MiTek®

MiTek, Inc.
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200

RE: 241713 - Roof

Site Information:

Project Customer: Premier Bulding Supply of Kansas City Project Name: P241021
Lot/Block: 174 Subdivision: Highland Meadows
Model:
Address:
City: Lee's Summit State: MO

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):

Design Code: IRC2018/TPI2014
Wind Code: ASCE 7-16
Wind Speed: 115 mph
Roof Load: 45.0 psf
Mean Roof Height (feet): 35

Design Program: MiTek 20/20 8.8
Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-16
Floor Load: N/A psf

Exposure Category: C

No.	Seal#	Truss Name	Date
1	I69931901	A1	12/4/24
2	I69931902	A2	12/4/24
3	I69931903	A3	12/4/24
4	I69931904	B1	12/4/24
5	I69931905	B2	12/4/24
6	I69931906	B3	12/4/24
7	I69931907	C1	12/4/24
8	I69931908	C2	12/4/24
9	I69931909	C3	12/4/24
10	I69931910	D1	12/4/24
11	I69931911	D2	12/4/24
12	I69931912	D3	12/4/24
13	I69931913	E1	12/4/24
14	I69931914	E2	12/4/24
15	I69931915	E3	12/4/24
16	I69931916	E4	12/4/24
17	I69931917	E5	12/4/24
18	I69931918	R1	12/4/24
19	I69931919	V1	12/4/24
20	I69931920	V2	12/4/24
21	I69931921	V3	12/4/24
22	I69931922	V4	12/4/24
23	I69931923	V5	12/4/24
24	I69931924	V6	12/4/24
25	I69931925	V7	12/4/24
26	I69931926	V8	12/4/24

The truss drawing(s) referenced above have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Christensen Building Compts..

Truss Design Engineer's Name: Sevier, Scott
My license renewal date for the state of Missouri is December 31, 2025.

IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to MiTek or TRENCO. Any project specific information included is for MiTek's or TRENCO's customers file reference purpose only, and was not taken into account in the preparation of these designs. MiTek or TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

December 4,2024

Sevier, Scott

Job	Truss	Truss Type	Qty	Ply	Roof	I69931901
241713	A1	Common Supported Gable	1	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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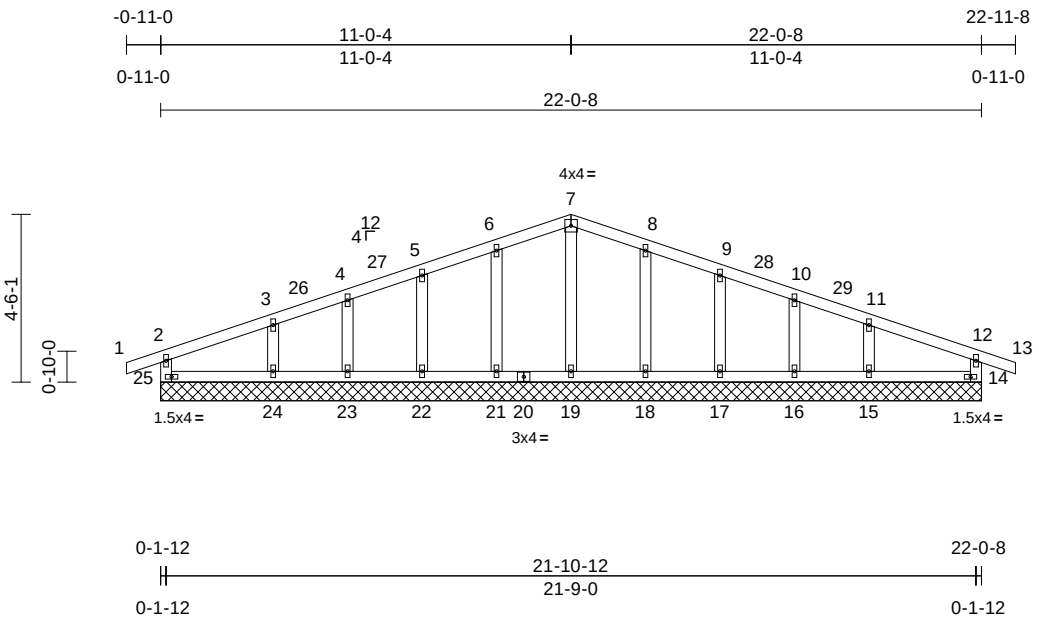

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.13	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	14	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-R								
BCDL	10.0										Weight: 80 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

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

REACTIONS (size) 14=22-0-8, 15=22-0-8, 16=22-0-8, 17=22-0-8, 18=22-0-8, 19=22-0-8, 21=22-0-8, 22=22-0-8, 23=22-0-8, 24=22-0-8, 25=22-0-8
Max Horiz 25=-54 (LC 17)
Max Uplift 14=-71 (LC 13), 15=-77 (LC 17), 16=-42 (LC 13), 17=-51 (LC 17), 18=-52 (LC 17), 21=-52 (LC 16), 22=-51 (LC 16), 23=-41 (LC 12), 24=-81 (LC 16), 25=-67 (LC 12)
Max Grav 14=210 (LC 1), 15=242 (LC 24), 16=226 (LC 24), 17=248 (LC 24), 18=261 (LC 24), 19=154 (LC 23), 21=261 (LC 23), 22=248 (LC 23), 23=226 (LC 23), 24=242 (LC 23), 25=210 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-25=-184/131, 1-2=0/40, 2-3=-69/57, 3-4=-50/94, 4-5=-60/128, 5-6=-72/164, 6-7=-85/200, 7-8=-85/195, 8-9=-72/150, 9-10=-60/114, 10-11=-51/80, 11-12=-61/45, 12-13=0/40, 12-14=-184/125
BOT CHORD 24-25=-32/59, 23-24=-32/59, 22-23=-32/59, 21-22=-32/59, 19-21=-32/59, 18-19=-32/59, 17-18=-32/59, 16-17=-32/59, 15-16=-32/59, 14-15=-32/59
WEBS 7-19=-114/0, 6-21=-221/135, 5-22=-207/129, 4-23=-192/83, 3-24=-185/126, 8-18=-221/135, 9-17=-207/129, 10-16=-192/82, 11-15=-185/123

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-11-0 to 4-1-0, Exterior(2N) 4-1-0 to 11-0-4, Corner(3R) 11-0-4 to 16-0-4, Exterior(2N) 16-0-4 to 22-11-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) All bearings are assumed to be SPF No.2 .
13) Bearing at joint(s) 25, 14 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
14) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 67 lb uplift at joint 25, 71 lb uplift at joint 14, 52 lb uplift at joint 21, 51 lb uplift at joint 22, 41 lb uplift at joint 23, 81 lb uplift at joint 24, 52 lb uplift at joint 18, 51 lb uplift at joint 17, 42 lb uplift at joint 16 and 77 lb uplift at joint 15.
15) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

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RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931902
241713	A2	Common	4	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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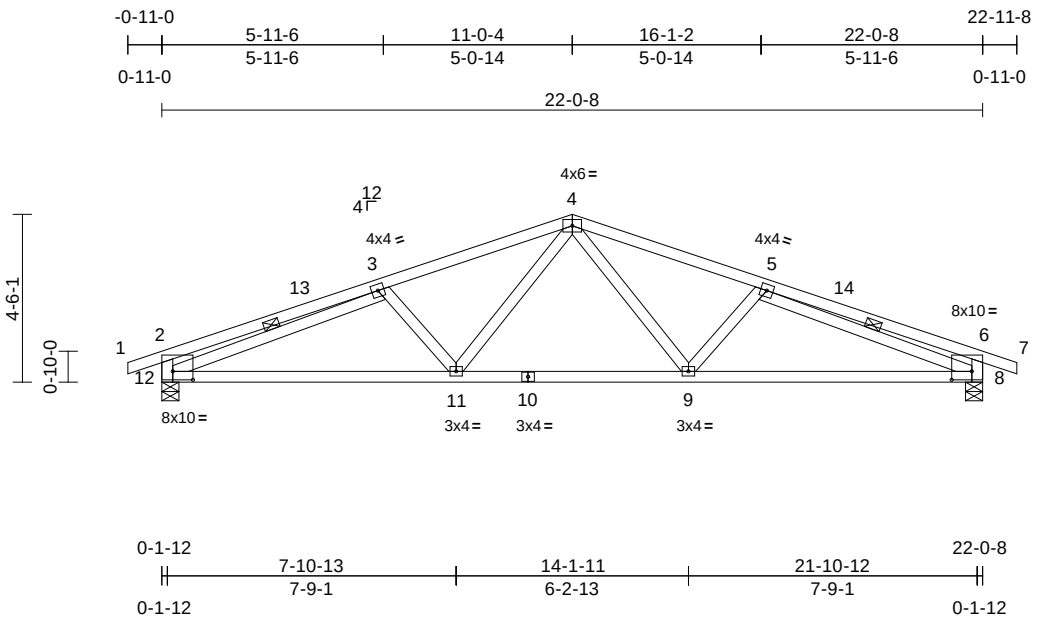

Scale = 1:55.3

Plate Offsets (X, Y): [6:0-6-8,0-2-12], [12:0-6-8,0-2-12]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.47	Vert(LL)	-0.11	11-12	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.59	Vert(CT)	-0.23	11-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.33	Horz(CT)	0.06	8	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 87 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-8-8 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 8-10-6 oc bracing.
WEBS 1 Row at midpt 3-12, 5-8

REACTIONS (size) 8=0-5-8, 12=0-5-8
Max Horiz 12=-54 (LC 21)
Max Uplift 8=-220 (LC 13), 12=-220 (LC 12)
Max Grav 8=1116 (LC 24), 12=1116 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/40, 2-3=-526/199, 3-4=-1750/470, 4-5=-1750/470, 5-6=-526/199, 6-7=0/40, 2-12=-427/269, 6-8=-427/269
BOT CHORD 11-12=-428/1837, 9-11=-243/1270, 8-9=-401/1837
WEBS 4-9=-88/569, 5-9=-416/207, 4-11=-88/569, 3-11=-416/207, 3-12=-1527/382, 5-8=-1527/383

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 11-0-4, Exterior(2R) 11-0-4 to 16-2-6, Interior (1) 16-2-6 to 22-11-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Bearing at joint(s) 12, 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 220 lb uplift at joint 12 and 220 lb uplift at joint 8.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

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Job	Truss	Truss Type	Qty	Ply	Roof	I69931903
241713	A3	Common	1	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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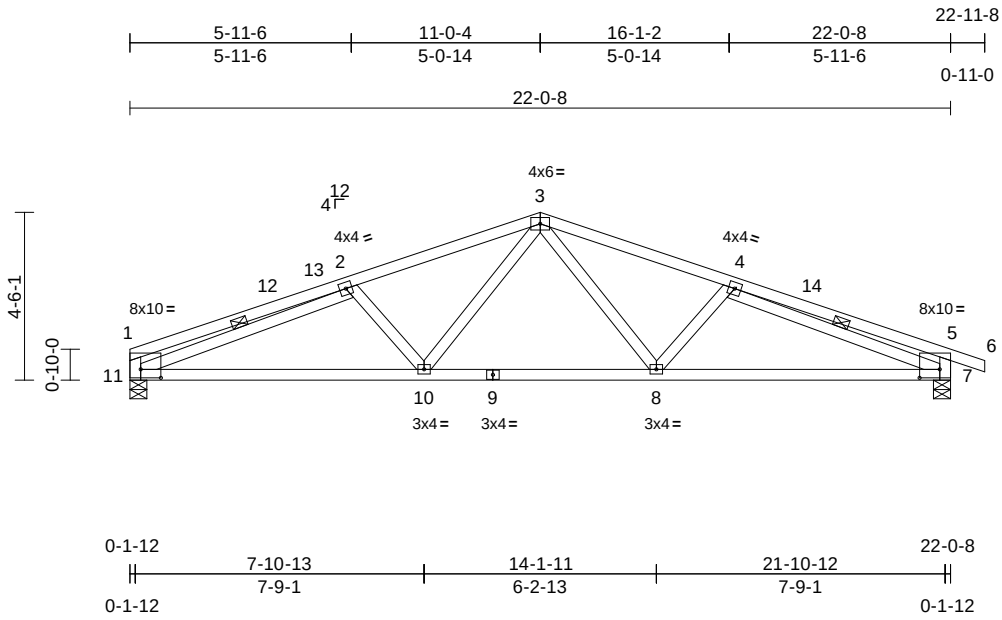

Scale = 1:55.3

Plate Offsets (X, Y): [1:0-6-8,0-2-12], [5:0-6-8,0-2-12]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.49	Vert(LL)	-0.11	7-8	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.23	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.06	7	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 86 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-8-6 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 8-9-10 oc bracing.
WEBS 1 Row at midpt 2-11, 4-7

REACTIONS (size) 7=0-5-8, 11=0-5-8
Max Horiz 11=-60 (LC 21)
Max Uplift 7=-221 (LC 13), 11=-171 (LC 12)
Max Grav 7=1117 (LC 24), 11=1040 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-435/157, 2-3=-1764/503, 3-4=-1753/486, 4-5=-526/199, 5-6=0/40, 1-11=-306/170, 5-7=-427/269
BOT CHORD 10-11=-433/1858, 8-10=-244/1274, 7-8=-416/1840
WEBS 3-8=-88/570, 4-8=-416/206, 3-10=-95/582, 2-10=-430/214, 2-11=-1638/433, 4-7=-1530/398

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-1-12 to 5-1-12, Interior (1) 5-1-12 to 11-0-4, Exterior(2R) 11-0-4 to 16-2-6, Interior (1) 16-2-6 to 22-11-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Bearing at joint(s) 11, 7 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 171 lb uplift at joint 11 and 221 lb uplift at joint 7.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

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RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof
241713	B1	Monopitch Supported Gable	1	1	Job Reference (optional) I69931904

Christensen Building Compts., Fremont, NE - 68025-5944,

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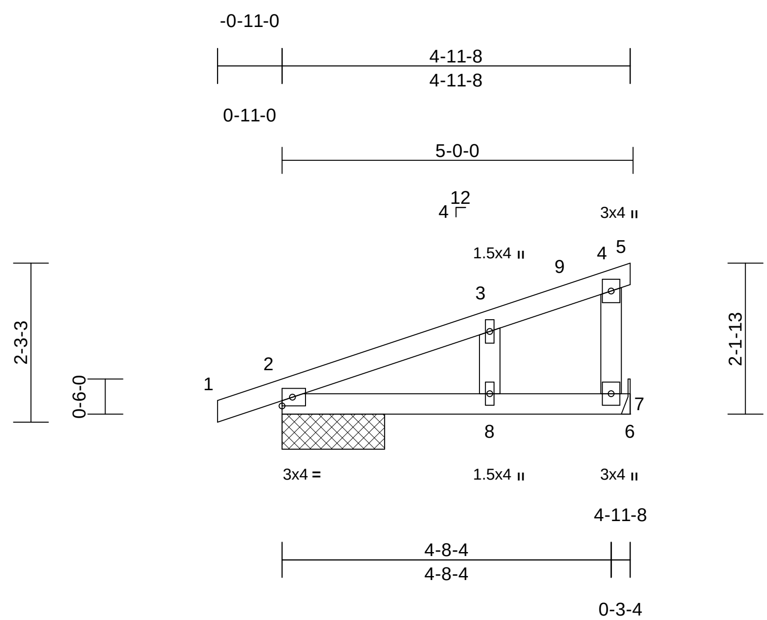

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Loading	(psf)	Spacing	1-11-4	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.23	Vert(LL)	-0.03	2-8	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.24	Vert(CT)	-0.05	2-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	7	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 16 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

BRACING

TOP CHORD Structural wood sheathing directly applied or 5-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 2=1-5-8, 7= Mechanical
Max Horiz 2=84 (LC 12)
Max Uplift 2=-74 (LC 12), 7=-61 (LC 16)
Max Grav 2=380 (LC 23), 7=304 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/12, 2-3=-193/0, 3-4=-122/48, 4-5=-9/0, 4-7=-163/131
BOT CHORD 2-8=-86/116, 7-8=-86/116, 6-7=0/0
WEBS 3-8=-105/145

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 4-11-8 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) Bearings are assumed to be: Joint 2 SPF No.2 .
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 61 lb uplift at joint 7 and 74 lb uplift at joint 2.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

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Job	Truss	Truss Type	Qty	Ply	Roof
241713	B2	Monopitch	3	1	Job Reference (optional) I69931905

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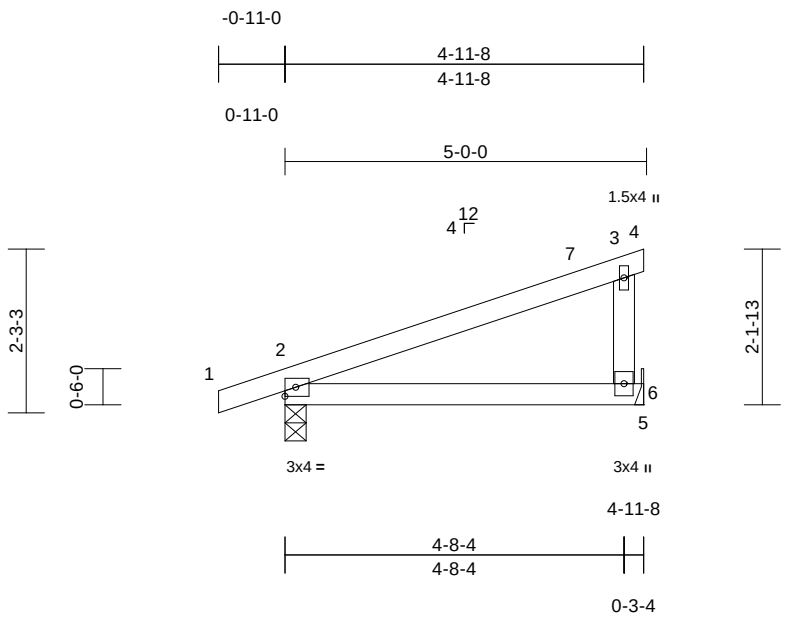

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.51	Vert(LL)	0.03	2-6	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.21	Vert(CT)	-0.05	2-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	n/a	-	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 15 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 2=0-3-8, 6= Mechanical
Max Horiz 2=86 (LC 12)
Max Uplift 2=-130 (LC 12), 6=-106 (LC 12)
Max Grav 2=401 (LC 23), 6=301 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/13, 2-3=-106/64, 3-4=-9/0, 3-6=-250/244
BOT CHORD 2-6=0/0, 5-6=0/0

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 4-11-8 zone; cantilever left and right exposed ; end vertical left exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) Bearings are assumed to be: Joint 2 SPF No.2 .
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 106 lb uplift at joint 6 and 130 lb uplift at joint 2.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	I69931906
241713	B3	Monopitch	7	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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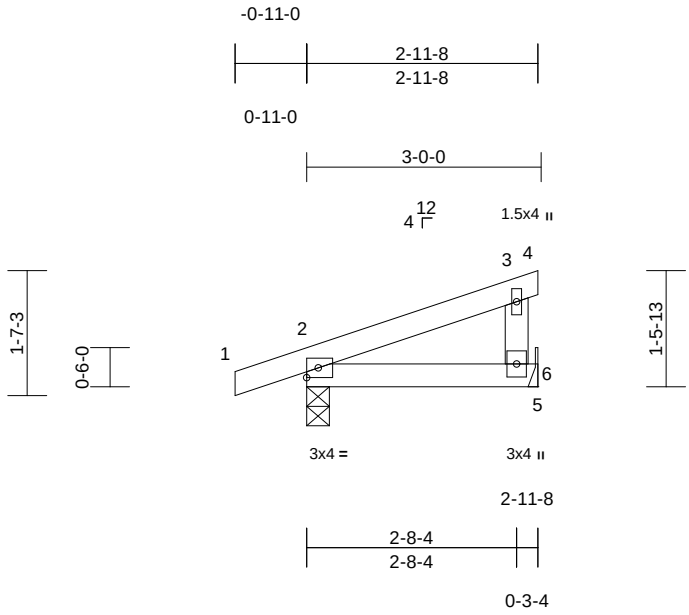

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.13	Vert(LL)	0.00	2-6	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	0.00	2-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 9 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 2=0-3-8, 6= Mechanical
Max Horiz 2=57 (LC 13)
Max Uplift 2=-78 (LC 12), 6=-30 (LC 16)
Max Grav 2=278 (LC 23), 6=164 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/13, 2-3=-83/46, 3-4=-9/0, 3-6=-133/146
BOT CHORD 2-6=-23/24, 5-6=0/0

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) Bearings are assumed to be: Joint 2 SPF No.2 .
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 30 lb uplift at joint 6 and 78 lb uplift at joint 2.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof
241713	C1	Common Structural Gable	1	1	Job Reference (optional) I69931907

Christensen Building Compts., Fremont, NE - 68025-5944, Run: 8.83 S Nov 8 2024 Print: 8.830 S Nov 8 2024 MiTek Industries, Inc. Mon Dec 02 19:49:27 Page: 1
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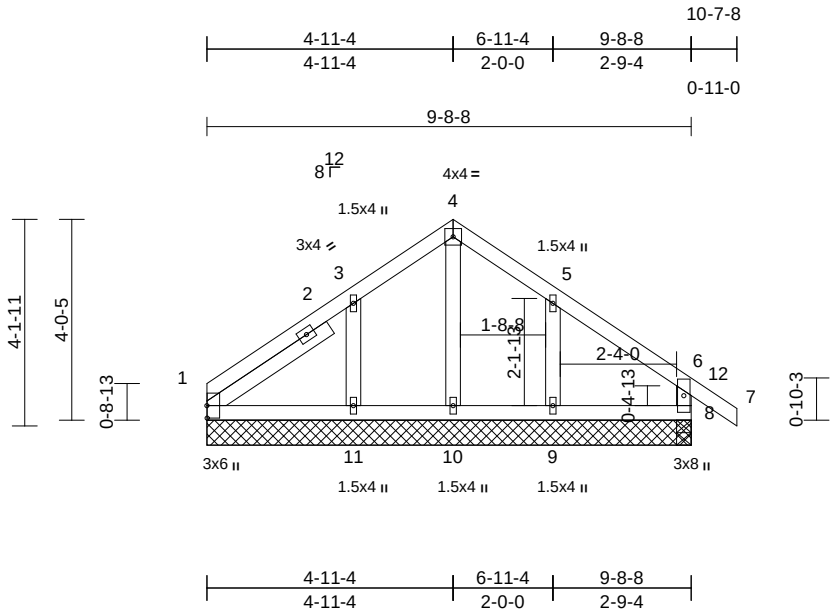

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Plate Offsets (X, Y): [1:0-3-0,0-0-1]

Loading	(psf)	Spacing	1-11-4	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.14	Vert(LL)	0.00	1-11	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	0.00	1-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 39 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2
SLIDER Left 2x4 SPF No.2 -- 2-11-3

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

REACTIONS (size) 1=9-8-8, 8=9-8-8, 9=9-8-8, 10=9-8-8, 11=9-8-8
Max Horiz 1=116 (LC 15)
Max Uplift 1=-51 (LC 17), 8=-64 (LC 17), 9=-103 (LC 17), 10=-10 (LC 15), 11=-117 (LC 16)
Max Grav 1=185 (LC 23), 8=283 (LC 24), 9=339 (LC 24), 10=146 (LC 29), 11=383 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-3=-133/111, 3-4=-136/174, 4-5=-137/175, 5-6=-121/77, 6-7=0/69, 6-8=-261/141
BOT CHORD 1-11=-28/44, 10-11=-28/44, 9-10=-28/44, 8-9=-28/44
WEBS 4-10=-123/57, 3-11=-319/169, 5-9=-287/154

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 4-11-4, Exterior(2R) 4-11-4 to 9-11-4, Interior (1) 9-11-4 to 10-7-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 51 lb uplift at joint 1, 64 lb uplift at joint 8, 10 lb uplift at joint 10, 117 lb uplift at joint 11 and 103 lb uplift at joint 9.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	I69931908
241713	C2	Common	1	1	Job Reference (optional)	

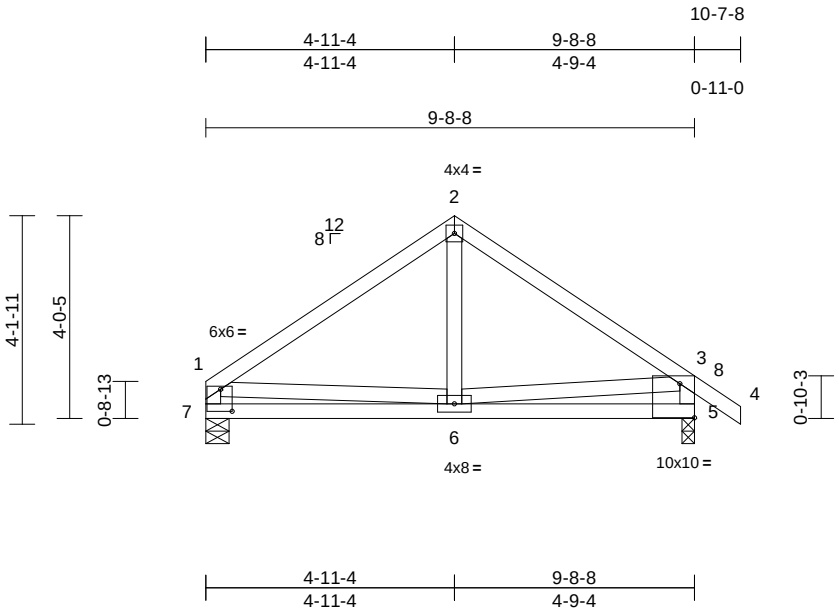

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Plate Offsets (X, Y): [1:0-2-12,0-5-4], [5:Edge,0-8-2]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.50	Vert(LL)	0.01	6-7	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.18	Vert(CT)	-0.02	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 41 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 5=0-3-0, 7=0-5-8
Max Horiz 7=-114 (LC 12)
Max Uplift 5=-84 (LC 17), 7=-58 (LC 16)
Max Grav 5=638 (LC 24), 7=550 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-550/282, 2-3=-540/289, 3-4=0/71, 1-7=-507/239, 3-5=-597/310
BOT CHORD 6-7=-155/316, 5-6=-138/322
WEBS 2-6=-118/187, 1-6=-76/203, 3-6=-108/251

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-1-12 to 4-11-4, Exterior(2R) 4-11-4 to 9-11-4, Interior (1) 9-11-4 to 10-7-8 zone; cantilever left and right exposed ; end vertical right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 58 lb uplift at joint 7 and 84 lb uplift at joint 5.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof
241713	C3	Common	1	1	Job Reference (optional) I69931909

Christensen Building Compts., Fremont, NE - 68025-5944,

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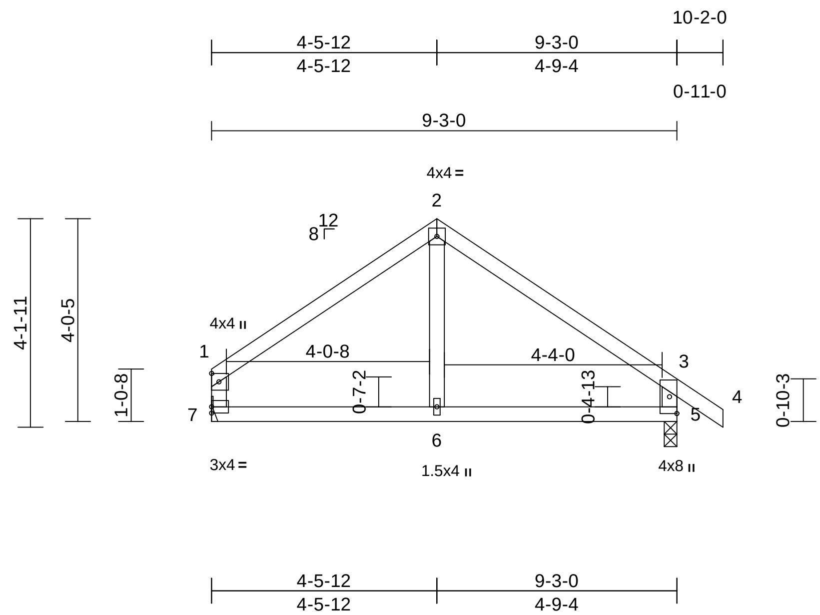

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.40	Vert(LL)	0.03	5-6	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.27	Vert(CT)	-0.04	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-R								
BCDL	10.0										Weight: 30 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 5=0-3-0, 7= Mechanical
Max Horiz 7=-113 (LC 12)
Max Uplift 5=-82 (LC 17), 7=-53 (LC 16)
Max Grav 5=597 (LC 24), 7=514 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-475/272, 2-3=-488/268, 3-4=0/71, 1-7=-454/233, 3-5=-549/306
BOT CHORD 6-7=-87/270, 5-6=-87/270
WEBS 2-6=-102/171

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-1-12 to 4-5-12, Exterior(2R) 4-5-12 to 9-5-12, Interior (1) 9-5-12 to 10-2-0 zone; cantilever left and right exposed ; end vertical right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) Bearings are assumed to be: , Joint 5 SPF No.2 .
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 53 lb uplift at joint 7 and 82 lb uplift at joint 5.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	
241713	D1	Common Structural Gable	1	1	Job Reference (optional)	I69931910

Christensen Building Compts., Fremont, NE - 68025-5944,

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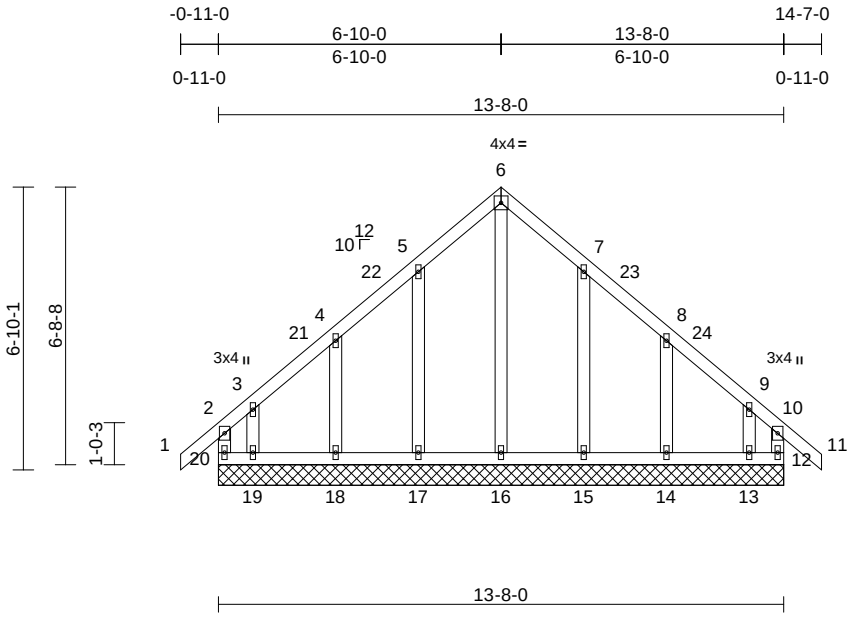

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Plate Offsets (X, Y): [10:0-0-0,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.14	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.07	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.20	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-R								
BCDL	10.0										Weight: 67 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SPF No.2
BOT CHORD	2x4 SPF No.2
WEBS	2x4 SPF No.2
OTHERS	2x4 SPF No.2

BRACING

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

REACTIONS (size) 12=13-8-0, 13=13-8-0, 14=13-8-0, 15=13-8-0, 16=13-8-0, 17=13-8-0, 18=13-8-0, 19=13-8-0, 20=13-8-0
Max Horiz 20=-213 (LC 14)
Max Uplift 12=-130 (LC 13), 13=-176 (LC 17), 14=-100 (LC 17), 15=-101 (LC 17), 17=-101 (LC 16), 18=-99 (LC 16), 19=-189 (LC 16), 20=-174 (LC 12)
Max Grav 12=195 (LC 30), 13=196 (LC 15), 14=263 (LC 24), 15=307 (LC 24), 16=224 (LC 29), 17=307 (LC 23), 18=263 (LC 23), 19=227 (LC 14), 20=231 (LC 27)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/82, 2-3=-165/154, 3-4=-103/108, 4-5=-84/190, 5-6=-140/305, 6-7=-140/305, 7-8=-82/189, 8-9=-79/87, 9-10=-130/116, 10-11=0/82, 2-20=-182/121, 10-12=-182/90
BOT CHORD	19-20=-101/119, 18-19=-101/119, 17-18=-101/119, 16-17=-101/119, 15-16=-101/119, 14-15=-101/119, 13-14=-101/119, 12-13=-101/119
WEBS	6-16=-293/72, 5-17=-267/161, 4-18=-220/208, 3-19=-136/147, 7-15=-267/161, 8-14=-220/208, 9-13=-134/147

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-11-0 to 4-1-0, Exterior(2N) 4-1-0 to 6-10-0, Corner(3R) 6-10-0 to 11-10-0, Exterior(2N) 11-10-0 to 14-7-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) All bearings are assumed to be SPF No.2 .
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 174 lb uplift at joint 20, 130 lb uplift at joint 12, 101 lb uplift at joint 17, 99 lb uplift at joint 18, 189 lb uplift at joint 19, 101 lb uplift at joint 15, 100 lb uplift at joint 14 and 176 lb uplift at joint 13.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	
241713	D2	Common Structural Gable	1	1	Job Reference (optional)	I69931911

Christensen Building Compts., Fremont, NE - 68025-5944,

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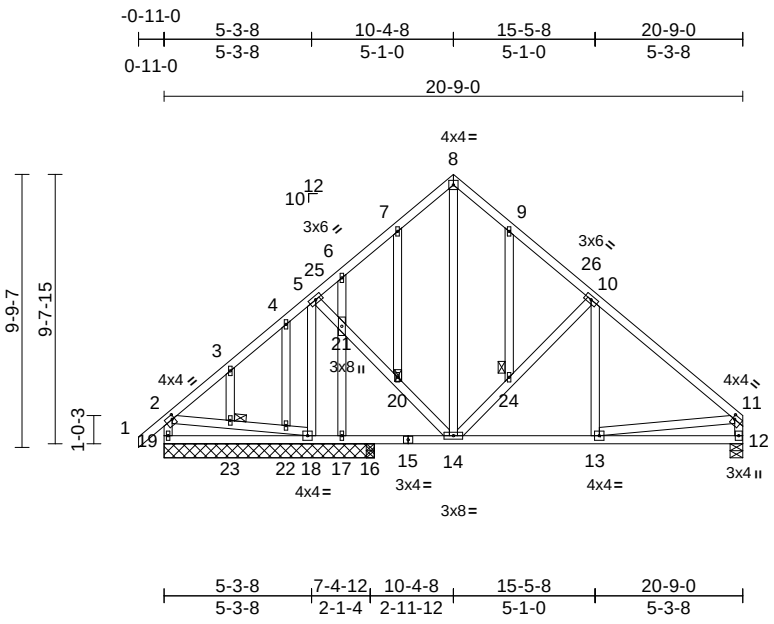

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Plate Offsets (X, Y): [2:0-1-0,0-1-12], [11:0-1-0,0-1-12]

Loading	(psf)	Spacing	1-11-4	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.38	Vert(LL)	-0.02	12-13	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	-0.03	12-13	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.28	Horz(CT)	0.01	12	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 131 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
JOINTS 1 Brace at Jt(s): 20, 23, 24

REACTIONS (size) 12=0-5-8, 16=0-3-8, 17=7-6-8, 18=7-6-8, 19=7-6-8
Max Horiz 19=278 (LC 13)
Max Uplift 12=-70 (LC 17), 17=-191 (LC 16), 18=-82 (LC 16), 19=-10 (LC 12)
Max Grav 12=705 (LC 24), 16=118 (LC 7), 17=371 (LC 23), 18=789 (LC 1), 19=231 (LC 36)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/79, 2-3=-170/167, 3-4=-118/208, 4-5=-72/189, 5-6=-311/111, 6-7=-346/156, 7-8=-305/182, 8-9=-313/159, 9-10=-479/124, 10-11=-792/87, 2-19=-184/45, 11-12=-659/97
BOT CHORD 18-19=-272/329, 17-18=-192/202, 16-17=-192/202, 14-16=-192/202, 13-14=-9/538, 12-13=-68/125
WEBS 2-23=-283/262, 22-23=-288/268, 18-22=-314/284, 11-13=0/430, 8-14=-115/176, 14-24=-463/244, 10-24=-392/216, 10-13=0/185, 5-21=-24/424, 20-21=-39/454, 14-20=-28/451, 5-18=-563/94, 7-20=-114/55, 6-21=-279/111, 17-21=-437/165, 4-22=-82/50, 3-23=-54/52, 9-24=-101/39

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-4-8, Interior (1) 4-4-8 to 10-4-8, Exterior(2R) 10-4-8 to 15-5-8, Interior (1) 15-5-8 to 20-7-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
8) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) All bearings are assumed to be SPF No.2 .
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 10 lb uplift at joint 19, 82 lb uplift at joint 18, 70 lb uplift at joint 12 and 191 lb uplift at joint 17.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931912
241713	D3	Common	7	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

Run: 8.83 S Nov 8 2024 Print: 8.830 S Nov 8 2024 MiTek Industries, Inc. Mon Dec 02 19:49:28 Page: 1
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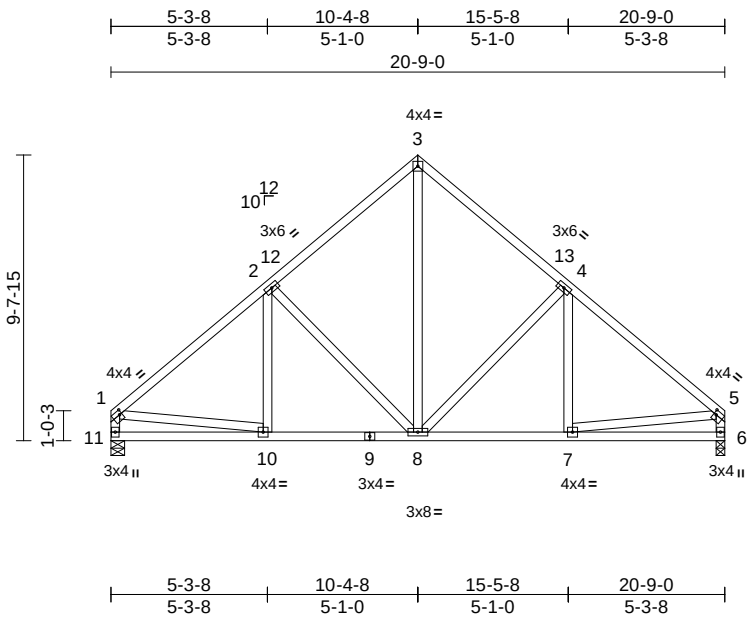

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Plate Offsets (X, Y): [1:0-1-0,0-1-12], [4:0-0-0,0-0-0], [5:0-1-0,0-1-12]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.52	Vert(LL)	-0.02	7-8	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.26	Vert(CT)	-0.05	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.37	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 104 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-10-10 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 6=0-3-8, 11=0-5-8
Max Horiz 11=-271 (LC 14)
Max Uplift 6=-114 (LC 17), 11=-113 (LC 16)
Max Grav 6=976 (LC 23), 11=976 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1146/182, 2-3=-883/253, 3-4=-883/253, 4-5=-1146/182, 1-11=-925/156, 5-6=-925/156
BOT CHORD 10-11=-268/341, 8-10=-155/811, 7-8=-81/812, 6-7=-66/136
WEBS 1-10=-23/706, 5-7=-26/706, 2-8=-408/234, 3-8=-175/549, 4-8=-408/234, 2-10=-7/153, 4-7=-6/153

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-1-12 to 5-3-8, Interior (1) 5-3-8 to 10-4-8, Exterior(2R) 10-4-8 to 15-5-8, Interior (1) 15-5-8 to 20-7-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) All bearings are assumed to be SPF No.2 .
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 113 lb uplift at joint 11 and 114 lb uplift at joint 6.
8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof
241713	E1	Roof Special Supported Gable	1	1	Job Reference (optional) I69931913

Christensen Building Compts., Fremont, NE - 68025-5944,

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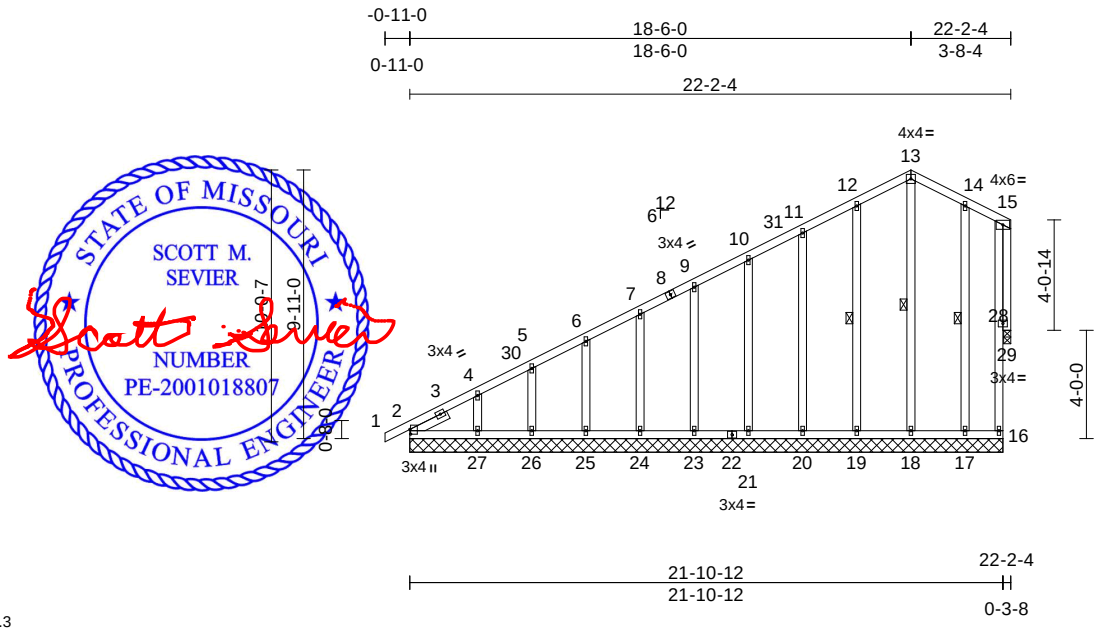

Scale = 1:77.3

Plate Offsets (X, Y): [2:0-2-1,0-0-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.11	Vert(LL)	0.00	2-27	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	0.00	2-27	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.20	Horz(CT)	-0.01	29	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-R								
BCDL	10.0										Weight: 134 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2
SLIDER Left 2x4 SPF No.2 -- 1-6-7

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 13-18, 12-19, 14-17

REACTIONS (size) 2=21-10-12, 16=21-10-12, 17=21-10-12, 18=21-10-12, 19=21-10-12, 20=21-10-12, 21=21-10-12, 23=21-10-12, 24=21-10-12, 25=21-10-12, 26=21-10-12, 27=21-10-12, 29=0-3-2
Max Horiz 2=383 (LC 16)
Max Uplift 16=-7 (LC 17), 17=-51 (LC 17), 19=-65 (LC 16), 20=-61 (LC 16), 21=-61 (LC 16), 23=-61 (LC 16), 24=-60 (LC 16), 25=-66 (LC 16), 26=-41 (LC 16), 27=-148 (LC 16), 29=-16 (LC 16)
Max Grav 2=218 (LC 28), 16=39 (LC 24), 17=240 (LC 24), 18=179 (LC 24), 19=262 (LC 23), 20=232 (LC 23), 21=182 (LC 23), 23=180 (LC 36), 24=180 (LC 23), 25=182 (LC 36), 26=171 (LC 1), 27=215 (LC 36), 29=22 (LC 24)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/12, 2-4=-413/153, 4-5=-318/115, 5-6=-278/100, 6-7=-227/80, 7-9=-179/62, 9-10=-130/43, 10-11=-81/43, 11-12=-48/53, 12-13=-53/105, 13-14=-55/94, 14-15=-24/38, 16-28=-28/16, 15-28=-28/16
BOT CHORD 2-27=-2/2, 26-27=-2/2, 25-26=-2/2, 24-25=-2/2, 23-24=-2/2, 21-23=-2/2, 20-21=-2/2, 19-20=-2/2, 18-19=-2/2, 17-18=-2/2, 16-17=-2/2
WEBS 13-18=-138/19, 12-19=-222/97, 11-20=-192/98, 10-21=-142/96, 9-23=-140/97, 7-24=-140/96, 6-25=-141/101, 5-26=-135/92, 4-27=-162/242, 14-17=-207/130, 15-29=-22/22

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-11-0 to 4-1-0, Exterior(2N) 4-1-0 to 18-6-0, Corner(3E) 18-6-0 to 21-9-0 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) All bearings are assumed to be SPF No.2 .
11) Bearing at joint(s) 29 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 16, 65 lb uplift at joint 19, 61 lb uplift at joint 20, 61 lb uplift at joint 21, 61 lb uplift at joint 23, 60 lb uplift at joint 24, 66 lb uplift at joint 25, 41 lb uplift at joint 26, 148 lb uplift at joint 27, 51 lb uplift at joint 17 and 16 lb uplift at joint 29.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

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Chesterfield, MO 63017
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RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931914
241713	E2	Roof Special	8	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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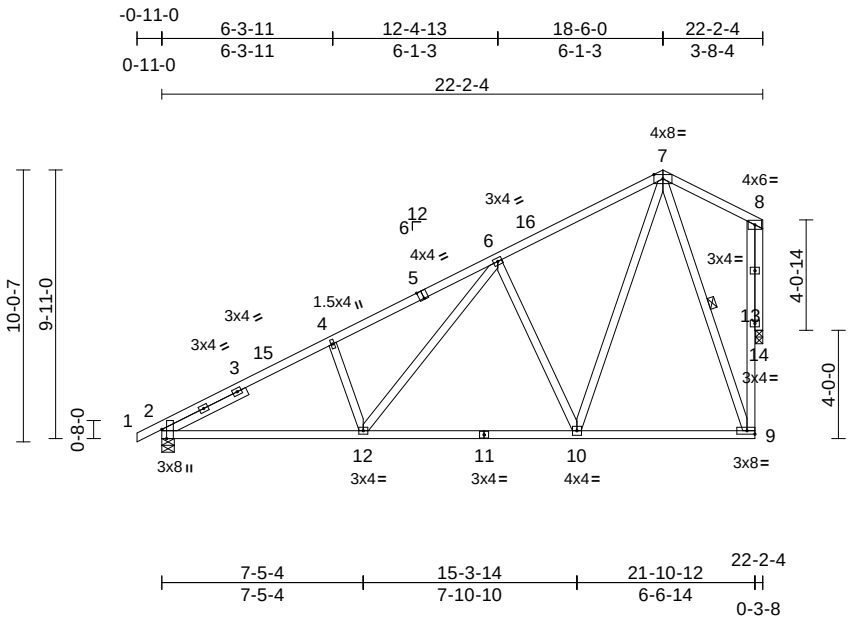

Scale = 1:77.3

Plate Offsets (X, Y): [2:0-4-1,Edge], [5:0-2-0,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.61	Vert(LL)	-0.07	10-12	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.54	Vert(CT)	-0.17	10-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.13	14	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 115 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SPF No.2
BOT CHORD	2x4 SPF No.2
WEBS	2x4 SPF No.2
OTHERS	2x4 SPF No.2
SLIDER	Left 2x4 SPF No.2 -- 3-5-11

BRACING

TOP CHORD	Structural wood sheathing directly applied or 4-5-1 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 8-6-15 oc bracing.
WEBS	1 Row at midpt 7-9

REACTIONS (size) 2=0-5-8, 14=0-3-2
Max Horiz 2=383 (LC 16)
Max Uplift 2=-160 (LC 16), 14=-229 (LC 16)
Max Grav 2=1090 (LC 23), 14=974 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/12, 2-4=-1650/207, 4-6=-1504/273, 6-7=-824/183, 7-8=-101/51, 9-13=-217/945, 8-13=-217/945
BOT CHORD	2-12=-468/1372, 10-12=-289/921, 9-10=-93/340
WEBS	4-12=-333/241, 6-12=-169/602, 6-10=-752/326, 7-10=-212/876, 7-9=-934/259, 8-14=-977/263

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 18-6-0, Exterior(2E) 18-6-0 to 21-9-0 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Bearing at joint(s) 14 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 160 lb uplift at joint 2 and 229 lb uplift at joint 14.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	
241713	E3	Roof Special	2	1	Job Reference (optional)	I69931915

Christensen Building Compts., Fremont, NE - 68025-5944,

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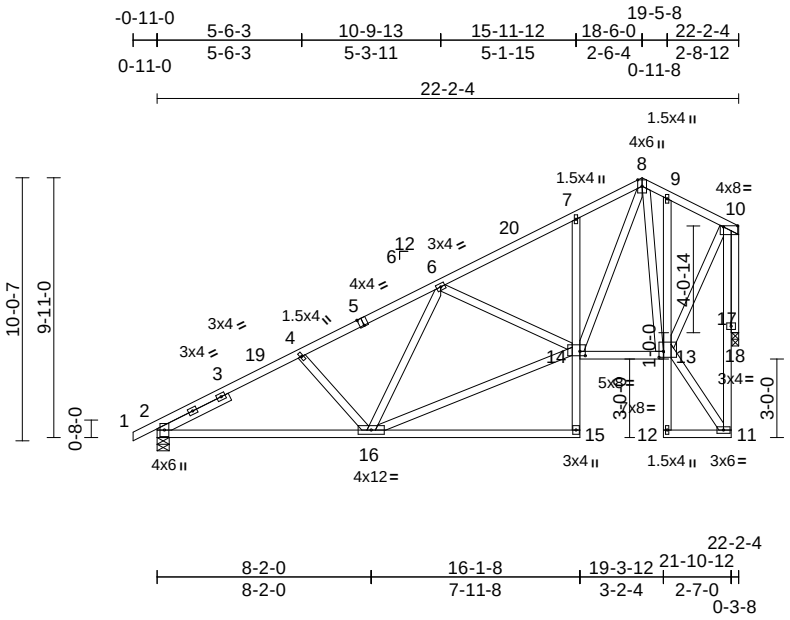

Scale = 1:77.3

Plate Offsets (X, Y): [2:0-3-9,0-1-5], [5:0-2-0,Edge], [10:0-6-8,0-0-8], [13:0-2-0,0-2-12], [14:0-2-8,0-2-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.36	Vert(LL)	-0.10	15-16	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.63	Vert(CT)	-0.22	15-16	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.64	Horz(CT)	0.14	18	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 143 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2
SLIDER Left 2x4 SPF No.2 -- 3-0-10

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-7-4 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 2=0-5-8, 18=0-3-2
Max Horiz 2=306 (LC 13)
Max Uplift 2=-167 (LC 16), 18=-222 (LC 16)
Max Grav 2=1090 (LC 23), 18=974 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/12, 2-4=-1665/245, 4-6=-1432/226, 6-7=-1117/273, 7-8=-1096/368, 8-9=-468/213, 9-10=-444/158, 11-17=-110/120, 10-17=-110/120
BOT CHORD 2-16=-529/1390, 15-16=0/34, 14-15=0/134, 7-14=-395/190, 13-14=-247/481, 12-13=-22/46, 9-13=-253/115, 11-12=-6/2
WEBS 4-16=-279/212, 6-16=-94/168, 14-16=-515/1313, 6-14=-407/194, 11-13=-152/201, 10-13=-330/858, 8-14=-384/1211, 8-13=-559/175, 10-18=-977/271

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 18-6-0, Exterior(2E) 18-6-0 to 21-9-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Bearing at joint(s) 18 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 167 lb uplift at joint 2 and 222 lb uplift at joint 18.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931916
241713	E4	Common	7	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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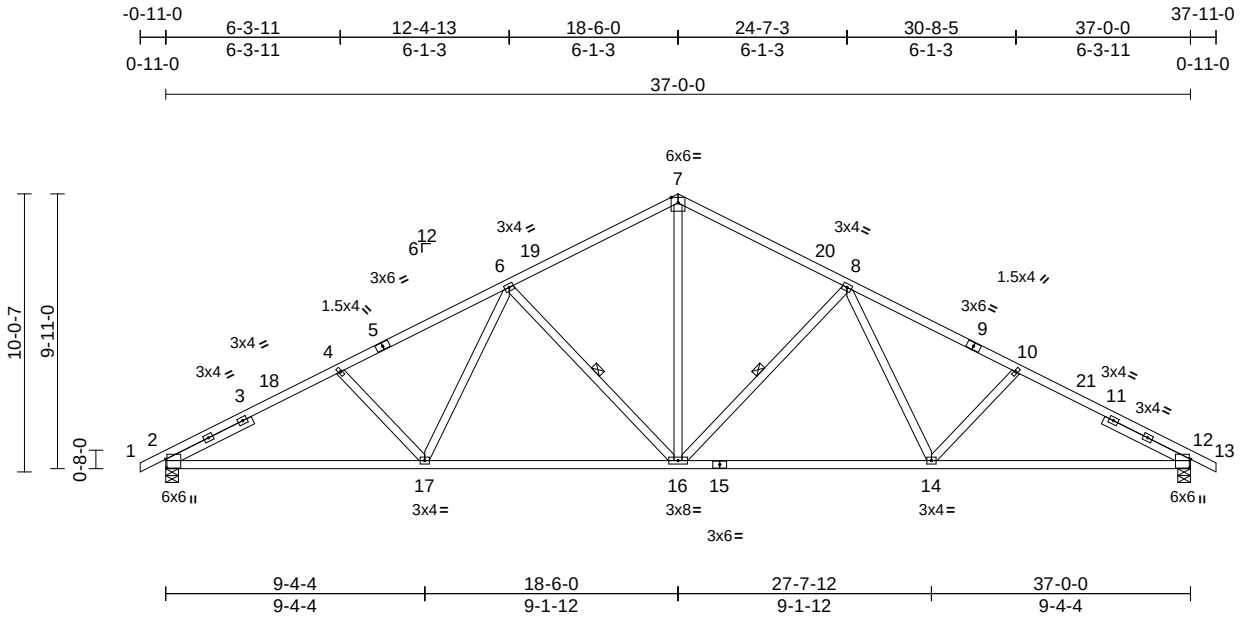

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Plate Offsets (X, Y): [2:0-3-13,0-0-8], [12:0-3-13,0-0-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.77	Vert(LL)	-0.19	2-17	>999	240	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.89	Vert(CT)	-0.42	2-17	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.33	Horz(CT)	0.14	12	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 156 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
SLIDER Left 2x4 SPF No.2 -- 3-5-10, Right 2x4 SPF No.2 -- 3-5-10

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
8-3-4 oc bracing: 2-17.
WEBS 1 Row at midpt 8-16, 6-16

REACTIONS (size) 2=0-5-8, 12=0-5-8
Max Horiz 2=183 (LC 16)
Max Uplift 2=-276 (LC 16), 12=-276 (LC 17)
Max Grav 2=1729 (LC 1), 12=1729 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/12, 2-4=-2919/471, 4-6=-2659/458, 6-7=-1924/432, 7-8=-1924/432, 8-10=-2659/458, 10-12=-2919/471, 12-13=0/12
BOT CHORD 2-17=-489/2483, 16-17=-309/2122, 14-16=-210/2122, 12-14=-315/2483
WEBS 7-16=-201/1250, 8-16=-865/303, 8-14=-58/461, 10-14=-294/230, 6-16=-865/303, 6-17=-57/461, 4-17=-294/230

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-11-0 to 4-1-0, Interior (1) 4-1-0 to 18-6-0, Exterior(2R) 18-6-0 to 23-6-0, Interior (1) 23-6-0 to 37-11-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) All bearings are assumed to be SPF No.2 .
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 276 lb uplift at joint 2 and 276 lb uplift at joint 12.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	I69931917
241713	E5	Common Supported Gable	1	1	Job Reference (optional)	

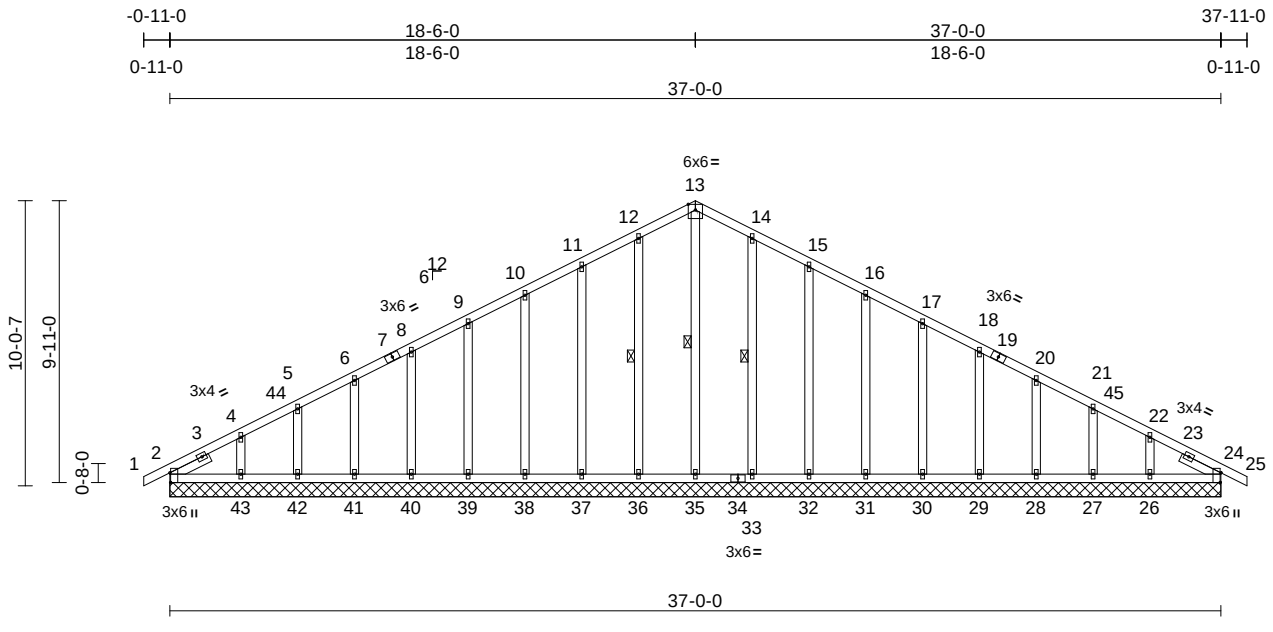

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Plate Offsets (X, Y): [2:0-4-1,Edge], [24:0-4-1,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.23	Horz(CT)	0.01	24	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 195 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
OTHERS 2x4 SPF No.2
SLIDER Left 2x4 SPF No.2 -- 1-6-7, Right 2x4 SPF No.2 -- 1-6-7

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 13-35, 12-36, 14-33

REACTIONS (size) 2=37-0-0, 24=37-0-0, 26=37-0-0, 27=37-0-0, 28=37-0-0, 29=37-0-0, 30=37-0-0, 31=37-0-0, 32=37-0-0, 33=37-0-0, 35=37-0-0, 36=37-0-0, 37=37-0-0, 38=37-0-0, 39=37-0-0, 40=37-0-0, 41=37-0-0, 42=37-0-0, 43=37-0-0
Max Horiz 2=183 (LC 16)
Max Uplift 2=-31 (LC 17), 26=-104 (LC 17), 27=-51 (LC 17), 28=-63 (LC 17), 29=-61 (LC 17), 30=-61 (LC 17), 31=-60 (LC 17), 32=-66 (LC 17), 33=-54 (LC 17), 36=-58 (LC 16), 37=-64 (LC 16), 38=-60 (LC 16), 39=-61 (LC 16), 40=-60 (LC 16), 41=-64 (LC 16), 42=-48 (LC 16), 43=-118 (LC 16)
Max Grav 2=185 (LC 1), 24=185 (LC 1), 26=212 (LC 37), 27=172 (LC 1), 28=182 (LC 37), 29=180 (LC 24), 30=180 (LC 37), 31=221 (LC 24), 32=264 (LC 24), 33=275 (LC 24), 35=216 (LC 29), 36=275 (LC 23), 37=264 (LC 23), 38=221 (LC 23), 39=180 (LC 36), 40=180 (LC 23), 41=182 (LC 36), 42=172 (LC 1), 43=212 (LC 36)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/12, 2-4=-239/88, 4-5=-158/95, 5-6=-123/110, 6-8=-97/138, 8-9=-78/165, 9-10=-74/193, 10-11=-92/245, 11-12=-112/301, 12-13=-130/350, 13-14=-130/350, 14-15=-112/301, 15-16=-92/245, 16-17=-74/192, 17-18=-55/138, 18-20=-53/84, 20-21=-66/34, 21-22=-91/23, 22-24=-158/49, 24-25=0/12
BOT CHORD 2-43=-47/186, 42-43=-47/186, 41-42=-47/186, 40-41=-47/186, 39-40=-47/186, 38-39=-47/186, 37-38=-47/186, 36-37=-47/186, 35-36=-47/186, 33-35=-47/186, 32-33=-47/186, 31-32=-47/186, 30-31=-47/186, 29-30=-47/186, 28-29=-47/186, 27-28=-47/186, 26-27=-47/186, 24-26=-47/186
WEBS 13-35=-226/45, 12-36=-235/86, 11-37=-224/102, 10-38=-181/95, 9-39=-140/97, 8-40=-140/96, 6-41=-141/98, 5-42=-136/100, 4-43=-160/205, 14-33=-235/86, 15-32=-224/102, 16-31=-181/95, 17-30=-140/97, 18-29=-140/96, 20-28=-141/99, 21-27=-136/101, 22-26=-160/201

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-11-0 to 4-1-0, Exterior(2N) 4-1-0 to 18-6-0, Corner(3R) 18-6-0 to 23-6-0, Exterior(2N) 23-6-0 to 37-11-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER PE-2001018807
PROFESSIONAL ENGINEER

December 4,2024

Continued on page 2

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16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof
241713	E5	Common Supported Gable	1	1	Job Reference (optional)

I69931917

6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) All bearings are assumed to be SPF No.2 .
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 31 lb uplift at joint 2, 58 lb uplift at joint 36, 64 lb uplift at joint 37, 60 lb uplift at joint 38, 61 lb uplift at joint 39, 60 lb uplift at joint 40, 64 lb uplift at joint 41, 48 lb uplift at joint 42, 118 lb uplift at joint 43, 54 lb uplift at joint 33, 66 lb uplift at joint 32, 60 lb uplift at joint 31, 61 lb uplift at joint 30, 61 lb uplift at joint 29, 63 lb uplift at joint 28, 51 lb uplift at joint 27 and 104 lb uplift at joint 26.
13) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2.
14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

Job	Truss	Truss Type	Qty	Ply	Roof	I69931918
241713	R1	Flat Girder	1	2	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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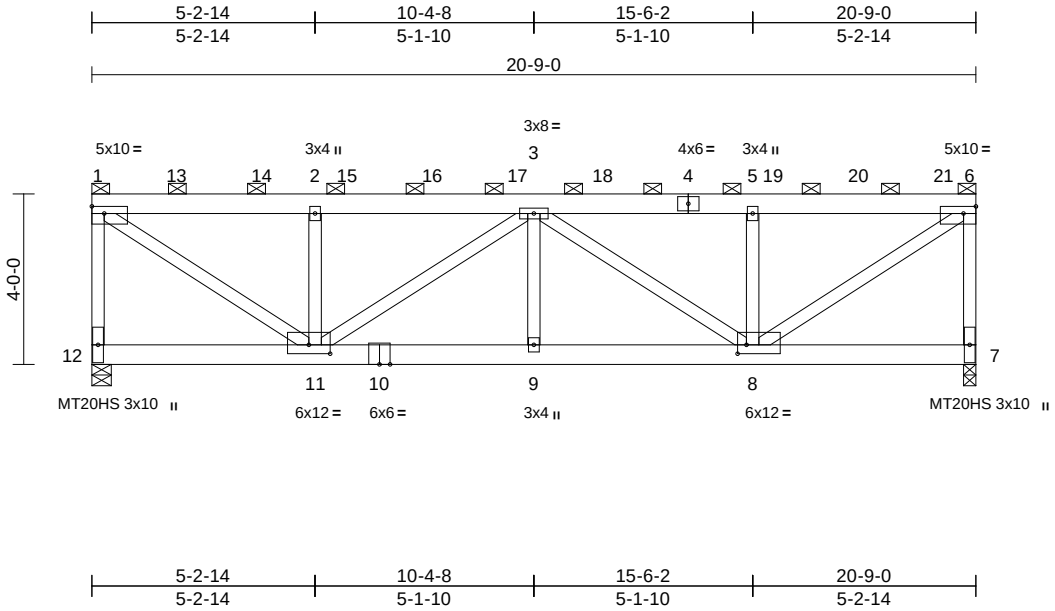

Scale = 1:49.5

Plate Offsets (X, Y): [1:Edge,0-2-0], [6:Edge,0-2-0], [8:0-2-8,0-2-8], [11:0-6-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.56	Vert(LL)	-0.10	9	>999	240	MT20HS	148/108
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.34	Vert(CT)	-0.18	9	>999	180	MT20	197/144
TCDL	10.0	Rep Stress Incr	NO	WB	0.74	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 281 lb	FT = 20%

LUMBER
TOP CHORD 2x6 SP 2400F 2.0E
BOT CHORD 2x6 SP 2400F 2.0E
WEBS 2x4 SPF No.2 *Except* 11-1,11-3,8-3,8-6:2x4 SPF 1650F 1.5E

BRACING
TOP CHORD 2-0-0 oc purlins (6-0-0 max.): 1-6, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 7=0-3-8, 12=0-5-8
Max Horiz 12=-108 (LC 14)
Max Uplift 7=-1250 (LC 13), 12=-1134 (LC 12)
Max Grav 7=5732 (LC 1), 12=5167 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-12=-5056/1315, 1-2=-6243/1605, 2-3=-6243/1605, 3-5=-6269/1567, 5-6=-6269/1567, 6-7=-5619/1425
BOT CHORD 11-12=-101/110, 9-11=-2084/8253, 8-9=-2084/8253, 7-8=-23/93
WEBS 1-11=-1872/7499, 2-11=-2876/816, 3-11=-2442/621, 3-9=0/228, 3-8=-2411/627, 5-8=-2910/813, 6-8=-1881/7522

NOTES
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner (3) zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
5) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) Provide adequate drainage to prevent water ponding.
8) All plates are MT20 plates unless otherwise indicated.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) All bearings are assumed to be SP 2400F 2.0E .
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1134 lb uplift at joint 12 and 1250 lb uplift at joint 7.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 17 lb down and 24 lb up at 0-1-12, 954 lb down and 198 lb up at 2-0-0, 954 lb down and 198 lb up at 4-0-0, 954 lb down and 198 lb up at 6-0-0, 954 lb down and 198 lb up at 8-0-0, 954 lb down and 198 lb up at 10-0-0, 954 lb down and 198 lb up at 12-0-0, 954 lb down and 198 lb up at 14-0-0, 954 lb down and 198 lb up at 16-0-0, and 954 lb down and 191 lb up at 18-0-0, and 958 lb down and 197 lb up at 20-0-0 on top chord. The design/ selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (lb/ft)
Vert: 1-6=-70, 7-12=-20
Concentrated Loads (lb)
Vert: 4=-904, 13=-904, 14=-904, 15=-904, 16=-904, 17=-904, 18=-904, 19=-904, 20=-904, 21=-918

December 4,2024

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RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931919
241713	V1	Valley	1	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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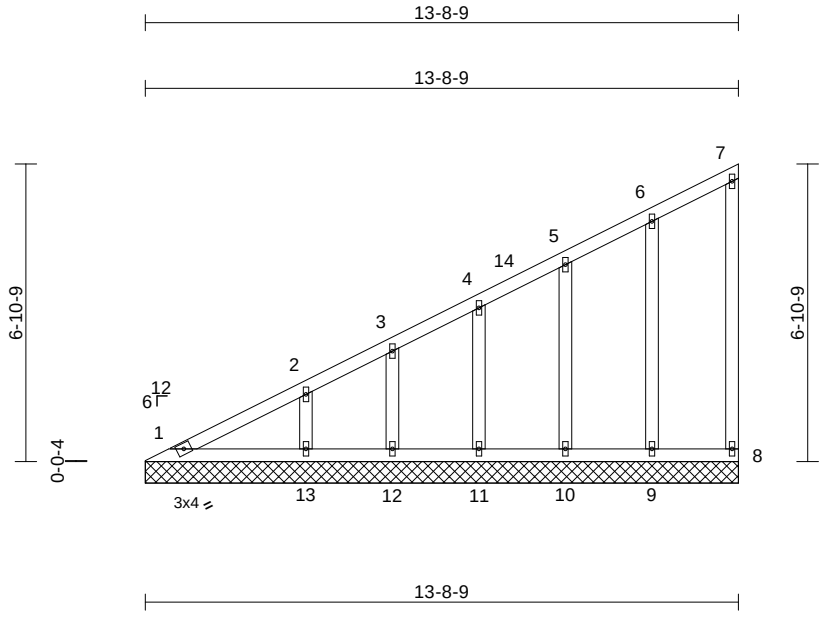


Scale = 1:53.3

Loading	(psf)	Spacing	1-11-4	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.11	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.06	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horiz(TL)	0.00	8	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 59 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=13-8-9, 8=13-8-9, 9=13-8-9, 10=13-8-9, 11=13-8-9, 12=13-8-9, 13=13-8-9
Max Horiz 1=275 (LC 16)
Max Uplift 8=-24 (LC 16), 9=-60 (LC 16), 10=-59 (LC 16), 11=-62 (LC 16), 12=-47 (LC 16), 13=-95 (LC 16)
Max Grav 1=133 (LC 27), 8=97 (LC 22), 9=265 (LC 22), 10=254 (LC 22), 11=224 (LC 22), 12=136 (LC 1), 13=280 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-327/138, 2-3=-248/96, 3-4=-203/82, 4-5=-148/59, 5-6=-89/47, 6-7=-53/27, 7-8=-82/42
BOT CHORD 1-13=-1/1, 12-13=-1/1, 11-12=-1/1, 10-11=-1/1, 9-10=-1/1, 8-9=-1/1
WEBS 6-9=-224/114, 5-10=-217/107, 4-11=-182/100, 3-12=-110/82, 2-13=-210/166

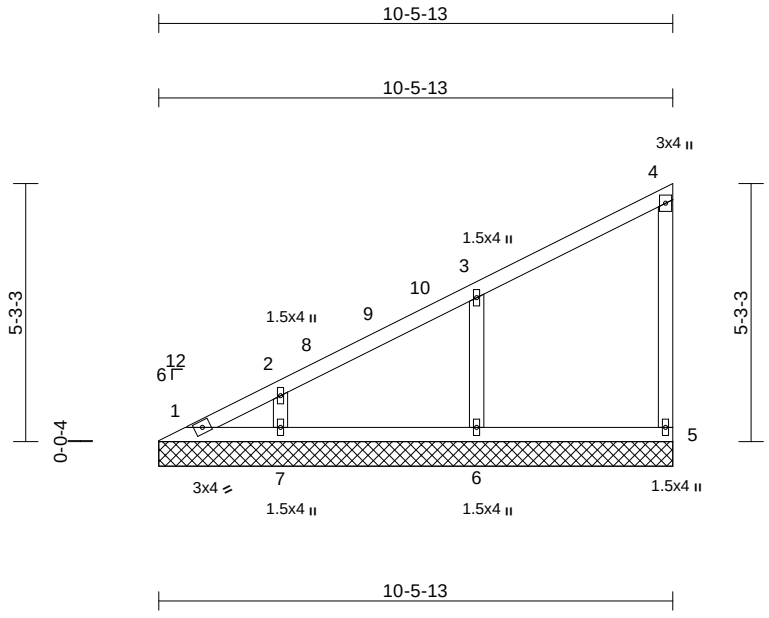
NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-7-9 to 5-9-1, Interior (1) 5-9-1 to 13-7-5 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) All plates are 1.5x4 (||) MT20 unless otherwise indicated.
7) Gable requires continuous bottom chord bearing.
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) All bearings are assumed to be SPF No.2 .
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 24 lb uplift at joint 8, 60 lb uplift at joint 9, 59 lb uplift at joint 10, 62 lb uplift at joint 11, 47 lb uplift at joint 12 and 95 lb uplift at joint 13.
12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof
241713	V2	Valley	1	1	Job Reference (optional) I69931920



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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 34 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SPF No.2
BOT CHORD	2x4 SPF No.2
WEBS	2x4 SPF No.2
OTHERS	2x4 SPF No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=10-5-13, 5=10-5-13, 6=10-5-13, 7=10-5-13
Max Horiz 1=213 (LC 16)
Max Uplift 5=-48 (LC 16), 6=-134 (LC 16), 7=-102 (LC 16)
Max Grav 1=92 (LC 16), 5=208 (LC 22), 6=558 (LC 22), 7=307 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-297/127, 2-3=-210/91, 3-4=-121/70, 4-5=-174/100
BOT CHORD	1-7=-4/9, 6-7=-4/9, 5-6=-4/9
WEBS	3-6=-471/284, 2-7=-241/220

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-7-9 to 5-7-9, Interior (1) 5-7-9 to 10-4-9 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 48 lb uplift at joint 5, 134 lb uplift at joint 6 and 102 lb uplift at joint 7.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931921
241713	V3	Valley	1	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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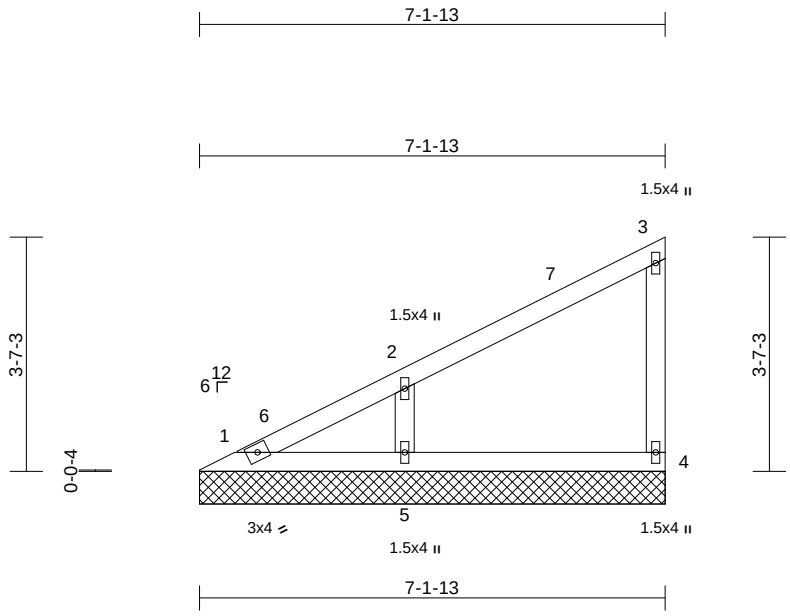

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.29	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.10	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 21 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SPF No.2
BOT CHORD	2x4 SPF No.2
WEBS	2x4 SPF No.2
OTHERS	2x4 SPF No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=7-1-13, 4=7-1-13, 5=7-1-13
Max Horiz 1=140 (LC 16)
Max Uplift 4=-48 (LC 16), 5=-127 (LC 16)
Max Grav 1=73 (LC 22), 4=204 (LC 22), 5=538 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-226/104, 2-3=-114/58, 3-4=-173/117
BOT CHORD	1-5=0/0, 4-5=0/0
WEBS	2-5=-455/313

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-7-9 to 5-7-9, Interior (1) 5-7-9 to 7-0-9 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 48 lb uplift at joint 4 and 127 lb uplift at joint 5.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	
241713	V4	Valley	1	1	Job Reference (optional)	I69931922

Christensen Building Compts., Fremont, NE - 68025-5944,

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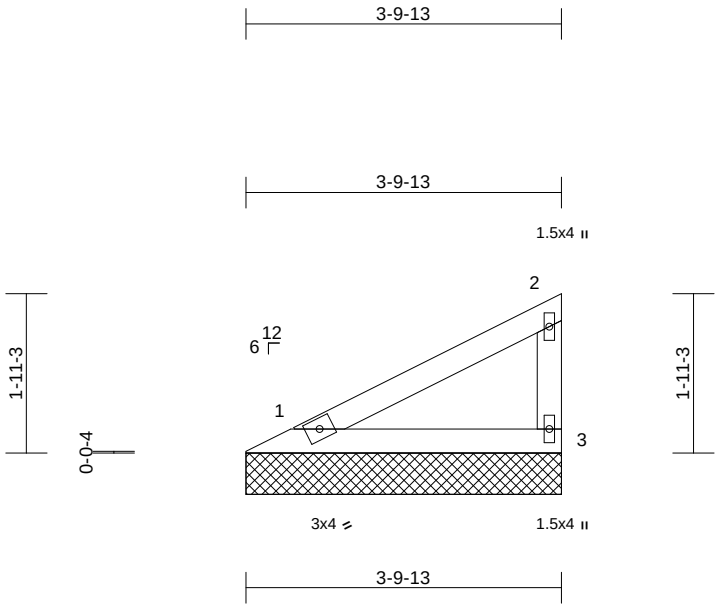


Scale = 1:26.7

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.25	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.09	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	n/a	-	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 10 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-10-5 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=3-9-13, 3=3-9-13
Max Horiz 1=68 (LC 16)
Max Uplift 1=-13 (LC 16), 3=-47 (LC 16)
Max Grav 1=189 (LC 22), 3=189 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-73/57, 2-3=-158/128
BOT CHORD 1-3=0/0

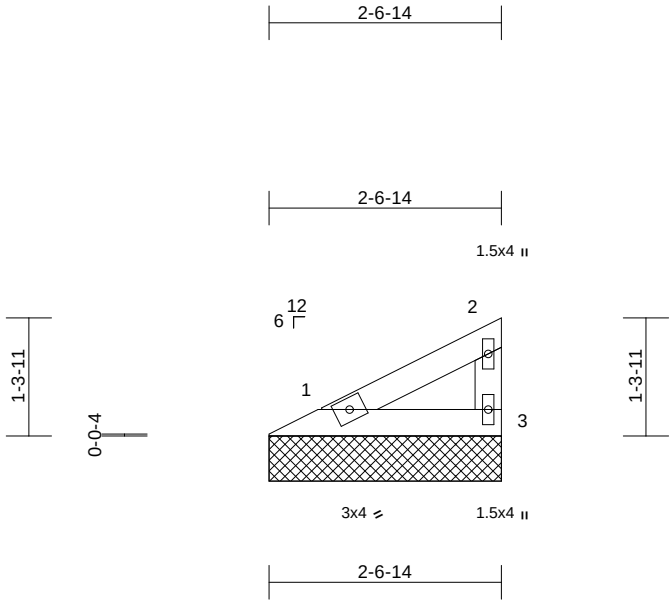
NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 13 lb uplift at joint 1 and 47 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	I69931923
241713	V5	Valley	1	1	Job Reference (optional)	



Scale = 1:24.3

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.08	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.03	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	n/a	-	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 6 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-7-6 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=2-6-14, 3=2-6-14
Max Horiz 1=40 (LC 16)
Max Uplift 1=-8 (LC 16), 3=-28 (LC 16)
Max Grav 1=106 (LC 22), 3=106 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-43/31, 2-3=-87/77
BOT CHORD 1-3=0/0

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 8 lb uplift at joint 1 and 28 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof
241713	V6	Valley	1	1	Job Reference (optional) I69931924

Christensen Building Compts., Fremont, NE - 68025-5944,

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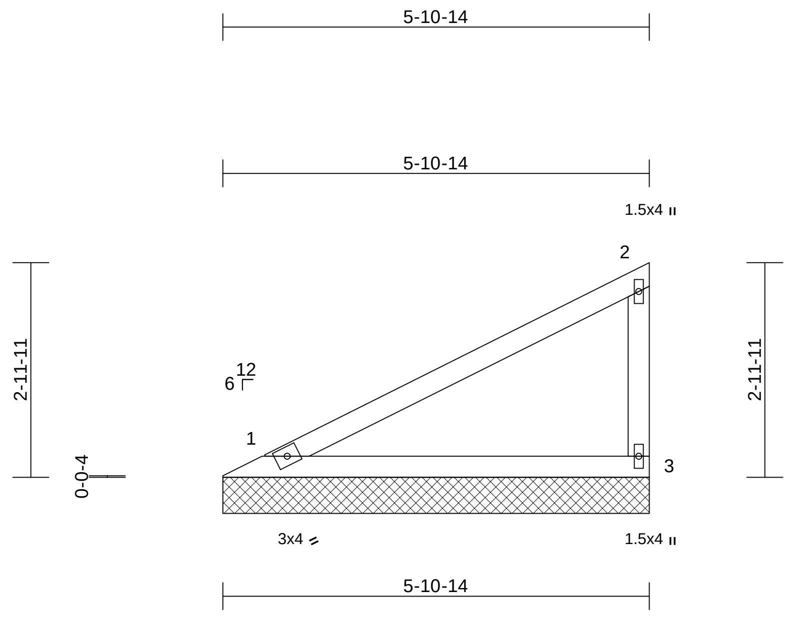

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.82	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.28	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	n/a	-	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-P								
BCDL	10.0										Weight: 16 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-11-6 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=5-10-14, 3=5-10-14
Max Horiz 1=113 (LC 16)
Max Uplift 1=-22 (LC 16), 3=-79 (LC 16)
Max Grav 1=338 (LC 22), 3=338 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-119/103, 2-3=-286/209
BOT CHORD 1-3=0/0

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 22 lb uplift at joint 1 and 79 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER
PE-2001018807
PROFESSIONAL ENGINEER

December 4,2024

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/27/2024

Job	Truss	Truss Type	Qty	Ply	Roof	I69931925
241713	V7	Valley	1	1	Job Reference (optional)	

Christensen Building Compts., Fremont, NE - 68025-5944,

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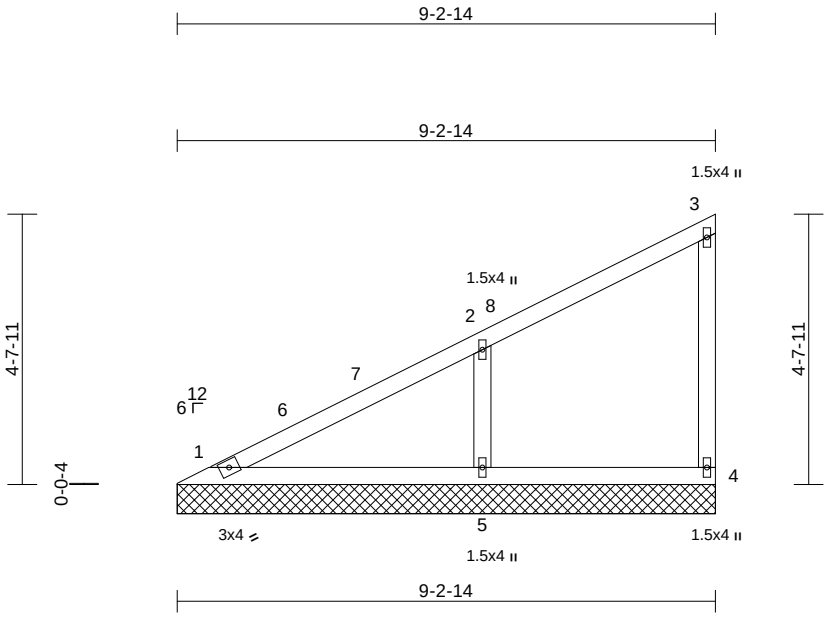

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.38	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.15	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 29 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=9-2-14, 4=9-2-14, 5=9-2-14
Max Horiz 1=186 (LC 16)
Max Uplift 4=-42 (LC 16), 5=-160 (LC 16)
Max Grav 1=175 (LC 22), 4=190 (LC 22), 5=638 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-237/109, 2-3=-126/65, 3-4=-163/98
BOT CHORD 1-5=-4/9, 4-5=-4/9
WEBS 2-5=-523/337

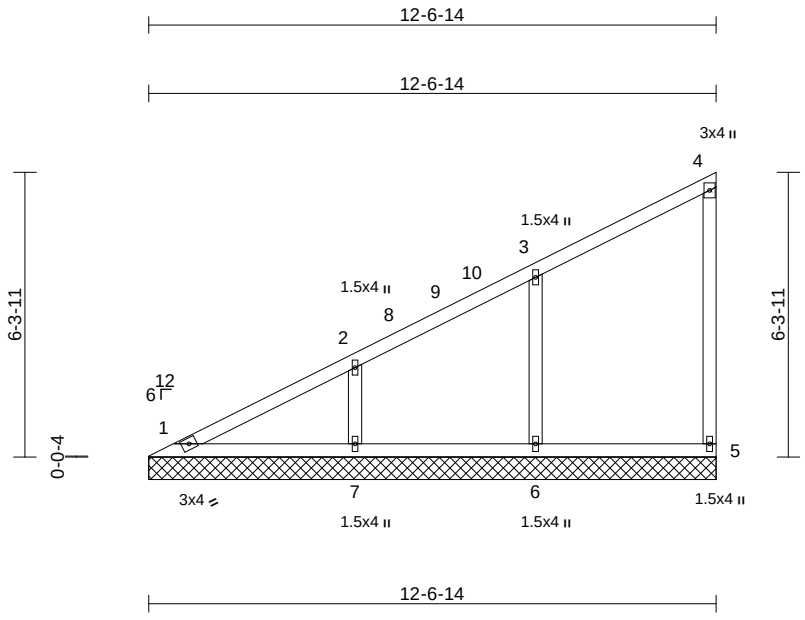
NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-7-9 to 5-7-9, Interior (1) 5-7-9 to 9-1-10 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 42 lb uplift at joint 4 and 160 lb uplift at joint 5.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

December 4,2024

MiTek®
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	Roof	
241713	V8	Valley	1	1	Job Reference (optional)	I69931926



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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.29	Vert(LL)	n/a	-	n/a	999	MT20	197/144
Snow (Pf)	25.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 42 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SPF No.2
BOT CHORD 2x4 SPF No.2
WEBS 2x4 SPF No.2
OTHERS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=12-6-14, 5=12-6-14, 6=12-6-14, 7=12-6-14
Max Horiz 1=259 (LC 16)
Max Uplift 5=-50 (LC 16), 6=-126 (LC 16), 7=-137 (LC 16)
Max Grav 1=147 (LC 27), 5=212 (LC 22), 6=536 (LC 22), 7=409 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-307/134, 2-3=-190/86, 3-4=-118/73, 4-5=-177/95
BOT CHORD 1-7=-3/7, 6-7=-3/7, 5-6=-3/7
WEBS 3-6=-457/242, 2-7=-311/244

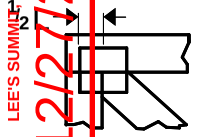
NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft; Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-7-9 to 5-7-9, Interior (1) 5-7-9 to 12-5-10 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=25.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=25.0 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) All bearings are assumed to be SPF No.2 .
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 50 lb uplift at joint 5, 126 lb uplift at joint 6 and 137 lb uplift at joint 7.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

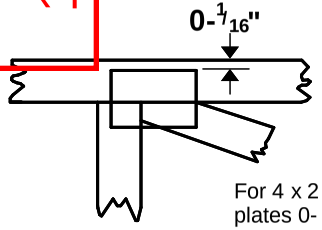
December 4,2024

Symbols

PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- 1/16" from outside edge of truss.

This symbol indicates the required direction of slots in connector plates.

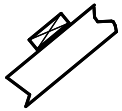
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

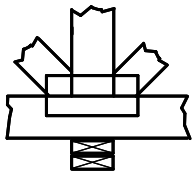
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

BEARING

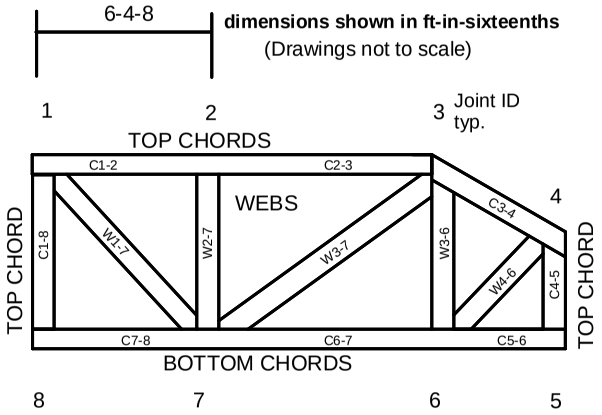


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

Product Code Approvals

ICC-ES Reports:

ESR-1988, ESR-2362, ESR-2685, ESR-3282
ESR-4722, ESL-1388

Design General Notes

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

MiTek®

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.