for the design and detailing of:
    - Steel connections.
    - Temporary bracing.
- Connections:
  - The contractor has the option to use bolted or welded connections. Any connections not specifically detailed on the drawings shall be designed by a professional structural engineer licensed in the project state and retained by the fabricator. In general, any connections shown on the drawings are schematic and are intended to show only the relative relationship of the connected members.
  - Structural design calculations for all beam and bracing connections shall be submitted to the engineer prior to fabrication and should include the following (as a minimum):
    - All plate dimensions and grades (minimum plate thickness shall be 3/8").
    - All weld sizes, lengths, pitches and returns.
    - Number and type of bolts.
  - Connection design forces:
    - Beam shear connections shall be designed for the actual reactions indicated on the drawings or 20 kips minimum. Connection forces shown on drawings are envelope reactions based on ASD load combinations.
    - Connections indicated on the drawings as moment-resisting shall be designed for the moment shown. If moment is not indicated on the drawings, connection shall be designed to develop the full capacity of the member.
    - Columns have not been checked for local effects at connections. Fabricator shall verify if stiffener or web doublers plates are required and provide as necessary. Column size may also be increased with approval of the engineer of record.
  - Connection loads indicated on the drawings include compensation for Code permitted stress increases and load reductions for connection design.
- Bolted Connections:
  - Minimum bolt diameter shall be 3/4".
  - Slip critical connections shall be used for bracing members, moment-resisting connections, cantilevers, and as indicated on the drawings. Standard oversized and long-slotted holes are permitted for friction-type connections.
  - All non-slip-critical connections shall be typical bearing type. Oversized or slotted holes are not permitted unless indicated on the drawings.
- The fabricator is responsible for verifying the tensile capacity of axially loaded members with the presence of bolt holes. Increase member size, add plates (etc) as required.
- Welded Connections:
  - All fillet welds shall be sized according to AISC minimums, but never less than 3/16" (UNO).
  - All welds shall be performed in accordance with the latest edition of the AWS Structural Welding Code.
- Erection:
  - All structural steel to be fabricated and erected in accordance with latest AISC specifications.
  - It is the responsibility of the contractor to ensure that structure is maintained in a safe, stable configuration at all times.
  - Any shoring required shall be submitted with engineering calculations for approval.
  - Splicing of steel members not specifically shown on the drawings is prohibited without prior approval from the engineer.
  - All beams shall be installed with the mill camber up.



NOTICE:  
McClure Engineering Co. is not responsible or liable for any issues, claims, damages, or losses (collectively, "Losses") which arise from failure to follow these Plans, Specifications, and the engineering intent they convey, or for Losses which arise from failure to obtain and/or follow the engineers' or surveyors' guidance with respect to any alleged errors, omissions, inconsistencies, ambiguities, or conflicts contained within the Plans or Specifications.

TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP. MARCH 31, 20



L. POST-TENSIONED CONCRETE

1. General
- a. Embeds: Where permanent fixtures such as curtain wall systems, handrails, fire protection equipment, lights, and security devices must be connected to post-tensioned slabs or beams, they shall be attached using embeds. Drilled anchors shall not be allowed on post-tensioned slabs unless there is written authorization from the Engineer of record. No dissimilar metals shall be in contact.
- b. Fasteners and Inserts: Fasteners or inserts shall not be shot or drilled into post-tensioned slabs after the concrete is placed unless there is written authorization from the Engineer of record. Drilled or power-driven fasteners will only be permitted if they are located to avoid the tendons and anchorages and it can be shown that they will not spall the concrete. Special attention shall be given to braces for column and wall forms to ensure that they are located between tendon groups
- c. Openings: Opening, penetration, and insert locations shall be determined to the fullest extent possible prior to tendon layout. No changes shall be made in the field without prior written approval of the Engineer of record and the Post-Tensioned Specialty Engineer (PT Engineer). Core drilling is not allowed without prior written approval of the Engineer of record.
- d. Installation Drawings: The Contractor shall submit installation drawings to the Engineer of record and the PT Engineer a minimum of four weeks prior to scheduled installation of the tendons. Installation drawings shall show the tendon layout, all anchorage locations, and tendon supports with all the details necessary to ensure proper installation. The review of installation drawings by the engineer of record is only for general compliance with the intent of the structural drawings and specifications.
- e. Field placement review: The tendon, mild steel, and slab embed installation shall be reviewed by the PT Engineer designated representative prior to the concrete pour. The PT Engineer shall be notified at least five days in advance of the date all placements of tendons, reinforcing steel, and slab embeds will be completed.
- f. Field Foreman: the field foreman responsible for the placement, stressing and finishing of all post-tensioning material (including all mild reinforcement necessary for proper installation of the post-tensioning tendons) shall be PTI certified with a minimum of five years of experience in this capacity for this type of construction.
2. Materials
- a. Strand Quality: Post-tensioning tendons shall use low-relaxation strand conforming to the following:
- Seven-wire strand ASTM designation A416
- Minimum Ultimate Stress 270 ksi
- 1/2" diameter strand area 1.53 in<sup>2</sup>
- One sample of each reel or heat shall be tested by an approved laboratory. Mill certificates may be submitted in lieu of independent testing if approved by the Engineer of record. Test results or mill certificates shall be submitted to the Engineer of record and PT Engineer before any tendons are fabricated or installed.
- b. P/T Hardware Quality: All anchorages, couplers, and miscellaneous hardware shall be approved by the governing agencies and the PT Engineer
- c. Sheathing: Unbonded tendons shall be encased in a slippage sheathing which shall be manufactured by a process that provides watertight encasement of the corrosion inhibiting coating material (P/T coating) so as to prevent the internal migration of any water. Sheathing shall be of sufficient strength and durability to resist damage during normal fabrication, transportation, installation, and concrete placement operations. Minimum sheathing thickness shall be 0.050 in. Tears in the sheathing shall be repaired by replacing the P/T coating and restoring the watertightness. Tendons shall be protected during shipping and handling to avoid damage to the tendon sheathing during transportation and offloading at the jobsite and avoid exposure to deicing salts or any other form of corrosive element.
- d. Post-tensioning strand, couplers, intermediate, and end anchorages shall be completely protected with a watertight, encapsulated system per ACI 423.7-14.
- e. Concrete: Strength and material data for all concrete mixes to be used on the project shall be provided to the Engineer of record and PT Engineer as early in the project as possible with a minimum of one week prior to their use. **Concrete shall be proportioned for a maximum allowable unit shrinkage of 0.045% measured at 28 days after curing in lime water as determined by Modified ASTM C157, using air storage.** No admixtures shall be added to the concrete mix without the approval of the Engineer of Record and PT Engineer. Admixtures or concrete containing chlorides shall not be used in post-tensioned slabs.
3. Installation
- a. Installation of unbonded tendons: If the post-tensioning supplier does not install the post-tensioning material, detailed instructions for the installation and stressing of the tendons shall be furnished to the installer. The contractor responsible for hiring the independent post-tensioning installer shall ensure that the installation crew meets the standards set forth by the PTI certification programs. The post-tensioning material supplier shall provide initial jobsite technical assistance to instruct the installer on any special requirements of their system to ensure proper installation, stressing, and finishing of all post-tensioning material.
- b. Tendons: Tendons shall be shop-fabricated with preassembled fixed-end anchorages. Plastic pocket formers shall be used at all stressing-ends to recess the anchor castings so that the required cover is achieved.
- c. Tendon placement: Care shall be taken that tendons are located and held in their designated positions as shown on the approved installation drawings. Except as noted in the construction documents or approved by the Engineer of record and/or the PT Engineer, tolerances for the vertical location of the prestressing steel shall not be more than +/- 1/4 in. for slab thicknesses less than 8in, 3/8 in for concrete with dimensions more than 8 in. but not more than 2 ft, and 1/2 in. for concrete with dimensions more than 2 ft. Access shall be provided to stressing-ends.
- d. Tendon Groups: Tendons in beams shall be grouped to provide adequate clearance to mild reinforcing and facilitate concrete placement. A maximum of five tendons is allowed per group unless noted otherwise on the approved installation drawings.
- e. Tendon Adjustments: Small deviations in the horizontal spacing of the slab tendons will be permitted when required to avoid openings, inserts, and dowels with specific location requirements. Where tendon locations interfere with each other, one tendon may be moved horizontally in order to avoid the interference.
- f. Twisting: Twisting or entwining of individual tendons within a group shall not be permitted. Entwining of groups within a beam shall not be permitted.
- g. Vertical profiles: Profiles shall conform to control points shown on the drawings and shall have an approximate parabolic drape between supports unless noted otherwise. Low points be at midspan unless noted otherwise. Harped tendons shall be straight between high and low points.
- h. Horizontal profiles: If tendons must be curved horizontally to avoid openings or other obstructions, tendon groups shall be flared such that a minimum of two inches of separation is maintained between each individual tendon. Tendons shall be flared a maximum of 1.6 If tendons are flared at more than 1:12 #3 hairpins at 12 in. o.c. shall be used to transfer the horizontal radial force to the concrete, unless noted otherwise on the approved installation drawings.
- i. Tendon cover: All dimensions showing the location of prestressing tendons are to the center of gravity of the tendon (cgs) unless noted otherwise. Refer to concrete reinforcing general notes for minimum cover requirements.
- j. Minimum chairing for slab tendons: tendons shall be supported on reinforcing bars spaced at a maximum of 4 ft o.c. and secured to the support bar at each tendon/support bar intersection to ensure that the correct vertical and horizontal location is maintained during the placing of the concrete. Supports shall be installed to prevent excessive movement during placement of the concrete.
- k. Support Bars: Support bars shall be a minimum #4. Support bars spanning across the capital or drop panel shall be #6 or greater and generally placed parallel to the banded tendons and below the lower layer of top reinforcement (parallel to uniformly spaced tendons).
- l. Anchorages: Anchorage devices shall be recessed a minimum of 2 in. Two continuous #4 backup bars shall be placed behind all anchorages unless otherwise noted.
- m. Blockouts/Pockets: All blockouts or pockets required for access to anchorages in beams or slabs shall be adequately reinforced so as not to decrease the strength of the structure. All blockouts and pockets should be sealed in such a manner as to eliminate water leakage through or into the blockout or pocket. Location of all blockouts and pockets shall be approved by the PT Engineer.
- n. Pipes: Plastic or metal conduits may be embedded in the slab providing the following criteria are met:
- i. The outside diameter of the conduit does not exceed 1/4 of the slab thickness or 2 in, whichever is less.
- ii. Conduits with outside diameter greater than or equal to 1 in are located within the middle third of the slab.
- iii. Conduits with outside diameter smaller than 1 in. may be located anywhere within the slab as long as the minimum cover requirements are observed.
- iv. Center-to-center spacing of the conduits is not less than three times the diameter of the largest conduit or 6 in, whichever is greater, with no more than three conduits per six-foot width of slab.
- v. Conduits do not contact interrupt or displace the post-tensioned tendons or the mild reinforcing and shall not be placed parallel within 3" of tendons or reinforcing.
- vi. When multiple conduits enter the slab at once the conduits must be fanned out immediately. Additional mild reinforcement shall be added top and bottom until item d above is met.
- o. Penetrations: Penetrations shall not be permitted in beams, 48" of the face of any column for two way slabs, within shear stud lengths or drop caps unless shown on post-tensioning drawings or typical details and approved by the Engineer of record and PT Engineer.
4. Concrete Placement:
- a. Concrete placement: Prior to placement of the concrete, forms shall be cleaned of all debris and dirt. When concrete is placed in post-tensioned slabs, special care shall be taken at column drop caps, and drop panels. The pump hose shall be inserted into the column drop panel below the reinforcement and held until the concrete reaches the top reinforcing layer. Concrete elevation shall be monitored to avoid flotation of the top reinforcing. After the drop panel is full of concrete, concrete shall be placed over the top reinforcing layer to specified slab thickness. Concrete shall be adequately vibrated in and around column drop panels.
- b. Pumped concrete: If concrete is placed with pumps, hoses shall not be allowed to rest on the reinforcing (tendons or rebar).
- c. Concrete Consolidation: the contractor shall take precautions to ensure complete consolidation and densification of concrete behind all post-tensioning anchorages. Care shall be taken not to allow the vibrator to contact the reinforcing or post-tensioning tendons.
- d. Chlorides: Maximum water-soluble chloride ion in concrete shall not exceed 0.06 percent by weight of cement.

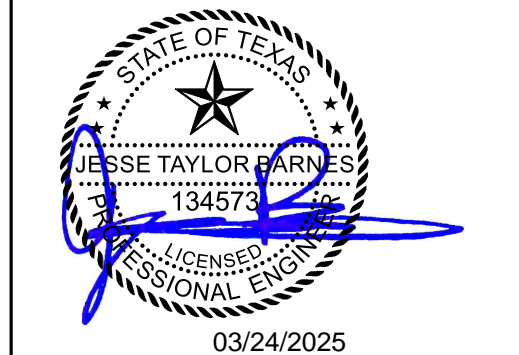
L. POST-TENSIONED CONCRETE CONT.

5. Stressing of Tendons
- a. Tendon stresses shall conform to the following:
- Maximum tendon jacking stress 0.94fpy < 0.8fpu
  - Maximum tendon stress immediately after prestress transfer 0.82fpy < 0.74fpu
  - Maximum tendon stress at anchors and couplers after anchorage-set 0.71pu
  - Final Effective Force: Forces shown on structural drawings are effective forces after all short and long term losses. The post-tensioning supplier shall provide friction and long-term loss calculations for the PT Engineer's review.
- b. Concrete Strength at Stressing: Concrete shall reach a minimum of f'c = 3000 psi prior to stressing (but not sooner than 48 hours). Minimum concrete strength shall be established by breaking concrete test cylinders cured at the job site under conditions similar to the curing of the post-tensioned elements. Stressing shall not commence until the concrete reaches the specified strength. Tendons should be stressed within 72 hours after the concrete is placed to minimize early age concrete shrinkage cracking. This may not apply to elements that are stage stressed where only a portion of the total post-tensioning forces is applied within the 72 hours.
- c. Calibration: Each stressing jack and gauge combination shall be individually identified and calibrated as a unit to know standards at intervals not exceeding 6 months. With a written approval of PT Engineer, it may be permissible to calibrate the gauges to a master gauge of known accuracy, provided the jacks are calibrated to the same master gauge. Copies of the calibration certificates for each jack and gauge of the calibration certificates for each jack and gauge combination being used shall be submitted to the Engineer of record for review and reviewed copies kept at the job site shall be available upon request.
- d. Tendon Stressing: The stressing operation shall be under the immediate control of a person who is a PTI certified installer experienced in this type of work. Continuous inspection and recording of elongations and stressing equipment gauge pressures by an independent inspector hired by the owner is required during all stressing operations. The independent inspector shall be certified under the PTI certified Installer program.
- e. Stressing Sequence: To prevent overloading of the forming system during the stressing operation, the type of formwork system being used shall be considered when determining the appropriate stressing sequence. In general, uniformly distributed tendons shall be stressed before banded tendons in two-way slab construction. Slab tendons shall be stressed before beam tendons in one-way slab construction. Additional stressing sequence requirements shall be as specified below. Special consideration shall be given to the stressing sequence of transfer girders.
- i. Two-Way Slab Sequence
- Stress continuous distributed tendons.
  - Stress continuous banded tendons.
  - Stress added distributed tendons.
  - Stress added banded tendons.
- f. Elongations: Field readings of elongations and/or stressing forces shall not vary by more than +/- 7% from calculated required values shown on the installation drawings. If the measured elongations vary from calculated values by more than +/- 7%, stressing operation shall be suspended until the cause of the variation from specified elongation is determined and corrected to the satisfaction of the PT Engineer. The elongation reports should be submitted the same day the stressing operation is completed, and the elongation report should be approved or rejected by the PT Engineer within 96 hours after stressing.
- g. Member forces: The post-tensioning force provided in the field for each structural member shall not be less than the requirements shown on the post-tensioned suppliers' drawings.
- h. Tendon ends: Tendon ends within a section of the project shall not be cut until all post-tensioning tendons in that section have been satisfactorily stressed and the PT Engineer approval is obtained. If an encapsulated system is specified, the tendon ends shall be protected with a grease-filled cap within one day of cutting off the tendon ends. Connection of the cap to the anchorage shall be watertight.
- i. Grouting of anchorage pockets: To minimize moisture access to the tendons, anchorage pockets shall be filled with non-shrink grout as soon as practical after stressing. Grout containing chlorides shall not be used.
- j. In areas supporting a partial span such as near a pour strip or construction joint, the shoring in the partial span shall stay in place until the remaining section of the span has been poured and stressed. In some cases, the immediate back span may also need to remain shored until the adjacent span is completed. If this is required, it shall be specified on the construction documents and post-tensioning installation drawings.
6. Inspection for Stressing Steel
- a. Continuous special inspection shall be provided during the placing of reinforcing steel and post-tensioning tendons for all structural concrete. Tendon placement and integrity shall be inspected prior to placement of concrete. During all stressing of post-tensioned concrete, the special inspection shall include recording the field-measured elongation and jacking force for each tendon. For good quality control, independent verification to tendon tails, end cap installation for encapsulated systems and grouting of anchorage pockets is recommended.
- i. Admixtures: No admixtures shall be added to the concrete mix without the approval of the Engineer of record and PT Engineer. Admixtures or concrete containing chlorides shall not be used in post-tensioned slabs.



NOTICE:  
McClure Engineering Co. is not responsible or liable for any issues, claims, damages, or losses (collectively, "Losses") which arise from failure to follow these Plans, Specifications, and the engineering intent they convey, or for Losses which arise from failure to obtain and/or follow the engineers' or surveyors' guidance with respect to any alleged errors, omissions, inconsistencies, ambiguities, or conflicts contained within the Plans or Specifications.

TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



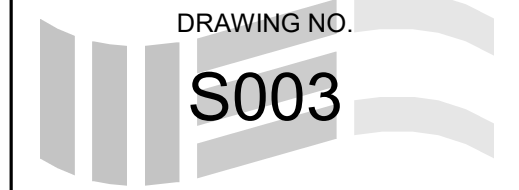
JESSE BARNES, PE  
NO. 134573  
EXP: MARCH 31, 2025

I HEREBY CERTIFY THAT THIS  
ENGINEERING DOCUMENT WAS  
PREPARED BY ME OR UNDER MY  
DIRECT PERSONAL SUPERVISION AND  
THAT I AM A DULY  
LICENSED PROFESSIONAL ENGINEER  
UNDER THE LAWS OF THE STATE OF  
TEXAS.

No.	Description	Date

PROJECT NUMBER	SET /ISSUE DATE	
2024002546	03/25/2025	
ENGINEER	DRAWN BY	CHECKED BY
IWC	CEL	MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSICANA, TEXAS  
GENERAL NOTES





TYPICAL WALL HEADER SCHEDULE (STACKED OPENINGS)											
Opening Mark	Max. Span (ft-in)	Header				Kings & Jacks					
		Level 1	Level 2	Level 3	Header Plates* (All Levels)	Level 1		Level 2		Level 3	
						Kings	Jacks	Kings	Jacks	Kings	Jacks
H1	6'-4"	(3) 2x12	(3) 2x12	(3) 2x8	(1) 2x6 T&B	(2) 2x6	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6
H2	3'-6"	(3) 2x8	(3) 2x8	(3) 2x8	(1) 2x6 T&B	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6
HH2	3'-6"	(3) 2x8	(3) 2x8	---	(1) 2x6 T&B	(1) 2x6	(1) 2x6	(1) 2x6	(1) 2x6	---	(1) 2x6

H = An opening which requires a header  
HH = An opening which requires a header & which does not stack with openings above

- Notes:
- See S503 for typical opening framing.
  - All openings should stack according to the plans.
  - Coordinate all dimensions and elevations with architectural drawings.
  - Cripple studs should match the adjacent wall framing.
  - \* Header top and bottom plates and sills should match the wall stud depths.
  - All LVL shall be stress class 2.0E-2500F
  - \*\* Indicates headers that do not require top and bottom plates.
  - All Glulam lumber shall be stress class 20F-1.5E or better.

WOOD WALL SCHEDULE				
Wood Wall Location	Wall Stud Size, number of plys, and spacing			Sheathing & Fastening U.N.O. (See Note 5)
	Level 1	Level 2	Level 3	
Exterior Walls	(1) 2x6 @ 24" o.c.	(1) 2x6 @ 24" o.c.	(1) 2x6 @ 24" o.c.	7/16" Structural wood sheathing fastened w/ 8d nails. 6" o.c. edge fastening, 12" o.c. field fastening
Corridor Walls & Interior Typ. Walls	(1) 2x6 @ 16" o.c.	(1) 2x6 @ 16" o.c.	(1) 2x6 @ 16" o.c.	5/8" Gypsum wallboard fastened w/ 1 5/8" Type W screws. 7" o.c. edge fastening, 12" o.c. field fastening - Both Sides
Unit Separation Walls	(1) 2x4 @ 16" o.c.	(1) 2x4 @ 16" o.c.	(1) 2x4 @ 16" o.c.	5/8" Gypsum wallboard fastened w/ 1 5/8" Type W screws. 7" o.c. edge fastening, 12" o.c. field fastening - Both Sides

- Notes:
- Wall stud spacing is to be per schedule unless noted otherwise.
  - Bottom sill plates at foundation to be fastened w/ 3/8"Ø x 6" Hilti Kwik HUS-EZ Bolts @ 48" o.c. U.N.O.
  - Sill and top plates at all other levels to be fastened w/ (2) 16d nails @ 24" o.c. U.N.O.
  - Shear walls shall be sheathed & fastened per shear wall schedule
  - Non-load bearing walls not shown, refer to architectural drawings.
  - All top plates are to be continuous. Splice per 4/S503
  - U.N.O. bottom sill plates shall be (1) 2x member matching wall thickness, and top plates shall be (2) 2x members.

WOOD BEAM SCHEDULE			
Mark	Max. Span (ft-in)	Beam Size	Hanger
B1	8'-10"	(3) LVL 1-3/4 x 9-1/2	Simpson HUCQ610-SDS

- Notes:
- All exterior beams are to be pressure treated.
  - All LVL shall be stress class 2.0E-2500F
  - Hangers to be installed with typical fasteners per manufacturer product data

JOIST & HANGER SCHEDULE	
Joist Size	Hanger
2x10	Simpson LUS28
2x12	Simpson LUS210

- Notes:
- Hangers to be installed with typical fasteners per manufacturer product data
  - All exterior members are to be pressure treated

WOOD COLUMN SCHEDULE			
Mark	Level 1	Level 2	Level 3
C1	(3) 2X6	(3) 2X6	(3) 2X6
P*	Match Jamb Above	Match Jamb Above	---

- Notes:
- All exterior columns are to be pressure treated

FLOOR AND ROOF SCHEDULE				
Type	Membrane/Sheathing	Fastening	Concrete/Topping	Reinforcing
PT Slab on Grade	15mil Vapor Retarder	Taped Edges	See Plan	See Plan
Interior Floors	3/4" Plywood	10d @ 6/12	3/4" Gypcrete Topping	---
Roof	15/32" Plywood	10d @ 6/12 UNO	---	---

- Notes:
- Vapor barrier to be placed over compacted fill per general notes.
  - Plywood sheathing to be fastened per detail 2/S503
  - Floor/Roof diaphragm are unblocked unless noted otherwise on plan.
  - Plywood to be Structural Grade 1 Material
  - See architectural drawings for full floor and roof assemblies including nonstructural elements.

WOOD SHEAR WALL SCHEDULE							
Mark	Level	Sheathing/ Fastener Layout	Post	Hold-Down	Min. Sill/Top Plate	Base Connection	Drag Truss/Blocking Load (ASD)
SW1	Level 3	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 6" Edge Fastening	(2) 2X6	LSTA30 w/ (22) 0.148"x2-1/2" nails	2X6	(2) 16d nails @ 16" o.c.	170plf
	Level 2	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 4" Edge Fastening	(2) 2X6	MST37 w/ (22) 0.162x2-1/2" nails	2X6	(2) 16d nails @ 12" o.c.	290plf
	Level 1	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 3" Edge Fastening	(2) 2X6	HTT4 w/ (18) 0.148Øx1-1/2" & 5/8"Ø Anchor Rod	2X6	(1) HILTI KH-EZ 3/8"Øx 6" @ 16" o.c.	410plf
SW2	Level 3	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 6" Edge Fastening	(3) 2X4	LSTA18 w/ (14) 0.148"x2-1/2" nails	2X4	(2) 16d nails @ 24" o.c.	145plf
	Level 2	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 4" Edge Fastening	(3) 2X4	MSTA 49 w/ (26) 0.148X2-1/2" nails	2X4	(2) 16d nails @ 12" o.c.	250plf
	Level 1	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 4" Edge Fastening	(3) 2X4	HTT4 w/ (18) 0.148Øx1-1/2" & 5/8"Ø Anchor Rod	2X4	(1) HILTI KH-EZ 3/8"Øx 6" @ 16" o.c.	350plf
SW3	Level 3	(1) Sided, ZIP Wood Structural Panel - S1 Structural Panel - 7/16" Thick, 8d Nail, 4" Edge Fastening	(3) 2X4	MST37 w/ (22) 0.162x2-1/2" nails	2X4	(2) 16d nails @ 12" o.c.	290plf
	Level 2	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 2" Edge Fastening	(3) 2X4	MST48 w/ (34) 0.162x2-1/2" nails	2X4	(2) 16d nails @ 6" o.c.	490plf
	Level 1	(1) Sided, ZIP Wood Structural Panel - S1 Structural Panel - 7/16" Thick, 8d Nail, 2" Edge Fastening	(3) 2X4	HDQ8-SDS3 w/ (20) 1/4"Øx3" SDS screws & 7/8"Ø Anchor Rod	2X4	(1) HILTI KH-EZ 3/8"Øx 6" @ 8" o.c.	700plf
SW4	Level 3	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 6" Edge Fastening	(2) 2X6	LSTA9 w/ (8) 0.148"x2-1/2" nails	2X6	(2) 16d nails @ 16" o.c.	70plf
	Level 2	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 6" Edge Fastening	(2) 2X6	LSTA9 w/ (8) 0.148"x2-1/2" nails	2X6	(2) 16d nails @ 8" o.c.	145plf
	Level 1	(1) Sided, ZIP Wood Structural Panel - Sheathing - 7/16" Thick, 8d Nail, 6" Edge Fastening	(2) 2X6	DTT1Z w/ (6) SD #9x1-1/2" & 3/8"Ø Anchor Rod	2X6	(1) HILTI KH-EZ 3/8"Øx 6" @ 24" o.c.	180plf
SW5	Level 3	(1) Sided, Gypsum Wallboard - 1/2" Thick, 5d Nail, 7" Edge Fastening, 16" O.C. Unblocked	(2) 2X6	LSTA9 w/ (8) 0.148"x2-1/2" nails	2X6	(2) 16d nails @ 16" o.c.	40plf
	Level 2	(1) Sided, Gypsum Wallboard - 1/2" Thick, 5d Nail, 7" Edge Fastening, 16" O.C. Unblocked	(2) 2X6	LSTA9 w/ (8) 0.148"x2-1/2" nails	2X6	(2) 16d nails @ 16" o.c.	80plf
	Level 1	(1) Sided, Gypsum Wallboard - 1/2" Thick, 5d Nail, 7" Edge Fastening, 16" O.C. Unblocked	(2) 2X6	DTT1Z w/ (6) SD #9x1-1/2" & 3/8"Ø Anchor Rod	2X6	(1) HILTI KH-EZ 3/8"Øx 6" @ 48" o.c.	100plf

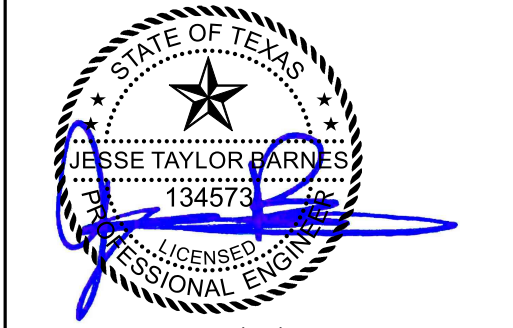
- Notes:
- See S530 for typical shear wall framing
  - All threaded rods shall be F1554 GR105; See 3/S530 for anchor options.
  - Floor to floor strap ties at top of wall shall match that of the floor above.
  - All hold downs and strap ties are Simpson Strong-Tie brand, U.N.O.
  - Bottom sill plate connections shall have a 3"x3"x1/4" steel plate washer at each anchor bolt on shear walls only.
  - All drag trusses shall be connected to shear walls per detail 5/S510 and 4/S515.
  - Provide floor to floor strapping on the same side as the OSB sheathing.
  - Field fastening for all sheathing to be 12" O.C. U.N.O
  - All shear walls to be blocked at all panel joints unless noted "Unblocked."



1901 Pennsylvania Drive  
Columbia, MO 65202  
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TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP: MARCH 31, 2025  
I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.

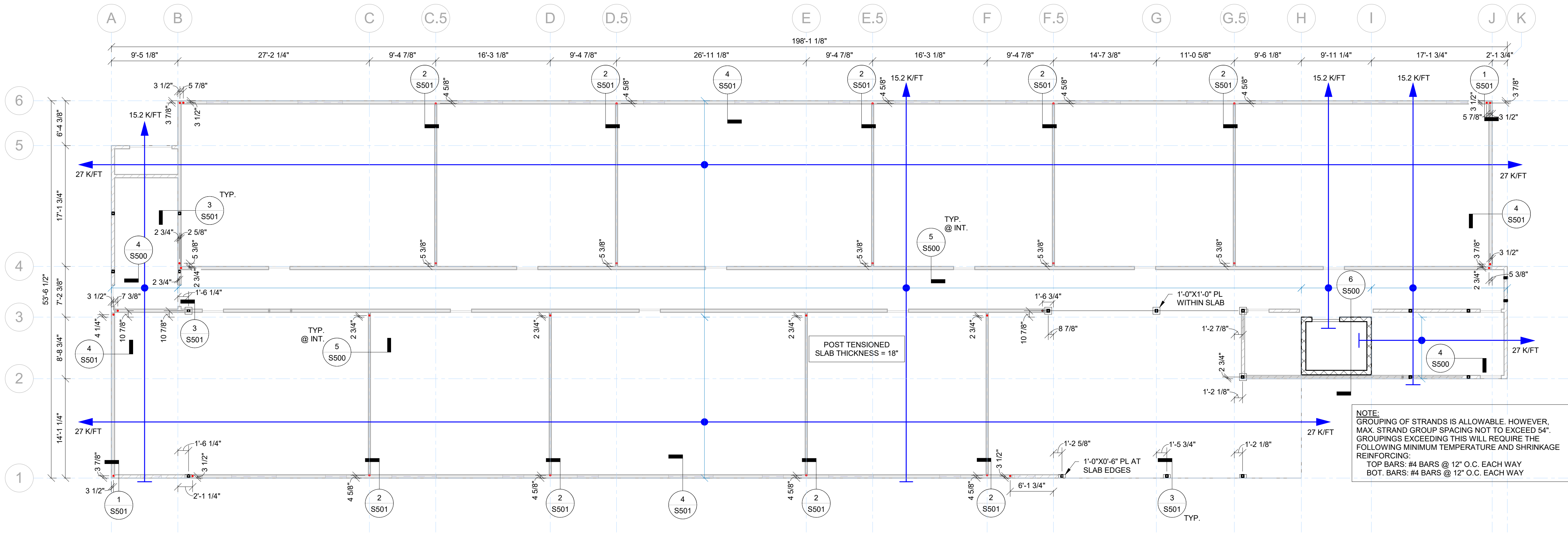
No.	Description	Date

PROJECT NUMBER	SET ISSUE DATE	
2024002546	03/25/2025	
ENGINEER	DRAWN BY	CHECKED BY
IWC	CEL	MDH

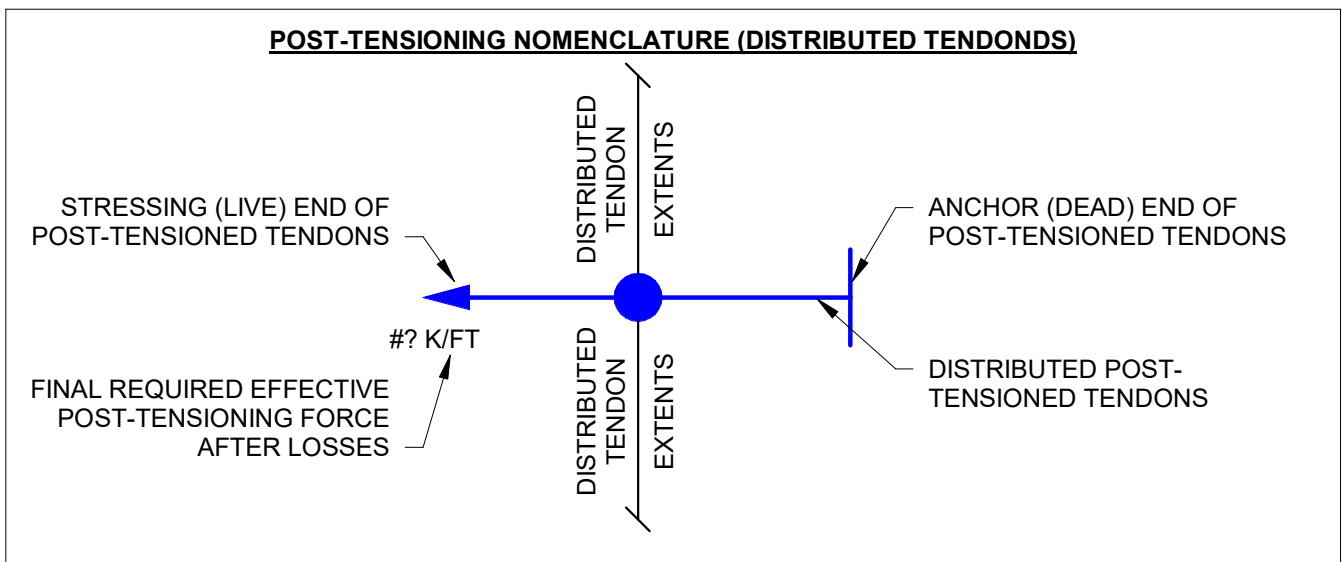
JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
SCHEDULES

Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt





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



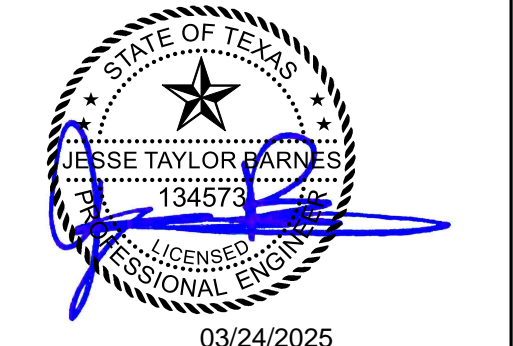
**FRAMING PLAN LEGEND:**

(H?)#	HEADER/OPENING PER OPENING SCHEDULE
(SW?)	SHEAR WALL TYPE, SHEAR WALL INDICATED BY
(F?)	INDICATES FOOTING TYPE
C#	INDICATES COLUMN TYPE
B#	INDICATES BEAM TYPE
P*	JAMB FROM OPENING ABOVE
E.O.S.	INDICATES EDGE OF CONCRETE SLAB
	INDICATES CENTER OF SHEAR WALL HOLDDOWN
	INDICATES STRUCTURAL WOOD FRAMED WALL

- PLAN NOTES:**
- SEE ARCHITECTURAL DRAWINGS FOR SITE PLAN BENCHMARK ELEVATION. FOR REFERENCE ELEVATIONS. SEE BELOW (VERIFY ALL ELEVATIONS AND DIMENSIONS WITH ARCHITECTURAL DRAWINGS)
    - T.O. SLAB-ON-GRADE: 100'-0"
    - LEVEL 2 F.F.: 110'-5 7/8"
    - LEVEL 3 F.F.: 120'-11 3/4"
    - TRUSS BRG: 130'-0 7/8"
  - FLOOR SHEATHING: 3/4" STRUCTURAL GRADE PLYWOOD. FASTEN TO FRAMING W/ 10d COMMON NAILS SPACED 6" O.C. AT EDGES, 12" O.C. WITHIN FIELD.
  - ROOF SHEATHING: 15/32" STRUCTURAL GRADE PLYWOOD. FASTEN TO FRAMING W/ 10d COMMON NAILS SPACED 6" O.C. AT EDGES, 12" O.C. WITHIN FIELD.
  - COORDINATE PLUMBING FIXTURES, SHAFTS, AND FLOOR DRAINS WITH ARCH. & MEP DRAWINGS.
  - ALL EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE PER WALL SCHEDULE ON SHEET S004. SEE ARCHITECTURAL FLOOR PLAN FOR NON-BEARING WALL, DOOR, AND WINDOW LOCATIONS.
  - FLOOR PLAN SHOWS FRAMING FOR THE FLOOR INDICATED & VERTICAL FRAMING (WALLS, HEADERS, POSTS, COLUMNS) ABOVE THAT FLOOR.
  - SEE ARCHITECTURAL DRAWINGS FOR ALL RAILING DETAILS. REFER TO GENERAL NOTES FOR DESIGN CRITERIA.
  - REFER TO MANUFACTURER'S GUIDELINES FOR INSTALLATION OF STRAP TIES, HOLD DOWNS & OTHER CONNECTIONS.
  - ALL EXTERIOR LUMBER (POSTS, BEAMS, DECKING, ETC.) TO BE TREATED.
  - WOOD FLOOR TRUSSES TO BE DESIGNED BY MANUFACTURER AND ARE SHOWN FOR THE INTENT OF SPAN DIRECTION AND LOAD PATH ONLY. REFER TO GENERAL NOTES FOR DESIGN CRITERIA.
  - TRUSS MANUFACTURER TO DESIGN & PROVIDE GIRDER TRUSSES AT ALL FLOOR OPENINGS & SPECIFY HANGERS FOR GIRDERS & SUPPORTED FRAMING.
  - REFER TO ARCHITECTURAL PLANS FOR STAIR DIMENSIONS AND REQUIREMENTS. REFER TO STRUCTURAL GENERAL NOTES FOR STAIR DESIGN CRITERIA.
  - SEE S503 FOR TYPICAL FRAMING DETAILS, S504 FOR STAIR FRAMING, & S520 FOR CMU DETAILS.

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TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP: MARCH 31, 2025

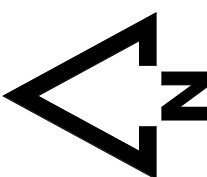
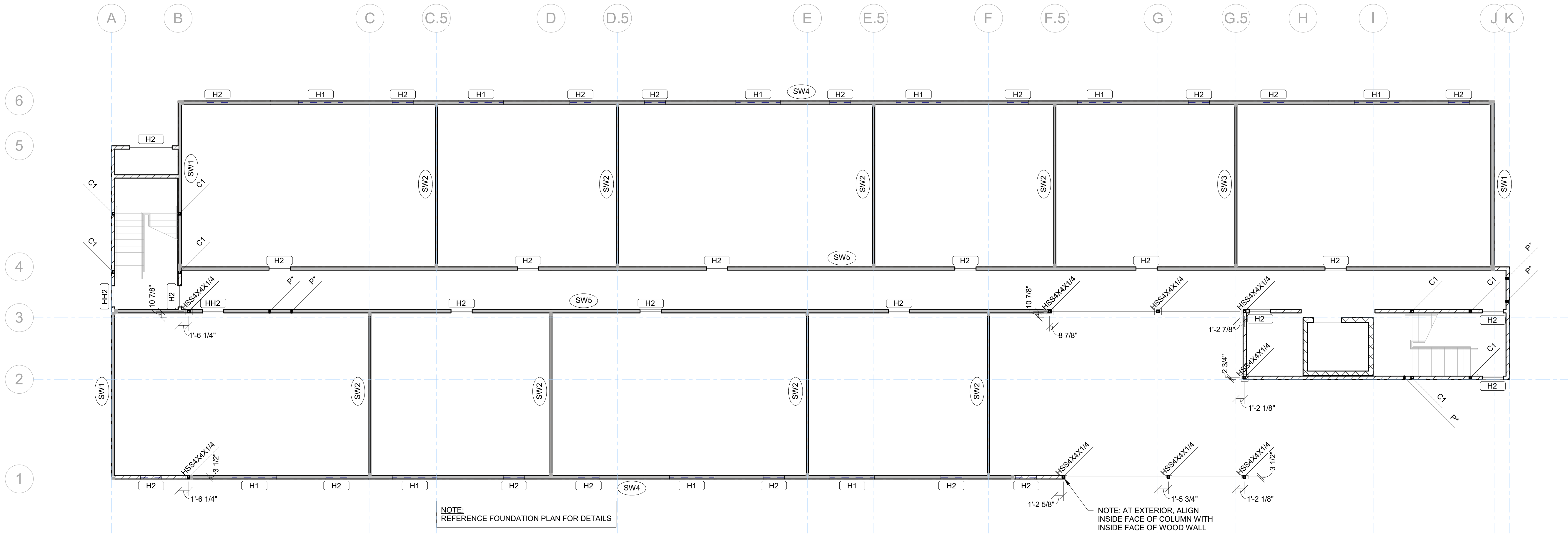
I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.

No.	Description	Date

PROJECT NUMBER 2024002546	SET/ISSUE DATE 03/25/2025
ENGINEER IWC	DRAWN BY CEL
	CHECKED BY MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
FOUNDATION PLAN





1 FIRST FLOOR PLAN  
S101 1/8" = 1'-0"

**FRAMING PLAN LEGEND:**

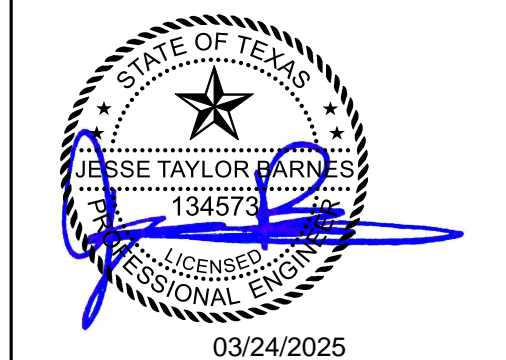
- (H?)# HEADER/OPENING PER OPENING SCHEDULE
- (SW?)# SHEAR WALL TYPE, SHEAR WALL INDICATED BY [Symbol]
- (F?)# INDICATES FOOTING TYPE
- C# INDICATES COLUMN TYPE
- B# INDICATES BEAM TYPE
- P# JAMB FROM OPENING ABOVE
- E.O.S. INDICATES EDGE OF CONCRETE SLAB
- INDICATES CENTER OF SHEAR WALL HOLDDOWN
- [Symbol] INDICATES STRUCTURAL WOOD FRAMED WALL

**PLAN NOTES:**

- SEE ARCHITECTURAL DRAWINGS FOR SITE PLAN BENCHMARK ELEVATION. FOR REFERENCE ELEVATIONS, SEE BELOW (VERIFY ALL ELEVATIONS AND DIMENSIONS WITH ARCHITECTURAL DRAWINGS)
  - T.O. SLAB-ON-GRADE: 100'-0"
  - LEVEL 2 F.F.: 110'-5 7/8"
  - LEVEL 3 F.F.: 120'-11 3/4"
  - TRUSS BRG: 130'-0 7/8"
- FLOOR SHEATHING: 3/4" STRUCTURAL GRADE PLYWOOD. FASTEN TO FRAMING W/ 10d COMMON NAILS SPACED 6" O.C. AT EDGES, 12" O.C. WITHIN FIELD.
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- ALL EXTERIOR AND INTERIOR LOAD BEARING WALLS ARE PER WALL SCHEDULE ON SHEET S004. SEE ARCHITECTURAL FLOOR PLAN FOR NON-BEARING WALL, DOOR, AND WINDOW LOCATIONS.
- FLOOR PLAN SHOWS FRAMING FOR THE FLOOR INDICATED & VERTICAL FRAMING (WALLS, HEADERS, POSTS, COLUMNS) ABOVE THAT FLOOR.
- SEE ARCHITECTURAL DRAWINGS FOR ALL RAILING DETAILS. REFER TO GENERAL NOTES FOR DESIGN CRITERIA.
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TEXAS CERTIFICATE OF AUTHORITY  
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EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP: MARCH 31, 2025

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No.	Description	Date

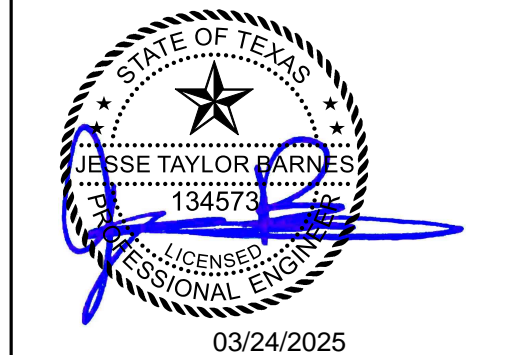
PROJECT NUMBER 2024002546	SET/ISSUE DATE 03/25/2025
ENGINEER IWC	DRAWN BY CEL
	CHECKED BY MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
FIRST FLOOR PLAN



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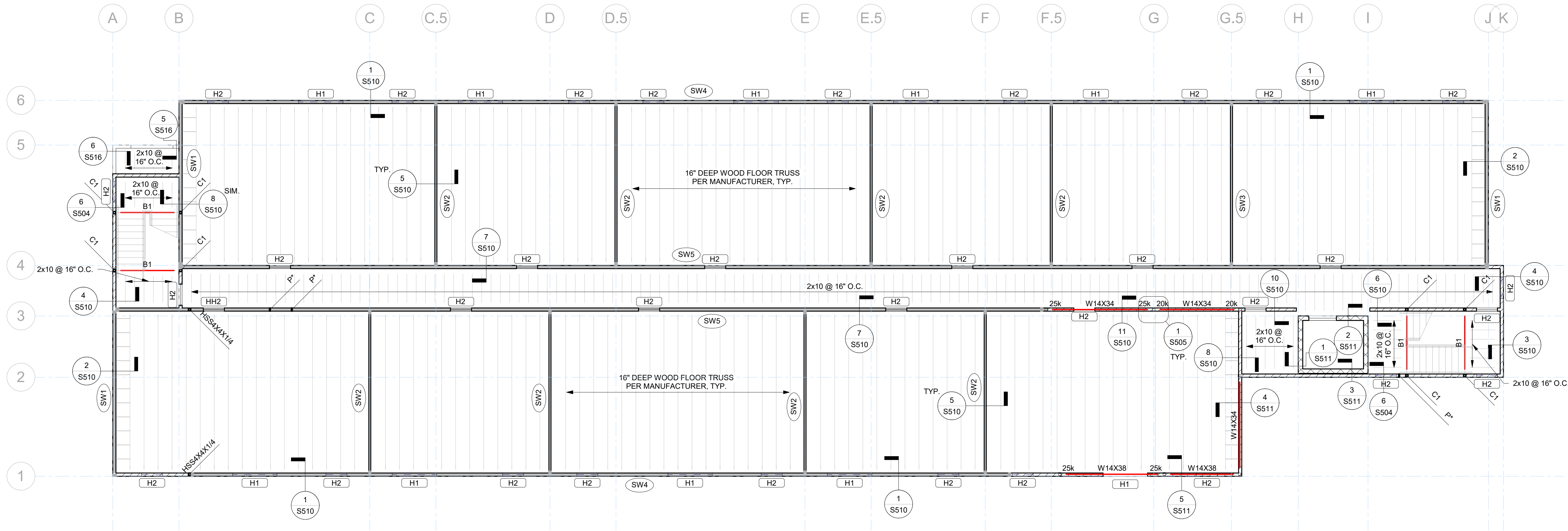
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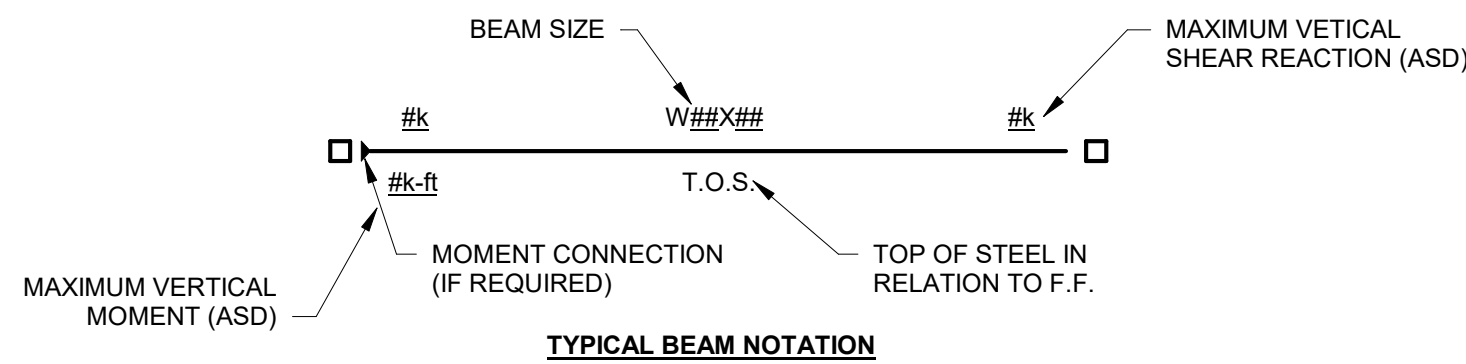
No.	Description	Date

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	CHECKED BY MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
SECOND FLOOR PLAN



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



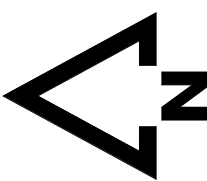
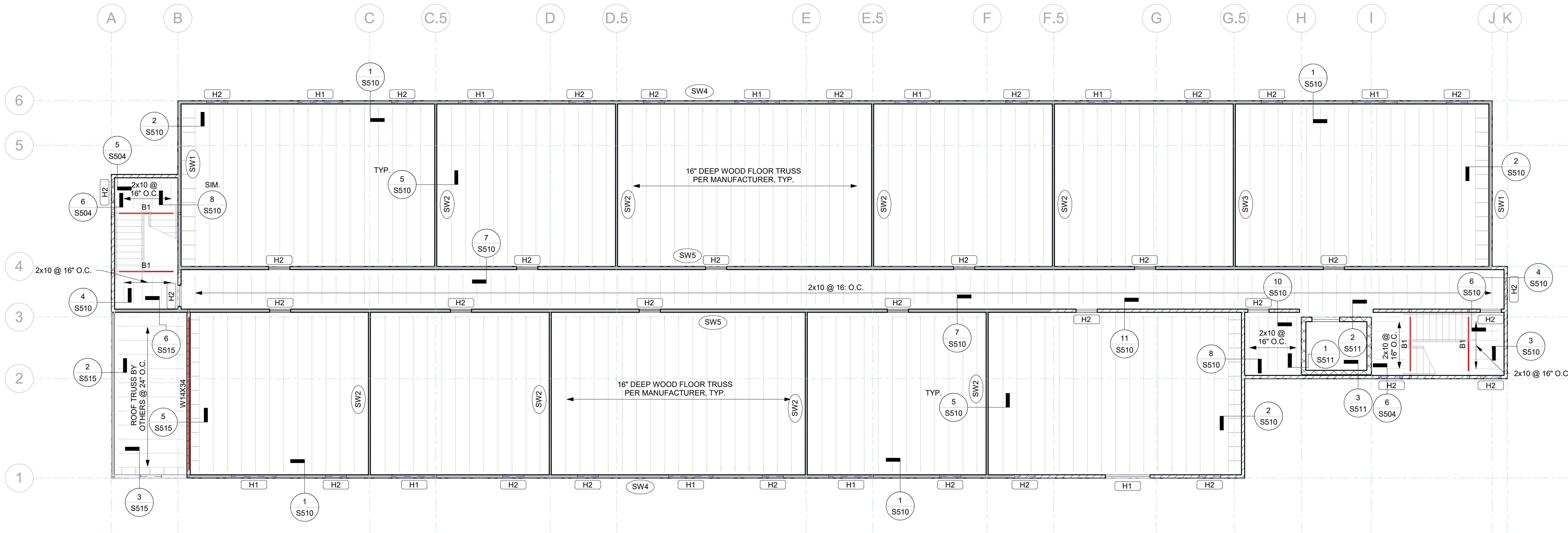
FRAMING PLAN LEGEND:

- (H?)# HEADER/OPENING PER OPENING SCHEDULE
- (SW?)# SHEAR WALL TYPE, SHEAR WALL INDICATED BY [Symbol]
- (F?)# INDICATES FOOTING TYPE
- C# INDICATES COLUMN TYPE
- B# INDICATES BEAM TYPE
- P\* JAMB FROM OPENING ABOVE
- E.O.S. INDICATES EDGE OF CONCRETE SLAB
- INDICATES CENTER OF SHEAR WALL HOLDDOWN
- [Hatched Box] INDICATES STRUCTURAL WOOD FRAMED WALL

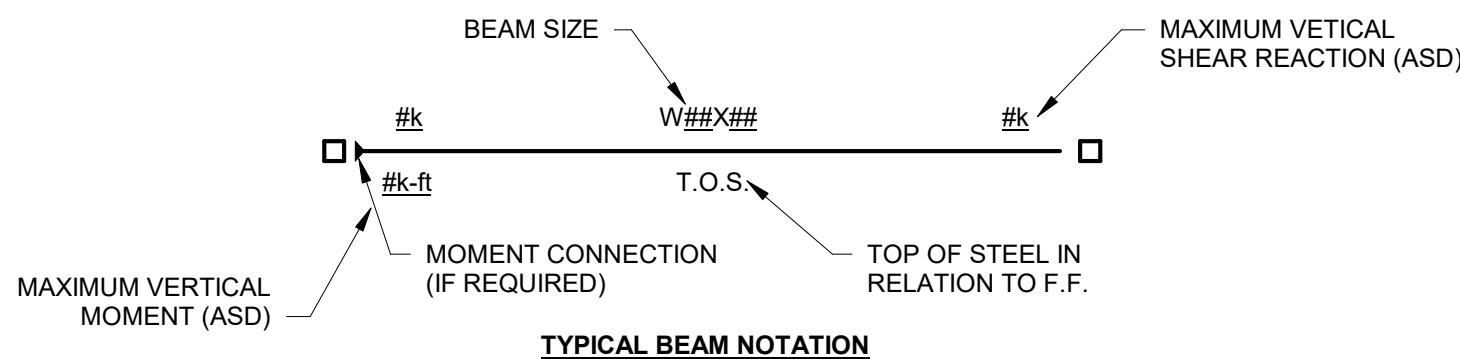
PLAN NOTES:

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



**FRAMING PLAN LEGEND:**

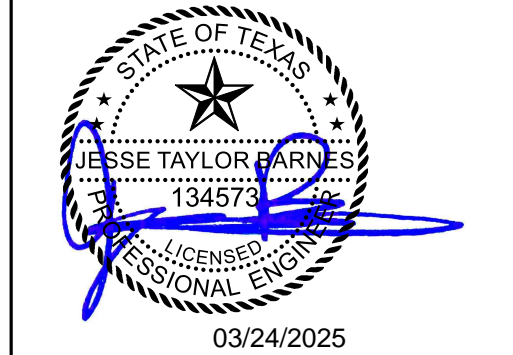
- (H?#) HEADER/OPENING PER OPENING SCHEDULE
- (SW?) SHEAR WALL TYPE, SHEAR WALL INDICATED BY [Symbol]
- (F?) INDICATES FOOTING TYPE
- C# INDICATES COLUMN TYPE
- B# INDICATES BEAM TYPE
- P\* JAMB FROM OPENING ABOVE
- E.O.S. INDICATES EDGE OF CONCRETE SLAB
- INDICATES CENTER OF SHEAR WALL HOLDDOWN
- [Symbol] INDICATES STRUCTURAL WOOD FRAMED WALL

**PLAN NOTES:**

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TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP. MARCH 31, 2025

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No.	Description	Date

PROJECT NUMBER 2024002546	SET/ISSUE DATE 03/25/2025
ENGINEER IWC	DRAWN BY CEL
	CHECKED BY MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIKANA, TEXAS  
THIRD FLOOR PLAN



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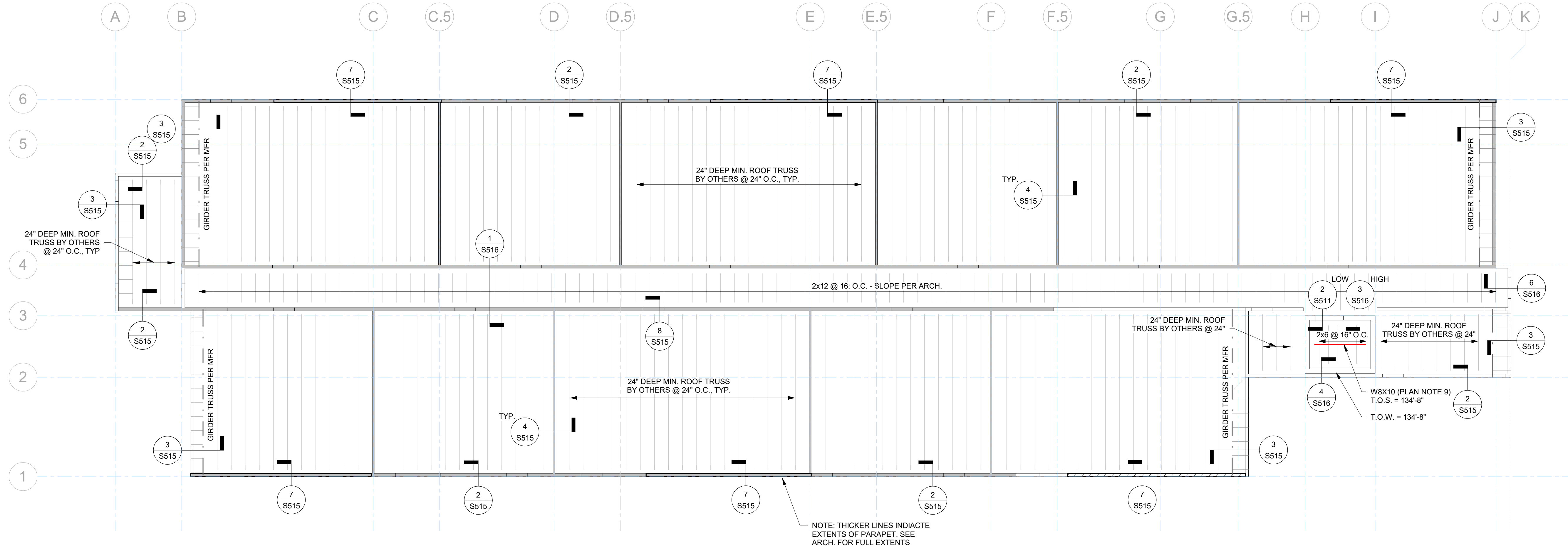
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TEXAS.

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ENGINEER IWC	DRAWN BY CEL
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JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
ROOF PLAN



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

FRAMING PLAN LEGEND:

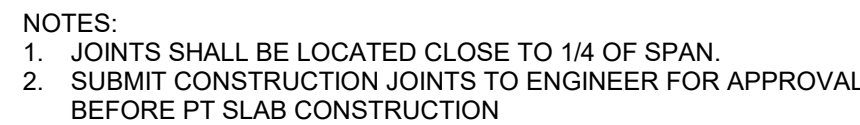
(H)?#	HEADER/OPENING PER OPENING SCHEDULE
(SW)?	SHEAR WALL TYPE, SHEAR WALL INDICATED BY <span style="display:inline-block; width:10px; height:10px; background-color:gray;"></span>
(F)?	INDICATES FOOTING TYPE
C#	INDICATES COLUMN TYPE
B#	INDICATES BEAM TYPE
P*	JAMB FROM OPENING ABOVE
E.O.S.	INDICATES EDGE OF CONCRETE SLAB

ROOF FRAMING NOTES:

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  - T.O. SLAB ON GRADE 100'-0"
  - LEVEL 2 F.F. 110'-5 7/8"
  - LEVEL 3 F.F. 120'-11 3/4"
  - ROOF TRUSS BEARING 130'-0 7/8"
- ROOF SHEATHING: 15/32" STRUCTURAL GRADE PLYWOOD FASTENED TO ROOF TRUSSES W/ 10d COMMON NAILS SPACED 6" O.C. AT EDGES, 12" O.C. WITHIN THE FIELD.
- RTU PENETRATIONS TO BE COORDINATED W/ ARCH. & MEP DRAWINGS.
- REFER TO MANUFACTURER'S GUIDELINES FOR INSTALLATION OF STRAP TIES, HOLD DOWNS AND OTHER CONNECTIONS.
- ALL EXTERIOR LUMBER (POSTS, BEAMS, DECKING, ETC.) TO BE TREATED.
- WOOD ROOF TRUSSES (DESIGN PER MANUFACTURER) ARE SHOWN FOR THE INTENT OF SPAN DIRECTION AND LOAD PATH ONLY. REFER TO GENERAL NOTES FOR DESIGN CRITERIA.
- TRUSS MANUFACTURER TO DESIGN & PROVIDE GIRDER TRUSSES AT ALL OPENINGS AND LOCATIONS SHOWN ON PLAN & SPECIFY HANGERS FOR GIRDERS & SUPPORTED FRAMING WHERE REQUIRED.
- TRUSS MANUFACTURER TO DESIGN & PROVIDE DRAG BLOCKING AND TRUSSES AT SHADED SHEAR WALL LOCATIONS. SEE SHEAR WALL SCHEDULE FOR LOAD TO TRANSFER.
- ELEVATOR HOIST BEAM IS APPROVED FOR ELEVATORS WITH A MAXIMUM HOIST LOAD REQUIREMENT OF 6.75KIP. FOR ELEVATORS REQUIRING A HOIST BEAM TO SUPPORT LOADS GREATER THAN 6.75KIP CONTACT MCCLURE FOR HOIST BEAM SIZE.

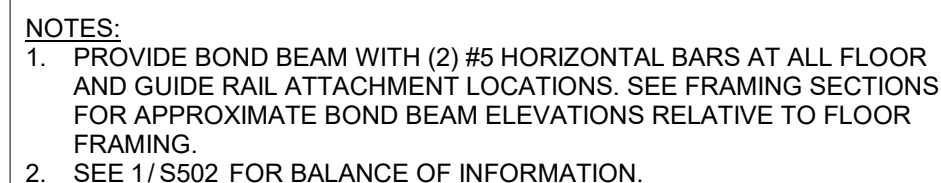
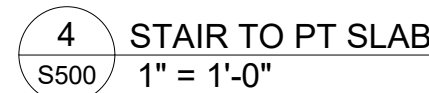


[1] A STANDARD HOOK FOR STIRRUPS, TIES, AND HOOPS INCLUDES THE SPECIFIC INSIDE BEND DIAMETER AND STRAIGHT EXTENSION LENGTH. IT SHALL BE PERMITTED TO USE A LONGER STRAIGHT EXTENSION AT THE END OF A HOOK. A LONGER EXTENSION SHALL NOT BE CONSIDERED TO INCREASE THE ANCHORAGE CAPACITY OF THE HOOK.



- 2 ADDITIONAL REINFORCING IN SLABS  
S500 3/4" = 1'-0"

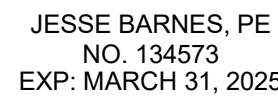
- 3 CONSTRUCTION JOINT WITH NO INTERMEDIATE STRESSING  
S500 1" = 1'-0"



- 6 ELEVATOR PIT DETAIL  
S500 3/4" = 1'-0"



TEXAS CERTIFICATE OF AUTHORITY  
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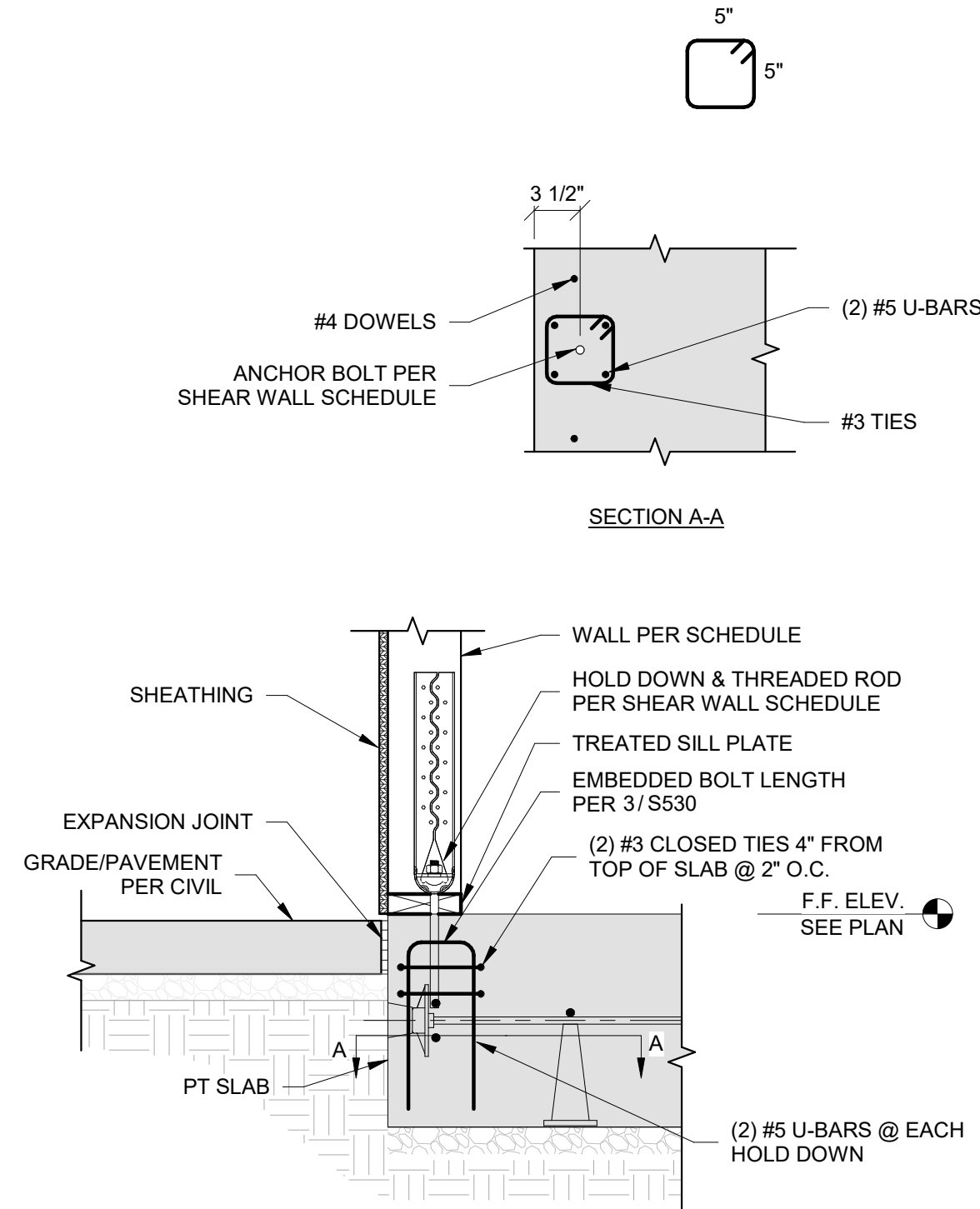


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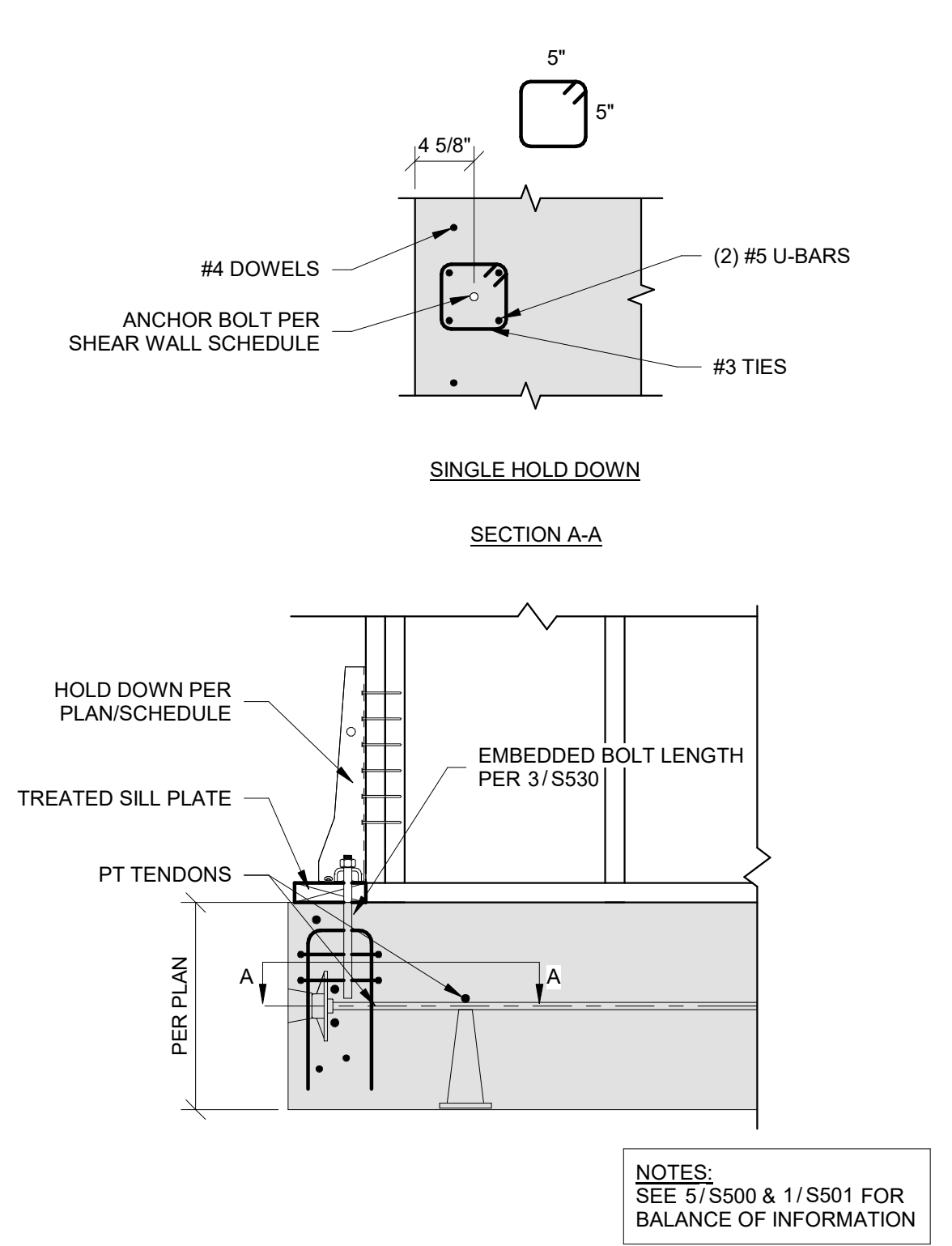
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JONES GILLAM RENZ  
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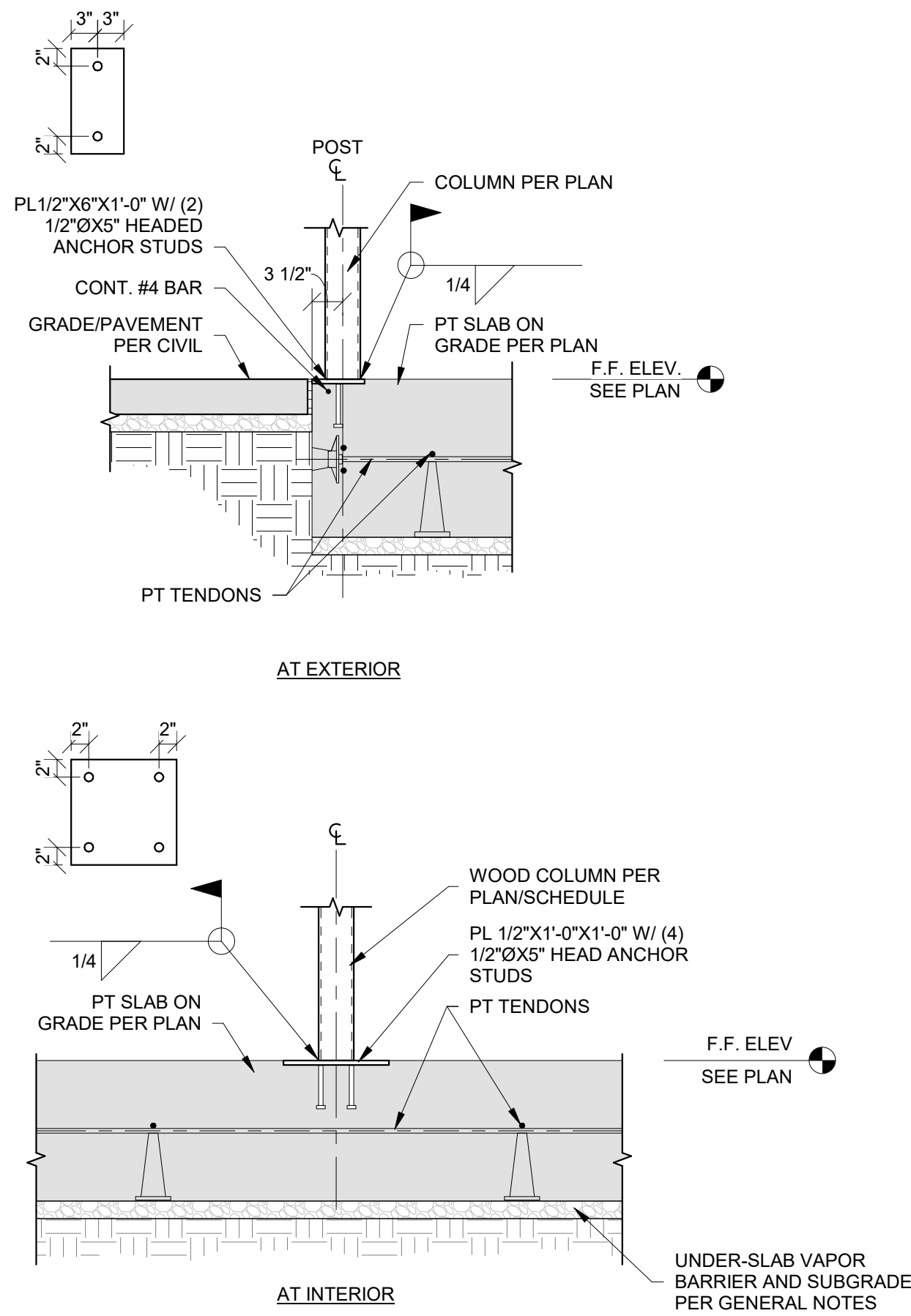




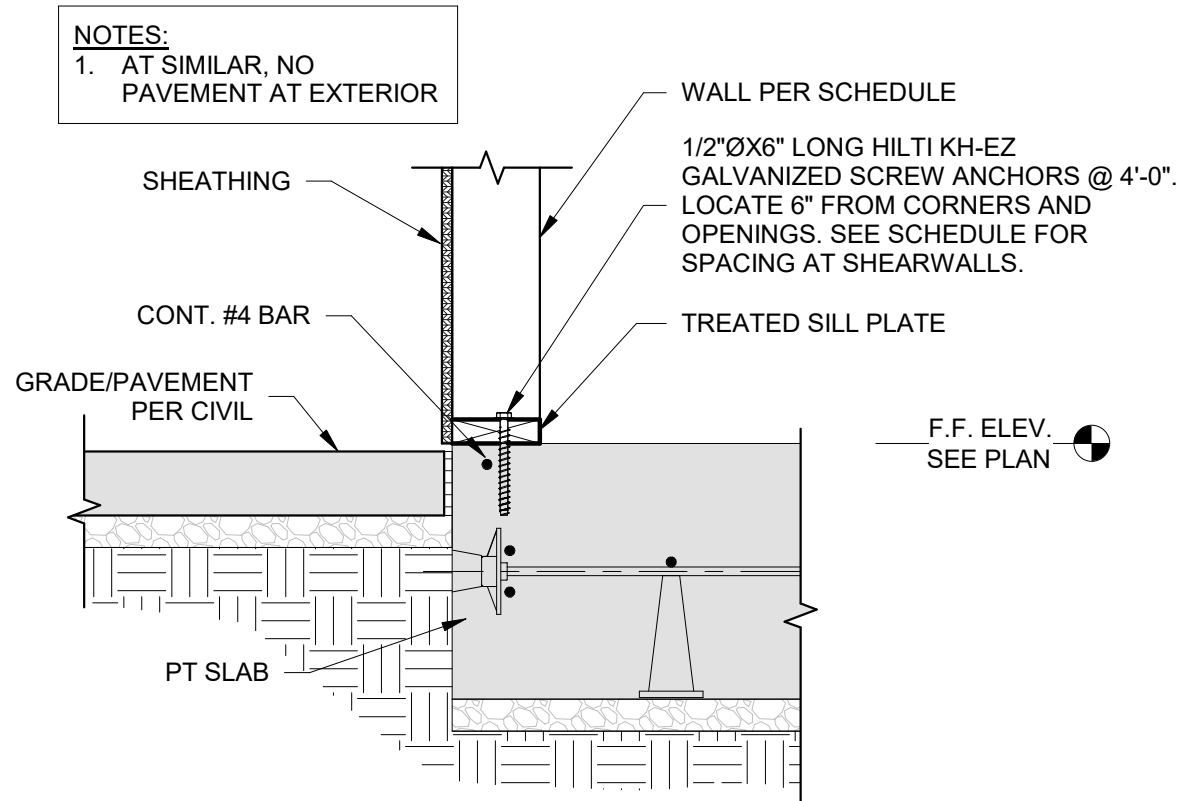
1 SECTION AT SHEAR WALL HOLD DOWN  
S501 1" = 1'-0"



2 SHEARWALL HOLD DOWN @ DEMISING WALL  
S501 1" = 1'-0"



3 COLUMN AT FOUNDATION  
S501 3/4" = 1'-0"



4 SECTION AT FOOTING  
S501 1" = 1'-0"

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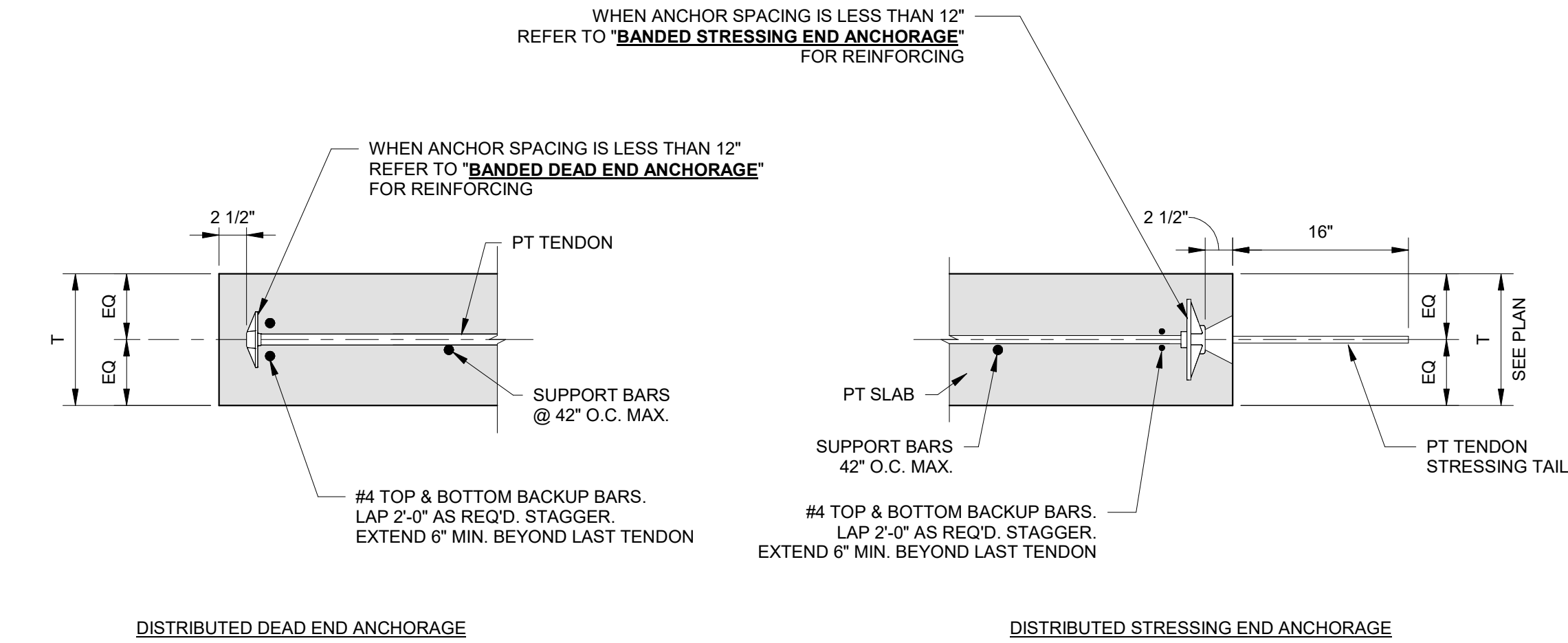
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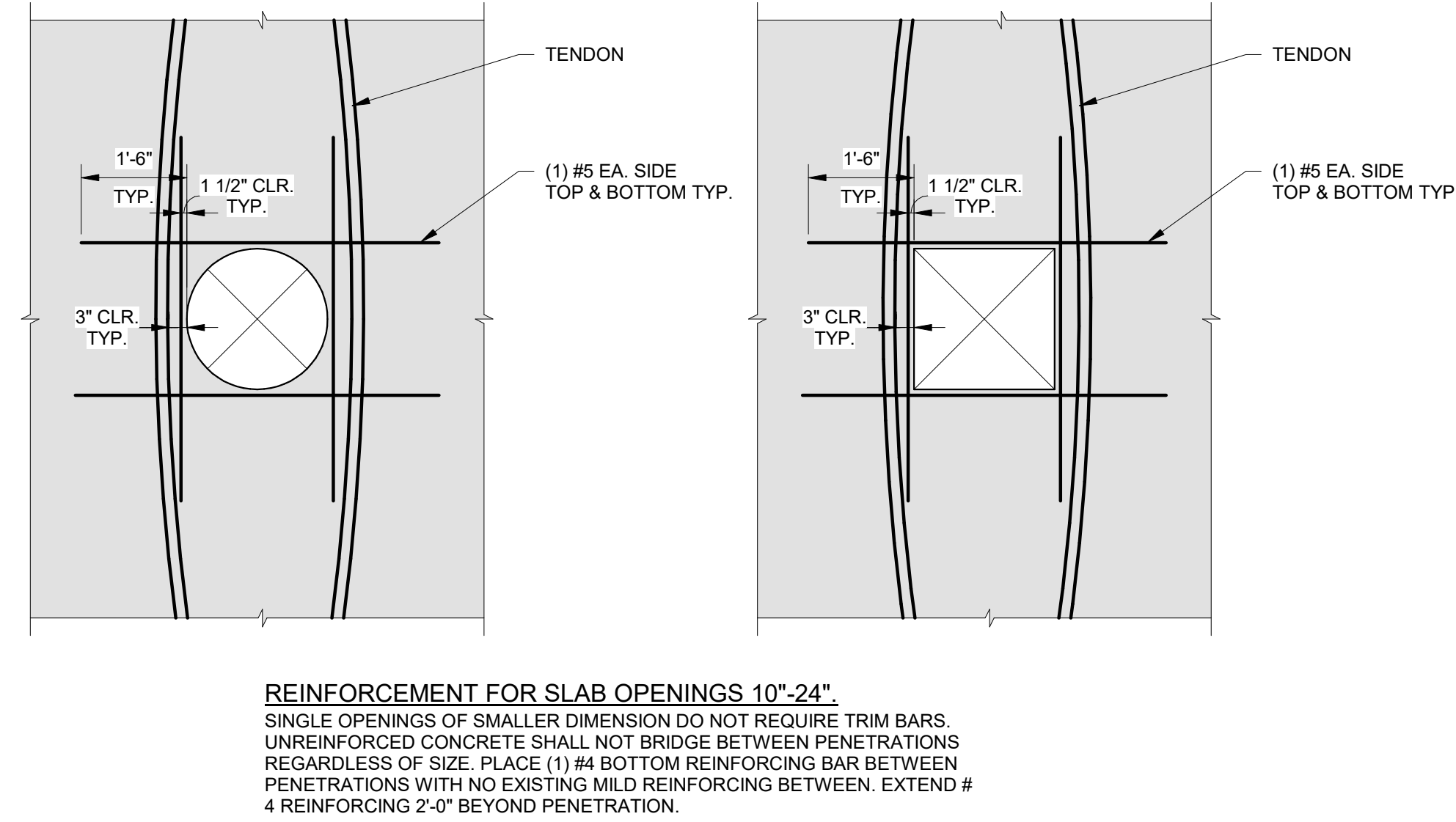
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FOUNDATION DETAILS  
Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt

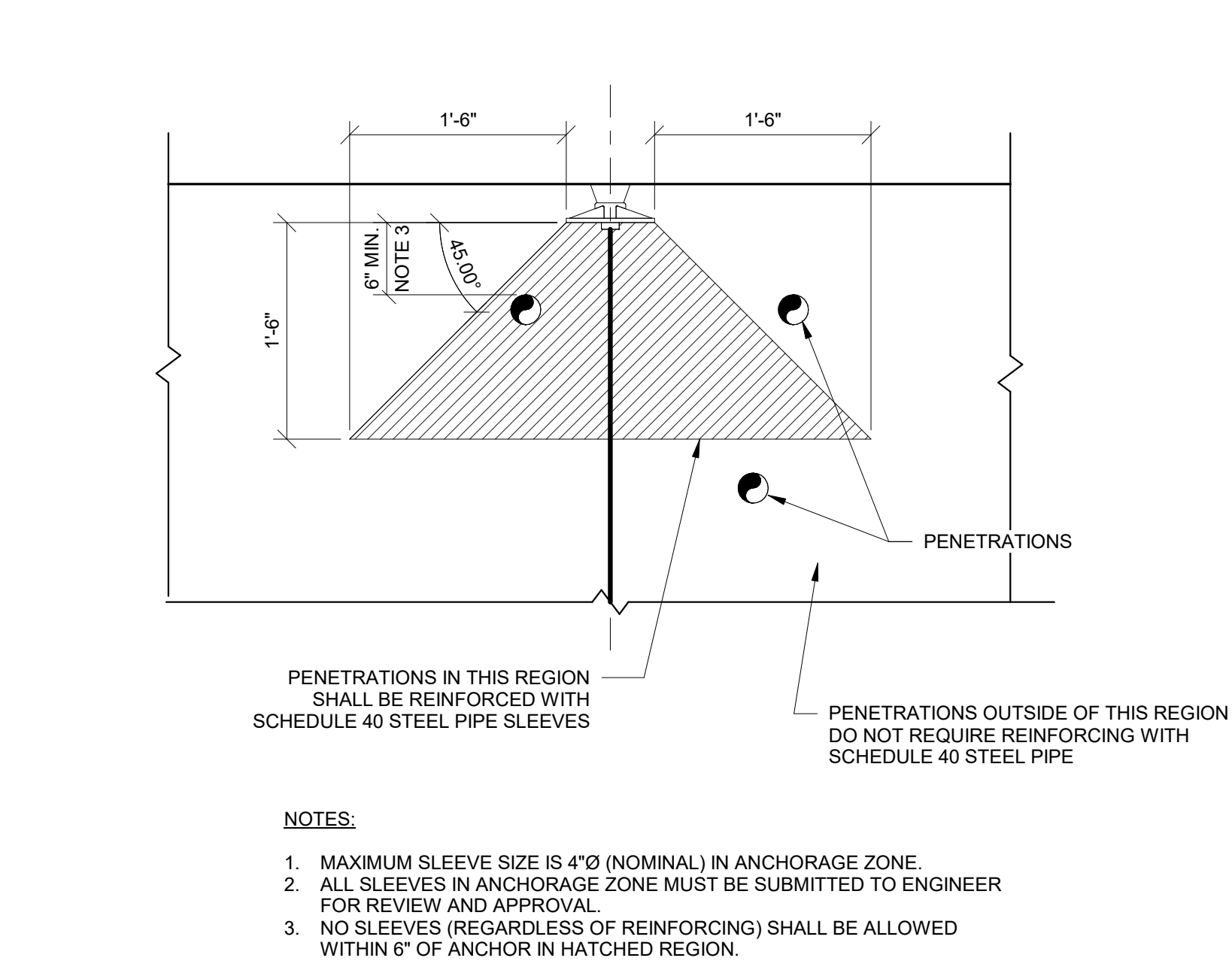




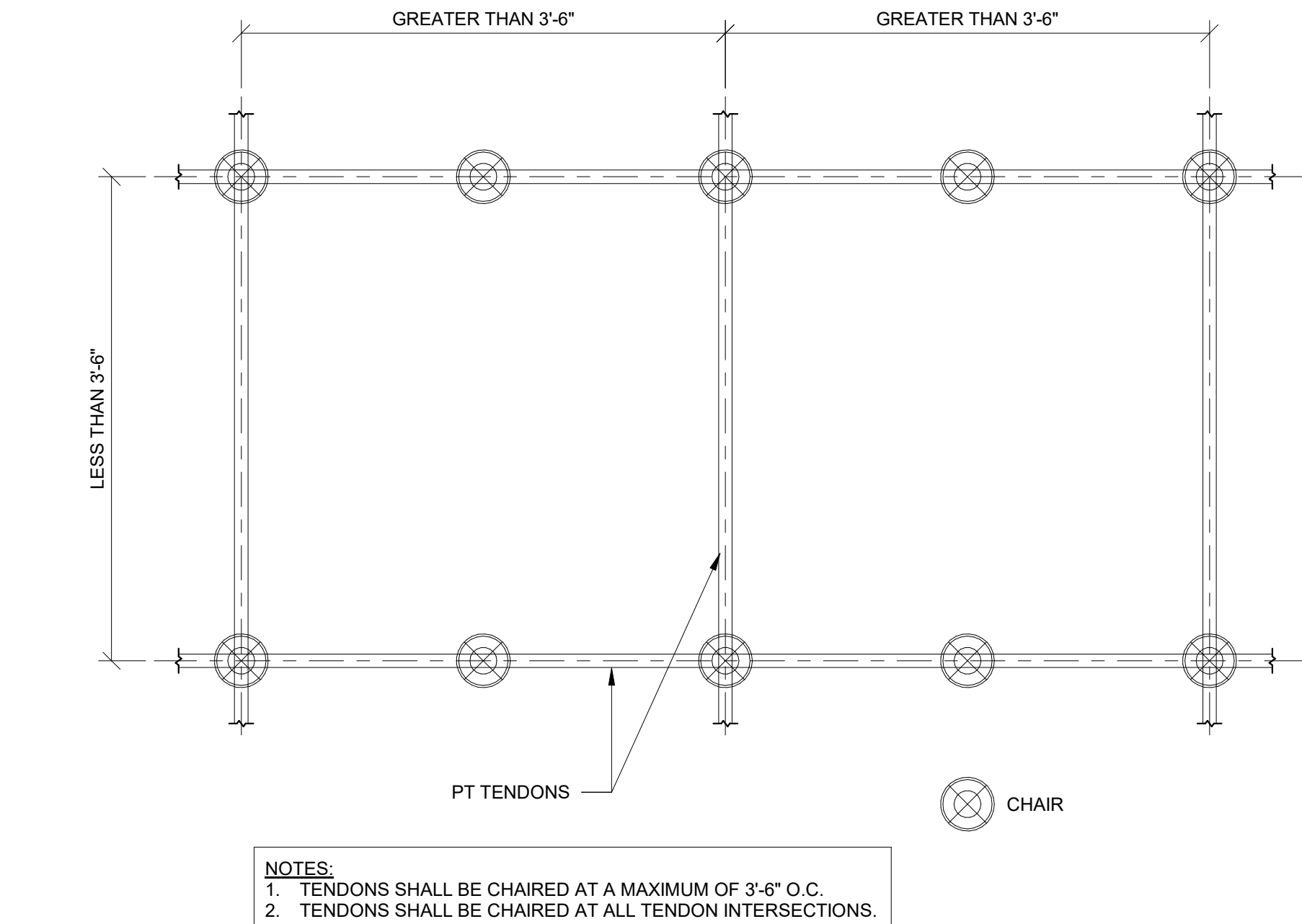
1 TYPICAL POST-TENSIONED SLAB ANCHORAGE DETAIL  
1" = 1'-0"



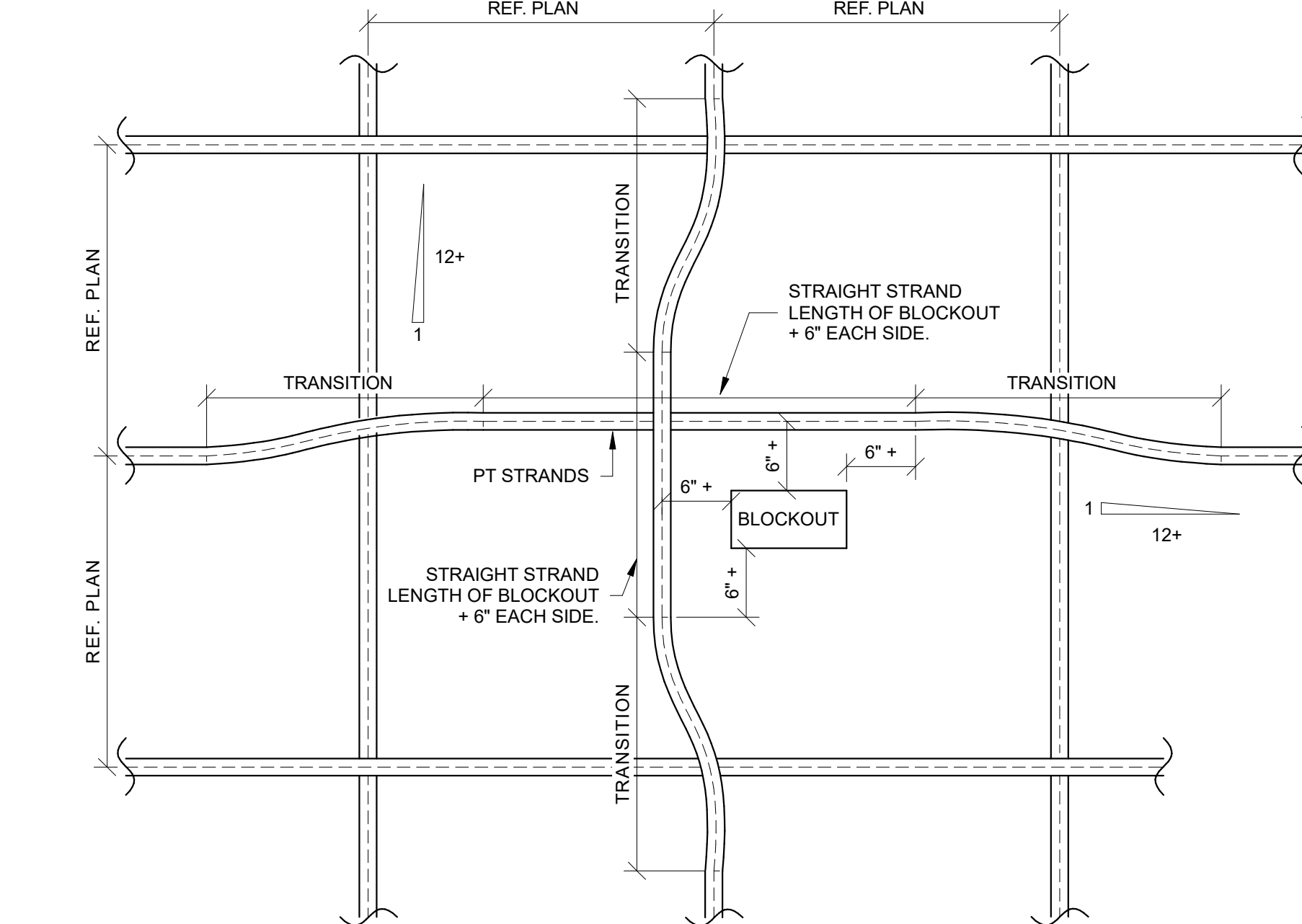
2 TRIM BARS AT SLAB OPENINGS  
1/2" = 1'-0"



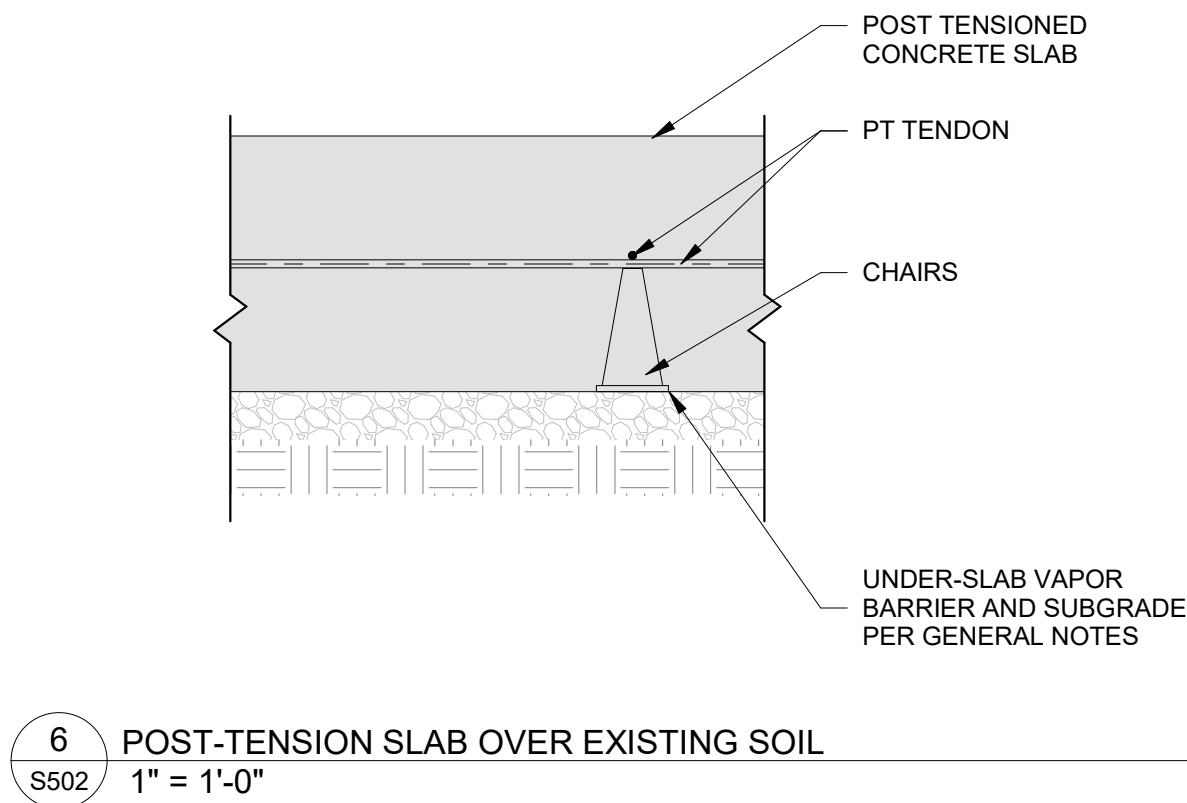
3 TYPICAL PENETRATIONS IN TENDON ANCHORAGE ZONE  
1" = 1'-0"



4 TENDON SUPPORT  
1" = 1'-0"



5 TYPICAL OPENING OR PENETRATION IN POST-TENSIONED SLAB ON GRADE  
1" = 1'-0"

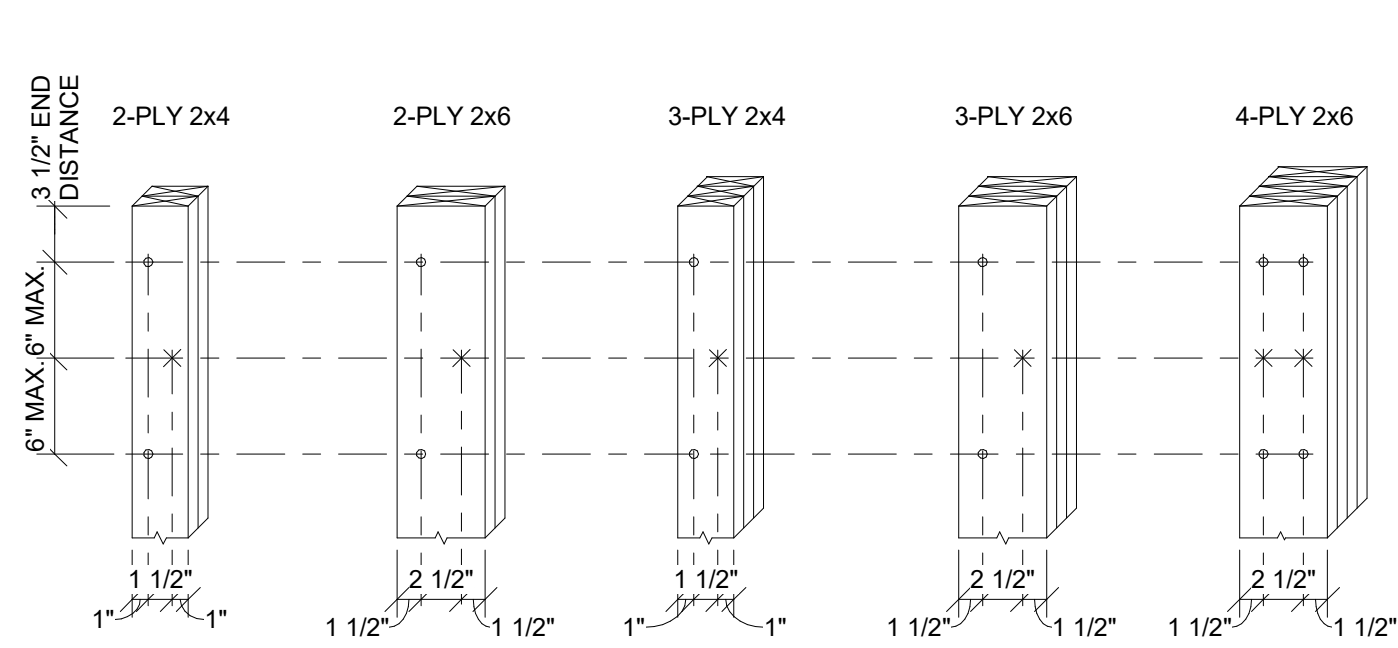


6 POST-TENSION SLAB OVER EXISTING SOIL  
1" = 1'-0"

No.	Description	Date

PROJECT NUMBER 2024002546	SET/ISSUE DATE 03/25/2025
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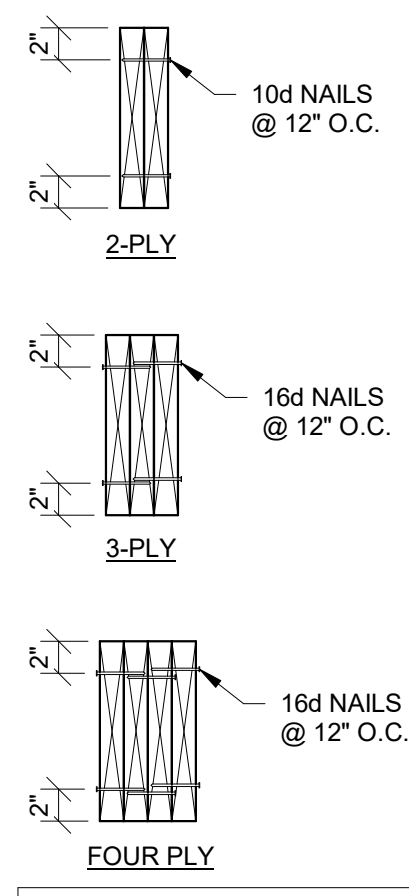
**LEGEND**

\* NAIL FROM THIS SIDE      × NAIL FROM OPPOSITE SIDE

**COLUMN NOTES:**

- USE 10d NAILS FOR 2-PLY & 30d FOR REST
- ADJACENT NAILS ARE TO BE DRIVEN FROM OPPOSITE SIDES OF COLUMN

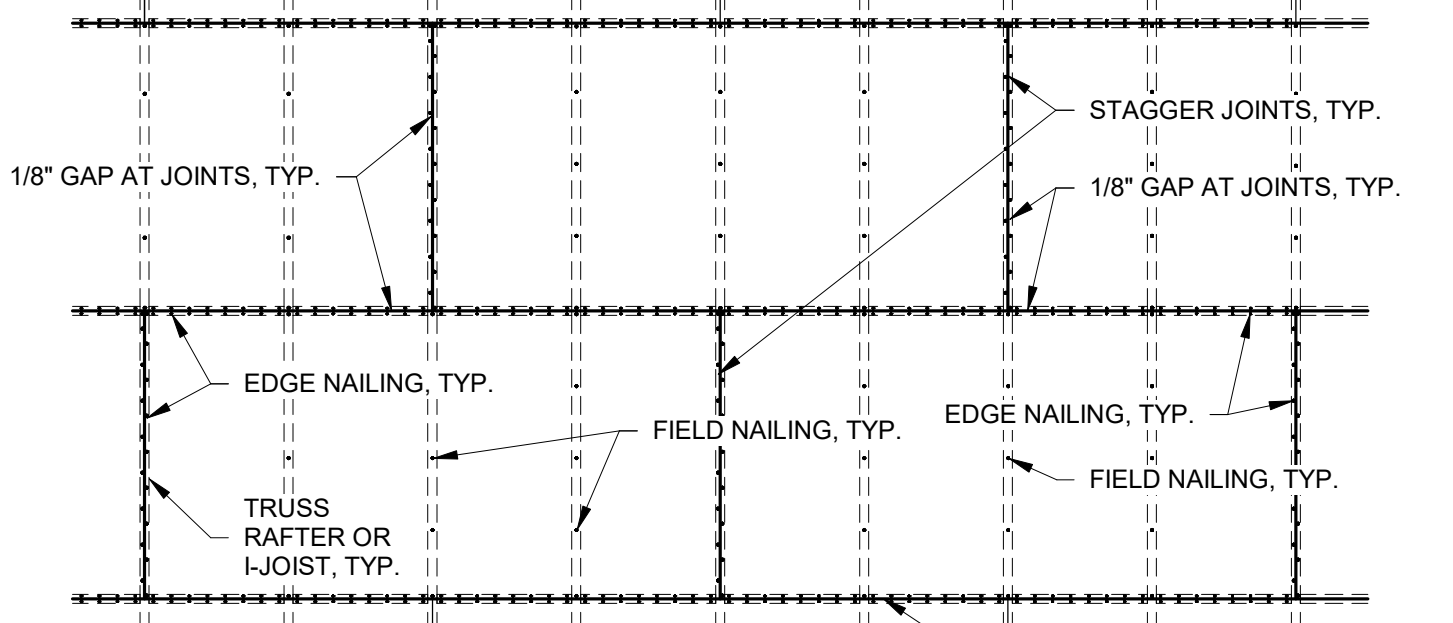
BUILT UP COLUMN



**BEAM NOTE:**

- PROVIDE MIN. (3) NAILS EACH END.

BUILT UP BEAM



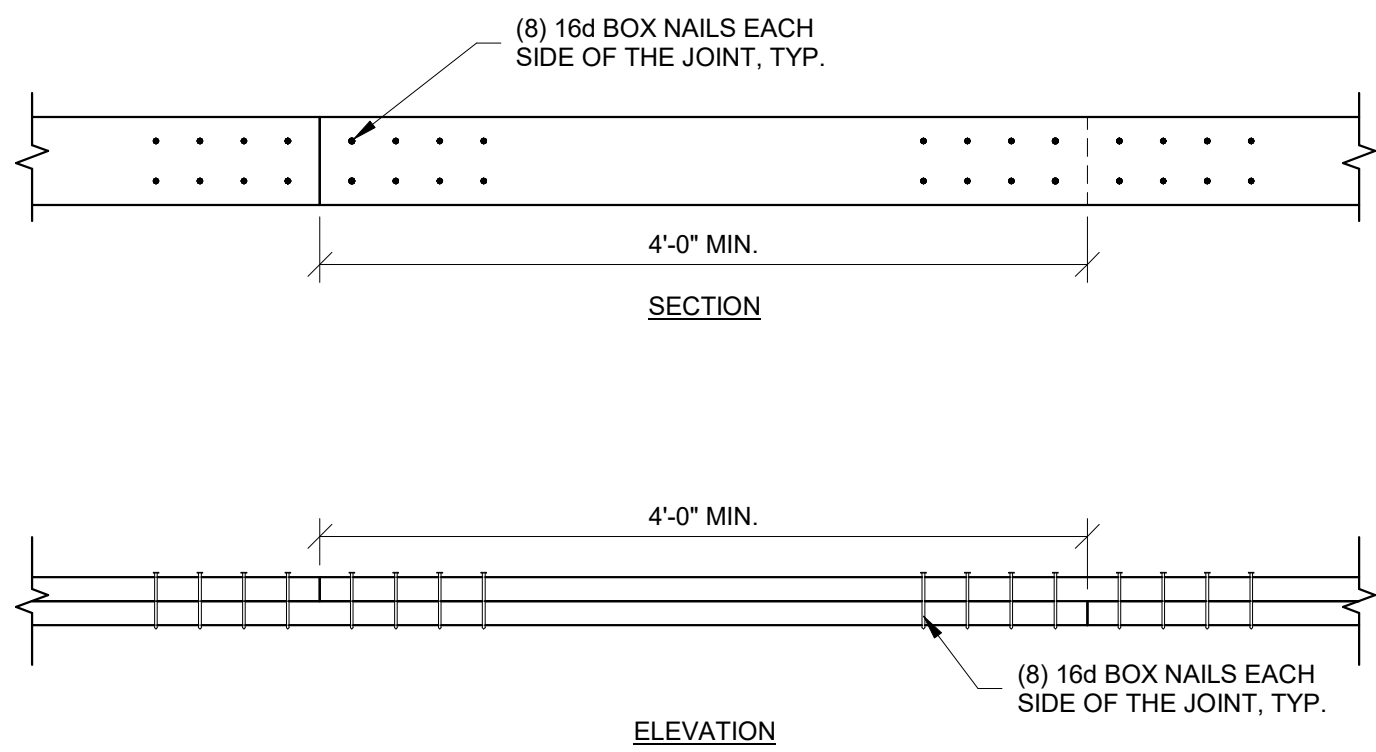
ELEVATION

SECTION

1 TYPICAL BUILT-UP MEMBER DETAIL  
S503 NTS

2 TYPICAL DIAPHRAGM NAILING  
S503 NTS

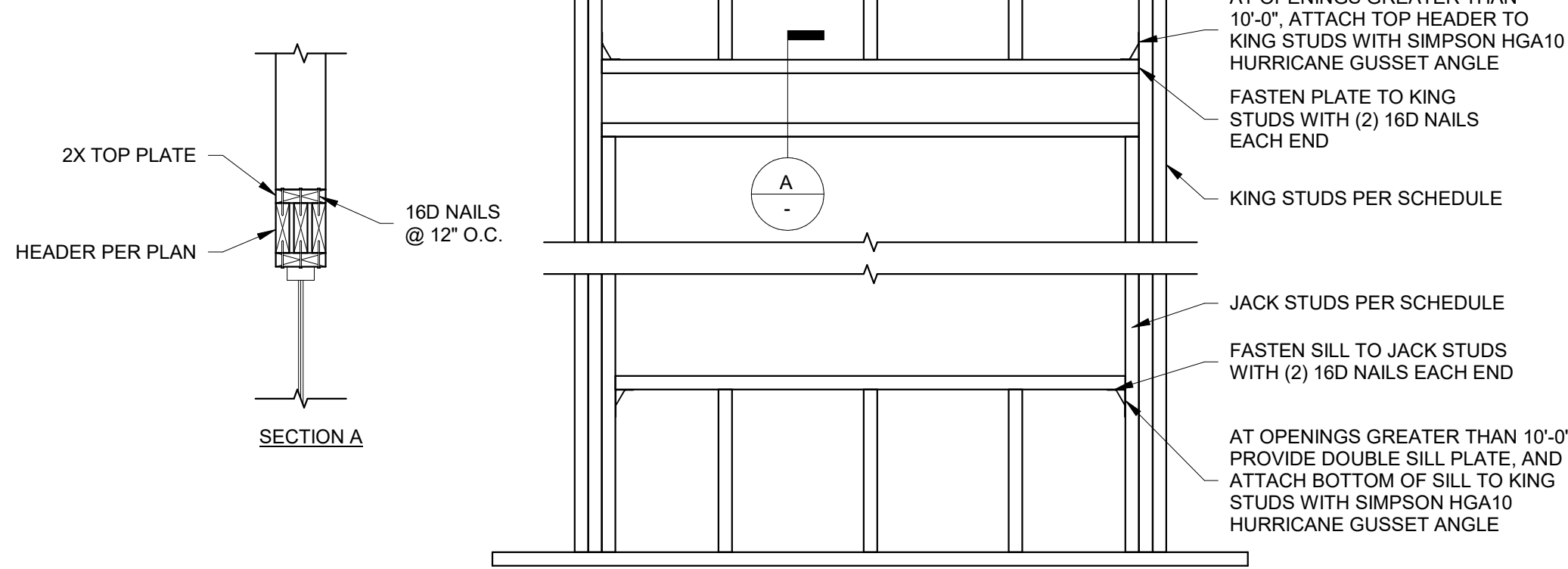
3 TYPICAL HEADER CONNECTION AT SHEAR WALLS  
S503 NTS



SECTION

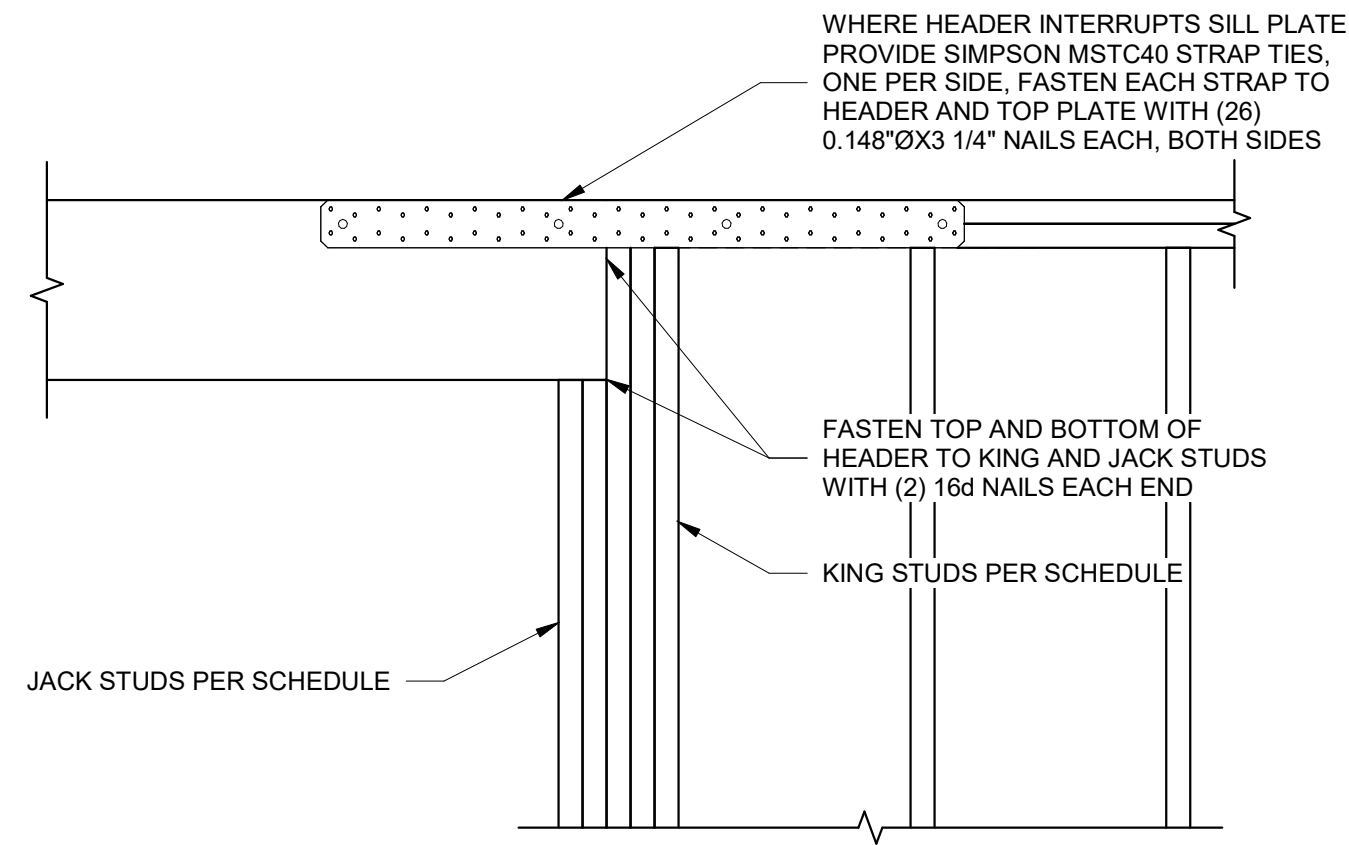
ELEVATION

4 TOP PLATE SPLICE  
S503 NTS

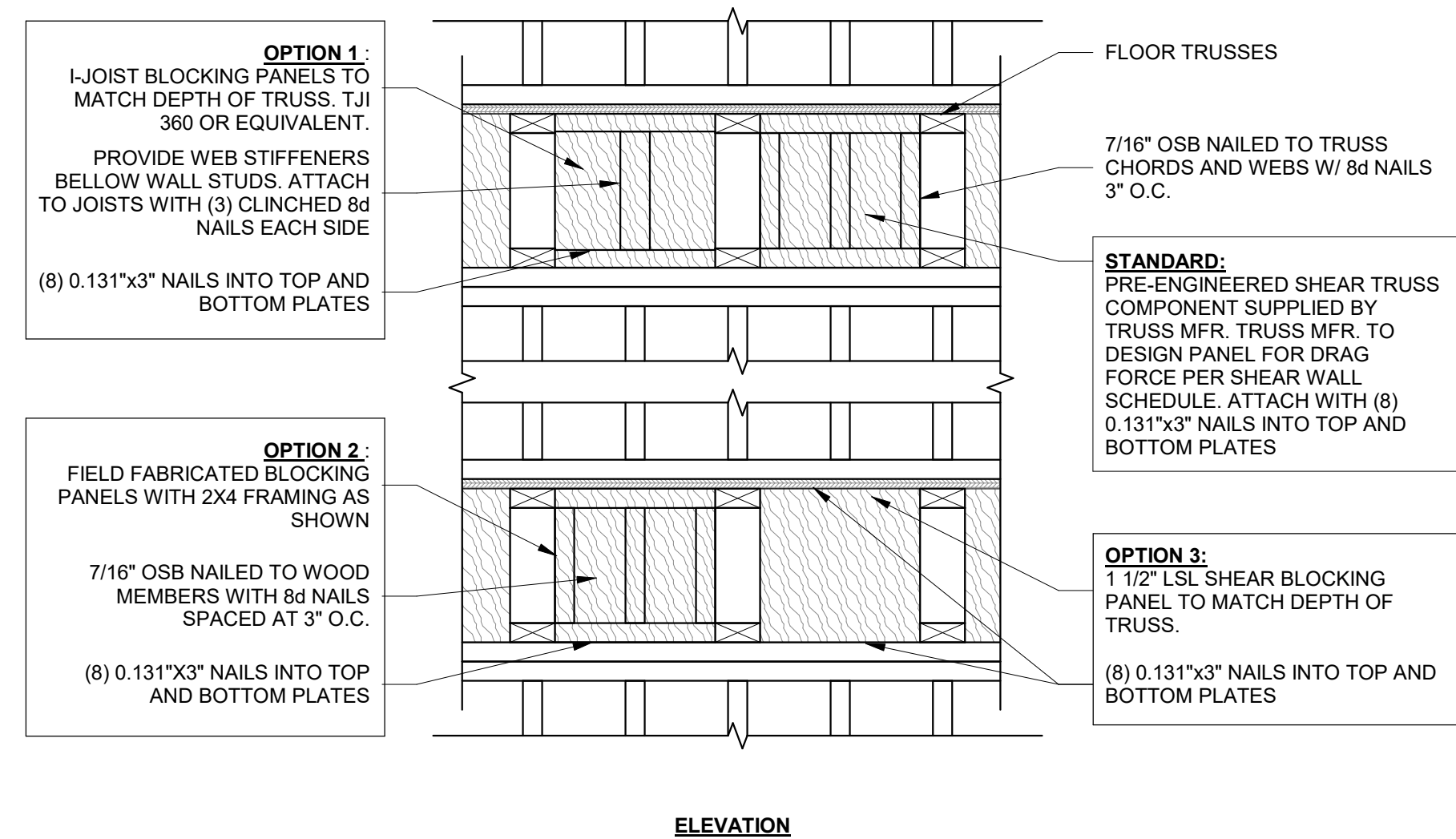


SECTION A

5 FRAMING AT OPENING  
S503 NTS



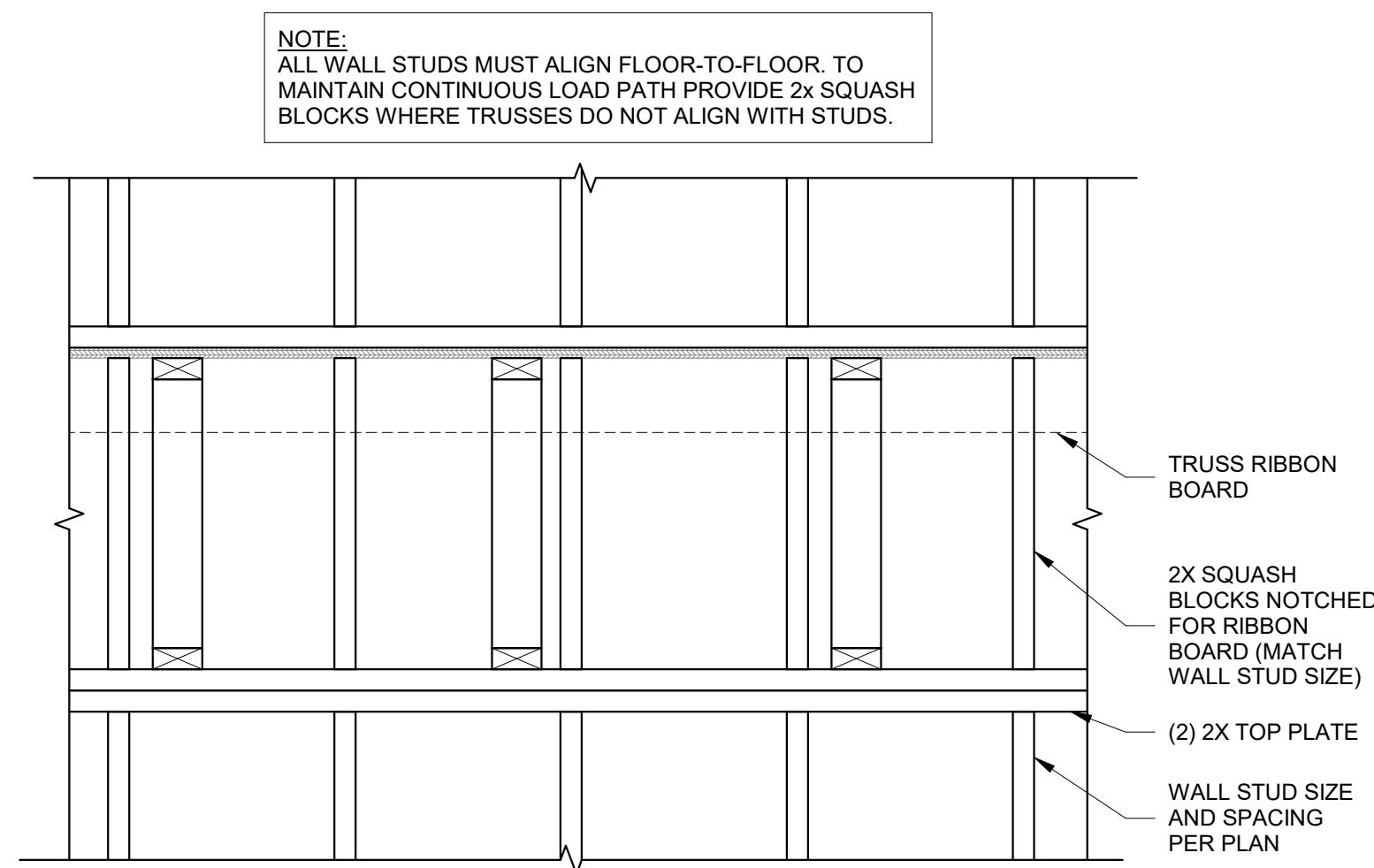
6 FRAMING AT OPENING - RAISED HEADER  
S503 NTS



ELEVATION

SECTION

7 SHEAR BLOCKING PANEL OPTIONS  
S503 1\"/>



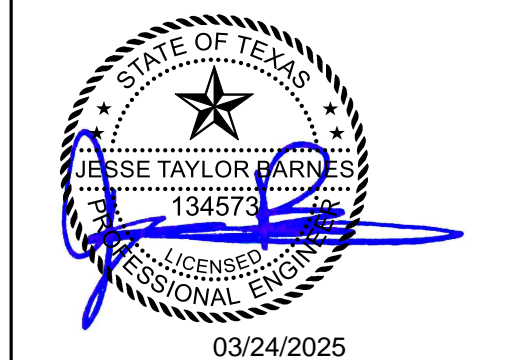
8 TYPICAL WALL FRAMING ELEVATION  
S503 1\"/>

No.	Description	Date



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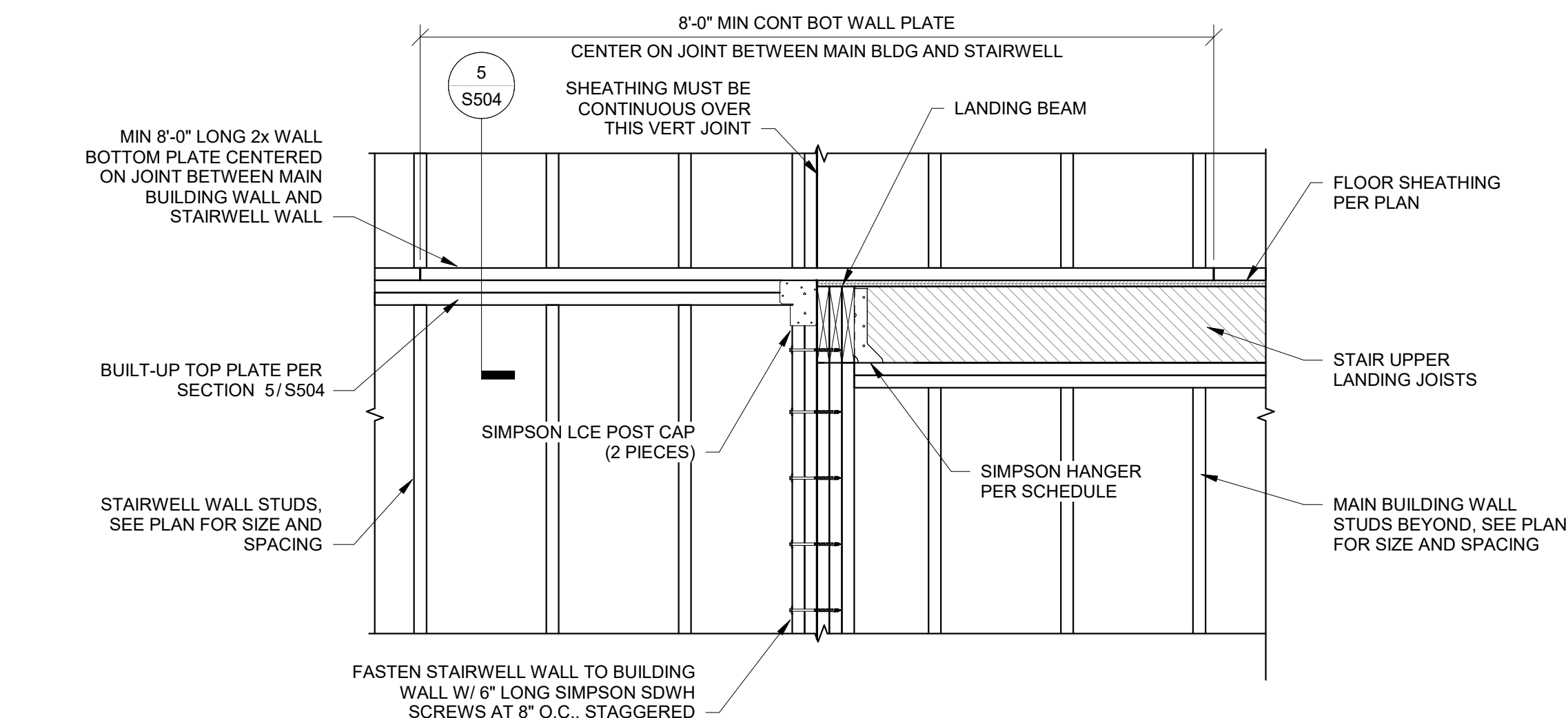
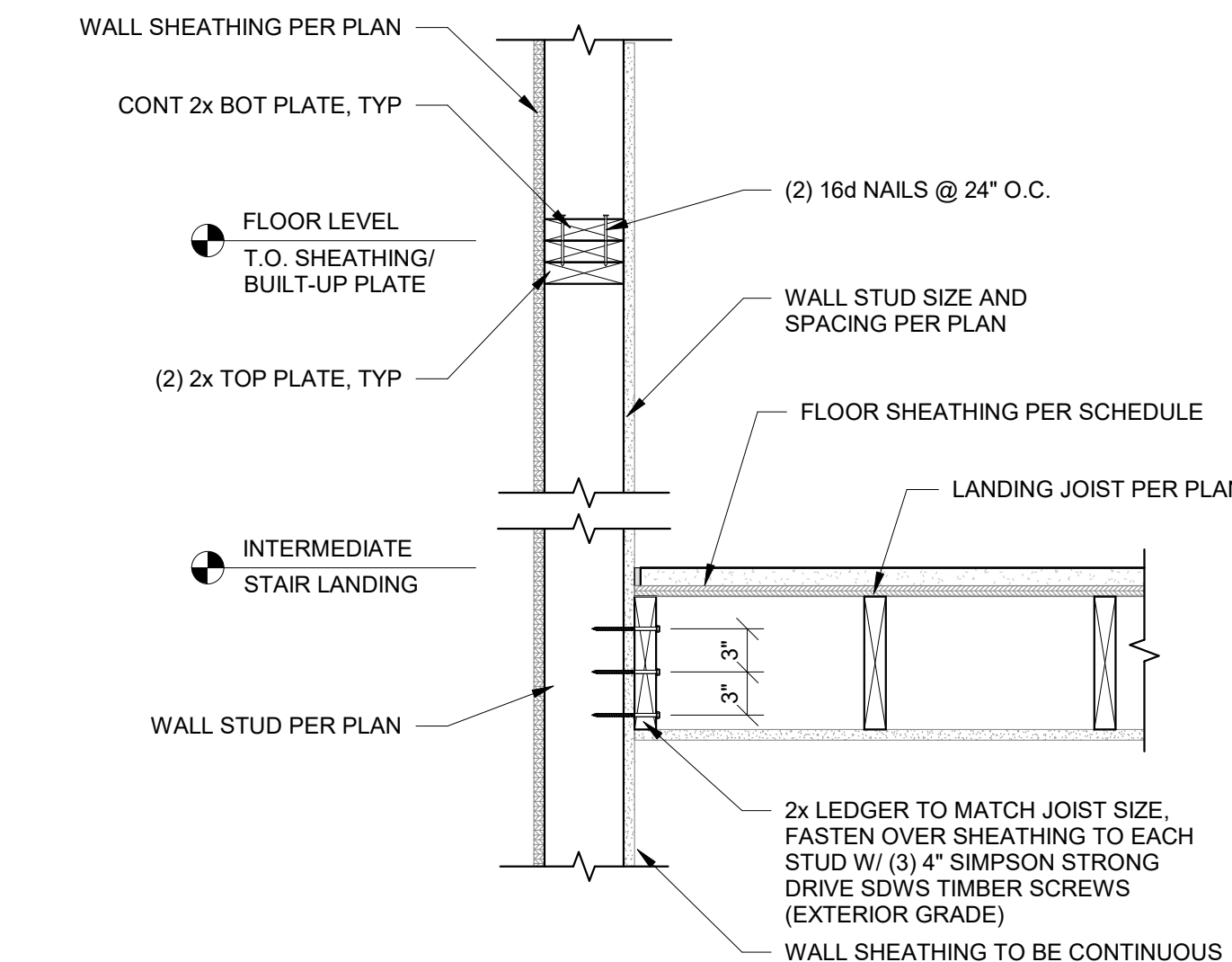
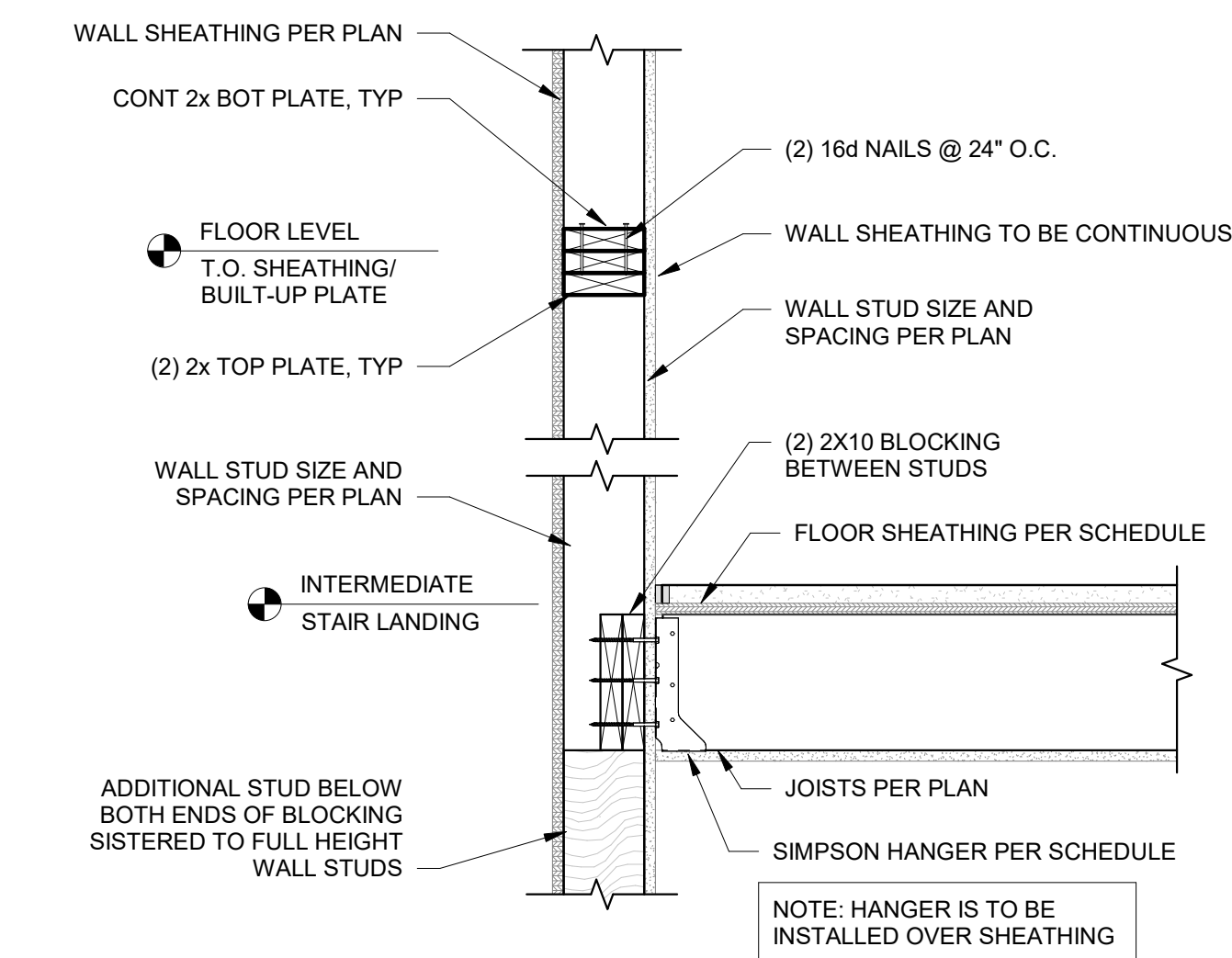
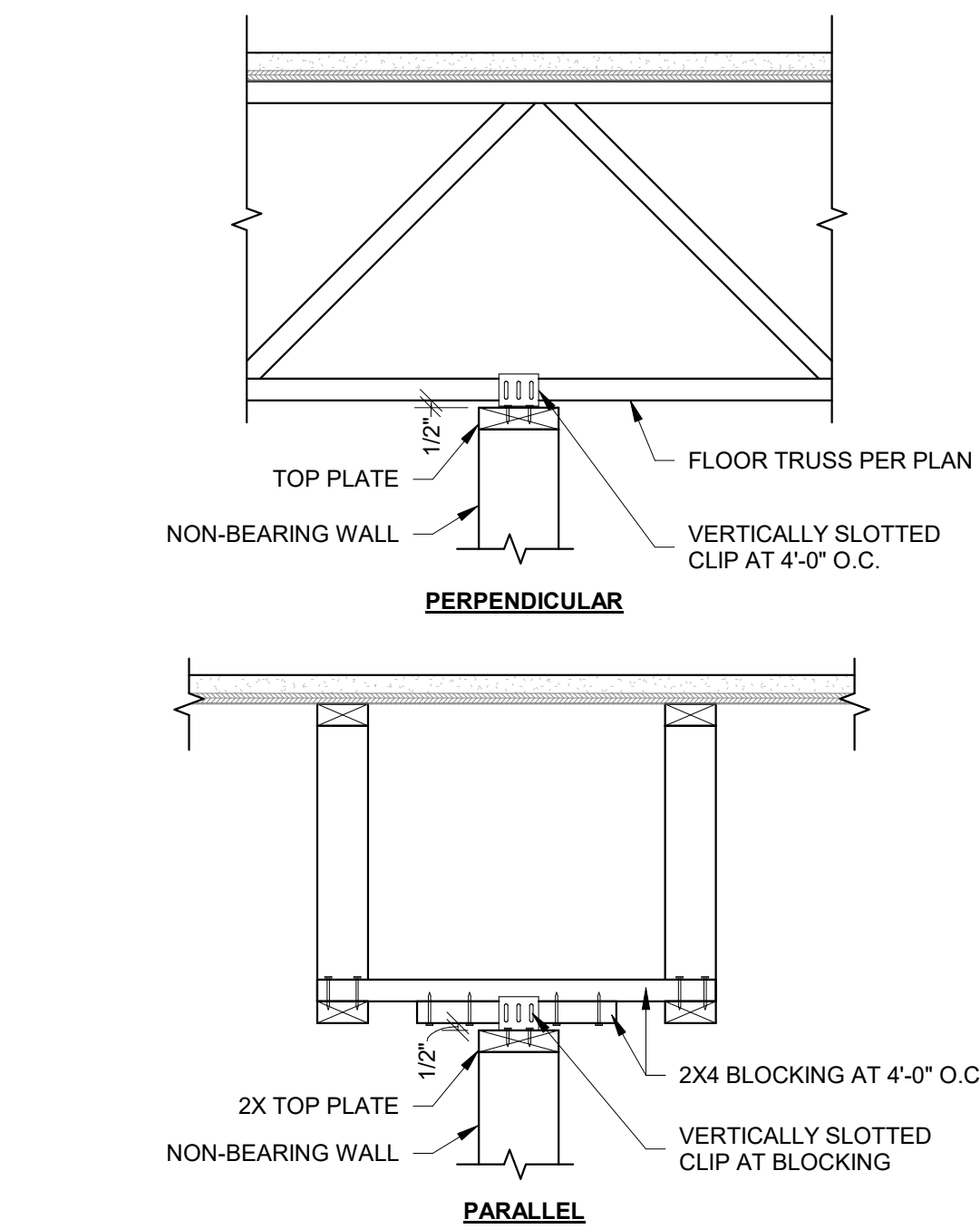
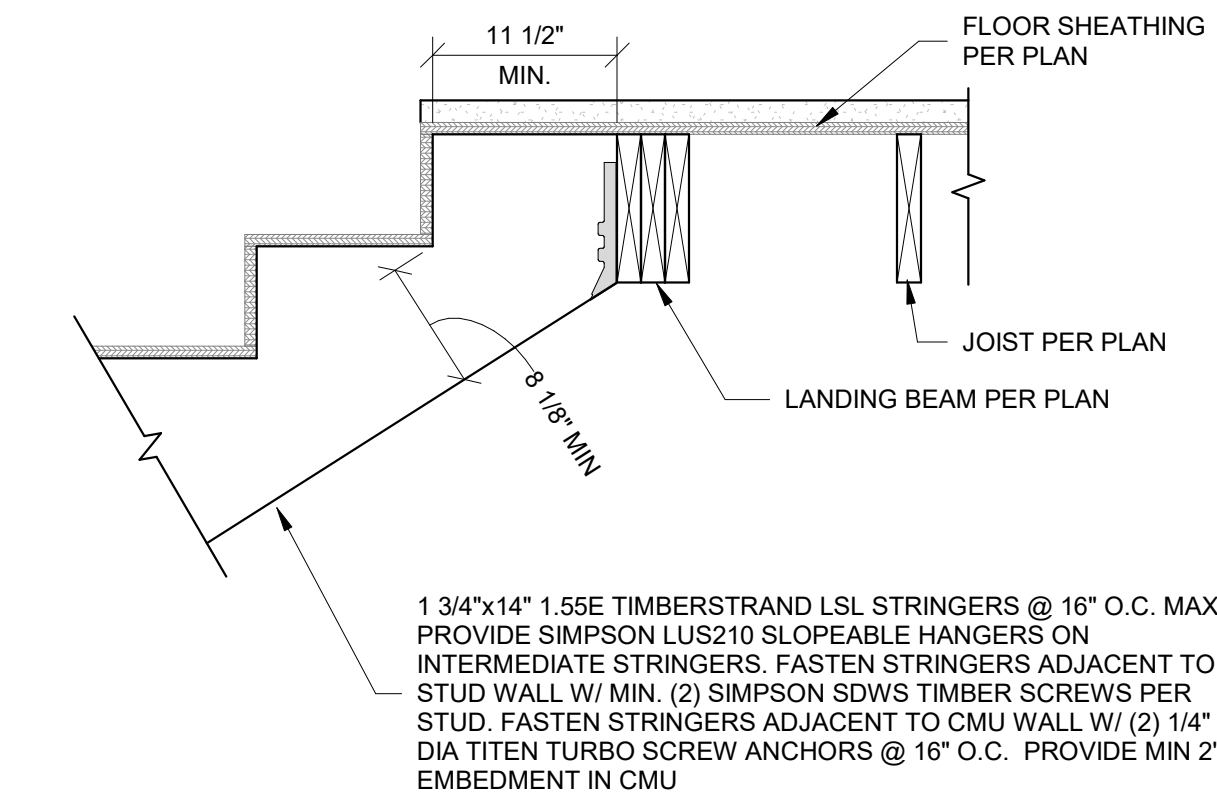
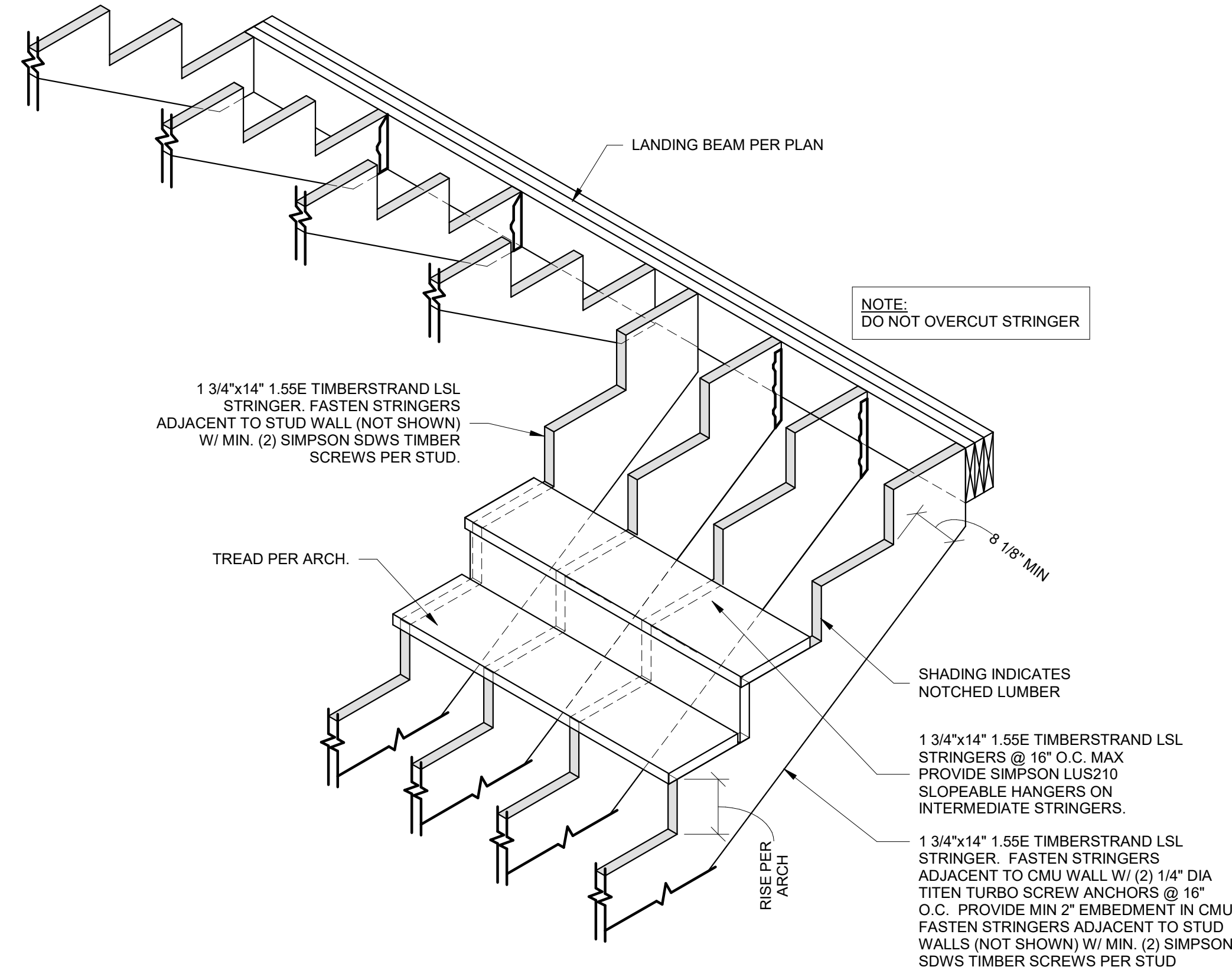
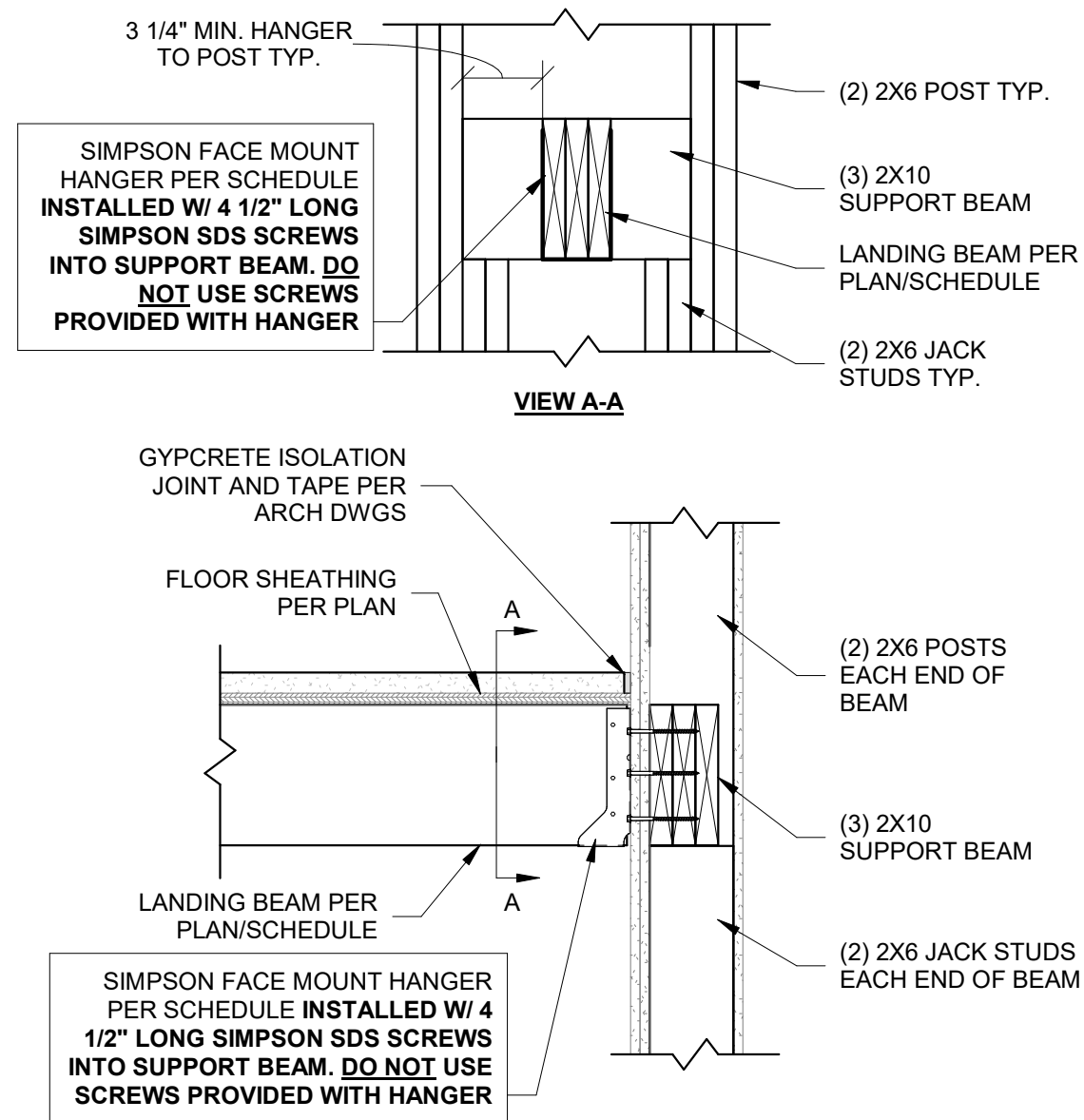
JESSE BARNES, PE  
NO. 134573  
EXP. MARCH 31, 2025

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.

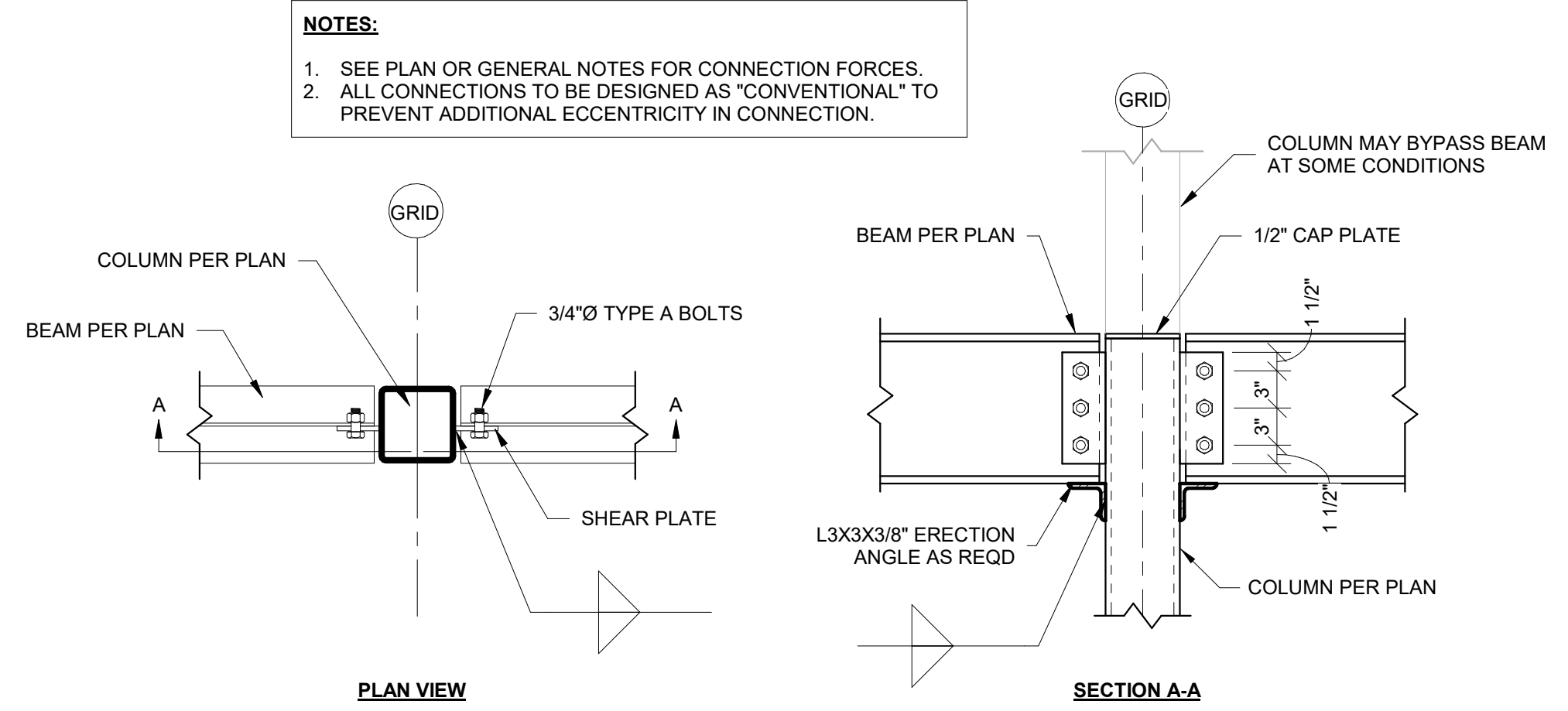
No.	Description	Date

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ENGINEER IWC	DRAWN BY CEL
	CHECKED BY MDH

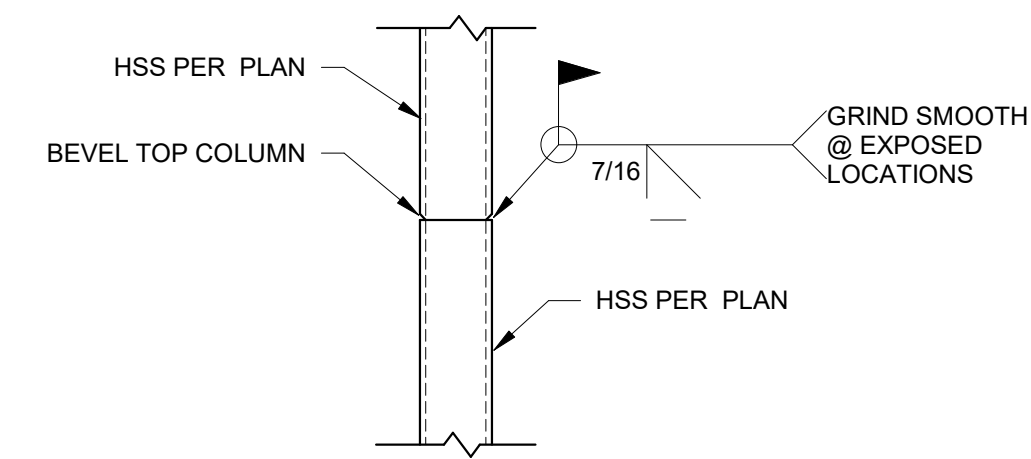
JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSIANA, TEXAS  
TYPICAL FLOOR FRAMING DETAILS  
Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt







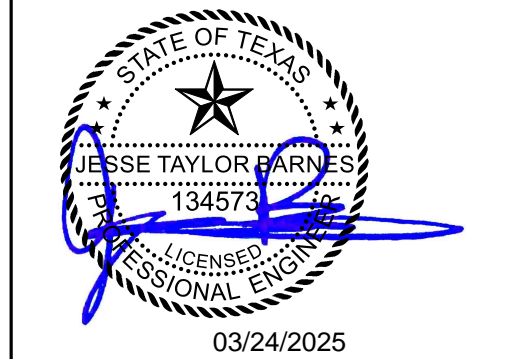
1 TYP. BEAM TO COLUMN SHEAR CONNECTION  
S505 1" = 1'-0"



2 HSS COLUMN SPLICE  
S505 3/4" = 1'-0"

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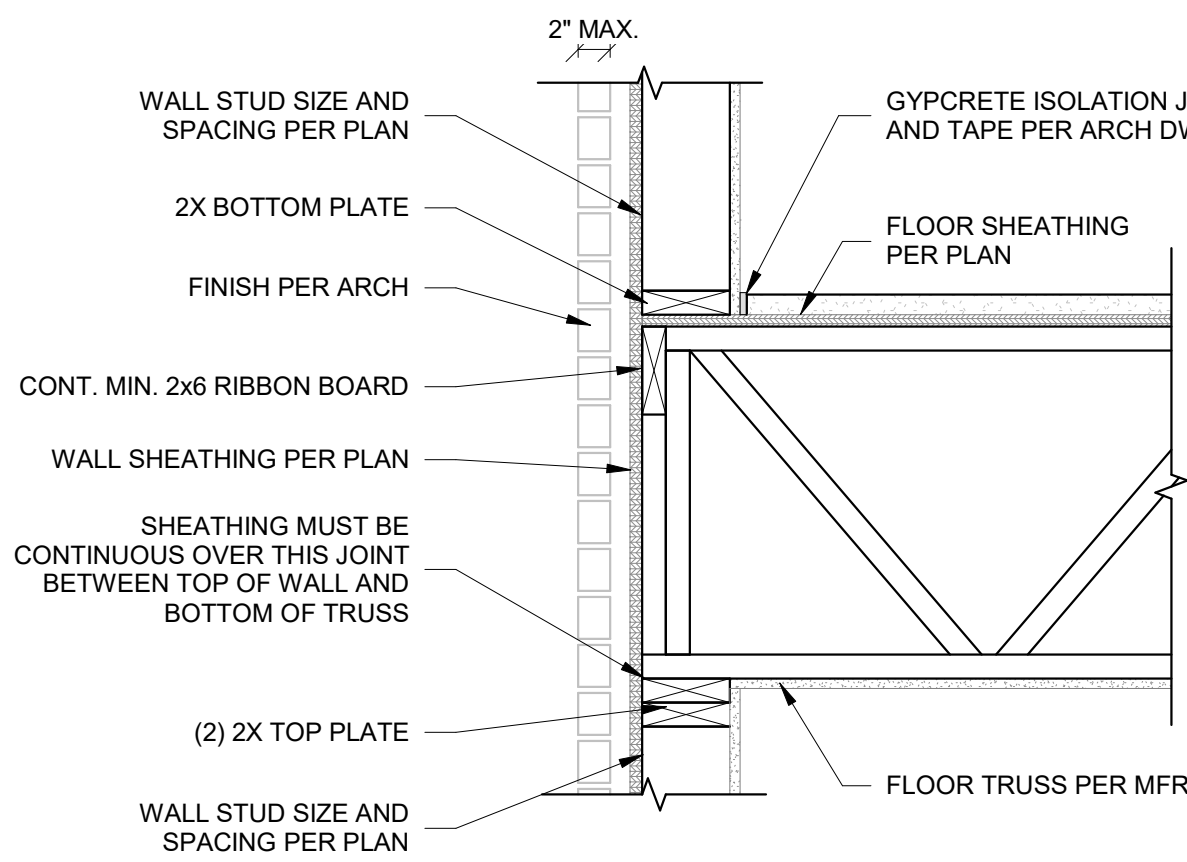
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TEXAS.

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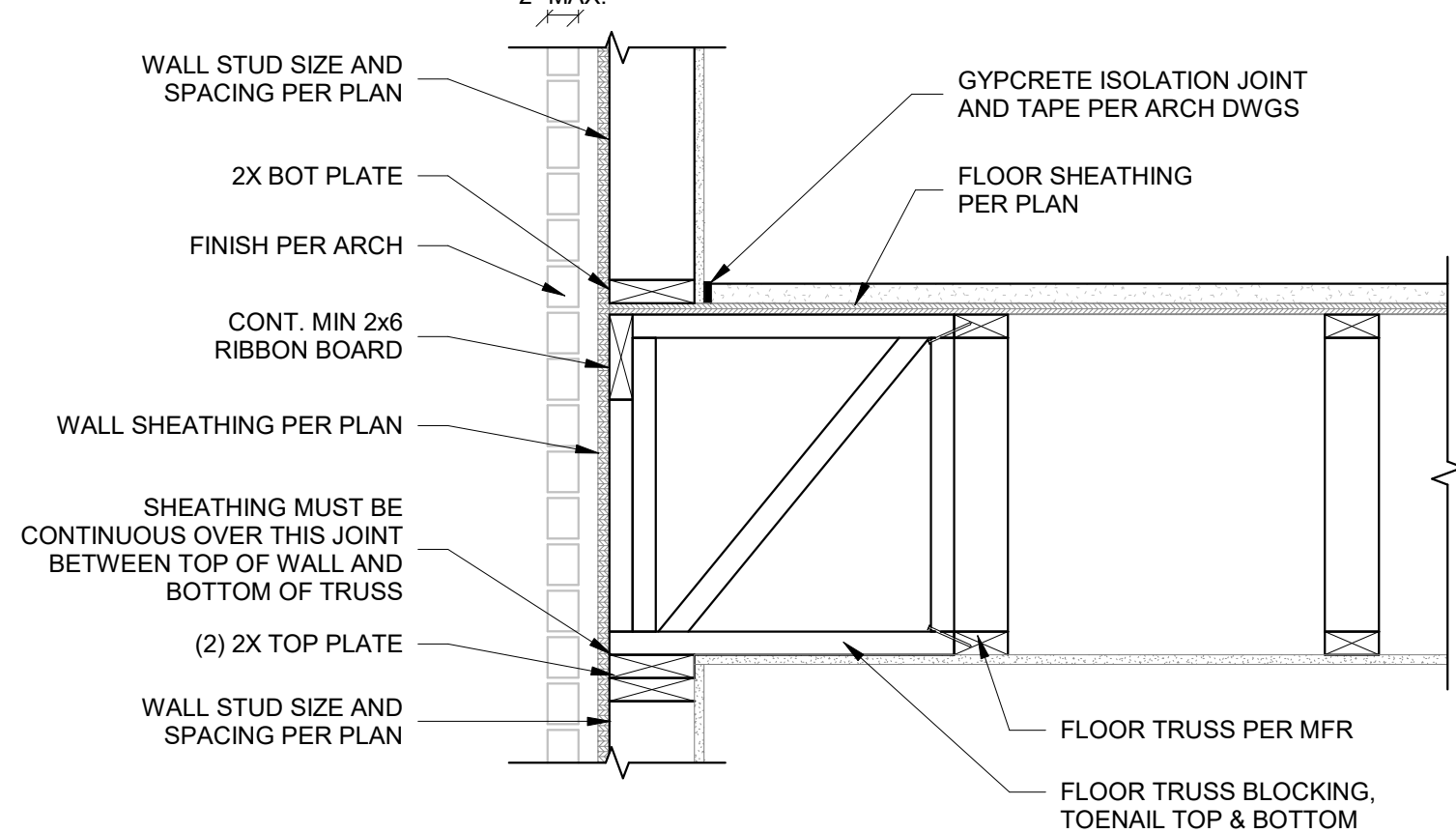
PROJECT NUMBER 2024002546	SET ISSUE DATE 03/25/2025
ENGINEER IWC	DRAWN BY CEL
CHECKED BY MDH	

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CORSICANA, TEXAS  
TYPICAL STEEL DETAILS  
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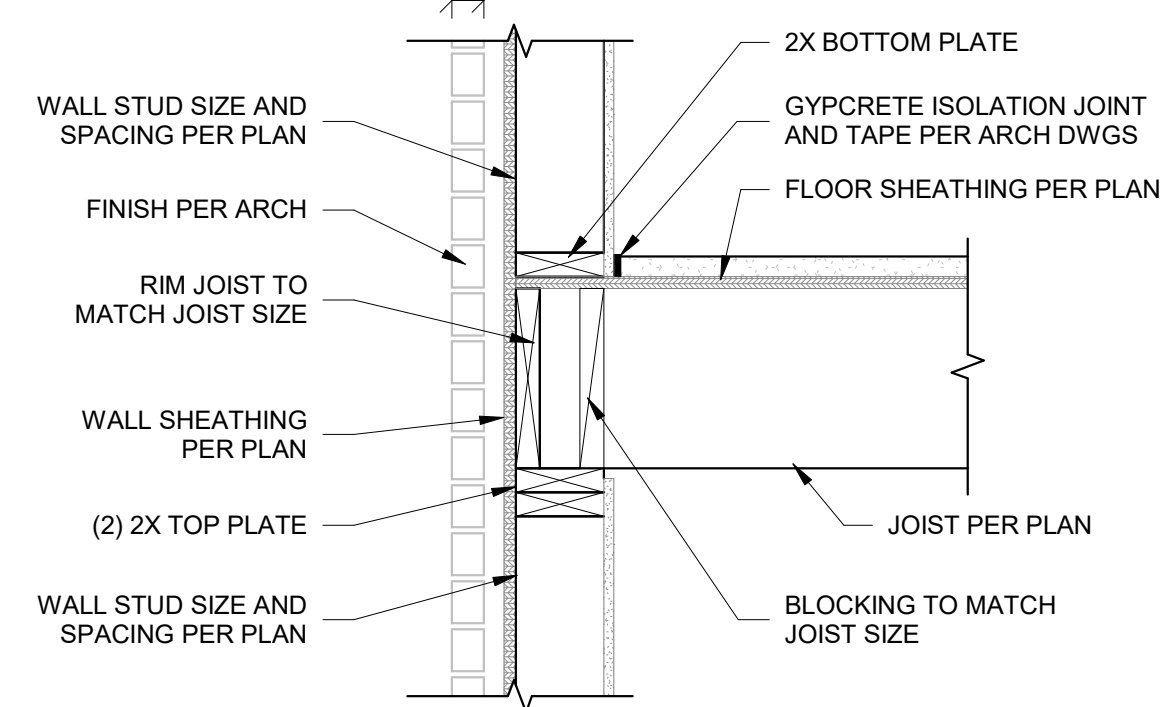




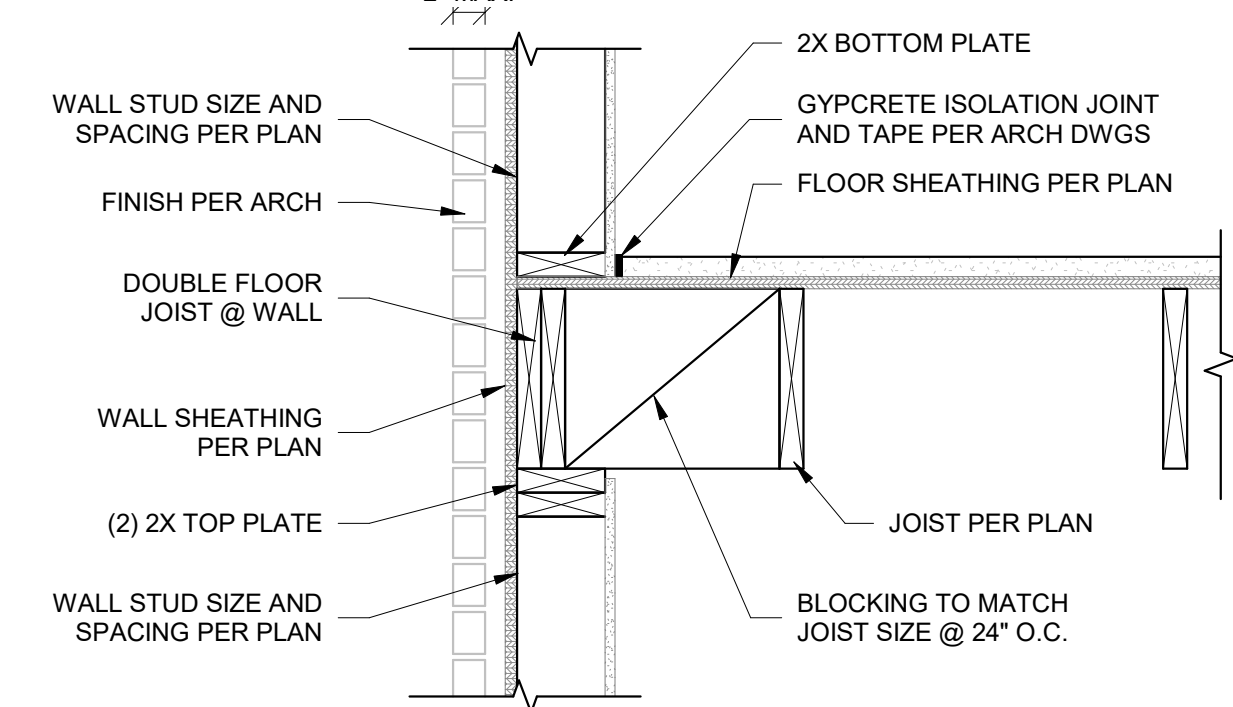
**1**  
S510 **FRAMING AT EXTERIOR WALL - OPEN WEB TRUSS BEARING**  
1" = 1'-0"



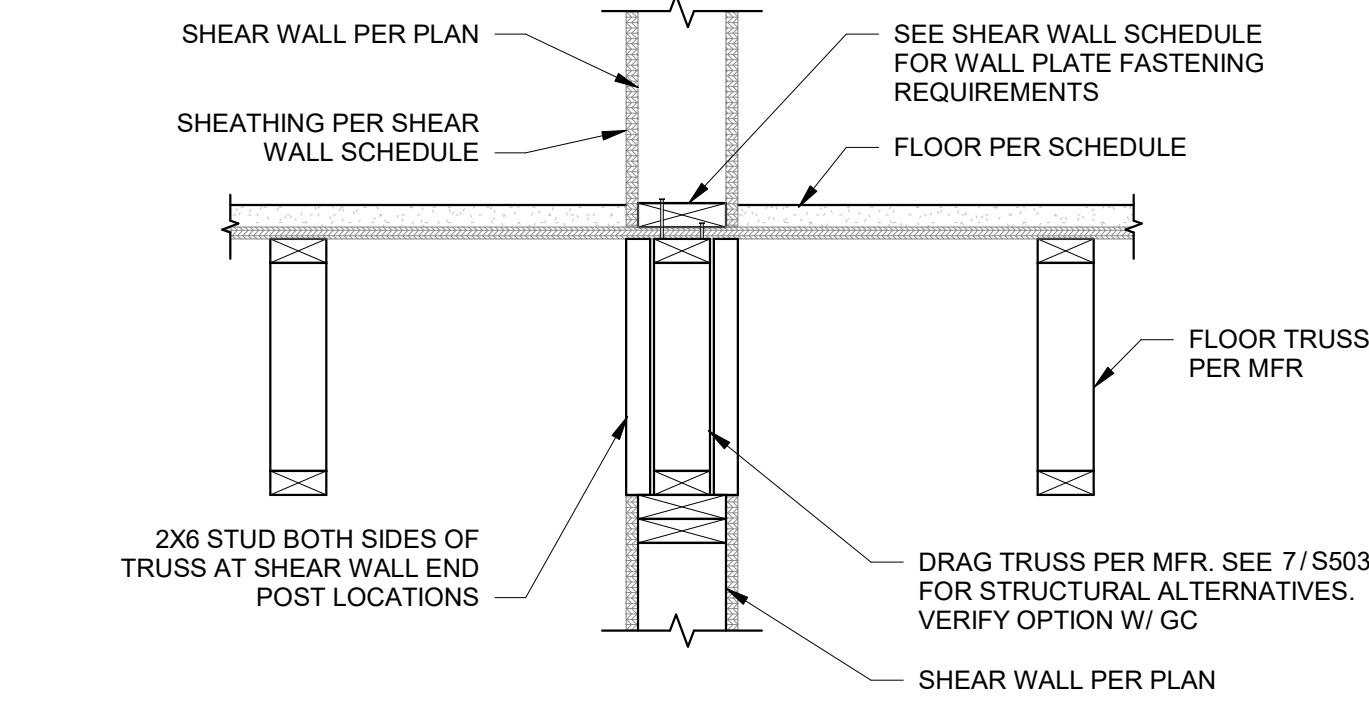
**2**  
S510 **FRAMING AT EXTERIOR WALL - OPEN WEB TRUSS PARALLEL**  
1" = 1'-0"



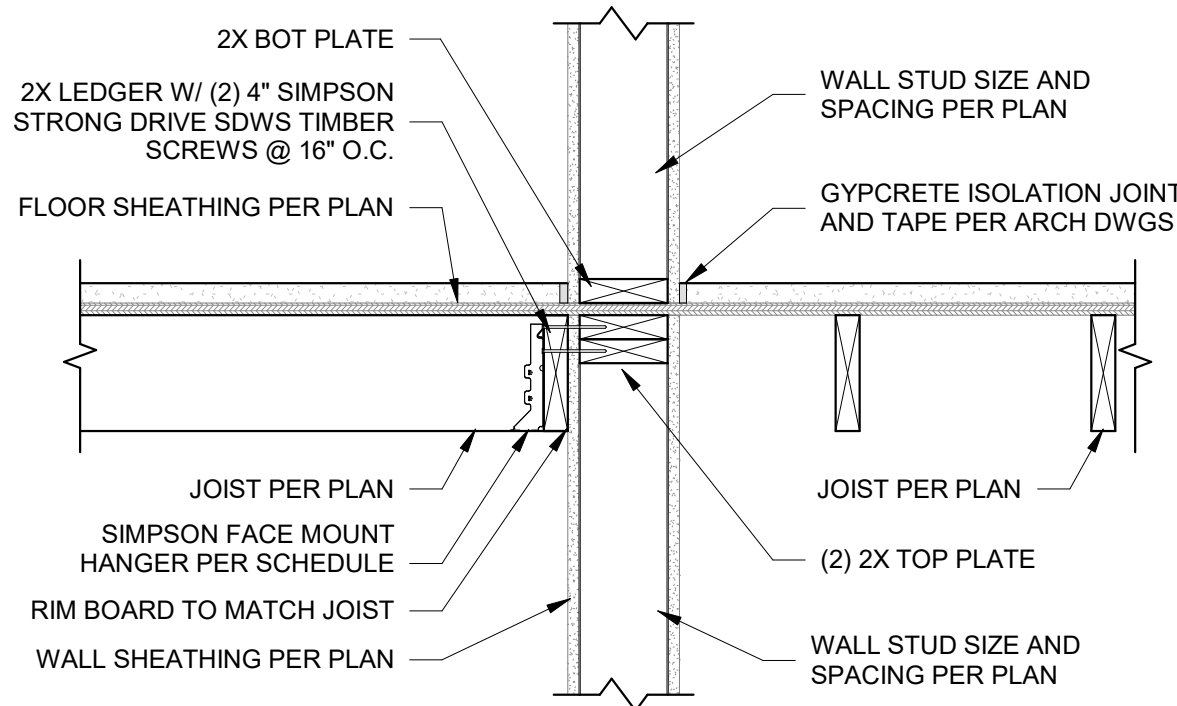
**3**  
S510 **FRAMING AT EXTERIOR WALL - JOIST BEARING**  
1" = 1'-0"



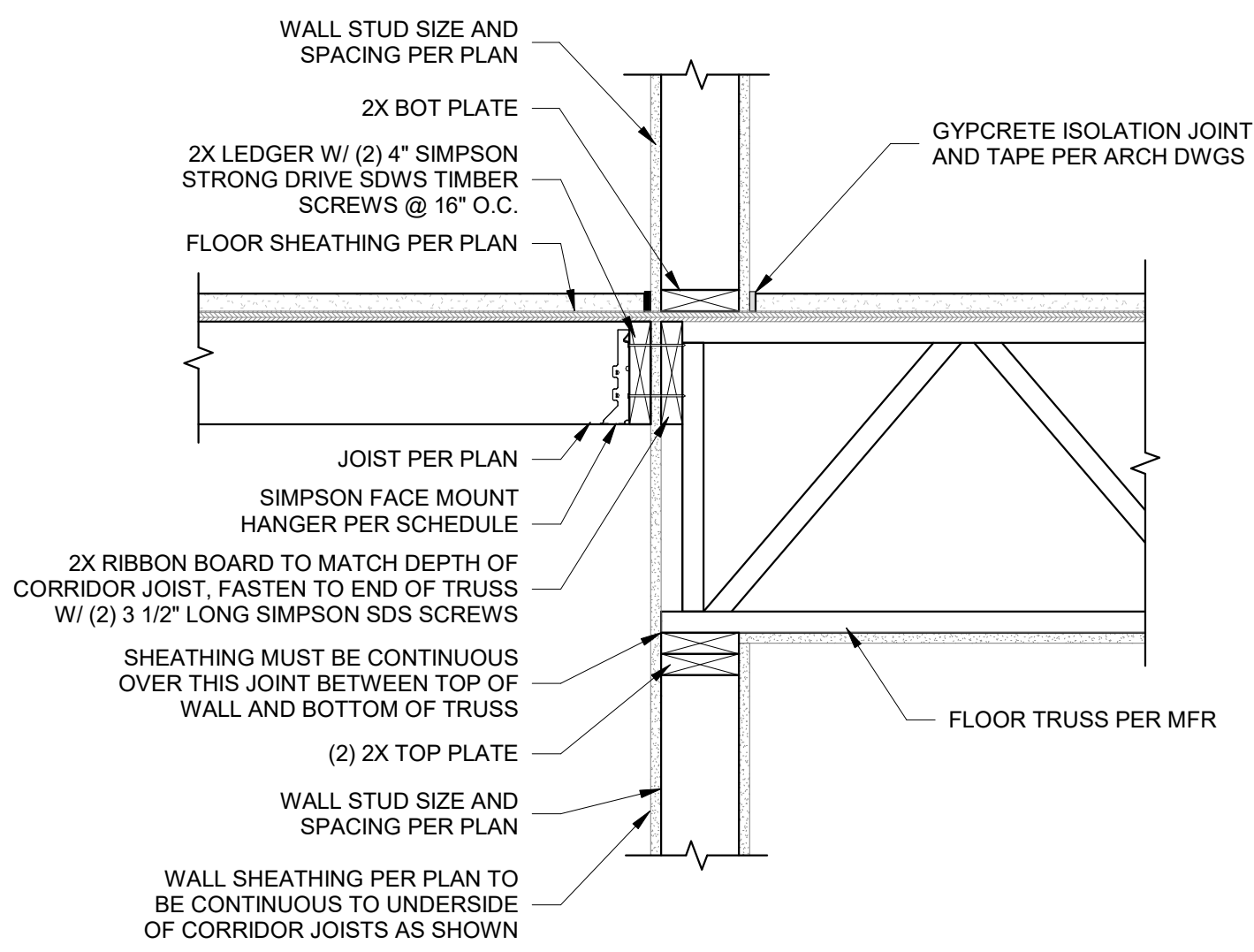
**4**  
S510 **FRAMING AT EXTERIOR WALL - JOIST PARALLEL**  
1" = 1'-0"



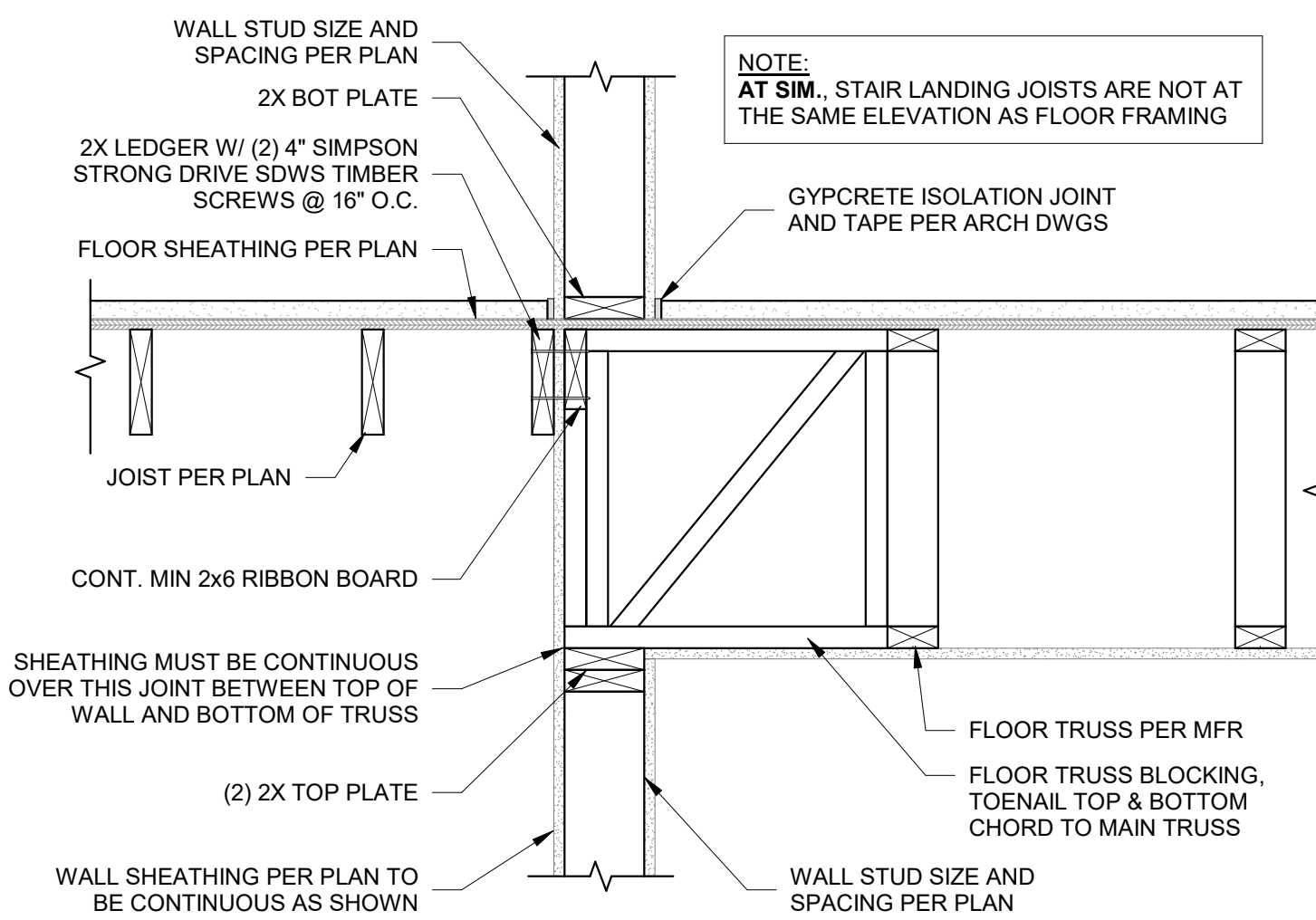
**5**  
S510 **SHEAR WALL PARALLEL TO FLOOR TRUSSES**  
1" = 1'-0"



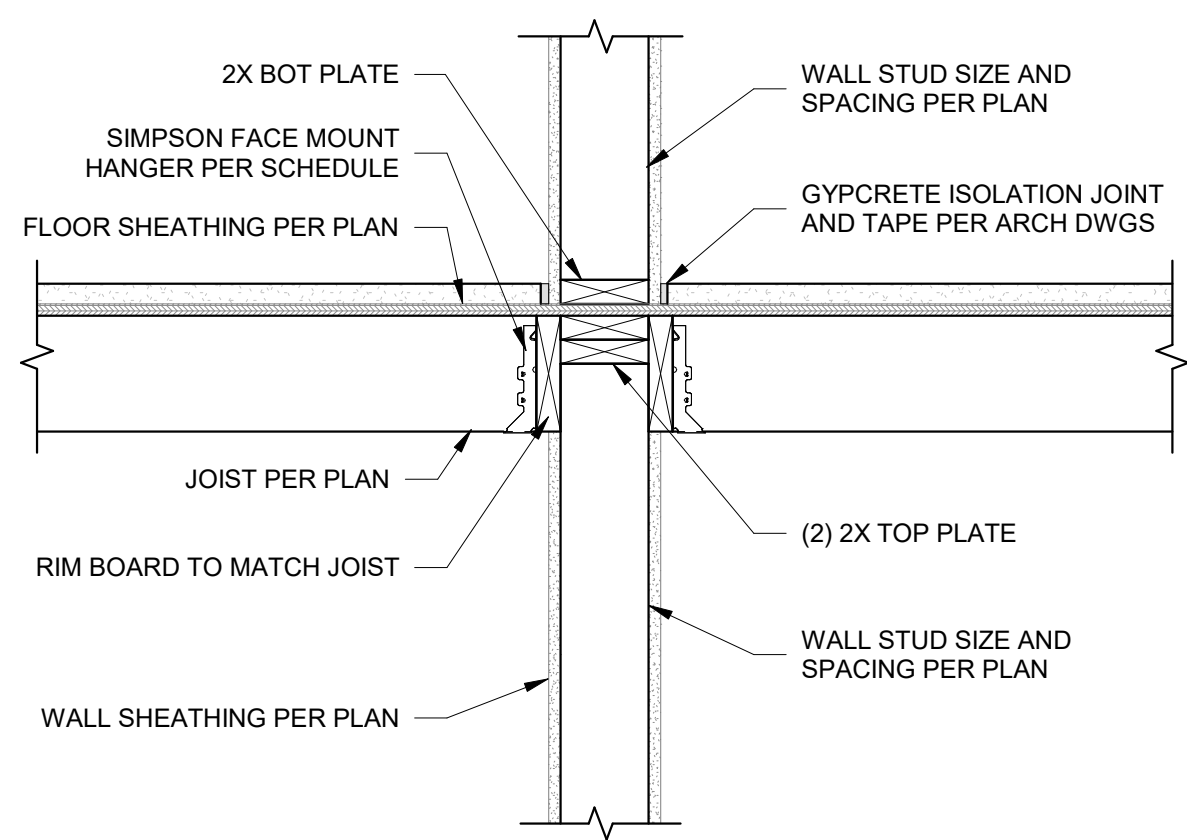
**6**  
S510 **JOIST TRANSITION AT INTERIOR WALL**  
1" = 1'-0"



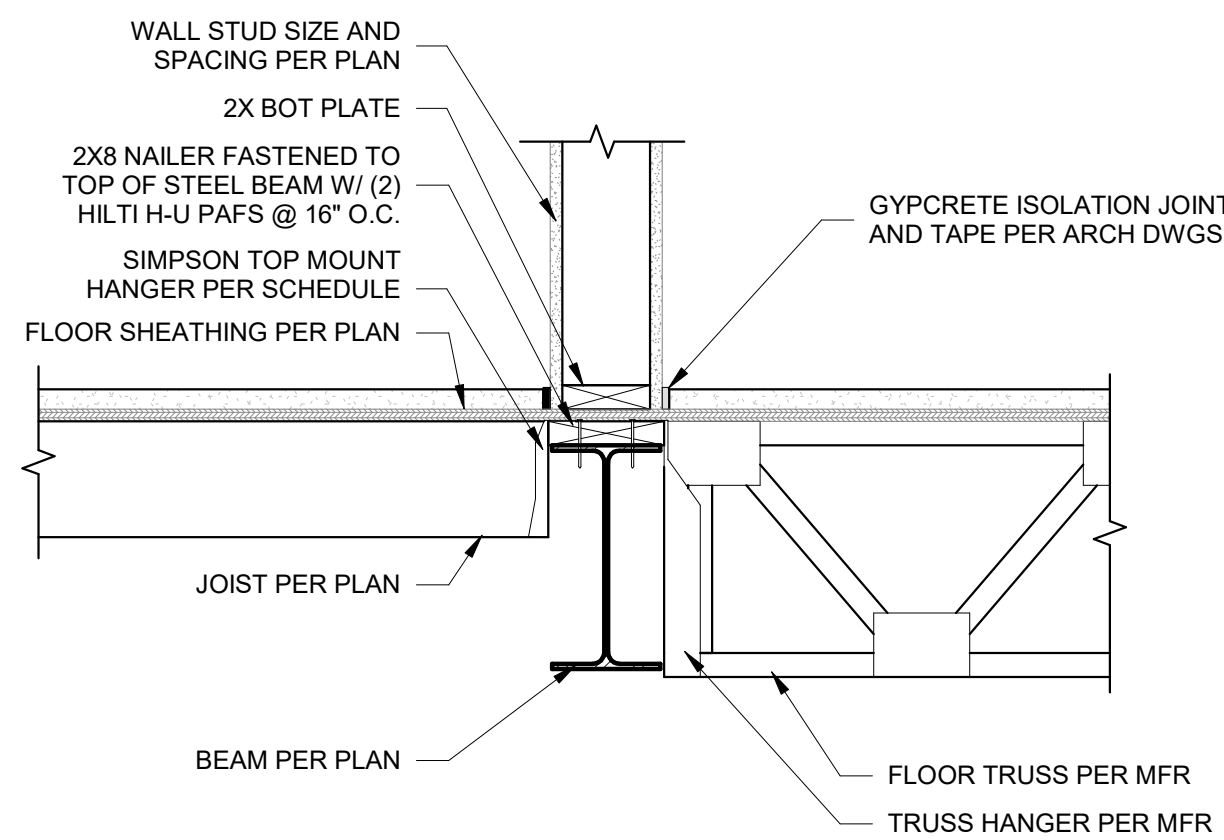
**7**  
S510 **TRUSS TO JOIST TRANSITION - BEARING**  
1" = 1'-0"



**8**  
S510 **TRUSS TO JOIST TRANSITION - PARALLEL**  
1" = 1'-0"



**10**  
S510 **2X JOISTS BEARING AT INTERIOR WALL**  
1" = 1'-0"



**11**  
S510 **TRUSS TO JOIST TRANSITION - BEARING ON STEEL**  
1" = 1'-0"

No.	Description	Date

PROJECT NUMBER  
2024002546

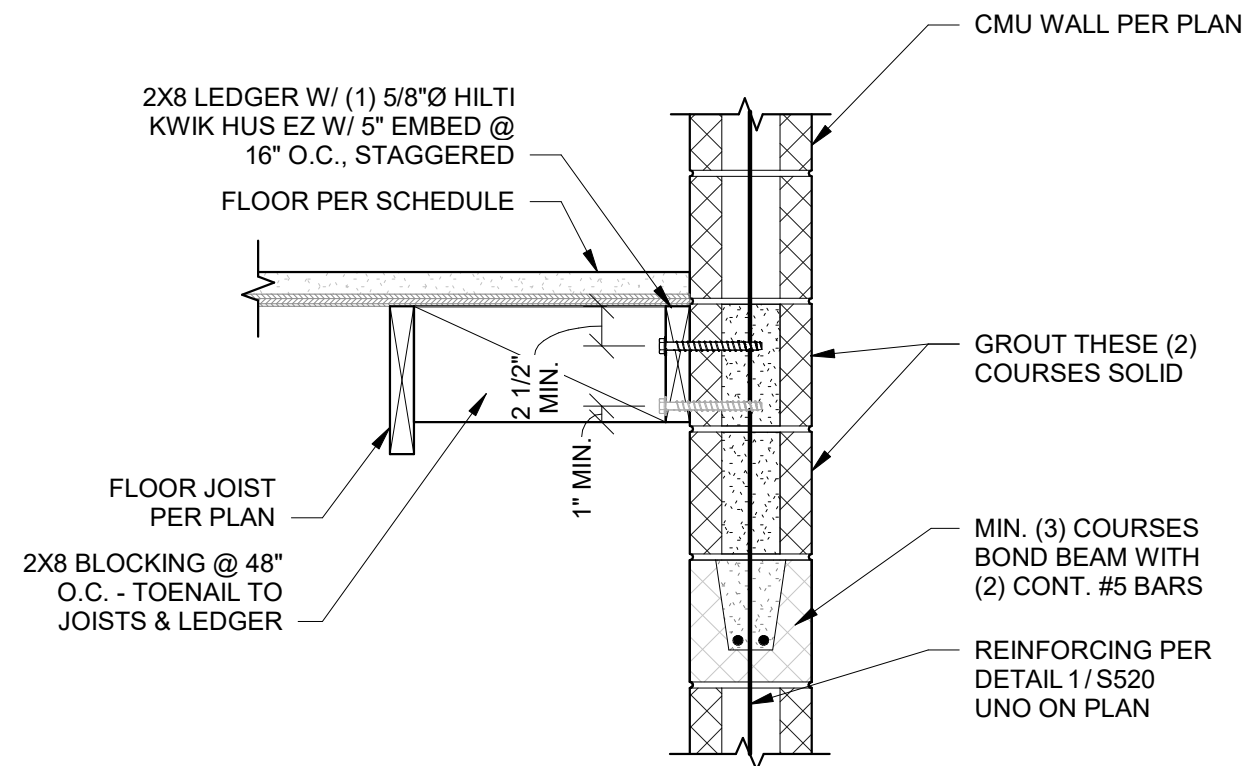
SET/ISSUE DATE  
03/25/2025

ENGINEER  
IWC

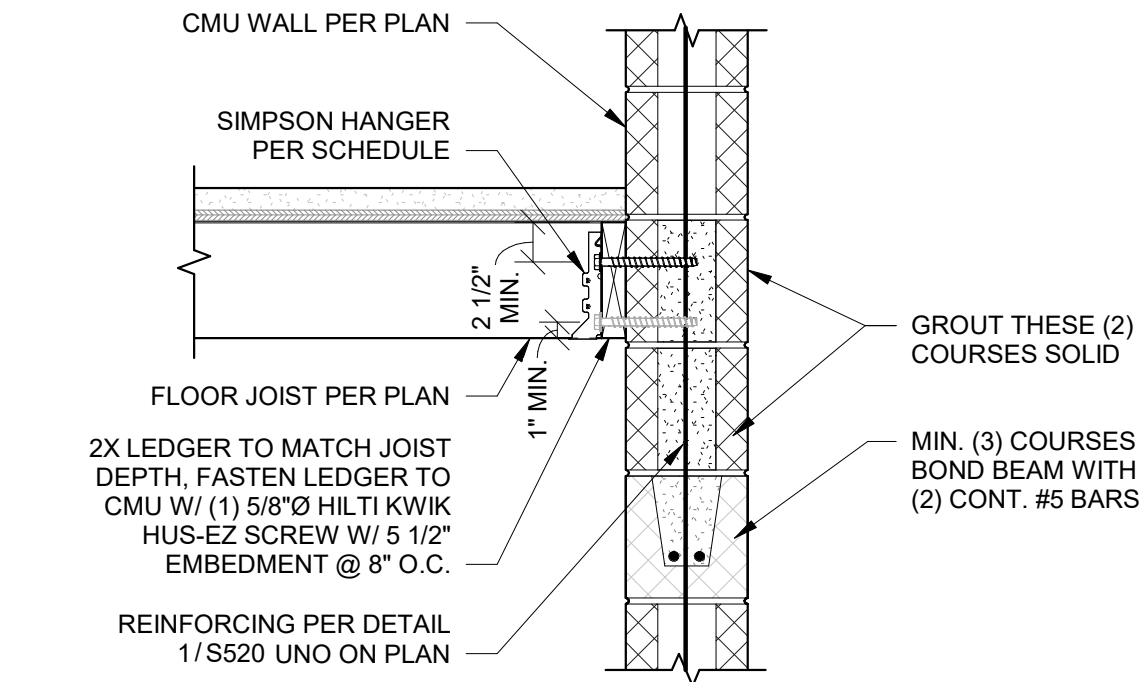
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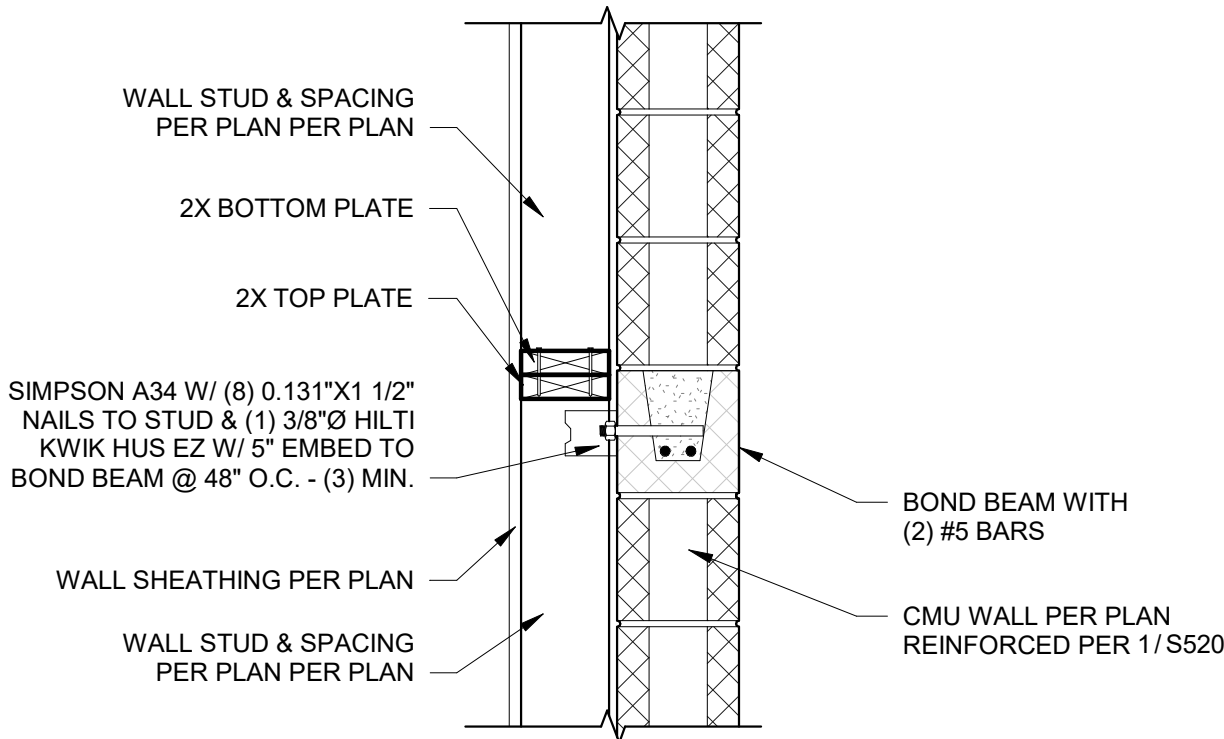




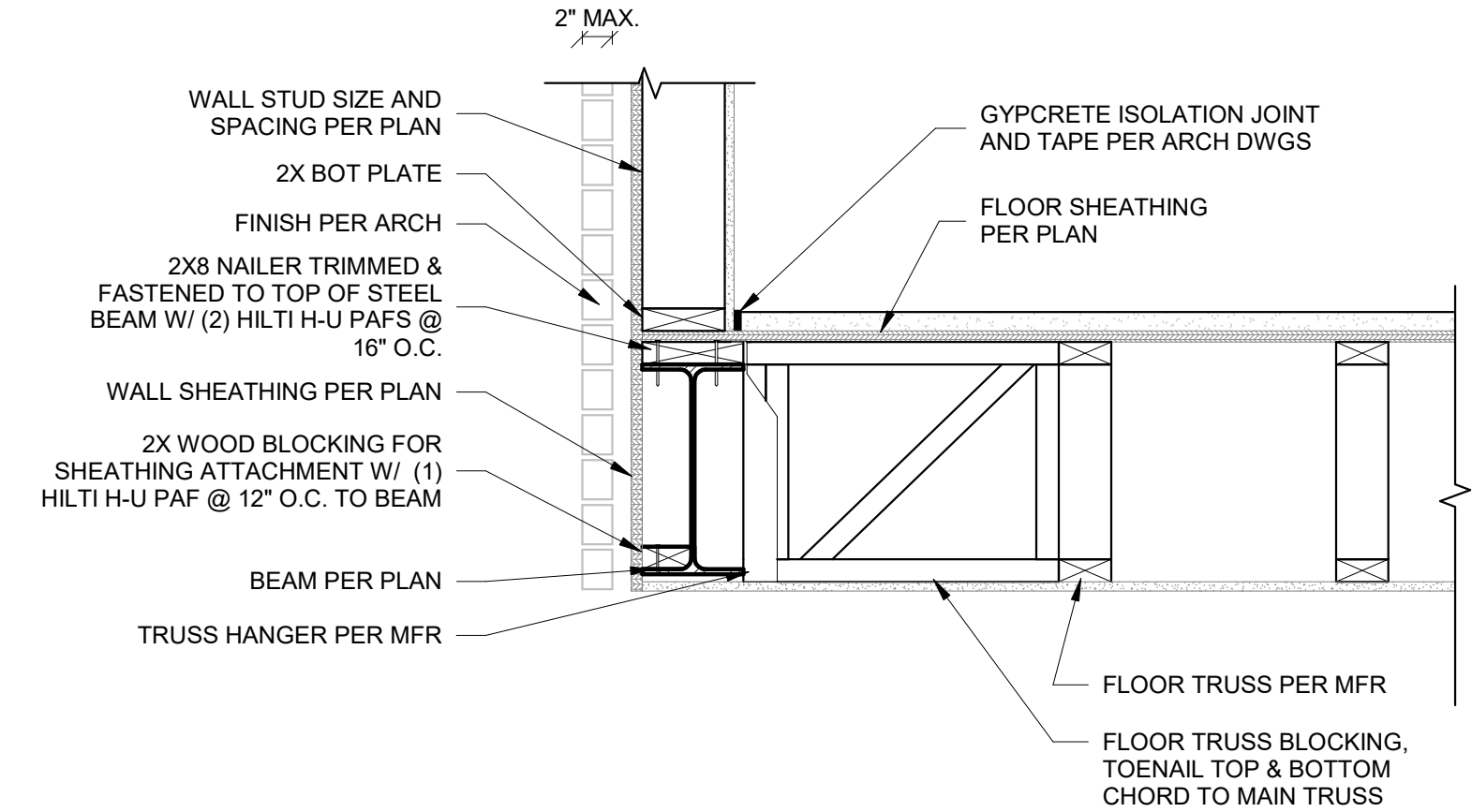
1 FLOOR JOIST PARALLEL TO CMU  
1" = 1'-0"



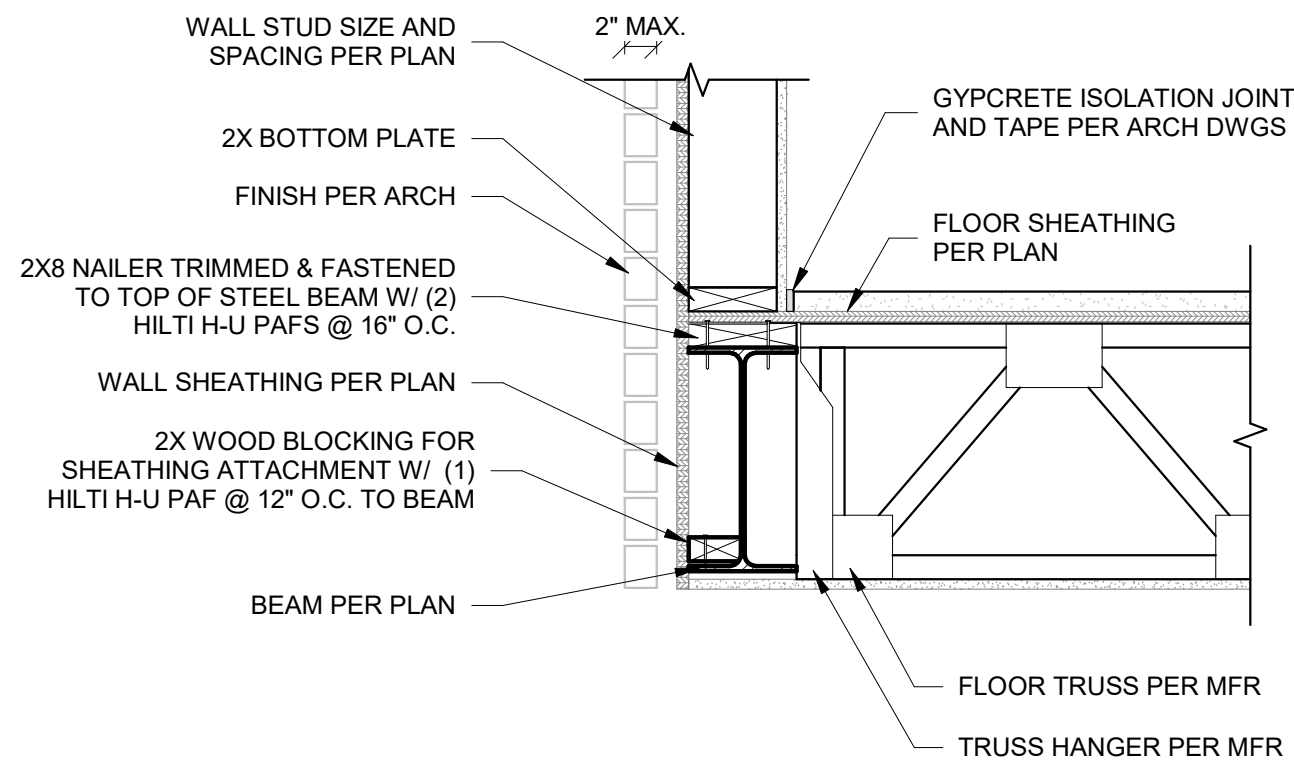
2 FLOOR JOIST BEARING AT CMU  
1" = 1'-0"



3 WALL ATTACHMENT TO CMU  
1" = 1'-0"



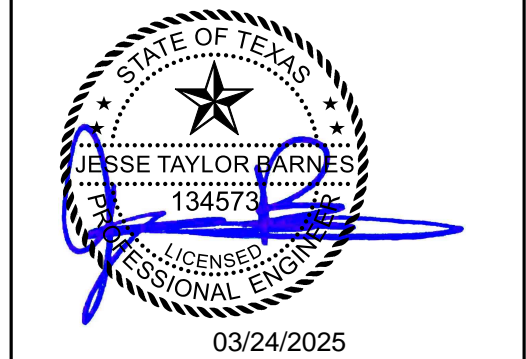
4 FRAMING AT EXTERIOR WALL - TRUSS PARALLEL TO STEEL BEAM  
1" = 1'-0"



5 FRAMING AT EXTERIOR WALL- TRUSS BEARING ON STEEL BEAM  
1" = 1'-0"

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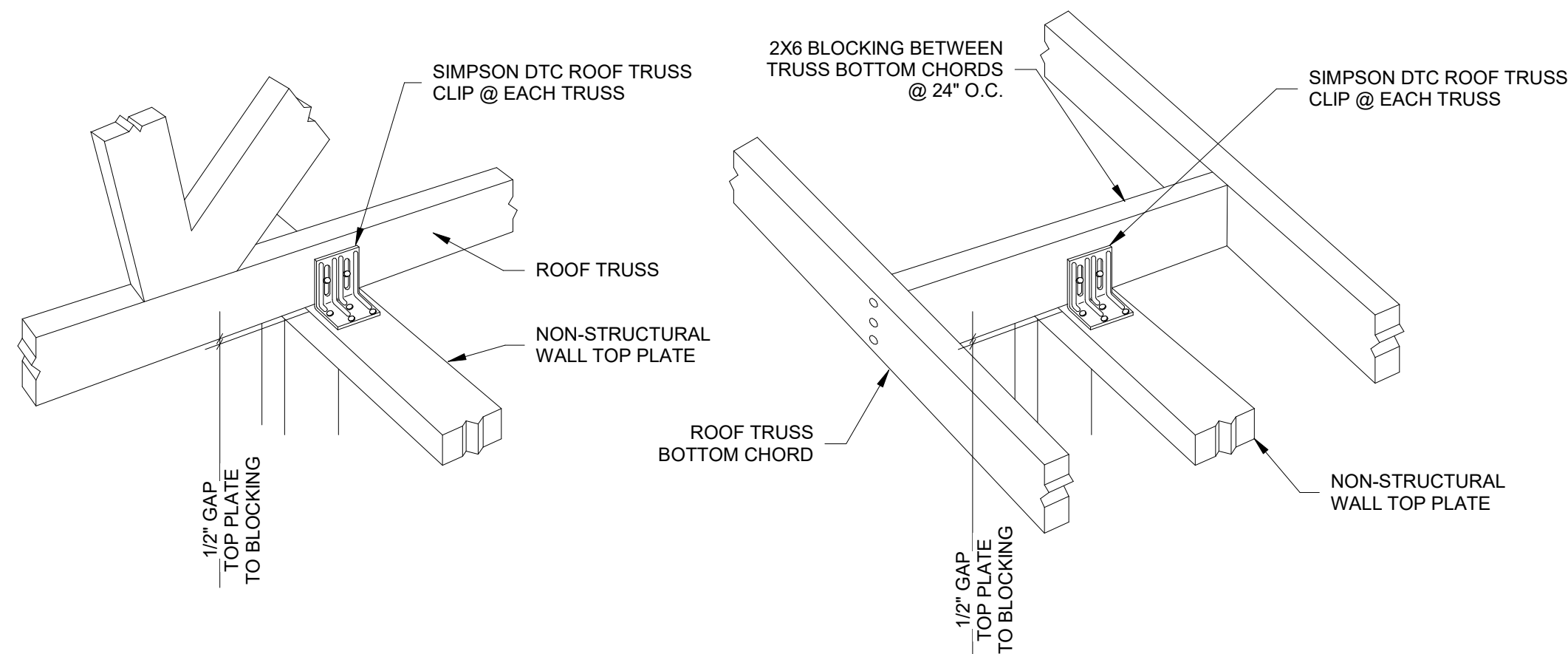
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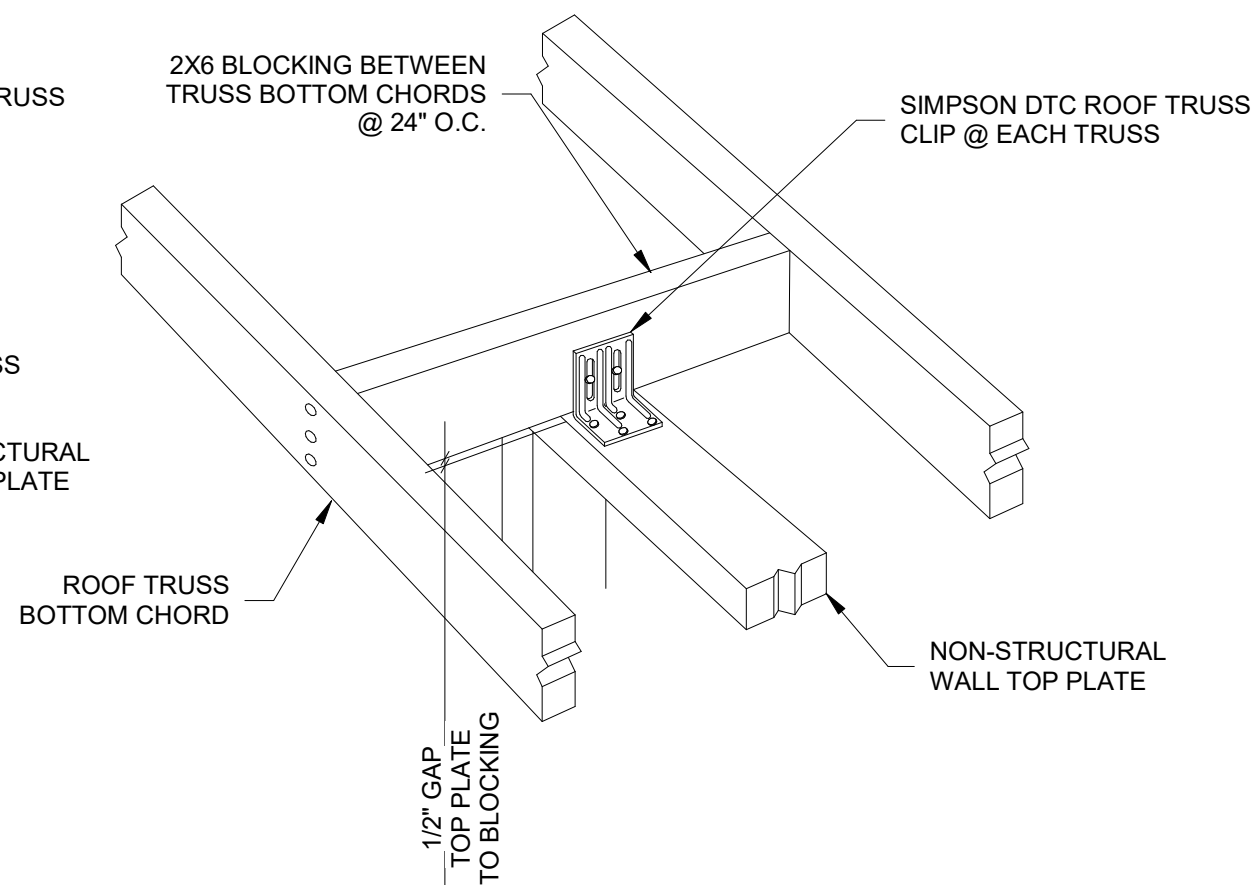
JONES GILLAM RENZ  
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FLOOR FRAMING DETAILS  
Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt



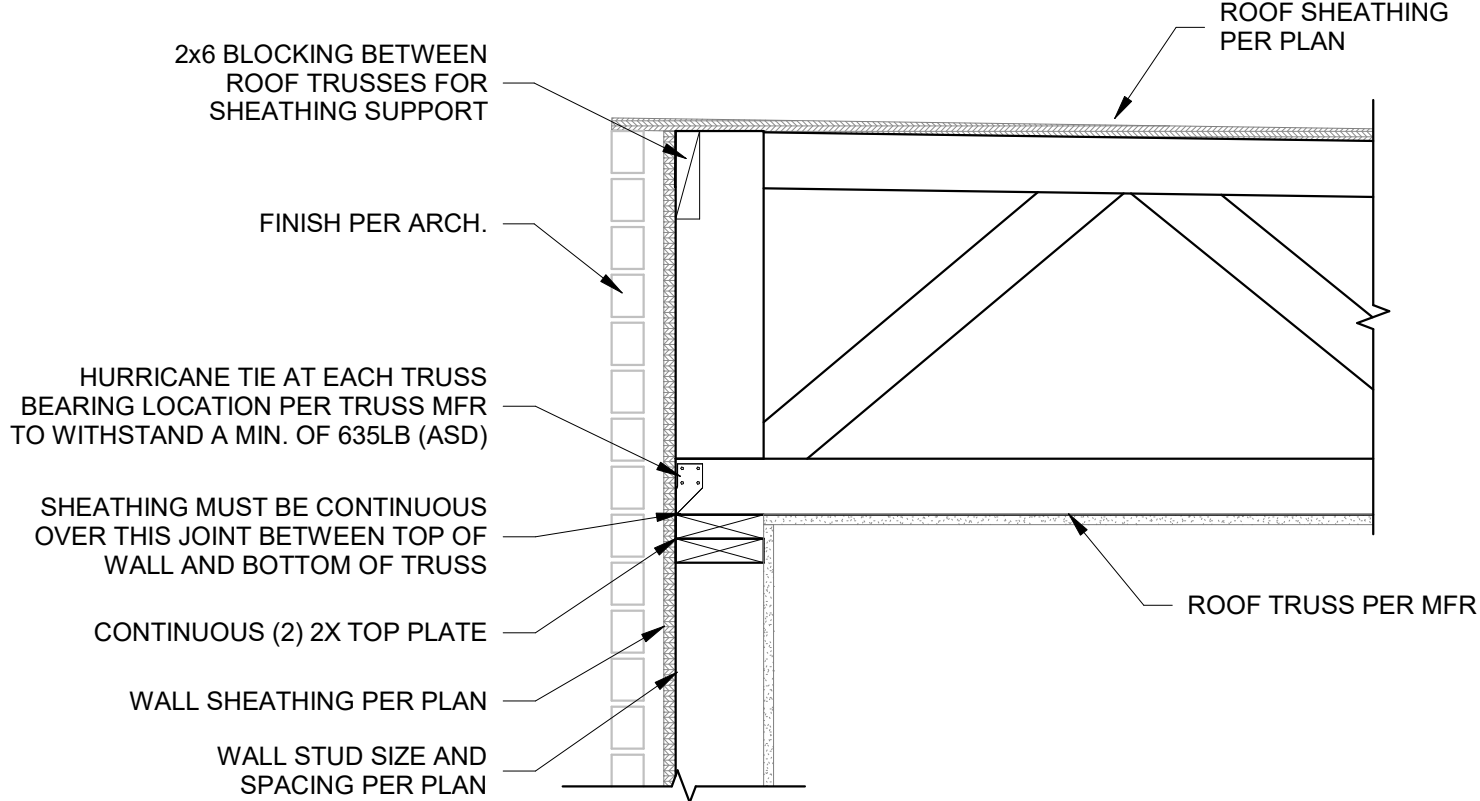


NON-STRUCTURAL WALL PERPENDICULAR TO TRUSSES

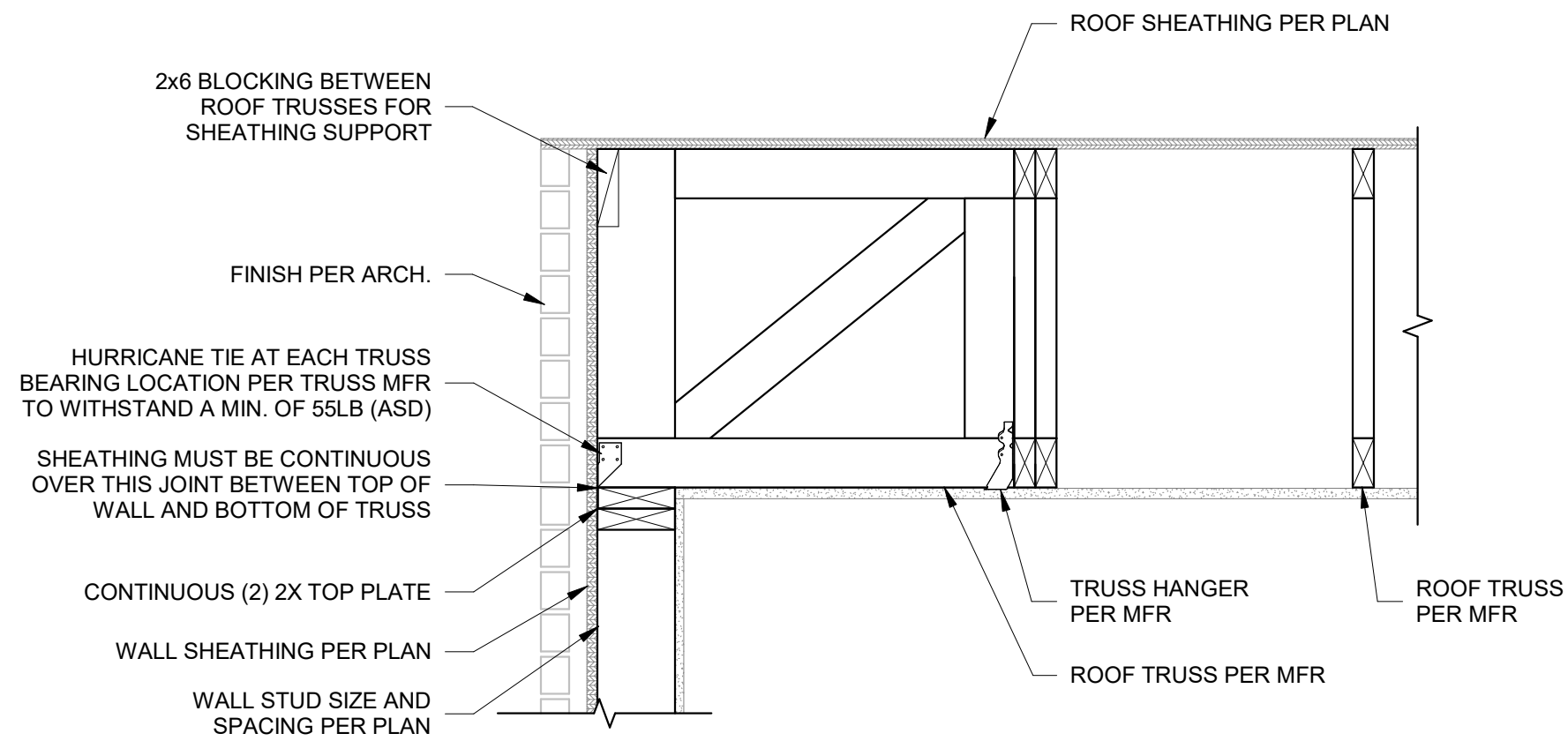
1  
S515  
NON-STRUCTURAL WALL AT ROOF TRUSS  
1" = 1'-0"



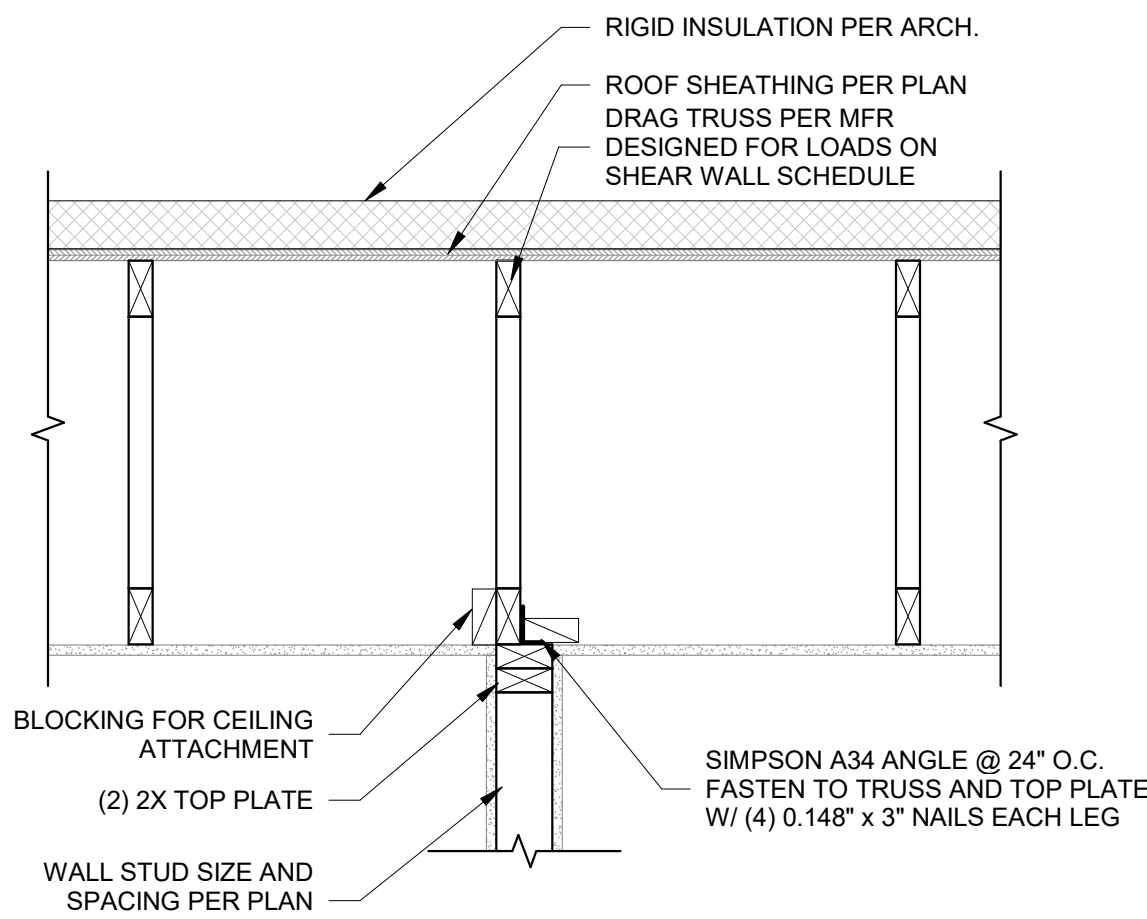
NON-STRUCTURAL WALL PARALLEL TO TRUSSES



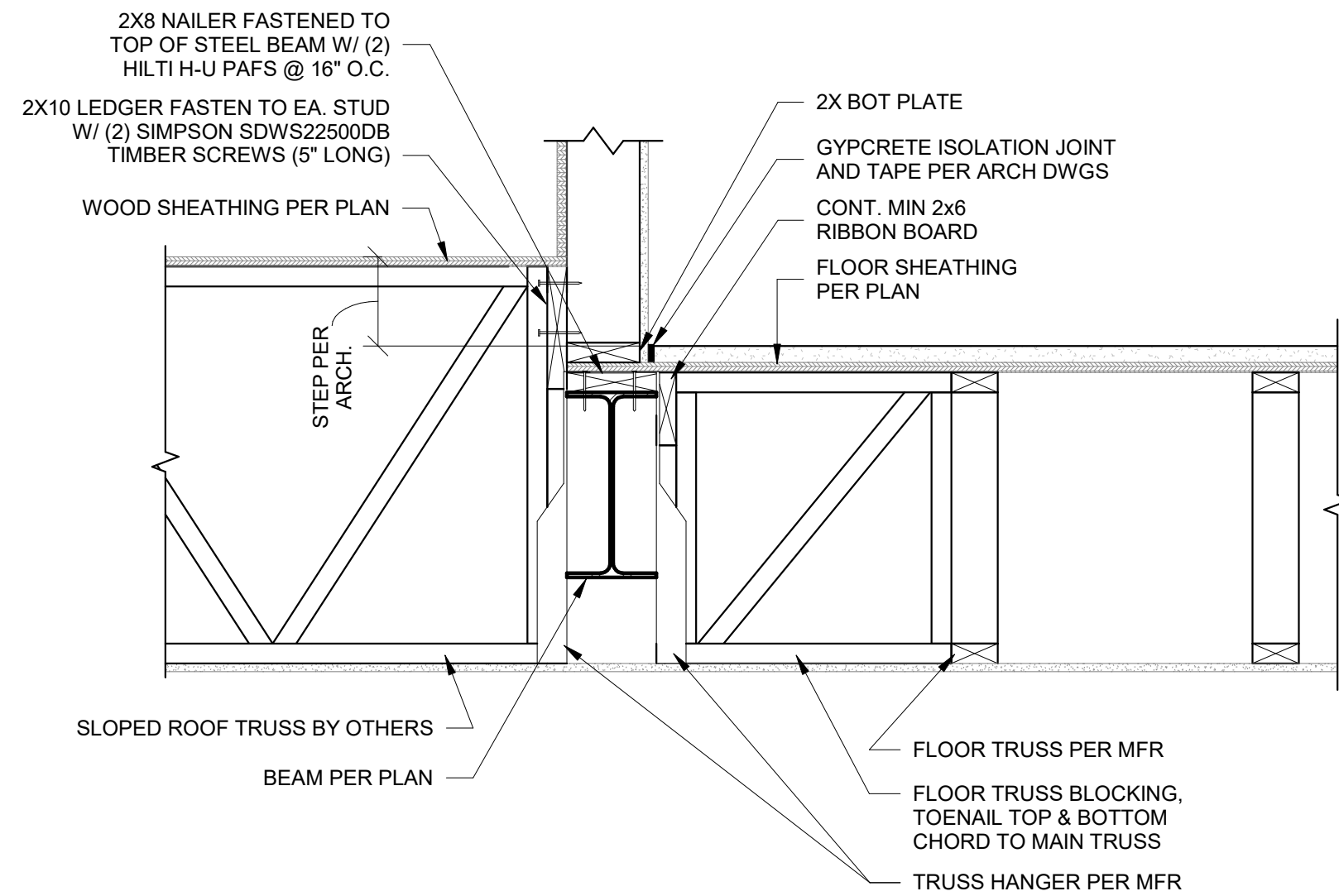
2  
S515  
ROOF TRUSS AT EXTERIOR WALL  
1" = 1'-0"



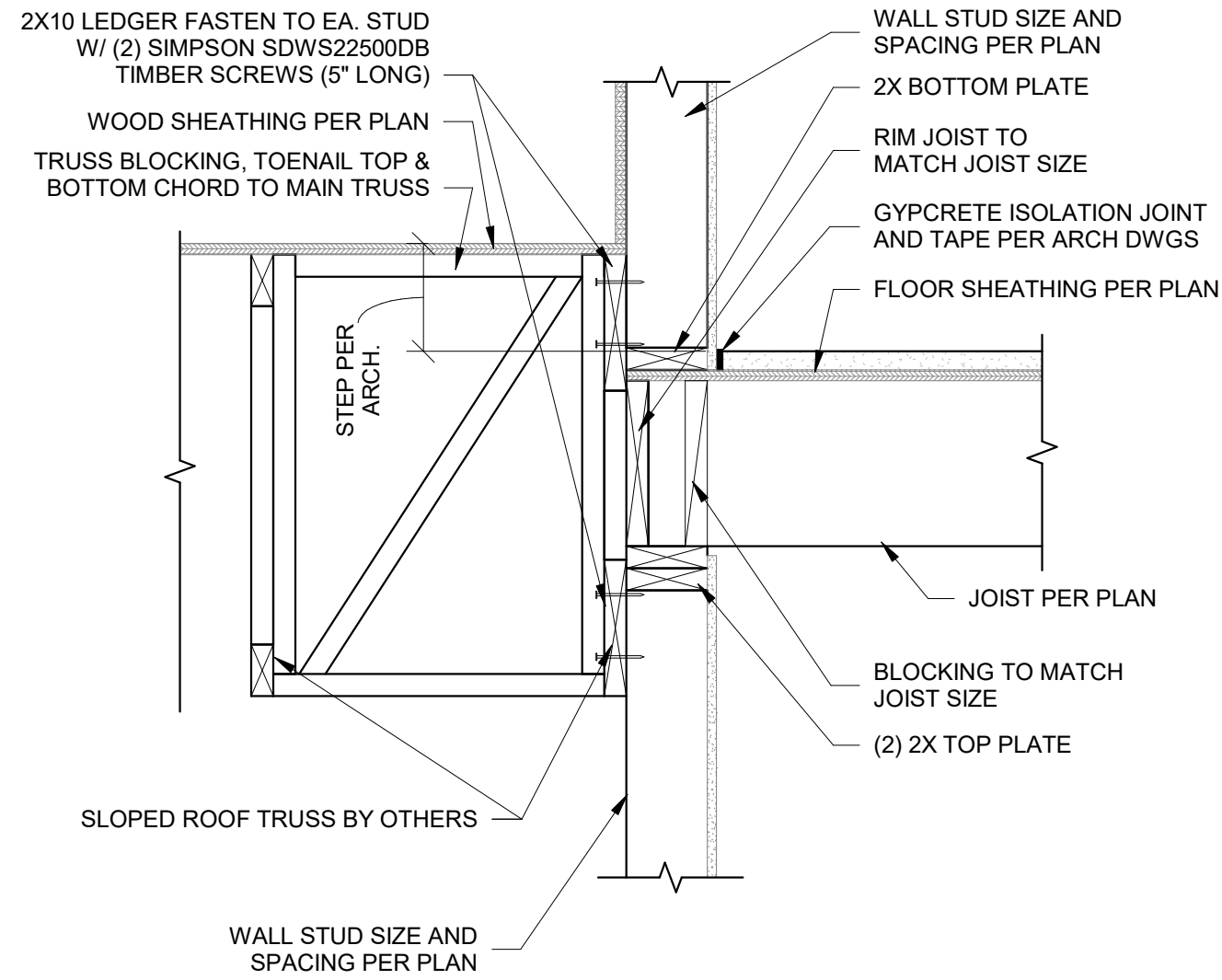
3  
S515  
ROOF TRUSS PARALLEL AT EXTERIOR WALL  
1" = 1'-0"



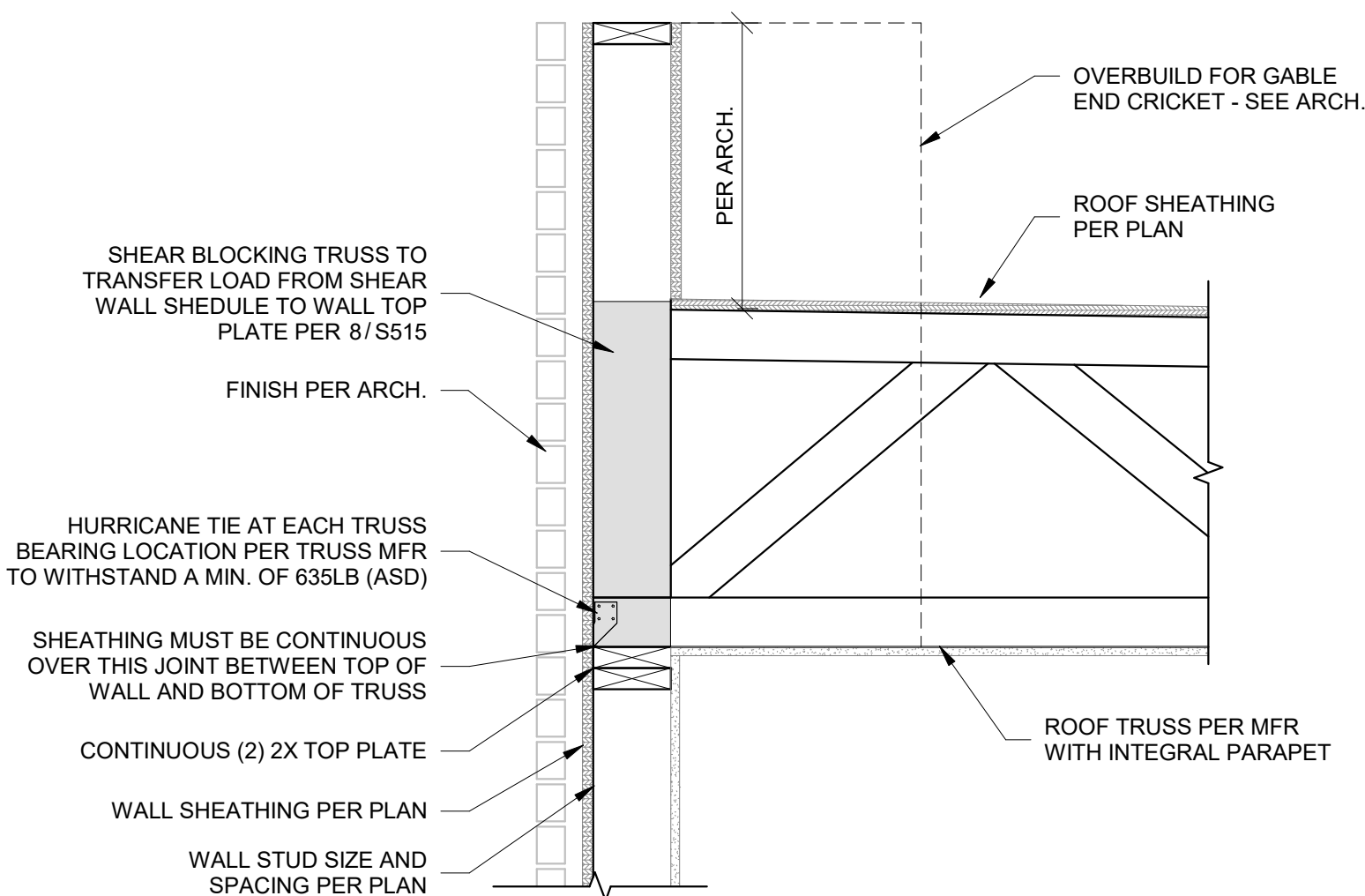
4  
S515  
ROOF DRAG TRUSS SECTION AT SHEAR WALL  
1" = 1'-0"



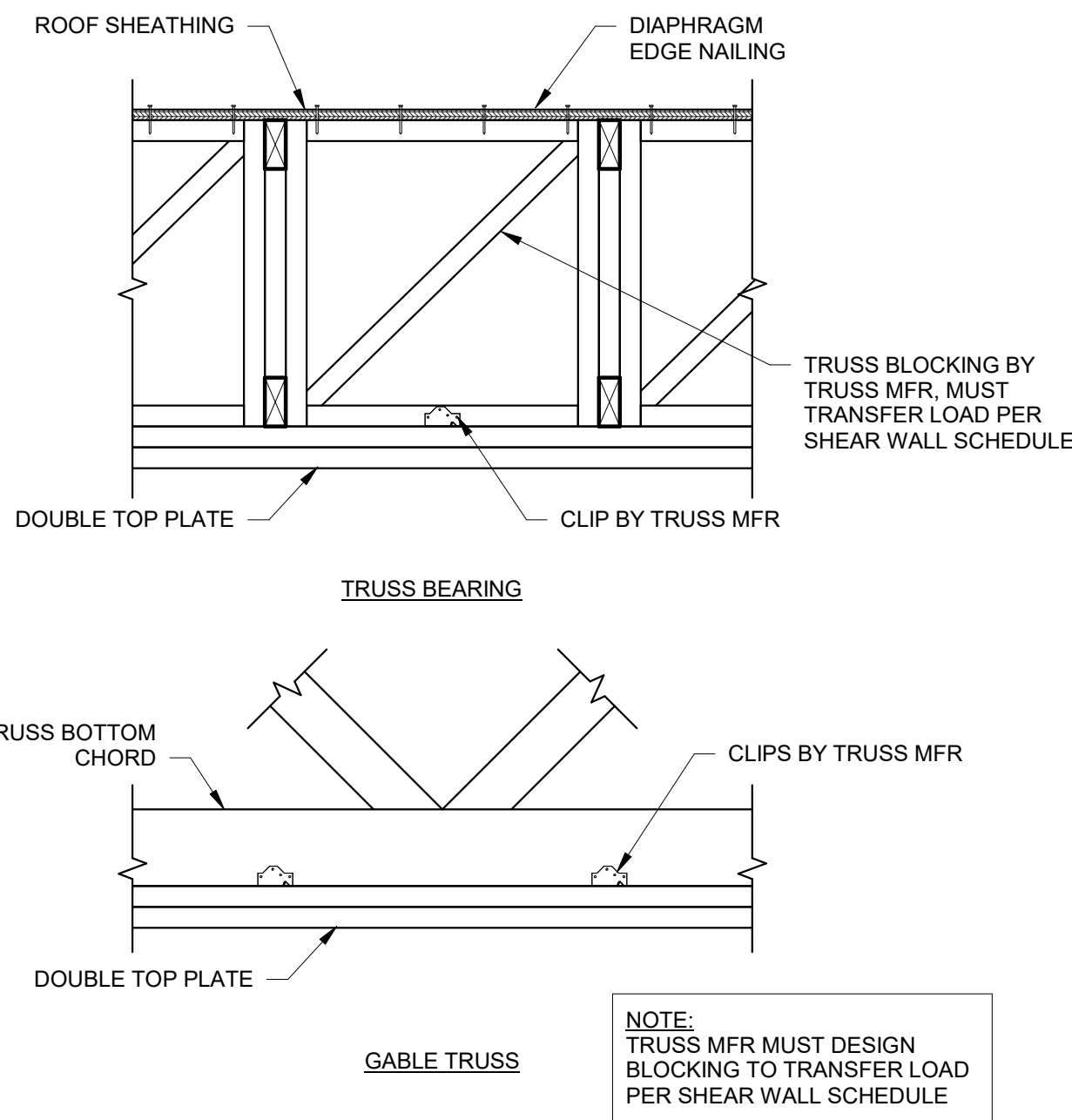
5  
S515  
FLOOR TRUSS PARALLEL & ROOF TRUSS BEARING AT BEAM  
1" = 1'-0"



6  
S515  
FLOOR JOIST BEARING - ROOF TRUSS PARALLEL  
1" = 1'-0"



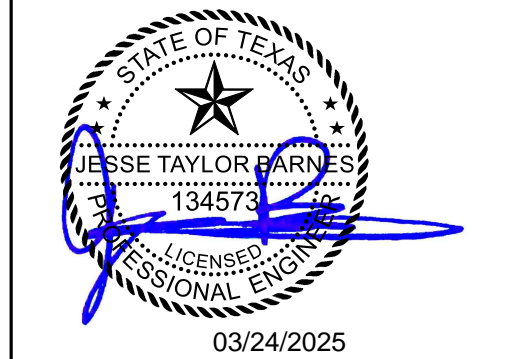
7  
S515  
PARAPET AT TRUSS BEARING  
1" = 1'-0"



8  
S515  
TRUSS BLOCKING WHERE TRUSSES ARE PERPENDICULAR TO SHEAR WALLS  
1" = 1'-0"

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JESSE BARNES, PE  
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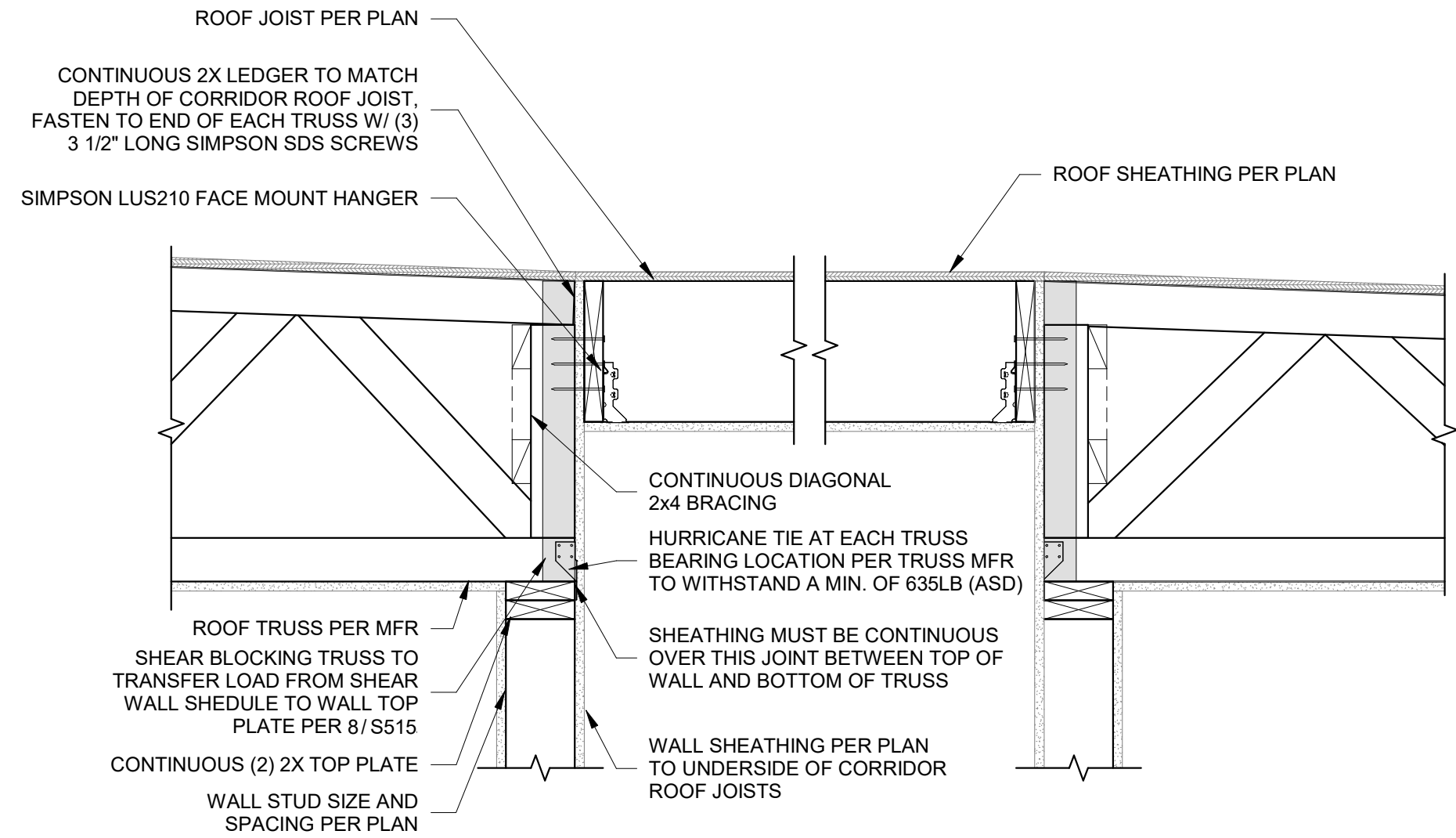
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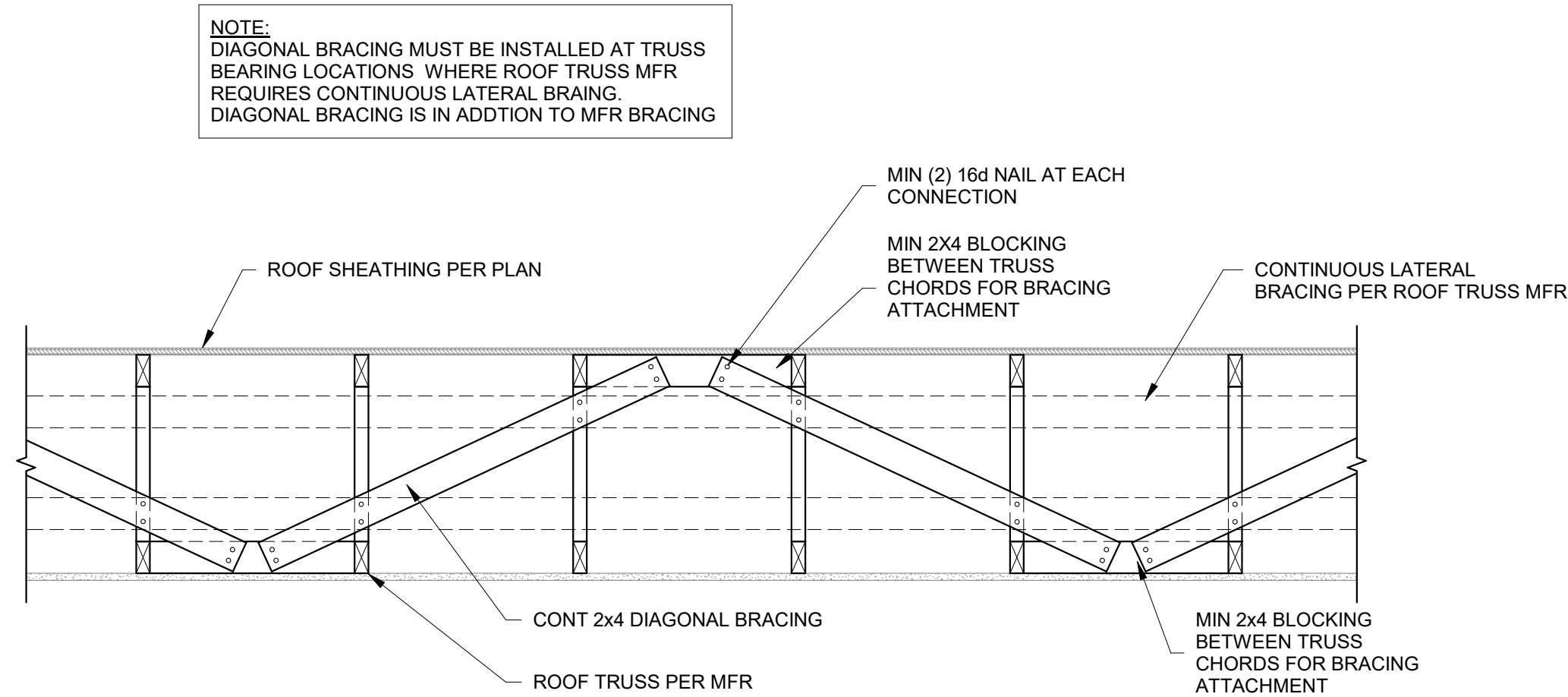
PROJECT NUMBER 2024002546	SET ISSUE DATE 03/25/2025
ENGINEER IWC	DRAWN BY CEL
CHECKED BY MDH	

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSICANA, TEXAS  
ROOF FRAMING DETAILS  
Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt

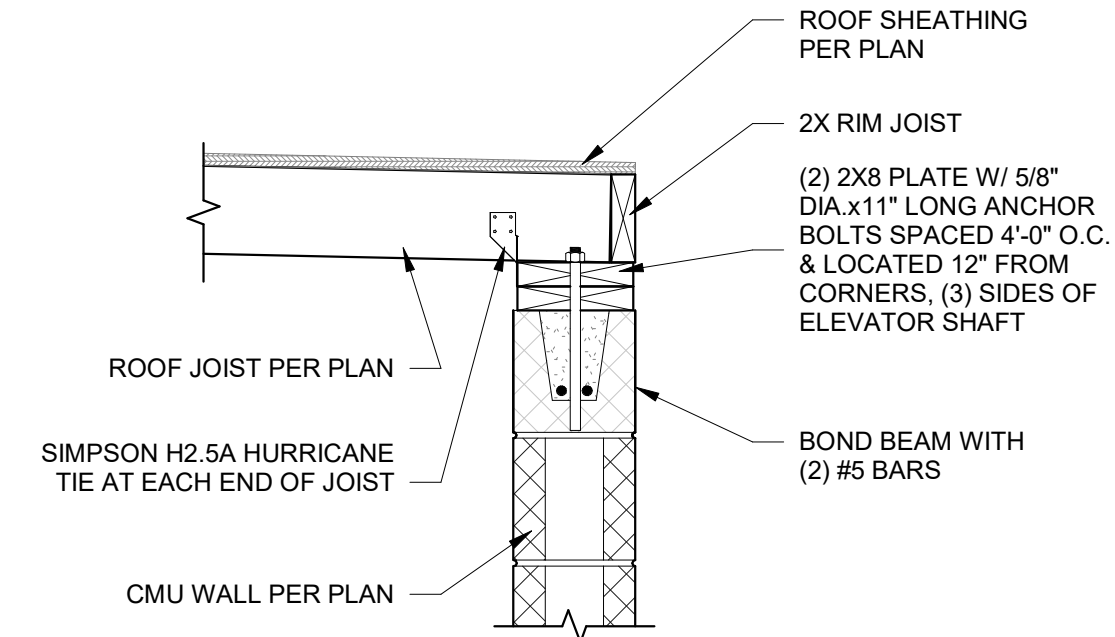




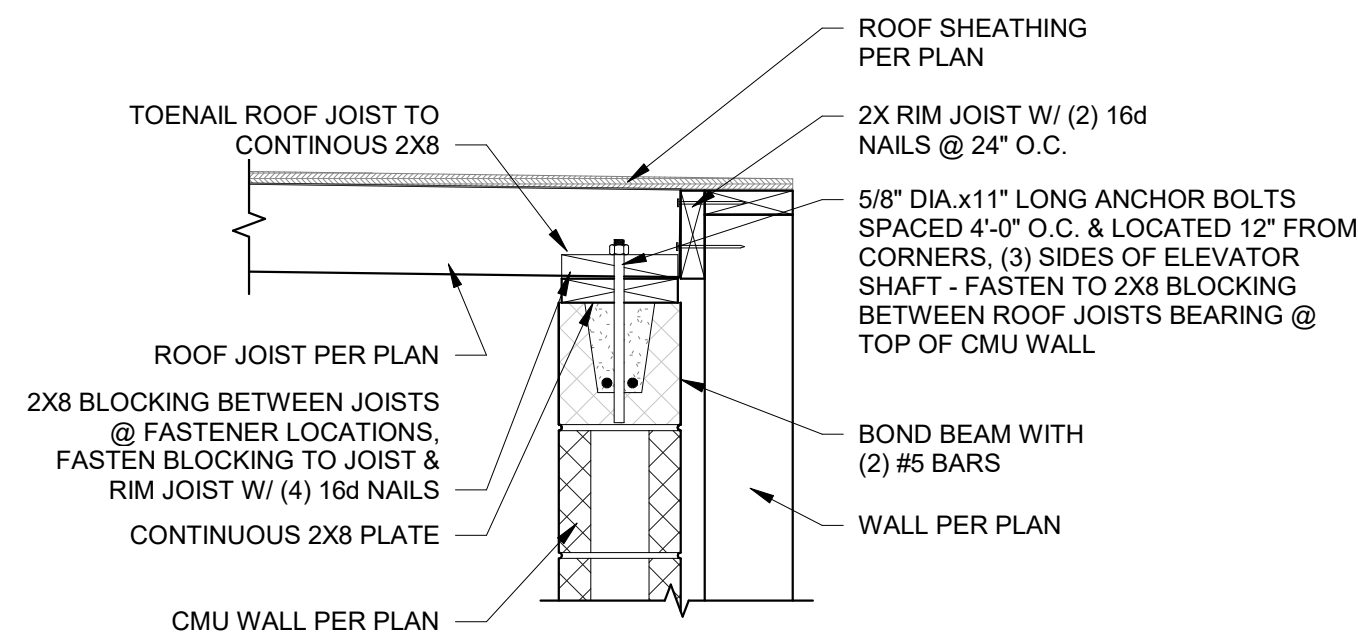
1 ROOF FRAMING SECTION AT CORRIDOR ROOF  
1" = 1'-0"



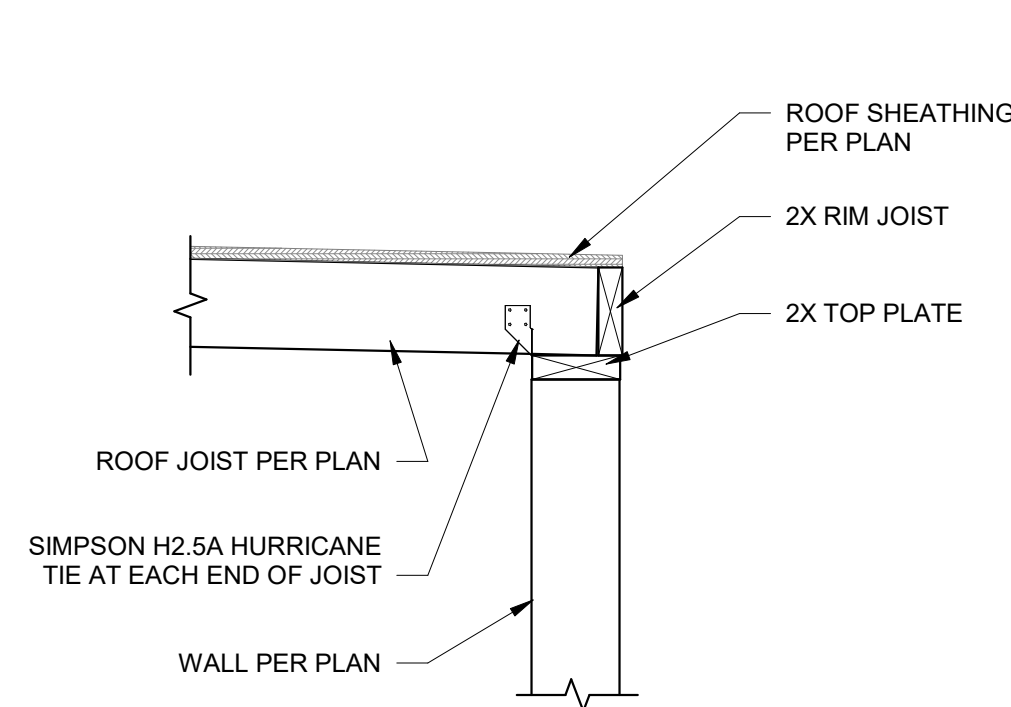
2 ROOF TRUSS BRACING  
3/4" = 1'-0"



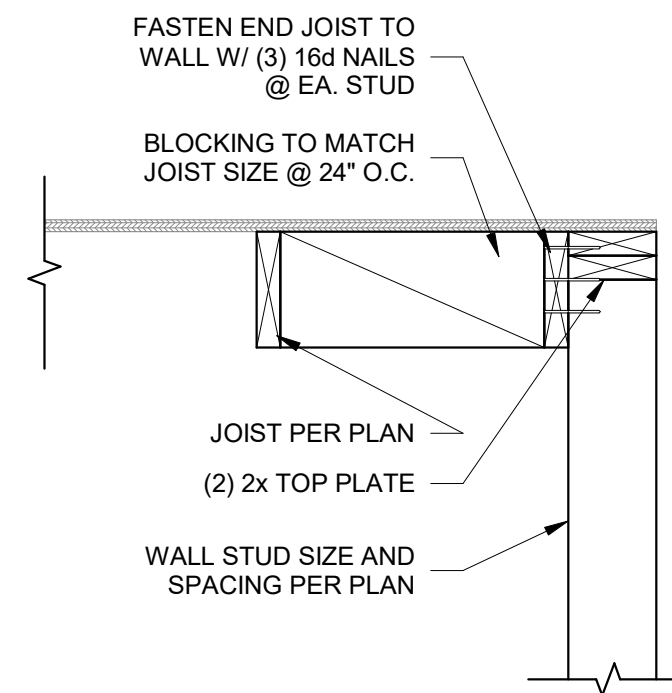
3 ROOF JOIST BEARING ON CMU  
1" = 1'-0"



4 ROOF JOIST BEARING ON CMU AT DOUBLE WALL  
1" = 1'-0"



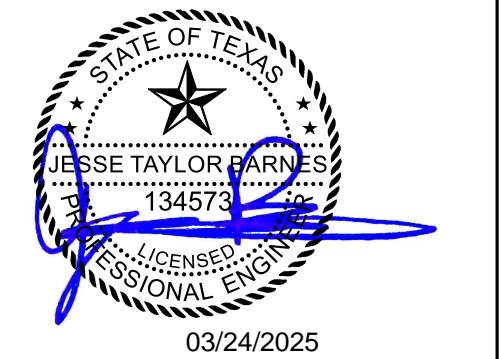
5 ROOF JOIST BEARING AT EXTERIOR WALL  
1" = 1'-0"



6 ROOF JOIST PARALLEL TO EXTERIOR WALL  
1" = 1'-0"

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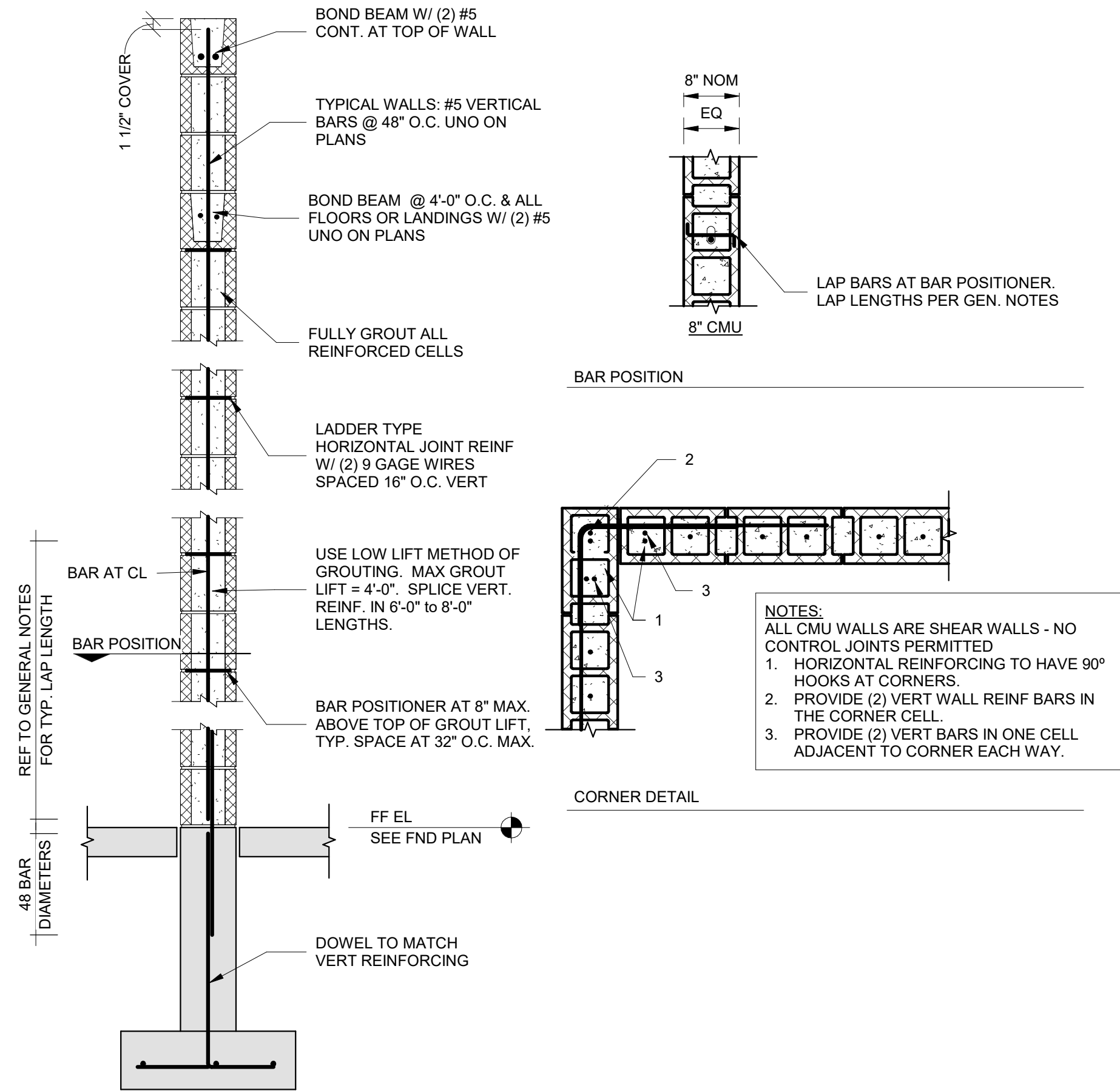
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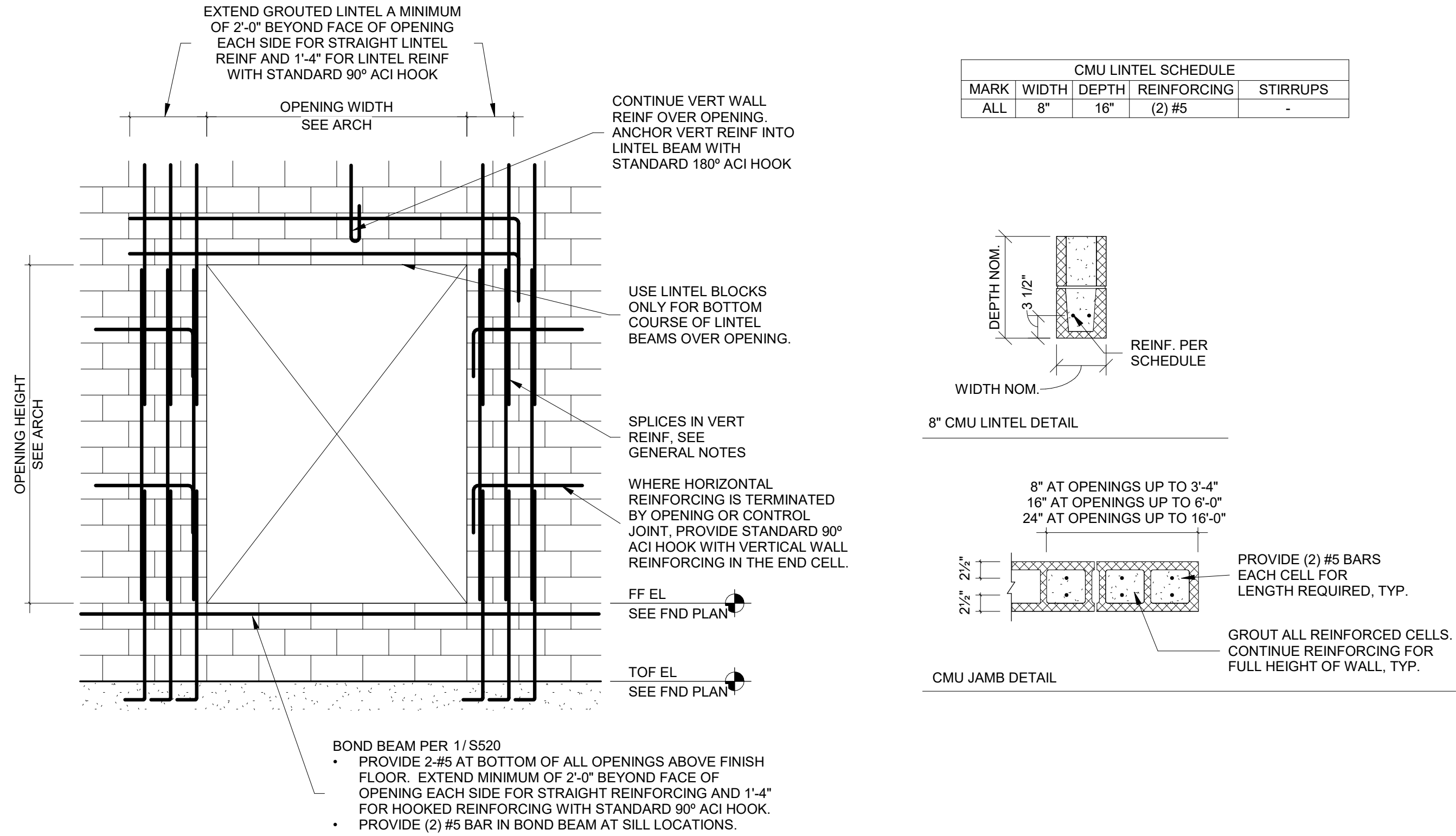
PROJECT NUMBER	SET ISSUE DATE	
2024002546	03/25/2025	
ENGINEER	DRAWN BY	CHECKED BY
IWC	CEL	MDH

JONES GILLAM RENZ  
THE RESIDENCE AT RED CEDAR  
CORSICANA, TEXAS  
ROOF FRAMING DETAILS  
Autodesk Docs://2024002546 - JGR - Red Cedar/2024002546 - JGR - Red Cedar R24.rvt

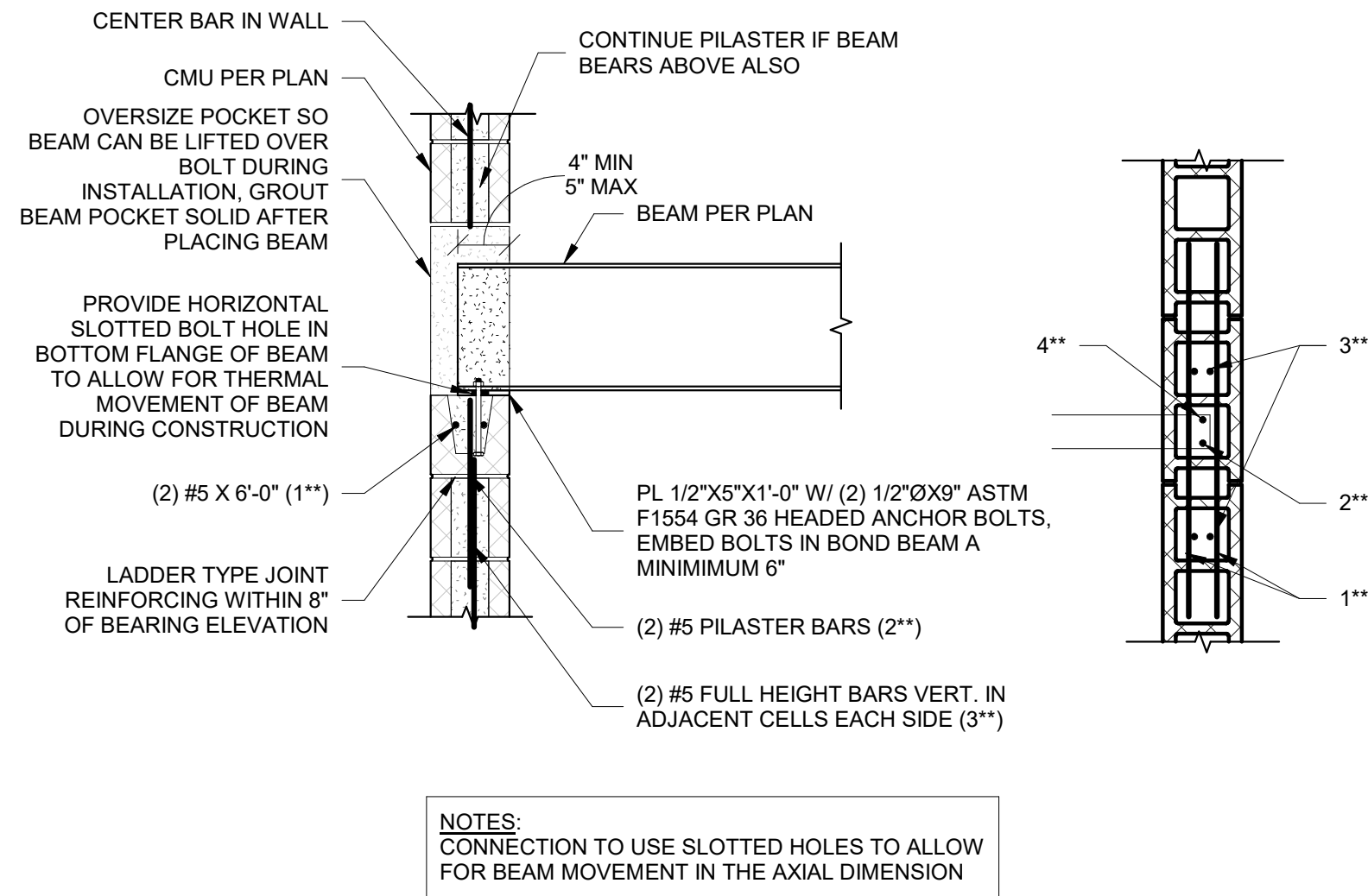




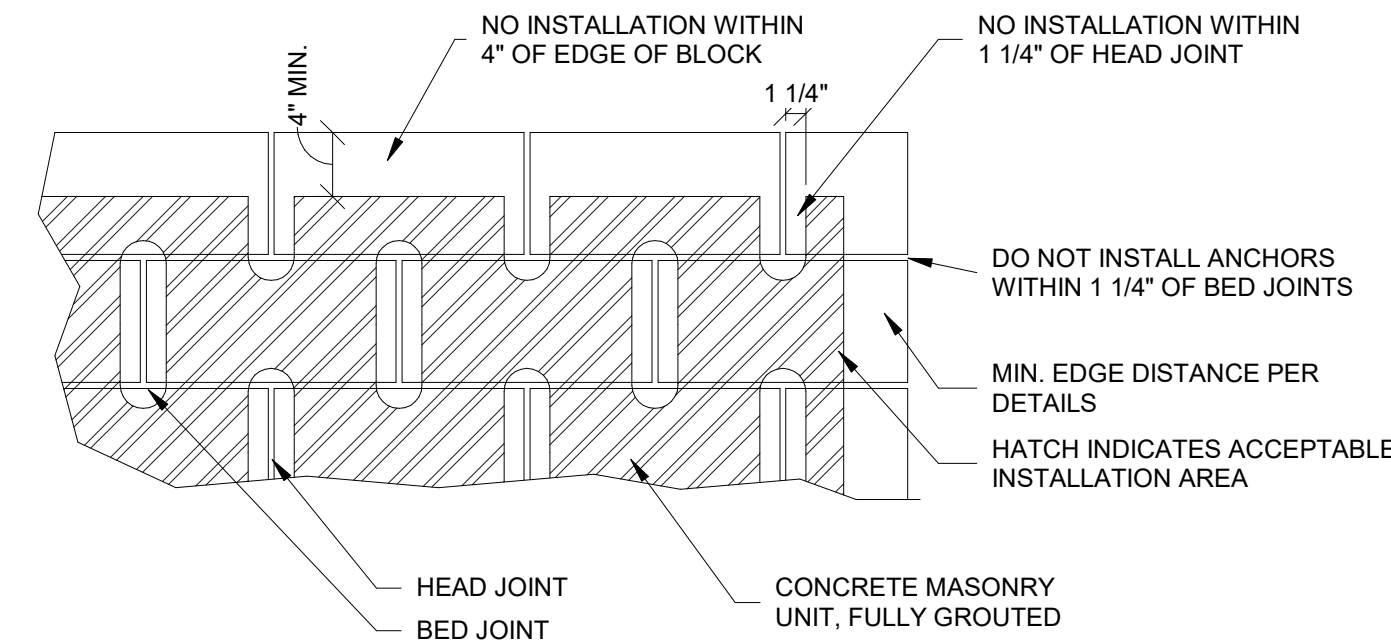
1 CMU WALL REINFORCING DIAGRAM  
3/4" = 1'-0"



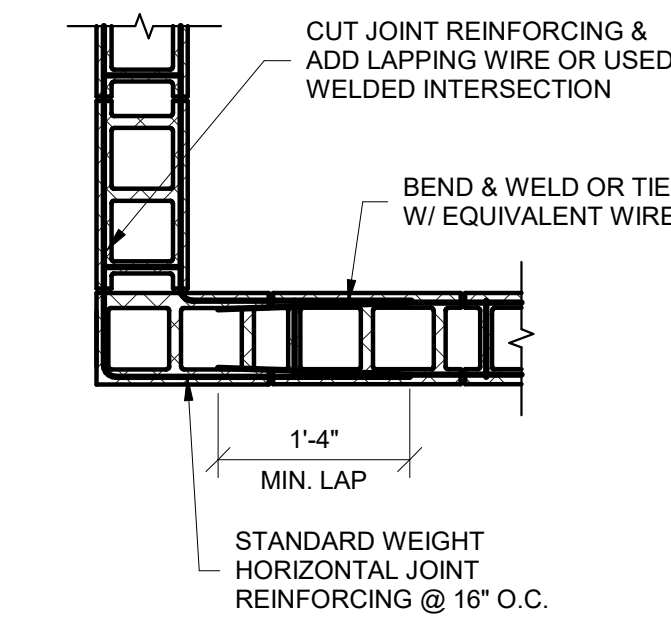
2 TYPICAL MASONRY OPENING DIAGRAM & SCHEDULE  
3/4" = 1'-0"



4 BEAM CONNECTION TO MASONRY - MID WALL  
3/4" = 1'-0"



5 ACCEPTABLE INSTALLATION LOCATIONS FOR ANCHORS IN CMU  
1" = 1'-0"

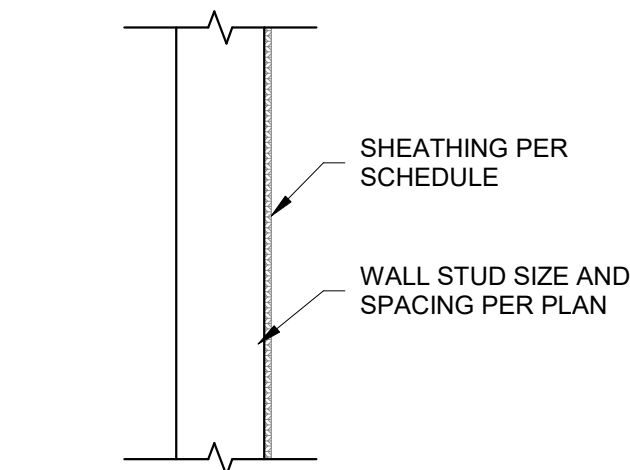


3 JOINT REINFORCING AT INTERSECTING CMU WALLS  
3/4" = 1'-0"

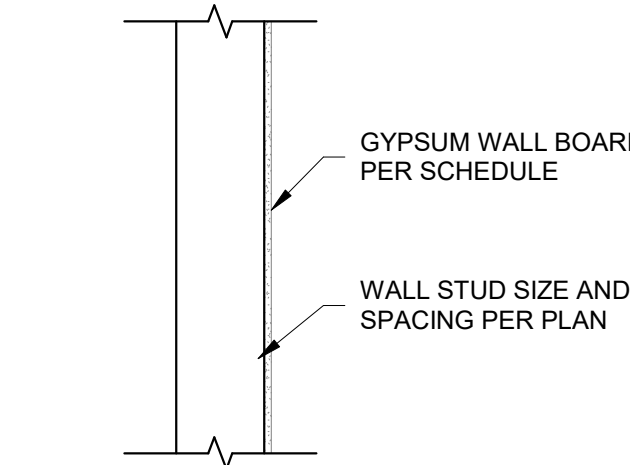
No.	Description	Date

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CHECKED BY MDH	



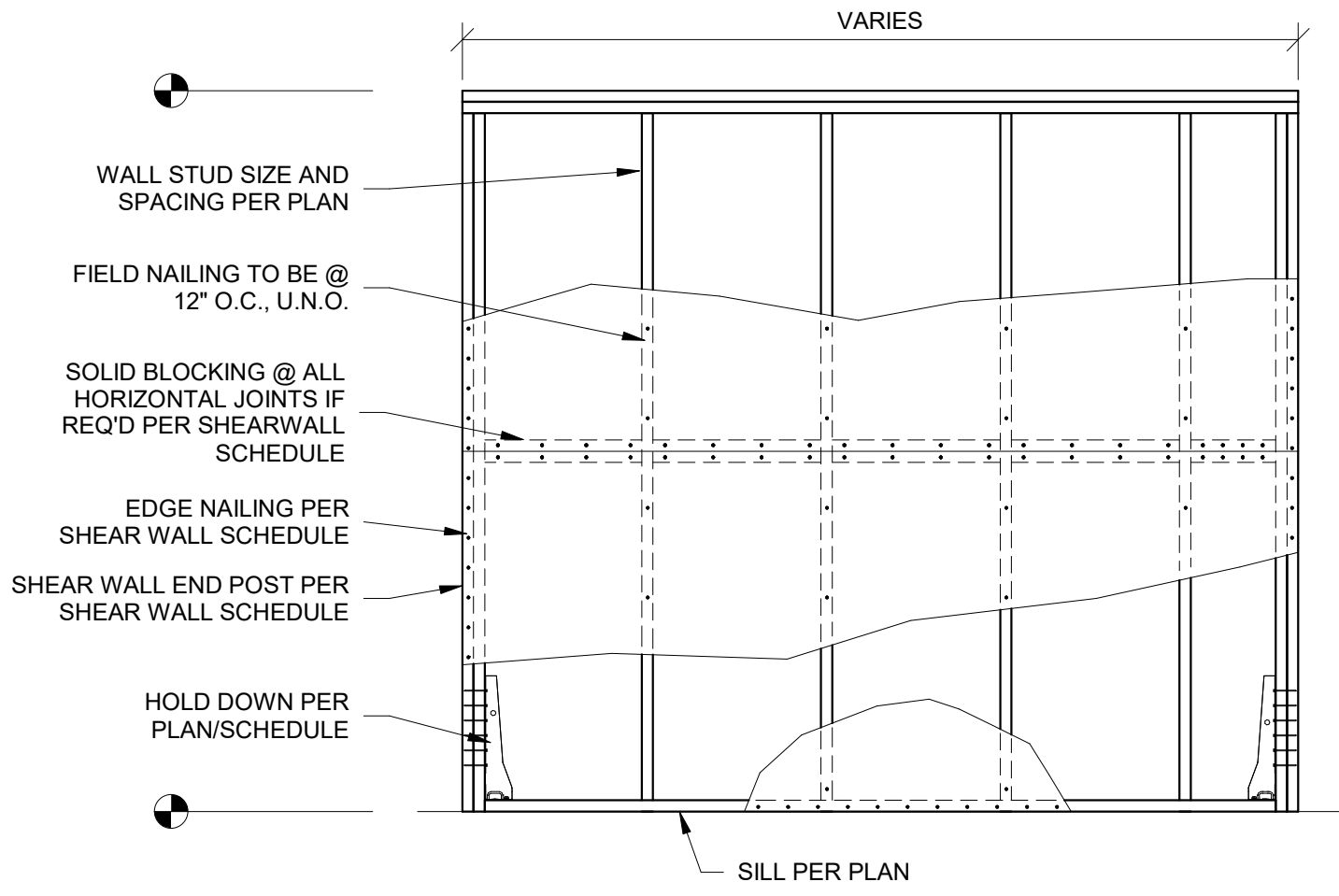


SINGLE WALL - (1) SIDE PLYWOOD

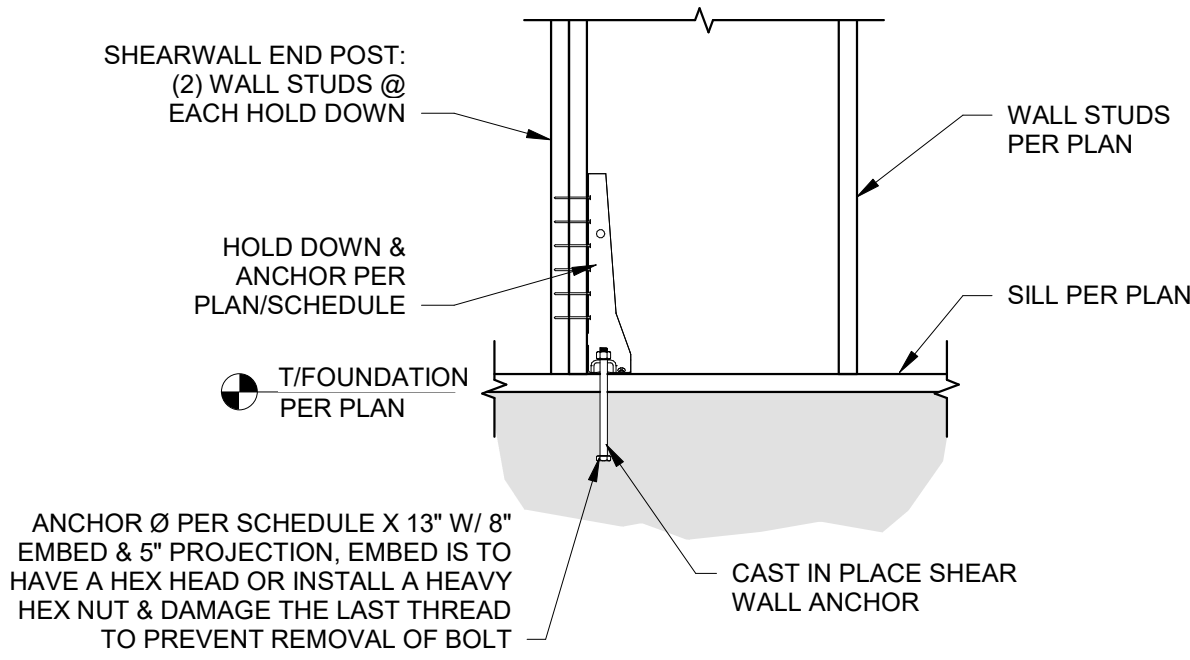


SINGLE WALL - (1) SIDE GYP

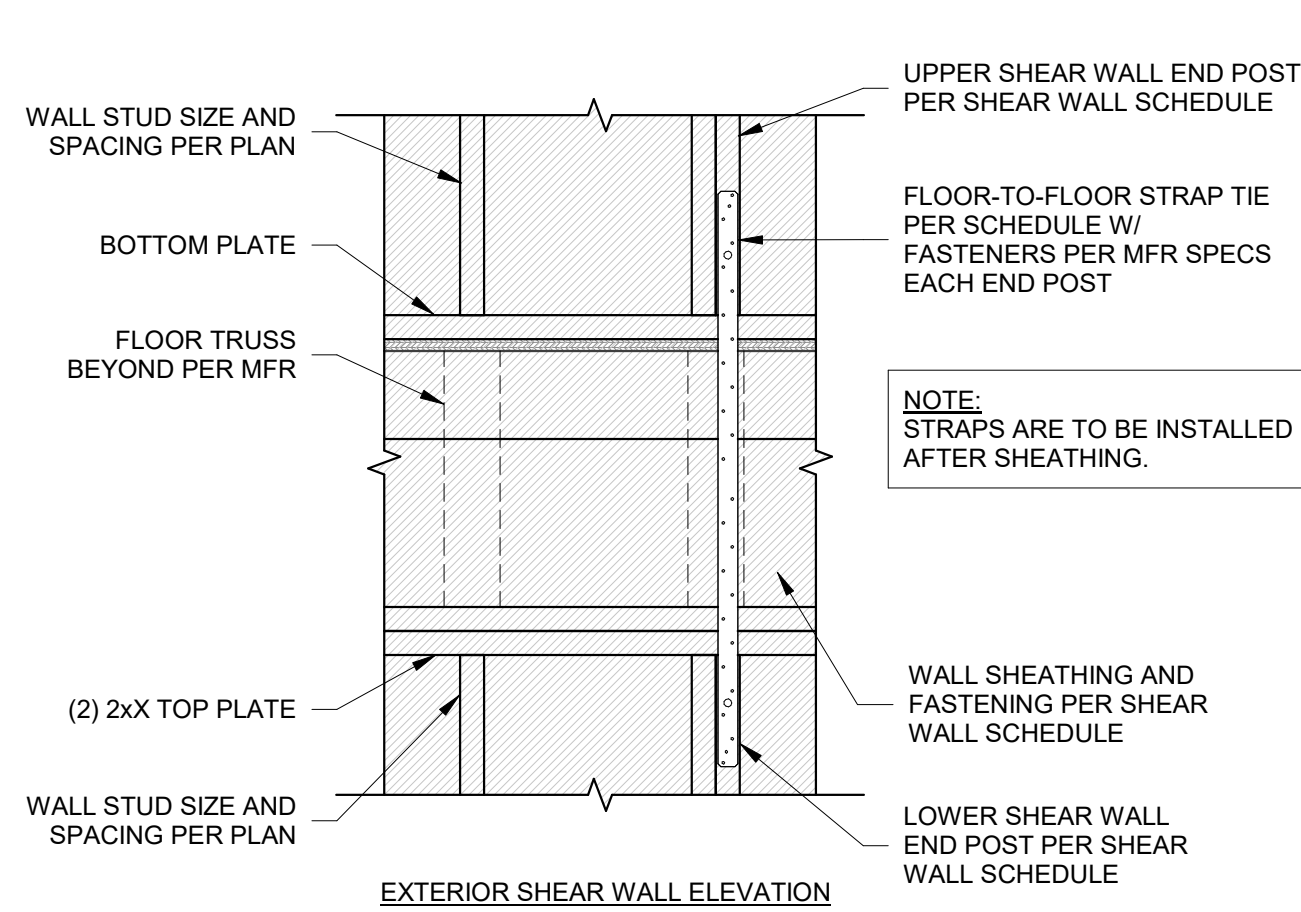
1 TYPICAL SHEARWALL SECTIONS  
1" = 1'-0"



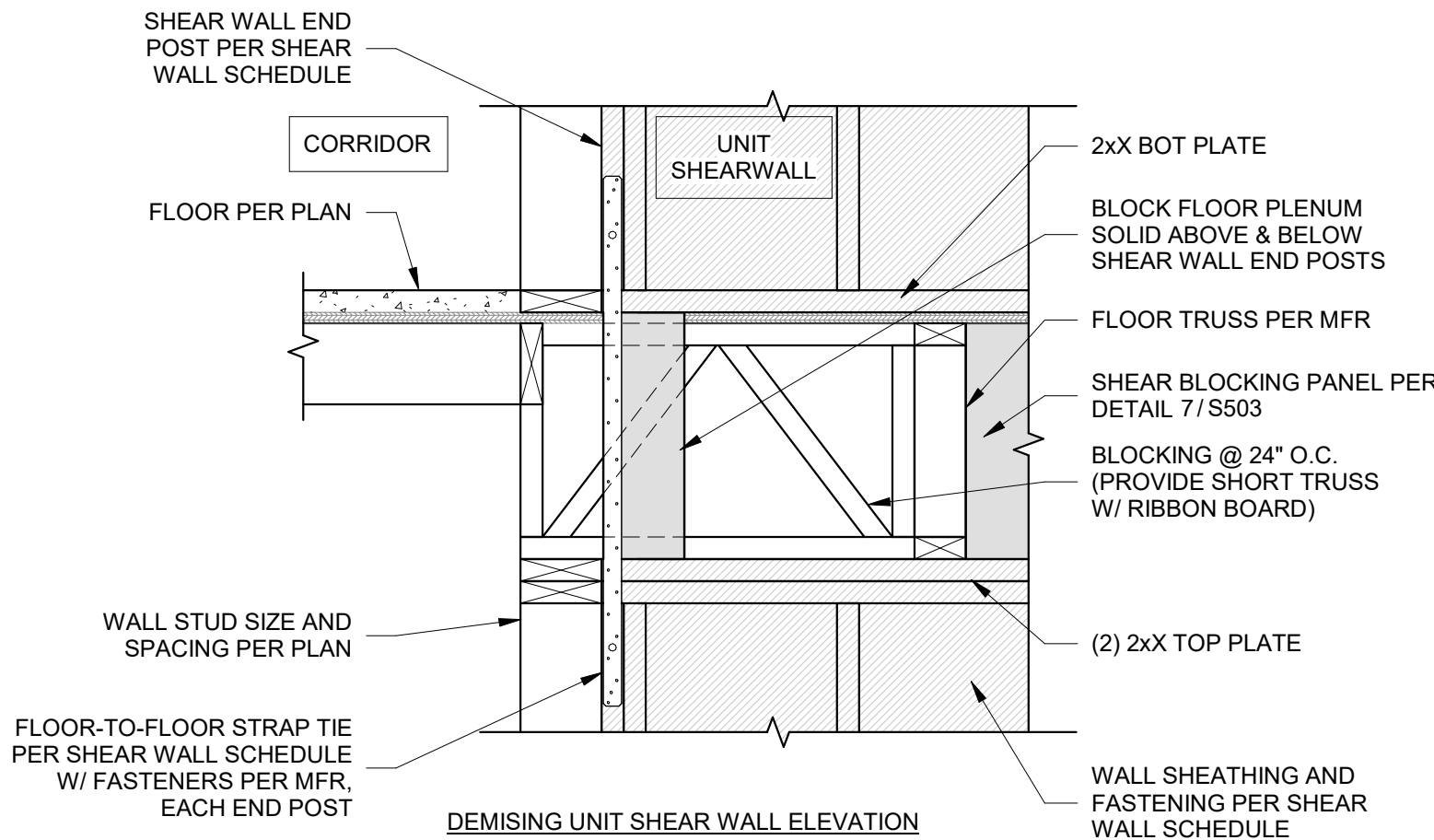
2 SHEARWALL NAILING  
1/2" = 1'-0"



3 SHEARWALL HOLD DOWN  
3/4" = 1'-0"

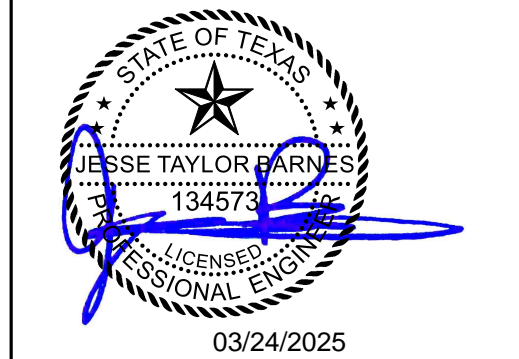


4 FLOOR-TO-FLOOR STRAP TIE  
1" = 1'-0"



NOTICE:  
McClure Engineering Co. is not responsible or liable for any issues, claims, damages, or losses (collectively, "Losses") which arise from failure to follow these Plans, Specifications, and the engineering intent they convey, or for Losses which arise from failure to obtain and/or follow the engineers' or surveyors' guidance with respect to any alleged errors, omissions, inconsistencies, ambiguities, or conflicts contained within the Plans or Specifications.

TEXAS CERTIFICATE OF AUTHORITY  
NO. F-17363  
EXPIRES: NOVEMBER 30, 2025



JESSE BARNES, PE  
NO. 134573  
EXP: MARCH 31, 2025

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF TEXAS.

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