

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.

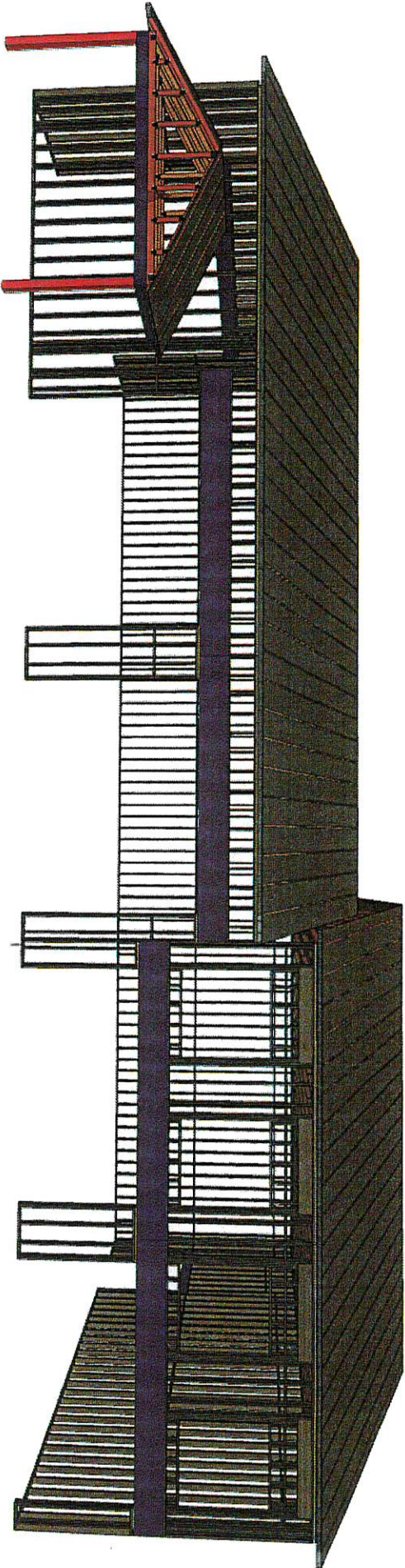
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code

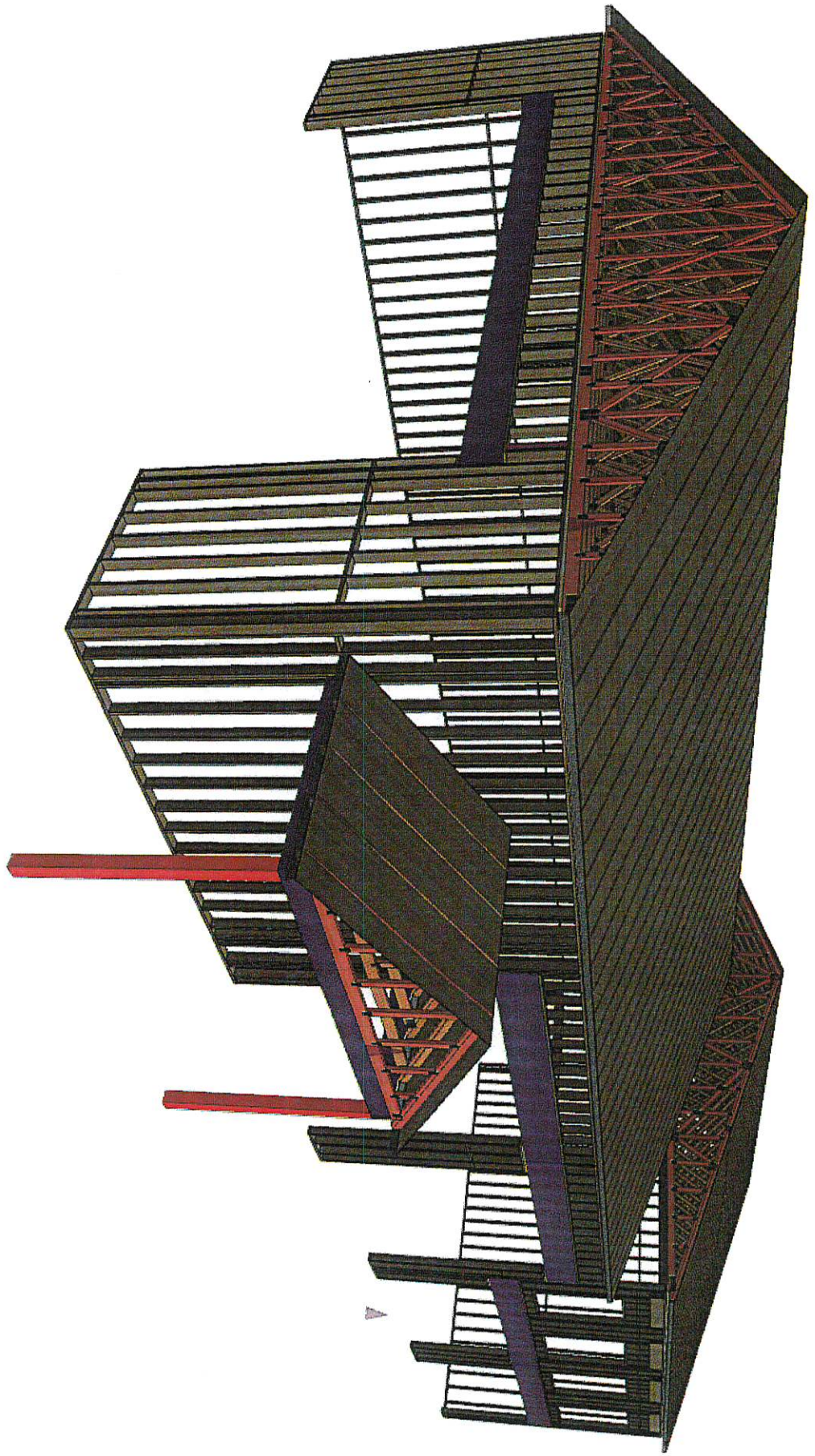
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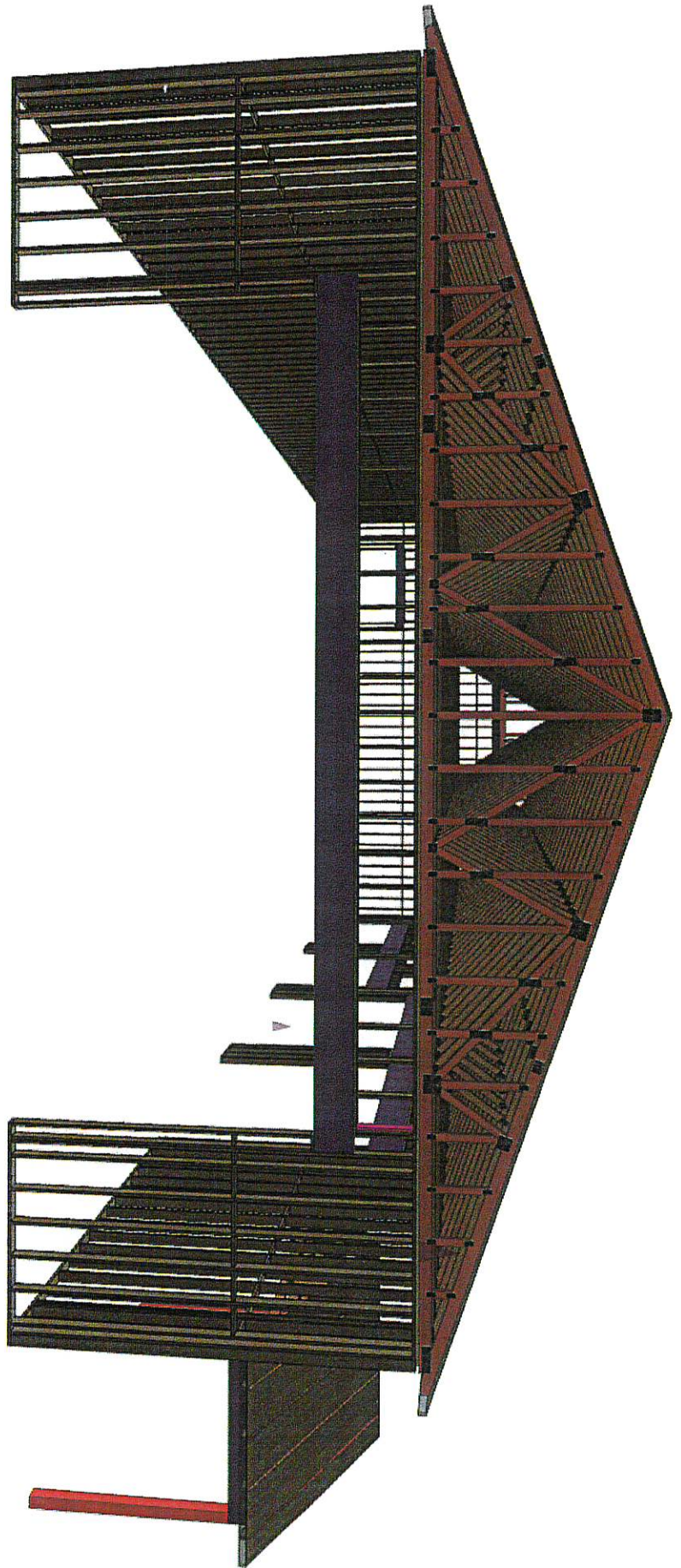
Harnett COUNTY
NORTH CAROLINA

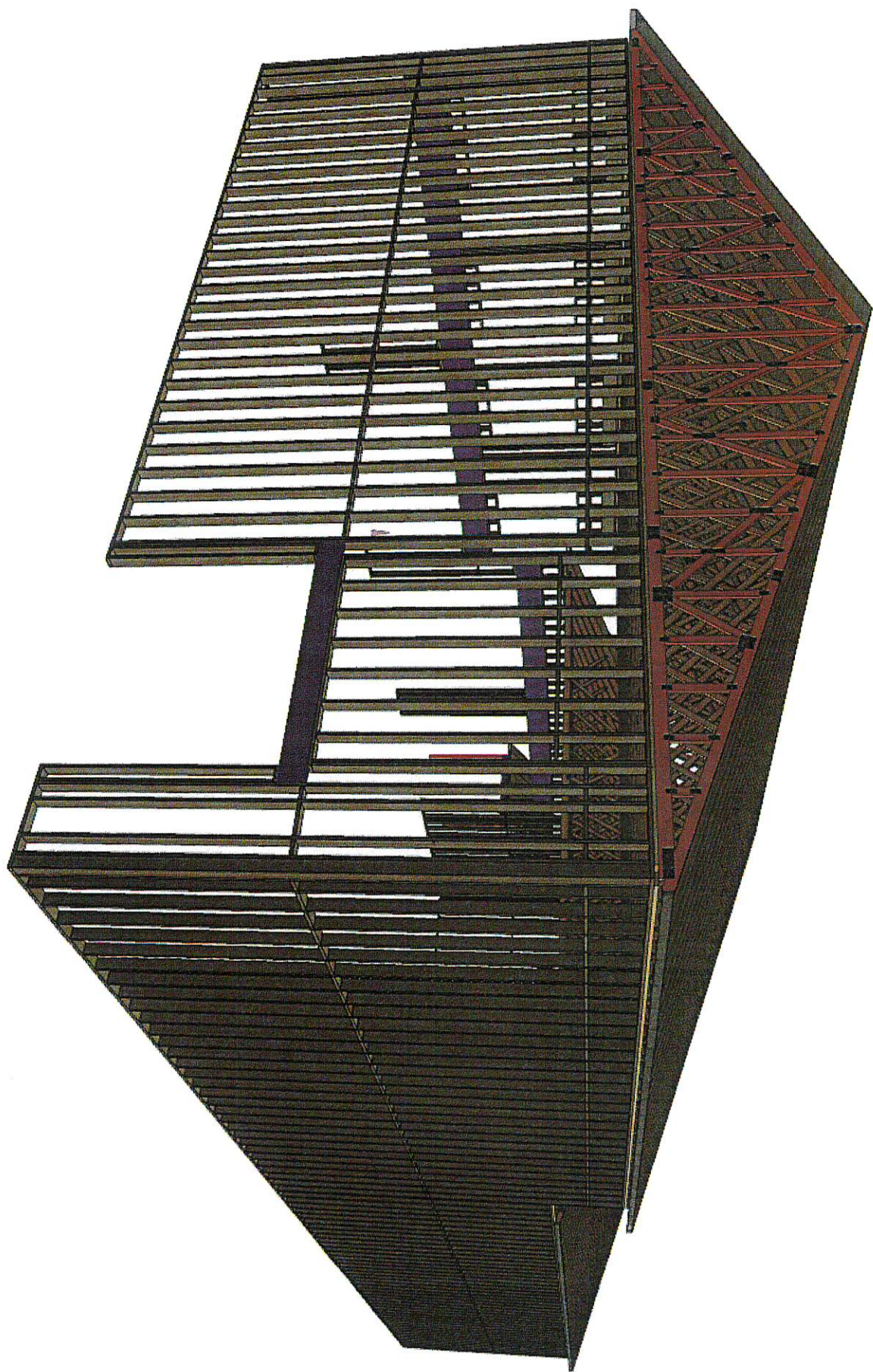
04/24/2023

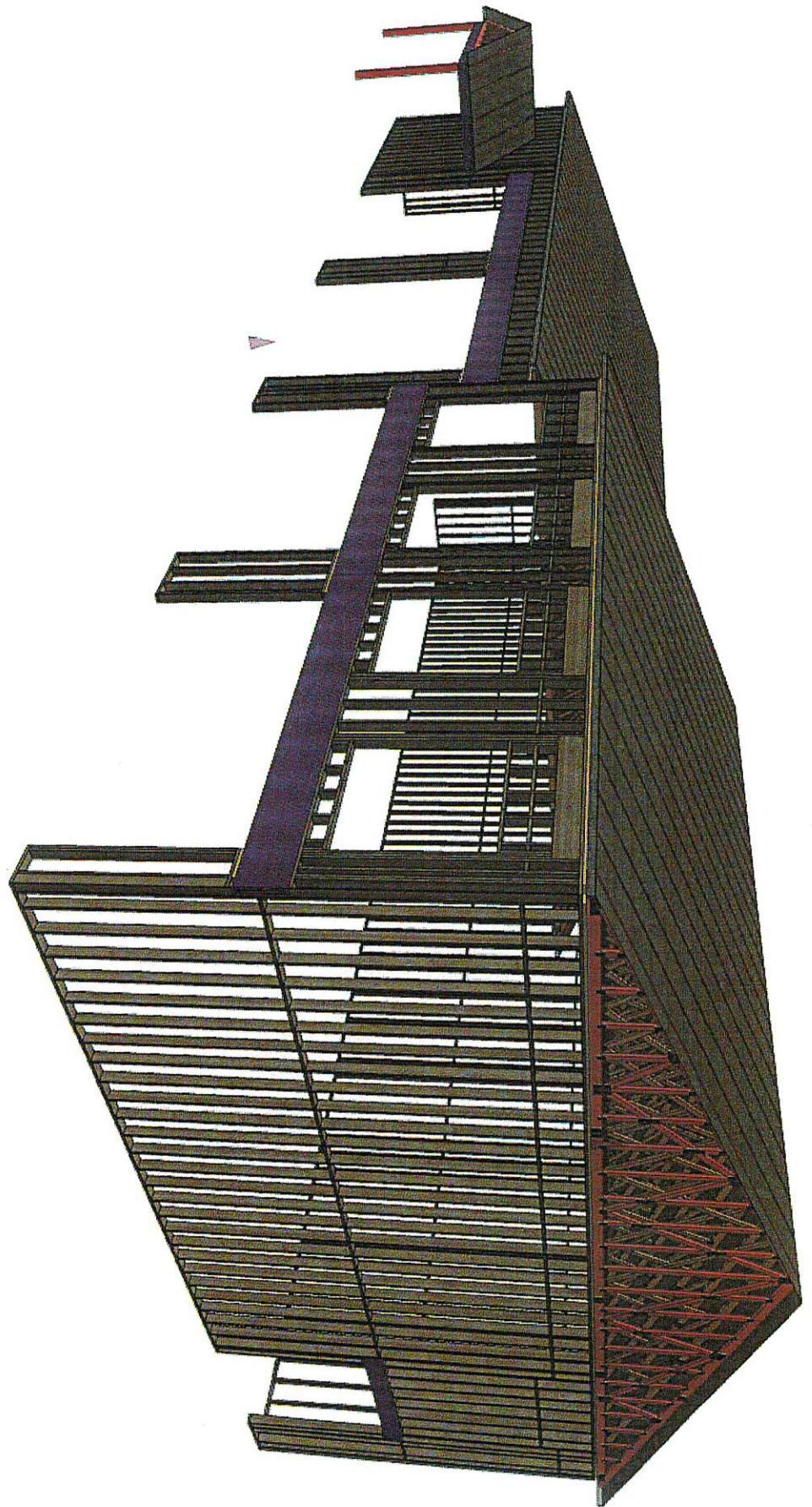
**SEE NOTES THROUGHOUT.
MAX STUD HEIGHT IS 10 feet
IF STUD HEIGHT EXCEEDS 10
FT. THEY MUST BE 2X6, 16 OC
WITH BRIDGING NO MORE THAN
4 FEET APART TO A MAX
HEIGHT OF 16 FT.**

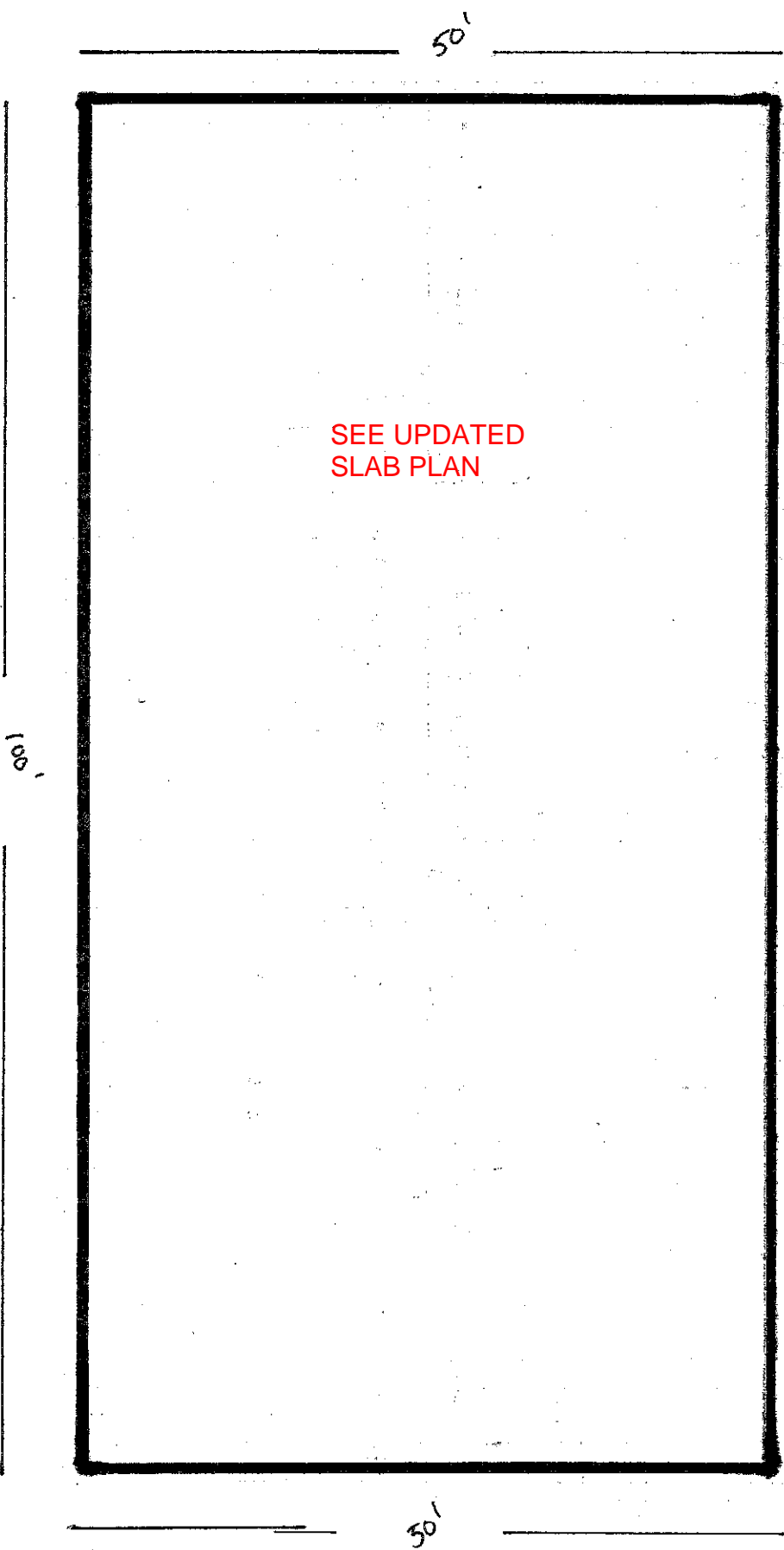




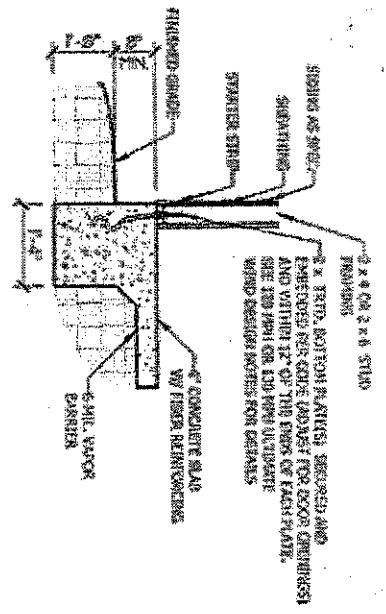




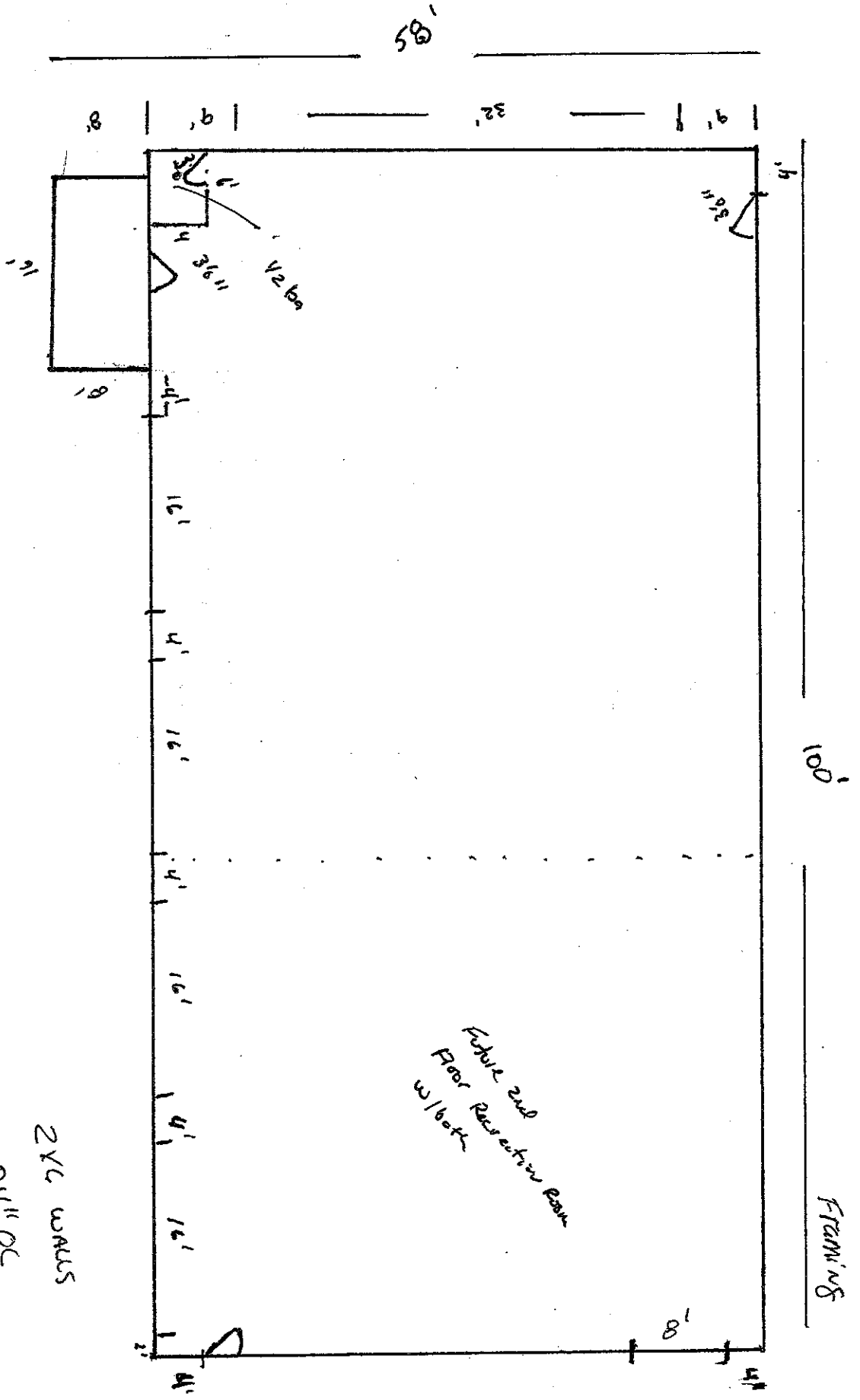




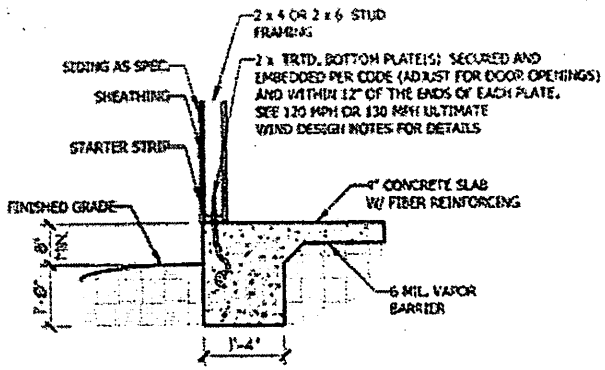
TYPICAL SLAB DETAIL



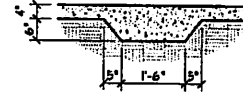
Slab



Slab

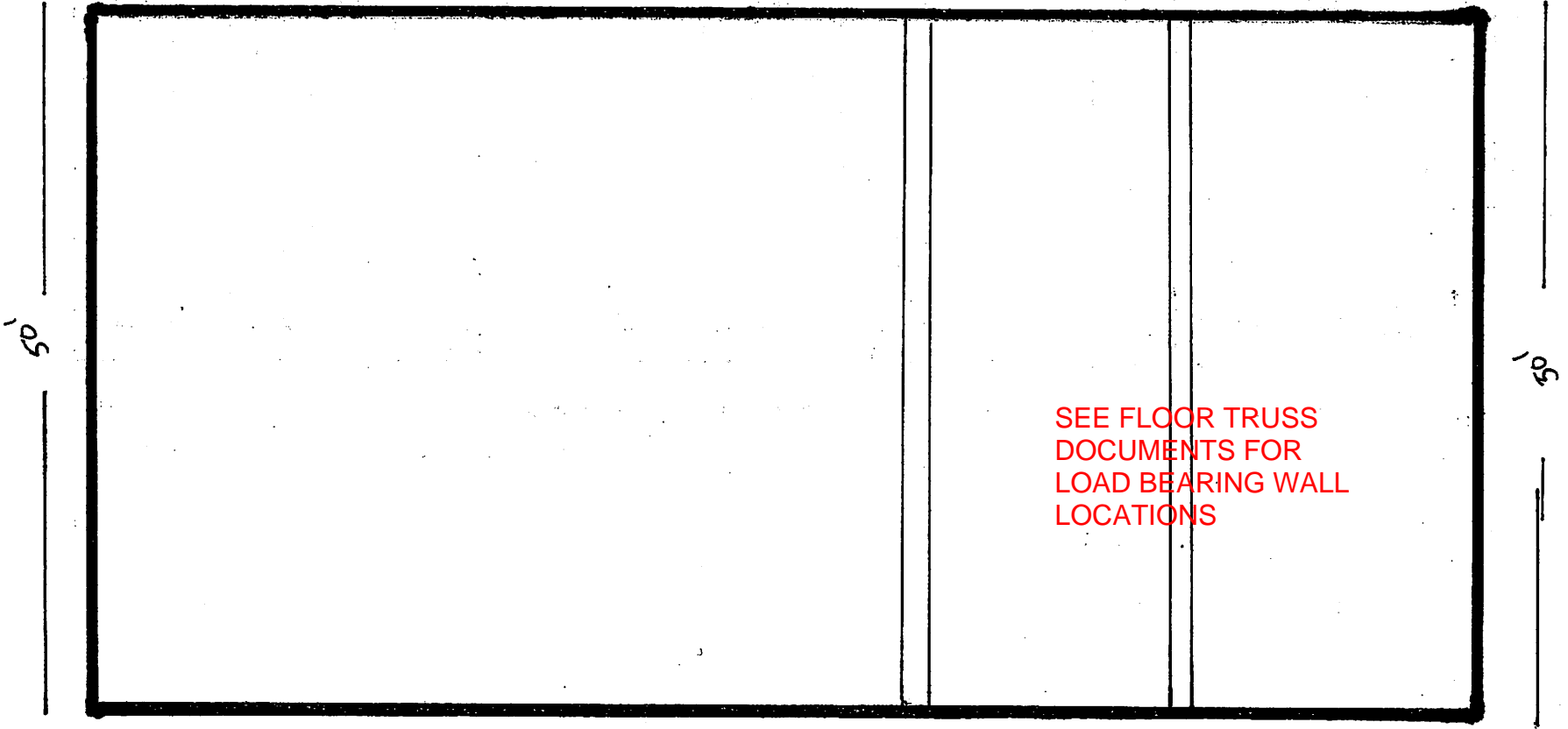


TYPICAL SLAB DETAIL



THICKENED SLAB DETAIL

100'

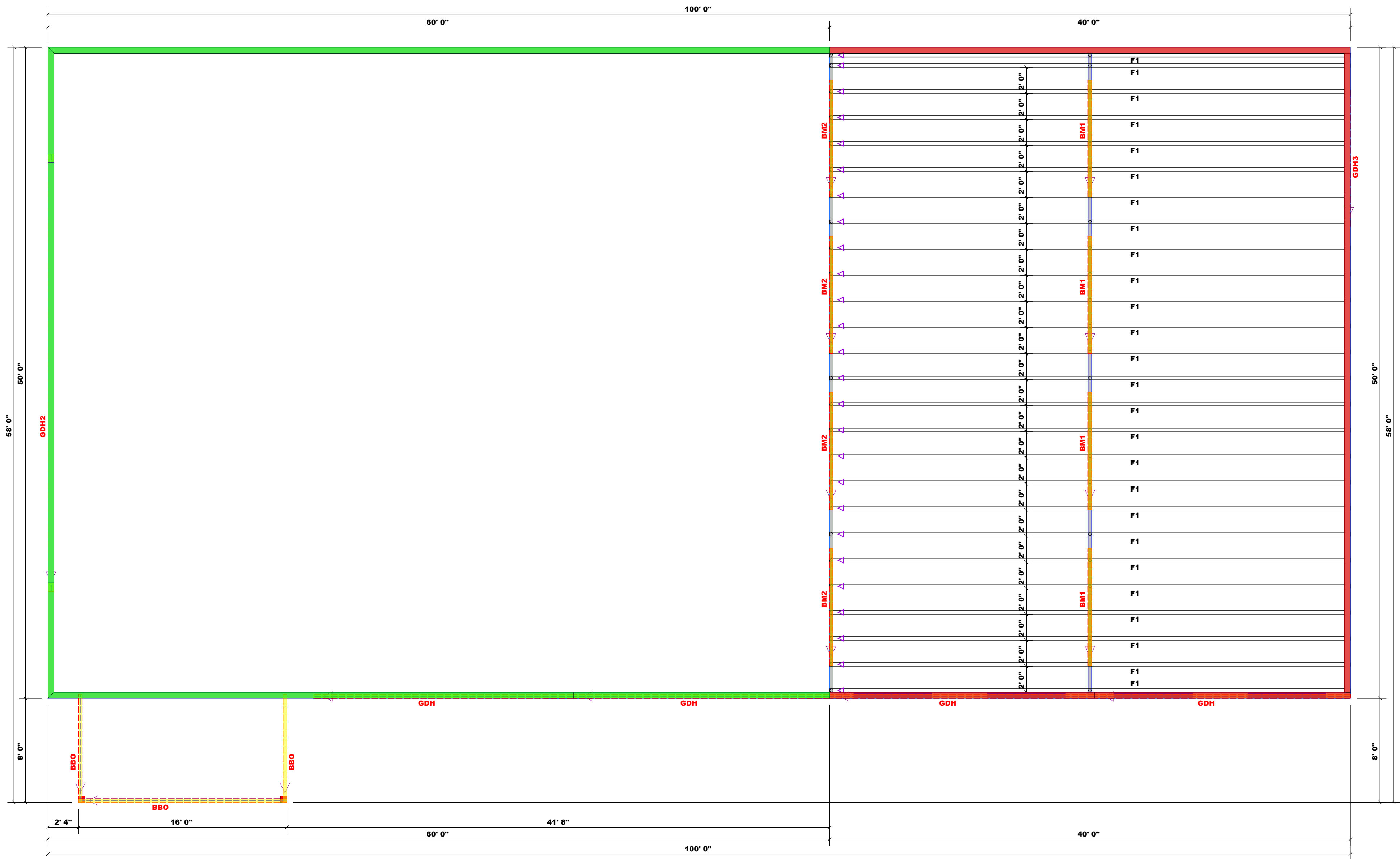


65'

65'

100'

SEE FLOOR TRUSS
DOCUMENTS FOR
LOAD BEARING WALL
LOCATIONS



LVL Beams					
PlotID	Length	Product	Plies	Net Qty	Fab Type
BM1	9' 0"	1-3/4"x 11-7/8" LVL Kerto-S	2	8	FF
BM2	10' 0"	2x12 SP No.2	2	8	FF
GDH	22' 0"	1-3/4"x 23-7/8" LVL Kerto-S	2	8	FF
GDH2	34' 0"	1-3/4"x 18" LVL Kerto-S	3	3	FF
GDH3	12' 0"	2x12 SPF No.2	2	2	FF

Hatch Legend	
	16' 1-1/2" Walls
	20' 1-1/2" Walls
	Drop Beam

1 Truss Placement Plan
Scale: 3/16"=1'

Roof Area = 5835.85 sq.ft.
Ridge Line = 112 ft.
Hip Line = 0 ft.
Horiz. OH = 224 ft.
Raked OH = 207.14 ft.
Decking = 201 sheets

▲ = Indicates Left End of Truss
(Reference Engineered Truss Drawing)
Do NOT Erect Truss Backwards

LOAD CHART FOR JACK STUDS					
(BASED ON TABLES R002.5(1) & (2))					
NUMBER OF JACK STUDS REQUIRED @ EA END OF HEADERS/CHANGES					
END REACTION (UP TO) 1700	1	2550	1	3400	1
END REACTION (UP TO) 3400	2	5100	2	6800	2
END REACTION (UP TO) 5100	3	7650	3	10200	3
END REACTION (UP TO) 6800	4	10200	4	13600	4
END REACTION (UP TO) 8500	5	12750	5	17000	5
END REACTION (UP TO) 10200	6	15300	6		
END REACTION (UP TO) 11900	7				
END REACTION (UP TO) 13600	8				
END REACTION (UP TO) 15300	9				

BUILDER	Weaver Development Co. Inc.	CITY / CO.	Johnston Co. / Johnston
JOB NAME	Blackwell Pole Barn	ADDRESS	Site Address
PLAN	Custom	MODEL	Floor
SEAL DATE	Seal Date	DATE REV.	04/21/23
QUOTE #	Quote #	DRAWN BY	David Landry
JOB #	J0423-1870	SALES REP.	Lenny Norris

THIS IS A TRUSS PLACEMENT DIAGRAM ONLY.
These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design identified on the placement drawing. The building designer is responsible for temporary and permanent bracing of the roof and floor system and for the overall structure. The design of the truss support structure including headers, beams, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult BCS-81 and BCS-83 provided with the truss delivery package or online @ sbindustry.com.

Bearing reactions less than or equal to 3000# are deemed to comply with the prescriptive Code requirements. The contractor shall refer to the attached Tables (derived from the prescriptive Code requirements) to determine the minimum foundation size and number of wood studs required to support reactions greater than 3000# but not greater than 15000#. A registered design professional shall be retained to design the support system for any reaction that exceeds those specified in the attached Tables. A registered design professional shall be retained to design the support system for all reactions that exceed 15000#.

Signature: David Landry
David Landry

comTECH
ROOF & FLOOR TRUSSES & BEAMS
Reilly Road Industrial Park
Fayetteville, N.C. 28309
Phone: (910) 864-8787
Fax: (910) 864-4444

Job J0423-1870	Truss F1	Truss Type Floor	Qty 26	Ply 1	Blackwell Pole Barn
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Comtech, Inc., Fayetteville, NC 28309, David Landry

8.430 s May 12 2021 MiTek Industries, Inc. Fri Apr 21 09:31:55 2023 Page 1
ID:QIPTOEKJ7EVp_7FWxEI97RzajZS-cl1oAqF6n30tkmjQDR32yNdYTF3MbsEe5ylEOTzOYUo

0-1-8

1-3-0

1-7-8

1-7-8

0-1-8

Scale = 1:68.6

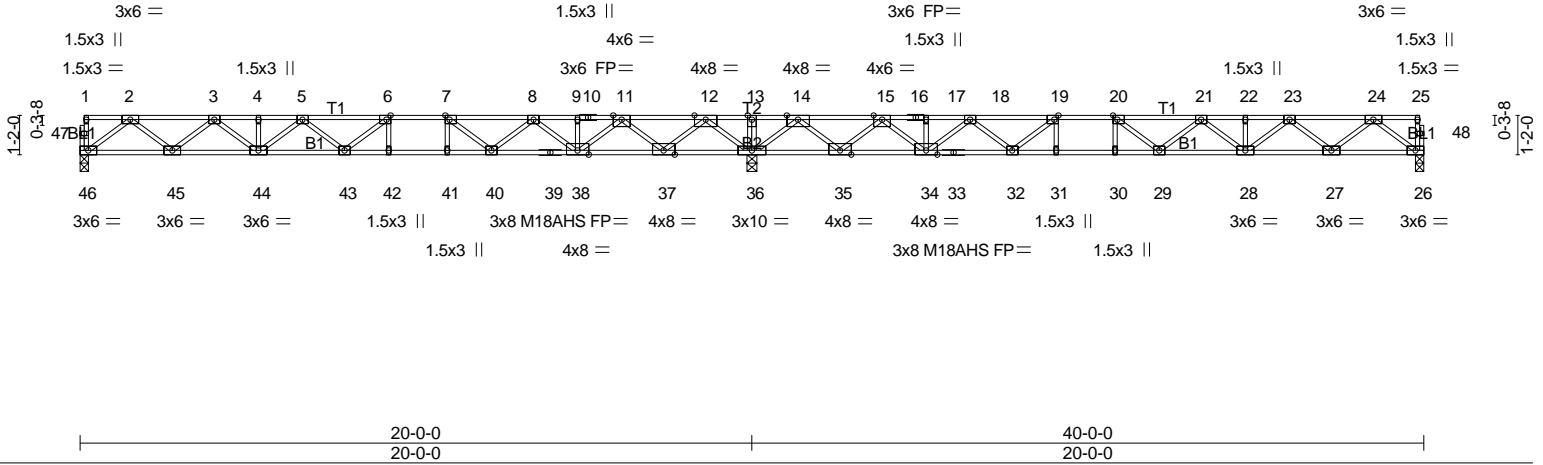


Plate Offsets (X,Y)-- [6:0-1-8,Edge], [7:0-1-8,Edge], [19:0-1-8,Edge], [20:0-1-8,Edge]

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 40.0	Plate Grip DOL	1.00	TC 0.96	Vert(LL)	-0.33 29-30	>720	480	MT20	244/190
TCDL 10.0	Lumber DOL	1.00	BC 0.79	Vert(CT)	-0.43 29-30	>556	360	M18AHS	186/179
BCLL 0.0	Rep Stress Incr	YES	WB 0.78	Horz(CT)	0.06 26	n/a	n/a		
BCDL 5.0	Code IRC2015/TPI2014		Matrix-S						
								Weight: 202 lb	FT = 20%F, 11%E

LUMBER-
TOP CHORD 2x4 SP No.1(flat)
BOT CHORD 2x4 SP 2400F 2.0E(flat)
WEBS 2x4 SP No.3(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS. (lb/size) 46=844/0-3-0 (min. 0-1-8), 36=2672/0-3-8 (min. 0-1-8), 26=844/0-3-0 (min. 0-1-8)
Max Grav 46=932(LC 3), 36=2672(LC 1), 26=932(LC 4)

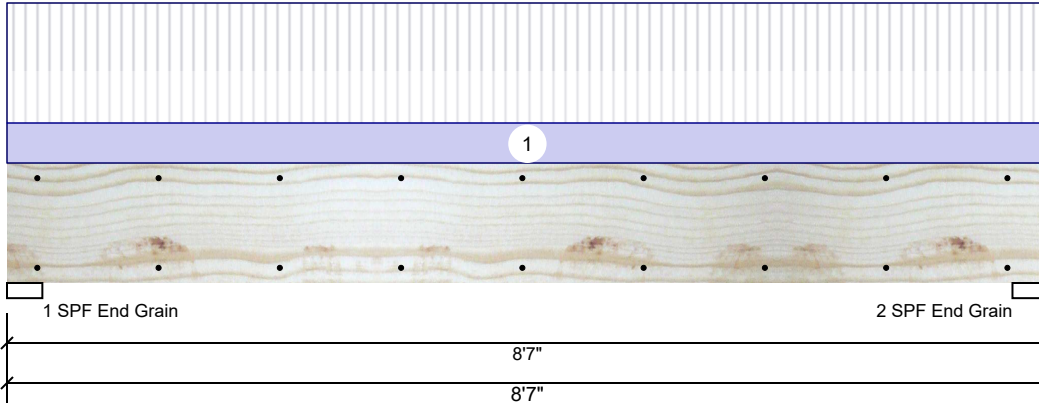
FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-1965/0, 3-4=-3230/0, 4-5=-3230/0, 5-6=-3759/0, 6-7=-3720/55, 7-8=-3112/449, 8-9=-1842/1066, 9-10=-1842/1066, 10-11=-1842/1066, 11-12=0/1919, 12-13=0/4575, 13-14=0/4575, 14-15=0/1919, 15-16=-1842/1066, 16-17=-1842/1066, 17-18=-1842/1066, 18-19=-3112/449, 19-20=-3720/55, 20-21=-3759/0, 21-22=-3230/0, 22-23=-3230/0, 23-24=-1965/0
BOT CHORD 45-46=0/1169, 44-45=0/2724, 43-44=0/3670, 42-43=-55/3720, 41-42=-55/3720, 40-41=-55/3720, 39-40=-747/2612, 38-39=-747/2612, 37-38=-1470/933, 36-37=-2923/0, 35-36=-2923/0, 34-35=-1470/933, 33-34=-747/2612, 32-33=-747/2612, 31-32=-55/3720, 30-31=-55/3720, 29-30=-55/3720, 28-29=0/3670, 27-28=0/2724, 26-27=0/1169
WEBS 2-46=-1464/0, 2-45=0/1036, 3-45=-989/0, 3-44=0/645, 5-44=-563/12, 12-36=-2074/0, 12-37=0/1640, 11-37=-1621/0, 11-38=0/1308, 8-38=-1102/0, 8-40=0/852, 7-40=-1177/0, 6-43=-85/604, 6-42=-415/0, 7-41=0/441, 24-26=-1464/0, 24-27=0/1036, 23-27=-989/0, 23-28=0/645, 21-28=-563/12, 20-29=-85/604, 14-36=-2074/0, 14-35=0/1640, 15-35=-1621/0, 15-34=0/1308, 18-34=-1102/0, 18-32=0/852, 19-32=-1177/0, 19-31=0/441, 20-30=-415/0

- NOTES-**
- 1) Unbalanced floor live loads have been considered for this design.
 - 2) All plates are MT20 plates unless otherwise indicated.
 - 3) All plates are 3x4 MT20 unless otherwise indicated.
 - 4) Plates checked for a plus or minus 1 degree rotation about its center.
 - 5) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
 - 6) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
 - 7) CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard

BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II	Ceiling:	Gypsum 1/2"
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	4300	1473	0	0	0
2	Vertical	4300	1473	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	56%	1473 / 4300	5773	L	D+L
2 - SPF End Grain	3.500"	Vert	56%	1473 / 4300	5773	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11101 ft-lb	4'3 1/2"	19911 ft-lb	0.558 (56%)	D+L	L
Unbraced	11101 ft-lb	4'3 1/2"	11114 ft-lb	0.999 (100%)	D+L	L
Shear	4059 lb	1'3 3/8"	8867 lb	0.458 (46%)	D+L	L
LL Defl inch	0.124 (L/789)	4'3 9/16"	0.203 (L/480)	0.608 (61%)	L	L
TL Defl inch	0.166 (L/588)	4'3 9/16"	0.271 (L/360)	0.612 (61%)	D+L	L

Design Notes

- Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- Refer to last page of calculations for fasteners required for specified loads.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 7'10 7/16" o.c.
- Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	334 PLF	1002 PLF	0 PLF	0 PLF	0 PLF	F1
	Self Weight				9 PLF					

Notes

Calculated Structural Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

- Dry service conditions, unless noted otherwise
- LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

- LVL beams must not be cut or drilled
- Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
- Provide lateral support at bearing points to avoid lateral displacement and rotation

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

Manufacturer Info

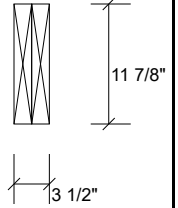
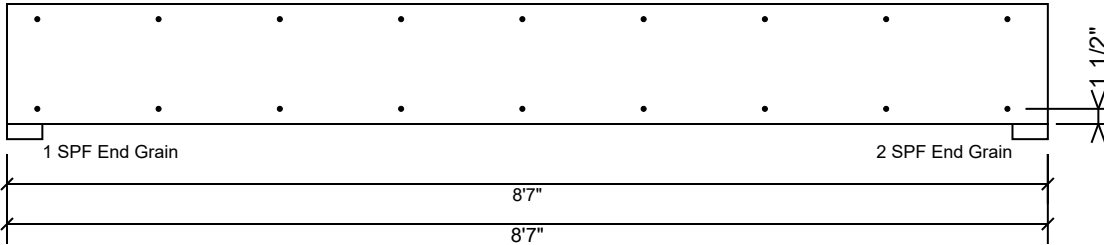
Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
www.metsawood.com/us

Comtech
 Reilly Road Industrial Park P.O. Box 40408, NC
 USA
 28309
 910-864-8787



BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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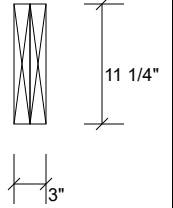
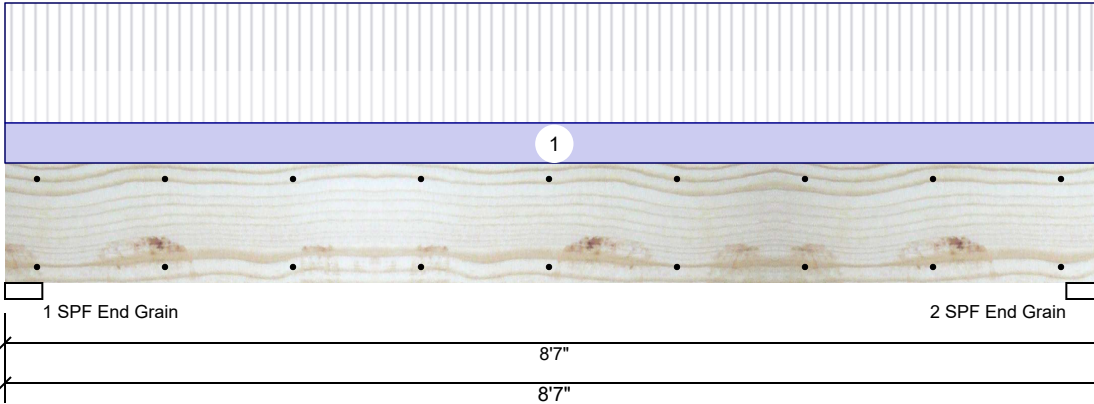
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BM1x S-P-F #2 2.000" X 12.000" 2-Ply - PASSED

Level: Level



Member Information

Type: Girder	Application: Floor
Plies: 2	Design Method: ASD
Moisture Condition: Dry	Building Code: IBC/IRC 2015
Deflection LL: 480	Load Sharing: No
Deflection TL: 360	Deck: Not Checked
Importance: Normal - II	Ceiling: Gypsum 1/2"
Temperature: Temp <= 100°F	

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1502	502	0	0	0
2	Vertical	1502	502	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	45%	502 / 1502	2004	L	D+L
2 - SPF End Grain	3.500"	Vert	45%	502 / 1502	2004	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3854 ft-lb	4'3 1/2"	4614 ft-lb	0.835 (84%)	D+L	L
Unbraced	3854 ft-lb	4'3 1/2"	3859 ft-lb	0.999 (100%)	D+L	L
Shear	1430 lb	7'4 1/4"	3038 lb	0.471 (47%)	D+L	L
LL Defl inch	0.069 (L/1416)	4'3 9/16"	0.203 (L/480)	0.339 (34%)	L	L
TL Defl inch	0.092 (L/1061)	4'3 9/16"	0.271 (L/360)	0.339 (34%)	D+L	L

Design Notes

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 7'9 5/16" o.c.
- 7 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	117 PLF	350 PLF	0 PLF	0 PLF	0 PLF	F1

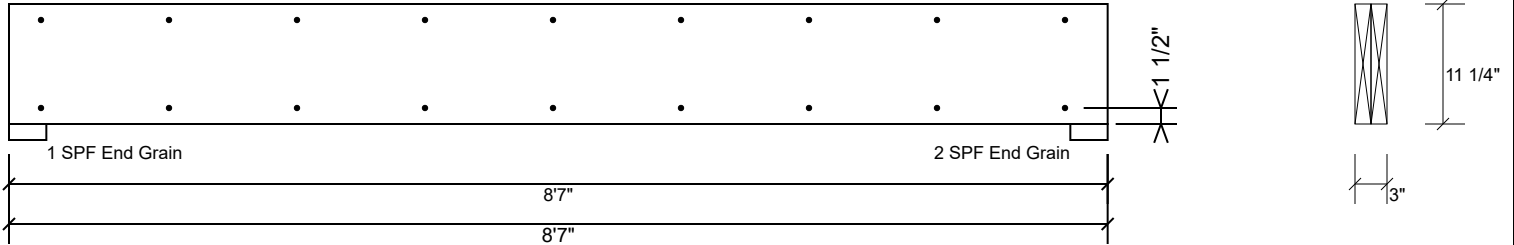
Manufacturer Info	Comtech Reilly Road Industrial Park P.O. Box 40408, NC USA 28309 910-864-8787
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This design is valid until 11/3/2024

BM1x S-P-F #2 2.000" X 12.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c.. Maximum end distance not to exceed 6".

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

Manufacturer Info	Comtech Reilly Road Industrial Park P.O. Box 40408, NC USA 28309 910-864-8787
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This design is valid until 11/3/2024