

STRUCTURAL DESIGN REQUIREMENTS:

DESIGN STANDARDS:

- ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS
- 2018 INTERNATIONAL RESIDENTIAL CODE
- 2018 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
- ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- ANSI/AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

DESIGN CRITERIA:

DEAD LOAD

-ROOF 20 PSF (INCLINED)

SNOW LOAD

-GROUND SNOW 40 PSF

-EXPOSURE FACTOR, Ce 1.0

-IMPORTANCE FACTOR 1.0 (CATEGORY "II" BUILDING)

-THERMAL FACTOR, Ct 1.1 INTERIOR; 1.2 EXTERIOR

-ROOF SLOPE FACTOR, Cs 1.0

LIVE LOAD

-ROOF 20 PSF (PROJECTED)

GENERAL NOTES:

TIMBER FRAME ELEMENTS HAVE BEEN DESIGNED TO RESIST GRAVITY LOAD ONLY.

IT IS THE RESPONSIBILITY OF THE TIMBER FRAME SYSTEM PURCHASER (OWNER AND/OR CONTRACTOR) TO VERIFY ALL DIMENSIONS INDICATED ON THE TIMBER FRAME SYSTEM DRAWINGS.

SHRINKAGE OF TIMBERS MAY RESULT IN THE "LOOSENING" OF BOLTS AND ALL-THREAD CONNECTORS. PERIODIC TIGHTENING OF THESE CONNECTIONS DURING THE FIRST SEVERAL YEARS OF THE STRUCTURE'S SERVICE LIFE IS REQUIRED.

SUB-SLAB PREPARATION, DAMP PROOFING OR WATERPROOFING, ANY SUB-SLAB ELECTRICAL, PLUMBING OR RADON PIPING, AND ALL FOOTINGS AND FLOOR DRAINS TO BE COORDINATED BY GENERAL CONTRACTOR.

SEE ARCHITECTURAL DRAWINGS PREPARED BY [REDACTED] FOR ADDITIONAL INFORMATION.

DO NOT SCALE ANY DRAWINGS.

WOOD:

TIMBERS

UNLESS OTHERWISE NOTED, SOLID SAWN TIMBER SHALL BE DOUGLAS FIR #1 OR BETTER, SIZED TO ½" UNDER THE STATED NOMINAL DIMENSION. TIMBERS MAY NOT BEAR A GRADE STAMP, BUT SHALL OTHERWISE MEET THE REQUIREMENTS OF #1 OR BETTER MATERIAL. SOME WARPING, TWISTING, AND CHECKING OF TIMBERS IS ANTICIPATED AS THEY REACH EQUILIBRIUM MOISTURE CONTENT.

TIMBER SCREWS

UNLESS NOTED OTHERWISE, ALL SCREWS SHALL BE BY GRK RSS OR ROTHOBLAAS TBS OR OTHER APPROVED SCREW, WITH A SHANK DIAMETER OF AT LEAST 0.2", AND A THREAD DIAMETER OF AT LEAST 0.30". SCREWS HOLES SHALL NOT BE PRE-DRILLED UNLESS OTHERWISE NOTED, AND HAVE AT LEAST 3" OF THREAD PENETRATION INTO THE CONNECTING MEMBER.

TIMBER FRAME JOINERY

UNLESS OTHERWISE CALLED OUT IN JOINERY DETAILS ON THE STRUCTURAL AND TIMBER FRAME DRAWINGS, THE JOINERY SHOULD MEET THE FOLLOWING REQUIREMENTS, AND BE DETAILED IN ACCORDANCE WITH TFEC 1-19.

ALL PEGS SHALL BE 1" IN DIAMETER, AND MEET THE REQUIREMENTS OF TFEC 1-19.

TENONS CONNECTING MEMBERS IN 8X MATERIAL AND LARGER (SMALLEST DIRECTION), SHALL BE 2" THICK AND 5" IN LENGTH, WITH 3" OF RELISH. IN 6X MATERIAL, 1 ½" THICK, 4" LONG TENONS WITH 2 ½" RELISH SHALL BE USED. 4X AND SMALLER MATERIAL, INCLUDING BRACES (UNLESS OTHERWISE CALLED OUT) AND STRUTS, SHALL HAVE A 1 ½" THICK TENON, AT LEAST 3 ½" IN LENGTH, AND 2 ½" OF RELISH.

WHERE TENON INTERFERENCE OCCURS, TENONS SHALL BE AS LONG AS POSSIBLE, AND OFFSET (HIGH/LOW) WHERE POSSIBLE. IN THREE-WAY AND FOUR-WAY CONNECTIONS, 1 ½" THICK HARDWOOD (SPECIFIC GRAVITY EQUAL TO OR GREATER THAN THE CONNECTING TIMBERS) OR 1 ¾" LVL SPLINES ARE STRONGLY ENCOURAGED.

HOUSINGS FOR 6X AND LARGER STOCK SHALL BE 1", UNLESS SPECIFIED OTHERWISE. WHERE 6X FRAMING IS NOT DIRECTLY SUPPORTING ROOF OR FLOOR LOADS, 1/2" STUB TENONS MAY BE USED IN PLACE OF FULL 1" HOUSINGS. 4X MATERIAL, INCLUDING BRACES, SHALL BE HOUSED ½". BIRDSMOUTHS, REDUCTIONS, AND COPES NOT SUPPORTED BY A BEARING SURFACE SHALL NOT EXCEED MORE THAN ¼ THE MEMBER DEPTH WITHOUT REQUIRING FURTHER REINFORCEMENT.

UNLESS OTHERWISE SPECIFIED, RAFTERS AND PURLINS SHALL BE SECURED INTO THEIR HOUSINGS AND SUPPORTS WITH LOG SCREWS, (1) SCREW AT EACH END FOR 6X AND SMALLER MATERIAL, (2) SCREWS AT EACH END FOR 8X AND LARGER MATERIAL.

DOVETAIL CONNECTIONS

UNLESS OTHERWISE NOTED, ROUNDED DOVETAIL CONNECTIONS SHALL HAVE A DEPTH OF 1" AND SHALL EXTEND FOR AT LEAST ¼ THE DEPTH AND ¼ THE WIDTH (AT THE TOP FACE) OF THE CONNECTING (SUPPORTING) MEMBER. THE CONNECTIONS SHALL HAVE A CONE ANGLE OF AT LEAST 10 DEGREES AND A WEDGE ANGLE OF 75 DEGREES.

DECKING

UNLESS OTHERWISE NOTED, ALL ROOF DECKING SHALL BE 2x6 T&G "SELECT" DOUGLAS FIR DECKING. EACH DECKING PIECE MUST BE CONTINUOUS OVER AT LEAST TWO SPANS. SECURE W/ (1) 16d FACE AND NAIL (1) 16d TOE-NAILED THROUGH THE TONGUE @ EACH SUPPORT LOCATION.

STRUCTURAL SHEATHING

STRUCTURAL SHEATHING SHALL BE APA RATED AND NOT EXCEED THE SPAN RATING FOR ITS INTENDED USE, WITH A MINIMUM THICKNESS OF 15/32" FOR WALLS, 19/32" FOR ROOFS, AND 23/32" FOR FLOORS.

NAILS

UNLESS OTHERWISE CALLED OUT IN THE PLANS FOR MORE STRINGENT NAILING, NAILING SHALL MEET OR EXCEED THE NAILING IN "TABLE R602.3(1) FASTENER SCHEDULE FOR STRUCTURAL MEMBERS" IN THE REFERENCED BUILDING CODE. ALL NAILS SPECIFIED ARE COMMON.

WHEN AIR GUN NAILING IS USED, CARE SHALL BE TAKEN TO USE TRUE COMMON NAIL EQUIVALENTS REGARDING DIAMETER. (8d = 0.131"Ø, 10D = 0.148"Ø, 16d = 0.162"Ø).

WOOD CONNECTORS

ALL STEEL FASTENERS OR CONNECTIONS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE ZINC COATED IN ACCORDANCE WITH ASTM A 153, MADE OF STAINLESS STEEL, OR SHOW A SIMILAR LEVEL OF CORROSION PROTECTION.

STRAPS AND HOLD-DOWNS

ALL STRAPS AND HOLD-DOWNS ARE BY SIMPSON STRONG-TIE OR EQUIVALENT.

ANCHOR BOLTS:

UNLESS OTHERWISE NOTED, ANCHOR BOLTS SHALL BE ASTM F1554 GR.36 OR BETTER. POST INSTALLED ANCHORS SHALL BE MANUFACTURED BY HILTI, INC. INTERNATIONAL CODE COUNCIL (ICC). BLOW AND CLEAR OUT ALL LOOSE PARTICLES FROM DRILLED HOLE PRIOR TO INSERTING ROD AND EPOXY. USE HILTI HIT-HY 200 ADHESIVE. CONSULT ENGINEER FOR USE OF ALTERNATE GRADE OR MANUFACTURER EPOXY.

STRUCTURAL STEEL:

FABRICATION AND ERECTION OF ALL STRUCTURAL STEEL SHALL CONFIRM WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION AND ANSI/AISC 360.

STEEL PLATES AND ANGLES SHALL BE ASTM GRADE A36 OR BETTER FINISHED PER CLIENT SPECIFICATIONS.

ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE FABRICATOR.

NO CUTS, HOLES, OR COPES SHALL BE MADE IN THE FIELD. ONLY THOSE SHOWN ON THE FABRICATOR SHOP DRAWINGS, AND MADE IN THE SHOP, SHALL BE PERMITTED.

SPlicing OF MEMBERS IS NOT ALLOWED, UNLESS SPECIFICALLY CALLED OUT OR APPROVED BY THE ENGINEER OF RECORD.

GROUT UNDER COLUMN BASE PLATES SHALL BE NON-SHRINK AND HAVE A MINIMUM 28-DAY f'c = 5,000PSI.

THREADED ROD AND STRUCTURAL BOLTING:

UNLESS NOTED OTHERWISE, BOLTS CONNECTING STRUCTURAL STEEL TO TIMBER SHALL BE A307B OR BETTER BOLTS, INSTALLED IN ACCORDANCE WITH THE NDS DETAILING REQUIREMENTS.

WELDING:

WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE AWS D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL BE CLASS E70XX.

THE MINIMUM FILLET WELD ON ALL CONNECTING MEMBERS MUST COMPLY WITH AISC TABLE J2.4 BASED ON THE THINNEST CONNECTING MEMBER:

t ≤ ¼" 1/8"

¼" < t ≤ ¾" 3/16"

¾" < t ≤ 1" 1/4"

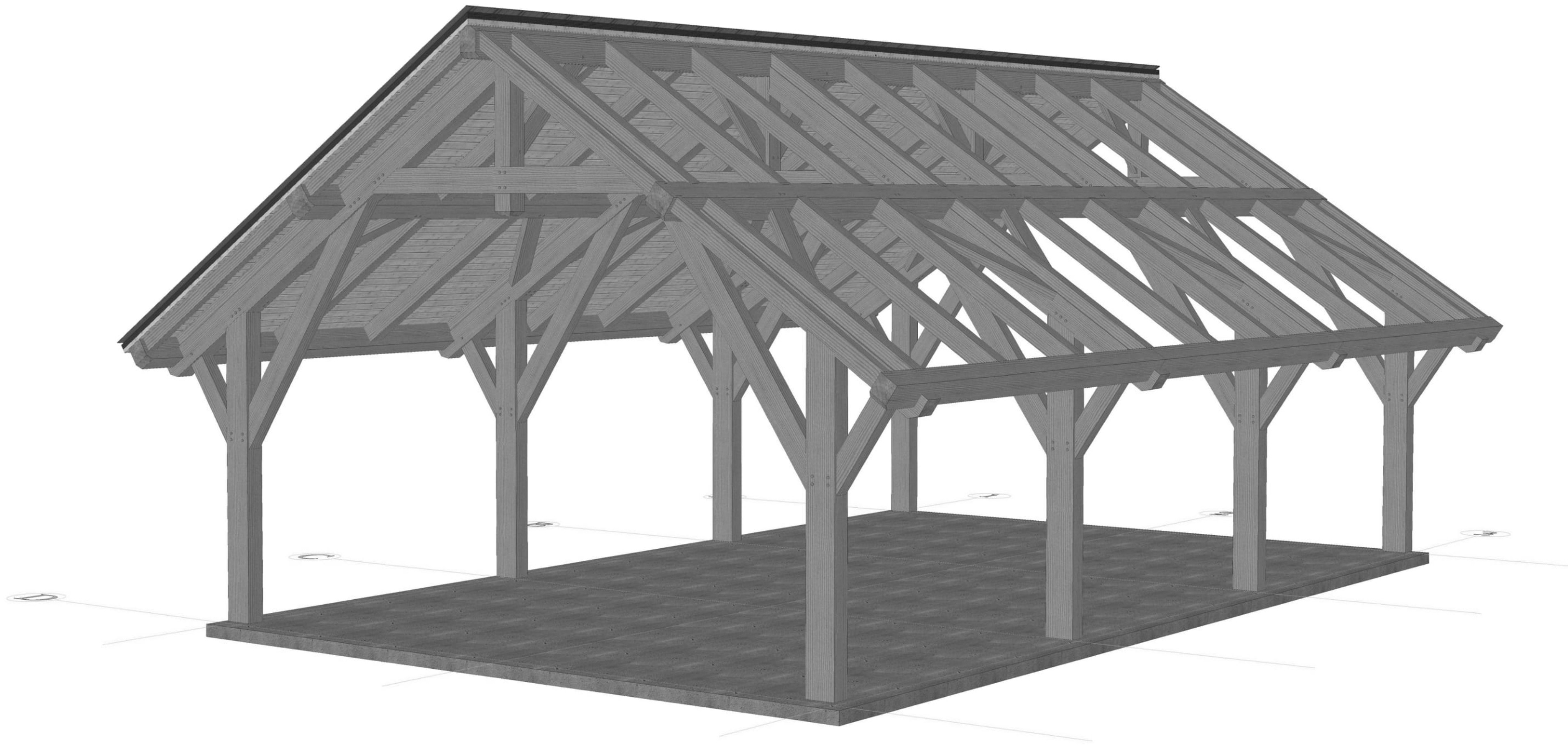
t ≥ 1" 5/16"

ERECTION AND BRACING:

THE STRUCTURAL DRAWINGS ARE INTENDED TO ILLUSTRATE THE COMPLETED STRUCTURE, WITH ALL MEMBERS IN THEIR FINAL SUPPORTED POSITION, AND ARE NOT INTENDED TO DESCRIBE THE METHOD OF CONSTRUCTION.

THE SEQUENCE FOR INSTALLING STRUCTURAL MEMBERS, AND ENSURING THE SAFETY OF THE STRUCTURE, WORKERS, AND OTHERS DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THIS INCLUDES SHORING, TEMPORARY BRACING, RIGGING, SCAFFOLDING, AND ERECTION (CRANE, FORKLIFT, ETC) EQUIPMENT.

TEMPORARY BRACING, GUYS, AND OTHER LATERAL SUPPORT SHALL BE PROVIDED UNTIL THE BUILDING FRAME IS COMPLETELY INSTALLED..



Engineer:

PAVILION

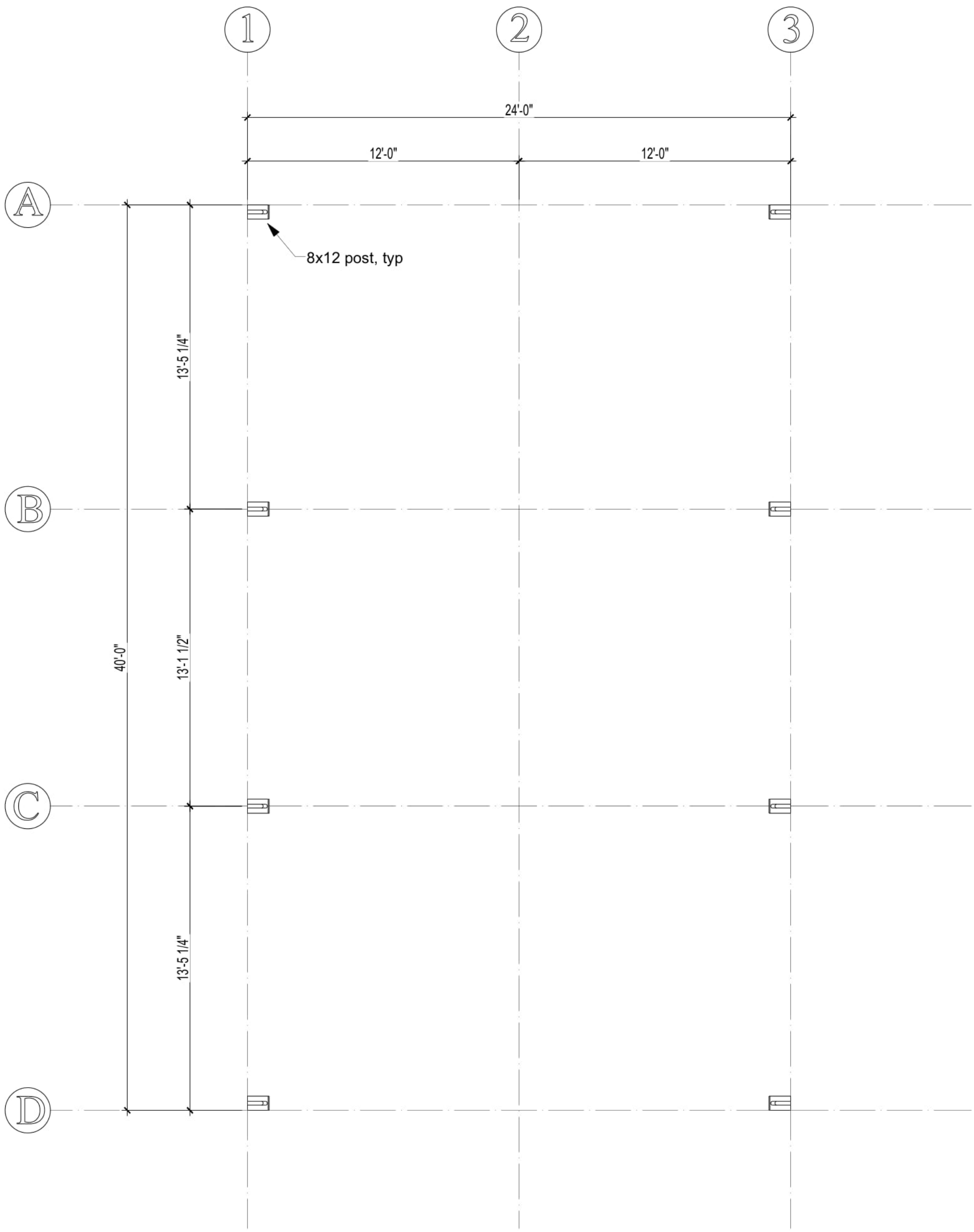
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Architect:
Designer: Kayle Sickler

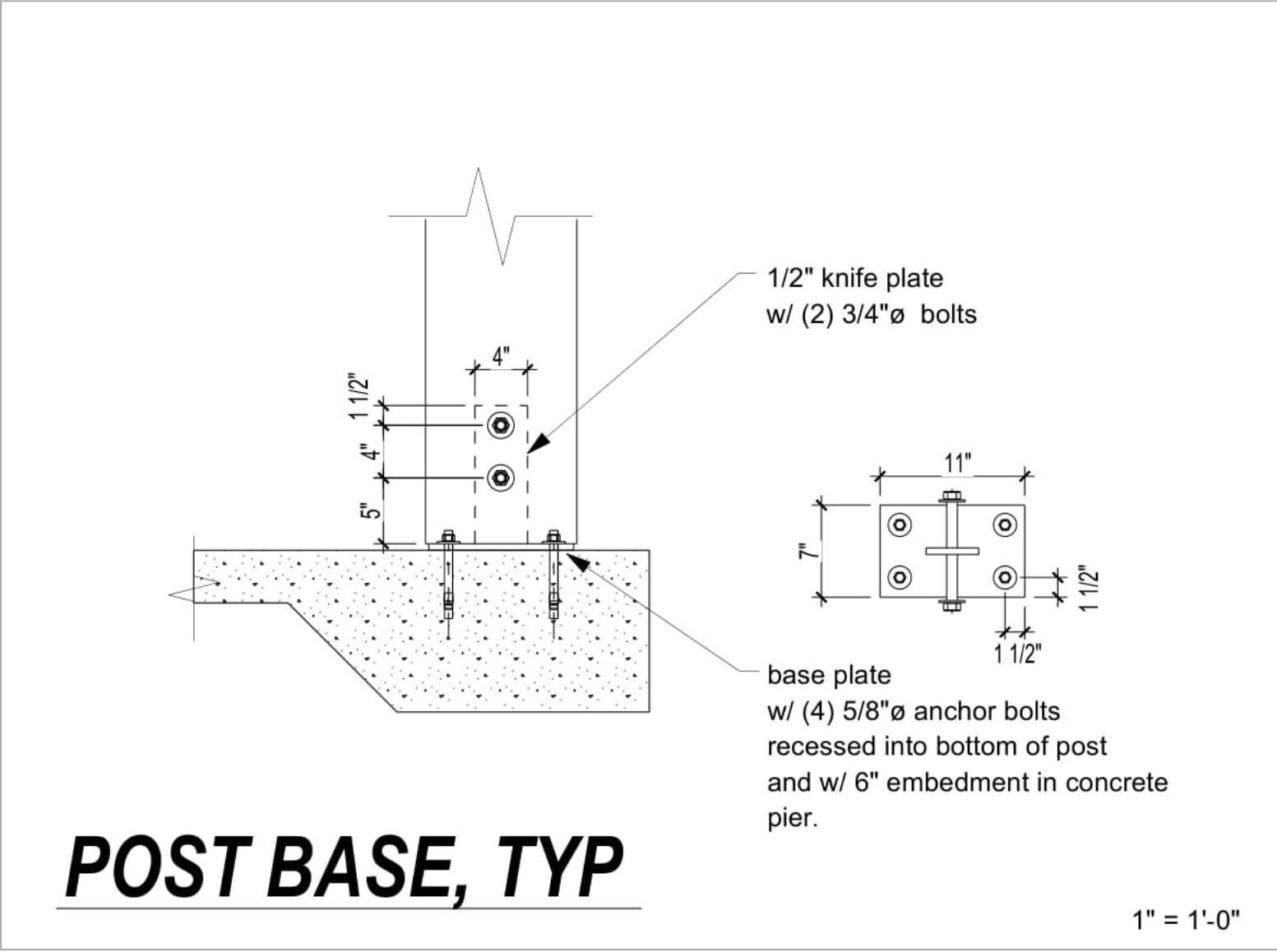
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Review:

Scale: Not to Scale

Timber Frame Drawing
TF1



POST LAYOUT



Engineer:

PAVILION



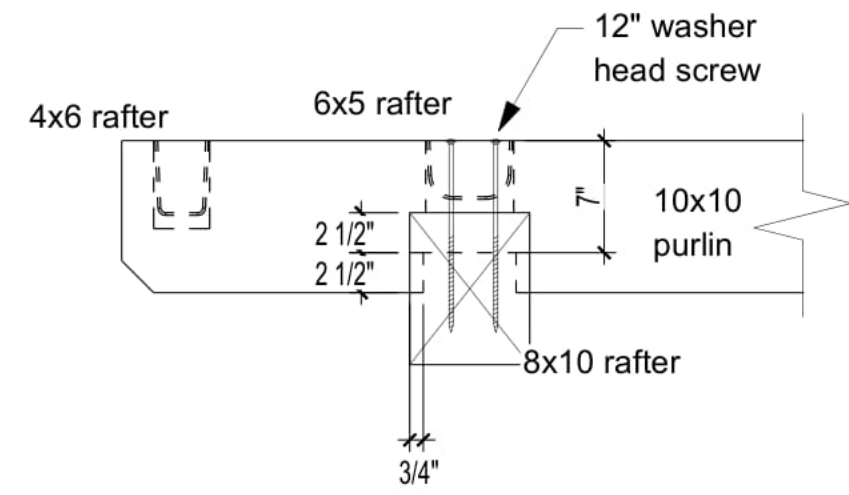
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Designer: Kayle Sickler

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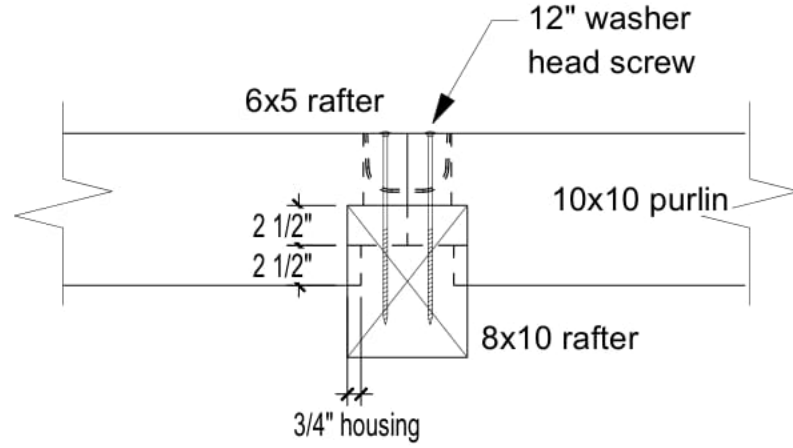
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Timber Frame Drawing
TF2



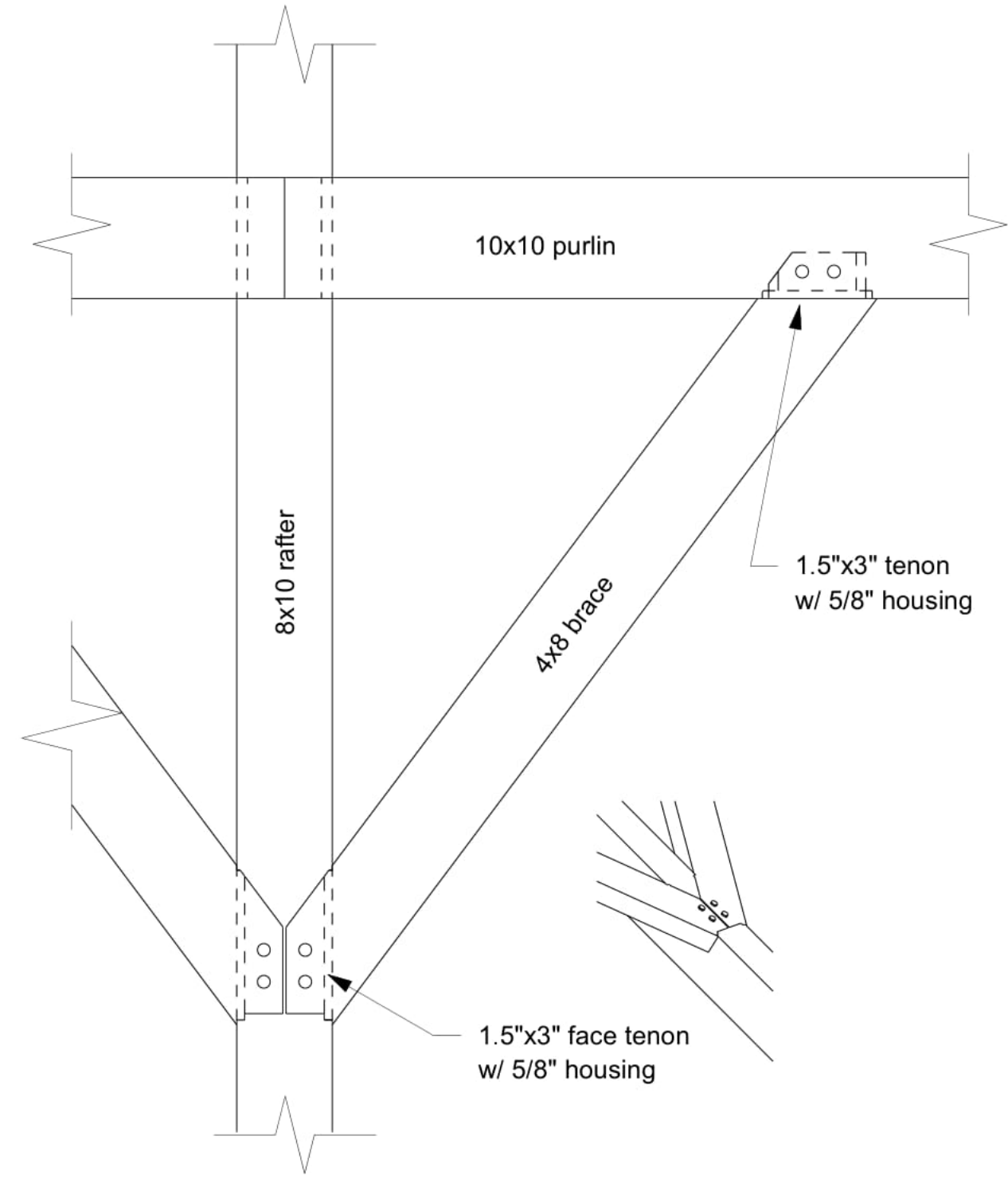
1 **DETAIL**

1" = 1'-0"



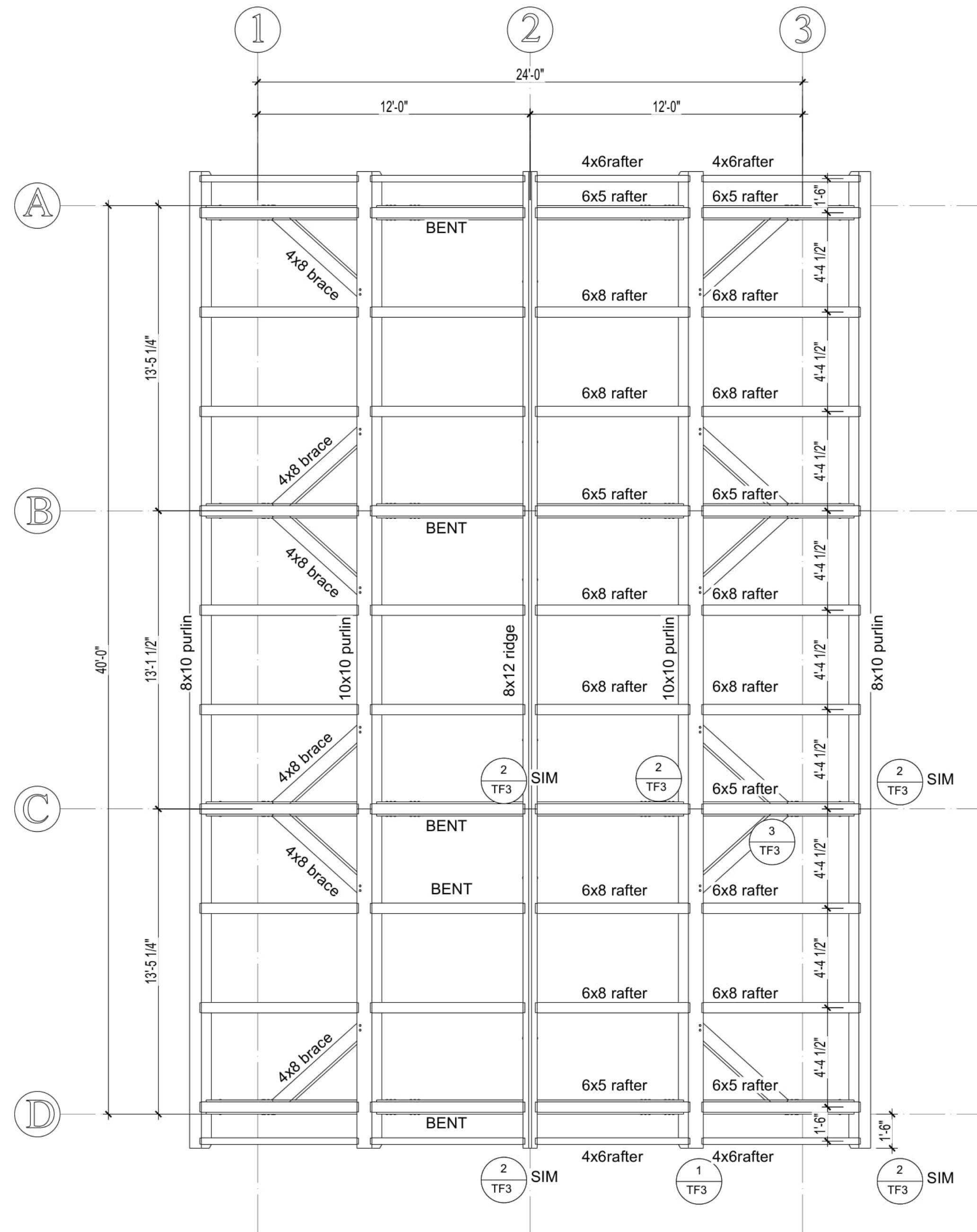
2 **DETAIL**

1" = 1'-0"



3 **DETAIL**

1" = 1'-0"



TIMBER ROOF PLAN

Engineer:

PAVILION

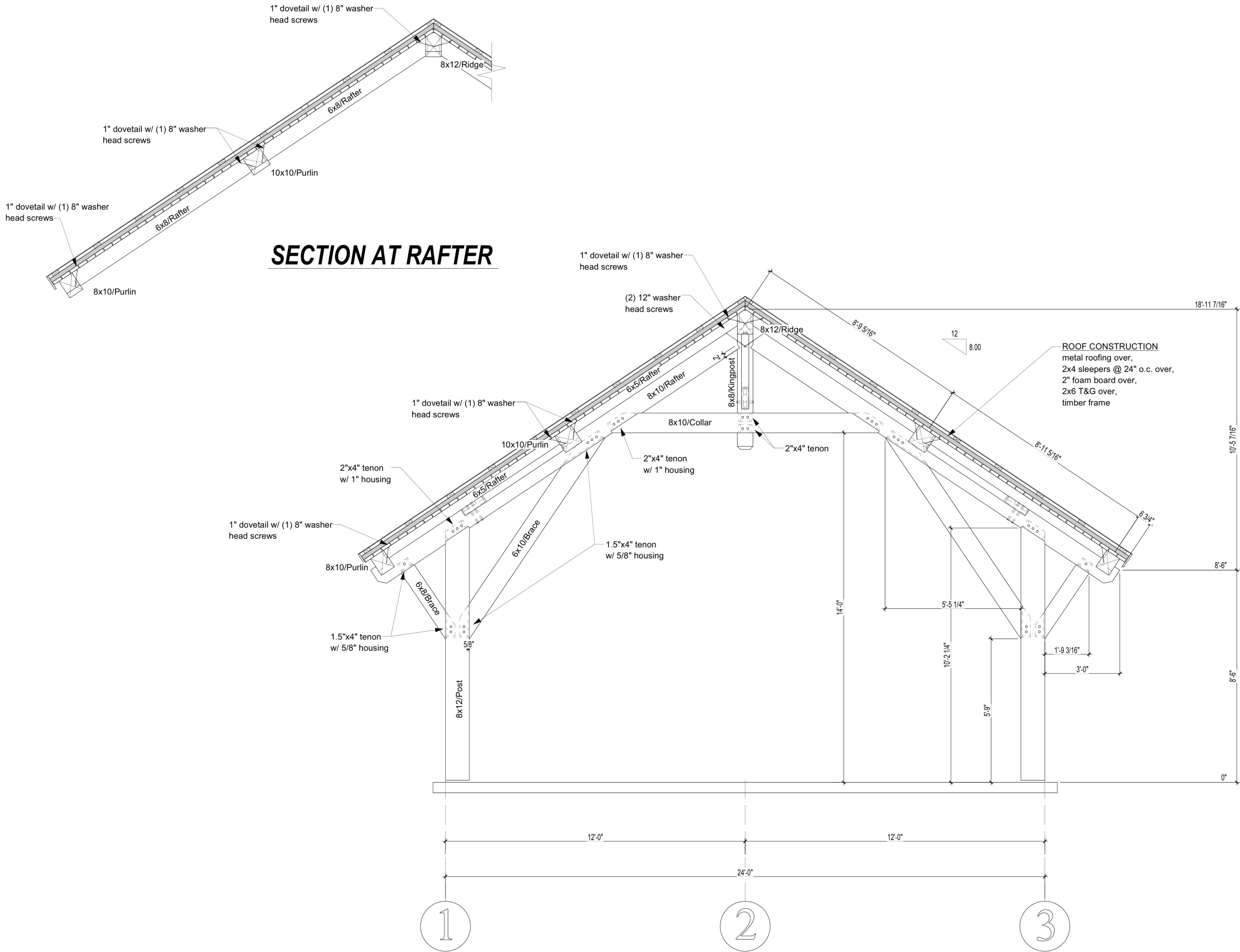
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Location:

Architect:
Designer: Kayle Sickler

Issue Date:
Review:

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

Timber Frame Drawing
TF3



SECTION AT RAFTER

SECTION AT LINE A (LINE B & C SIMILAR)

Engineer:

PAVILION

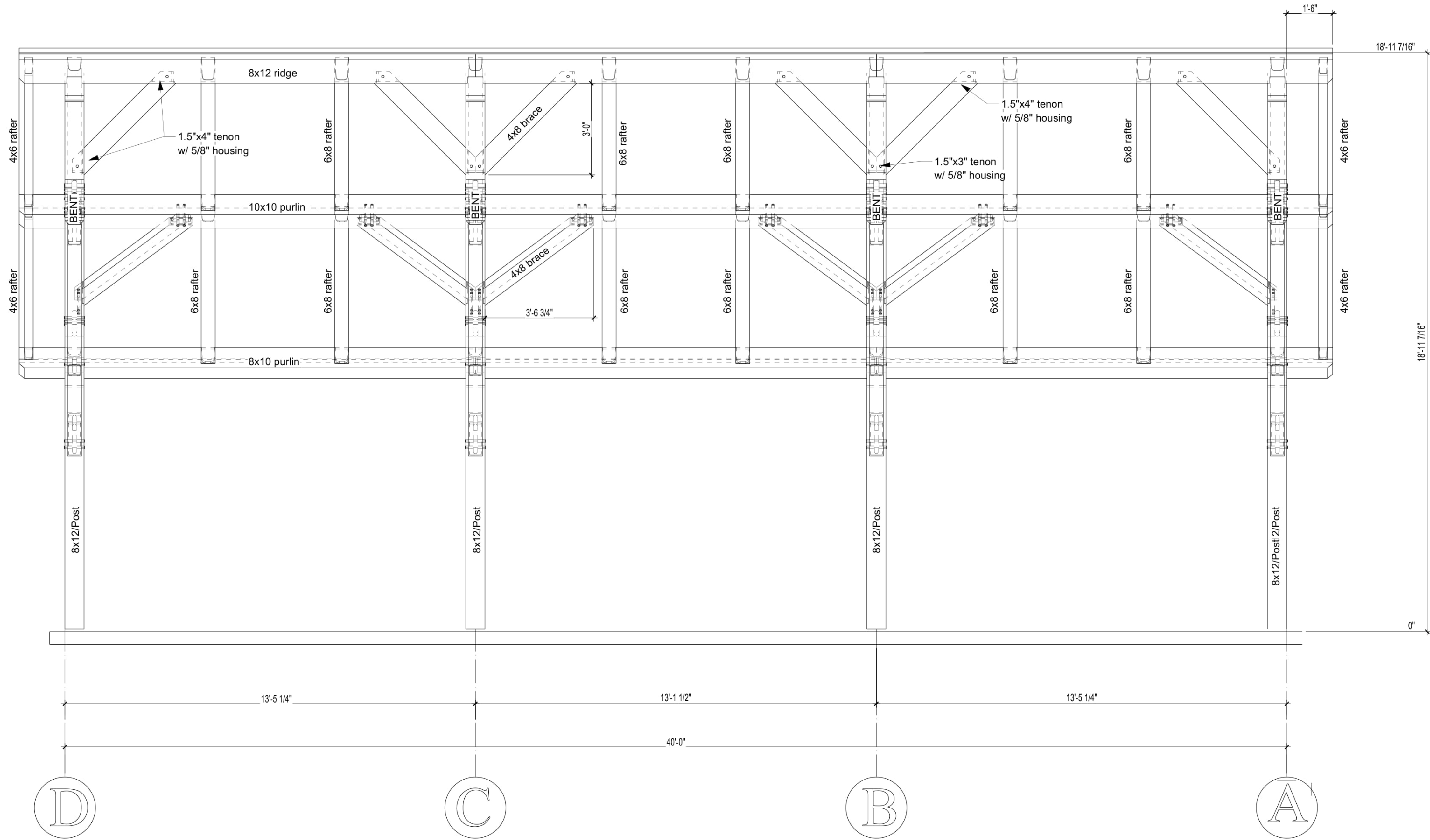
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Location:

Architect:
Designer: Kayle Sickler

Issue Date:
Review:

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

Timber Frame Drawing
TF4



SECTION AT LINE 2

Engineer:

PAVILION

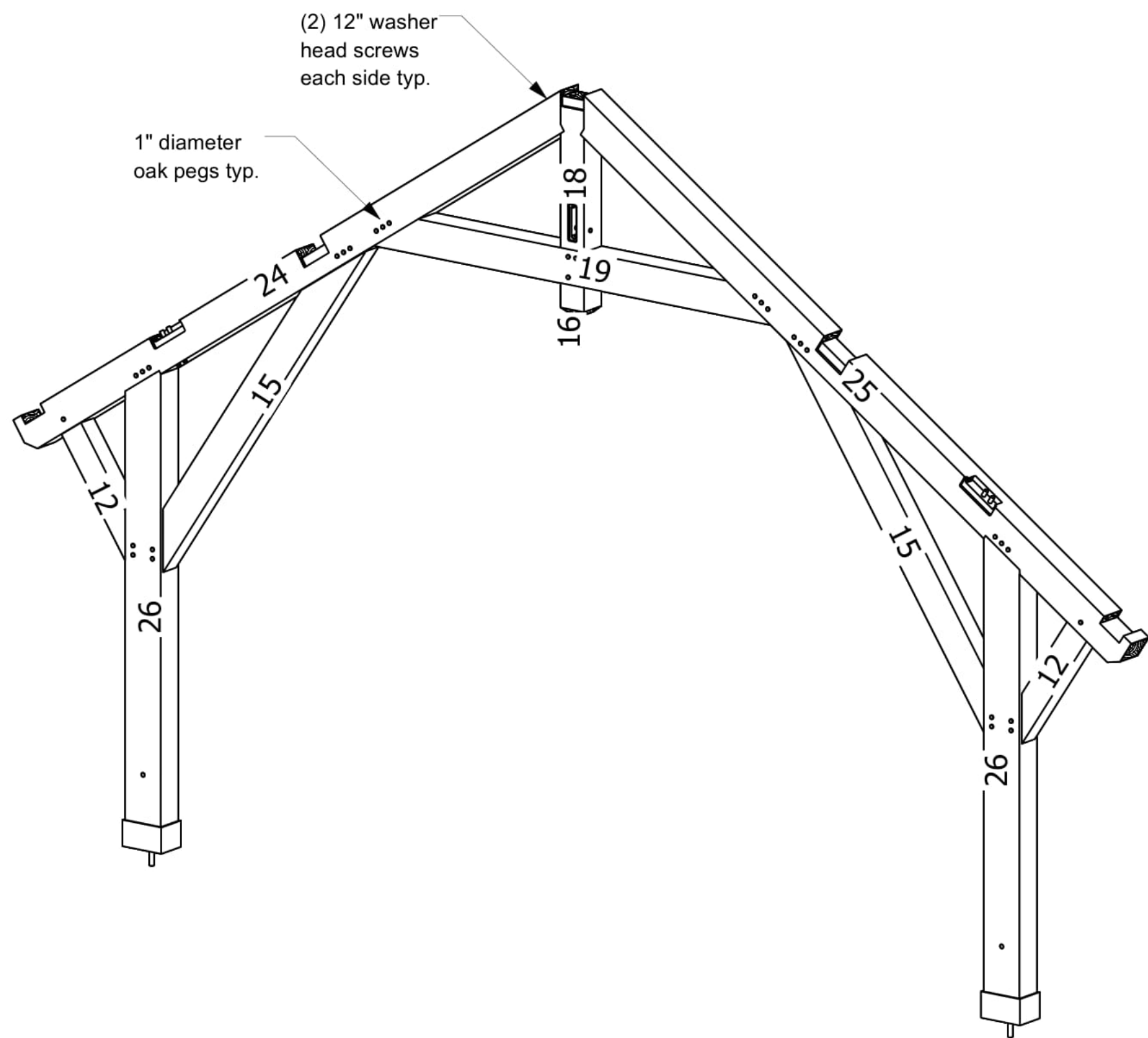
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Location:

Architect:
Designer: Kayle Sickler

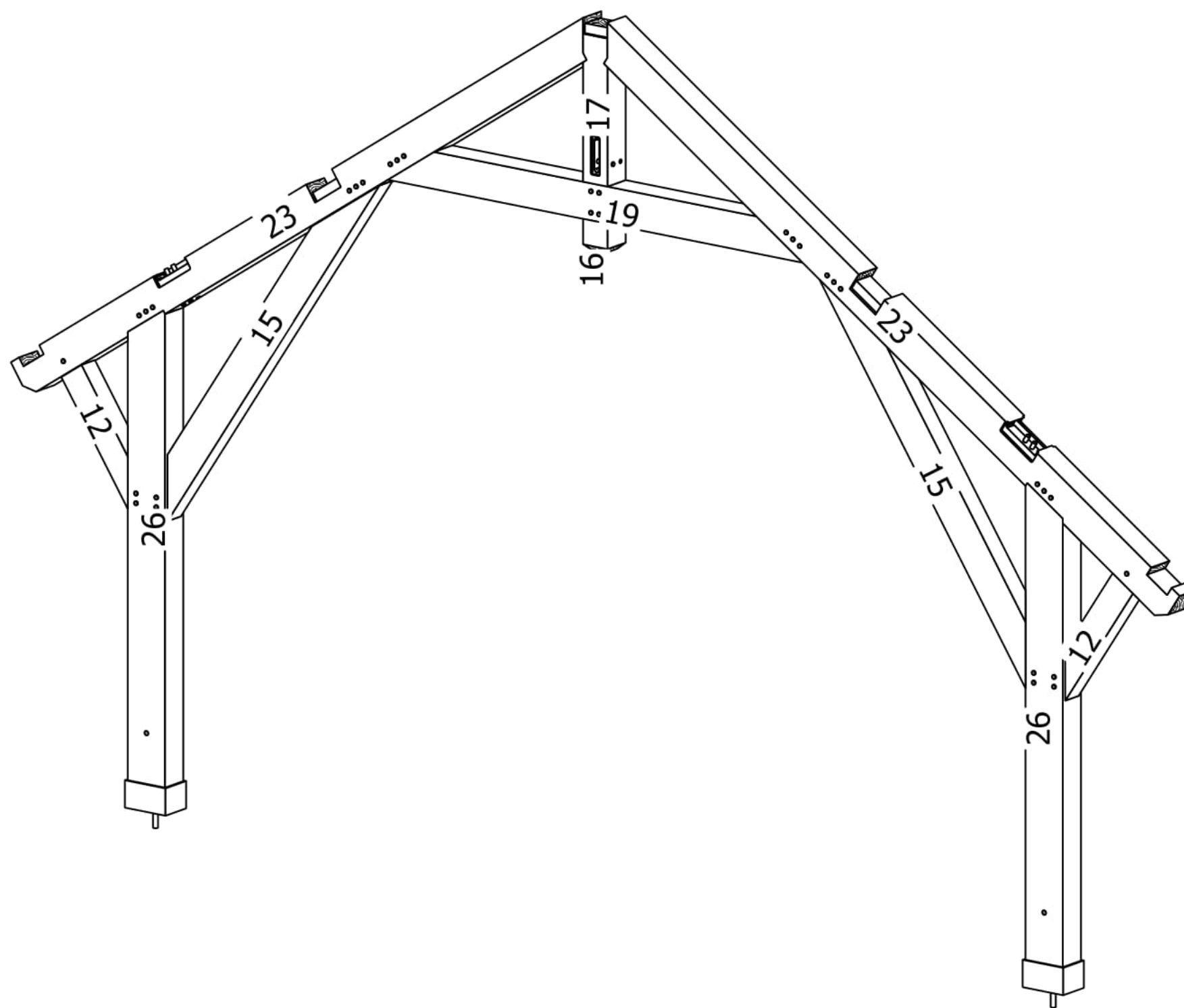
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Review:

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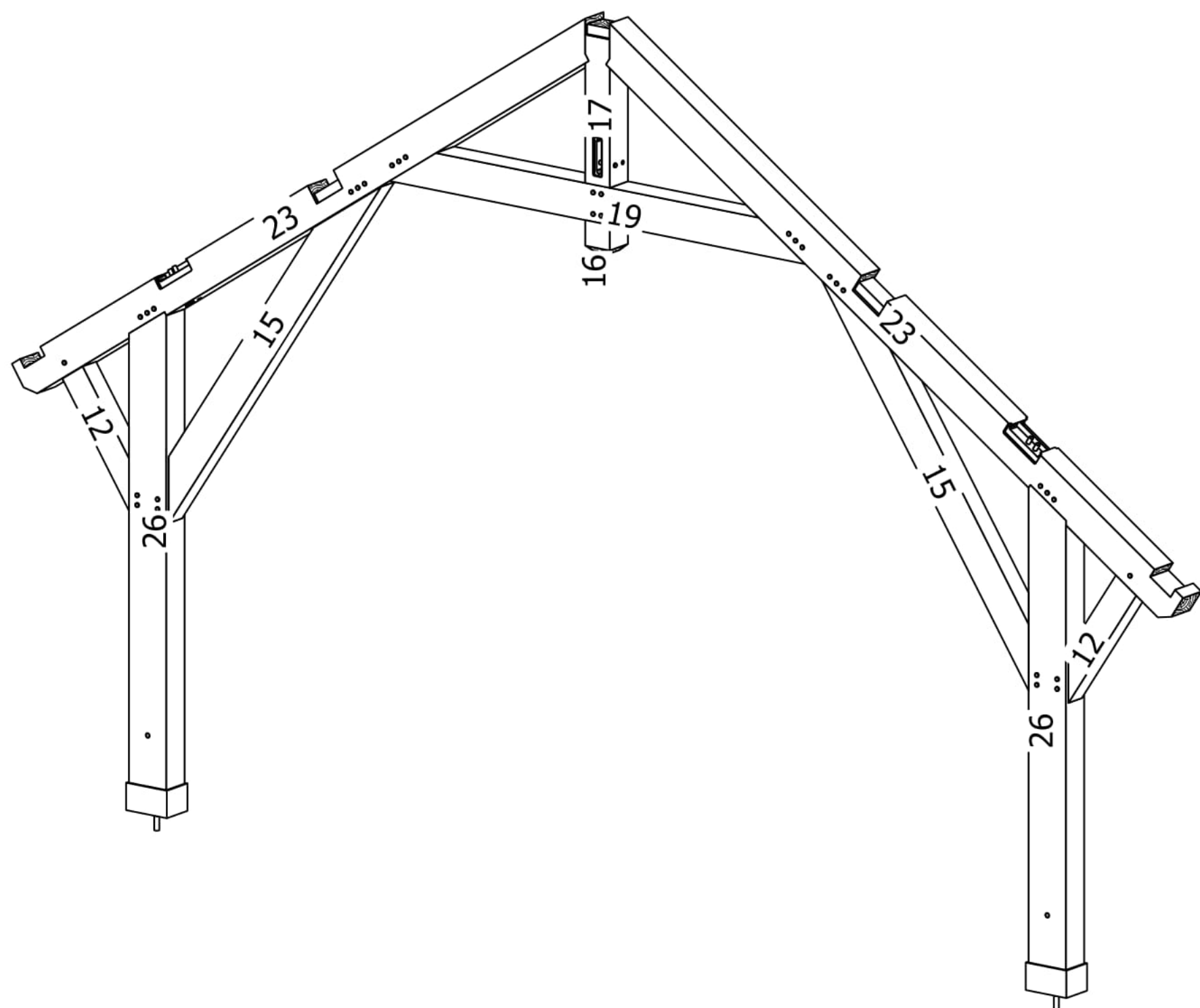
Timber Frame Drawing
TF5



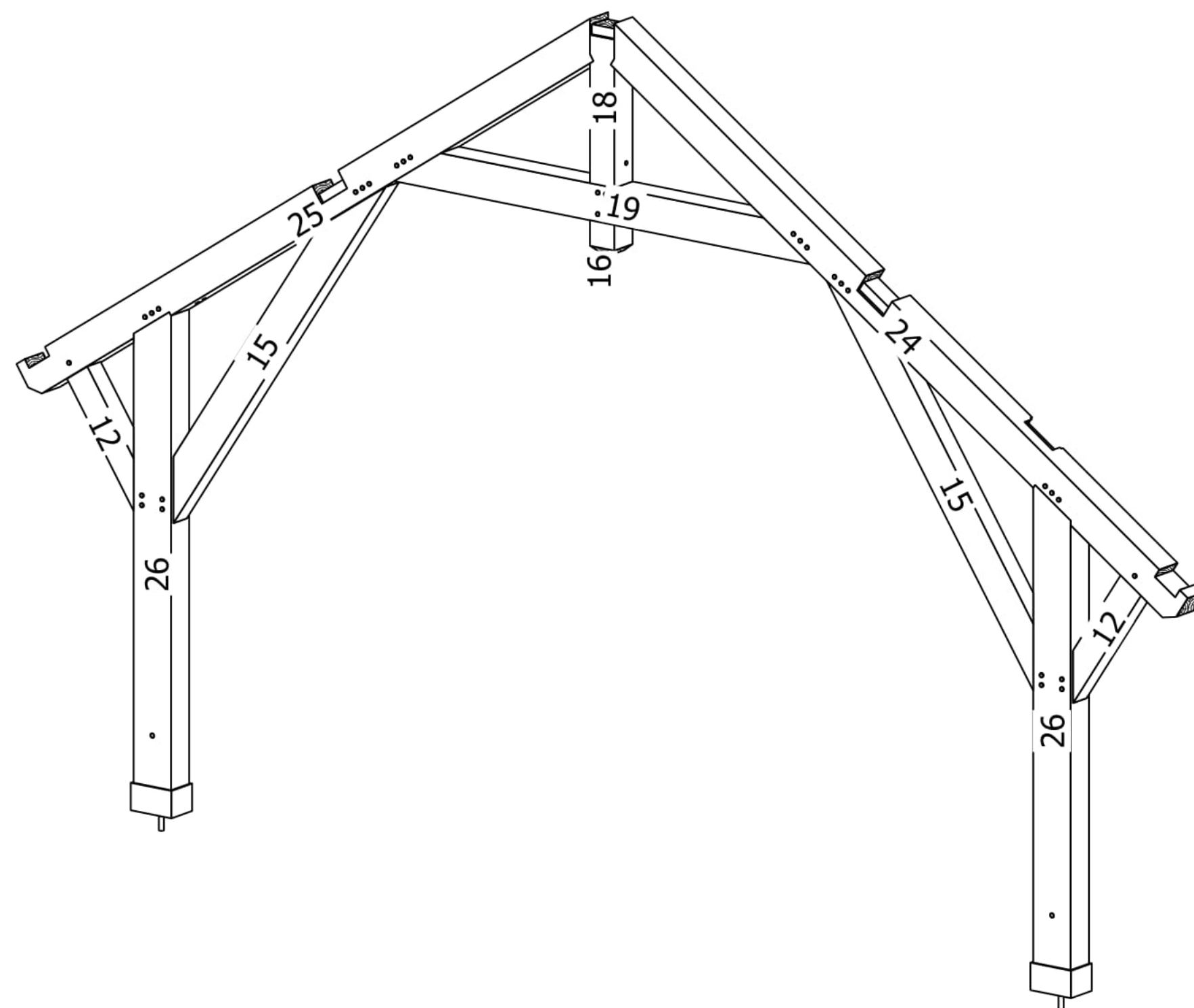
BENT A



BENT B



BENT C



BENT D

Engineer:

PAVILION

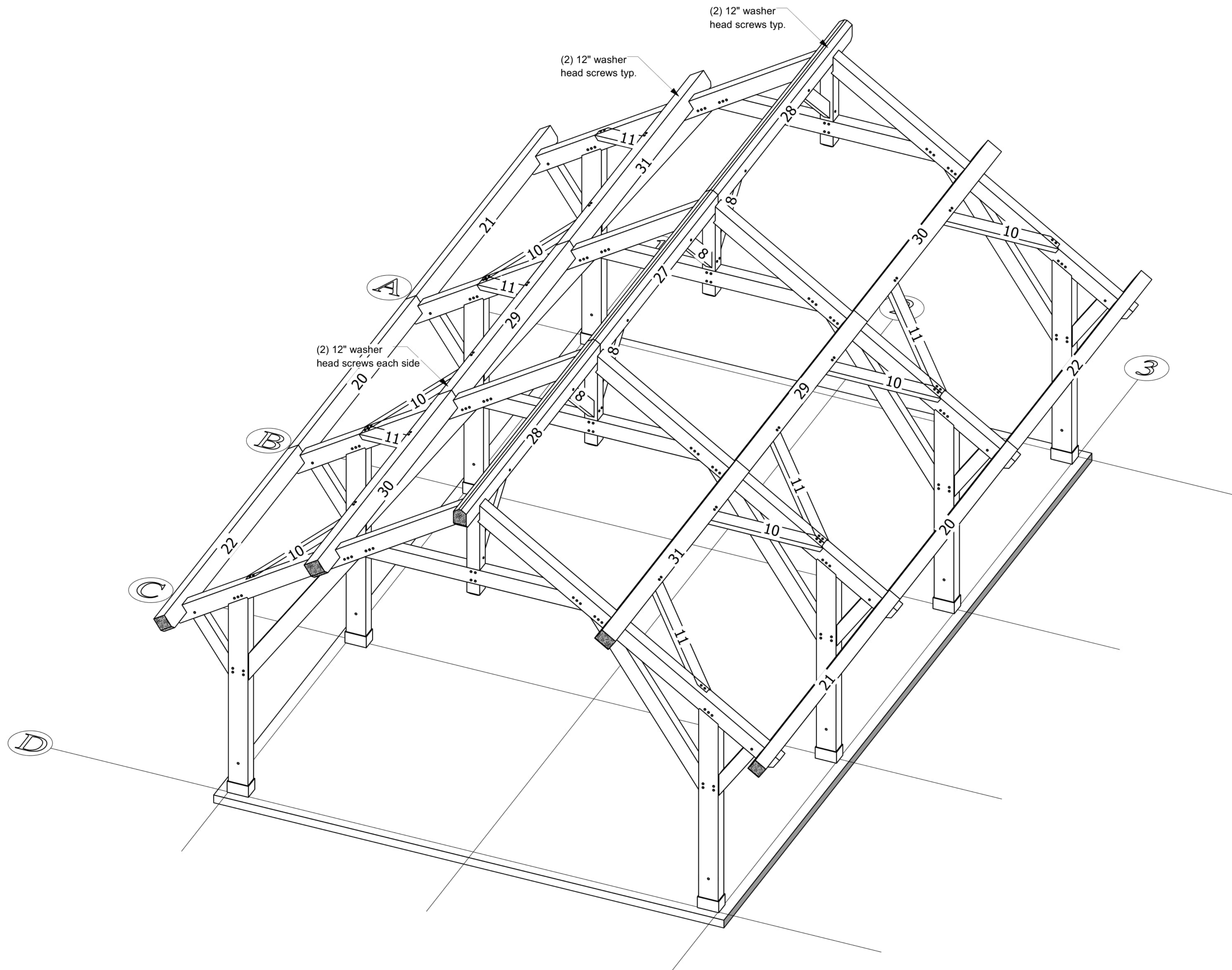
Customer:
Location:

Architect:
Designer: Kayle Sickler

Issue Date:
Review:

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

Timber Frame Drawing
TF6



AXONOMETRIC PURLINS AND RIDGE BEAMS

Engineer:

PAVILION

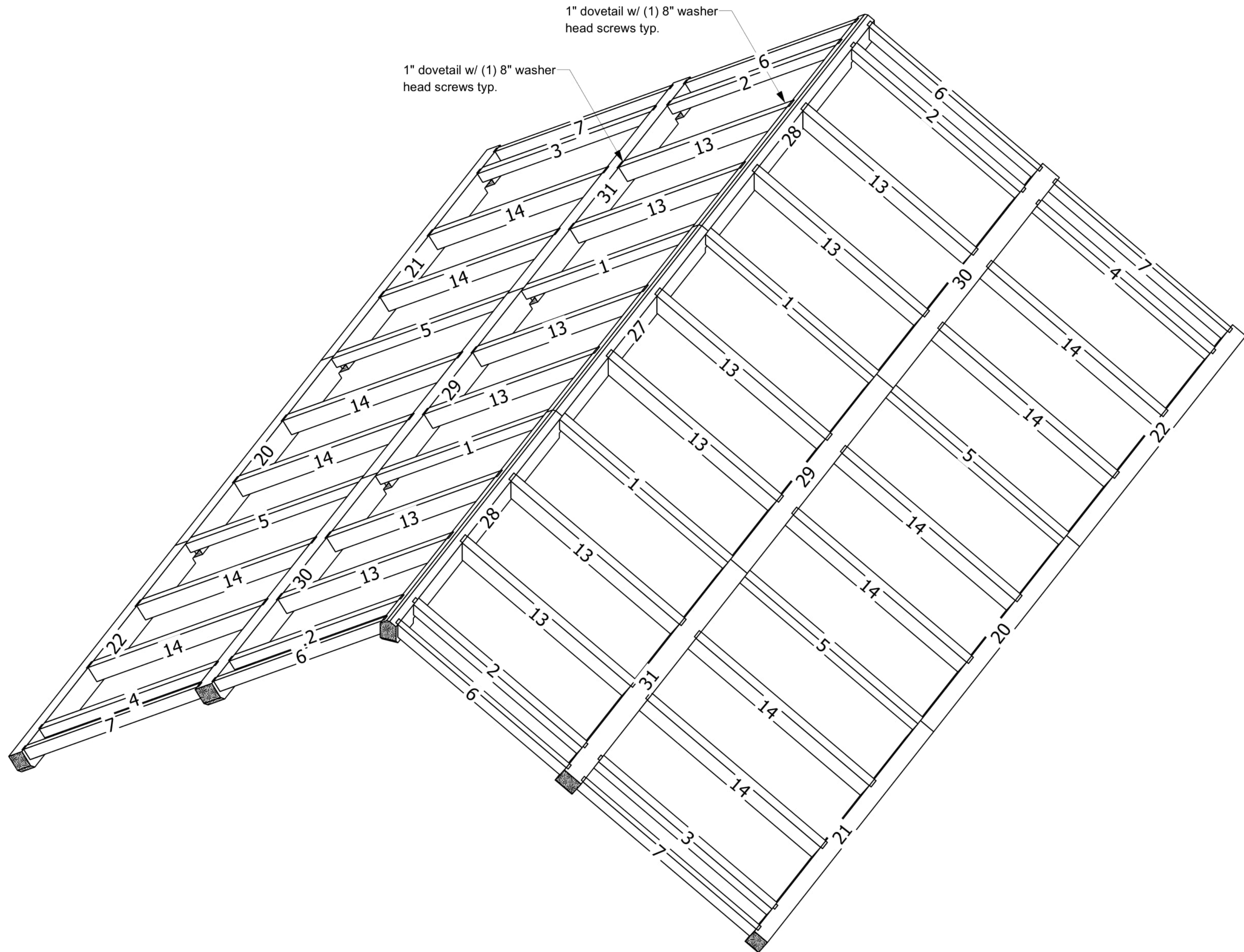
Customer:
Location:

Architect:
Designer: Kayle Sickler

Issue Date:
Review:

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

Timber Frame Drawing
TF7



AXONOMETRIC SECONDARY RAFTERS

Engineer:

PAVILION

Customer:
Location:

Architect:
Designer: Kayle Sickler

Issue Date:
Review:

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

Timber Frame Drawing
TF8