

BUILDING CODE SUMMARY

STRUCTURAL DESIGN

DESIGN LOADS:

Importance Factors: Wind (I_w) 1
Snow (I_s) 1
Seismic (I_E) 1

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 50 psf work space
Floor 100 psf lobby and attic

Ground Snow Load: 20 psf

Wind Load: Basic Wind Speed 90 mph (ASCE-7)
Exposure Category B
Wind Base Shears (for MWFRS) V_x = 42 K V_y = 20 K

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☒ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☒ II ☐ III ☐ IV
Spectral Response Acceleration S_s %g S₂ %g
Site Classification (Table 1613.5.2) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data

Basic structural system (check one)
☒ Bearing Wall ☐ Dual w/ Special Moment Frame
☒ Building Frame ☐ Dual w/ Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum

Seismic base shear: V_x = 19 V_y = 19
Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☒ No

LATERAL DESIGN CONTROL: ☐ Earthquake ☒ Wind

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) psf
Presumptive Bearing capacity 2,500 psf
Pile size, type, and capacity N/A psf

SPECIAL INSPECTIONS REQUIRED: ☐ Yes ☒ No

DRAWING INDEX

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S1.2 ATTIC FRAMING PLAN
S1.3 ROOF FRAMING PLAN
S2.0 FOUNDATION DETAILS
S3.0 FRAMING DETAILS
S3.1 ATTIC FRAMING DETAILS

STRUCTURAL NOTES

1. SOIL BEARING TO BE 2,500 PSF.
2. THE 28-DAY COMPRESSIVE STRENGTH IS 3,000 PSI FOR ALL FOOTINGS AND SLABS.
3. ALL REINFORCING STEEL TO BE ASTM A615 GRADE 60; LAP 24 BAR MINIMUM UNLESS NOTED OTHERWISE.
4. REFERENCED FINISHED FLOOR ELEVATION: 710.0' UNLESS NOTED OTHERWISE
5. THE FIRST FLOOR AND ATTIC FLOOR IS A STRUCTURAL DIAPHRAGM AND PART OF THE LATERAL FORCE RESISTING SYSTEM.
6. ALL WALLS TO BE BRACED UNTIL ALL SYSTEMS ARE IN PLACE.

GENERAL CONDITIONS & NOTES

A. General Conditions

- A1. The contractor is responsible for means and methods of construction to erect the structure indicated on the drawings.
A2. The structure is designed to act in whole as a completed unit. The contractor shall design and provide temporary bracing, shoring, and supports as required until all structural elements are installed.
A3. The contractor shall notify the engineer of any deviations to be made from the construction documents. Such notification shall be made in writing and clearly identified if included on shop drawings/product data submittals. The contractor shall not proceed with installation of alternate construction until receipt of written confirmation of the change from the engineer.
A4. The contractor is responsible for the design of concrete formwork and shoring.
A5. The contractor shall not impose loads on the structure during construction that exceeds the capacity of the structure. Design loads are indicated on the drawings.
A6. All structural openings for materials handling, conveying, mechanical, electrical, and/or plumbing equipment shall be verified with the actual equipment purchased before proceeding with the structural work.

B. Foundation and Earthwork

- B1. All footings shall be founded on solid undisturbed soil or on field controlled, compacted fill. Footings bearing surfaces shall be mechanically tamped and consolidated. A soil bearing pressure of 2,500 psf was used to design footings.
B2. If footing subgrade soils are wet, disturbed, unstable, or unsuitable material the engineer shall be notified. Foundation excavations shall be cleared of all debris, trash, and loose material prior to pouring concrete.
B3. Steps in wall footings shall not exceed a slope of one (1) vertical to two (2) horizontal unless specifically noted otherwise on the drawings.

C. Concrete Work

- C1. Concrete work shall comply with provisions of ACI 301 and ACI 318. Concrete construction tolerances shall be as set forth in ACI 117. Provisions of ACI 305 and/or ACI 306 shall apply as weather conditions warrant. Formwork shall be in compliance with provisions of ACI 347.
C2. Unless otherwise shown on drawings, minimum cover for reinforcing steel shall be as follows:
Concrete cast against earth 3"
Walls and piers (over vertical reinforcing) 2"
C3. All reinforcing shall be held securely in position with standard accessories during concrete placement in conformance with the provisions of the CRSI manual of Standard Practice and ACI 315. Reinforcing steel shall be clean of dirt, mud, hardened cementations materials, rust, grease or oil, or other matter which may prevent proper bond and development.
C4. Unless otherwise noted, splices in reinforcing where permitted shall be as follows:
Deformed reinforcing bars 24 bar diameters
Welded wire fabric 6 inch overlap
C5. All hooks in reinforcing bars shall be ACI standard hooks unless otherwise shown or noted on the drawings.
C6. Ready mixed concrete shall conform to ASTM C94 and ACI 304. Concrete shall be placed as near as practicable to its final location. Concrete shall not be allowed to fall freely for a height of more than 4 feet. Concrete shall be consolidated to prevent voids and honeycombs. Concrete vibrators shall not be used to move concrete to its final location.
C7. Concrete shall be placed continuously to prevent cold joints in the work. Should a disruption occur during placement the work shall be stopped and a construction joint installed.
C8. Concrete shall be cured using wet curing or curing compounds for the durations stipulated in the ACI building code.

D Steel Work

- D1. Block to comply with ASTM C90 type II with a compressive strength of 1,500 psi.
D2. Bond beams, pilasters, retaining walls, shear walls and all other reinforced brick walls shall be poured with high slump, pea gravel, concrete grout mix with a compressive strength of 3,000 psi in 28 days.
D3. Cement-time mortar shall be type "S" with a minimum compressive strength of 1,800 psi in 28 days.

E Steel Work

- E1. Structural steel shall be primed with gray primer.
E2. All angles, bars, anchors, anchor bolts, etc. embedded in concrete that are exposed to weather or view shall be hot-dipped galvanized after fabrication
E3. All bolts shall be ¾ inch diameter, ASTM a325, unless otherwise
E4. High strength bolts not designated as slip critical (SC) may be installed snug tight as per AISC specifications for structural joints using ASTM 325 or A490 bolts, section SC
E5. Minimum size of all fillet welds shall conform to section J2.2b AISC specifications even though shown otherwise on architectural or structural drawings
E6. All welds along the length of members indicated on architectural or structural drawings but not sized shall be a minimum of 3/16" fillet, 2" at 12" c-c, both sides.
E7. All weld material and procedures shall conform to AWS D1.1 welds to primary members shall be made with E70xx electrodes.
E8. See architectural, mechanical, electrical, and plumbing drawings for openings, sleeves, etc. not shown on the structural drawings
E9. All metal stud for first floor wall shall be 18 gage 6" CSJ spaced at 16" o.c. with 18 ga. bottom and top track. See sections for attachment requirements at shear walls.

F Structural Wood

- F1. All wood construction shall be in accordance with State and Local Codes, Industry's standard of good workmanship, and the plans. Wood for general use, joist, headers, etc. shall conform to the National Design Specifications for Wood Construction (NDS) and be grade mark No. 2 K.D. Southern Yellow Pine, or better. Wood studs use shall conform to (NDS) and shall be grade marked #2 K.D. Spruce-Pine-Fir or better unless noted on plans.
F2. All wood plates, sills, beams, columns, etc. resting on concrete or masonry shall be pressure treated wood as per the AWPI Specifications and NC State Building Code.
F3. Roof sheathing shall be 5/8" CDX plywood. Attached to roof structure with 10d nails at 6" c/c at all supported edges & 12" c/c along intermediate support members in center of building. Attached to roof structure with 10d nails at 4" c/c at all supported edges & 4" c/c along intermediate support members within 8 feet of perimeter of building and building ridge. All edges shall be blocked within 4" of edge of building.
F4. All plywood shall be identified with a grade-trademark as per the latest APA Specifications. Panel thickness, grade, and group number, span index or identification index shall be equal to or better than the recommendations of the APA in the Plywood Construction Guide.
F5. Metal connectors shall be Simpson, model number shown on plans. Connectors shall be installed according to the manufacturer's specifications and recommendations and per the NC State Building Code.
F6. An Engineer registered in the state of North Carolina shall design roof trusses. Sealed design drawings shall be submitted for approval. Design of wood trusses, including bracing and all necessary framing for roof mounted equipment shall be provided by the truss manufacturer and shall conform to the following minimum loading:

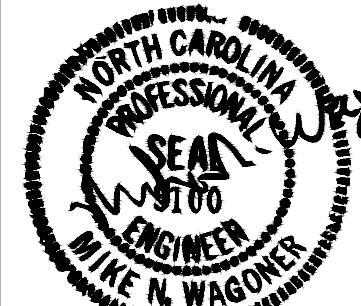
Roof:	
i. Live Load.....	20 psf
ii. Dead Load, top chord.....	10 psf
iii. Dead Load, bottom chord.....	10 psf
iv. Total Truss Loading.....	40 psf

F7. Limit roof truss live load deflection to L/360.
F8. Provide all temporary and permanent truss bracing as per truss manufacturer's requirements.
F9. Provide all temporary and permanent truss bracing as per truss manufacturer's requirements
F10. Limit roof truss live load deflection to L/360.
F11. Trusses to be designed to resist a net uplift of 15 psf.

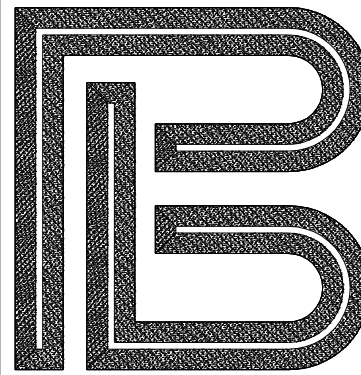
G Cold Formed Metal

- G1. All studs and accessories shall conform to the type, size, gauge and spacing shown on the drawings and shall be manufactured by Marino-Ware or approved equal. Structural studs and joists shall conform to the Marino-Ware SW series with 1 5/8" widths
G2. All structural members shall be designed and fabricated in accordance with the American Iron and Steel Institute (AISI) "Specifications for the Design of Cold-Formed Steel Structural Members".
G3. All structural members shall be formed from corrosion-resistant steel corresponding to the requirements of ASTM A446, with a minimum yield of 33 ksi (50 ksi for 18 ga. Material and thicker) and shall have a zinc coating meeting ASTM A525 requirements.

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3 / 04 / 16



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New Dental Offices for
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Mk Date Description

Revisions

GENERAL
INFORMATION

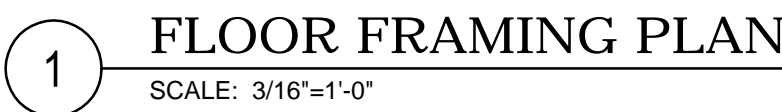
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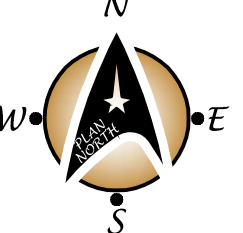
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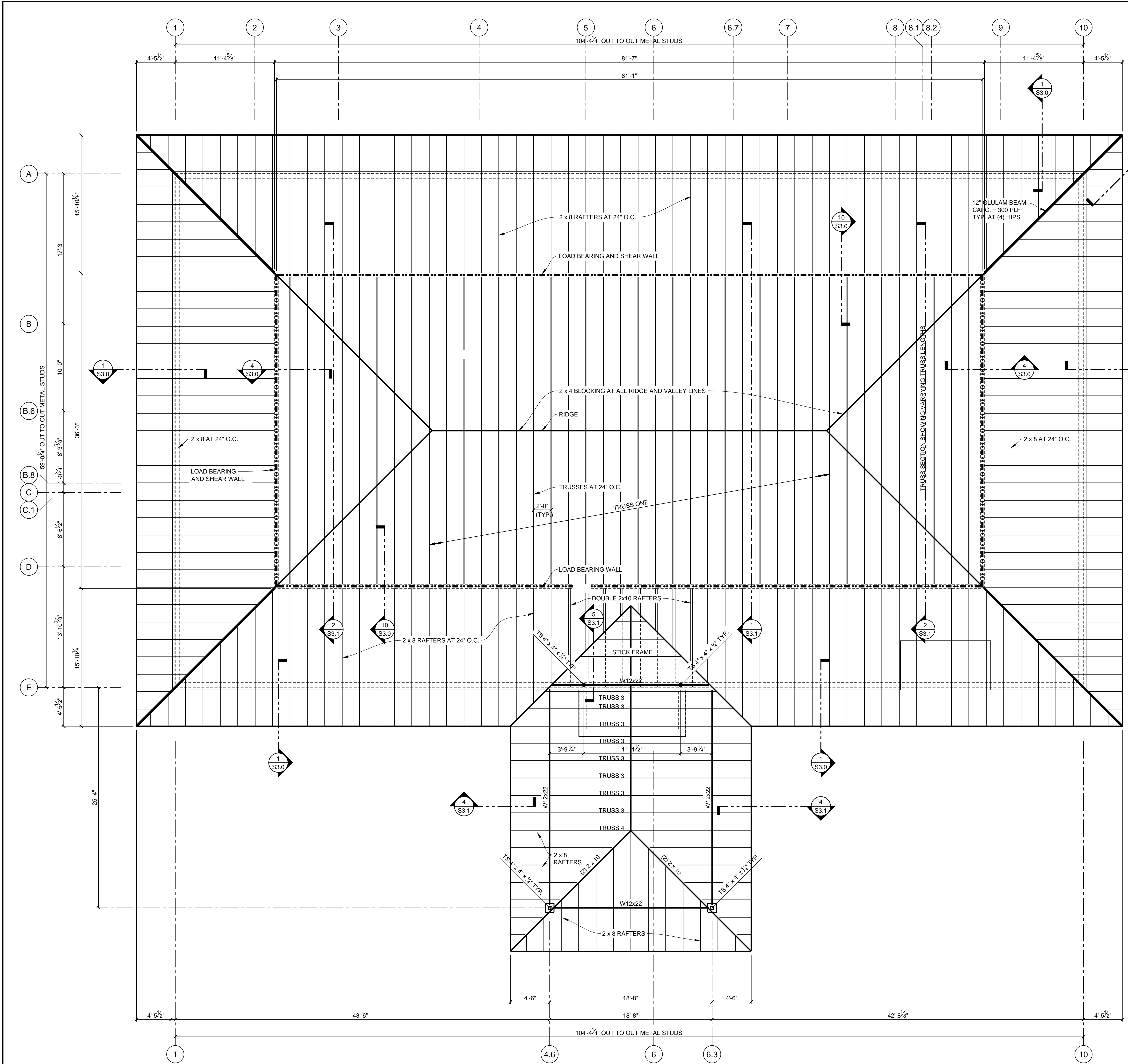
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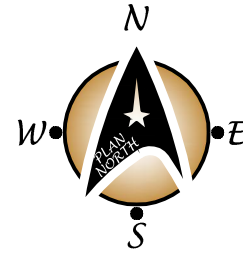




ROOF CONSTRUCTION

1) -

1 ROOF FRAMING PLAN
SCALE: 3/16"=1'-0"



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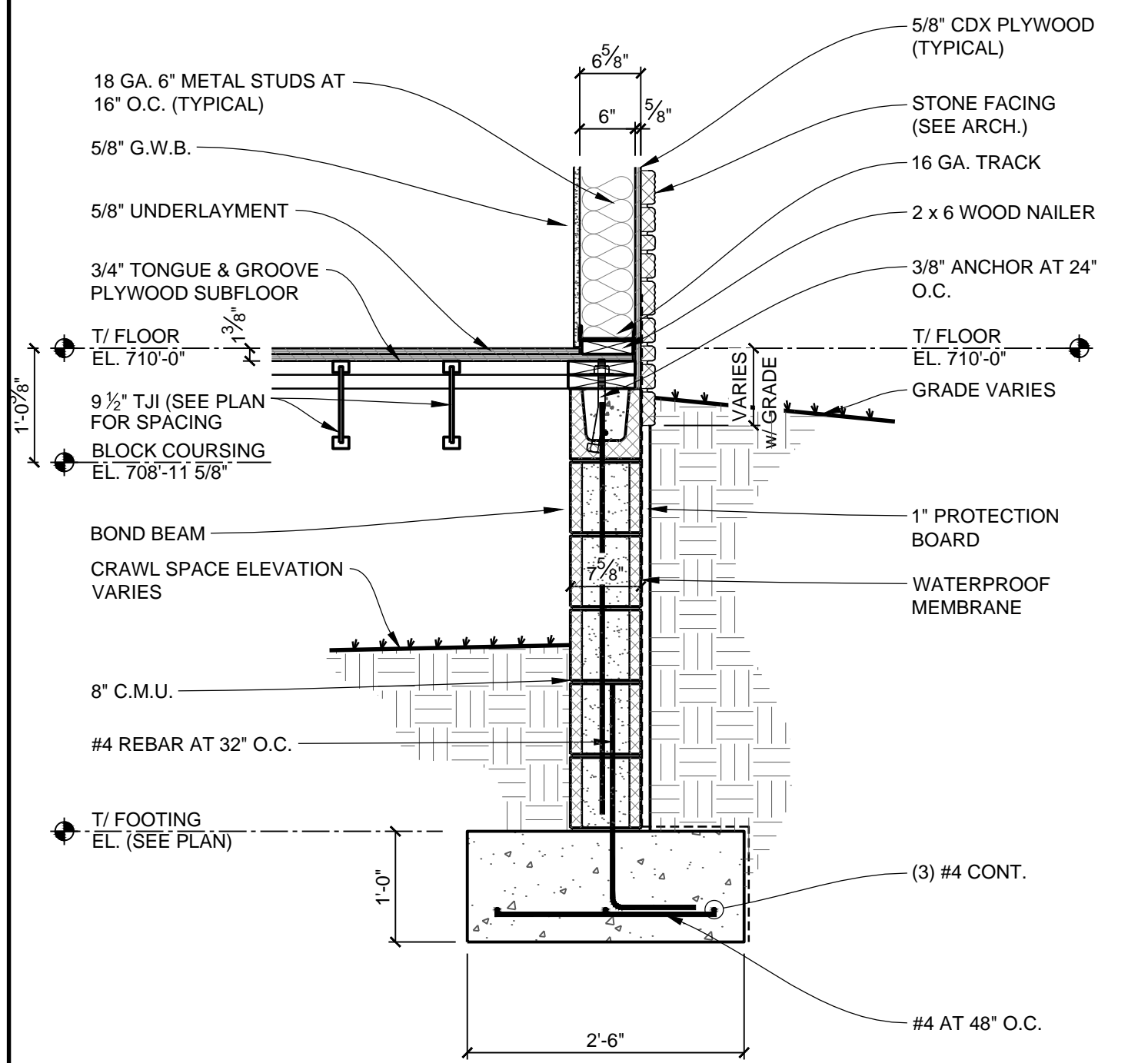
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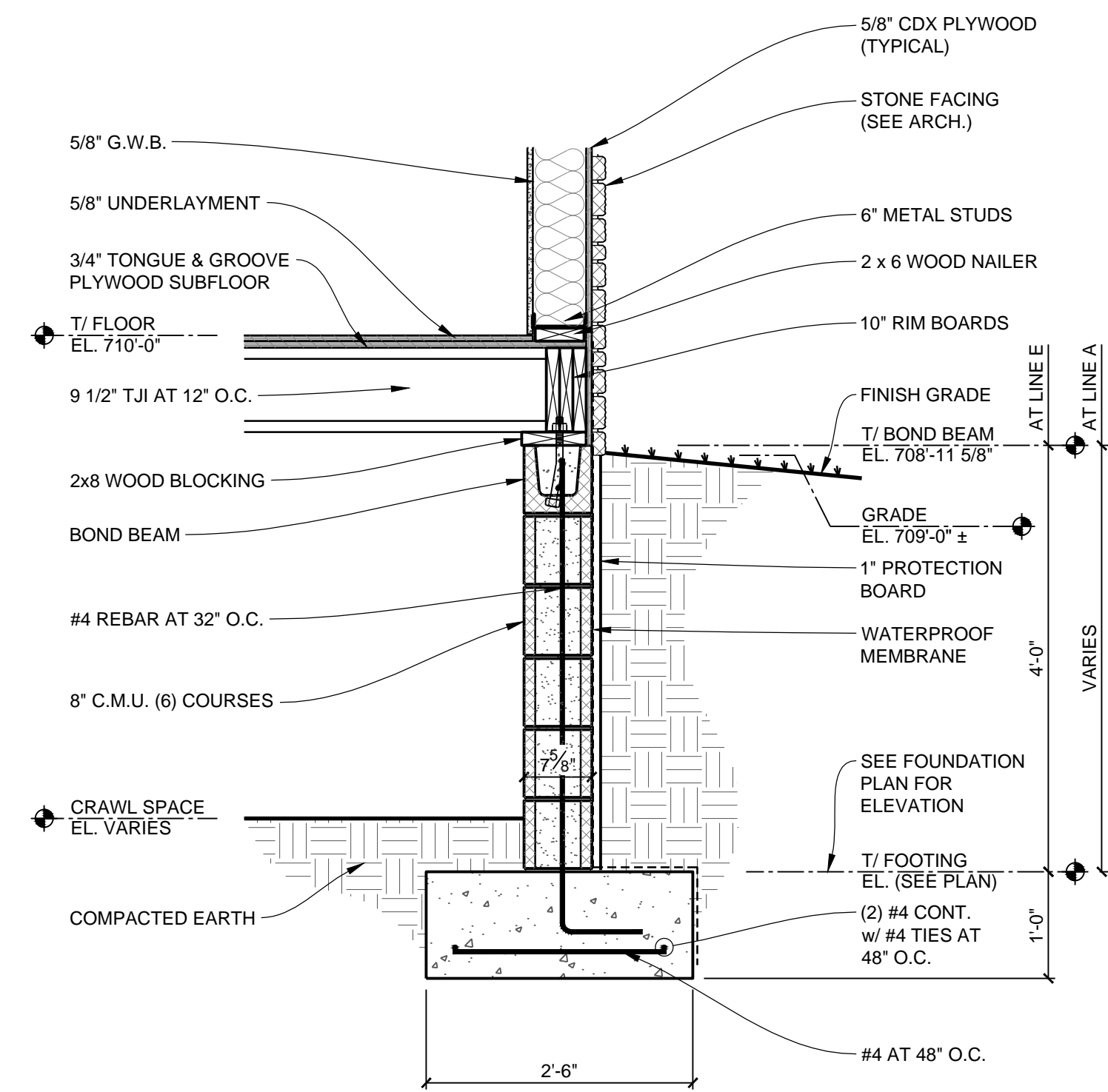
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Revisions		

ROOF FRAMING PLAN

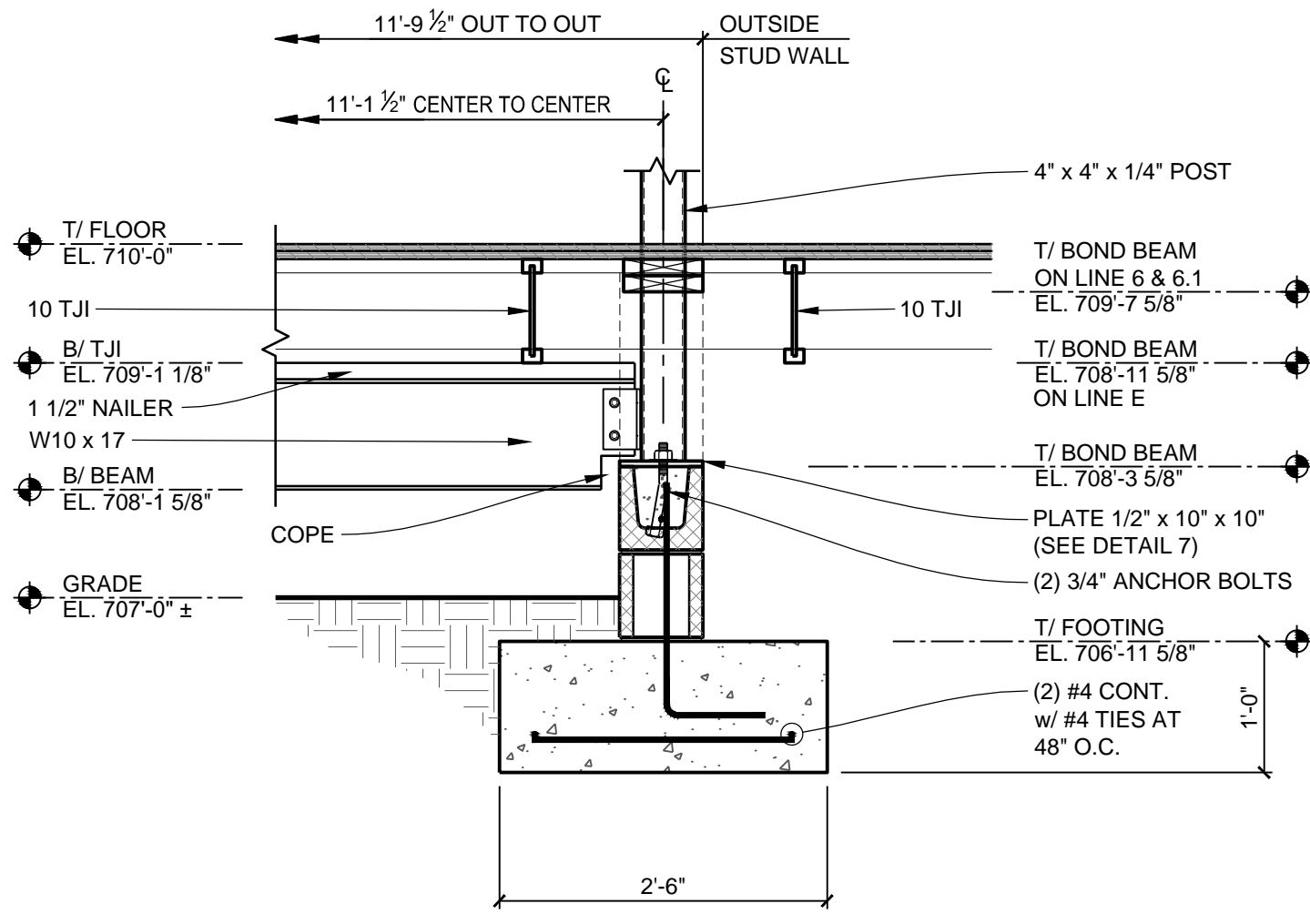
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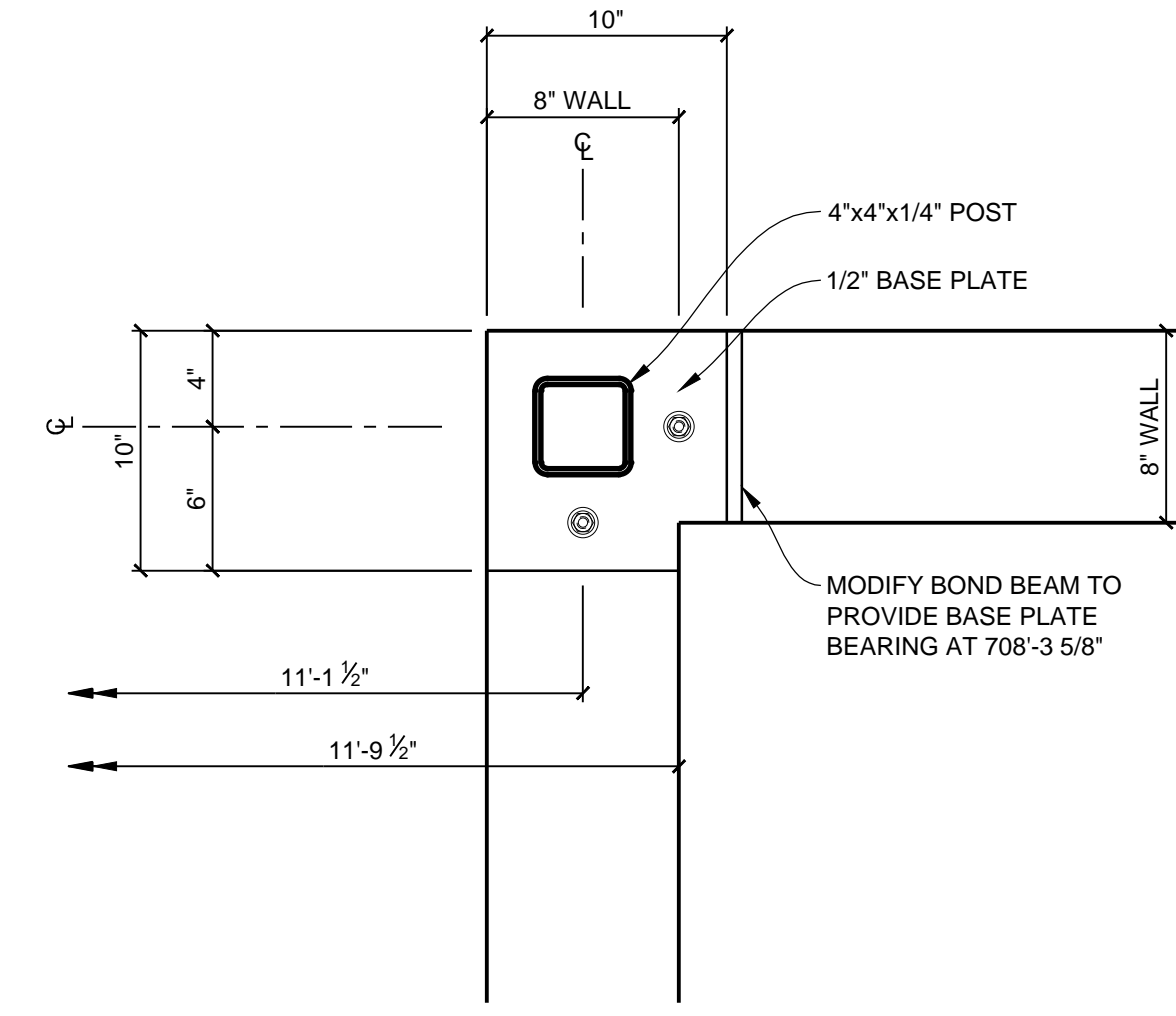
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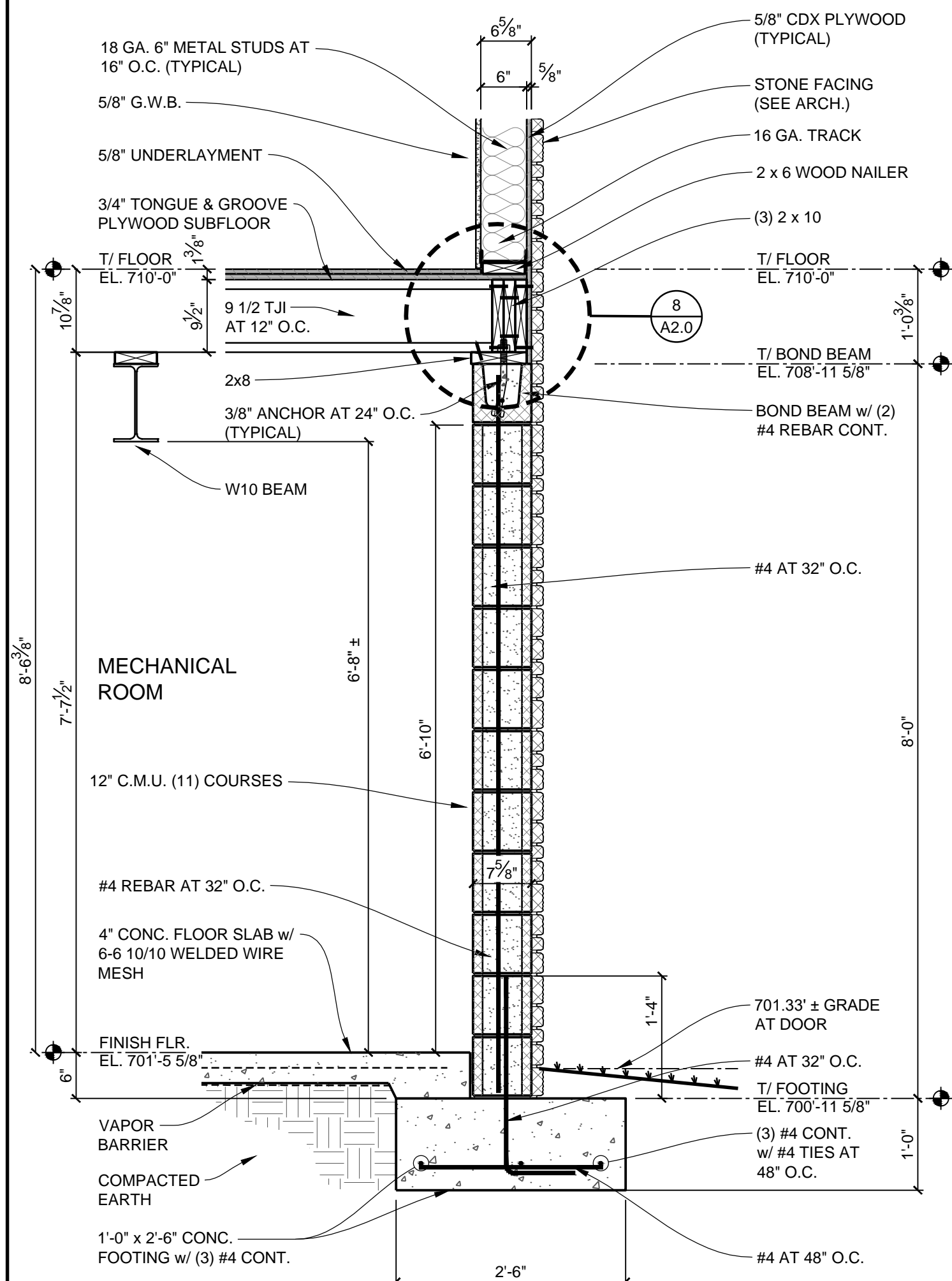
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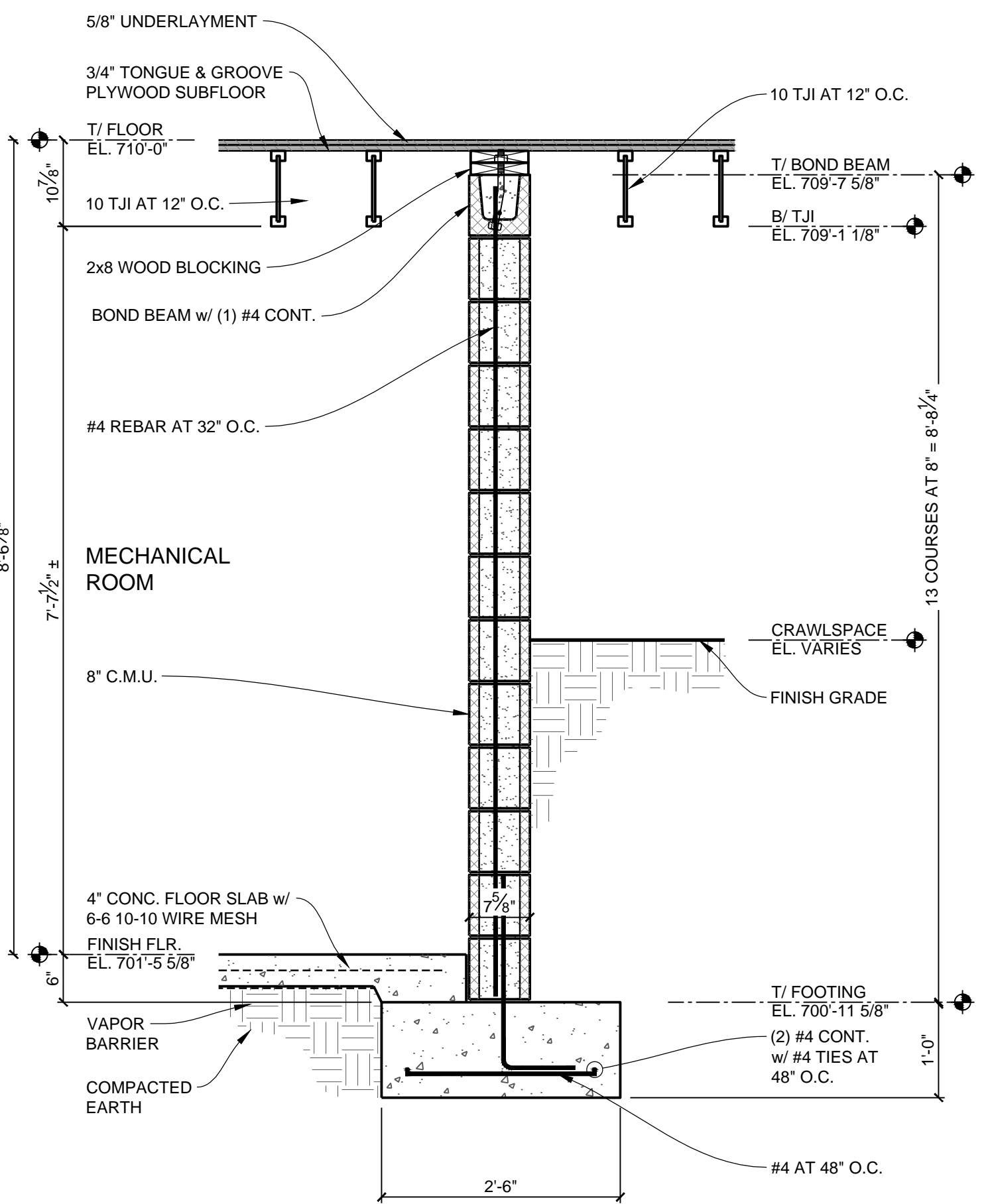
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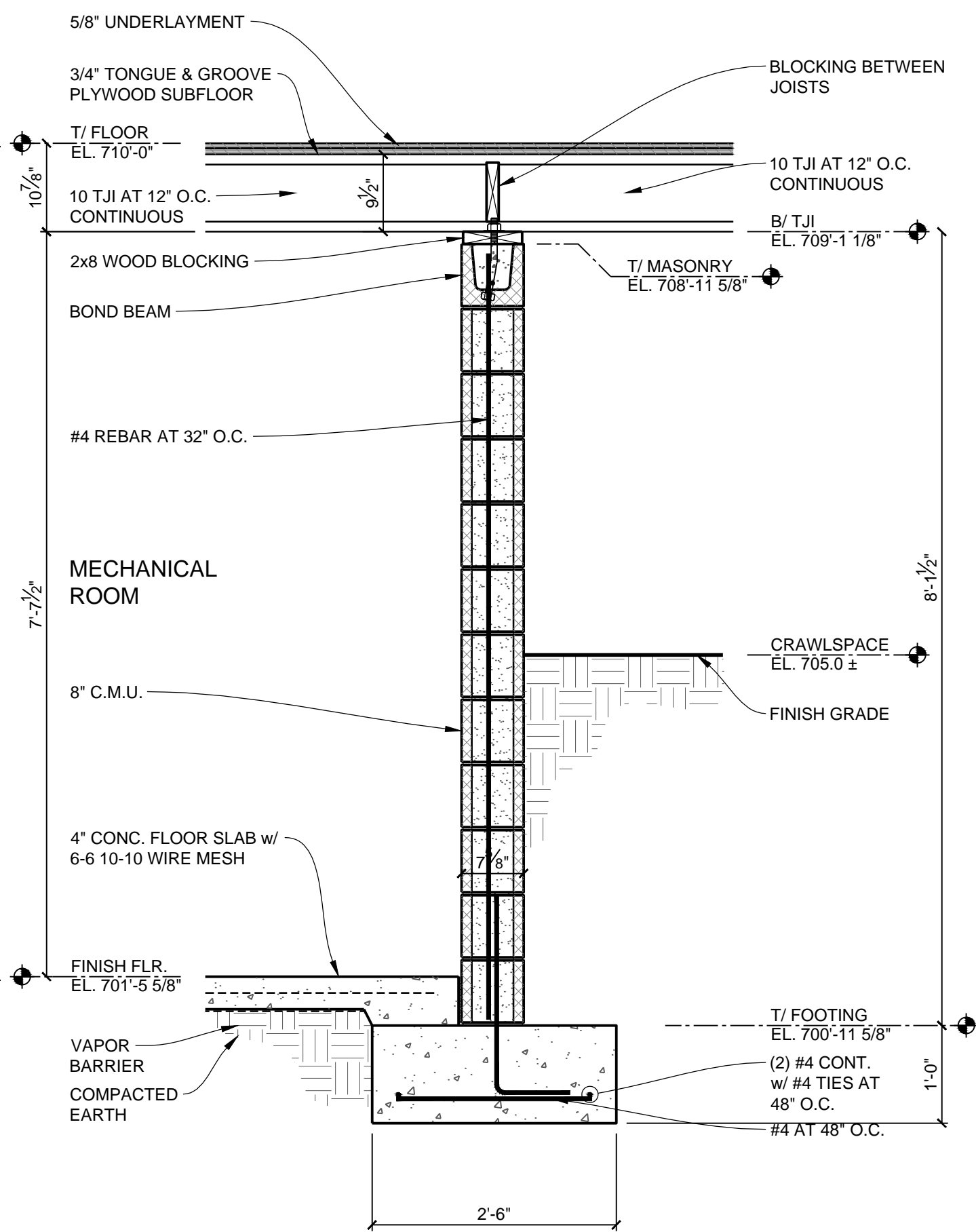
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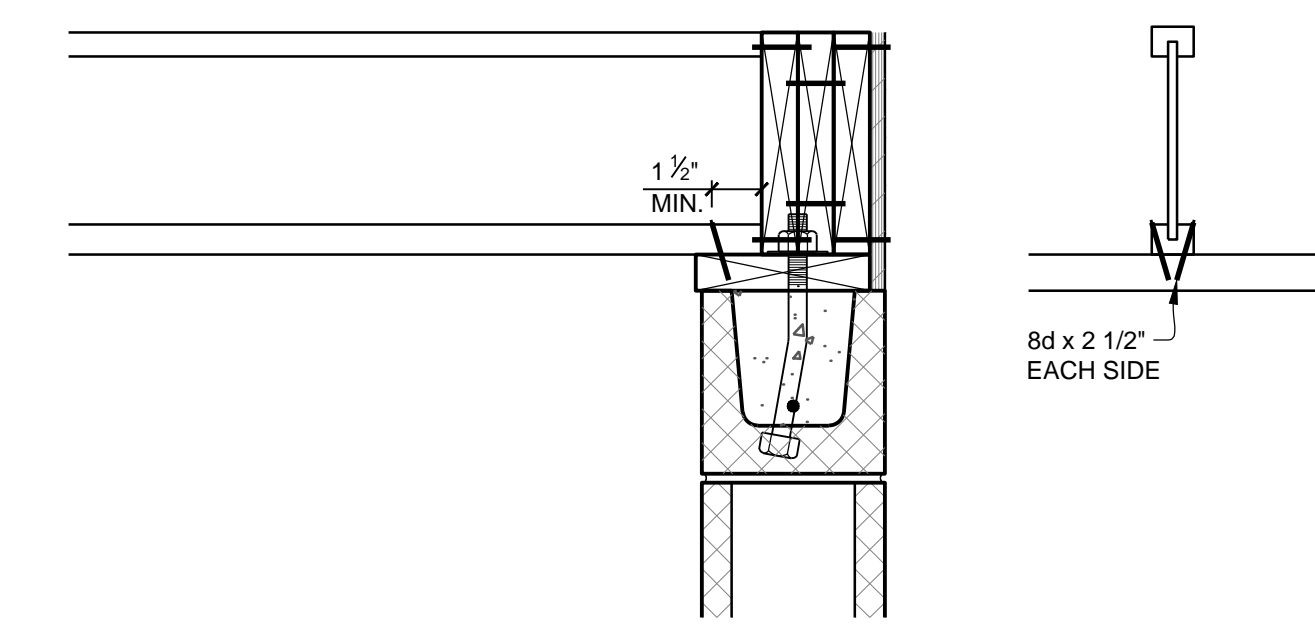
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4 SECTION 4
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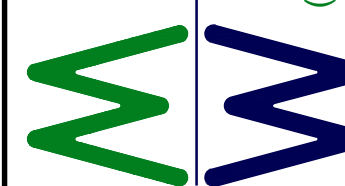


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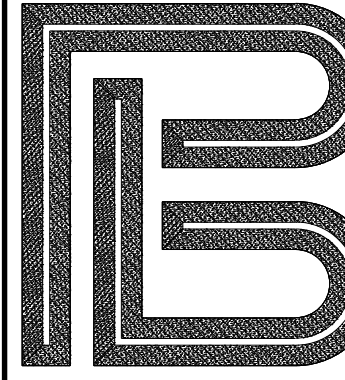


8 TYP. TJI CONNECTION TO BOTTOM PL.
SCALE: 1 1/2"=1'-0"

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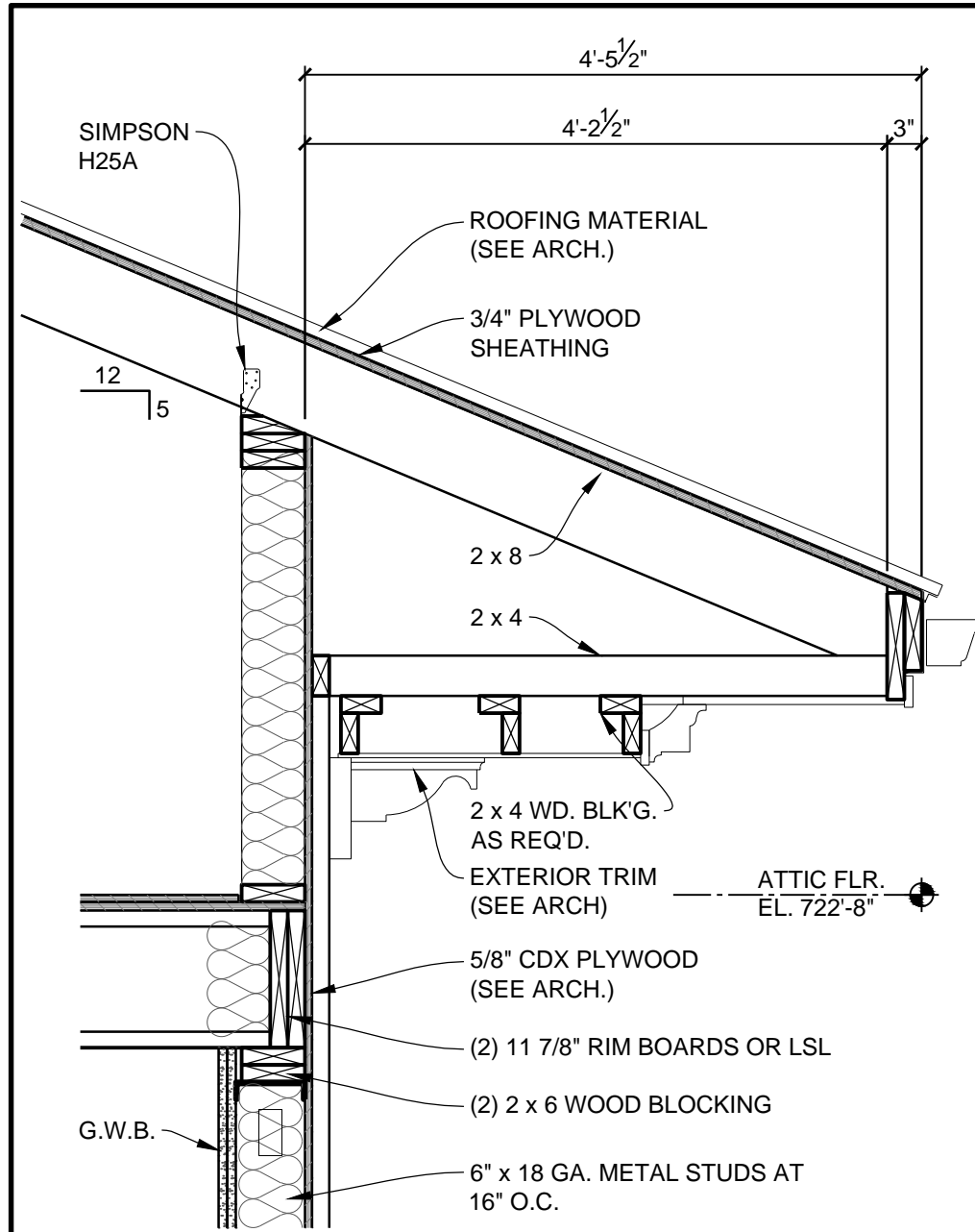
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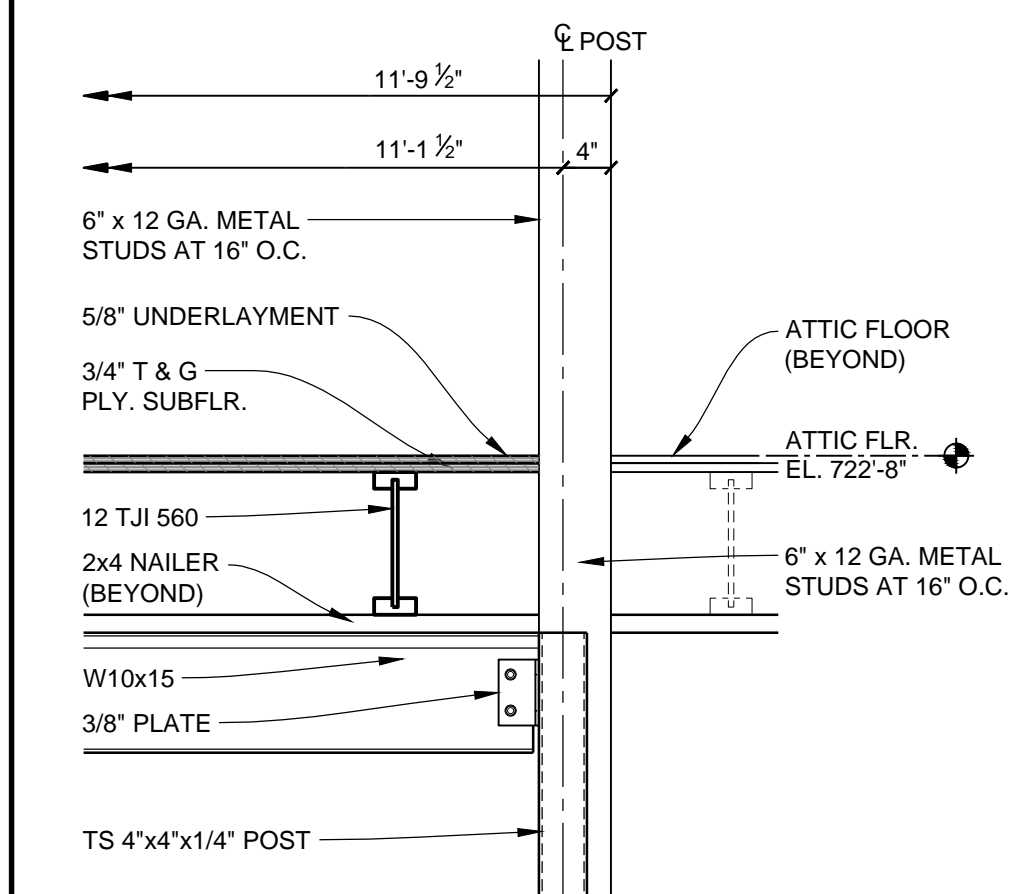
FOUNDATION
DETAILS

Date: MAR. 04, 2016
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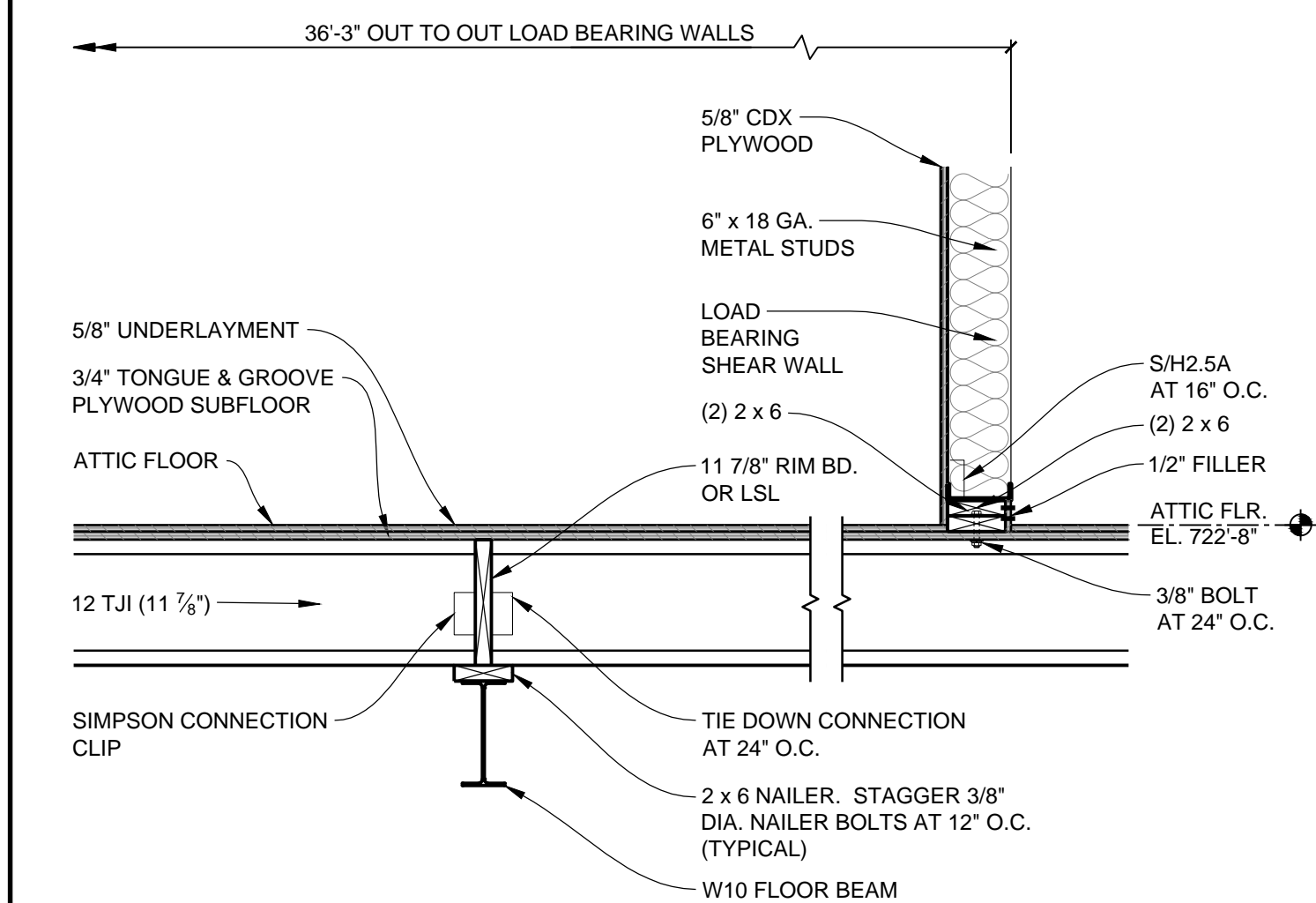
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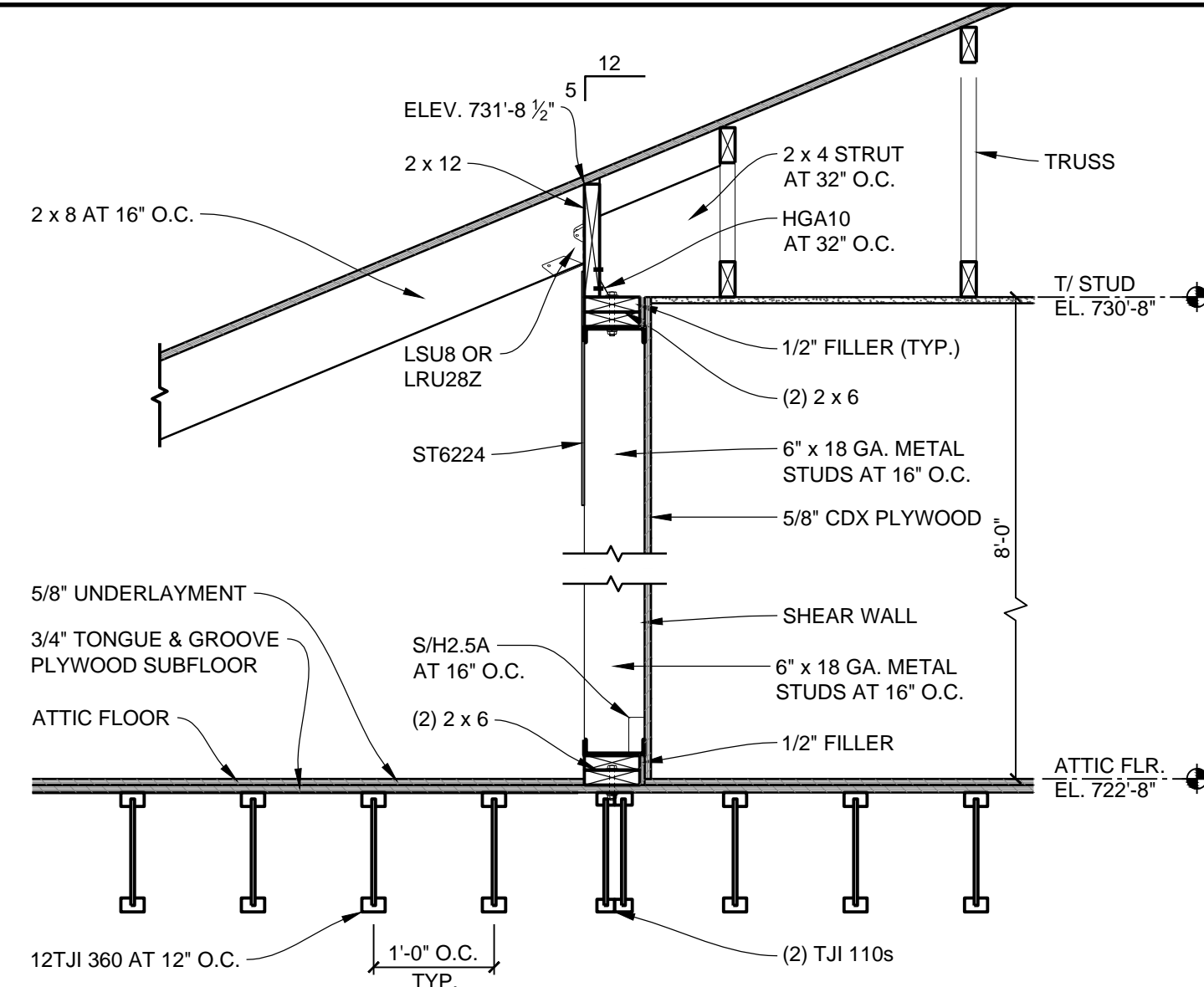
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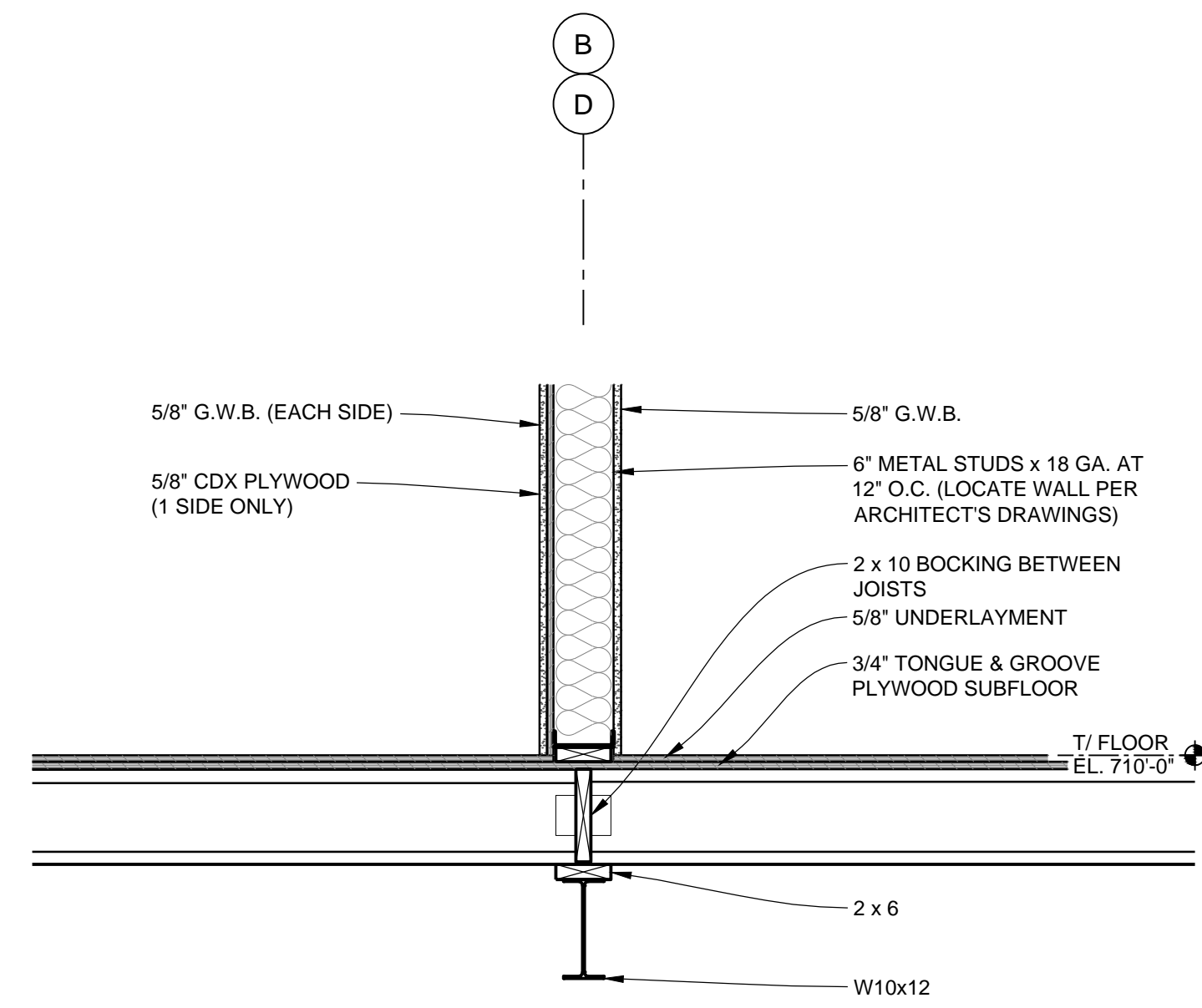


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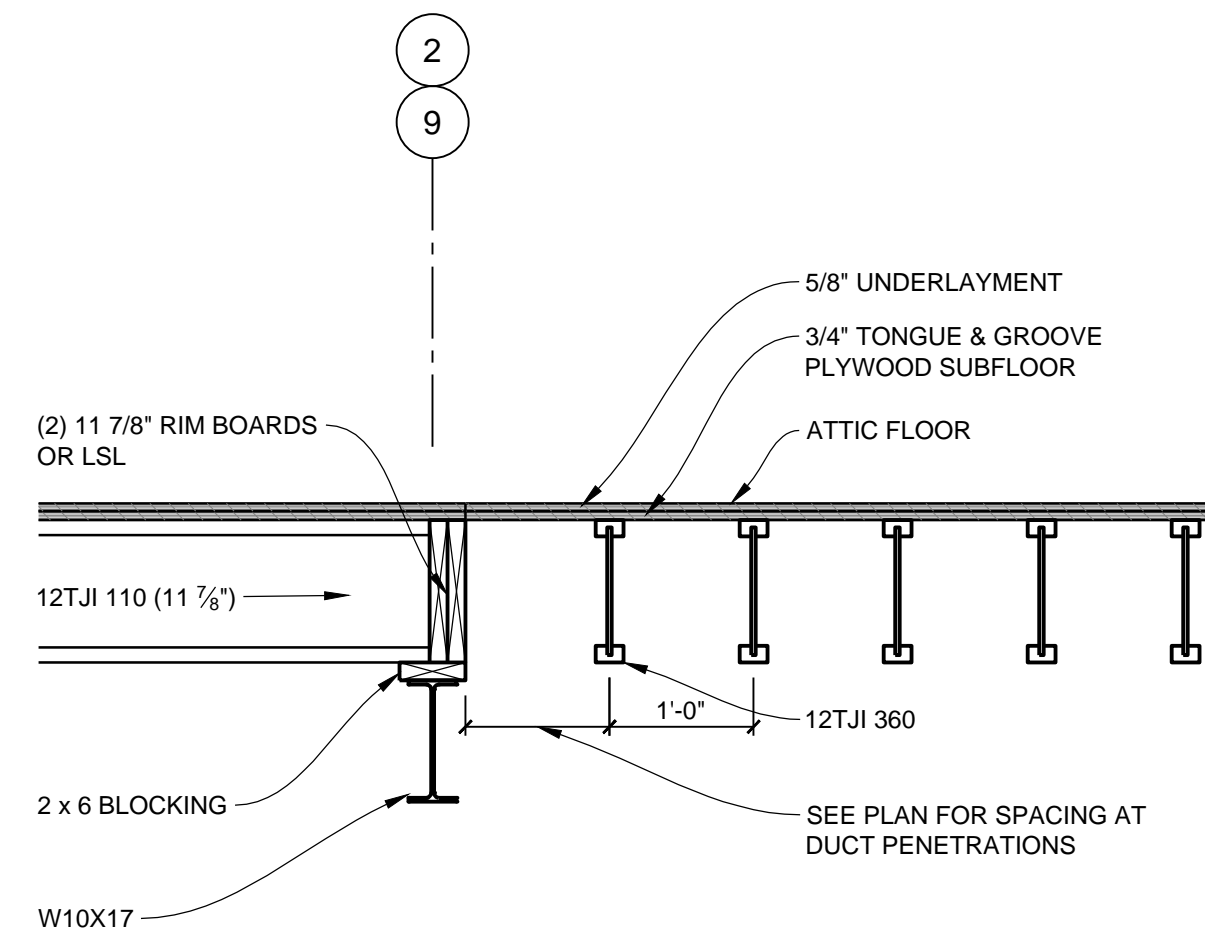


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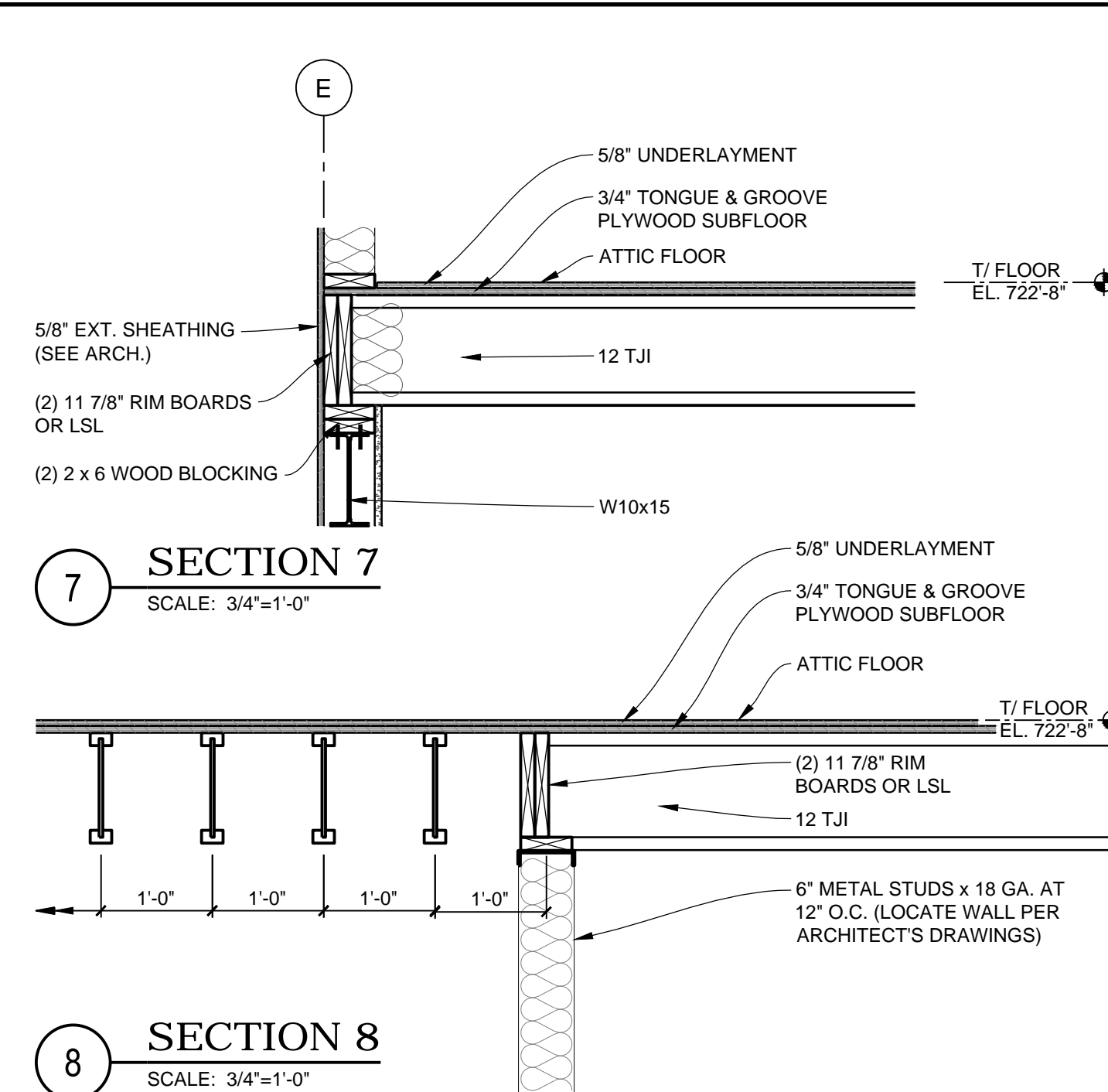
PROVIDE 2 1/2" WIDE x 16 GA. STRAP ANCHOR x 23 1/2" (ST6224) AT 32" O.C.



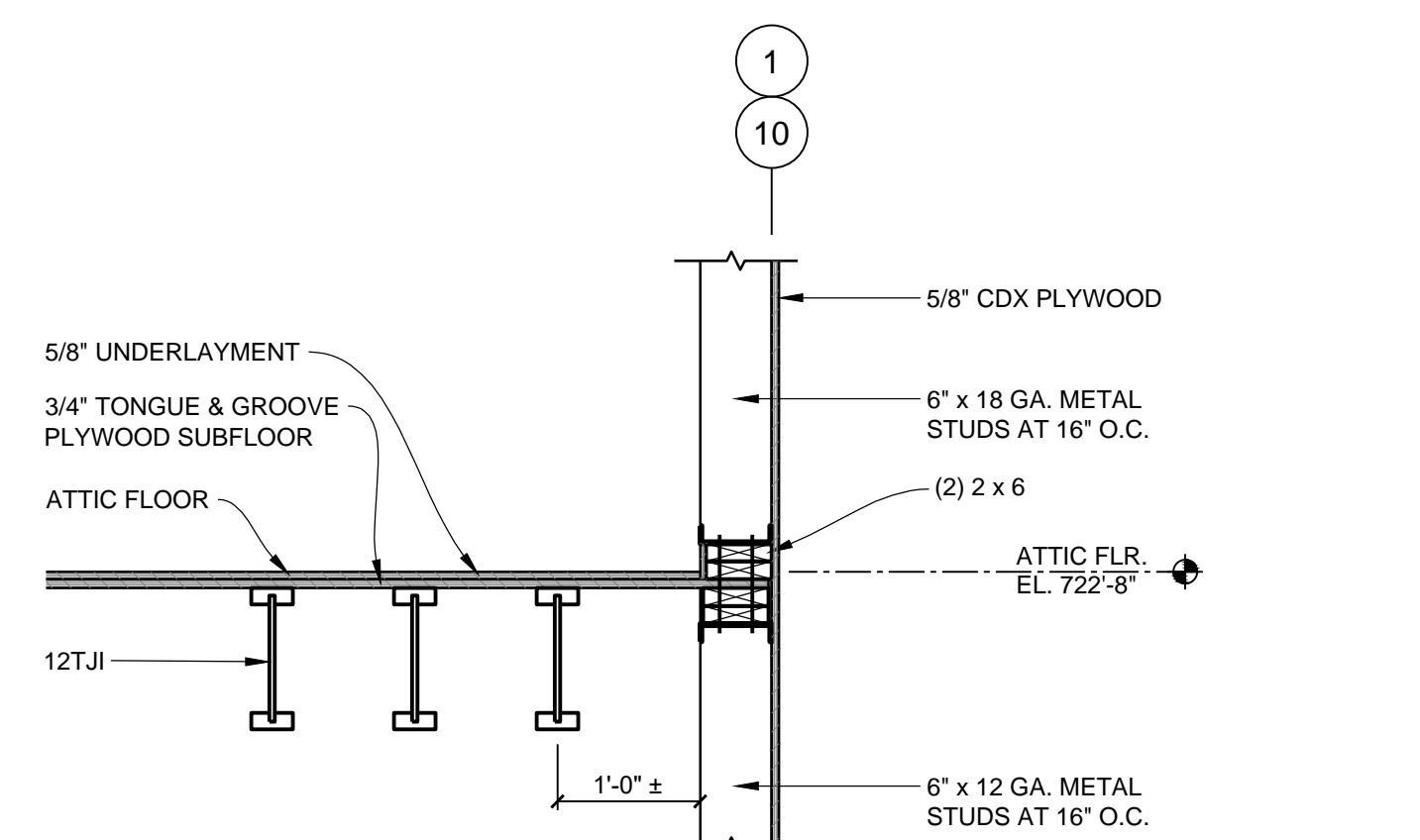
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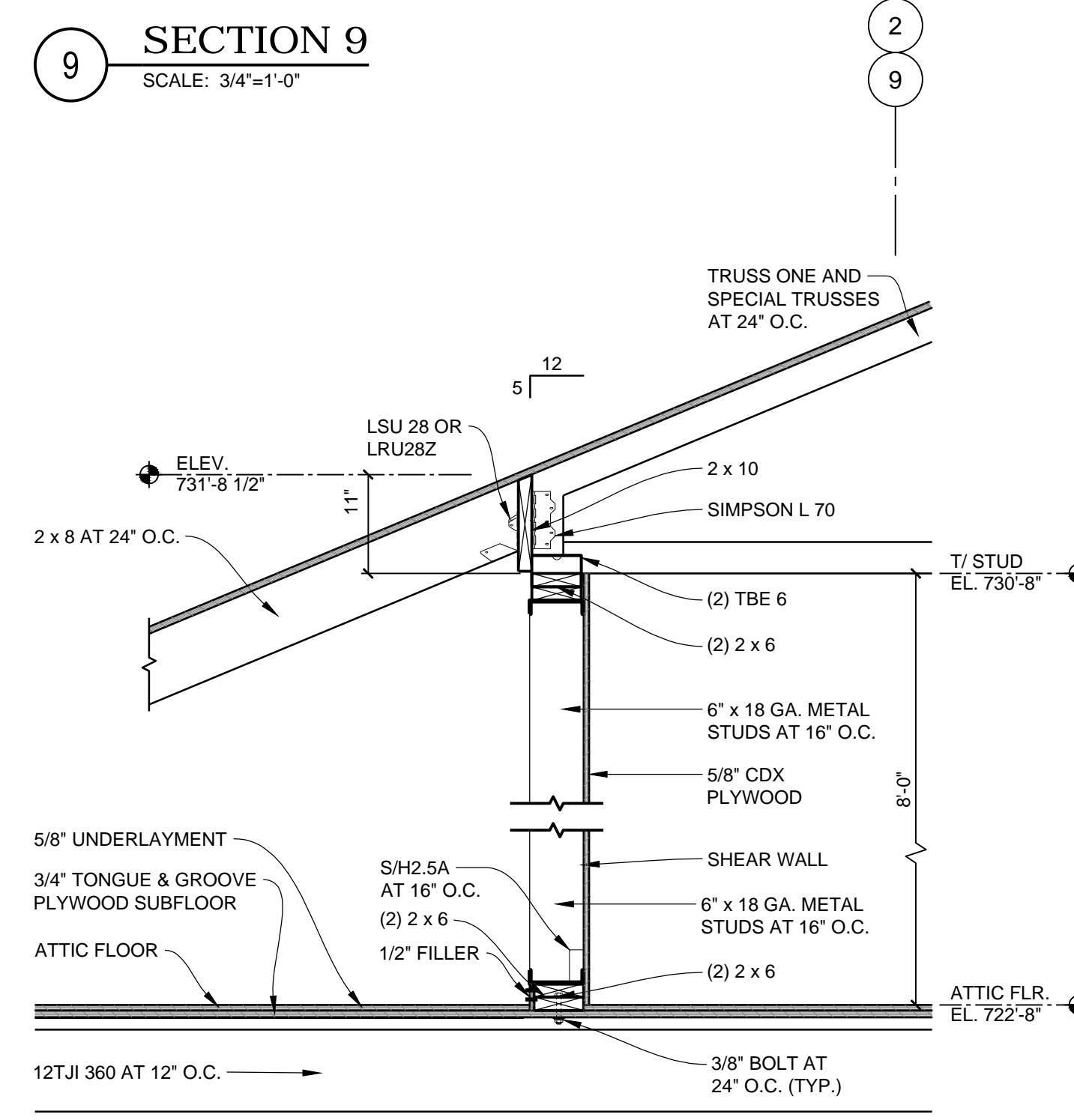
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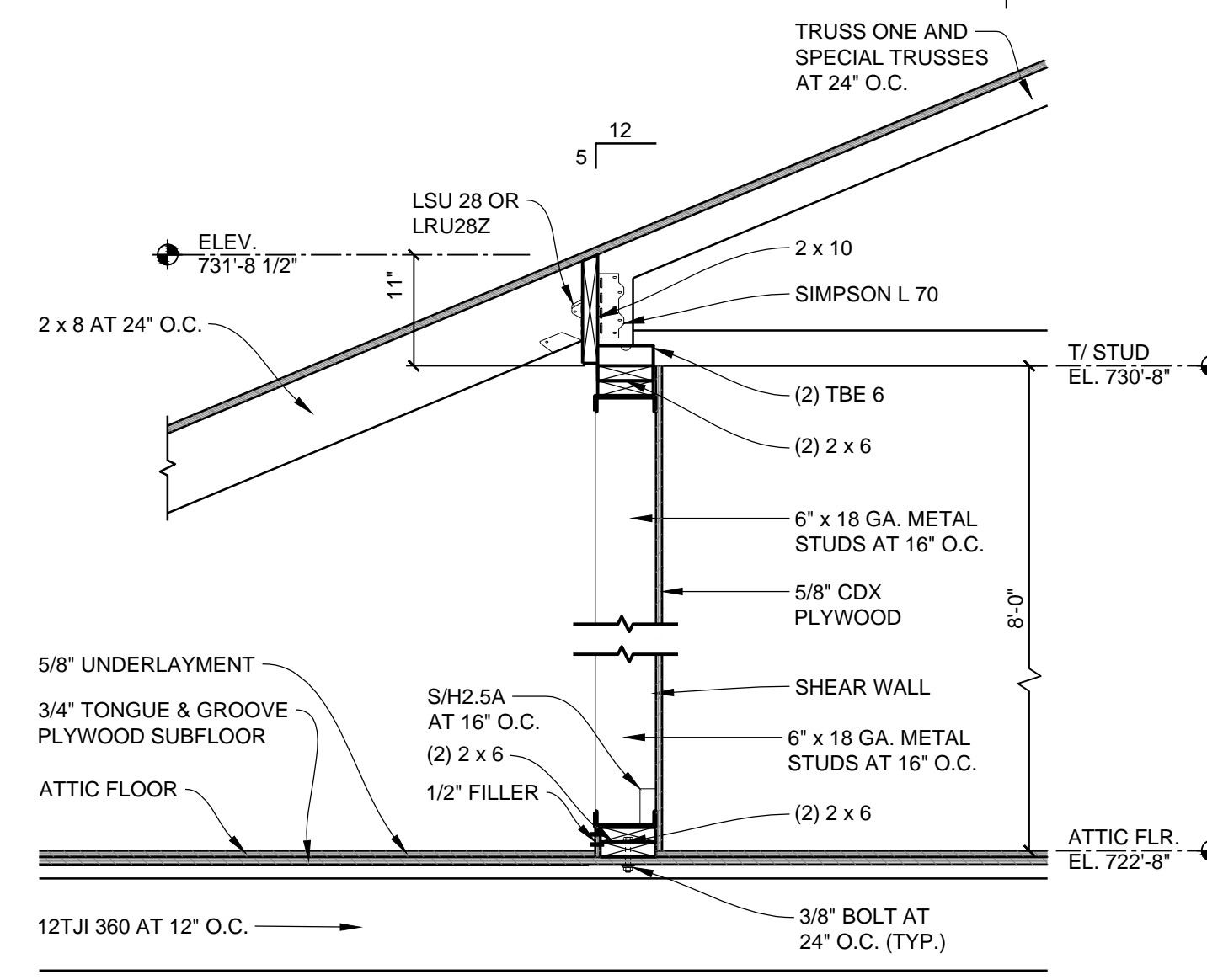
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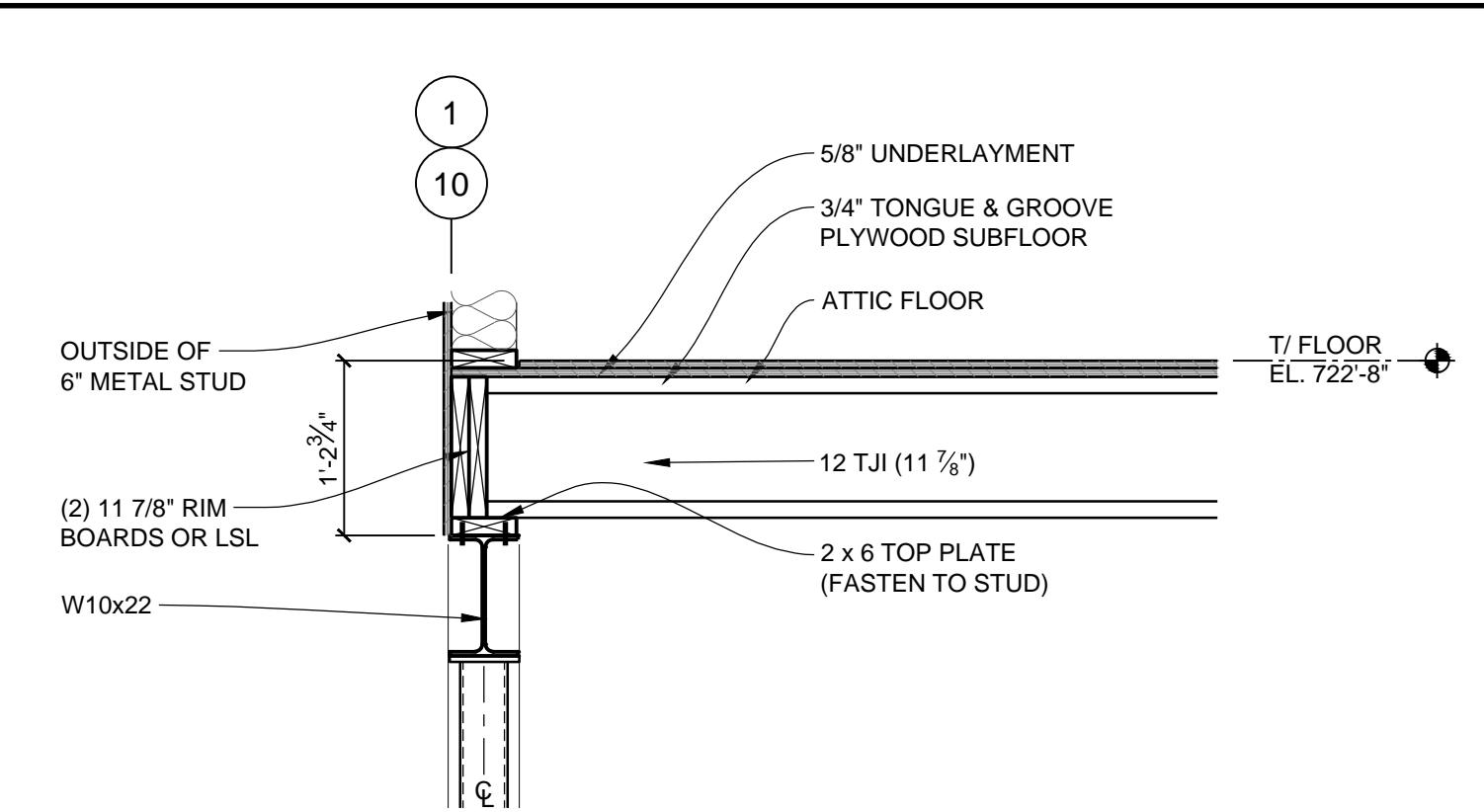
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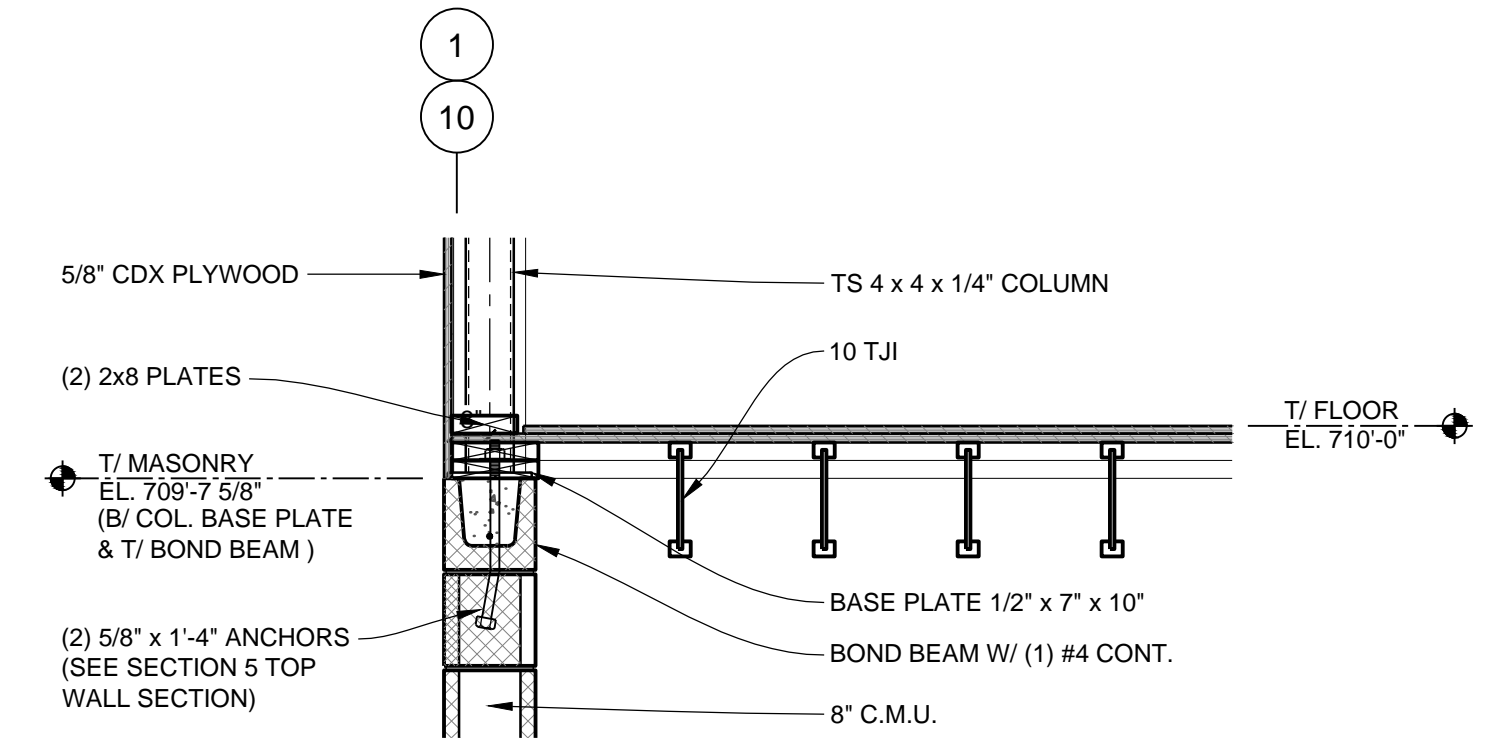
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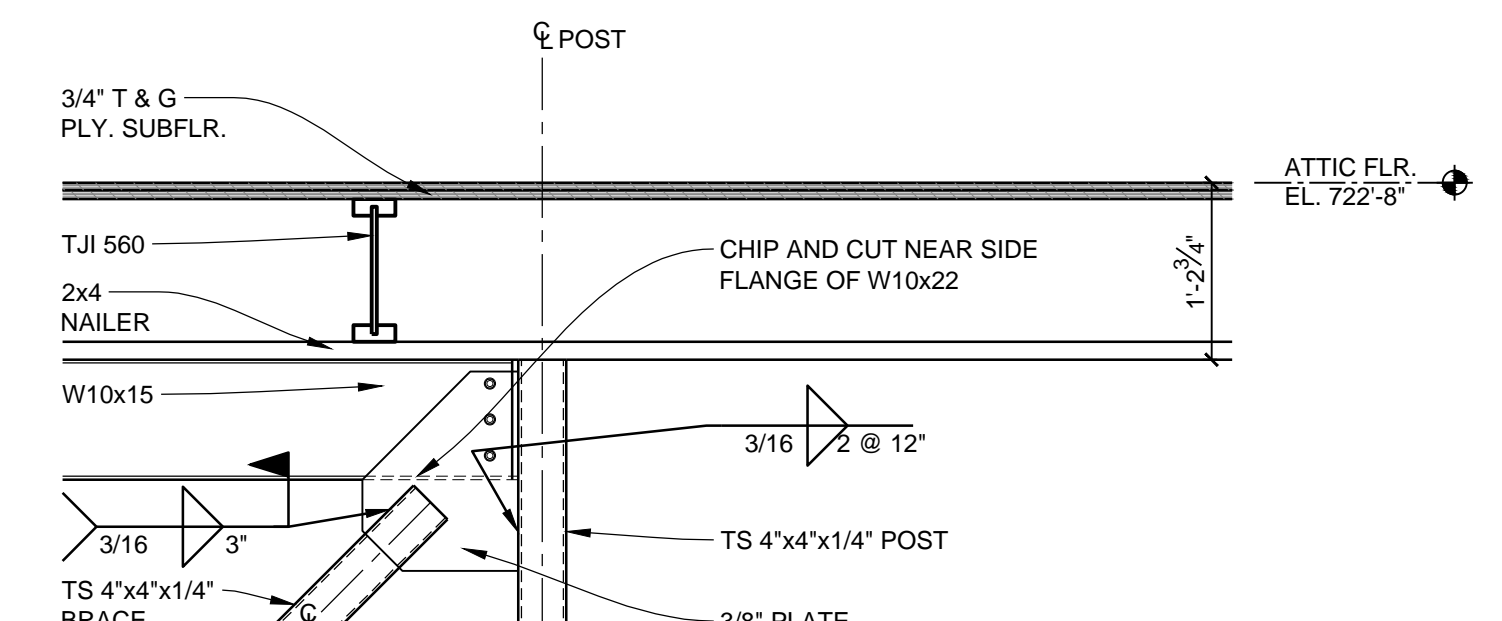
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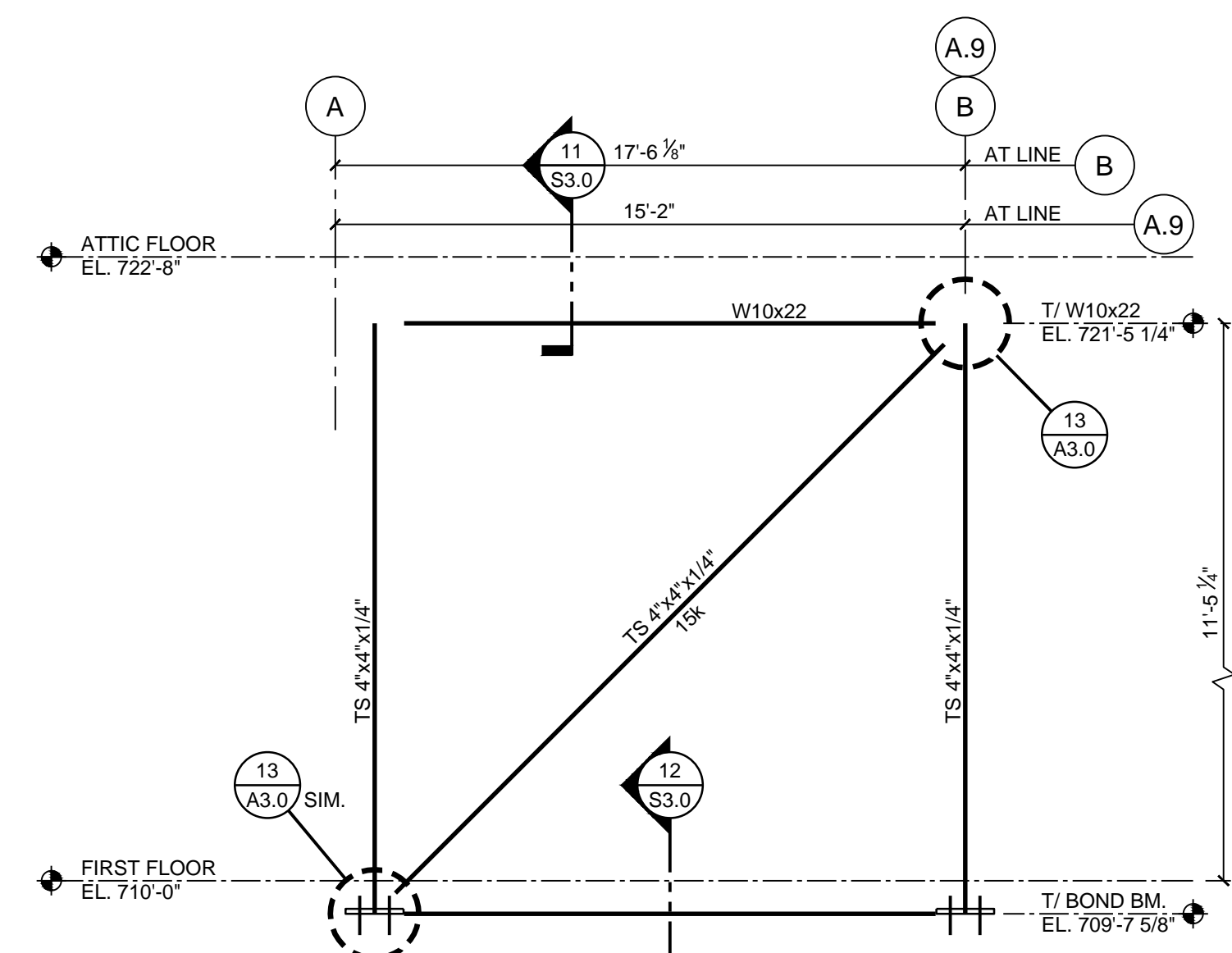
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12 SECTION 12
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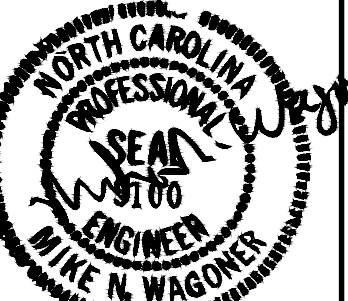


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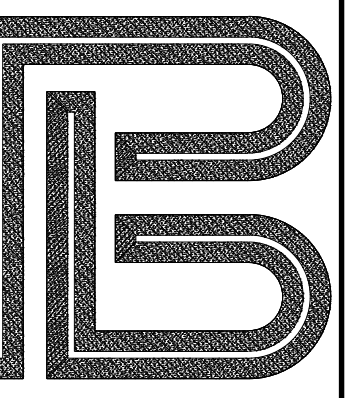


14 SECTION AT WIND FRAME LINE 1 & 10
SCALE: 3/4"=1'-0"

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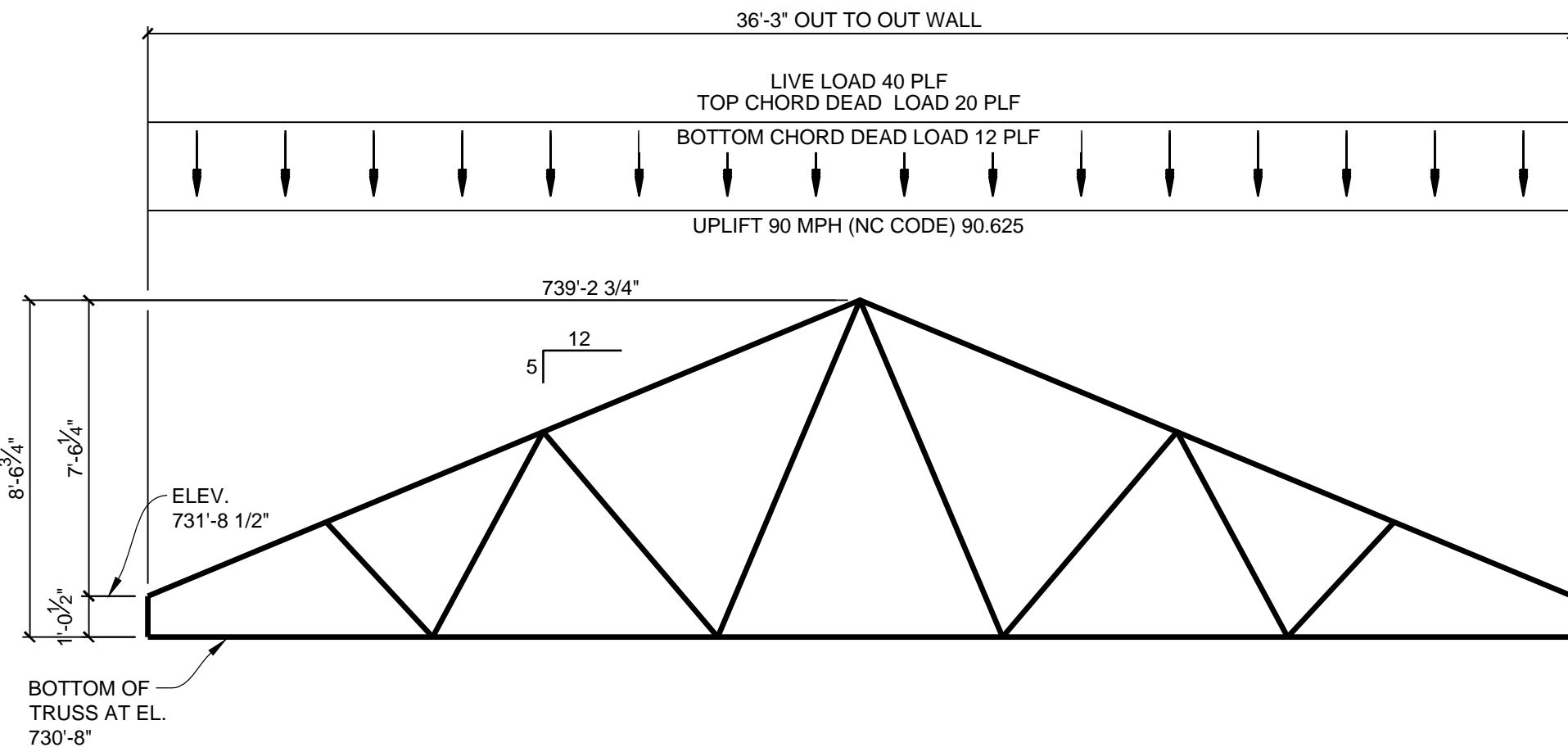
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Revisions

FRAMING DETAILS

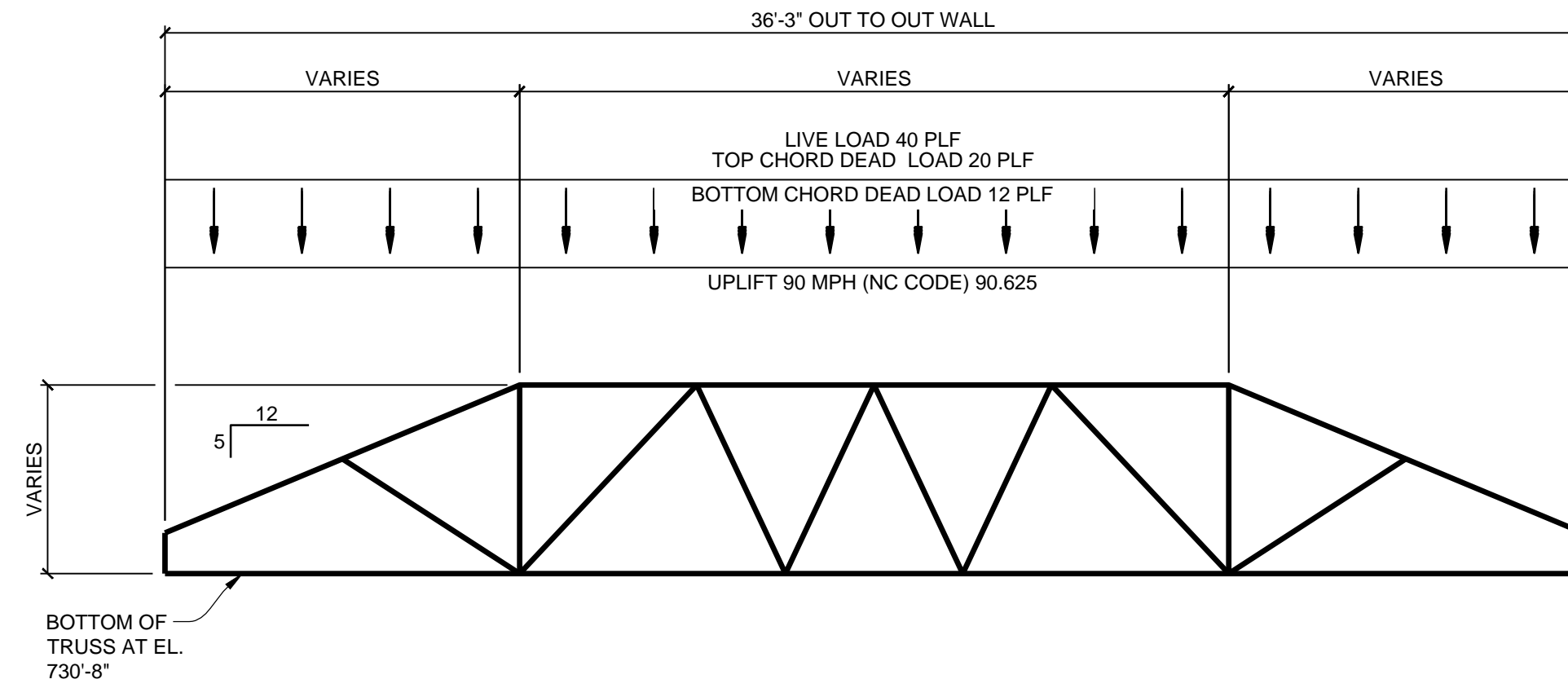
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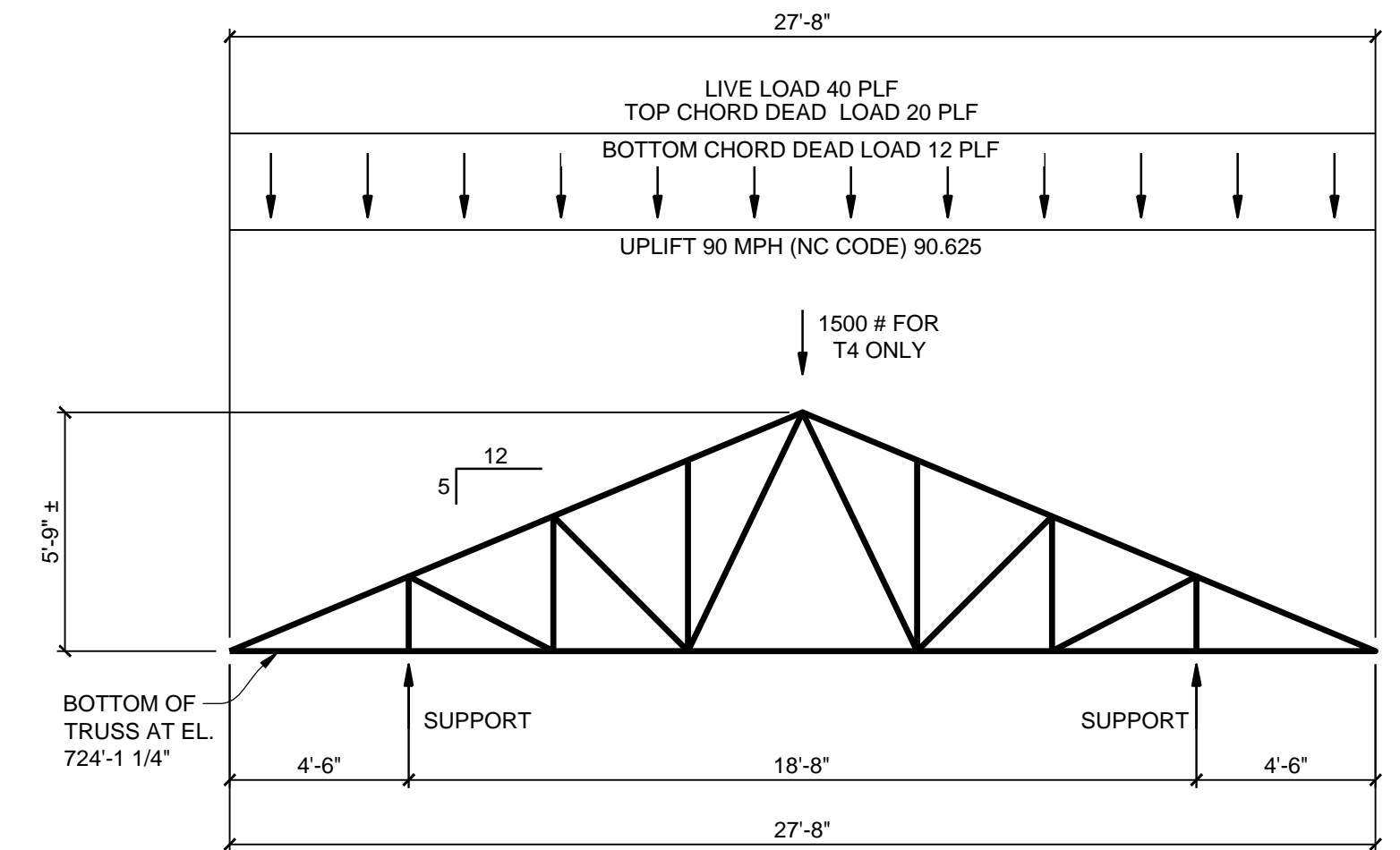


1 TRUSS T1 (AT 24" O.C. TYPICAL)
SCALE: 1/4"=1'-0" WEB MEMBER PATTERN PER TRUSS MANUF.

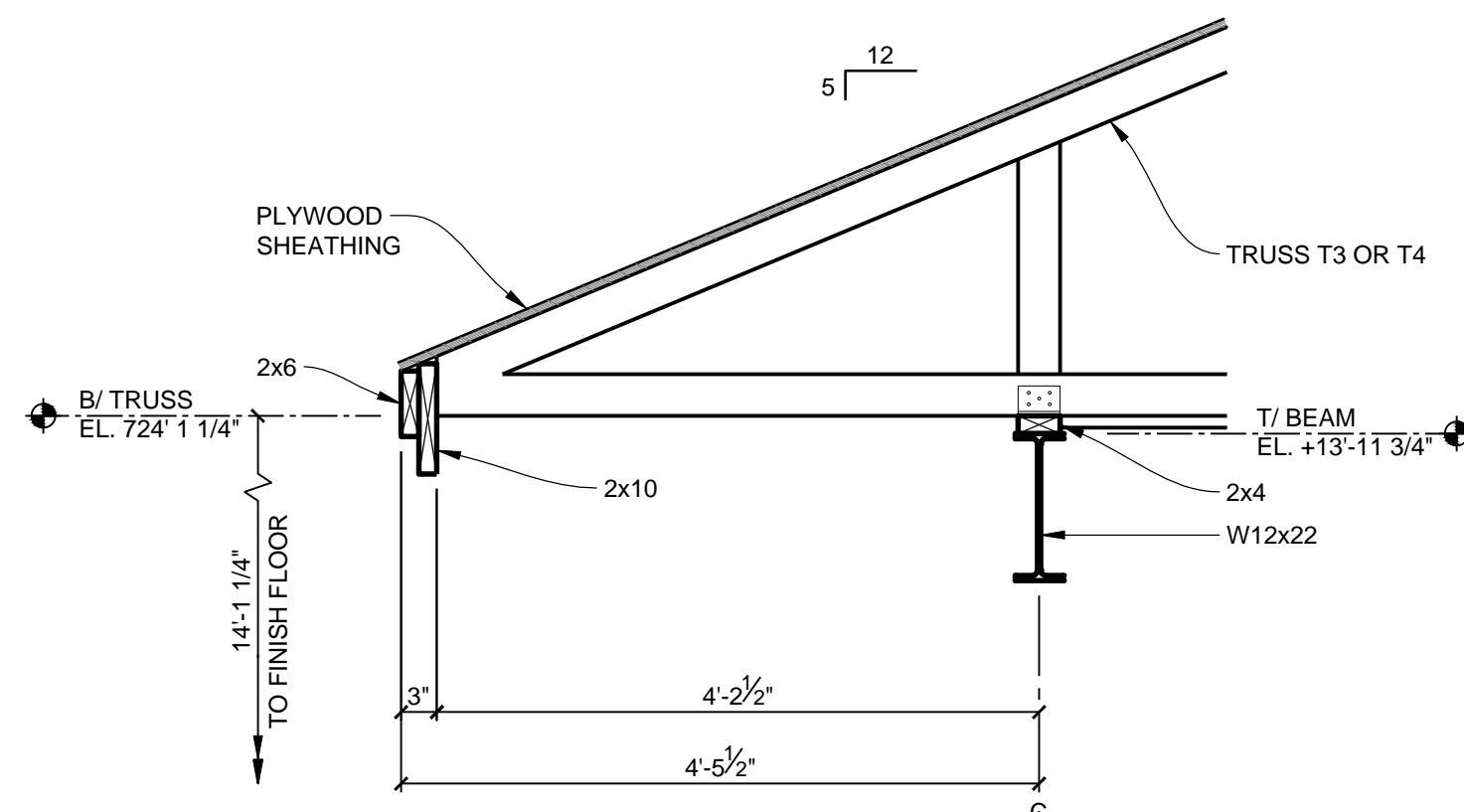
NOTE:
ALL TRUSSES ARE TO BE
DESIGNED FOR 40 PSF MIN.



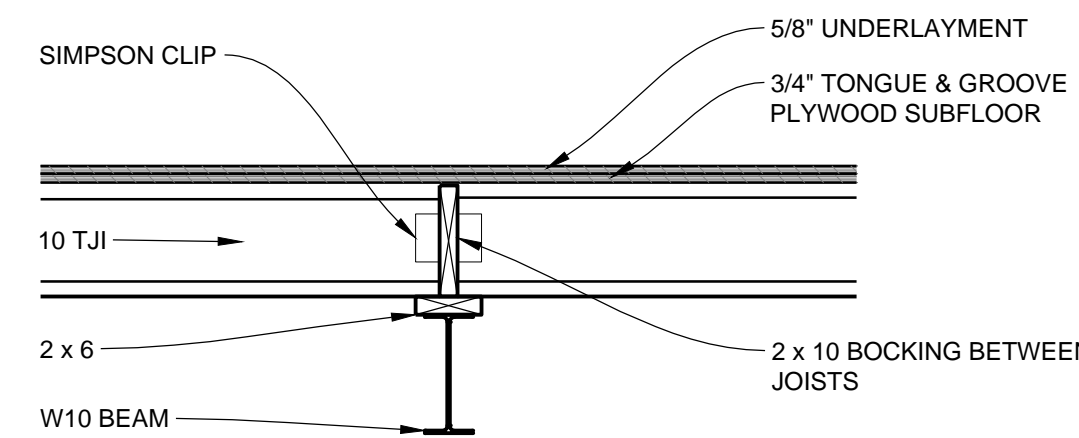
2 TYPICAL HIP TRUSS
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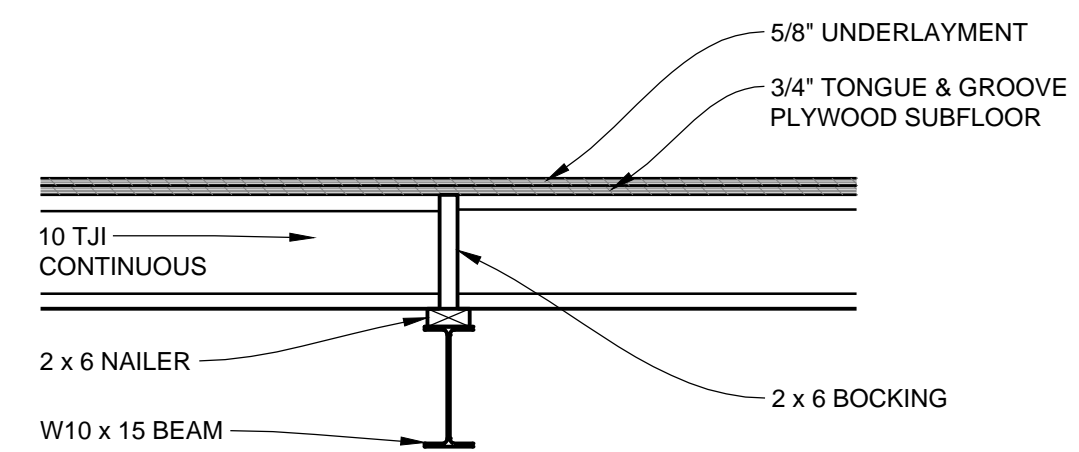
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4 SECTION AT ENTRANCE CANOPY
SCALE: 3/4"=1'-0"

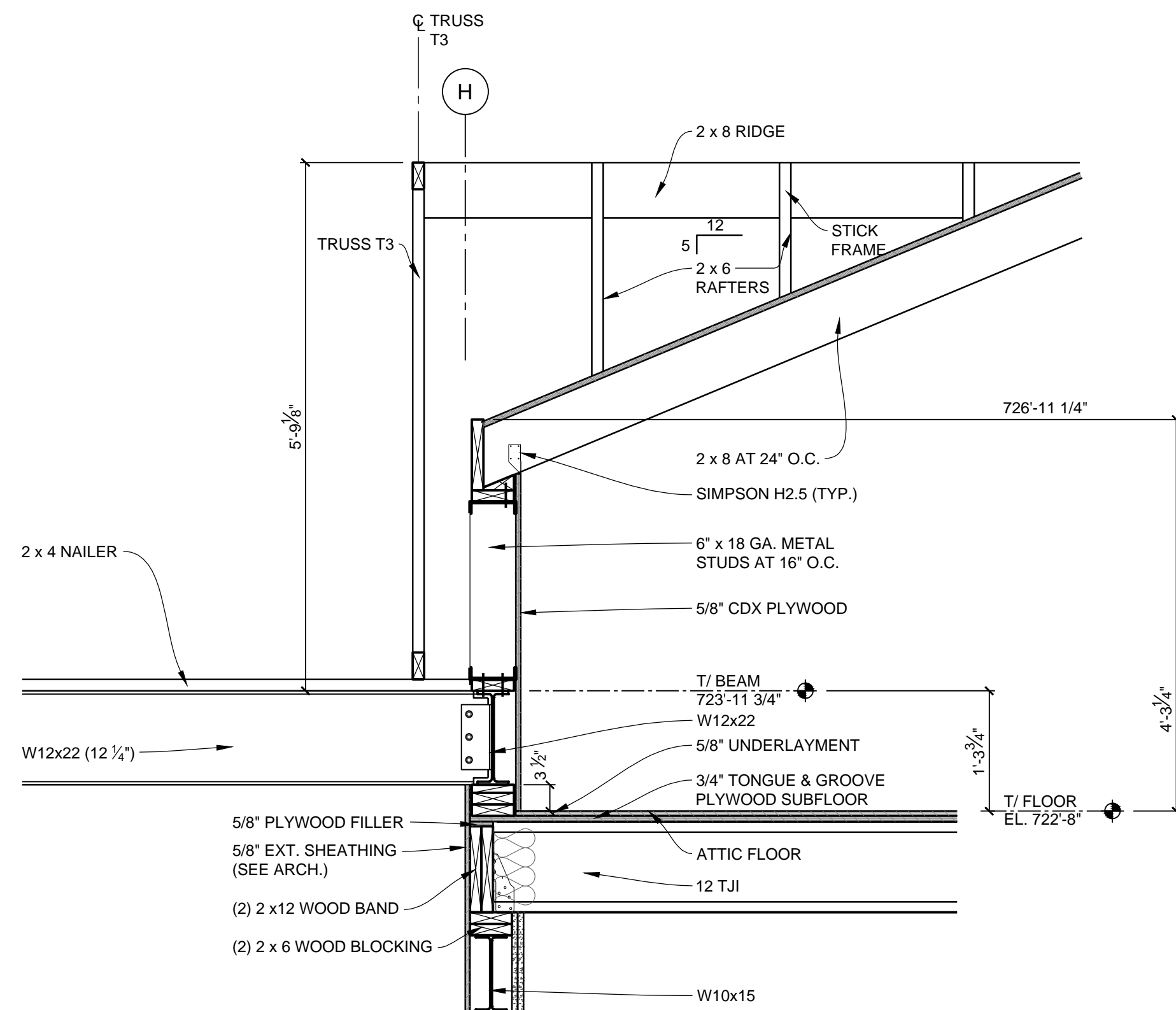


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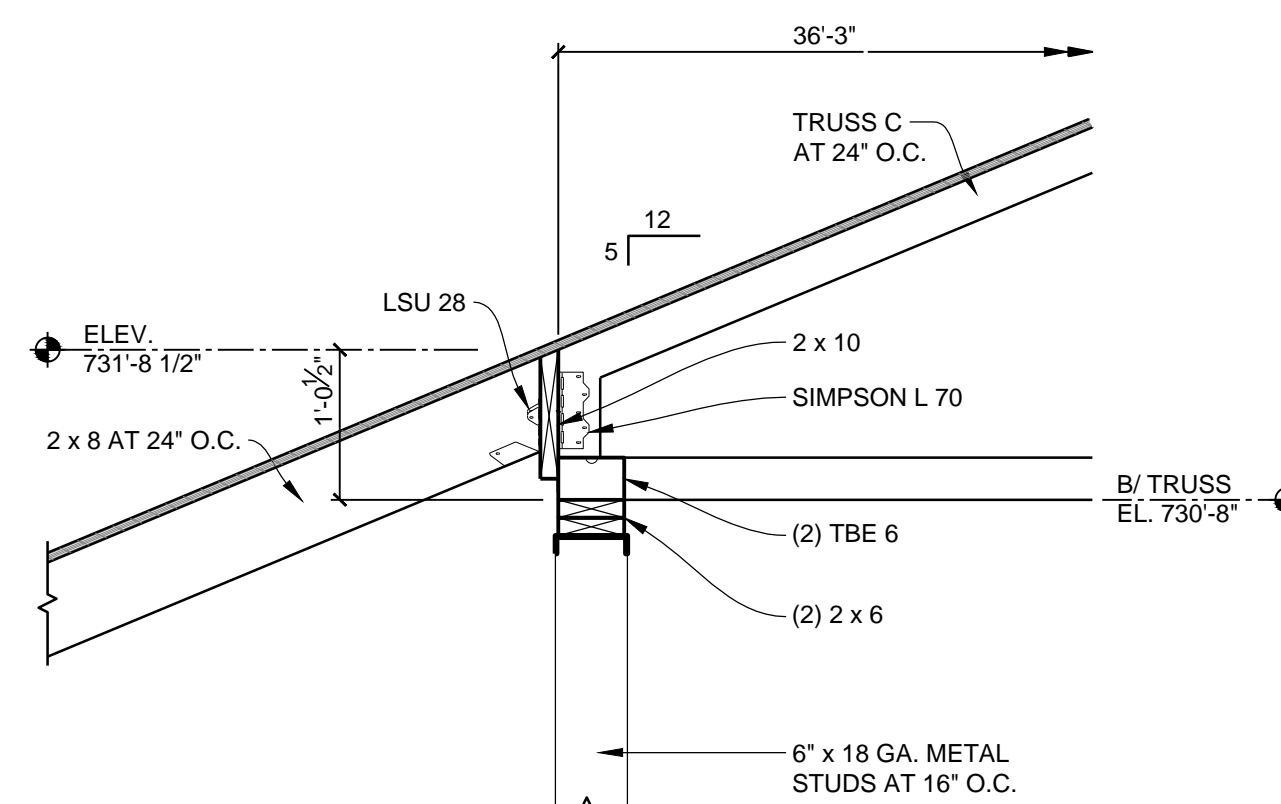


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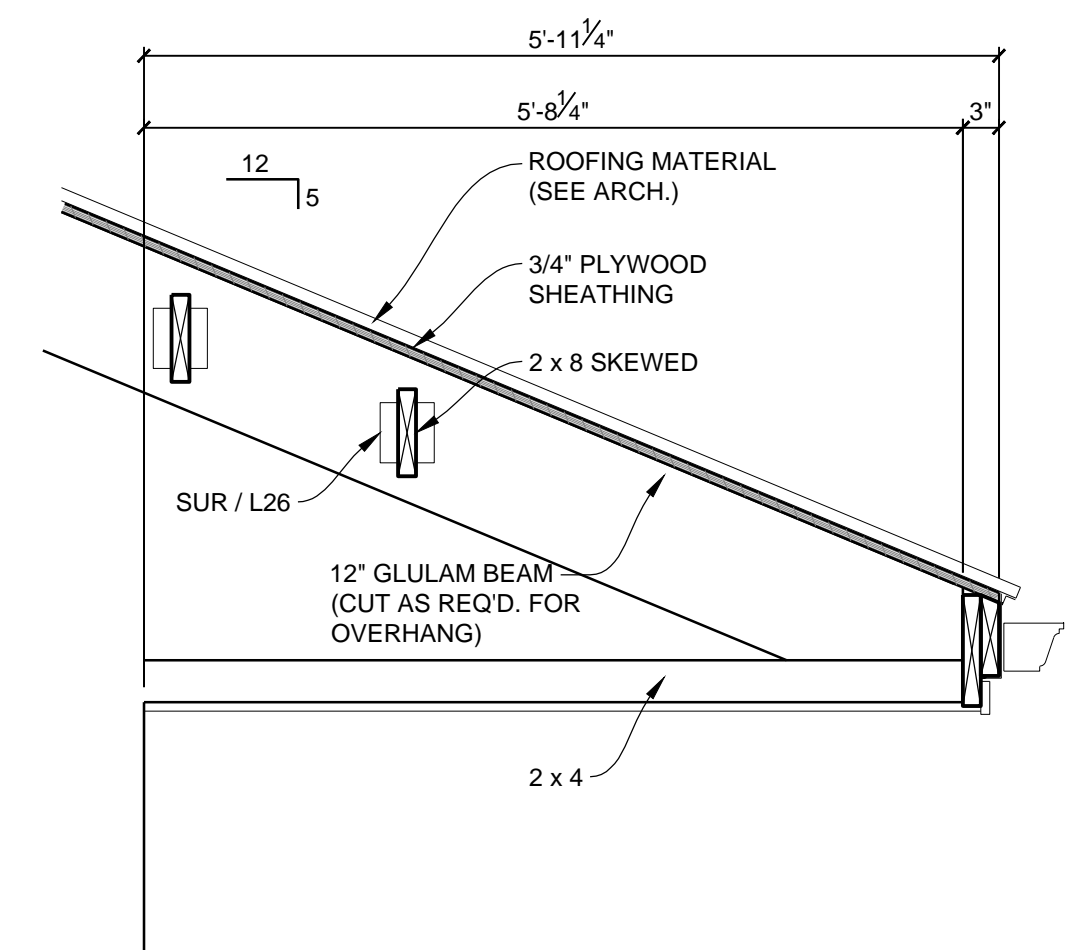
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5 SECTION 5
SCALE: 3/4"=1'-0"



8 SECTION 8
SCALE: 3/4"=1'-0"



10 DETAIL 10
SCALE: 3/4"=1'-0"