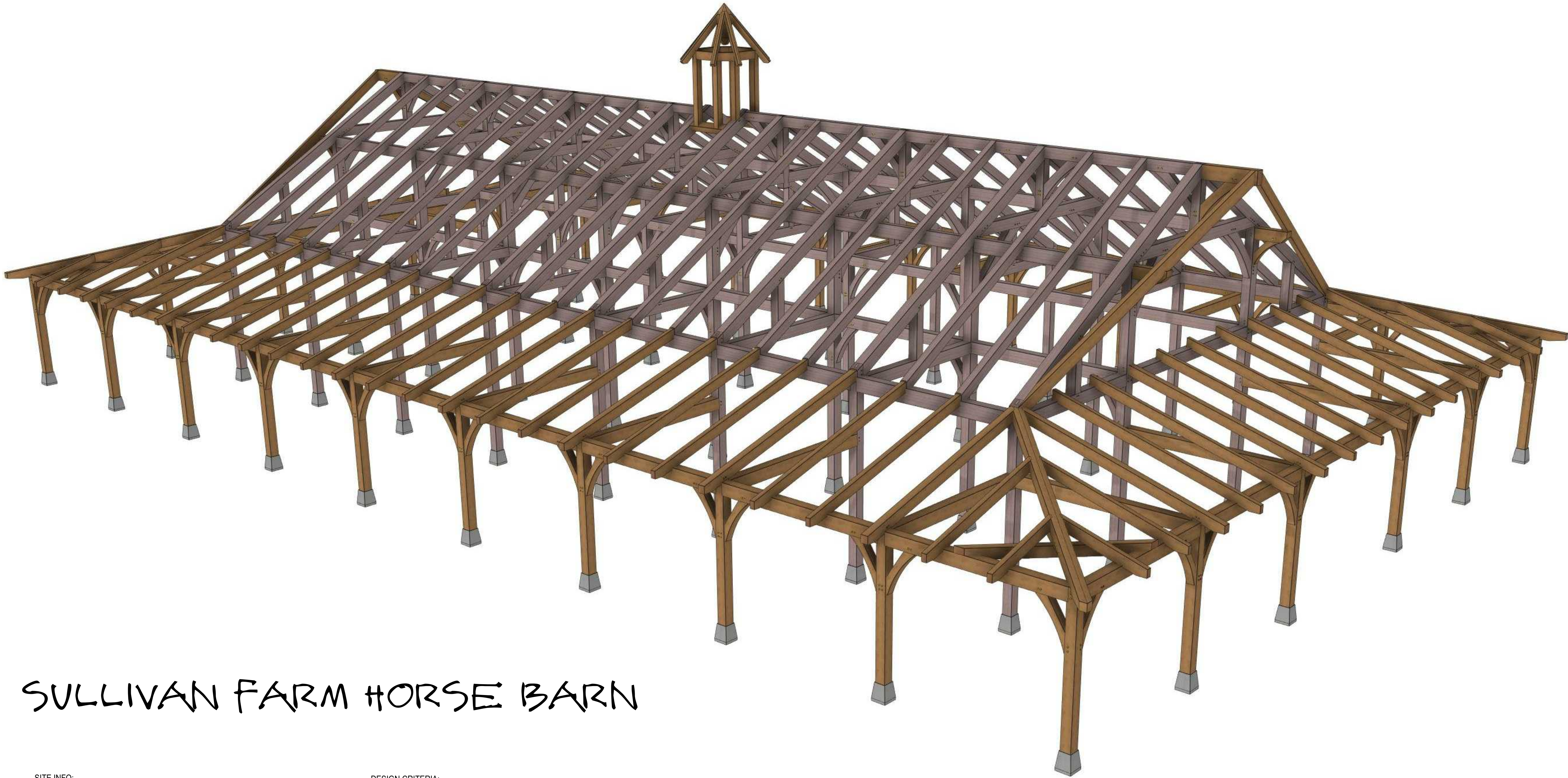




SULLIVAN FARM HORSE BARN

- SITE INFO:**

CURRENT SITE ADDRESS

STRUCTURAL DESIGN REQUIREMENTS:

DESIGN STANDARDS:

 - ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS
 - 2012 INTERNATIONAL BUILDING CODE
 - 2018 NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION
- DESIGN CRITERIA:**

ROOF DEAD LOAD - 15 PSF

ROOF LIVE LOAD - 20 PSF

GROUND SNOW LOAD - 10 PSF

WIND LOAD - 105 MPH WIND

- IMPORTANCE FACTOR, 1.00 (CATEGORY II BUILDING)

GENERAL NOTES:

THESE DRAWINGS ARE INTENDED TO REPRESENT THE TIMBER FRAME STRUCTURE ONLY.

ANY STRUCTURE NOT EXPLICITLY SHOWN ON THESE PLANS HAS NOT BEEN ENGINEERED BY THE ENGINEER OR DESIGNED BY CAROLINA TIMBERWORKS, AND IS THE RESPONSIBILITY OF OTHERS. THE TIMBER FRAME STRUCTURE IS DESIGNED TO RESIST GRAVITY AND UPLIFT LOADS

DIMENSIONS & MEASUREMENTS:

MEASUREMENTS ARE BASED ON THE DRAWING SET...

PLEASE VERIFY ALL FIELD DIMENSIONS BEFORE FABRICATION. **DO NOT SCALE ANY DRAWINGS.**

TIMBERS:

UNLESS OTHERWISE CALLED OUT, ALL EXTERIOR TIMBERS SHALL #2 & BETTER, WHITE OAK, ROUGH SAWN (R/S) TO THE FULL STATED DIMENSIONS. NO EDGE TREATMENT APPLIED.

UNLESS OTHERWISE CALLED OUT, ALL INTERIOR TIMBERS SHALL #2 & BETTER, RED OAK, ROUGH SAWN (R/S) TO THE FULL STATED DIMENSIONS. NO EDGE TREATMENT APPLIED.

WOOD IS A NATURAL MATERIAL AND BY NATURE SHRINKS, CHECKS, TWISTS, AND MOVES. THIS MOVEMENT SHOULD BE EXPECTED, AND IT NOT INDICATIVE OF STRUCTURAL OR FABRICATION ERRORS. TIGHTENING OF BOLTS AND OTHER FASTENERS MAY BE REQUIRED DURING THE STRUCTURE'S SERVICE LIFE, BY OTHERS.

TIMBER SCREWS:

UNLESS OTHERWISE CALLED OUT, ALL SCREWS SHALL BE BY GRK RSS OR WURTH ASSY, WITH A SHANK DIA. OF AT LEAST 0.2", AND A THREAD DIA. OF AT LEAST 0.30".

EQUAL SUBSTITUTIONS MAY BE MADE, ONLY WITH DIRECT WRITTEN PERMISSION FROM THE ENGINEER. SCREW HOLES SHALL NOT BE PRE-DRILLED UNLESS OTHERWISE CALLED OUT, AND HAVE AT LEAST 3" OF THREAD PENETRATION INTO THE CONNECTING MEMBER.

DOVETAIL CONNECTIONS:

UNLESS OTHERWISE NOTED, ROUNDED DOVETAIL CONNECTIONS SHALL HAVE A DEPTH OF 1" AND SHALL EXTEND FOR AT LEAST 3/4 THE DEPTH AND 3/4 THE WIDTH (AT THE TOP FACE) OF THE CONNECTING (SUPPORTED) MEMBER. THE CONNECTIONS SHALL HAVE A CONE ANGLE OF AT LEAST 10 DEGREES AND A WEDGE ANGLE OF 75 DEGREES.

TIMBER FRAME JOINERY:

UNLESS OTHERWISE CALLED OUT, THE JOINERY SHOULD MEET THE FOLLOWING REQUIREMENTS, AND BE DETAILED IN ACCORDANCE WITH TFEC 1-19.

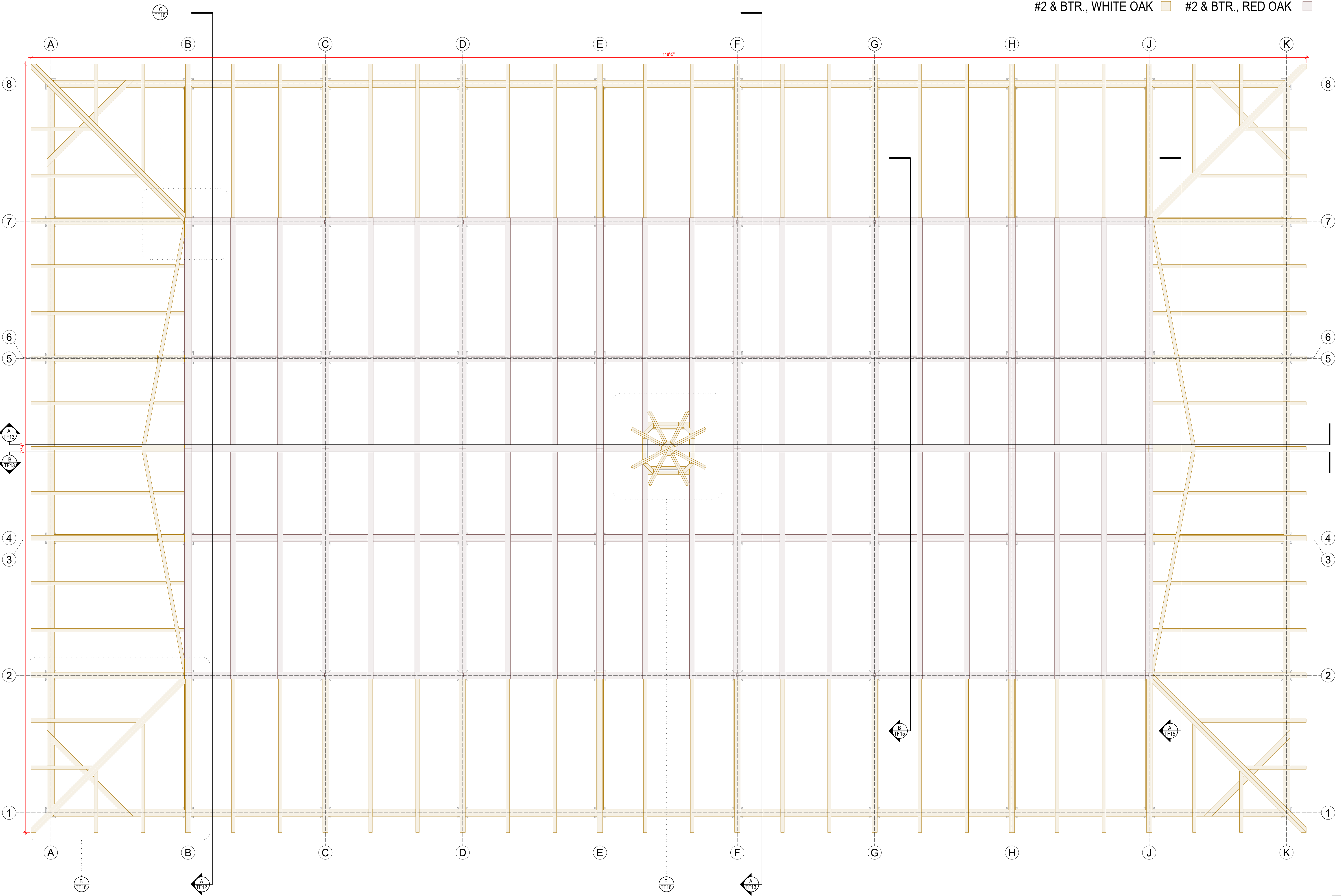
UNLESS OTHERWISE CALLED OUT, ALL PEGS SHALL BE 1" IN DIA. AND MEET THE REQUIREMENTS OF TFEC 1-19.

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

WHERE TENON INTERFERENCE OCCURS, TENONS SHALL BE AS LONG AS POSSIBLE, AND OFFSET (HIGH/LOW). IN THREE-WAY AND FOUR-WAY CONNECTIONS, 2" x 6" HARDWOOD SPLINES (SPECIFIC GRAVITY EQUAL TO OR GREATER THAN THE CONNECTING TIMBERS) WITH (3) 1" W.O. PEGS, EACH SIDE, SPACED 2-3/4" APART ARE TO BE USED, UNLESS OTHERWISE CALLED OUT ON THE PLANS.

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

SULLIVAN FARM BARN		ENGINEER:		TIMBER FRAME:	
210 INDUSTRIAL PARK WAY, WEST JEFFERSON, NC 28694		 FIRE TOWER ENGINEERED TIMBER		 Carolina Timberworks	
CLIENT:	ARCHITECT:				
DRAWN BY:		JH			
DBL CHK BY:		DC			
DATE:		11-01-22			
REVISION:		0.1			
SHEET TF		1 OF 23			



TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN

FLOOR PLAN

CLIENT:

ARCHITECT:

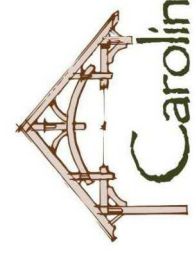
DRAWN BY:
JH

DATE:
11-01-22

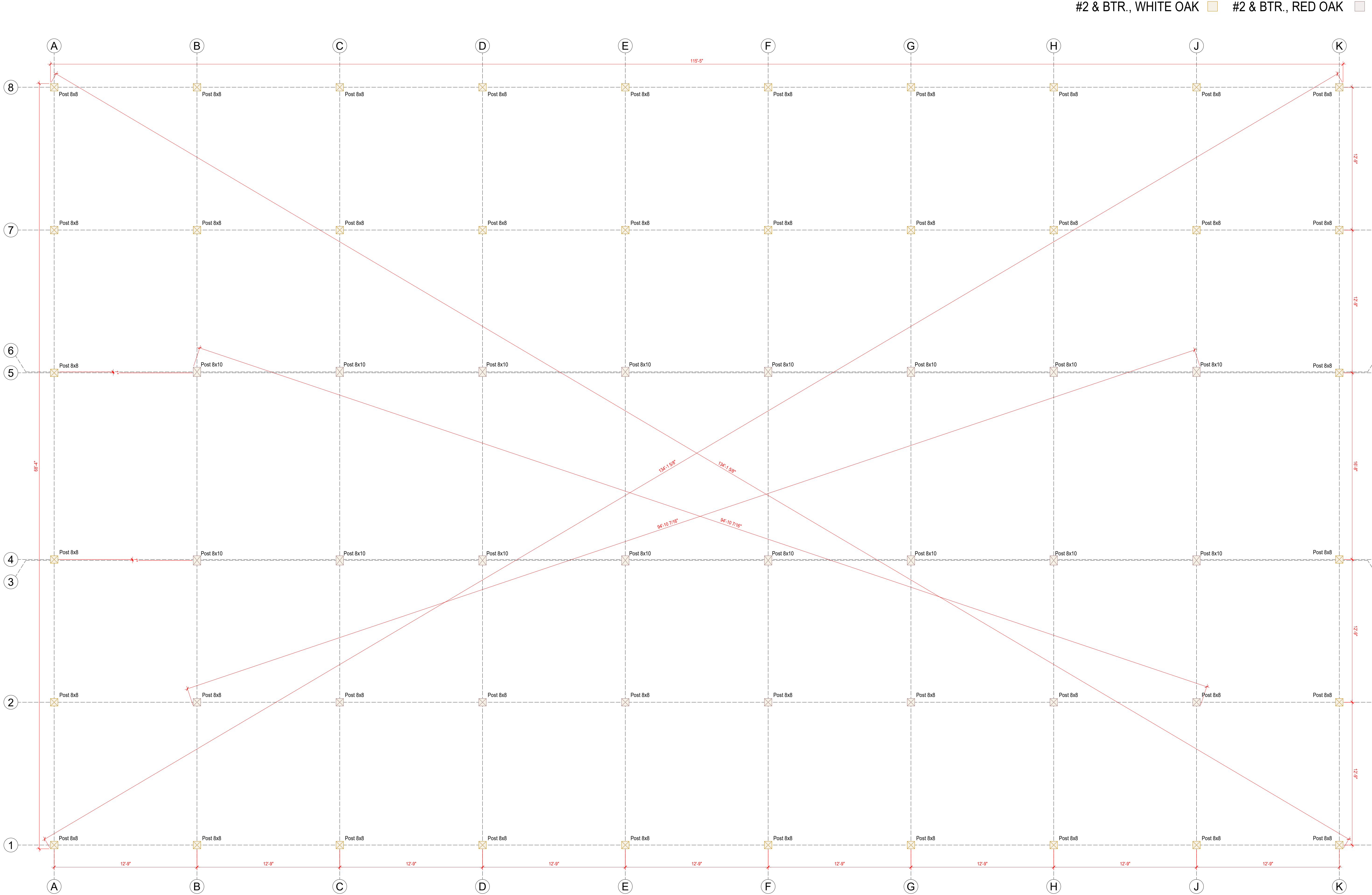
REVISION:
0.1

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

SHEET TF
2 OF 23

Carolina Timberworks

FIRE TOWER
ENGINEERED TIMBER



#2 & BTR., WHITE OAK #2 & BTR., RED OAK

TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN

FLOOR PLAN

ARCHITECT:

CLIENT:

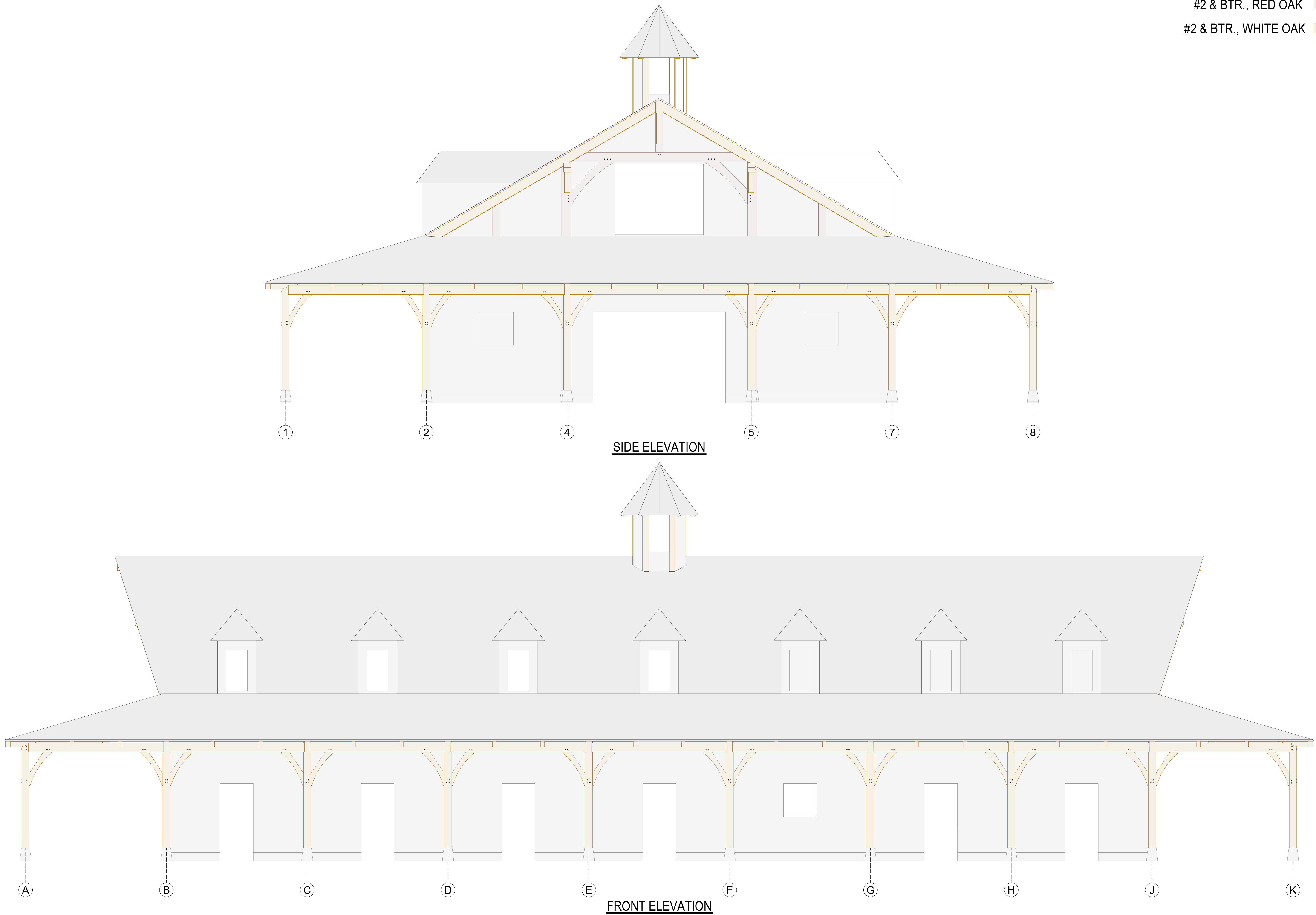
DRAWN BY:
JH

DATE:
11-01-22

REVISION:
0.1

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

SHEET TF
3 OF 23

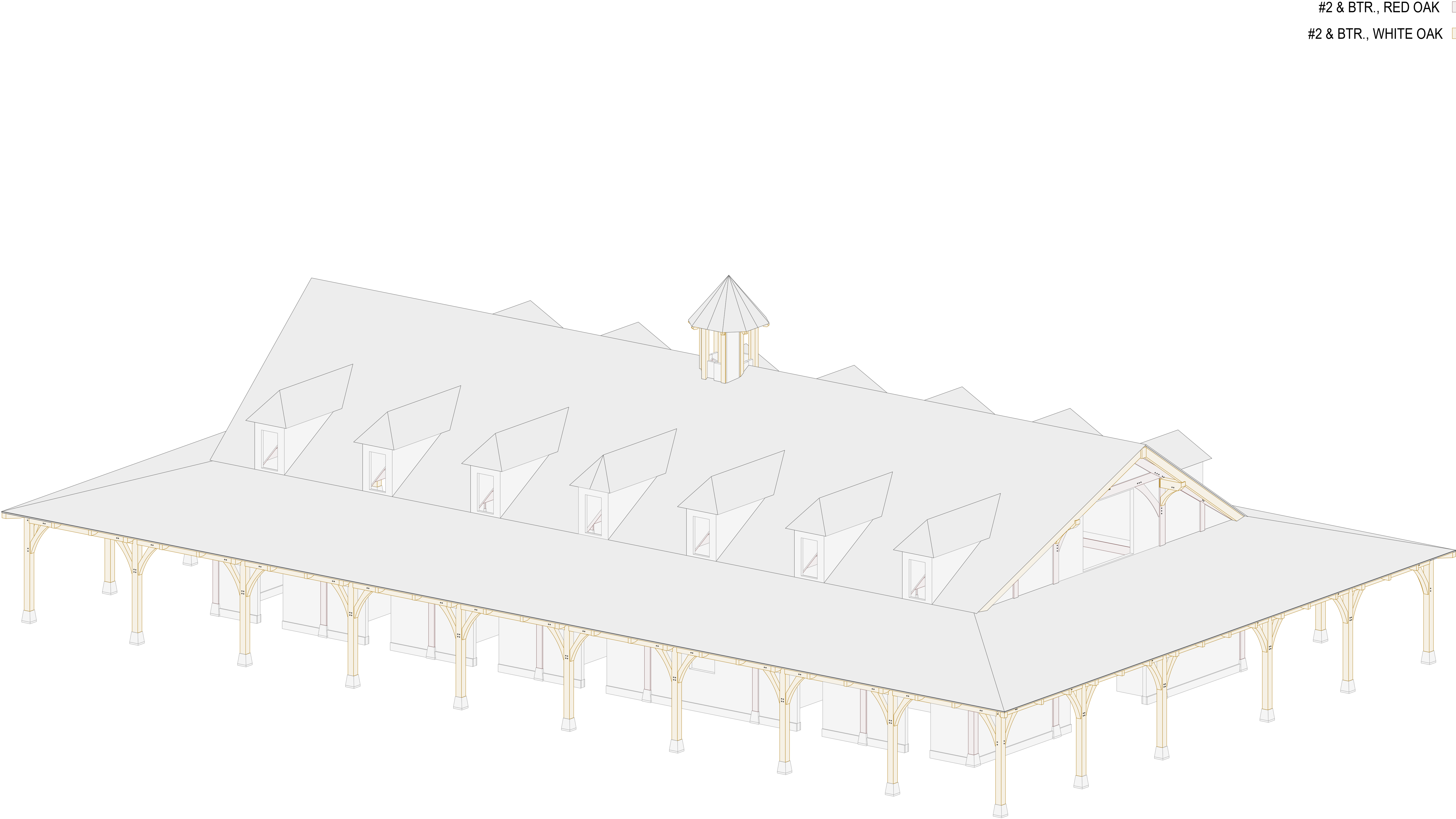


#2 & BTR., RED OAK
#2 & BTR., WHITE OAK

SIDE ELEVATION

FRONT ELEVATION

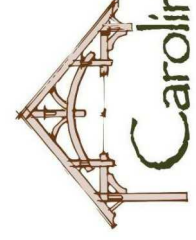
SULLIVAN FARM BARN ELEVATIONS		ENGINEER:	TIMBER FRAME:
CLIENT:		 FIRE TOWER ENGINEERED TIMBER	 Carolina Timberworks
ARCHITECT:			
DRAWN BY: JH			
DATE: 11-01-22			
REVISION: 0.1			
SCALE: 1/4" = 1'-0"			
SHEET TF 4 OF 23			



#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:

 Carolina Timberworks

ENGINEER:

 FIRE TOWER
ENGINEERED TIMBER

SULLIVAN FARM BARN

FLOOR PLAN

ARCHITECT:

CLIENT:

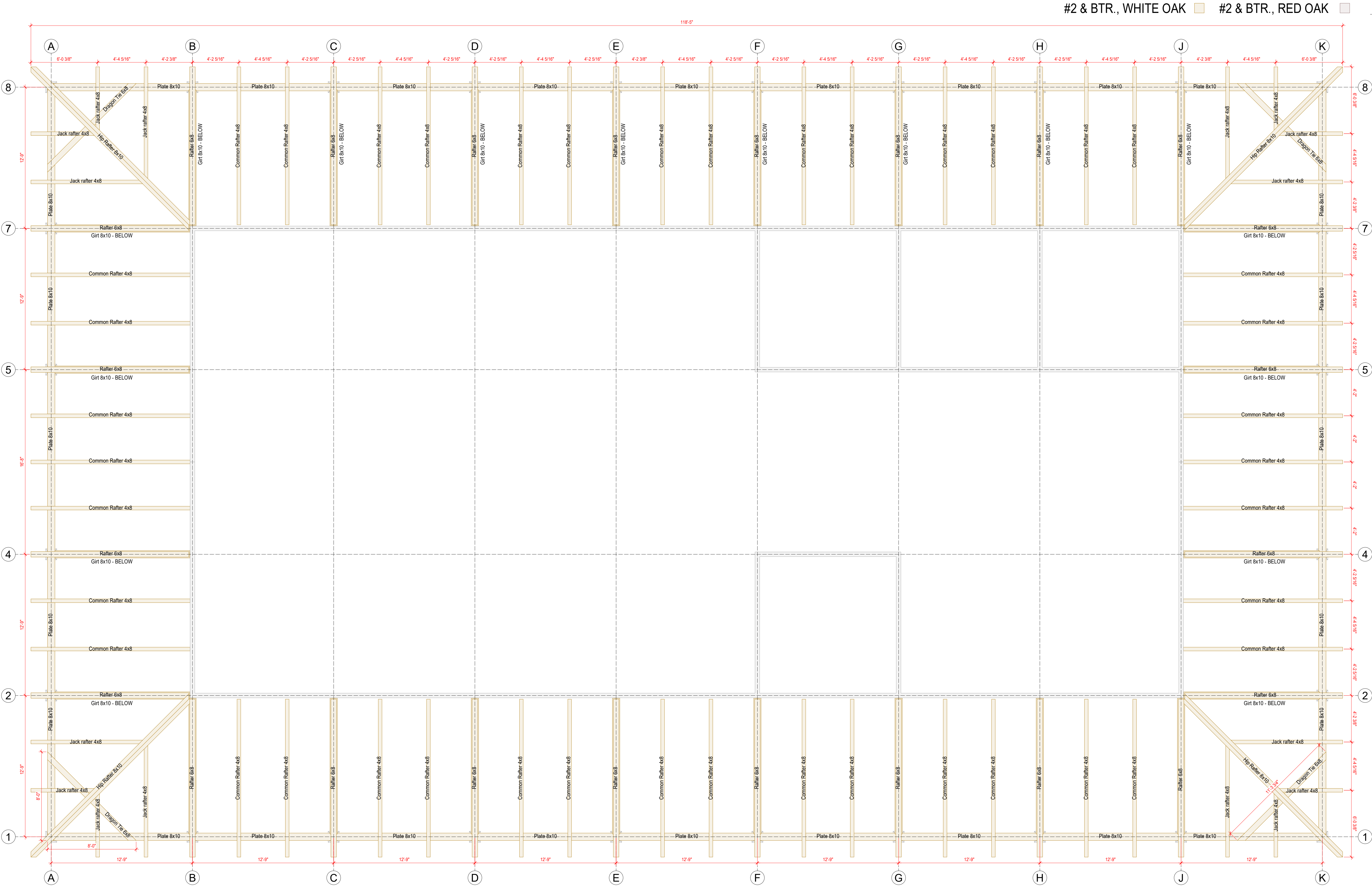
DRAWN BY:
JH

DATE:
11-01-22

REVISION:
0.1

SCALE:
N.T.S.

SHEET TF
5 OF 23



#2 & BTR., WHITE OAK #2 & BTR., RED OAK

TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN
EXTERIOR COVERED PORCH PLAN

DRAWN BY:
JH
DATE:
11-01-22
REVISION:
0.1

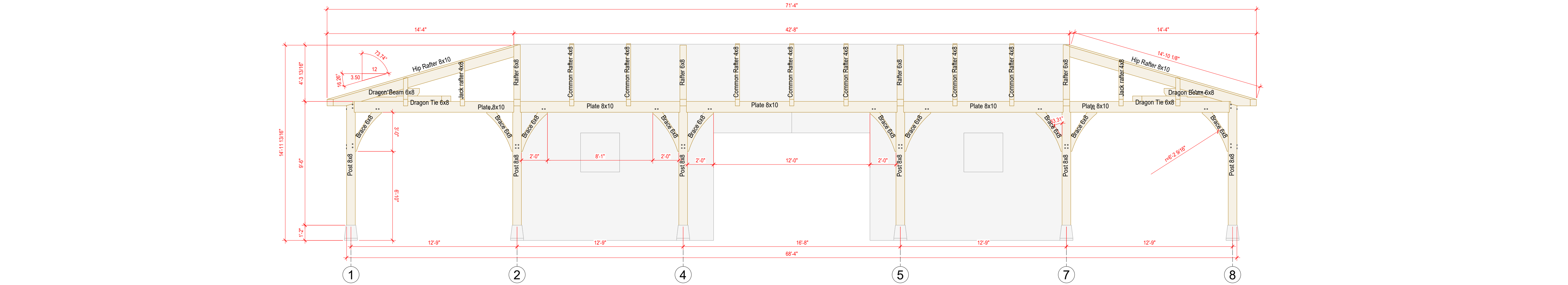
SCALE:
1/4" = 1'-0"

SHEET TF
6 OF 23

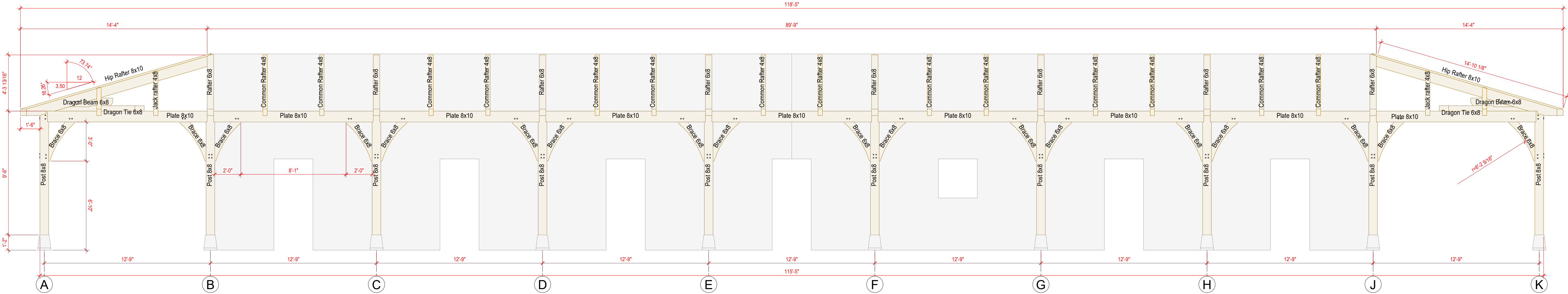
ARCHITECT:

CLIENT:





SIDE ELEVATION



FRONT ELEVATION

#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN
EXTERIOR COVERED PORCH ELEVATIONS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

REVISION:
0.1

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

SHEET TF
7 OF 23

#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN
EXTERIOR COVERED PORCH OVERVIEW

ARCHITECT:

CLIENT:

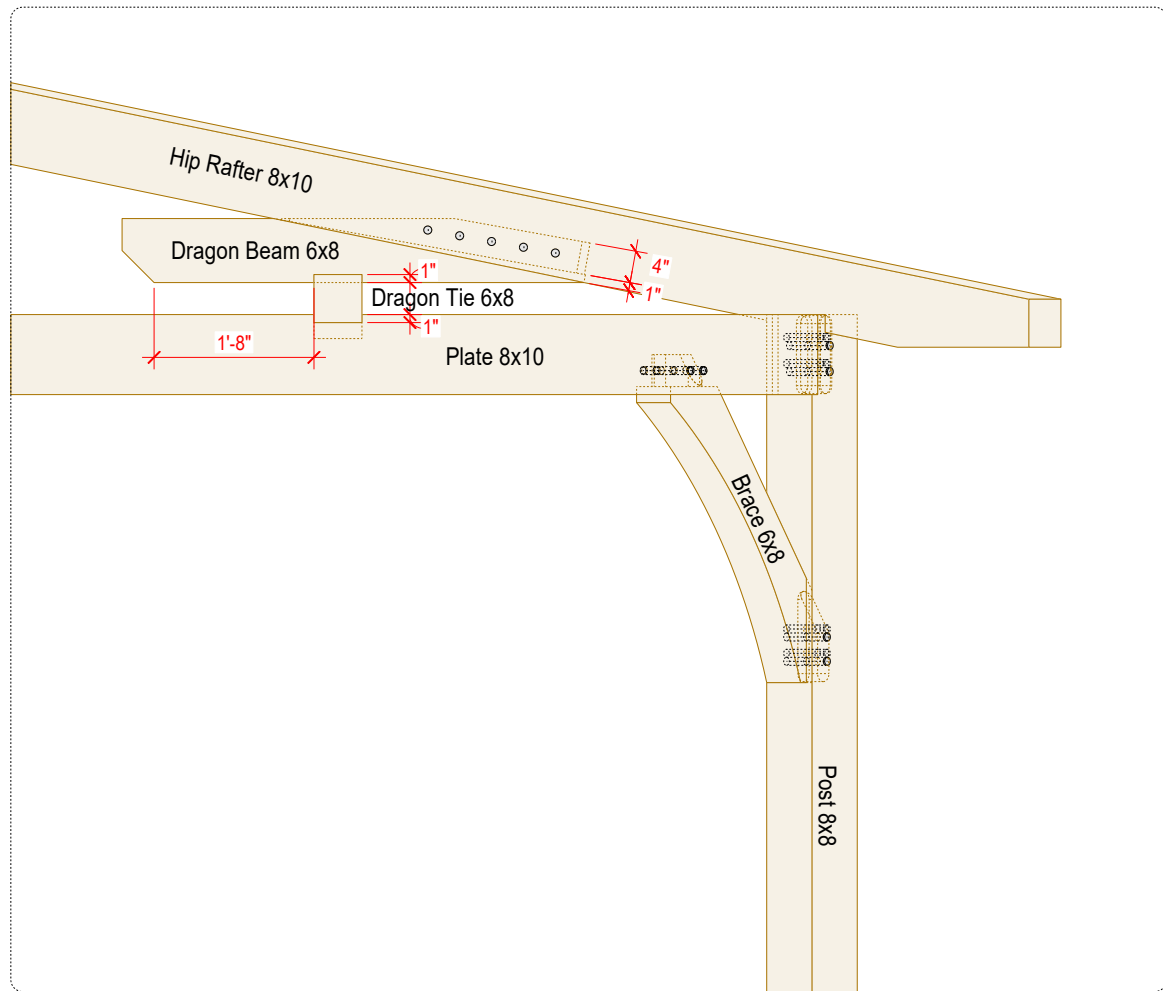
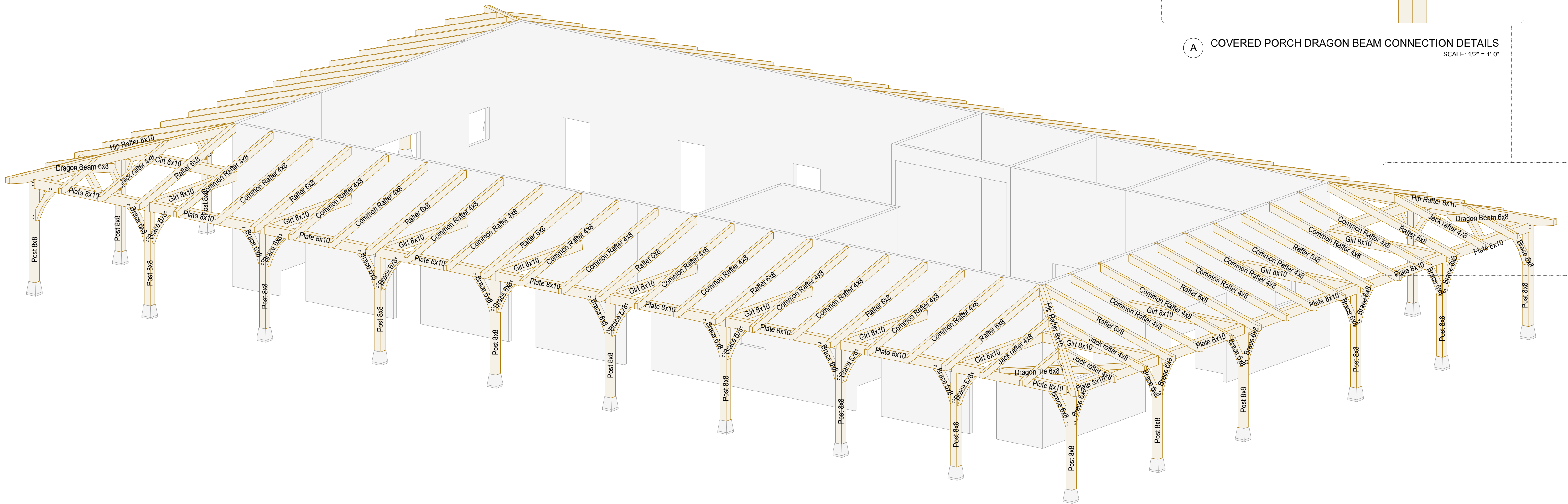
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JH

DATE:
11-01-22

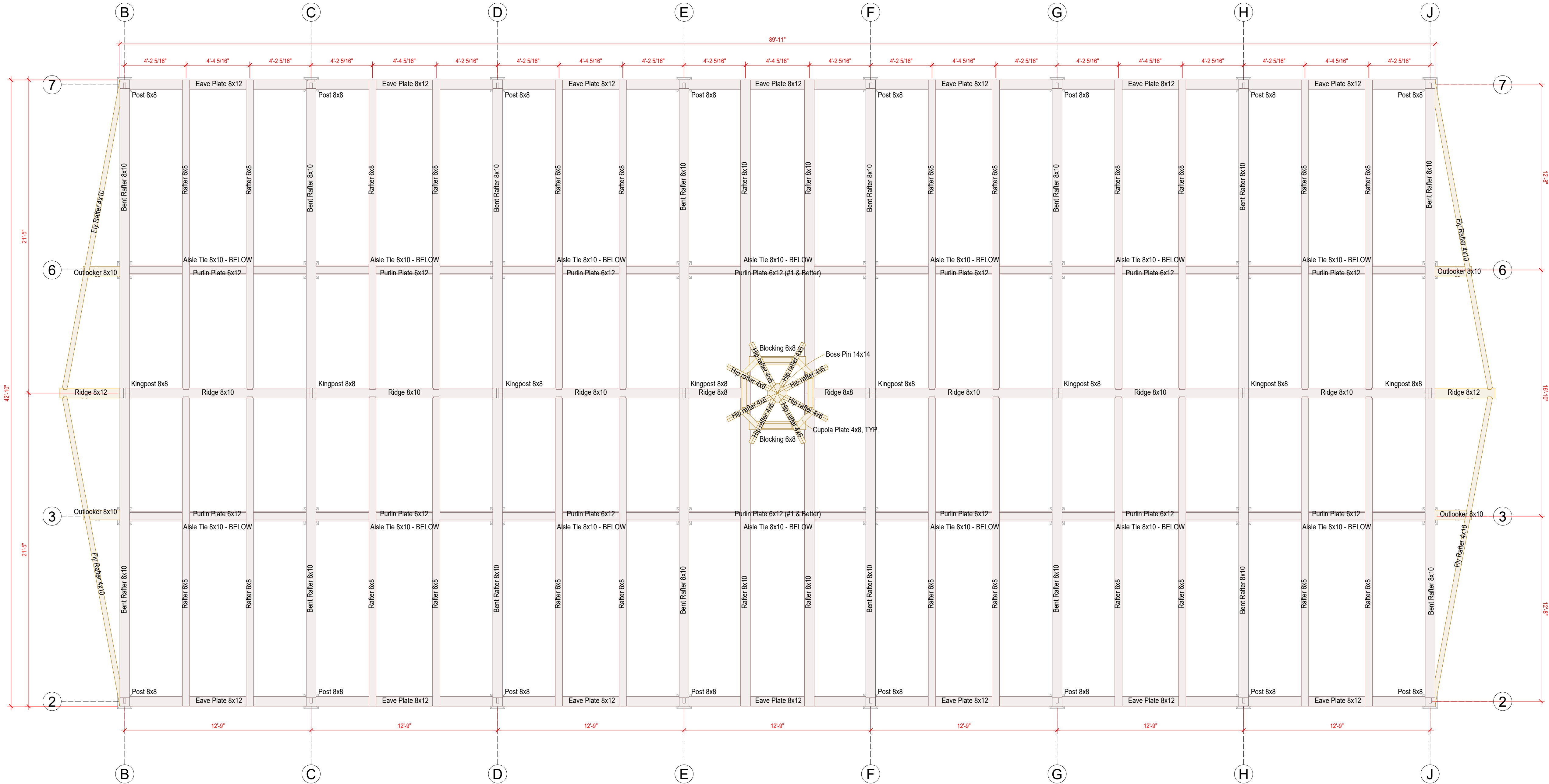
REVISION:
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SCALE:
N.T.S.

SHEET TF
8 OF 23



A COVERED PORCH DRAGON BEAM CONNECTION DETAILS
SCALE: 1/2" = 1'-0"



#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN

INTERIOR MAIN BARN FRAME PLAN

ARCHITECT:

CLIENT:

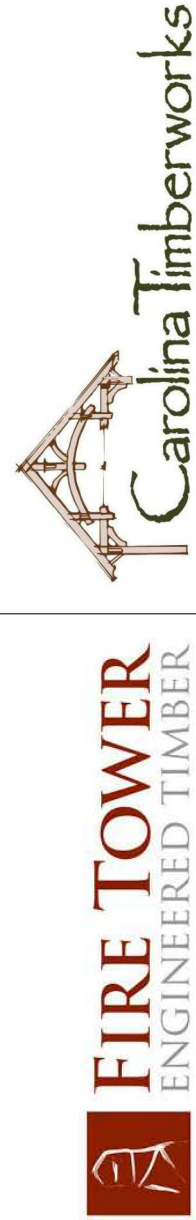
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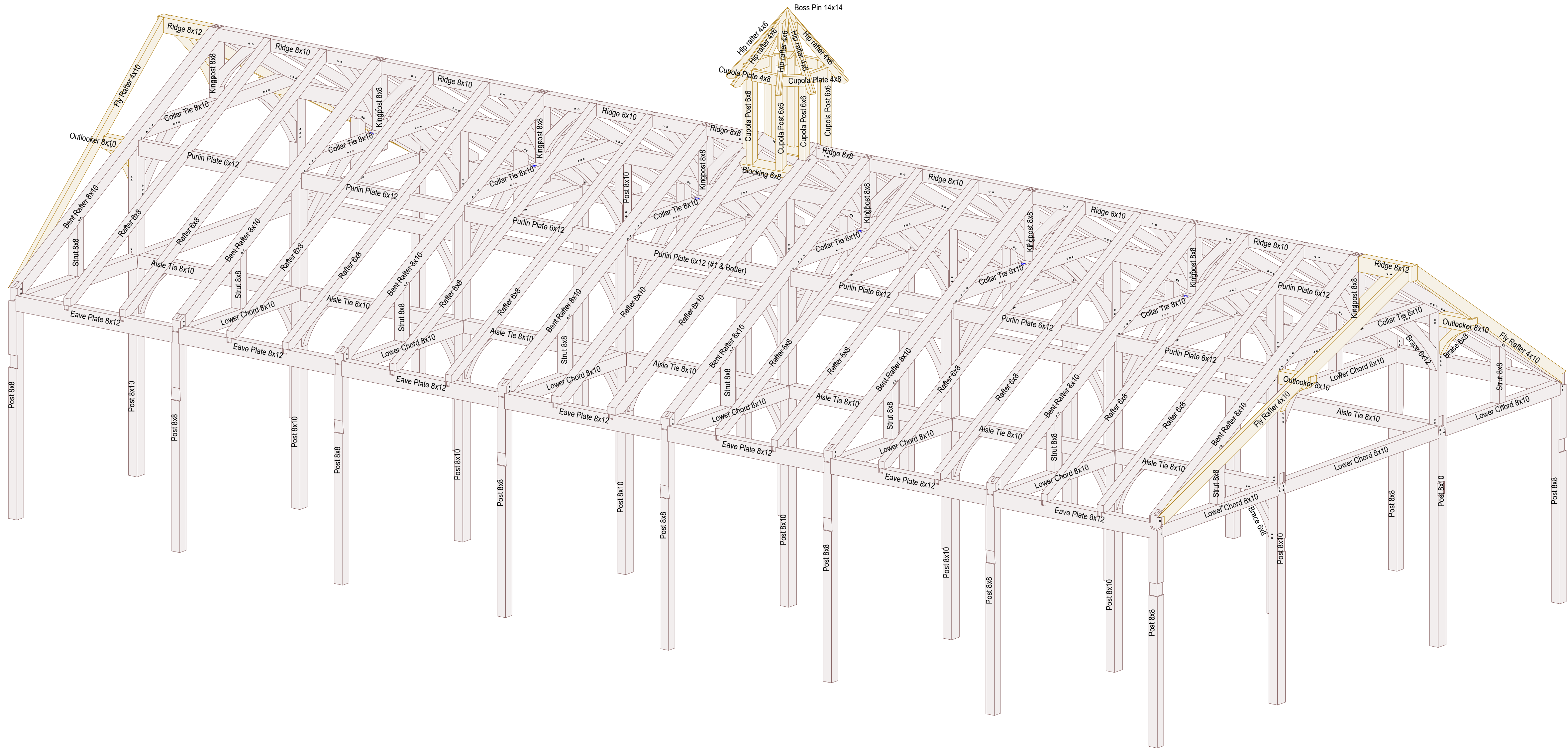
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11-01-22

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

SHEET TF
9 OF 23





#2 & BTR., RED OAK
#2 & BTR., WHITE OAK

TIMBER FRAME:

Carolina Timberworks

ENGINEER:

FIRE TOWER
ENGINEERED TIMBER

SULLIVAN FARM BARN
INTERIOR MAIN BARN FRAME OVERVIEW

ARCHITECT:

CLIENT:

DRAWN BY:
JH
DATE:
11-01-22
REVISION:
0.1
SCALE:
N.T.S.
SHEET TF
11 OF 23

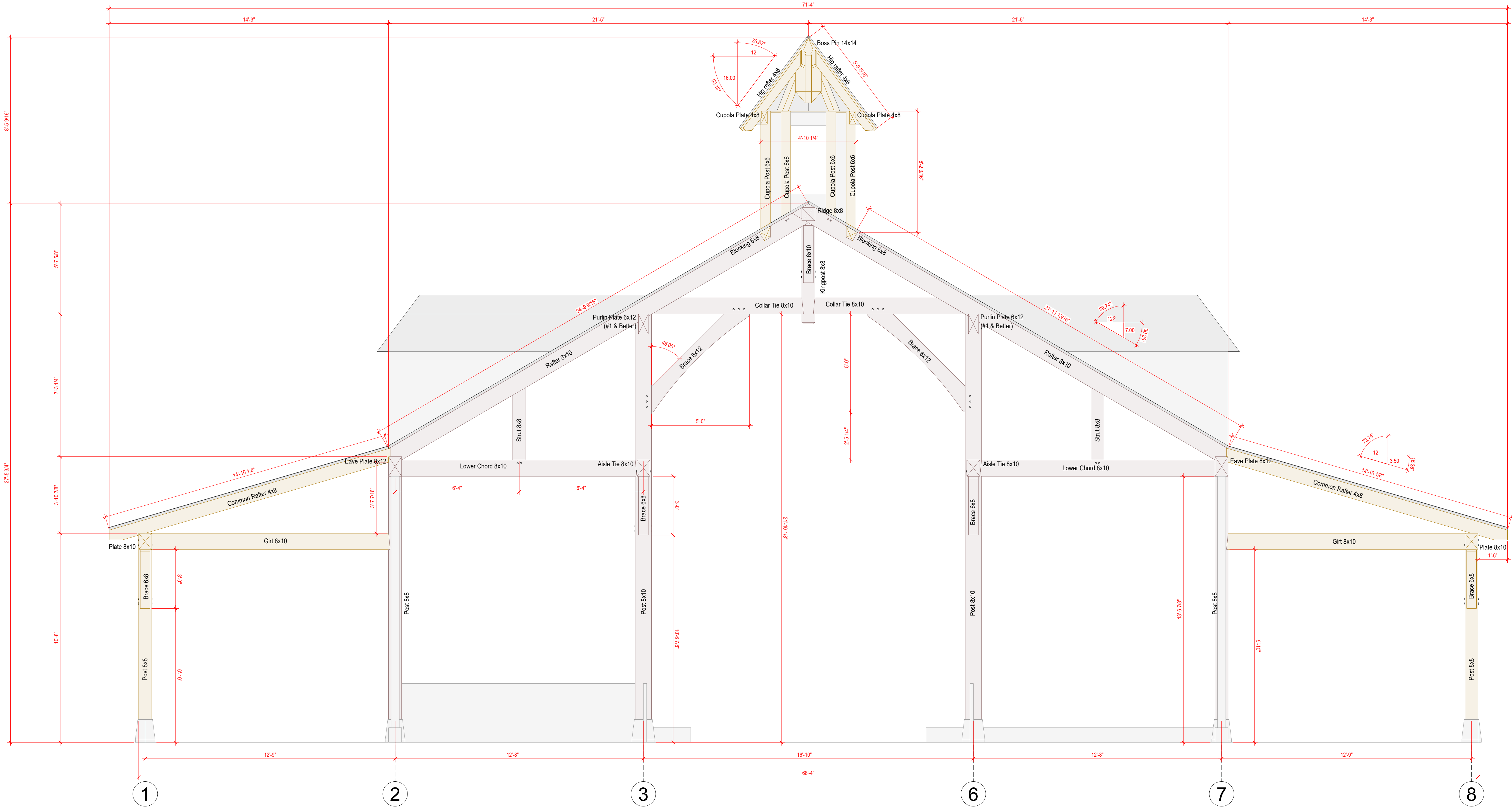


FIRE TOWER
ENGINEERED TIMBER

BUILDING SECTIONS

CLIENT:

SHEET TF
12 OF 23



#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN

BUILDING SECTIONS

ARCHITECT:

DRAWN BY:
JH

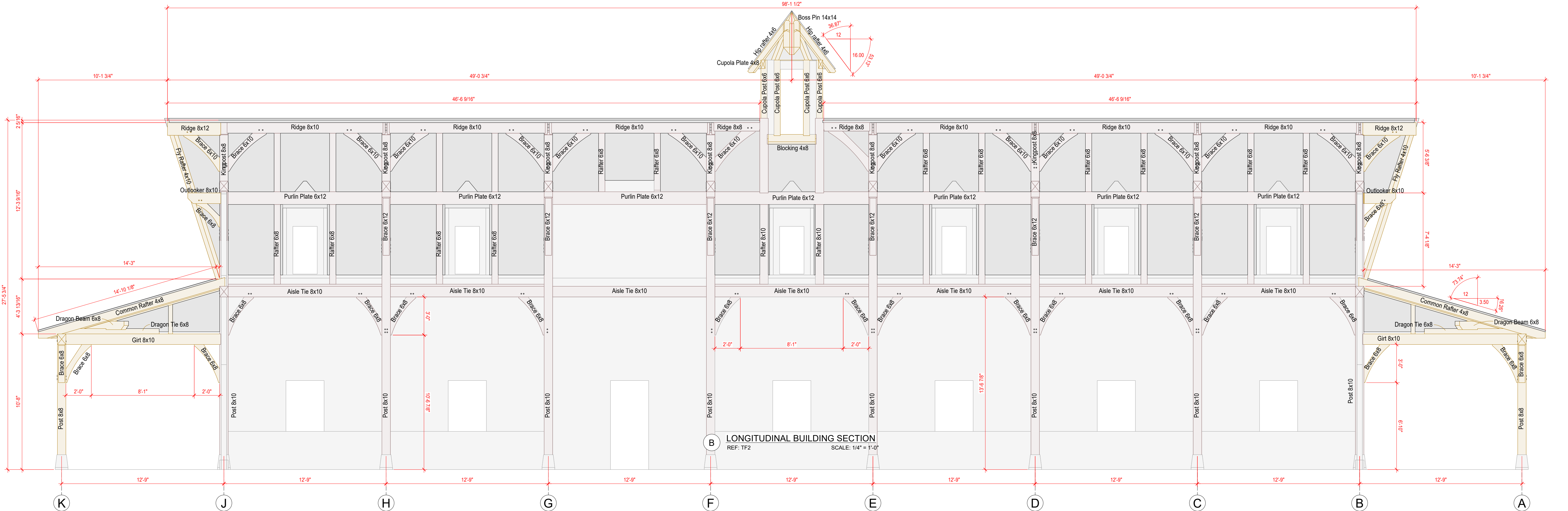
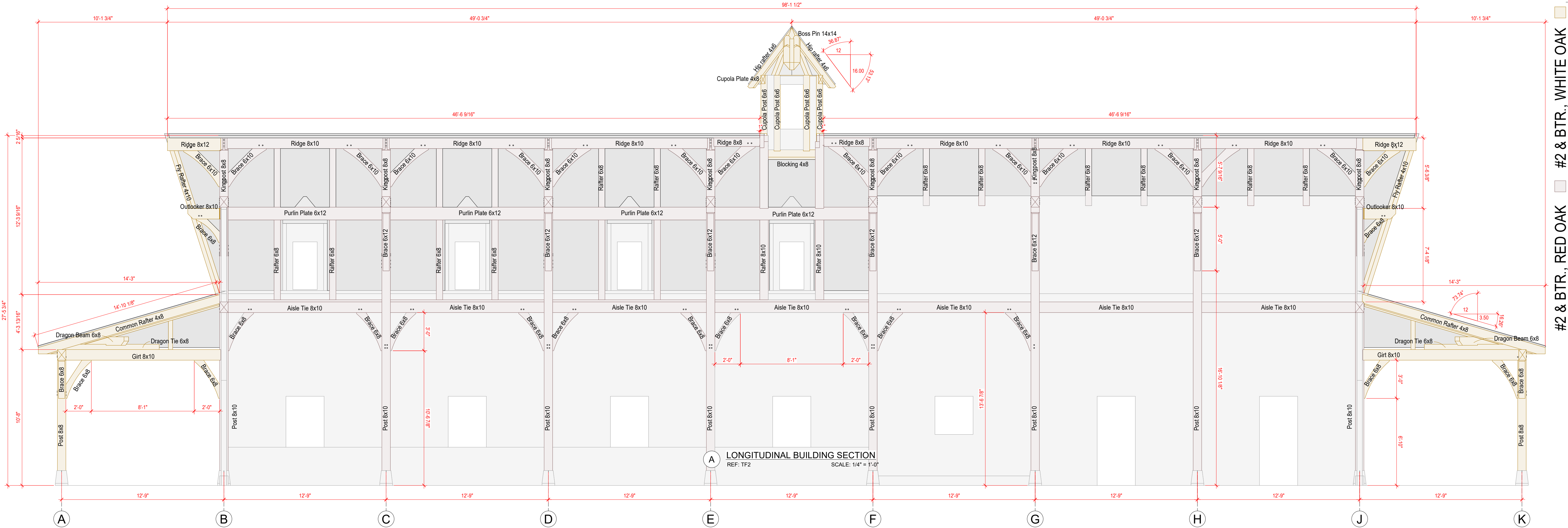
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11-01-22

REVISION:
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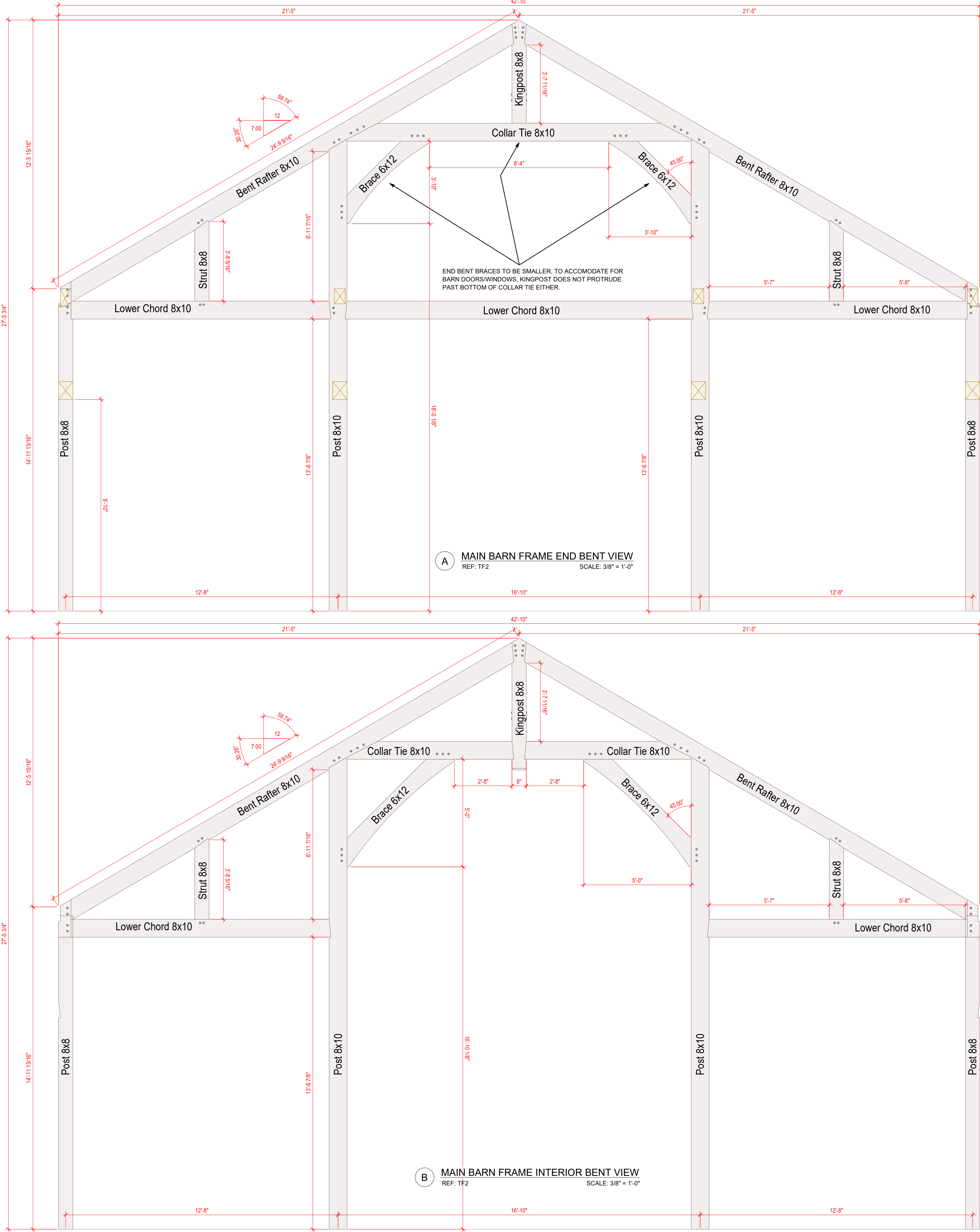
SCALE:
3/8" = 1'-0"

SHEET TF
13 OF 23





SULLIVAN FARM BARN		ENGINEER:		TIMBER FRAME:	
BUILDING SECTIONS		ARCHITECT:		CAROLINA TIMBERWORKS	
CLIENT:		DRAWN BY: JH		#2 & BTR., RED OAK ■ #2 & BTR., WHITE OAK ■	
DATE: 11-01-22		REVISION: 0.1		FIRE TOWER ENGINEERED TIMBER	
SCALE: NOTED		SHEET TF 14 OF 23			



#2 & BTR., RED OAK

#2 & BTR., WHITE OAK

TIMBER FRAME:

Carolina Timberworks

ENGINEER:

FIRE TOWER
ENGINEERED TIMBER

SULLIVAN FARM BARN

BENT VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

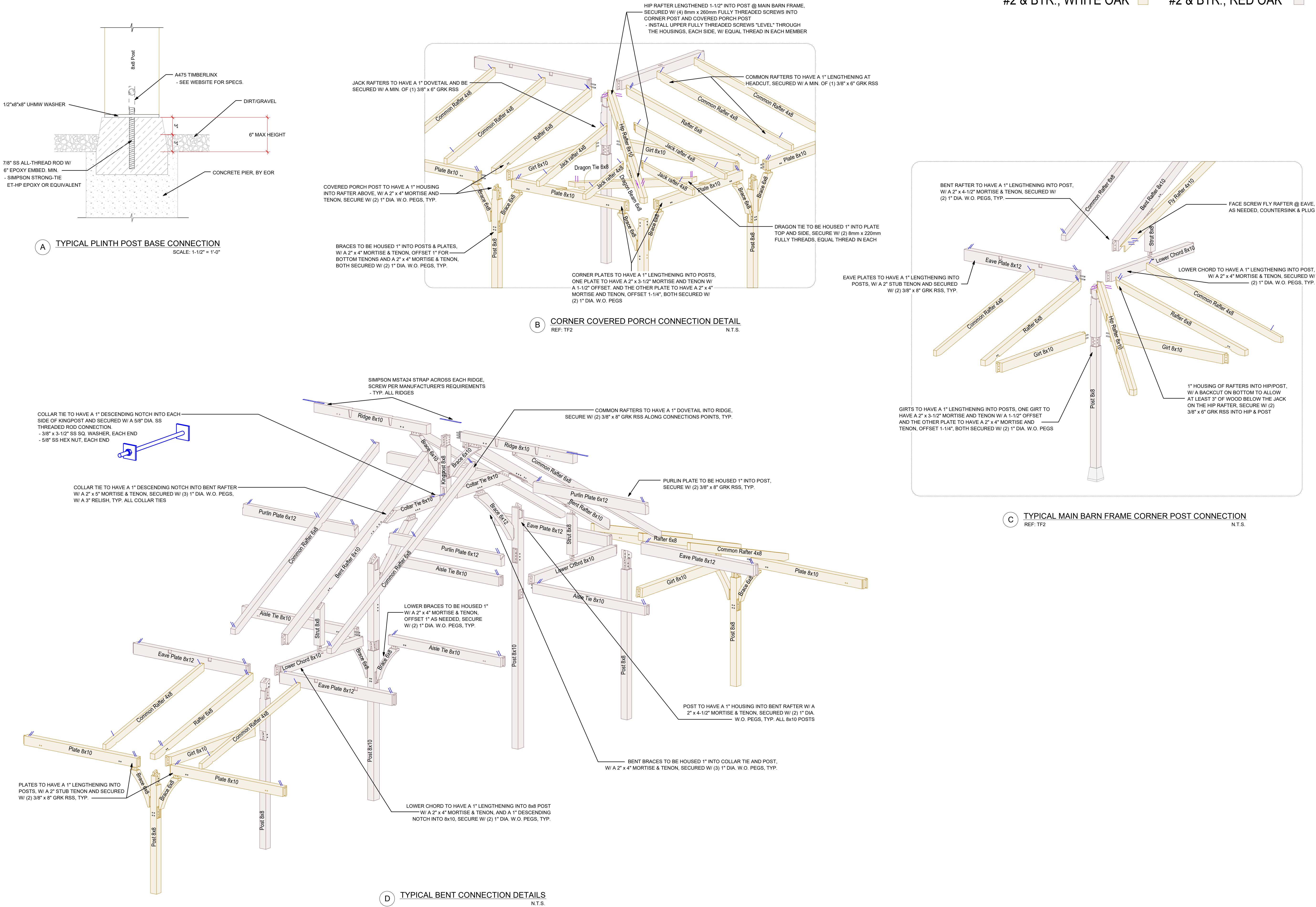
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11-01-22

REVISION:
0.1

SCALE:
NOTED

SHEET TF
15 OF 23

#2 & BTR., WHITE OAK #2 & BTR., RED OAK



TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

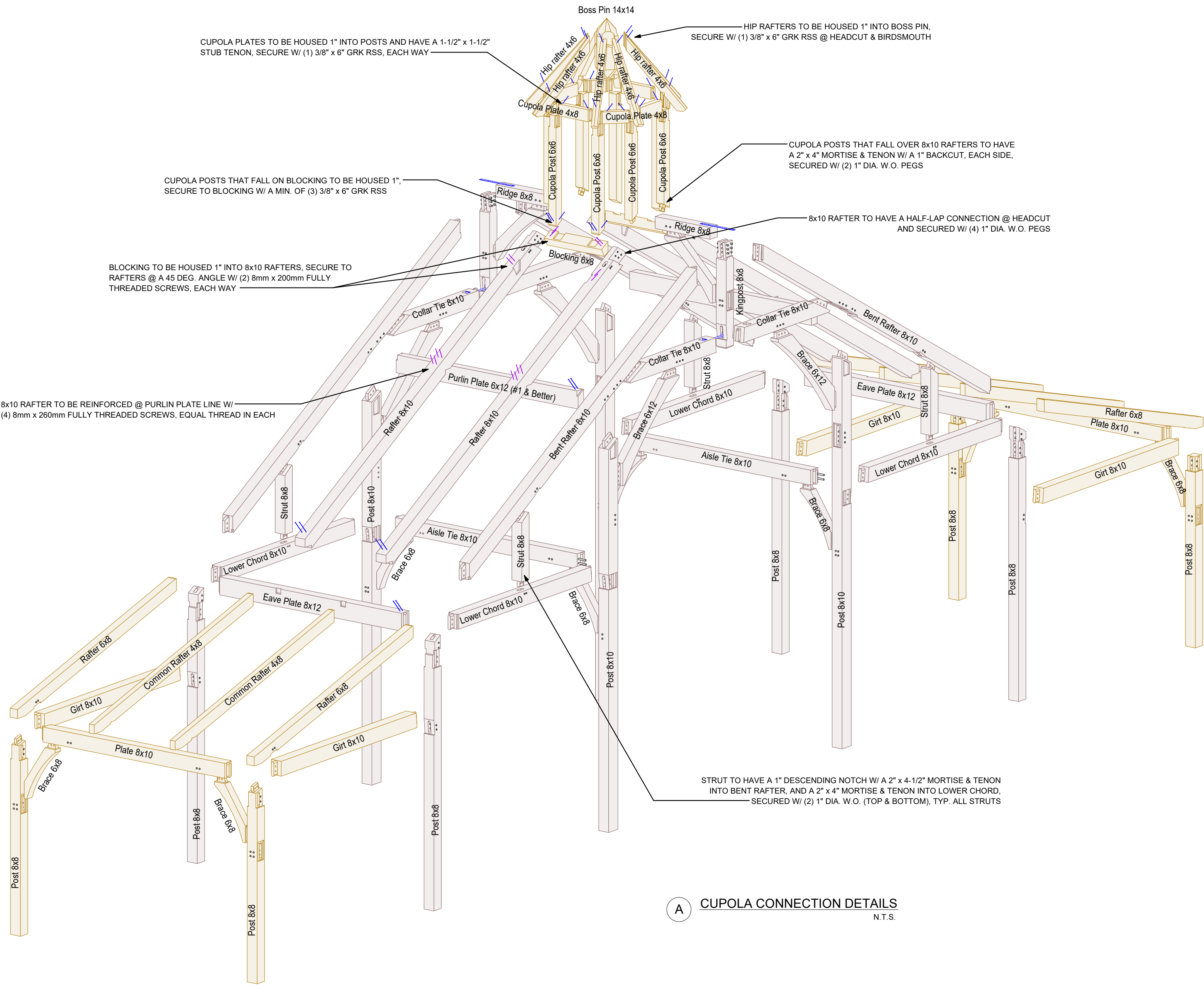
DRAWN BY:
JH

DATE:
11-01-22

REVISION:
0.1

SCALE:
NOTED

SHEET TF
16 OF 23



A CUPOLA CONNECTION DETAILS
N.T.S.

TIMBER FRAME:

ENGINEER:

SULLIVAN FARM BARN

DETAIL VIEWS

CLIENT:

ARCHITECT:

DRAWN BY:
JH

DATE:
11-01-22

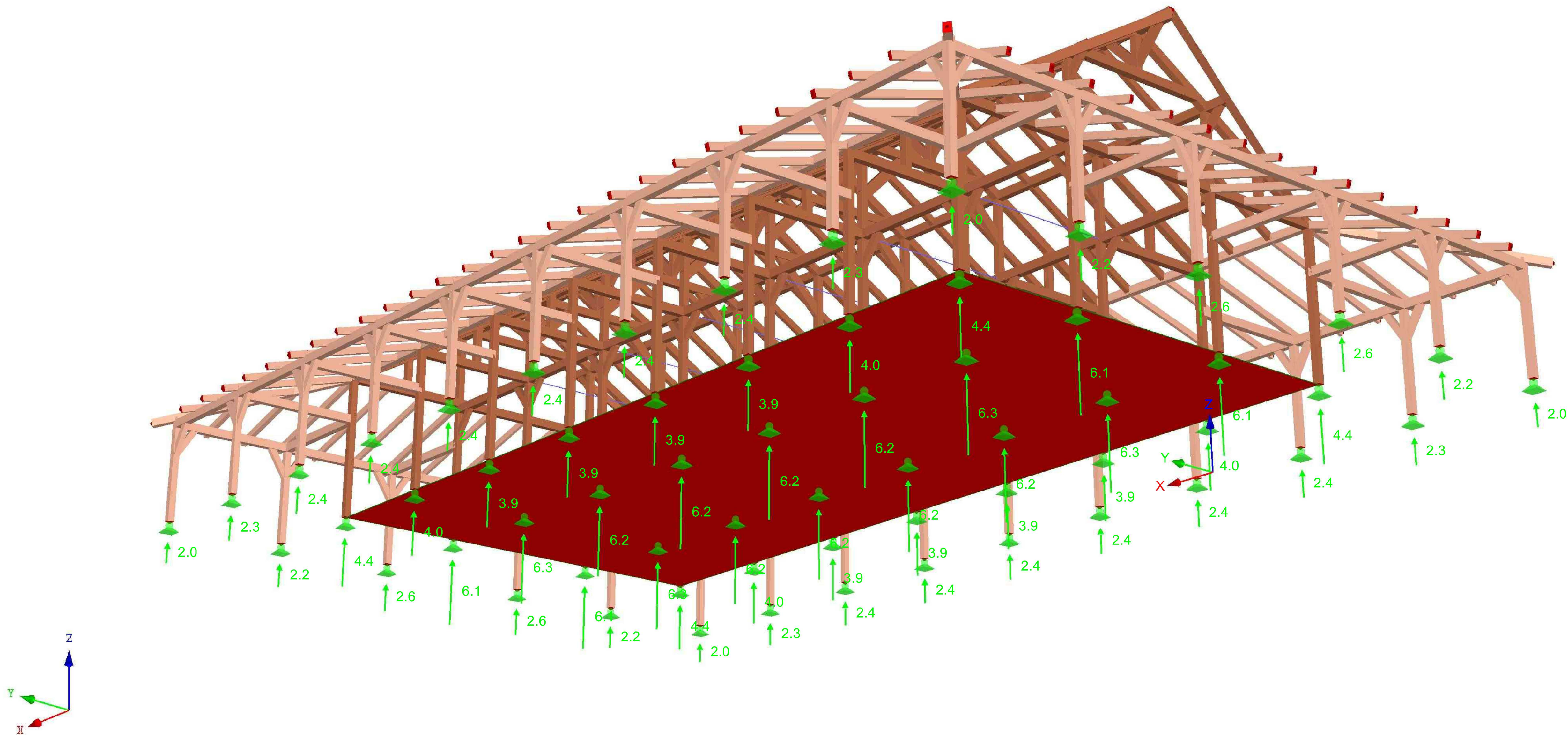
REVISION:
0.1

SCALE:
NOTED

SHEET TF
17 OF 23

LC1 : D
Support Reactions[kip]

SUPPORT REACTIONS - DEAD LOAD



Max P-Z': -2.0, Min P-Z': -6.3 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

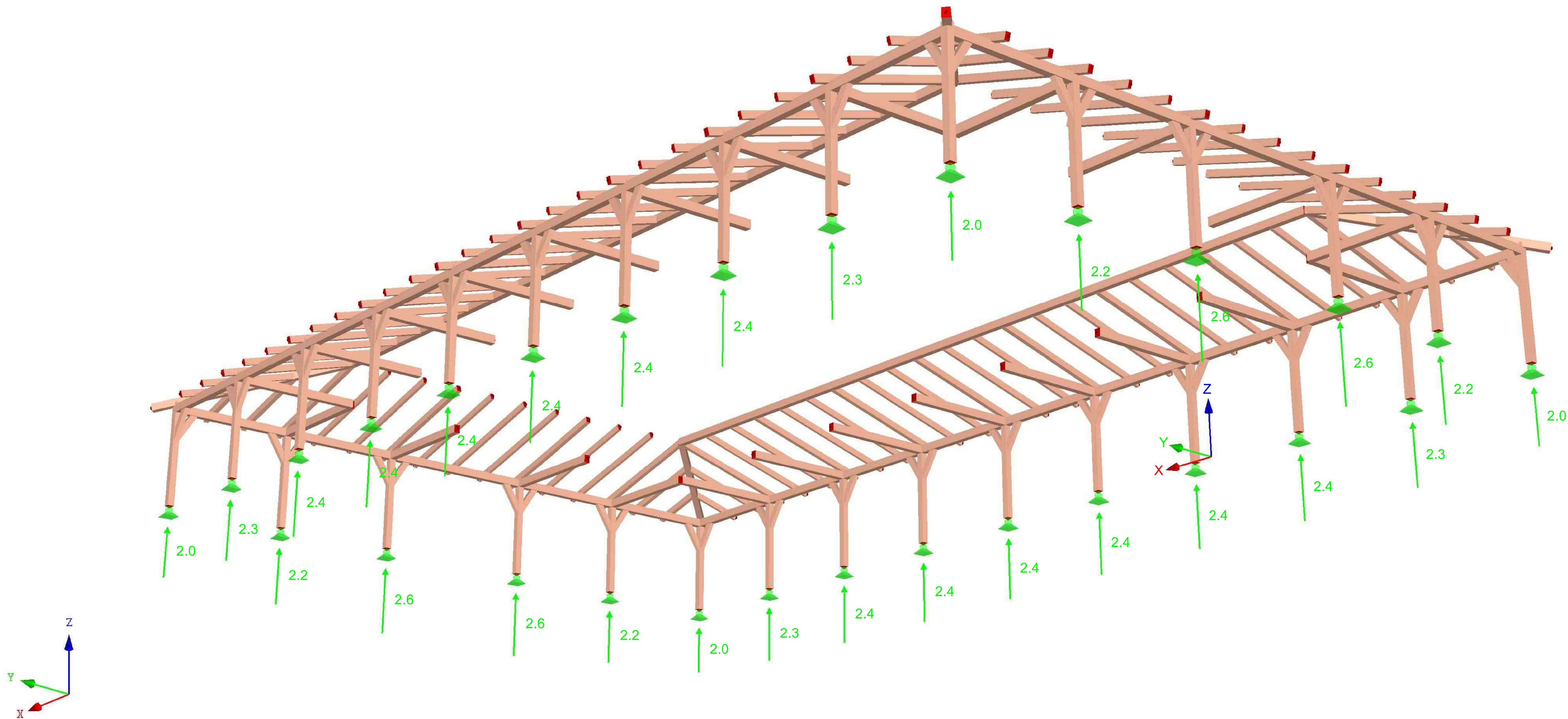
REVISION:
0.0

SCALE:
NOTED

SHEET TF
18 OF 23

LC1 : D
Support Reactions[kip]

■ SUPPORT REACTIONS - DEAD LOAD



Max P-Z': -2.0, Min P-Z': -2.6 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

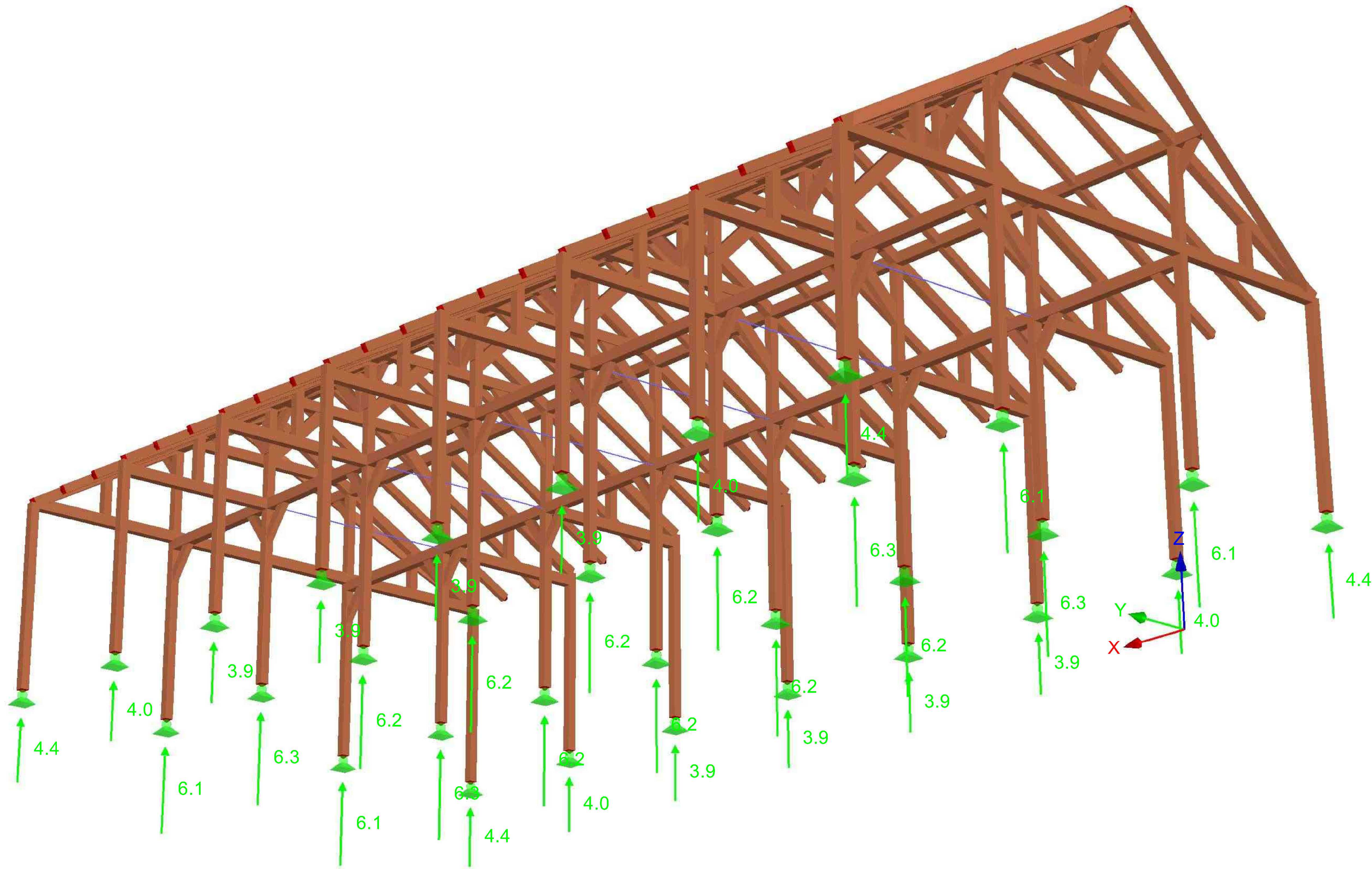
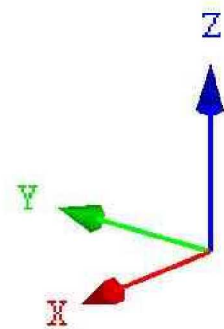
REVISION:
0.0

SCALE:
NOTED

SHEET TF
19 OF 23

LC1 : D
Support Reactions[kip]

SUPPORT REACTIONS - DEAD LOAD



Max P-Z': -3.9, Min P-Z': -6.3 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

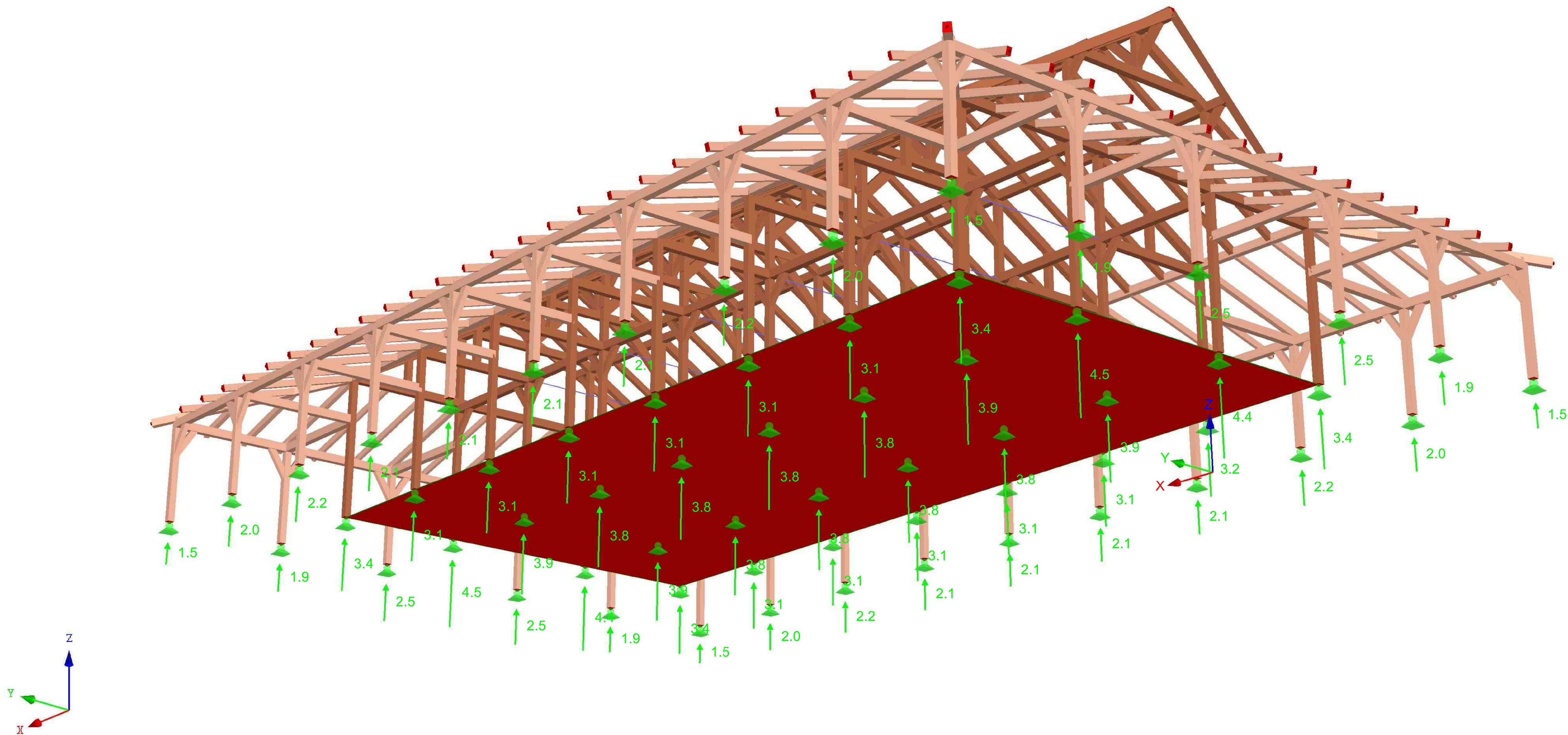
REVISION:
0.0

SCALE:
NOTED

SHEET TF
20 OF 23

LC2 : Lr
Support Reactions[kip]

■ SUPPORT REACTIONS - ROOF LIVE



Max P-Z': -1.5, Min P-Z': -4.5 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

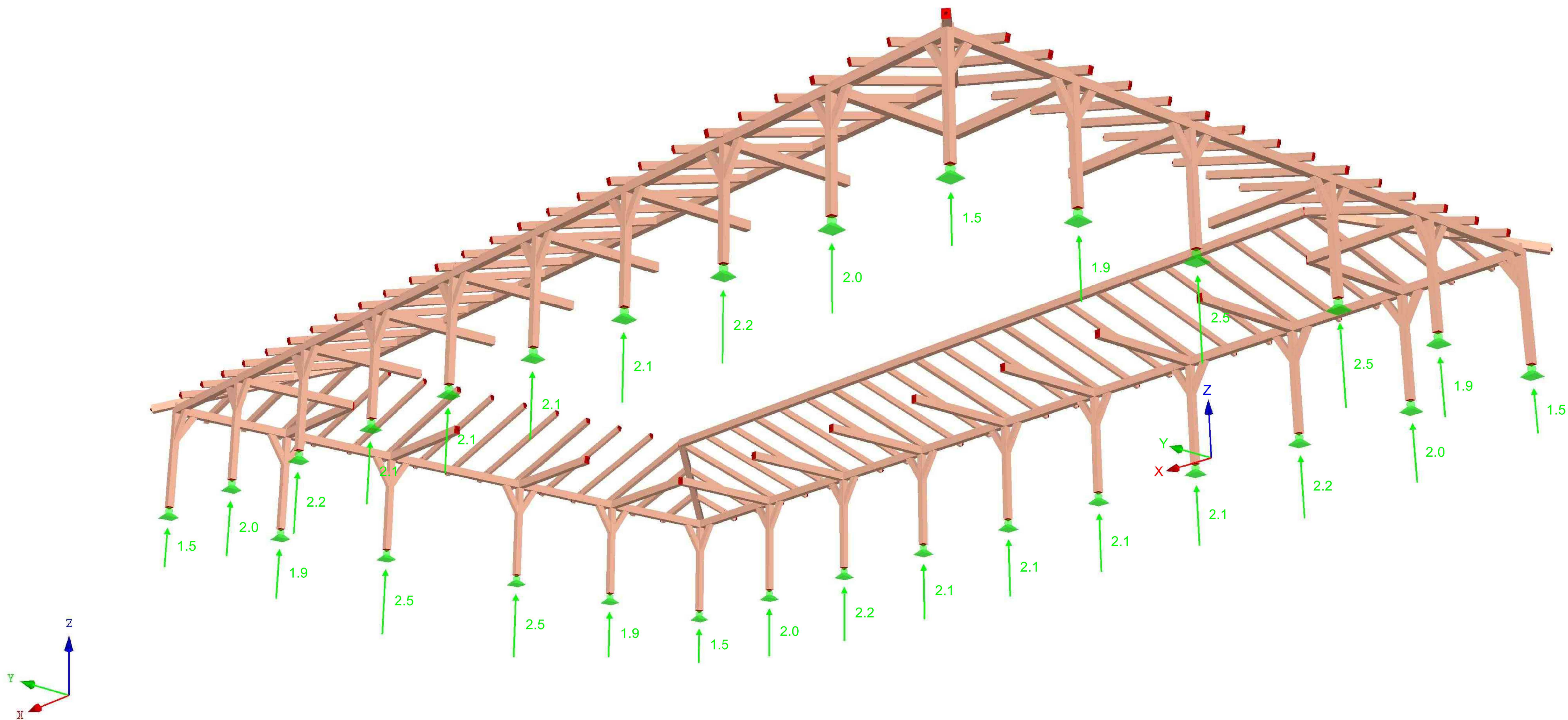
REVISION:
0.0

SCALE:
NOTED

SHEET TF
21 OF 23

LC2 : Lr
Support Reactions[kip]

■ SUPPORT REACTIONS - ROOF LIVE



Max P-Z': -1.5, Min P-Z': -2.5 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

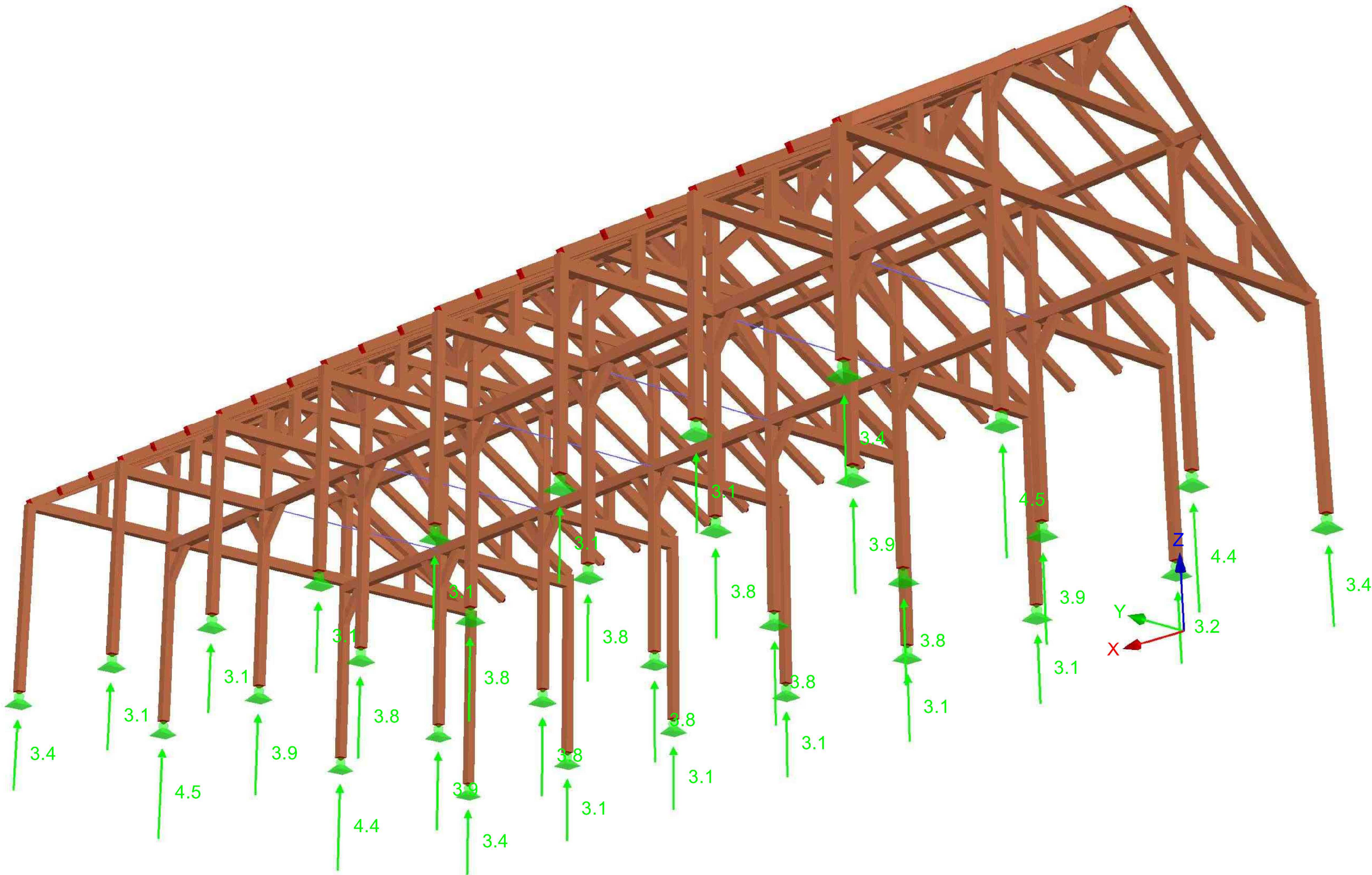
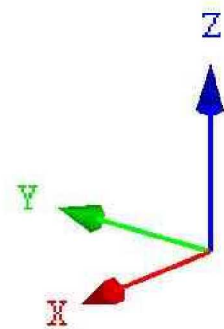
REVISION:
0.0

SCALE:
NOTED

SHEET TF
22 OF 23

LC2 : Lr
Support Reactions[kip]

SUPPORT REACTIONS - ROOF LIVE



Max P-Z': -3.1, Min P-Z': -4.5 kip



RFEM 5.28.01 - General 3D structures solved using FEM

TIMBER FRAME:



ENGINEER:



SULLIVAN FARM BARN

DETAIL VIEWS

ARCHITECT:

CLIENT:

DRAWN BY:
JH

DATE:
11-01-22

REVISION:
0.0

SCALE:
NOTED

SHEET TF
23 OF 23