

MATERIALS:

- **Sawn Lumber:** Conform to grading rules of WWPA, WCLIB or NLGA and Table below. Finger jointed studs acceptable at interior walls only.

TABLE OF SOLID SAWN LUMBER

Member Use	Size	Species	Grade
Wall Stud	2x4, 3x4, 2x6, 3x6	Doug Fir Larch	No. 2
Roof Joist	2x6 through 2x12	Doug Fir Larch	No. 2
Beam	4x8 through 4x12	Doug Fir Larch	No. 2
Beam	6x8 through 6x12	Doug Fir Larch	No. 1
Post or Timber	6x6, 8x8	Doug-Fir Larch	No. 1

- **Glued Laminated Timber:** Conform to AITC 117-2004 "Standard Specifications for Structural Glue-laminated Timber of Softwood Species, Manufacturing and Design" and ANSI/AITC A190.1 "Structural Glued Laminated Timber." Camber all glued laminated beams, except cantilevered and continuous beams, to 3000' radius, unless shown otherwise on the plans.

TABLE OF GLULAM and GRADE

Member	Sizes	Species	Comb. Sym-bol	Uses
Beams	All	DF/DF	24F-V4	Simple Spans
Beams	All	DF/DF	24F-V8	Continuous or with Cantilever Spans (Balanced)
Columns	All	DF	L2	Post, Truss Member

Fasteners used to connect preservative-treated glue laminated timber should be corrosion resistant to withstand the effects of the high-moisture environment to which these members are typically exposed. Aluminum should not be used in direct contact with wood treated with copper based solutions.

- **Wood Structural Sheathing (Plywood):** Wood APA-rated structural sheathing includes: all veneer ply-wood, oriented strand board, waferboard, particleboard, T1-11 siding, and composites of veneer and wood based material with T&G joint. **Architect** may disallow OSB. Confirm with **Architect**. Conform to "Construction and Industrial Plywood" based on Product Standard PS 1-07 by the U.S. Dept. of Commerce, and "Performance Standard for Wood-Based Structural-Use Panels" based on Product Standard PS 2-04 by the U.S. Dept. of Commerce and "Plywood Design Specification" based on APA PDS-04 by the American Plywood Association. Unless noted otherwise, sheathing shall comply with the following table.

TABLE OF SHEATHING - Use, Minimum Thickness and Minimum APA Rating

Location	Thickness	Span Rating	Plywood Grade	Exposure
Roof/walls	15/32"	32/16	C-D	1

Unless noted otherwise on drawings, install roof and floor panels with long dimension across supports and with panel continuous over two or more spans. End joints shall occur over supports.

- **Timber Connectors:** Shall be "Strong Tie" by Simpson Company as specified in their latest catalog. Alternate connectors by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load capacities and are reviewed and approved by the SER prior to ordering. Connectors shall be installed per the manufacturer's instructions. Where connector straps connect two members, place one-half of the nails or bolts in each member. Where straps are used as hold-downs, nail straps to wood framing just prior to drywall application, as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

Where connectors are in exposed exterior applications in contact with preservative treated wood (PT) other than CCA, connectors shall be either batch hot-dipped galvanized (HDG), mechanically galvanized (ASTM B695, Class 55 minimum) stainless steel, or provided with 1.85 oz/sf of zinc galvanizing equal to or better than Simpson ZMAX finish.

Nail straps to wood framing as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

- **Fasteners** (nails, bolts, screws, etc) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector. Fasteners (nails, bolts, screws, etc) attaching sawn timber members or sheathing (shear walls) to PT wood be corrosion resistant; nails and lag bolts shall be either HDG (ASTM A153) or stainless steel. Verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier.

Provide **washers** under the heads and nuts of all bolts and lag screws bearing on wood.

- **Lag Bolts/Bolts:** Conform to ASTM A307 and OSSC Section 2304.9.
- **Engineered Wood Products (TrusJoist):** The following materials are based on lumber manufactured by TrusJoist and were used for the design as shown on the plans. Alternate products by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load and stiffness properties and are reviewed and approved by the Structural Engineer. [A HUD Material Release form is required for all manufactured wood products listed below]
 - Laminated Veneer Lumber (LVL):** Conform to **ICC ES Report No. ESR-1387** or CCMC Report No. 08675-R.

TABLE of ENGINEERED WOOD Requirements

Type	Use	Widths	E(10 ⁴)	Fb	Fv	Fc//
			PSI	PSI	PSI	PSI
Microllam LVL	Header, Beam	1 3/4"	1.9E	2,600	285	2,510

NAILING REQUIREMENTS: Conform to OSSC Section 2304.9 "Connections and fasteners." Unless noted on plans, nail per Table 2304.9.1. Nailing for roof/floor diaphragms/shear walls shall be per drawings. Nails shall be driven flush and shall not fracture the surface of sheathing. Alternate nails may be used but are subject to review and approval by the Structural Engineer. Substitution of staples for the nailing of rated sheathing is subject to review by the structural engineer prior to construction.

STANDARD LIGHT-FRAME CONSTRUCTION: Unless noted on the plans, construction shall conform to OSSC Section 2308 "Conventional Light-Frame Construction."

MOISTURE CONTENT: Wood material used for this project shall have maximum moisture content of 19% except for the pressure-treated wood sill plate. Refer to TESTING & INSPECTIONS for the verification of these limits. The maximum moisture content required may be less than 19% when based on a particular cladding/insulation system. Refer to the Architect's drawings, and project specifications, or with cladding installer for maximum recommended moisture content.

SHRINKAGE COMPENSATION FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS: MEP systems, including ductwork, pipes, and other elements that run continuously between levels shall be installed/designed in such a manner to accommodate shrinkage in the wood framing. Wood shrinkage amounts will vary depending on the construction process and materials used. The anticipated shrinkage under typical conditions is expected to range between 1/8" and 1/4" per floor.

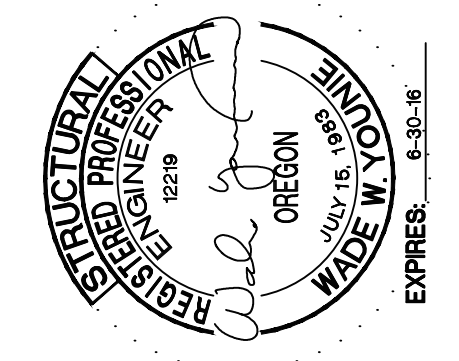
CLADDING COMPATIBILITY: The Architect/Owner shall review the cladding and insulation systems proposed for the project with respect to their performance over wood studs with moisture contents greater than 19%. EIFS systems should be avoided on wood-framed projects due to problems with moisture proofing.

PRESERVATIVE TREATMENT (PT): Wood materials are required to be "treated wood" in accordance with OSSC Section 2304.11. "Decay and Termite Protection" shall conform to the appropriate standards of the American Wood-Preservers Association (AWPA) for sawn lumber, glued laminated timber, round poles, wood piles and marine piles. Follow American Lumber Standards Committee (ALSC) quality assurance procedures. Products shall bear the appropriate mark. Fasteners or anchors in treated wood shall be of stainless steel or hot-dipped galvanized or as per OSSC 2304.9.5.

Mud sill plates in normally dry interior applications may be treated with Sodium Borate (DOT - Disodium Octaborate Tetrahydrate) as recent studies have noted less connector corrosion potential than other available wood treatments or the original CCA treated sill plates. Wood treated with Sodium Borate shall be protected during shipment, storage and installation to minimize leaching of the water-soluble preservative from the lumber. Sodium borate pressure treated plates do not require hot-dipped galvanized connectors.

If using sill plates other than CCA or sodium borate, fasteners must be hot dipped galvanized or stainless steel. Fasteners (nails, bolts, screws, washers & lag screws) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector, that is, use hot dipped galvanized or stainless steel fasteners. Fasteners (nails, bolts, screws, washers & lag screws) attaching sawn timber members or sheathing (shear walls) to Pressure Treated wood be corrosion resistant (hot dipped galvanized or stainless steel).

Always verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/supplier.



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PROJECT NO.
15-0309

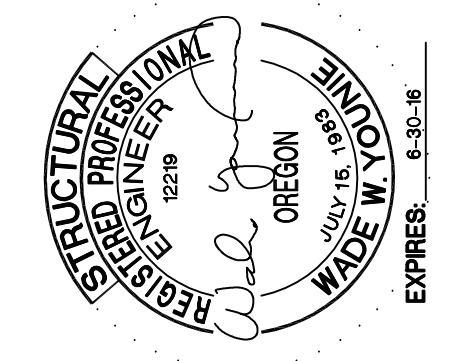
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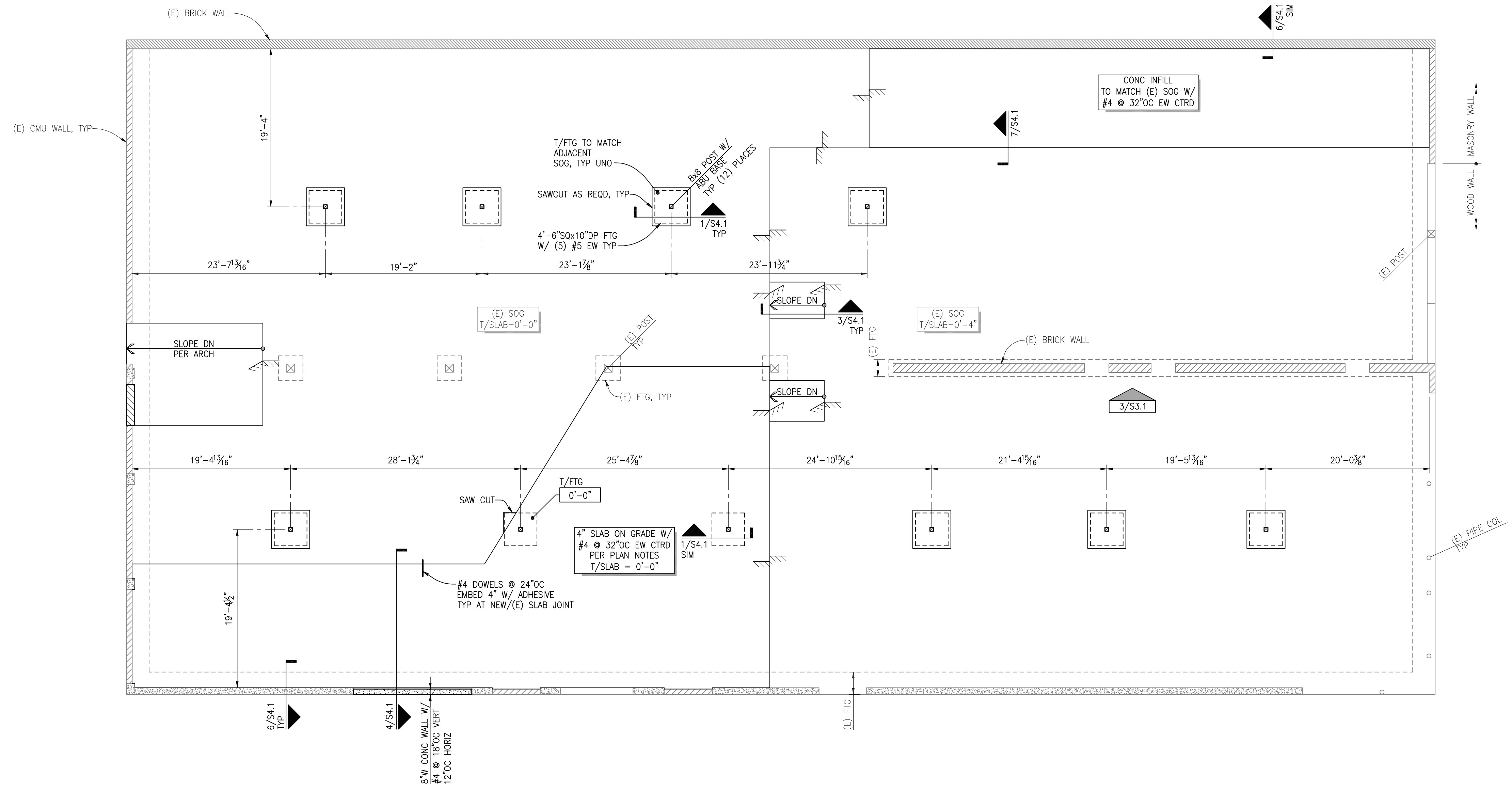
SHEET **STRUCTURAL
 GENERAL NOTES**

S1.2

STRUCTURAL UPGRADE



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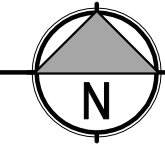


FOUNDATION PLAN NOTES:

- STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1 & S1.2.
- VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED.
- CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRETE: ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES; BLOCKOUTS. ALL DUCTS, CHASES AND PIPES PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS. CONCRETE CURBS AND LOCATIONS PER ARCHITECTURAL DRAWINGS.
- TOP OF SLAB (T/SLAB) ELEVATION ASSUMED 0'-0". FOR ACTUAL T/SLAB ELEVATION REFER ARCHITECTURAL DRAWINGS. PROVIDE FREE-DRAINING GRANULAR FILL.
- TYPICAL TOP OF INTERIOR (T/INTERIOR) FOOTING ELEVATION = T/SLAB, UNO.
- ALL FOOTINGS AND SLABS TO BEAR ON COMPETENT NATIVE SOIL AND/OR STRUCTURAL FILL.
- CJ INDICATES CONTROL JOINT PER ARCHITECTURAL DRAWING.
- MOISTURE PROOF ALL CONCRETE STEM AND BASEMENT WALLS PER ARCHITECT.
- DEMO (E) SLAB ON GRADE PER DEMO PLAN.
- TYPICAL DETAILS PER:

8/S4.1	STANDARD HOOKS AND BAR BENDS
11/S4.1	TYPICAL SLAB ON GRADE JOINT
12/S4.1	TYPICAL LAP SPLICE SCHEDULE

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



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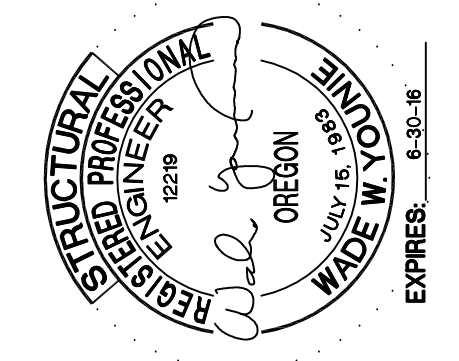
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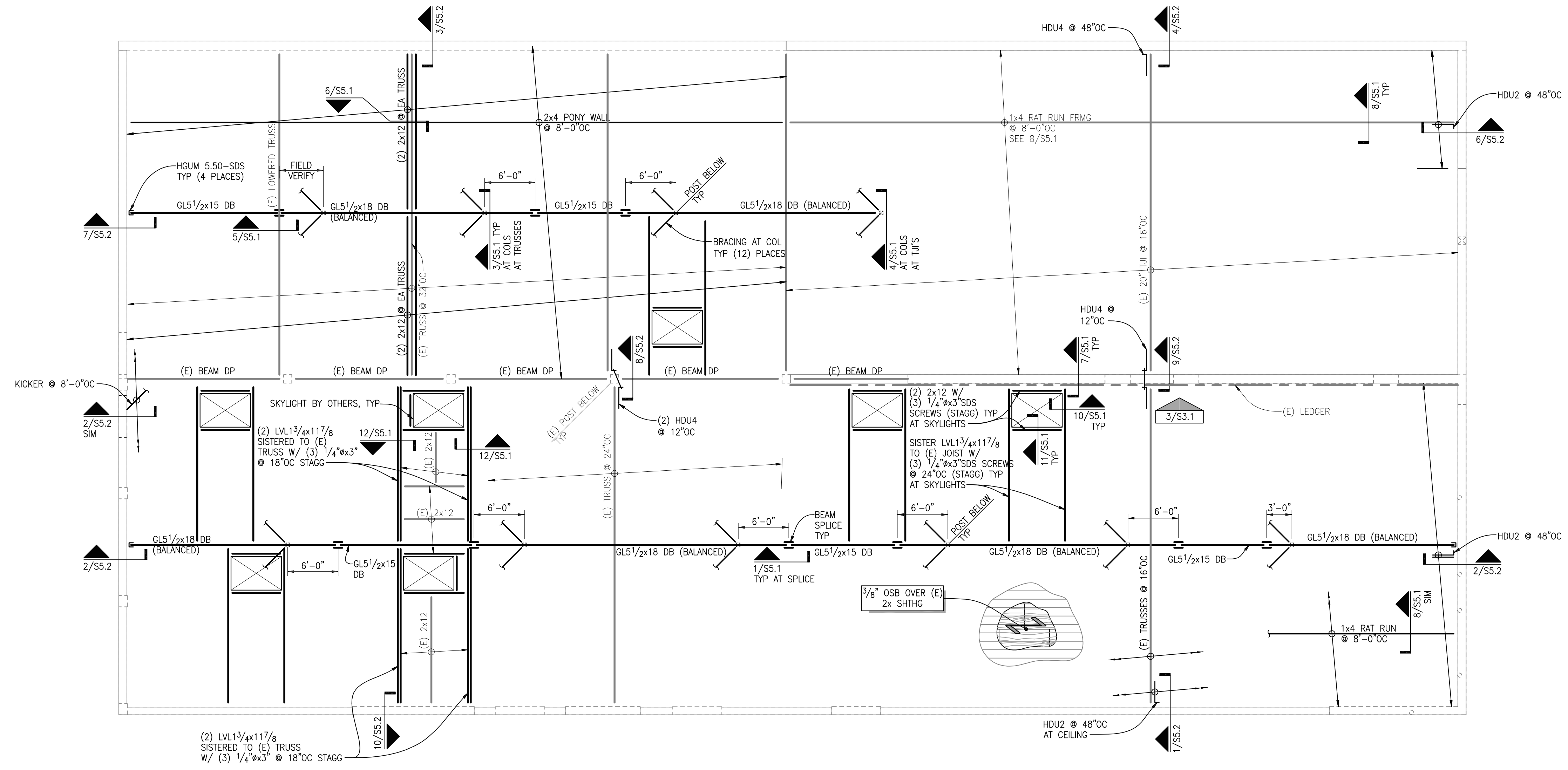
SHEET
STRUCTURAL FOUNDATION PLAN
S2.1
STRUCTURAL UPGRADE



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FRAMING PLAN NOTES:

- STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1 & S1.2.
- LUMBER GRADE PER STRUCTURAL GENERAL NOTES.
- ALL INTERIOR NON-BEARING, NON-STRUCTURAL WALL STUD REQUIREMENTS PER STRUCTURAL GENERAL NOTES.
- BEAMS SHOWN ON FRAMING PLAN SHALL BE SUPPORTED BY POST, UNO. POST TO BE CONTINUOUS TO THE FOUNDATION.
- VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECT'S DRAWINGS. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED.
- ALL DUCTS, CHASES AND PIPES SHALL BE PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS.
- ROOF SHEATHING PER PLAN AND STRUCTURAL GENERAL NOTES. SHEATHING TO BE NAILED TO ROOF FRAMING WITH 0.131"x2 1/2" NAILS @ 6" OC AT PANEL EDGES AND @ 12" OC FIELD, UNO. LAY SHEATHING WITH FACE GRAIN (LONG DIRECTION) PERPENDICULAR TO SUPPORTS AND STAGGER PANEL END JOINTS. ALLOW 1/8" SPACE BETWEEN PANEL ENDS AND EDGES.
- ALL 2X HANGERS TO BE FACE MOUNT TYPE LUS, UNO. GLULAM, PARALLAM AND MICROLLAM HANGERS ARE AS SPECIFIED ON PLAN. 1" JOIST HANGERS TO BE FACE MOUNT SIMPSON IUS TYPE, UNO.
- BEAMS ARE FLUSH FRAMED WITH JOISTS UNLESS NOTED OTHERWISE ON DETAILS, OR ON PLANS AS "DB" INDICATING THAT DROPPED BEAM FRAMING IS REQUIRED. BEAM SUPPORTS PER STUD AND SHEAR WALL PLAN ON LEVEL BELOW. PROVIDE A35 CLIP EACH SIDE OF FLUSH BEAMS THAT BEAR ON DOUBLE TOP PLATES.

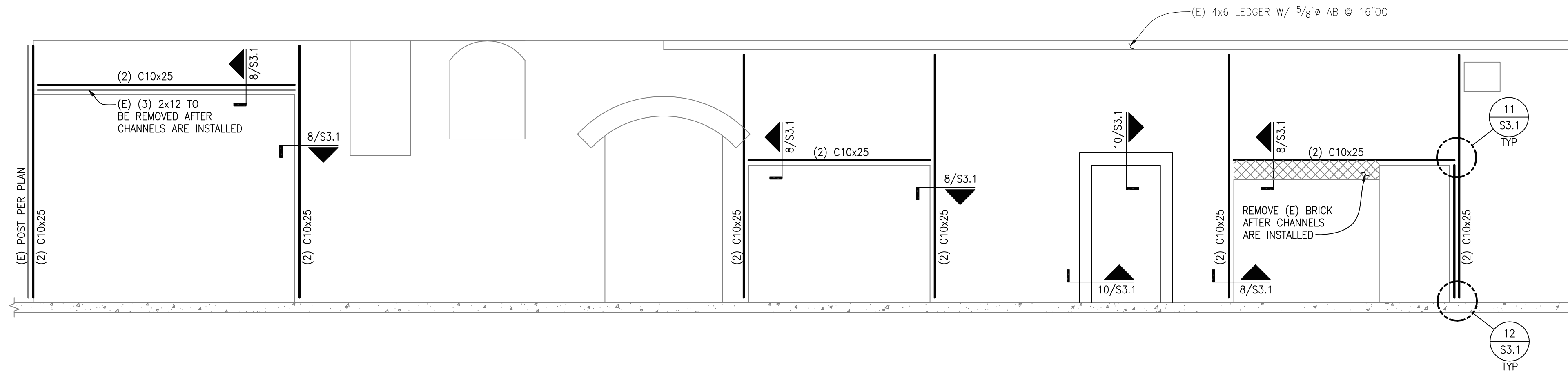
ROOF FRAMING PLAN
 SCALE: 1/8"=1'-0"

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ROOF FRAMING
PLAN
S2.2
STRUCTURAL UPGRADE

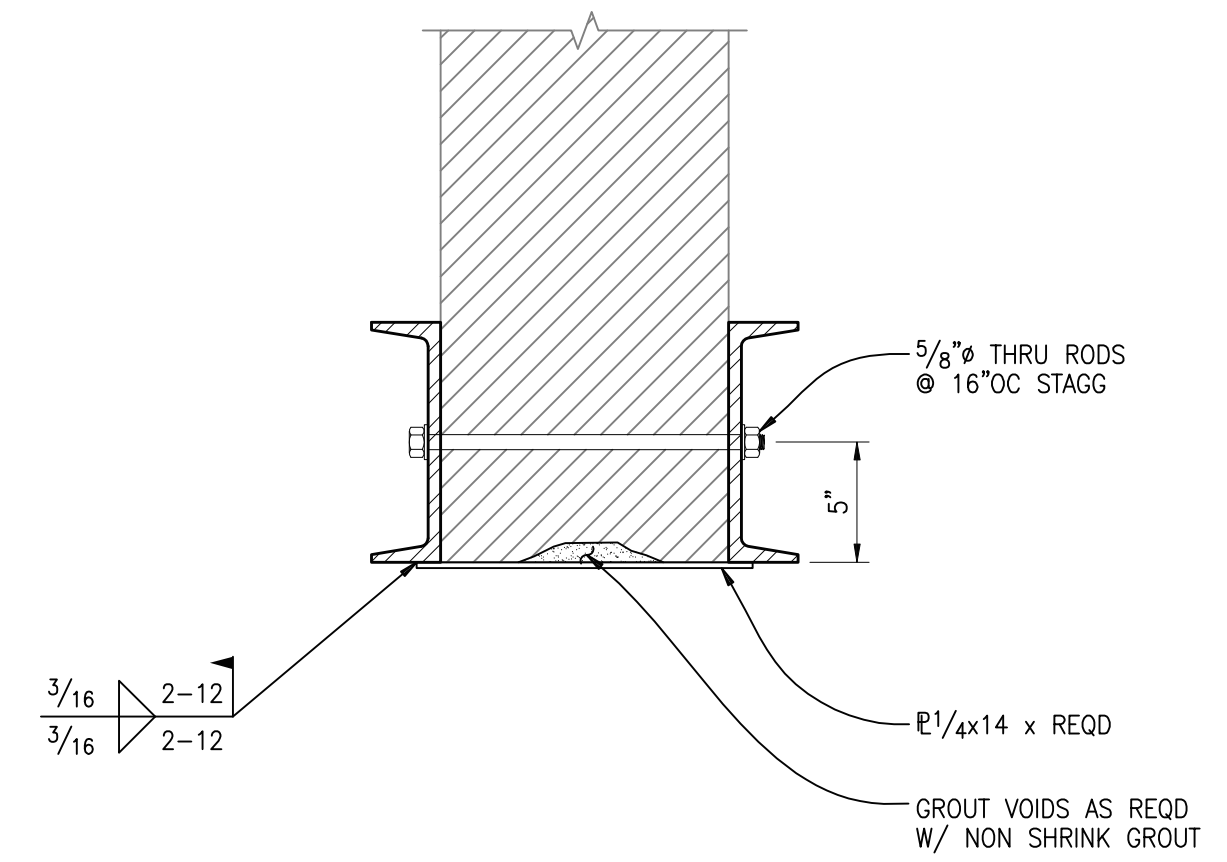
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EXISTING WALL ELEVATION

SCALE: 1/4"=1'-0"

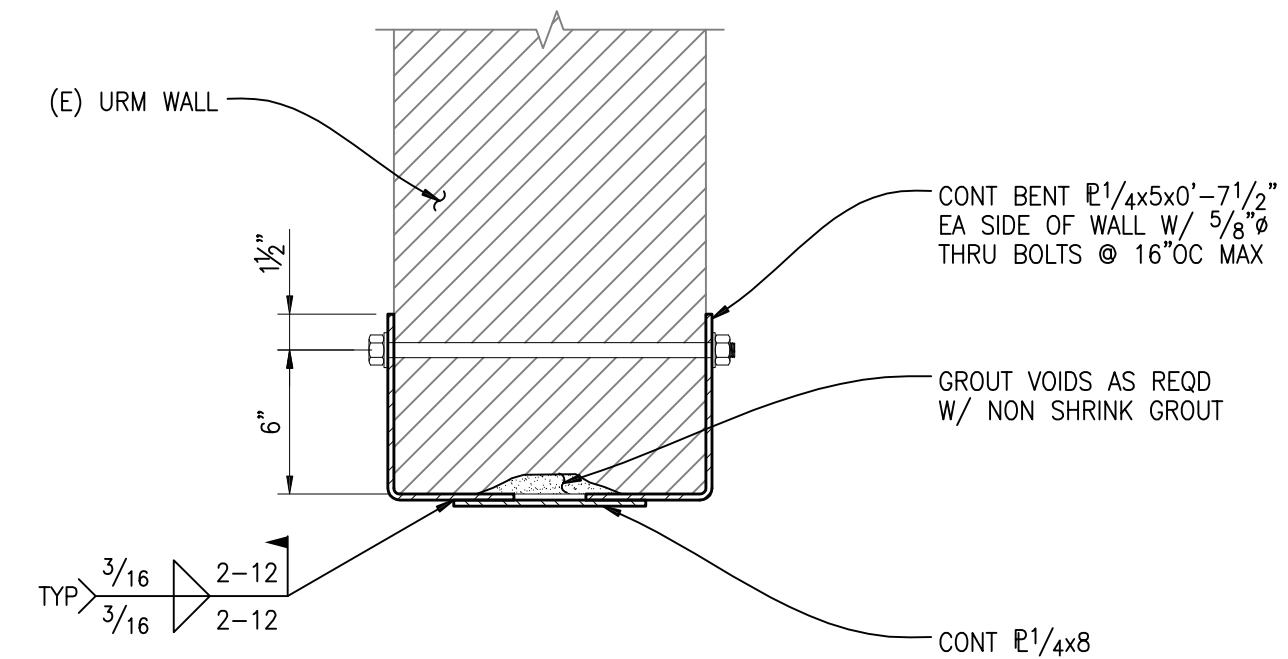
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CHANNEL AT URM

SCALE: 1 1/2"=1'-0"

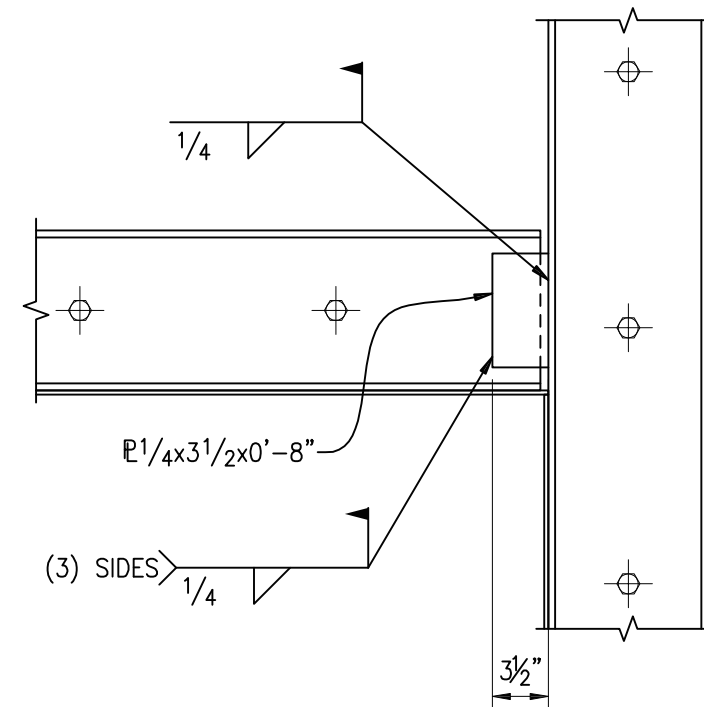
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REINFORCEMENT FOR DOOR

SCALE: 1 1/2"=1'-0"

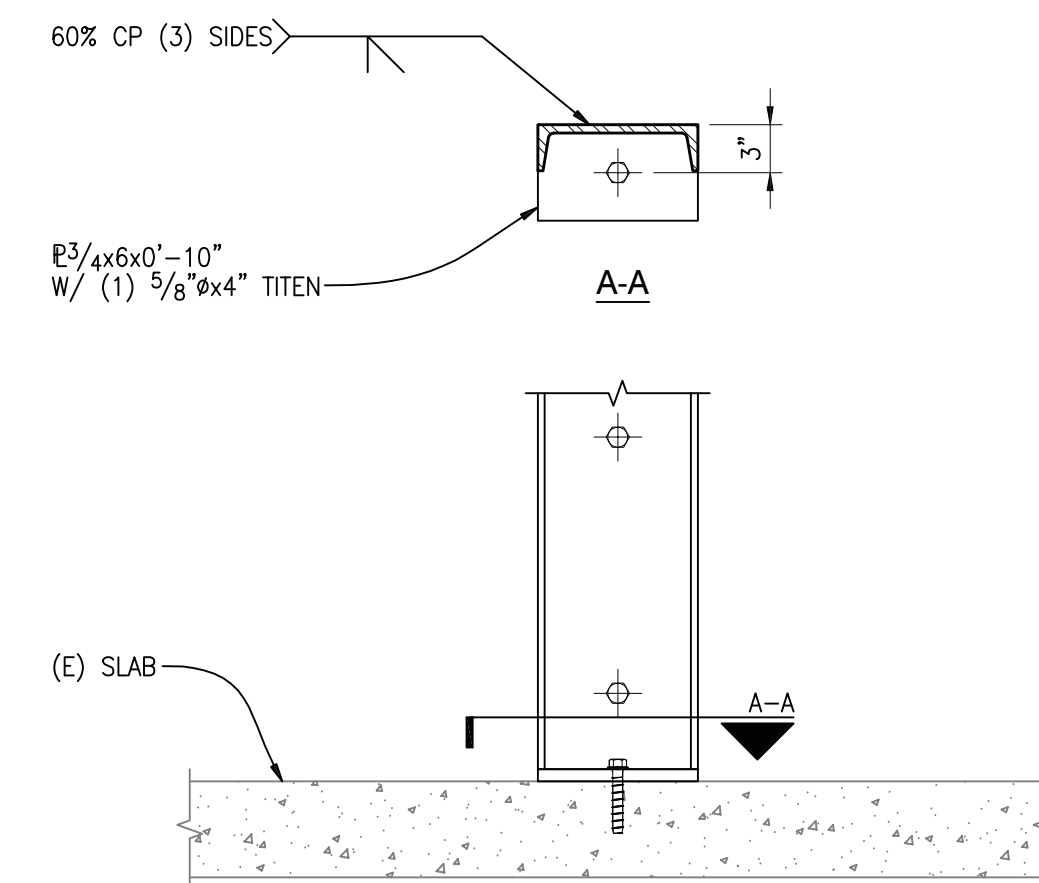
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CHANNEL CONNECTION

SCALE: 1"=1'-0"

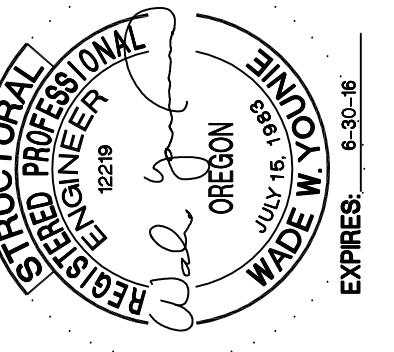
11



COLUMN TO SLAB CONNECTION

SCALE: 1"=1'-0"

12



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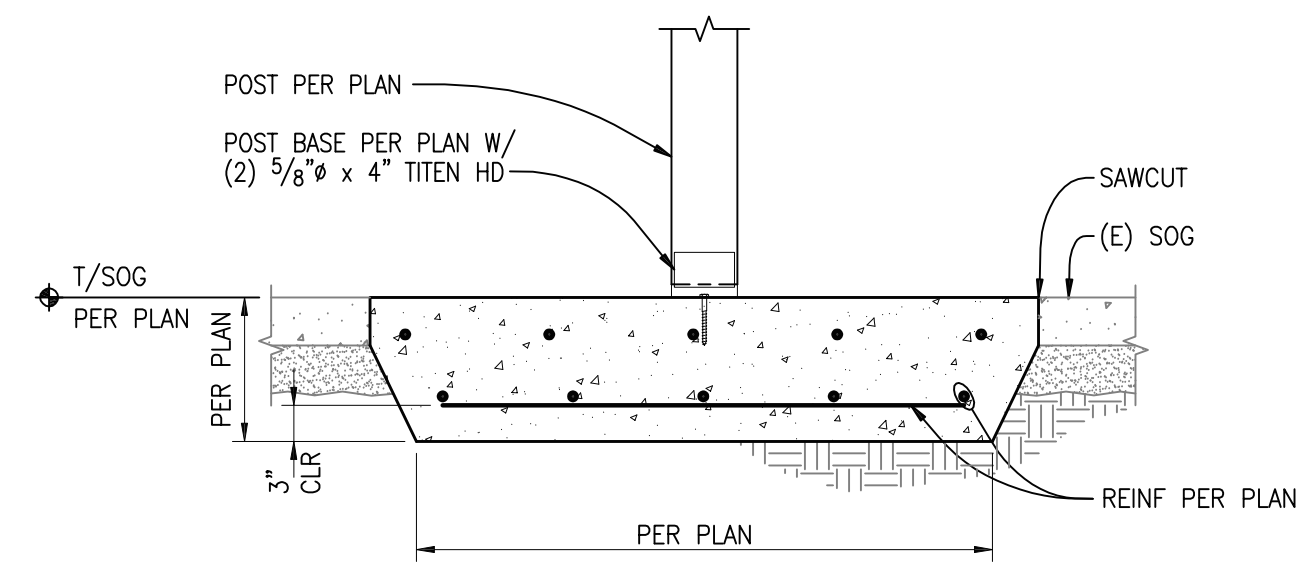
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SHEET

S3.1

STRUCTURAL UPGRADE

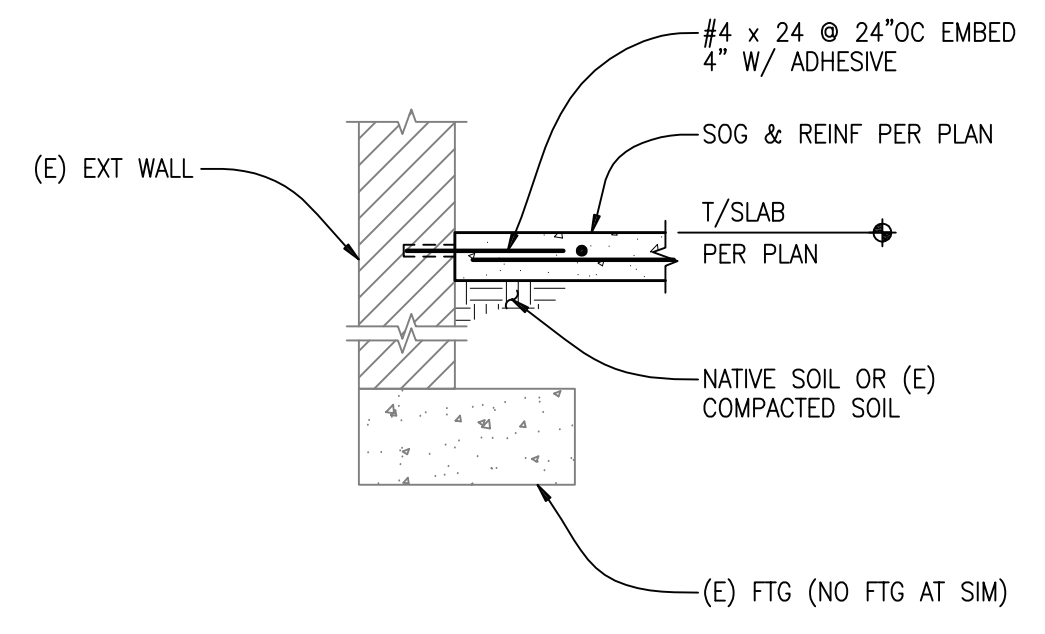
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INTERIOR THICKENED SLAB FOOTING AT WOOD POST

03010M SCALE: 3/4"=1'-0"

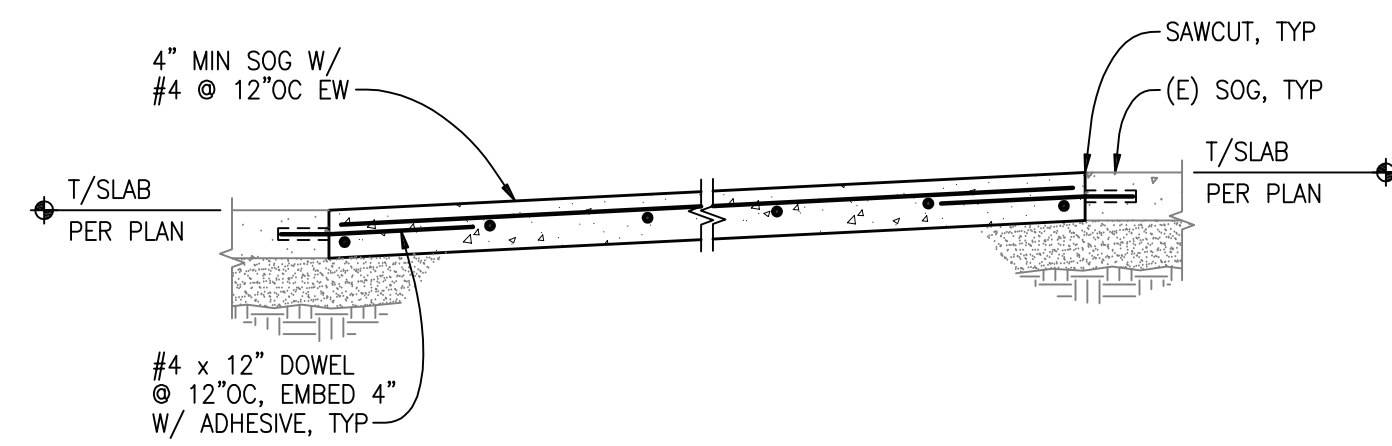
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SLAB ON GRADE EXTERIOR WALL

SCALE: 3/4"=1'-0"

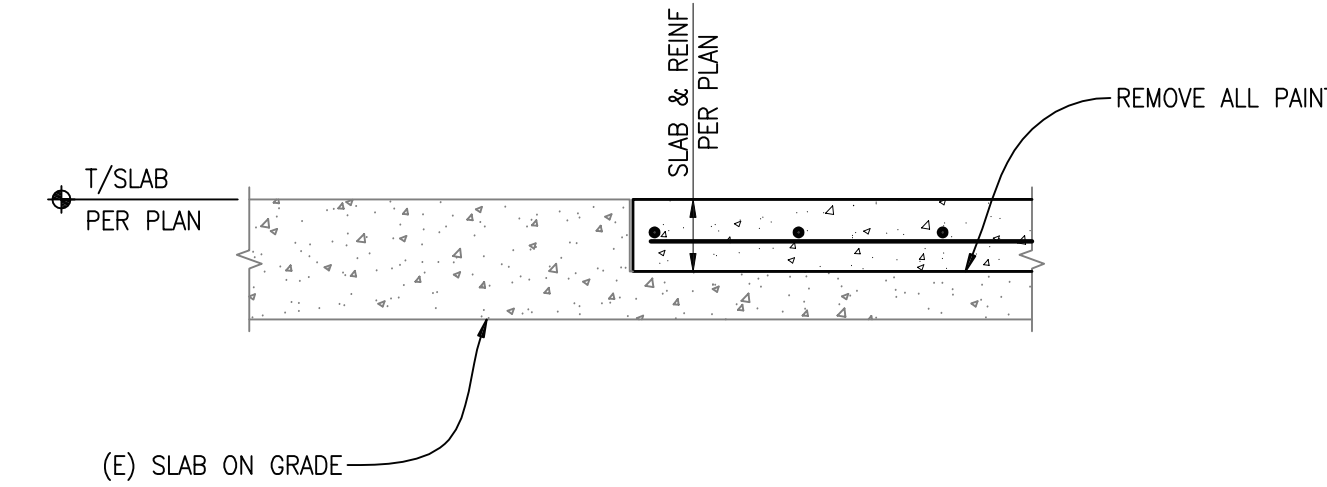
6



TYPICAL SLAB ON GRADE RAMP

SCALE: 3/4"=1'-0"

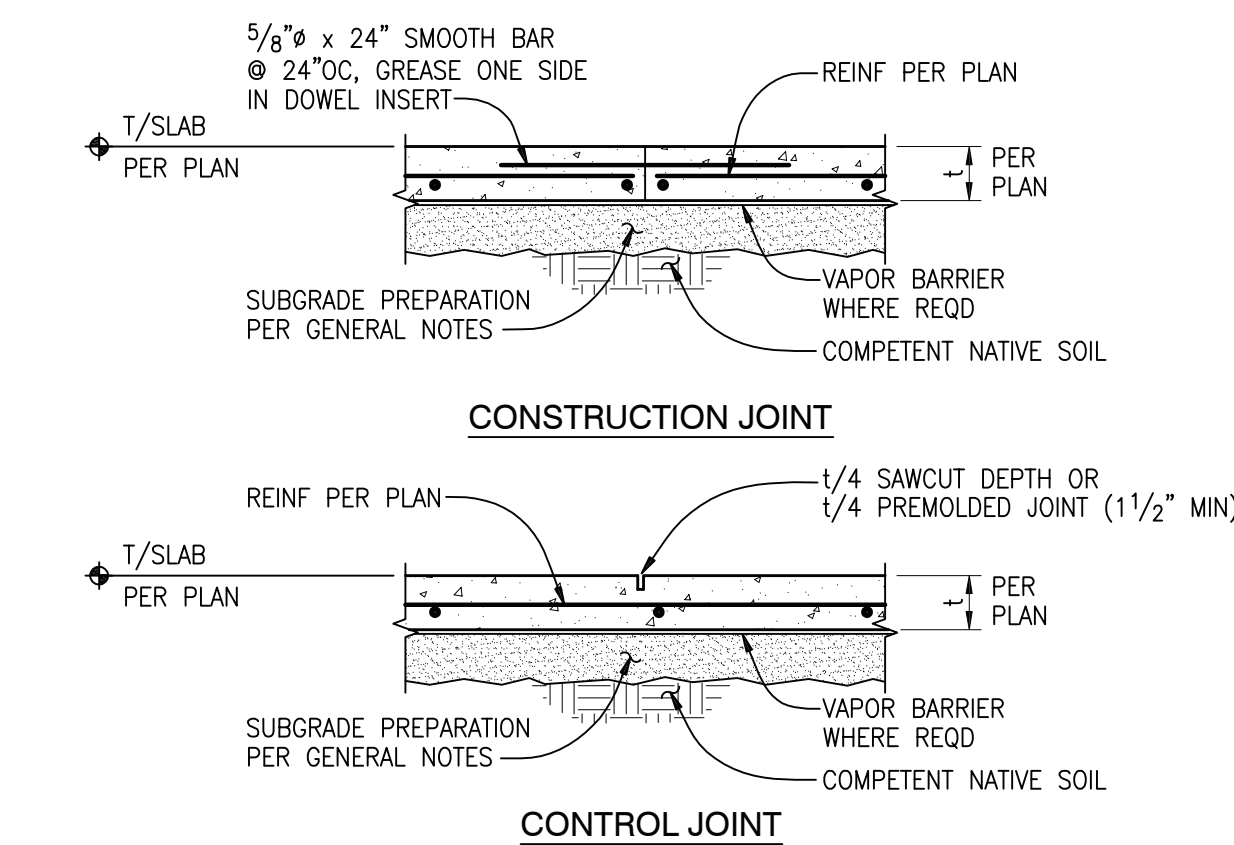
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SLAB ON GRADE INFILL

SCALE: 3/4"=1'-0"

7



NOTES:

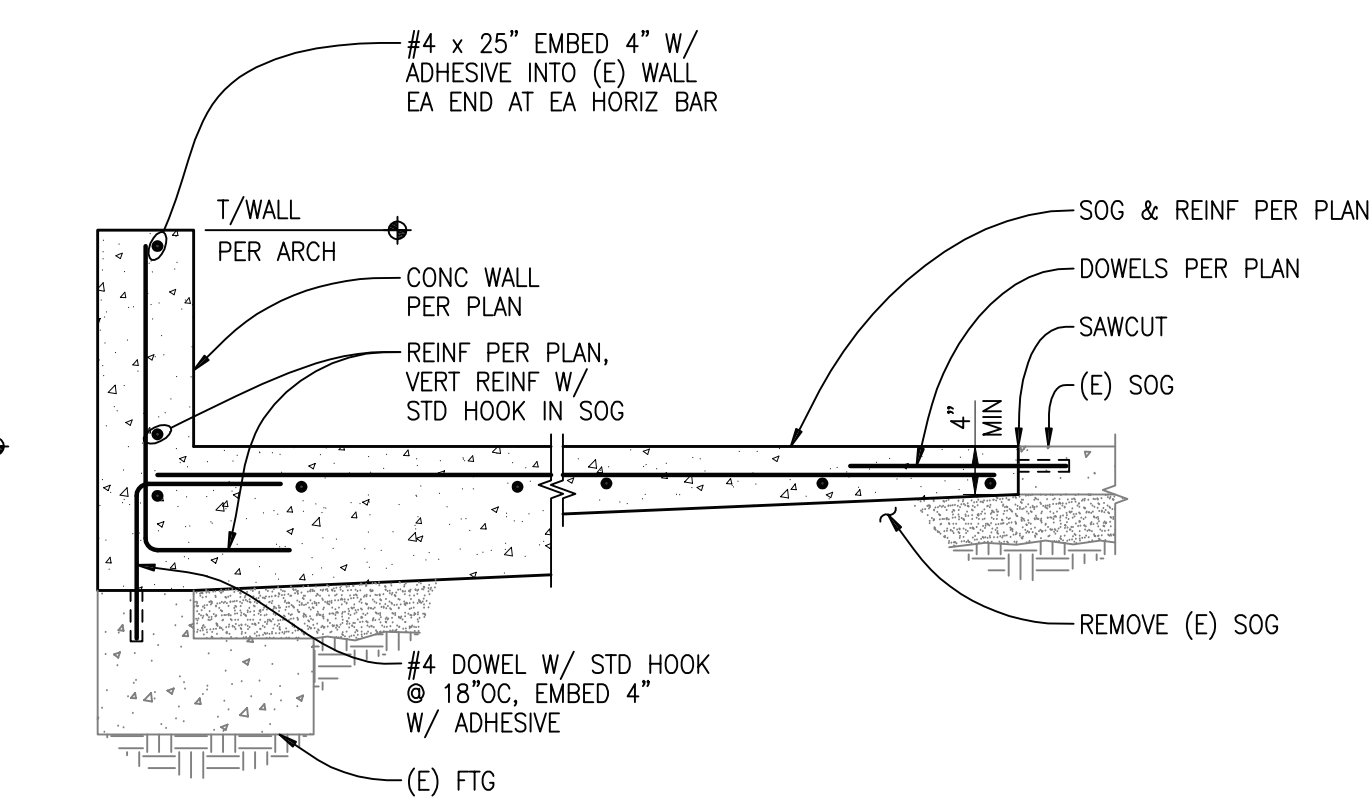
- USE "EARLY ENTRY DRY-CUT SAW" AS SOON AS POSSIBLE WITHOUT CAUSING RAVELING OF CONCRETE EDGES. SAWCUT ALONG SHORT DIRECTION OF POUR FIRST.
- ALIGN A CONSTRUCTION OR CONTROL JOINT WITH RE-ENTRANT SLAB CORNERS, EACH WAY, TYPICAL.
- PROVIDE CONSTRUCTION/CONTROL JOINT TO ENCLOSE APPROXIMATE SQUARE AREAS 225 SQUARE FEET MAXIMUM, WITH A MAXIMUM PANEL ASPECT RATIO OF 1.3 TO 1.0.

TYPICAL SLAB ON GRADE JOINT DETAILS WITH REINFORCING

03201M

SCALE: 3/4"=1'-0"

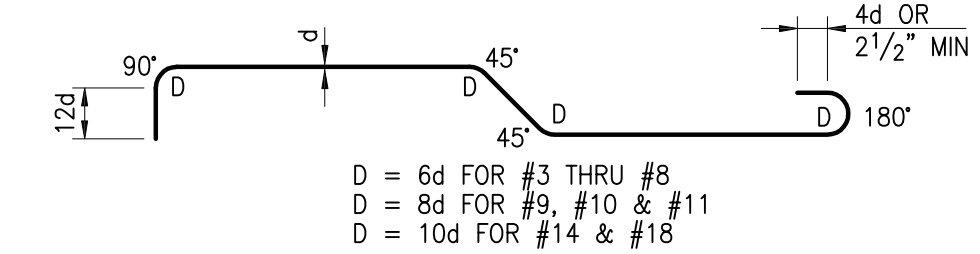
11



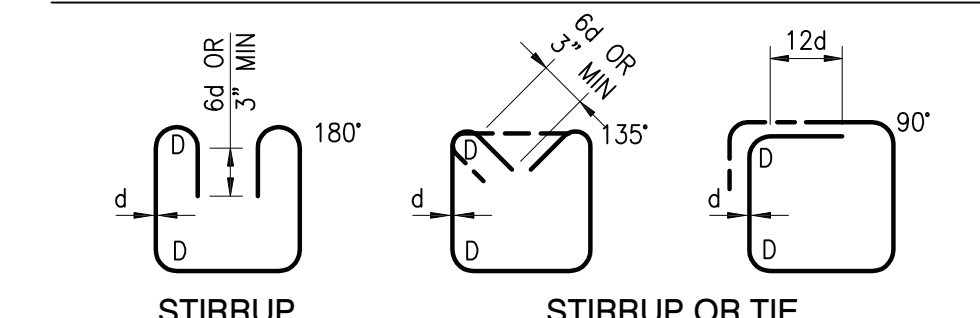
RAMP INFILL

SCALE: 3/4"=1'-0"

4



ALL REINFORCING EXCEPT COLUMN TIES AND BEAM STIRRUPS



**BEAM OR COLUMN CROSSTIES
BEAM STIRRUPS AND COLUMN TIES**

NOTE:

TIES AND CROSSTIES FOR SHEAR WALL BOUNDARY ELEMENTS SHALL BE DETAILED AS COLUMN TIES/CROSSTIES.

**STANDARD HOOKS AND BENDS -
BEAM STIRRUPS AND COLUMN TIES**

03400 (FOR REVISIONS TO STANDARD HOOKS & BENDS REF TO CURRENT AC) SCALE: NONE

BAR SIZE	MISC BARS		TOP BARS (see note #4)		HOOKED BARS
	Ld	Splice	Ld	Splice	
#3	15	20	19	25	8
#4	19	25	25	33	10
#5	24	32	31	41	12
#6	29	38	37	49	15
#7	42	55	54	71	17
#8	48	63	62	81	19
#9	54	71	70	91	22
#10	61	80	79	103	25
#11	67	88	87	114	27

NOTES:

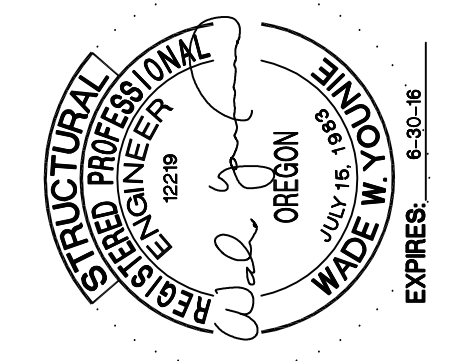
- VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGHT CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND CLEAR COVER > db.
- DEVELOP ALL REINFORCING IN SLABS WITH MINIMUM DEVELOPMENT LENGTH Ld.
- Ldh = DEVELOPMENT LENGTH OF BAR WITH STANDARD HOOK.

TYPICAL LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE

01400M

SCALE: NONE

12



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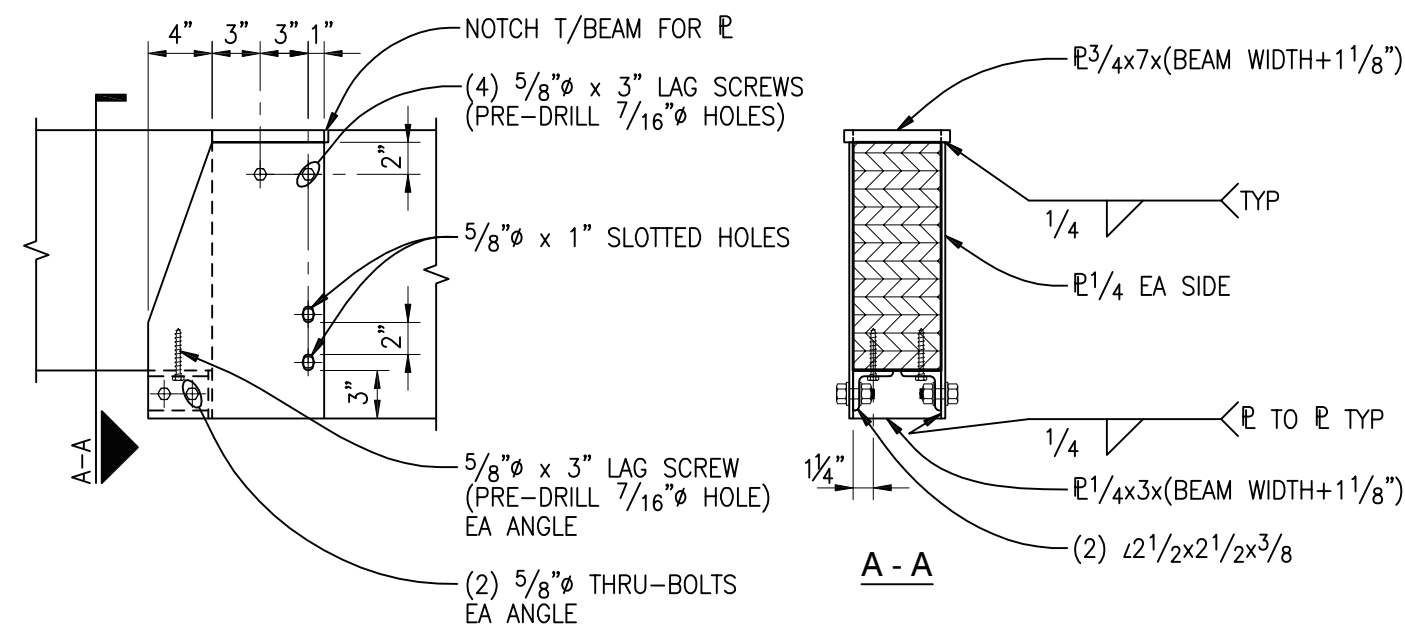
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STRUCTURAL FOUNDATION DETAILS
S4.1

STRUCTURAL UPGRADE

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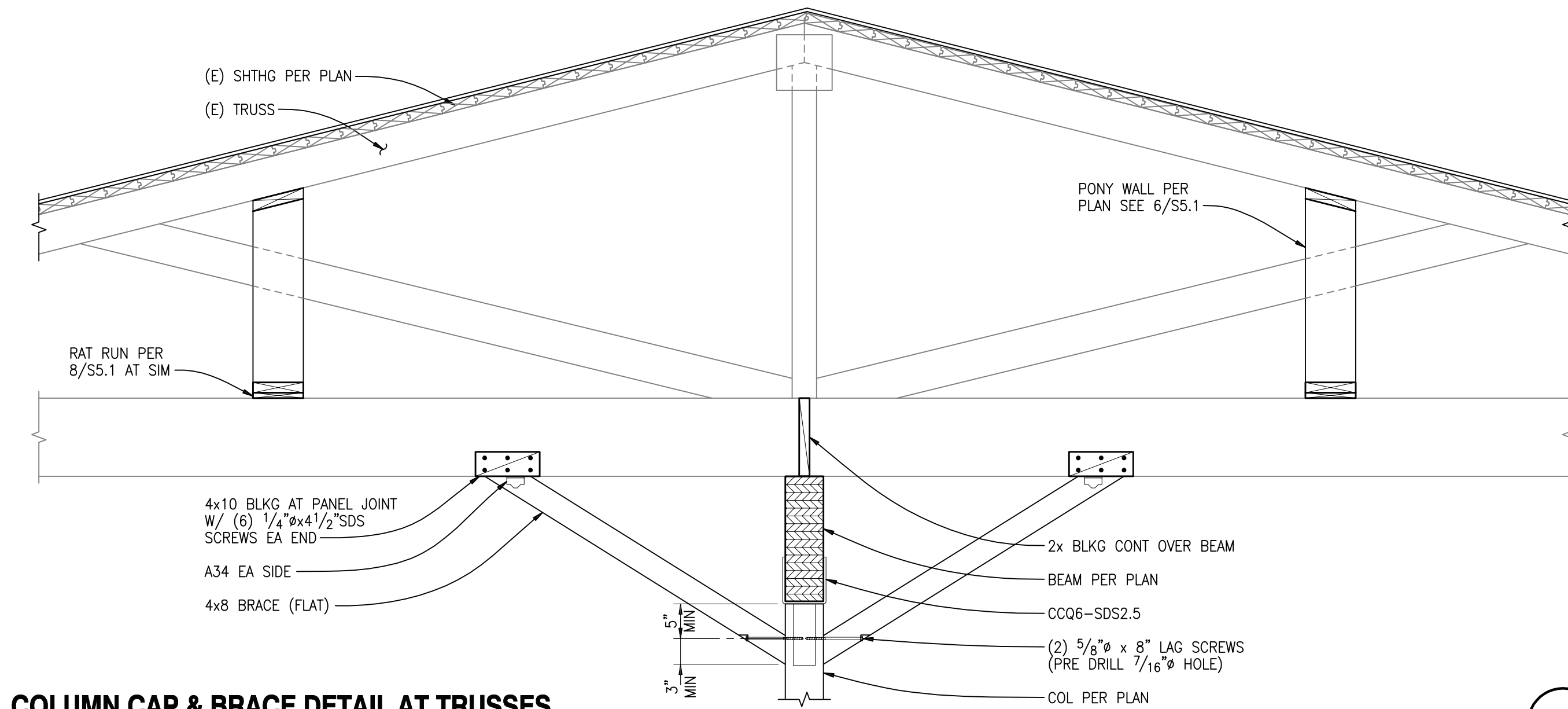


GLU-LAM SPLICE CONNECTION

SCALE: 1"=1'-0"

1

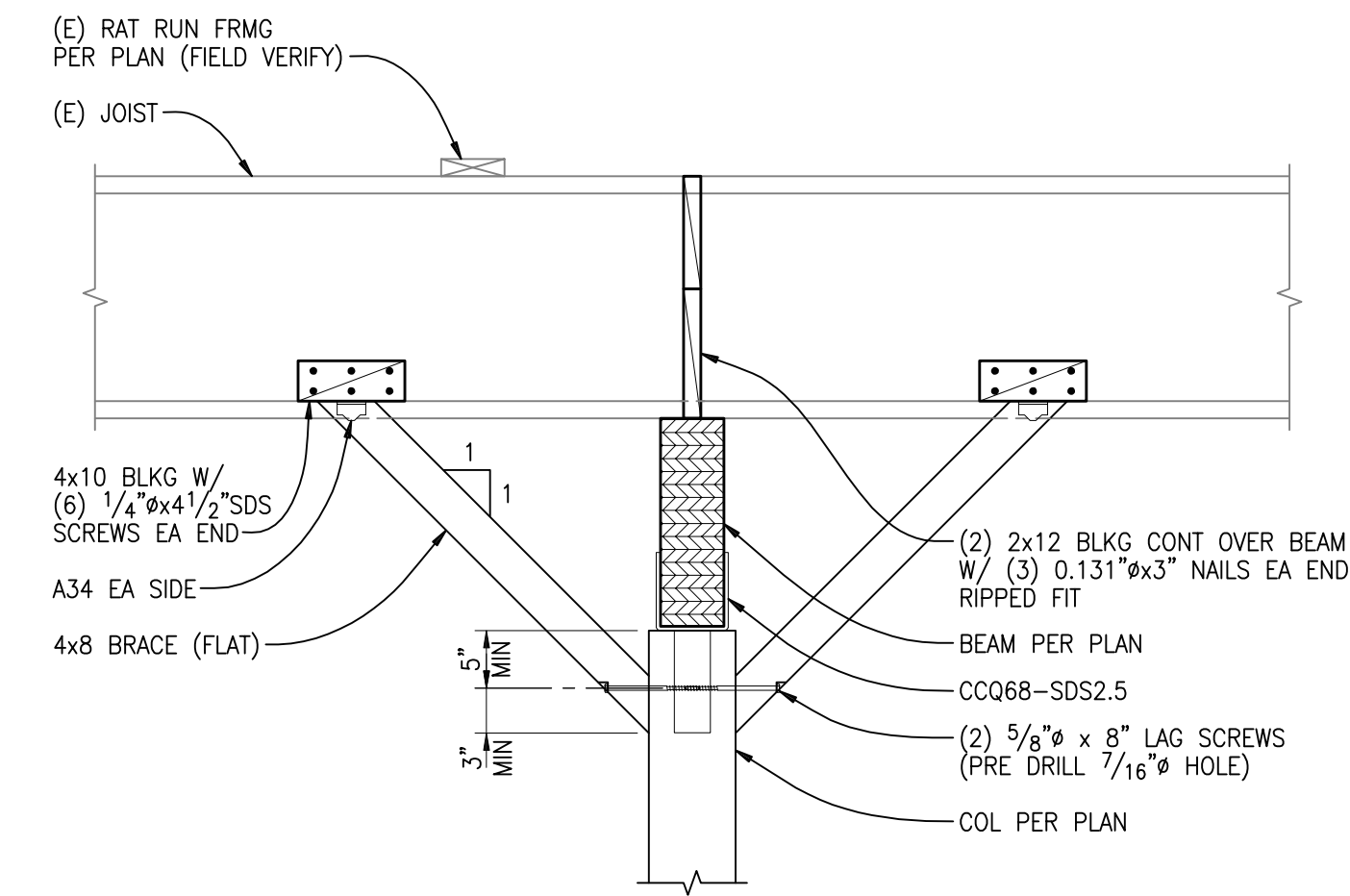
COLUMN CAP & BRACE DETAIL AT TRUSSES



SCALE: 3/4"=1'-0"

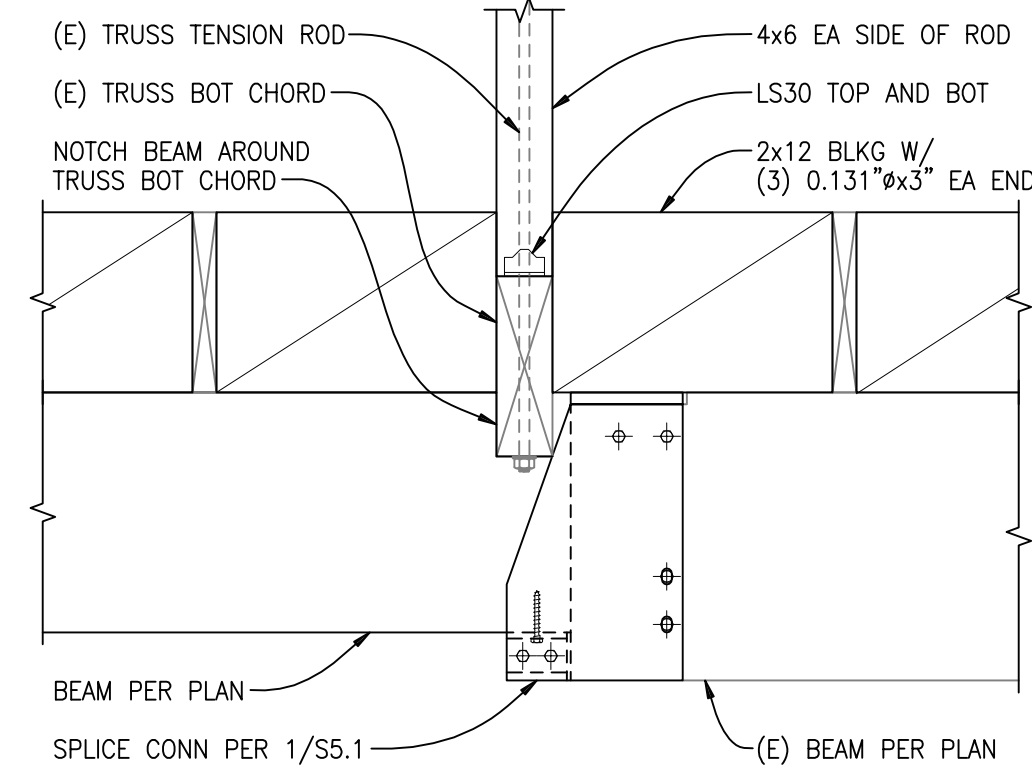
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COLUMN CAP & BRACE DETAIL AT JOISTS



SCALE: 3/4"=1'-0"

4

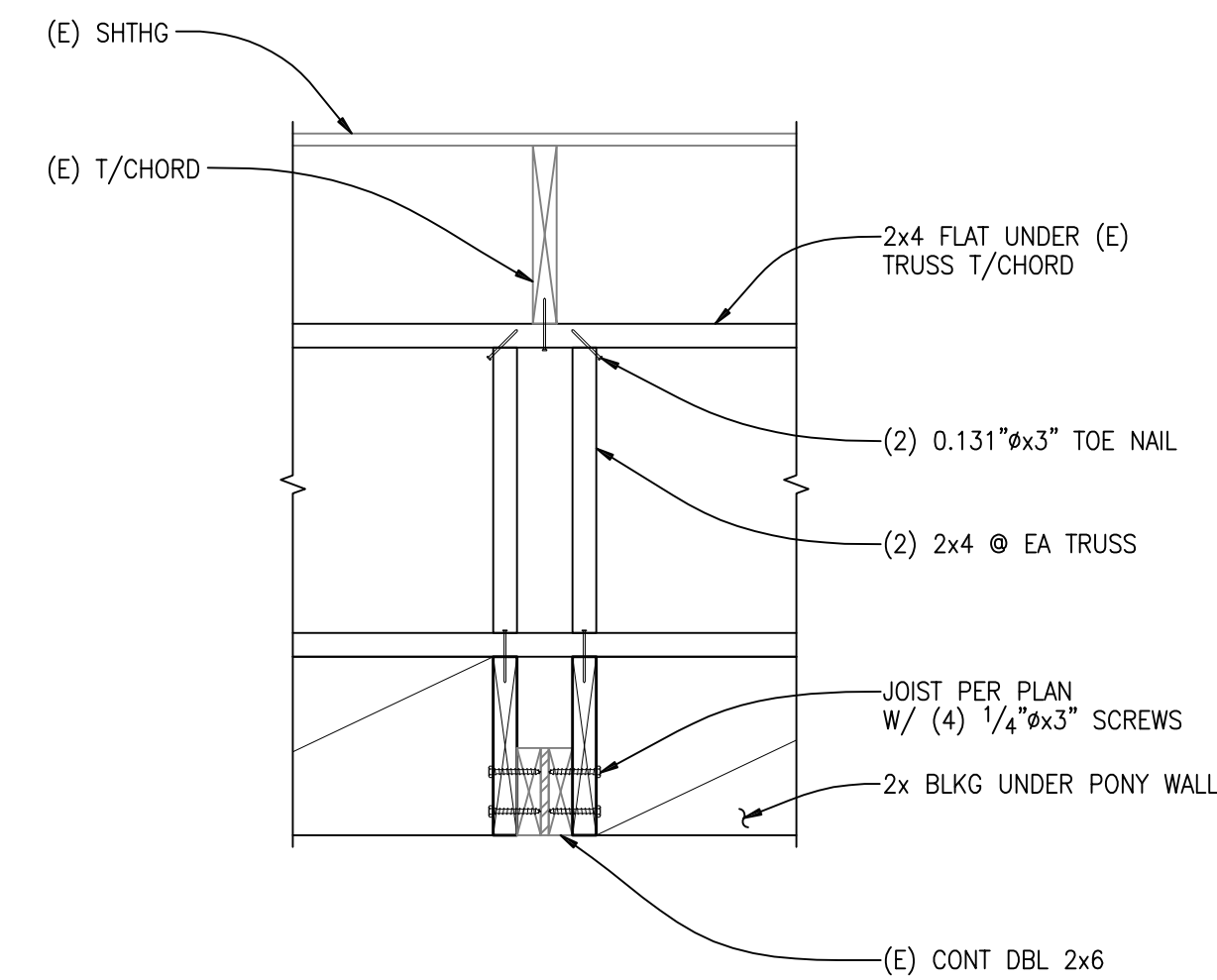


CONNECTION AT EXISTING TRUSS

SCALE: 1"=1'-0"

5

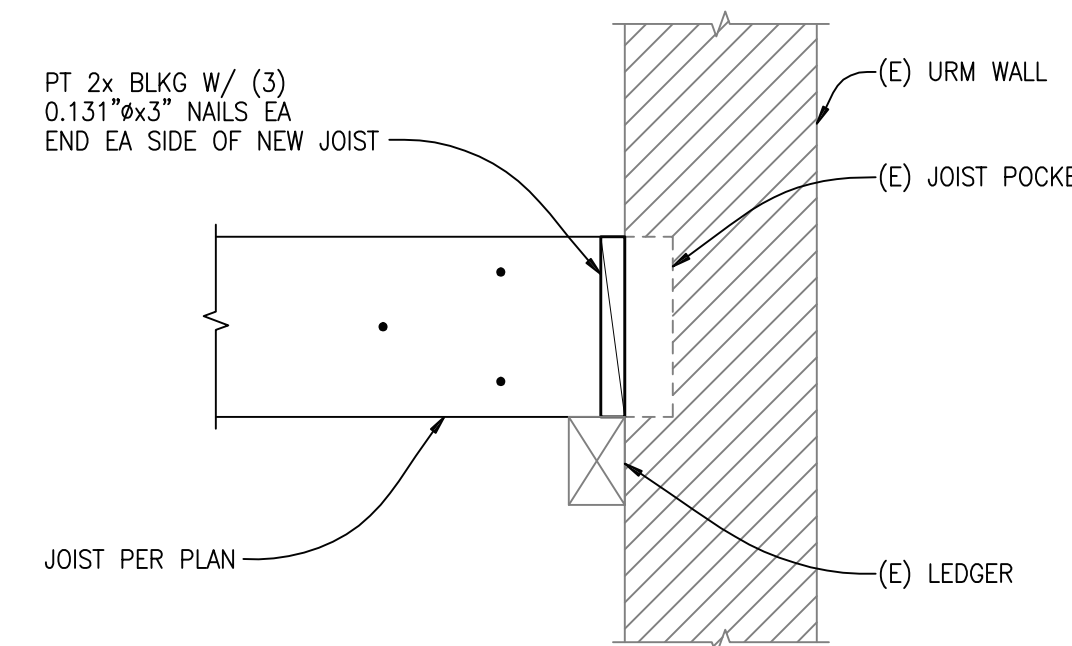
EXISTING TRUSS REINFORCEMENT



SCALE: 1"=1'-0"

6

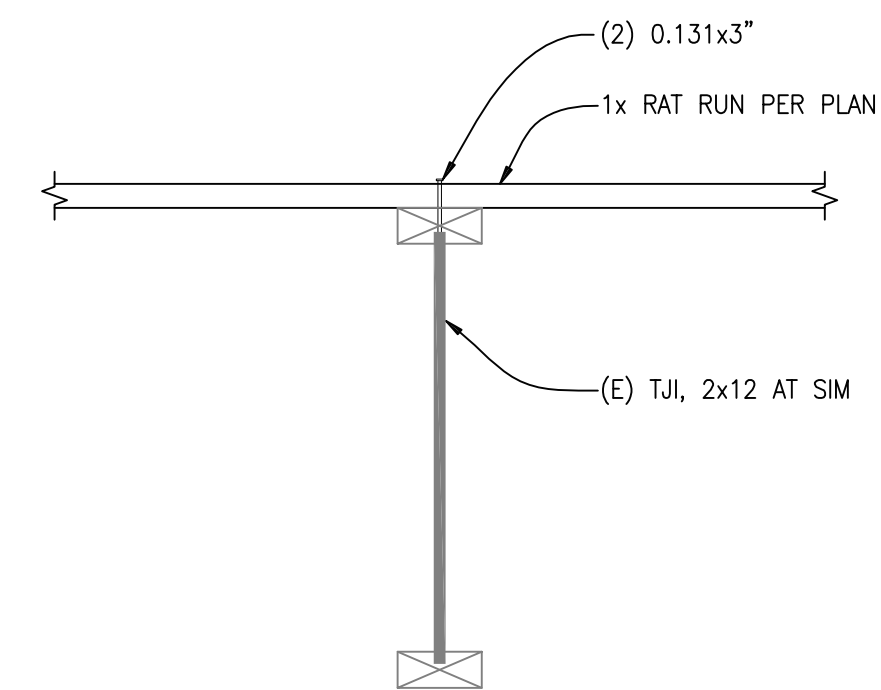
DETAIL



SCALE: 1"=1'-0"

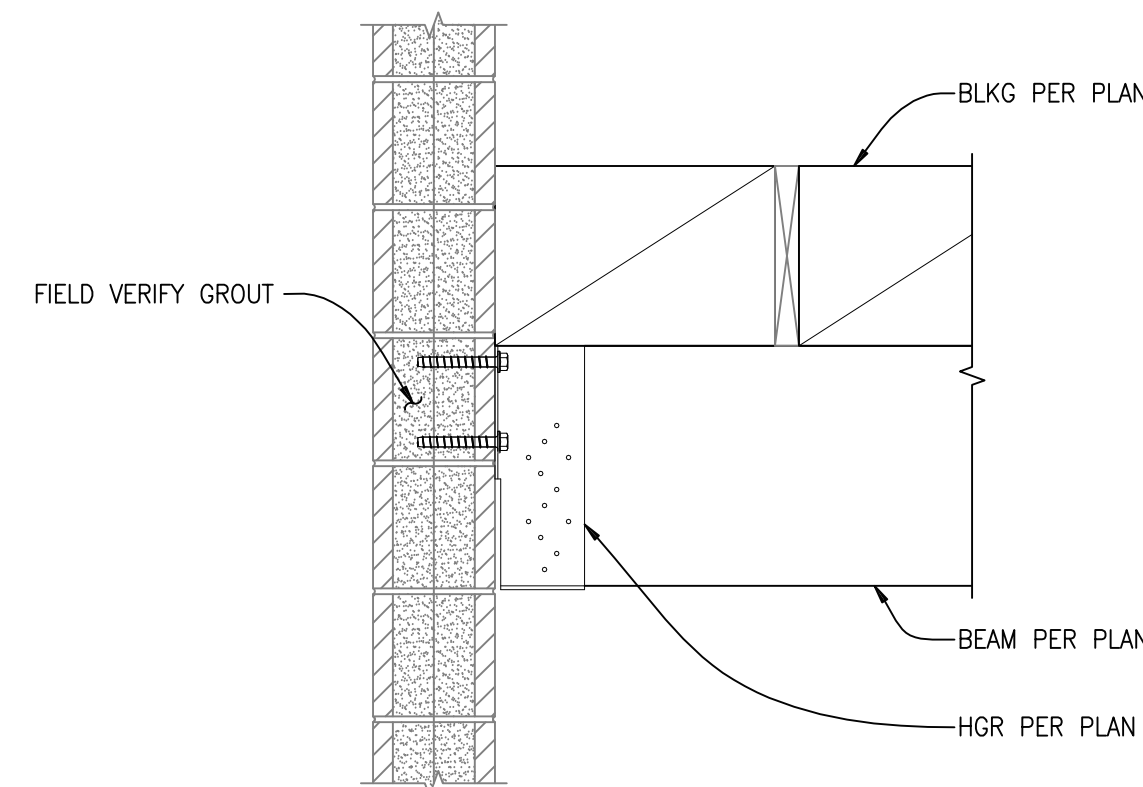
7

RAT RUN TO EXISTING TRUSS CONNECTION



SCALE: 1 1/2"=1'-0"

8



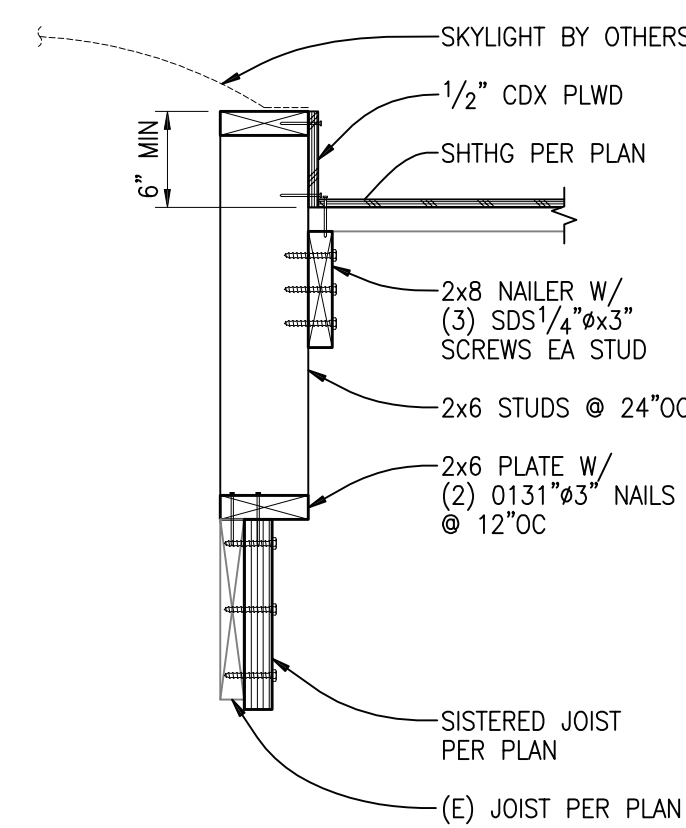
NOTE:
AVOID REINFORCEMENT.

BEAM TO EXISTING CMU WALL

SCALE: 1"=1'-0"

9

SKYLIGHT WELL FRAMING DETAIL

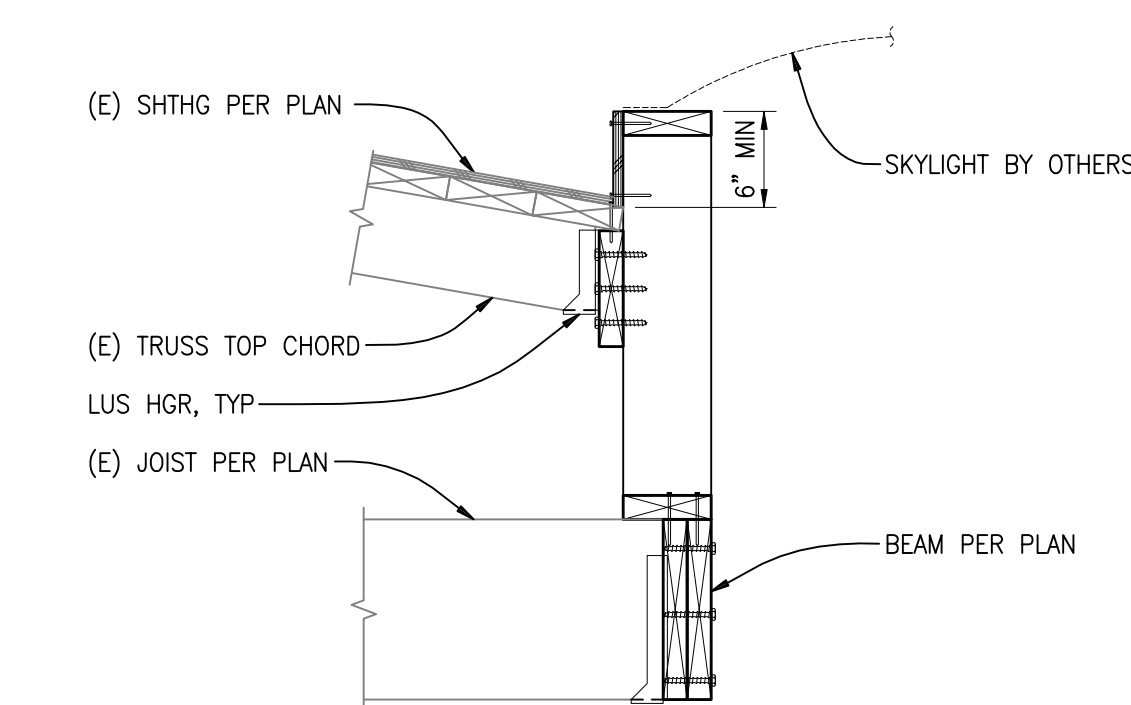


SCALE: 1"=1'-0"

10

SKYLIGHT WELL FRAMING DETAIL

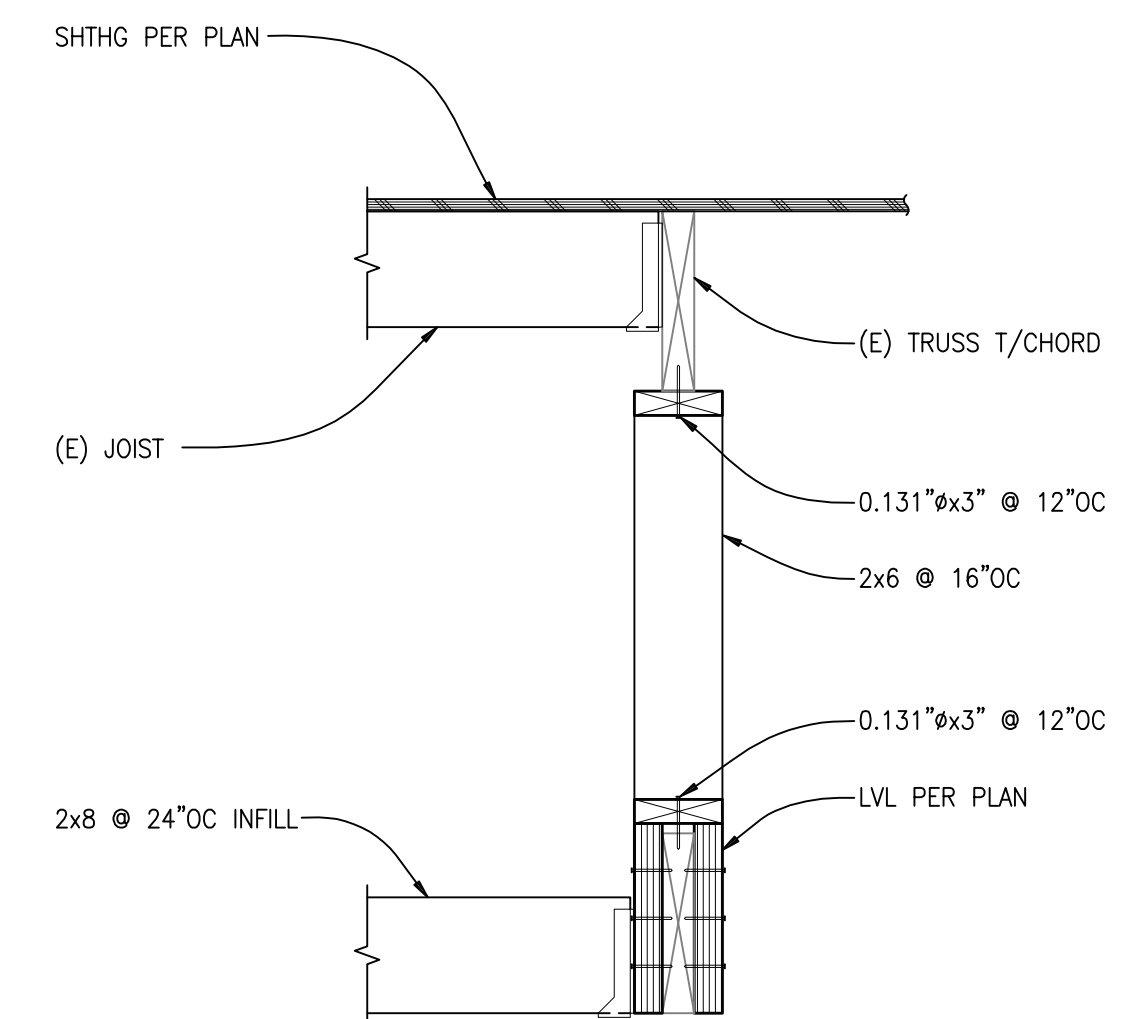
NOTE:
INFORMATION NOT NOTED PER 10/SS.1



SCALE: 1"=1'-0"

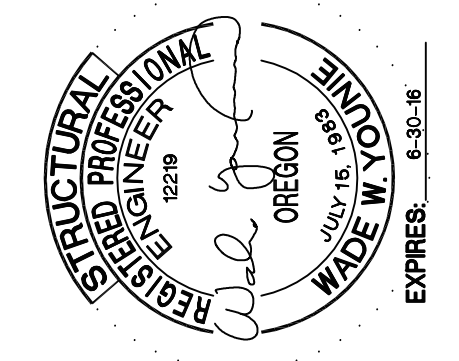
11

EXISTING SKYLIGHT INFILL



SCALE: 1"=1'-0"

12



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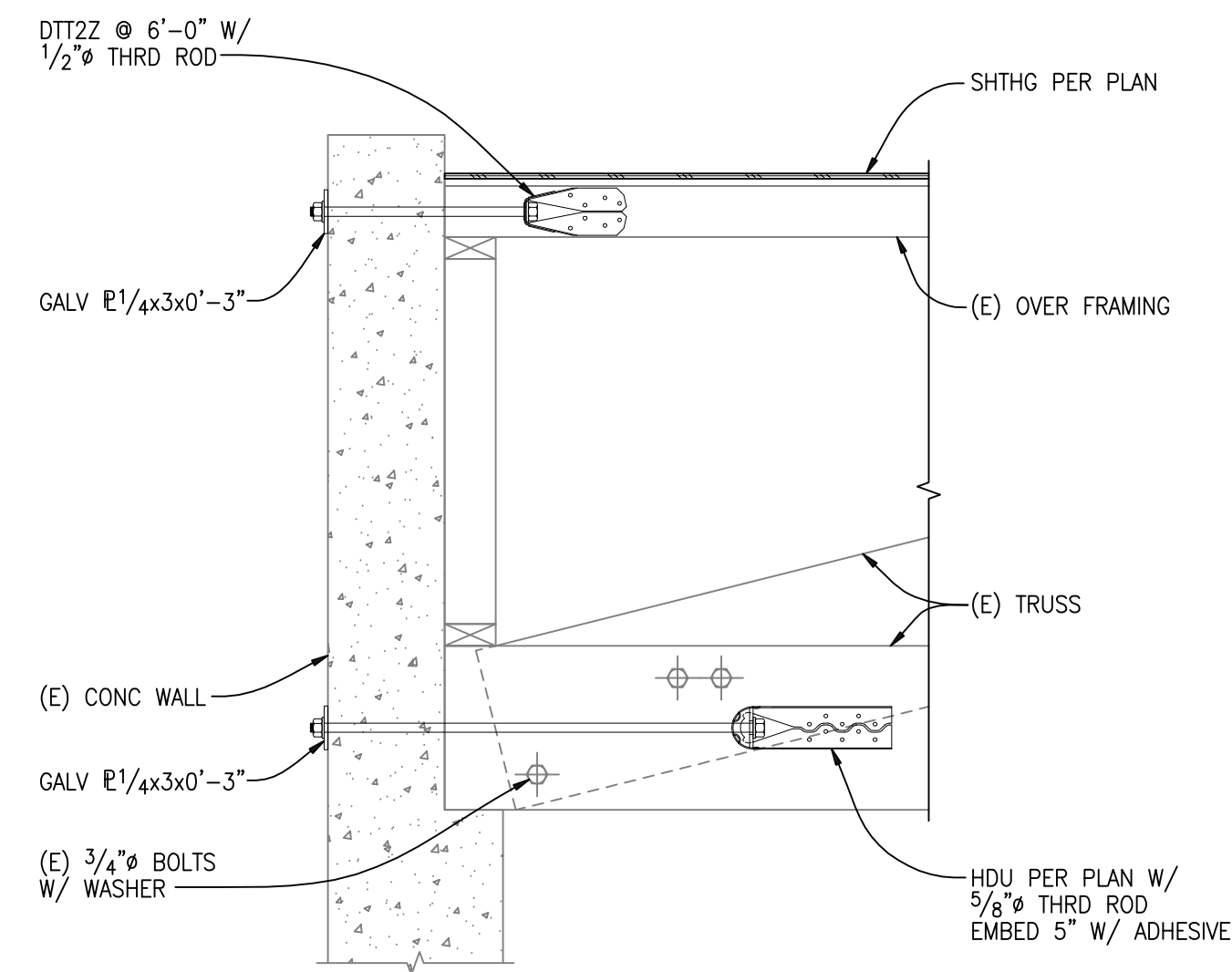
942 OLIVE STREET
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OWNER: UNIVERSITY OF OREGON
CAMPUS PLANNING, DESIGN & CONSTRUCTION
CONTACT: MARTINA OXOBY 541.346.5880

PROJECT NO.
15-0309
DCI PROJECT NO. ISSUE DATE
15031-0045 08.17.2015
REVISIONS

SHEET **STRUCTURAL FRAMING DETAILS**

S5.1
STRUCTURAL UPGRADE

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OUT OF PLANE TIE

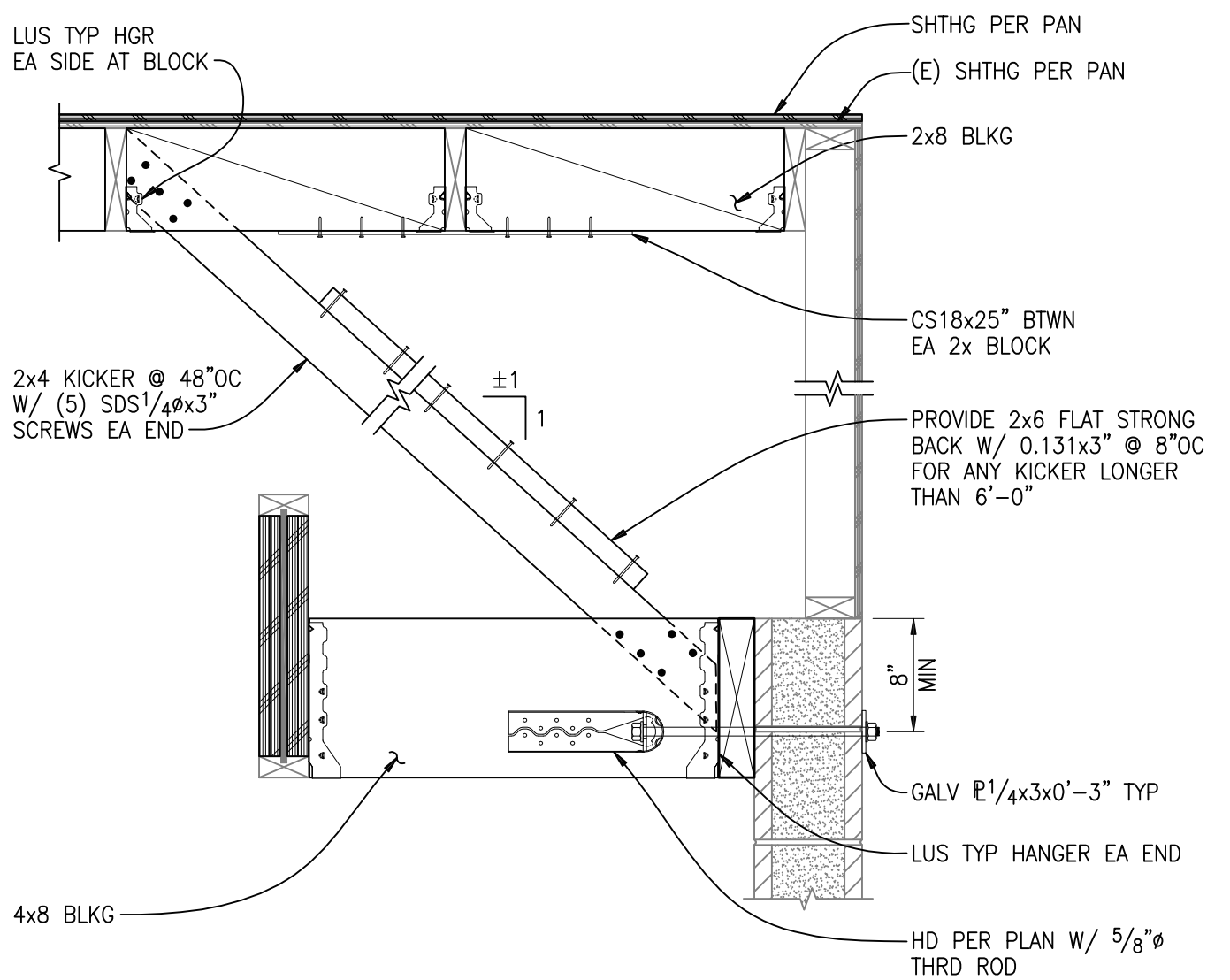
SCALE: 1"=1'-0"

1

OUT OF PLANE TIES PARALLEL TO EXISTING ROOF TRUSSES

SCALE: 1"=1'-0"

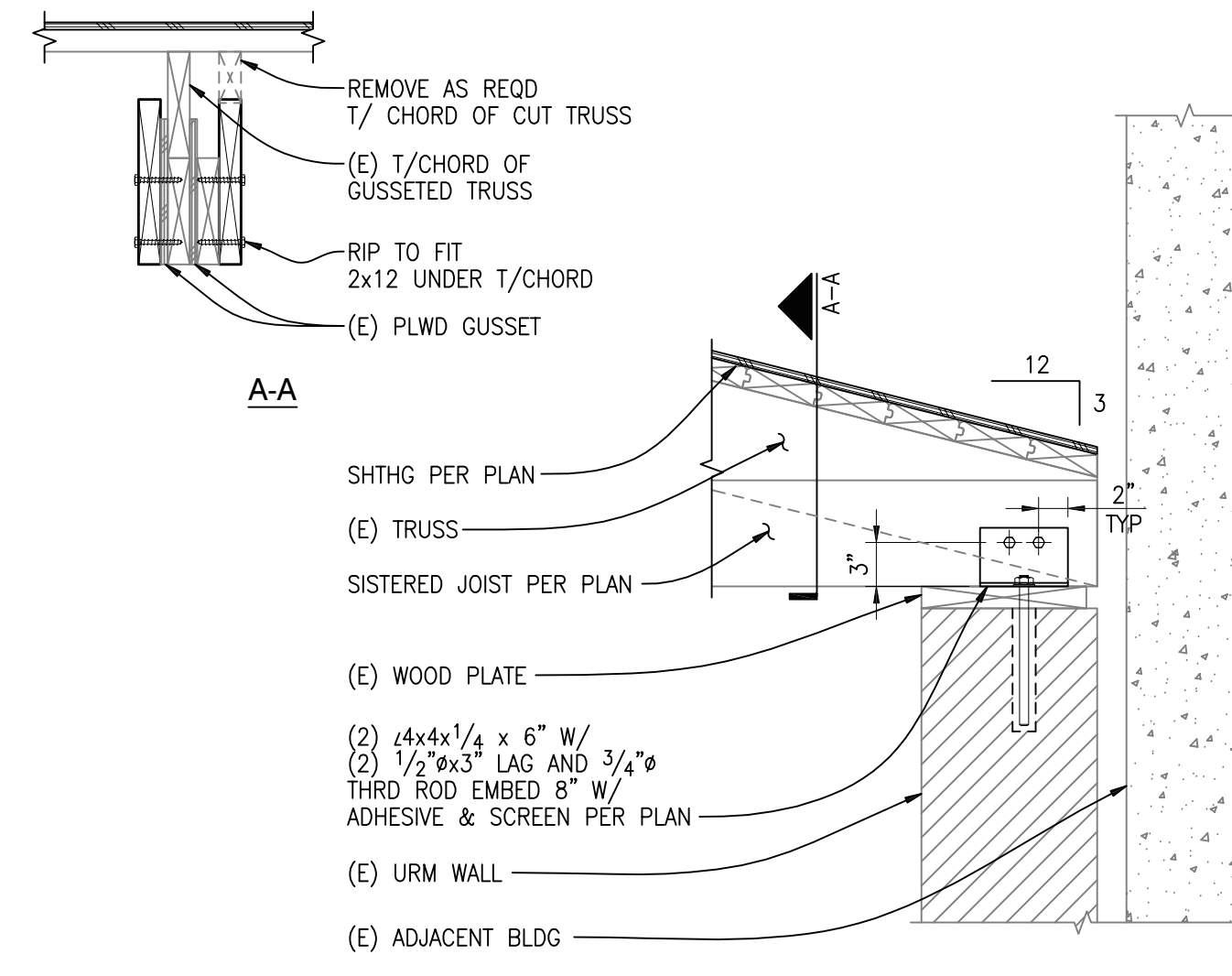
2



OUT OF PLANE TIES AT MASONRY WALL

SCALE: 1"=1'-0"

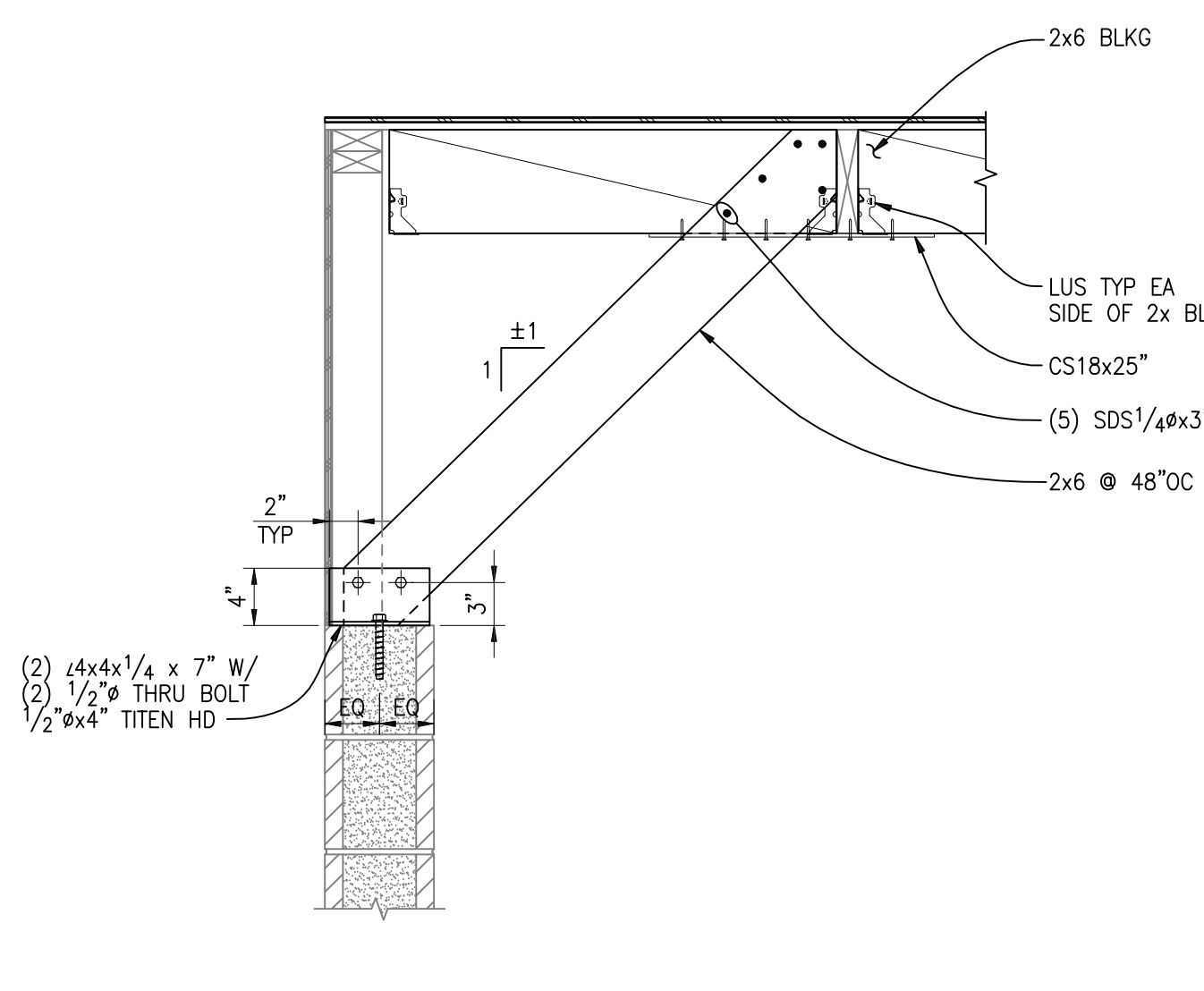
6



OUT OF PLANE ANCHORAGE AT TRUSS & URM

SCALE: 1"=1'-0"

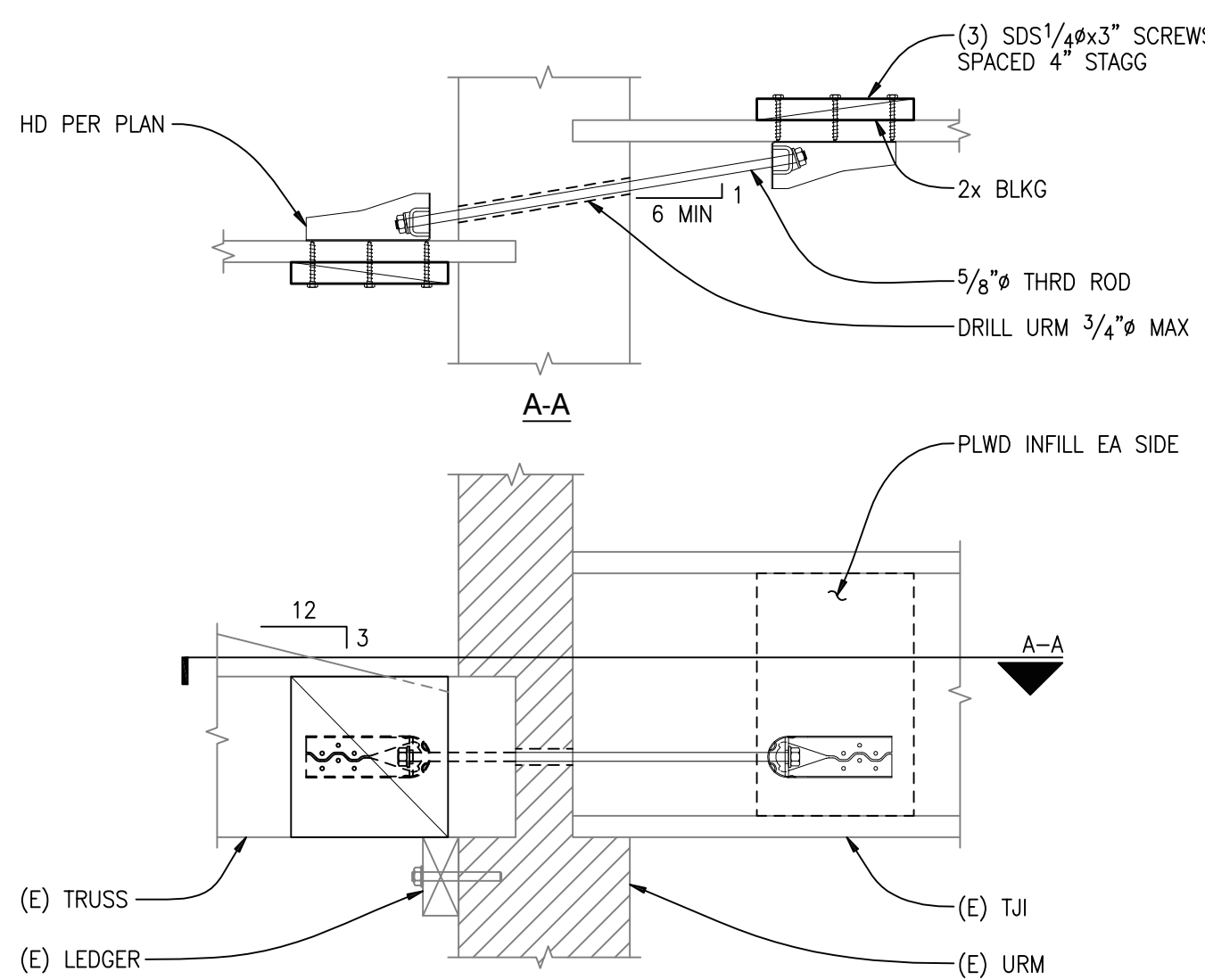
3



OUT OF PLANE TIES AT TJI

SCALE: 1"=1'-0"

4



HOLD DOWN AT URM WALL

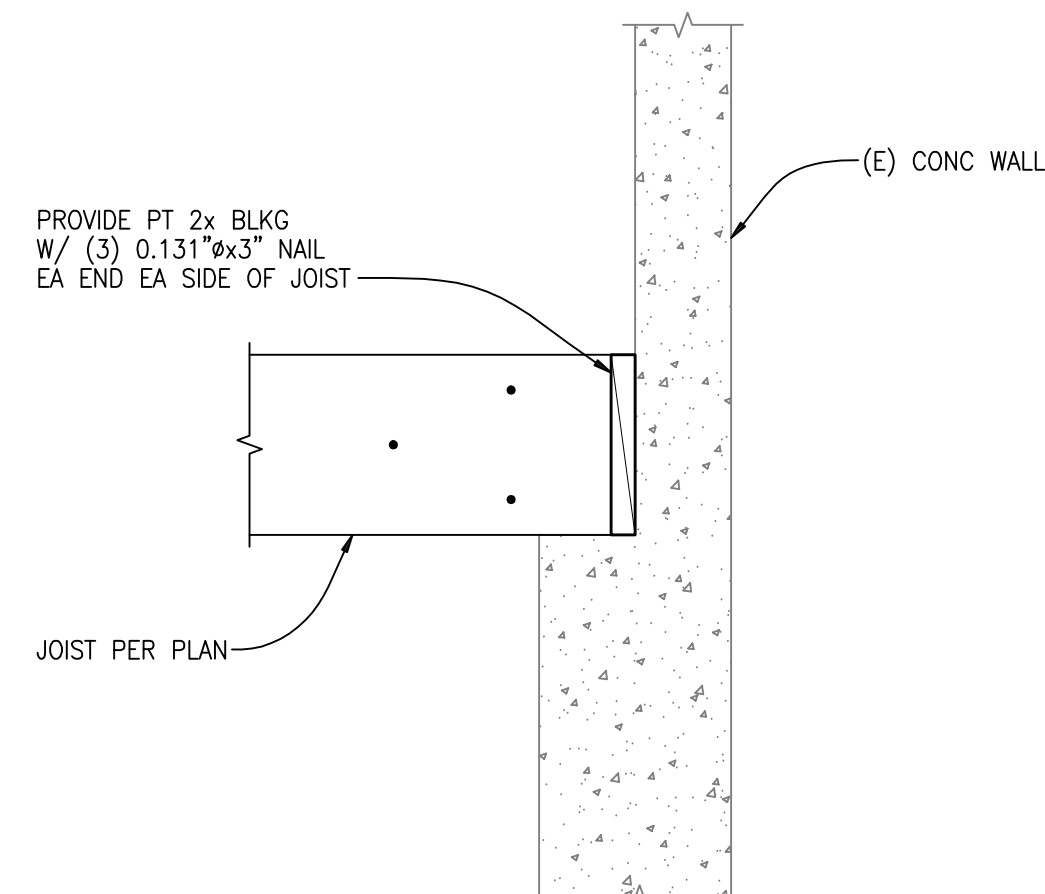
SCALE: 1"=1'-0"

9

DETAIL

SCALE: 1"=1'-0"

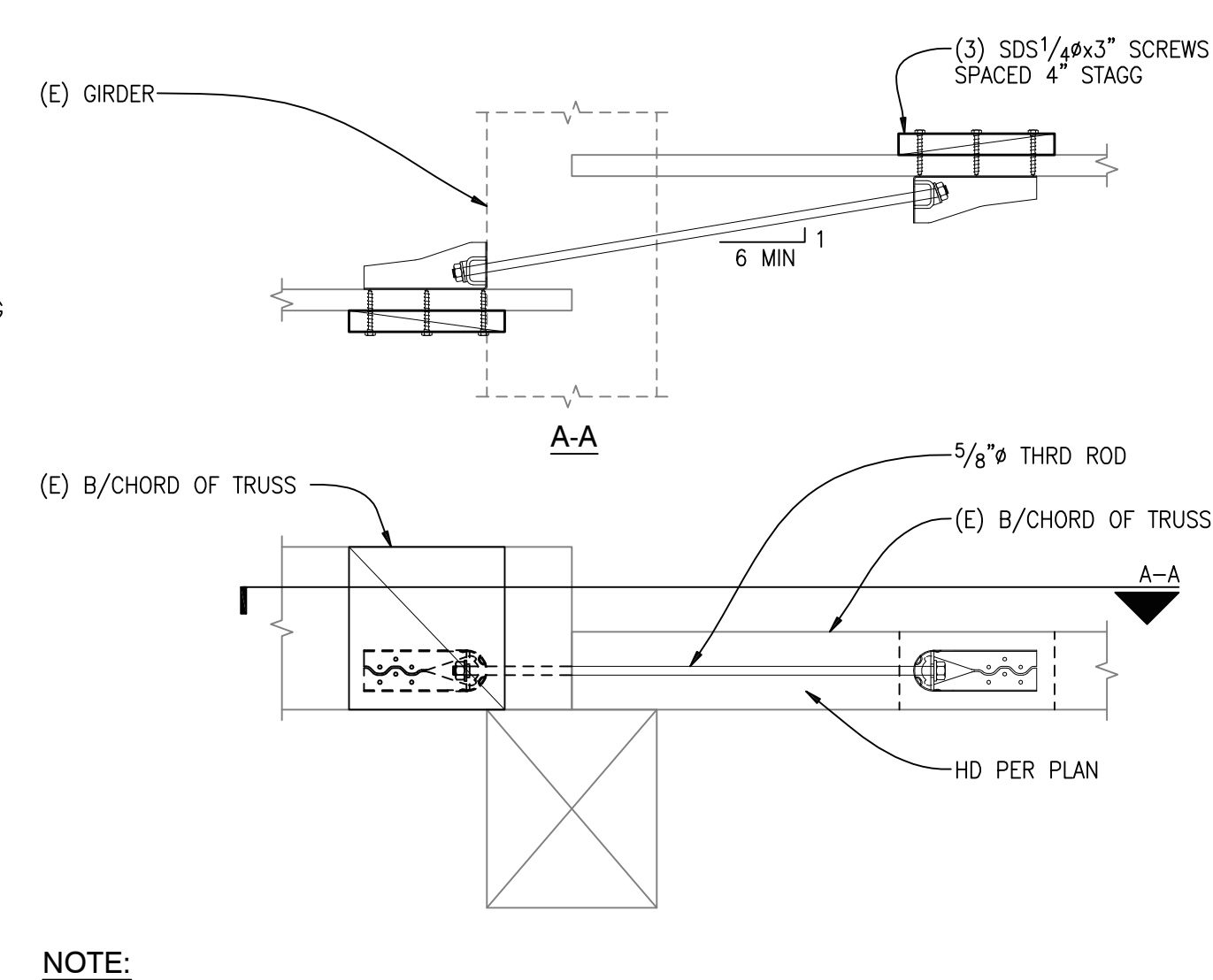
10



KICKER AT MASONRY WALL

SCALE: 1"=1'-0"

7



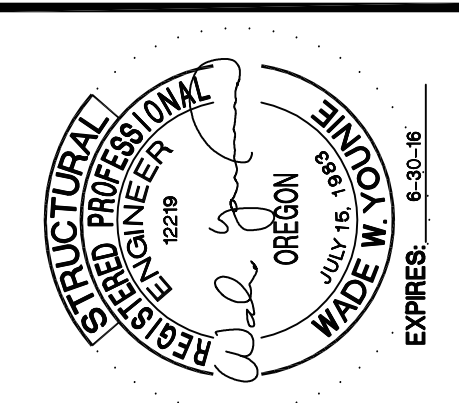
NOTE:

T/SHORD & SHTHG NOT SHOWN FOR CLARITY

HOLD DOWN AT GIRDER

SCALE: 1"=1'-0"

8



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SHEET
STRUCTURAL FRAMING DETAILS

S5.2
 STRUCTURAL UPGRADE

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