

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS ON THE PROJECT TO CLEARLY DEFINE ALL OF THE REQUIREMENTS FOR THE CONSTRUCTION. WHERE CONFLICTS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

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PROJECT DESCRIPTION

1. Project is a single family residence with one level above grade and a level at grade above crawl space. Foundations consist of cast-in-place concrete walls on spread footings. Floor and roof framing is wood sheathing over wood I-joists or LVL rafters. The lateral system for the building is wood panel shear walls and special reinforced masonry shear walls.
2. This description is for general orientation only. The General Contractor is responsible for all scope items described in the drawings and project specifications as well as for all material and labor that can reasonably be inferred there from.

GENERAL APPLICATION

1. These drawings must be used in conjunction with the architectural drawings on the project to clearly define all requirements for construction.
2. No Contractor should attempt to bid nor construct any portion of this project without consulting the project architectural, mechanical, and electrical documents.
3. All things which, in the opinion of the Contractor, appear to be deficiencies, omissions, contradictions or ambiguities in the drawings shall be brought to the attention of the Structural Engineer. Corrections or written interpretations shall be issued before affected work may proceed.
4. The Contractor shall inform the Structural Engineer, clearly and explicitly in writing of any deviation or substitution from requirements of the contract documents. Contractor shall not be relieved of any requirement of the contract documents by virtue of the Structural Engineer's review of shop drawings, project data, etc., unless the Contractor has clearly and explicitly informed the Structural Engineer in writing of any deviations or substitutions at time of submission.

MISCELLANEOUS NOTES

1. The Contractor is solely responsible for all safety regulations, programs and precautions related to all work on this project.
2. The Contractor is solely responsible for the protection of persons and property either on or adjacent to the project and shall protect it against injury, damage, or loss.
3. Means and methods of construction and erection of structural materials are solely the Contractor's responsibility.
4. The structure is designed to function as a unit upon completion of construction of the project and then, only to support the design loads indicated. The contractor is responsible for means, methods and sequence of construction and the adequacy of the structure to support loads occurring during construction of the project. Furnish all temporary bracing, shoring, and/or support as may be required.
5. No openings, nor any change in size, dimension or location shall be made in any structural element without written approval of the Structural Engineer.
6. Openings 1'-4' or less on a side are generally not shown on the structural drawings. Refer to drawings of other consultants for such openings.
7. Openings through floors and/or roofs for passage of utilities are not located nor dimensioned on structural drawings. Contractor shall obtain and coordinate such locations and dimensions with the contractor requiring the opening.
8. Show all openings through structural members on shop drawings and submit for review. Openings not shown on structural drawings are subject to acceptance and shall be specifically indicated for review and acceptance.
9. Fireproofing of structural elements is not shown on the structural drawings. Refer to the specifications and architectural documents.
10. Do not scale these drawings, use the dimensions shown. In case of conflict, request clarification from architect and structural engineer.
11. No structural modifications, alterations, or repairs shall be made without prior review by Structural Engineer. Submit details and calculations prepared by a professional engineer registered in state where project is located and employed by contractor.
12. Where framed floors are to be used for staging or temporary storage area the contractor shall verify that unit loads do not exceed the design loads for the supporting framed floors.

QUALITY ASSURANCE

1. The Contractor is responsible for quality assurance, including workmanship and materials furnished by subcontractors and suppliers.
2. Inspection or testing by the Owner does not relieve the Contractor of the responsibility to perform the work in accordance with the Contract Documents.
3. Workmanship: The Contractor is responsible and shall bear the cost of correcting work which does not conform to the specified requirements.
4. Correct deficient work by means acceptable to the Architect. The cost of extra work incurred by the Architect to approve corrective work shall be borne by the Contractor.

QUALITY CONTROL

1. The Owner's Testing Agency shall perform testing and special inspections required by the structural documents, building code and the local authority. The Testing Agency shall comply with ASTM E329 and upon completion of work, the Testing Agency shall furnish a certificate of compliance, signed by the professional engineer overseeing special inspections and testing. The professional engineer must be registered and licensed in the state where the project is located.
2. The individual employed by the Testing Agency, responsible for overseeing testing and inspection of soils and foundations shall be a professional engineer practicing the discipline of geotechnical engineering, referred to as the Geotechnical Engineer in the structural portion of the construction documents. The Geotechnical Engineer is responsible for testing and inspections of soils, earthwork and foundations for conformance to the foundation design and the geotechnical report. See foundation section of the general notes.
3. See special inspections section of the general notes for required testing and inspection.

STRUCTURAL DESIGN CRITERIA			
Building Code: 2018 International Building Code		(Note 1)	
Local Jurisdiction: Teton County, Wyoming			
Risk Category : II			
Wind Loading			
Basic Wind Speed	Vult = 115 MPH		Vasd = 90 MPH
Exposure Category	B		
GCpi	0.18		
Wind Base Shear - Ultimate	East/West	North/South	
Master Wing	8 K	7 K	
Great Room Wing	7 K	5 K	
Junior Master Wing	9 K	5 K	
Garage Wing	5 K	7 K	
Wind Design Pressure Components and Cladding - Ultimate	20sqft	50sqft	100sqft
Interior Roof Zone (Zone 1)	34.4 PSF	26.3 PSF	20.1 PSF
Roof End Zone (Zone 2)	40.0 PSF	33.7 PSF	29.0 PSF
Corner Roof Zone (Zone 3)	48.6 PSF	40.3 PSF	34.1 PSF
Interior Wall Zone (Zone 4)	25.2 PSF	23.7 PSF	22.6 PSF
Wall End Zone (Zone 5)	30.2 PSF	27.3 PSF	25.2 PSF
Seismic Loading			
Seismic Importance Factor, Ie	1.0		
Mapped Spectral Response Acceleration			
Ss	1.051		
S1	0.316		
Site Class	D		
Spectral Response Coefficients			
Sds	0.756		
Sd1	0.418		
Seismic Design Category	D		
Basic Seismic Force Resisting System	Wood Framed Shear Walls	Special Reinf CMU Shear Walls	
Response Modification Factor, R	6.5	5.0	
Over-Strength Factor, O_o	2.5	2.0	
Deflection Amplification Factor, C_d	4.0	3.5	
Seismic Response Coefficient, C_s	0.116	0.151	
Analysis Procedure Used	Equivalent Lateral Force Analysis		
Seismic Base Shear - Ultimate	East/West	North/South	
Master Wing	11 K	11 K	
Great Room Wing	8 K	8 K	
Junior Master Wing	11 K	11 K	
Garage Wing	18 K	18 K	
Snow Loading (Notes 2,3,5)			
Ground Snow Load, P_g	175 PSF		
Minimum Flat Roof Snow Load, P_f	135 PSF		
Importance Factor, I_s	1.0		
Terrain Category	B		
Exposure Factor, C_e	1.0		
Thermal Factor, C_t	1.1		
Slope Factor, C_s	1.0		
Live Loads and Superimposed Dead Loads (Notes 4,5)			
Foundations			
Geotechnical Engineer Information:	Ray Womack, PE, PG WY # 4958 Jorgensen Geotechnical Engineering and Geology PO Box 9550 Jackson, WY 83002 (307) 733-5150 Date of Report: 5/15/2015		
Active Equivalent Fluid Pressure	40 PSF/FT		
At-Rest Equivalent Fluid Pressure	58 PSF/FT		
Passive Equivalent Fluid Pressure	305 PSF/FT		
Sliding Friction Coefficient	0.53		
Allowable Bearing Capacity	3,000 PSF at 4' below grade 5,500 PSF at 8' below grade		
Minimum Frost Depth	36 IN		
Referenced Datum	100'-0" = main level subfloor = 6218.5 USGS		
NOTES:			
1. The governing building code defines the applicable edition of referenced codes and standards. Where governing building code does not define referenced codes and standards, the latest edition shall be used.			
2. Ground snow load is according to the Teton County Building Department on 11/09/2018.			
3. All snow loads on the structure for both flat and sloped roofs are calculated in accordance with the 2018 IBC and based on the ground snow load stated above. Roof snow loads consider the following load conditions: partial loading, unbalanced roof snow loads, snow drifting, and sliding snow.			
4. Minimum uniform and concentrated live loads are determined according to Section 1607 of the IBC.			
5. See Load Keys for numerical definition and area designation of snow, live, and other gravity loads used in design.			

SUBMITTALS

1. See Material sections of these General Notes for required shop drawings.
2. Submit one (1) copy of the required information (Manufacturers Data, Shop Drawings, etc) via electronic media (PDF or similar).
3. Reproducible copies of contract documents shall not be used.
4. Submittals shall be sent directly to the Architect for review and distribution.
5. Submittals shall be reviewed by Contractor and Subcontractor prior to submission. Drawings shall bear Contractor's approval stamp accepting responsibility for coordination of dimensions shown in the contract documents, quantities and coordination with other trades.
6. Allow 14 calendar days in the Structural Engineer's office for review of submittals.
7. Submittals will be returned to the Architect with Structural Engineer's review comments via electronic media.

SPECIAL INSPECTION

1. Special inspection and testing shall be performed as required by the local jurisdiction, the building code and the construction documents. See quality assurance section of the general notes.
2. Coordinate and schedule inspection and testing prior to the start of work requiring inspection and testing while providing special inspector reasonable notice.
3. All deficiencies shall be corrected for acceptance by the testing agency.
4. Inspections performed by the local jurisdiction do not replace inspection or testing required by the owners testing agency.
5. Special inspection and testing is required for the items shown in the special inspections and testing table.

SPECIAL INSPECTIONS AND TESTING						
Category/Material	Component/Work	Class				
		1	2	3	4	5
Soils and Foundations	Footing Soil Bearing Material		X			
	Slab-on-Grade Subgrade Material		X			
	Compaction	X	X	X		
	Permanent Soil Retention Elements	X	X	X		
Cast-in-Place Concrete	Concrete special inspection not required per exceptions in Section 1705.3					
Reinforced Masonry (Level B)	Verification of f'm prior to construction	X	X			
	Masonry Units, Grout and Mortar	X	X			
	Preparation of Mortar and Construction of Mortar Joints	X	X			
	Reinforcing Placement	X	X			
	Welding Reinforcement	X	X	X		
	Mortar Joint Reinforcing and Placement	X	X			
	Grout Space	X				
	Grout Placement		X	X		
	Control and Construction Joints	X				
	Steel Embeds	X	X			
	Cast Embedded Anchors	X	X			
	Post-Installed Anchors	X	X	X		
	Curing		X			
NOTES:						
1. Special inspection and testing are to conform to chapter 17 of the IBC and the local building department.						
2. Unless noted as continuous inspection, all inspections are periodic. Periodic inspection is defined as part-time or intermittent inspection of the work. It is the Special Inspector's responsibility to determine and coordinate the frequency and duration of the inspection relative to the Contractor's schedule and sequencing of the work in order to meet the inspection and reporting requirements.						
3. Class 1: Inspection verification of size, location, quantity, and tolerance.						
4. Class 2: Inspection and testing verification of strength, grade, classification, quality, density, proportions, and manufacturers certified test reports.						
5. Class 3: Continuous inspection and verification of operations and conditions.						
6. Class 4: Audit and inspection of fabrication facility's quality control program, and collection of facilities records during the course of fabrication for Class 2 and 3 inspections and testing.						
7. Class 5: Verification of certifications						

SPECIFICATIONS

1. These General Notes are intended to function as the structural portion of project specifications.



3D IMAGE IS FOR VISUALIZATION ONLY. REFER TO PLANS AND DETAILS FOR SPECIFIC INFORMATION.

ABBREVIATIONS	
AB	anchor bolt
ADDNL	additional
AFF	above finish floor
ALT	alternate
ARCH	architectural
BLDG	building
BM	beam
BOT, B/, BOX	bottom of (S=slab, C=conc, etc)
Brg	bearing
BS	both sides
BTWN	between
CFS	cold-formed steel
CIP	cast-in-place
CJ	construction / control joint
CJP	complete joint penetration
CLR	clear
CMU	concrete masonry unit
COL	column
CONC	concrete
CONN	connection
CONST	construction
CONT	continuous
D	depth
DIA, φ	diameter
DIM	dimension
DK	deck
DTL	detail
DWGS	drawings
DWL	dowel
(E)	existing construction
EA	each
EF	each face
EJ	expansion joint
ELEV	elevation
EOx	edge of (S=slab, C=conc, etc)
EW	each way
EXP	expansion
EXT	exterior
FDN	foundation
FLR	floor
FOx	face of (S=slab, C=conc, etc)
FS	far side
FTG	footing
GA	gage
GB	grade beam
GC	general contractor
GEN	general
GLB	glulam
HDG	hot dip galvanize
HDR	header
HK	hook
HORIZ	horizontal
HSA	headed stud anchor
IF	inside face
INT	interior
JST	joist
JT	joint
KIP, K	1000 pounds
KLF	1000 pounds per lineal foot

WOOD SHEAR WALL PLAN KEY	
---	SHEAR WALL ABOVE FLOOR/ROOF
---	SHEAR WALL BELOW FLOOR/ROOF
---	SHEAR WALL ABOVE & BELOW FLOOR/ROOF
⊙ 0"	WOOD SHEAR WALL DESIGNATION AND MINIMUM REQUIRED LENGTH RE: SHEAR WALL SCHEDULE
△	HOLD DOWN FOR WOOD SHEAR WALL RE: HOLD DOWN SCHEDULE

ABBREVIATIONS	
L	length
LAT	lateral
LBS	pounds
LLH	long leg horizontal
LLV	long leg vertical
LONG	longitudinal
LSL	laminated strand lumber
LVL	laminated veneer lumber
LW, LWT	lightweight
MAS	masonry
MAX	maximum
MECH	mechanical
MFR	manufacturer
MIN	minimum
MTL	metal
(N)	new construction
No	Number
NOM	nominal
NS	near side
NW, NWT	normal weight
OC	on center
OF	outside face
OH	opposite hand
OPNG	opening
PAF	powder actuated fastener
PC	precast
PERP	perpendicular
PERT	pre-engineered roof truss
PJP	partial joint penetration
PL, P	plate
PLF	pounds per lineal foot
PSL	parallel strand lumber
PT	post-tensioning
PT	pressure treated
RE:	reference
REINF	reinforcement
REOD	required
RET	retaining
SC	slip critical
SCHED	schedule
SCL	structural composite lumber
SIP	structural insulated panel
SOG	slab on grade
SPA	spacing
STFNR	stiffener
STL	steel
SUBFLR	subfloor
T/, TOx	top of (S=slab, C=conc, etc)
THK	thickness
TL	transfer load
TRAN	transverse
TYP	typical
UNO	unless noted otherwise
VERT	vertical
VIF	verify in field
W	width
WP	work point
WWF	welded wire fabric

PLAN KEYS AND SYMBOLS	
	ELEVATION VIEW 1 = DRAFTING NUMBER S101 = SHEET NUMBER
	WALL / BUILDING SECTION 1 = DRAFTING NUMBER S101 = SHEET NUMBER
	SECTION CUT 1 = DRAFTING NUMBER S101 = SHEET NUMBER
	DETAIL CALL OUT 1 = DRAFTING NUMBER S101 = SHEET NUMBER
	ADDENDUM NUMBER
	STEPS AND SLOPES IN DECKS & SLABS YY" = STEP HEIGHT
	ELEVATION CALLOUT REFERENCE = T/OBJECT OR B/OBJECT XXX"-YY" = OBJECT ELEVATION
	COLUMN TYPE CX = COLUMN TYPE, RE: SCHEDULE BPX = BASE PLATE, RE: SCHEDULE xxK = TRANSFER LOAD
	DIRECTION OF DECK SPAN
	WOOD JOIST HANGER HT = JOIST HANGER TYPE, RE: SCHEDULE
	KEYED NOTE K = KEYED NOTE, RE: SCHEDULE

SECTIONS AND DETAILS	
	CIP CONCRETE
	MASONRY
	SOIL FILL
	UNDISTURBED SOIL

WALLS AND COLUMNS	
	CIP CONCRETE WALL ABOVE
	MASONRY WALL ABOVE
	WOOD WALL ABOVE
	WALL BELOW (ALL MATERIALS)
	WALL ABOVE W/ WINDOW *
	CIP CONCRETE COLUMN ABOVE
	STEEL COLUMN ABOVE
	WOOD COLUMN ABOVE
	COLUMNS BELOW (ALL MATERIALS)
*CIP CONCRETE SHOWN; GRAPHICS APPLY TO OTHER WALL MATERIALS	

STEEL FRAMING	
SIZE XX"-YY"	BEAM / GIRDER NOTATION SIZE = MEMBER TYPE XX"-YY" = T/STL ELEVATION
WOOD FRAMING	
	HEAVY TIMBER FRAMING
	BEAM / GIRDER
	JOIST / RAFTER

NEW SHEET = ○ REVISED DRAWING = ●		NO MODIFICATIONS = ● SHEET DELETED = ✕			
SHEET NO.	SHEET NAME	ISSUE DATE AND TITLE			
		PERMIT SET	CONSTRUCTION		
		05.10.2019	06.28.2019		
S1.0	GENERAL NOTES	○	●		
S1.1	GENERAL NOTES	○	●		
S1.2	GENERAL NOTES	○	●		
S1.3	LOAD KEYS	○	●		
S1.4	TYPICAL DETAILS	○	●		
S1.5	TYPICAL DETAILS	○	●		
S1.6	TYPICAL DETAILS	○	●		
S1.7	TYPICAL DETAILS	○	●		
S2.1	FOUNDATION PLAN	○	●		
S2.2	MAIN LEVEL FRAMING PLAN	○	●		
S2.3	UPPER LEVEL / LOW ROOF PLAN	○	●		
S2.4	ROOF FRAMING PLAN	○	●		
S3.1	SHEAR WALL ELEVATIONS	○	●		
S3.2	INTERIOR TRUSS	○	●		
S3.3	EXTERIOR TRUSSES	○	●		
S3.4	CHIMNEY SECTIONS	○	●		
S4.1	DETAILS	○	●		
S4.2	DETAILS				
S4.3	DETAILS				
S4.4	DETAILS				
S4.5	DETAILS				
S4.6	ROOF DETAILS				
S4.7	ROOF DETAILS				
S5.1	SCHEDULES	○	●		
S5.2	SCHEDULES				

1. The foundations have been designed based on the design criteria and the Geotechnical Report referenced in the Structural Design Criteria section. Earthwork and foundation soil preparation shall be performed to provide soil properties meeting the design criteria.
2. The Geotechnical Engineer shall inspect and test soils, earthwork and foundations - see special inspection and quality assurance sections of the general notes. Prior to placing foundations and slabs-on-grade, obtain approval from the Geotechnical Engineer indicating earthwork and soil preparation has been performed adequately to conform to the foundation design criteria.
3. Bottom of exterior footings and walls shall bear below final exterior grade for frost protection - see structural design criteria section of the general notes.
4. Foundation walls having earth placed on each side shall have both sides filled simultaneously to maintain a common elevation.
5. Brace all foundation walls against movement while backfilling until floor slabs at the top and bottom of the wall are in place. Brace foundation walls as necessary to prevent movement and overstress due to equipment loading regardless of sequencing of top and bottom floor slabs.
6. Slab-on-grade movement is anticipated, see Geotechnical Report for magnitude of vertical movement. Isolate partition walls from slab-on-grade to allow for expected vertical movement.
7. Contractor shall provide continuous site drainage by a mechanical method to control surface and underground water as required to maintain a dry working site.
8. Foundation drainage and waterproofing is not shown or specified within the structural portion of the construction documents. Reference other portions of the construction documents for drainage, waterproofing and items associated with other disciplines.

1. All concrete work shall conform to ACI318 and ACI 301 and tolerances shall conform to ACI 117 unless noted otherwise. Contractor shall keep a copy of these references on site at all times.
2. Concrete Compressive Strength – See "Concrete Mix Design Requirements" Table
3. Materials – See "Concrete Materials Designation" table

1. All formwork shall conform to Class B finish in accordance with ACI 117 unless noted otherwise by architectural drawings. Refer to architectural drawings for architectural finish concrete.
2. All construction joints shown on the drawings shall be incorporated into the structure unless elimination is approved by the Structural Engineer. Additional joints required to facilitate construction shall be located at points of minimum shear and shall be detailed on reinforcing shop drawings for review. Locate vertical joints in walls and slabs within the middle third between supports designed and detailed with dowels and keys for transfer of design shear, unless noted otherwise. Reinforcing shall pass continuously through construction joints. Where joints are shown as roughened, mechanically roughen surface to 1/4" amplitude clean and free of laitance.
3. Unless otherwise shown in the architectural drawings, provide chamfers at all columns, beams, walls, and slab edges that are exposed to view in the finished structure.
4. Unless otherwise shown in the architectural drawings, provide drip edges at the underside of all exposed slab edges.
5. Locate door openings, window openings, MEP openings, drip slots, reglets, curbs, and ledges per architectural drawings. For openings not dimensioned on structural drawings refer to architectural drawings.

1. Provide standard hooks on bars terminating at a concrete face unless noted such as at edges of openings, slab edges, expansion joints, ends of beams, and ends of walls.
2. Unless noted otherwise, provide (2) #5's at each side of openings. Extend 2'-0" beyond edges of opening.
3. Unless noted, splice continuous top and bottom bars in walls as follows: top bars at mid-span, bottom bars over support.
4. Splice bars with class B contact laps per the reinforcing contact lap splice length table, unless noted otherwise.
5. Unless noted, provide continuous reinforcing around corners and through

1. Handling, placing, constructing, and curing shall conform to ACI 301 including placement of concrete in wet weather, cold weather, and hot weather.
2. Curing compounds should not be used on surfaces that are to receive additional concrete, paint, tile, or other material requiring a positive bond unless the contractor has demonstrated that the membrane can be satisfactorily removed before subsequent application is made, or the membrane dissipates or can serve satisfactorily as the base for the later application.
3. All concrete work shall be poured in-place unless noted otherwise. Shotcrete placement method will only be permitted if approved by the structural engineer.

2. Holes are assumed to be dry unless otherwise noted on plans.
3. Holes to be hammer drilled with bit as specified by anchor manufacturer.
4. Anchors specified are based on the specific technical data published by the specified anchor manufacturer. Substitutions are not permitted without approval by the Structural Engineer of Record prior to use. Contractor shall provide calculations demonstrating that the substituted product is capable of achieving the performance values of the specified product. Substitutions will be evaluated by their having an ICC ESR showing compliance with the relevant building code for seismic uses, load resistance, installation category, and availability of comprehensive installation instructions. Adhesive anchor evaluations consider creep, in-service temperature and installation temperature.
4. Install anchors per the manufacturer instructions, as included in the anchor packaging. Installation shall adhere to ICC ESR. Reference plans and details for anchors that are to be installed with reduced torque.
5. Concrete should be allowed to cure a minimum of 21 days prior to adhesive anchor installation.
6. Prior to installation of anchors all installation and inspection personnel shall be instructed on site by a representative of the anchor manufacturer on proper installation techniques and equipment.
7. Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings.
8. Drilling of anchors shall not damage existing reinforcing. Prior to drilling, care shall be taken to avoid damage by locating existing reinforcing by use of GPR, X-Ray, or other means that avoids damage to the concrete and accurately predicts potential conflict of reinforcing.
9. Post-installed anchors to be stainless steel where exposed to exterior and/or corrosive environments unless the anchor is protected.
10. All installers of post-installed adhesive anchors horizontally, vertically or upwardly inclined in concrete to support sustained tension loads shall be certified by ACI/CRSI adhesive anchor installer certification program, or equivalent as required by the IBC. Submit certificates for record.
11. All post-installed anchors in concrete shall be suitable for use in cracked concrete applications.
12. When doweling continuously deformed rebar into concrete use Hilti RE-500v3 or an adhesive that has been approved under ACI 355.4 and ACI 318 for development and lap splices.
13. Unless noted otherwise on plans/details all adhesive anchors shall be Hilti HIT-HY200 Safe-Set for concrete and Hilti HY-270 for block and brick. Unless noted otherwise on plans/details all expansion anchors shall be Hilti Kwik-Bolt TZ. See note 3 for substitutions.

CONCRETE MIX DESIGN REQUIREMENTS							
Element	f'c (psi)	Concrete Type	Max W/C	Max Agg	Air 1.2% Content	Slump	Exposure Class
Footings	4000, NW	I/II	-	3/4"	-	4"	F0, C0 SO, W0 F1, C0 S0, W0
Walls	4500, NW	I/II	0.45	3/4"	5	4"	F0, C0 SO, W0 F1, C0 S0, W0
Interior Slab-on-Grade (SOG)	4000, NW	I/II	0.50	3/4"	-	4"	F0, C0 SO, W0 F1, C0 S0, W0
Other	4000, NW	I/II	0.45	3/4"	-	4"	F0, C0 SO, W0

TABLE FOOTNOTES:

- Minimum air content equals 5% if concrete is exposed to freezing temperature and moisture regardless of value indicated in table.
- Tolerance on air content as delivered shall be +/- 1.5% for f'c < 5000 psi, 1.0% for f'c > 5000 psi
- Slump tolerances as follows (ACI 117)
Specified Slump not greater than 4" = +/- 1"
Specified Slump more than 4" = +/- 1 1/2"
Where Slump is specified as a range = No Tolerance
See ACI 301 for slump of concrete before addition of plasticizers or high-range water reducing admixtures

GENERAL CONCRETE MIX NOTES:

- Strength (f'c) is the 28 day compressive strength at 28 days unless noted otherwise or compressive strength at the specified age.
- Concrete is normal weight concrete unless noted otherwise. Normal weight concrete (NW) shall have a dry density of 145 ± 5 pcf unless noted otherwise.
- Required minimum average splitting tensile strength = $6.7 \sqrt{f'c}$ (psi) regardless of concrete density.
- Mix designs shall be in accordance with ACI 301.
- Exposure Class indicates the severity of the anticipated exposure of concrete members for each exposure indicated below according to ACI 318/ACI301. Freeze Thaw Exposure noted thus: F0,F1,F2,F3
Water-Soluble Sulfate in Soil Exposure noted thus: S0,S1,S2,S3
Permeability Requirements noted thus: W0,W1
Corrosion Protection of Reinforcement noted thus: C0, C1, C2
Refer to ACI 301/ACI 318 for specific requirements based on the exposure category indicated in the mix design table above
- Corrosion Protection of Reinforcement requirements (C0,C1,C2):
Maximum water-soluble chloride ion (CL-) content in concrete, by % weight of cement
Reinforced Concrete: C0 = 1.0 C1 = 0.3 C2 = 0.15
Prestressed Concrete: C0 = 0.06 C1 = 0.06 C2 = 0.06
- Where concrete is exposed to F3 freeze thaw exposure, restrictions on maximum fly ash and/or other cementitious materials apply. Refer to Table 4.4.2 in ACI 318 for requirements

REQUIRED CONCRETE COVER FOR NON-FIRE-RATED ASSEMBLIES	
Assembly	Cover (in)
Concrete cast against & permanently exposed to earth	3
Concrete Exposed to Earth or Weather	
#6-#18	2
#5 and smaller	1 1/2
Concrete <u>not</u> Exposed to Earth or Weather	
Walls, slabs #11 and smaller	3/4
Columns, beams, girders	1 1/2

CONCRETE MATERIALS DESIGNATION	
Material	Standard
Portland Cement	ASTM C150, Type I or Type II
Fly Ash	ASTM C618, Class C or F
Aggregate	ASTM C33
Water	Potable
Water Reducing Admixture	ASTM C494, Type A or Type D
High Range Water Reducing Admixture	ASTM C494, Type F or Type G
Accelerator Admixture	ASTM C494, Type C or Type E
Air Entraining Admixture	ASTM C260
Curing Compound	ASTM C309, Type I, Class A
Reinforcing Bars	ASTM A615-grade 60 (Specified Yield Strength = 60ksi)
Welded Reinforcing Bars	ASTM A706-grade 60 (Specified Yield Strength = 60ksi)
Vapor Retarder below Slab-on-Grade	ASTM E1745-Class A

NOTES:
 1. Type III Portland cement may be used if acceptable to the Architect.

CONCRETE REINFORCING TENSION CONTACT LAP SPlice LENGTHS									
		CONCRETE COMPRESSION STRENGTH (psi)							
		3,000	4,000	4,500	5,000	6,000	8,000		
Class A	Case #1	Bars ≤ #6	Other	57 d _b	49 d _b	47 d _b	44 d _b	40 d _b	35 d _b
		Bars ≥ #7	Top	44 d _b	38 d _b	36 d _b	34 d _b	31 d _b	27 d _b
		Other <td>71 d_b</td> <td>62 d_b</td> <td>58 d_b</td> <td>55 d_b</td> <td>50 d_b</td> <td>44 d_b</td>	71 d _b	62 d _b	58 d _b	55 d _b	50 d _b	44 d _b	
	Case #2	Bars ≤ #6	Other	55 d _b	47 d _b	45 d _b	42 d _b	39 d _b	34 d _b
		Bars ≥ #7	Top	85 d _b	74 d _b	70 d _b	66 d _b	60 d _b	52 d _b
		Other <td>66 d_b</td> <td>57 d_b</td> <td>54 d_b</td> <td>51 d_b</td> <td>46 d_b</td> <td>40 d_b</td>	66 d _b	57 d _b	54 d _b	51 d _b	46 d _b	40 d _b	
Class B	Case #1	Bars ≤ #6	Other	107 d _b	92 d _b	87 d _b	83 d _b	76 d _b	65 d _b
		Bars ≥ #7	Top	102 d _b	71 d _b	67 d _b	64 d _b	58 d _b	50 d _b
		Other <td>74 d_b</td> <td>64 d_b</td> <td>60 d_b</td> <td>57 d_b</td> <td>52 d_b</td> <td>45 d_b</td>	74 d _b	64 d _b	60 d _b	57 d _b	52 d _b	45 d _b	
	Case #2	Bars ≤ #6	Other	57 d _b	49 d _b	47 d _b	44 d _b	40 d _b	35 d _b
		Bars ≥ #7	Top	93 d _b	80 d _b	76 d _b	72 d _b	65 d _b	57 d _b
		Other <td>71 d_b</td> <td>62 d_b</td> <td>58 d_b</td> <td>55 d_b</td> <td>50 d_b</td> <td>44 d_b</td>	71 d _b	62 d _b	58 d _b	55 d _b	50 d _b	44 d _b	
Case #1	Bars ≤ #6	Other	111 d _b	96 d _b	91 d _b	86 d _b	79 d _b	68 d _b	
	Bars ≥ #7	Top	85 d _b	74 d _b	70 d _b	66 d _b	60 d _b	52 d _b	
	Other	139 d _b	120 d _b	113 d _b	108 d _b	98 d _b	85 d _b		
Case #2	Bars ≤ #6	Other	107 d _b	92 d _b	87 d _b	83 d _b	76 d _b	65 d _b	
	Bars ≥ #7	Top							
	Other								

Where:

d_b:

Diameter of reinforcing bar

Class A:

Class A tension splice

Class B:

Class B tension splice

Case #1:

Clear spacing greater than or equal to 2*d_b AND cover greater than or equal to d_b

Case #2:

Clear spacing less than 2*d_b or cover less than d_b

Top:

Where horizontal reinforcement is placed such that more than 12 inches of fresh concrete is cast below the development length or splice.

Other:

Other condition not satisfying Top qualification (bottom horizontal reinforcing)

NOTES:

1. All tension splices shall be contact class B splices unless noted otherwise. Splice length shall not be less than 12 inches.
2. Splice Lengths in table are for single bar splices with maximum yield strength of 60ksi non-epoxy reinforcing bars.
3. For epoxy coated bars; zinc and epoxy coated bars; or epoxy coated wires multiply "Bot" reinforcing splice length by 1.5 and multiply "Top" reinforcing splice lengths by 1.31
4. For lightweight concrete multiply splice length by 1.33.
5. For reinforcing with a specified yield strength greater than 60ksi multiply splice length by (specified yield strength/60ksi)
6. For individual bars within a bundle lap lengths shall be multiplied by 1.33 for four-bundles and 1.20 for three bar bundles. Individual splices within a bundle shall not overlap. Entire bundle shall not be lap spliced.
7. Bars larger than #11 shall not be lap spliced. For bars larger than #11, mechanical splice shall be used. Mechanical splices shall have strength greater than or equal to 125% the yield strength of the reinforcing bar. Mechanical splices shall be staggered.
8. Where bar of different size are lap spliced in tension the minimum splice length shall be the larger of the length of a Class B tension splice of the smaller bar, or the length of a Class A tension splice of the larger bar.
9. Lap splices are not permitted where minimum clearance between reinforcing cannot be maintained.
10. Lap splice lengths shall not be less than the larger of 12 inches multiplied by all applicable multipliers or the table length multiplied by all applicable multipliers.

CONCRETE REINFORCING DOWEL EMBEDMENT LENGTHS			
Concrete Compression Strength	Tension Dowels		Compression Dowels
	Standard Hook	Other	
3000psi	22db	Note 1	22db
4000psi	19db	Note 1	19db
5000psi	17db	Note 1	18db

NOTES:

1. Refer to " Concrete Reinforcing Tension contact Lap Splice Lengths" table for tension dowels without standard hooks. Values for Class A tension splices are permitted to be used.
2. Embedment length shall not be less than 12 inches.
3. db is bar diameter
4. Compression dowel embedment lengths are permitted only when dowel is noted in drawings as compression, otherwise use tension embedment length.
5. Extend dowels to far edge of member UNO.

1. All masonry work shall conform to ACI 530.1/ASCE 6/ TMS 602 unless noted otherwise. Contractor shall keep a copy of these references on site at all times.
2. Masonry Strength – See Masonry Strength Table
3. Materials – See Masonry Materials Table

1. Owner will engage a qualified Testing Agency, approved by the Architect and Engineer to perform tests and Special Inspections. Upon completion of work, Testing Agency shall furnish a certificate of compliance, signed by the Professional Engineer responsible for management of the Agency. The Professional Engineer must be registered in the state where the project is located. Tests and inspections shall be performed in compliance with ACI 530.1/ASCE 6/ TMS 602 and Chapter 17 of the IBC. Inspections include: proportions of site-prepared mortar, construction of mortar joints, location of reinforcement and connectors, grout space, grade and size of reinforcement, proportions of site-prepared grout, grout placement and curing. Testing includes: Grout strength, mortar strength, and prisms.
2. Masonry grout shall not be placed until reinforcing and connectors have been inspected by the owner's independent inspection agency and/or the special inspector.
3. See "Special Inspections and Testing" Table.

1. Vertical reinforcement shall extend the full height of the wall unless noted otherwise. Provide vertical reinforcement at all wall corners; end of walls; each side of openings and at each side of control and expansion joints.
2. Provide bond beams at sill lines, top and bottom edge of openings, top of walls, floor lines, and roof lines. Bond beams shall be continuous unless noted otherwise. See typical bond beam detail.
3. Continue reinforcing through construction joints and around corners unless noted otherwise. Terminate horizontal reinforcement at control joints except keep bars continuous at floor lines, roof lines, lintels, and top and bottom of typical openings.
4. Provide standard hooks on bars terminating at a masonry face unless noted. i.e.: edges of openings, ends of walls, heads, jambs, control joints, etc.
5. Splice bars with contact laps per the reinforcing splice and development length table, unless noted otherwise.
6. Vertical reinforcement shall have a minimum clearance of 3/4" from masonry and shall be supported and fastened together to prevent displacement.
7. Horizontal joint reinforcing shall be lapped no less than 6" at all splices including corners and tees where no control joint is used.
8. Dowels from concrete shall be furnished and placed by the concrete contractor.
9. Welding of reinforcing is prohibited, unless noted otherwise and shall conform to ASTM A706.
10. Provide embeds (including anchors) for supporting structural and non-structural elements including but not limited to: hand rails, canopies, miscellaneous steel, etc.

1. Unless otherwise noted, lay masonry in running bond.
2. Unless noted provide control joints at 30 feet on center.
3. Coordinate blockouts, reveals, holes, openings, and built in items with all contract documents and trades.
4. Grout lift heights shall follow requirements of TMS 602 Sections 3.5C and 3.5D. Grout lift heights shall follow requirements of TMS 602 Sections 3.5C and 3.5D.
5. Grout cells solid at: reinforcing, bond beams, inserts, anchors, elevator guide rails, and 24" below and 12" to each side of steel beam bearing points.
6. Consolidate grout pours 12" or less in height by mechanical vibration or puddling not more than five minutes after grouting.
7. Consolidate grout pours exceeding 12" in height by mechanical vibration not more than five minutes after grouting, and reconsolidate after initial water loss and settlement has occurred.
8. Grout in masonry beams shall be vibrated as it is placed. Where full depth grouting is required, the grouting shall extend to the end of the horizontal reinforcement.
9. Hot weather construction refer to ACI 530.1 section 1.8D.
10. Cold weather construction refer to ACI 530.1 section 1.8C.

MASONRY MATERIALS TABLE	
Material	Standard
Hollow Concrete Masonry Units	ASTM C 90
Grout	ASTM C 476
Mortar	ASTM C 270
Reinforcing	ASTM A615-grade 60
Reinforcing Welded	ASTM A706-grade 60
Wire Reinforcing	ASTM A951

NOTES:

1. Provide lightweight hollow concrete masonry units for general use. Provide normal weight or solid units where indicated.
2. Mortar for clay masonry shall be type S.
3. Mortar for concrete masonry shall be type S at exterior walls and type N at interior walls.
4. Hydrated lime required in all mortar.
5. Wire joint reinforcing shall be ladder type.

GROUT AND MORTAR PROPORTIONING TABLE	
Element	Proportions
Fine Grout	(1) Part Portland cement with not more than (1/10) part hydrated lime, and (2) 4/4 to (3) parts sand.
Coarse Grout	(1) Part Portland cement with not more than (1/10) part hydrated lime, and (2) 4/4 to (3) parts sand, and (1) to (2) parts gravel.
Mortar Type S Exterior Walls	(1) Part Portland cement with (1/4) to not more than (1/2) part hydrated lime and a damp aggregate ratio of not less than (2 1/4) and not more than (3) times the sum of the separate cementitious material volumes.
Mortar Type N Interior Walls	(1) Part Portland cement with (1/2) to not more than (1 1/4) part hydrated lime, and a damp aggregate ratio of not less than (2 1/4) and not more than (3) times the sum of the separate cementitious material volumes.

NOTES:


1. Grout shall contain a minimum of (7) sacks of cement per cubic yard.
2. Add sufficient water to grout to provide proper consistency without segregation.

MASONRY STRENGTH TABLE	
Element	Specified Compressive Strength
Concrete Masonry	$f'_m = 2000 \text{ psi}$
Grout for Concrete Masonry	$f'_g = 1.0 * f'_m$ (2000 psi minimum)

MASONRY REINFORCING SPLICE LENGTHS	
Bar Size	Splice Length (in.)
#3	12
#4	14
#5	21

NOTES:

1. Laps in reinforcing bars in reinforced masonry shall have minimum lengths defined above unless specifically noted otherwise in the drawings.
2. All splices to be wired together.
3. Splice and develop lengths are the same value for horizontal and vertical bars.
4. F'm must be greater than or equal to 2,000 psi.
5. Clear cover from face of block must be greater than 3.3"

<h1>Richardson Residence</h1> <p>5370 West Woodchuck Road Lot 10, Unit 1, River Meadows Subdivision Teton County, Wyoming</p>											
<p>Ankeny Architecture And Design P.O. Box 11062 Jackson, WY 83002 307.413.0904</p>											
 <p>KL&A Engineers & Builders 1177 Washington Avenue, Suite 100 Golden, Colorado 80601 P: (303) 384-9910 F: (303) 384-9915 Boulder, WY • Colorado, CO • Golden, CO • Loveland, CO</p> <p style="text-align: right;">©2019 KL&A, INC</p>											
<table border="1"> <thead> <tr> <th colspan="2">Date/Revision:</th> </tr> </thead> <tbody> <tr> <td>SD SET</td> <td>11.30.2018</td> </tr> <tr> <td>PERMIT SET</td> <td>05.10.2019</td> </tr> <tr> <td>CONST.</td> <td>06.28.2019</td> </tr> <tr> <td colspan="2"> </td> </tr> </tbody> </table>		Date/Revision:		SD SET	11.30.2018	PERMIT SET	05.10.2019	CONST.	06.28.2019		
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<p>Sheet:</p> <h1>S1.1</h1> <p>GENERAL NOTES</p>											
<p>M0012</p>											

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS ON THE PROJECT TO CLEARLY DEFINE ALL OF THE REQUIREMENTS FOR THE DIRECTION OF THE ENGINEER-OF-RECORD. THE SEAL DOES NOT IMPLY RESPONSIBILITY FOR INFORMATION PREPARED BY OTHERS NOR FOR ANY INFORMATION NOT SHOWN ON THIS DRAWING AND SUCH RESPONSIBILITY IS SPECIFICALLY DISCLAIMED. WHERE CONFLICTS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

THE STRUCTURAL ENGINEERS SEAL ON THIS DRAWING INDICATES THAT THE INFORMATION SHOWN AND THE CALCULATIONS PERTAINING TO THAT INFORMATION HAVE BEEN PREPARED BY QUALIFIED PEOPLE UNDER THE DIRECTION OF THE ENGINEER-OF-RECORD. THE SEAL DOES NOT IMPLY RESPONSIBILITY FOR INFORMATION PREPARED BY OTHERS NOR FOR ANY INFORMATION NOT SHOWN ON THIS DRAWING AND SUCH RESPONSIBILITY IS SPECIFICALLY DISCLAIMED. ON PHASED PROJECTS, DRAWINGS THAT ARE ISSUED BUT NOT SEALED SHALL BE CONSIDERED TO BE PRELIMINARY IN NATURE AND ARE ISSUED FOR INFORMATION ONLY.

STRUCTURAL STEEL (HIGH SEISMIC)

GENERAL:

- All structural steel work shall conform to AISC 360 and tolerances shall conform to AISC 303 unless noted otherwise. Structural Steel that is part of the Seismic Force Resisting System (SFRS) shall conform to AISC 341. Contractor shall keep a copy of these references on site at all times.
- Materials – See Steel Materials Table
- Qualifications - Fabricator and Erector shall be experienced in fabrication and erection of projects of similar size and complexity.

SUBMITTALS:

- Submittals shall conform to AISC 360 and AISC 341 for members designated as part of the SFRS.
- Submittals for structural steel shall include: Erection and Shop drawings and mill test reports.
- Erection drawings shall include plan drawings at 1/8"=1'-0" minimum scale complete with sections, elevations, and details as required to properly erect the structural steel frame. For structural steel that is part of the SFRS, erection drawings shall include all information required by AISC 341 Chapter 1.
- Shop drawings shall include piece drawings which indicate cuts, connections, camber, holes, welds, and dimensions as required for fabrication of the members. Part drawings are not required to be submitted unless specifically requested. For structural steel that is part of the SFRS, shop drawings shall include all information required by AISC 341 Chapter 1, and shall include part drawings of all gusset plates.

CONNECTIONS:

- Engineer of Record (EOR) has designed all connections. If a connection design is inadvertently omitted from contract documents the contractor shall request specific connection design from the EOR.
- Unframed end of wide flange beams: At the end of wide flange beams without incoming framing or other means of restraint of rotation of the beam, provide a pair of 3/8" full depth stiffeners or a 3/8" full depth end plate at the end of the beam.

BOLTS:

- Where indicated on the drawings as slip critical and where oversized or long-slotted holes are utilized in shear bolted joints shall be slip critical. Faying surfaces shall be prepared to meet the requirements of a Class A surface, and bolts shall be installed to the Fully Tensioned condition.
- Where bolts are subject to non-static loading, are utilized to interconnect parts of a built up compression member, or all Group B fasteners loaded in tension shall be installed to the fully tensioned condition.
- Bolts not subject to the requirements for slip critical connections and not required to be fully tensioned may be installed to the snug-tight condition
- A307 bolts may be used only where indicated.

WELDS:

- Weld Electrodes: E70, 70ksi unless noted otherwise.
- Fillet Welds: size as indicated, but not less than AISC minimum size.
- Groove Welds: full penetration unless noted otherwise.
- Welds are continuous unless noted otherwise.

SHOP CLEANING AND PAINTING:

- Uncoated Steel: All steel not specifically indicated as painted steel, steel to receive spray-on-fireproofing or to be galvanized, and faying surfaces of slip critical connections shall be uncoated. Prepare surface per SSPC-SP1.
- Primed Steel: Steel indicated to painted, with no specific paint requirements stated, shall have the surface prepared per SSPC-SP2 minimum and receive one coat of fabricator's standard rust-inhibitive primer paint applied to a minimum dry-film thickness of 1 mil.
- Galvanized Steel: Steel indicated to be galvanized shall be cleaned, prepared, and galvanized in accordance with ASTM A123. Repair minor defects, damaged areas, and welded joints in accordance with ASTM A780. Provide vent holes as required in tube members. Provide vent hole plugs at all vertically oriented tubes.
- Other specified coatings: where indicated on the drawings, provide specified coating system as indicated. Clean and prepare steel as required by the specification or coating manufacture.

ERECTION:

- No final bolting or welding shall be performed until as much of the structure which will be stiffened thereby has been properly aligned.
- Field correction of fabrication or other errors will be permitted only when approved by the EOR. Finish gas-cut sections in accordance with AWS D1.1.

STEEL MATERIALS DESIGNATION	
Material	Standard
W and WT Sections	ASTM A992 (50 ksi) or ASTM A572 Gr. 50 (50 ksi)
M, C, MC, L, Sections	ASTM A36 (36ksi)
Pipe	ASTM A53 Gr. B (35ksi)
Rectangular HSS	ASTM A500 Gr. C (50 ksi)
Round HSS	ASTM A500 Gr. C (46 ksi)
Plates, Bars, and threaded rod	ASTM A36 (36ksi) ASTM A572 Gr. 50 (50ksi)
Anchor Rods	ASTM F1554 Gr. 55 w/ Supplement S1
Bolts	
- typical	ASTM A325 or ASTM F1852
- where noted as Group B	ASTM A490 or ASTM F2280
Nuts	ASTM A563, Heavy Hex
Washers	ASTM F436, except plate washers to be ASTM A36
Direct-Tension-Indicator Washers	ASTM F959
Headed Stud Anchors	ASTM A108/A29
All Thread Rod and Threaded Studs, UNO	ASTM A36
Weld Electrodes	E70, 70ksi

STEEL DECKING

GENERAL:

- Steel roof deck shall conform to SDI-RD1.0.
- Qualifications - Deck Manufacture shall be a member of the Steel Deck Institute.

DECK MATERIALS:

- Steel for Deck: minimum yield strength of 33ksi.
- Provide all required accessories including cell closures, pour stops, ridge, and valley plates.

DECK ATTACHMENTS:

- See plan notes and details for required deck attachment type and pattern.

STEEL ROOF DECK:

- Do not suspend point loads in excess of 20 pounds from deck. Attachments shall be spaced 8 feet apart or more, and within 2 feet of member supporting roof deck. Provide sub-framing as required for heavier point loads.

WOOD FRAMING

GENERAL:

- All wood construction work shall conform to ANSI/AF&PA NDS unless noted otherwise. Contractor shall keep a copy of these references on site at all times.
- Materials – See Wood Materials Tables
- Qualifications – Carpenter shall be experienced in construction of projects of similar size and complexity and shall be knowledgeable of conventional light frame construction practices and minimum nailing requirements of the IBC.

SUBMITTALS:

- All submittals shall be reviewed by the Contractor prior to Engineer/Architect review and shall bear Contractor's review stamp. Contractor is responsible for reviewing submittals for conformance with all contract documents and coordination with all trades.
- Submittals are required for heavy timber framing.
- Heavy timber submittals shall include shop drawings for trusses including connection material and details.

PRODUCTS:

- All wood framing shall be at a moisture content of 19% or less and shall be marked S-Dry (surface dried) or KD (kiln dried).
- Unless noted otherwise, all sizes noted on these drawings are nominal. Actual sizes are based on "Minimum Dressed-Dry" dimensions according to American Softwood and Lumber Standard PS20-10.
- Unless noted otherwise, all glulam framing sizes are minimum dressed dimensions in accordance with American Institute of Timber Construction AITC113.
- Unless noted otherwise, all manufactured framing sizes are based on specified manufacturers published information.
- See plan notes for wall framing material and spacing.
- Wood I-joists: where framing members are noted TJI on the drawings, use engineered products by Weyerhaeuser or approved equal.
- Structural Panels: Sheathing for roofs and walls shall conform to APA PS-2 standards. All panels shall be Exposure 1, unless noted otherwise.
- Sills: Sill plates shall be pressure treated Douglas Fir-Larch stamped to show compliance with AWPAs standards.

WOOD FRAMING (continued)

HEAVY TIMBER FRAMING:

- General: sound, thoroughly seasoned, and free of warp or significant surface defects.
- Material: see table and plans for species and grade.
- For large members (12" nominal or greater maximum dimension), box heart members may be used. For smaller members, free of heart center timbers may be used. Do not use timber with excessive reaction or juvenile wood.
- Moisture Content: Provide timber with 15% average moisture content at time of dressing. Use a nominal 10x10 timber for determining baseline average moisture content throughout the cross section. Variation in moisture content from the center to the edge of the timber shall not exceed 8%.
- End Sealer: Manufacturer's standard, transparent, colorless wood sealer effective in retarding transmission of moisture at cross-grain cuts and compatible with finish.
- Exposed framing shall be appearance grade; reference architectural drawings for finish requirements.

CONNECTORS:

- All bolts, metal connectors, hangers, anchors, and fasteners in contact with preservative treated wood shall be hot dipped galvanized G90 or G185 or stainless steel type 304 or 316.
- Provide anchor bolts at the top of all foundation elements for attaching sill plates. See "Typical Wood Shear Walls - Nailing Schedule and Details" typical detail for shear wall anchor bolt size, spacing, and embedment. See "Typical Bearing Wall Elevation" typical detail for anchor bolt size, spacing, and embedment elsewhere.
- J and L type bolts are allowed for anchorage of wood sills.
- Provide plate washers at all shear wall anchor bolt connections to wall plates. See "Typical Wood Shear Walls - Nailing Schedule and Details" for more information.
- Nailing shall conform to the minimum requirements contained in Table 2304.9.1 of the IBC unless more stringent requirements are shown on these drawings or in these notes.
- All nails are to be steel common wire nails and conform to ASTM F1667.
- Pre-drill nail holes when necessary to prevent splitting.
- Steel plates for wood construction shall conform to ASTM A36.
- Bolts shall conform to ASTM A307.
- All exposed bolts in wood structure which are not in contact with preservative treated wood shall be plain, uncoated steel.
- Holes for bolts shall be 1/16" oversized.
- Retighten all bolts prior to closing in.
- Lag screws shall penetrate the main member a minimum of eight times the shaft diameter unless noted otherwise.
- Diagonal (toe-nail) lag screws shall be installed with a minimum edge distance of four times the shaft diameter.

INSTALLATION:

- Where hidden in a wall, at Contractor's option, wood columns may be built-up from 2x laminations. See "Typical Stud Pack Nailing" typical detail for nailing. Do not splice laminations.
- Truss rods and connections shall be tightened after installation and leveling.
- At roofs and floors, lay panels with long dimension perpendicular to supports with short edges staggered.
- See plan notes for roof and floor sheathing nailing requirements.
- See plans for areas of special blocking and nailing.
- See plan notes for vertical sheathing nailing requirements.
- Where shear walls are noted on the plans, the sheathing is used as part of the lateral load resisting system. See typical details for attachment of sheathing to supports for wood structural panel shear walls.
- All panel edges within the extent of the shear wall shall be blocked with flat 2x4 blocking.

FRAMING TOLERANCES:

- Layout of walls and partitions: within 1/4" of intended position.
- Plates and runners: 1/4" in 8' from a straight line.
- Studs: 1/4" in 8' out of plumb, not cumulative.
- Face of framing: 1/4" in 8' from a true plane.

COMMON NAIL DIMENSIONS		
Common Nail (Steel Wire)	Minimum Diameter (in)	Minimum Length (in)
8d	0.131	2 1/2
10d	0.148	3
16d	0.162	3 1/2

DESIGN VALUES FOR DIMENSIONAL LUMBER				
Species & Grade	Flexural Stress	Compressive Stress	Horizontal Shear Stress	Modulus of Elasticity
DOUGLAS FIR-LARCH (DFL)				
Select Structural	1,500 psi	1,700 psi	180 psi	1,900 ksi
No1	1,000 psi	1,500 psi	180 psi	1,700 ksi
No2	900 psi	1,350 psi	180 psi	1,600 ksi
Stud	700 psi	850 psi	180 psi	1,400 ksi

DESIGN VALUES FOR HEAVY TIMBER					
Species & Grade	Size Classification	Flexural Stress	Compressive Stress	Horizontal Shear Stress	Modulus of Elasticity
DOUGLAS FIR-LARCH (DFL)					
Select Structural	Columns	1,500psi	1,150 psi	170 psi	1,600 ksi
	Beams	1,600 psi	1,100 psi	170 psi	1,600 ksi
No1	Columns	1,200 psi	1,000 psi	170 psi	1,600 ksi
	Beams	1,350psi	925 psi	170 psi	1,600 ksi
No2	Columns	750 psi	700 psi	170 psi	1,300 ksi
	Beams	875psi	600 psi	170 psi	1,300 ksi

DESIGN VALUES FOR GLUE-LAMINATED TIMBER							
Member Type	Combo Symbol	Flexural Stress (Top)	Flexural Stress (Bottom)	Compressive Stress	Horizontal Shear Stress	Modulus of Elasticity (E _c)	Modulus of Elasticity (E _{c,min})
Cont Beams, Cantilevers	24F-V8	2,400 psi	2,400 psi	1,650 psi	265 psi	1,800 ksi	950 ksi
Simple Beams	24F-V4	1,850 psi	2,400 psi	1,650 psi	265 psi	1,800 ksi	950 ksi

DESIGN VALUES FOR MANUFACTURED LUMBER						
Type - E	Flexural Stress	Compressive Stress	Tensile Stress	Compressive Stress Perp	Horiz Shear Stress	Modulus of Elasticity
LAMINATED STRAND LUMBER (LSL)						
2x4 and 2x6 Studs - 1.3E	1,700 psi	1,400 psi	1,075 psi	435 psi	400 psi	1,300 ksi
2x8 Studs - 1.5E	2,250 psi	1,950 psi	1,500 psi	475 psi	400 psi	1,500 ksi
Headers and Beams - 1.55E	2,325 psi	1,350 psi	1,070 psi	800 psi	310 psi	1,550ksi
LAMINATED VENEER LUMBER (LVL)						
Headers and Beams - 2.0E	2,600 psi	2,510 psi	1,555 psi	750 psi	285 psi	2,000 ksi

WOOD STRUCTURAL PANEL REQUIREMENTS		
Supporting Element	APA Span Rating	Minimum Thickness
Roof over Rafters	48/24	23/32"
Floors (Sturd-I T&G)	24 OC Single Floor	23/32"
Walls	32/16	15/32"
Shear Walls	32/16	15/32"

DESIGN VALUES FOR WOOD DECKING			
Species & Grade	Flexural Stress	Compressive Stress Perpendicular	Modulus of Elasticity
REDWOOD			
Select	1,700 psi	-- psi	1,100 ksi
Common	700	420 psi	900 ksi
ALASKAN YELLOW CEDAR			
Select Structural	1,350 psi	510 psi	1,500 ksi
No 2	800 psi	510 psi	1,300 ksi

Richardson Residence
5370 West Woodchuck Road
Lot 10, Unit 1, River Meadows Subdivision
Teton County, Wyoming

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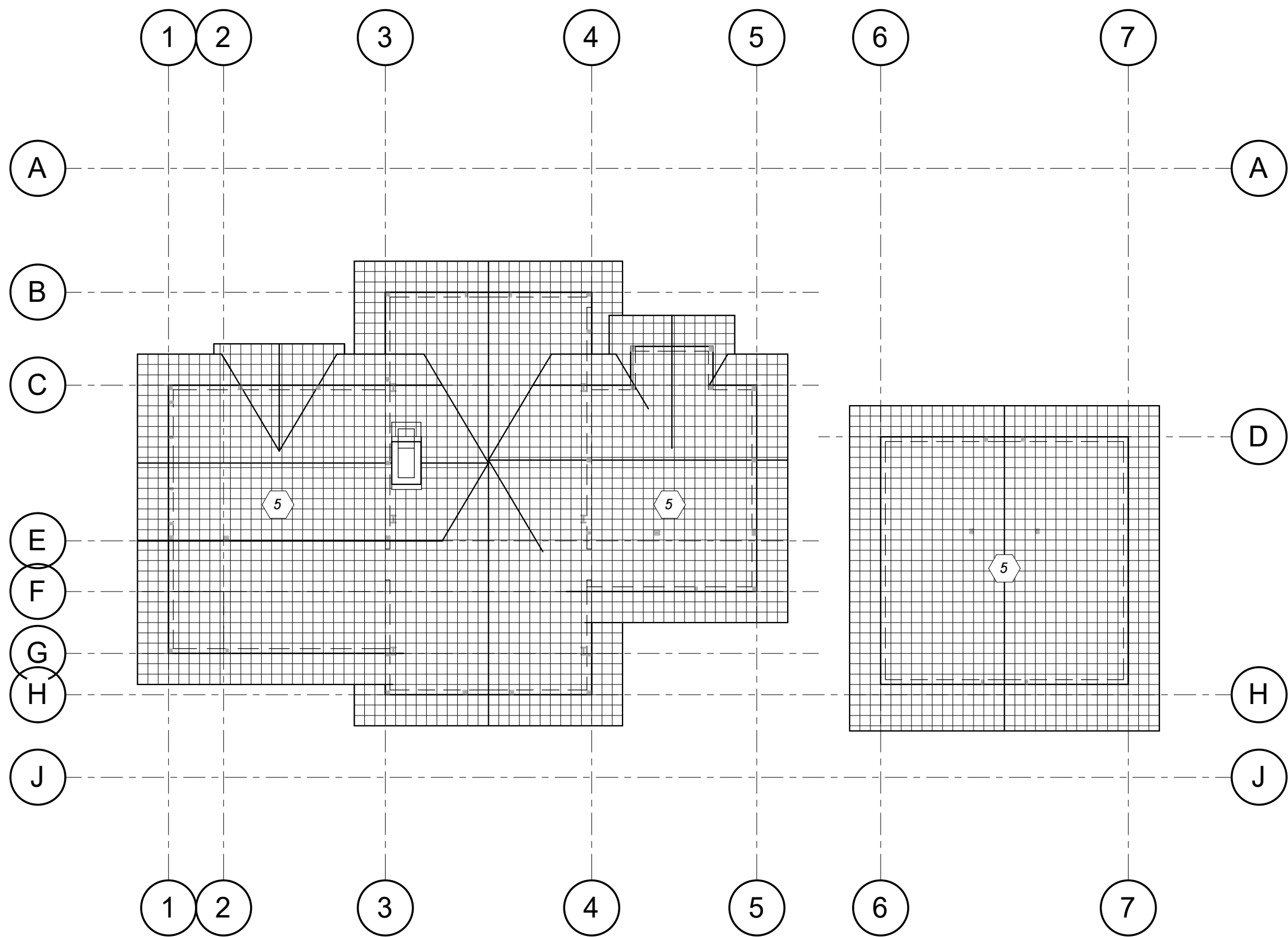
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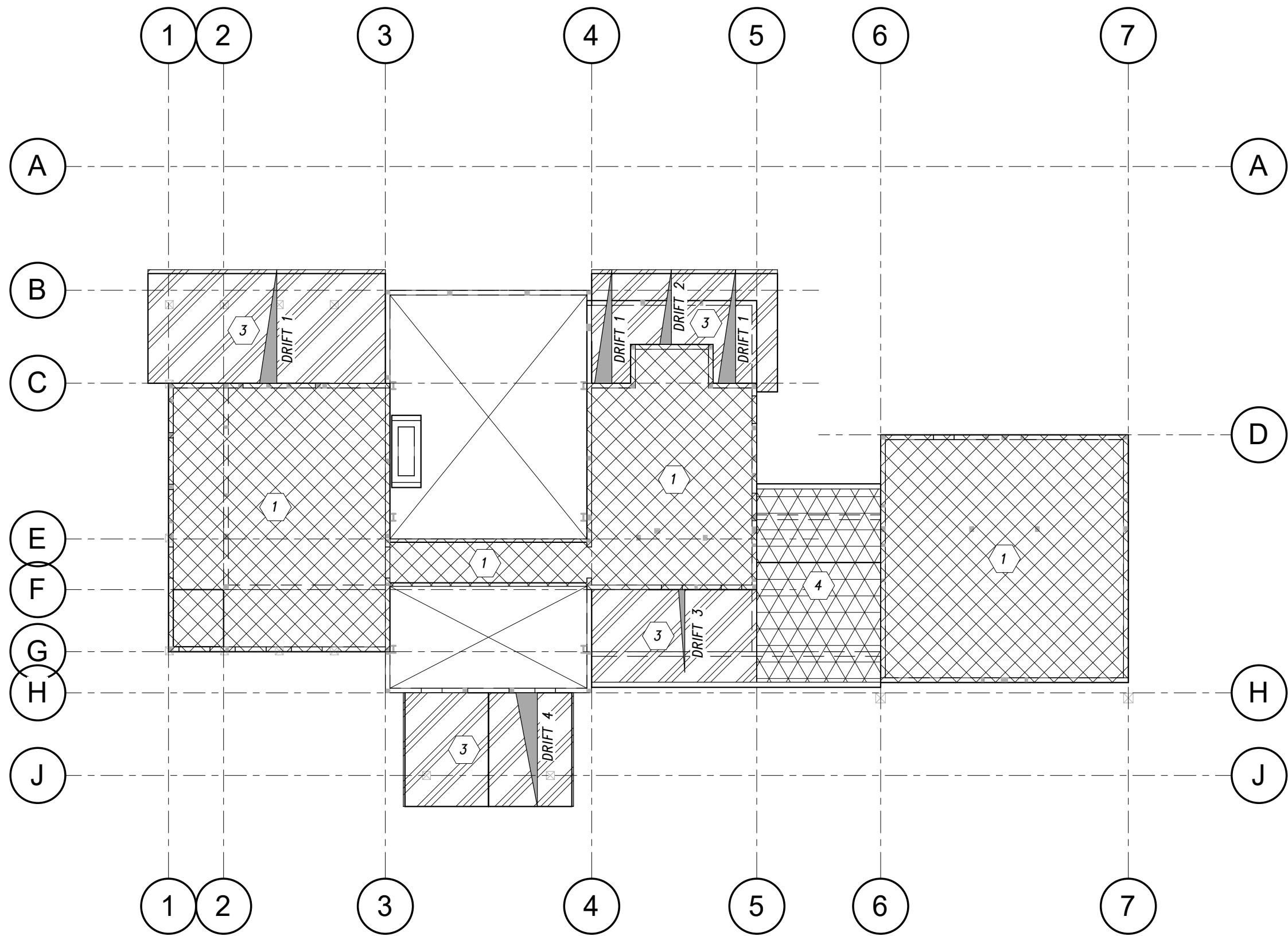
GENERAL
NOTES

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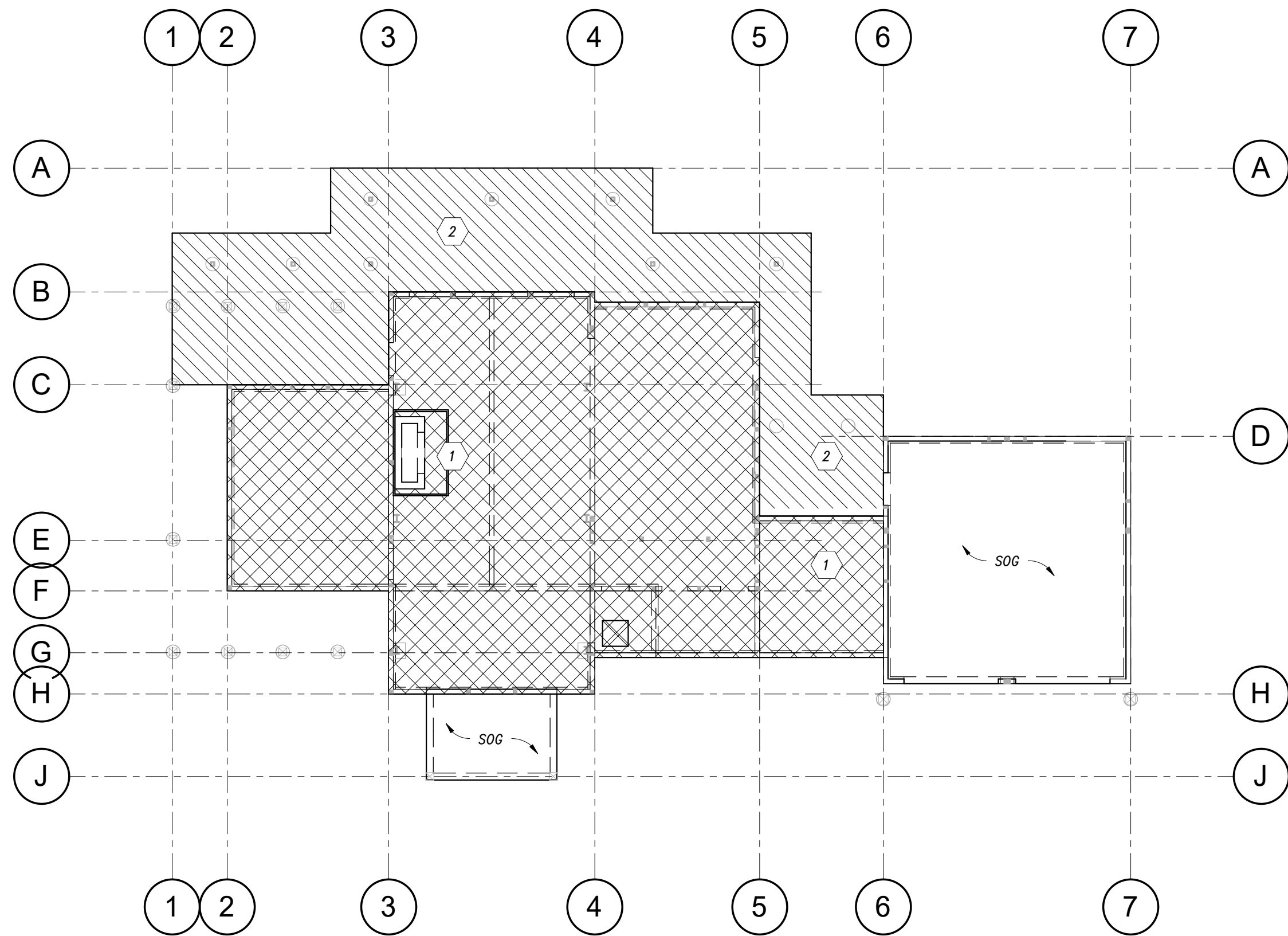
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3 **LOAD KEY**
3/32" = 1'-0"



2 **UPPER LEVEL/ LOW ROOF LOAD KEY**
3/32" = 1'-0"



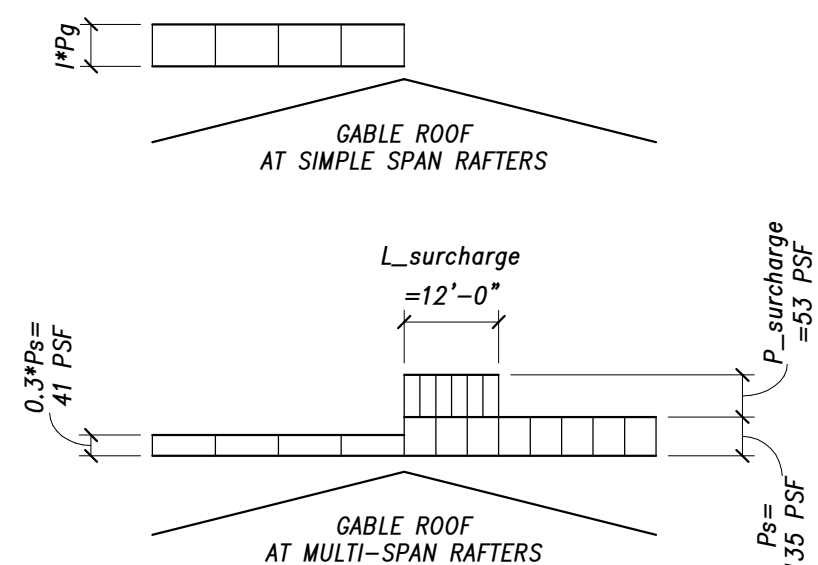
1 **MAIN LEVEL LOAD KEY**
3/32" = 1'-0"

LOAD KEY LEGEND						
LOAD AREA	PATTERN	SELF WEIGHT (psf)	SUPERIMPOSED LOADS			NOTES
			DEAD LOAD (psf)	LIVE LOAD (psf)	SNOW LOAD (psf)	
1		5	15	40	--	TYPICAL FLOOR
2		12	0	60	145	EXTERIOR DECK
3		5	20	20	135+DRIFT	LOW ROOF
4		5	20	20	170	LOW ROOF
5		5	20	20	135	TYPICAL ROOF

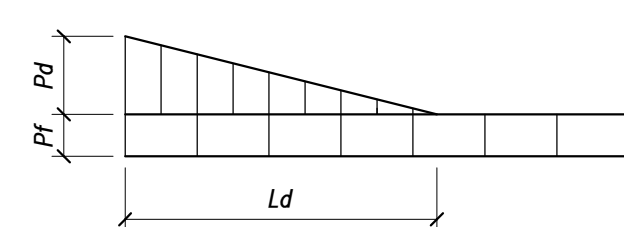
NOTES:

1. DRIFTING SNOW LOADS ARE DEFINED BY DIAGRAM TO THE RIGHT.
2. ROOF LIVE AND SNOW LOADS DO NOT ACT CONCURRENTLY.

UNBALANCED SNOW LOAD DIAGRAMS



DRIFTING SNOW LOAD DIAGRAM



DRIFT SCHEDULE		
	Pd (PSF)	Ld (FT)
DRIFT 1	84	11'-0"
DRIFT 2	55	7'-3"
DRIFT 3	30	8'-0"
DRIFT 4	104	8'-3"

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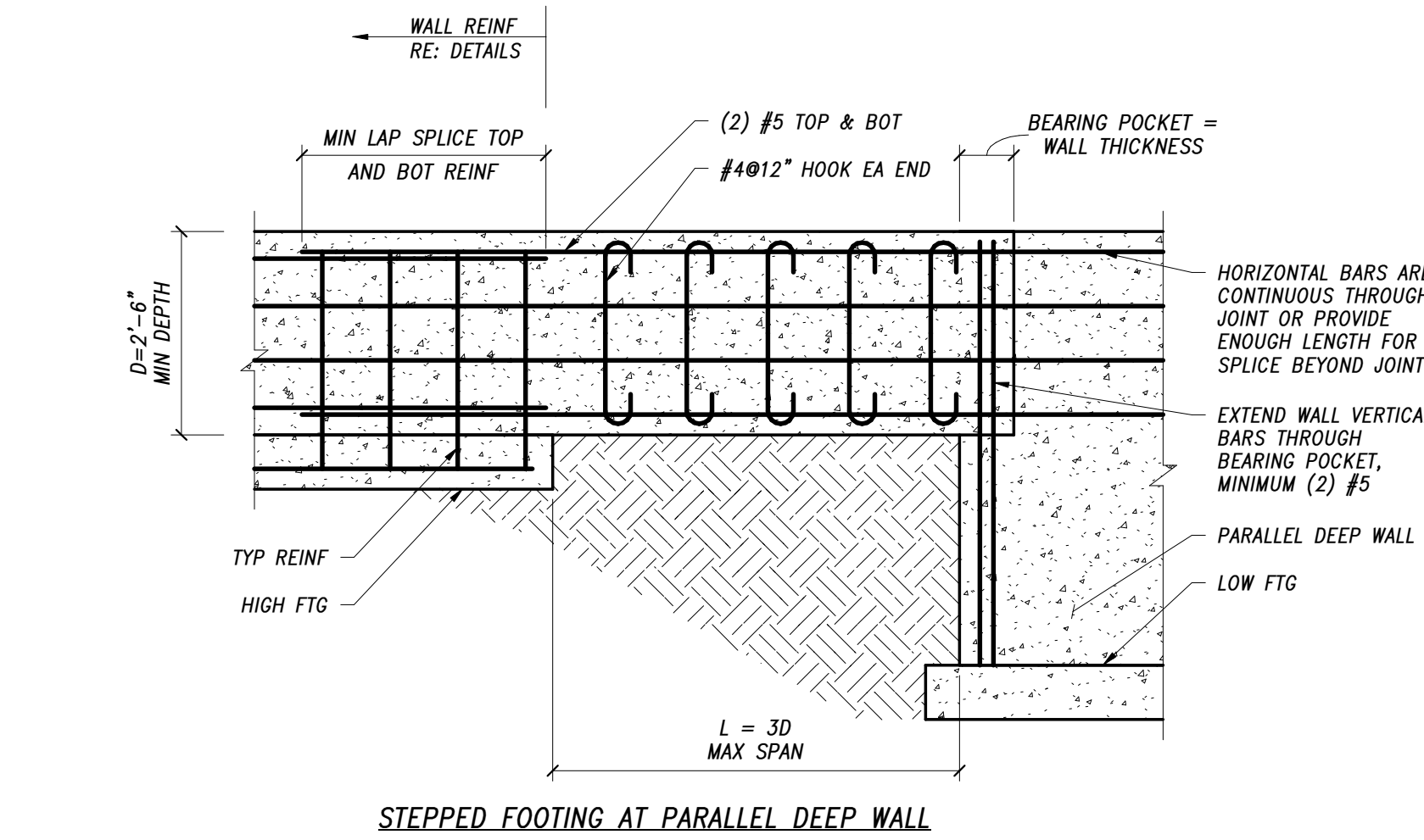
LOAD KEYS

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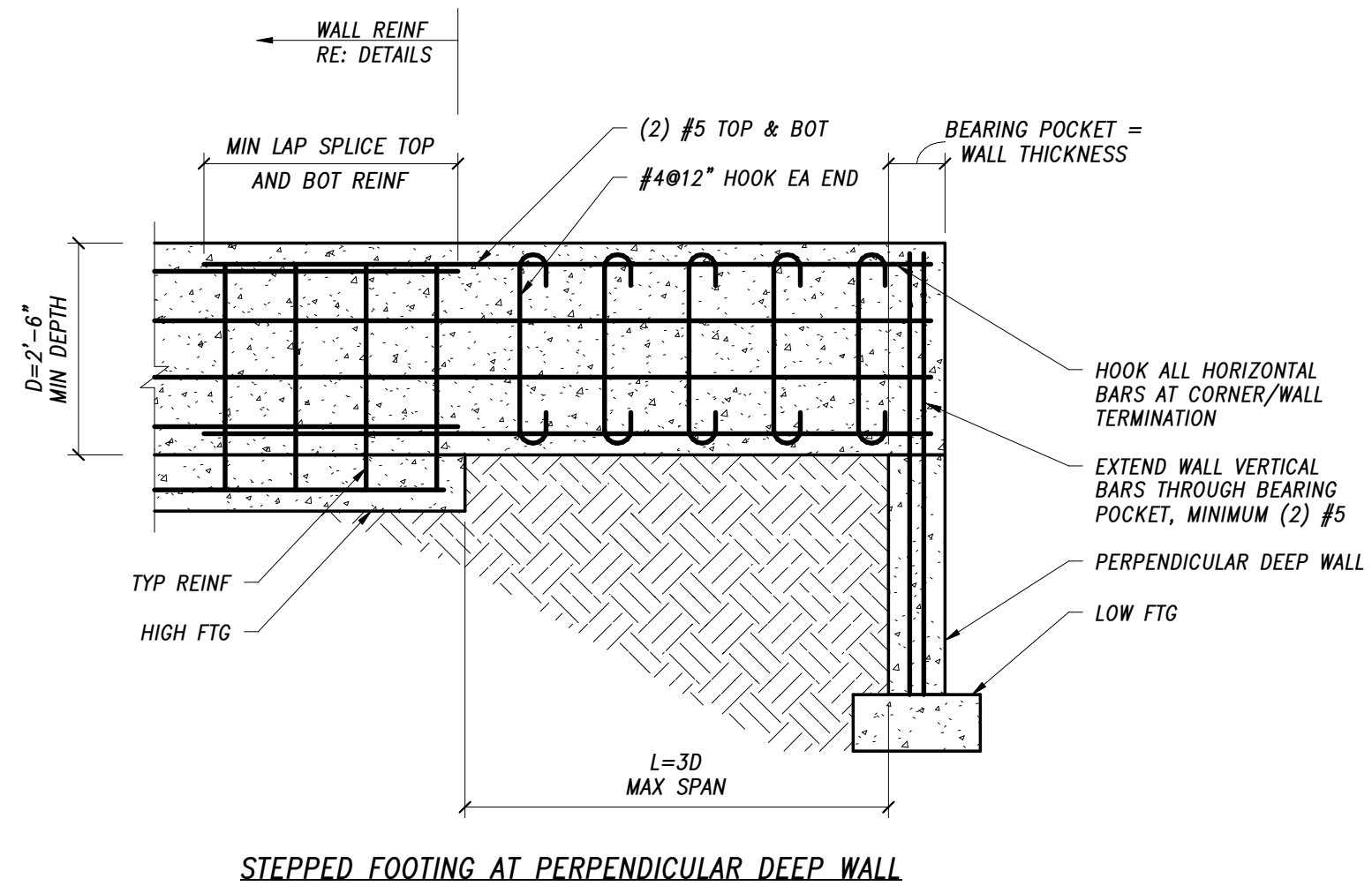
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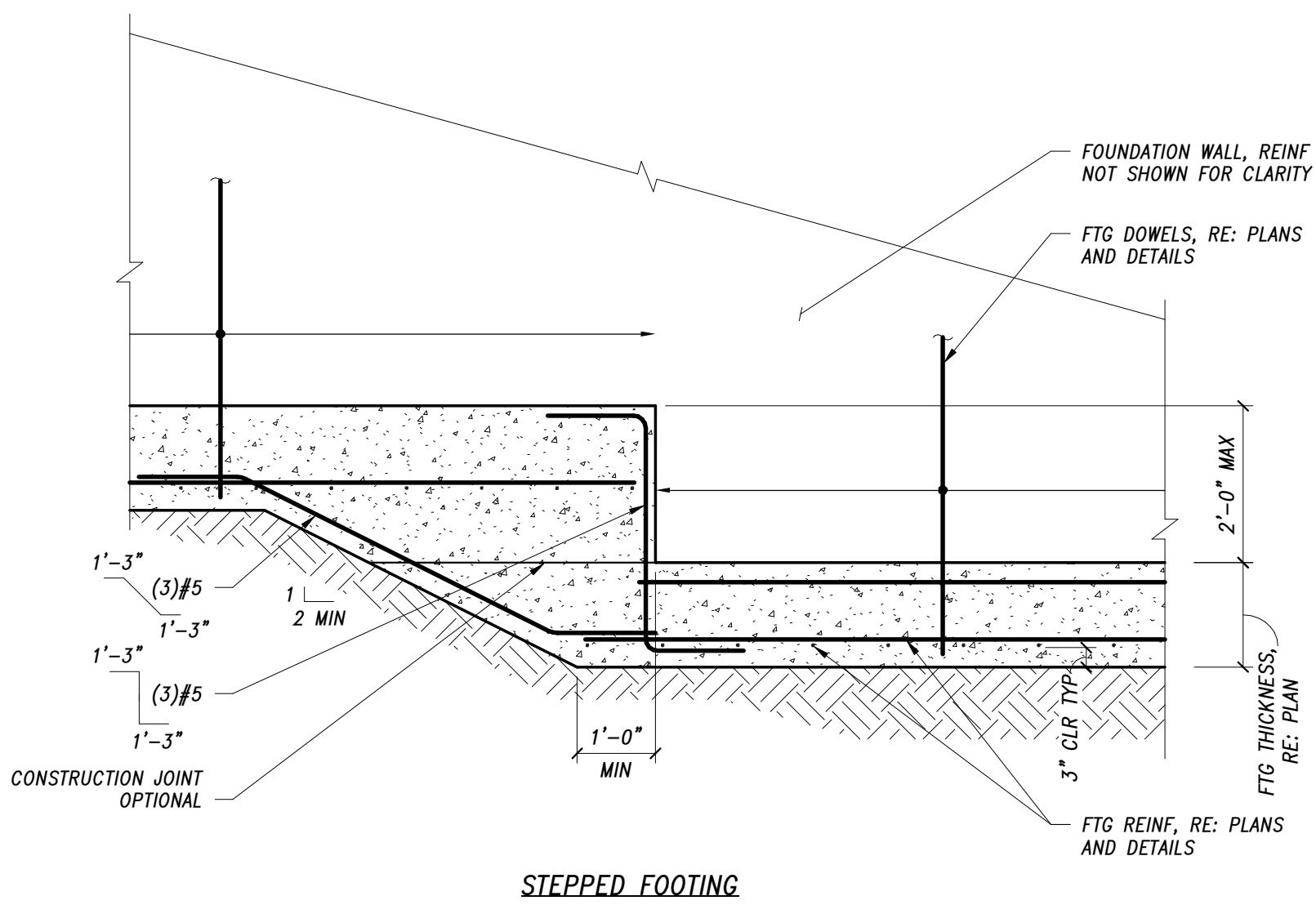
- TYPICAL DETAIL SHEET NOTES
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STEPPED FOOTING AT PARALLEL DEEP WALL



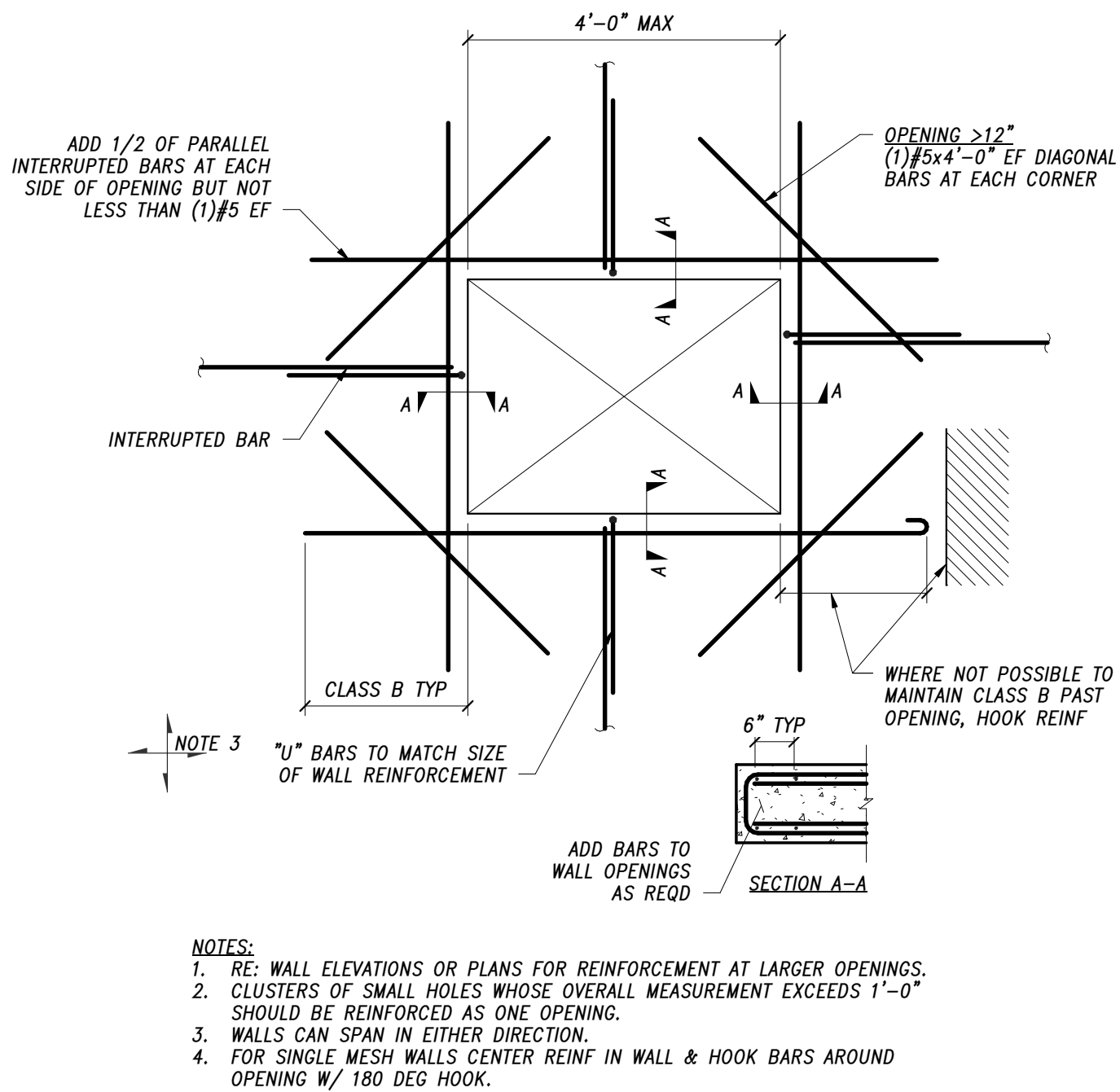
STEPPED FOOTING AT PERPENDICULAR DEEP WALL



STEPPED FOOTING

8 TYPICAL FOOTING STEP DETAILS

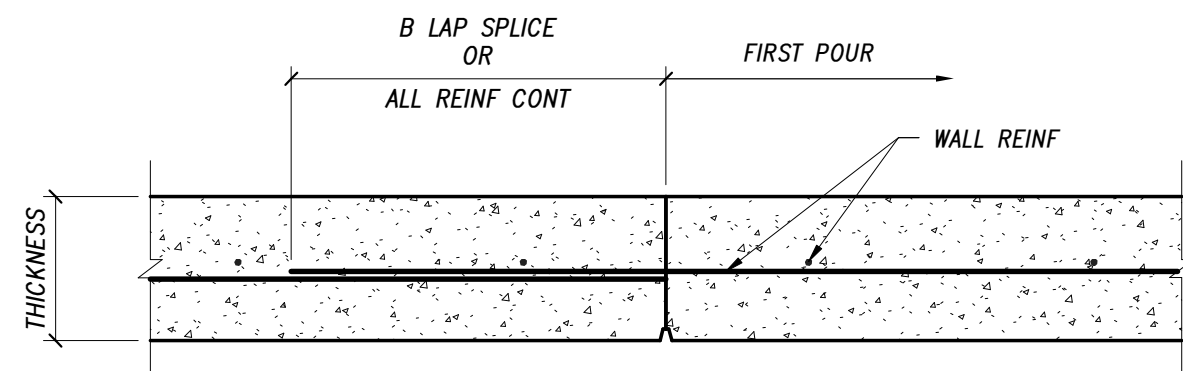
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- NOTES:
1. RE: WALL ELEVATIONS OR PLANS FOR REINFORCEMENT AT LARGER OPENINGS.
 2. CLUSTERS OF SMALL HOLES WHOSE OVERALL MEASUREMENT EXCEEDS 1'-0" SHOULD BE REINFORCED AS ONE OPENING.
 3. WALLS CAN SPAN IN EITHER DIRECTION.
 4. FOR SINGLE MESH WALLS CENTER REINF IN WALL & HOOK BARS AROUND OPENING W/ 180 DEG HOOK.

7 TYPICAL WALL OPENING REINFORCING

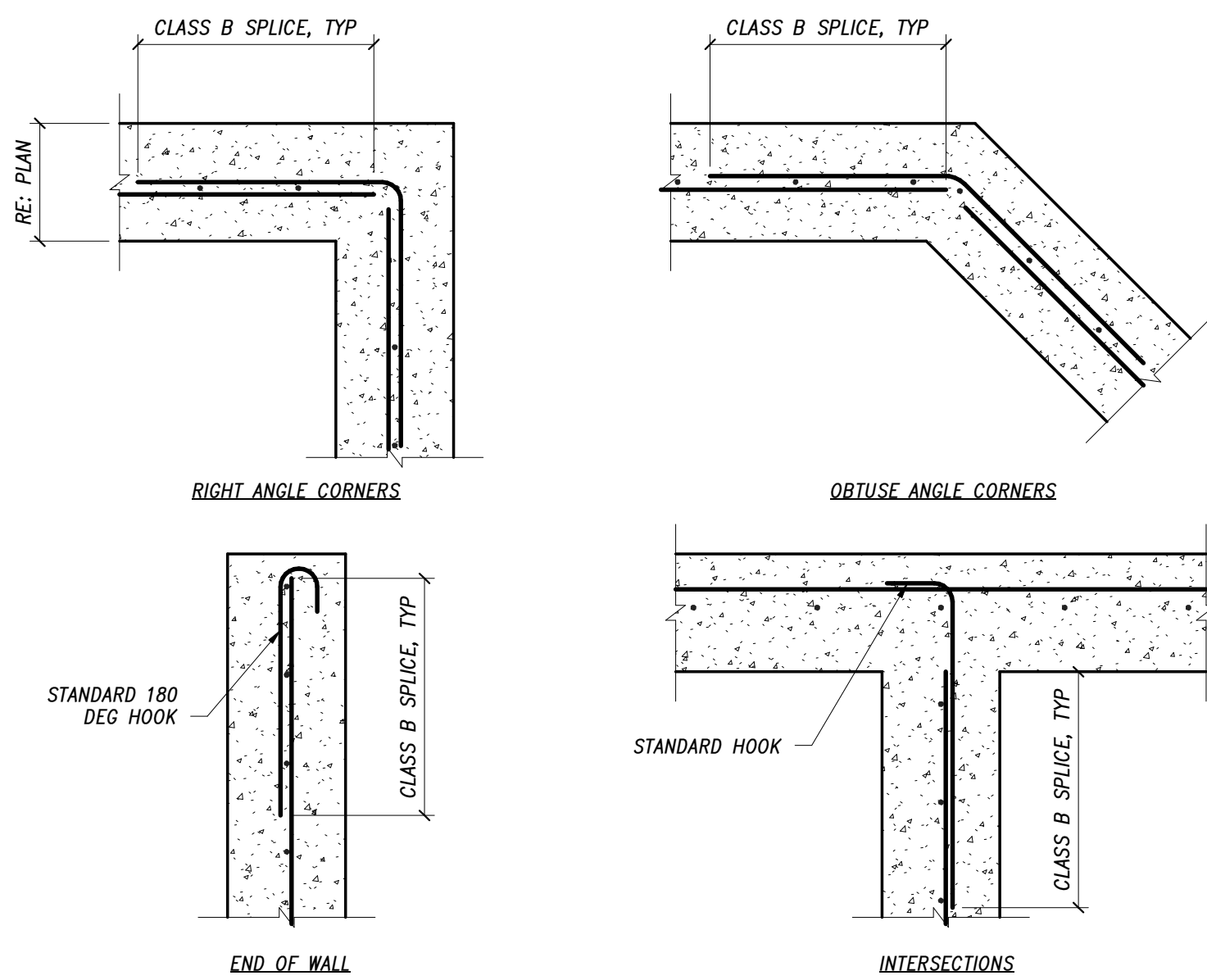
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- NOTES:
1. LOCATION OF CONSTRUCTION JOINTS IN WALLS: SUPPORTED ON CONTINUOUS FOOTINGS AT CONTRACTOR OPTION.
 2. LOCATE CONSTRUCTION JOINTS IN WALLS ACTING AS GRADE BEAMS AT POINT OF MINIMUM SHEAR, GENERALLY AT MIDDLE THIRD OF SPANS.

TYPICAL WALL CONSTRUCTION JOINT SINGLE MAT OF REINFORCING

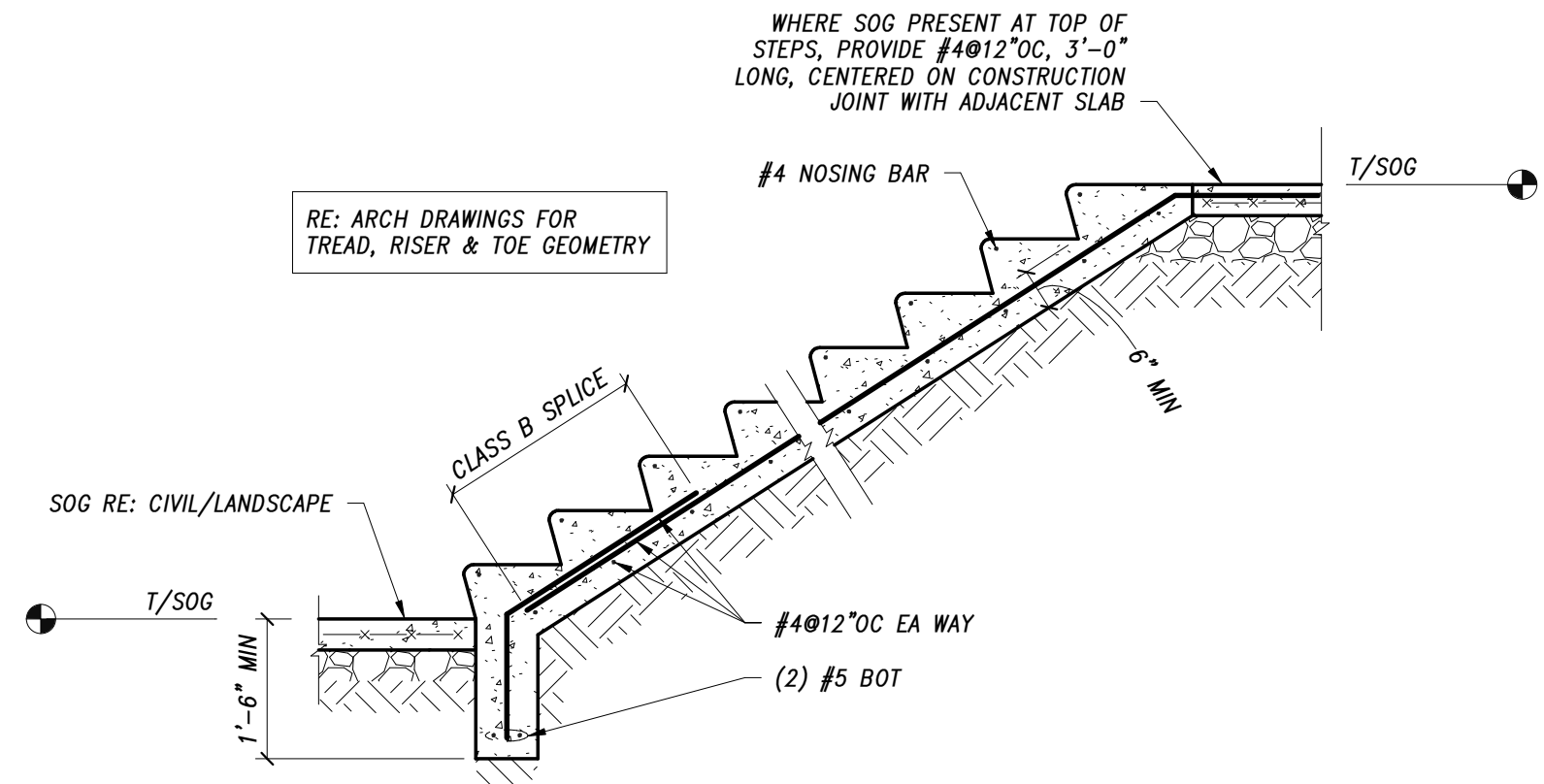
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- NOTES:
1. DOWELS AND CORNER BARS MATCH HORIZONTAL REINF EXCEPT USE #5 DOWELS & CORNER BARS FOR HORIZONTAL BARS #6 AND LARGER
 2. SEQUENCING OF VERTICAL AND HORIZONTAL REINFORCING PER DETAILS CUT ON PLAN, UNO

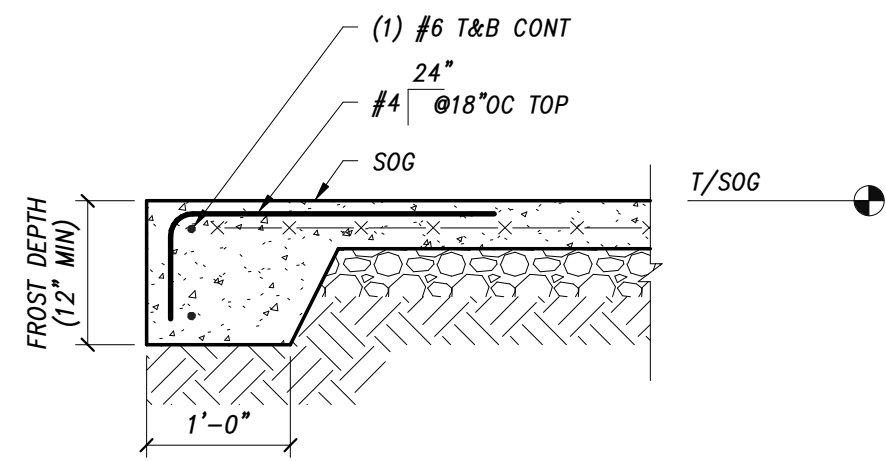
5 TYPICAL WALL CORNER REINFORCING

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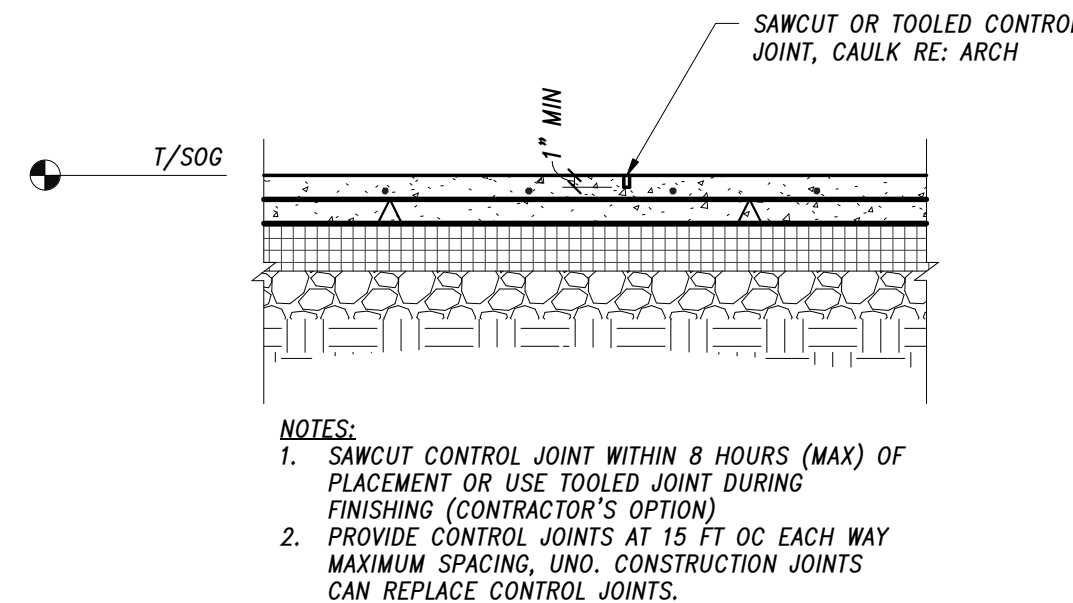
4 TYPICAL SLAB-ON-GRADE STAIR

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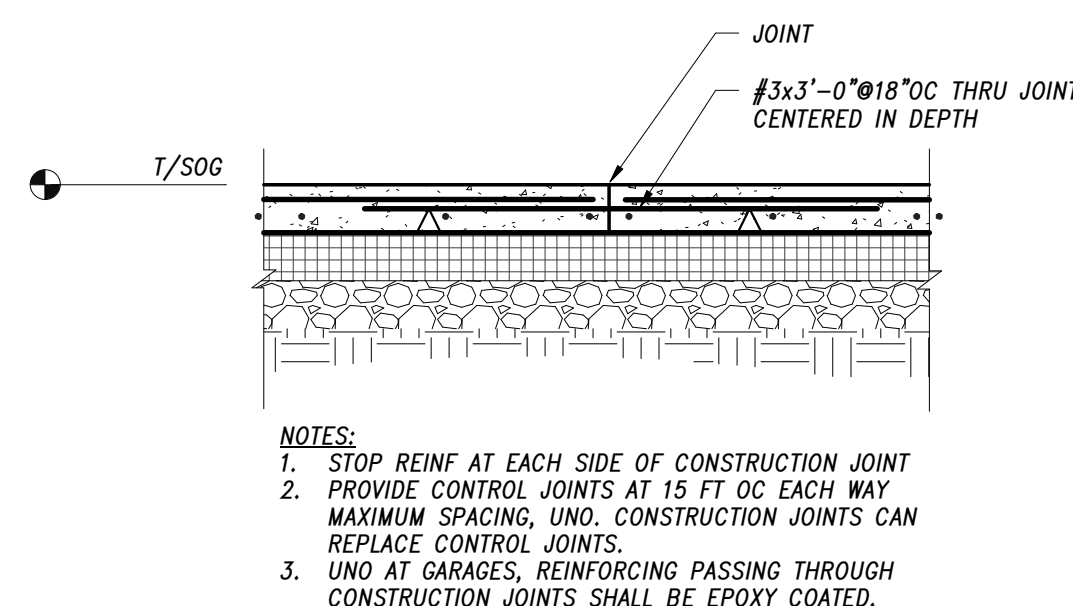


3 SLAB-ON-GRADE TURN DOWN

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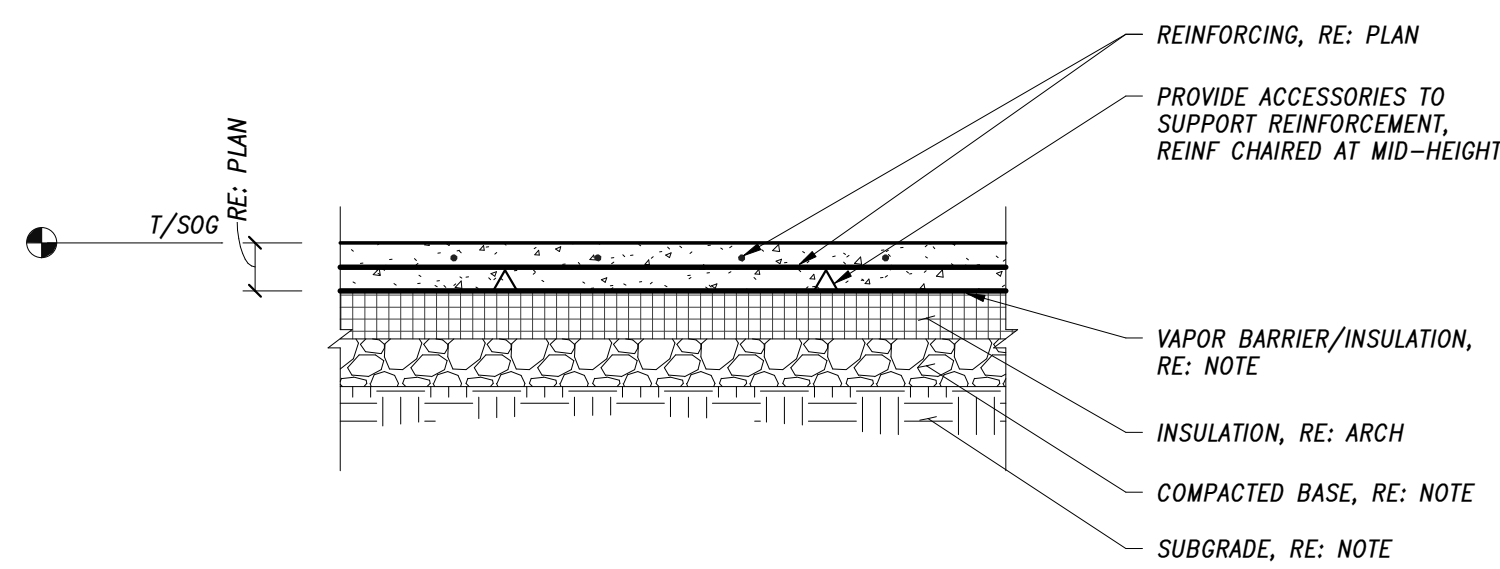
TYPICAL SOG CONTROL JOINT



TYPICAL SOG CONSTRUCTION JOINT

2 TYPICAL SLAB-ON-GRADE JOINTING

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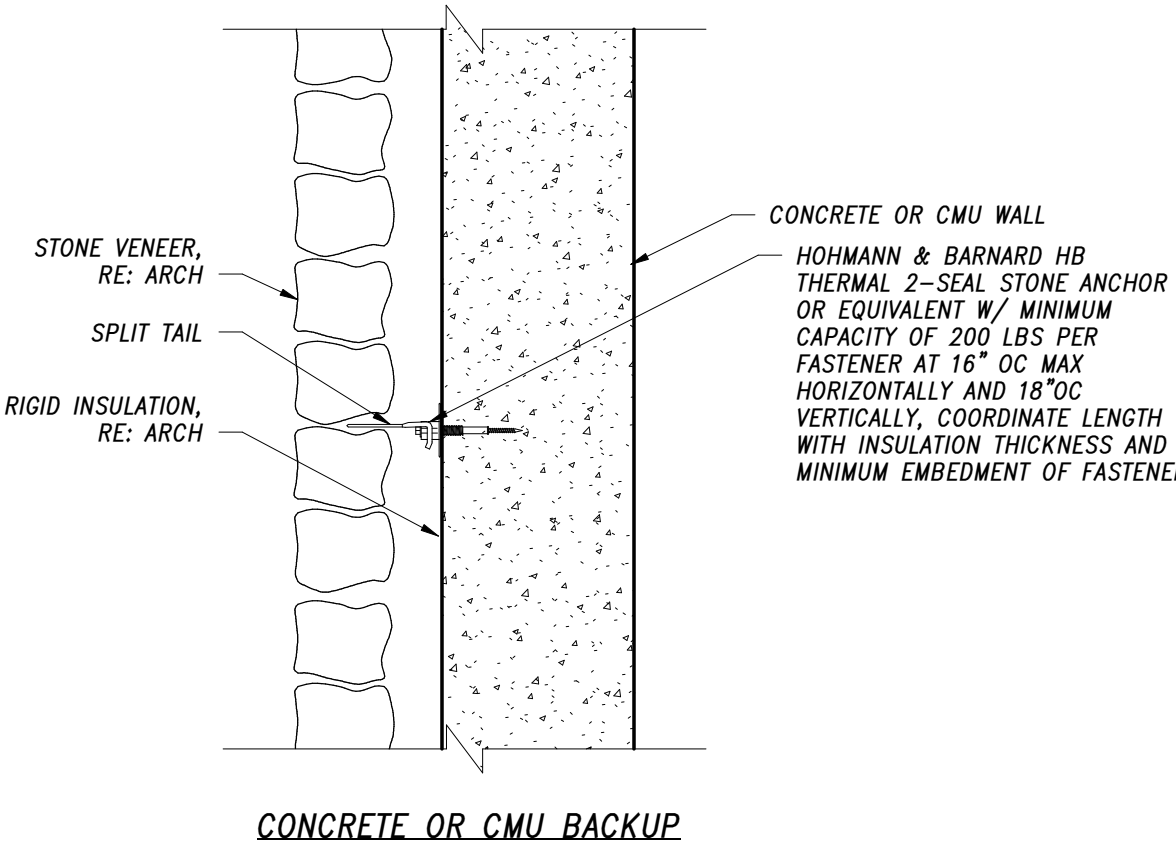
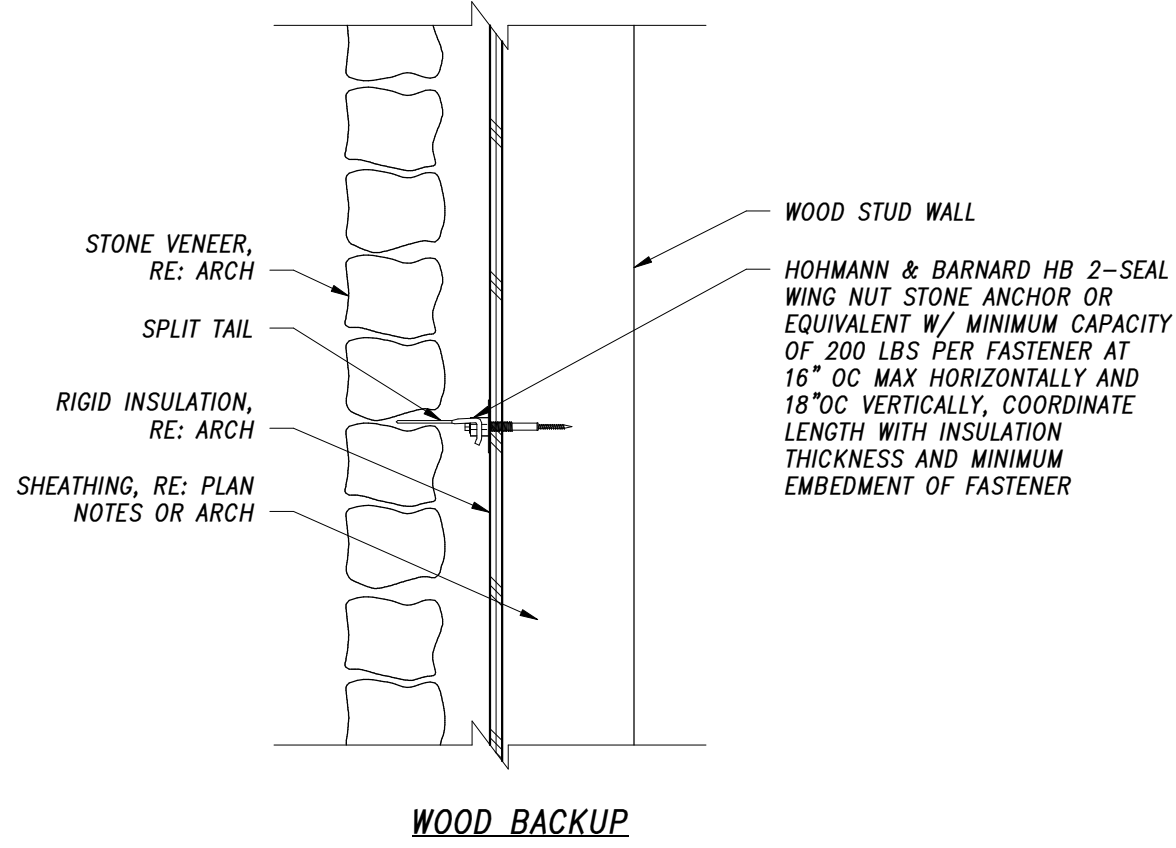
1 TYPICAL SLAB-ON-GRADE

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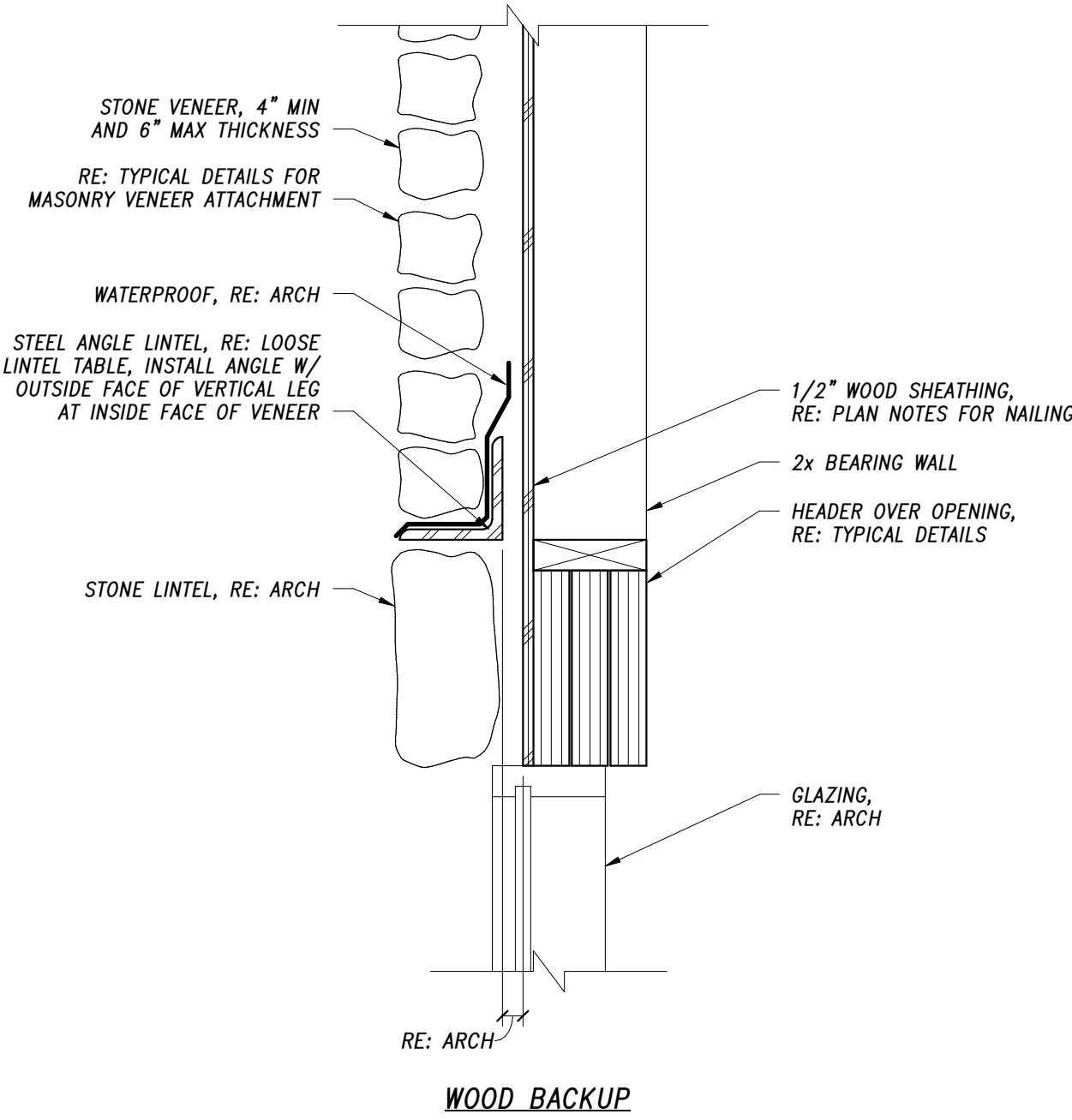
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TYPICAL STONE VENEER ATTACHMENT WITH RIGID INSULATION

6

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LOOSE LINTEL TABLE – STONE VENEER		
THIS TABLE IS FOR 6" MAXIMUM STONE VENEER ONLY		
MASONRY OPENING WIDTH	ANGLE SIZE	MINIMUM BEARING EACH END
TO 6'-0"	L4x4x1/4	6"
TO 7'-0"	L4x4x3/8	6"
TO 8'-0"	L6x4x5/16 (LLV)	6"
TO 9'-0"	L6x4x5/16 (LLV)	6"
TO 10'-0"	L7x4x3/8 (LLV)	8"
> 10'-0"	CONTACT STRUCTURAL ENGINEER	

NOTES:

1. WHERE ARCHITECTURAL ASSEMBLIES REQUIRE STEEL CLOSURE BETWEEN BACKUP AND INTERIOR FACE OF VENEER, PROVIDE PLATE AS SHOWN, THICKNESS TO MATCH HORIZONTAL LEG OF ANGLE, WIDTH PER ARCHITECTURAL DRAWINGS.

2. USE ABOVE ANGLE SIZES AT ALL MASONRY OPENINGS EXCEPT WHERE DETAILED OTHERWISE.

3. RE: ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS AND SIZES OF MASONRY OPENINGS.

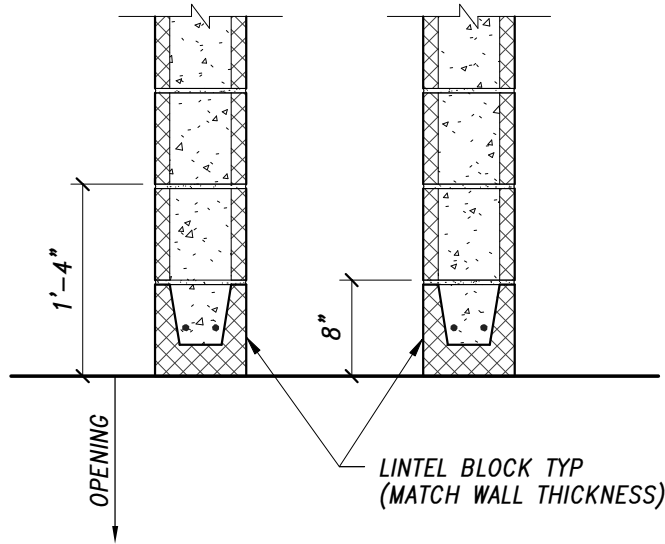
4. ALL ANGLES ARE GALVANIZED UNLESS NOTED OTHERWISE.

5. LLV = LONG LEG VERTICAL, SLV = SHORT LEG VERTICAL

TYPICAL LOOSE LINTEL TABLE AND DETAIL - STONE VENEER

5

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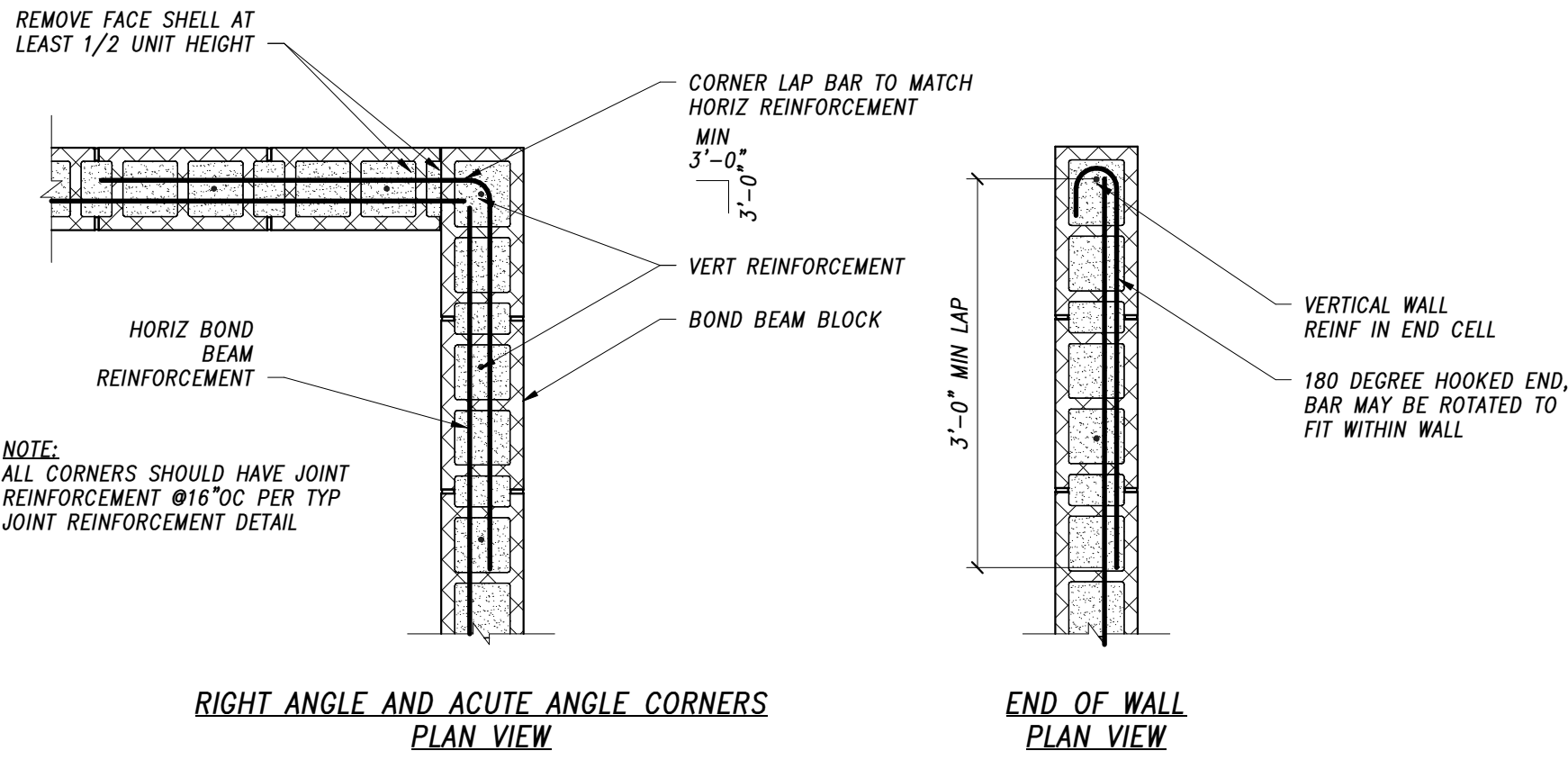


REINFORCED CMU LINTEL TABLE					
MASONRY OPENING WIDTH	NOMINAL BLOCK WIDTH				MINIMUM BEARING EACH END
	6"	8"	10"	12"	
TO 4'-0"	8" DEEP W/ (1) #4	8" DEEP W/ (2) #4	8" DEEP W/ (2) #4	8" DEEP W/ (2) #4	8"
TO 8'-0"	16" DEEP W/ (1) #5	16" DEEP W/ (2) #4	16" DEEP W/ (2) #4	16" DEEP W/ (2) #5	8"
TO 10'-0"	16" DEEP W/ (1) #6	16" DEEP W/ (2) #5	16" DEEP W/ (2) #5	16" DEEP W/ (2) #6	8"
FULL DEPTH OF BOND BEAM TO BE GROUTED SOLID. RE: "TYP CMU REINF AT OPENINGS" DETAIL FOR VERTICAL REBAR AT EA SIDE OF OPENINGS					

TYPICAL REINFORCED MASONRY LINTEL TABLE

4

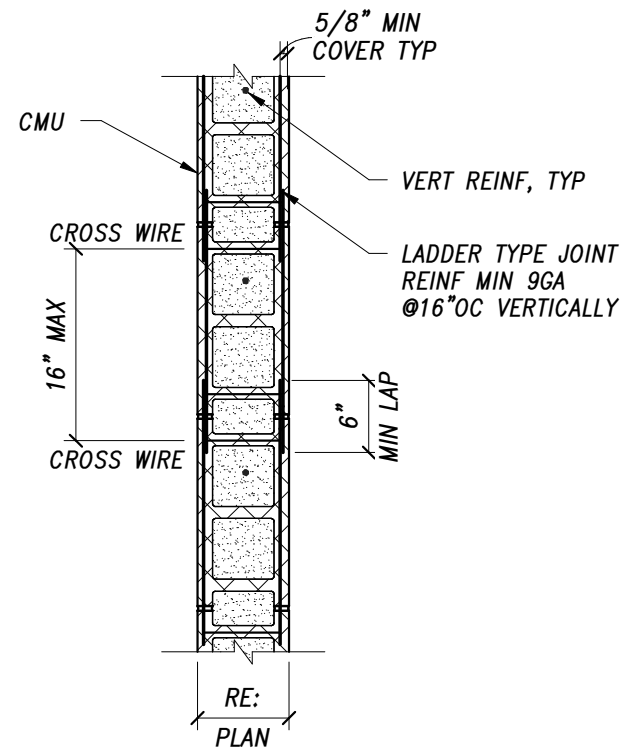
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TYPICAL REINFORCED MASONRY WALL HORIZONTAL REINFORCEMENT CORNERS

2

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TYPICAL REINFORCED MASONRY WALL JOINT REINFORCEMENT

1

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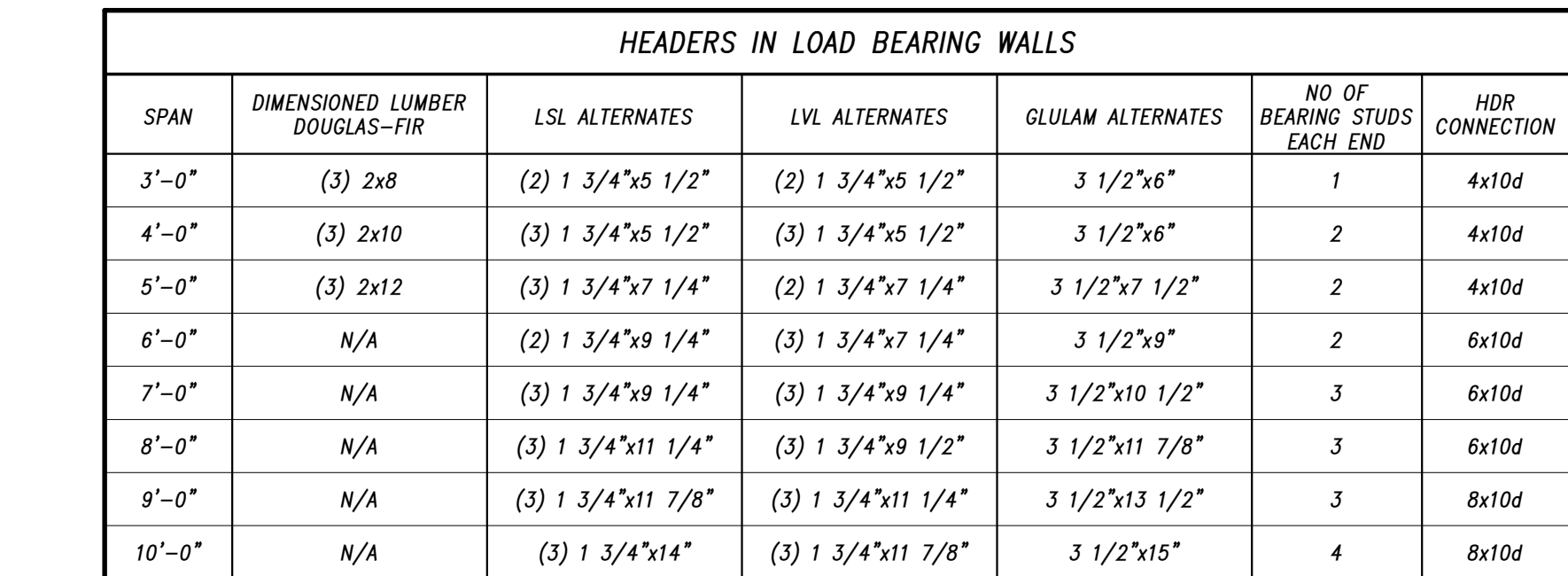
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TYPICAL
DETAILS

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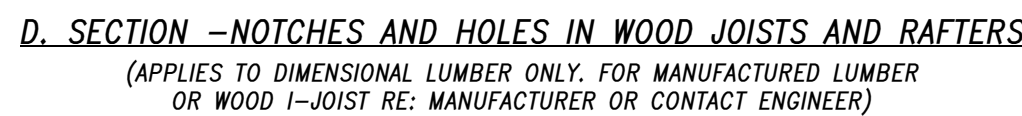
NOTES:

1. THIS TABLE APPLIES TO HEADERS WHICH ARE NOT EXPLICITLY CALLED OUT ON PLAN WITH SPANS OF 10'-0" OR LESS
2. HEADERS IN LOAD BEARING WALLS DESIGNED FOR 2000 PSF DEAD + LIVE LOAD.
3. HEADERS IN NON-LOAD BEARING WALLS DESIGNED FOR 400 PLF DEAD + LIVE LOAD.
4. DIMENSIONED LUMBER HEADERS TO BE DOUGLAS-FIR No2.
5. LVL = LAMINATED VENEER LUMBER: Fb = 2600 PSI, E = 2000 KSI
6. LSL = LAMINATED STRAND LUMBER: Fb = 2250 PSI, E = 1500 KSI
7. GLULAM GRADE IS 24F-V4 DF
8. LIVE LOAD DEFLECTION CRITERIA IS L/360
9. HEADERS SUPPORTING POINT LOADS FROM BEAMS OR COLUMNS SHOULD NOT BE SIZED FROM THIS TABLE. NOTIFY STRUCTURAL ENGINEER.
10. RE: ARCH FOR LOCATIONS OF NON-LOAD BEARING WALLS.

6 TYPICAL WOOD HEADER TABLE



3 TYPICAL STUD PACK NAILING



TYPICAL REQUIREMENTS FOR HOLES AND NOTCHES IN WOOD MEMBERS

2 AN
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TYPICAL MINIMUM NAILING REQUIREMENTS		
THIS DETAIL CONFORMS TO ALL IBC 2015 (AND OLDER) REQUIREMENTS		
CONNECTION	COMMON NAILS	ALTERNATE OPTION
1. 1"x6" sheathing to each bearing or joist; face nail	(2) 8d	--
2. 1"x8" and wider sheathing to each bearing; face nail	(3) 8d	--
3. 2" subfloor to joist, girder, or blocking; blind and face nail	(2) 16d	--
4. Blocking between ceiling joists, rafters or trusses to top plate or other framing below; each end, toenail	(3) 8d	(3) 3"x0.131"
5. Blocking between rafters or truss to rafter or truss	(2) 8d toenail ea end or (2) 16d end nail	(2) 3"x0.131" # toenail ea end or (3) 3"x0.131" # end nail
6. Bottom plate to joist or blocking; face nail	16d @ 16" OC	3"x0.131" # @ 12" OC
7. Top or bottom plate to stud; end nail	(2) 16d	(3) 3"x0.131" #
8. Stud to top or bottom plate	(4) 8d toenail or (2) 16d end nail	(4) 3"x0.131" # toenail or (3) 3"x0.131" # end nail
9. Stud to stud; face nail	16d @ 24" OC	3"x0.131" # @ 16" OC
10. Top plate to top plate; face nail	16d @ 16" OC	3"x0.131" # @ 12" OC
11. Top plate to top plate at end joints; each side of end joint, face nail (min 24" lap splice length each side of end joint)	(8) 16d	(12) 3"x0.131" #
12. Top plate laps at corners and intersections; face nail	(2) 16d	(3) 3"x0.131" #
13. Rim joist or blocking to top plate, sill or other framing below; toenail	8d @ 6" OC	3"x0.131" # @ 6" OC
14. Built-up header (2" to 2"); face nail	16d @ 16" OC each face	--
15. Continuous header to stud; toenail	(4) 8d	--
16. Ceiling joists to plate; toenail	(3) 8d	(3) 3"x0.131" #
17. Ceiling joists not attached to parallel rafter, laps over partitions; face nail	(3) 16d	(4) 3"x0.131" #
18. Ceiling joists attached to parallel rafter	RE: IBC Table 2308.7.3.1	
19. Joist at all bearings; toenail	(3) 8d	(3) 3"x0.131" #
20. Joist to rim joist; end nail	(3) 16d	(4) 3"x0.131" #
21. Rafter or roof truss to top plate; toenail	(3) 10d	(4) 3"x0.131" #
22. Roof rafters to ridge valley or hip rafters, or roof rafter to 2" ridge beam	(2) 16d end nail or (3) 10d toenail	(3) 3"x0.131" # end nail or (4) 3"x0.131" # toenail
23. 1" brace to each stud and plate; face nail	(2) 8d	(2) 3"x0.131" #
24. Built-up corner studs	16d @ 24" OC	3"x0.131" # @ 12" OC
25. Built-up girder and beams	20d @ 32" OC at top and bottom and staggered (2) 20d at ends and at each splice	3"x0.131" # @ 24" OC at top and bottom and staggered (3) 3"x0.131" # at ends and at each splice
Dimensional Lumber:	As required by manufacturer but not less than nailing for Dimensional Lumber	
Manufactured Lumber:		
26. 2" planks; face nail	(2) 16d at each bearing	--
27. Bridging to joist	(2) 8d	(2) 3"x0.131" #
Blocking between joists and rafters - To joists or rafters - Toenails each side, each end		
Blocking between studs, each end	(2) 16d end nail or (2) 10d toenail	(3) 3"x0.131" # end nail or (2) 3"x0.131" # toenail
28. Plywood Sheathing	At shear walls - RE: "Typical Wood Shear Walls - Nailing Schedule and Details" Other walls - RE: general or plan notes	

1 TYPICAL MINIMUM NAILING REQUIREMENTS

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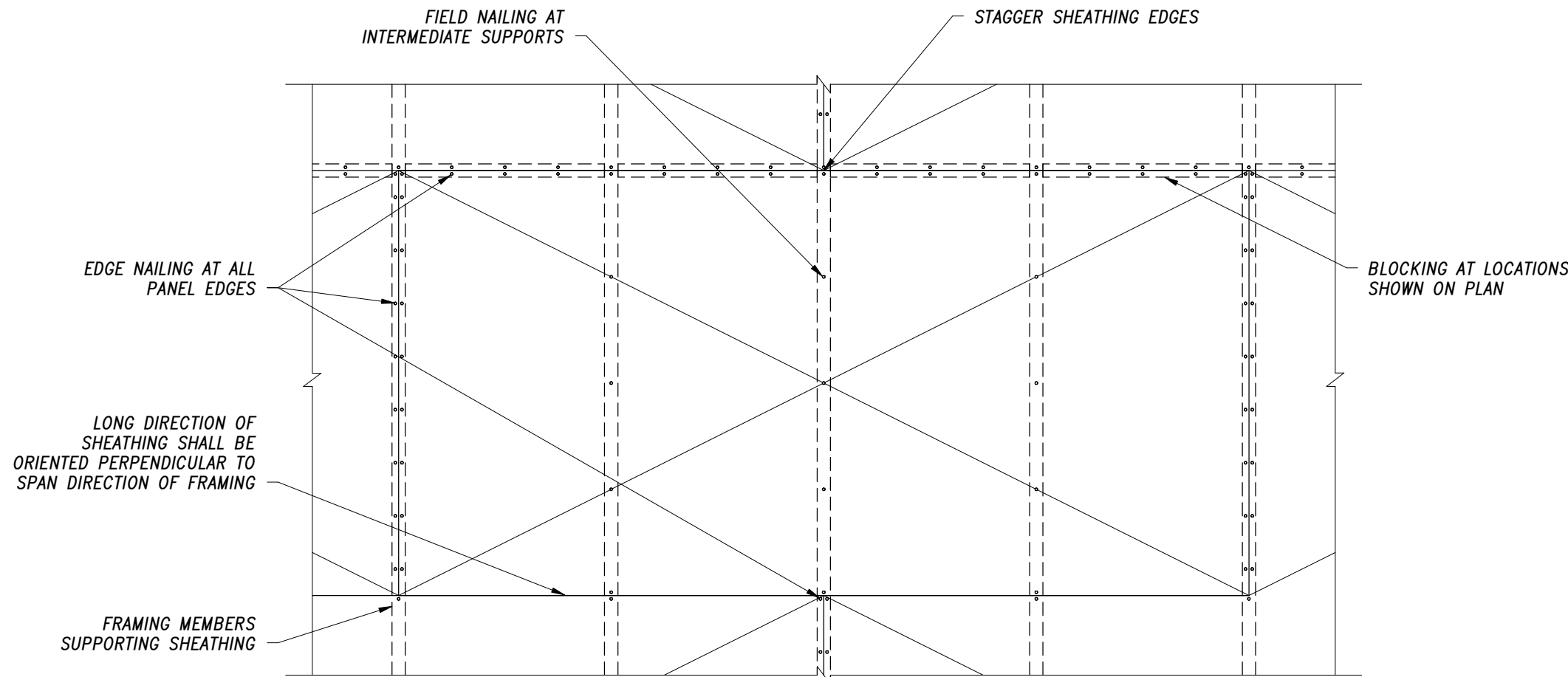
TYPICAL DETAILS

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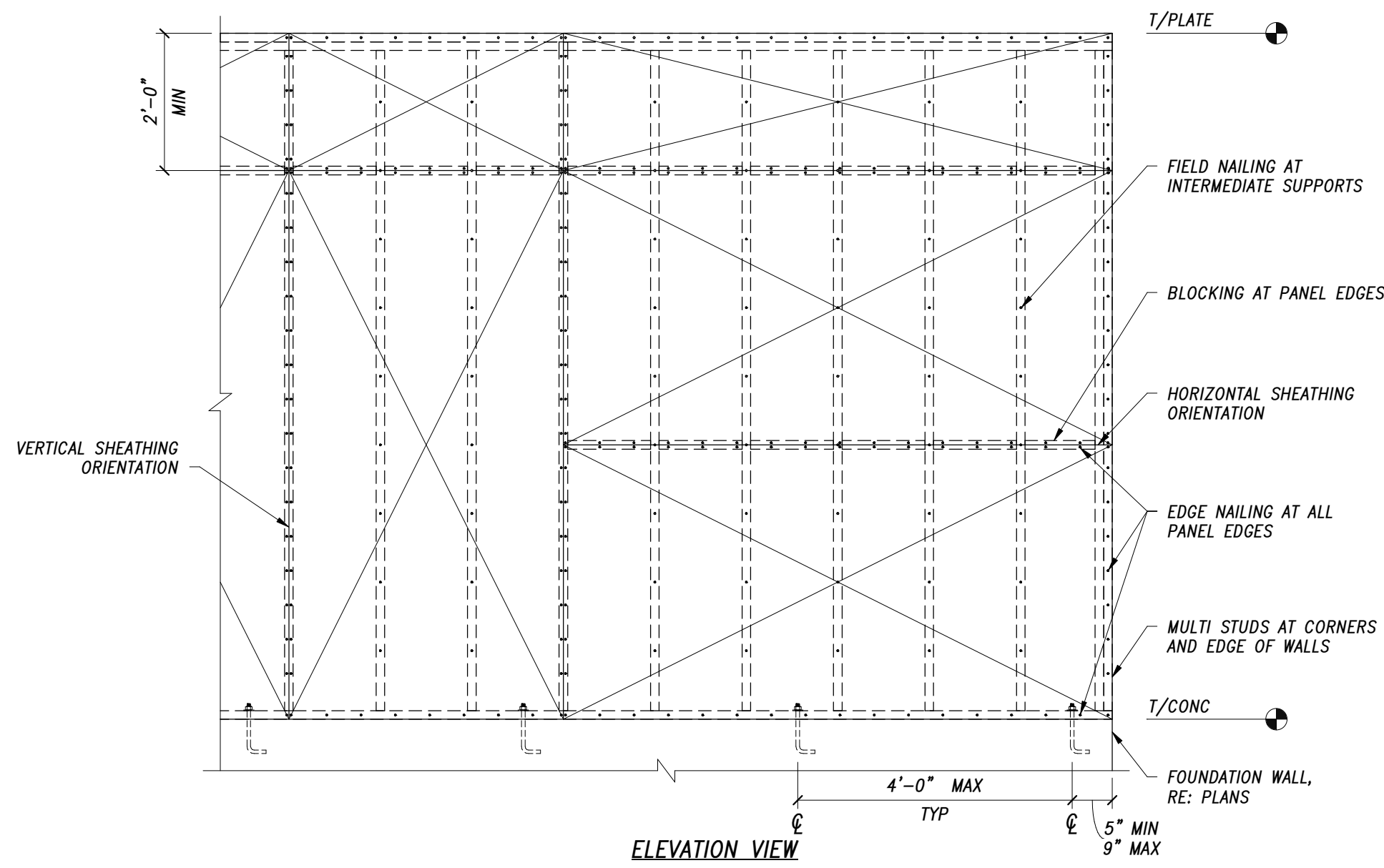


- NOTES:
1. MINIMUM EDGE DISTANCE IS 3/8"
 2. MINIMUM SHEATHING SIZE IS 2'-0"x4'-0"
 3. NAILS SHALL BE COMMON WIRE NAILS OR APPROVED EQUAL AND SHALL NOT BE OVERDRIVEN
 4. RE: GENERAL NOTES AND PLANS FOR ADDITIONAL INFORMATION

TYPICAL FLOOR AND ROOF

5 SHEATHING DIAGRAM

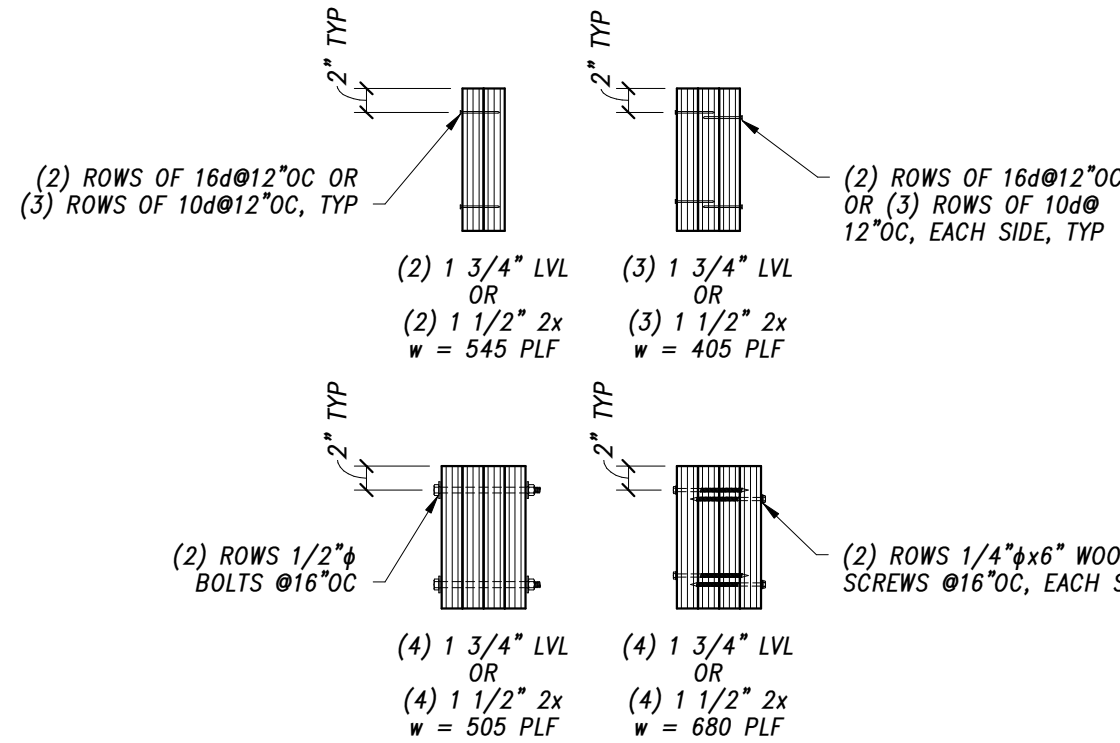
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 2. MINIMUM SHEATHING SIZE IS 2'-0"x4'-0"
 3. NAILS SHALL BE COMMON WIRE NAILS OR APPROVED EQUAL AND SHALL NOT BE OVERDRIVEN
 4. SHEATHING CAN BE ORIENTED IN VERTICAL OR HORIZONTAL ORIENTATION
 5. RE: GENERAL NOTES AND PLANS FOR ADDITIONAL INFORMATION

4 TYPICAL WALL SHEATHING DIAGRAM

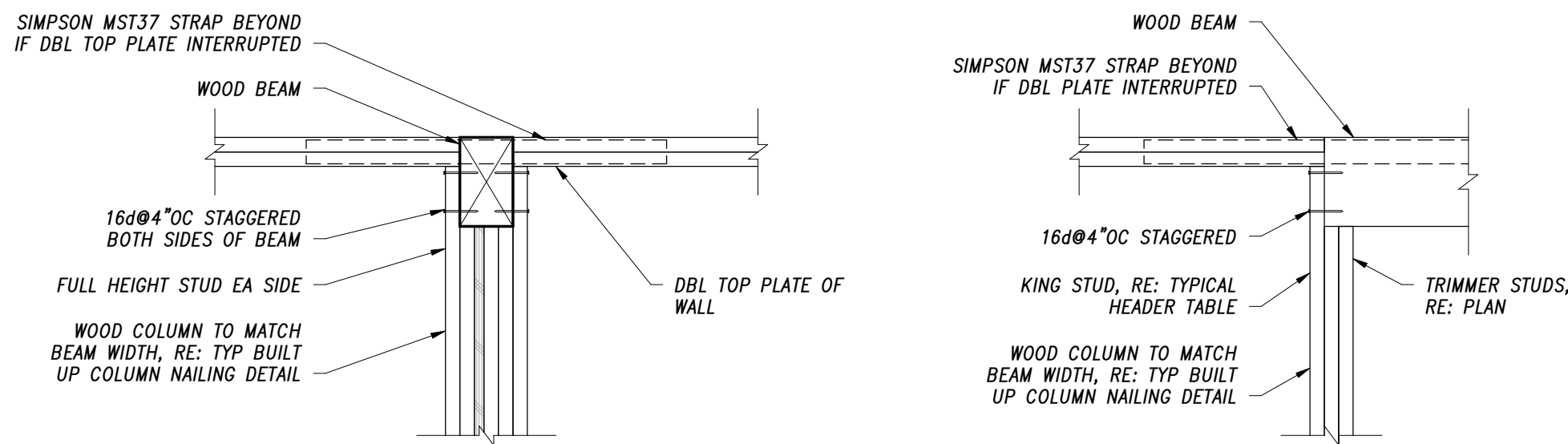
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- NOTES:
1. ALL MULTIPLE WOOD MEMBERS MUST BE FASTENED TOGETHER TO ACT AS A SINGLE UNIT.
 2. LAMINATIONS SHALL BE CONTINUOUSLY GLUED WITH EXTERIOR GLUE.
 3. LAMINATIONS SHALL BE DRY (LESS THAN 16% MOISTURE CONTENT) WHEN GLUED. DO NOT SPLICE LAMINATIONS
 4. WHERE FASTENERS TO BE INSTALLED ON BOTH SIDES, STAGGER BY 1/2 THE REQUIRED CONNECTOR SPACING.
 5. PSL MATERIAL OF EQUAL CROSS-SECTIONAL DIMENSIONS MAY BE SUBSTITUTED FOR BUILT-UP LVL BEAMS.
 6. 7" WIDE BEAMS SHOULD BE SIDE-LOADED ONLY WHEN LOADS ARE APPLIED TO BOTH SIDES OF THE MEMBERS (TO MINIMIZE ROTATION).
 7. W = MAXIMUM UNIFORM LOAD APPLIED TO EITHER OUTSIDE MEMBER.

3 BUILT-UP WOOD BEAM DETAIL

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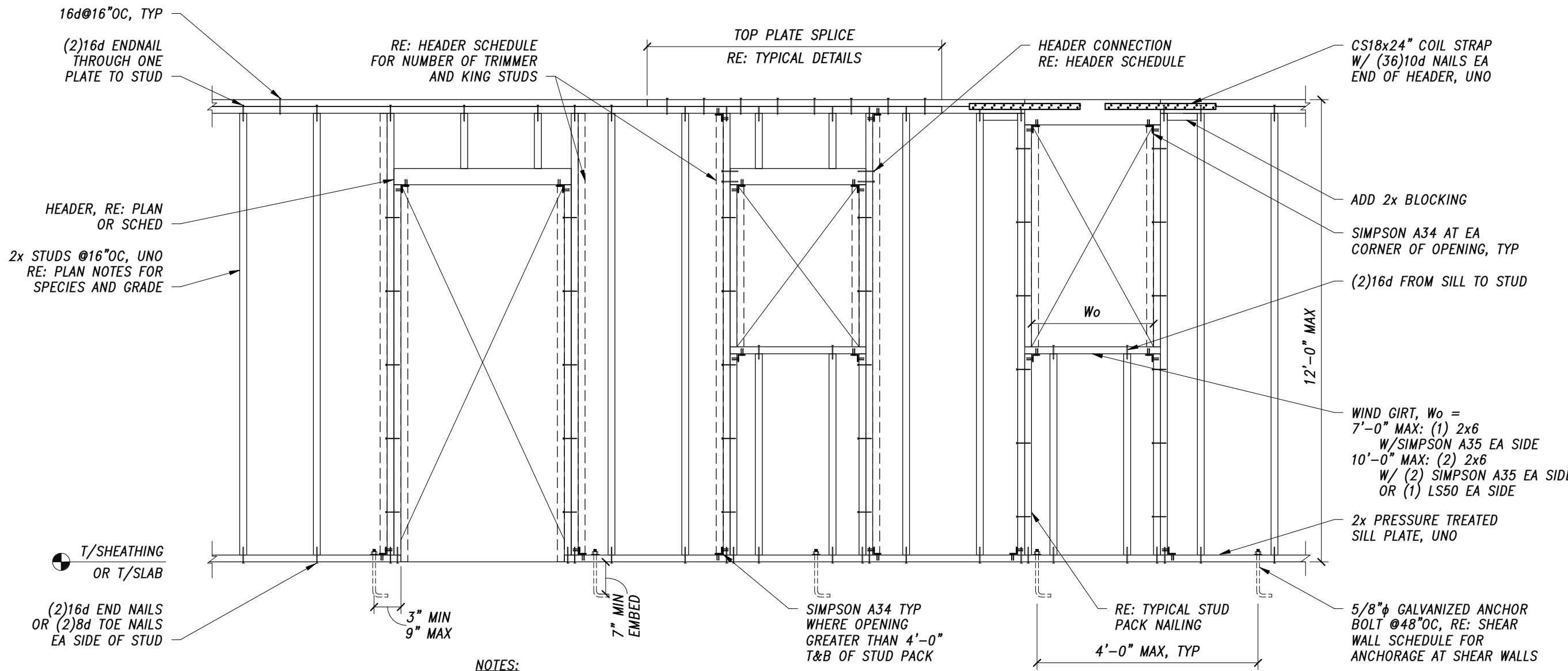


BEAM PERPENDICULAR TO WALL

BEAM PARALLEL TO WALL

2 TYPICAL WOOD BEAM BEARING DETAIL

NTS



- NOTES:
1. NOTES ON PLAN SUPERCEDE TYPICAL DETAIL.
 2. RE: TYPICAL WOOD SHEAR WALL ELEVATION AND SHEAR WALL NAILING SCHEDULE FOR FRAMING CONDITIONS AT SHEAR WALLS
 3. WHERE WOOD BEARING WALLS ARE LOCATED BELOW, FASTEN BOTTOM PLATE TO RIM BOARD BELOW FLOOR SHEATHING WITH 16d 12" OC.
 4. DETAIL IS TYPICAL UNO ON PLAN, ELEVATIONS, SECTIONS, OR DETAILS.

1 TYPICAL BEARING WALL ELEVATION

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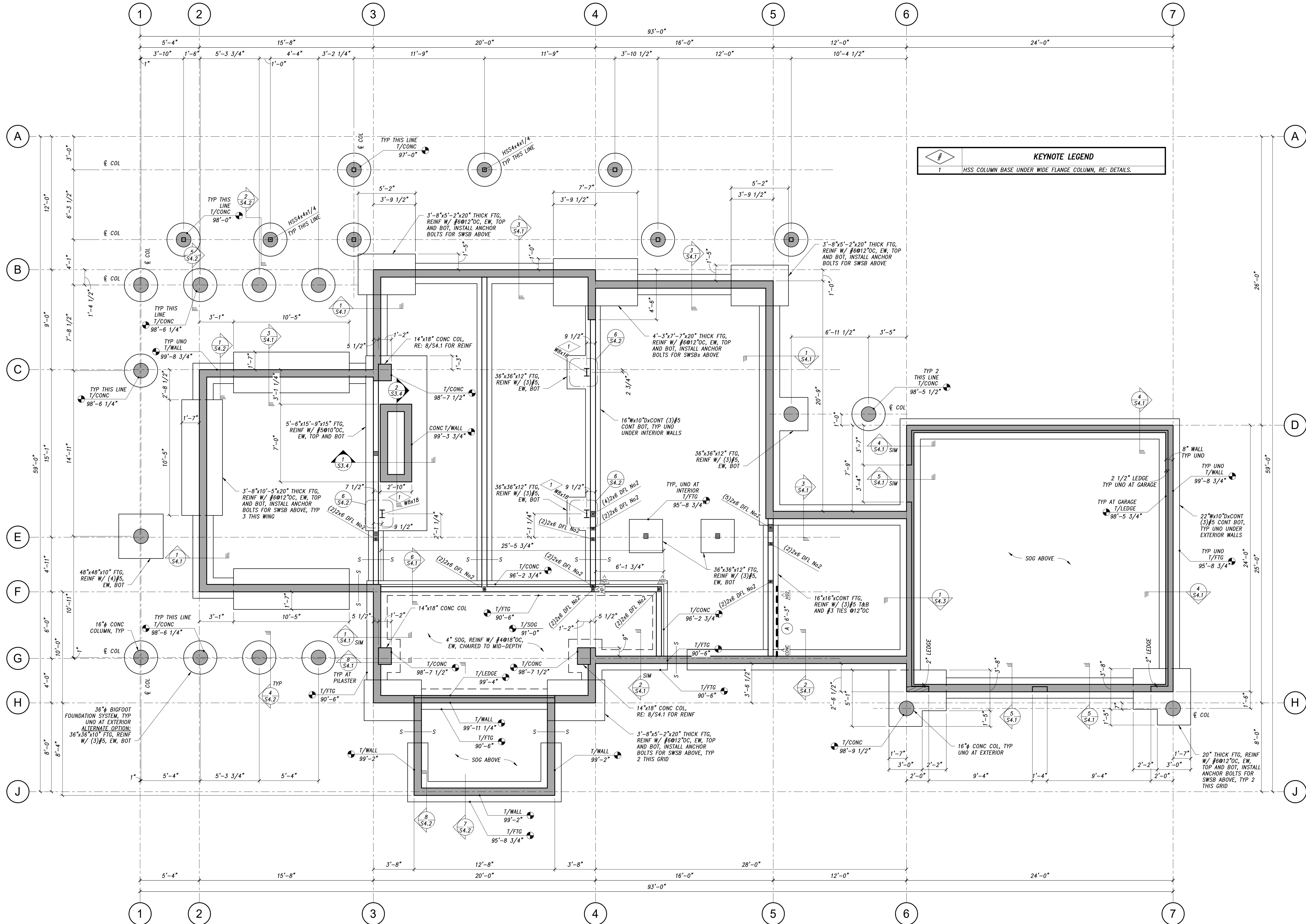
S1.7

TYPICAL
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S2.1

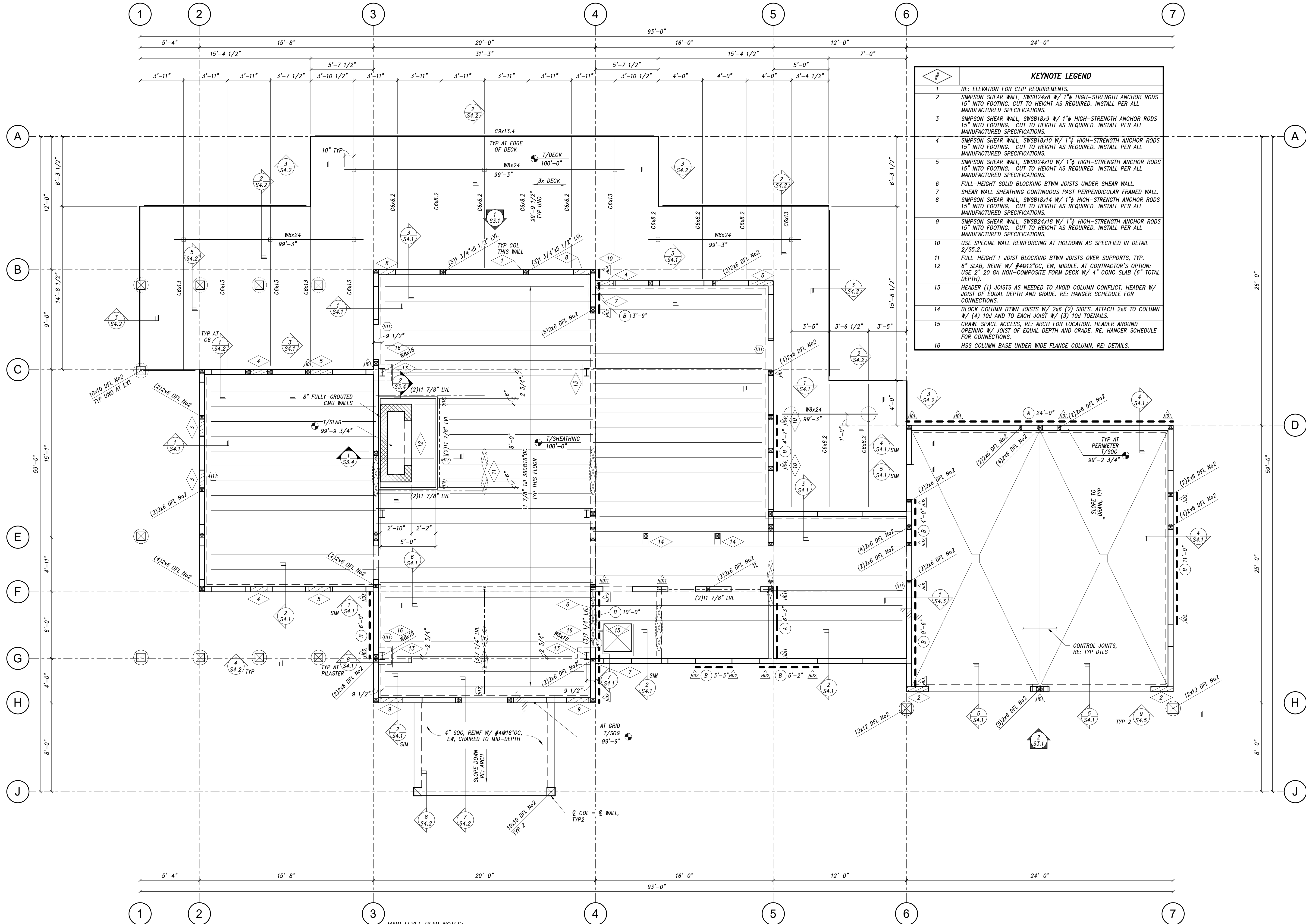
**FOUNDATION
PLAN**

M0012

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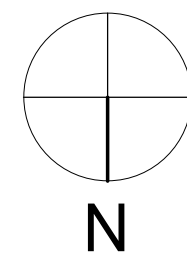


MAIN LEVEL PLAN NOTES:

- TYPICAL FLOOR IS ARCHITECTURAL FINISHES OVER 3/4" T&G FLOOR SHEATHING OVER WOOD I-JOISTS. TYPICAL FLOOR SHEATHING ATTACHMENT IS GLUE AND NAIL WITH 8d@6"OC AT EDGES AND @12"OC IN FIELD, UNO.
- GARAGE FLOOR IS 6" SLAB-ON-GRADE, REINFORCE W/ #4@18"OC, EW, CHAIRCED TO MID-DEPTH. RE: GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.
- TYPICAL EXTERIOR WALL IS 1/2" WALL SHEATHING ON 2x6 DFL No.2@16"OC, UNO. ATTACH WALL SHEATHING WITH 8d@6"OC AT EDGES AND @12"OC IN FIELD UNLESS DESIGNATED AS A SHEAR WALL. RE: SHEAR WALL SCHEDULE FOR SHEAR WALL NAILING.
- TYPICAL INTERIOR STRUCTURAL WALL IS 2x6 DFL No.2 @18"OC, UNO.
- TYPICAL COLUMN IS (3)2x6 DFL No.2, UNO.
- TYPICAL TIMBER COLUMN IS CENTERED OVER CONCRETE COLUMN BELOW, UNO.

- RE: S2.1 FOR T/WALL ELEVATIONS
- RE: "TYPICAL WOOD HEADER TABLE" FOR HEADER SIZING AND NUMBER OF TRIMMER STUDS WHERE INDICATED "HDR" ON PLAN.
- WHEN NOT SPECIFIED AS "HDR", MINIMUM NUMBER OF KING STUDS EACH SIDE OF OPENING IS EQUAL TO HALF THE NUMBER OF STUDS INTERRUPTED BY HEADER PLUS ONE, (2) MIN. RE: "TYPICAL WOOD HEADER TABLE" FOR ATTACHMENT OF HEADER TO KING STUDS.
- ALL LVL MATERIAL IS 1 3/4" WIDE, UNO.
- RE: ARCH FOR WINDOW AND DOOR LOCATIONS.
- RE: SHEETS S1.0-S1.2 FOR GENERAL NOTES AND LEGENDS
- RE: SHEET S1.3 FOR LOAD KEYS
- RE: SHEETS S1.4-S1.7 FOR TYPICAL DETAILS
- RE: SHEETS S5.1-S5.2 FOR SHEAR WALL, HOLDOWN, AND HANGER SCHEDULES

1 MAIN LEVEL FRAMING PLAN
1/4" = 1'-0"



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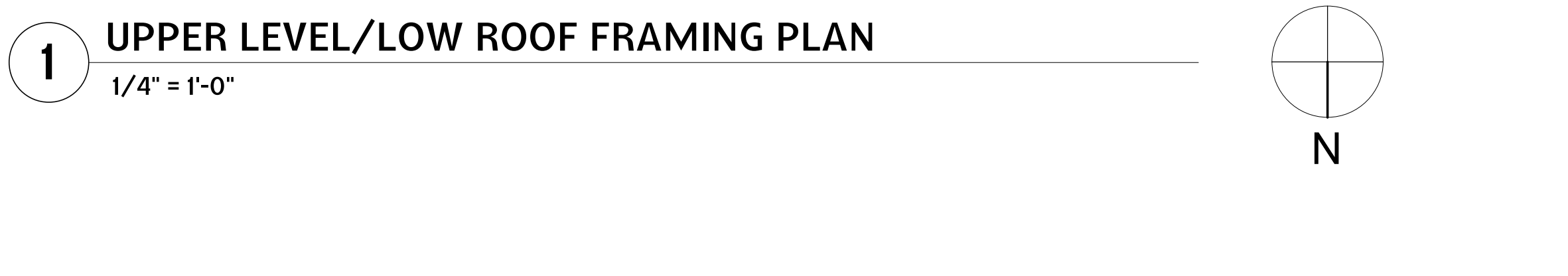
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S2.2
MAIN LEVEL
FRAMING PLAN

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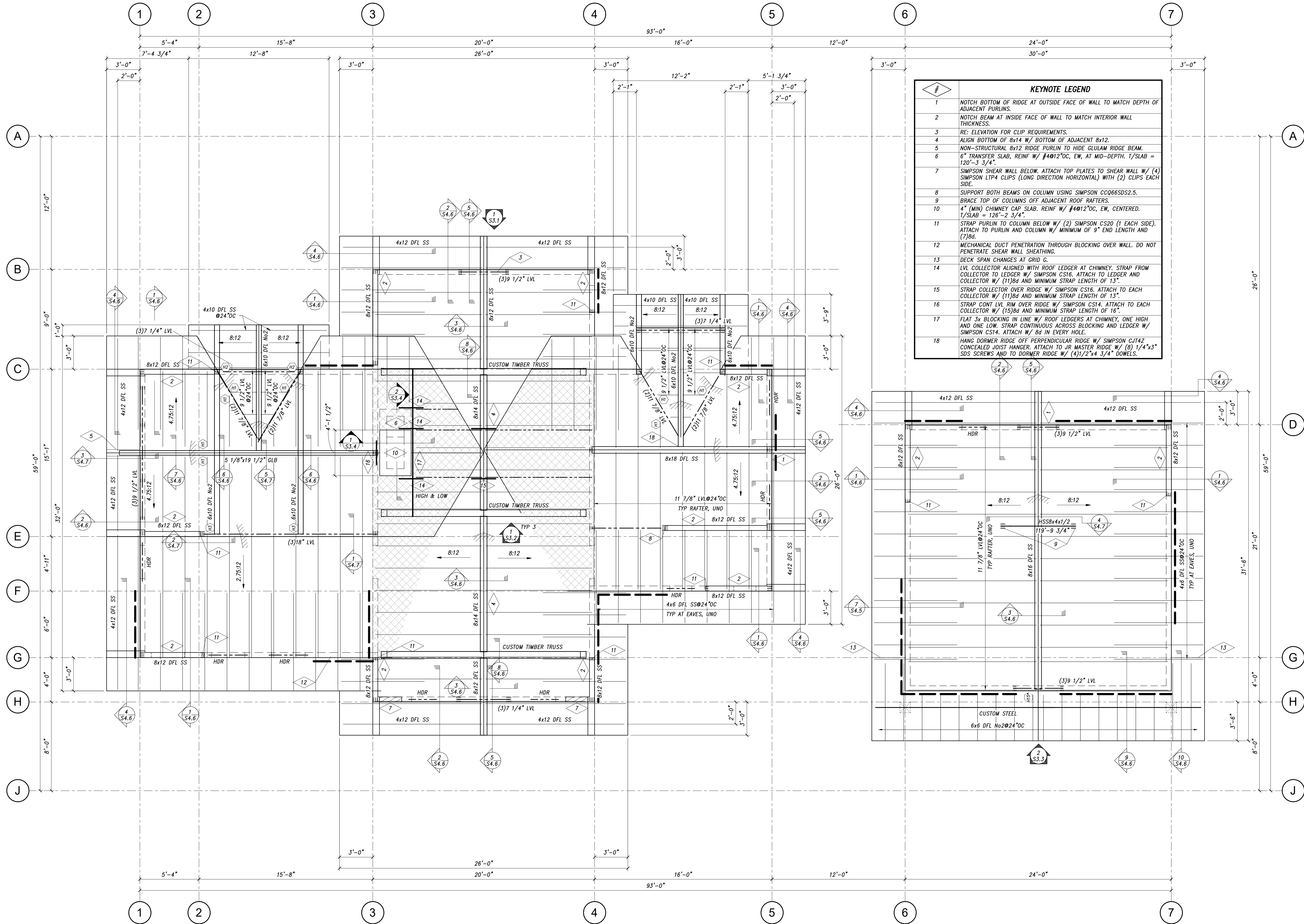
S2.3

**UPPER LEVEL /
LOW ROOF PLAN**

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ROOF PLAN NOTES:

1. TYPICAL ROOF IS FINISHES AND VENTILATED COLD ROOF OVER 3/4" FIRE RETARDANT ROOF SHEATHING OVER LVL RAFTERS. ATTACH ROOF SHEATHING WITH 8006^{OC} AT EDGES AND 812^{OC} IN FIELD, UNO.
2. TYPICAL EAVE FRAMING IS 2x DECKING OVER EXPOSED 4x RAFTERS, UNO.
3. RE: ARCH FOR TOP OF PLATE ELEVATIONS.
4. RE: "TYPICAL WOOD HEADER TABLE" FOR HEADER SIZING AND NUMBER OF TRIMMER STUDS WHERE INDICATED "HDR" ON PLAN.
5. WHEN NOT SPECIFIED AS "HDR", MINIMUM NUMBER OF KING STUDS EACH SIDE OF OPENING IS EQUAL TO HALF THE NUMBER OF STUDS INTERRUPTED BY HEADER PLUS ONE, (2) MIN. RE: "TYPICAL WOOD HEADER TABLE" FOR ATTACHMENT OF HEADER TO KING STUDS.

6. ALL LVL MATERIAL IS 1 3/4" WIDE, UNO.
7. COORDINATE JOIST LAYOUT WITH LIGHTING LOCATIONS, RE: ARCH.
8. RE: SHEETS S1.0-S1.2 FOR GENERAL NOTES AND LEGENDS
9. RE: SHEET S1.3 FOR LOAD KEYS
10. RE: SHEETS S1.4-S1.7 FOR TYPICAL DETAILS
11. RE: SHEET S5.1 FOR HANGER SCHEDULE

1 ROOF FRAMING PLAN
1/4" = 1'-0"

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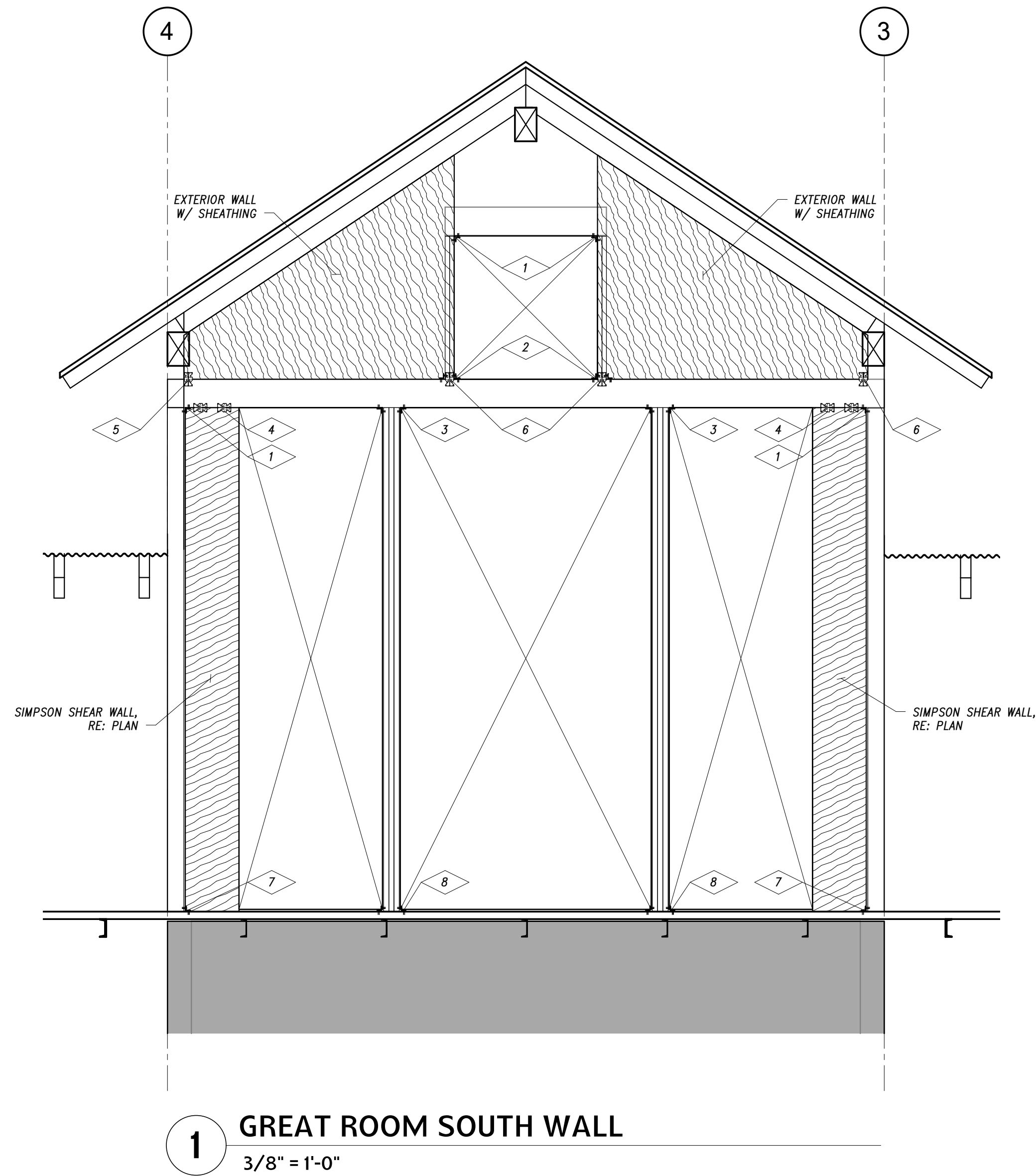
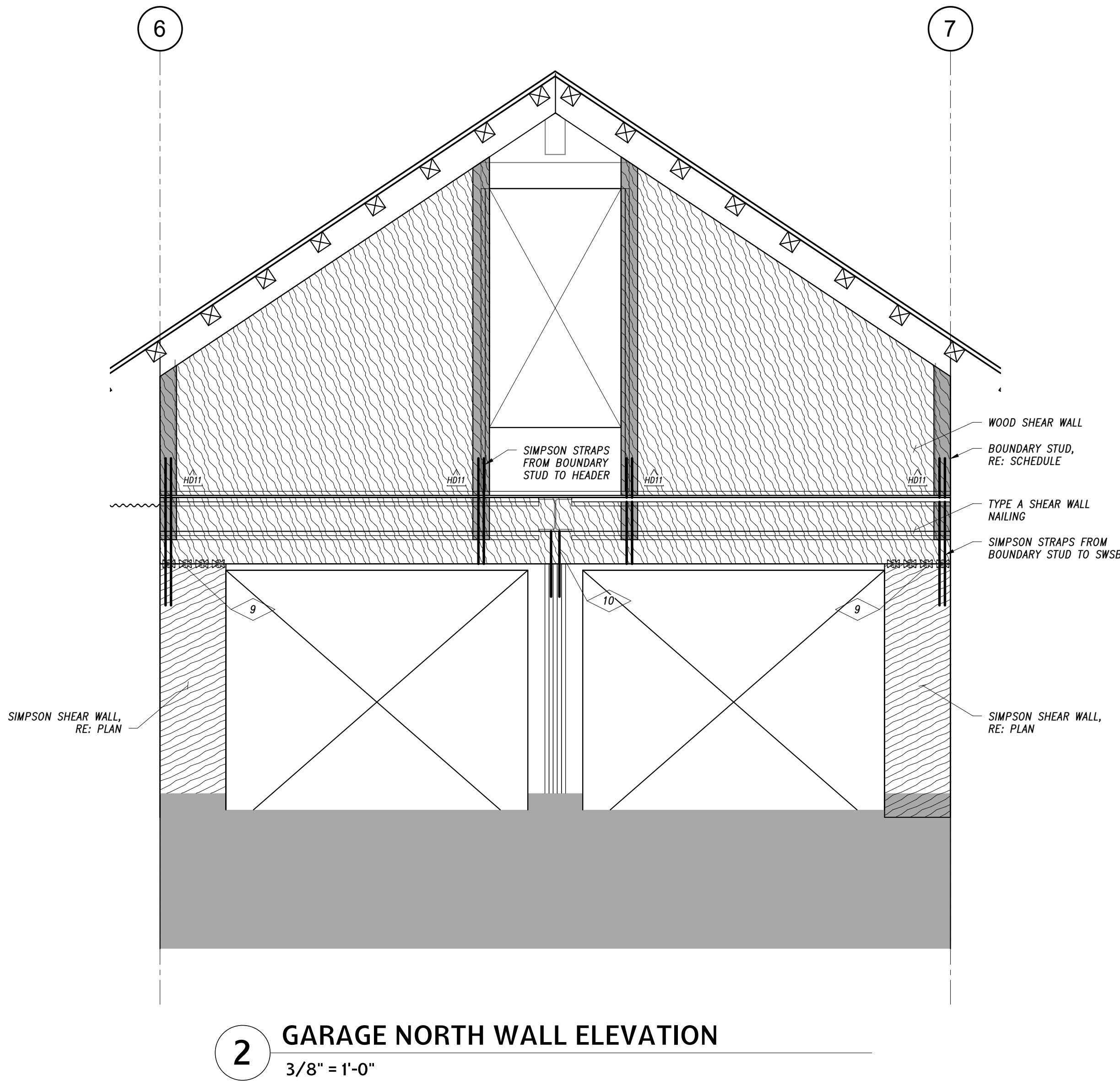
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S2.4
ROOF FRAMING
PLAN

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#	KEYNOTE LEGEND
1	ATTACH BEAM TO COLUMN BELOW W/ SIMPSON A35.
2	ATTACH COLUMN BASE TO HEADER BELOW W/ (2) SIMPSON A35.
3	ATTACH BEAM TO COLUMN BELOW W/ (2) SIMPSON A35.
4	SIMPSON SHEAR WALL BELOW. ATTACH LVL HEADER TO SHEAR WALL W/ (4) SIMPSON LTP4 CLIPS (LONG DIRECTION HORIZONTAL) WITH (2) CLIPS EACH SIDE.
5	RE: ELEVATION FOR CLIP REQUIREMENTS.
6	ATTACH DOUBLE BOUNDARY STUD TO LVL HEADER W/ (2) SIMPSON LTP4 CLIPS (LONG DIRECTION VERTICAL) WITH (1) CLIP EACH SIDE OF WALL.
7	ATTACH COLUMN BASE TO SHEATHING BELOW W/ SIMPSON A35.
8	ATTACH COLUMN BASE TO SHEATHING BELOW W/ (2) SIMPSON A35.
9	SIMPSON SHEAR WALL BELOW. ATTACH LVL HEADER TO SHEAR WALL W/ (8) SIMPSON LTP4 CLIPS (LONG DIRECTION HORIZONTAL) WITH (4) CLIPS EACH SIDE.
10	STRAP LVL BEAM TO COLUMN BELOW W/ (2) SIMPSON CS14 STRAPS ATTACH TO LVL AND COLUMN W/ (12)10d W/ 14" MIN END LENGTH.

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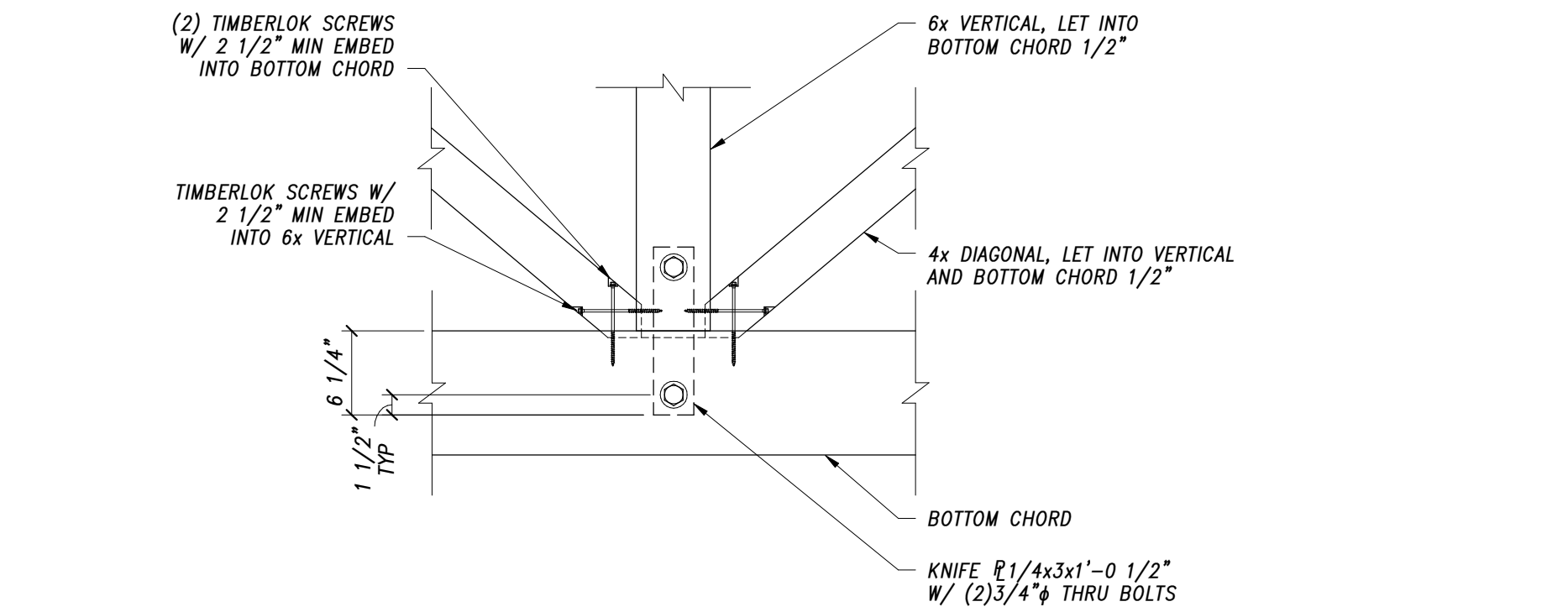
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S3.1
SHEAR WALL ELEVATIONS

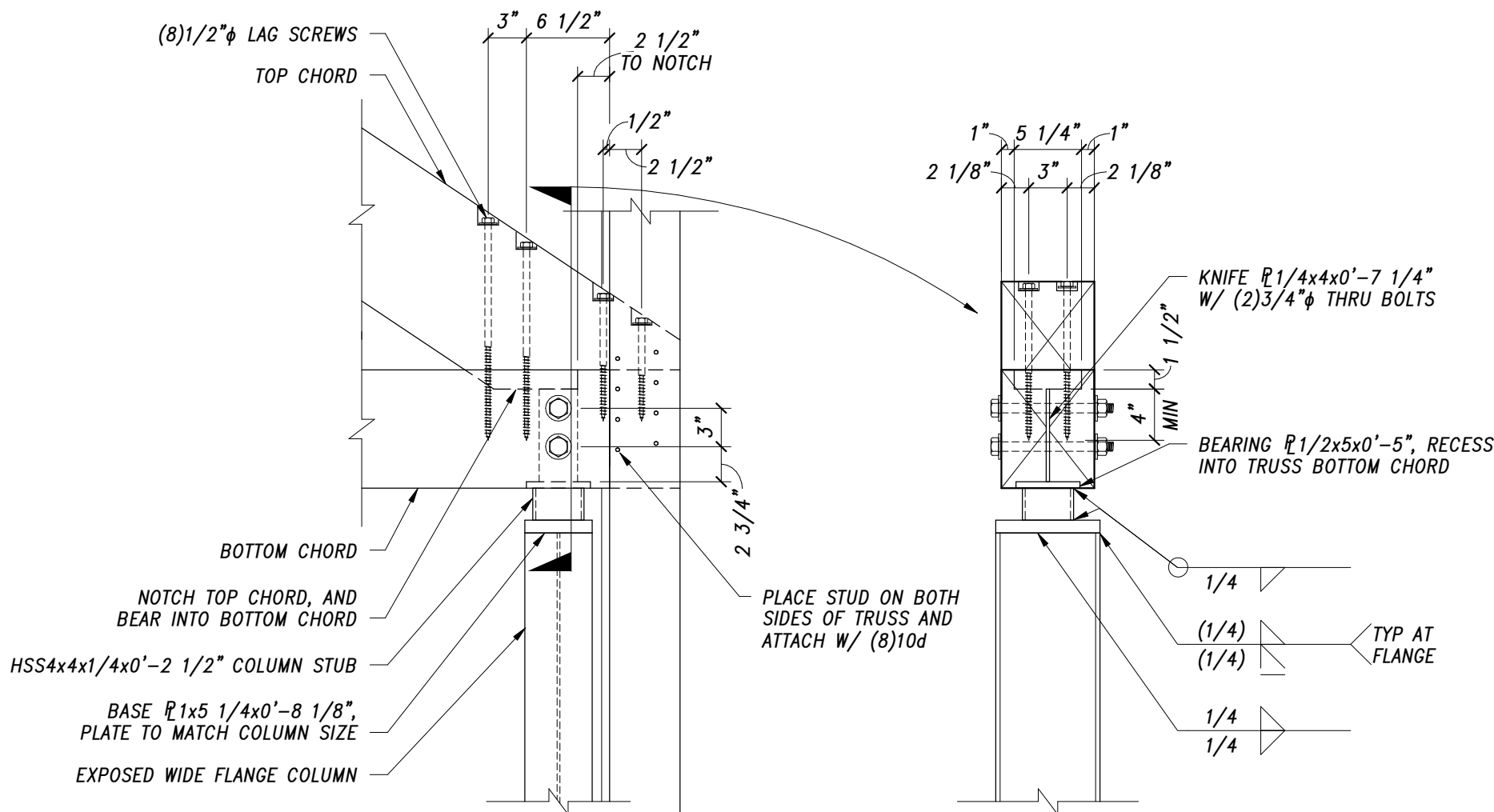
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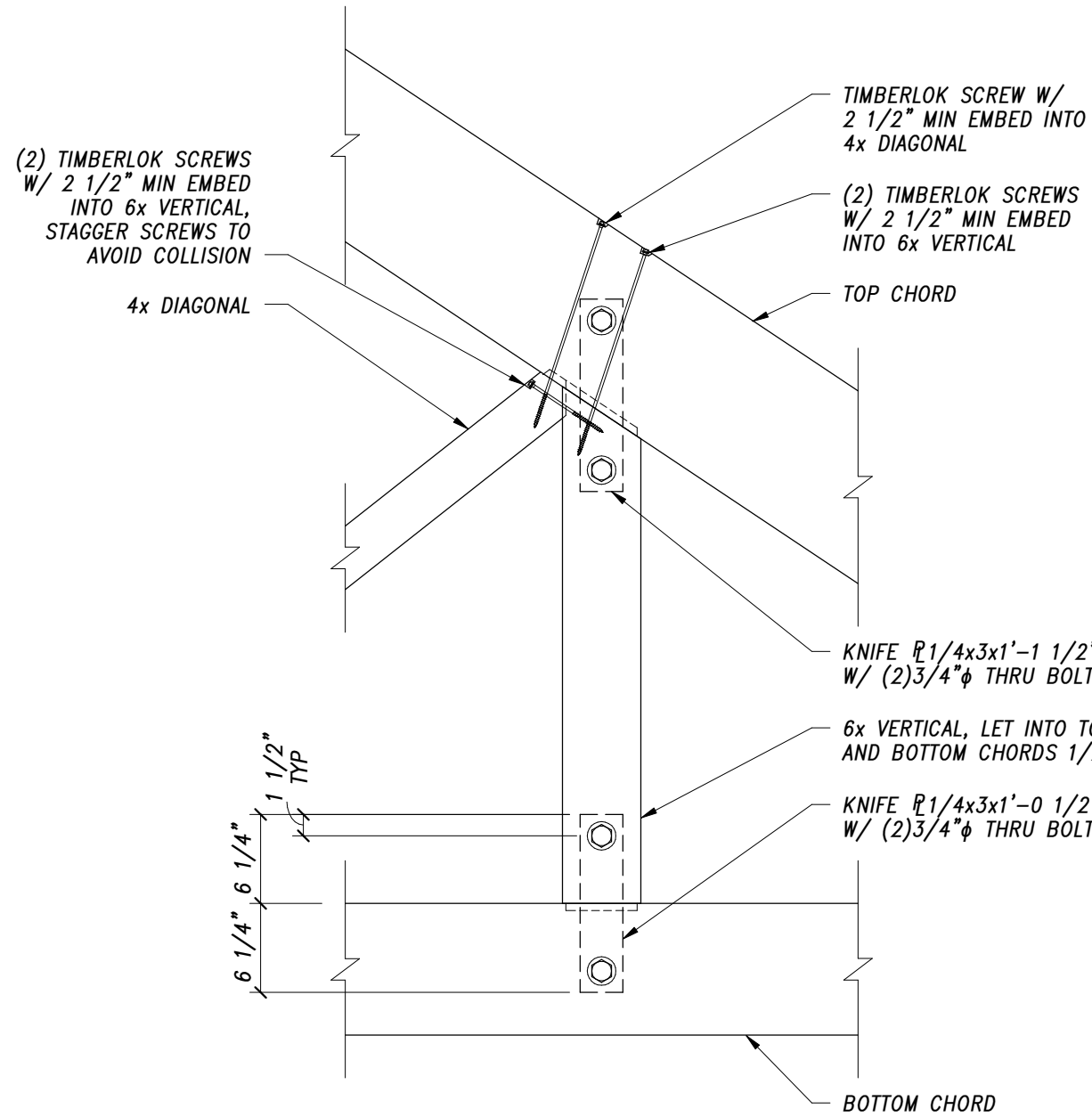
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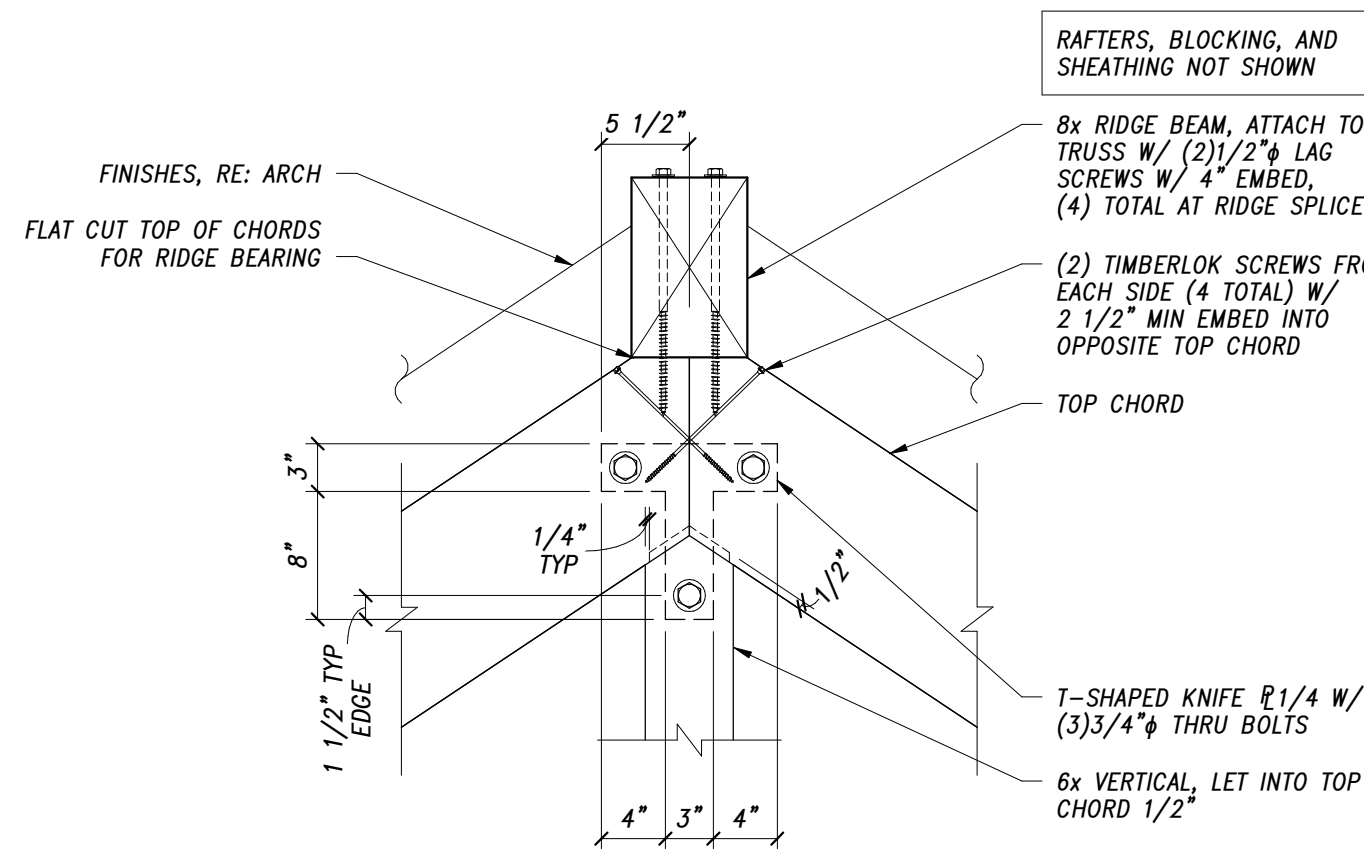
5 TRUSS CONNECTION DETAIL
1" = 1'-0"



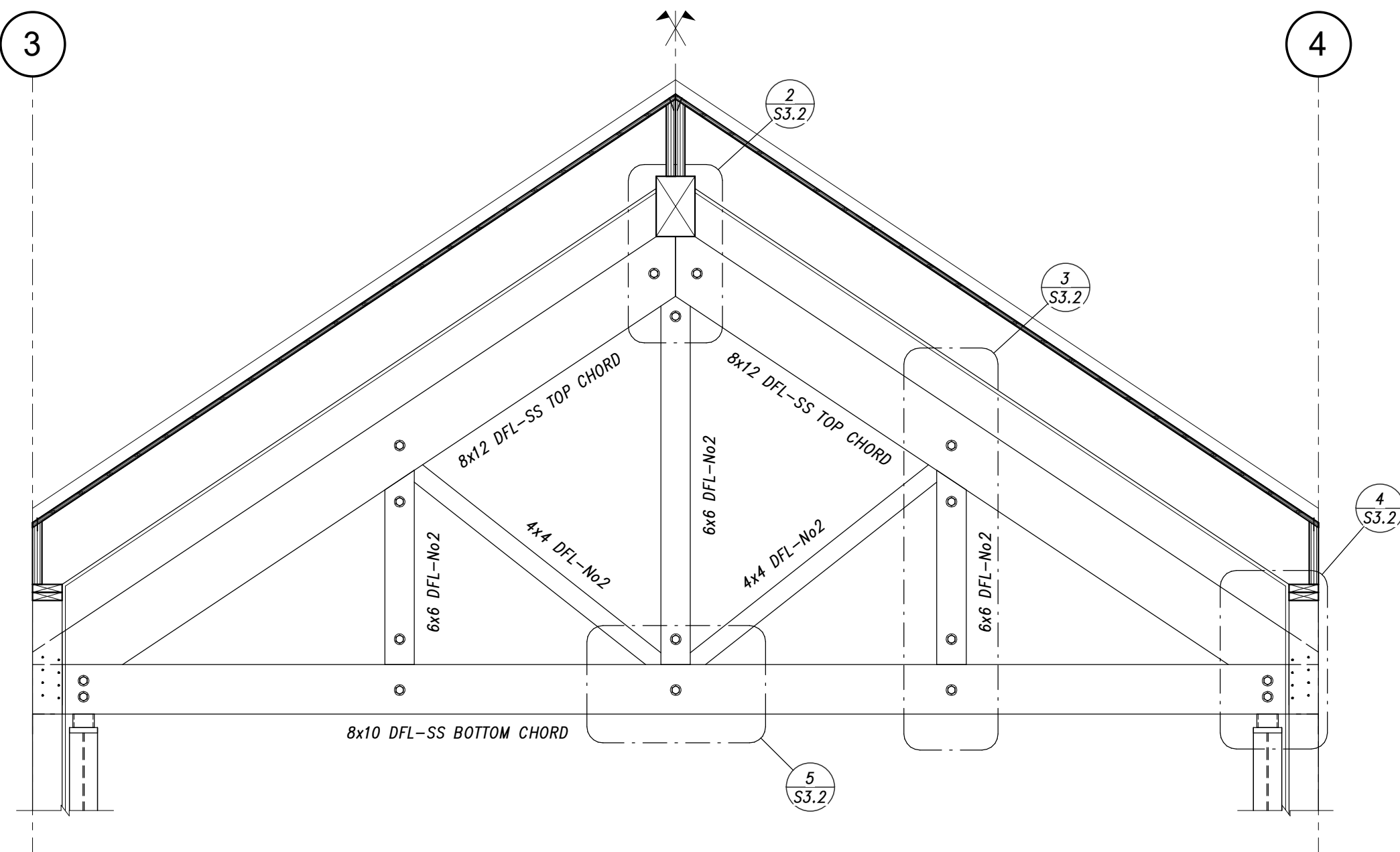
4 TRUSS TO COLUMN CONNECTION
1" = 1'-0"



3 TRUSS CONNECTION DETAIL
1" = 1'-0"



2 TIMBER TRUSS RIDGE DETAIL
1" = 1'-0"



1 GREAT ROOM TRUSS ELEVATION
1/2" = 1'-0"

ALL EXPOSED BOLTS TO BE UNCOATED BARE A307 STEEL, RE: ARCH

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INTERIOR TRUSS

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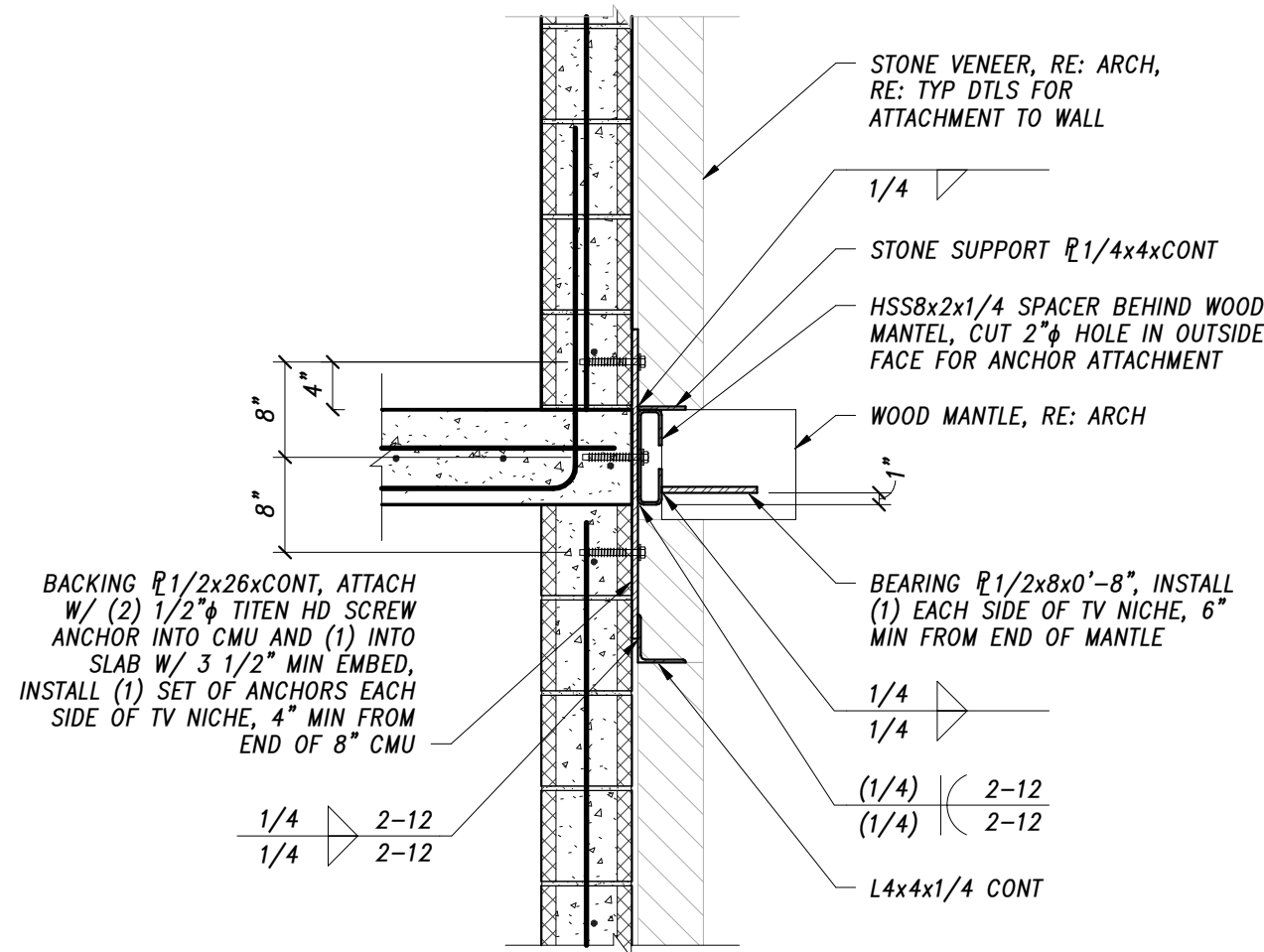
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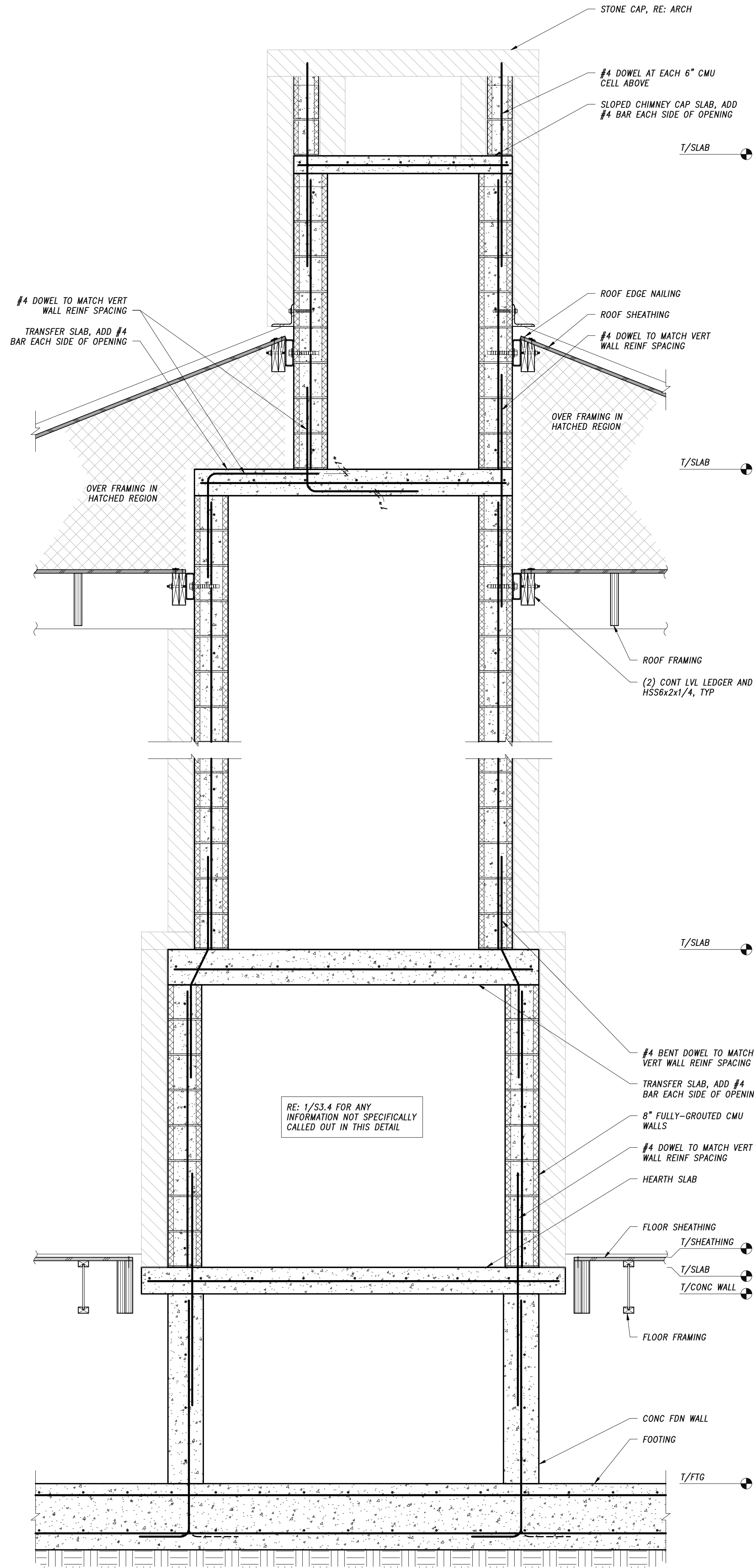
3 STONE AND MANTLE SUPPORT DETAIL

3/4" = 1'-0"



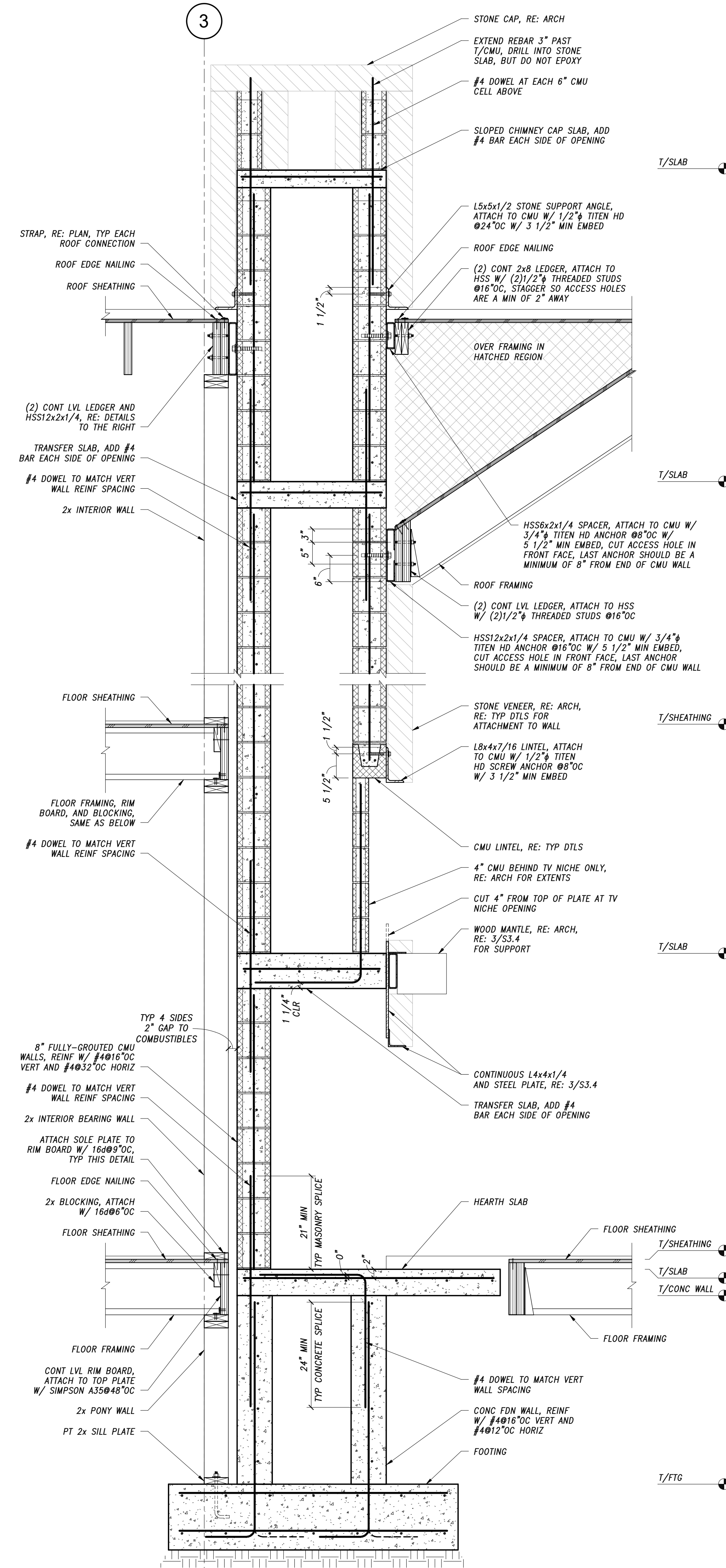
2 CHIMNEY SECTION

3/4" = 1'-0"



1 CHIMNEY SECTION

3/4" = 1'-0"



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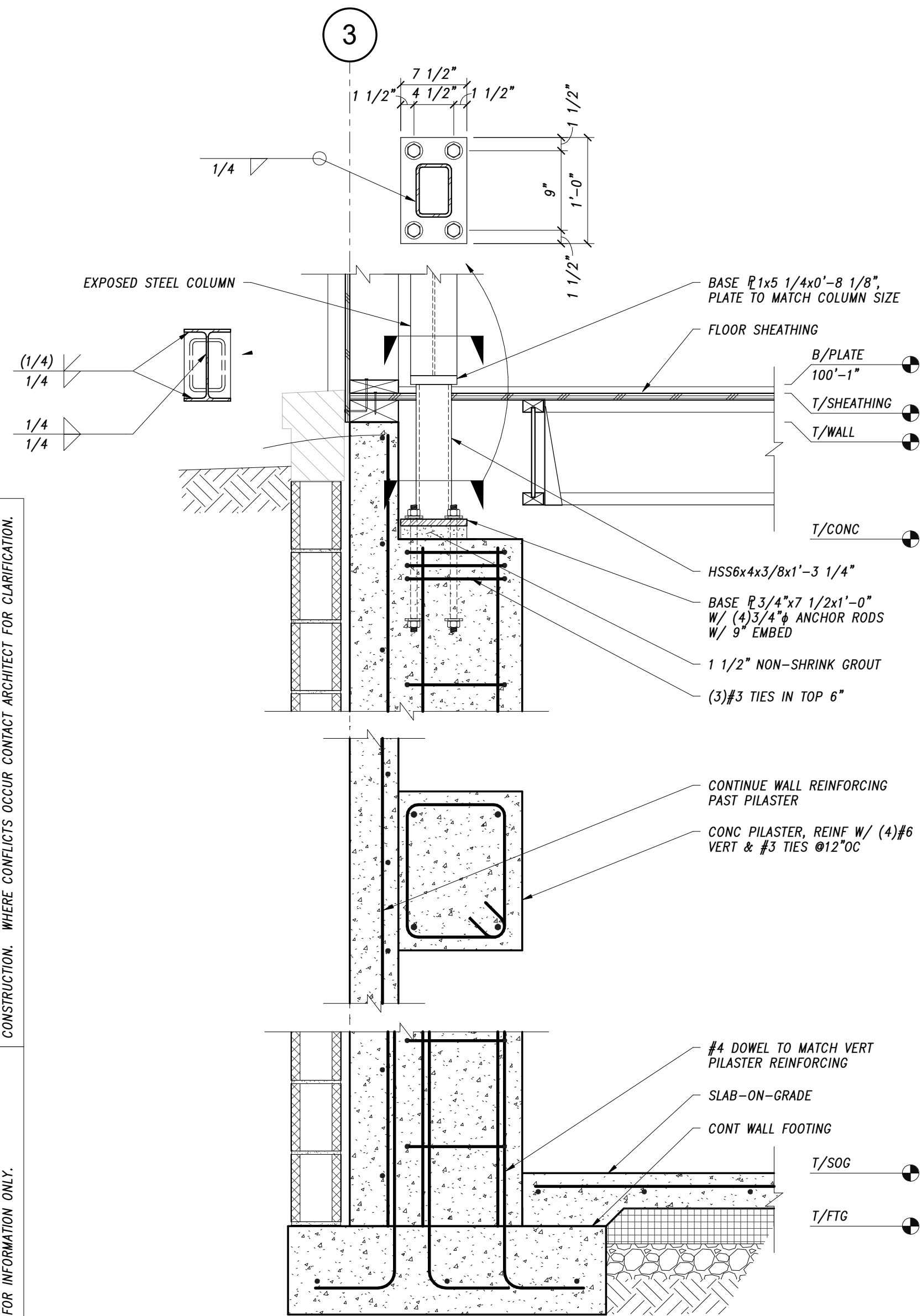
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CHIMNEY
SECTIONS

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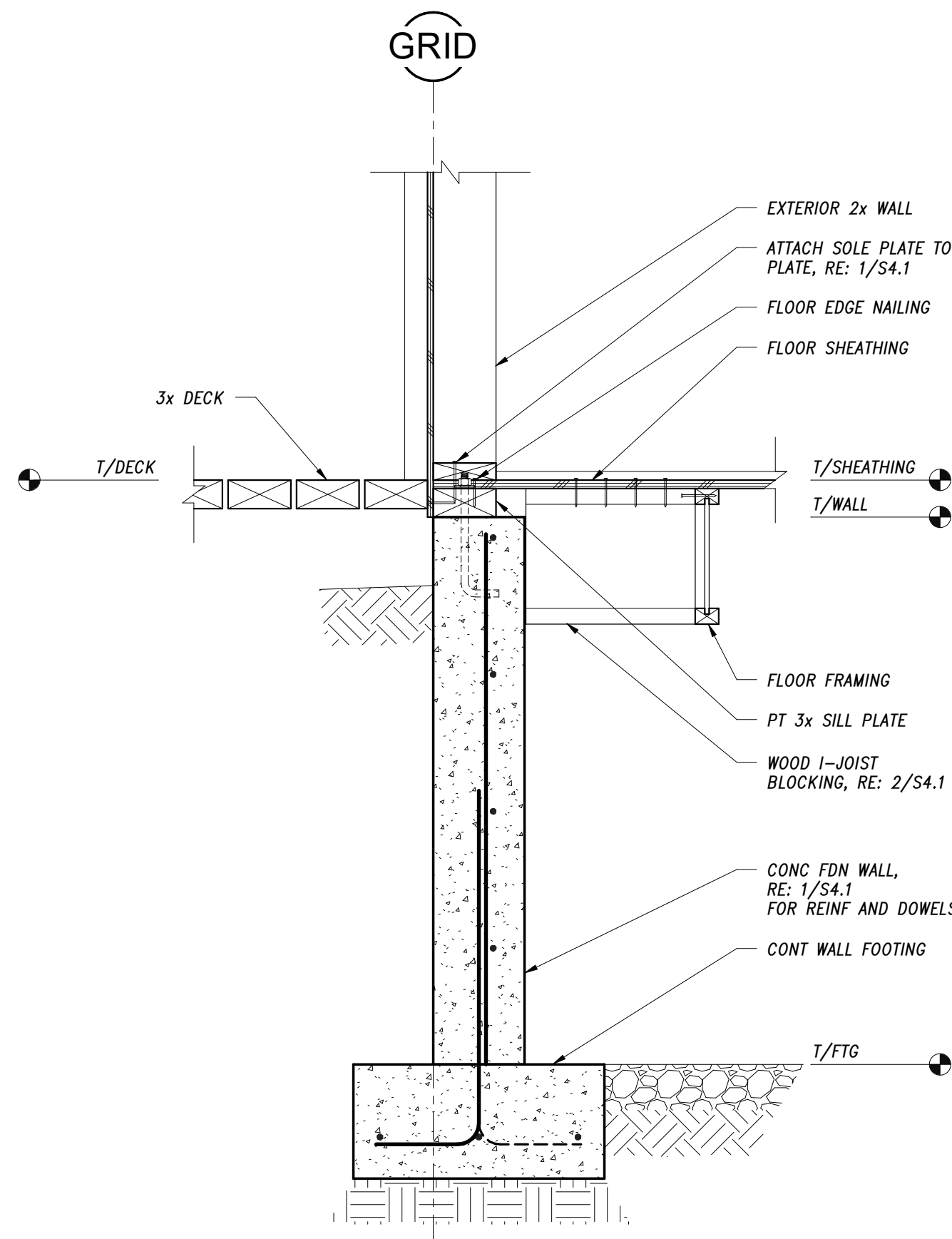


2 FOUNDATION SECTION
1" = 1'-0"

4 SOG FOUNDATION SECTION
1" = 1'-0"

6 BASEMENT SECTION
1" = 1'-0"

8 COLUMN BASE DETAIL
1" = 1'-0"

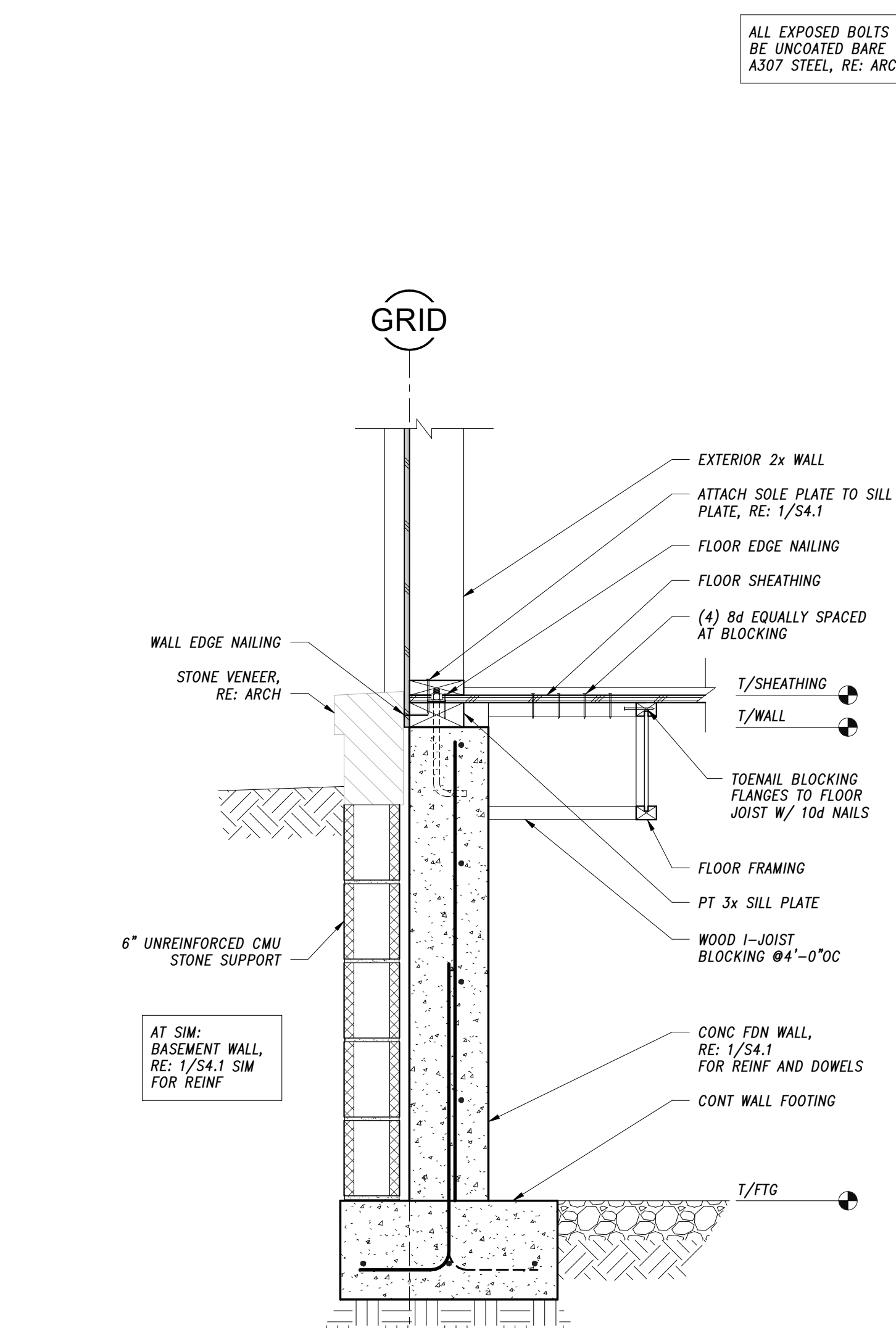
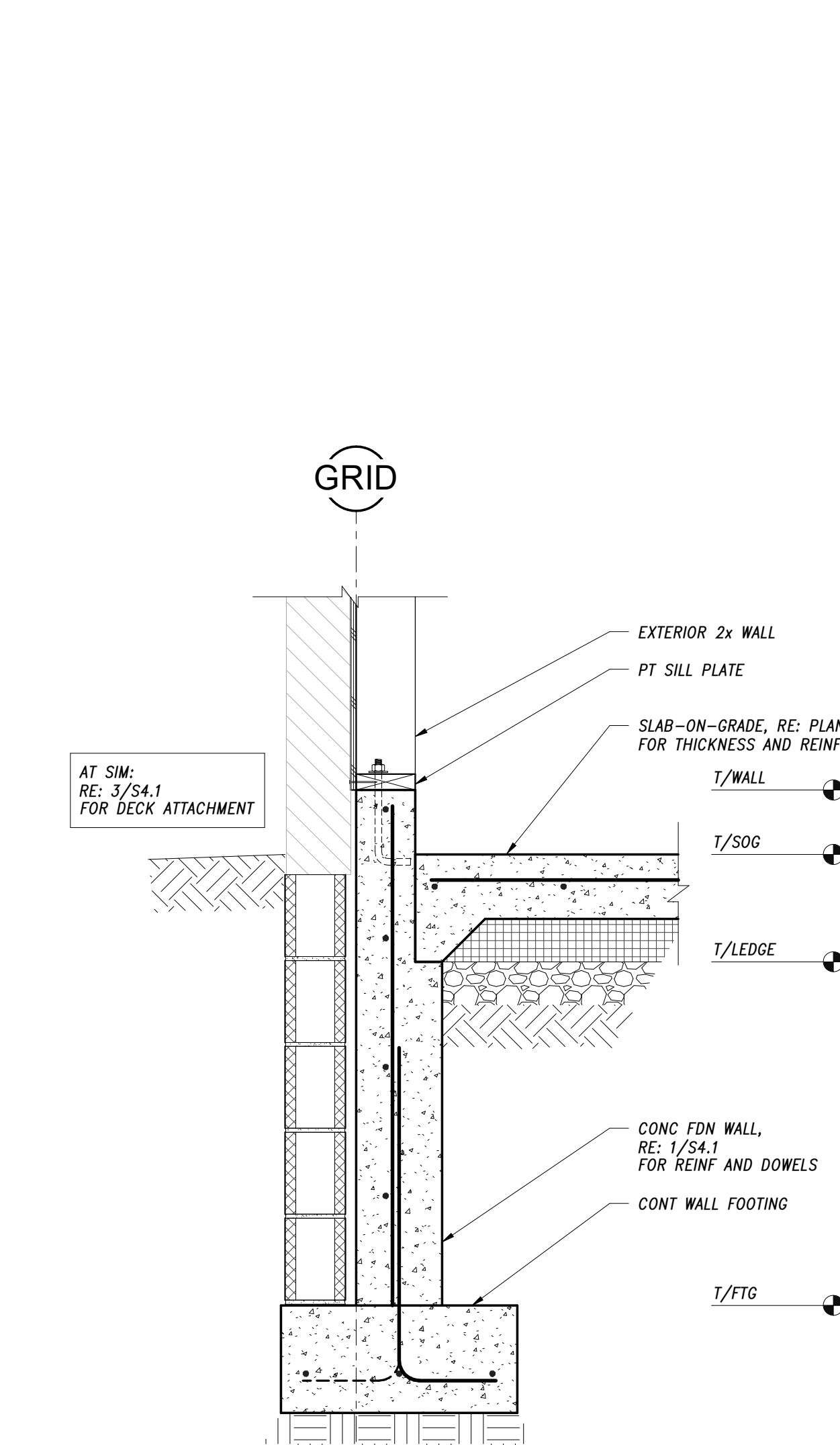
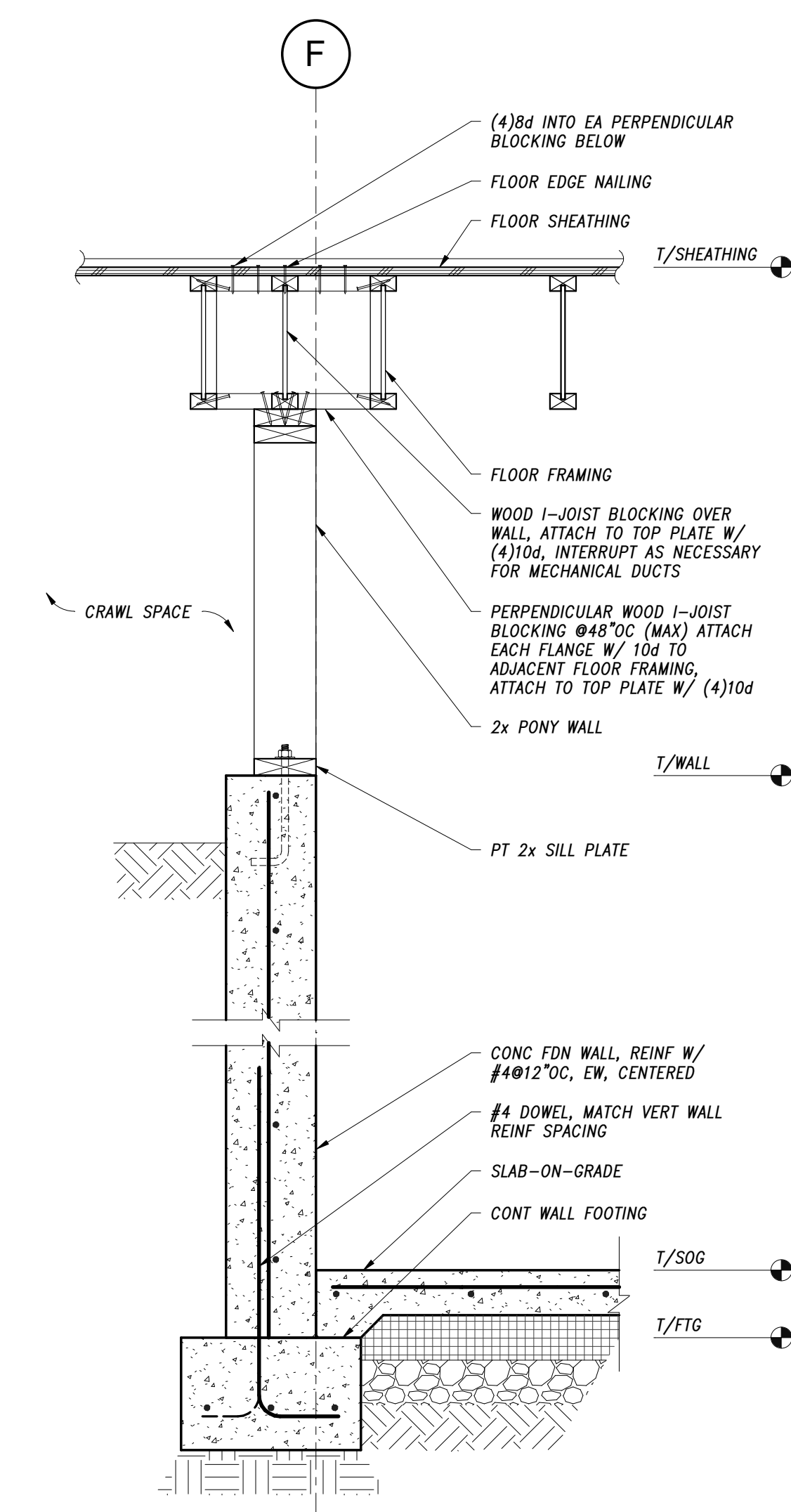
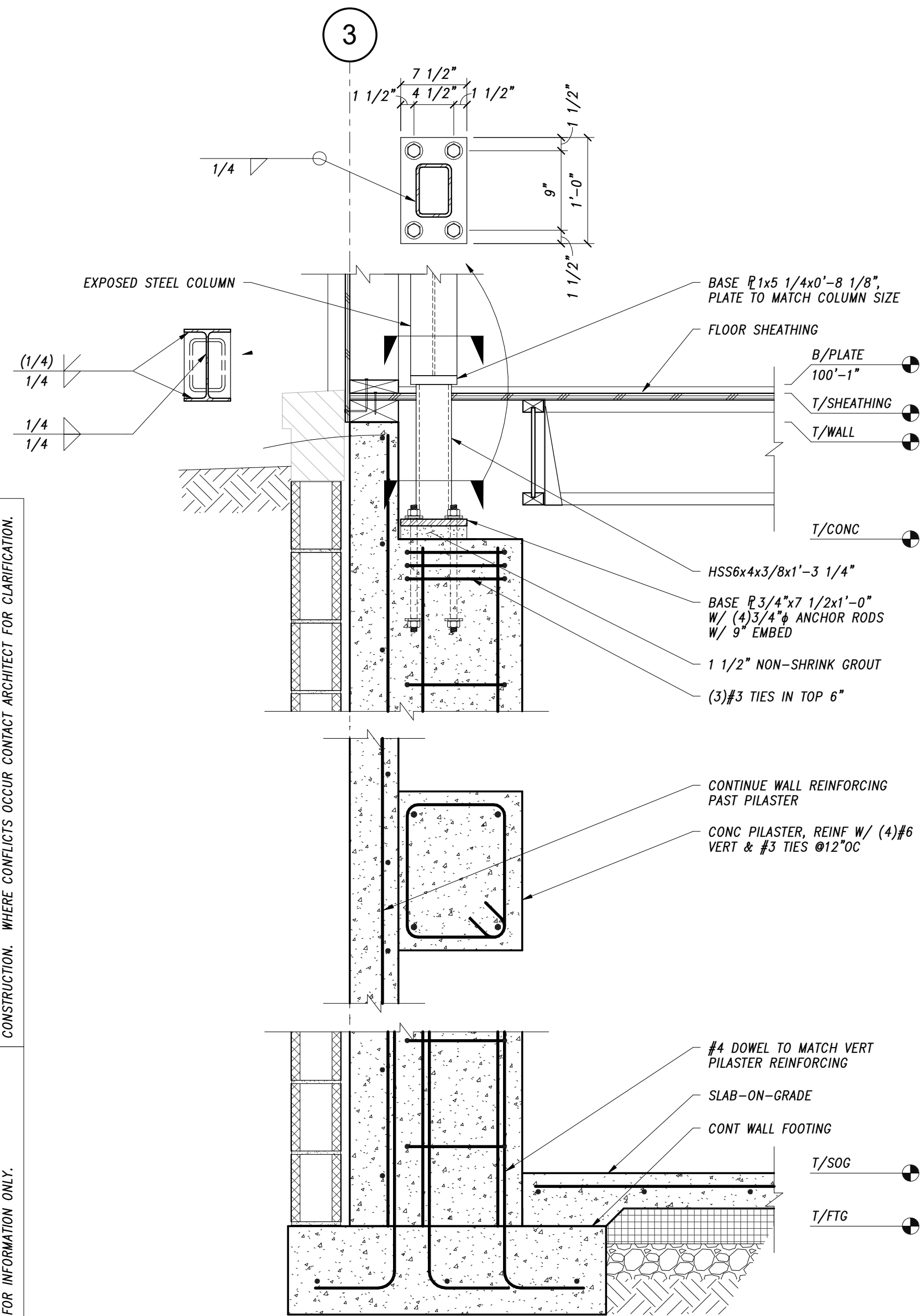
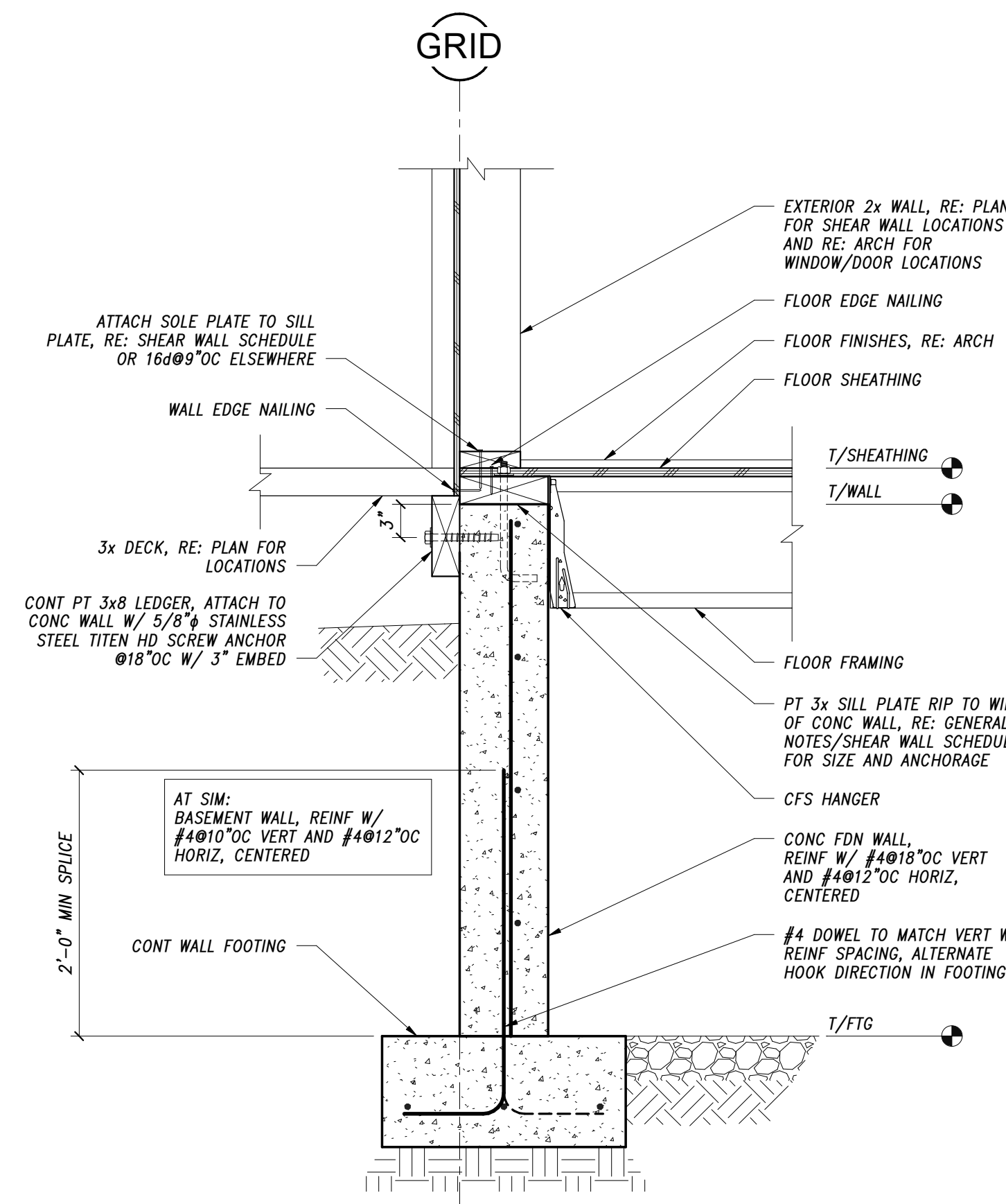
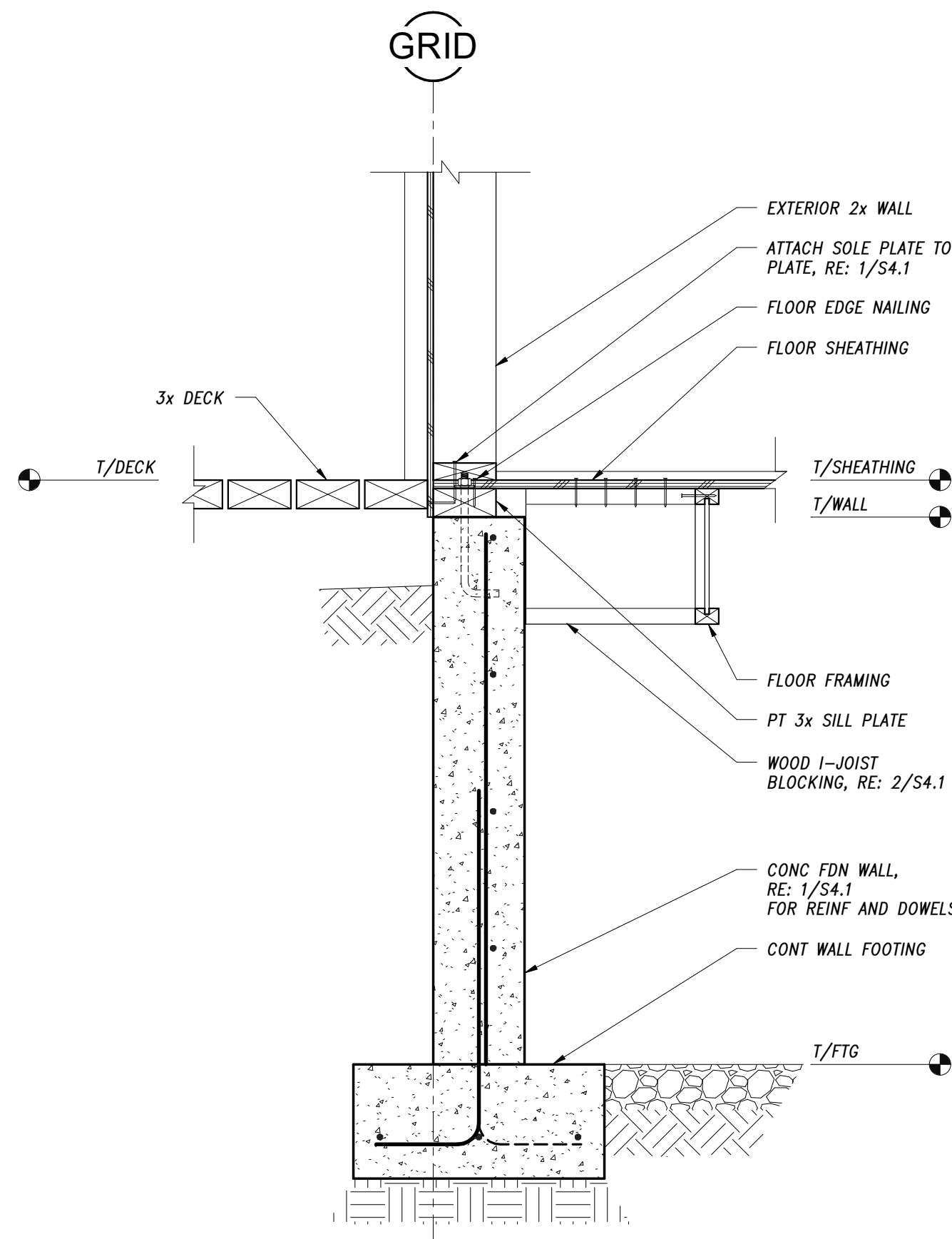
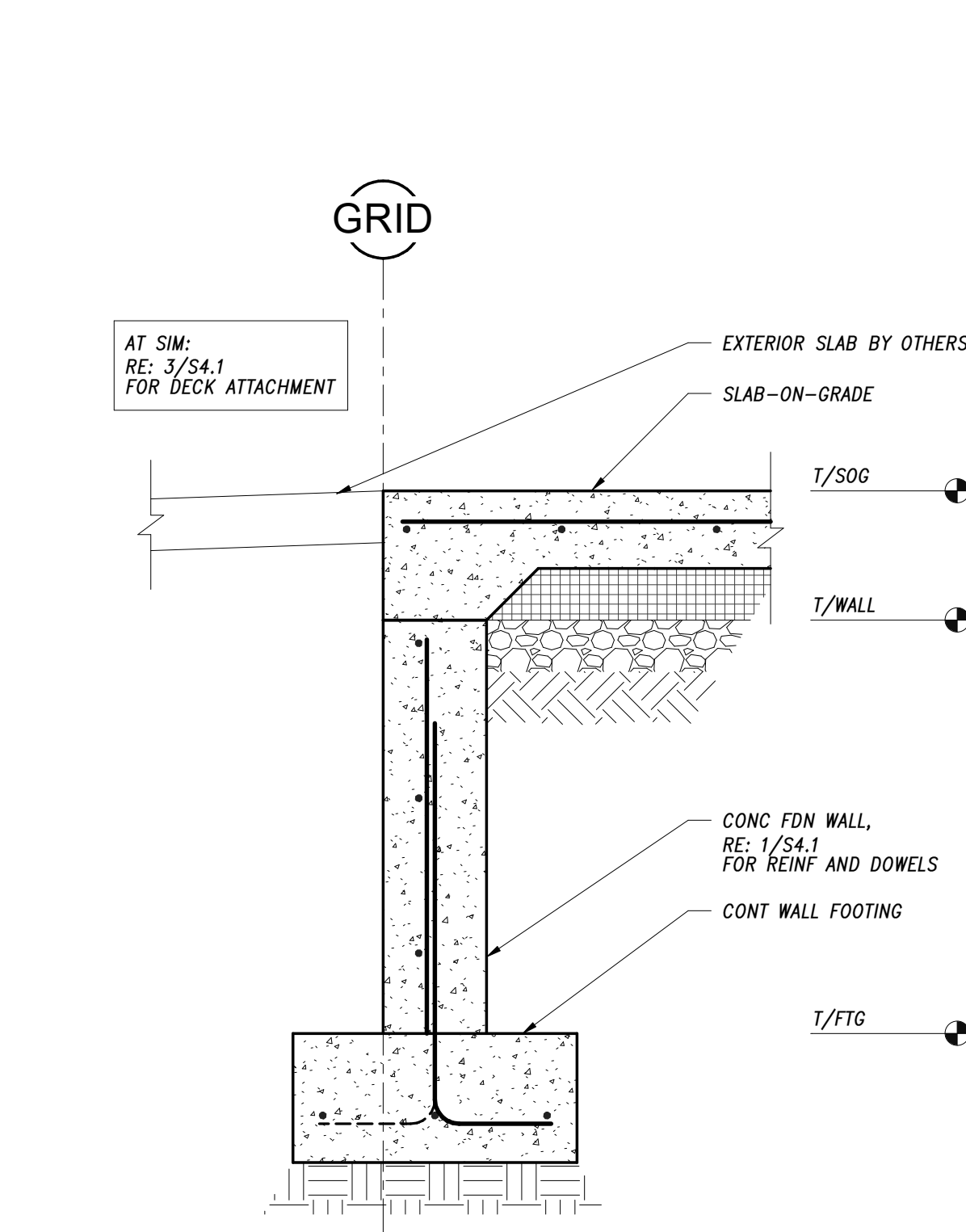
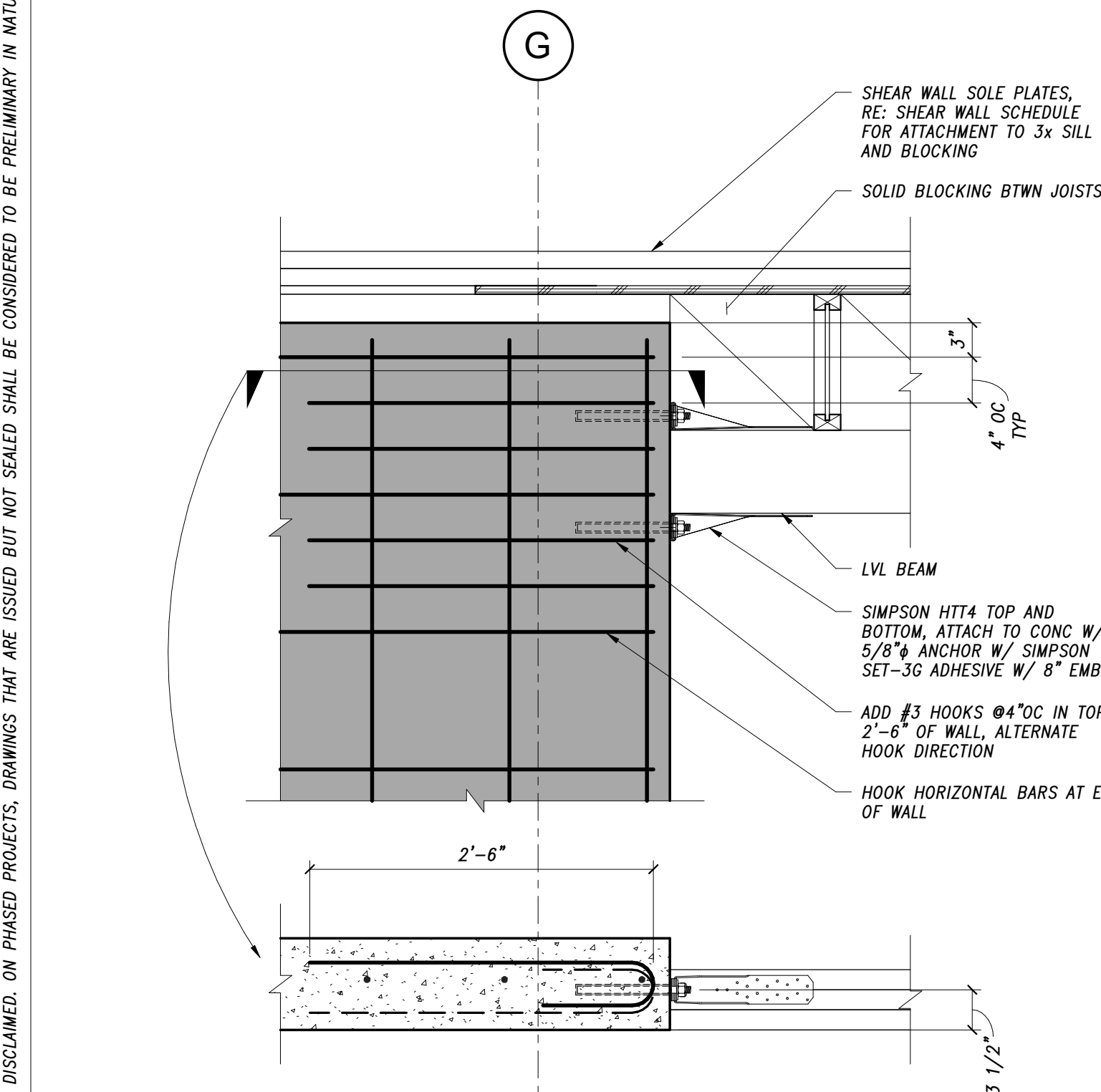


1 FOUNDATION SECTION
1" = 1'-0"

3 FOUNDATION SECTION AT DECK
1" = 1'-0"

5 SOG THRESHOLD SECTION
1" = 1'-0"

7 LVL CONNECTION DETAIL
1" = 1'-0"



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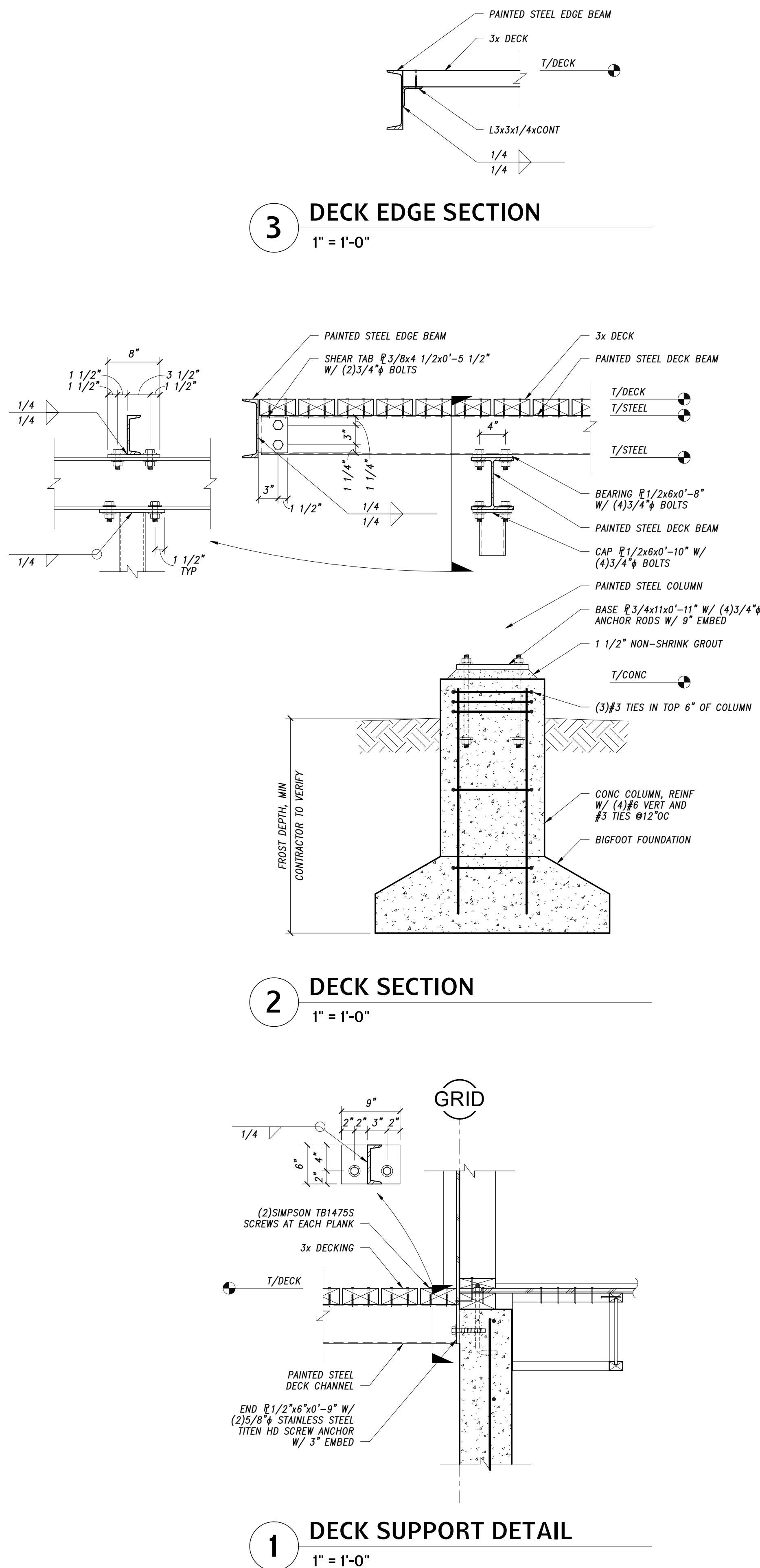
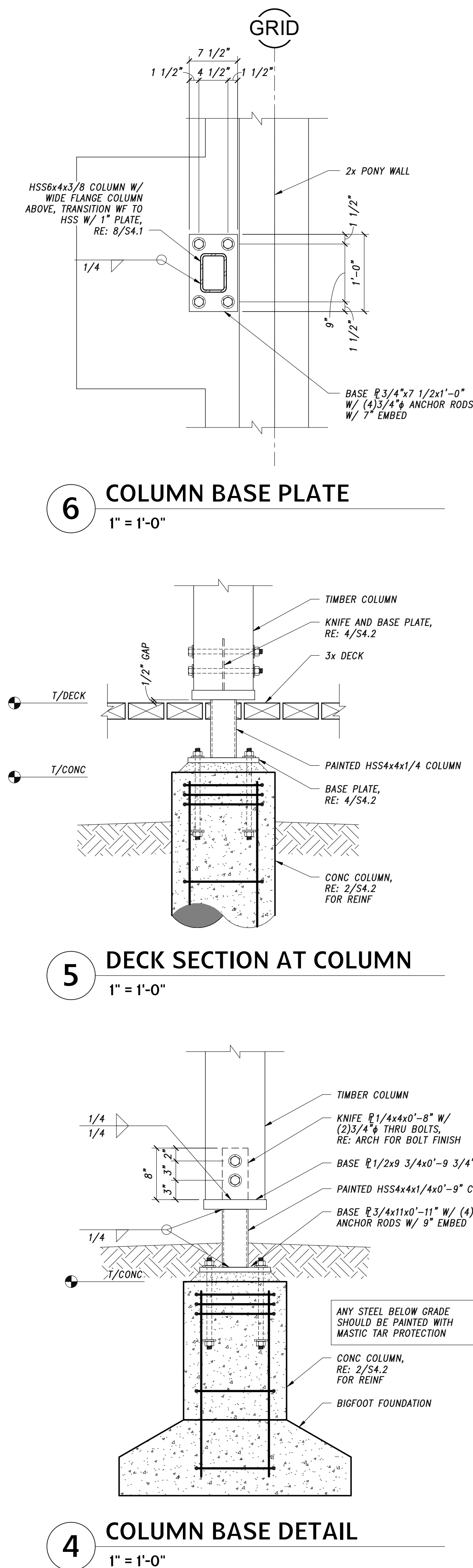
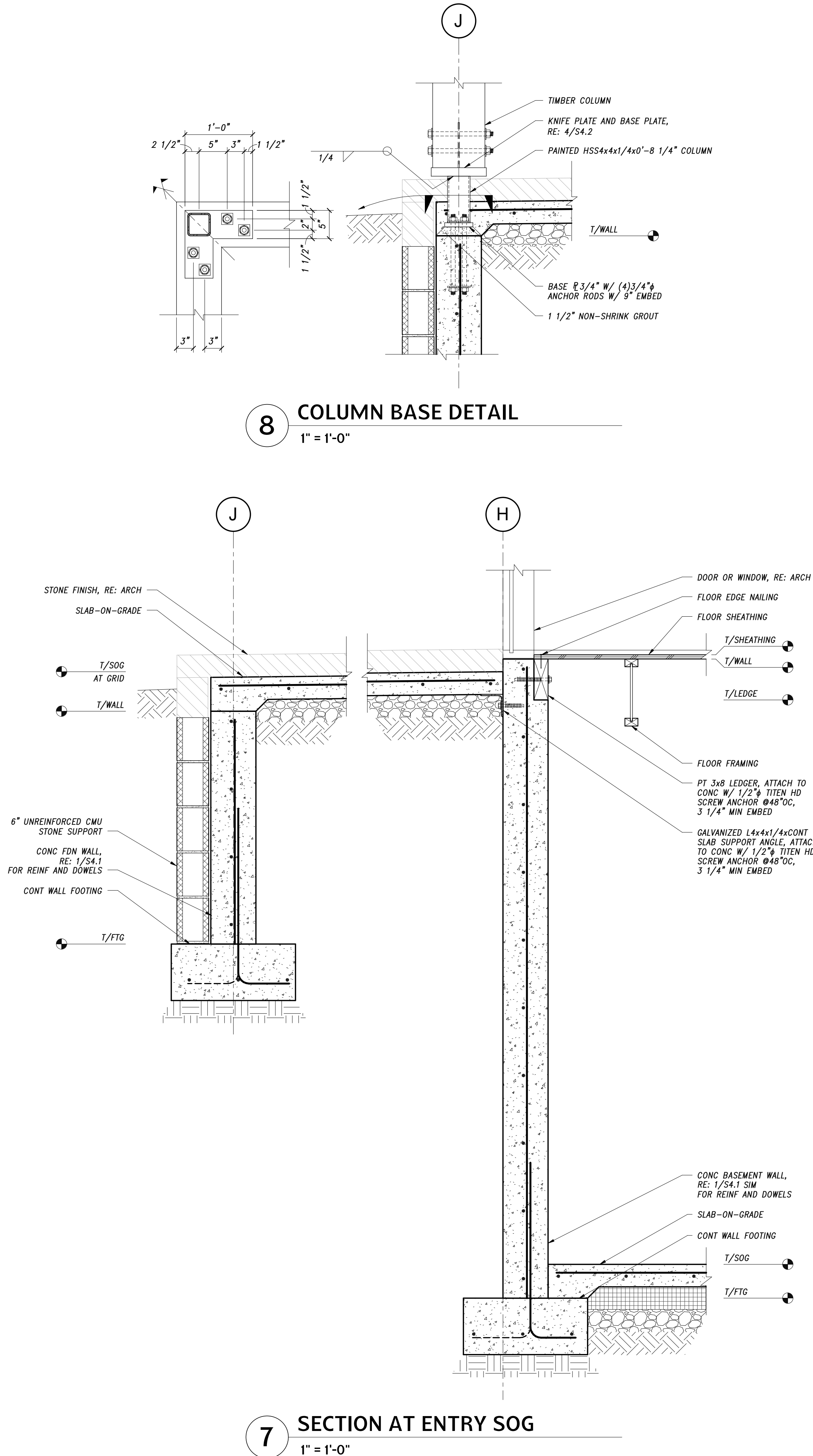
S4.1

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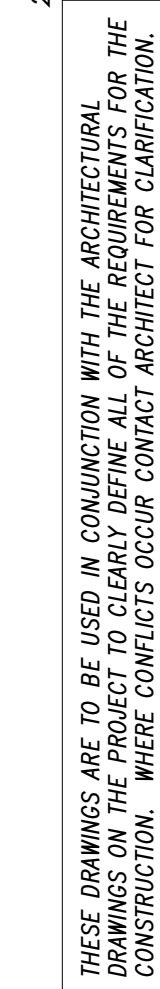
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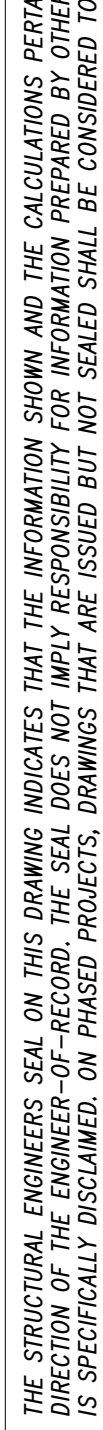
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6 NOR FOR ANY INFORMATION NOT SHOWN ON THIS DRAWING AND SUCH RESPONSIBILITY
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10 SHEAR WALL SECTION
1" = 1'-0"



7 FLOOR SECTION
1" = 1'-0"

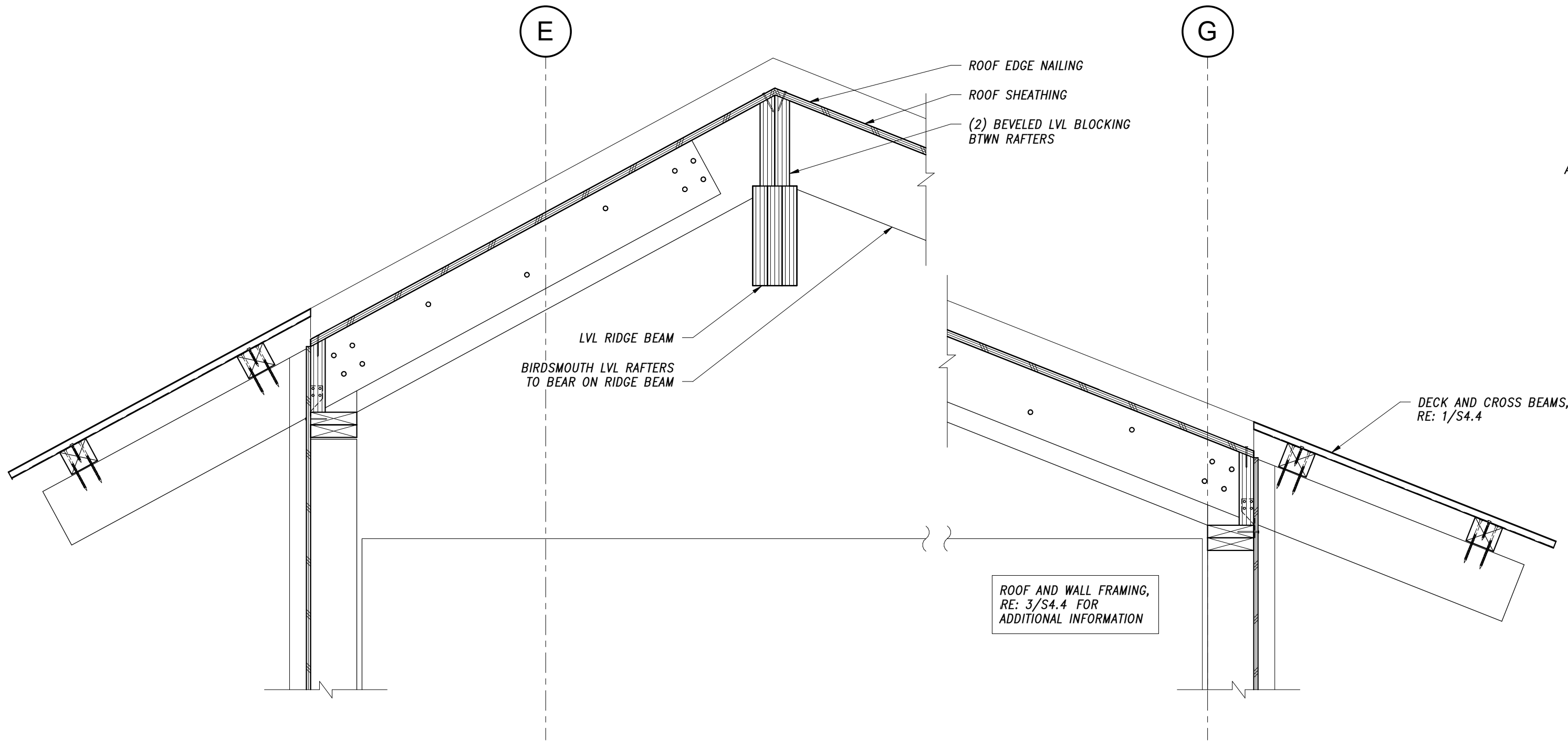
4 SWSB ATTACHMENT DETAIL
1" = 1'-0"

1 GARAGE TRANSITION SECTION
1" = 1'-0"

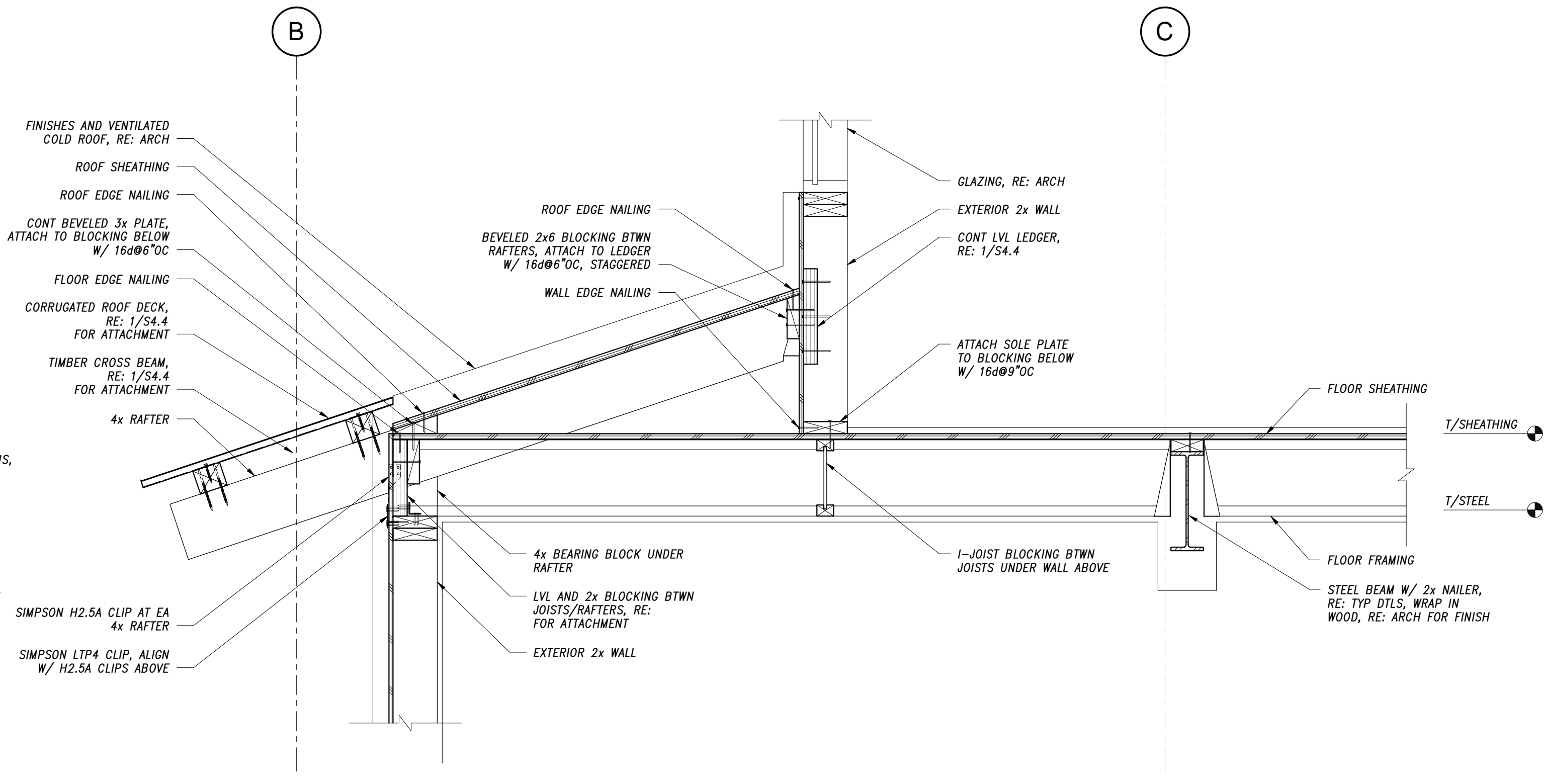


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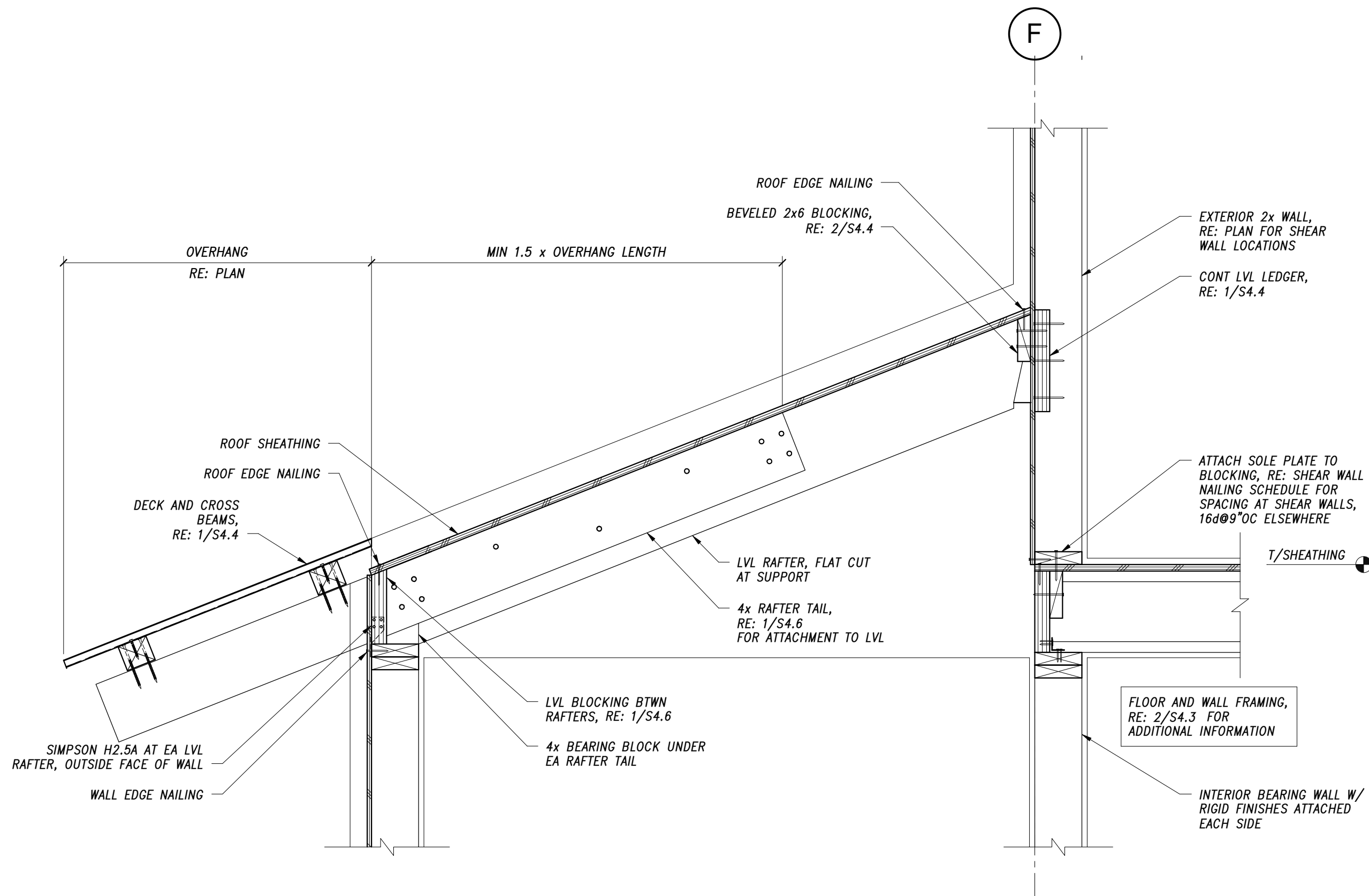
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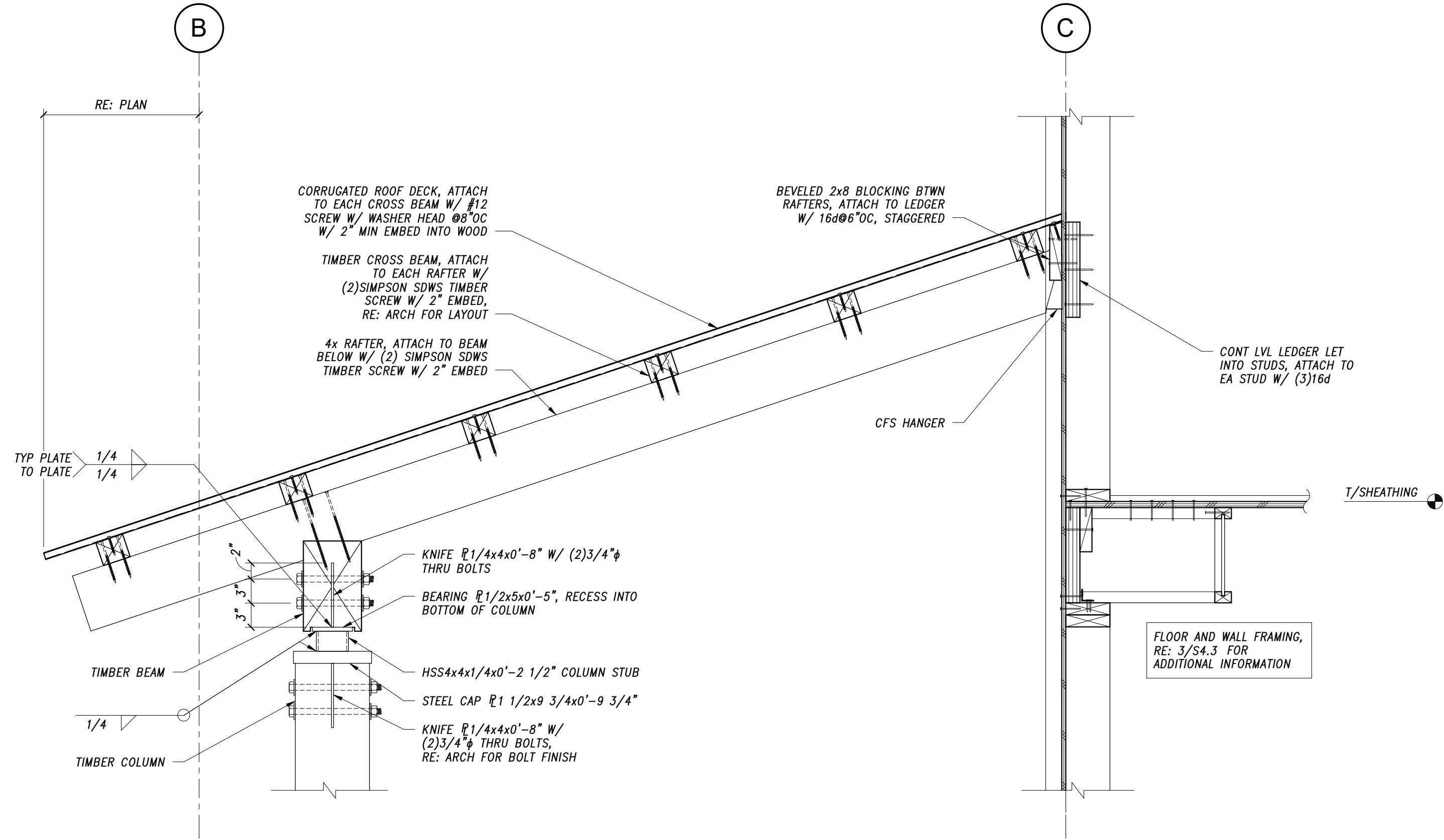
4 CONNECTOR SECTION
1" = 1'-0"



2 LOW ROOF TRANSITION
1" = 1'-0"



3 LOW ROOF SECTION
1" = 1'-0"



1 LOW ROOF SECTION
1" = 1'-0"

ALL EXPOSED BOLTS TO
BE UNCOATED BARE
A307 STEEL, RE: ARCH

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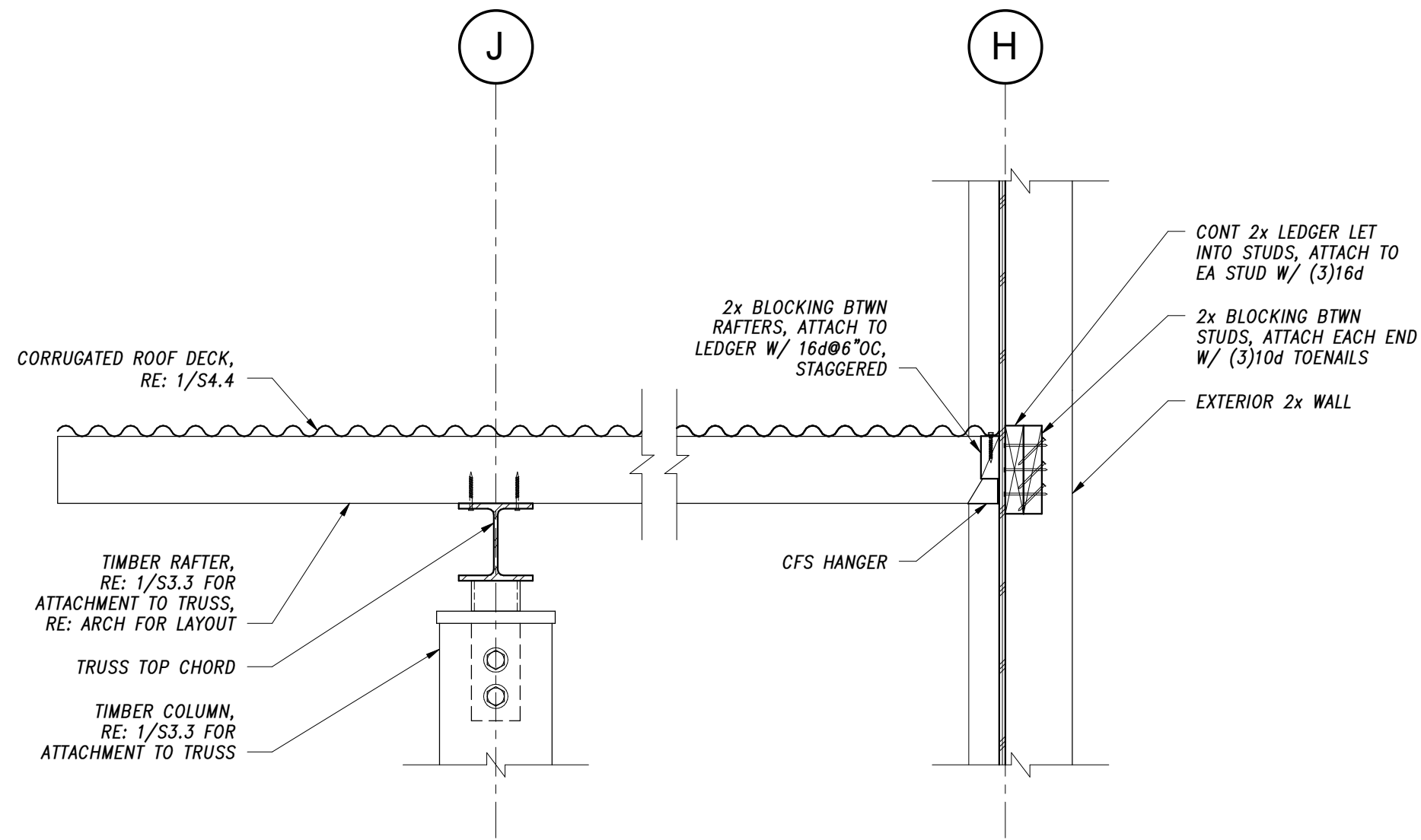
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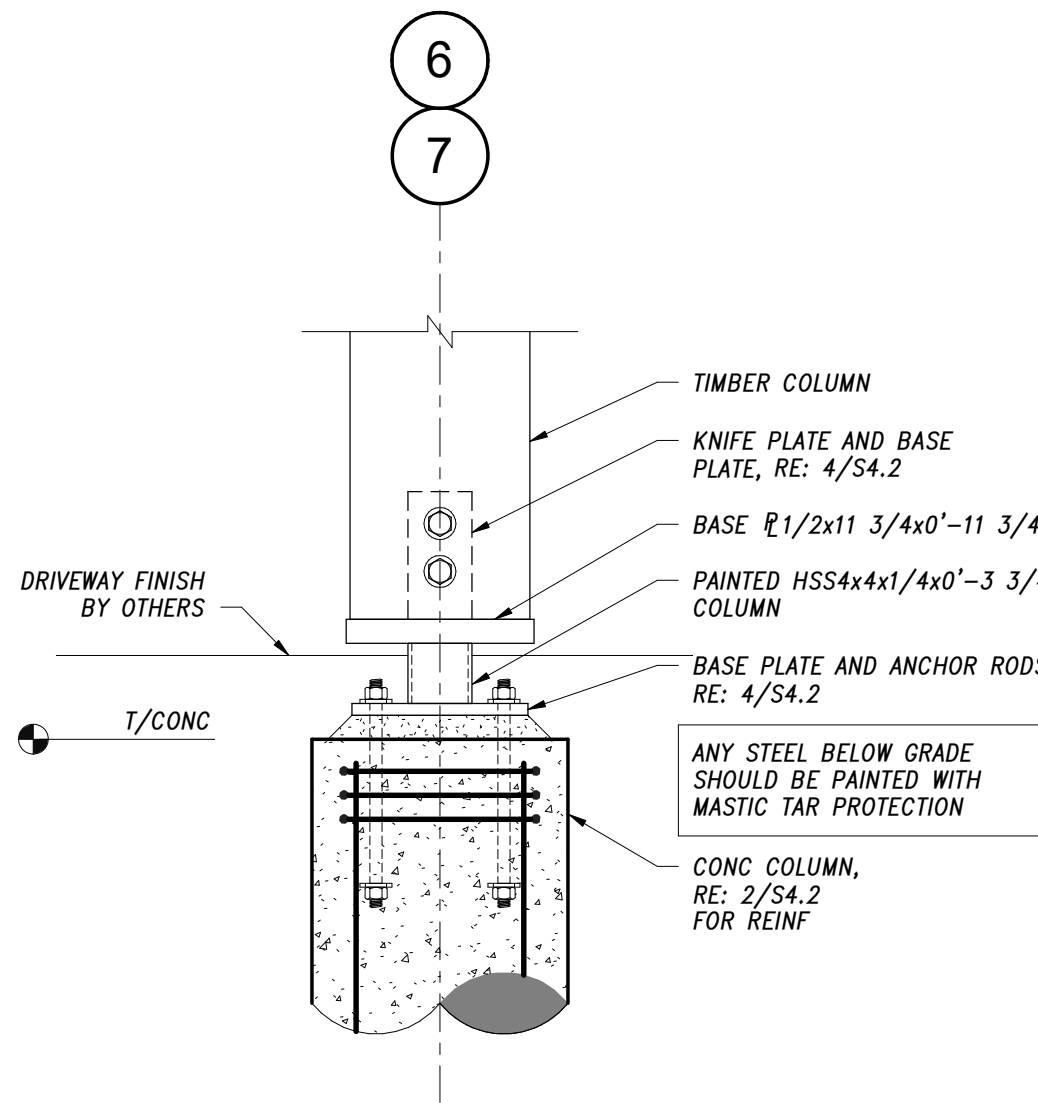
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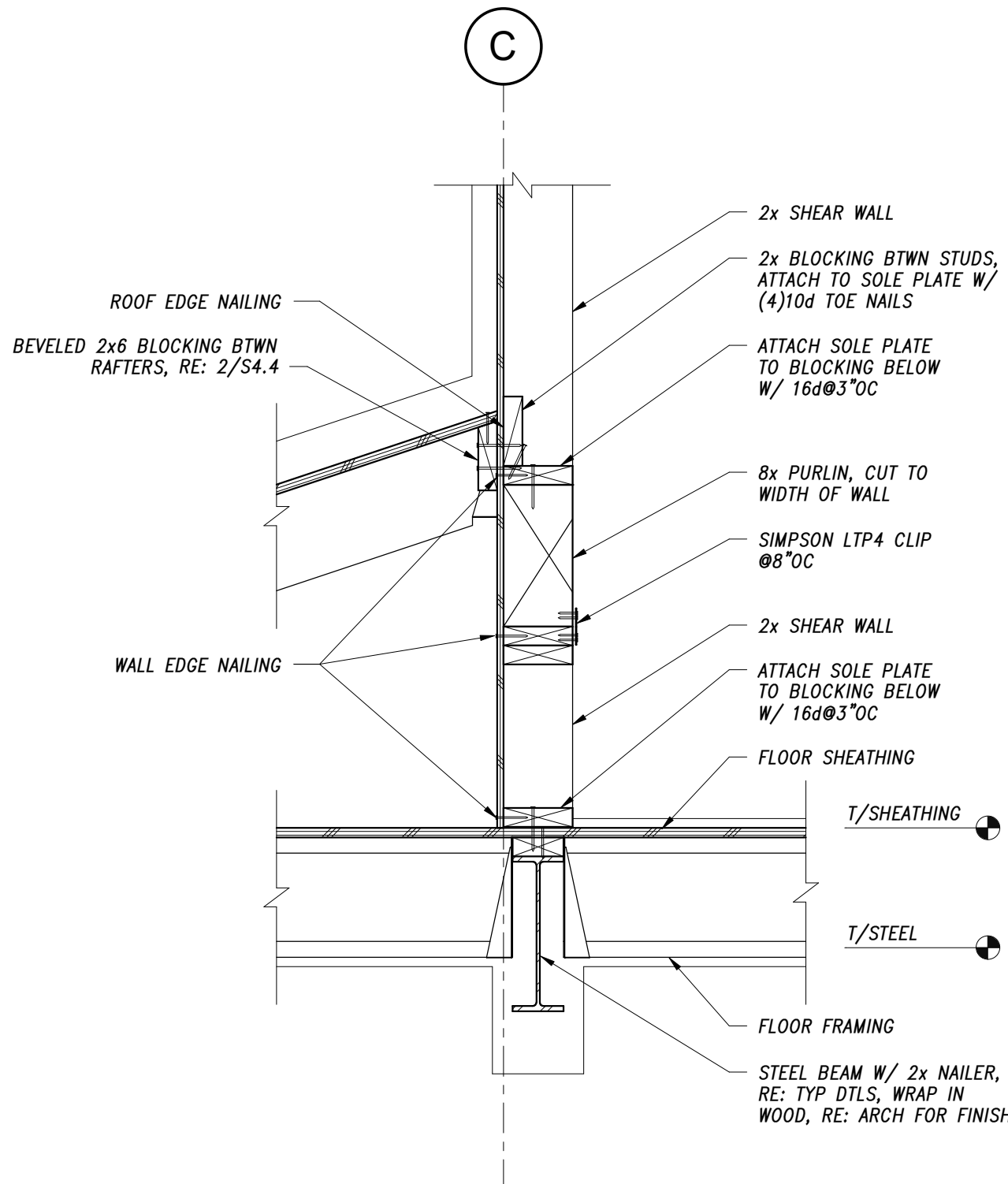
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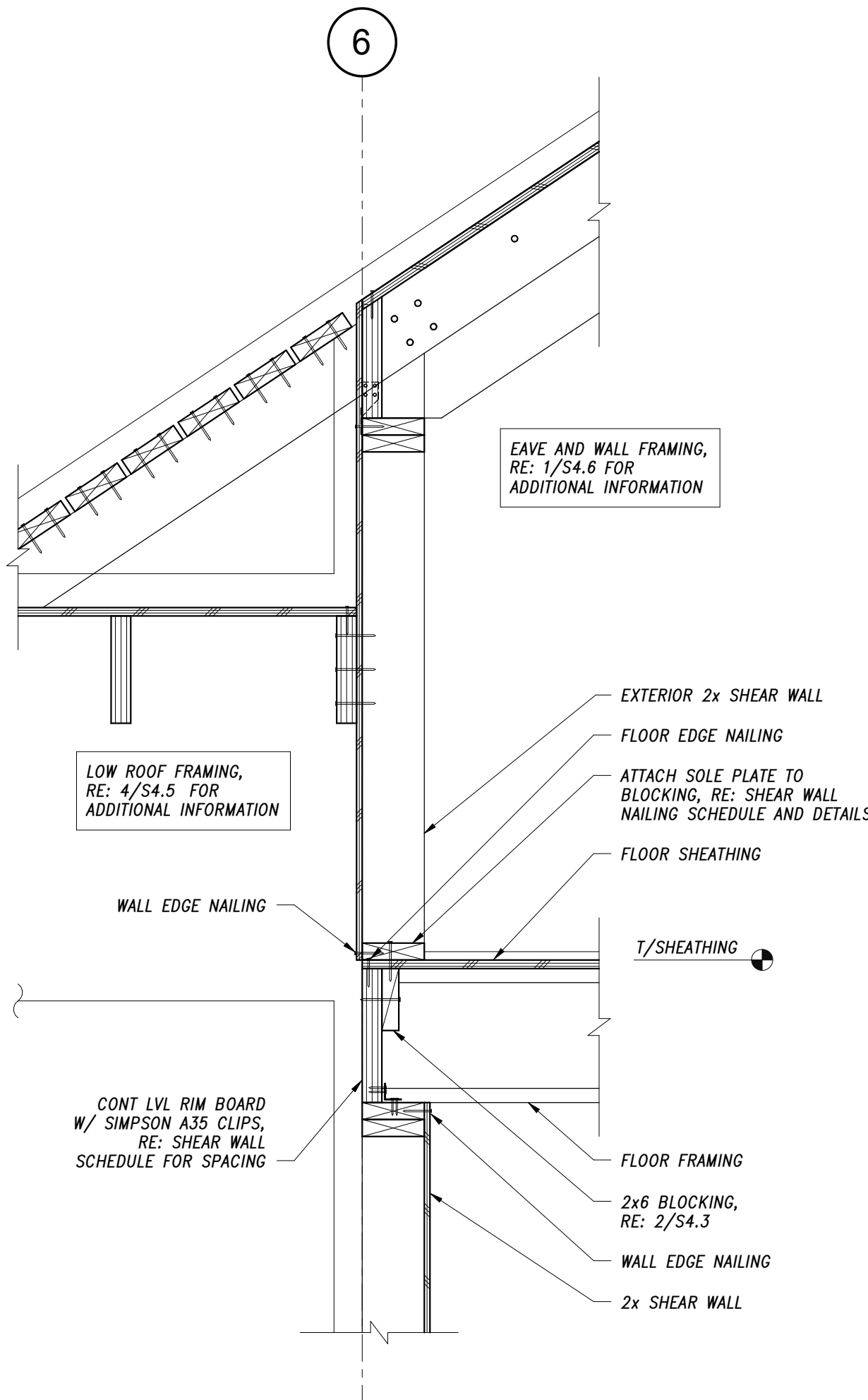
10 ENTRY ROOF SECTION
1" = 1'-0"



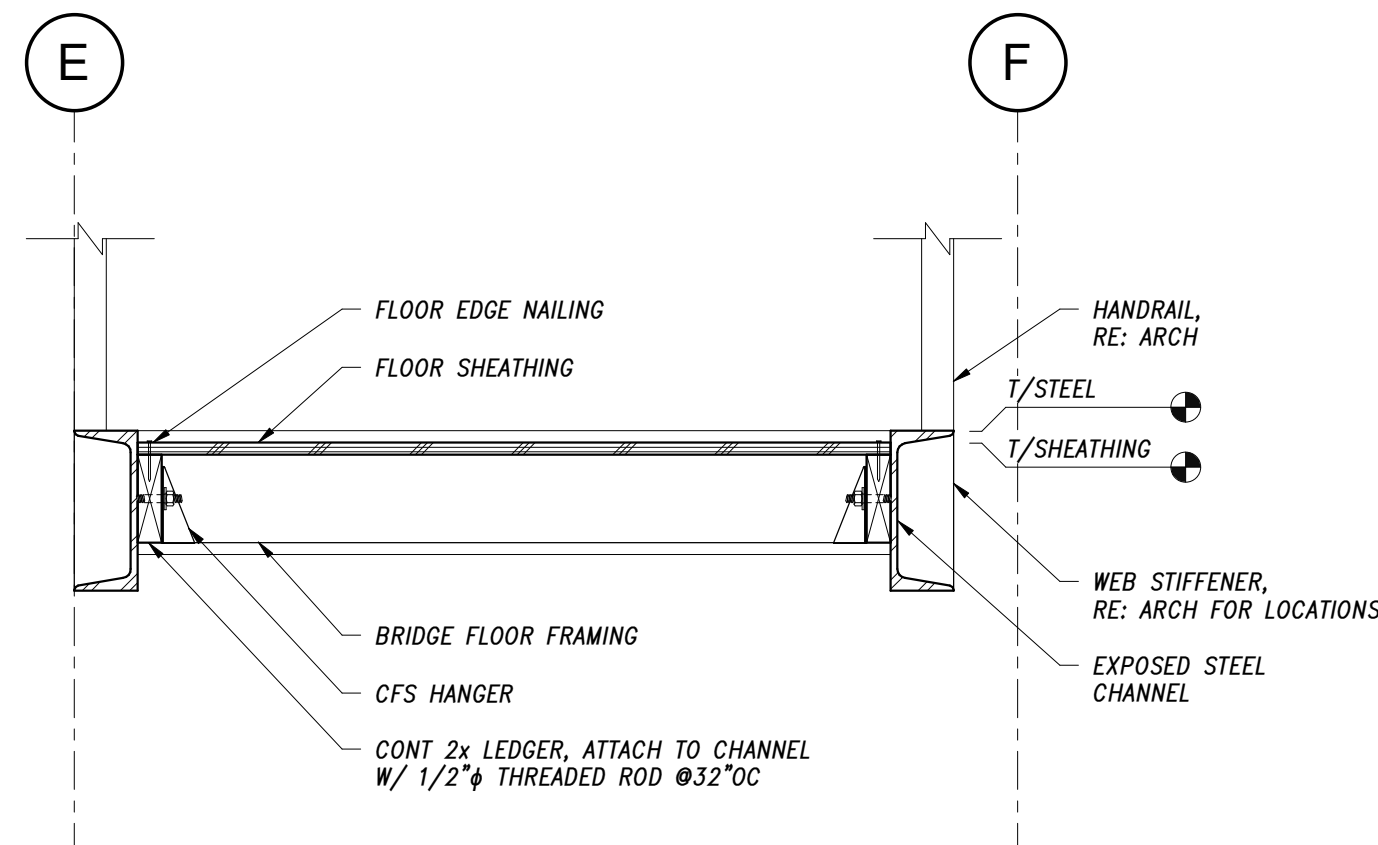
9 GARAGE COLUMN BASE
1" = 1'-0"



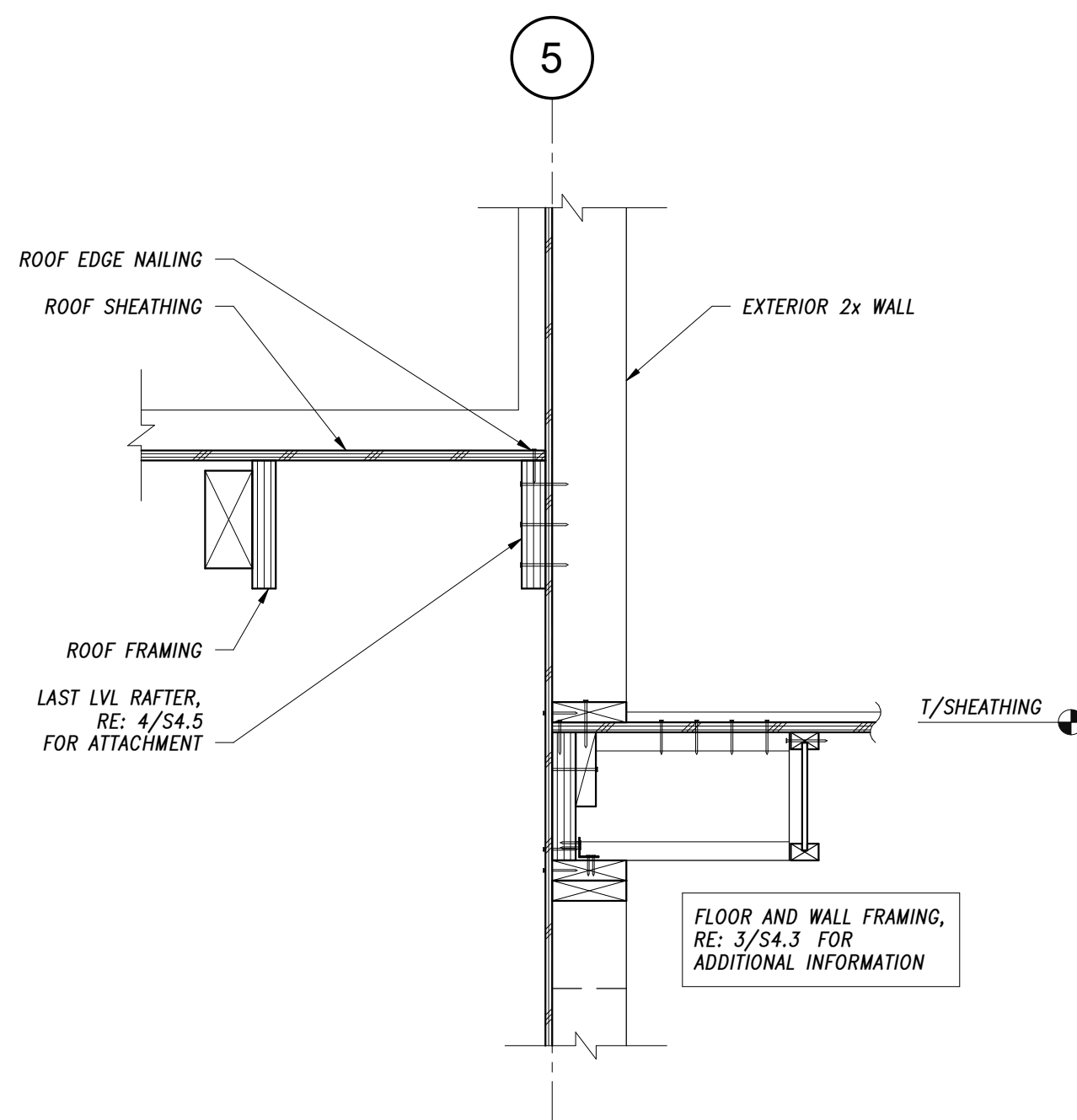
8 LOW ROOF TRANSITION
1" = 1'-0"



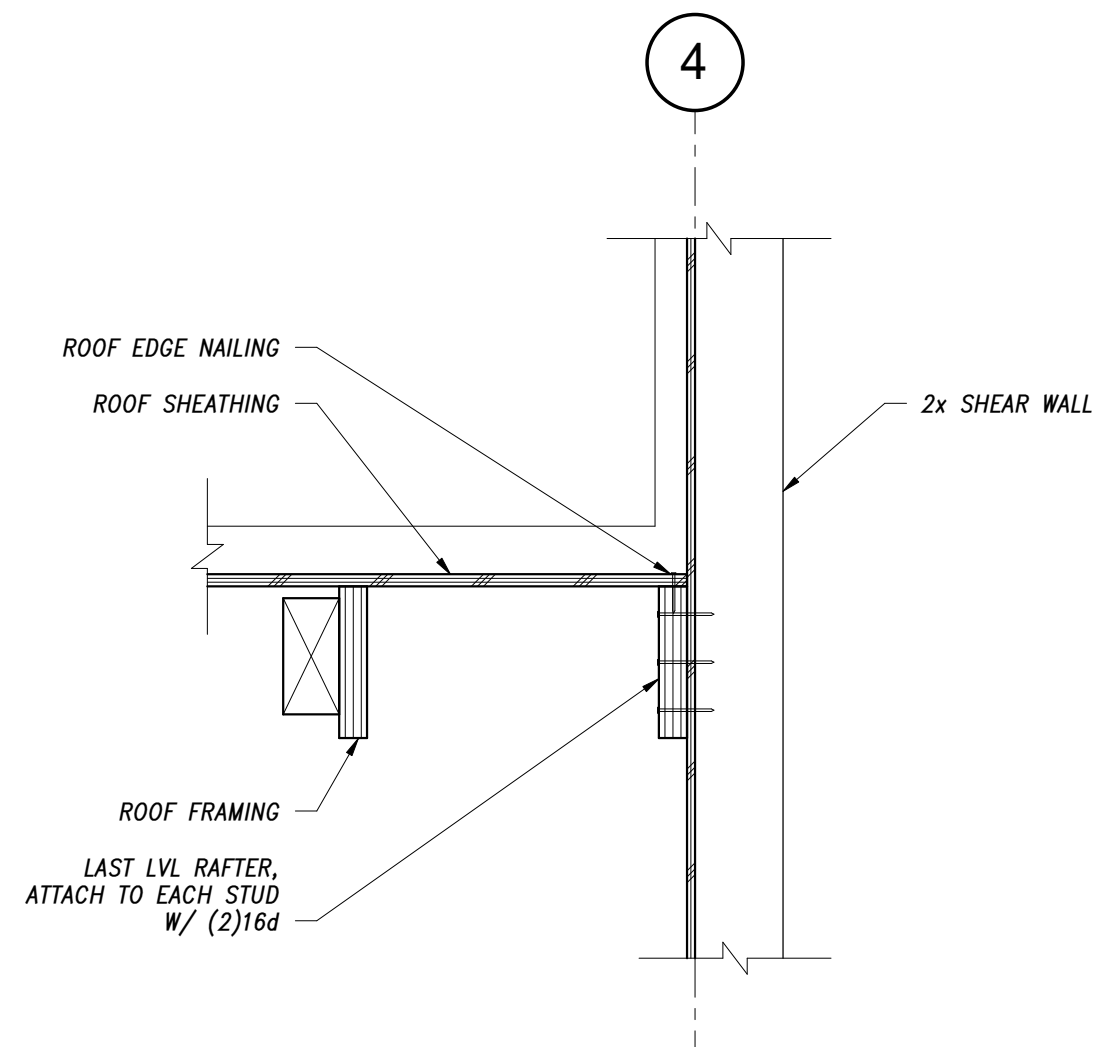
7 SHEAR WALL SECTION
1" = 1'-0"



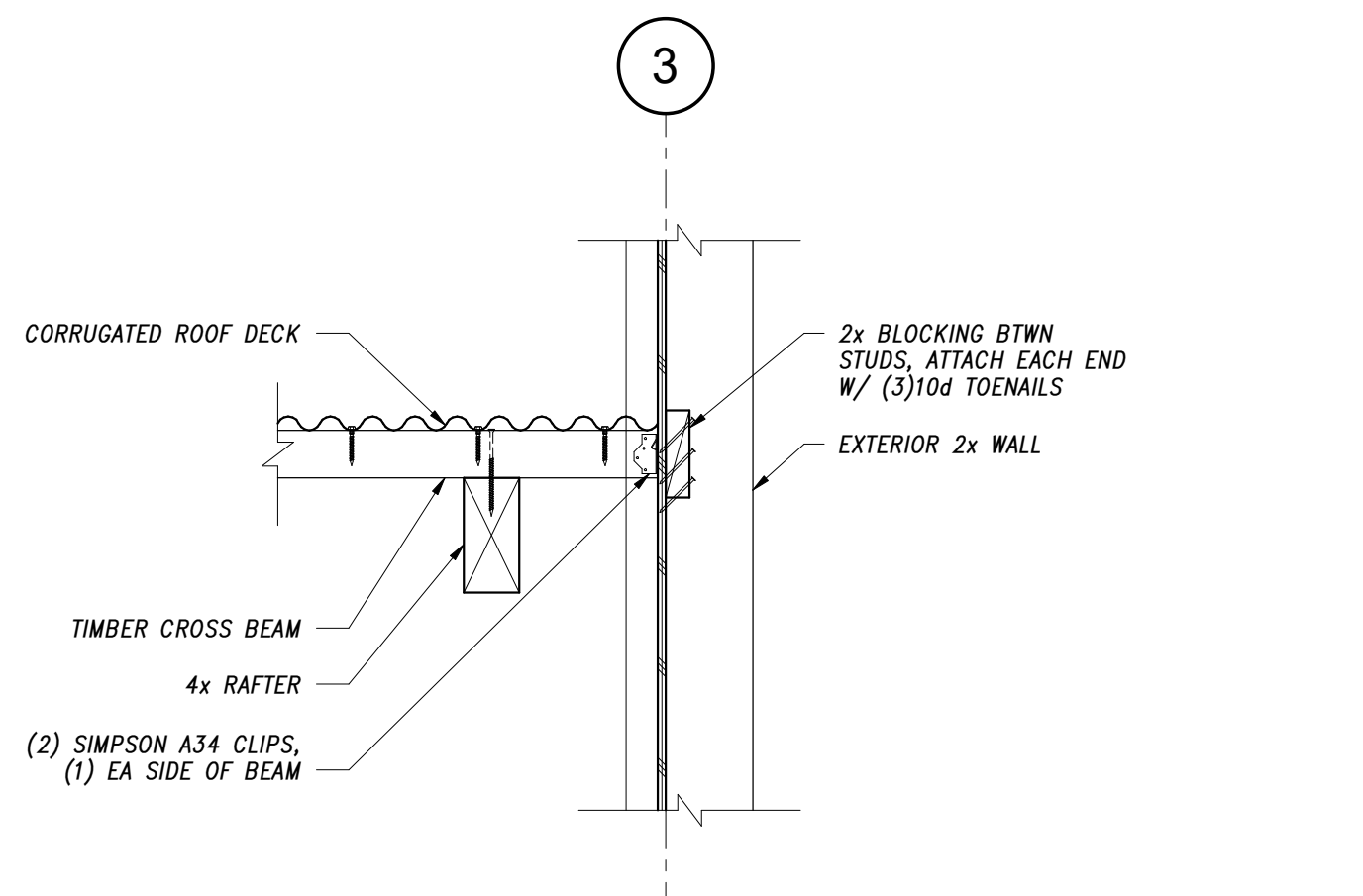
6 BRIDGE SECTION
1" = 1'-0"



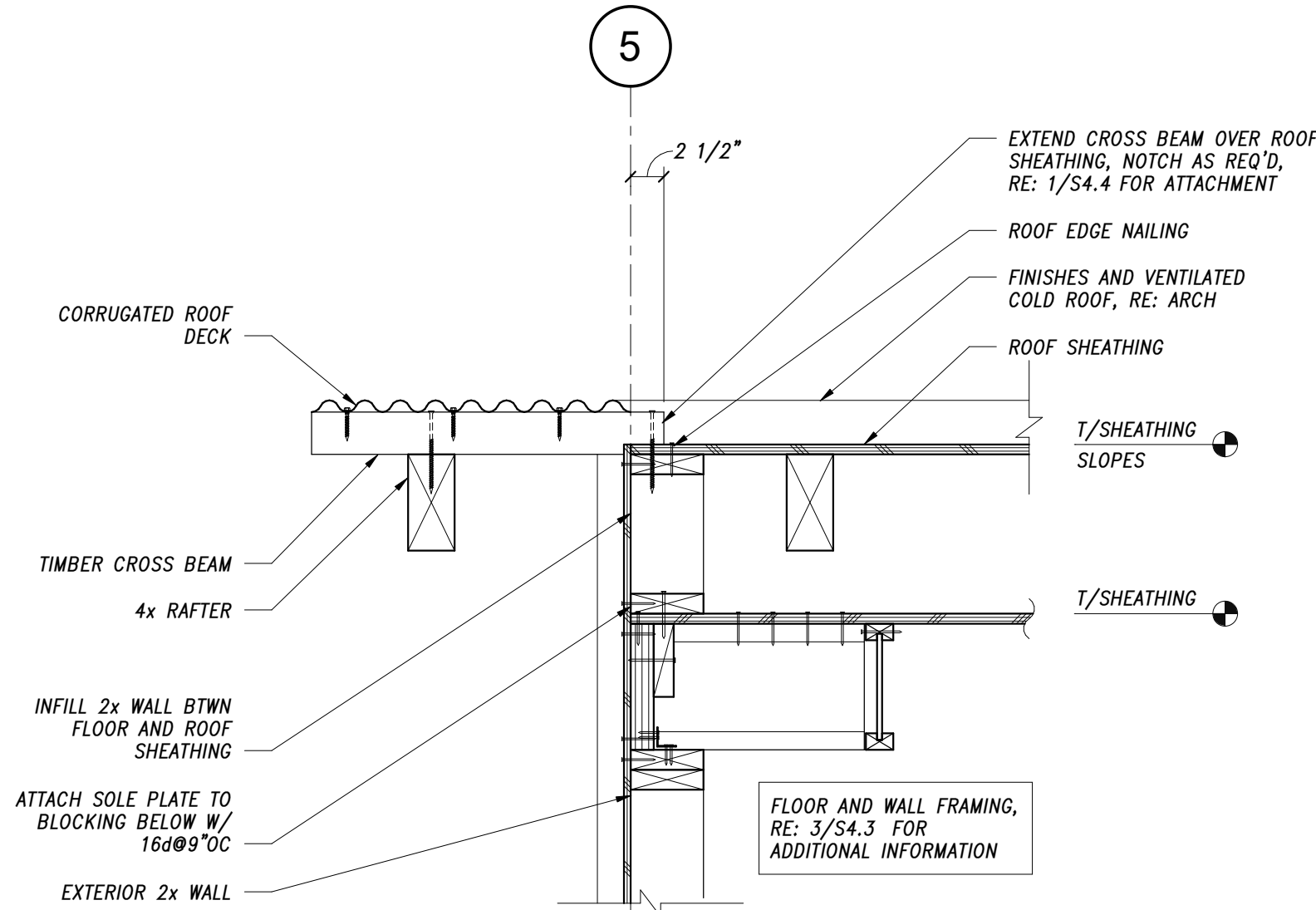
5 LOW ROOF SECTION
1" = 1'-0"



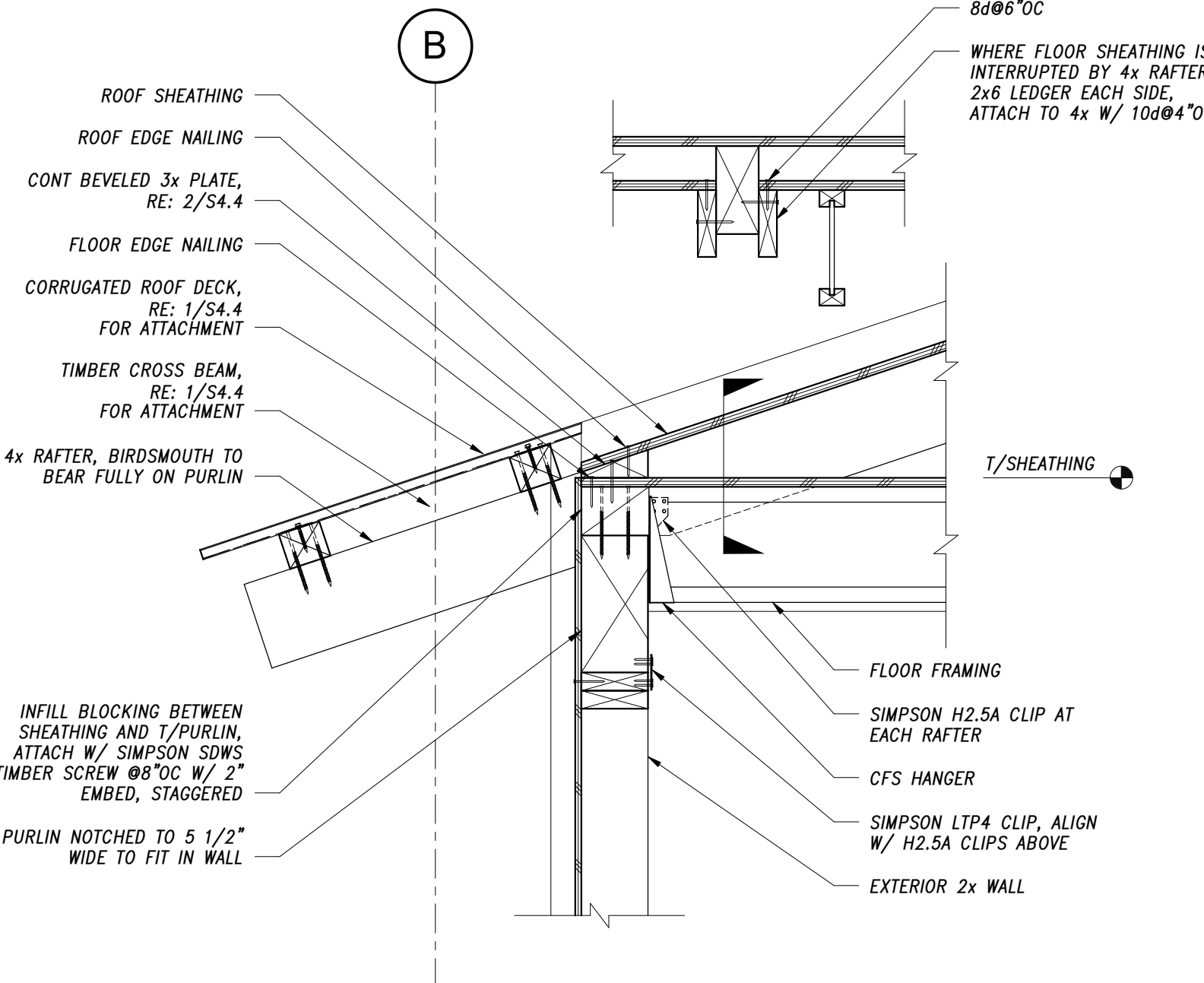
4 LOW ROOF SECTION
1" = 1'-0"



3 LOW ROOF SECTION
1" = 1'-0"



2 LOW ROOF SECTION
1" = 1'-0"



1 LOW ROOF SECTION
1" = 1'-0"

ALL EXPOSED BOLTS TO BE UNCOATED BARE A307 STEEL, RE: ARCH

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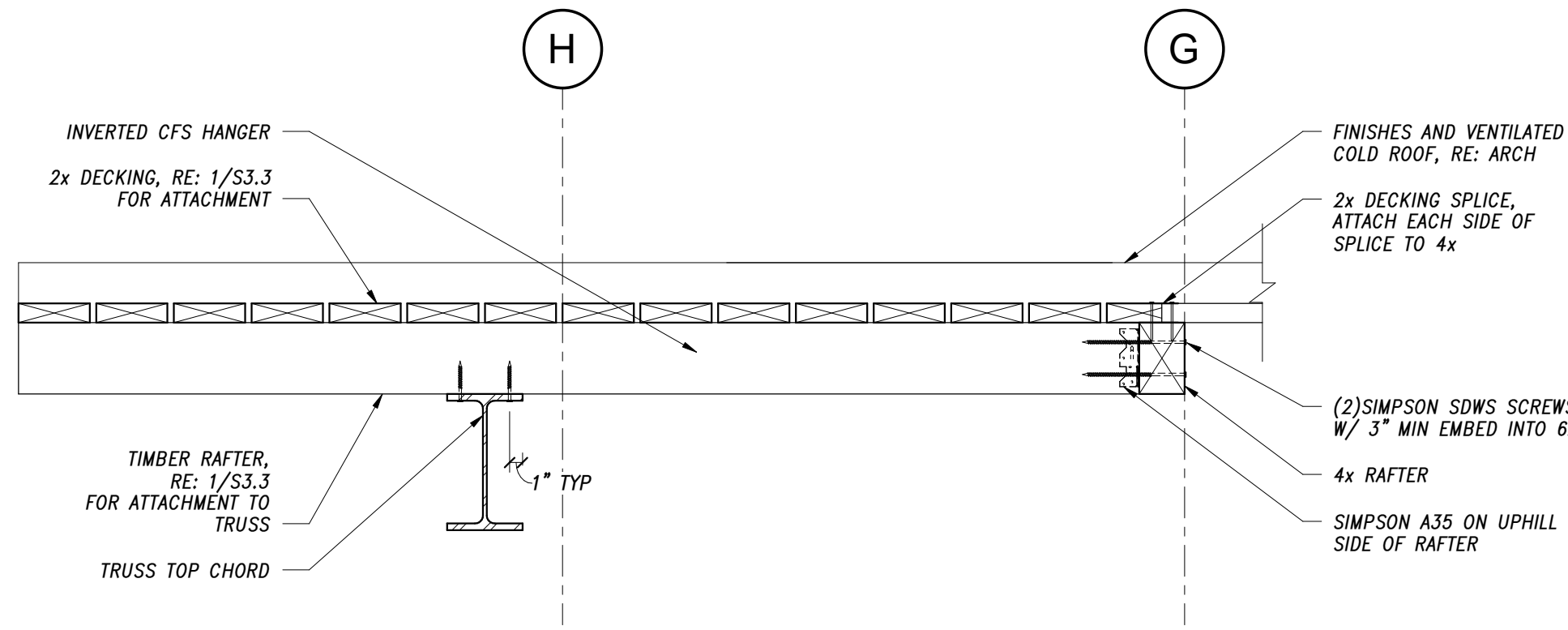
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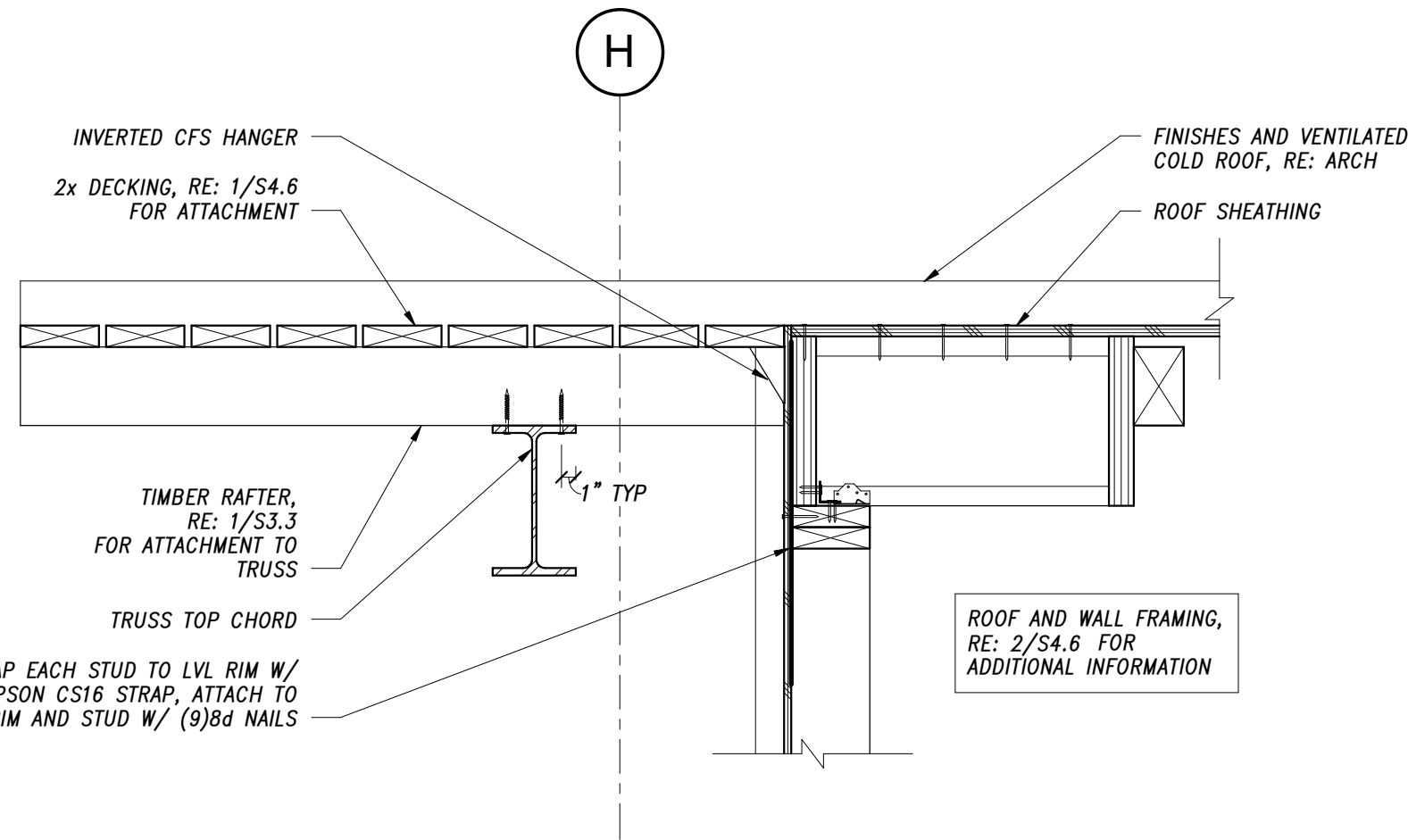
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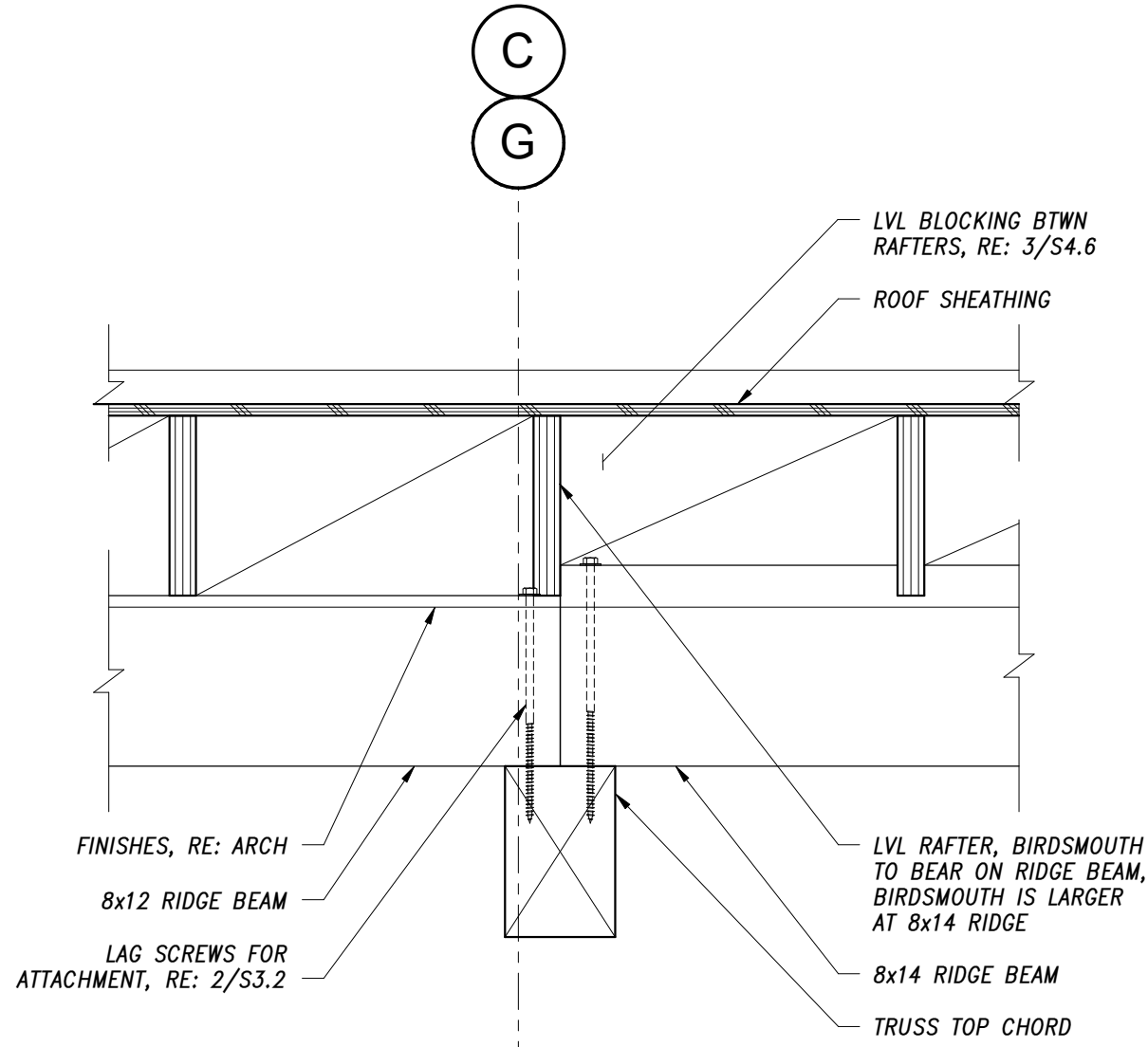
ALL EXPOSED BOLTS TO
BE UNCOATED BARE
A307 STEEL, RE: ARCH



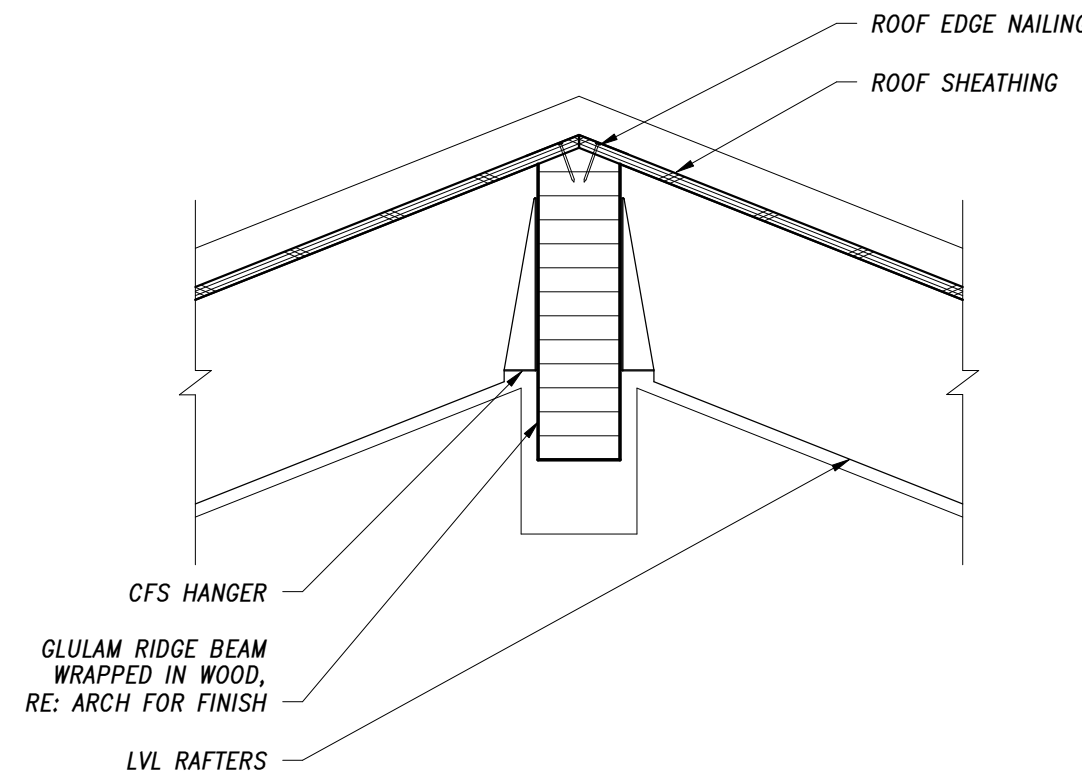
10 ROOF TRANSITION DETAIL
1" = 1'-0"



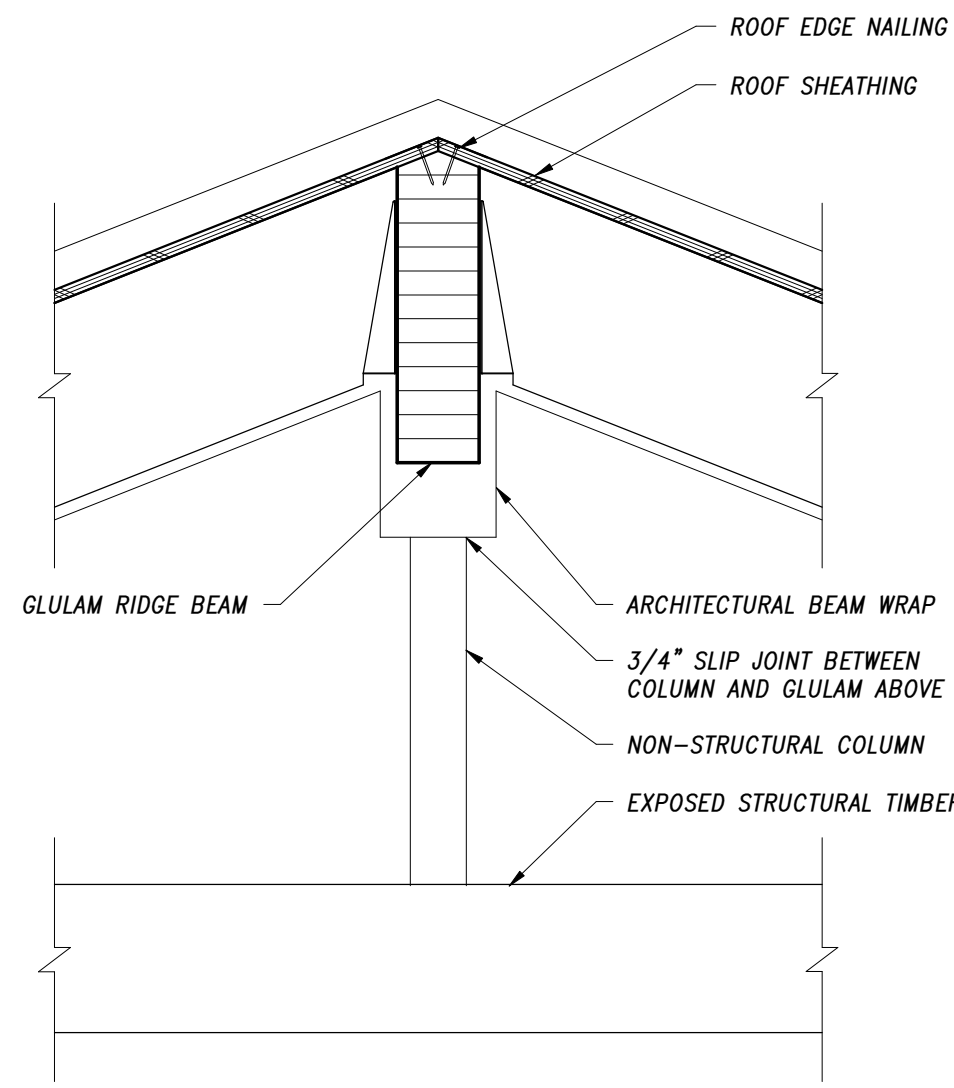
9 ROOF TRANSITION DETAIL
1" = 1'-0"



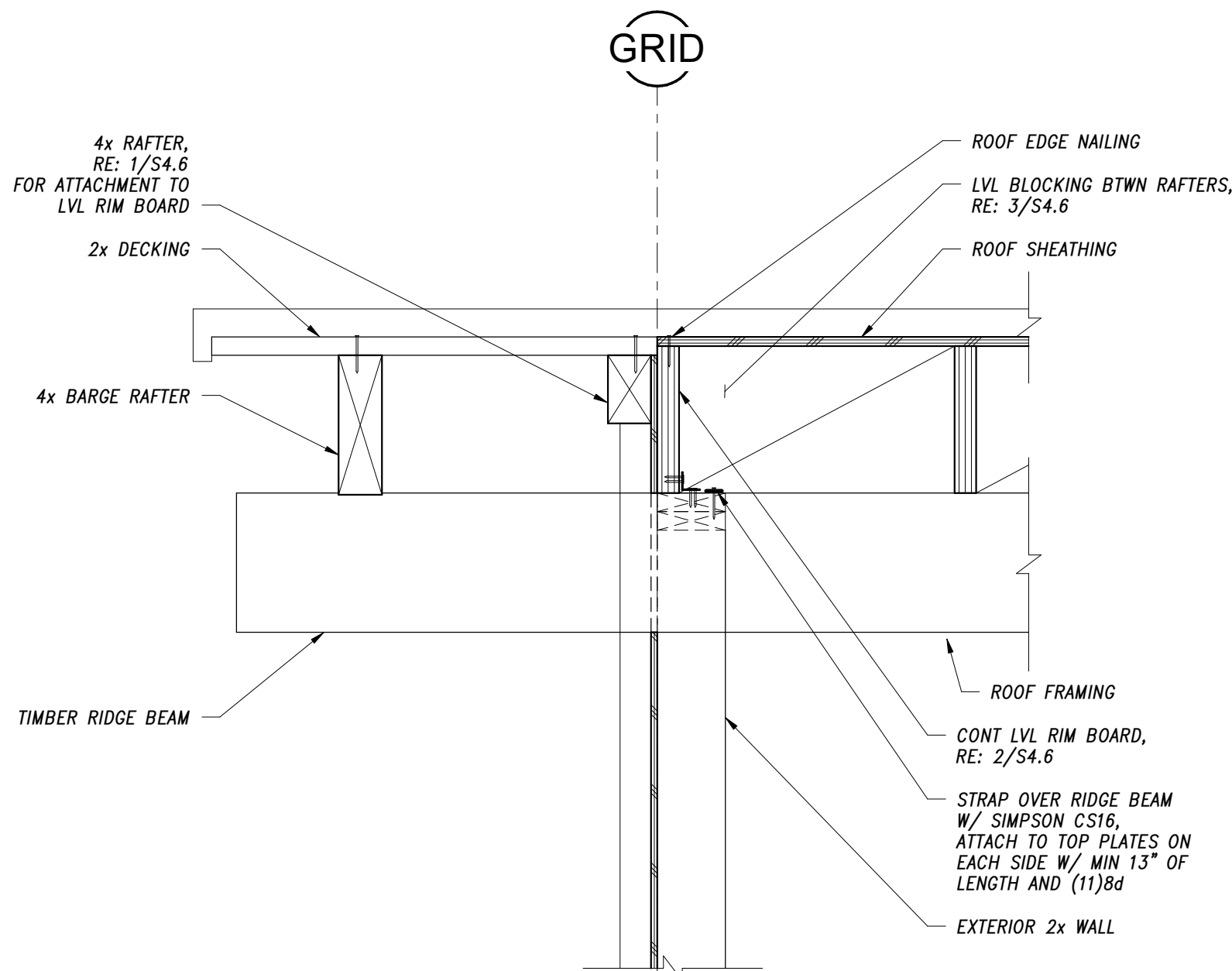
8 RIDGE HEIGHT TRANSITION DETAIL
1" = 1'-0"



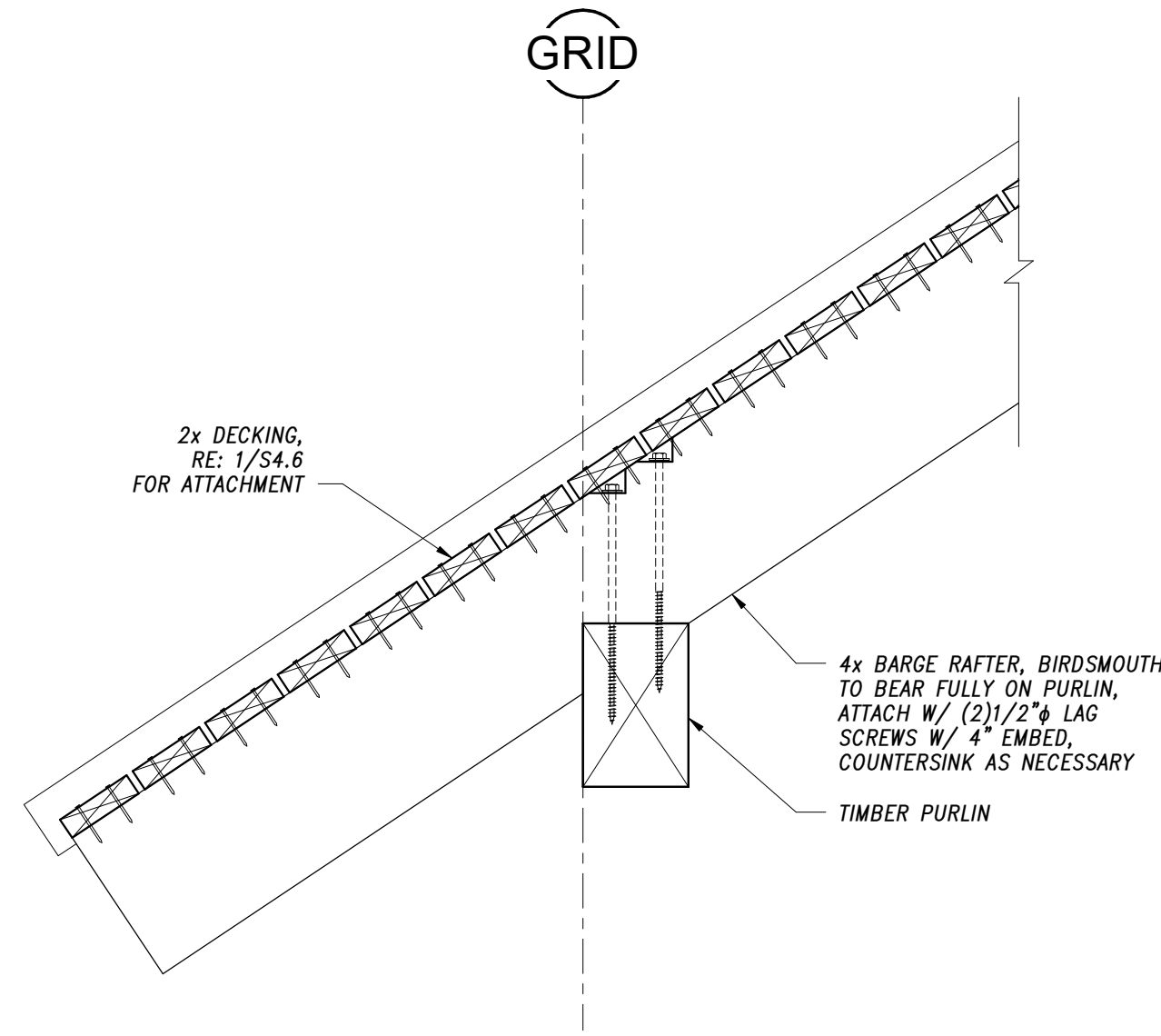
7 RIDGE DETAIL AT GLULAM
1" = 1'-0"



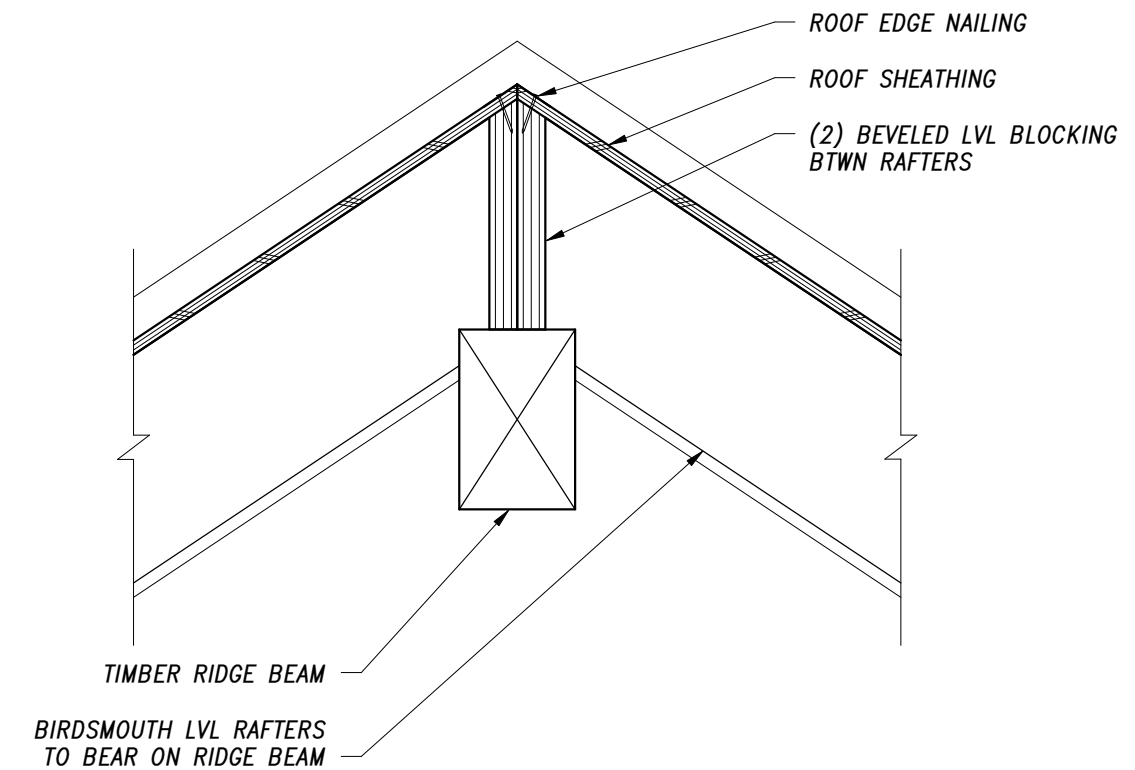
6 MASTER RIDGE SECTION AT CROSS BEAMS
1" = 1'-0"



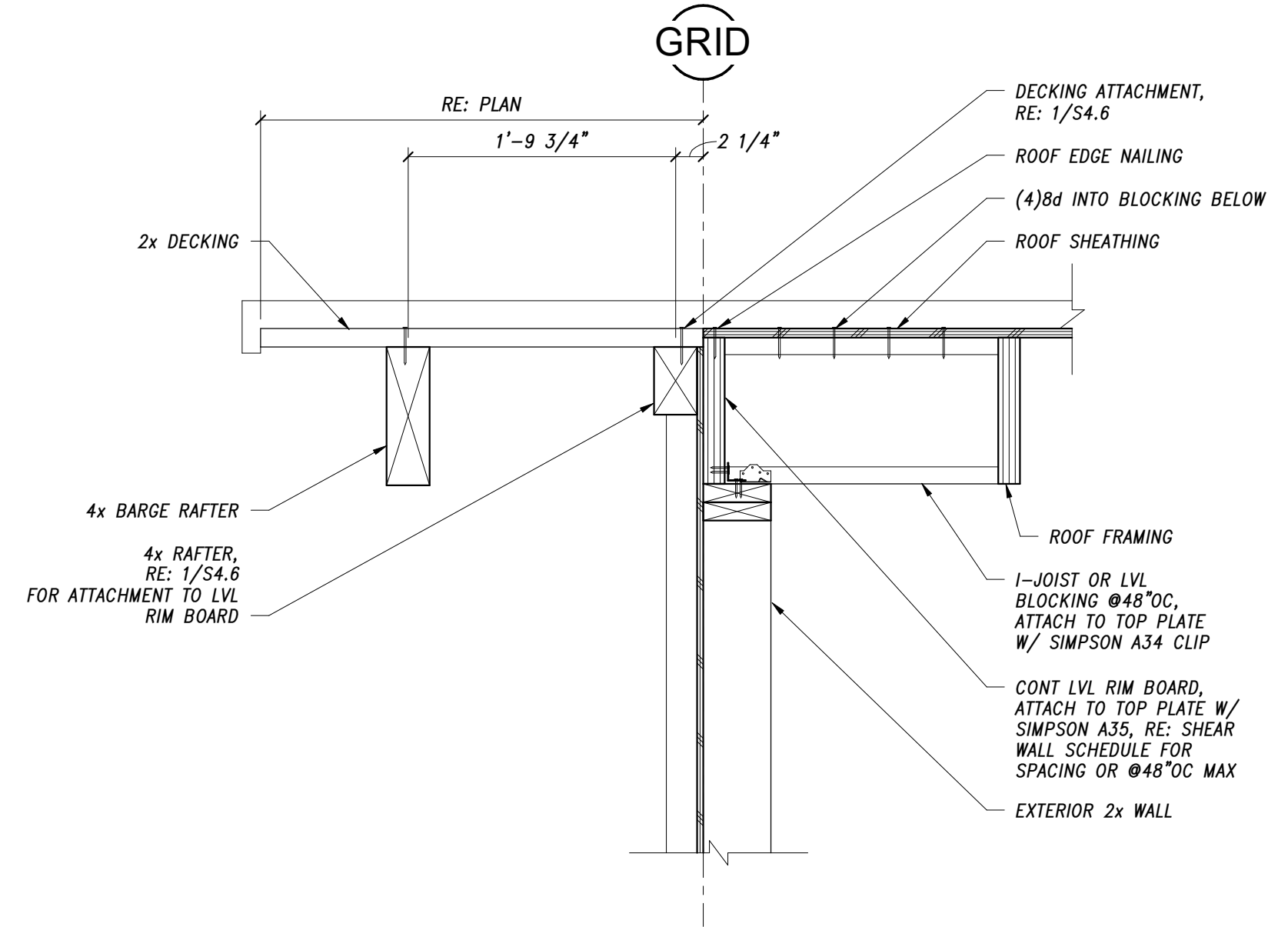
5 RAKE AT RIDGE SECTION
1" = 1'-0"



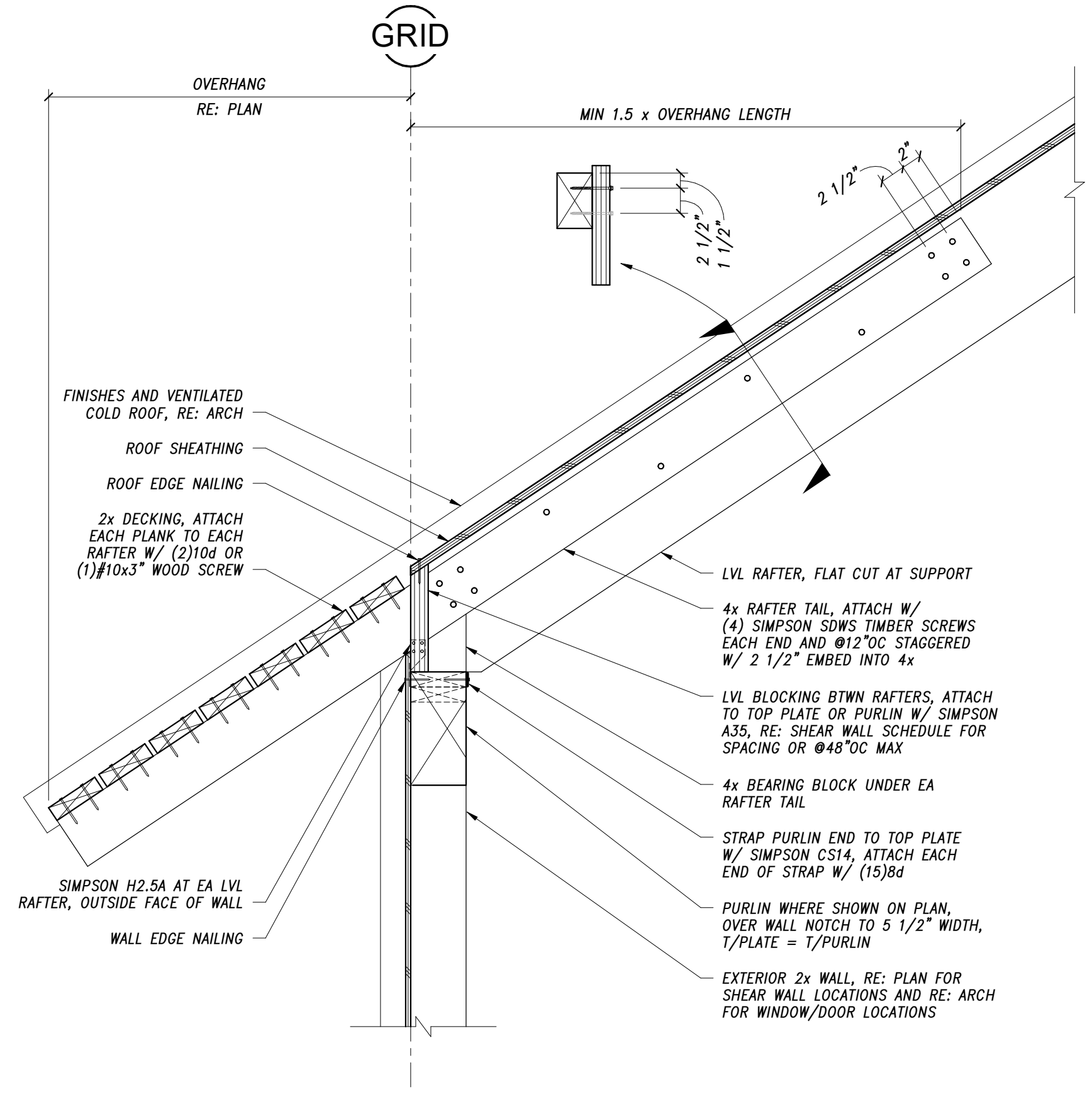
4 EAVE SECTION AT BARGE RAFTER
1" = 1'-0"



3 TYPICAL RIDGE DETAIL
1" = 1'-0"



2 TYPICAL RAKE SECTION
1" = 1'-0"



1 TYPICAL EAVE SECTION
1" = 1'-0"

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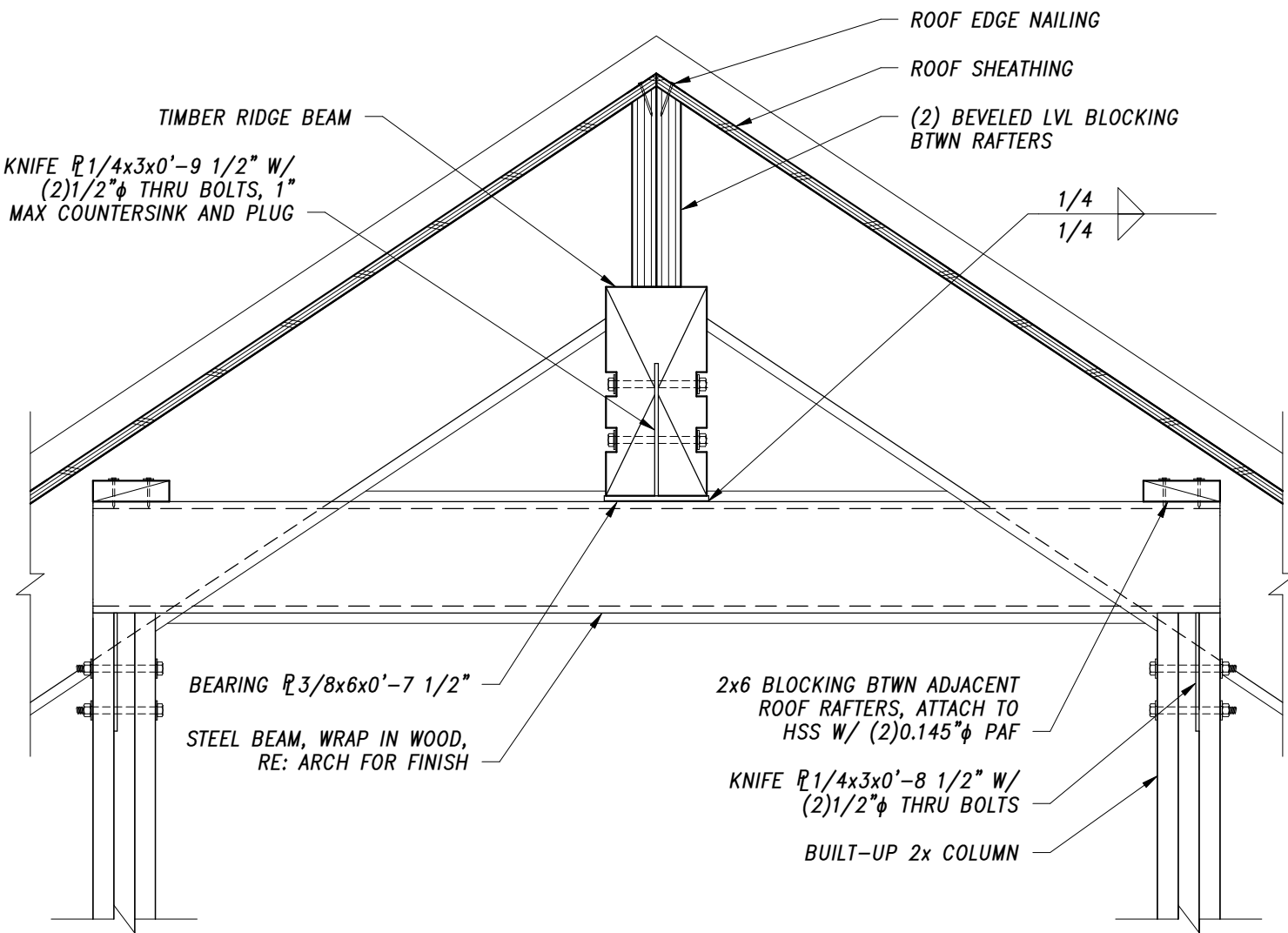
S4.6

ROOF DETAILS

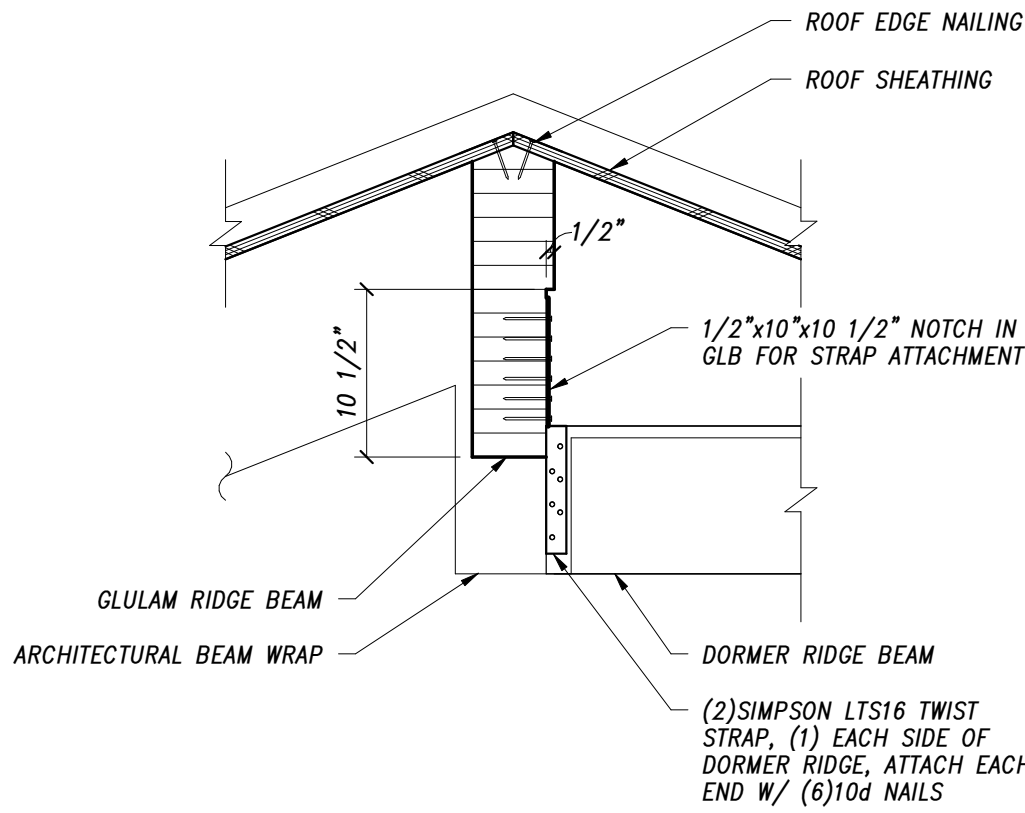
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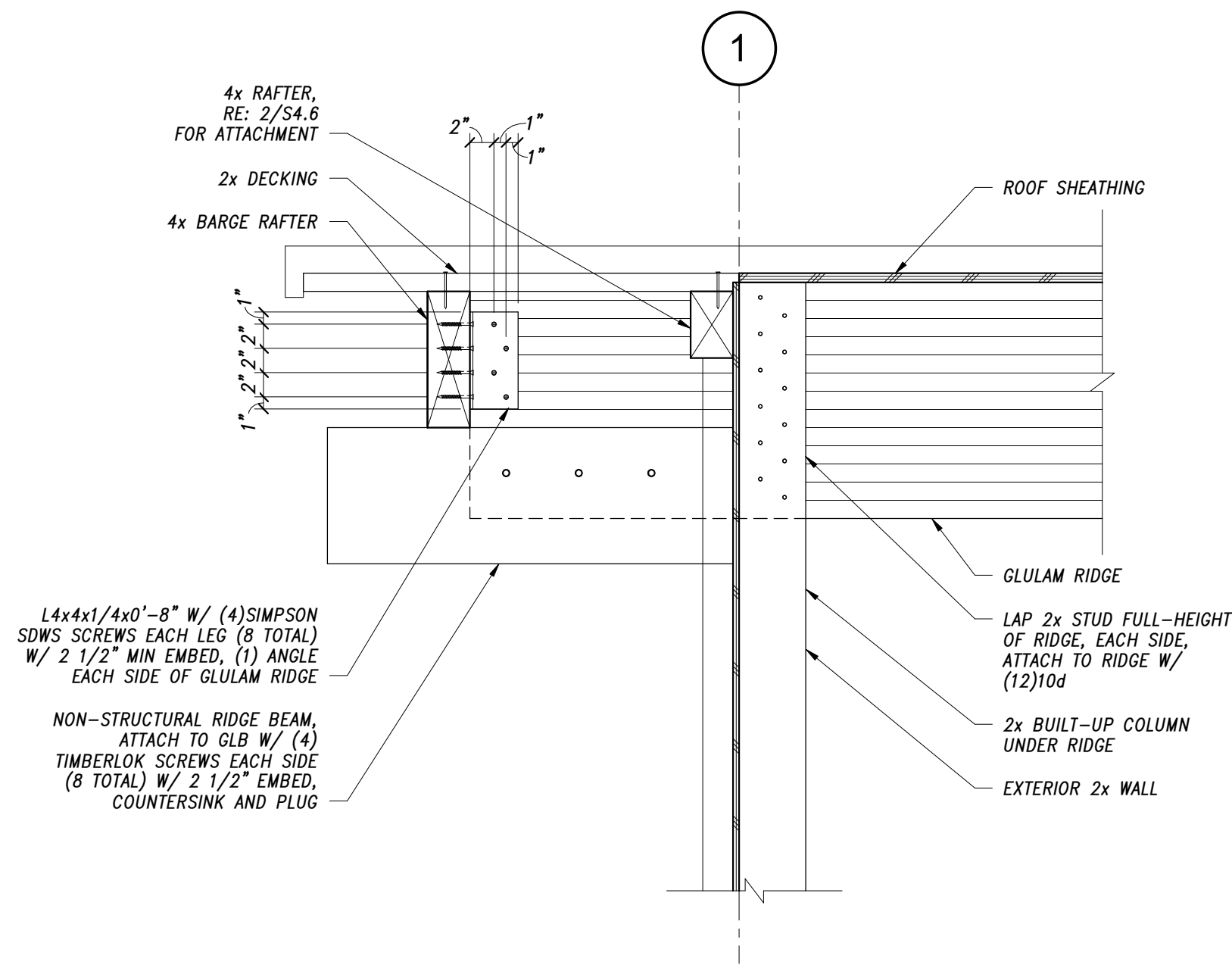
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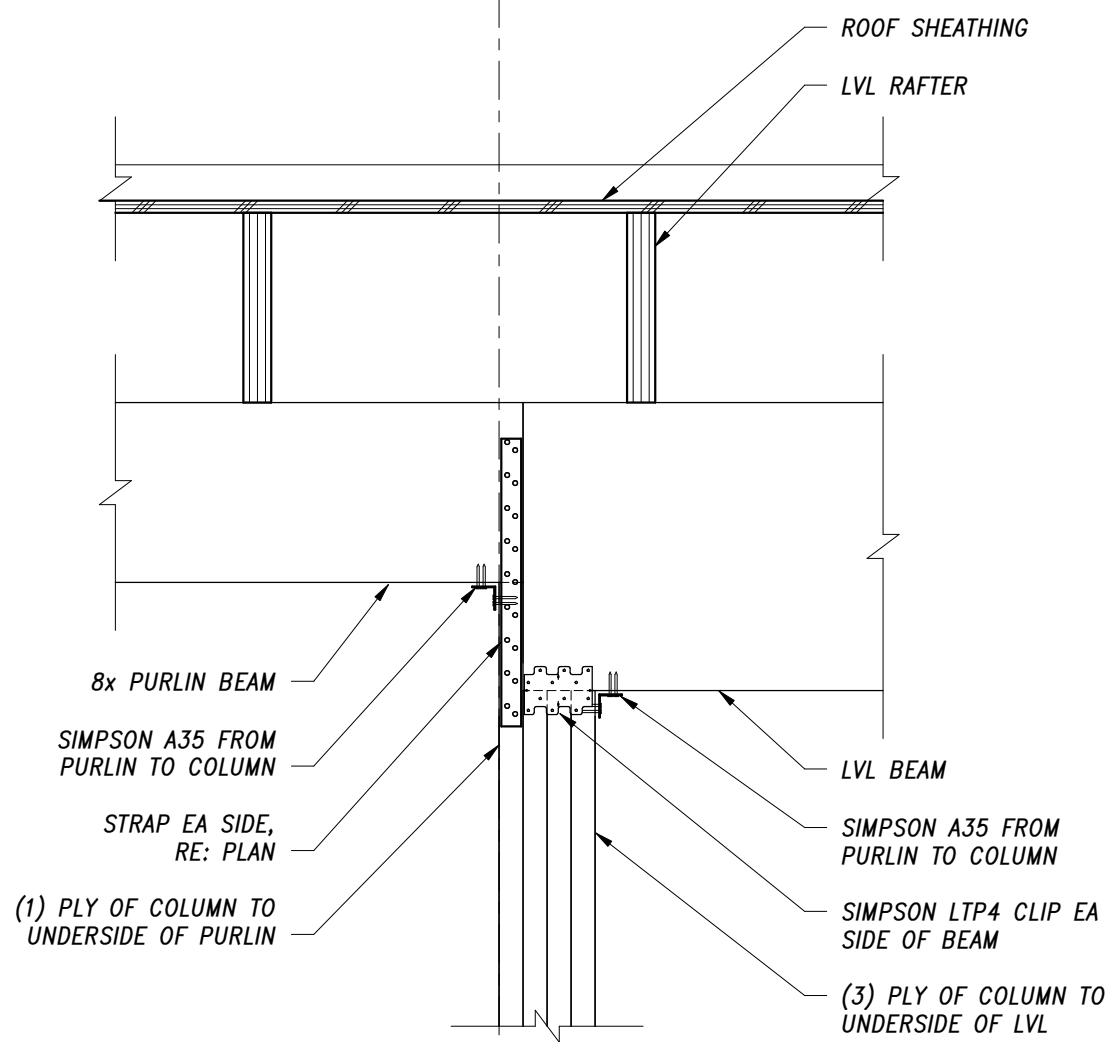
4 ROOF SECTION
1" = 1'-0"



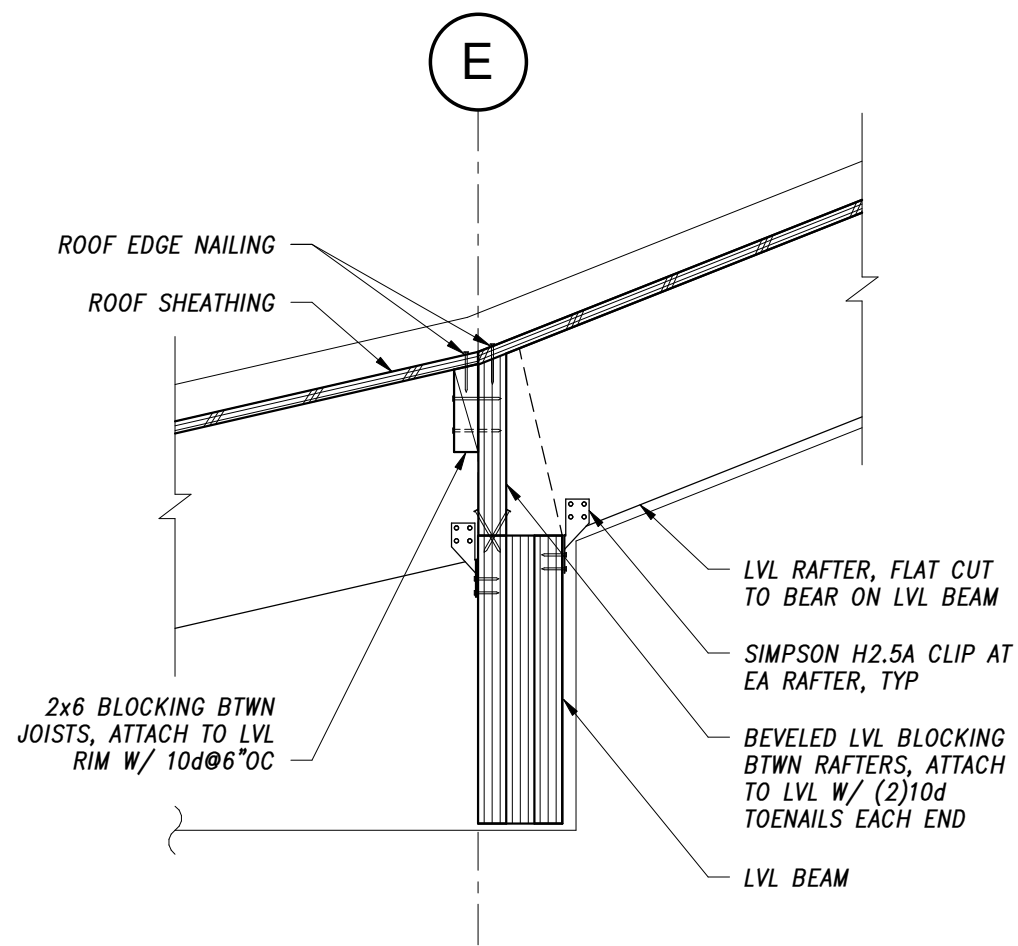
5 DORMER RIDGE ATTACHMENT
1" = 1'-0"



3 FAUX RIDGE BEAM
1" = 1'-0"



2 BEAM SUPPORT DETAIL
1" = 1'-0"



1 DETAIL AT ROOF PITCH CHANGE
1" = 1'-0"

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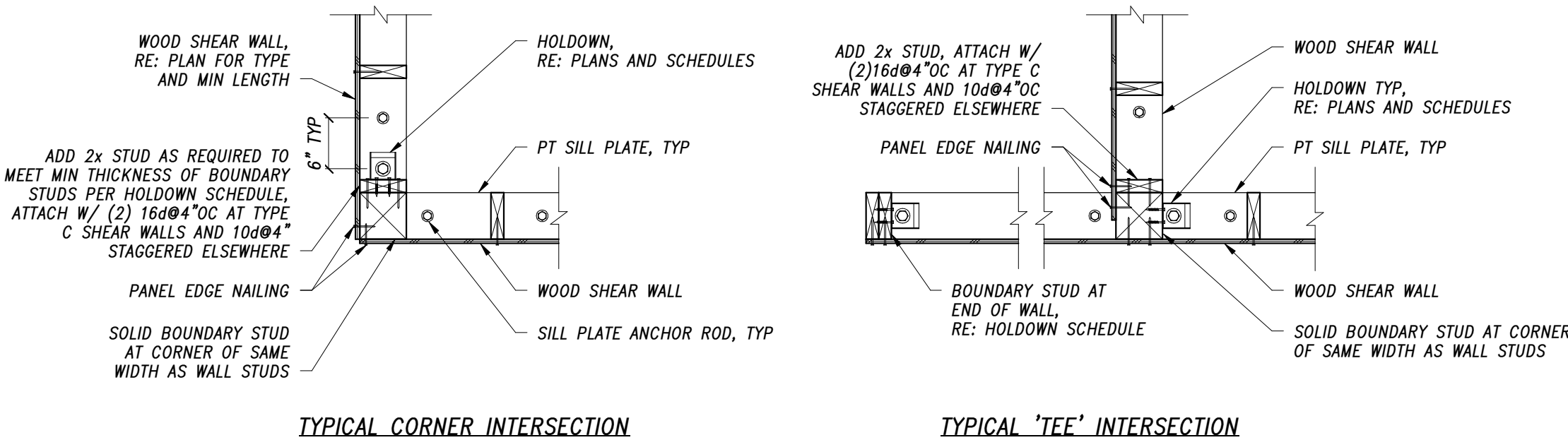
WOOD HANGER SCHEDULE									
MARK H#	SIMPSON HANGER	FASTENERS			MEMBERS		ALLOWABLE LOADS		REMARKS
		SUPPORTING MEMBER	TOP FLANGE	SUPPORTED MEMBER	SUPPORTING MEMBER	SUPPORTED MEMBER	BEARING CAPACITY	UPLIFT CAPACITY	
H1	LSSR1.81Z	(14)10d	--	(12)10dx1 1/2"	LVL OR GLB	11 7/8" LVL OR 9 1/2" LVL	1565 (1205 AT SKEW)	510	FIELD SKEW AND SLOPE
H2	HUC68	(10)10d	--	(4)10d	2x DFL	(3) 7 1/4" LVL	1425	760	CONCEALED FLANGE
H3	HU68	(10)10d	--	(4)10d	LVL	6x10 DFL	1425	760	--
H4	ITS2.06/11.88	(2)10dx1 1/2"	(4)10dx1 1/2"	(2)STRONG-GRIP	2x NAILER	11 7/8" TJI 210	1265	120	--
H5	IUS2.06/9.5	(8)10d	--	(2)STRONG-GRIP	LVL OR DFL	9 1/2" TJI 210	950	70	--
H6	HUS48	(6)16d	--	(6)16d	LEDGER	4x8 DFL	1790	1320	--
H7	IUS2.06/9.5	(8)10d	--	(2)STRONG-GRIP	9 1/2" TJI 210	9 1/2" TJI 210	950	70	--
H8	LU26	(6)10d	--	(4)10dx1 1/2"	2x LEDGER	2x6 DFL	590	465	--
H9	HU2.1/9	(14)10d	--	(6)10dx1 1/2"	WEB PACKOUT	11 7/8" TJI 210	1780	610	WEB STIFFENER REQ'D
H10	HUCQ410-SDS	(12)SDS 1/4"x2 1/2"	--	(6)SDS 1/4"x2 1/2"	WEB PACKOUT	(2)11 7/8" LVL	4500	2265	CONCEALED FLANGE
H11	ITS2.37/11.88	(2)10dx1 1/2"	(4)10dx1 1/2"	(2)STRONG-GRIP	2x NAILER	11 7/8" TJI 360	1265	120	--
H12	HUC68	(14)TITEN 1/4"x1 3/4"	--	(6)16d	CONC	(3)7 1/4" LVL	4920	895	--
H13	ITS2.37/11.88	(2)10dx1 1/2"	(4)10dx1 1/2"	(2)STRONG-GRIP	11 7/8" TJI 360	11 7/8" TJI 360	920	120	--
H14	LSSR1.81Z	(14)10dx2 1/2"	--	(12)10dx1 1/2"	LEDGER	9 1/2" LVL	1565	510	FIELD SLOPE
H15	HU66	(12)16d	--	(6)16d	(2) LEDGER	6x6 DFL	2015	1345	INSTALL INVERTED WHERE SHOWN AS H15*
H16	ITS2.06/9.5	(2)10dx1 1/2"	(4)10dx1 1/2"	(2)STRONG-GRIP	2x NAILER	9 1/2" TJI 210	1265	120	--
H17	IUS2.37/11.88	(10)10d	--	(2)STRONG-GRIP	LVL	11 7/8" TJI 360	1190	70	--
H18	LUS410	(8)10d	--	(6)10d	LVL	(2)11 7/8" LVL	1500	1230	--

NOTES:
1. SUBSTITUTION OF HANGER MANUFACTURER AND/OR HANGER TYPE ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER.
2. HANGERS TO BE HOT DIP GALVANIZED STEEL, UNO.
3. FOR CONTACT WITH PRESERVATIVE TREATED WOOD IN EXPOSED LOCATIONS, PROVIDE MINIMUM G185 GALVANIZING.
4. SOME HANGERS SHOWN IN SCHEDULE MAY NOT BE USED ON PROJECT.

3

HANGER SCHEDULE

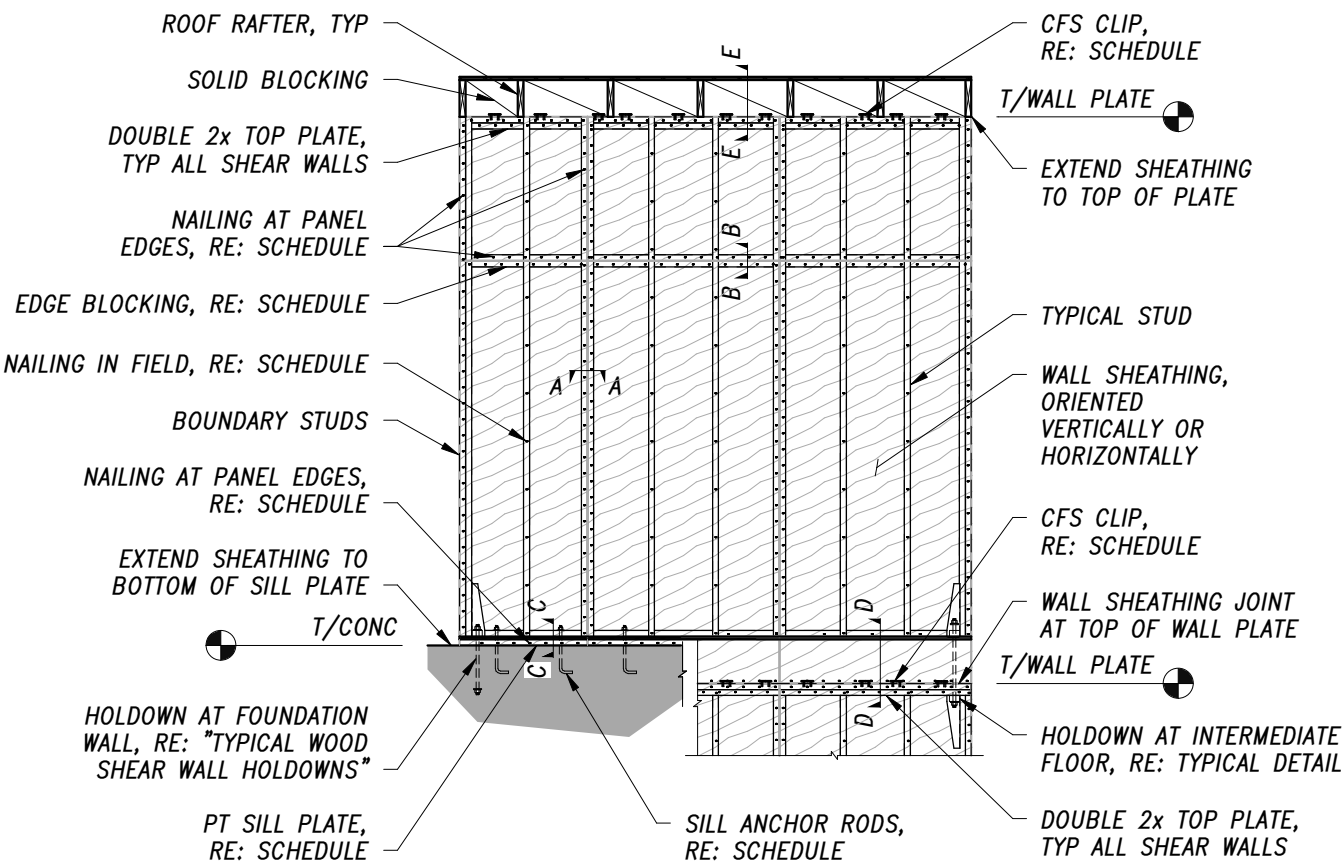
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2

TYPICAL SHEAR WALL INTERSECTION DETAILS

NTS



CONCEPTUAL SHEATHING LAYOUT AT SHEAR WALLS

SHEAR WALL SCHEDULE											
SHEAR WALL TYPE AND CAPACITY	NAIL TYPE AND SPACING AT PANEL EDGES	FRAMING MEMBERS AT VERTICAL EDGE NAILING	NAIL TYPE AND SPACING IN FIELD (AWAY FROM EDGES)	MIN SILL PLATE AT FOUNDATION WALLS (SEE NOTE 5)	ANCHOR BOLT (SEE NOTE 14)	CFS CLIP SIZE AND SPACING	SECTION A-A	SECTION B-B	SECTION C-C	SECTION D-D (SEE NOTES 12 AND 13)	SECTION E-E (SEE NOTES 12 AND 13)
A 350 PLF	8d@4"OC	(1) 2x	8d@12"OC	(1) 2x PT SILL	5/8"φ@32"OC	SIMPSON A35 Ø14"OC OR SIMPSON LTP4 Ø14"OC (1) CLIP MIN PER BAY OF BLOCKING					
B 600 PLF	10d@3"OC STAGGERED	(2) 2x GLUED AND NAILED OR (1) 3x	10d@12"OC	(1) 3x PT SILL	5/8"φ@16"OC	SIMPSON A35 Ø8"OC OR SIMPSON LTP4 Ø8"OC (1) CLIP MIN PER BAY OF BLOCKING					
C 1200 PLF SHEATHING ON EACH SIDE	10d@3"OC STAGGERED, EACH SIDE OF WALL	(2) 2x GLUED AND NAILED OR (1) 3x	10d@12"OC EACH SIDE OF WALL	(1) 3x PT SILL	5/8"φ@8"OC	SIMPSON A35 Ø8"OC AND SIMPSON LTP4 Ø8"OC AT BLOCKING (2) CLIP MIN PER BAY OF BLOCKING					
NOTES: 1. ALL SHEAR WALL STUD FRAMING Ø16"OC UNLESS TIGHTER SPACING NOTED ON PLAN. 2. ALL FRAMING IS DOUGLAS FIR-LARCH MATERIAL OR STRUCTURAL COMPOSITE LUMBER. 3. BOUNDARY STUDS AT ENDS OF SHEAR WALLS MAY REQUIRE ADDITIONAL STUDS. SEE "TYPICAL WOOD SHEAR WALL HOLDOWNS". 4. ALL SHEAR WALLS TO BE WOOD SHEATHED WITH 32/16 SPAN RATED PLYWOOD OR OSB (15/32" MINIMUM THICKNESS). 7/16" THICKNESS PERMITTED PROVIDED PANELS ARE APPLIED WITH LONG DIMENSION ACROSS STUDS. 5. FOR SINGLE 2x SILL PLATE, COUNTERSINKING ANCHOR BOLT WASHER AND NUT IS NOT ALLOWED. FOR 3x SILL PLATE, 1" MAX COUNTERSINK OF ANCHOR BOLT WASHER AND NUT. 6. PROVIDE SLOTTED WASHER PLATE AND STANDARD WASHER AT ANCHOR BOLT CONNECTIONS. SLOTTED PLATE TO BE NO FURTHER THAN 1/2" FROM SHEATHED SIDE OF WALL PLATE. USE SIMPSON BP55/8-3 AT 2x4 WALLS AND BP55/8-6 AT 2x6 WALLS OR EQUIVALENT. 7. RE: "TYPICAL REQUIREMENTS FOR HOLES AND NOTCHES IN WOOD MEMBERS" FOR REINFORCING OF WALL PLATES WITH NOTCHES. 8. RE: GENERAL NOTES FOR MINIMUM DIMENSIONS FOR NOTED NAIL SIZES. 9. NAILS SHALL NOT BE OVERDRIVEN; RE: GENERAL NOTES. 10. ALL CAPACITIES SHOWN ARE ASD VALUES AND DO NOT INCLUDE INCREASES FOR WIND. 11. DO NOT BEND A35 CLIPS 12. AT INTERIOR WALLS WHERE JOISTS/RAFTERS ARE PERPENDICULAR TO THE WALL, BLOCK BETWEEN JOISTS/RAFTERS OVER WALL AND ATTACH CFS CLIP PER SCHEDULE. 13. AT INTERIOR WALLS WHERE JOISTS/RAFTERS ARE PARALLEL TO THE WALL, ALIGN A JOIST/RAFTER OVER WALL AND ATTACH WITH CFS CLIPS PER SCHEDULE. 14. RE: TYPICAL DETAILS FOR ADDITIONAL ANCHOR BOLT INFORMATION INCLUDING END SPACING AND END SCHEDULE. 15. NO HOLES SHOULD BE CUT IN SHEAR WALLS WITHOUT PRIOR WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.											

1

TYPICAL WOOD SHEAR WALLS - NAILING SCHEDULE AND DETAILS

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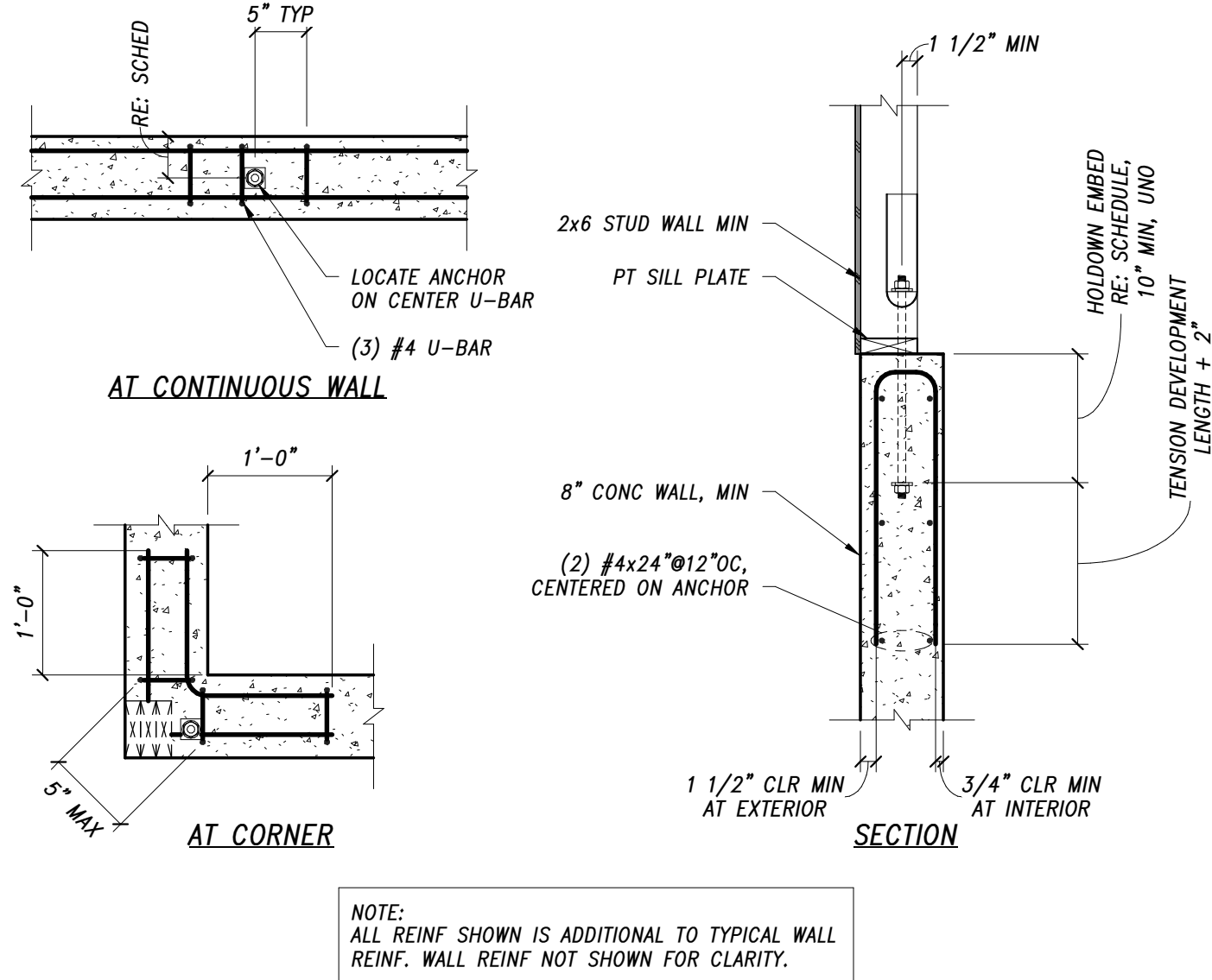
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SCHEDULES

M0012

THESE DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS ON THE PROJECT TO CLEARLY DEFINE ALL OF THE REQUIREMENTS FOR THE CONSTRUCTION. WHERE CONFLICTS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

THE STRUCTURAL ENGINEERS SEAL ON THIS DRAWING INDICATES THAT THE INFORMATION SHOWN AND THE CALCULATIONS PERTAINING TO THAT INFORMATION HAVE BEEN PREPARED BY QUALIFIED PEOPLE UNDER THE DIRECTION OF THE ENGINEER-OF-RECORD. THE SEAL DOES NOT IMPLY RESPONSIBILITY FOR INFORMATION NOT SHOWN ON THIS DRAWING AND SUCH RESPONSIBILITY IS SPECIFICALLY DISCLAIMED. ON PHASED PROJECTS, DRAWINGS THAT ARE ISSUED BUT NOT SEALED SHALL BE CONSIDERED TO BE PRELIMINARY IN NATURE AND ARE ISSUED FOR INFORMATION ONLY.

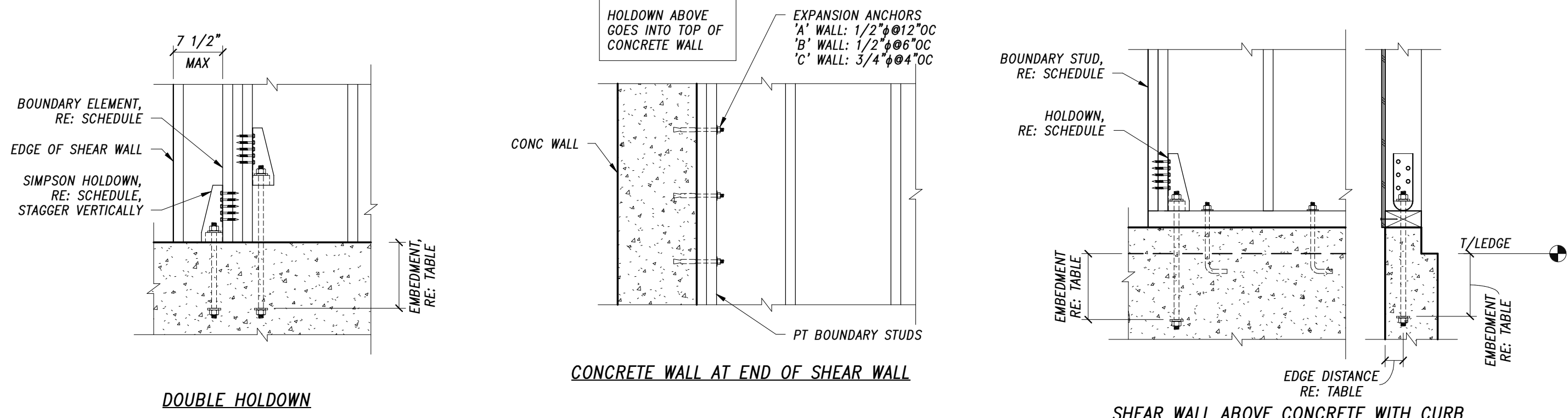
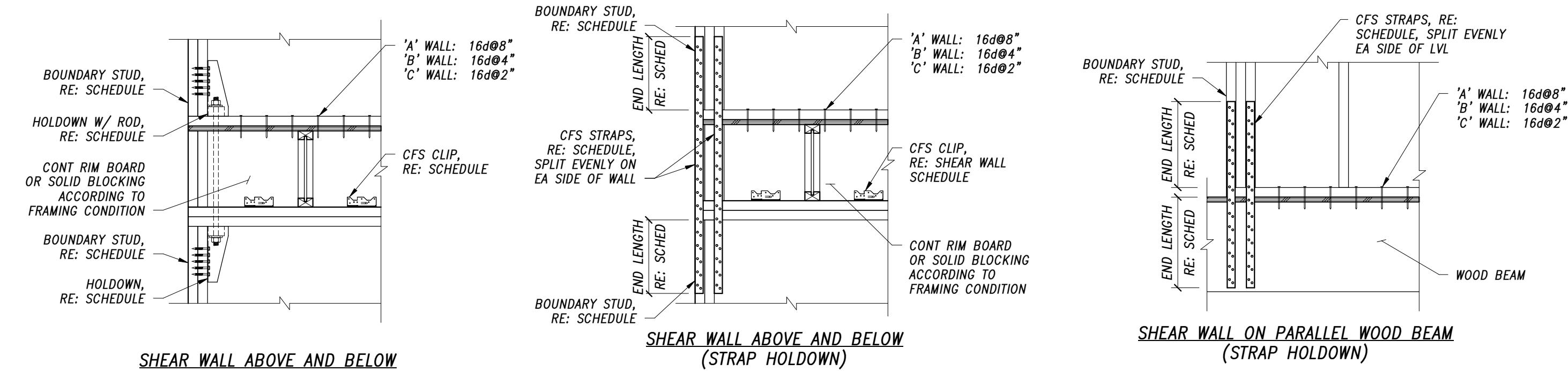
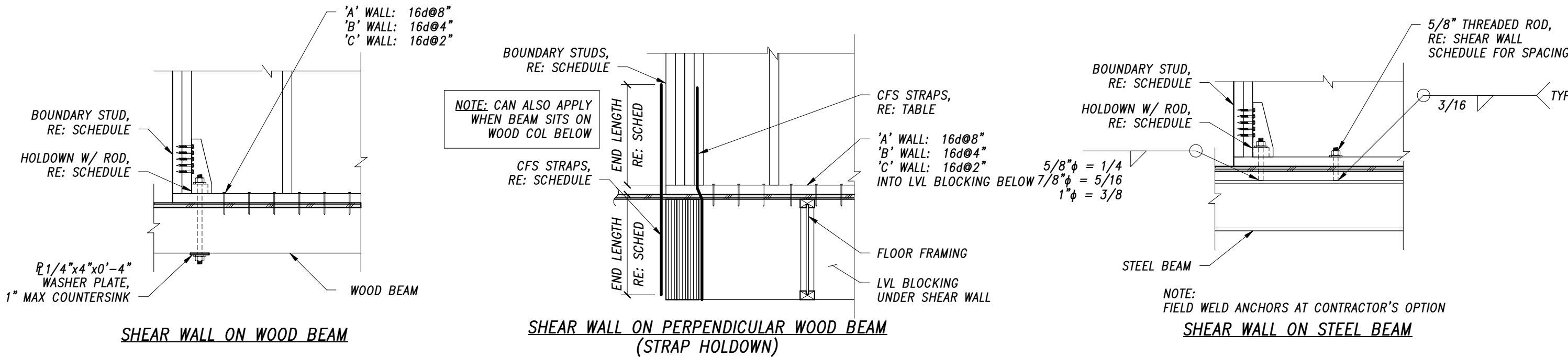


NOTE:
ALL REINF SHOWN IS ADDITIONAL TO TYPICAL WALL REINF. WALL REINF NOT SHOWN FOR CLARITY.

2

ADDITIONAL REINFORCING AT HOLDOWN

NTS



SHEAR WALL ABOVE CONCRETE WITH CURB

HOLDOWN SCHEDULE				
HOLDOWN KEY MARK	SIMPSON HOLDOWN TYPE	ANCHOR BOLT DIAMETER	MIN BOUNDARY STUD THICKNESS	ALLOWABLE TENSION LOAD
$\overline{HD1}$	HDU4-SDS2.5	5/8"	3"	4565 LB
$\overline{HD2}$	HDU8-SDS2.5	7/8"	4 1/2"	7870 LB
$\overline{HD3}$	(2) HDU5-SDS2.5	5/8"	6"	11200 LB
	HDU11-SDS2.5	1"	7 1/4"	11100 LB
$\overline{HD4}$	HDU14-SDS2.5	1"	7 1/4"	14390 LB
\overline{CONC}	N/A	N/A	3"	VARIES
NOTES: 1. ALLOWABLE TENSION LOADS ASSUME USE OF DOUGLAS FIR-LARCH OR COMPOSITE LUMBER BOUNDARY STUDS. 2. USE ALL HARDWARE PROVIDED WITH HOLDOWN, RE: SIMPSON MANUAL FOR OTHER INSTALLATION REQUIREMENTS. 3. BOUNDARY STUDS NOT ALWAYS SHOWN ON PLAN, CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER'S OFFSET FOR PROPER PLACEMENT. 4. WHERE DOUBLE HOLDOWN AND A SINGLE HOLDOWN OPTION ARE SHOWN, IT IS CONTRACTOR'S OPTION WHICH TO USE. 5. WHERE SHOWN ON PLAN, USE ADDITIONAL REINFORCING, RE: 2/SS.2.				

TABLE: ANCHOR ROD EMBEDMENT			
TYPE	ANCHOR BOLT DIAMETER	EMBEDMENT	MINIMUM WALL THICKNESS MINIMUM EDGE DISTANCE
EMBEDDED ANCHOR	5/8"	10" (26")	8" 3"
	7/8"	24"	8" 3"
	1"	31" *	8" 3"
ADHESIVE ANCHOR	5/8"	XX"	8" 4"
	7/8"	NOT ALLOWED	NOT ALLOWED
	1"	NOT ALLOWED	NOT ALLOWED
NOTES: 1. USE ASTM F1554 GRADE 36 ANCHOR RODS. 2. FOR POST-INSTALLED ANCHORS USE SIMPSON SET-3G ADHESIVE. SUBSTITUTION OF OTHER ADHESIVE MUST BE APPROVED BY ENGINEER. () = INCREASED EMBEDMENT AT DOUBLE HOLDOWN CONDITIONS. * LAP SPLICE ANCHOR ROD TO WALL REINFORCEMENT.			

HOLDOWN STRAP SCHEDULE					
HOLDOWN KEY MARK	SIMPSON STRAP TYPE AND QUANTITY	TOTAL NAILS EACH STRAP	END LENGTH EACH STRAP	MIN BOUNDARY STUD THICKNESS	ALLOWABLE TENSION LOAD
$\overline{HD1}$	(4) CS14	(22) 8d	12"	6"	7200 LB
$\overline{HD2}$	(4) CS14	(22) 8d	16"	6"	9900 LB
NOTES: 1. ALLOWABLE TENSION LOADS, END LENGTHS, AND NAIL QUANTITIES ASSUME USE OF DOUGLAS FIR-LARCH OR COMPOSITE LUMBER BOUNDARY STUDS. 2. BOUNDARY STUDS NOT ALWAYS SHOWN ON PLAN, CONTRACTOR TO COORDINATE WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER'S OFFSET FOR PROPER PLACEMENT.					

1

TYPICAL SHEAR WALL HOLDOWNS

NTS

Date/Revision:

SD SET 11.30.2018

PERMIT SET 05.10.2019

CONST. 06.28.2019

Sheet:

S5.2

SCHEDULES