

Byrd Barr Place Renovation, Firehouse 23

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Seattle, WA
PERMIT SET
June 25, 2020

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ABBREVIATIONS

@	AT	K	KIPS = 1000 LBS
Ø	DIAMETER	KSI	KILOPOUNDS PER SQUARE INCH
#	POUND OR NUMBER	L	ANGLE
AB	ANCHOR BOLT	LBS	POUNDS
ADJ	ADJACENT	LVL	LEVEL
AFF	ABOVE FINISH FLOOR	LVL	LAMINATED VENEER LUMBER
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	L&I	LABOR & INDUSTRIES DEPARTMENT
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	LLH	LONG LEG HORIZONTAL
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	LLV	LONG LEG VERTICAL
ARCH	ARCHITECTURAL, ARCHITECT	LOC	LOCATE, LOCATION
ASD	ALLOWABLE STRESS DESIGN	LONGIT	LONGITUDINAL
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	LSL	LAMINATED STRAND LUMBER
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MB	MACHINE BOLT
AWS	AMERICAN WELDING SOCIETY	MECH	MECHANICAL
AWC	AMERICAN WOOD COUNCIL	MTL	METAL
BLKG	BLOCKING	MFR	MANUFACTURER
BNDY	BOUNDARY	MIN	MINIMUM
BN	BOUNDARY NAILING	MC	MOISTURE CONTROL
BOT	BOTTOM	MPH	MILES PER HOUR
BRG	BEARING	NS	NEAR SIDE
BS	BOTH SIDES	NDS	NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
BTWN	BETWEEN	NTS	NOT TO SCALE
CIP	CAST-IN-PLACE	NWT	NORMAL WEIGHT
CJ	CONSTRUCTION/CONTROL JOINT	OC	ON CENTER
CL	CENTERLINE	OPP	OPPOSITE HAND
CLG	CEILING	PAF	POWDER ACTUATED FASTENER
CLR	CLEAR	PC	PRE-CAST
CMU	CONCRETE MASONRY UNIT	PCF	POUNDS PER CUBIC FOOT
COL	COLUMN	PERP	PERPENDICULAR
CONC	CONCRETE	PL	PLATE
CONT	CONTINUOUS	PLF	POUNDS PER LINEAR FOOT
CONTR	CONTRACTOR	PNL	PANEL
CSK	COUNTERSINK	PRE-ENG	PRE-ENGINEERED
CTR	CENTER	PSF	POUNDS PER SQUARE FOOT
CVR	COVER	PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	PSL	PARALLEL STRAND LUMBER
DIAPH	DIAPHRAGM	PW	PLYWOOD
DIM	DIMENSION	REF	REFERENCE
D	DEEP	REINF	REINFORCEMENT
DF	DOUGLAS-FIR	REQ'D	REQUIRED
DT	PRE-ENGINEERED DRAG TRUSS	RT	PRE-ENGINEERED ROOF TRUSS
EA	EACH	SBC	SEATTLE BUILDING CODE
EL	ELEVATION	SCHED	SCHEDULE
ELEV	ELEVATOR	SDCI	SEATTLE DEPARTMENT OF CONSTRUCTION & INSPECTIONS
EMBED	EMBEDMENT	SER	STRUCTURAL ENGINEER OF RECORD
EN	END NAILING	SF	SQUARE FEET
ENGR	ENGINEER	SHTG	SHEATHING
EOR	ENGINEER OF RECORD	SIM	SIMILAR
EQ	EQUAL	SIMP	SIMPSON STRONG-TIE
EQUIV	EQUIVALENT	SOG	SLAB ON GRADE
EA FACE	EACH FACE	SPCG	SPACING
EA SIDE	EACH SIDE	SRC	SEATTLE RESIDENTIAL CODE
EA WAY	EACH WAY	STD	STANDARD
(E)	EXIST, EXISTING	STIFF	STIFFENER
ESR	ICC EVALUATION SERVICE REPORT	STRUC	STRUCTURAL
EXP	EXPANSION	SW	SHEAR WALL
EXT	EXTERIOR	SQ	SQUARE
FDN	FOUNDATION	T&G	TONGUE AND GROOVE
FF	FINISH FLOOR	THK	THICK
FFE	FINISH FLOOR ELEVATION	THRD	THREADED
FOC	FACE OF CONCRETE	T&B	TOP & BOTTOM
FOM	FACE OF MASONRY	TO	TOP OF
FOS	FACE OF STUD	TOC	TOP OF CONCRETE
FS	FAR SIDE	TOS	TOP OF STEEL
FT	FEET	TRANSV	TRANSVERSE
FTG	FOOTING	TRTD	TREATED
FT-LB	FOOT POUNDS	TS	TUBE STEEL
GA	GAGE	TYP	TYPICAL
GALV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GC	GENERAL CONTRACTOR	VERT	VERTICAL
GL	GLUE LAMINATED	VIF	VERIFY IN FIELD
GLB	GLUE LAMINATED BEAM	WABO	WASHINGTON ASSOCIATION OF BUILDING OFFICIALS
GR	GRADE	W	WIDE
GT	PRE-ENGINEERED GIRDER TRUSS	w/	WITH
GWB	GYPSTUM WALL BOARD	w/o	WITHOUT
HGR	HANGER	WF	WIDE FLANGE
HDR	HEADER	WHS	WELDED HEADED STUD
HF	HEM-FIR	WTS	WELDED THREADED STUD
HSS	HOLLOW STRUCTURAL STEEL	WWF	WELDED WIRE FABRIC
HT	HEIGHT		
HORIZ	HORIZONTAL		
IBC	INTERNATIONAL BUILDING CODE		
IN	INCHES		
INT	INTERIOR		
JST	JOIST		
JT	JOINT		

GRAPHIC SYMBOL LEGEND

	CONCRETE WALL (ABOVE)
	CONCRETE WALL (BELOW)
	CMU WALL (ABOVE)
	CMU WALL (BELOW)
	WOOD/CFS SHEAR WALL (ABOVE)
	WOOD/CFS STUD WALL (ABOVE)
	WOOD/CFS STUD WALL (BELOW)
	CONCRETE COLUMN (ABOVE)
	CONCRETE COLUMN (BELOW)
	WOOD POST (ABOVE)
	WOOD POST (BELOW)
	STEEL HSS COLUMN (ABOVE)
	STEEL HSS COLUMN (BELOW)
	STEEL WIDE FLANGE COLUMN (ABOVE)
	STEEL WIDE FLANGE COLUMN (BELOW)
	BEAM/JOIST
	BRACED FRAME BEAM
	GRID LINE
	CENTERLINE
	EARTH (CUT)
	GRAVEL (CUT)
	SIMPSON TENSION TIE HOLDOWN
	NUMBER OF KINGS PLUS TRIMMERS
	JOIST w/ HANGER
	JOIST SPAN
	EXTENT
	BLOCKED DIAPHRAGM

SHEET INDEX	
SHEET NUMBER	SHEET NAME
S0.0.0	STRUCTURAL TITLE SHEET
S0.1.0	STRUCTURAL GENERAL NOTES
S0.1.1	STRUCTURAL GENERAL NOTES
S0.1.2	STRUCTURAL GENERAL NOTES
S2.1.1	FOUNDATION PLAN
S2.2.1	SECOND FLOOR FRAMING PLAN
S2.3.1	ROOF FRAMING PLAN
S3.0.1	STRUCTURAL CONCRETE DETAILS
S3.0.2	STRUCTURAL CONCRETE DETAILS
S3.0.3	STRUCTURAL CONCRETE DETAILS
S4.0.1	STRUCTURAL MASONRY ELEVATIONS
S4.1.1	STRUCTURAL MASONRY ELEVATIONS
S4.1.2	STRUCTURAL MASONRY ELEVATIONS
S5.2.0	STRUCTURAL BRACED FRAME ELEVATION & DETAILS
S5.2.1	STRUCTURAL BRACED FRAME DETAILS
S5.2.2	STRUCTURAL BRACED FRAME DETAILS
S5.2.3	STRUCTURAL BRACED FRAME DETAILS
S5.3.1	HOSE TOWER FRAMING DETAILS
S6.0.1	STRUCTURAL WOOD DETAILS
S6.1.1	STRUCTURAL WOOD DETAILS
S6.2.1	STRUCTURAL WOOD DETAILS
S6.2.2	STRUCTURAL WOOD DETAILS
S6.3.1	STRUCTURAL WOOD DETAILS
S6.4.1	STRUCTURAL WOOD DETAILS

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Renovation,
Firehouse 23

PERMIT SET

722 18th Ave
Seattle, WA

Drawn by: ZCE
Checked: JB, JC
Date: June 25, 2020
Scale: As indicated

Revisions:
No. Date Remarks

STRUCTURAL
TITLE SHEET
S0.0.0

GENERAL REQUIREMENTS

SUMMARY OF WORK

Project consists of a Substantial Alteration to a 1906 unreinforced masonry (URM) and wood structure. Seismic modifications are made according to the Seattle Existing Building Code, specifically Appendix A1 and are within the current practice for the renovation of existing buildings of this age and construction type. The intent of the upgrade is to improve life-safety in an earthquake but the building may be heavily damaged.

Seismic forces are resisted by the existing URM walls with some strengthening and added steel braced frames. Connections between the URM walls and floor and roof framing are added. No foundation work will be performed at the lateral elements other than anchoring the steel frames to the basement and foundation walls. The building is located on dense glacial till and foundations are acceptable as constructed. If slight overstresses to bearing pressures would occur in an earthquake, they would not be a risk to life safety.

DEFINITIONS

The following acronyms are used throughout these structural notes:

- IBC - Governing code, including local amendments
- SER - Structural Engineer of Record per these Contract Documents
- UNO - unless noted otherwise
- ASTM - American Society for Testing and Materials

GOVERNING CODE

All design and construction shall conform to the 2015 Seattle Existing Building Code and the 2015 Seattle Building Code for new construction.

Reference to ASTM and other standards shall refer to the latest edition designated by IBC Chapter 35. Refer to the specifications for information in addition to that covered by these structural notes and drawings.

DOCUMENTS

Structural Documents shall be used in conjunction with Architectural Documents for all bidding and construction.

Drawings indicate general and typical details of construction. Typical details and general notes shall apply even if not specifically denoted on plans, UNO. Where conditions are not specifically indicated similar details of construction shall be used, subject to review and approval by the Architect and the SER.

Existing structural information, designated as (E) on the structural drawings, has been compiled from information furnished by various sources and is not necessarily field-verified by the engineer. Dimensions relating to existing structures are intended for use as guidelines only, all dimensions shall be field-verified by the contractor prior to start of construction. Notify the Architect of any discrepancies.

These Contract Documents and any materials used in preparation of them, including calculations, are the exclusive property of the SER and can be reproduced only with the permission of the SER.

WARRANTY

The SER has used that degree of care and skill ordinarily exercised under similar circumstances by members of the profession in this locale and no other warranty, either expressed or implied, is made in connection with rendering professional services.

OWNER RESPONSIBILITY

The owner shall retain a Special Inspector to perform the special inspection requirements required by the building official and as outlined in the Special Inspection section below.

SEISMIC LOADS ON EXISTING BUILDINGS

The existing building does not conform to the seismic requirements for new construction. The building has been evaluated based on the industry standard practice for renovation of existing structures, based on the criteria outlined in ASCE 41-13: Seismic Evaluation and Retrofit of Existing Buildings.

Not all existing components and connections can be observed, therefore the work shown on these documents may need slight modifications, depending on actual conditions.

DESIGN CRITERIA

BUILDING CATEGORY

Structural Risk Category II
Importance factors for snow and seismic are listed with the loading criteria.

LIVE LOADS - FLOOR AND ROOF

Partition loading has been added per IBC

Office Buildings:	
Lobbies and first floor corridors	100 psf
Offices	50 psf
Partition loading	15 psf

Stores:	
Wholesale all floors	125 psf
Concentrated load (all conditions)	1,000 lbs

LIVE LOADS - SNOW

Numbering below is per IBC Section 1603.1.3:

- Flat-Roof Snow Load: $P_f = 25\text{psf}$
- Snow Exposure Factor: $C_e = 1.2$
- Snow Importance Factor: $I_s = 1.0$
- Thermal Factor: $C_t = 1.1$

LATERAL LOADS - WIND

Numbering below is per IBC Section 1603.1.4:

- Ultimate Design Wind Speed (3-second gust): $V_{ult} = 110\text{ mph}$
Nominal Design Wind Speed: $V_{sust} = 85\text{ mph}$
- Risk Category: II
- Wind Exposure: B
- Internal Pressure Coefficient = +/- 0.18

DESIGN CRITERIA (cont'd)

Additional Info:

- Topographic factor: $K_{at} = 1.0$
- Directionality factor: $K_d = 0.85$
- Enclosure classification: (enclosed)
- Gust Effect Factor: $G = 0.85$
- Design Base shear: N/A, DOES NOT CONTROL

LATERAL LOADS - EARTHQUAKE

Numbering below is per IBC Section 1603.1.5:

- Risk Category: II
- Seismic Importance Factor: $I_w = 1.0$
- Mapped Spectral Response Acceleration Parameters: $S_s = 1.354\text{ g}$; $S_1 = 0.524\text{ g}$
- Site Class: D; $F_A = 1.0$; $F_V = 1.5$
- Design Spectral Response Acceleration Parameters: $S_{DS} = 0.903\text{ g}$; $S_{D1} = 0.524\text{ g}$
- Seismic Design Category: D
- Basic Seismic Force-Resisting Systems:
 - Vertical Elements: URM walls and Ordinary Concentric Braced Frames;
 - Diaphragms: Existing straight sheathed roofs, Existing Diagonal sheathed floors with wood flooring, and new sure-board ceiling diaphragm;
- Design Base Shear: N/A, Design per SEBC Appendix A1
- Seismic Response Coefficient: $R = 0.45$
- Response Modification Coefficient: $R = 1.5$
- Analysis Procedure: Appendix A1

CONTRACTOR PERFORMANCE REQUIREMENTS

DESIGN DOCUMENTS

Contractor shall verify all dimensions and all conditions at the job site, including building and site conditions before commencing work, and be responsible for same. All discrepancies shall be reported to the Architect before proceeding with work. Any errors, ambiguities and/or omissions in the contract documents shall be reported to the Architect immediately, in writing. No work is to be started before correction is made.

Contractor shall verify and/or coordinate all dimensioned openings and slab edges shown on the contract documents. Some dimensions, openings and embedded items are shown on the structural drawings. Others may be required. Refer to architectural drawings for size and location of curbs, equipment pads, wall and floor openings, architectural treatment, embeds required for architectural items and dimensions. Refer to mechanical, plumbing, electrical and fire protection drawings for size and location of all openings for ducts, piping, conduits, etc. Submit openings to architect for review.

Do not scale drawings. Use only field verified dimensions. When electronic plan files are provided for the Contractor's detailing convenience, it shall be noted that the electronic files are not guaranteed to be dimensionally accurate. The Contractor uses them at their own risk. The published paper documents are the controlling Contract Documents. Electronic files of detail sheets and notes will not be provided.

CONTRACTOR-INITIATED CHANGES

Contractor-initiated changes shall be submitted in writing to the Architect for review and acceptance prior to fabrication or construction. Changes shown on shop drawings only will not satisfy this requirement.

INSPECTIONS

The Contractor shall coordinate with the building department for all building department required inspections.

TEMPORARY SHORING AND BRACING

The Contractor shall provide temporary bracing as required until all permanent connections and stiffening have been installed. The Contractor is responsible for the strength and stability of all partially completed structures including but not limited to concrete or masonry walls, steel framing and erection aids. The Contractor shall, at their discretion, employ the aid of a licensed Structural Engineer to design all temporary bracing and shoring necessary to complete the work described in these contract documents. The Contractor shall be responsible for all required safety standards, safety precautions and the methods, techniques, sequences or procedures required in performing their work. For concrete construction refer to ACI 318 - Section 26.11.2 "Removal of Formwork".

SAFETY PROCEDURES

Contractor shall be responsible for all safety precautions and the methods, techniques, sequences or procedures required to perform the Contractor's work. The Structural Engineer has no overall supervisory authority or actual and/or direct responsibility for the specific working conditions at the site and/or for any hazards resulting from the actions of any trade contractor. The Structural Engineer has no duty to inspect, supervise, note, correct, or report any health or safety deficiencies to the Owner, Contractors, or other entities or persons at the project site.

RENOVATIONS

DEMOLITION

Contractor shall verify all existing conditions before commencing any demolition. Shoring shall be installed to support existing construction as required and in a manner suitable to the work sequences. Demolition debris shall not be allowed to damage or overload the existing structure. Limit construction loading (including demolition debris) on existing floor systems to 40 psf.

EXISTING CONCRETE

Existing reinforcing shall be saved where and as noted on the plans. Saw cutting, if and where used, shall not cut existing reinforcing that is to be saved.

- All new openings through existing walls, slabs and beams shall be accomplished by saw cutting wherever possible.
- Contractor shall verify all existing conditions and location of members prior to cutting any openings.
- Small round openings shall be accomplished by core drilling, if possible.
- Where new reinforcing terminates at existing concrete, dowels epoxy grouted into existing concrete shall be provided to match horizontal reinforcing, unless noted otherwise on plans.

EXISTING WOOD

Contractor shall check for dryrot at all areas of new work. All rot shall be removed and damaged members shall be replaced or repaired as directed by the Structural Engineer or Architect.

EXTERIOR MASONRY INSPECTION & REPAIR

All exterior masonry walls shall be inspected and repaired as follows:

Scrape all loose and weakened mortar out to full depth of the deterioration; remove and replace any loose masonry units; check for loose facing brick; tuck point all joints solid. All masonry restoration and repair shall be performed in such a manner that the existing structure is not weakened or left unsupported during the process of the work. All exterior appendages such as fire escapes, cornices and eyebrows shall be inspected for structural integrity and the condition of the connections to the structure. The Contractor shall notify the Structural Engineer as to their findings.

RENOVATIONS (continued)

EXISTING MASONRY SHEAR TEST

Allowable unreinforced masonry stresses may be determined by performing in-place shear tests. All testing is to be in accordance with the Seattle Existing Building Code, Section A106.3.3. All testing is to be performed by an approved agency. An accurate record of all such tests and their location in the building shall be recorded and these results shall be submitted to the building official for approval as part of the structural analysis.

The results of the test are to be submitted to the building department, along with a letter from the Structural Engineer comparing the test result to the design shear stresses.

SHOP DRAWINGS AND SUBMITTALS

SHOP DRAWING & SUBMITTAL REVIEW (including Deferred Structural Components)

The contractor must review and stamp the shop drawings & submittals for review. SER will only review submittals for items shown on SER documents. Submittals for Deferred Structural Components will receive cursory review by SER for loads imposed on primary structure. SER will review shop drawings for general conformance with design concept of the project and general compliance with the information given in the Structural Contract Documents. Review of submittals does not constitute approval or acceptance of unauthorized deviation from Contract Documents.

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications.

Contractor responsible for:

- Reviewing, approving, stamping and signing submittals prior to submittal to Architect and SER
- Timing submittals to allow two weeks of review time for the SER and time for corrections and/or resubmittal
- Conformance to requirements of the Contract Documents
- Dimensions and quantities
- Verifying information to be confirmed or coordinated
- Information solely for fabrication, safety, means, methods, techniques and sequences of construction
- Coordination of all trades

Resubmittals shall be clouded and dated for all changes to the submittal. Only clouded portions of submittal will be reviewed and SER's review stamp applies to only these areas.

SUBSTITUTIONS

Substitutions shall be submitted in writing prior to submittal of shop drawings. Shop drawings bearing substitutions will be rejected. Submit engineering data to substantiate the equivalence of the proposed items. The SER's basic services contract does not include review of substitutions that require re-engineering of the item or adjacent structure. Nor does the SER's contract cover excessive review of proposed substitutions. The fees for making these reviews and/or redesign shall be paid by the contractor. Reviews and approvals shall not be made until authorization is received.

SUBMITTALS

Shop drawings and material submittals shall be submitted to the Architect and SER prior to any fabrication or construction for the following structural items. Submittals shall include one reproducible and one copy; reproducible will be marked and returned. If deviations, discrepancies, or conflicts between shop drawings submittals and the contract documents are discovered either prior to or after shop drawing submittals are processed by the SER, the Contract Documents control and shall be followed.

- Construction sequence description
- Contractor quality control testing procedures for masonry tests
- Concrete mix designs
- Concrete accessories material specification, size and location
- Reinforcing bar shop drawings and placing plans
- Reinforcing bar mill certificates shall be available upon request
- Masonry materials and mix designs
- Non-shrink grout material specifications and manufacturer's installation recommendations
- Fabrication shop AISC Certification
- Structural steel registration/certification or quality control inspection records
- Structural steel shop and erection drawings
- Welding Procedure Specifications
- Glued laminated members (certificates shall be on site and be available upon request)
- Deferred Structural Components listed below
- Certificate of conformance for welding material, including supplemental notch toughness requirements

DEFERRED STRUCTURAL COMPONENTS

Components referred to as Deferred Structural Components shall comply with these notes. These elements have not been permitted under the base building application. The contractor will be required to submit the component system documents to the building official for approval. The documents shall be stamped and signed by an engineer licensed by the state where the project is located. The deferred structural components shall not be installed until the design and submittal documents have been approved by the building official.

Prior to building department submittal, the deferred structural components submittals shall receive cursory review by SER for loads imposed on primary structure and general conformance with design concept of the project and general compliance with the information given in the Structural Contract Documents. Review of submittals does not constitute approval or acceptance of unauthorized deviation from Contract Documents. Submittals of contractor-designed components shall include the designing professional engineer's stamp and signature, as noted above. The submittal shall be approved by the component vendor prior to review by the SER. The designing professional is responsible for code conformance and all necessary connections not specifically called out on architectural or structural contract documents.

Submittals shall include details of connections to primary structure that indicate magnitude and direction of all loads imposed at point of connection. Design criteria shall be provided with submittal and calculations shall be made available upon request.

The following list includes the items that are defined as Deferred Structural Components. Refer to other discipline's contract documents for additional deferred components that may require structural design and details. Connections of these elements shall not induce torsion on structural members. Deferred Structural Components shall be manufactured, delivered, handled, stored, and field erected in conformance with instructions prepared by the component vendor.

Deferred structural components:

- Elevator guide rail systems
- Metal stairs and landings
- Handrails, guards, grab bars
- Fall-restraint systems

INSPECTIONS

INSPECTIONS BY BUILDING OFFICIAL

The building official, upon notification, shall make structural inspections as required by local ordinance. The inspection by the building official per IBC Section 110 will be separate from and in addition to the special inspection and structural observation mentioned subsequently.

SPECIAL INSPECTIONS

A Special Inspector shall be hired by the owner to perform the following special inspections per IBC Section 1704. See the specifications for additional requirements for special inspection and testing. The architect, structural engineer, and building department shall be furnished with copies of all inspection reports and test results.

See IBC Chapter 17: "Special Inspections and Tests" for more detailed requirements.

SPECIAL INSPECTIONS AND TESTS OF SOILS (PER IBC 1705.6)

Verification and Inspection	Frequency		Reference
	Continuous	Periodic	
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X	
2. VERIFY THAT EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X		
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X	

SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION (PER IBC 1705.3)

Verification and Inspection	Frequency		Reference
	Continuous	Periodic	
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT		X	IBC 1908.4 ACI 318: 20, 25.2, 25.3, 26.6.1-3
3. INSPECTION OF ANCHORS CAST IN CONCRETE		X	ACI 318: 17.8.2
4. INSPECTION OF ANCHORS AND REINFORCING BAR POST-INSTALLED IN HARDENED CONCRETE MEMBERS:			
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X		ACI 318: 17.8.2.4
b. MECHANICAL ANCHORS, ADHESIVE ANCHORS AND REINFORCING BAR NOT DEFINED IN 4a		X	ACI 318: 17.8.2
5. VERIFYING USE OF REQUIRED DESIGN MIX		X	IBC 1904.1, 1904.2, 1908.2, 1908.3, ACI 318: CH. 19, 26.4.3, 26.4.4
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		IBC 1908.10 ACI 318: 26.4, 26.12 ASTM C172, C31 SEATTLE DCI DR 14-2014
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		IBC 1908.6, 1908.7, 1908.8 ACI 318: 26.5
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	IBC 1908.9 ACI 318: 26.5.3- 26.5.5
9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE BEING FORMED		X	ACI 318: 26.11.1.2(b)

SPECIAL INSPECTIONS OF STRUCTURAL STEEL CONSTRUCTION OTHER THAN SEISMIC LATERAL FORCE RESISTING SYSTEMS (PER IBC 1705.2.1)

Verification and Inspection	Frequency		Reference
	Continuous	Periodic	
INSPECTION OF FABRICATOR'S QUALITY CONTROL PROCEDURES		X	IBC 1704.2.5 AISC 360-N.2
REVIEW OF MATERIAL TEST REPORTS AND CERTIFICATIONS LISTED IN AISC SECTION N3.2	X		AISC 360-N.5.2
INSPECTION OF WELDING STRUCTURAL STEEL:			
PER AISC 360 TABLES N5.4-1, -2, -3			AISC 360-N.5.4 AISC 360-N.5.5 AWS D1.1
NONDESTRUCTIVE TESTING OF WELDED JOINTS			PER AISC 360 N5.5 AISC 360-N.5.5 AWS D1.1
INSPECTION OF HIGH-STRENGTH BOLTING			PER AISC 360 TABLES N5.6-1, -2, -3 AISC 360-N.5.6
INSPECT THE FABRICATED STEEL OR ERECTED STEEL FRAME TO VERIFY COMPLIANCE WITH THE DETAILS SHOWN ON THE CONSTRUCTION DOCUMENTS		X	AISC 360-N.5.7
INSPECTION DURING THE PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL	X		AISC 360-N.5.7

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Drawn by: ZCE

Checked: JB, JC

Date: June 25, 2020

Scale:

Revisions:
No. Date Remarks

STRUCTURAL
GENERAL NOTES
S0.1.0

INSPECTIONS (continued)

SPECIAL INSPECTIONS OF STRUCTURAL STEEL CONSTRUCTION AT SEISMIC LATER FORCE RESISTING SYSTEMS (PER IBC 1705.12.1)

Verification and Inspection	Frequency		Reference
	Continuous	Periodic	
INSPECTION OF WELDING STRUCTURAL STEEL:	PER AISC 341 TABLES J6-1, -2, -3		AISC 341-J6 AISC 360-N5.5 AWS D1.8
NONDESTRUCTIVE TESTING OF WELDED JOINTS	PER AISC 360 N5.5		AISC 360-N5.5 AWS D1.1
INSPECTION OF HIGH-STRENGTH BOLTING	PER AISC 341 TABLES J7-1, -2, -3		AISC 341-J7

SPECIAL INSPECTIONS OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL (PER IBC 1705.2)

Verification and Inspection	Frequency		Reference
	Continuous	Periodic	
1. INSPECTION OF WELDING a. REINFORCING STEEL: 1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706 2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT. 3) SHEAR REINFORCEMENT 4) OTHER REINFORCING STEEL	X	X	AWS D1.4 ACI 318: 3.5.2
2. HANDRAIL TO OTHER THAN STRUCTURAL STEEL		X	

GEOTECHNICAL

REPORT & GENERAL CRITERIA

Criteria outlined in the report listed below was used for the design of the foundations:
*Geotechnical Report - Proposed Seismic Retrofit,
 722 18th Avenue, Seattle, WA, 98122
 prepared by PanGEO (March 2020)*

No foundation work is planned for this project. Minor areas of slab removal may require recompaction of underlying soils. A new Elevator pit requires Geotechnical Inspection.

Contractor shall be familiar with recommendations in the above-mentioned report prior to start of construction. Allowable soil pressure and lateral earth pressure are assumed and therefore must be verified by a Geotechnical Inspector or the building official. If soils are found to be other than assumed, notify the Structural Engineer for possible foundation redesign.

INSPECTIONS

All prepared soil-bearing surfaces shall be inspected by the owners Geotechnical Inspector (or building official) prior to placement of reinforcing steel and concrete. Inspections shall be made per IBC Table 1705.6.

BEARING VALUES

All footings shall bear on undisturbed soil and shall be lowered to firm bearing if suitable soil is not found at elevations shown. Exterior footings shall bear a minimum of 18" below the finished ground surface. Footing elevations shown on plans (or in details) are minimum depths and for guidance only; the actual elevations of footings must be established by the Contractor in the field working with the Geotechnical Inspector.

Allowable vertical bearing soil pressure	= 6000 pcf
Allowable lateral bearing soil pressure	= 350 pcf

EXISTING UTILITIES

The Contractor shall determine the location of all adjacent underground utilities prior to any excavation, shoring. Any utility information shown on the plans and details are approximate and not verified by the SER. Contractor is to provide protection of any utilities or underground structures during construction.

CONCRETE

CAST-IN-PLACE CONCRETE

Concrete materials shall conform to the following:	
Portland cement:	Type 1, ASTM C150
Fly ash (if used):	ASTM C618 class F or C
Slag cement (if used):	ASTM C989
Lightweight aggregates:	lightweight aggregates shall not be used without prior approval of SER and building department
Normal weight aggregates:	Norml C33
Sand equivalent:	ASTM C33
Water:	Potable per ASTM C94
Air entraining admixtures:	ASTM C260
Chemical admixtures:	ASTM C494
Flowable concrete admixtures:	ASTM C1017

Durability requirements of concrete mixes shall conform to building code. These requirements include water-cementitious material ratios, minimum compressive strengths, air entrainment, type of cement, and maximum chloride ion content.

CONCRETE STRENGTH REQUIREMENTS TABLE

Location	Strength f'c (psi)	Max Agg Size	Max W/C Ratio	Total Air Content	Exposure Categories and Classes			
					F	S	W	C
LEAN MIX SOIL REPLACEMENT WHERE NOTED	1,500	SAND	1.5 SACK CEMENT	-	F1	S0	W0	C1
FOUNDATIONS, GRADE BEAMS, STEM WALLS	4,000	1"	0.44	4.5%	F1	S0	W0	C1
SLAB ON GRADE, TOPPING SLAB, STAIR TREAD (INTERIOR)	3,000	3/4"	0.44	1%	F0	S0	W0	C0

CONCRETE (cont'd)

CONCRETE MIXTURES

Mixes shall be proportioned to meet compliance requirements of ACI 318 Section 26.4.3. Slump, W/C ratio, admixtures and aggregate size will be determined by the contractor. Submit documentation of concrete mixture characteristics for review by the SER before the mixture is used and before making changes to mixtures already in use. Documentation shall comply with ACI 318 Section 26.4.4 or City of Seattle Director's Rule 11-2014.

All concrete, including slab on grade, shall contain an acceptable water-reducing admixture conforming to ASTM C494 and be used in strict accordance with the manufacturer's recommendations.

All concrete which is exposed to freezing and thawing in a moist condition or exposed to deicing chemicals shall contain an air entraining agent, conforming to ASTM C260. Total air content shall be adjusted per ACI 318 for mix designs with smaller nominal aggregate size. The amount of entrained air shall be measured at the discharge end of the placing nozzle. Entrained air shall be as noted ± 1.0% by volume. Air-entrainment shall not be used at slabs that will receive a smooth, dense, hard-troweled finish.

Trucks hauling plant-mixed concrete shall arrive on-site with a field ticket indicating the maximum gallons of water that can be added at the site not to exceed the total water content in the approved mix design.

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. Concrete shall be thoroughly consolidated by suitable means during placement and shall be thoroughly worked around reinforcement, embedded items, and into corners of forms.

SHOTCRETE

Concrete may be placed by the "shotcrete" method, provided the approvals, tests, and inspections required by the building department are obtained. Shotcrete materials, equipment, procedures, proportions, batching, mixing and placement shall be in accordance with ACI 506R. The "shotcrete" method shall not be used without making special arrangements through owner and SER unless structural drawings are specifically detailed to accommodate shotcreting.

FORMWORK AND ACCESSORIES

Concrete construction shall conform to ACI 301 "Specifications for Structural Concrete" and the Building Code, including testing procedures. See specifications and/or architectural documents for formwork requirements. Installation shall adhere to ACI 301. Conduits and pipes of aluminum shall not be embedded in concrete construction.

Concrete accessories and embedded items shall be coordinated with Architectural and all other Contract Documents and suppliers' drawings before placing concrete. Wet-setting of anchor rods, reinforcing hardware, etc. is not allowed in concrete. Anchor rods, reinforcing hardware, etc. shall be firmly tied in place prior to concrete placement.

CURING AND FINISHES

Protect and cure freshly placed concrete per ACI 305.1 in hot conditions, ACI 306.1 in cold conditions, and ACI 308.1 " Specification for Curing Concrete". All exposed edges and corners shall have 3/4" chamfer, UNO. Concrete flatwork shall be sloped to provide positive drainage. Coordinate finish with architectural contract documents.

At the time of application of finish materials or special treatment to concrete, moisture content of concrete shall conform to requirements in finish material specifications. Where vapor sensitive coverings are to be placed on slabs on grade, conform strictly to slab covering manufacturer's recommendations regarding vapor retarder and granular fill requirements below the slab.

CONCRETE CRACK MAINTENANCE

Cracking occurs in concrete structures due to inherent shrinkage, creep, and the restraining effects of walls and other structural elements. Most cracking due to shrinkage and creep will likely occur over the first two years of the life of the structure; further concrete movement due to variations in temperature may persist. Cracks that result in water penetration will need to be repaired to protect reinforcing. Other cracking may be repaired at the owner's discretion for aesthetic reasons or performance of applied finishes. Prior to repairing cracks, a structural engineer should be consulted to provide direction on which cracks to repair and on whether observed cracks may affect the strength of the structure.

GROUTING STEEL BASE PLATES

Nonshrink grout for base plates shall be an approved nonshrink cementitious grout containing natural aggregates delivered to the job site in factory prepackaged containers requiring only the addition of water. The minimum 28-day compressive strength shall be at least 6000 psi. UNO. Grouts shall meet ASTM C1107. Approved grouts include: Master Builders' "Master Flow 713", Sika Corporation's "Sikagrout 212", Burke Company's "Nonferrous Nonshrink Grout", W.R. Meadows CG-86 Construction Grade Grout, or approved equal. Grout shall be mixed, applied, and cured strictly in accordance with the manufacturer's published recommendations.

REINFORCEMENT IN CONCRETE AND MASONRY

REINFORCING STEEL

Reinforcing steel shall conform to ASTM A615 (including supplement S1), Grade 60, Fy = 60,000 psi, except any bars specifically so noted on the drawings shall be Grade 40, Fy = 40,000 psi.

PROCEDURES

Reinforcing steel shall be detailed (including hooks and bends) in accordance with ACI 315 "Details and Detailing of Concrete Reinforcement". Lap all reinforcement in accordance with "The Reinforcing Splice and Development Length Schedule" on these documents. If table is not provided, lap all reinforcing by 40 bar diameters. Provide corner bars at all wall and footing intersections.

Reinforcing steel shall be adequately supported to prevent displacement during concrete and grout placement. Bars shall be bent cold.

Bars partially embedded in concrete shall not be field bent, unless specifically so detailed or approved by the SER.

ANCHORAGE

Post-installed anchors or reinforcing bar shall not be installed without prior approval of engineer of record unless noted otherwise on the plans.

ADHESIVE ANCHORS

Adhesive anchors (threaded rods or reinforcing bar) specified on the drawings in concrete shall be installed using "HIT-RE 500 V3" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report No. ESR-3814. Rods shall be ASTM F1554 Gr.55, unless noted otherwise. Special inspection of installation is required.

ADHESIVE ANCHORS IN EXISTING UN-REINFORCED MASONRY

Adhesive anchors (threaded rods or reinforcing bar) specified on the drawings as attaching to existing un-reinforced masonry shall be installed using "HIT-HY 270" as manufactured by the Hilti Corporation. Install in strict accordance with manufacturer's guidelines and ICC Report Number ESR-4143. Anchors shall be installed in core-drilled holes located in center stretcher brick. Manufacturer's Field Engineer must approve application prior to installation, including need for screen tubes. Rods shall be ASTM A307, unless noted otherwise. Special inspection of installation is required.

ANCHORAGE (cont'd)

EXPANSION ANCHORS

Expansion anchors into concrete and concrete masonry units shall be "Kwik Bolt TZ" as manufactured by the Hilti Corporation. Install in strict accordance with ICC Report Number ESR-1917, including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Substitutes proposed by contractor shall be submitted for review with ICC Reports indicating equivalent or greater load capacities. Special inspection of installation is required.

SCREW ANCHORS

Post-installed mechanical anchors into concrete and concrete masonry units shall be "Titen HD" screw anchors as manufactured by the Simpson Strong-Tie Company. Install in strict accordance with ICC Report Number ESR-2713 (into concrete) or ESR-1056 (into masonry), including minimum embedment requirements. At concrete masonry or brick masonry applications, bolts shall be installed into fully-grouted cells. Titen HD screw anchors are approved for dry interior applications only. Special inspection is required for the installation of all screw anchors resisting tension.

MASONRY

CONCRETE MASONRY UNIT WALLS

Concrete masonry unit walls shall be constructed of normal weight units, conforming to ASTM C90, laid in a running bond.

Mortar shall be Type S per IBC 2103.2 Grout shall conform to IBC 2103.3 and ASTM C476 requirements and attain a minimum compressive strength of 2,000 psi at 28 days, design F'm = 2,000 psi. Full stresses are required.

Strength shall be verified by prism testing in accordance with IBC Section 2108. Masonry units shall be chosen in accordance with TMS 602 Table 2.

All preparation and placing of masonry shall conform to Section 2104 of the IBC.

HELI-TIE ANCHORS

Post-installed masonry anchors referred to on these documents as Heli-Tie or Helical Anchors shall be Simpson Strong-Tie Company's Heli-Tie Anchors or approved equal. Anchors shall be 3/8" diameter stainless steel. Installation shall be by experienced installers, using manufacturer's installation tools, in strict accordance with the manufacturer's published instructions. On-site testing is required to verify capacity per manufacturer's testing recommendations. Prior to installation, test two anchors in each configuration at each wall where specified. Testing is to determine the load at a displacement of 0.157 inches. A factor of safety of three is applied to the average load to achieve the design load.

STRUCTURAL STEEL

REFERENCE STANDARDS

Steel construction shall conform to the latest editions of the AISC Specifications and Codes. "Specification for Structural Steel Buildings" ANSI/AISC 360, "Specification for Structural Joints Using High-Strength Bolts" AISC 348 and "Code of Standard Practice for Steel Buildings and Bridges" AISC 303 amended by the deletion of paragraph 4.4.1.

FABRICATORS

Fabricators for structural steel must have a quality assurance program in place. The quality assurance program must meet the requirements of one of the following methods:

- Registration in the Washington Association of Building Officials (WABO) Steel Fabricator Registration Program
- Participation in the AISC quality certification program, designated as an AISC Certified Plant, Category BU.
- Meeting the requirements of AISC 360 for structural steel buildings, appendix N and submitting plan documentation to the authority having jurisdiction, the engineer of record, and the owner or owner's designee. Quality assurance requirements of steel construction for wind and seismic (AISC 341, Chapter J) shall be included as required in Special Inspection section of the general notes, where applicable.

Fabricator for structural steel must be registered and approved to perform work without special inspection. At completion of fabrication, the fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents.

FINISHING

The terms finish, finish column, finishing, milled, milled surface or milling are intended to include surfaces which have been accurately sawed or finished to a true plane as defined by AISC.

Grind surface value equal to or less than 1,000 as defined by ANSI B46.2 (4-inch and thinner).

STEEL COATINGS AND PROTECTION

Coatings and protection (weather, fire, corrosion, etc.) shall be as specified by the architect. Galvanized steel members shall conform to ASTM A-123 and galvanized steel hardware shall conform to ASTM A-153. Guidelines outlined in ASTM A-384 shall be followed in order to safeguard against warping and distortion during hot-dip galvanizing of steel assemblies. Steel anchors and ties embedded in concrete and masonry shall be left unpainted.

CORROSION CONTROL

All steel noted as galvanized and any steel in ground contact or within 6-inches of grade shall be zinc-plated (galvanized) by the hot-dipped galvanic method (or pre-approved equivalent), except where such steel is to be fully encased in concrete. Furthermore, any surface where the coating has been removed or damaged must be brushed and re-coated in clean, dry field conditions with an approved zinc-based anti-corrosion coating except where such area is to be encased in concrete.

SHOP PAINTING

All steel to be shop primed. Steel fire proofed or encased with concrete need not be painted. All other steel shall be given one coat of shop paint, in accordance with Section 1.24 of the AISC "Specification" and Section 6.5 of the AISC "Code", unless noted otherwise. The surface preparation of the structural steel prior to painting shall be in accordance with the specific paint manufacturer's published recommendations. Structural joints and faying surfaces which are to be connected by means of welds or bolts shall not be painted until all welds and bolts are installed, inspected and approved. Paint shall be held back 3" from the faying surface or the joint to be welded.

STRUCTURAL STEEL (cont'd)

STRUCTURAL STEEL MEMBERS

Structural Steel shall conform to the following requirements (unless otherwise shown on plans):

STRUCTURAL STEEL MEMBER SPECIFICATIONS TABLE

Type of Member	ASTM Specification	Fy
SQUARE & RECTANGULAR HSS SECTIONS	A500, GRADE B OR C	46 ksi
STEEL PIPES	A53, GRADE B	35 ksi
PLATES, CHANNELS, ANGLES	A36, GRADE 36	36 ksi
THREADED RODS	A36	36 ksi
ANCHOR RODS (HOOKED, HEADED, THREADED & NUTTED)	F1554, GRADE 36 (UNO)	36 ksi
COMMON BOLTS	A307, GRADE A	-
STRUCTURAL FRAMING BOLTS	A325, TYPE 1	-
TWIST-OFF TYPE TENSION-CONTROL BOLTS	F1852 (A325, TYPE 1)	-
HEX NUTS	A563	-
FLAT CIRCULAR WASHERS	F436	-
SQUARE OR RECTANGULAR BEVELED WASHERS	F436	-
COMPRESSIBLE-WASHER TYPE DIRECT-TENSION INDICATORS	F959	-
HEADED SHEAR STUDS	A29	-

STEEL FRAMING

The contractor shall be responsible for all erection aids and joint preparations that include, but are not limited to: erection angles, lift holes, and other aids; welding procedures; required root openings; root face dimensions; groove angles; backing bars; copes; surface roughness values; and tapers of unequal parts.

WELDING

All welding shall be in conformance with AISC and AWS standard and shall be performed by WABO certified welders using E70XX Electrodes in accordance with AWS D1.1. Only Prequalified welders, as defined by WABO, shall be used.

Shop drawings shall show all welding with AWS D1.4 symbols. Welds shown on the drawings are the minimum sizes. Increase weld size to AWS minimum sizes, based on plate thickness. Minimum welding shall be 3/16" UNO. Filler metal with a specified minimum Charpy V-notch toughness of 20 ft-lb at 40°F or lower shall be used at complete-joint-penetration groove welds. Welds designated as demand critical shall be made with filler metals meeting the requirements specified in AWS D1.8 clause 6.3.

Welding procedures shall be submitted to the owner's testing agency for review prior to commencement of fabrication or erection. All complete-penetration welds shall be ultrasonically tested upon completion of the connection except plate less than or equal to 1/4" thick shall be magnetic particle tested. Complete penetration welds on plates less than or equal to 1/4" shall be magnetic particle tested.

Field welds shown are engineer's recommendation. Contractor is responsible for actual welds used to support specific means and methods.

BOLTS

All ASTM A-307 bolts shall be provided with lock washers under nuts or self-locking nuts.

Connections, joints and fasteners that are part of the Seismic Load Resisting System (SLRS) shall be pretensioned (PT) high-strength bolts and shall meet the requirements for slip-critical (SC) joints. UNO. All faying surfaces shall be prepared as required for class A or better slip-critical joints. All high-strength bolts shall be installed, tightened and inspected in accordance with AISC 348. Slip-critical (SC) connections shall use compressible-washer-type direct tension indicators or twist-off-type tension-control bolts.

HOLLO-BOLT

Bolts referred to in details as Hollo Bolts shall be fasteners designed for connection to hollow steel sections. Acceptable bolts are Hollo-Bolt 3 Part as provided by Lindapter (ICC ESR-3330) or approved equal. Installation shall adhere to the written requirements of the ESR report.

WOOD

MATERIAL CRITERIA

Framing lumber shall be kiln dried or MC-19 (unless more stringent criteria are required in these notes or on the drawings) and graded and marked in conformance with the latest WCLIB "Standard Grading Rules No. 17 for West Coast Lumber". Furnish to the following minimum standards:

WOOD STANDARDS

Member	Grade	Moisture Content
4x BEAMS & POSTS, 6x POSTS	DF #2	MC19
4x TREATED BEAMS & POSTS, AND 6x TREATED POSTS	DF #2	MC19
2x JOISTS, RAFTERS, BUILT-UP BEAMS, AND HEADERS	DF #2	MC19
2x, 3x FLATWISE & EDGEWISE BLOCKING	DF STANDARD	MC19
3x NAILERS ON STEEL BEAMS	DF #2	MC19
2x4 AND 2x6 STUDS	DF #2	MC19
3x STUDS	DF #2	MC19
2x4 PLATES	DF STANDARD	KD15
2x6 PLATES	DF #2	KD15
2x, 3x, AND 4x TREATED PLATES, LEDGERS	DF #2	KD15
TONGUE AND GROOVE DECKING (NON-VISUAL)	DF UTILITY/ #3 COMMERCIAL DED	MC19
TONGUE AND GROOVE DECKING (EXPOSED)	DF #2	MC19
TONGUE AND GROOVE DECKING (UPPER END EXPOSED)	DF SELECT DEX	MC19

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Byrd Barr Place
Renovation,
Firehouse 23

PERMIT SET

722 18th Ave
Seattle, WA

Drawn by: ZCE

Checked: JB, JC

Date: June 25, 2020

Scale:

Revisions:
No. Date Remarks

STRUCTURAL
GENERAL NOTES
S0.1.1

WOOD (cont'd)

MOISTURE CONTENT AND CARE OF MATERIAL DURING CONSTRUCTION

All 2x studs and plates shall be kiln dried. The Contractor shall take measures to minimize exposure of sawn lumber and engineered wood products to moisture during construction. All wood framed construction shall have maximum moisture content not to exceed 10% at time of fur-out, which shall be verified by a testing agency hired by the Owner. These test results shall be submitted to the Architect and Structural Engineer of Record for review prior to installation and interior drywall installation is performed.

TREATED WOOD

All wood framing in direct contact with concrete or masonry, exposed to weather, or that rest on exterior foundation walls and are located within 8" of earth, shall be pressure-treated with an approved preservative per IBC section 2303.1.9. Cut or drilled sections of treated material shall be treated with an approved preservative per IBC section 2303.1.9. See IBC section 2304.12 for additional requirements.

GLU-LAMINATED MATERIAL

Glu laminated members shall be fabricated in conformance with ANSI/AITC A190.1 AND ASTM D3737, Stress Class 24F-1.8E. Each member shall bear an AITC identification mark and shall be accompanied by an AITC certificate of conformance. All simple span beams shall be douglas fir combination 24F-V4, fb = 2,400 psi, fv = 265 psi and all cantilevered beams and columns shall be Douglas fir combination 24F-V8, fb = 2,400 psi, fv = 265 psi unless noted otherwise. Camber all simple span glu laminated beams to 3,500' radius or zero camber, unless shown otherwise on the plans.

(Trus-Joist)

STRUCTURAL COMPOSITE LUMBER

Manufactured lumber, PSL, LVL, and LSL, shall be manufactured under a process approved by the national research board. Each piece shall bear a stamp or stamps noting the name and plant number of the manufacturer, the grade, the national research board number, and the quality control agency. All PSL, LVL and LSL lumber shall be manufactured in accordance with ICC Report ESR-1387. LVL lumber shall be manufactured using veneer glued with a waterproof adhesive complying with the requirements of ASTM D2559 with all grain parallel with the length of the member. The members shall have the following minimum properties:

WOOD STRUCTURAL PANELS

Wood structural panels shall be APA rated sheathing, exposure 1 durability classification, in conformance with USDOC PS 1, ASTM D 5457 and IBC 2303.1.5 and table 2304.8(2).

Oriented strand board (OSB), shall be in accordance with USDOC PS 2, and of equivalent thickness, exposure rating and span rating and may be used in lieu of plywood pending OSB substitution approval by Architect. Contractor to ensure OSB is protected to prevent warping during installation.

SURE-BOARD

Structural sheathing referred to on these documents as Sure-Board Sheathing shall meet the following requirements as provided by International Materials Inc in ICC ESR-126. The panels shall be Series 200 Sure-Board consisting of 1/2" non-rated or Type X fire-resistance-rated gypsum wallboard factory-laminated with water-soluble adhesive to 22 gage sheet steel. Steel to comply with ASTM A653 Gr 33. All panel edges shall be blocked. See details for size and spacing of anchorage to supports.

FASTENERS

Fasteners shall conform to the following requirements, unless noted otherwise. Splitting shall be avoided at all wood fasteners:

Bolts	NDS section 12.1.3
Lag screws	NDS section 12.1.4
Wood screws	NDS section 12.1.5
Nails	NDS section 12.1.6
Wood-to-wood connection bolts	ASTM A307
Steel-to-wood connection bolts	ASTM A307
Anchor rods (7" embed min)	ASTM F1554 grade 36 with threaded ends and welded nut at end (provide higher grade at holddown rods where indicated)

Thru-bolt and anchor rod holes shall be at least 1/32" but no more than 1/16" larger than bolt/rod diameter. Clearance holes for lag screw shanks shall have the same diameter as the lag shank and the same penetration depth as the length of the unthreaded shank. Lead holes for threaded portion of lag screws shall have a diameter of 55 to 60% of lag screw shank diameter and shall extend the length of the threaded portion of the lag screw. Fasteners exposed to earth, weather or located in pressure preservative or fire retardant treated wood shall comply with the criteria listed in the "Metal Products in Contact with Treated Lumber" section.

FRAMING CONNECTORS

Timber connectors called out by letters and numbers shall be "Strong-Tie" by the Simpson Strong-Tie Company. Equivalent devices by other manufacturers may be substituted, provided they have ICC approval for equal or greater load capacities.

All connectors shall be installed in accordance with the manufacturer's recommendations. Provide number and size of fasteners as specified by manufacturer. All shims shall be seasoned and dried and the same grade (minimum) as members connected. All nails shall be as called out in the "Fasteners" section of this sheet, unless noted otherwise. All bolts in wood members shall conform to ASTM A307. Provide washers under the heads and nuts of all bolts and lag screws bearing on wood. Where connector straps connect two members, place one-half of the nails or bolts in each member.

METAL PRODUCTS IN CONTACT WITH TREATED LUMBER

Simpson hardware in contact with ACQ, CA, or CBA pressure-preservative treated wood shall have a Zmax finish (G185 HDG per ASTM A653) or shall be post hot-dip galvanized (per ASTM A123 for connectors and ASTM A153 for fasteners) unless noted otherwise. Exception: type 304 or 316 stainless steel connectors and fasteners are required for the following applications:

- ACQ, CA, or CBA treatments with ammonia where members are used in exterior applications.
- All ACZA treatments
- Retention levels greater than 0.40 pcf for ACQ, 0.41 pcf for CBA-A, or 0.21 pcf for CA-B treatments.

Stainless steel connectors require matching stainless steel fasteners. Zmax and post hot-dip galvanized connectors require fasteners galvanized per ASTM A153. Thru-bolts and anchor rods used in dry conditions shall be permitted to be of mechanically deposited zinc coated steel with coating weights in accordance with ASTM B 695, class 55 minimum. See IBC section 2304.10.5.1 and "Framing Connectors" section on this sheet for additional requirements.

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Byrd Barr Place
Renovation,
Firehouse 23

PERMIT SET

722 18th Ave
Seattle, WA

Drawn by: ZCE

Checked: JB, JC

Date: June 25, 2020

Scale:

Revisions:
No. Date Remarks

STRUCTURAL
GENERAL NOTES

S0.1.2



Byrd Barr Place
Renovation,
Firehouse 23

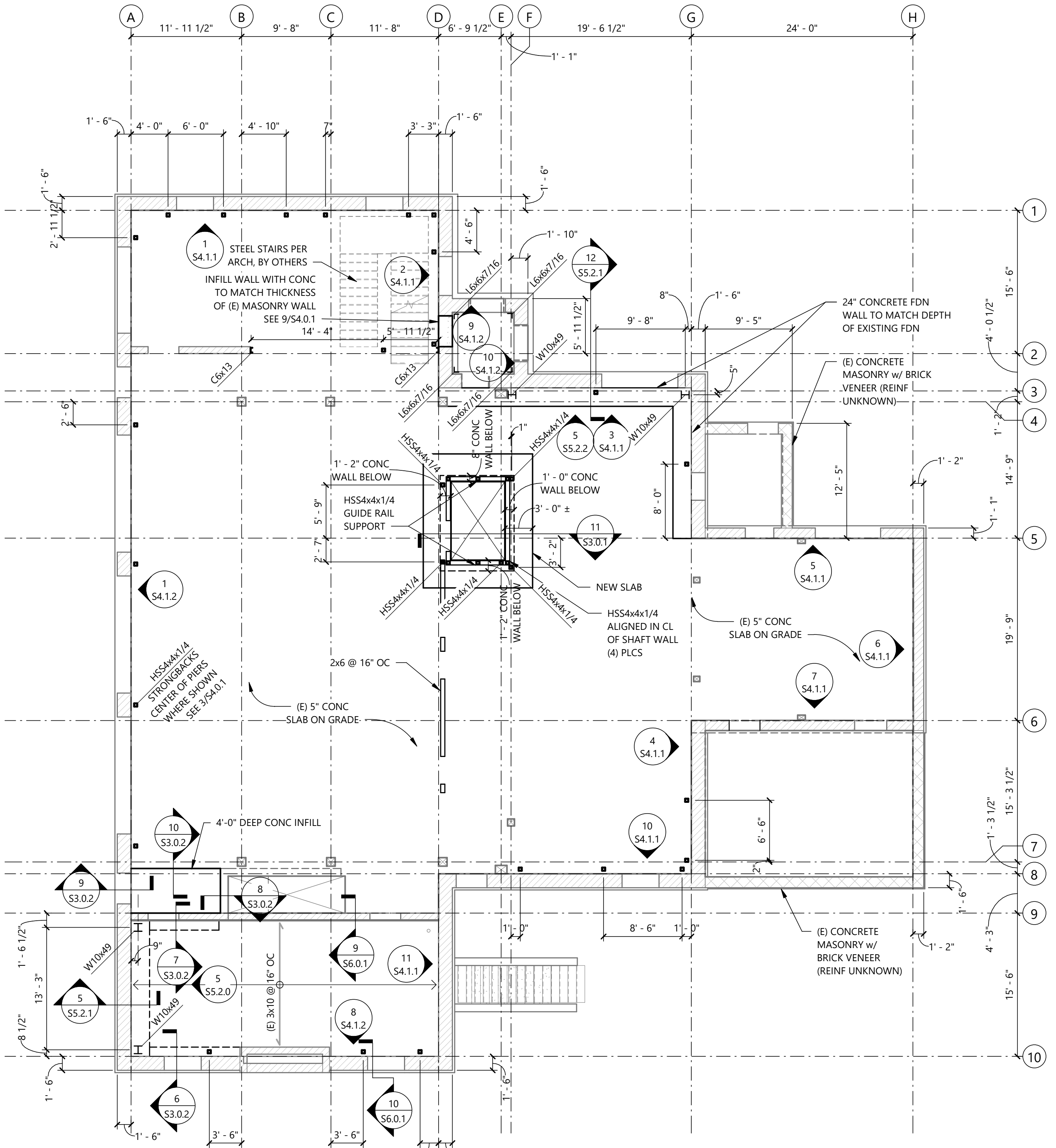
PERMIT SET

722 18th Ave
Seattle, WA

Drawn by:	ZCE	
Checked:	JB	
Date:	June 25, 2020	
Scale:	As indicated	
Revisions:		
No.	Date	Remarks

FOUNDATION
PLAN

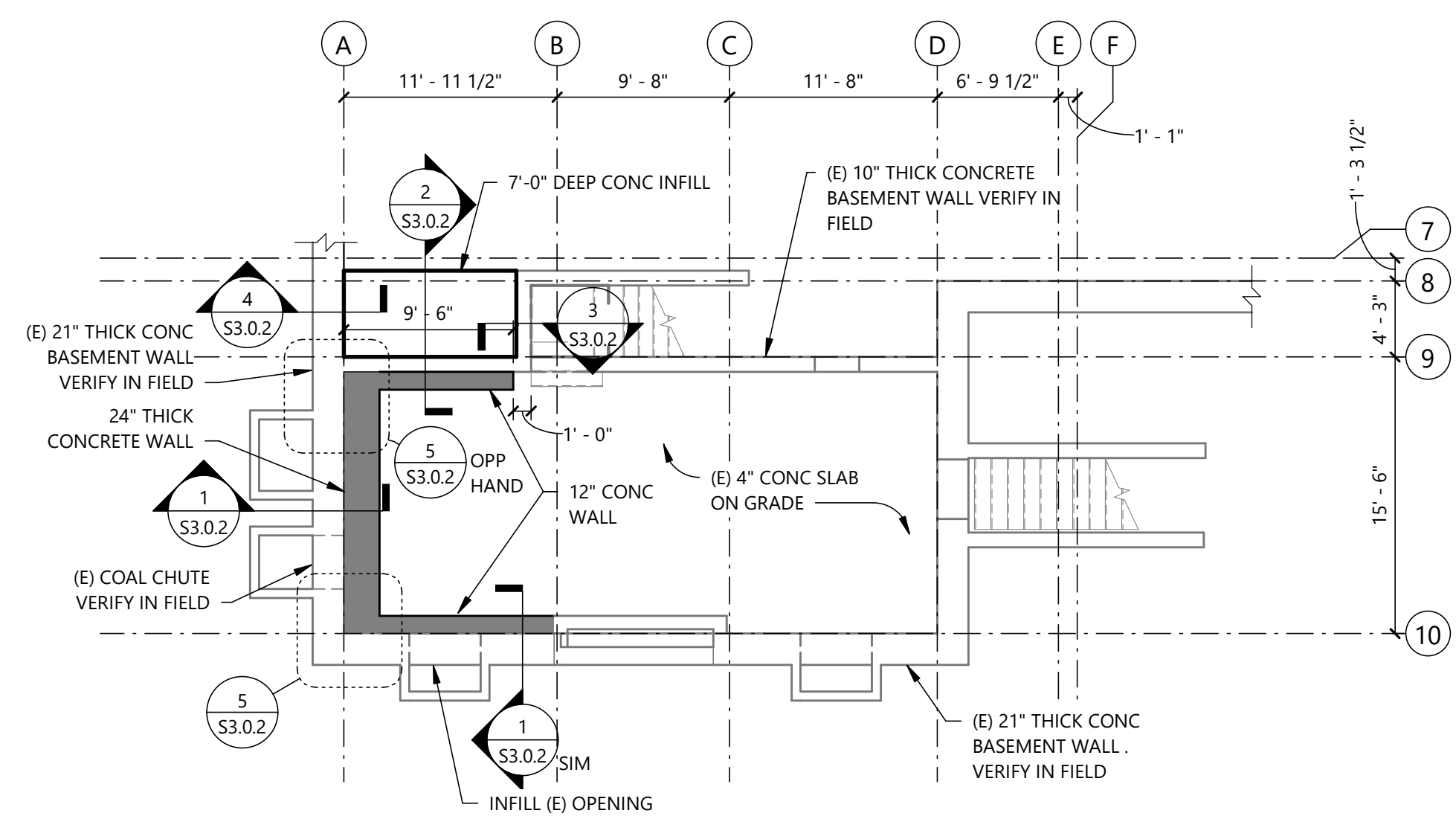
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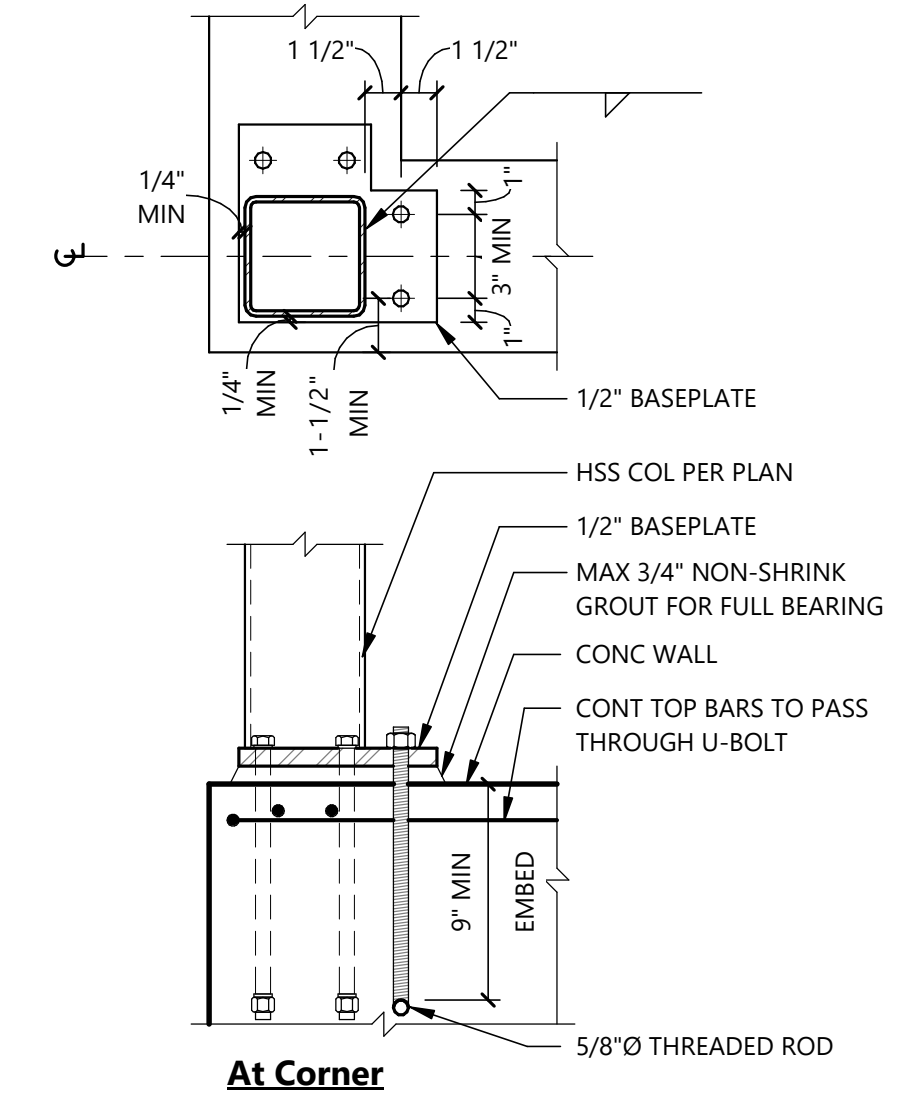
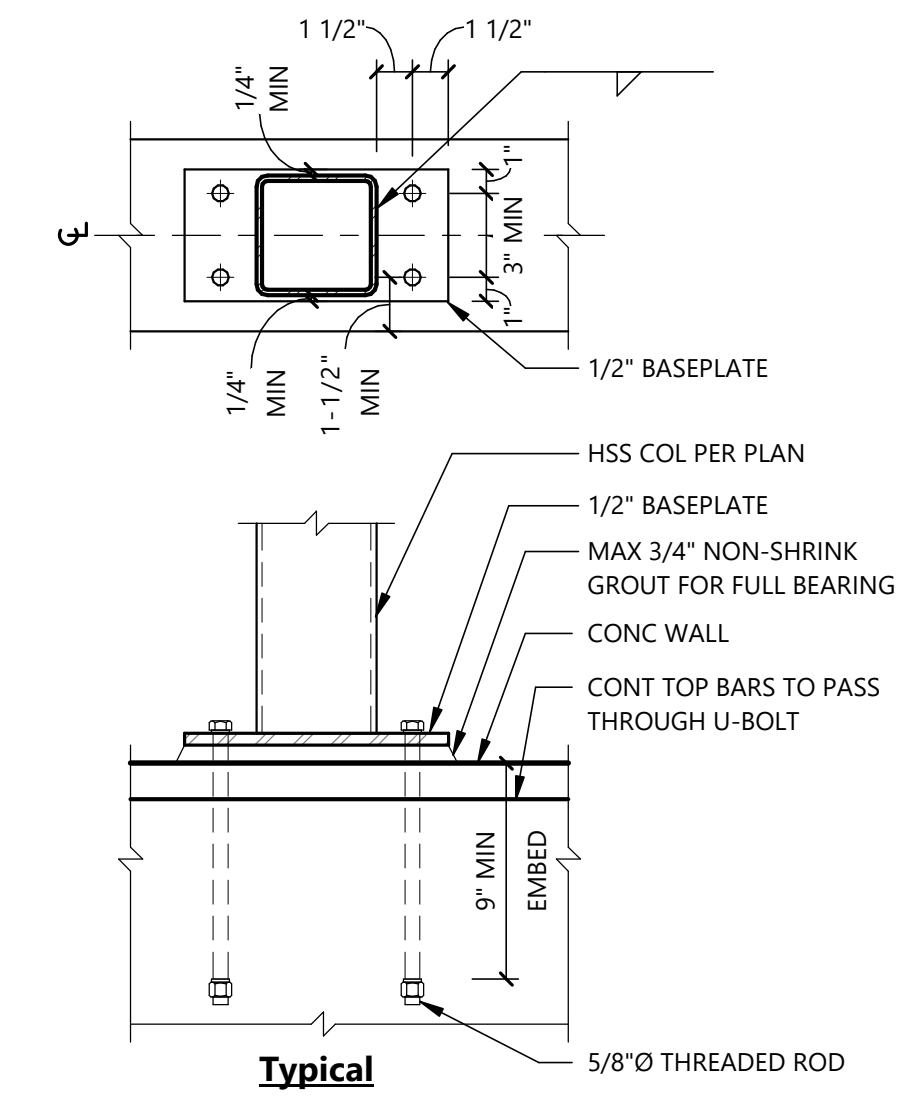
2 FIRST FLOOR FRAMING PLAN
Scale: 1/8" = 1'-0"

FOUNDATION PLAN NOTES

- | | |
|--|---|
| <p>1. GENERAL</p> <ol style="list-style-type: none"> ELEVATION AT TOP OF SLAB SHALL BE PER ARCHITECTURAL UNO. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN. REFER TO STRUCTURAL GENERAL NOTES FOR ADDITIONAL REQUIREMENTS. EXISTING CONDITIONS ARE ASSUMED AND MUST BE VERIFIED BY THE CONTRACTOR. WHERE DISCOVERED CONDITIONS VARY FROM THOSE SHOWN ON PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. (E) INDICATES EXISTING STRUCTURAL MEMBER | <p>2. FOUNDATIONS</p> <ol style="list-style-type: none"> EXCAVATE, BACKFILL, AND PREPARE SOILS AS REQUIRED PER STRUCTURAL GENERAL NOTES AND GEOTECHNICAL REPORT. REFER TO FOOTING SCHEDULE FOR SIZES AND REINFORCEMENT AT ALL COLUMN FOOTINGS. |
|--|---|



1 BASEMENT FOUNDATION PLAN
Scale: 1/8" = 1'-0"



3 HSS Column Base Plate at Elevator Wall
Scale: 1 1/2" = 1'-0"

REINFORCING BAR LAP SPICE & DEVELOPMENT LENGTH DIAGRAMS

The following conditions must be met in order to use the Reinforcing Bar Lap Splice & Development Length Tables

	Lap Splices	Straight Bar Development	Hooked Bar Development
CLASS 1: Bars enclosed by column ties or beam stirrups			
CLASS 2: No enclosure			
Where conditions for Classes 1 & 2 are not met	MULTIPLY LENGTHS SHOWN IN SCHEDULE BY 1.5	MULTIPLY LENGTHS SHOWN IN SCHEDULE BY 1.5	

- NOTES:**
- ALL BARS SHALL BE DEVELOPED & ALL SPLICES LAPPED PER ACE 318 FOR TENSION. UNO. TABLE MAY BE USED WHERE CONDITIONS MEET CRITERIA NOTED IN DIAGRAMS.
 - TABLES ARE APPLICABLE FOR NORMAL WEIGHT CONCRETE, ONLY.
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" DEPTH OF CONCRETE CAST BELOW THEM. (WALL HORIZONTAL REINFORCEMENT IS EXEMPT)
 - WHERE BARS OF DIFFERENT SIZE ARE LAP SPICED, SPLICE LENGTH SHALL BE THE LARGER OF:
 - DEVELOPED LENGTH OF LARGER BAR
 - SPLICE LENGTH OF SMALLER BAR
 - WHERE MINIMUM STRAIGHT BAR DEVELOPMENT LENGTH CANNOT BE ACHIEVED, USE WITH STANDARD HOOK
 - REFER TO CONCRETE COVER TABLE FOR MINIMUM CONCRETE COVER REQUIREMENTS.

REINFORCING BAR LAP SPICE & DEVELOPMENT LENGTH TABLE
f'c = 4,000 psi Grade 60 Reinforcing

Bar Size	Min Lap Splice Lengths (Ls)		Min Straight Bar Development Lengths (Ld)		Min Hooked Bar Embedment Lengths (Ldh)
	Top Bars	Other Bars	Top Bars	Other Bars	
#3	25"	19"	19"	15"	8"
#4	32"	25"	25"	19"	10"
#5	41"	31"	31"	24"	12"
#6	49"	37"	37"	29"	15"
#7	71"	54"	54"	42"	17"
#8	81"	62"	62"	48"	19"
#9	91"	70"	70"	54"	22"
#10	102"	79"	79"	61"	25"
#11	114"	87"	87"	67"	27"

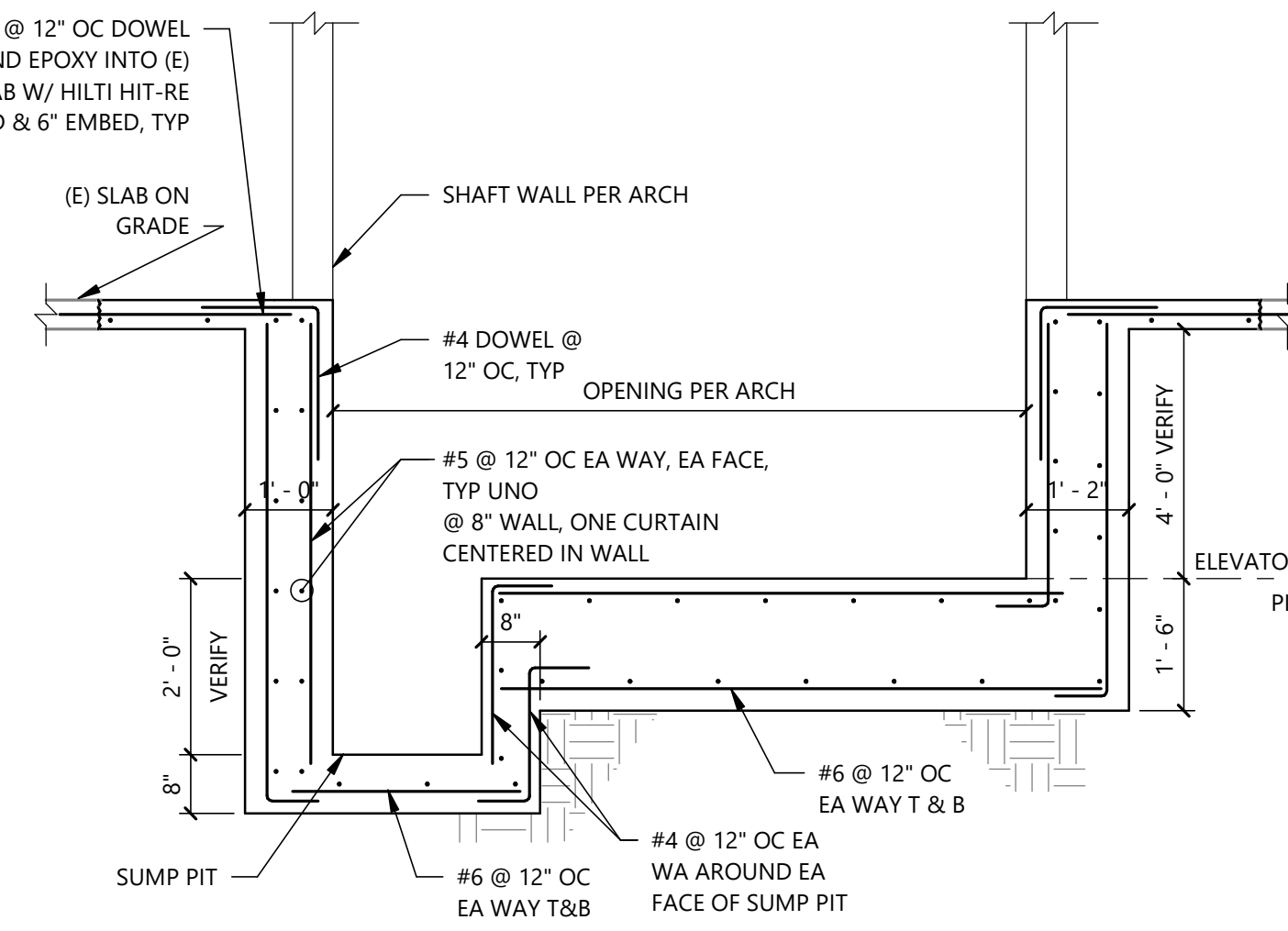
6 Reinforcing Bar Lap Splice & Development Length Tables
Scale: 1 1/2" = 1'-0"

CONCRETE COVER FOR REINFORCING STEEL

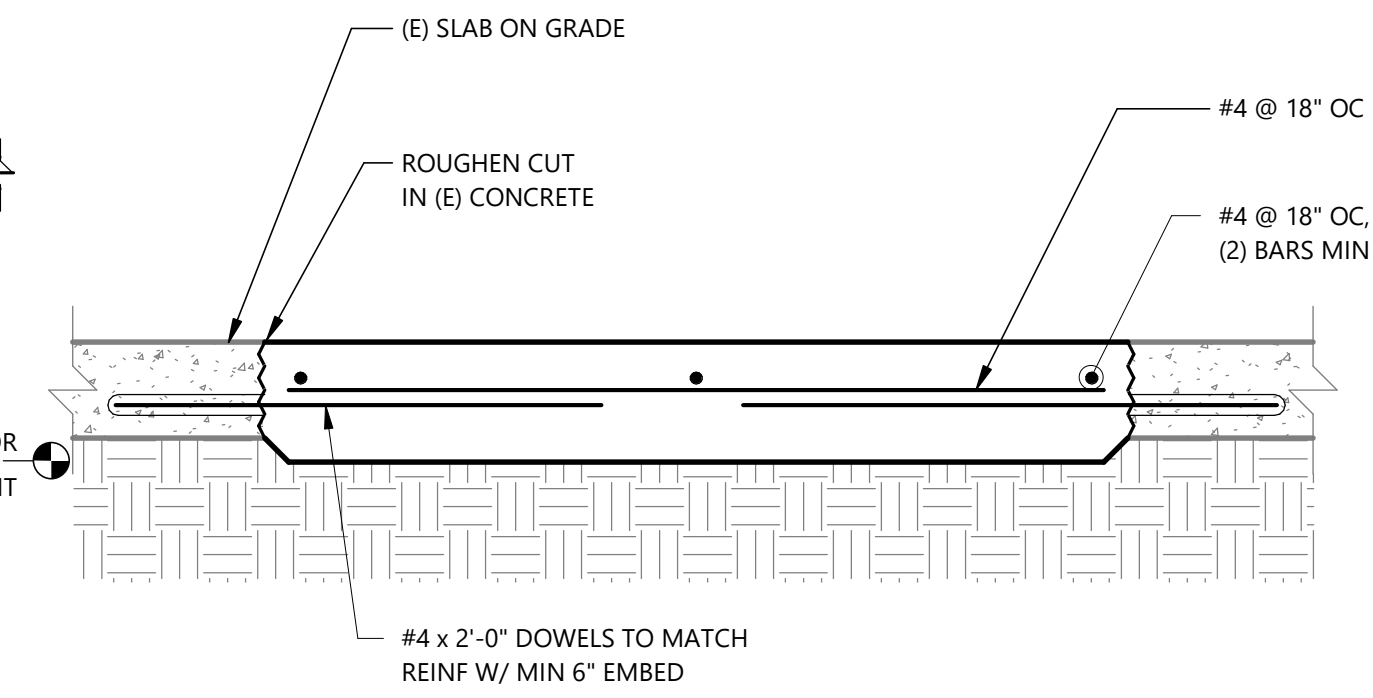
Reinforcing Bar Location	Min Concrete Cover
UNFORMED SURFACES CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#6 BARS AND LARGER)	2"
FORMED SURFACES EXPOSED TO EARTH OR WEATHER (#5 BARS AND SMALLER)	1 1/2"
COLUMNS AND BEAMS w/ BARS ENCLOSED IN STIRRUPS, TIES OR SPIRAL REINF	1 1/2"
SLABS, JOISTS AND INTERIOR FACES OF WALLS (#11 BARS AND SMALLER)	3/4"
2-HOUR AND 3-HOUR SLABS	(REFER TO PLAN NOTES)
CLEAR SPACING BETWEEN LONGITUDINAL BARS IN COLUMNS AND BOUNDARY ELEMENTS	1 1/2" OR 1.5db
CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER	1" OR db
CLEAR SPACING BETWEEN (2) OR MORE PARALLEL LAYERS	1"

- NOTES:**
- WHERE A THICKNESS OF COVER REQUIRED FOR FIRE PROTECTION IS GREATER THAN THAT SPECIFIED IN THIS TABLE, THE GREATER THICKNESS SHALL BE USED.
 - WHERE TWO VALUES ARE SHOWN, THE GREATER SHALL BE USED.

10 Concrete Cover for Reinforcing Steel
Scale: 1 1/2" = 1'-0"



11 Elevator Pit Section With Sump Pit
Scale: 1/2" = 1'-0"



12 Typical Patching at Slab on Grade
Scale: 1 1/2" = 1'-0"

Byrd Barr Place
Renovation,
Firehouse 23

PERMIT SET

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No.	Date	Remarks

STRUCTURAL
CONCRETE
DETAILS

S3.0.1



Byrd Barr Place
Renovation,
Firehouse 23

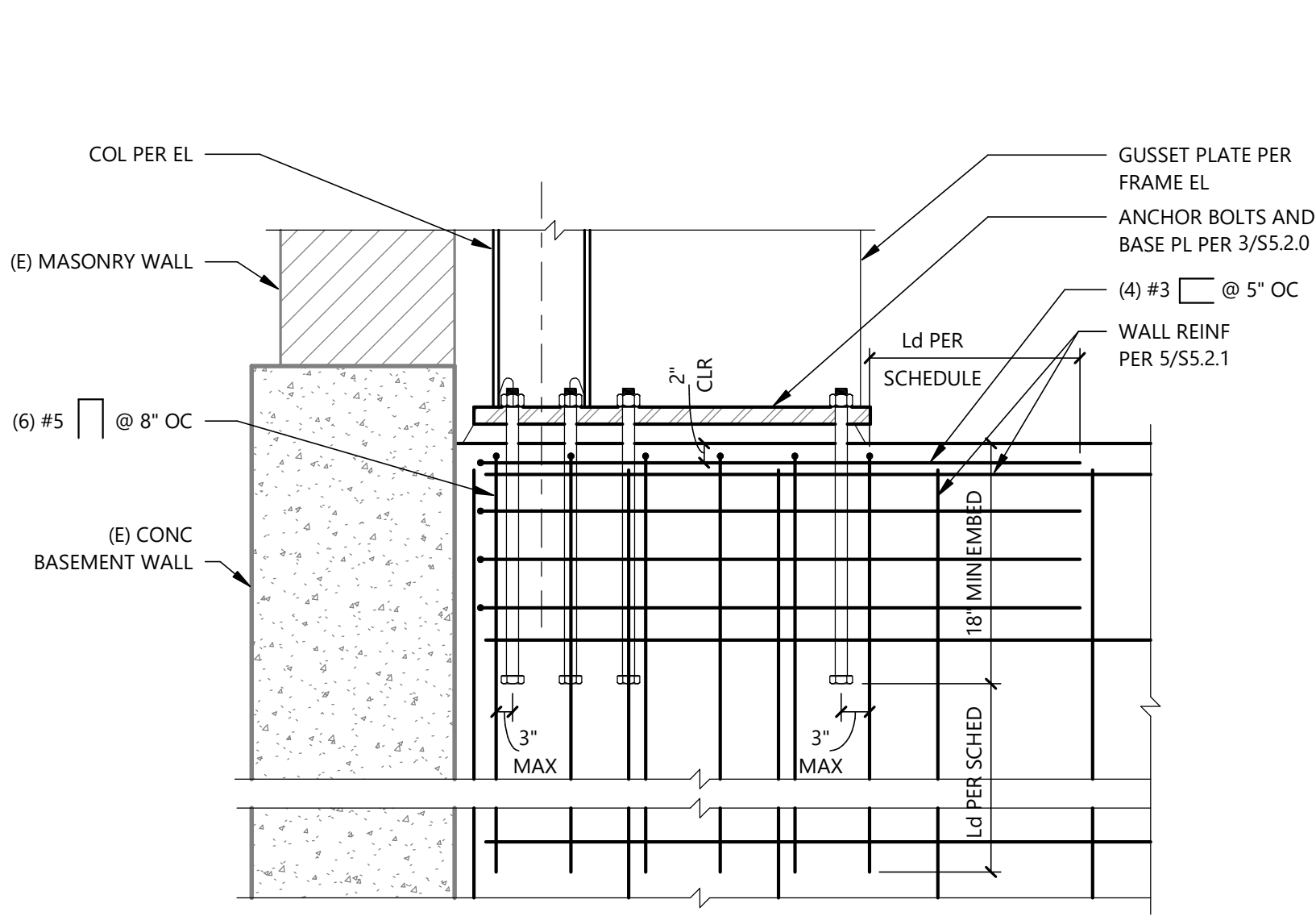
PERMIT SET

722 18th Ave
Seattle, WA

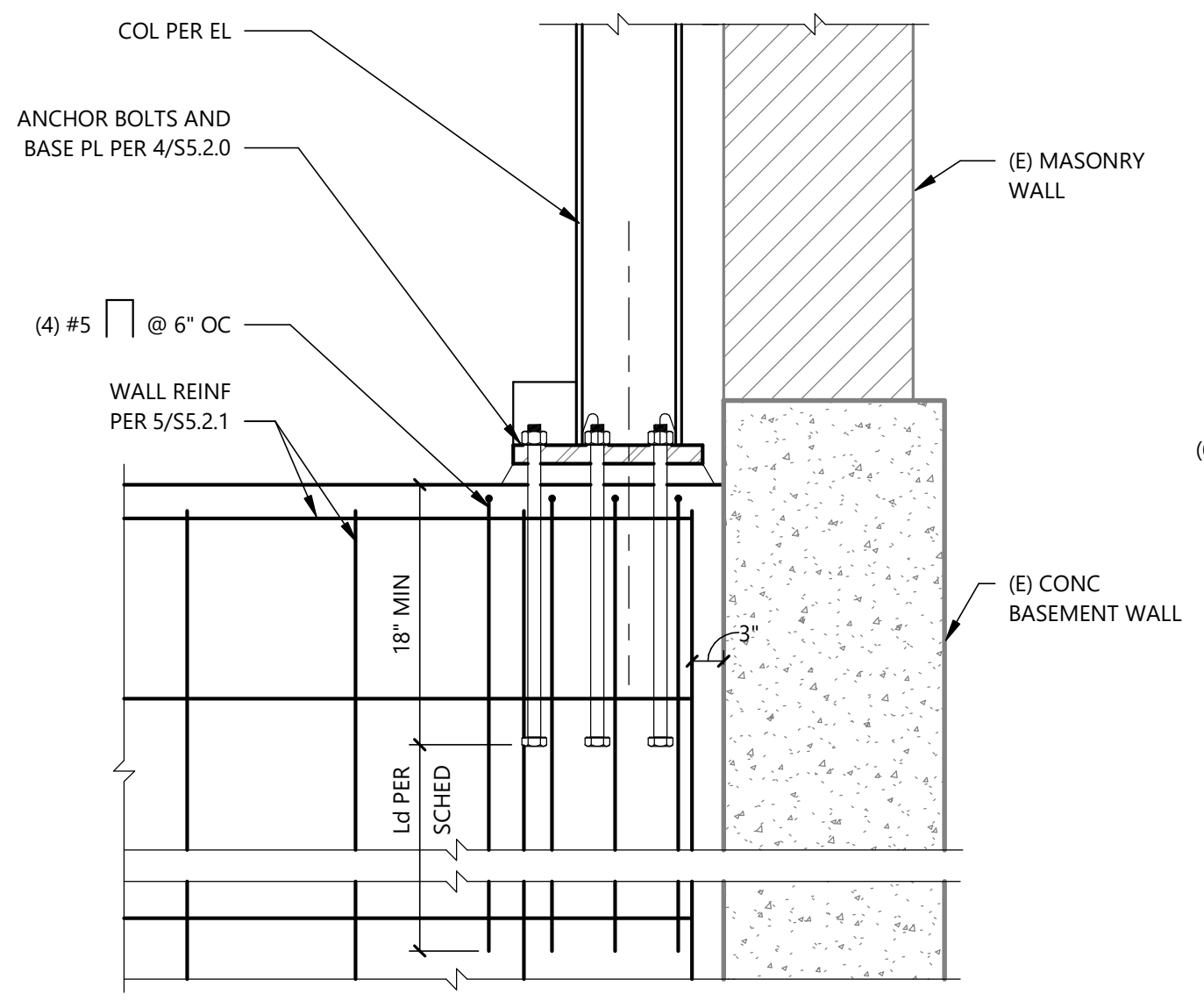
Drawn by: ZCE
Checked: JB_JC
Date: June 25, 2020
Scale: 3/4" = 1'-0"

Revisions:
No. Date Remarks

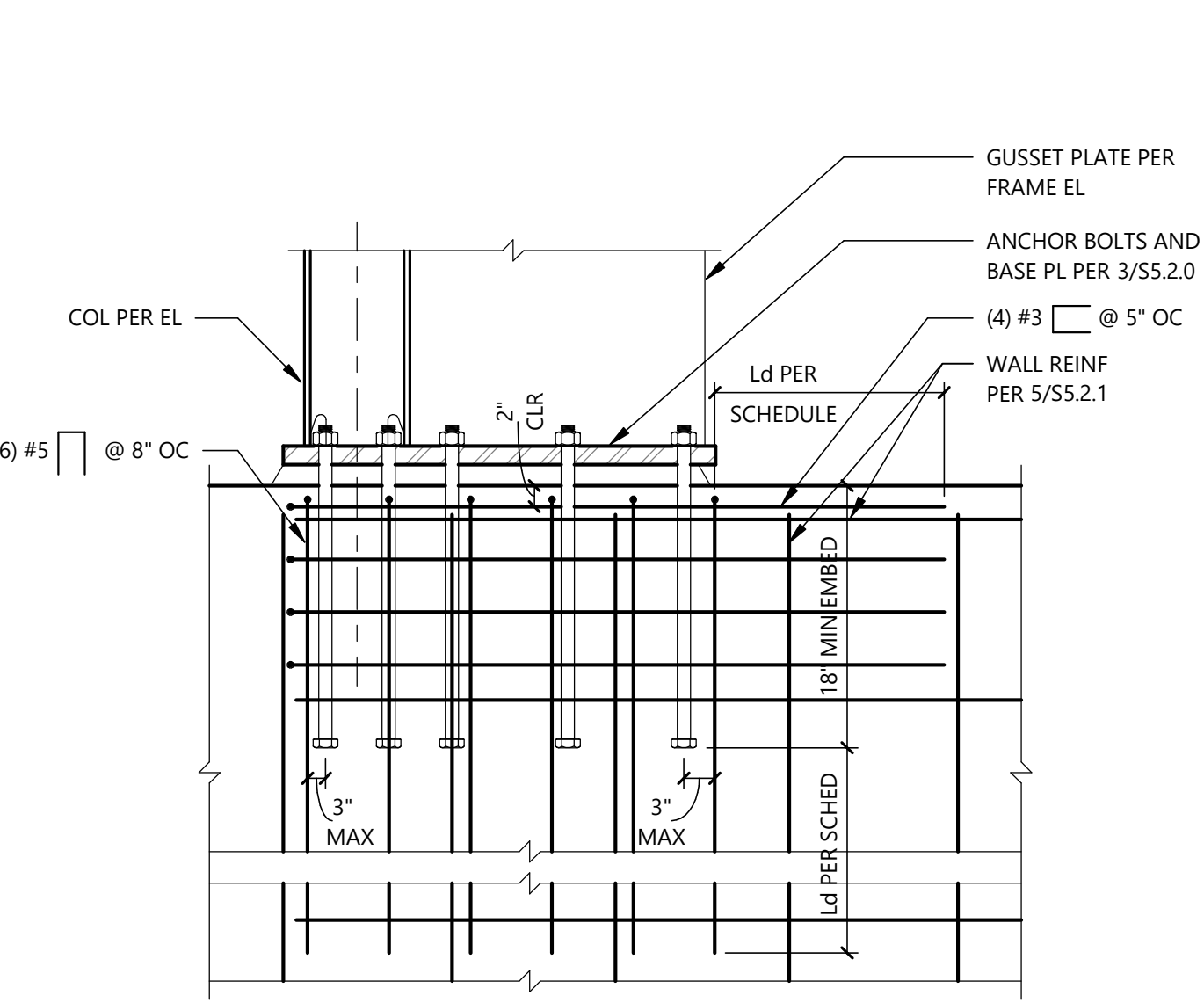
STRUCTURAL
CONCRETE
DETAILS
S3.0.3



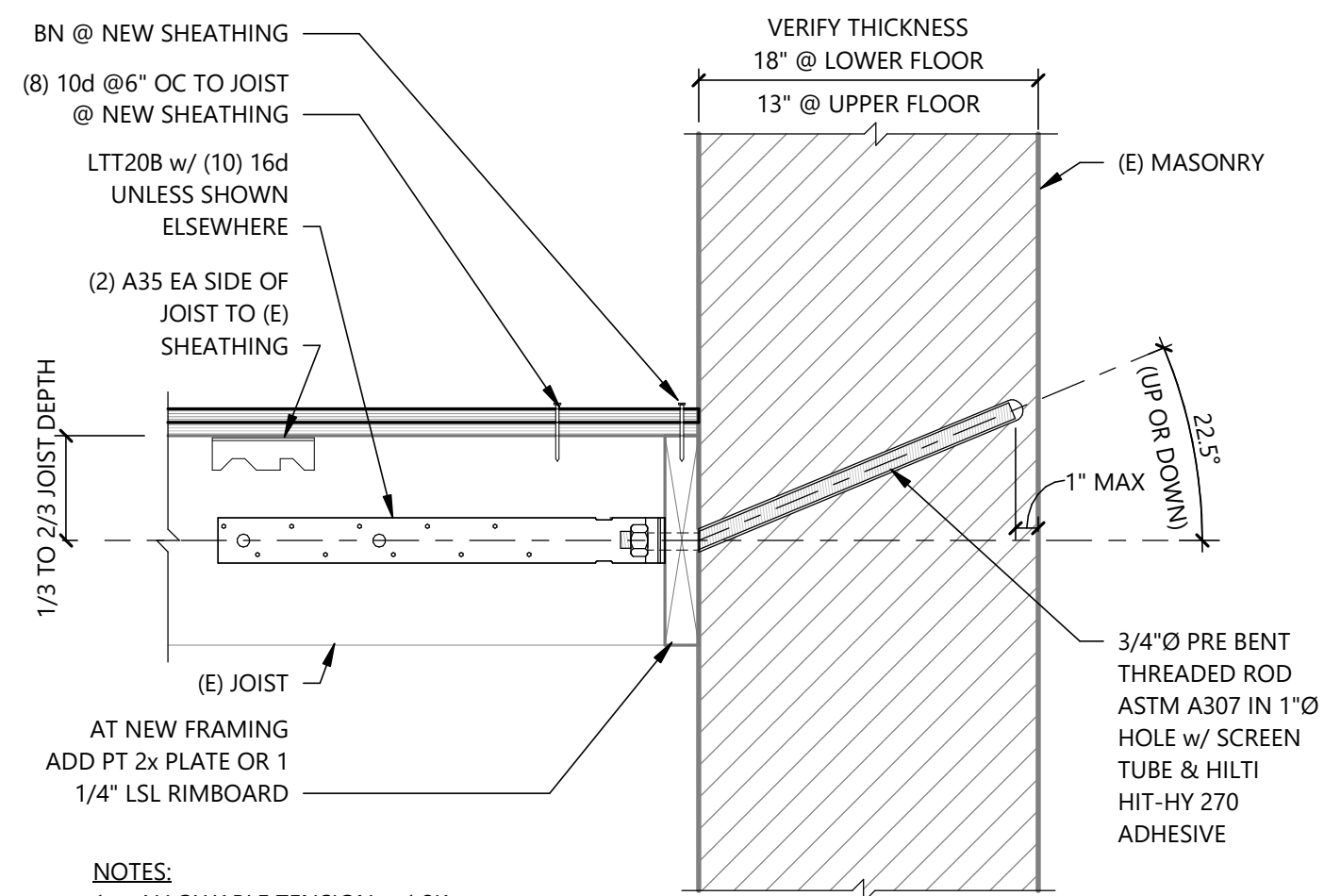
1 Anchorage Reinforcement at Gusset Plate, Gridline A
Scale: 3/4" = 1'-0"



2 Typical Anchorage Reinforcement at Frame Column
Scale: 3/4" = 1'-0"

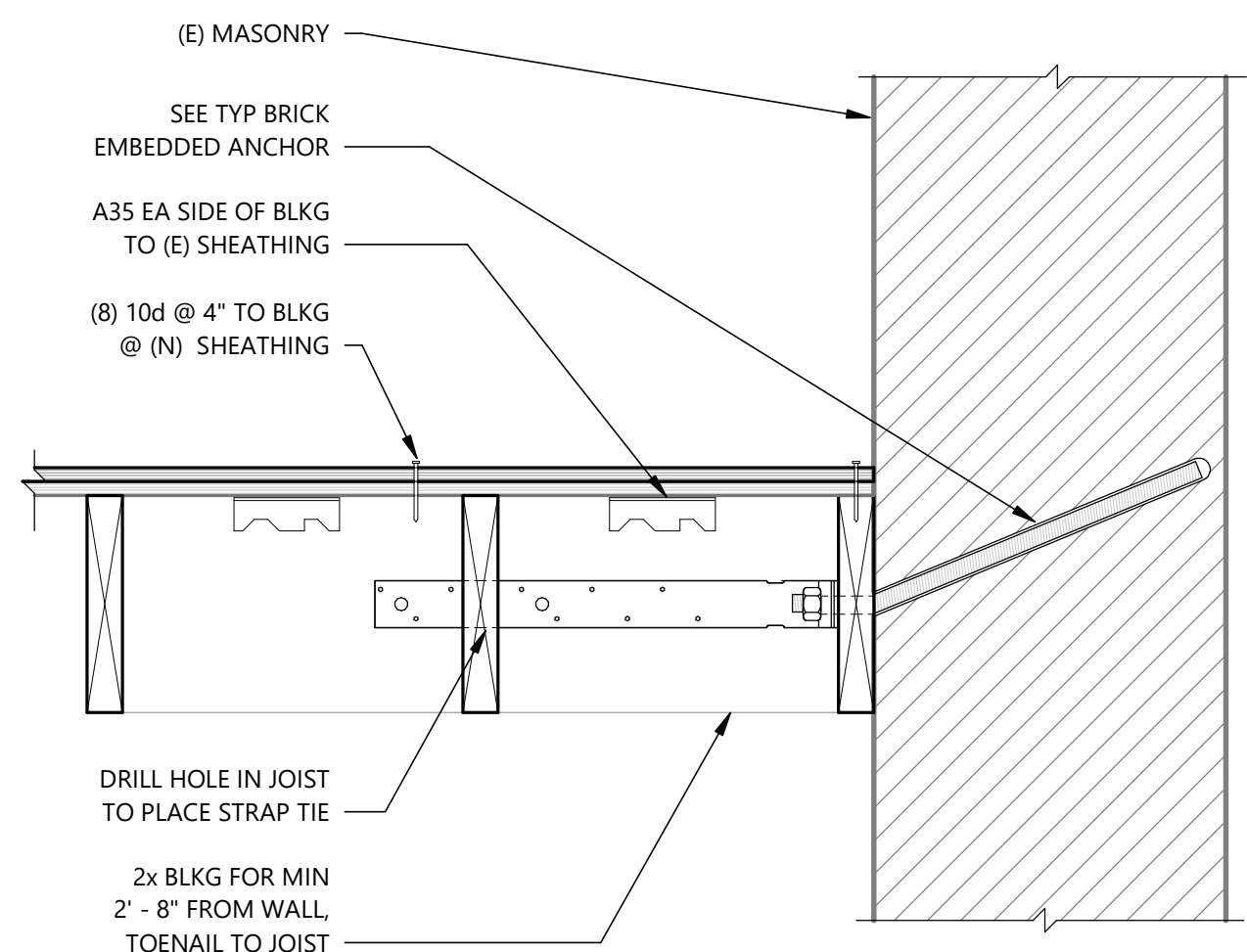


3 Anchorage Reinforcement at Gusset Plate, Gridline 3
Scale: 3/4" = 1'-0"



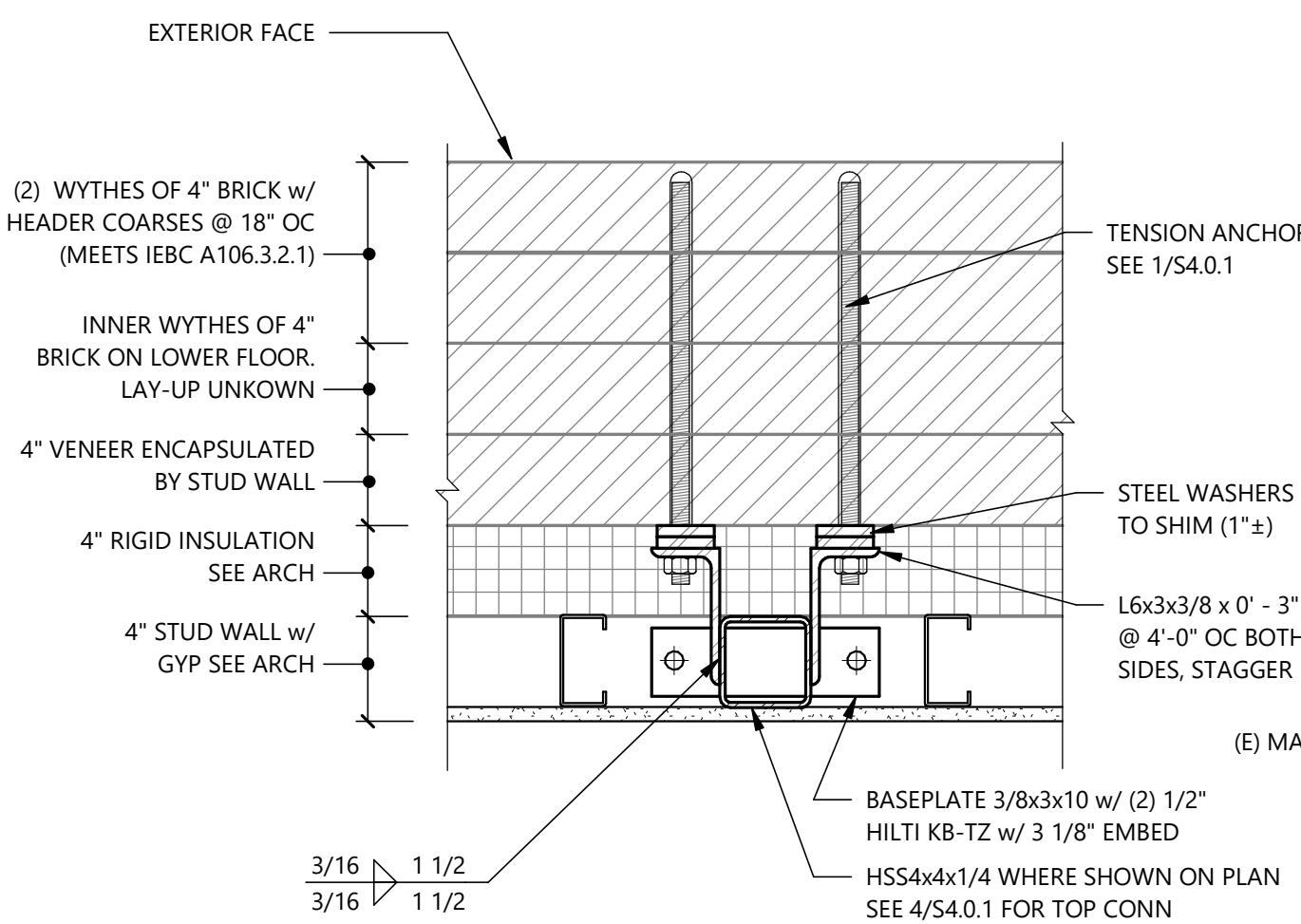
- NOTES:
 1. ALLOWABLE TENSION = 1.2K
 2. ALLOWABLE SHEAR = 1.0K
 3. ROD MUST BE INSTALLED DOWNWARDS @ ALL ROOFS
 4. ANCHORS SHALL BE AT 16" OC AT 2ND FLOOR & 32" OC AT ROOF, UNO.
 5. ANCHORS OCCUR AT ALL EXTERIOR BRICK WALLS
 6. LOCATE ANCHORS WITHIN 24" OF OPENINGS AND CORNERS.
 7. SEE GENERAL NOTES FOR ADHESIVE ANCHOR SYSTEM.

1 Typical Brick Embedded Anchor
 Scale: 1 1/2" = 1'-0"



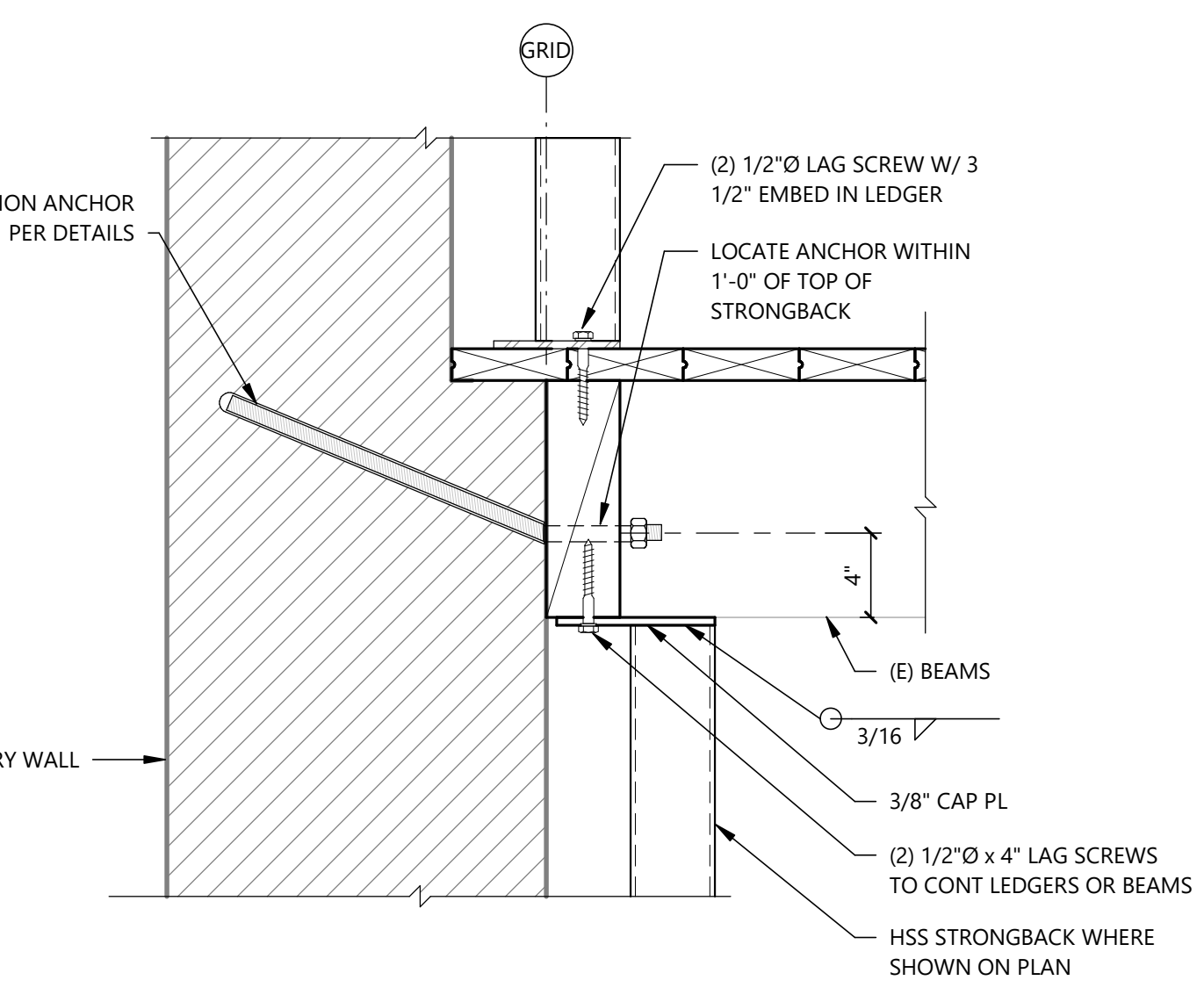
- NOTES:
 1. SEE 1/S4.0.1 FOR NOTES.

2 Typical Brick Embedded Anchor Perpendicular to Joist
 Scale: 1 1/2" = 1'-0"

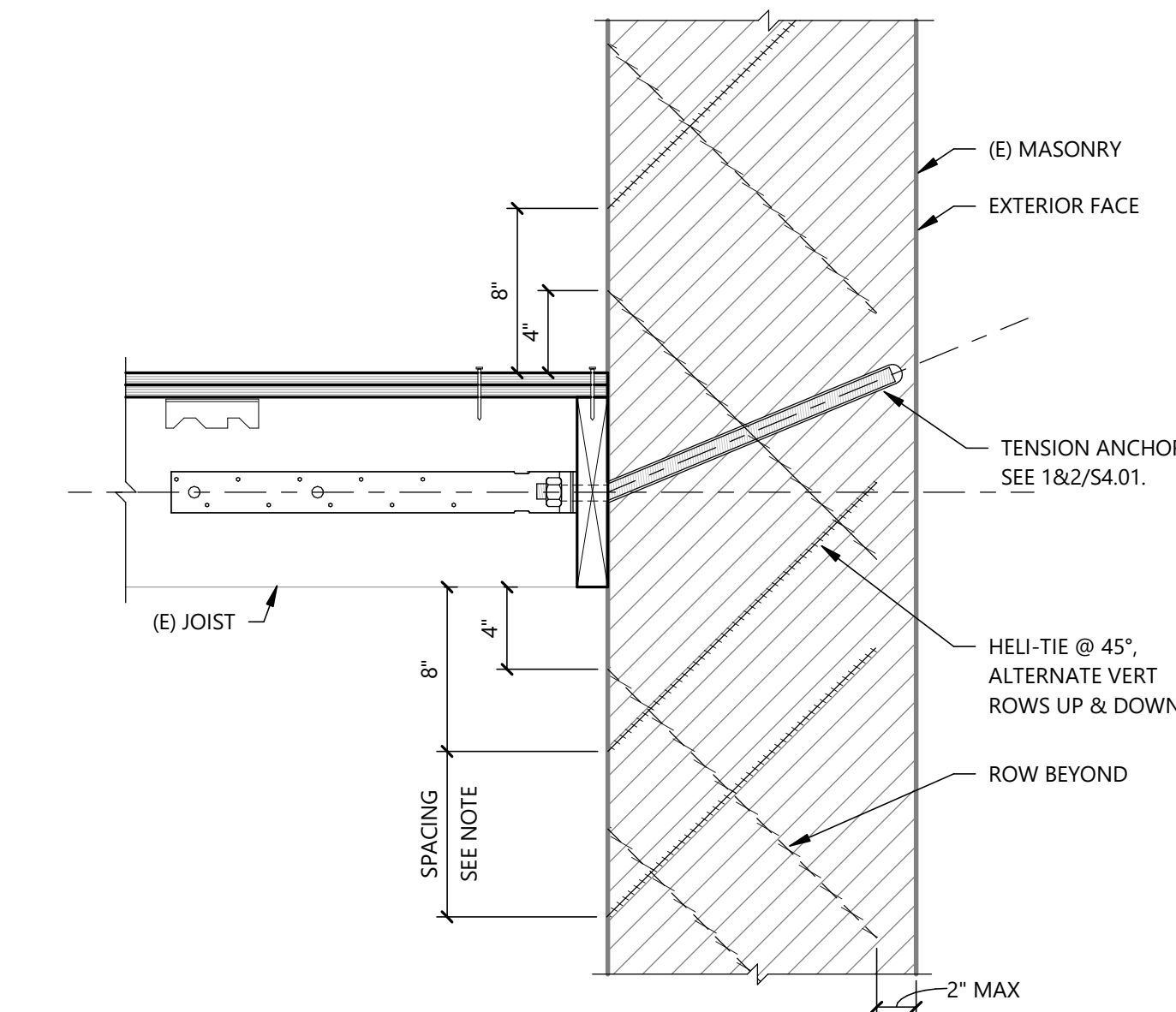


- NOTES:
 1. ANCHORS SHALL OCCUR WITHIN 2'-0" OF TOP AND BOTTOM OF STRONGBACK.

3 Typical Strongback Post and Wall Anchors
 Scale: 1 1/2" = 1'-0"



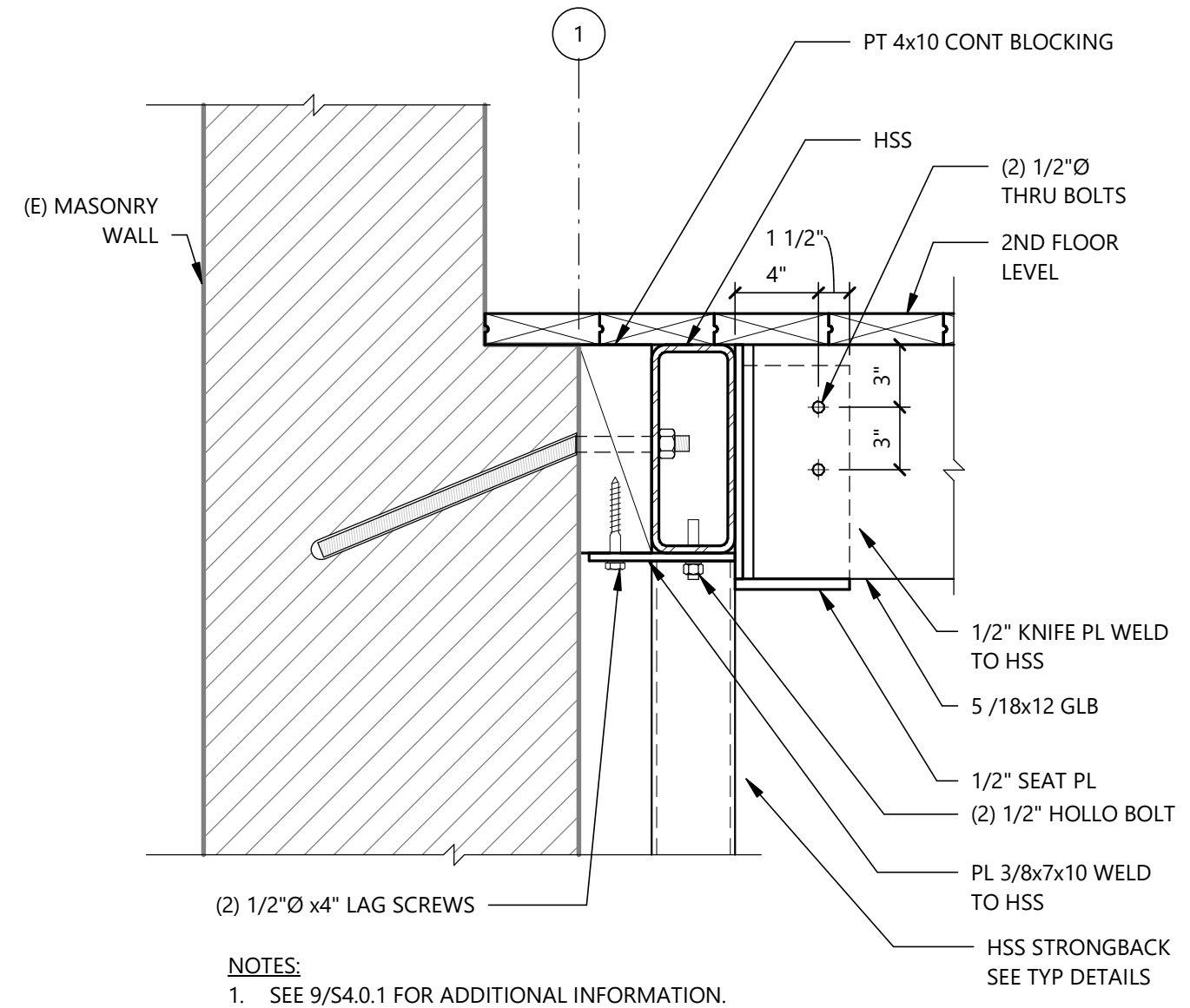
4 Typical Strongback Post Top Connection
 Scale: 1 1/2" = 1'-0"



STORY	SPACING	
	HORIZ	VERT
2ND	20"	24"
1ST	16"	12"

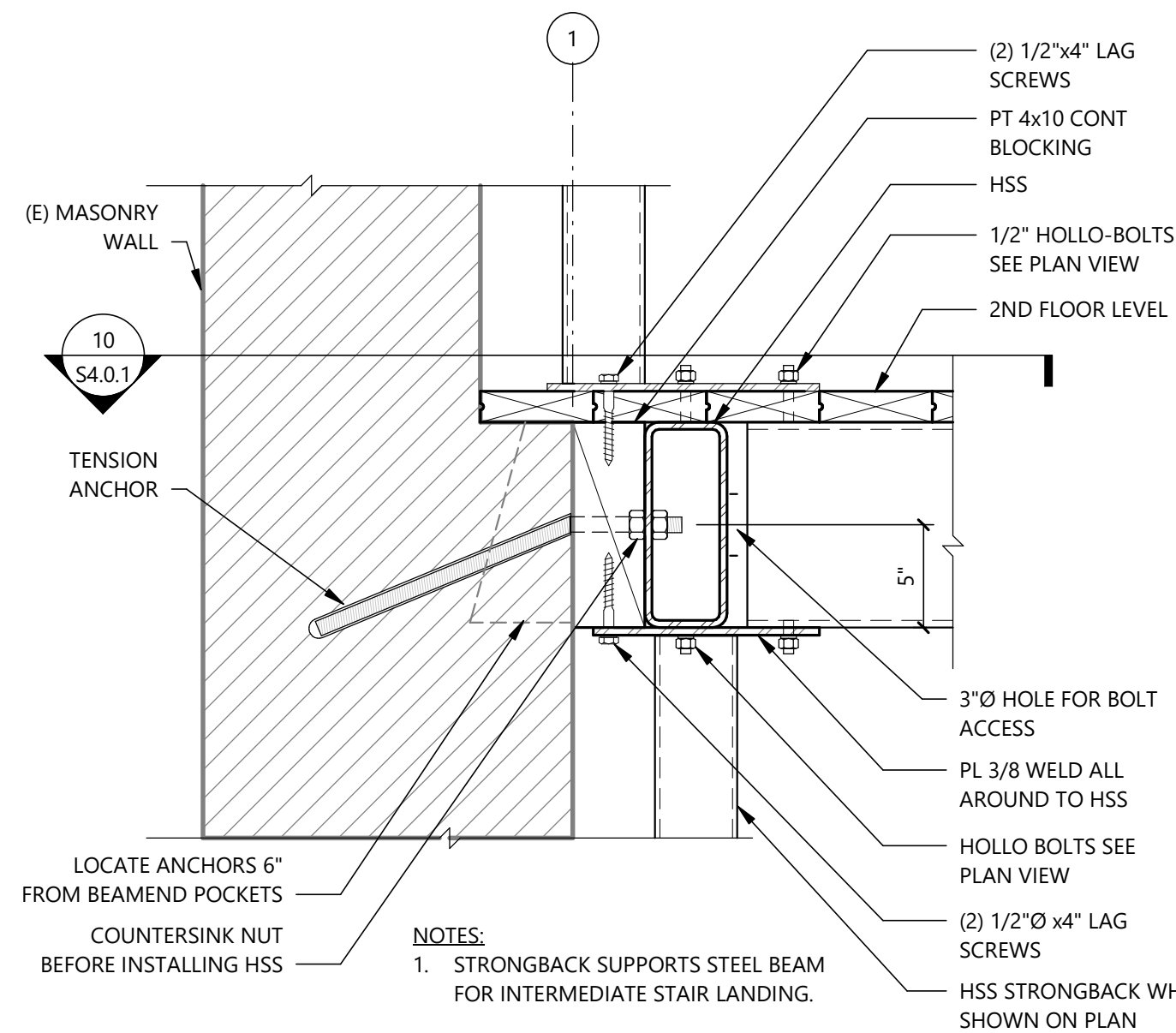
- NOTES:
 1. WHEN INDICATED ON ELEVATIONS, HELI-TIE ANCHORS SHALL BE INSTALLED WITHIN 8" OF ALL OPENINGS AND CORNERS AND THROUGHOUT ALL OF THE WALL AT THE SPACING SHOWN IN TABLE.
 2. ALLOWABLE TENSION = 655#.
 3. ANCHORS CREATE SHEAR BETWEEN BRICK WYTHES = 463#.
 4. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

5 Typical Heli-Tie Anchor
 Scale: 1 1/2" = 1'-0"

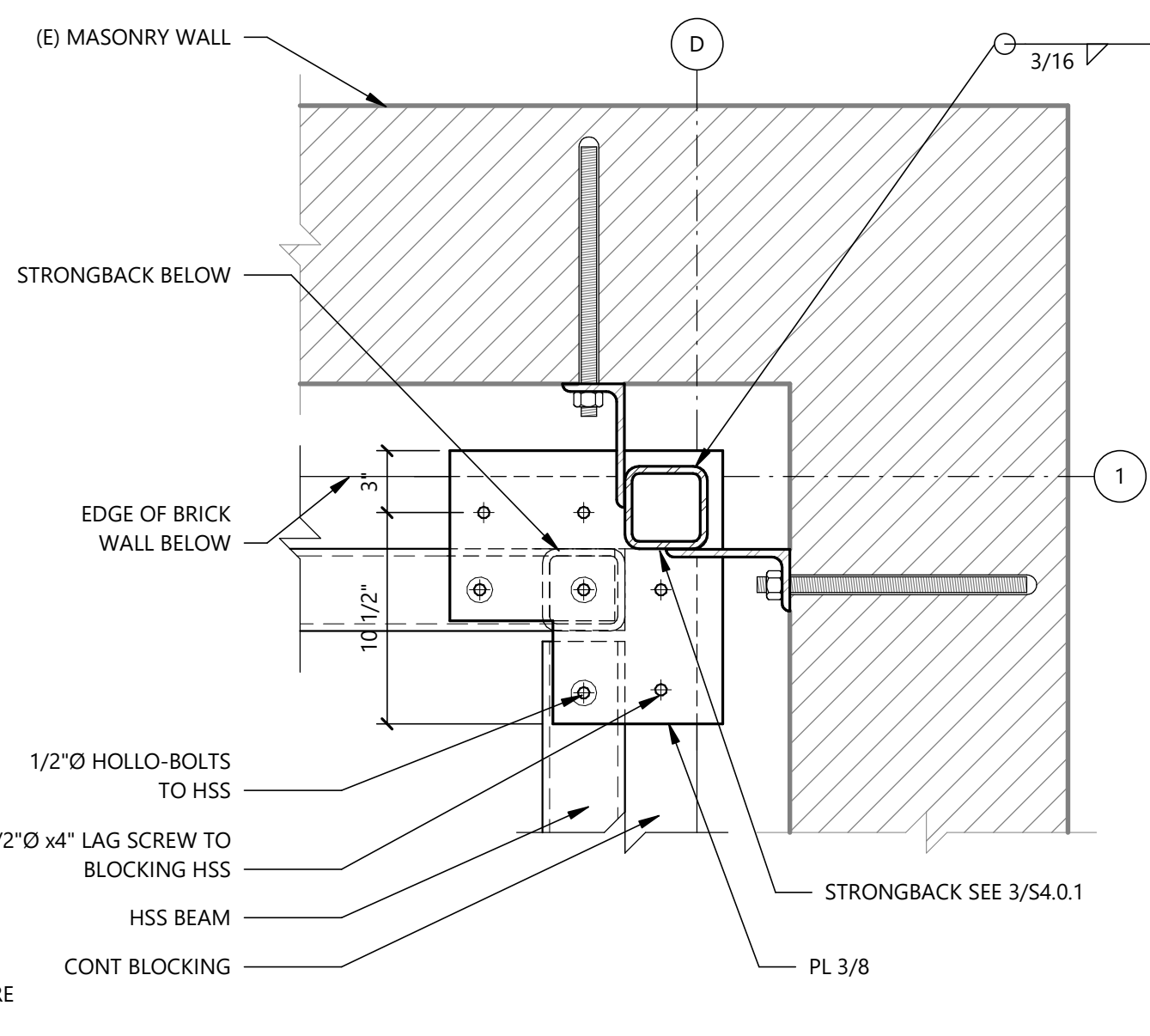


- NOTES:
 1. SEE 9/S4.0.1 FOR ADDITIONAL INFORMATION.

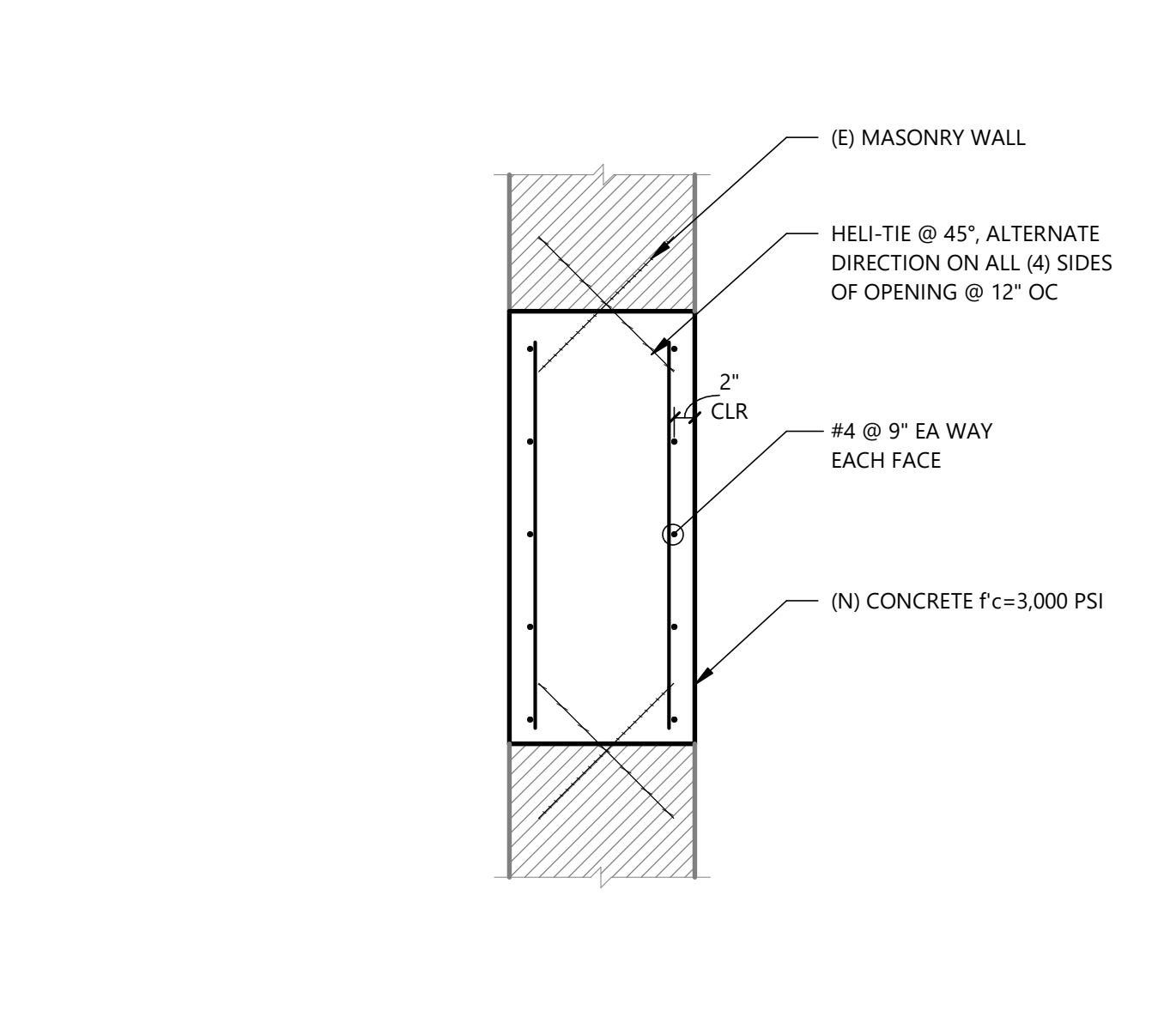
7 Strongback and Wall Anchors at Stair
 Scale: 1 1/2" = 1'-0"



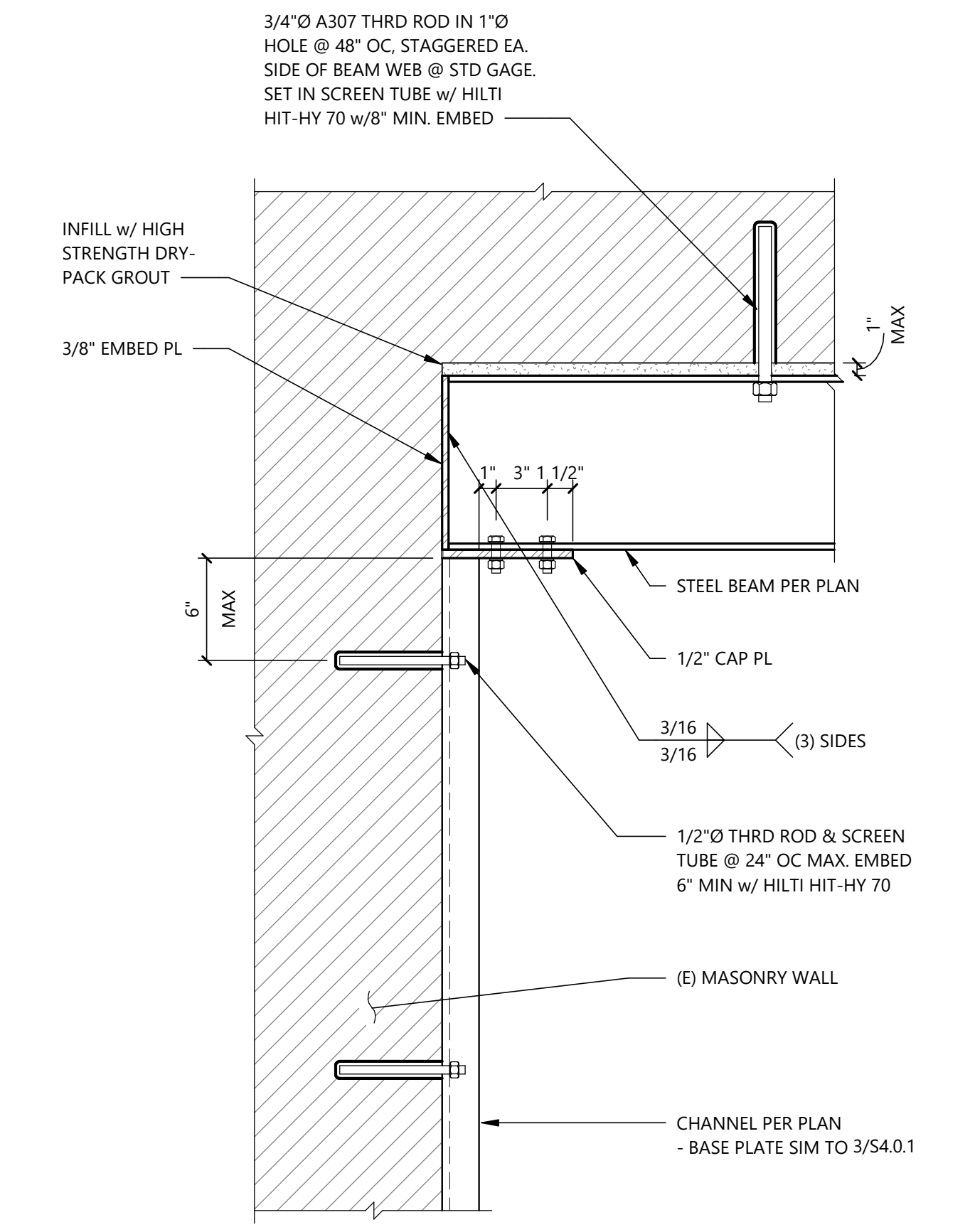
9 Strongback and Beam Connection
 Scale: 1 1/2" = 1'-0"



10 Plan Detail at Corner
 Scale: 1 1/2" = 1'-0"



11 Typical Opening Infill
 Scale: 3/4" = 1'-0"



12 Steel Header at New Opening in Masonry
 Scale: 1 1/2" = 1'-0"

1050 N. 38th St.
 Seattle, WA 98103
 PH 206.675.9151
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 1201 First Avenue South, Suite 310
 Seattle, Washington 98134
 206-402-5156 www.lundopsahl.com

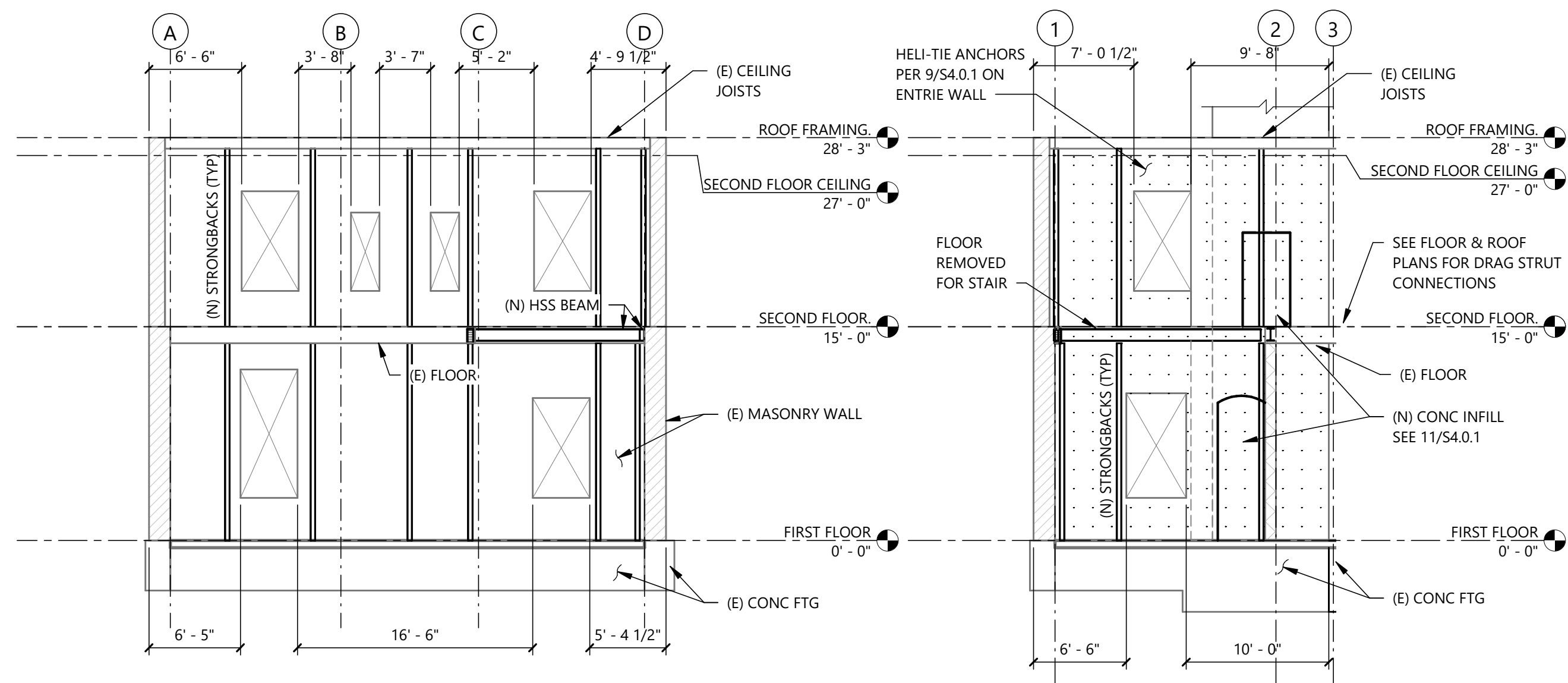


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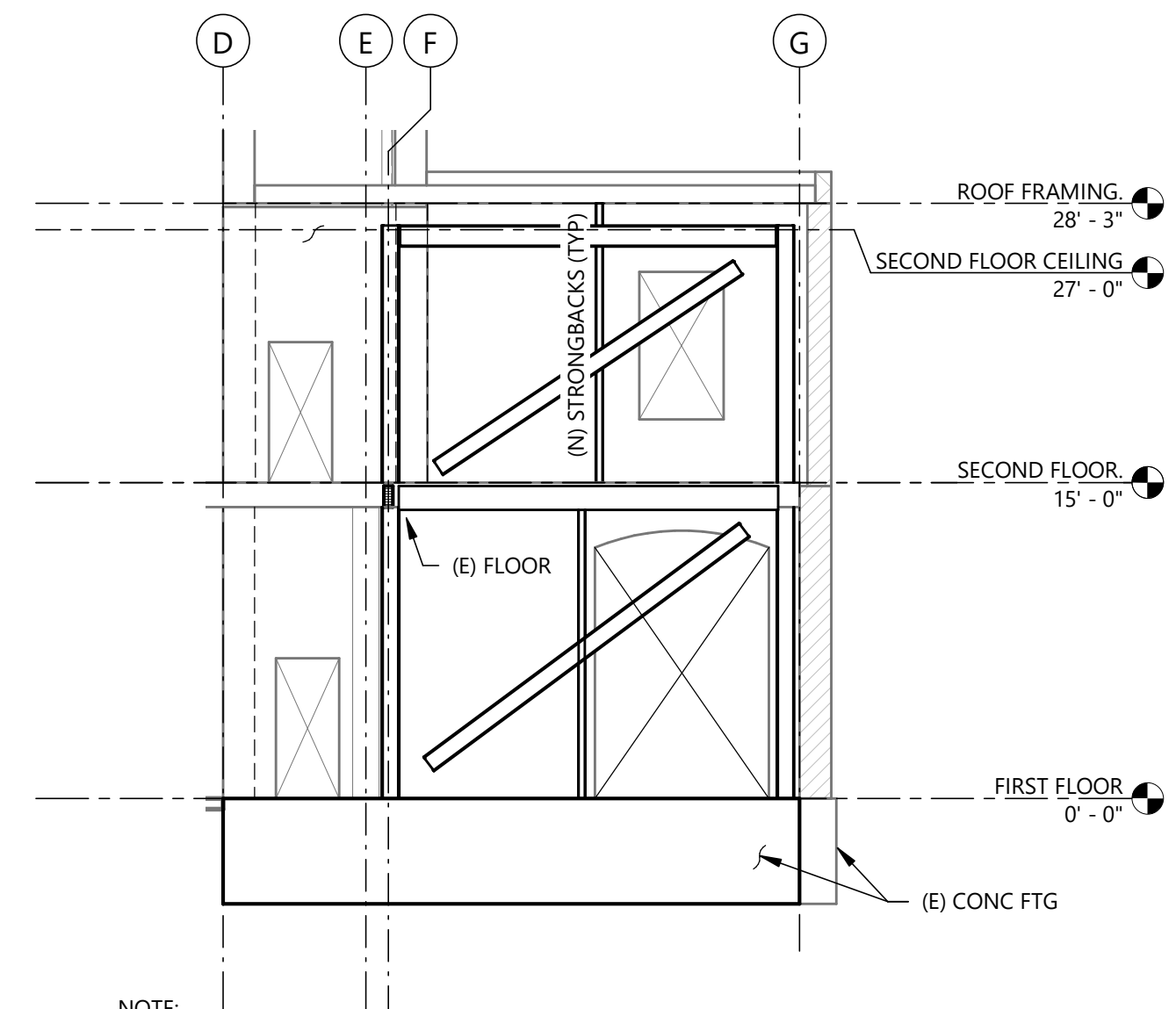
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 Scale: As indicated
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STRUCTURAL
 MASONRY
 DETAILS
S4.0.1



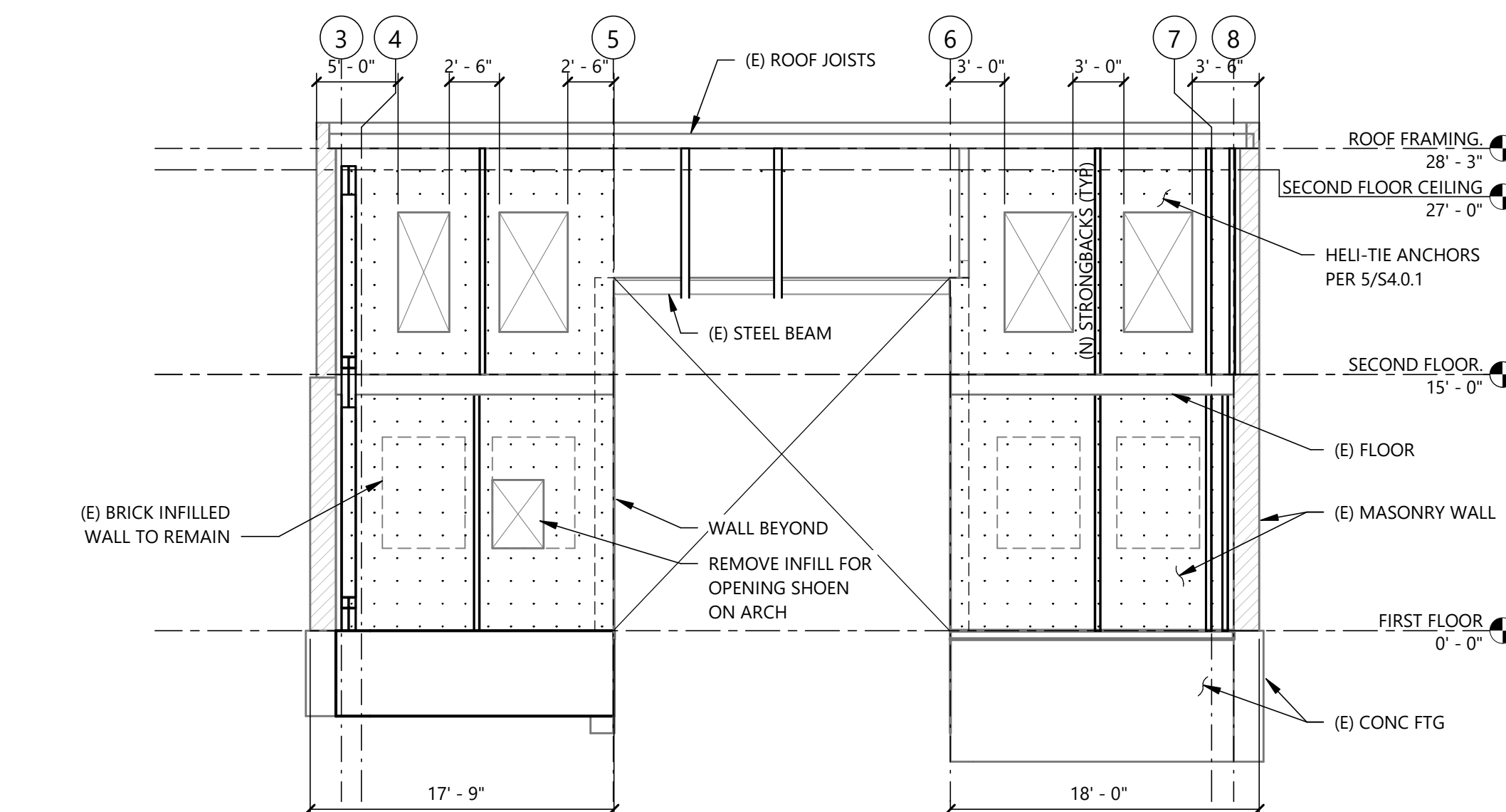
1 GRID 1 WALL ELEVATION
Scale: 1/8" = 1'-0"

2 GRID D WALL ELEVATION NORTH SIDE
Scale: 1/8" = 1'-0"



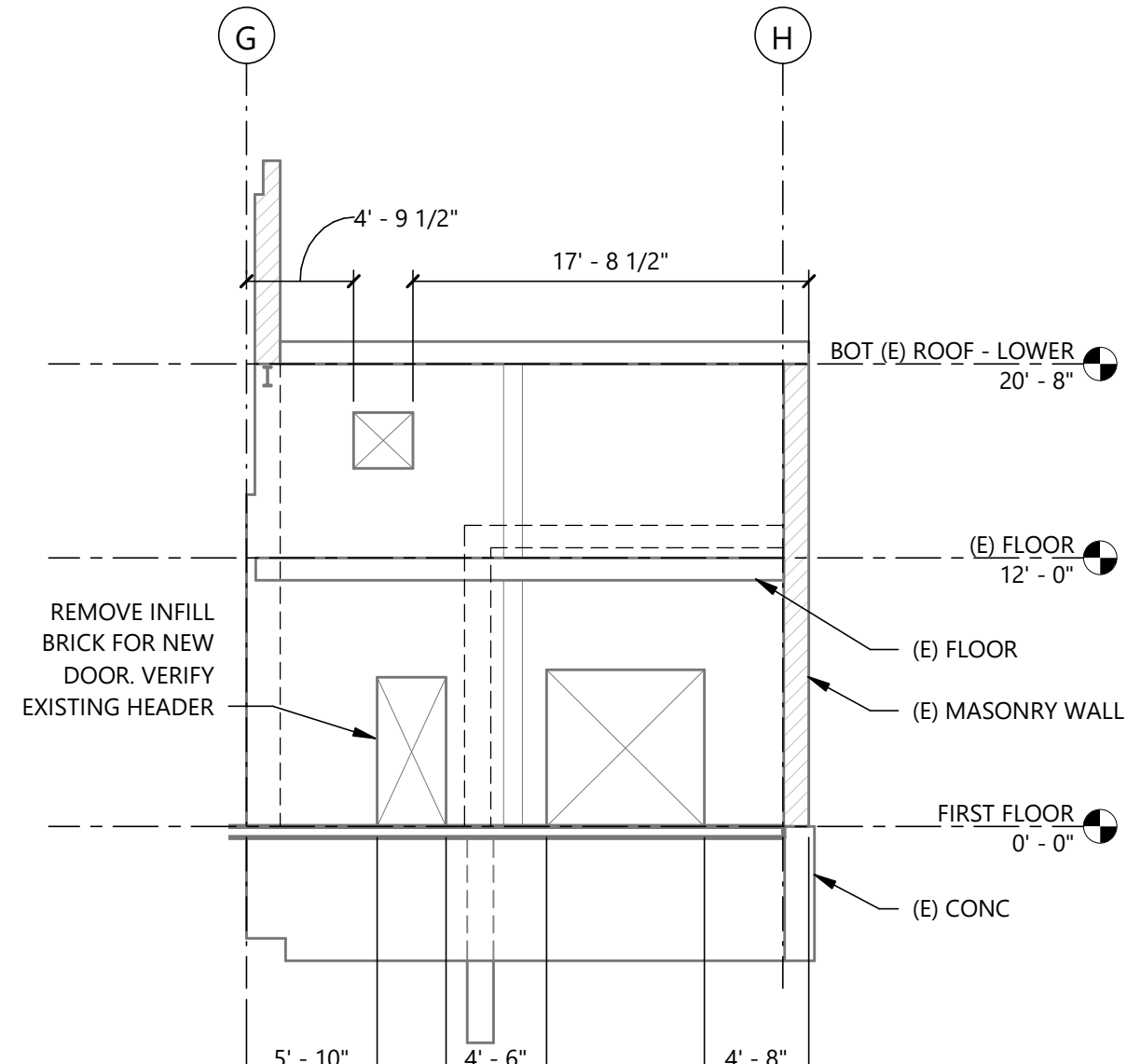
3 GRID 3 WALL ELEVATION
Scale: 1/8" = 1'-0"

NOTE:
1. THIS WALL IS NOT A SHEAR WALL SEE 5/55.2.2 FOR STEEL FRAME.

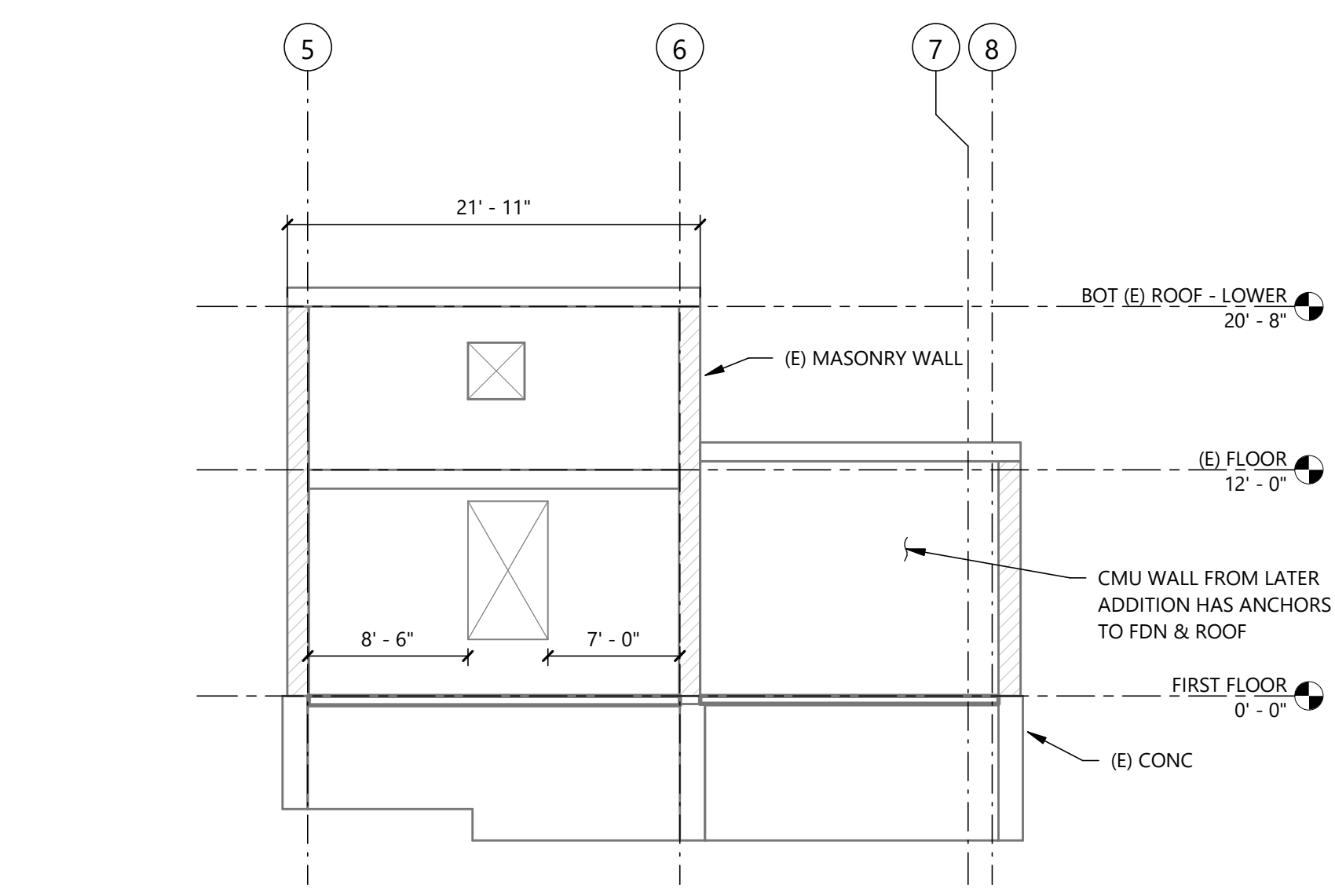


4 GRID G WALL ELEVATION
Scale: 1/8" = 1'-0"

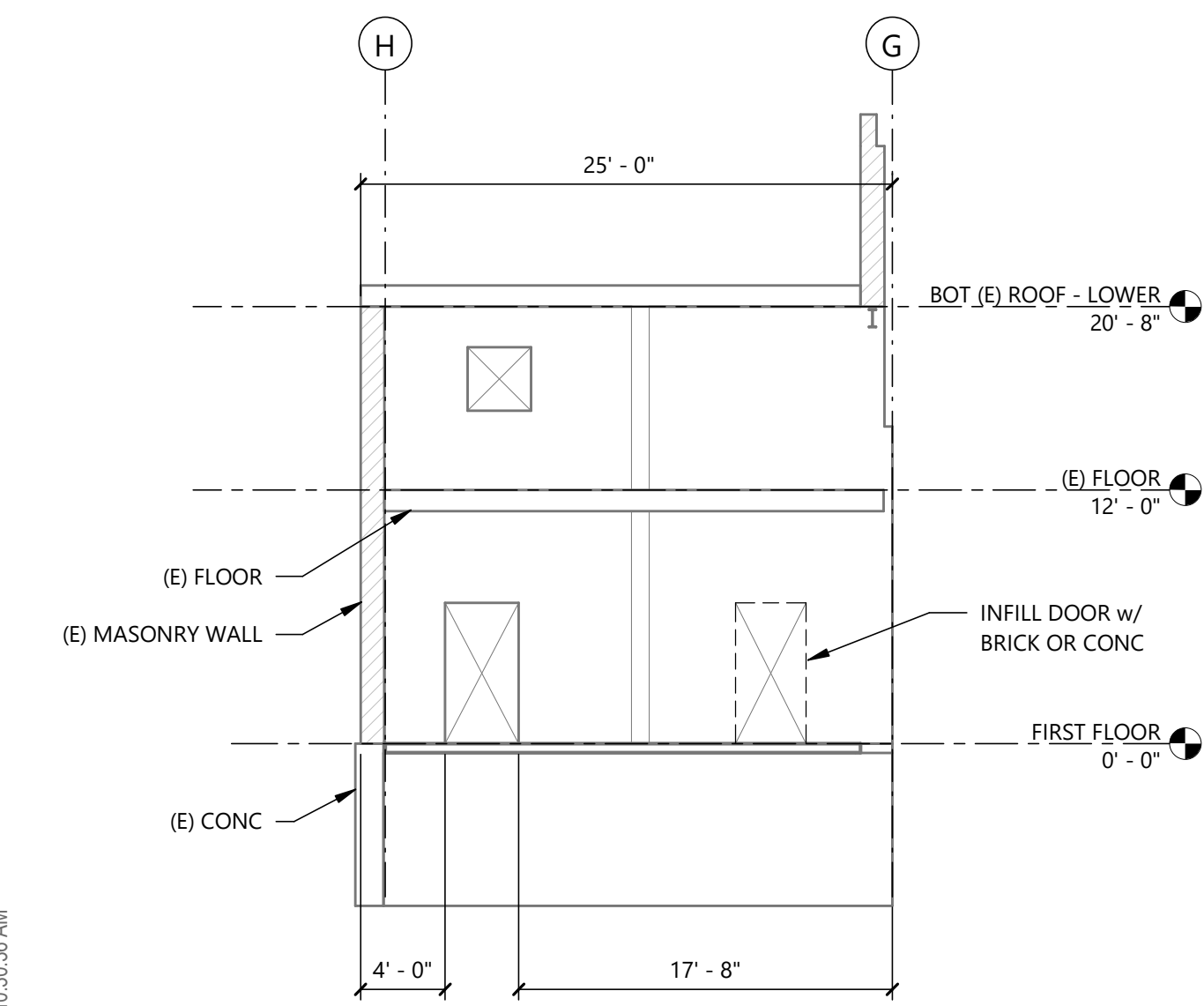
NOTE:
1. CMU ADDITIONS NOT SHOWN



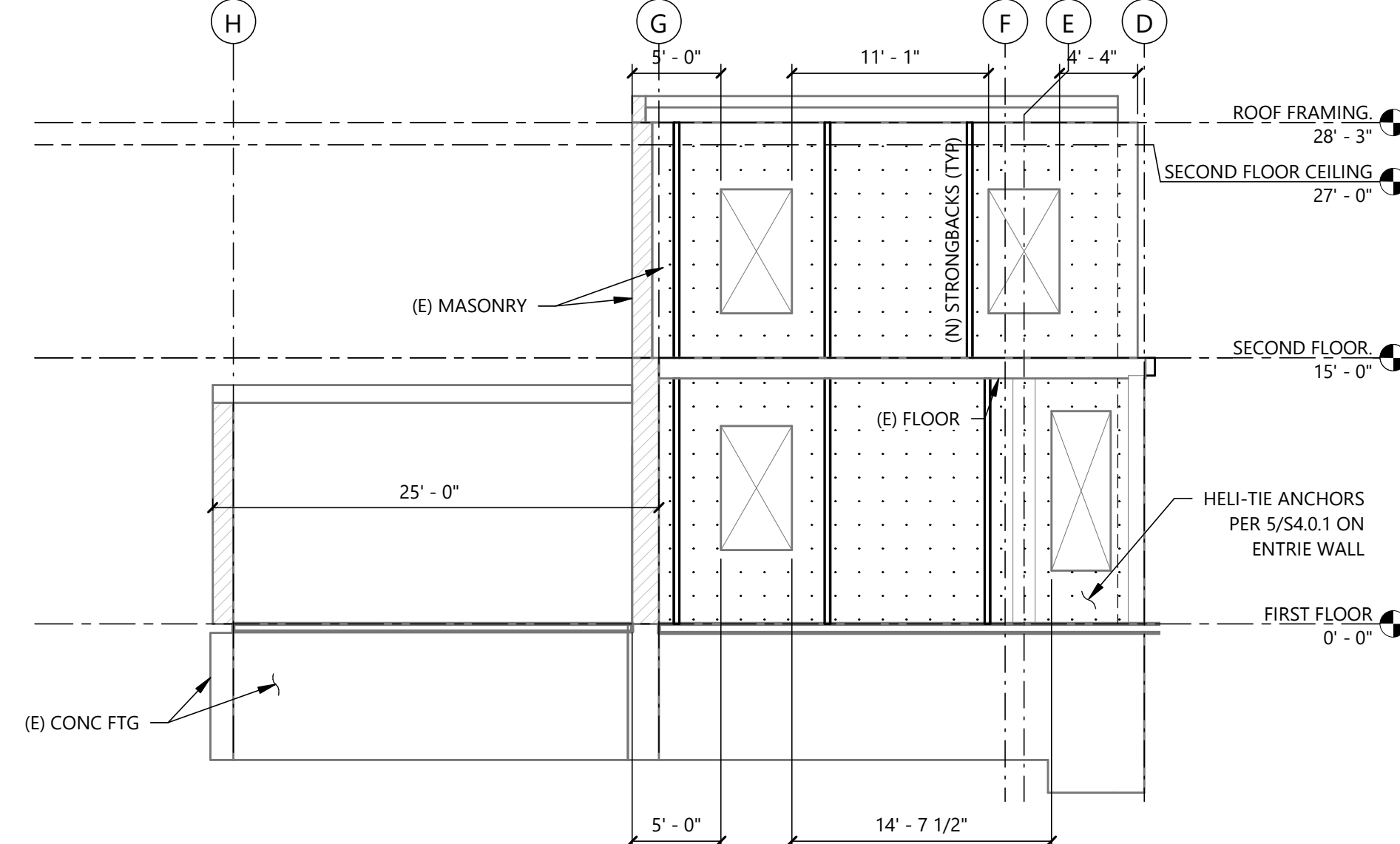
5 GRID 5 WALL ELEVATION
Scale: 1/8" = 1'-0"



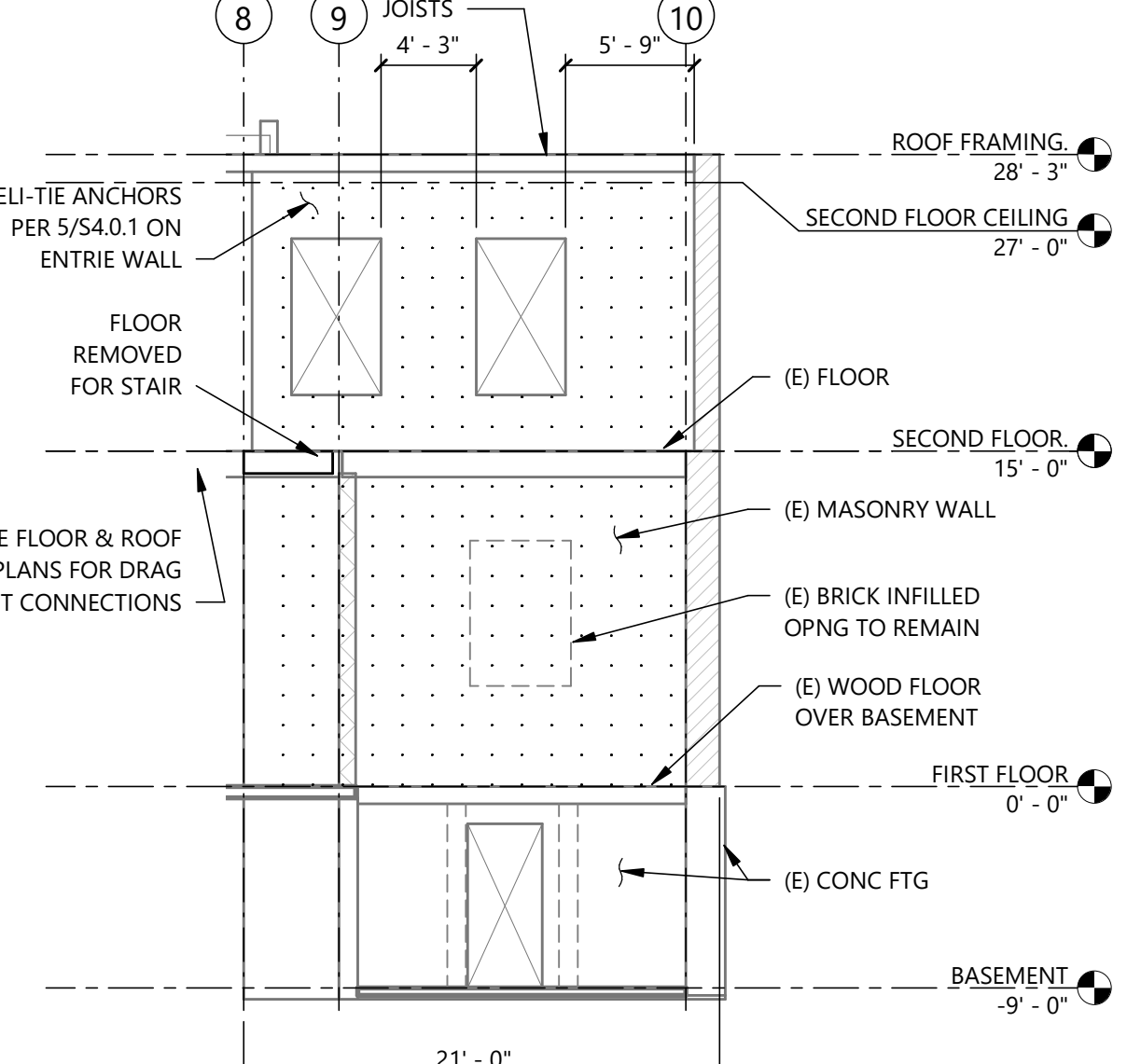
6 GRID H WALL ELEVATION
Scale: 1/8" = 1'-0"



7 GRID 6 WALL ELEVATION
Scale: 1/8" = 1'-0"



10 GRID 8 WALL ELEVATION
Scale: 1/8" = 1'-0"



11 GRID D WALL ELEVATION SOUTH SIDE
Scale: 1/8" = 1'-0"

SHEAR WALL NOTES

- ALL WALLS SHOWN IN ELEVATION ARE LATERAL-FORCE RESISTING SHEAR WALLS EXCEPT AS NOTED. DIMENSIONS SHOWN ARE APPROXIMATE LENGTHS OF SHEAR WALLS USED IN THE DESIGN, IF DIMENSIONS VARY BY MORE THAN 6" NOTIFY ENGINEER.
- SEE PLANS FOR STRONGBACK LOCATIONS AND DETAILS FOR CONNECTION TO FLOOR FRAMING.
- ALL WALLS SHALL BE CONNECTED TO FLOOR AND ROOF FRAMING USE TYPICAL DETAILS ON S4.0.1 WHERE SPECIFIC DETAILS ARE NOT SHOWN.

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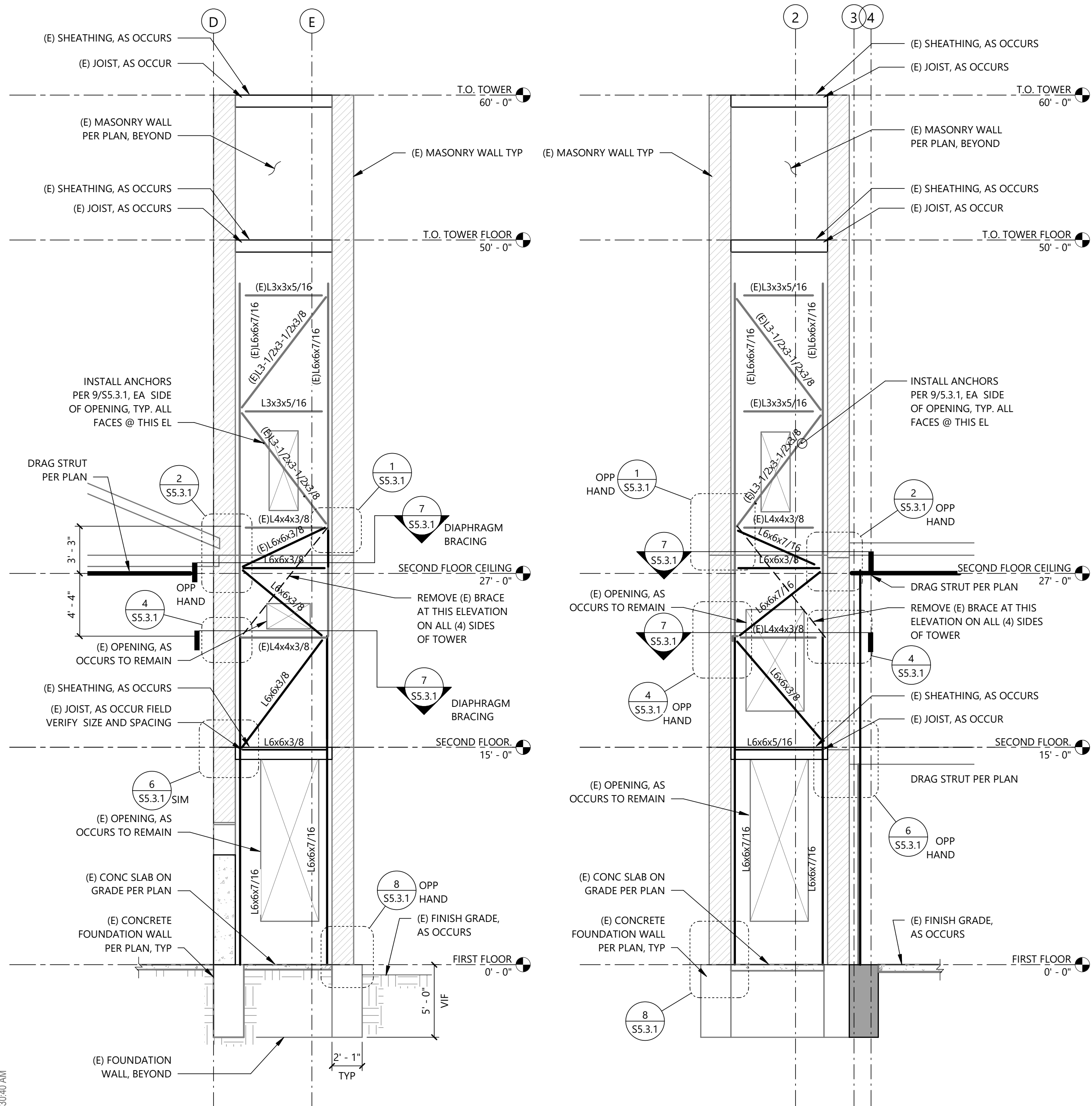
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STRUCTURAL
MASONRY
ELEVATIONS

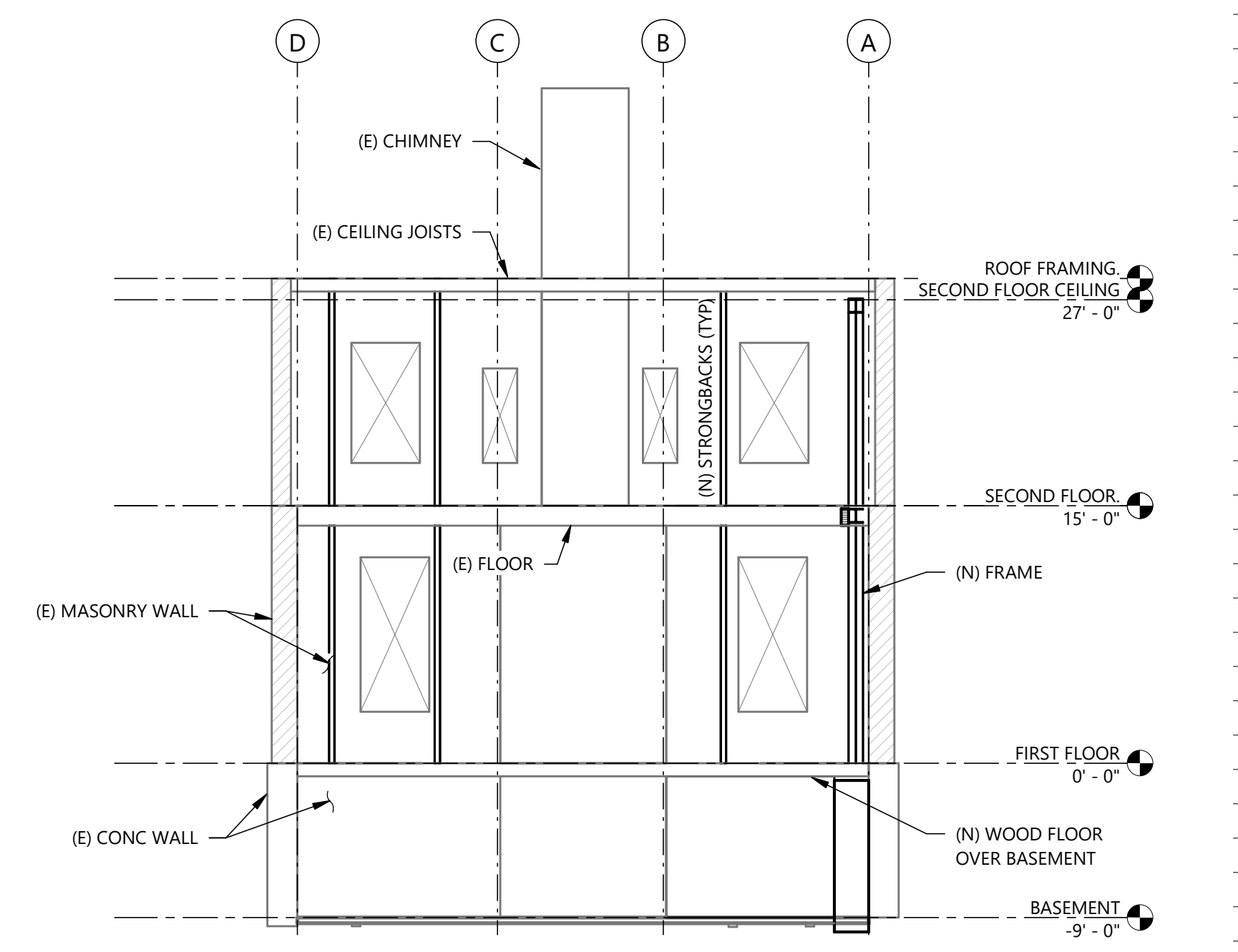
S4.1.1

6/22/2020 10:30:36 AM

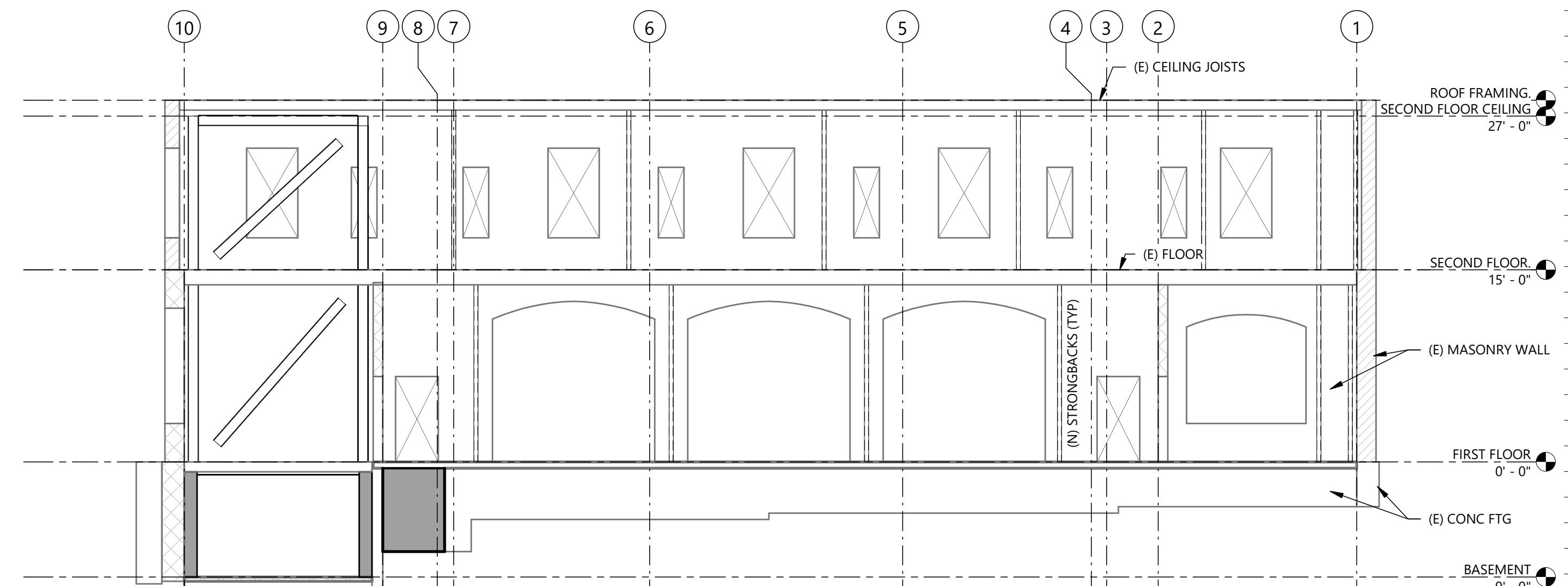


9 STACK TOWER ELEVATION LOOKING NORTH
Scale: 3/16" = 1'-0"

10 STACK TOWER ELEVATION LOOKING EAST
Scale: 3/16" = 1'-0"



8 GRID 10 WALL ELEVATION
Scale: 1/8" = 1'-0"



1 GRID A WALL ELEVATION
Scale: 1/8" = 1'-0"

NOTES:
1. THIS WALL IS NOT A SHEAR WALL. SEE 5/5.2.0 FOR STEEL FRAME.

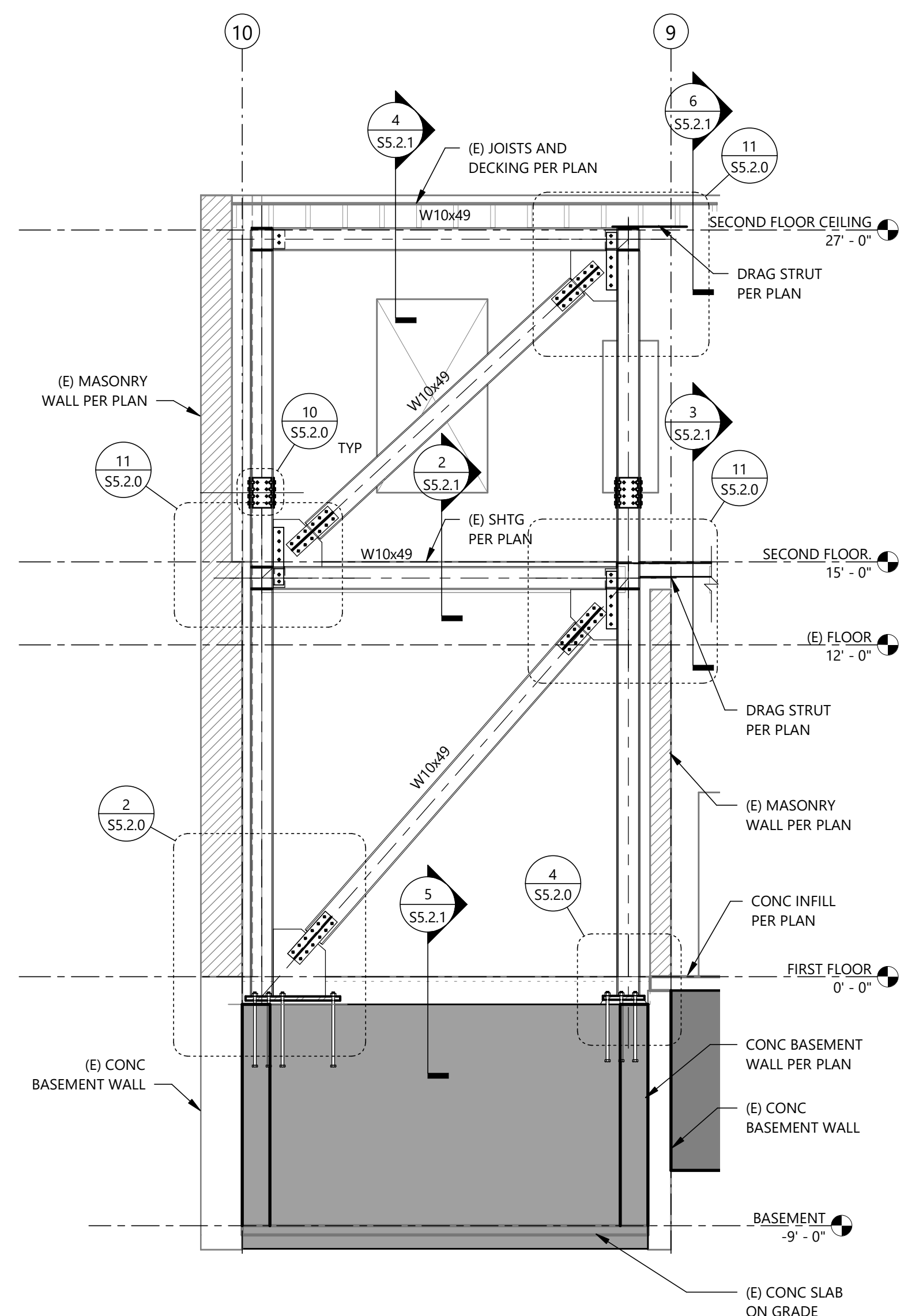
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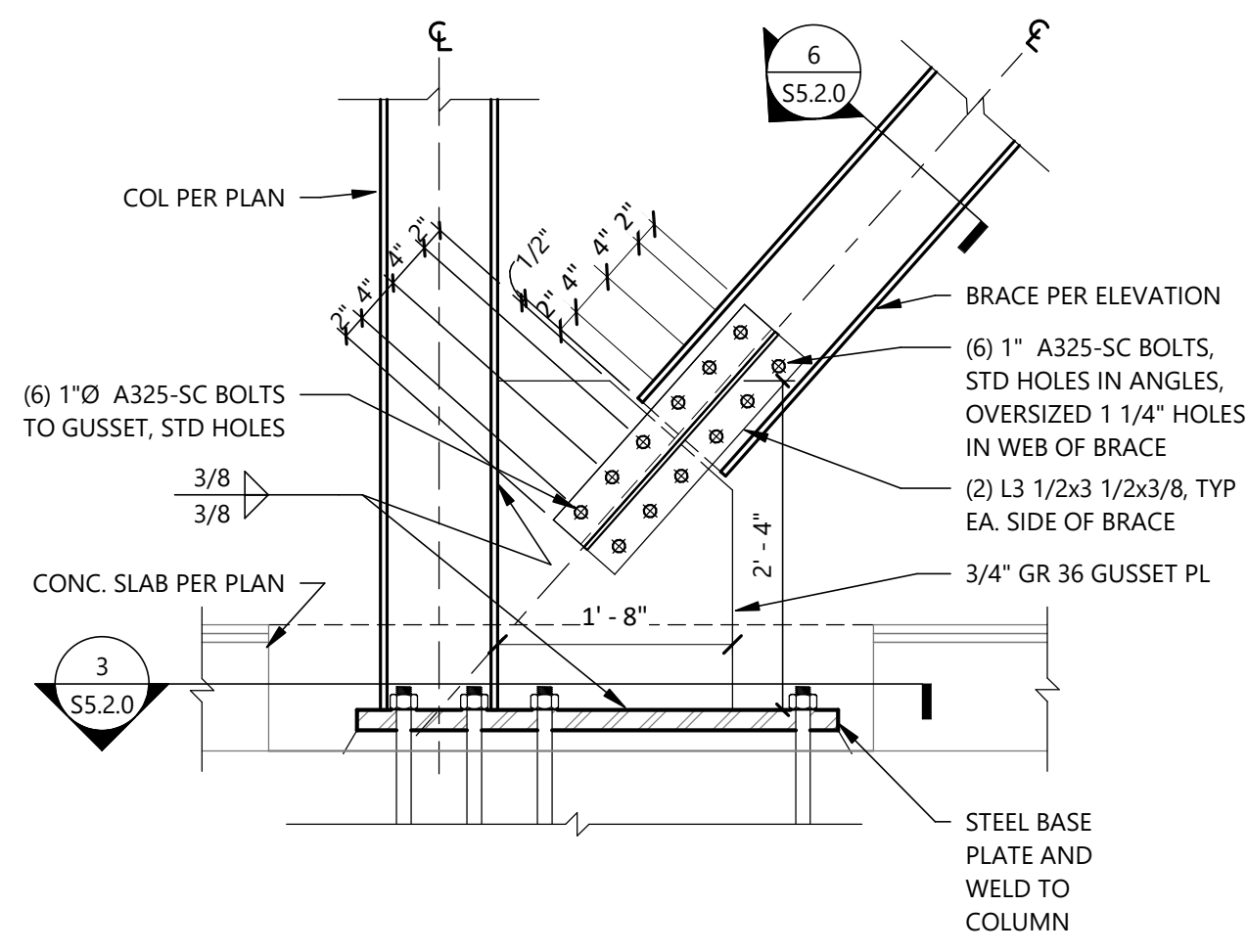
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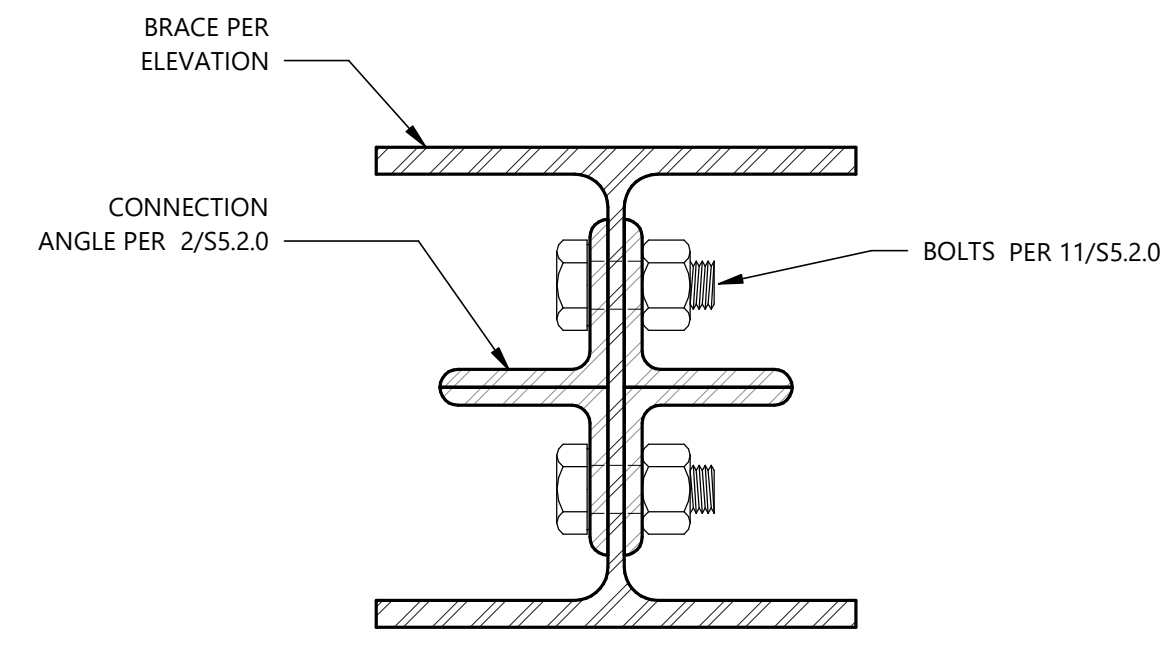
STRUCTURAL
MASONRY
ELEVATIONS
S4.1.2



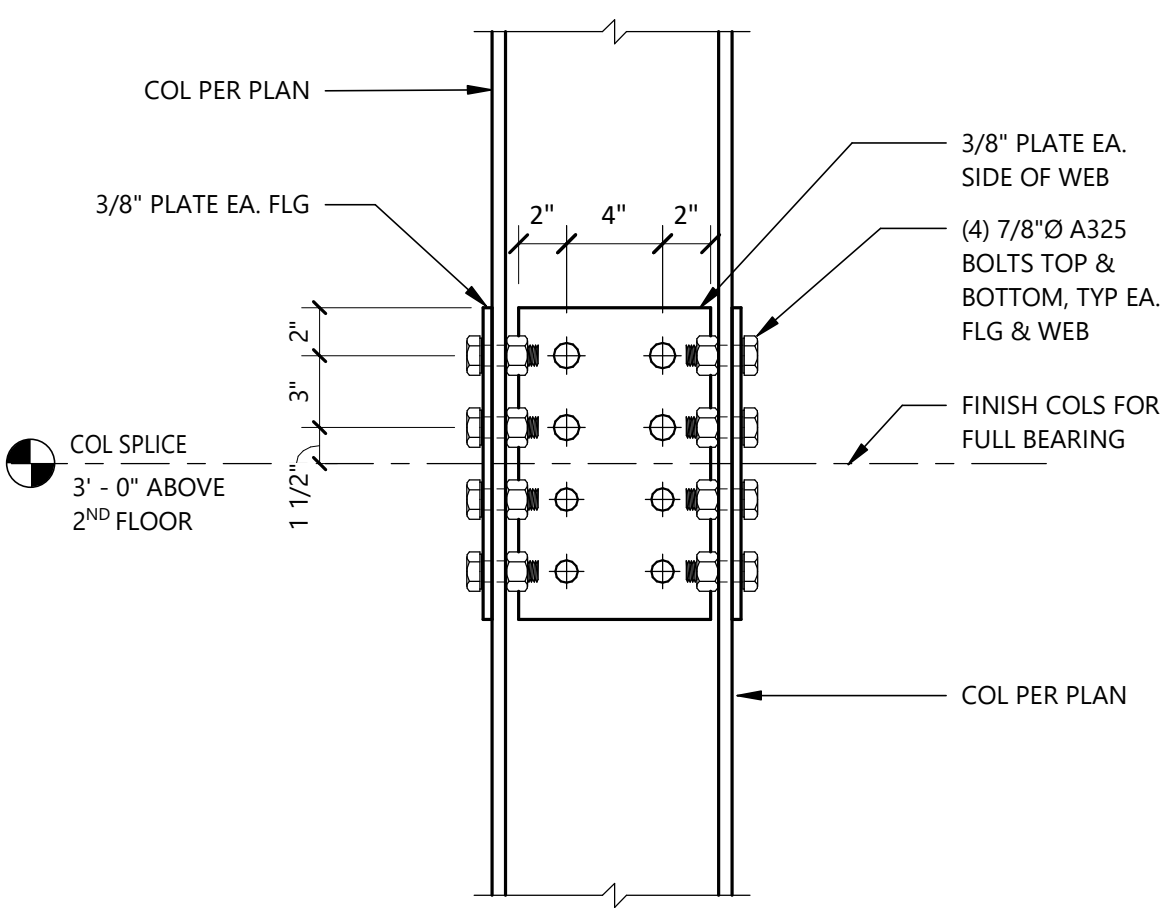
5 Brace Frame Elevation
Scale: 1/4" = 1'-0"



2 Typical Brace - Gusset at Baseplate
Scale: 3/4" = 1'-0"

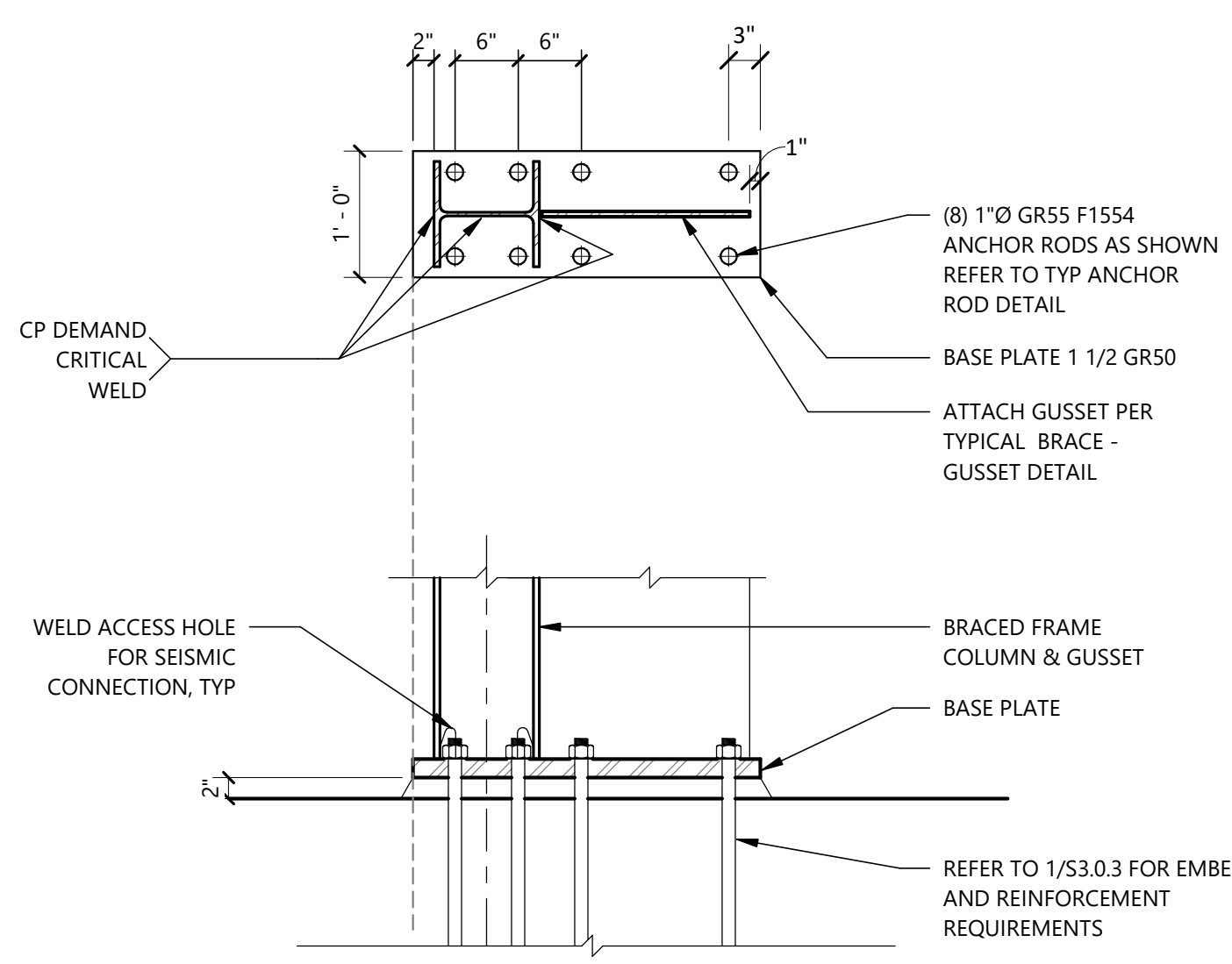


6 Section at Brace
Scale: 3" = 1'-0"



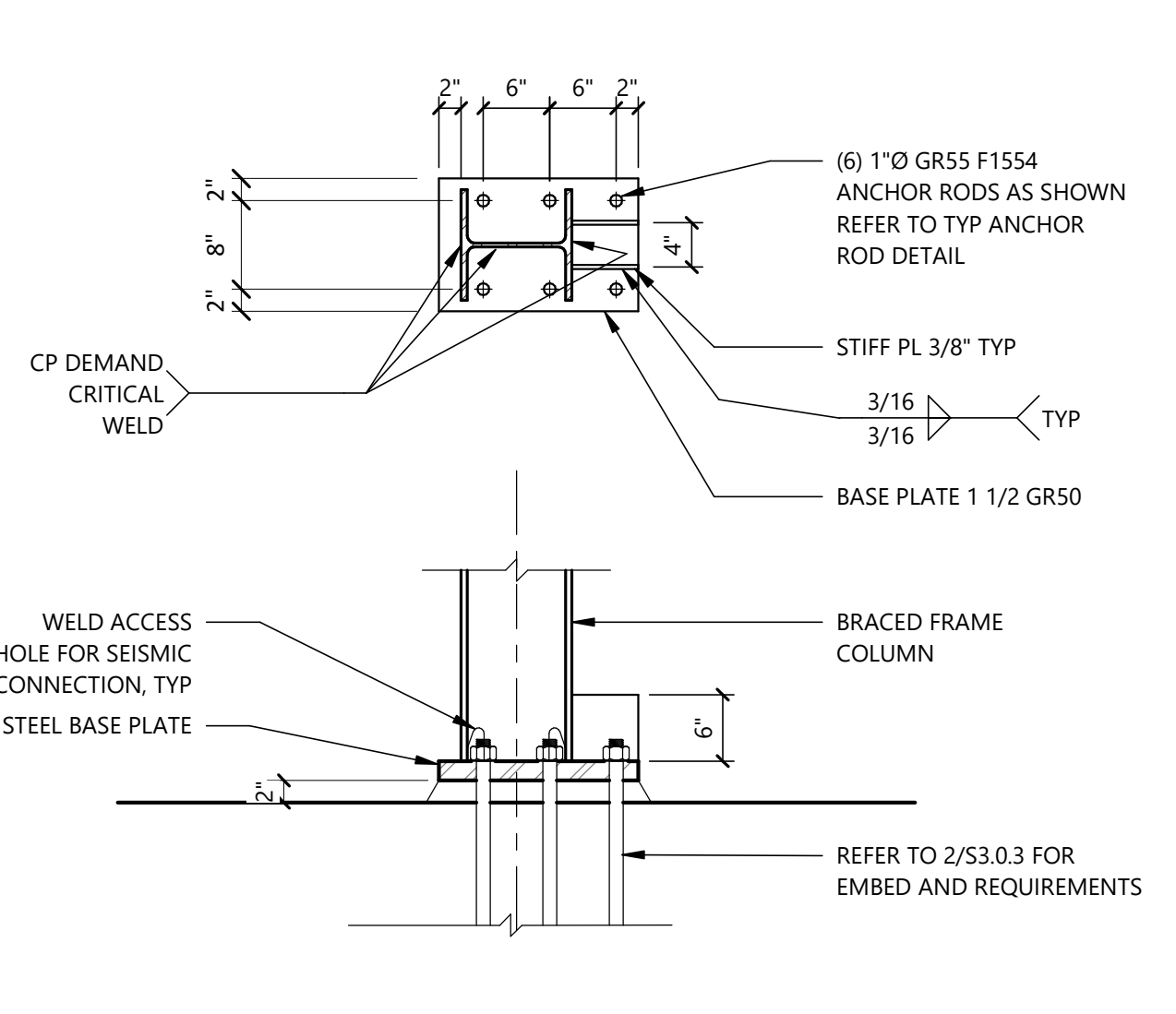
10 Column Splice
Scale: 1 1/2" = 1'-0"

NOTE:
USE OVERSIZED HOLES IN UPPER COLUMN.



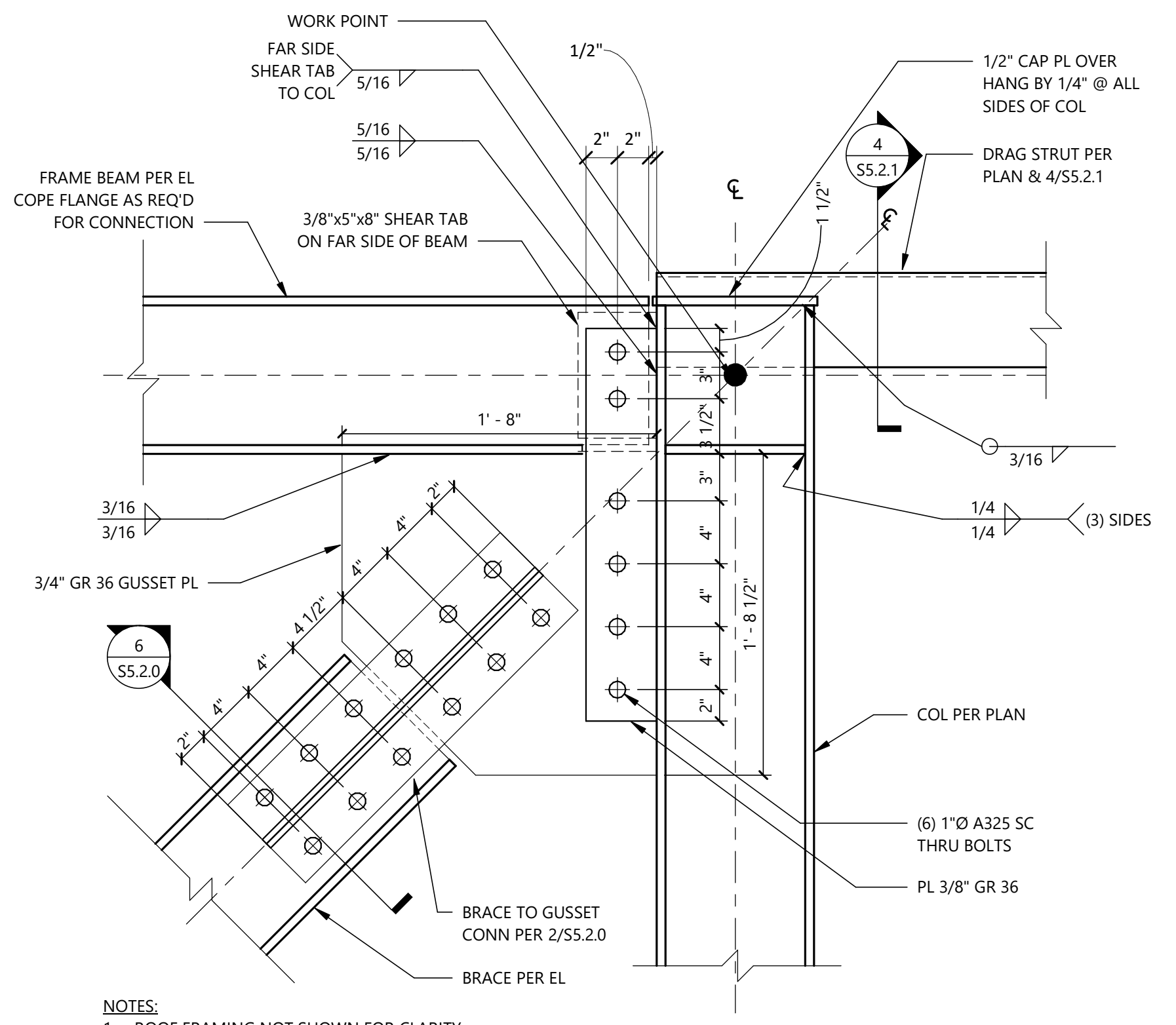
3 Base Plate at End BF Column
Scale: 3/4" = 1'-0"

NOTES:
1. REMOVE ALL WELD TABS AND BACKING.



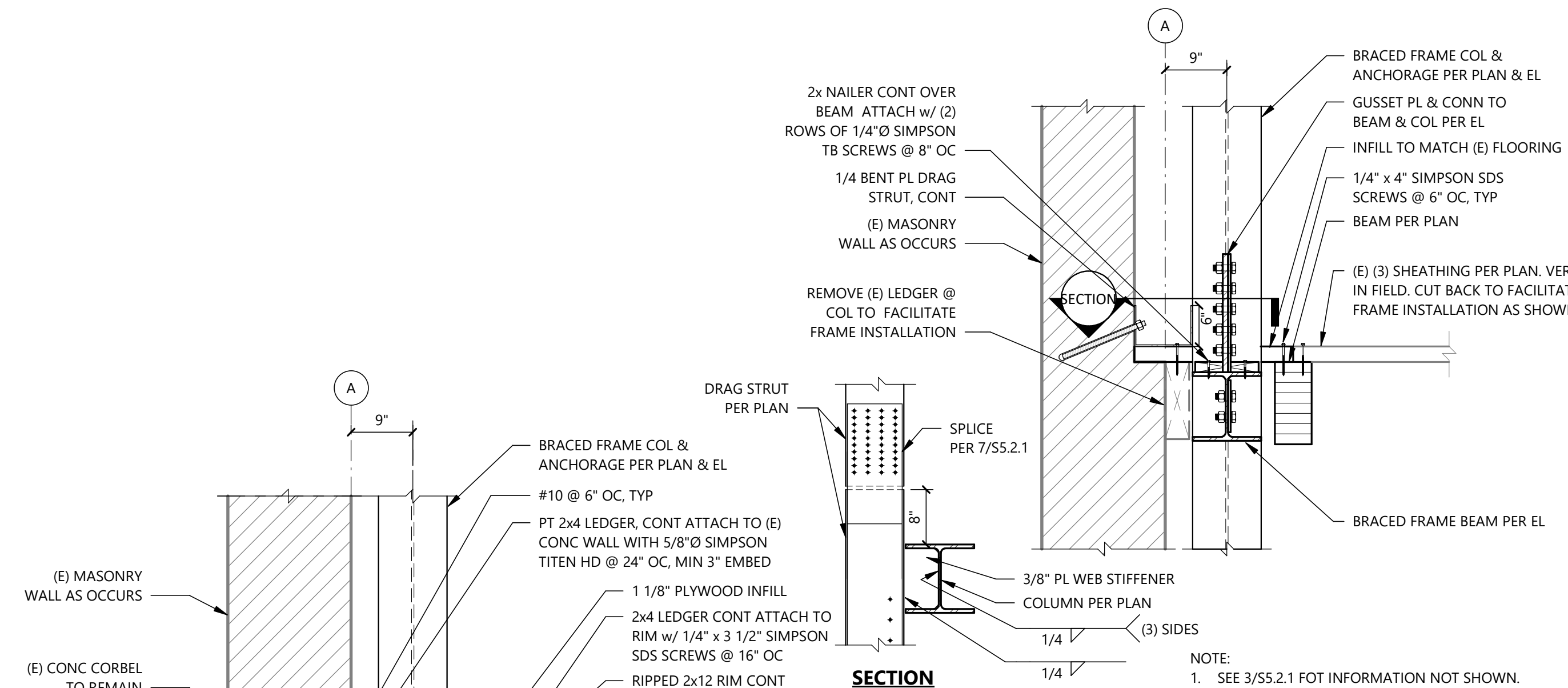
4 Typical Baseplate at WF Column
Scale: 3/4" = 1'-0"

NOTES:
1. REMOVE ALL WELD TABS AND BACKING.

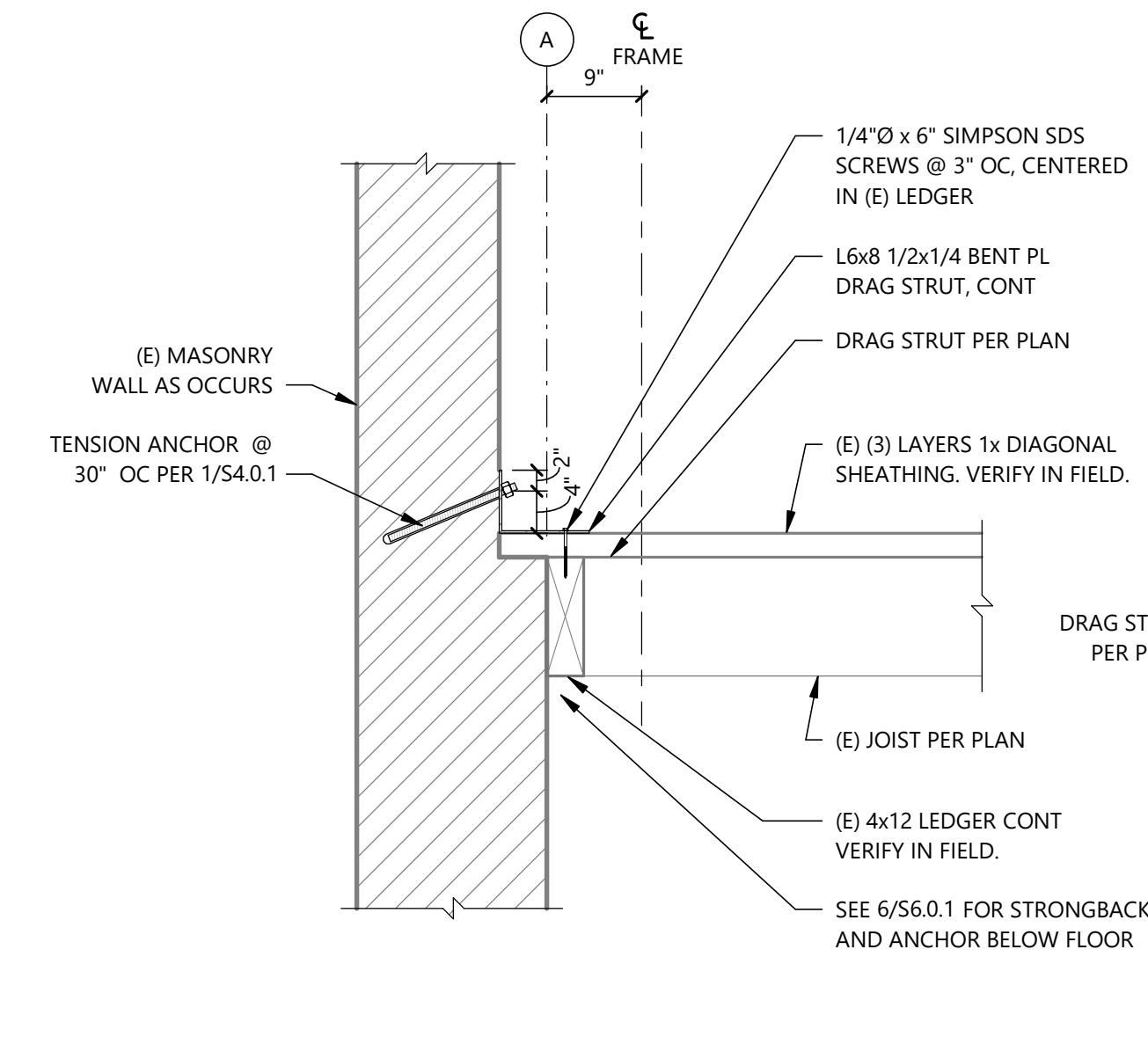


11 Typical Brace - Gusset Connection
Scale: 1 1/2" = 1'-0"

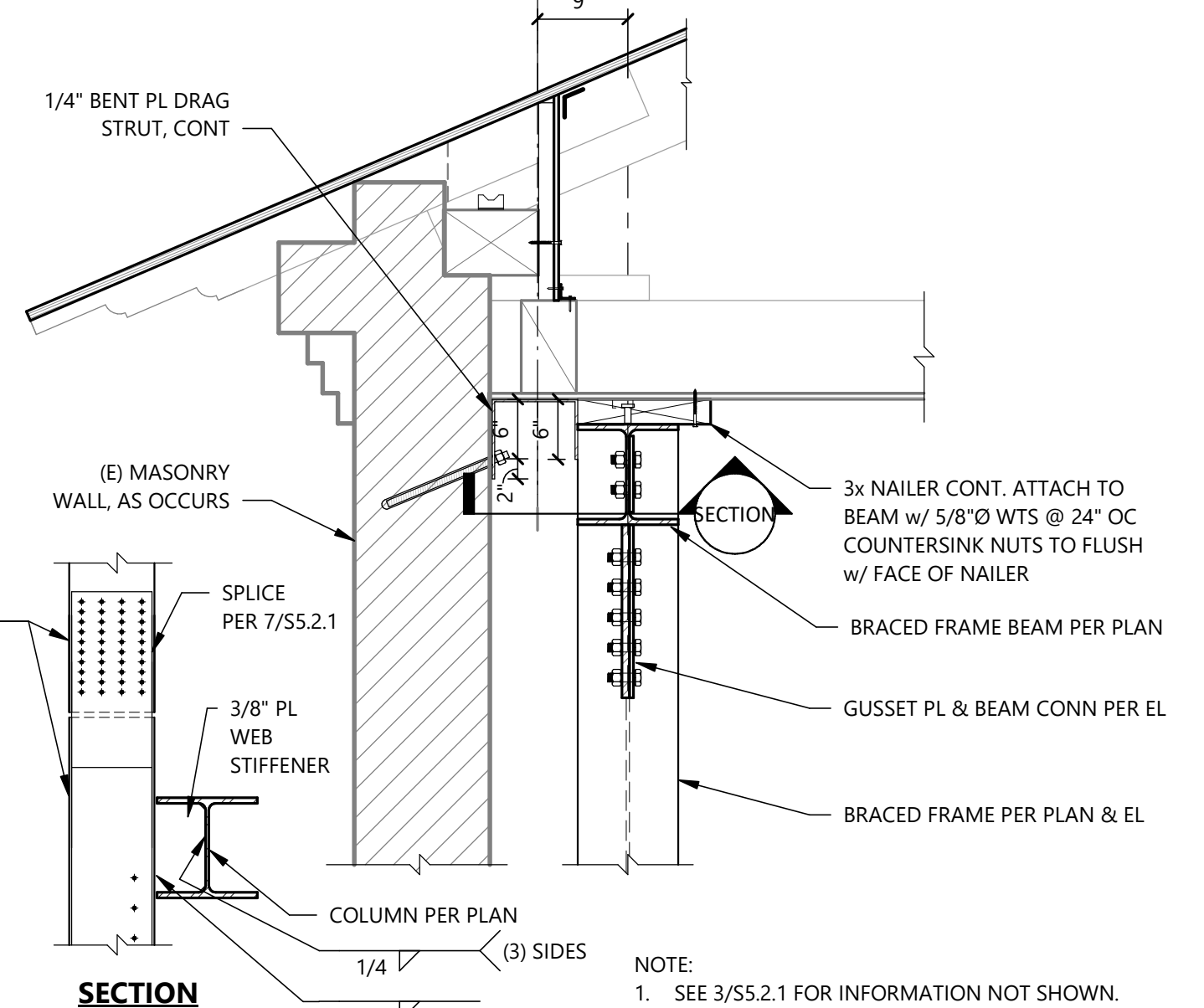
NOTES:
1. ROOF FRAMING NOT SHOWN FOR CLARITY
2. AT SIM CONDITION, DRAG STRUT PER 3/S5.2.1.



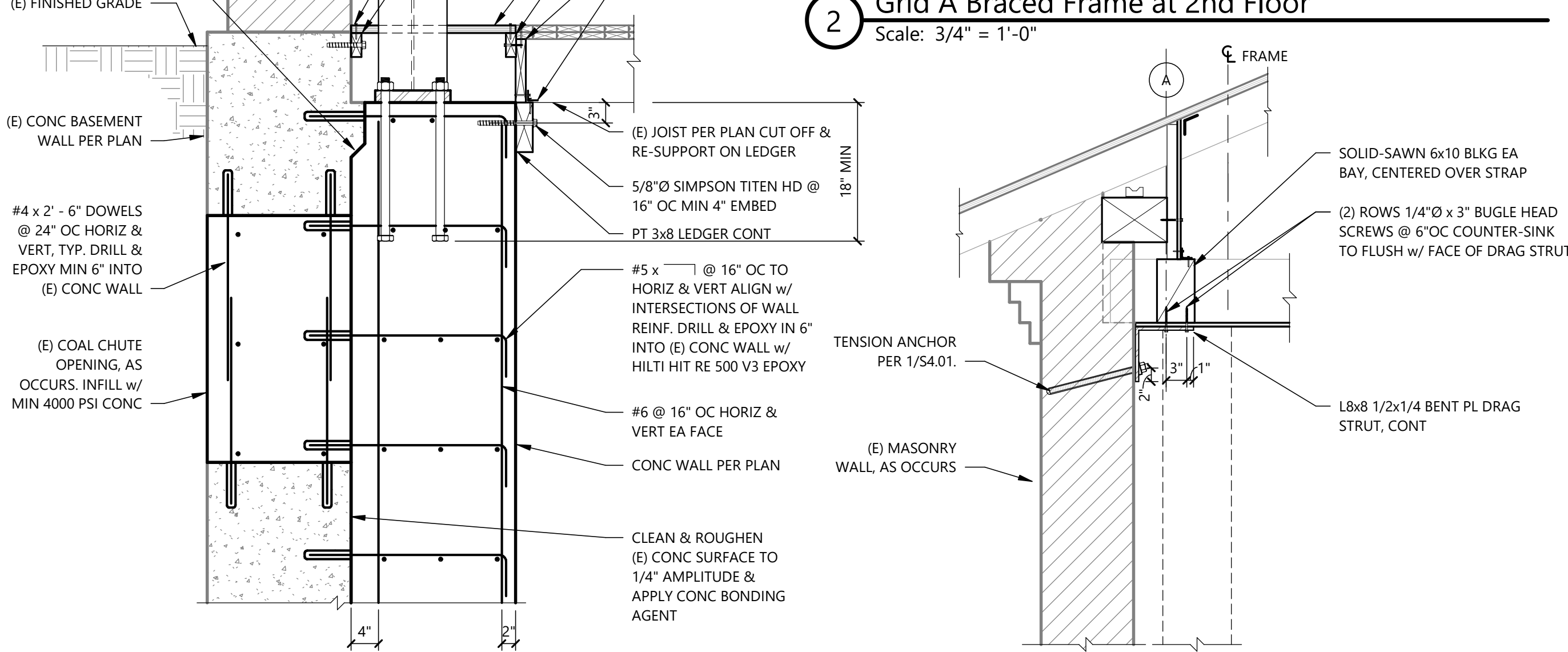
2 Grid A Braced Frame at 2nd Floor
Scale: 3/4" = 1'-0"



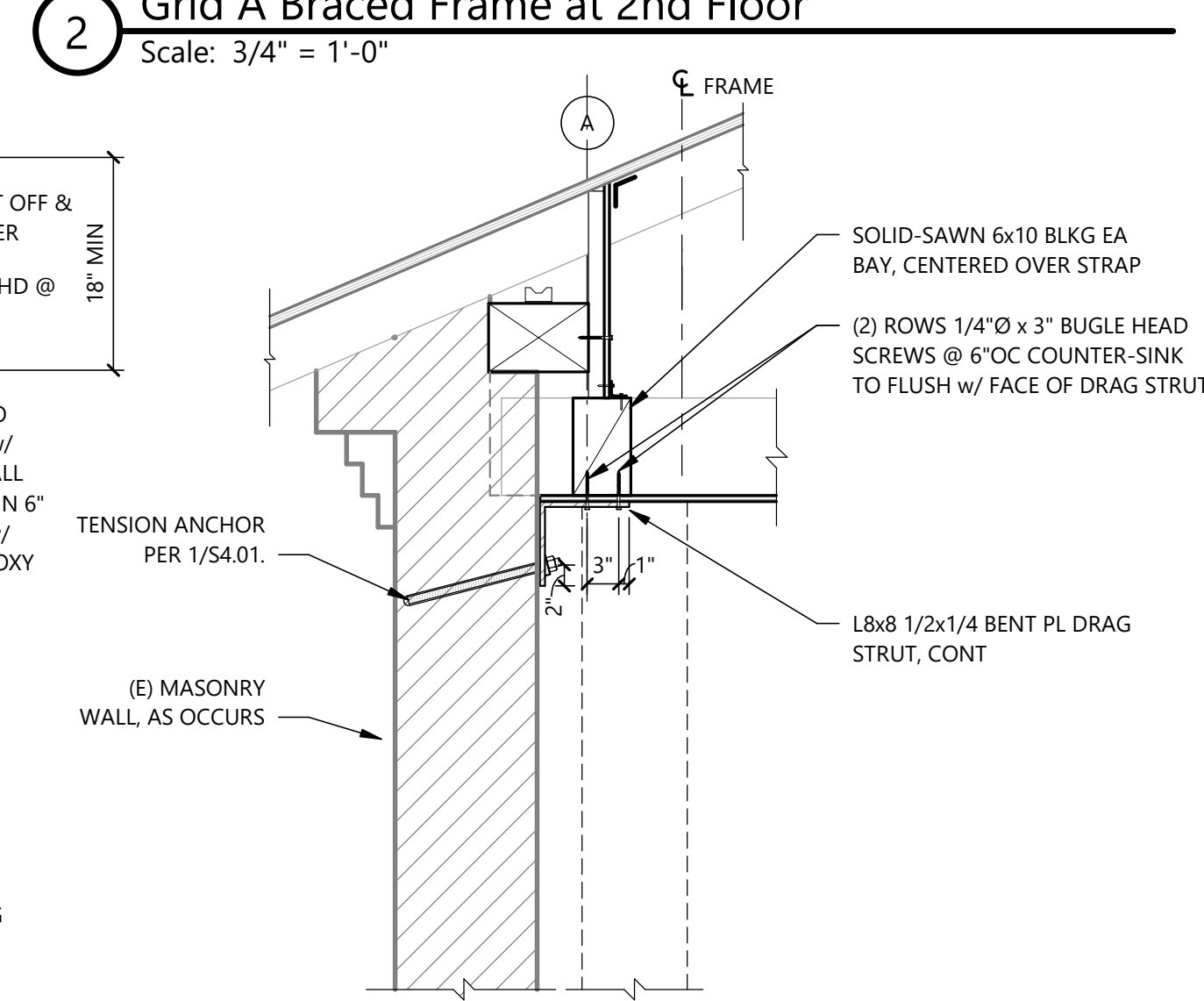
3 Grid A Drag Strut at 2nd Floor
Scale: 3/4" = 1'-0"



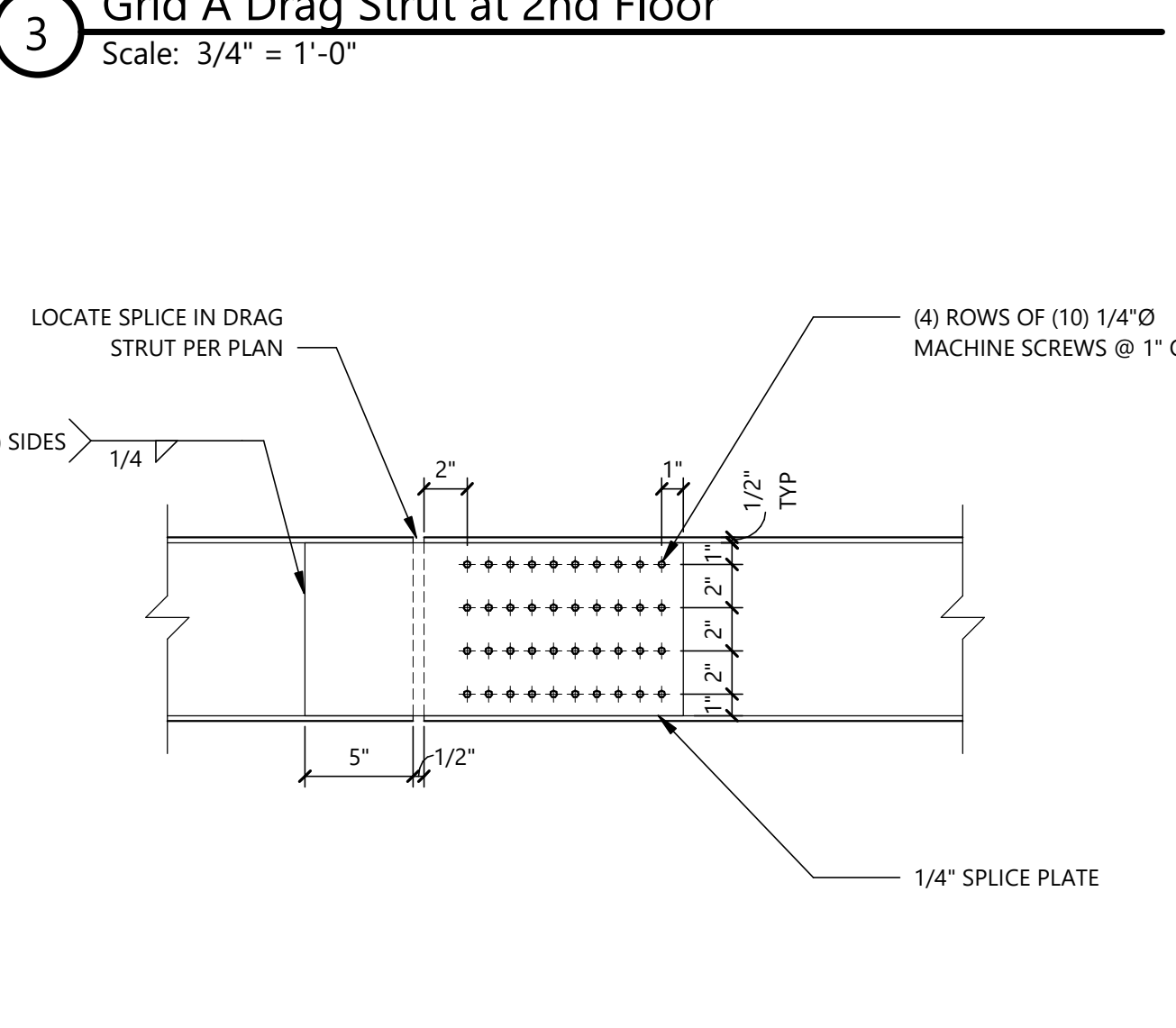
4 Grid A Braced Frame at Roof
Scale: 3/4" = 1'-0"



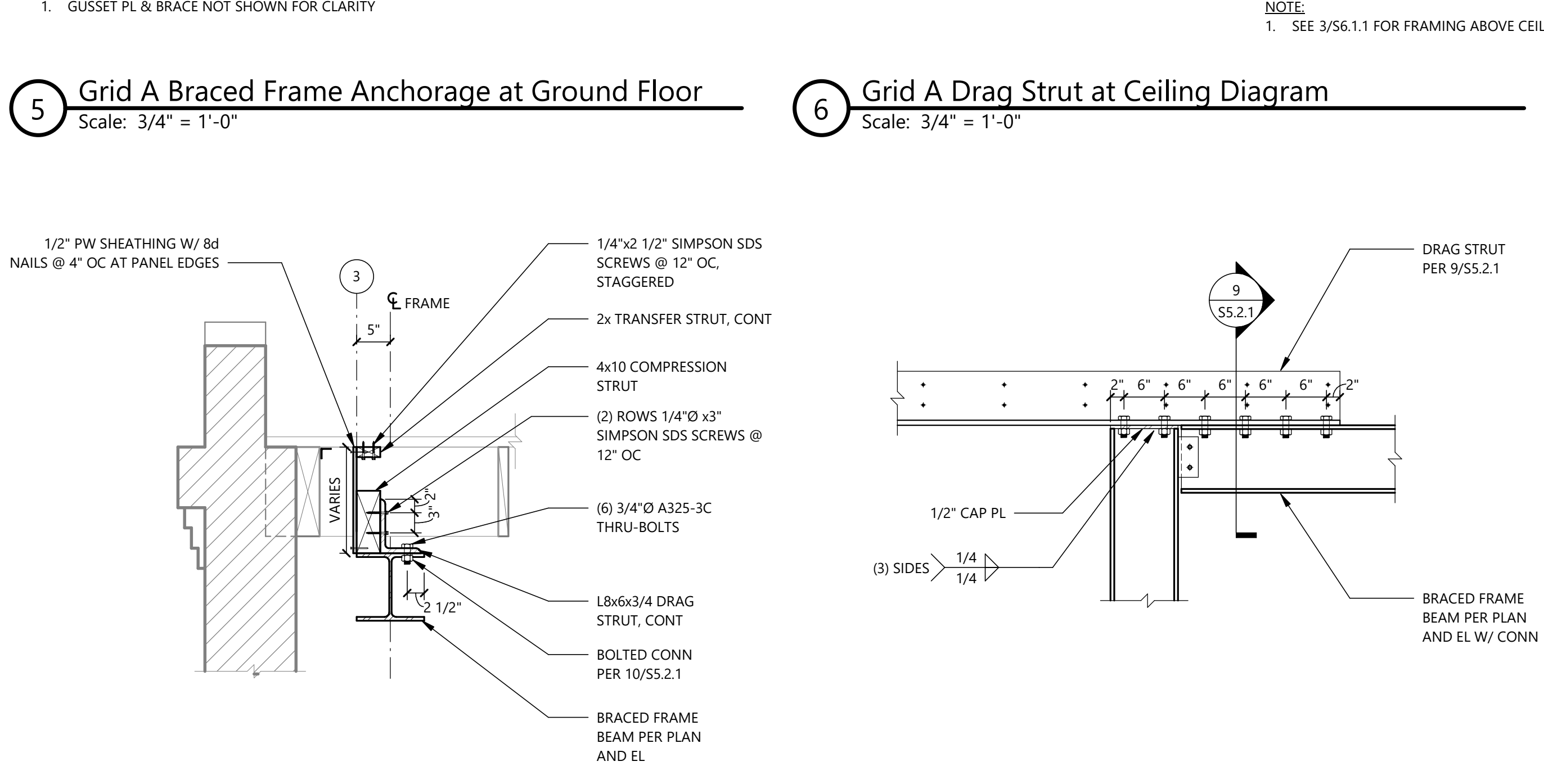
5 Grid A Braced Frame Anchorage at Ground Floor
Scale: 3/4" = 1'-0"



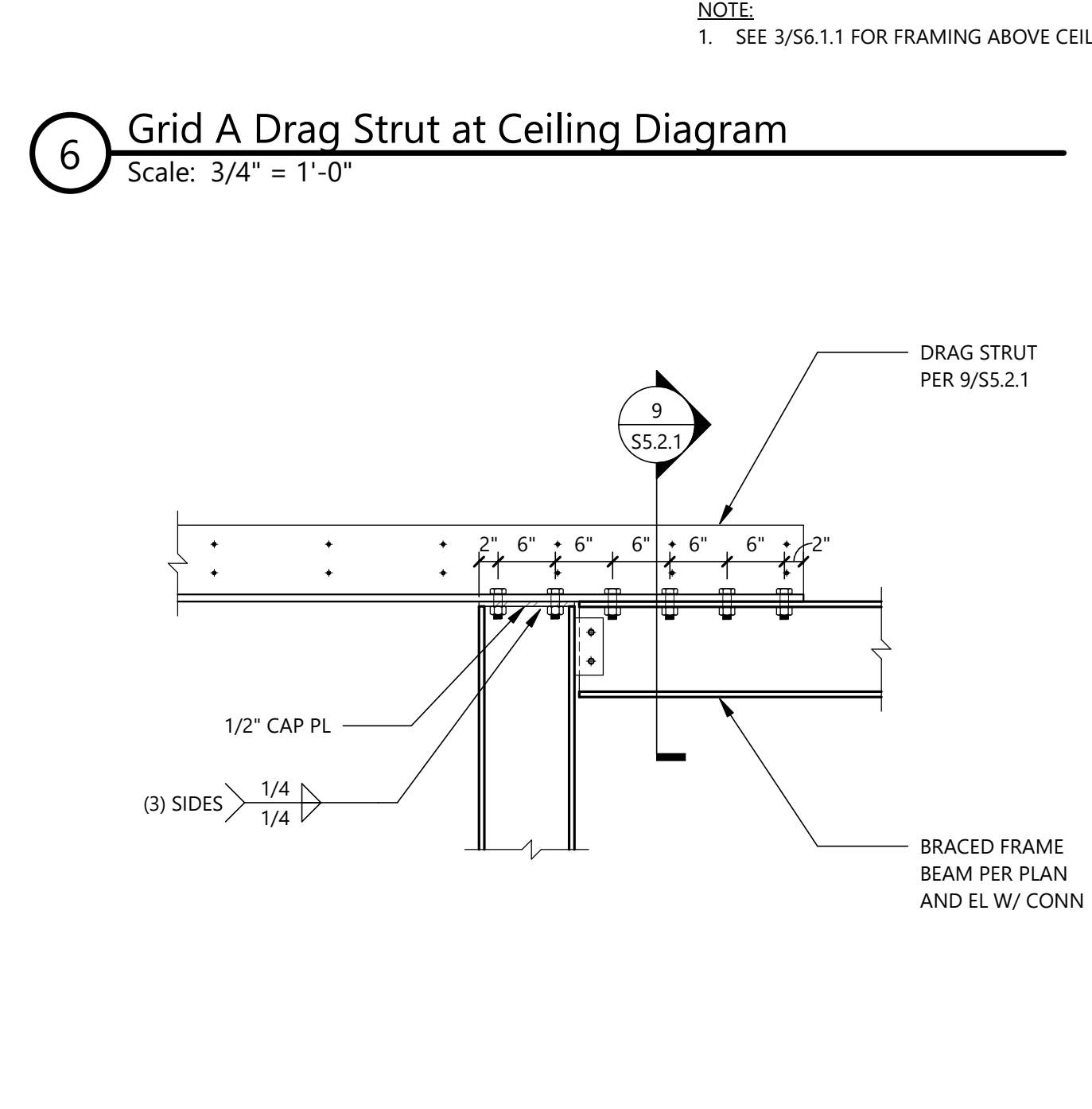
6 Grid A Drag Strut at Ceiling Diagram
Scale: 3/4" = 1'-0"



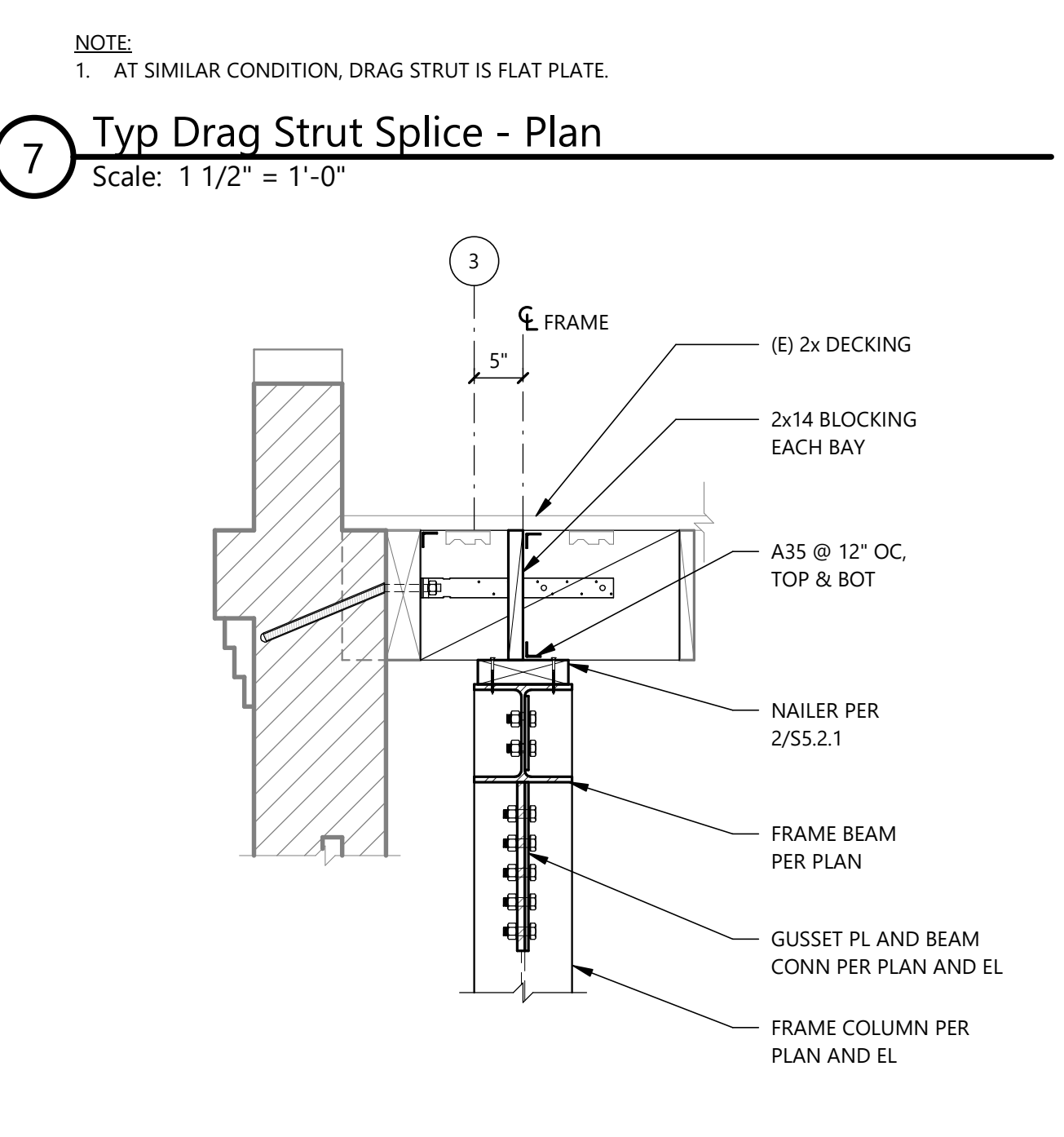
7 Typ Drag Strut Splice - Plan
Scale: 1 1/2" = 1'-0"



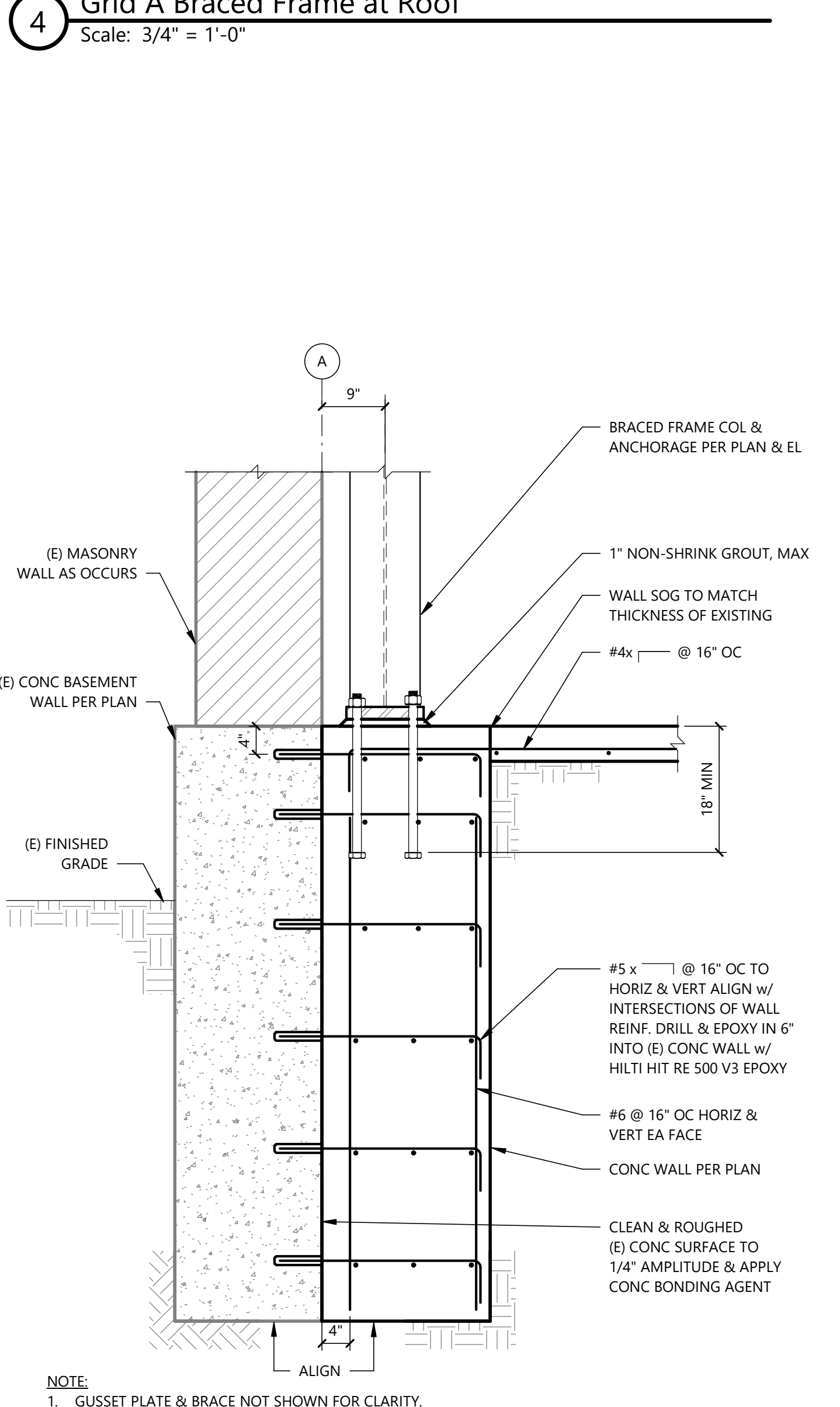
9 Gridline 3 Drag Strut Between Grids D and F
Scale: 3/4" = 1'-0"



10 Drag Strut at Grid 3 Frame, Roof
Scale: 3/4" = 1'-0"



11 Grid 3 Braced Frame At Roof
Scale: 3/4" = 1'-0"



12 Grid 3 Braced Frame Anchorage at Ground Floor
Scale: 3/4" = 1'-0"

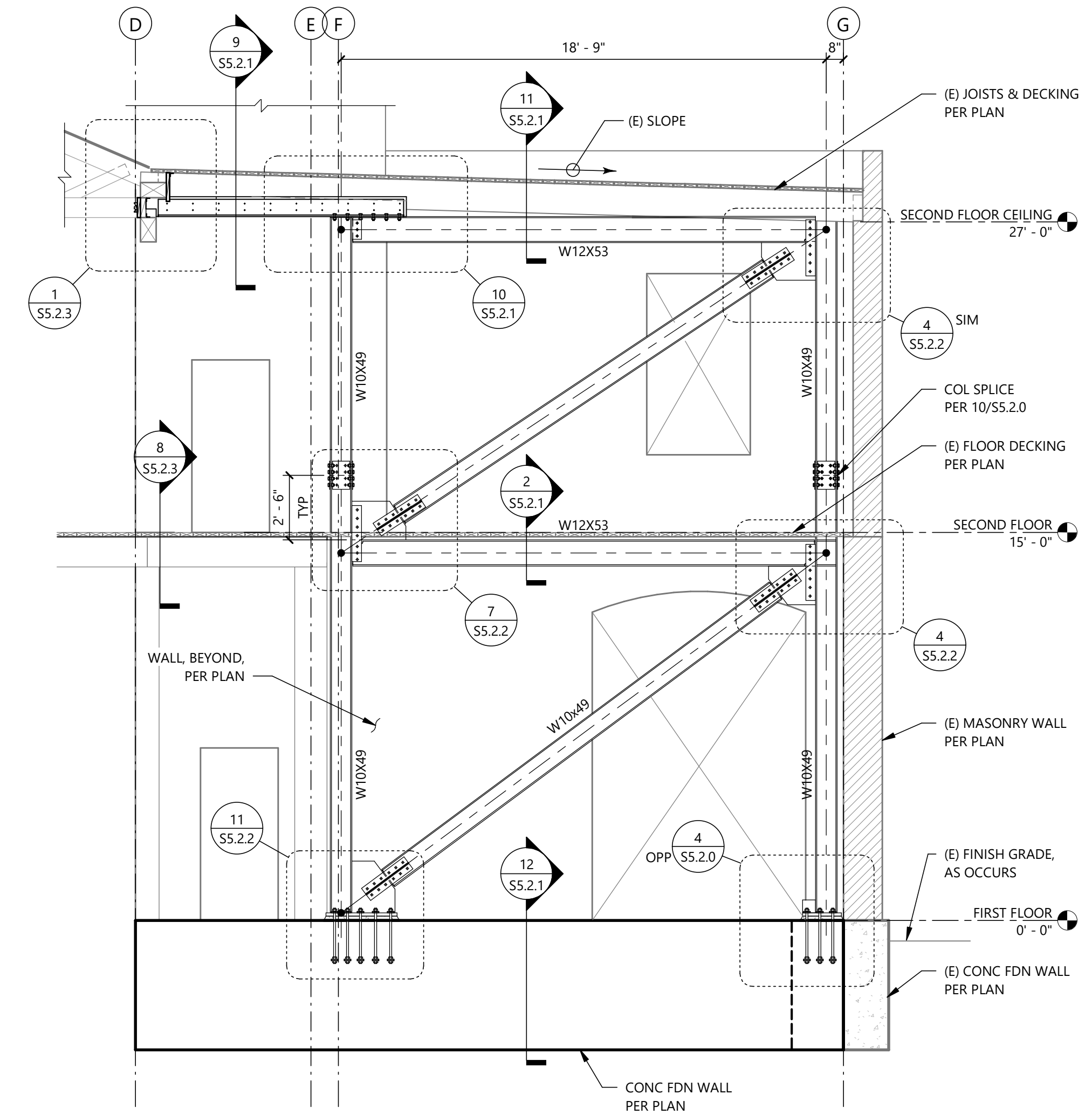
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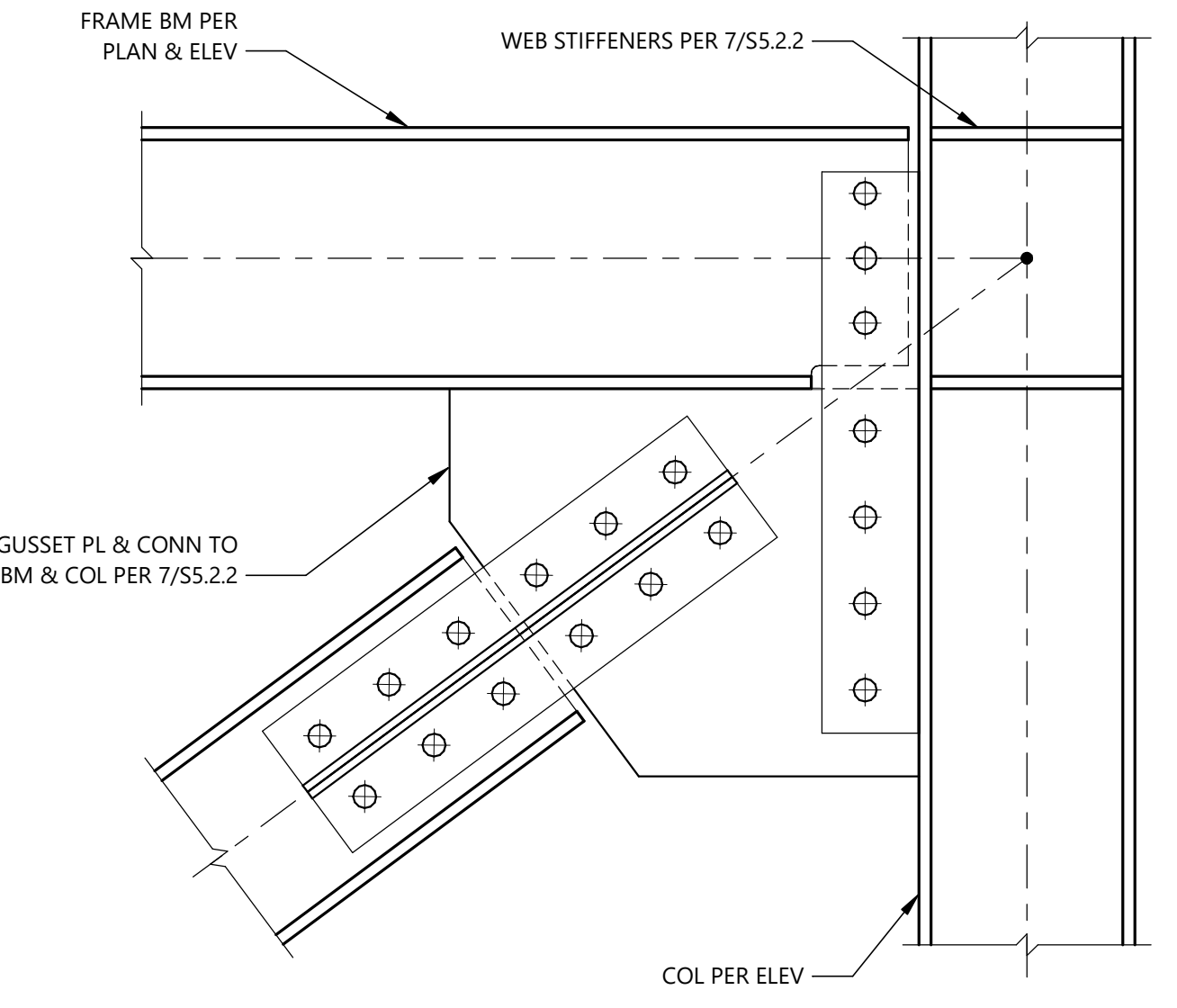
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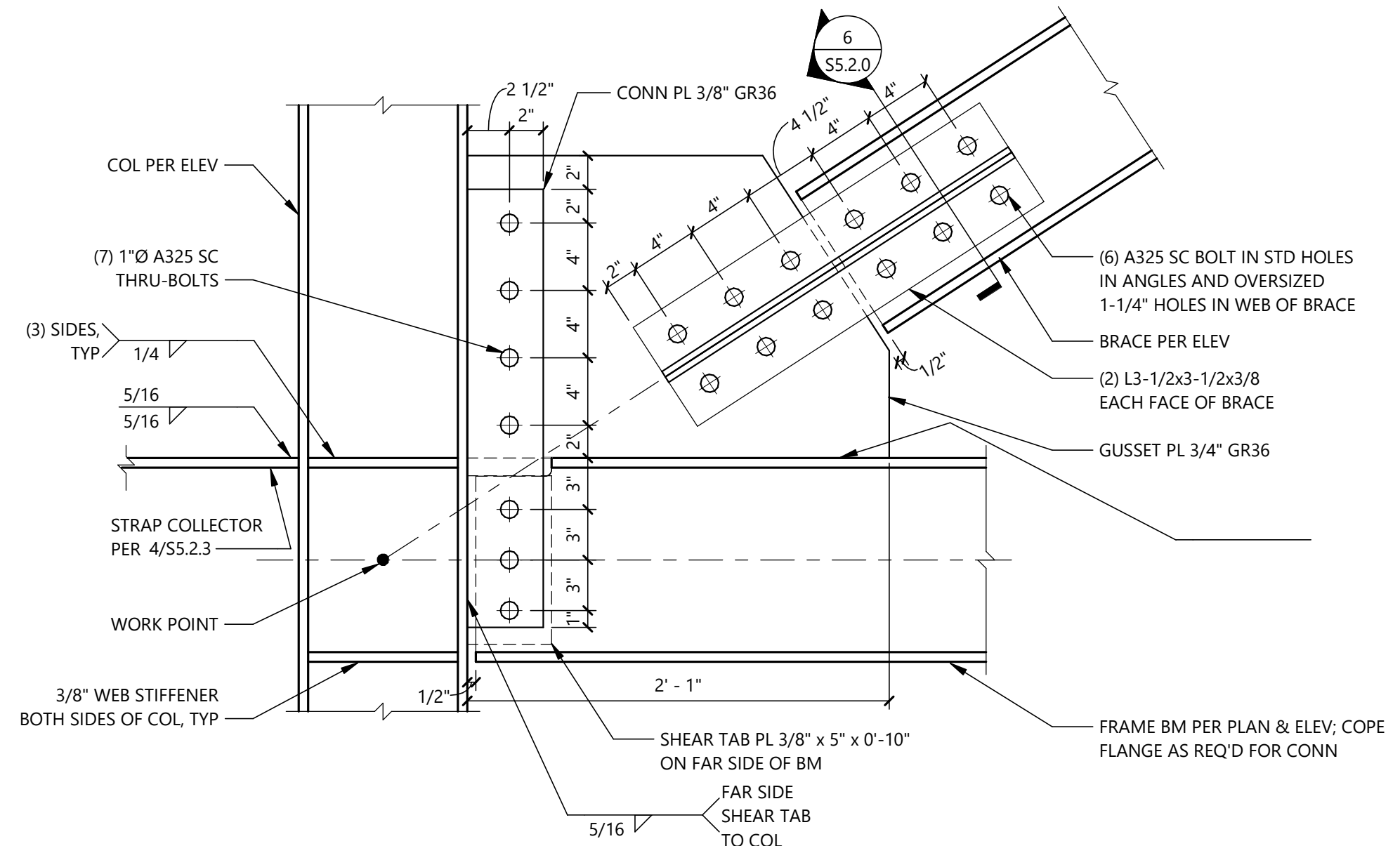
STRUCTURAL
BRACED FRAME
DETAILS
S5.2.1



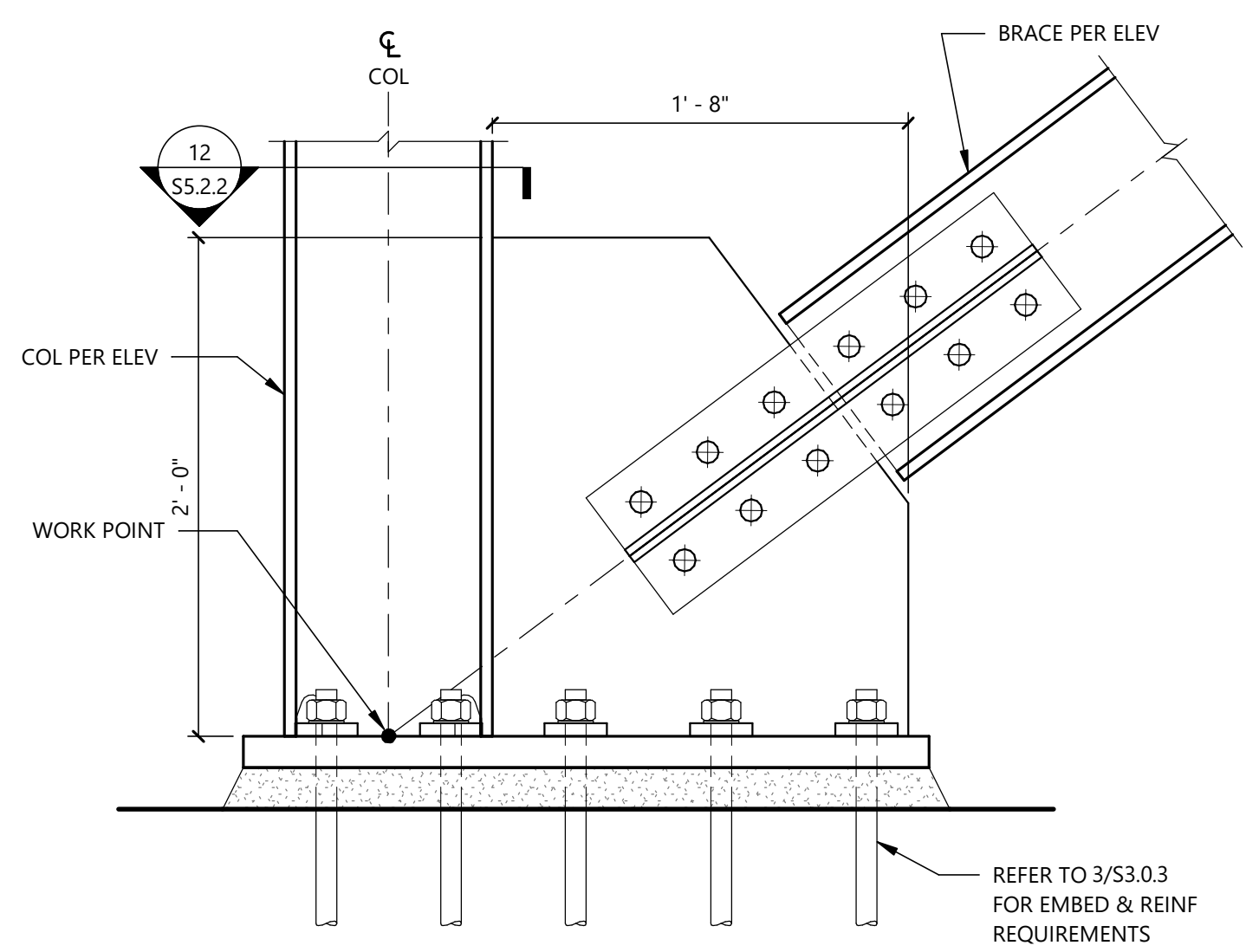
5 Brace Frame Elevation
Scale: 1/4" = 1'-0"



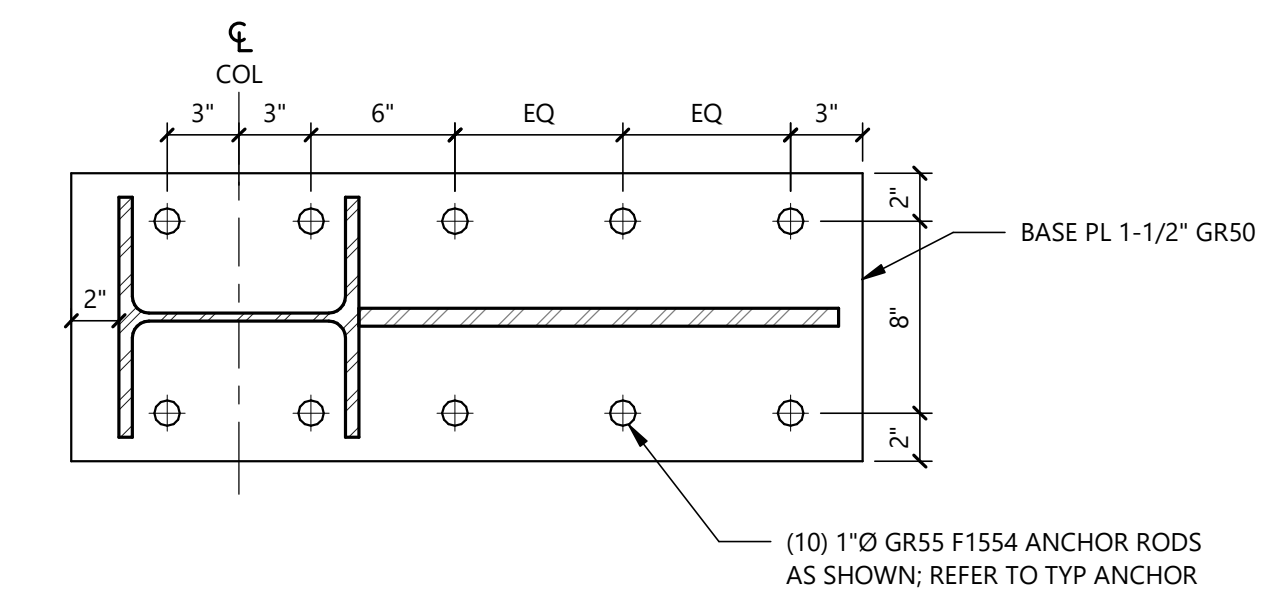
4 Gusset Plate Connection at Grid 3
Scale: 1 1/2" = 1'-0"



7 Gusset Plate Connection at Second Floor at Grid 3
Scale: 1 1/2" = 1'-0"



11 Wide Flange Base Plate Connection at Grid 3
Scale: 1 1/2" = 1'-0"



12 Grid 3 Braced Frame Gusset Plate Baseplate
Scale: 1 1/2" = 1'-0"

NOTES:
1. FOR INFORMATION NOT SHOWN, SEE 2/S5.2.0.

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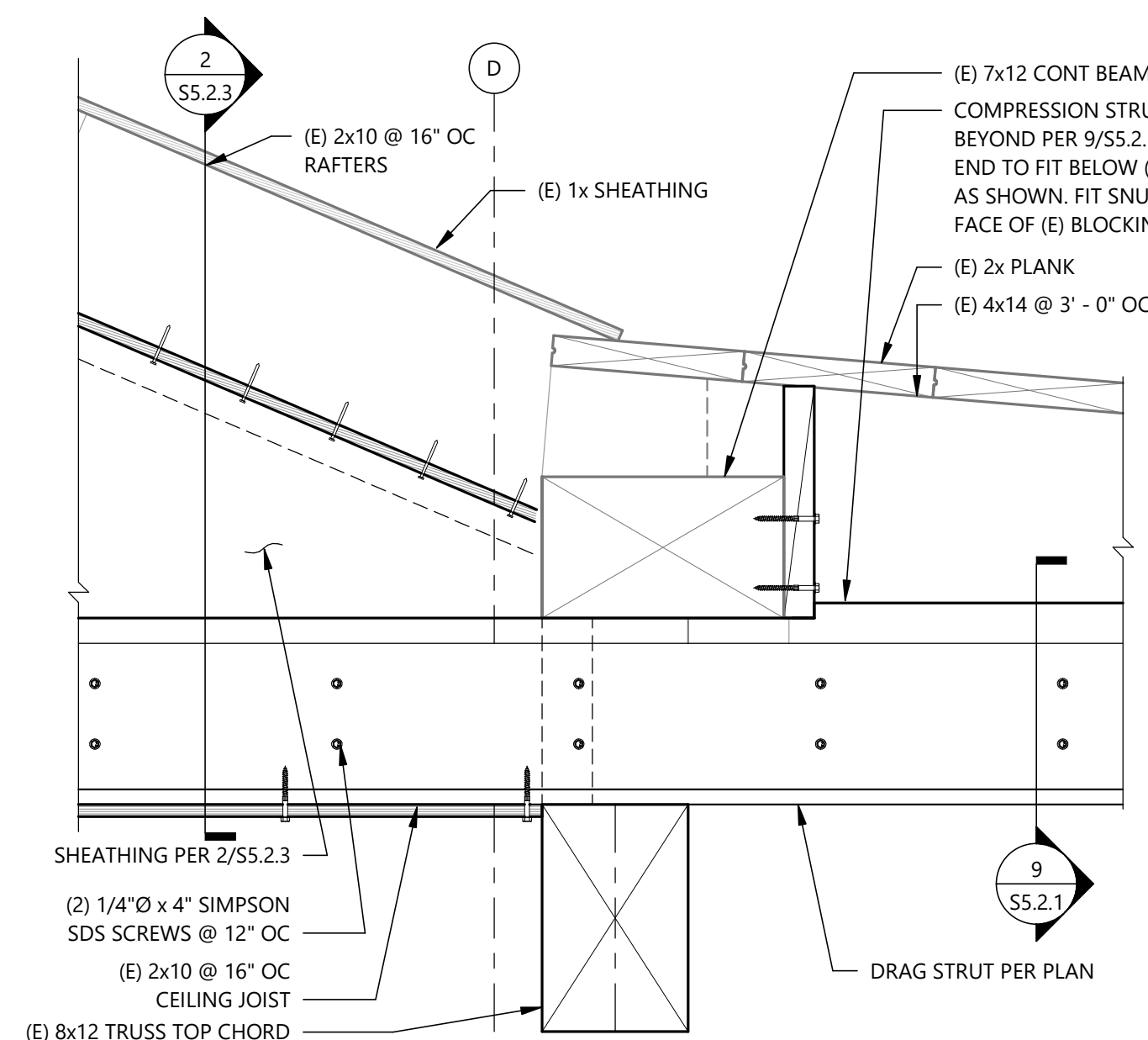
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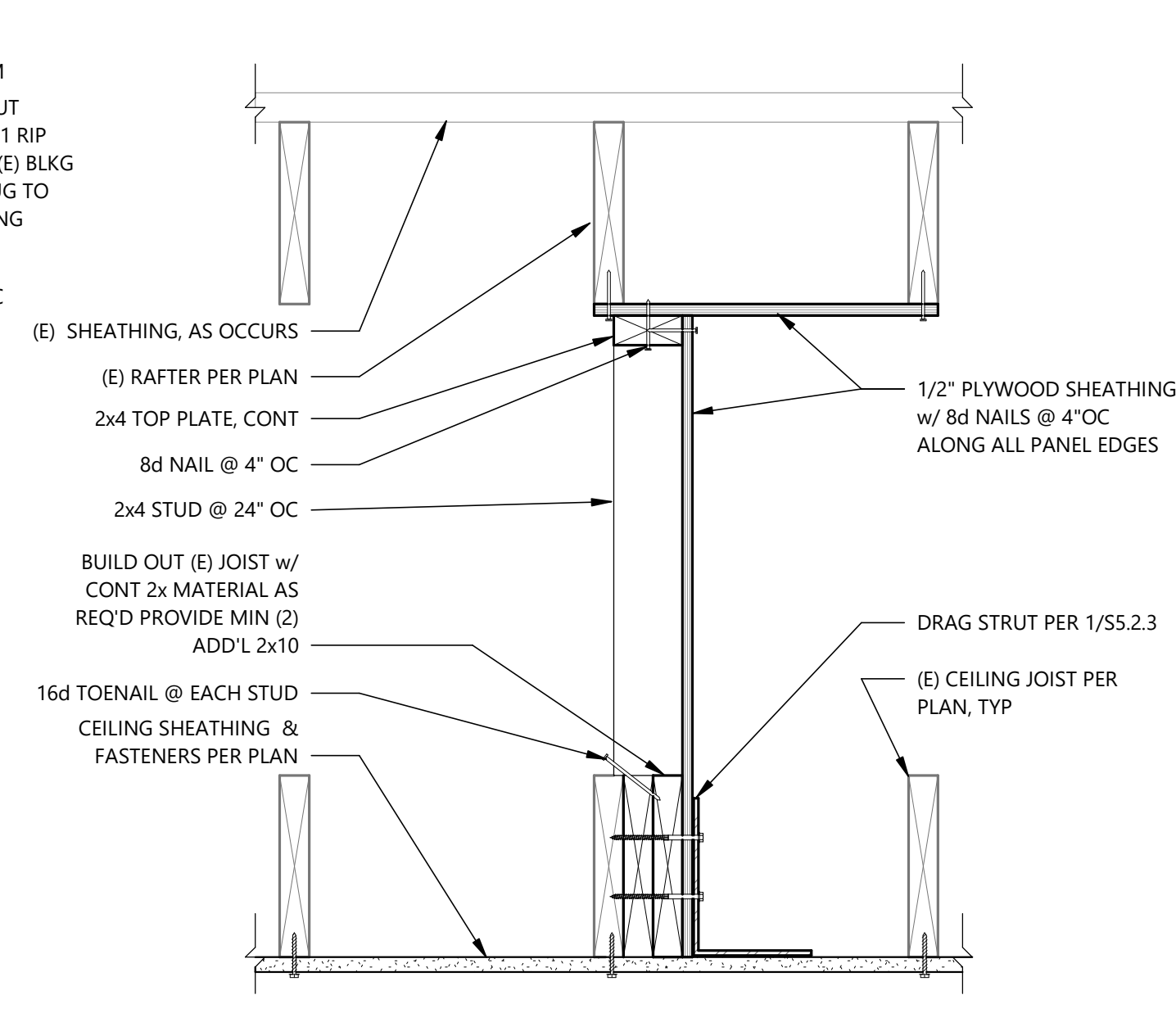
Drawn by:	ZCE	
Checked:	JB, JC	
Date:	June 25, 2020	
Scale:	As indicated	
Revisions:		
No.	Date	Remarks

STRUCTURAL
BRACED FRAME
DETAILS

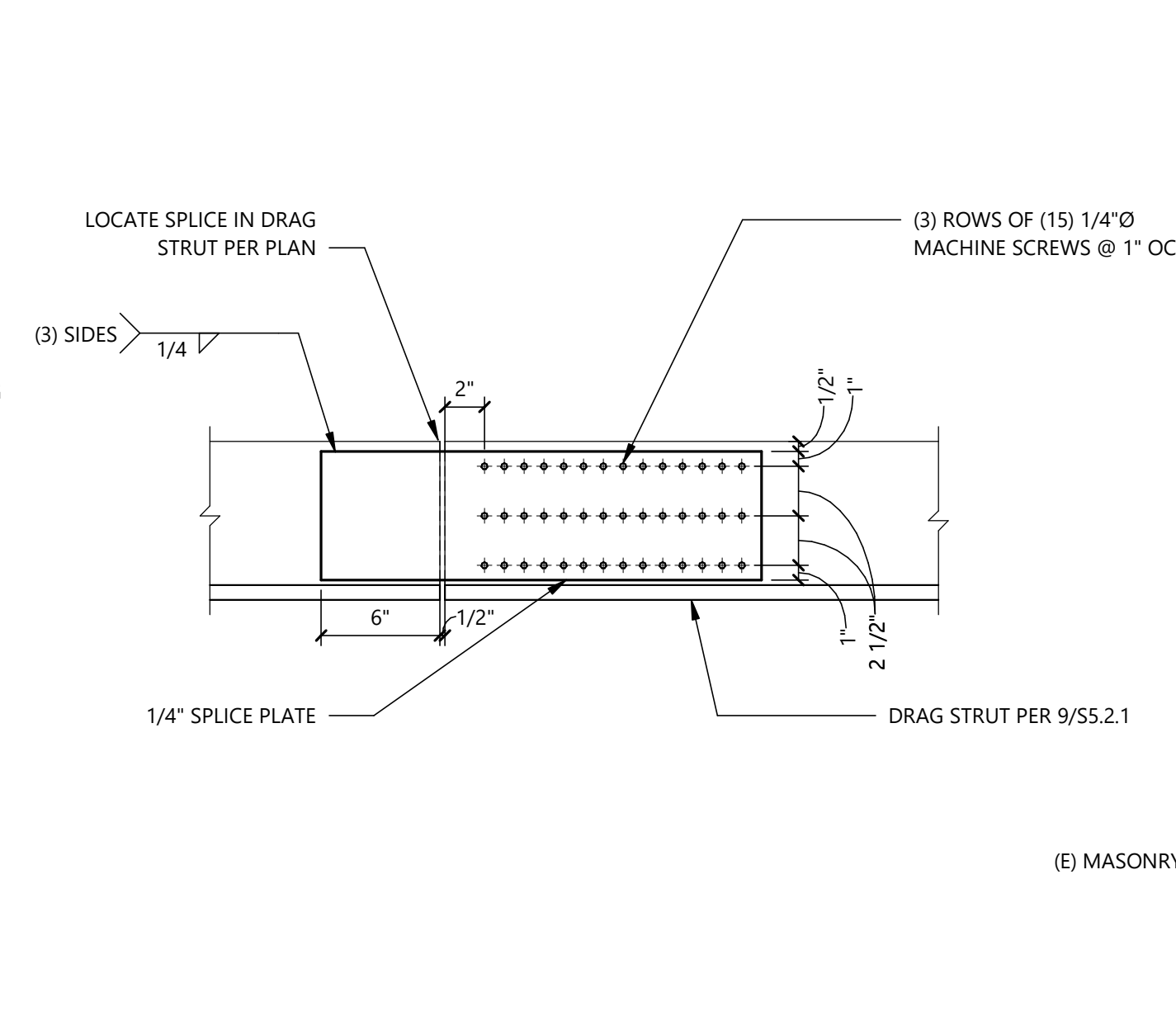
S5.2.2



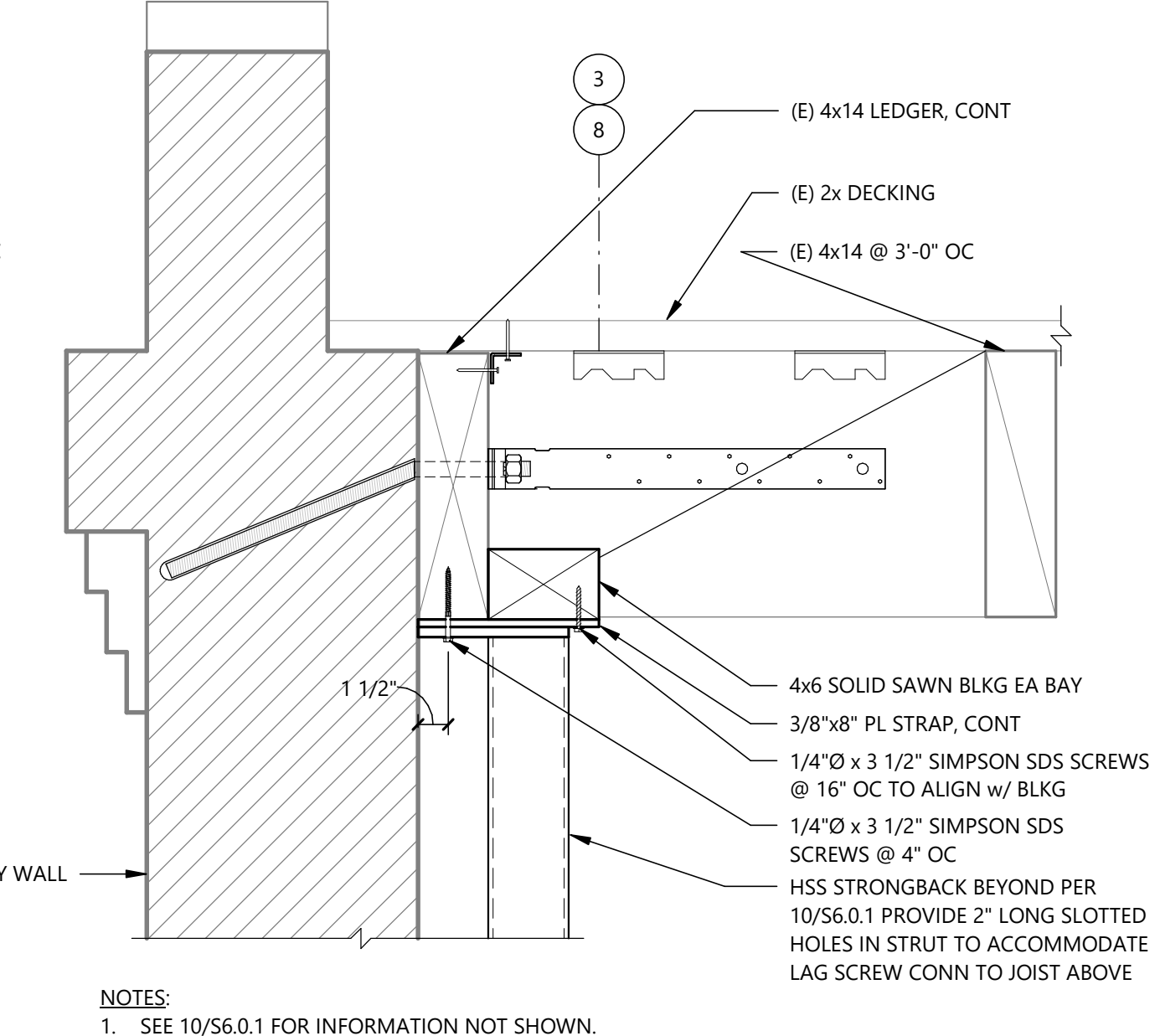
1 Drag Strut at Roof Transion, Gridline 3
Scale: 1 1/2" = 1'-0"



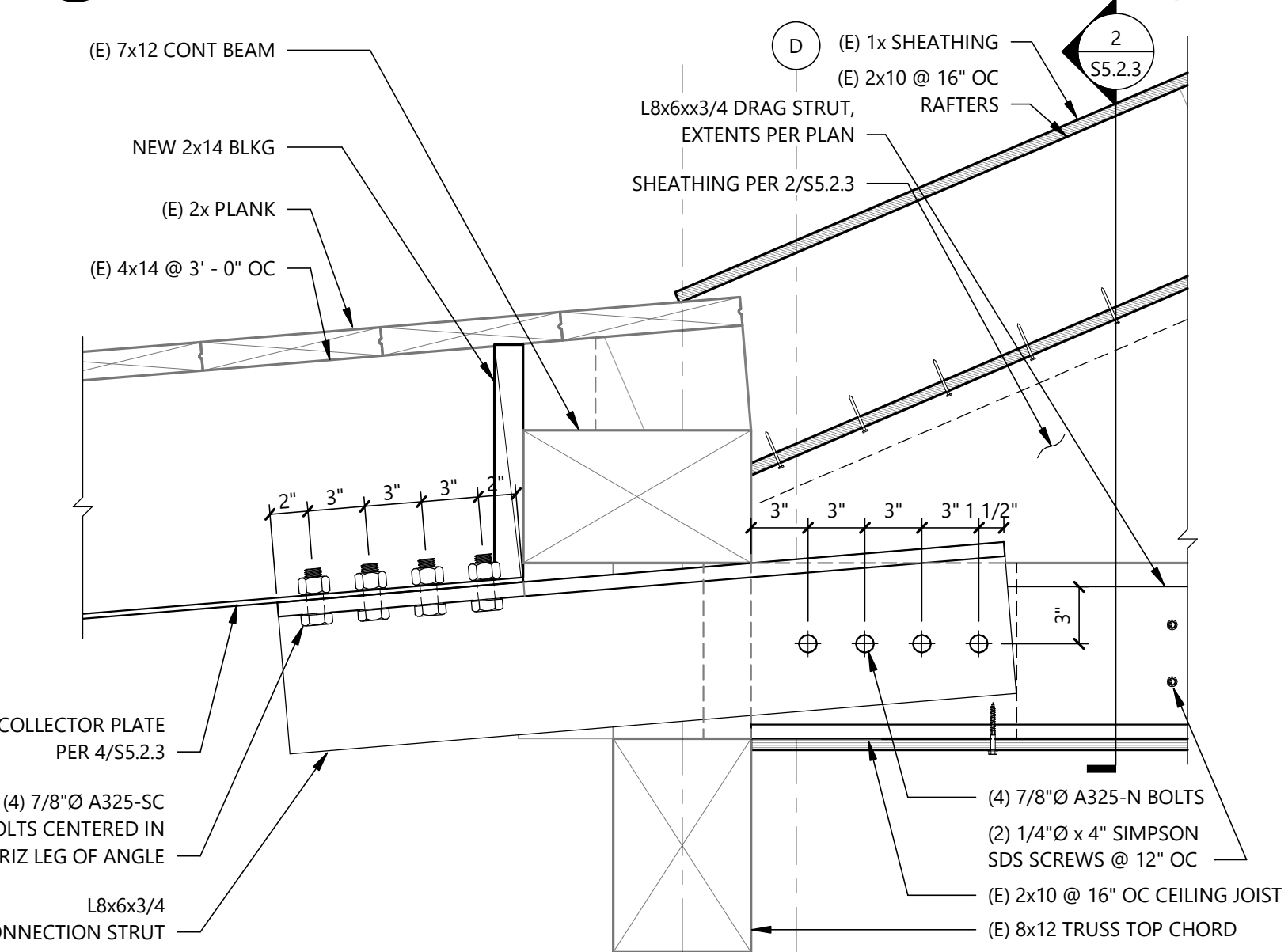
2 Drag Strut at Trussed Rafters
Scale: 1 1/2" = 1'-0"



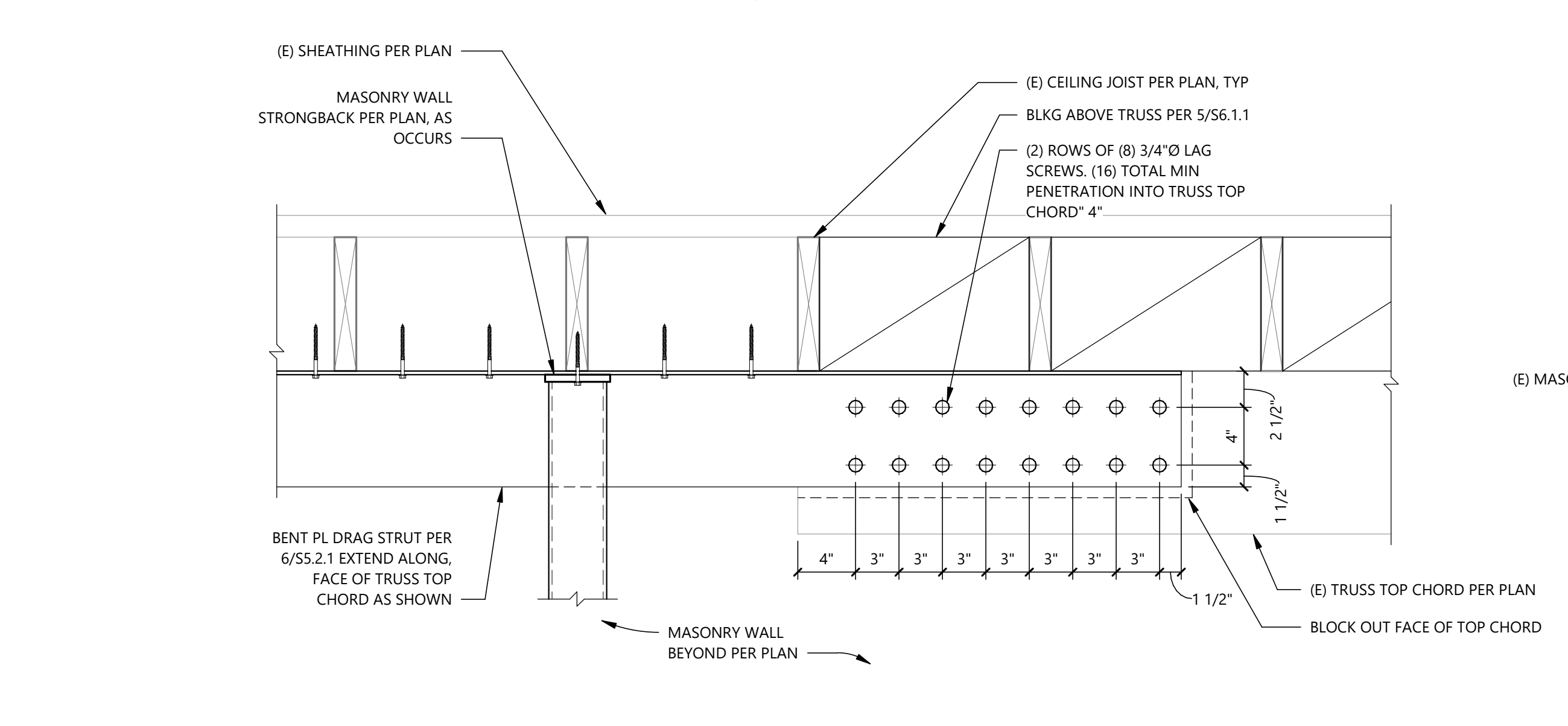
3 Drag Strut Splice on Gridline 3
Scale: 1 1/2" = 1'-0"



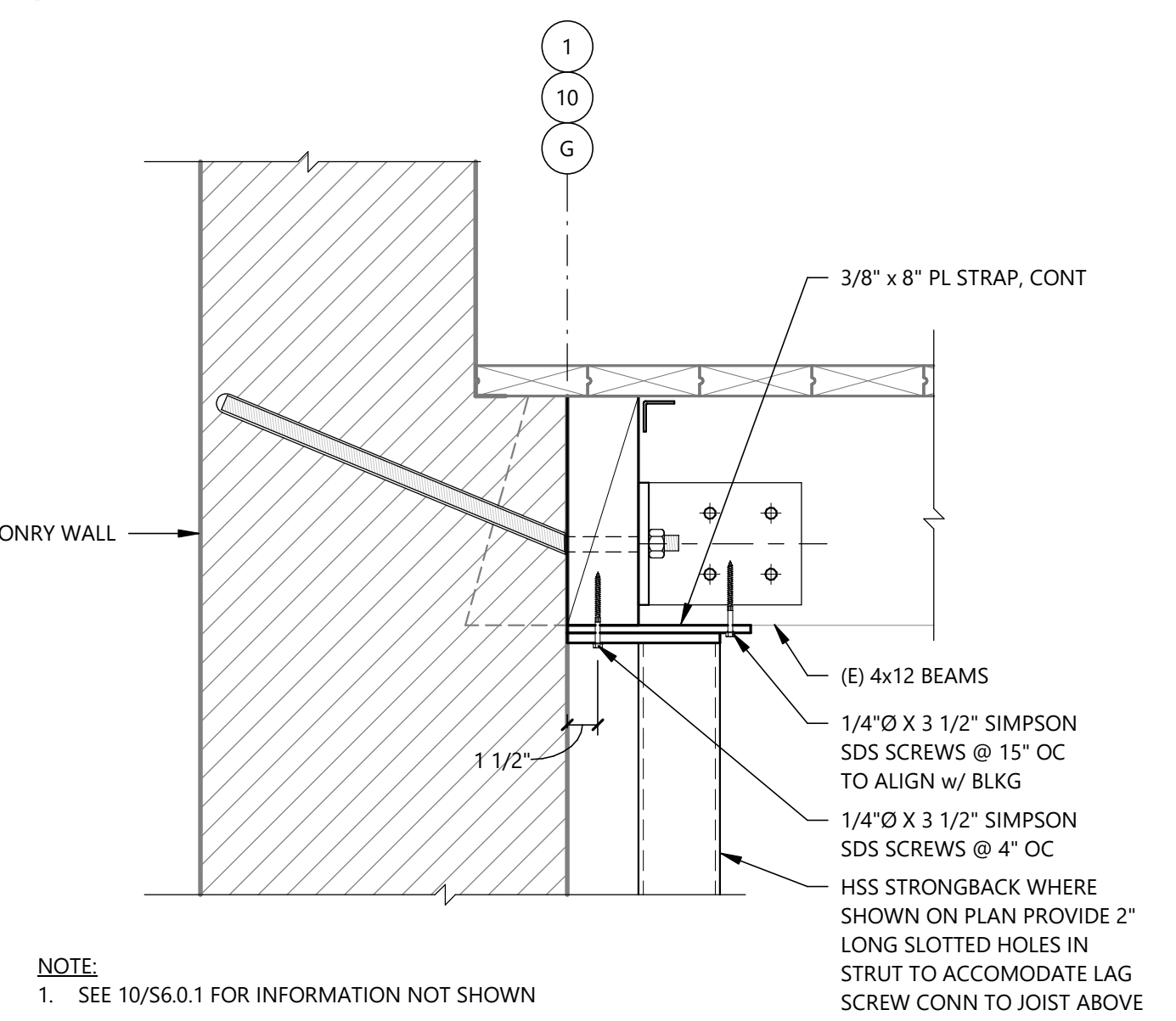
4 Collector at Roof Diaphragm, Gridline 8
Scale: 1 1/2" = 1'-0"



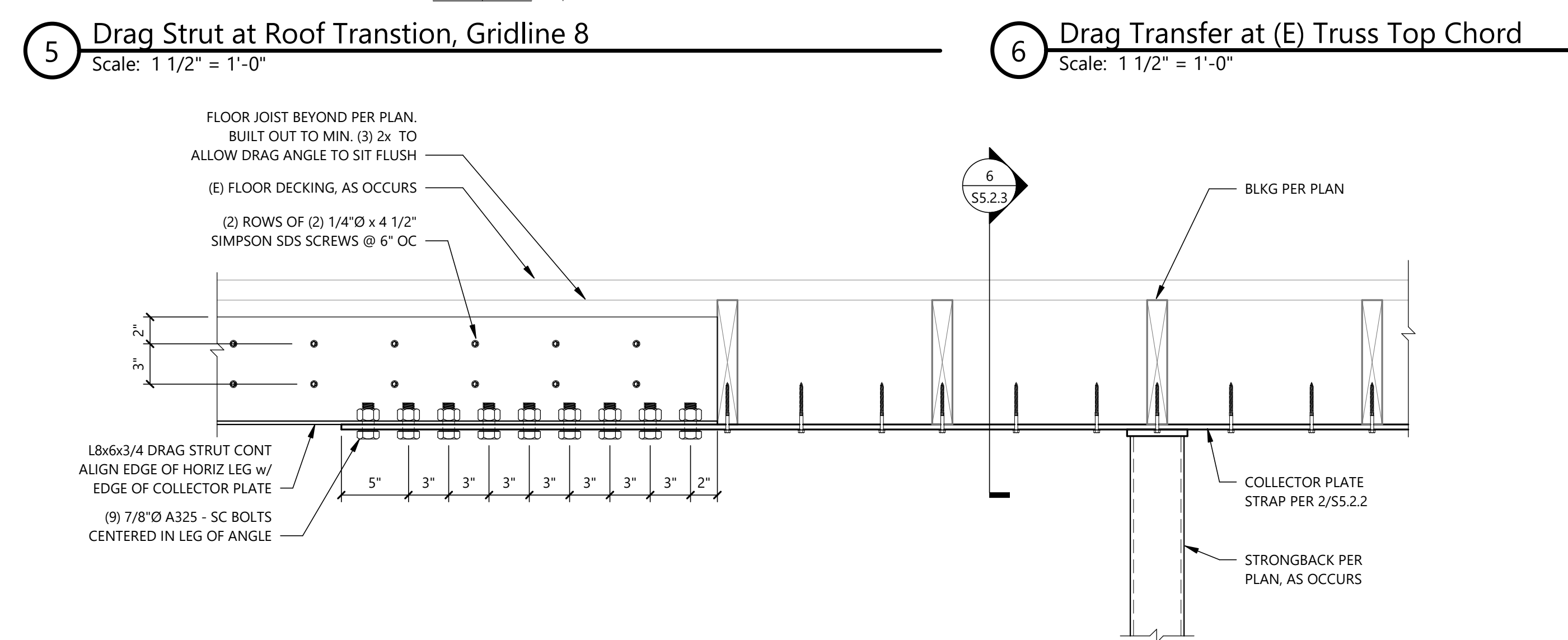
5 Drag Strut at Roof Transion, Gridline 8
Scale: 1 1/2" = 1'-0"



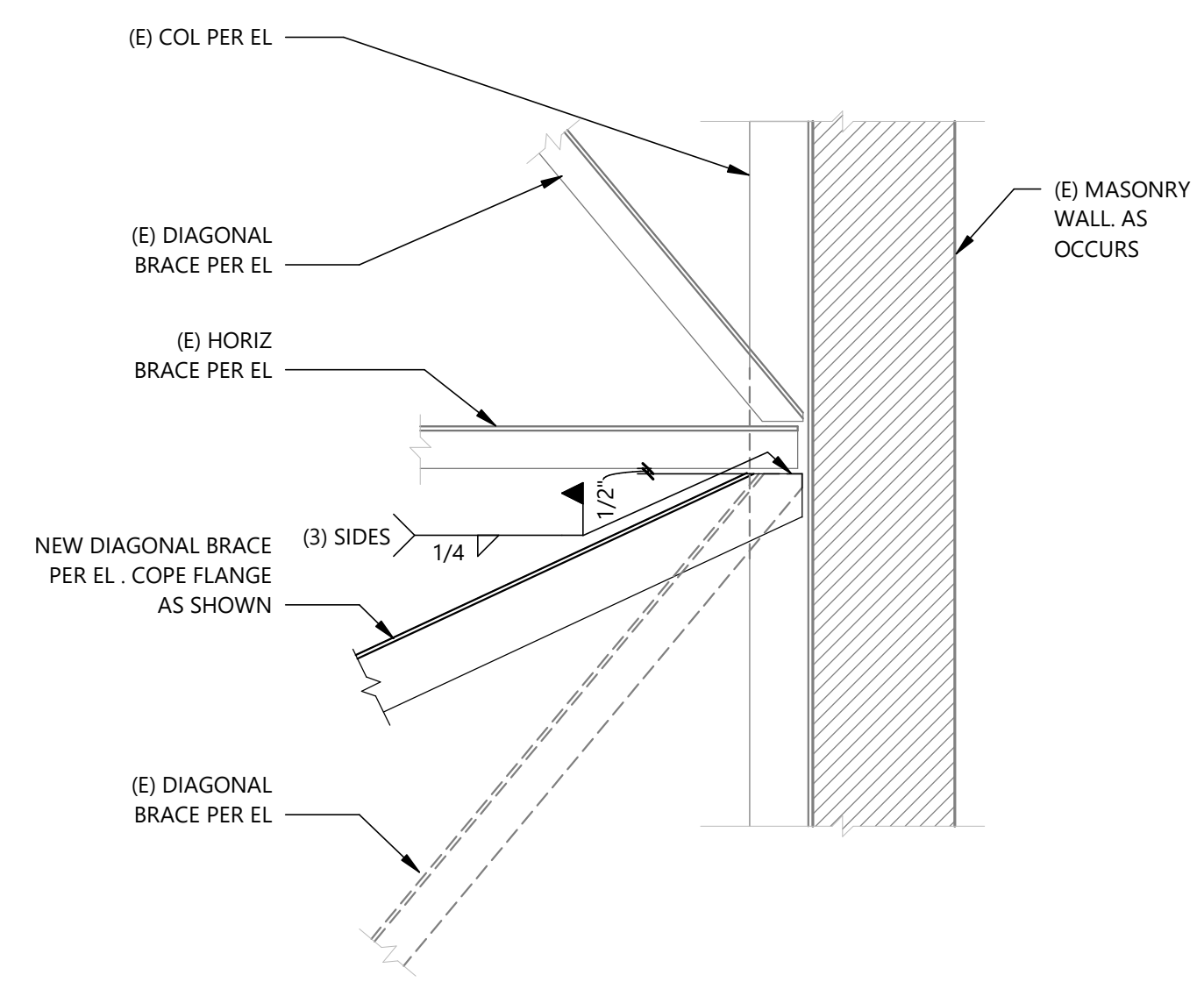
6 Drag Transfer at (E) Truss Top Chord
Scale: 1 1/2" = 1'-0"



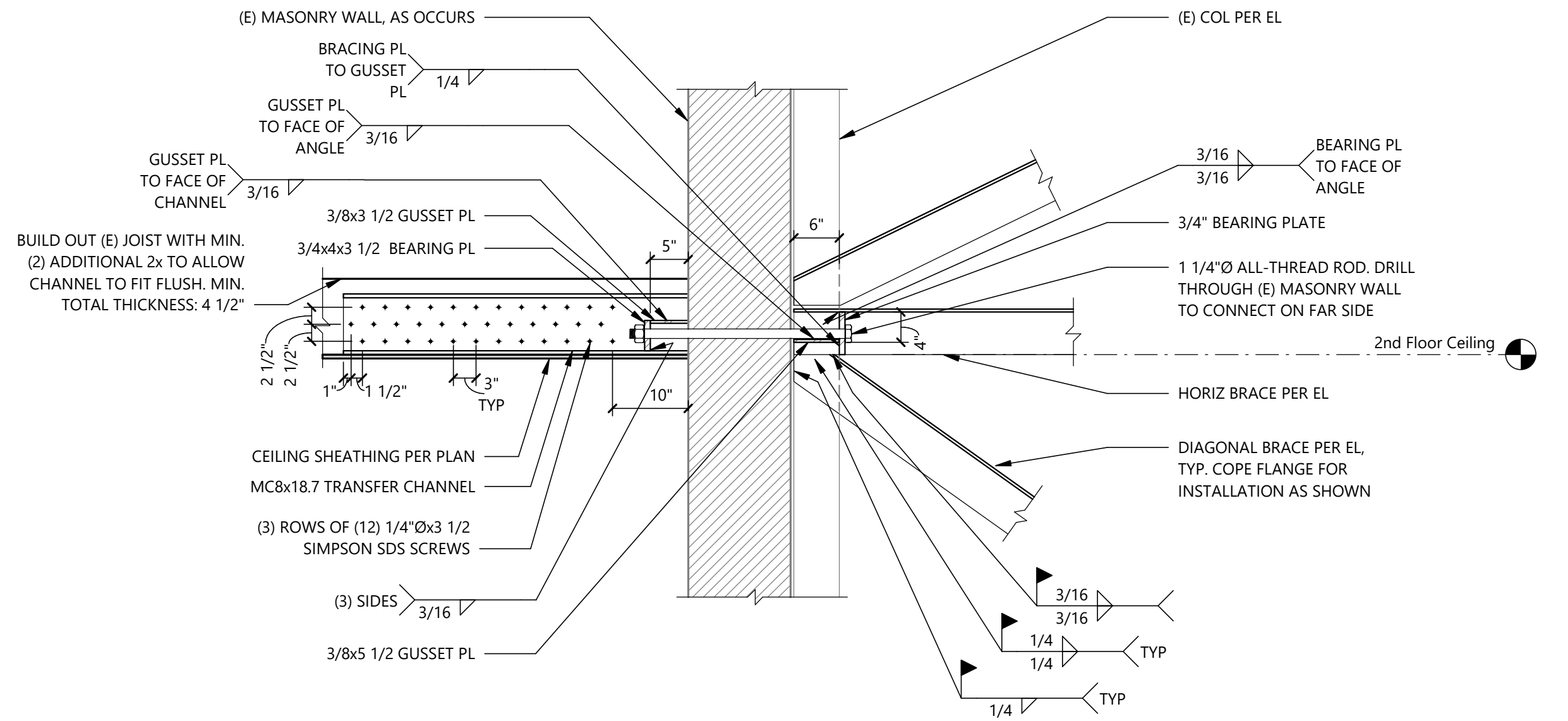
8 Collector at Floor Diaphragm, Gridline 3 & 8
Scale: 1 1/2" = 1'-0"



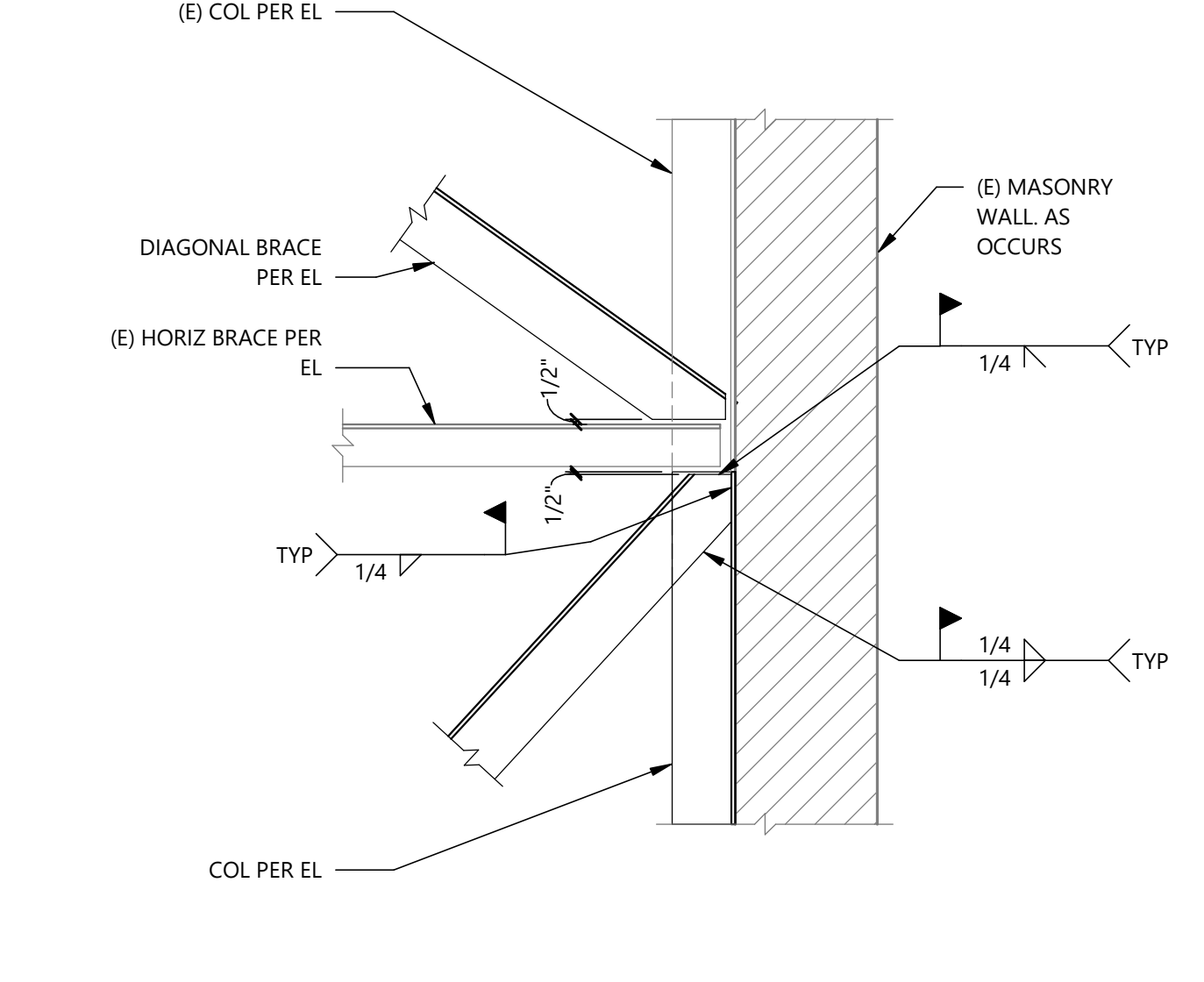
9 Collector Transition to Face of Joist at 2nd Floor
Scale: 1 1/2" = 1'-0"



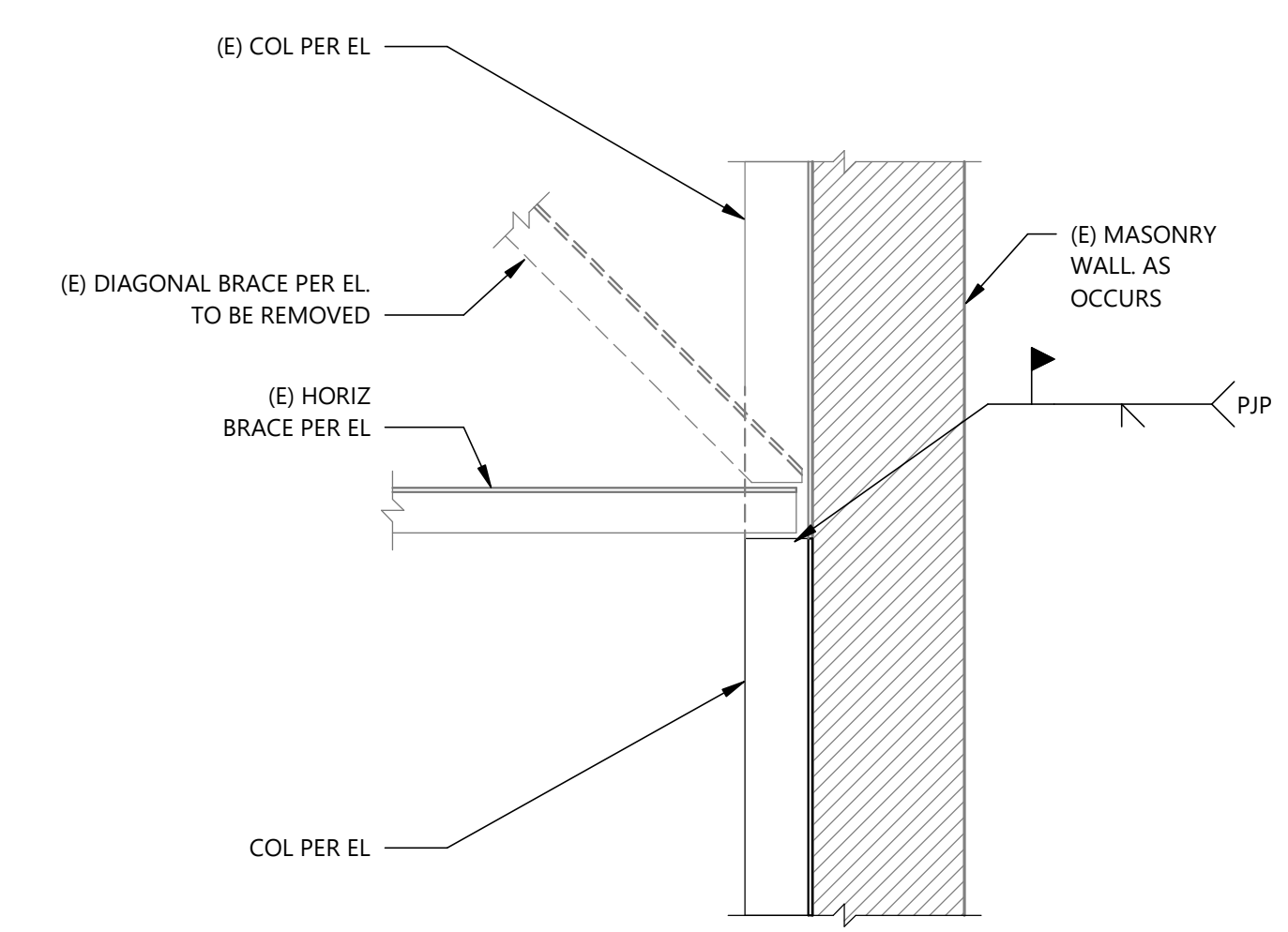
1 Diagonal Brace Replacement
Scale: 3/4" = 1'-0"



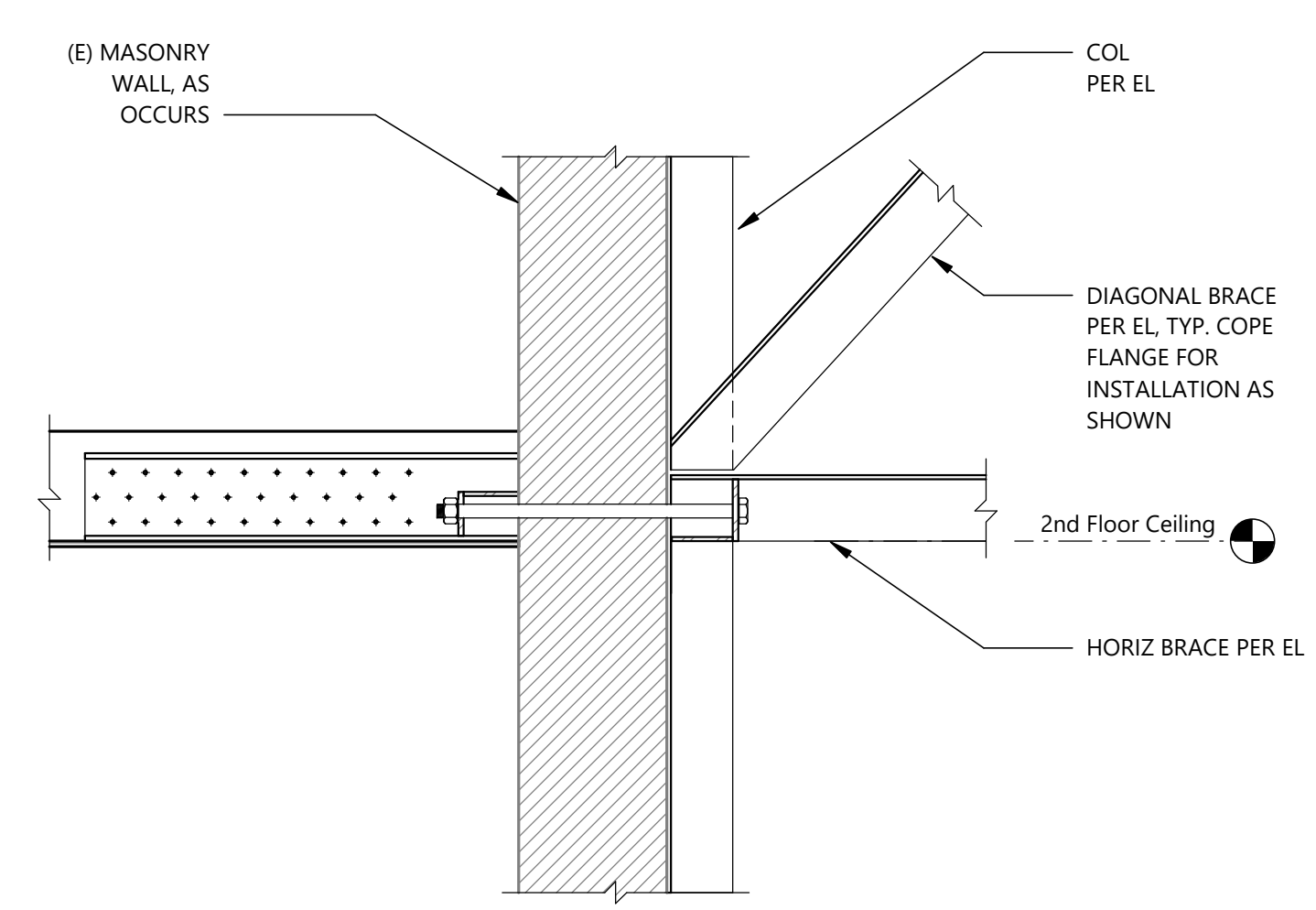
2 Tower Drag Strut at 2nd Floor Ceiling
Scale: 3/4" = 1'-0"



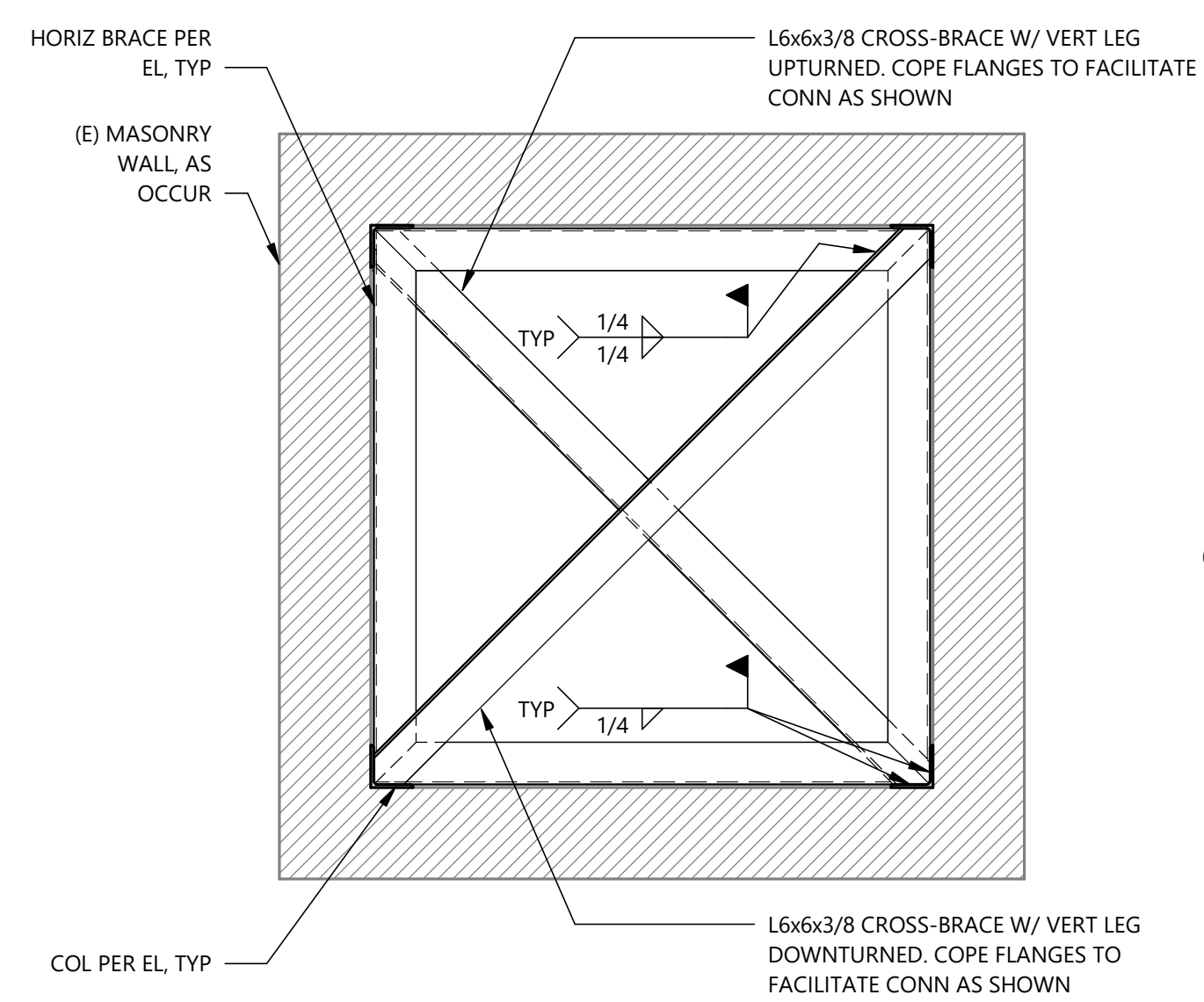
4 New to Existing Column Splice and Braces
Scale: 3/4" = 1'-0"



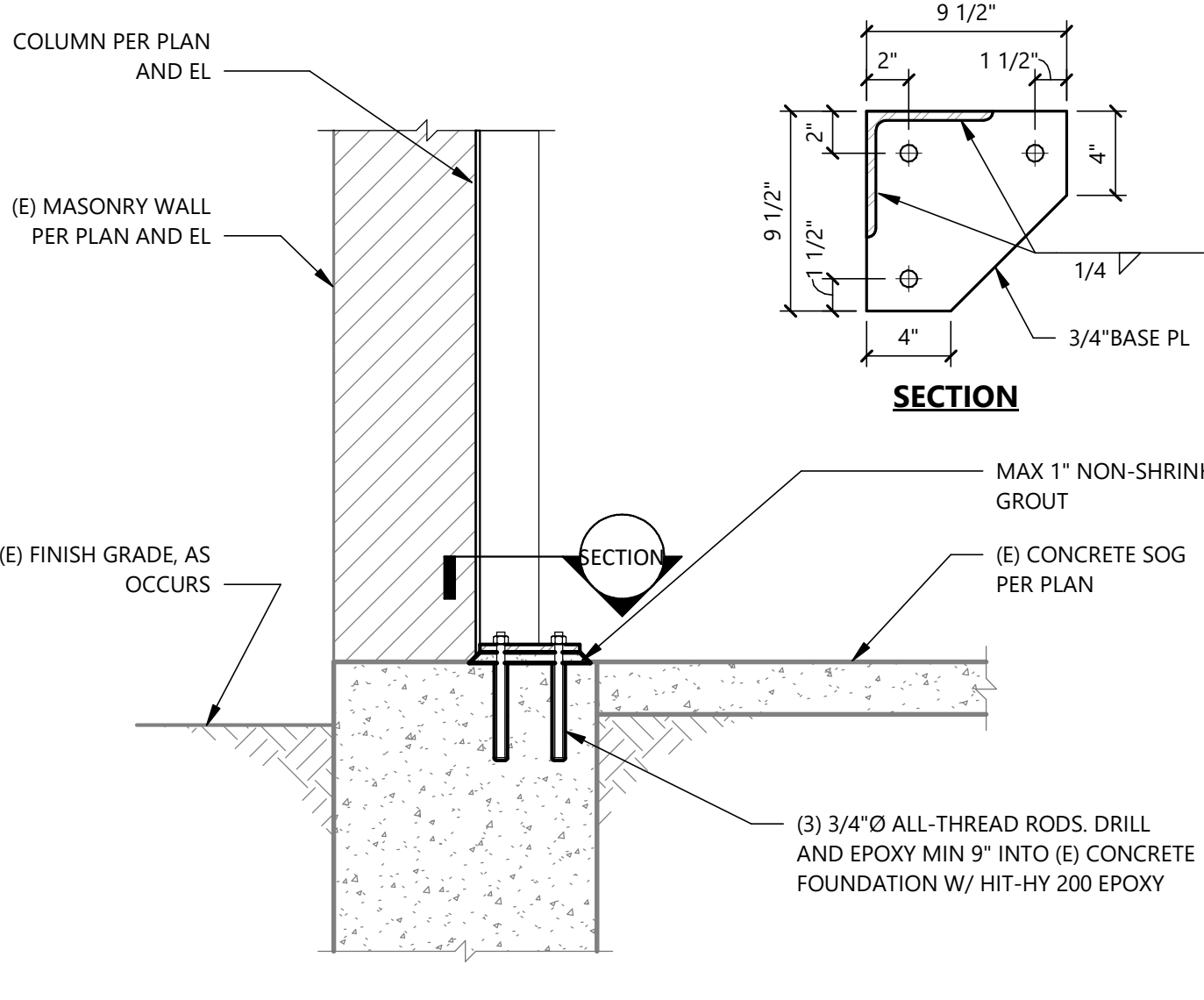
5 New to Existing Column Splice
Scale: 3/4" = 1'-0"



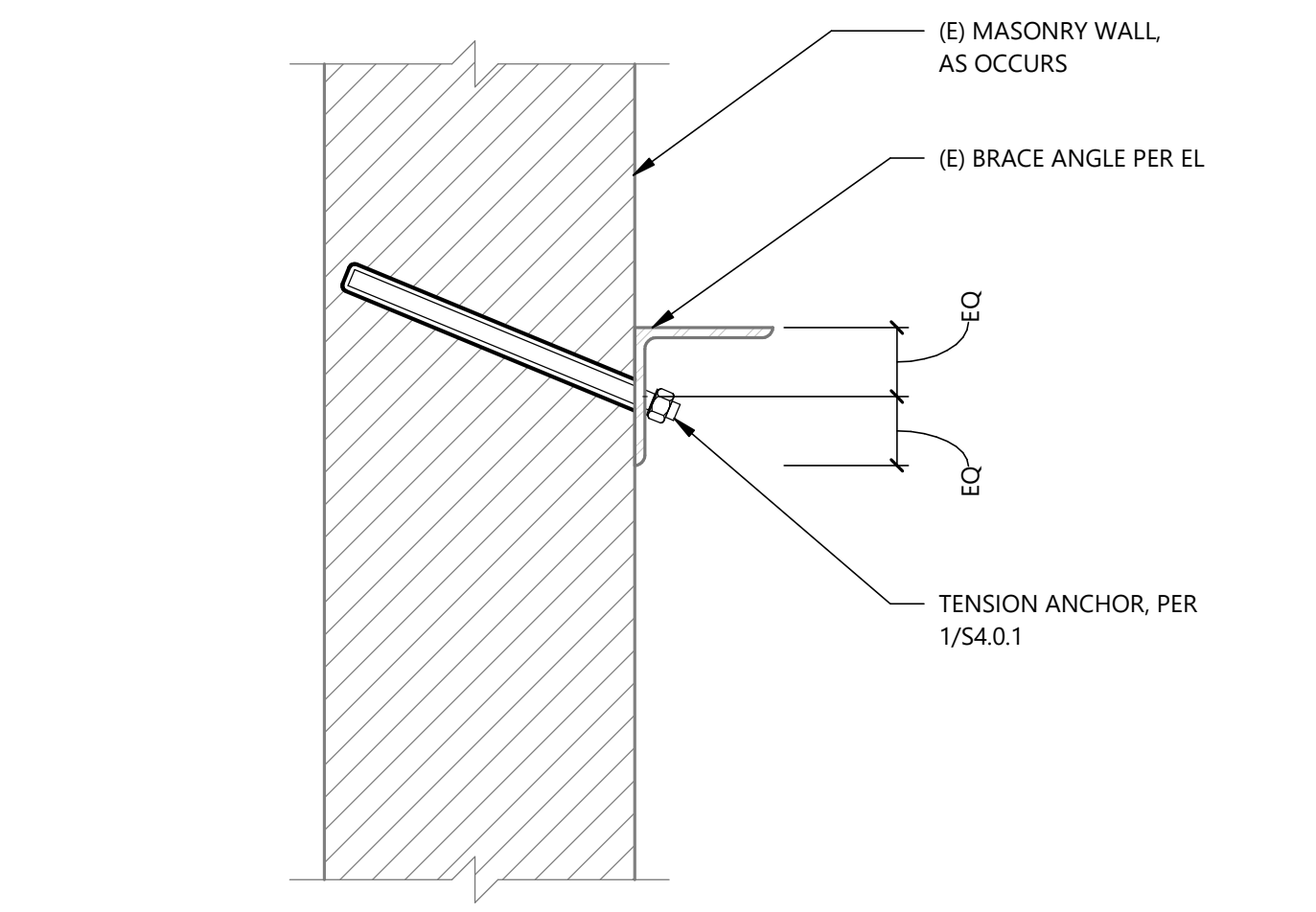
6 Tower Drag Strut at 2nd floor
Scale: 3/4" = 1'-0"



7 PLAN - DIAPHRAGM CROSS-BRACING
Scale: 1/2" = 1'-0"



8 Tower Column Anchorage
Scale: 3/4" = 1'-0"



9 Retrofit Anchore (E) Brace
Scale: 1 1/2" = 1'-0"

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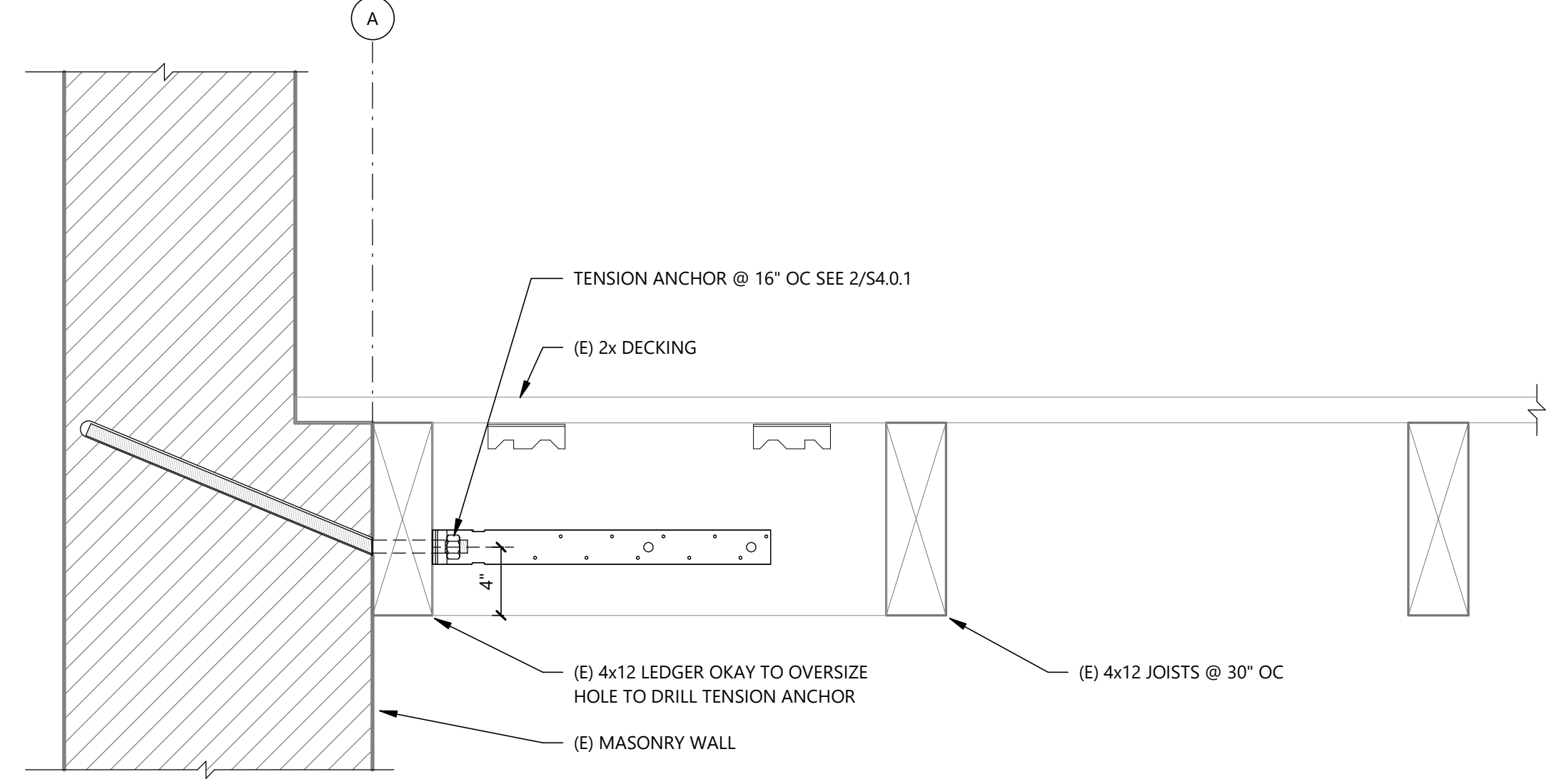
Byrd Barr Place
Renovation,
Firehouse 23

PERMIT SET

722 18th Ave
Seattle, WA

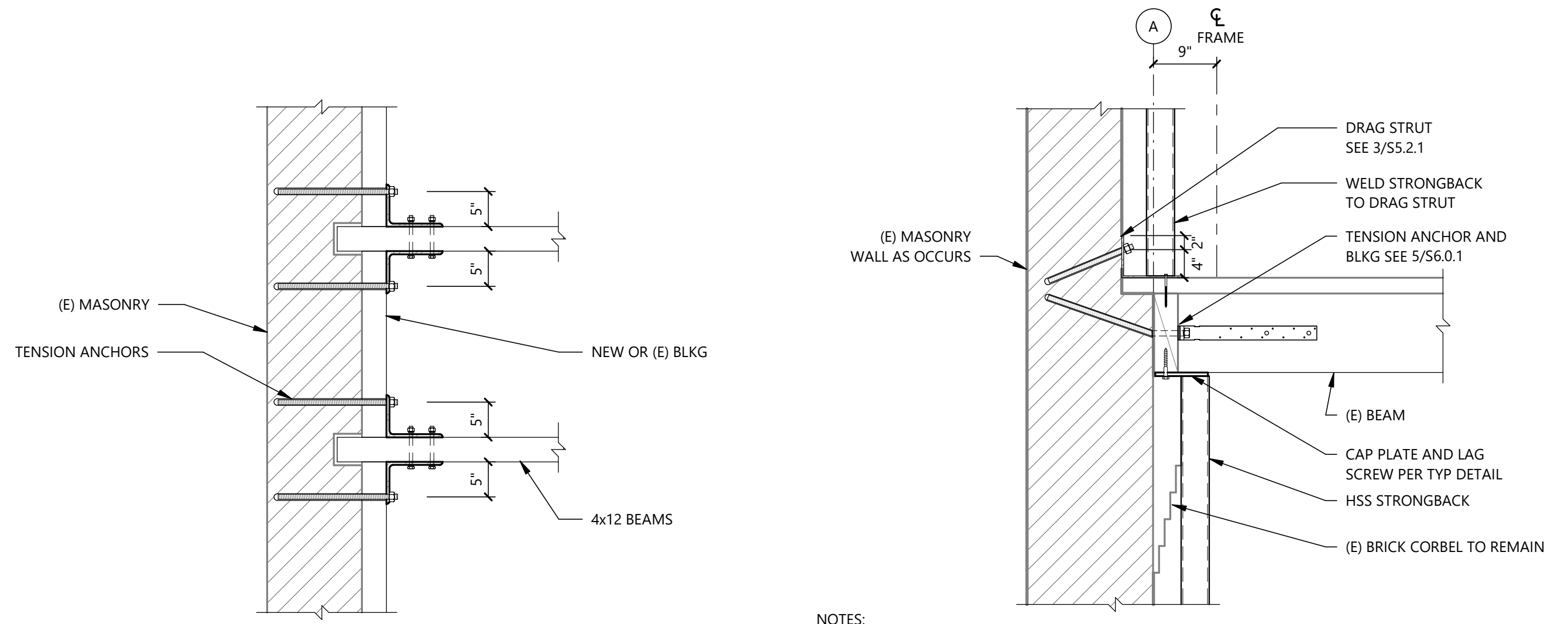
Drawn by:	ZCE	
Checked:	JB, JC	
Date:	June 25, 2020	
Scale:	As indicated	
Revisions:		
No.	Date	Remarks

HOSE TOWER
FRAMING
DETAILS
S5.3.1



NOTE:
1. SEE 2/S4.0.1 FOR NOTES

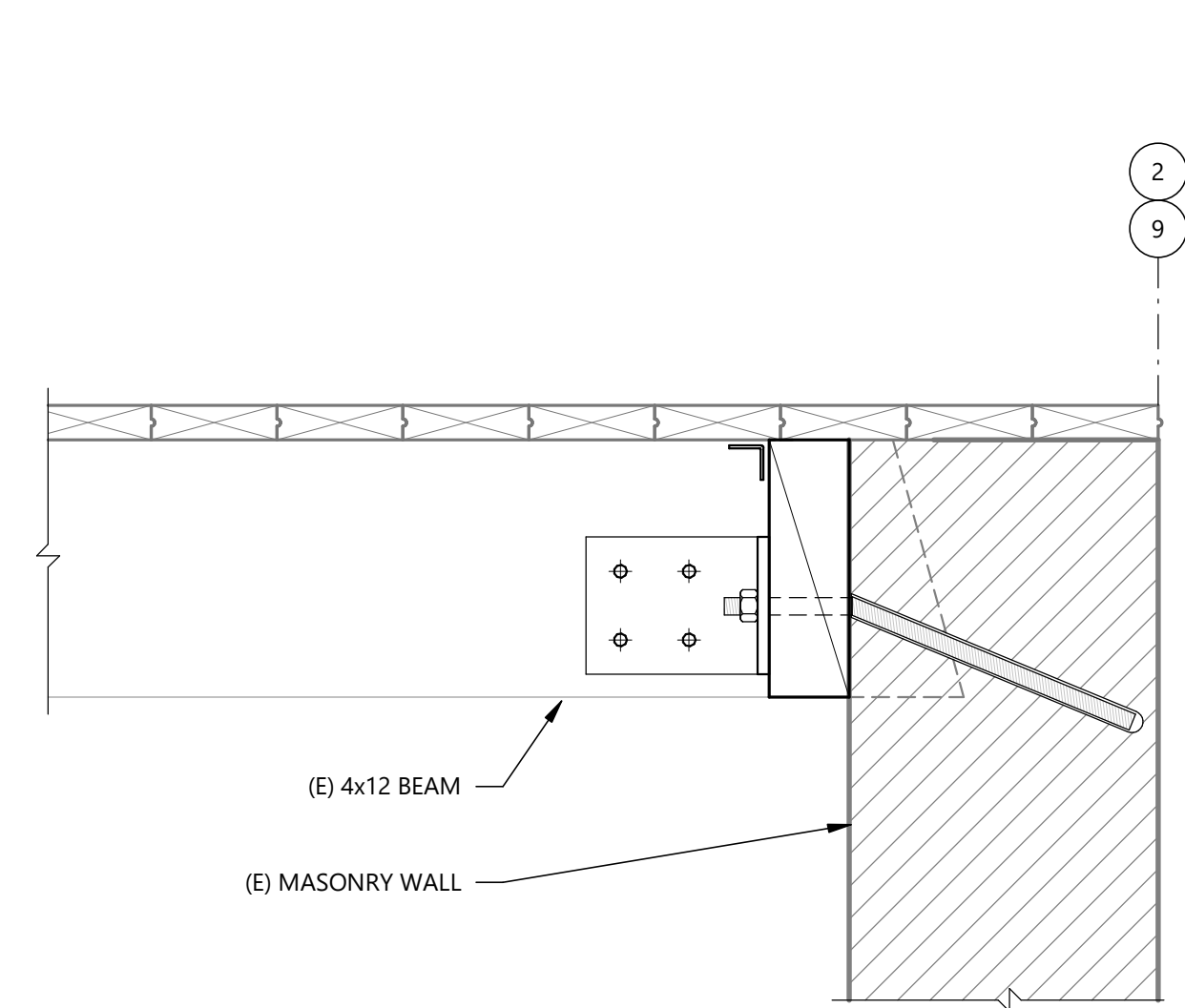
3 Floor Detail
Scale: 1 1/2" = 1'-0"



NOTES:
1. SEE 3/S5.2.1 FOR ADDITIONAL NOTES.

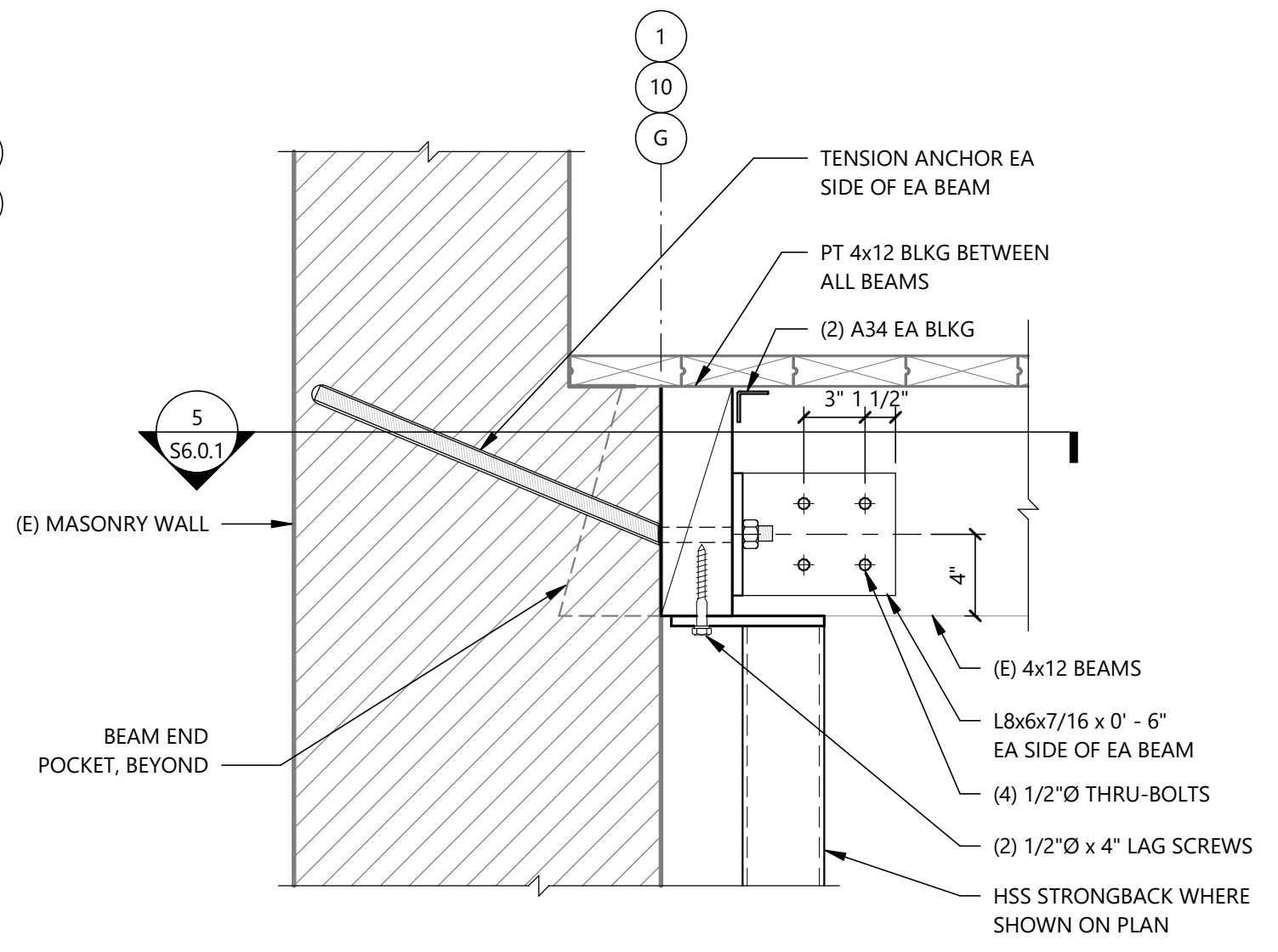
5 Plan -Detail
Scale: 3/4" = 1'-0"

6 Floor Detail
Scale: 3/4" = 1'-0"

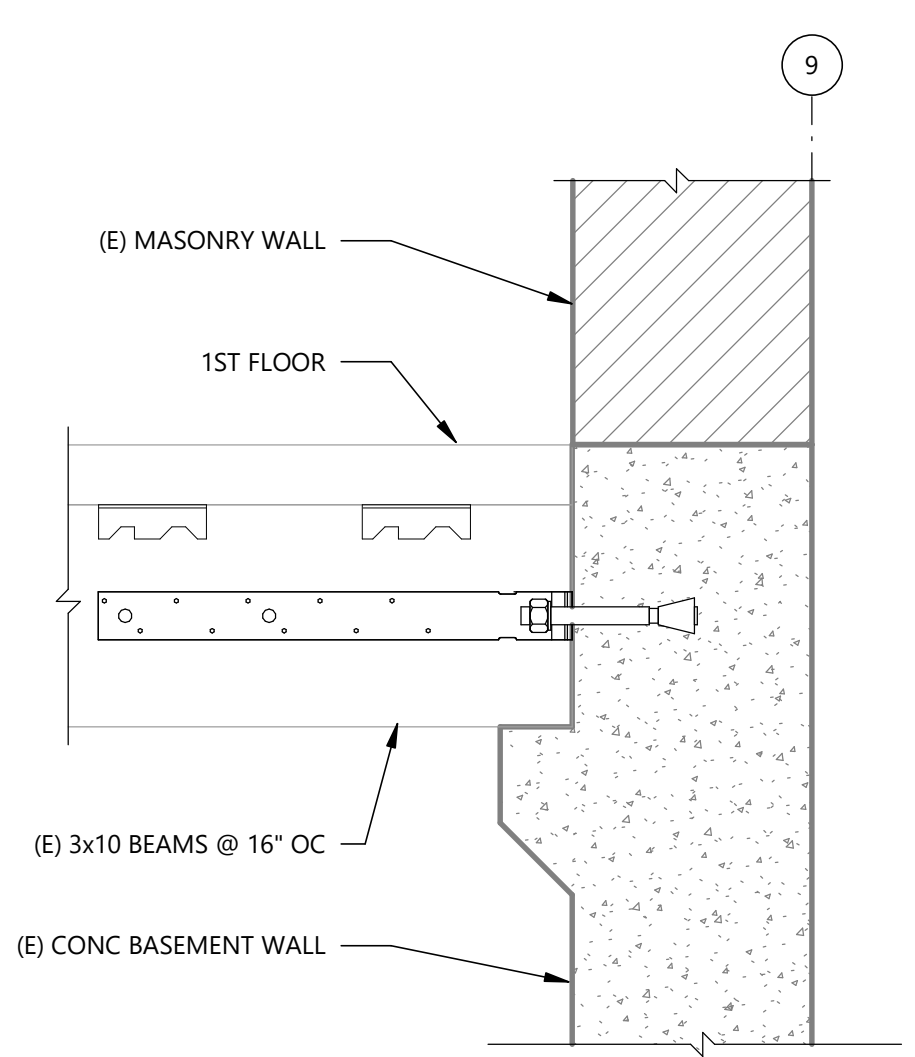


NOTE:
1. SEE 10/S6.0.1 FOR ALL NOTES

9 FLOOR DETAIL
Scale: 1 1/2" = 1'-0"

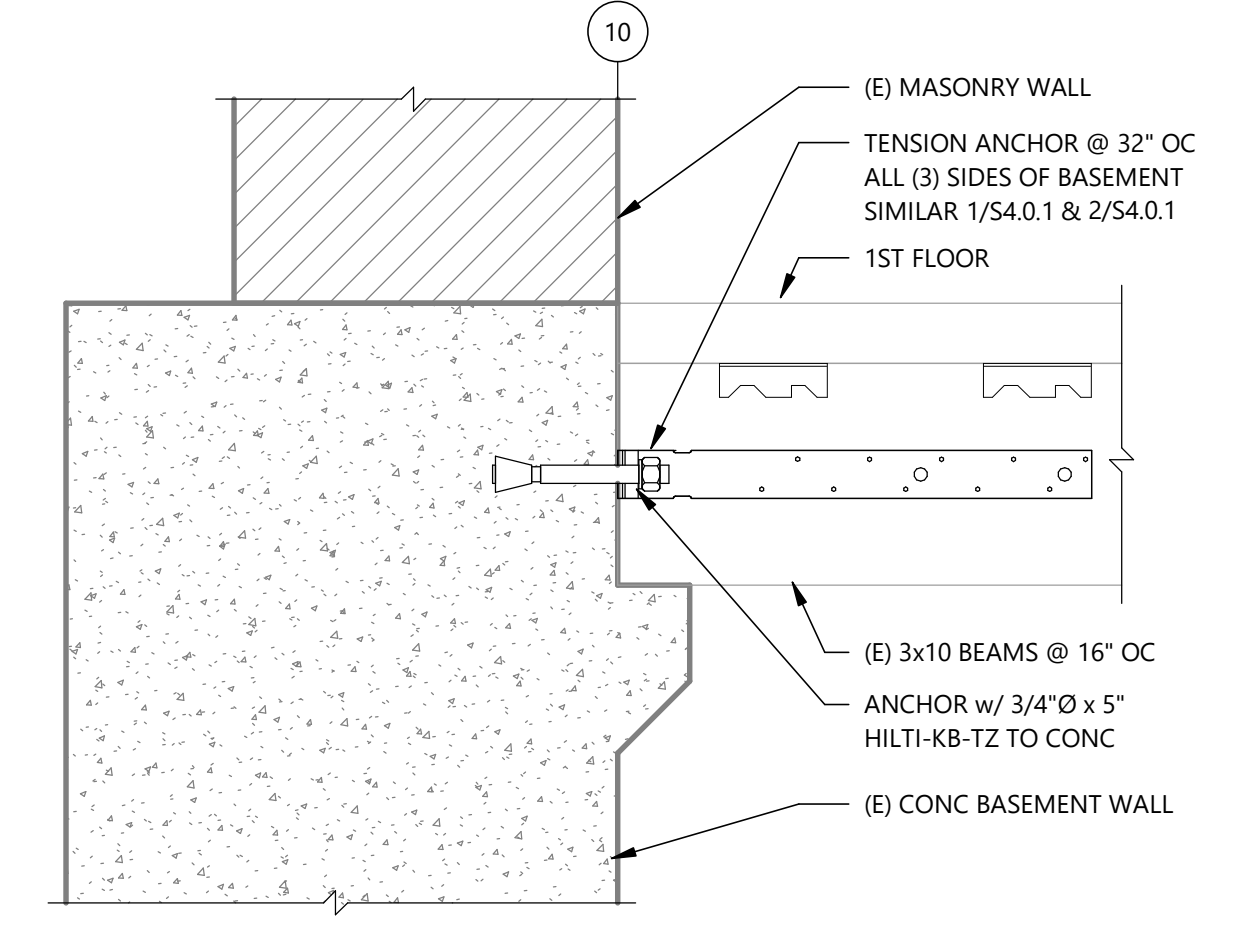


10 FLOOR DETAIL
Scale: 1 1/2" = 1'-0"



NOTE:
1. SEE 12/S6.0.1 FOR NOTES

11 1ST FLOOR DETAIL
Scale: 1 1/2" = 1'-0"



NOTE:
1. IF ENDS OF BEAMS ARE DECAYED NOTIFY ENGINEER FOR REPAIR.

12 1ST FLOOR DETAIL
Scale: 1 1/2" = 1'-0"

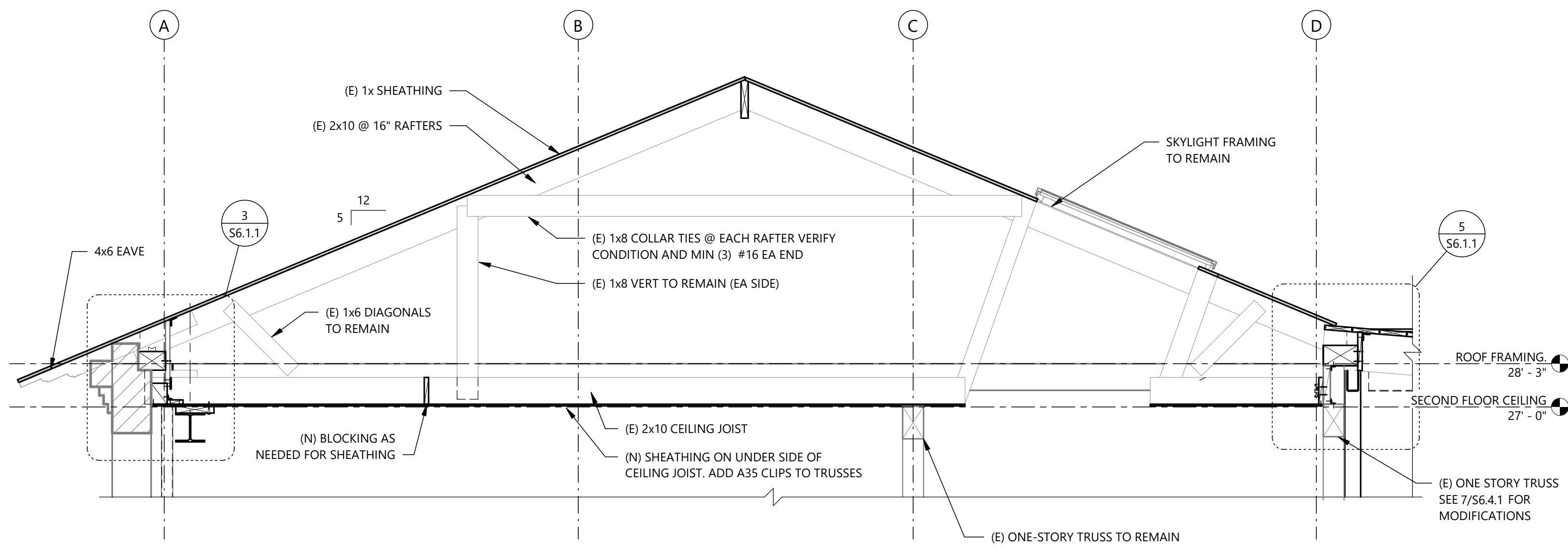
Byrd Barr Place
Renovation,
Firehouse 23

PERMIT SET

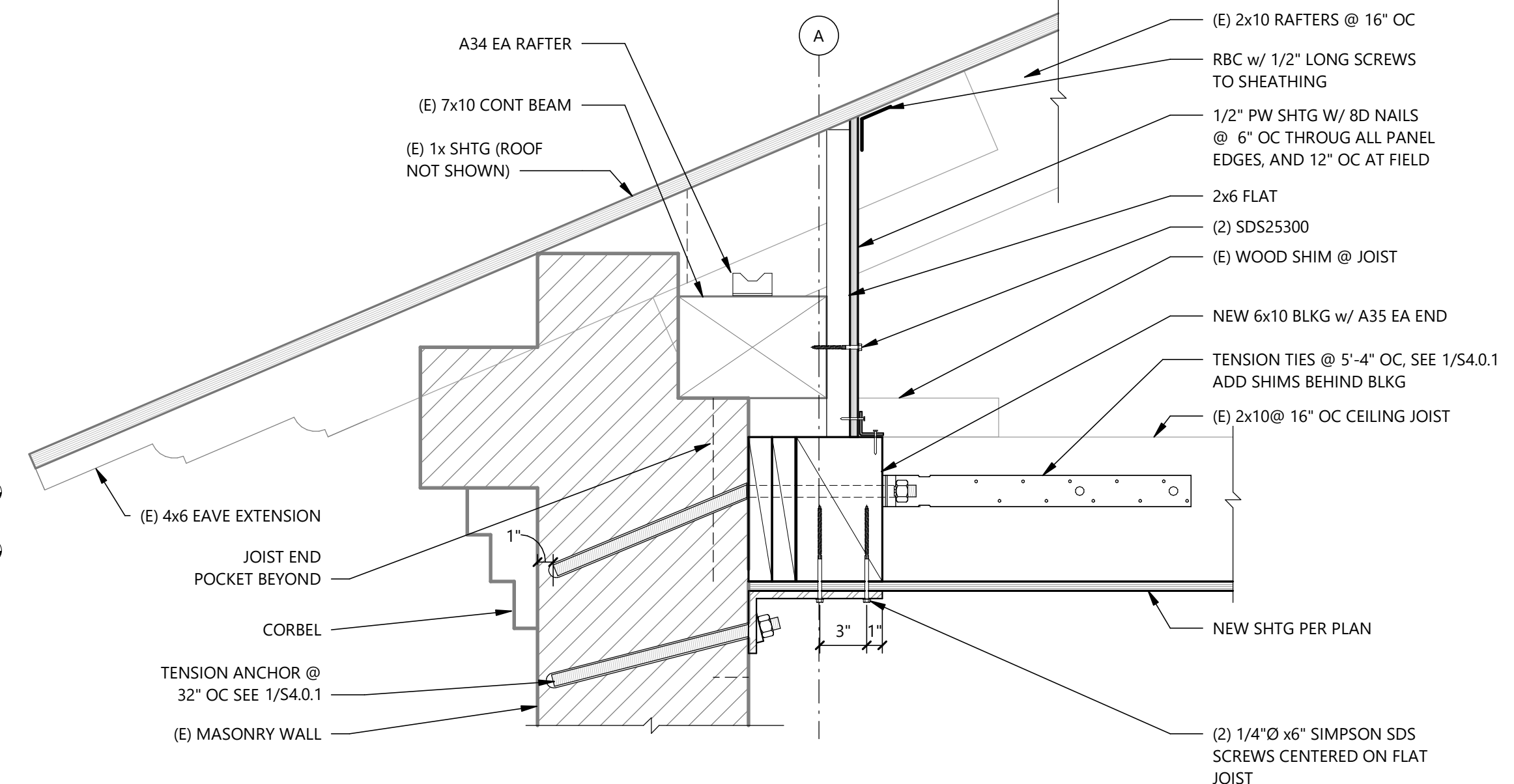
722 18th Ave
Seattle, WA

Drawn by:	ZCE	
Checked:	JB, JC	
Date:	June 25, 2020	
Scale:	As indicated	
Revisions:		
No.	Date	Remarks

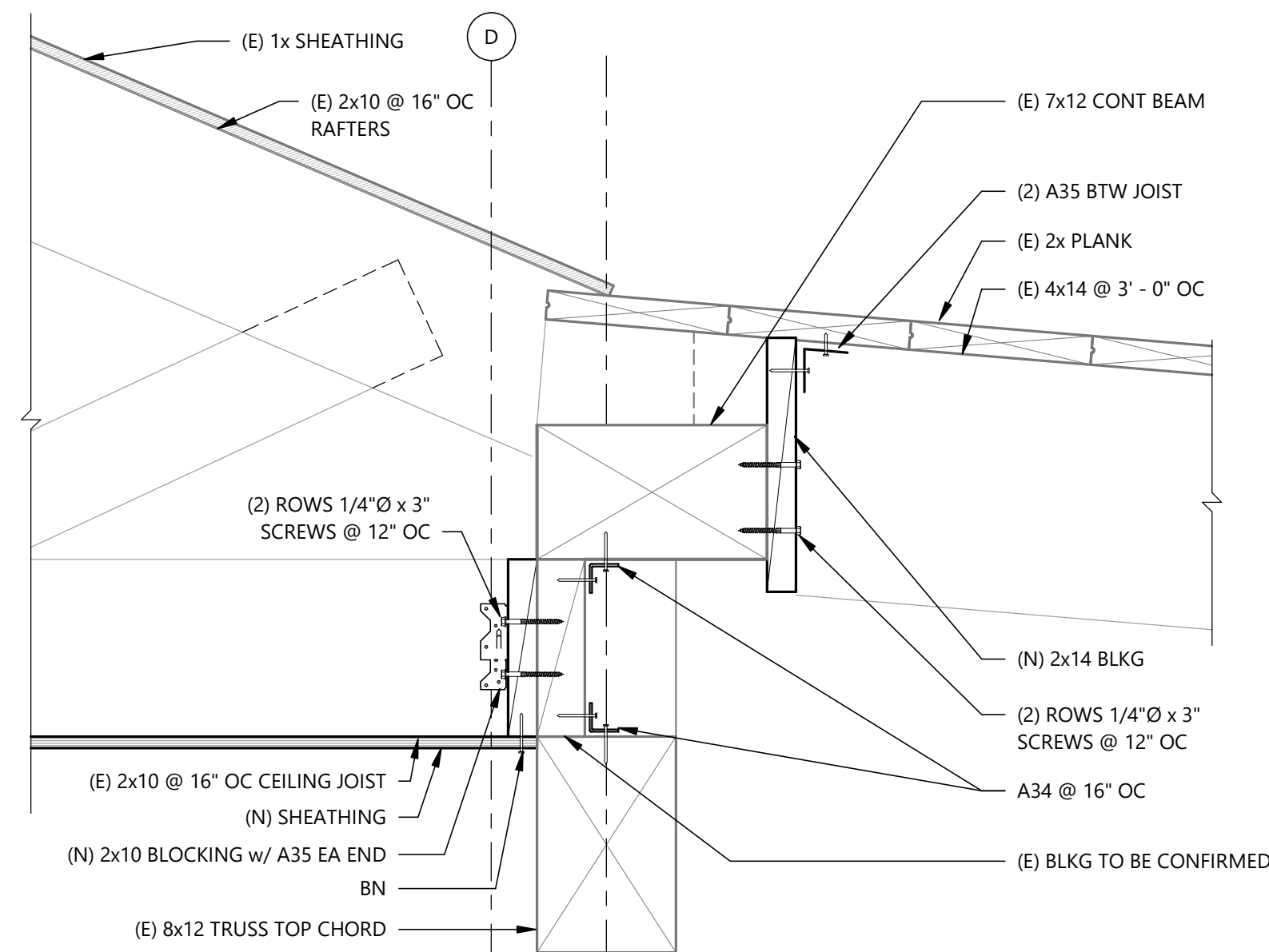
STRUCTURAL
WOOD DETAILS
S6.0.1



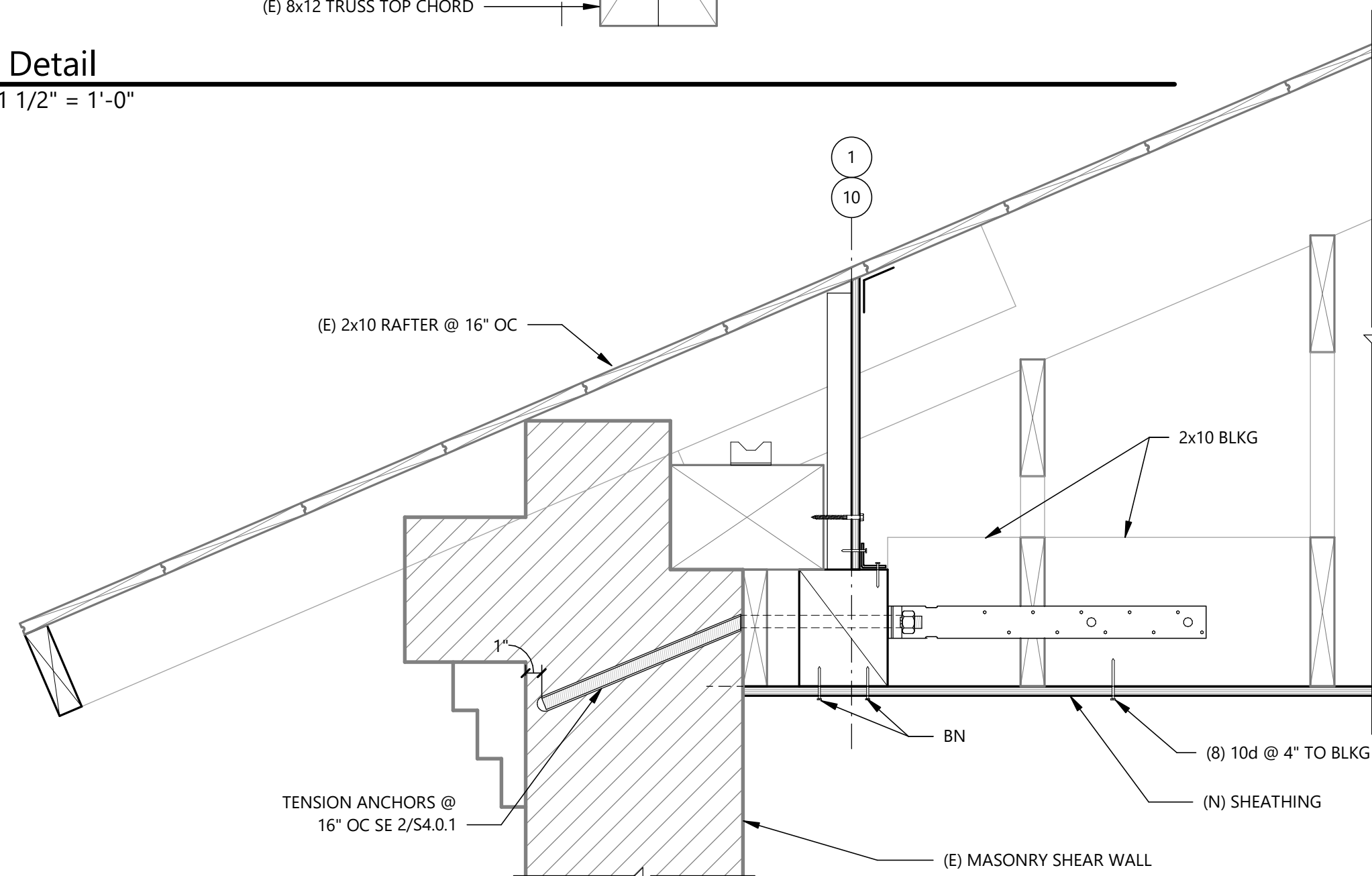
1 Main Roof Section
Scale: 3/8" = 1'-0"



3 Roof Detail
Scale: 1 1/2" = 1'-0"

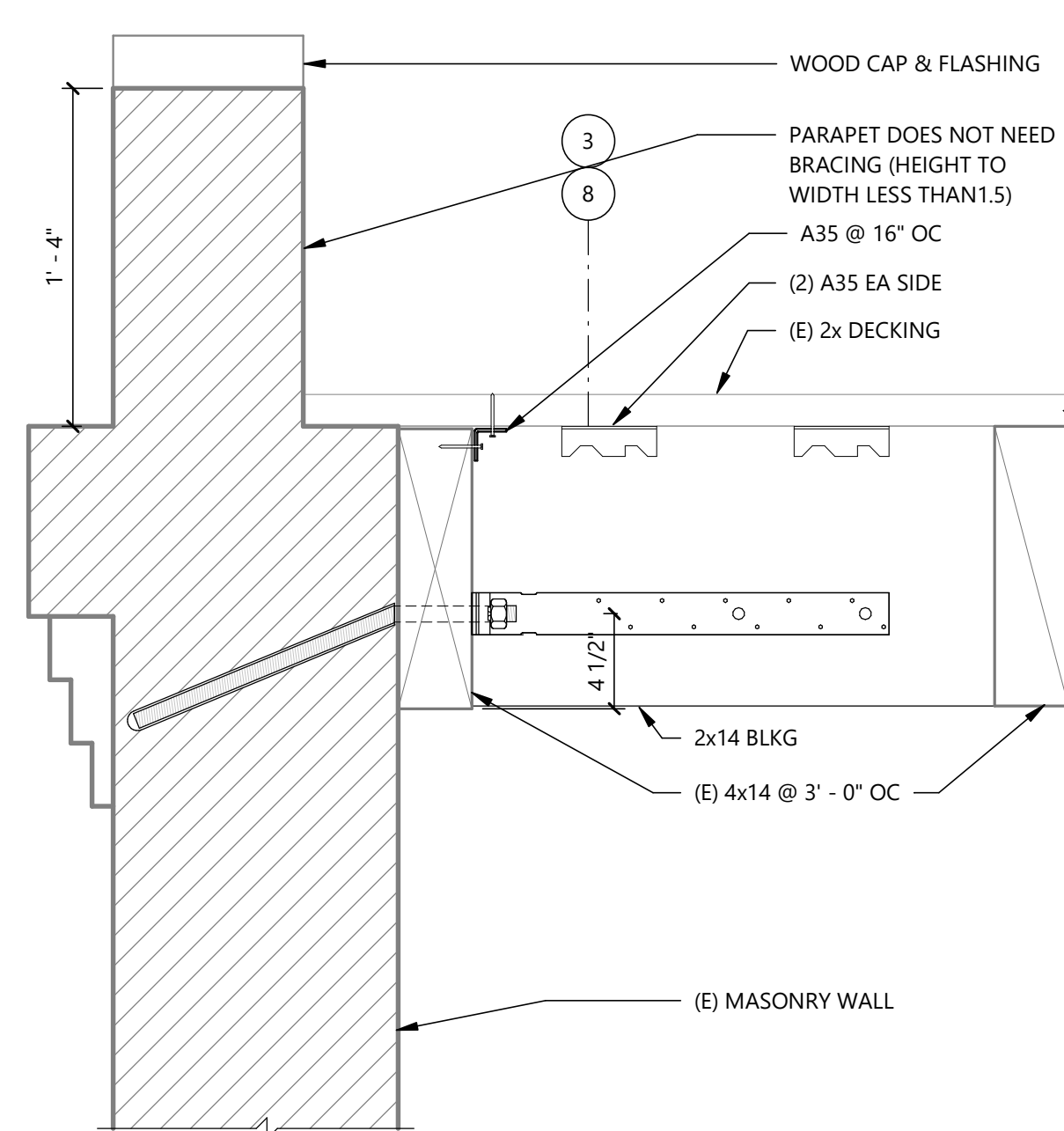


5 Roof Detail
Scale: 1 1/2" = 1'-0"



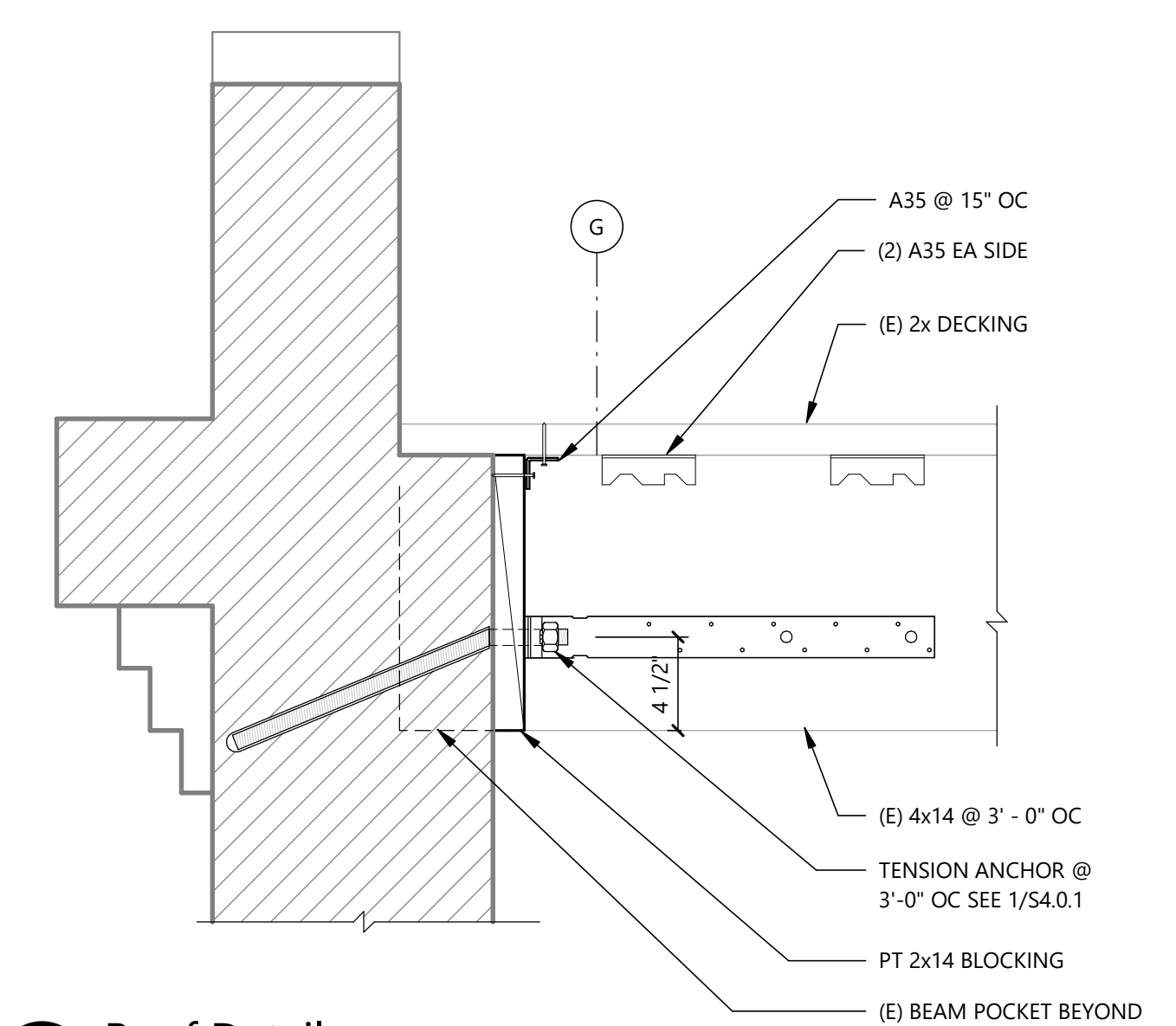
9 Roof Detail
Scale: 1 1/2" = 1'-0"

NOTE:
1. SEE 3/S6.1.1 & 2/S4.0.1 FOR ALL NOTES NOT SHOWN

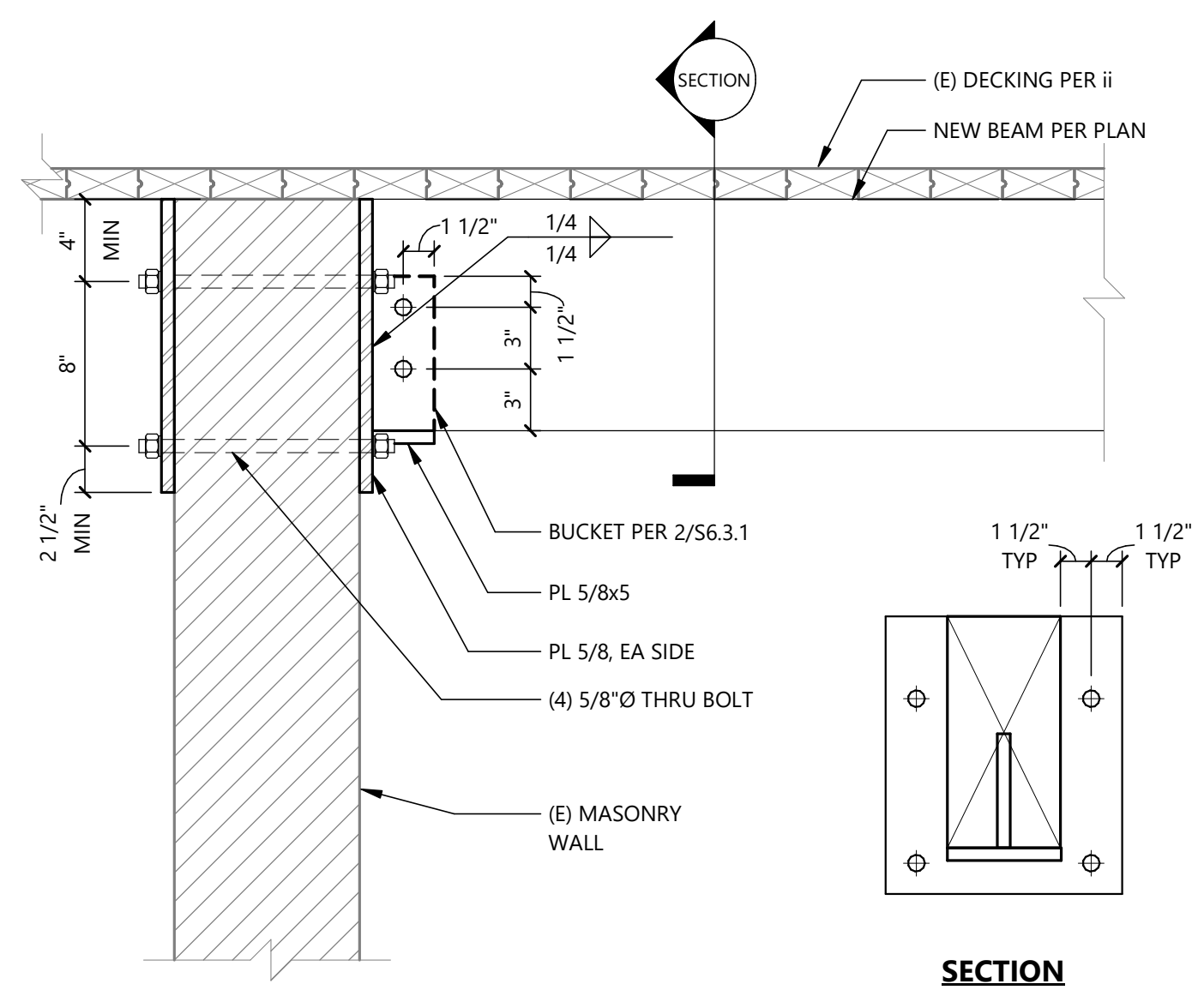


NOTE:
1. SEE 2/S4.0.1 FOR ANCHOR & NOTES (2) ANCHORS @ 32" OC.

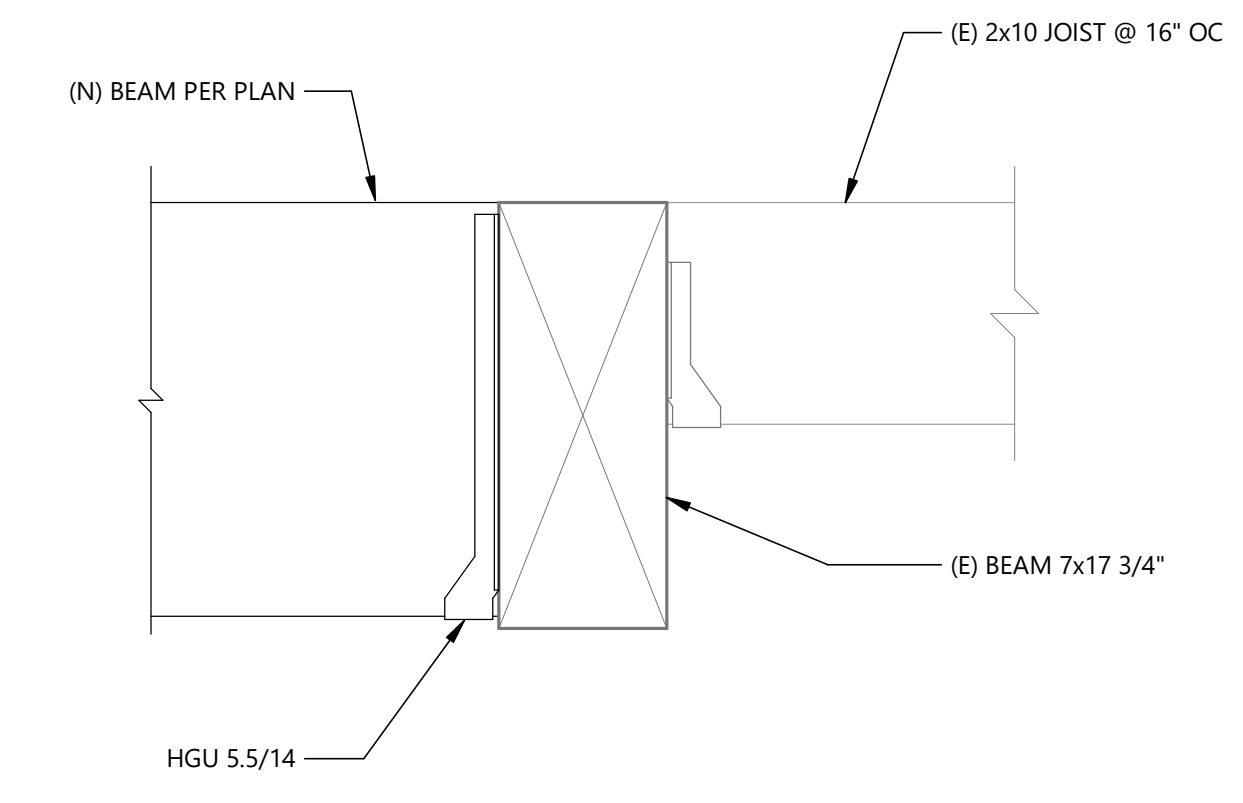
11 Roof Detail
Scale: 1 1/2" = 1'-0"



12 Roof Detail
Scale: 1 1/2" = 1'-0"

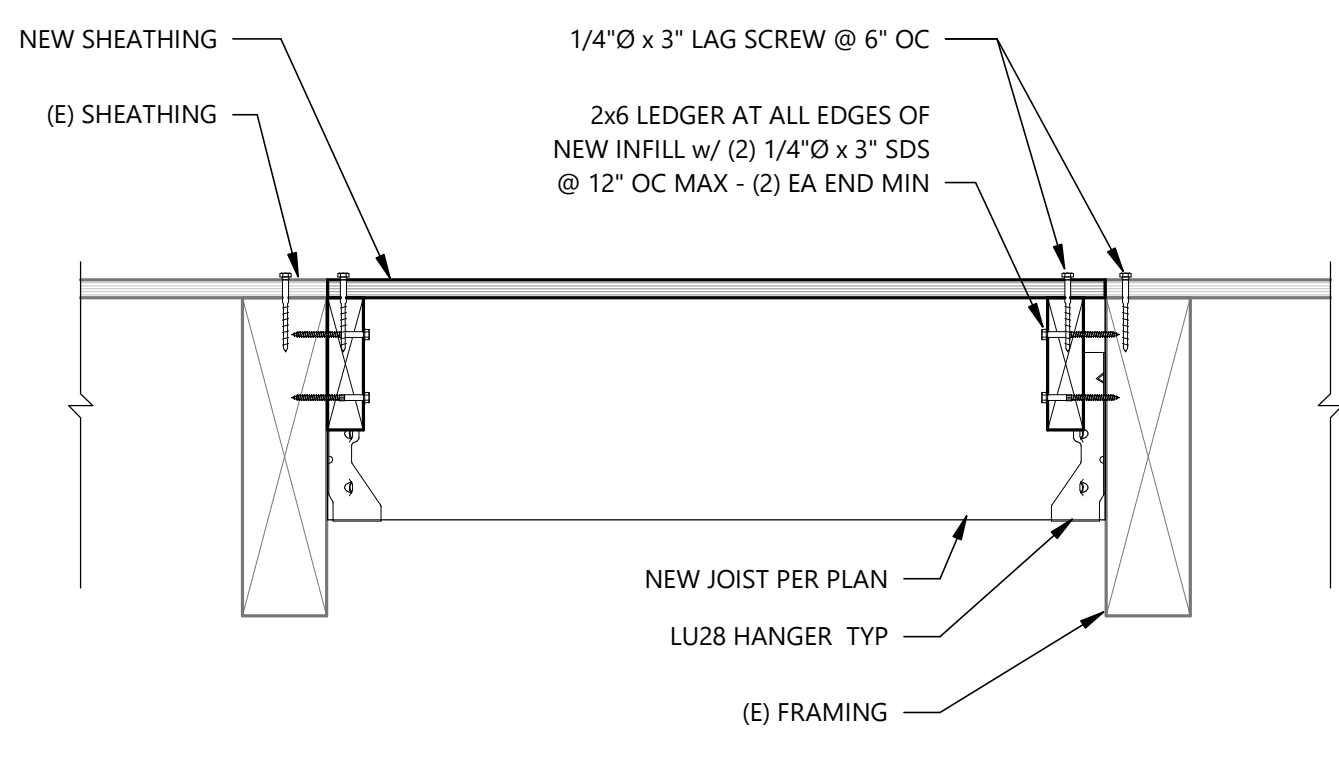


1 WD Beam at Masonry Wall
Scale: 1 1/2" = 1'-0"

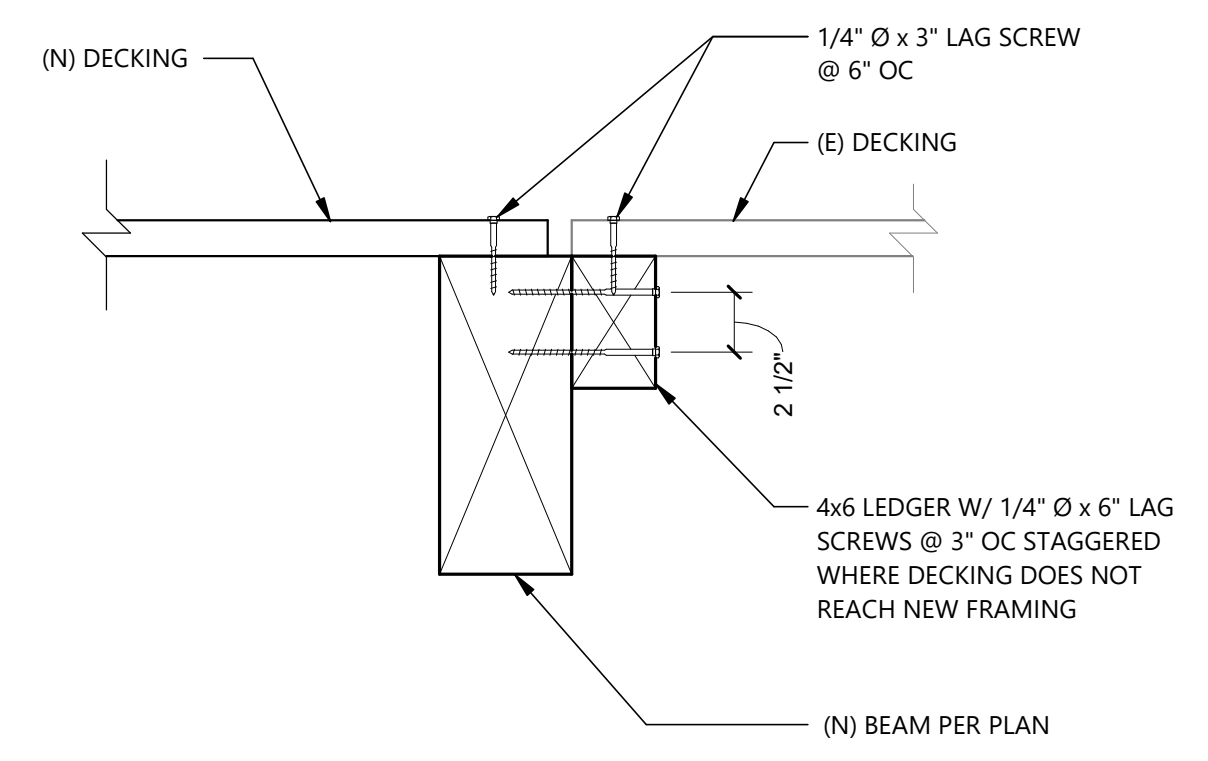


2 Detail
Scale: 1 1/2" = 1'-0"

NOTE:
1. PROVIDE LEDGER FOR DECKING SUPPORT PER 4/S6.2.1 AS REQUIRED.

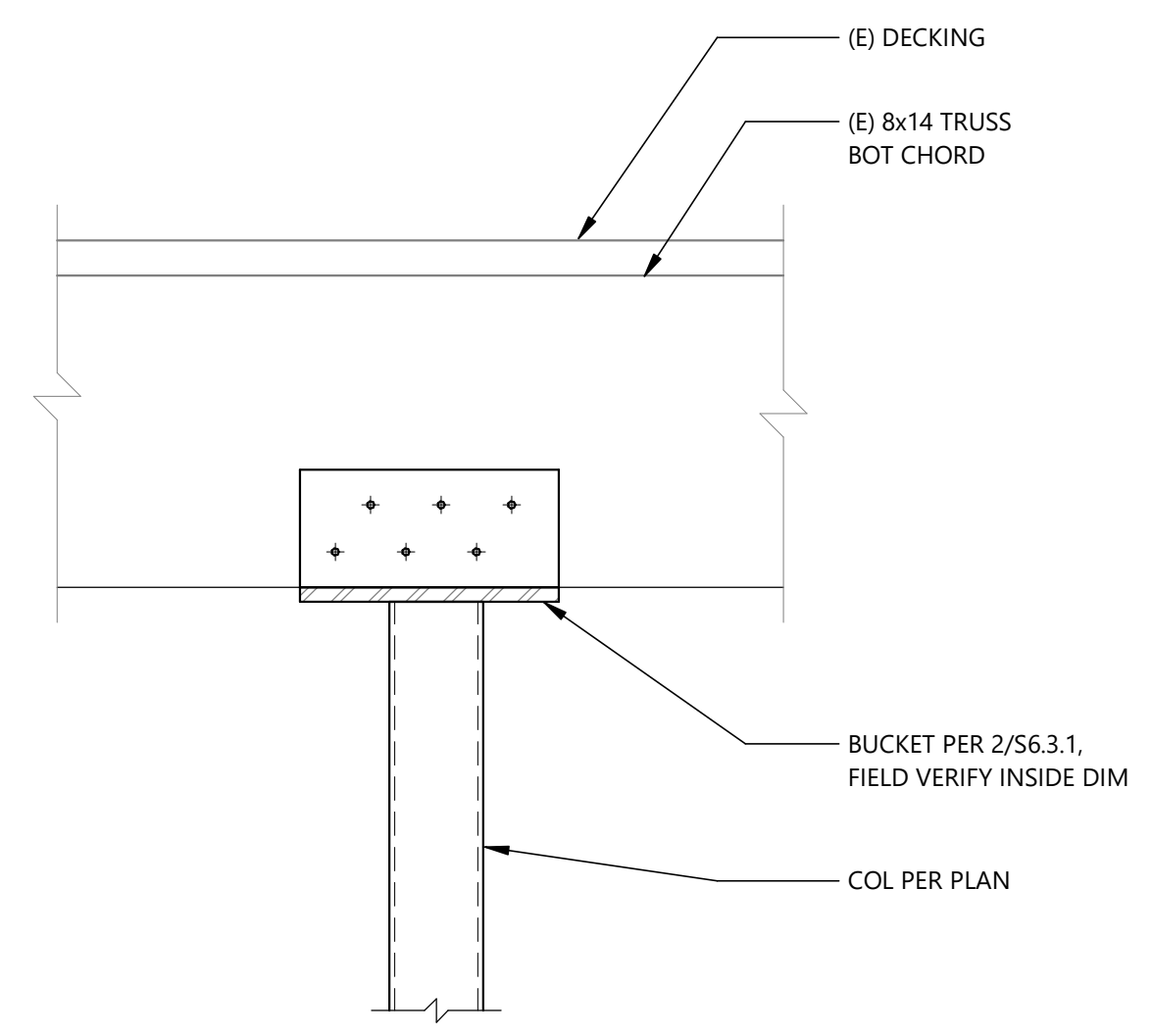


3 Infill at Roof
Scale: 1 1/2" = 1'-0"

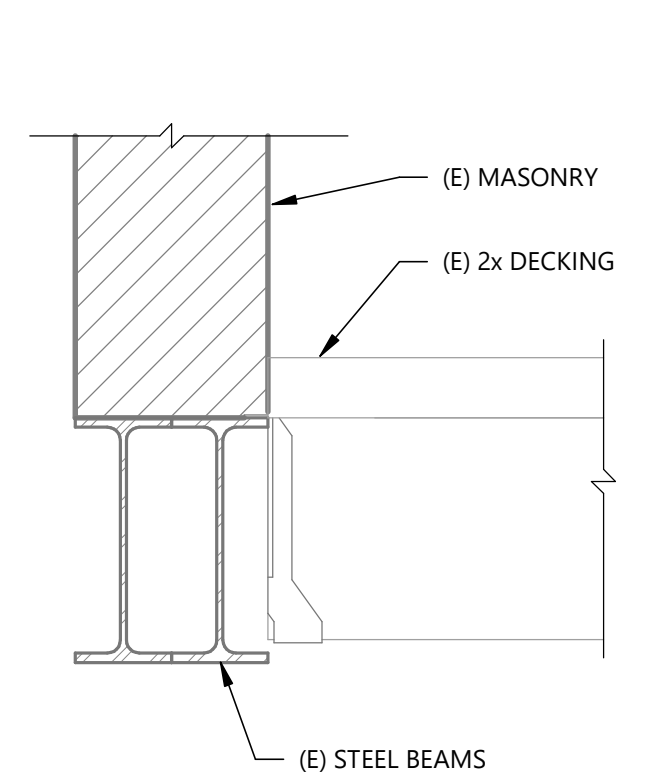


4 Typical Decking at New Framing
Scale: 1 1/2" = 1'-0"

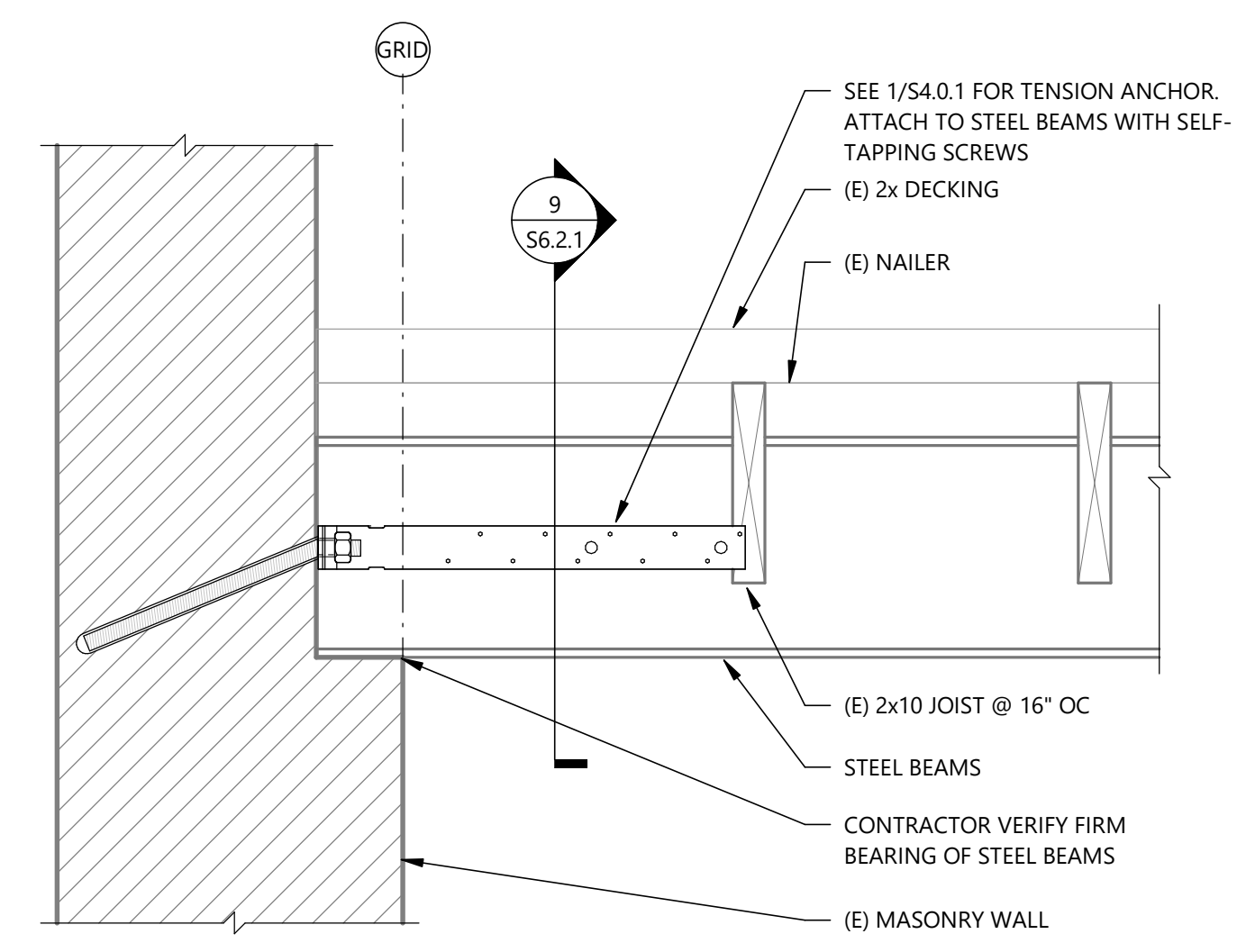
NOTES:
1. CUT DECKING TO LAND 1 1/2" ONTO NEW BEAM WHERE POSSIBLE. THIS DETAIL IS FOR DECKING THAT DOES NOT HAVE FULL BEARING ON NEW BEAM.



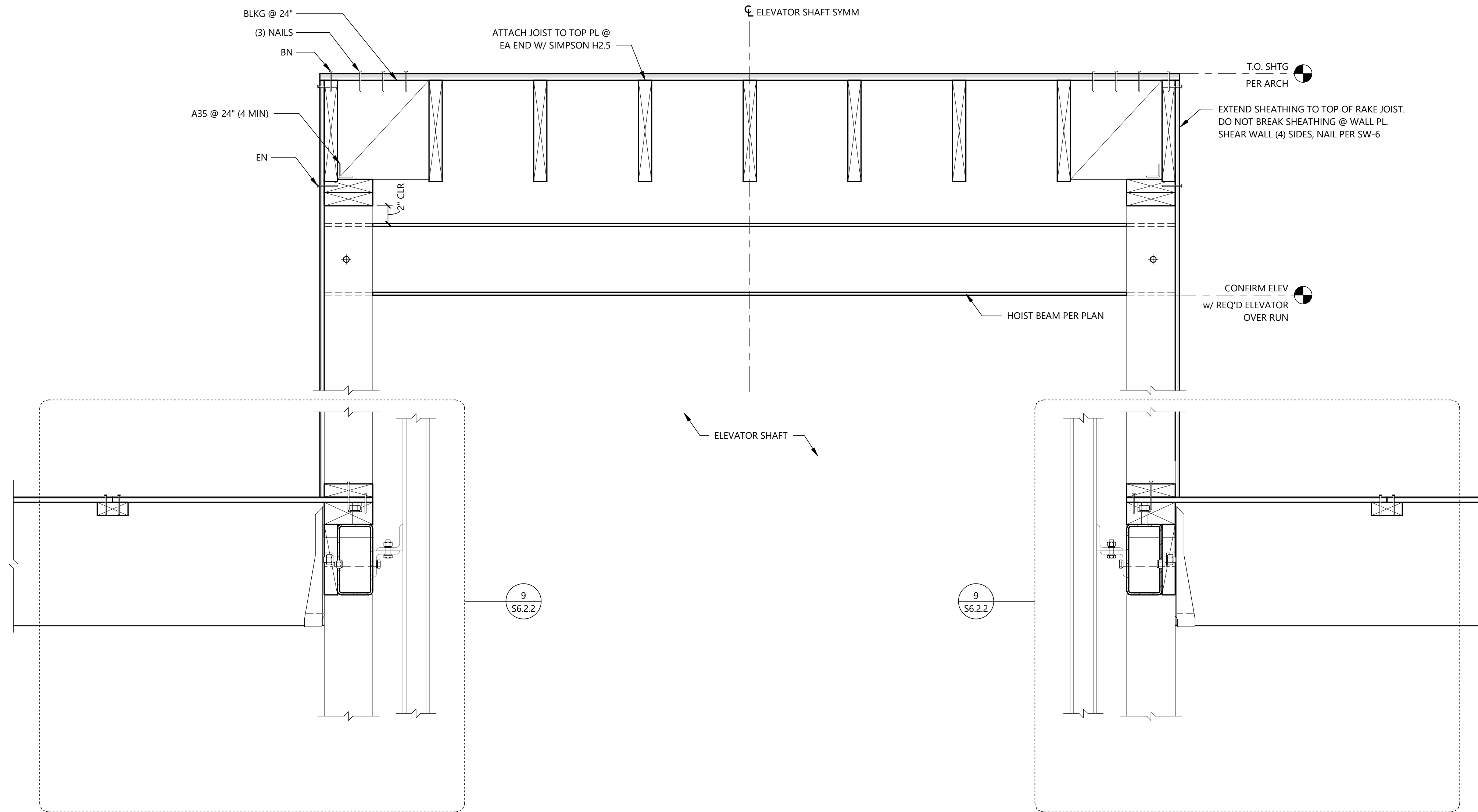
7 Detail at (E) Truss Support
Scale: 1 1/2" = 1'-0"



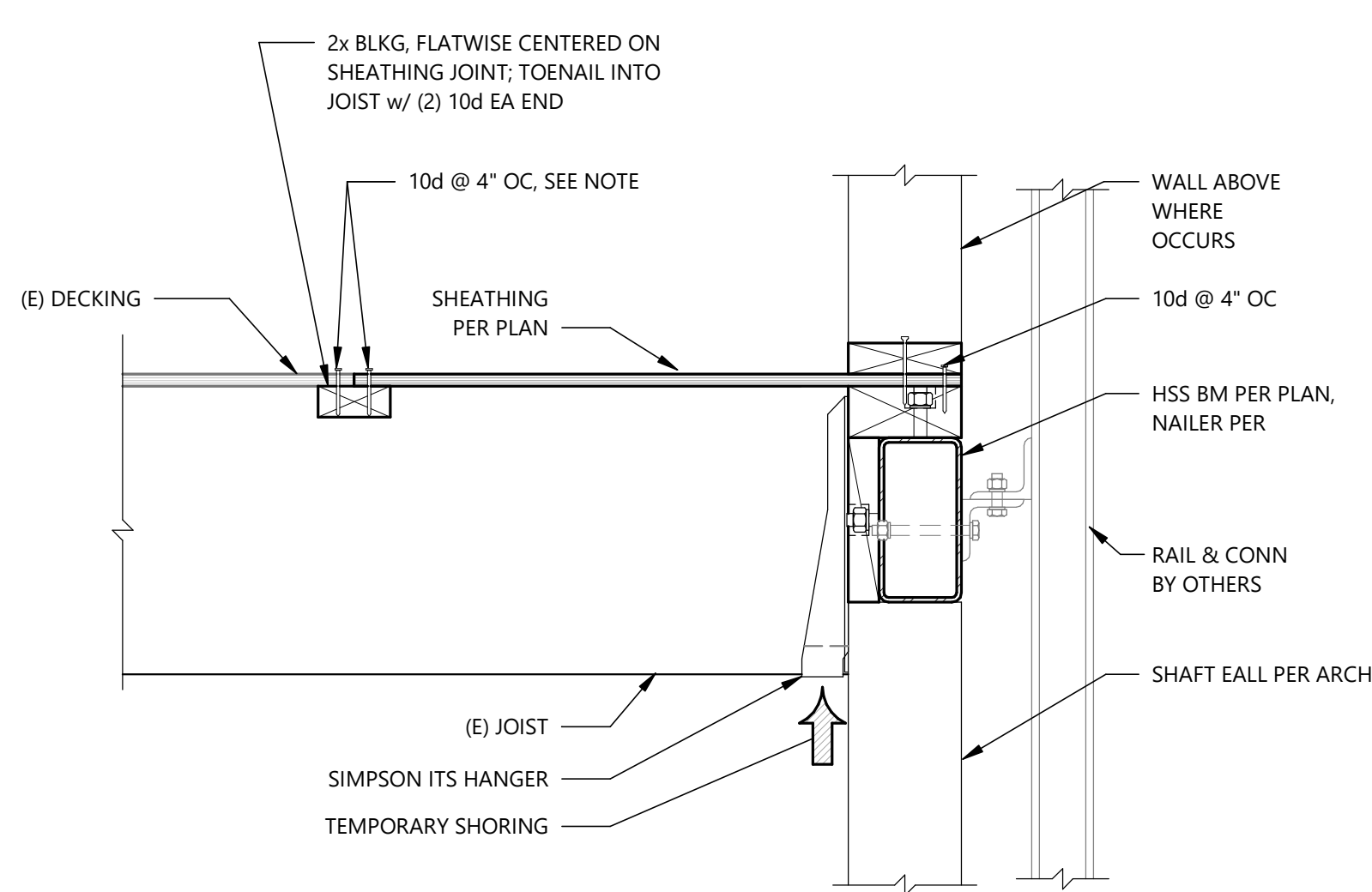
9 ROOF DETAIL
Scale: 1 1/2" = 1'-0"



10 ROOF DETAIL
Scale: 1 1/2" = 1'-0"

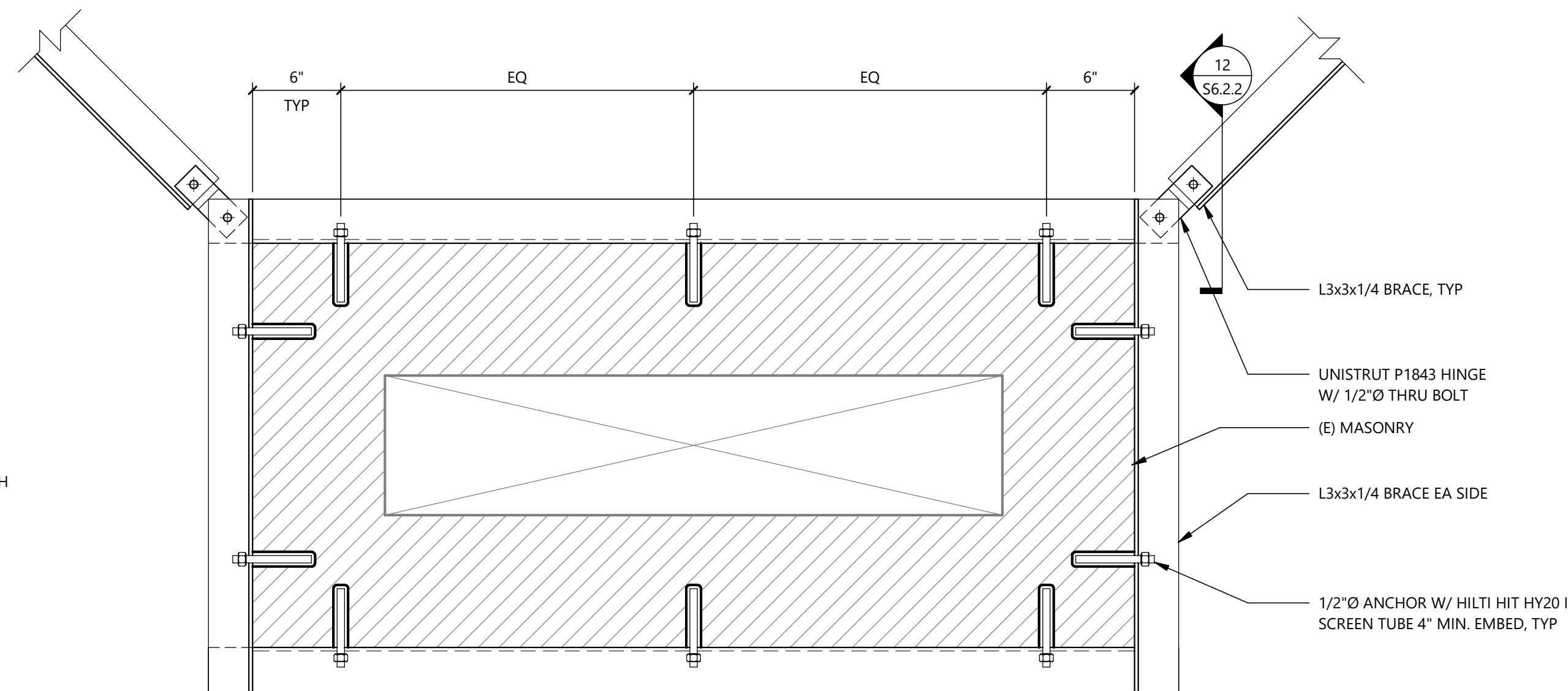


5 Typical Roof Framing at Elevator Overrun & Hoist Beam
Scale: 1 1/2" = 1'-0"

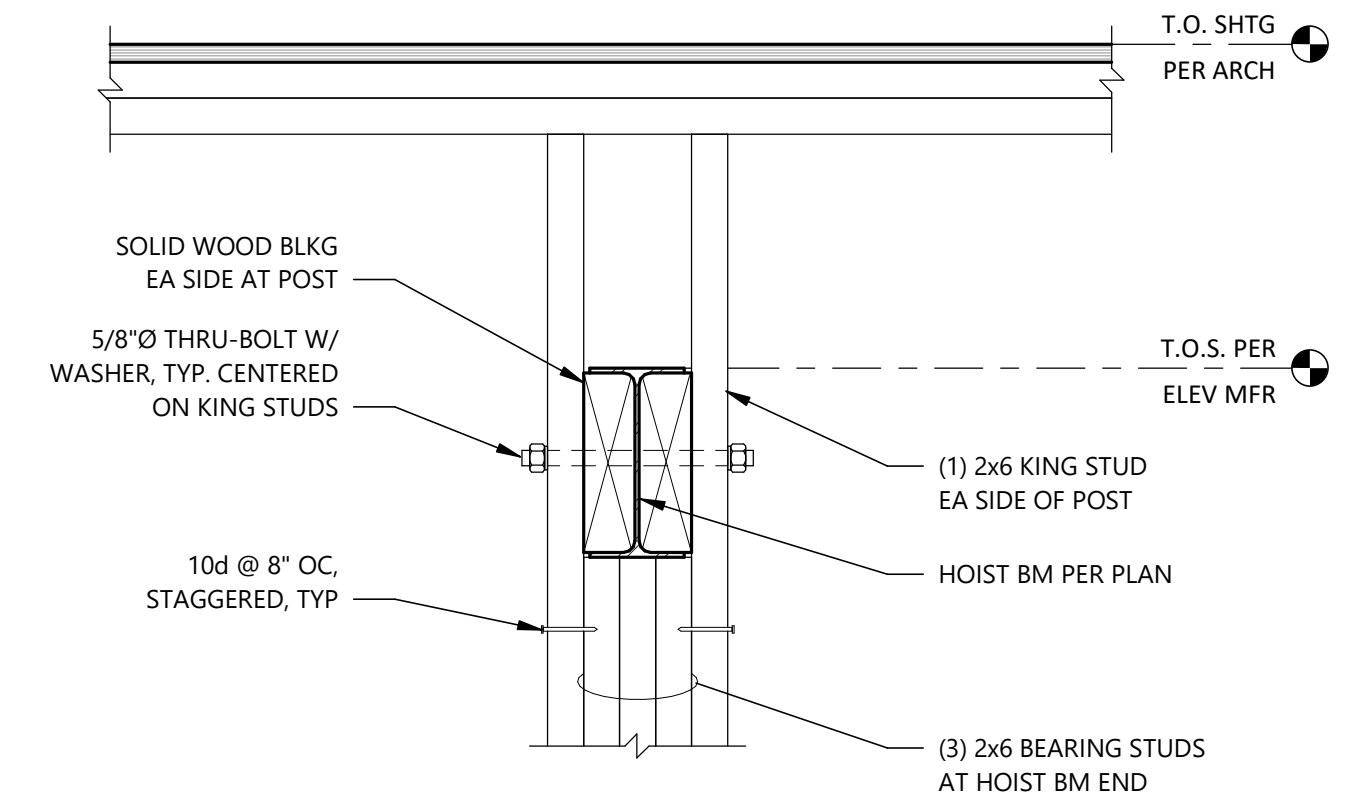


NOTE:
1. WHERE EXISTING DECKING IS PRESENT, USE SIMPSON SDS25500 INSTEAD.
2. WHERE FRAMING IS PARALLEL, PROVIDE 2x BLOCKING TO CONNECT TO HSS

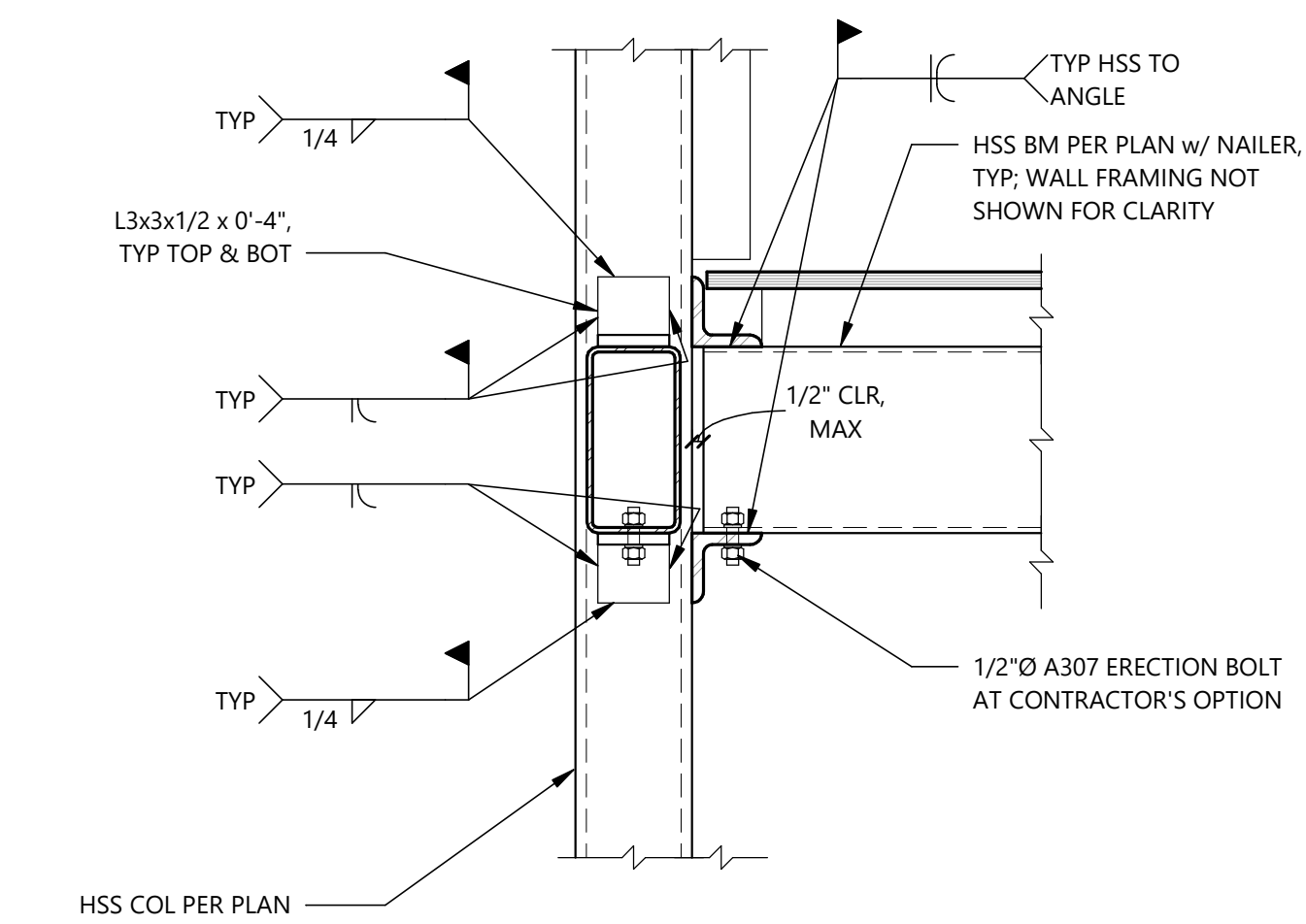
9 Existing Joist to HSS Beam Connection
Scale: 1 1/2" = 1'-0"



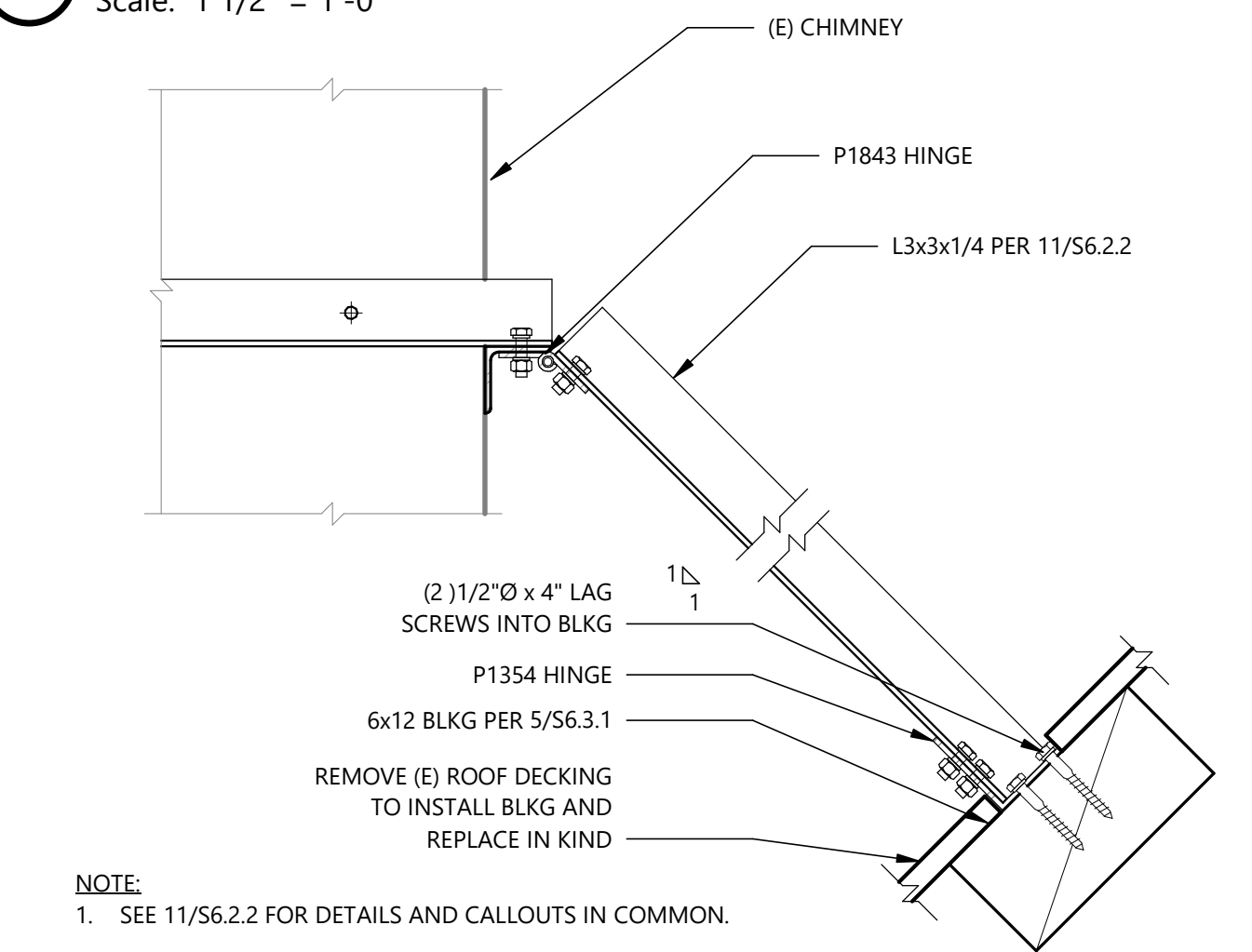
10 Chimney Brace at Roof
Scale: 1 1/2" = 1'-0"



4 Elevator Hoist Beam Section
Scale: 1 1/2" = 1'-0"

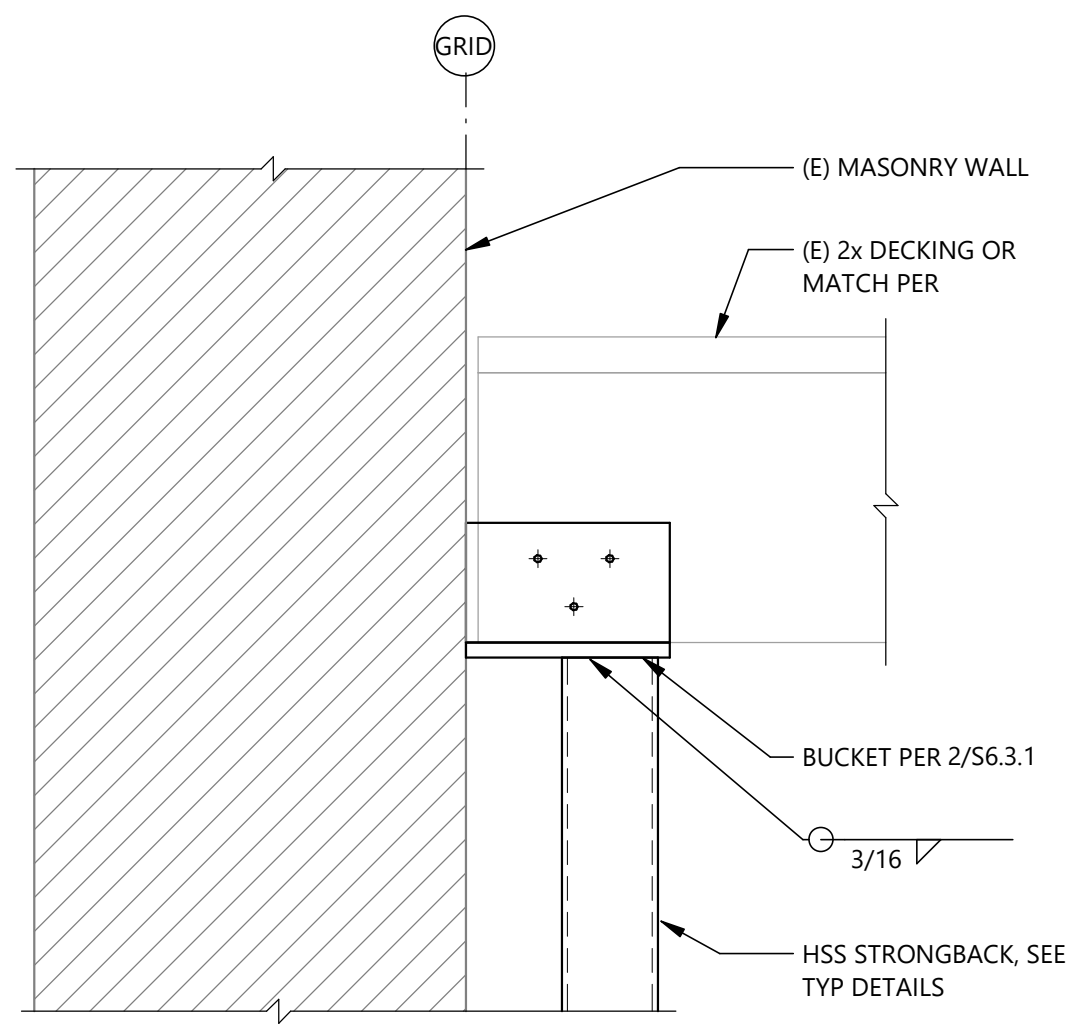


8 Elevator Shaft HSS Framing
Scale: 1 1/2" = 1'-0"

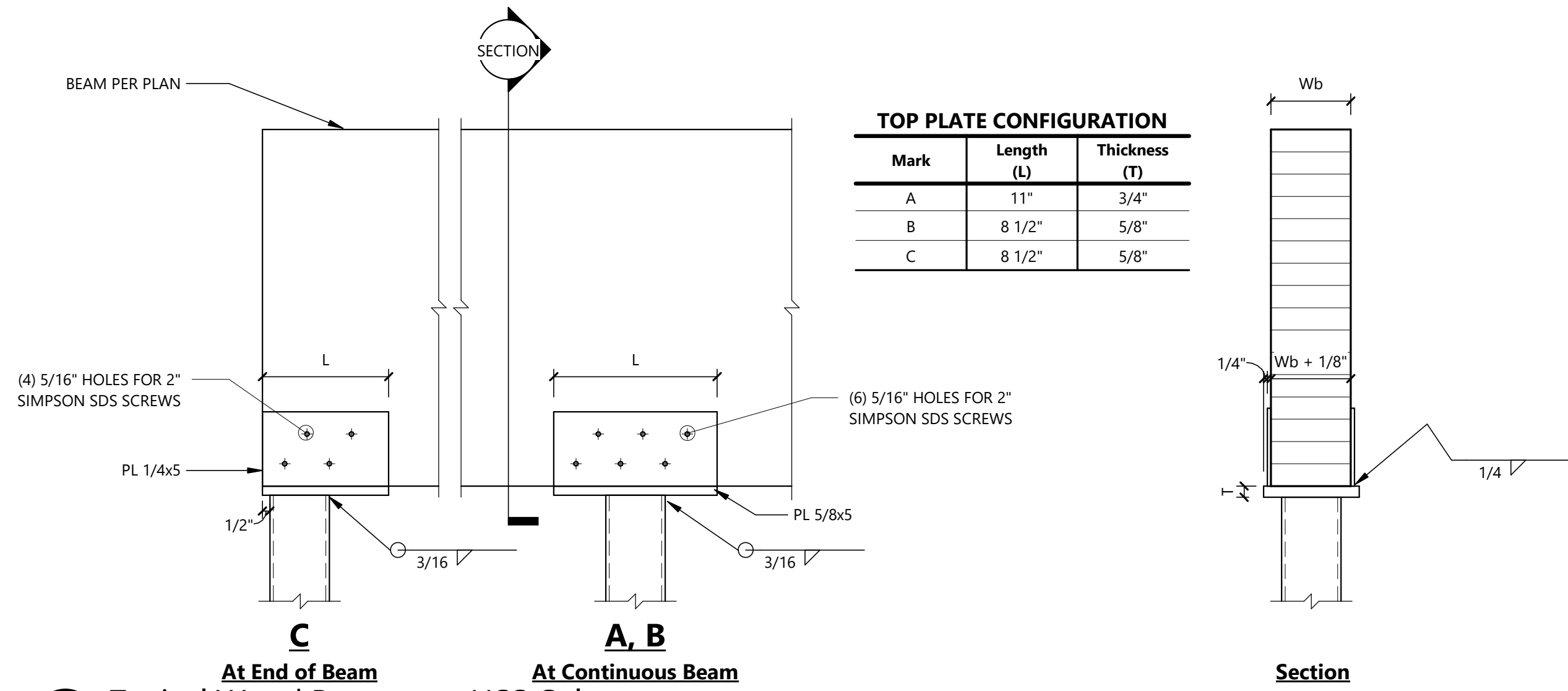


12 Detail
Scale: 1 1/2" = 1'-0"

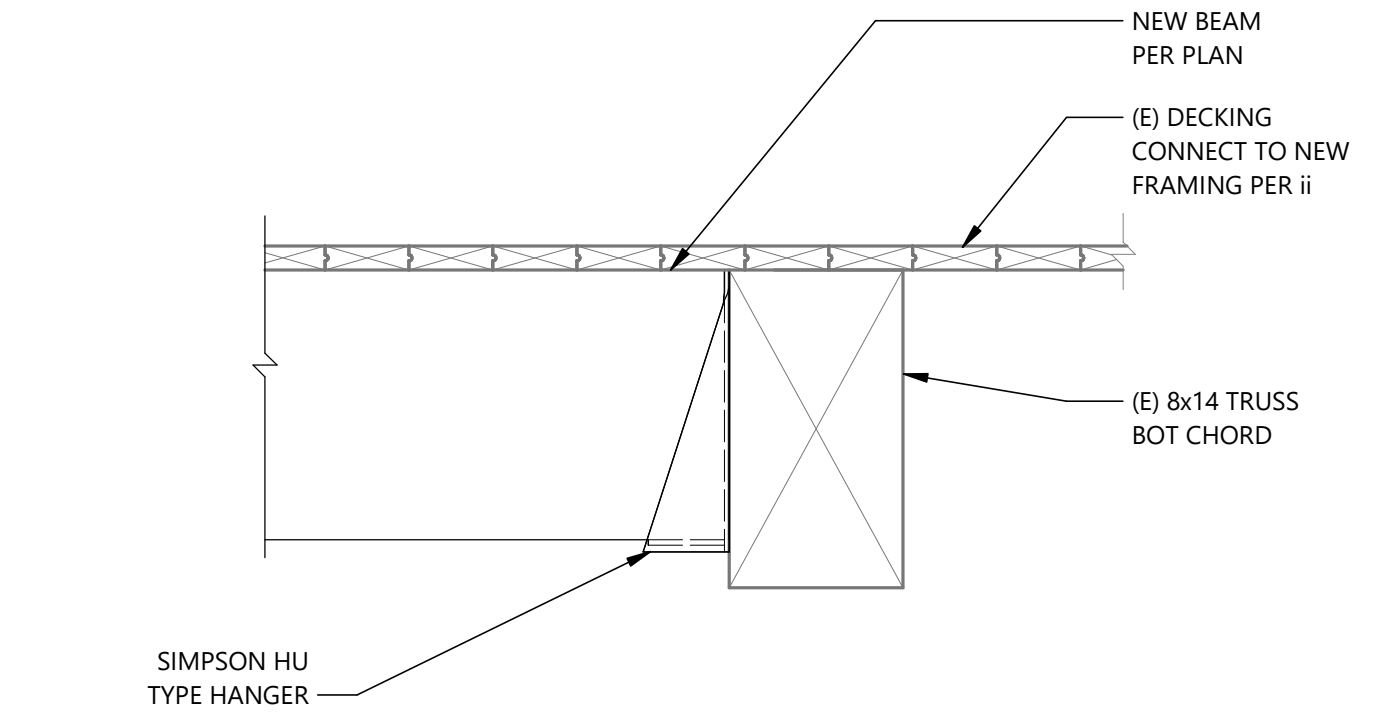
NOTE:
1. SEE 11/S6.2.2 FOR DETAILS AND CALLOUTS IN COMMON.



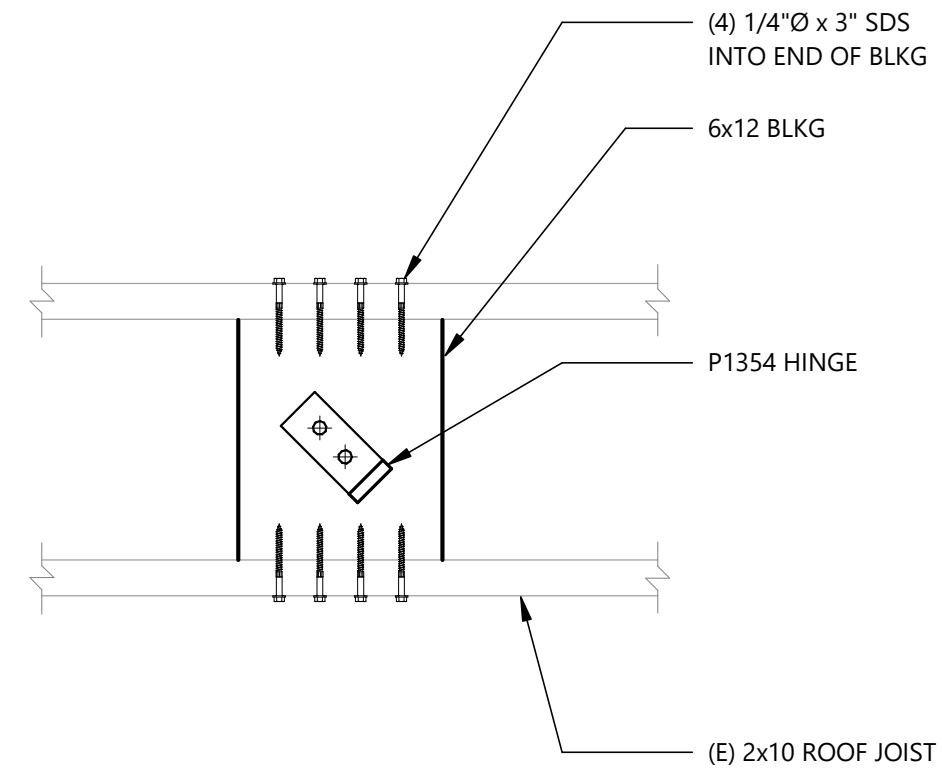
1 Detail
Scale: 1 1/2" = 1'-0"



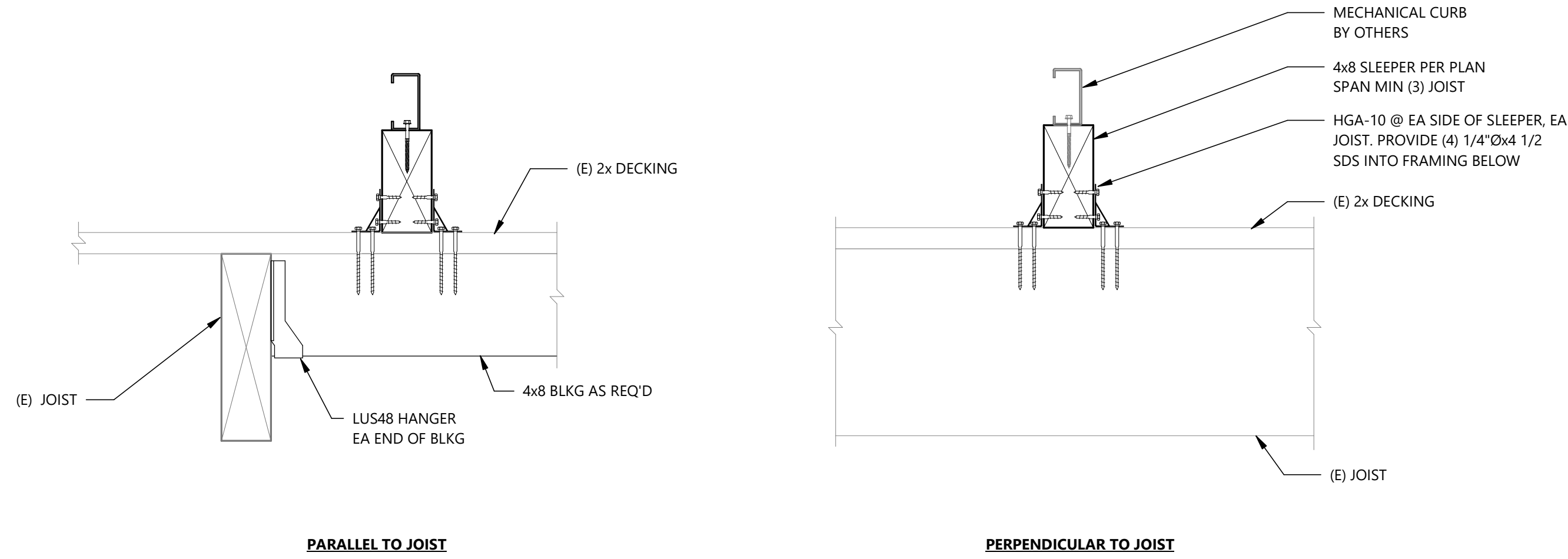
2 Typical Wood Beam over HSS Column
Scale: 1 1/2" = 1'-0"



4 Detail
Scale: 1 1/2" = 1'-0"



5 BLOCKING AT CHIMNEY BRACE
Scale: 1 1/2" = 1'-0"



6 Mechanical Support Sleeper
Scale: 1 1/2" = 1'-0"

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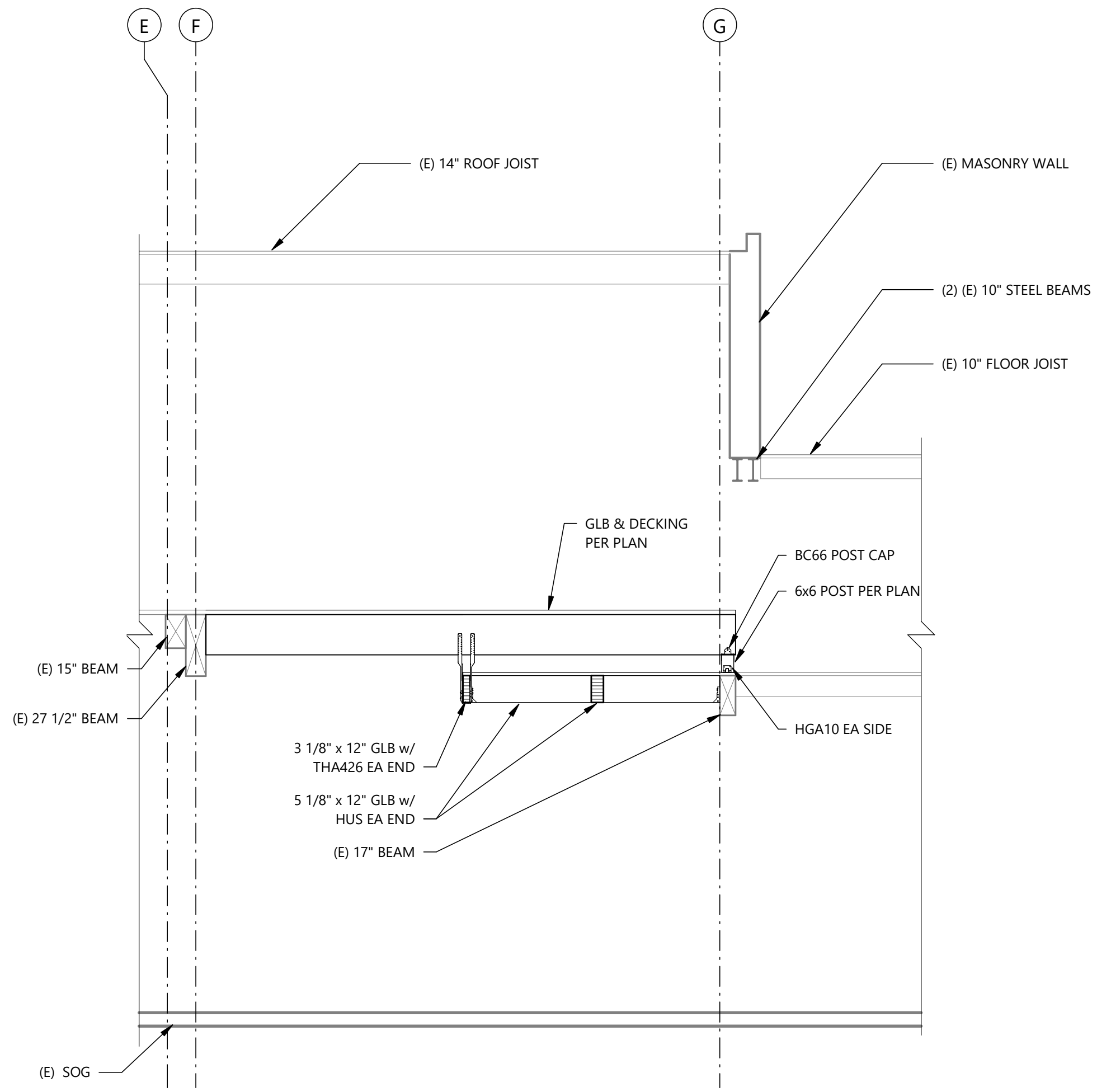
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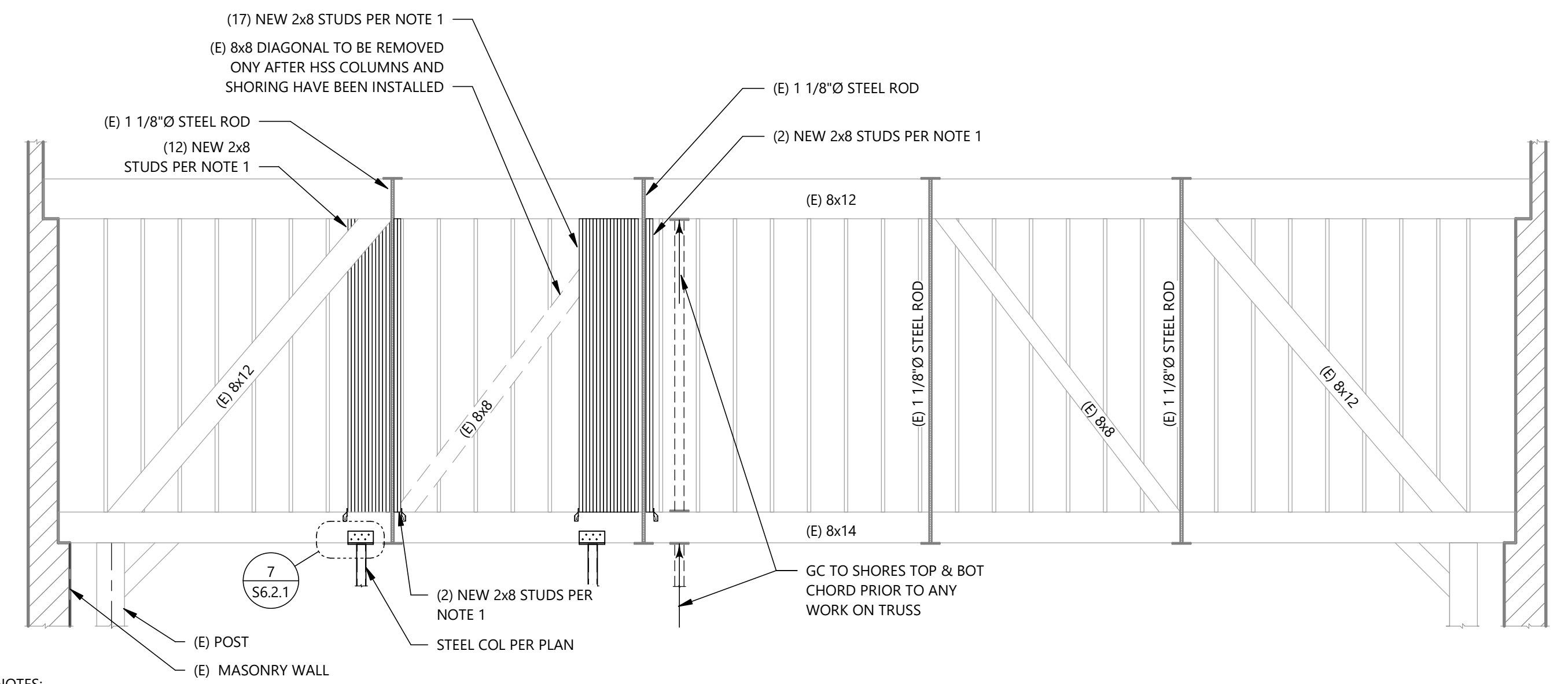
Drawn by: ZCE
Checked: JB, JC
Date: June 25, 2020
Scale: 1 1/2" = 1'-0"

Revisions:
No. Date Remarks

STRUCTURAL
WOOD DETAILS
S6.3.1



5 Building Section
Scale: 1/4" = 1'-0"



7 Truss Elevation
Scale: 1/4" = 1'-0"

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No. Date Remarks

STRUCTURAL
WOOD DETAILS
S6.4.1