
Trenco
818 Soundside Rd
Edenton, NC 27932

Re: Q2502514
Brown 25-FAY-SAN-044

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Carolina Structural Systems, LLC.

Pages or sheets covered by this seal: I77203908 thru I77203926

My license renewal date for the state of North Carolina is December 31, 2025.

North Carolina COA: C-0844



October 22, 2025

Tony Miller

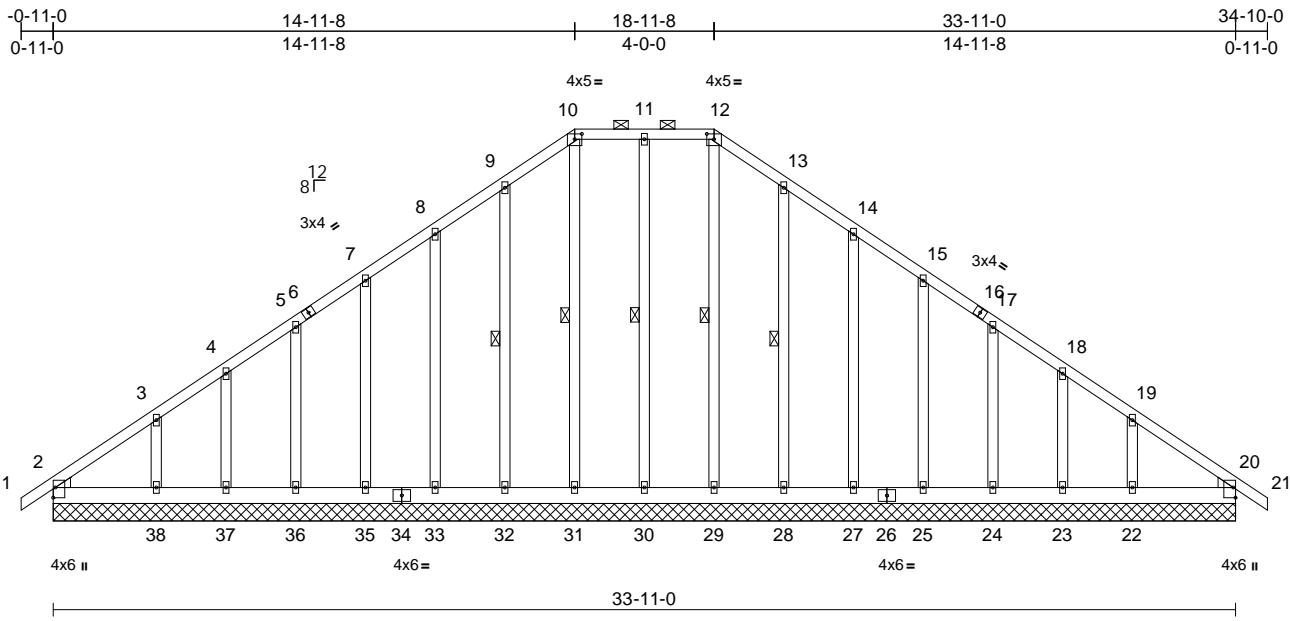
IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which 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.

Job Q2502514	Truss A01	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203908
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:06
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Page: 1



Scale = 1:66.1

Plate Offsets (X, Y): [2:Edge,0-0-12], [10:0-2-8,0-1-13], [12:0-2-8,0-1-13], [20:Edge,0-0-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.06	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.02	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.12	Horz(CT)	0.00	20	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 284 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2

BOT CHORD 2x6 SP DSS

OTHERS 2x4 SP No.2

WEDGE Left: 2x4 SP No.2
Right: 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except

2-0-0 oc purlins (6-0-0 max.): 10-12.

BOT CHORD Rigid ceiling directly applied.

WEBS 1 Row at midpt 12-29, 11-30, 10-31, 9-32, 13-28

REACTIONS (size) 2=33-11-0, 20=33-11-0, 22=33-11-0, 23=33-11-0, 24=33-11-0, 25=33-11-0, 27=33-11-0, 28=33-11-0, 29=33-11-0, 30=33-11-0, 31=33-11-0, 32=33-11-0, 33=33-11-0, 35=33-11-0, 36=33-11-0, 37=33-11-0, 38=33-11-0

Max Horiz 2=204 (LC 11)

Max Uplift 22=52 (LC 12), 23=12 (LC 12), 24=26 (LC 12), 25=22 (LC 12), 27=25 (LC 12), 28=20 (LC 12), 32=20 (LC 12), 33=25 (LC 12), 35=22 (LC 12), 36=26 (LC 12), 37=12 (LC 12), 38=52 (LC 12)

Max Grav 2=205 (LC 18), 20=184 (LC 1), 22=244 (LC 18), 23=138 (LC 1), 24=171 (LC 18), 25=161 (LC 18), 27=164 (LC 18), 28=166 (LC 18), 29=141 (LC 24), 30=168 (LC 23), 31=141 (LC 23), 32=167 (LC 17), 33=163 (LC 17), 35=161 (LC 17), 36=171 (LC 17), 37=138 (LC 1), 38=250 (LC 17)

FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/31, 2-3=-152/134, 3-4=-136/107, 4-5=-123/93, 5-7=-114/75, 7-8=-103/99,

8-9=-109/149, 9-10=-137/196, 10-11=-117/179, 11-12=-117/179,

12-13=-137/196, 13-14=-109/149, 14-15=-80/99, 15-17=-79/51, 17-18=-89/46,

18-19=-101/61, 19-20=-121/87, 20-21=0/31

BOT CHORD 2-38=-136/153, 37-38=-75/153,

36-37=-75/153, 35-36=-75/153,

33-35=-75/153, 32-33=-75/153,

31-32=-75/153, 30-31=-75/153,

29-30=-75/153, 28-29=-75/153,

27-28=-75/153, 25-27=-75/153,

24-25=-75/153, 23-24=-75/153,

22-23=-75/153, 20-22=-75/153

WEBS 12-29=-101/2, 11-30=-128/20, 10-31=-101/2,

9-32=-127/61, 8-33=-123/66, 7-35=-123/63,

5-36=-125/65, 4-37=-116/60, 3-38=-149/79,

13-28=-126/61, 14-27=-123/66,

15-25=-123/63, 17-24=-125/65,

18-23=-116/60, 19-22=-148/79

NOTES

1) Unbalanced roof live loads have been considered for this design.

2) Wind: ASCE 7-16; Vult=120mph (3-second gust)

Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;

B=55ft; L=58ft; eave=2ft; Ke=1.00; Cat. II; Exp B;

Enclosed; MWFRS (directional) and C-C Corner(3E)

-0-11-0 to 4-11-8, Exterior(2N) 4-11-8 to 14-11-8, Corner

(3E) 14-11-8 to 18-11-8, Corner(3R) 18-11-8 to 24-11-8,

Exterior(2N) 24-11-8 to 34-10-0 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) Provide adequate drainage to prevent water ponding.

5) All plates are 2x4 MT20 unless otherwise indicated.

6) Gable requires continuous bottom chord bearing.

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) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

10) All bearings are assumed to be SP DSS .

11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 20 lb uplift at joint 32, 25 lb uplift at joint 33, 22 lb uplift at joint 35, 26 lb uplift at joint 36, 12 lb uplift at joint 37, 52 lb uplift at joint 38, 20 lb uplift at joint 28, 25 lb uplift at joint 27, 22 lb uplift at joint 25, 26 lb uplift at joint 24, 12 lb uplift at joint 23 and 52 lb uplift at joint 22.



October 22, 2025

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

Job Q2502514	Truss A01	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203908
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

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Page: 2

- 12) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 20, 42.
- 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.
- 14) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.
- 15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

LOAD CASE(S) Standard



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

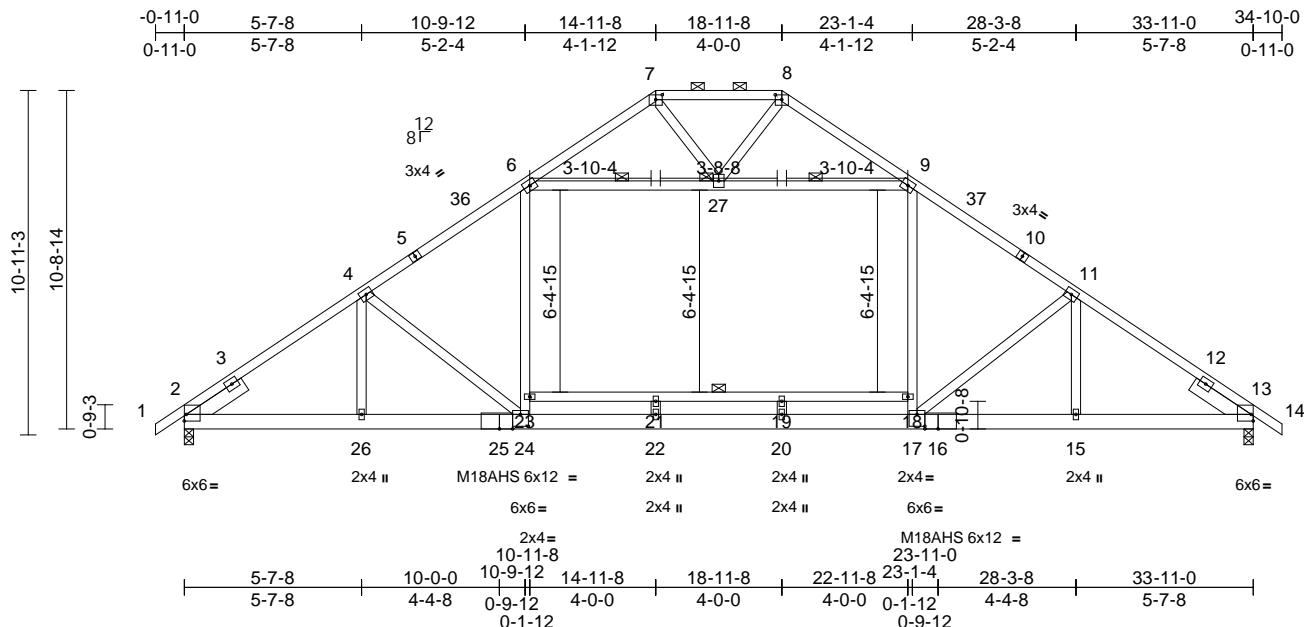
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

Job Q2502514	Truss A02	Truss Type Piggyback Base	Qty 6	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203909
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Plate Offsets (X, Y): [2:Edge,0-2-8], [7:0-2-8,0-1-13], [8:0-2-8,0-1-13], [13:Edge,0-2-8], [16:0-5-0,Edge], [17:0-3-0,0-4-8], [24:0-3-0,0-4-8], [25:0-5-0,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.47	Vert(LL)	-0.43	20-22	>942	244/190	
TCDL	10.0	Lumber DOL	1.15	BC	0.71	Vert(CT)	-0.67	20-22	>601	186/179	
BCLL	0.0*	Rep Stress Incr	YES	WB	0.28	Horz(CT)	0.06	13	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 250 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2

BOT CHORD 2x6 SP DSS *Except* 23-18:2x4 SP No.2

WEBS 2x4 SP No.2 *Except* 21-22,19-20:2x4 SP

No.3

SLIDER Left 2x6 SP No.1 -- 2-1-0, Right 2x6 SP No.1 -- 2-1-0

BRACING

TOP CHORD Structural wood sheathing directly applied, except

2-0-0 oc purlins (6-0-0 max.); 7-8.

BOT CHORD Rigid ceiling directly applied.

WEBS 1 Row at midpt 6-27, 9-27

JOINTS 1 Brace at Jt(s): 27

REACTIONS (size) 2=0-3-8, 13=0-3-8

Max Horiz 2=205 (LC 10)

Max Grav 2=1937 (LC 17), 13=1937 (LC 18)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 7-8=-373/129, 1-2=0/35, 2-4=-2610/9,

4-6=-2590/0, 6-7=-515/130, 8-9=-515/126,

9-11=-2590/3, 11-13=-2610/0, 13-14=0/35

BOT CHORD 2-26=0/2248, 24-26=0/2248, 22-24=0/2140,

20-22=0/2140, 17-20=0/2140, 15-17=0/2095,

13-15=0/2095, 21-23=0/24, 19-21=0/24,

18-19=0/24

WEBS 4-26=-323/52, 4-24=-304/260, 23-24=0/894,

6-23=0/1027, 17-18=0/894, 9-18=0/1027,

11-17=-304/260, 11-15=-323/52, 7-27=-61/92,

8-27=-61/92, 21-22=-235/0, 19-20=-235/0,

6-27=-1793/0, 9-27=-1793/0

NOTES

1) Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
-0-11-0 to 4-10-3, Interior (1) 4-10-3 to 14-11-8, Exterior
(2E) 14-11-8 to 18-11-8, Exterior(2R) 18-11-8 to 24-8-11,
Interior (1) 24-8-11 to 34-10-0 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
- Provide adequate drainage to prevent water ponding.
- All plates are MT20 plates unless otherwise indicated.
- All plates are 4x5 MT20 unless otherwise indicated.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members, with BCDL = 10.0psf.
- All bearings are assumed to be SP DSS .
- 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.
- Graphical purlin representation does not depict the size
or the orientation of the purlin along the top and/or
bottom chord.

LOAD CASE(S) Standard



October 22, 2025

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

ENGINEERING BY
TRENCO
A MiTek Affiliate

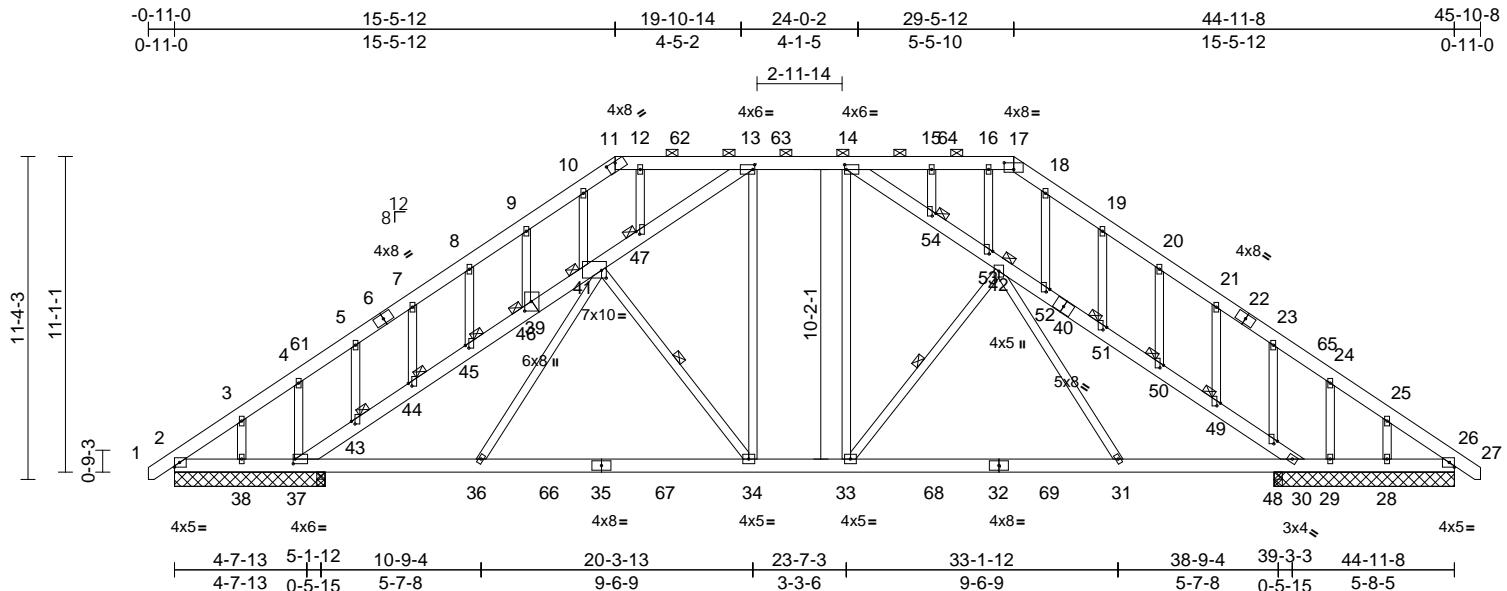
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss B01	Truss Type Piggyback Base Structural Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203910
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

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Scale = 1:80.9

[11:0-4,0,0-0-10], [13:0-0-12,0-2-0], [14:0-0-12,0-2-0], [17:0-4-0,0-2-13], [37:0-0-12,0-2-0], [39:0-4-0,0-2-12], [41:0-2-0,0-3-4], [43:0-1-1,0-1-8], [44:0-1-1,0-1-8],
Plate Offsets (X, Y): [45:0-1-1,0-1-8], [47:0-1-1,0-1-8], [48:0-1-1,0-1-8], [49:0-1-1,0-1-8], [50:0-1-1,0-1-8], [51:0-1-1,0-1-8], [52:0-1-1,0-1-8], [53:0-1-1,0-1-8], [54:0-1-1,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.33	Vert(LL)	-0.12	31-33	>999	240	
TCDL	10.0	Lumber DOL	1.15	BC	0.42	Vert(CT)	-0.21	31-33	>999	180	
BCLL	0.0*	Rep Stress Incr	YES	WB	0.23	Horz(CT)	0.06	26	n/a	n/a	
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 467 lb	FT = 20%

LUMBER

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.2 *Except*

39-13,40-30,40-14,39-37:2x6 SP No.1

OTHERS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except

2-0-0 oc purlins (6-0-0 max.): 11-17.

BOT CHORD Rigid ceiling directly applied.

WEBS 1 Row at midpt 34-41, 33-42

JOINTS

1 Brace at Jt(s): 41, 42, 43, 44, 45, 46,

47, 49, 50, 51, 54

REACTIONS (size) 2=5-3-8, 26=6-4-0, 28=6-4-0,

29=6-4-0, 30=6-4-0, 37=5-3-8,

38=5-3-8

Max Horiz 2=210 (LC 10)

Max Uplift 28=117 (LC 1), 29=154 (LC 12), 37=156 (LC 12), 38=304 (LC 18)

Max Grav 2=703 (LC 19), 26=711 (LC 18), 28=32 (LC 12), 29=308 (LC 19), 30=1218 (LC 19), 37=1777 (LC 18), 38=22 (LC 12)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=27, 2-3=-878/0, 3-4=-706/0, 4-5=-954/0, 5-7=-840/0, 7-8=-823/8, 8-9=-784/28, 9-10=-732/56, 10-11=-705/90, 11-12=-650/88, 12-13=-650/88, 13-14=-1554/104, 14-15=-755/175, 15-16=-755/175, 16-17=-755/175, 17-18=-781/149, 18-19=-877/137, 19-20=-880/103, 20-21=-891/67, 21-22=-984/66, 23-24=-924/7, 24-25=-801/0, 25-26=-924/0, 26-27=0/27

BOT CHORD

WEBS 37-43=-1473/8, 43-44=-1542/31, 44-45=-1486/8, 45-46=-1460/0,

41-46=-1448/0, 41-47=-1069/38, 13-47=-1123/32, 14-54=-1059/1, 53-54=-1104/15, 42-53=-1039/41, 42-52=-1390/0, 51-52=-1351/0,

50-51=-1386/0, 49-50=-1415/0, 48-49=-1392/0, 30-48=-1470/0,

13-34=-3/489, 14-33=-0/428, 34-41=-261/94, 33-42=-258/54, 36-41=0/436, 31-42=0/460,

3-38=-66/246, 5-43=-41/123, 7-44=-100/42, 8-45=-48/27, 9-46=-34/42, 10-41=-144/96, 12-47=-0/102, 25-28=-58/145,

24-29=-425/151, 23-48=-209/79, 21-49=-19/58, 20-50=-79/41, 19-51=-86/36, 18-52=0/84, 16-53=-12/171, 15-54=-116/27, 4-37=-735/224

NOTES

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft; B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2E) -0-9-13 to 4-11-7, Interior (1) 4-11-7 to 15-5-12, Exterior (2R) 15-5-12 to 23-8-0, Interior (1) 23-8-0 to 29-5-12, Exterior(2R) 29-5-12 to 37-7-10, Interior (1) 37-7-10 to 45-9-5 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) Provide adequate drainage to prevent water ponding.

5) All plates are 2x4 MT20 unless otherwise indicated.

6) Gable studs spaced at 2-0-0 oc.

7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.

9) All bearings are assumed to be SP No.1 .

10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 304 lb uplift at joint 38, 117 lb uplift at joint 28, 154 lb uplift at joint 29 and 156 lb uplift at joint 37.

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.



October 22, 2025

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

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Job Q2502514	Truss B01	Truss Type Piggyback Base Structural Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203910
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:07
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Page: 2

- 12) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.
- 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 14) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

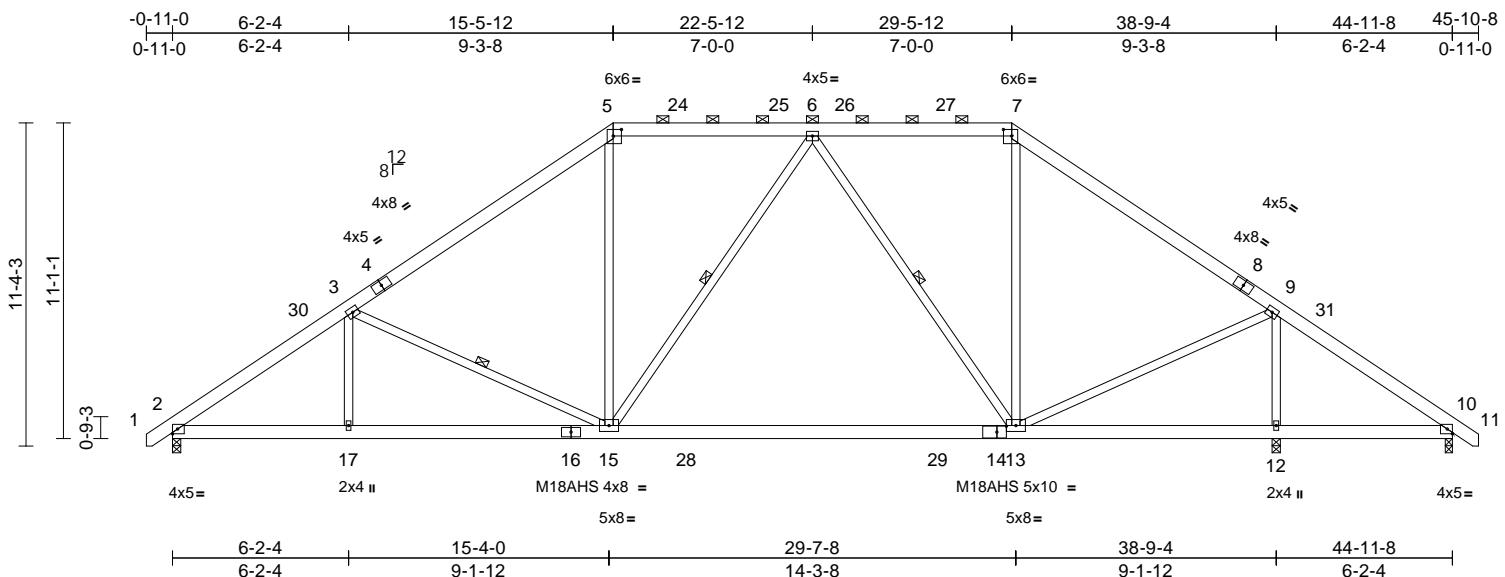
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANS/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

Job Q2502514	Truss B02	Truss Type Piggyback Base	Qty 11	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203911
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
ID:v2Uk0X3H684Vfc_1soUQxMz4Tcu-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCd0i7J4zJC?f

Page: 1



Scale = 1:80.9

Plate Offsets (X, Y): [5:0-3-8,0-2-12], [7:0-3-8,0-2-12], [14:0-4-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.41	13-15	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.64	13-15	>726	180	M18AHS	186/179
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.05	12	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 338 lb	FT = 20%

LUMBER

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except
2-0-0 oc purlins (6-0-0 max.): 5-7.

2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)

-0-9-13 to 4-11-7, Interior (1) 4-11-7 to 15-5-12, Exterior
(2R) 15-5-12 to 23-7-10, Interior (1) 23-7-10 to 29-5-12,

Exterior(2R) 29-5-12 to 37-7-10, Interior (1) 37-7-10 to
45-9-5 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) Provide adequate drainage to prevent water ponding.

4) All plates are MT20 plates unless otherwise indicated.

5) This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.

6) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom

chord and any other members, with BCDL = 10.0psf.

7) All bearings are assumed to be SP No.1 .

8) Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 29 lb uplift at joint
2, 23 lb uplift at joint 12 and 12 lb uplift at joint 10.

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.

10) This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

11) Graphical purlin representation does not depict the size
or the orientation of the purlin along the top and/or
bottom chord.

12) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard

NOTES

1) Unbalanced roof live loads have been considered for
this design.



October 22, 2025

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DS-B22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

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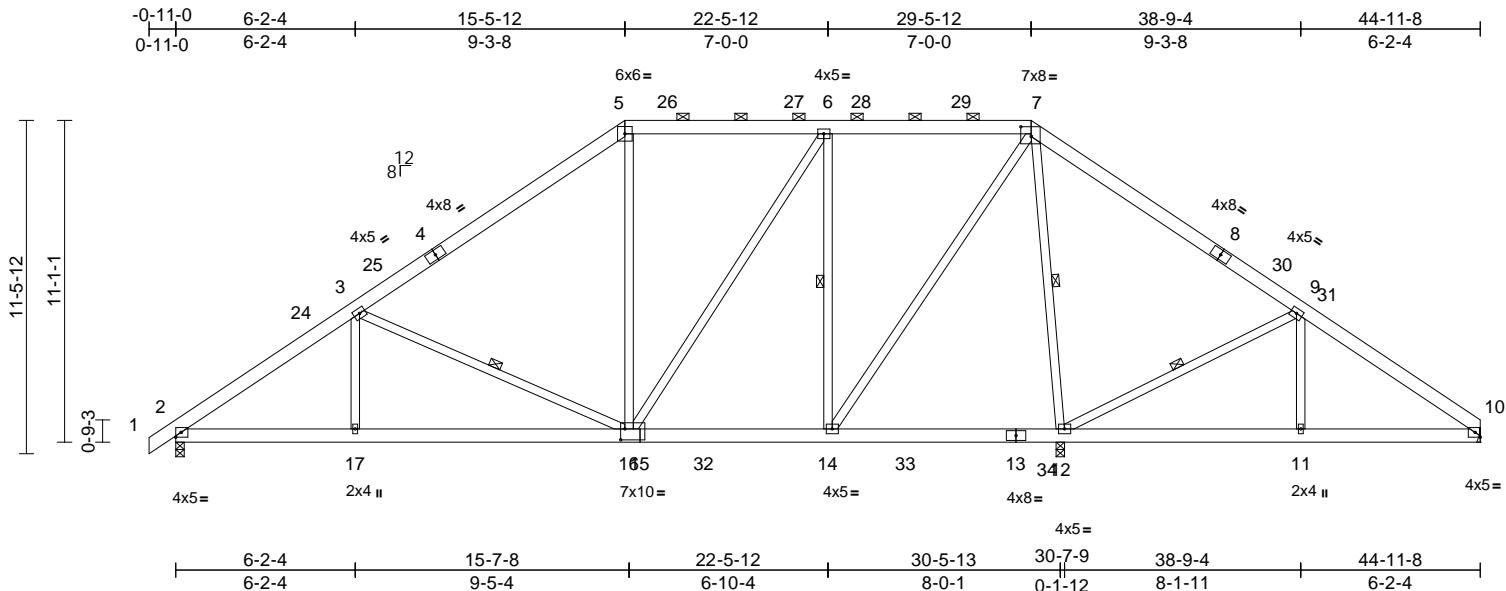
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss B03	Truss Type Piggyback Base	Qty 2	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203912
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
ID:1ajBKKnxxBbUcECeN6utYz4T9c-RIC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:79.4

Plate Offsets (X, Y): [7:0-4-4,0-4-0], [15:0-1-12,0-4-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.08	16-17	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.16	16-17	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.03	10	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 350 lb	FT = 20%

LUMBER

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except 2-0-0 oc purlins (6-0-0 max.): 5-7.

2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;

B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;

Enclosed; MWFRS (directional) and C-C Exterior(2E)

-0-11-0 to 4-10-3, Interior (1) 4-10-3 to 15-5-12, Exterior

(2R) 15-5-12 to 23-7-10, Interior (1) 23-7-10 to 29-5-12,

Exterior(2R) 29-5-12 to 37-7-10, Interior (1) 37-7-10 to

44-11-8 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) Provide adequate drainage to prevent water ponding.

4) This truss has been designed for a 10.0 psf bottom

chord live load nonconcurrent with any other live loads.

5) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle

3-06-00 tall by 2-00-00 wide will fit between the bottom

chord and any other members, with BCDL = 10.0psf.

6) Bearings are assumed to be: Joint 2 SP No.1 , Joint 12

SP No.1 .

7) Refer to girder(s) for truss to truss connections.

8) Provide mechanical connection (by others) of truss to

bearing plate capable of withstanding 34 lb uplift at joint

2, 1 lb uplift at joint 12 and 10 lb uplift at joint 10.

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.

10) This truss design requires that a minimum of 7/16"

structural wood sheathing be applied directly to the top

chord and 1/2" gypsum sheetrock be applied directly to

the bottom chord.

11) Graphical purlin representation does not depict the size

or the orientation of the purlin along the top and/or

bottom chord.

12) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard

NOTES

1) Unbalanced roof live loads have been considered for this design.



October 22, 2025

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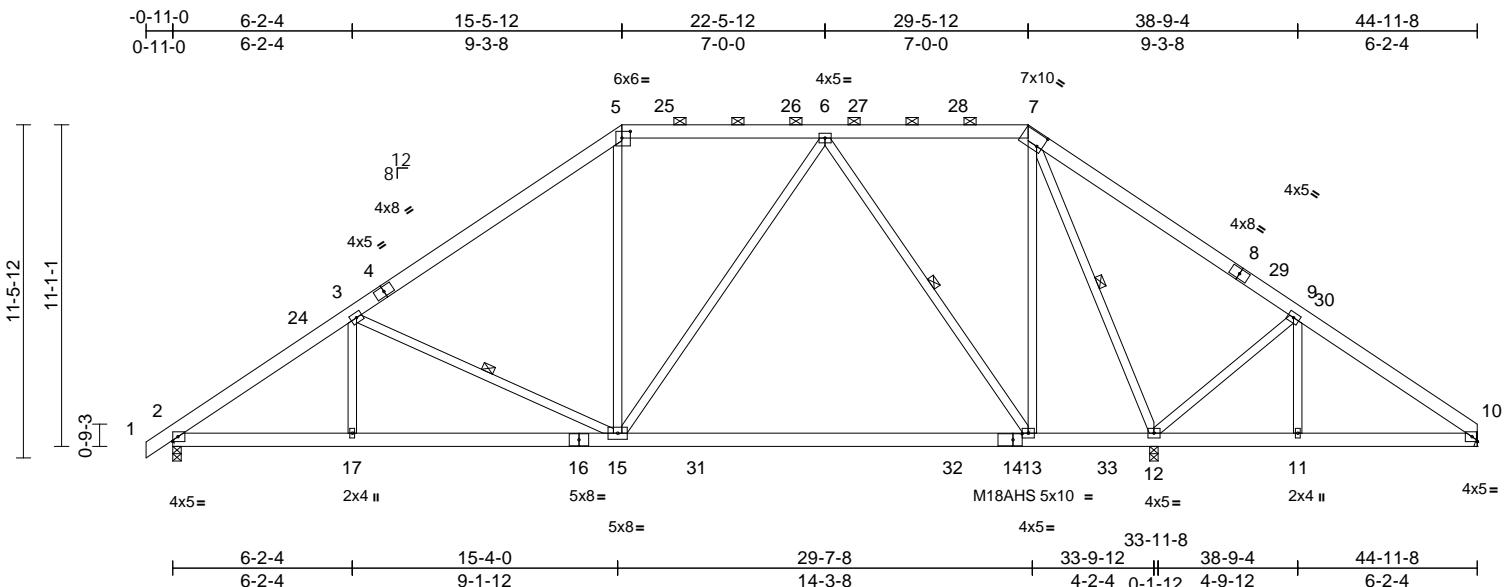
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss B04	Truss Type Piggyback Base	Qty 9	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203913
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
ID:jxL7MdzGvzqi0e9WnyOVCsz4T5R-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCd0i7J4zJC?f

Page: 1



Scale = 1:79.4

Plate Offsets (X, Y): [5:0-3-8,0-2-12], [7:0-2-4,0-5-0], [14:0-3-12,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.39	13-15	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.61	13-15	>661	180	M18AHS	186/179
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.04	10	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 347 lb	FT = 20%

LUMBER

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP No.1
WEBS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except 2-0-0 oc purlins (6-0-0 max.): 5-7.
BOT CHORD Rigid ceiling directly applied.
WEBS 1 Row at midpt 6-13, 3-15, 7-12

REACTIONS (size) 2=0-3-8, 10= Mechanical, 12=0-3-8
Max Horiz 2=208 (LC 11)
Max Uplift 2=23 (LC 12), 12=48 (LC 12)
Max Grav 2=1619 (LC 18), 10=534 (LC 19), 12=2049 (LC 19)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/31, 2-3=-2315/39, 3-5=-1755/84, 5-6=-1367/136, 6-7=-677/106, 7-9=-171/191, 9-10=-584/3

BOT CHORD 2-17=-48/2004, 15-17=-30/2004, 13-15=0/1177, 12-13=0/719, 11-12=0/452, 10-11=-4/452

WEBS 3-17=0/225, 9-11=0/250, 5-15=0/499, 7-13=0/1267, 6-13=-853/85, 3-15=-626/127, 6-15=0/458, 9-12=-657/114, 7-12=-1776/0

NOTES

1) Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
-0-11-0 to 4-10-3, Interior (1) 4-10-3 to 15-5-12, Exterior
(2R) 15-5-12 to 23-7-10, Interior (1) 23-7-10 to 29-5-12,
Exterior(2R) 29-5-12 to 37-7-10, Interior (1) 37-7-10 to
44-11-8 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
- Provide adequate drainage to prevent water ponding.
- All plates are MT20 plates unless otherwise indicated.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members, with BCDL = 10.0psf.
- Bearings are assumed to be: Joint 2 SP No.1, Joint 12
SP No.1 .
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 23 lb uplift at joint
2 and 48 lb uplift at joint 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.
- Graphical purlin representation does not depict the size
or the orientation of the purlin along the top and/or
bottom chord.
- Attic room checked for L/360 deflection.

LOAD CASE(S) Standard



October 22, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **SDS-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

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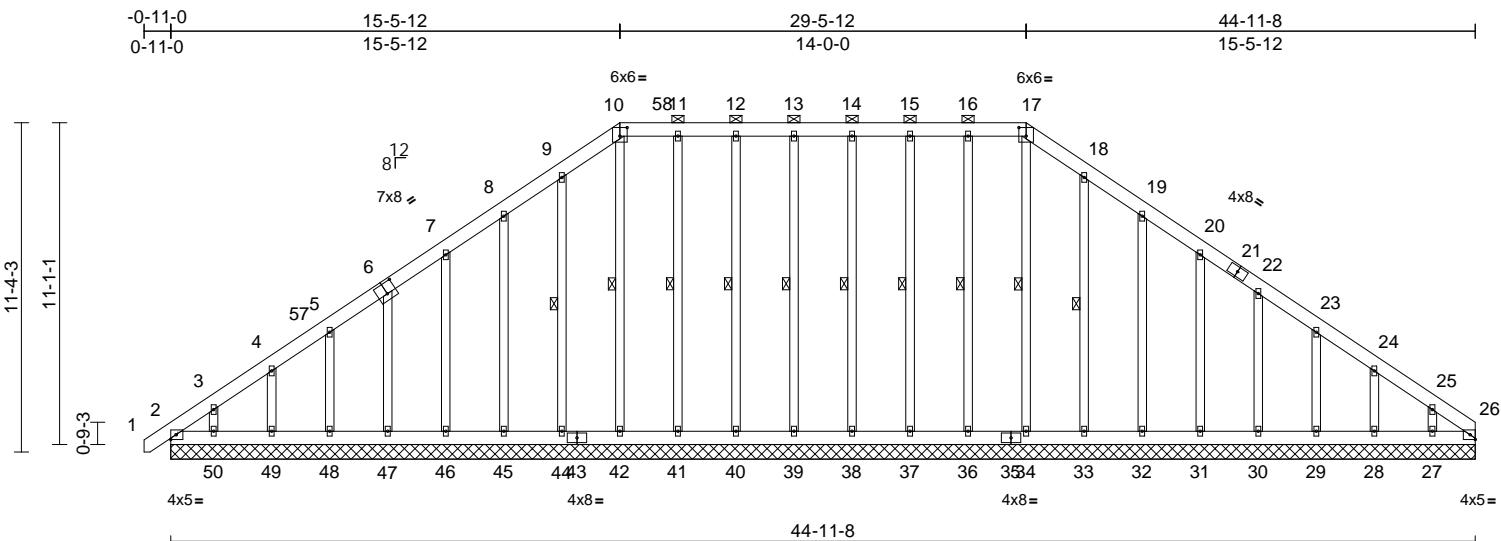
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss B05	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203914
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
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Page: 1



Scale = 1:79.4

Plate Offsets (X, Y): [6:0-4-0,0-4-8], [10:0-3-0,0-3-8], [17:0-3-0,0-3-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.02	Vert(LL)	n/a	-	n/a	999	MT20
TCDL	10.0	Lumber DOL	1.15	BC	0.01	Vert(CT)	n/a	-	n/a	999	
BCLL	0.0*	Rep Stress Incr	YES	WB	0.13	Horz(CT)	0.00	26	n/a	n/a	
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 450 lb FT = 20%

LUMBER

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP No.1 *Except* 0-0:2x4 SP No.2
OTHERS 2x4 SP No.2 *Except* 50-3,27-25:2x4 SP No.3

BRACING

TOP CHORD Structural wood sheathing directly applied, except

2-0-0 oc purlins (6-0-0 max.): 10-17.

BOT CHORD Rigid ceiling directly applied.

WEBS 1 Row at midpt 17-34, 16-36, 15-37, 14-38, 13-39, 12-40, 11-41, 10-42, 9-44, 18-33

REACTIONS (size) 2=44-11-8, 26=44-11-8, 27=44-11-8, 28=44-11-8, 29=44-11-8, 30=44-11-8, 31=44-11-8, 32=44-11-8, 33=44-11-8, 34=44-11-8, 36=44-11-8, 37=44-11-8, 38=44-11-8, 39=44-11-8, 40=44-11-8, 41=44-11-8, 42=44-11-8, 44=44-11-8, 45=44-11-8, 46=44-11-8, 47=44-11-8, 48=44-11-8, 49=44-11-8, 50=44-11-8

Max Horiz 2=207 (LC 11)

Max Uplif 2=56 (LC 10), 26=24 (LC 11), 27=46 (LC 12), 28=19 (LC 12), 29=24 (LC 12), 30=22 (LC 12), 31=23 (LC 12), 32=28 (LC 12), 33=9 (LC 12), 37=4 (LC 12), 38=2 (LC 12), 39=2 (LC 12), 40=4 (LC 12), 44=9 (LC 12), 45=27 (LC 12), 46=25 (LC 12), 47=23 (LC 12), 48=20 (LC 12), 49=21 (LC 12), 50=38 (LC 12)

Max Grav 2=180 (LC 19), 26=89 (LC 18), 27=165 (LC 19), 28=164 (LC 19), 29=163 (LC 19), 30=163 (LC 19), 31=163 (LC 19), 32=165 (LC 19), 33=161 (LC 19), 34=145 (LC 25), 36=160 (LC 25), 37=162 (LC 24), 38=160 (LC 24), 39=160 (LC 25), 40=162 (LC 25), 41=160 (LC 24), 42=149 (LC 18), 44=166 (LC 18), 45=163 (LC 18), 46=168 (LC 18), 47=162 (LC 18), 48=156 (LC 18), 49=166 (LC 1), 50=160 (LC 18)

FORCES (lb) - Maximum Compression/Maximum Tension

1-2=0/27, 2-3=-172/164, 3-4=-158/146, 4-5=149/128, 5-7=136/112, 7-8=-115/113,

8-9=-105/144, 9-10=-122/168,

10-11=-110/153, 11-12=-110/153,

12-13=-110/153, 13-14=-110/153,

14-15=-110/153, 15-16=-110/153,

16-17=-110/153, 17-18=-122/165,

18-19=-101/132, 19-20=-73/97,

20-22=-61/67, 22-23=-72/37, 23-24=-82/46,

24-25=-96/64, 25-26=-123/80

2-50=-122/124, 49-50=-61/104,

48-49=-61/104, 47-48=-61/104,

46-47=-61/105, 45-46=-61/105,

44-45=-61/105, 42-44=-61/105,

41-42=-61/105, 40-41=-61/105,

39-40=-61/105, 38-39=-61/105,

37-38=-61/105, 36-37=-61/105,

34-36=-61/105, 33-34=-61/105,

32-33=-61/105, 31-32=-61/105,

30-31=-61/105, 29-30=-61/105,

28-29=-61/105, 27-28=-61/105,

26-27=-61/105

WEBS

17-34=-105/0, 16-36=-120/22, 15-37=-122/41, 14-38=-120/38,

13-39=-120/38, 12-40=-122/41, 11-41=-120/20, 10-42=-109/0, 9-44=-126/52,

8-45=-123/69, 7-46=-128/67, 6-47=-123/49, 5-48=-116/44, 4-49=-127/50, 3-50=-109/45,

18-33=-121/50, 19-32=-125/70, 20-31=-123/65, 22-30=-123/47,

23-29=-123/47, 24-28=-126/50, 25-27=-112/49

NOTES

1) Unbalanced roof live loads have been considered for this design.



October 22, 2025

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

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818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss B05	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203914
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
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Page: 2

- 2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
-0-9-13 to 4-11-7, Interior (1) 4-11-7 to 15-5-12, Exterior
(2R) 15-5-12 to 23-5-12, Interior (1) 23-5-12 to 29-5-12,
Exterior(2R) 29-5-12 to 37-5-12, Interior (1) 37-5-12 to
44-11-8 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) Provide adequate drainage to prevent water ponding.
- 5) All plates are 2x4 MT20 unless otherwise indicated.
- 6) Gable requires continuous bottom chord bearing.
- 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) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- 10) All bearings are assumed to be SP No.1 .
- 11) Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 24 lb uplift at joint
26, 56 lb uplift at joint 2, 4 lb uplift at joint 37, 2 lb uplift at
joint 38, 2 lb uplift at joint 39, 4 lb uplift at joint 40, 9 lb
uplift at joint 44, 27 lb uplift at joint 45, 25 lb uplift at joint
46, 23 lb uplift at joint 47, 20 lb uplift at joint 48, 21 lb
uplift at joint 49, 38 lb uplift at joint 50, 9 lb uplift at joint
33, 28 lb uplift at joint 32, 23 lb uplift at joint 31, 22 lb
uplift at joint 30, 24 lb uplift at joint 29, 19 lb uplift at joint
28, 46 lb uplift at joint 27, 24 lb uplift at joint 26 and 56 lb
uplift at joint 2.
- 12) Beveled plate or shim required to provide full bearing
surface with truss chord at joint(s) 2, 54.
- 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.
- 14) This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.
- 15) Graphical purlin representation does not depict the size
or the orientation of the purlin along the top and/or
bottom chord.
- 16) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

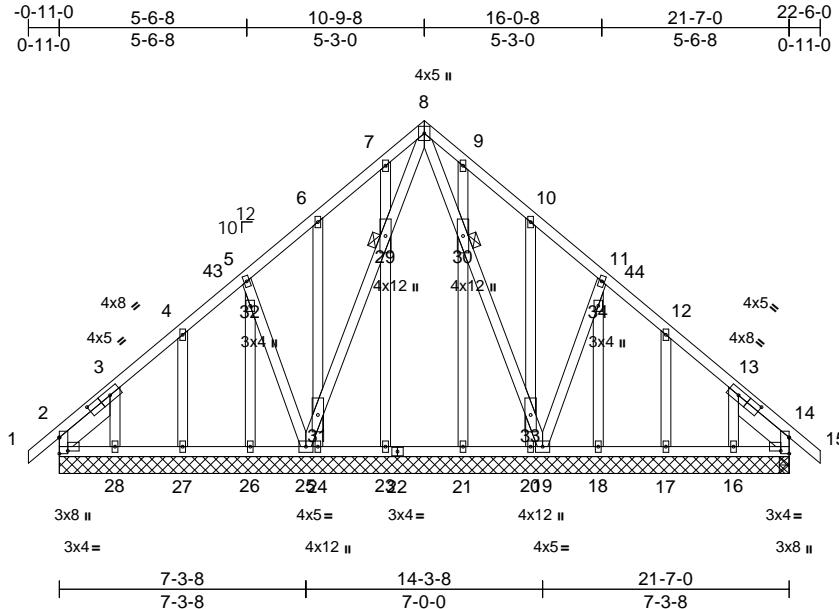
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

Job Q2502514	Truss C01	Truss Type Common Supported Gable	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203915
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
ID:eYy0l3WYK46vYkOzRxH81z4Sv7-RfC?PsB70Hq3NSgPqnL8w3uLTxbGKWrCDoi7J4zJC?!

Page: 1



Scale = 1:68.1

Plate Offsets (X, Y): [2:1-2-7,0-2-0], [2:0-3-0,0-4-12], [14:1-2-7,0-2-0], [14:0-3-0,0-4-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	0.00	21-23	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	0.00	21-23	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.00	14	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 207 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
OTHERS 2x4 SP No.2 *Except*
24-31,3-28,20-33,16-13:2x4 SP No.3
SLIDER Left 2x6 SP No.1 -- 2-1-8, Right 2x6 SP No.1
-- 2-1-8

BOT CHORD

2-28--100/107, 27-28--100/107,
26-27--100/107, 25-26--100/107,
24-25--91/153, 23-24--91/153,
21-23--91/153, 20-21--91/153,
19-20--91/153, 18-19--56/101,
17-18--56/101, 16-17--56/101,
14-16--56/101

WEBS

8-30--93/40, 30-33--85/36, 19-33--98/42,
19-34--90/71, 11-34--114/64, 25-31--99/46,
29-31--86/39, 8-29--94/44, 5-32--114/64,
25-32--86/72, 7-29--107/40, 23-29--107/32,
9-30--100/40, 21-30--98/31, 6-31--142/89,
24-31--139/103, 26-32--38/0, 4-27--120/54,
3-28--143/85, 10-33--143/89,
20-33--144/103, 18-34--38/0,
12-17--120/54, 13-16--133/82

NOTES

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
-0-11 to 4-10-3, Interior (1) 4-10-3 to 10-9-8, Exterior
(2R) 10-9-8 to 16-6-11, Interior (1) 16-6-11 to 22-6-0
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) All plates are 2x4 MT20 unless otherwise indicated.
- 5) Gable studs spaced at 2-0-0 oc.
- 6) This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.

FORCES (size)

2=21-7-0, 14=21-7-0, 16=21-7-0,
17=21-7-0, 18=21-7-0, 19=21-7-0,
20=21-7-0, 21=21-7-0, 23=21-7-0,
24=21-7-0, 25=21-7-0, 26=21-7-0,
27=21-7-0, 28=21-7-0
Max Horiz 2=204 (LC 11)
Max Uplift 2=48 (LC 10), 16=68 (LC 12),
17=23 (LC 12), 20=62 (LC 12),
24=62 (LC 12), 27=24 (LC 12),
28=68 (LC 12)
Max Grav 2=194 (LC 18), 14=153 (LC 17),
16=204 (LC 18), 17=191 (LC 18),
18=103 (LC 17), 19=123 (LC 17),
20=183 (LC 18), 21=197 (LC 18),
23=205 (LC 17), 24=179 (LC 17),
25=124 (LC 17), 26=98 (LC 18),
27=189 (LC 17), 28=219 (LC 17)

(lb) - Maximum Compression/Maximum
Tension

TOP CHORD 1-2=0/35, 2-3=-135/141, 3-4=-117/98,
4-5=-101/75, 5-6=-76/87, 6-7=-94/136,
7-8=-109/163, 8-9=-107/164, 9-10=-92/132,
10-11=-50/74, 11-12=-58/40, 12-13=-74/41,
13-14=-105/74, 14-15=0/35

7) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members, with BCDL = 10.0psf.

8) All bearings are assumed to be SP No.2 .

9) Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 48 lb uplift at joint
2, 62 lb uplift at joint 24, 24 lb uplift at joint 27, 68 lb uplift
at joint 28, 62 lb uplift at joint 20, 23 lb uplift at joint 17,
68 lb uplift at joint 16 and 48 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.

11) This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

LOAD CASE(S)

Standard



October 22, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

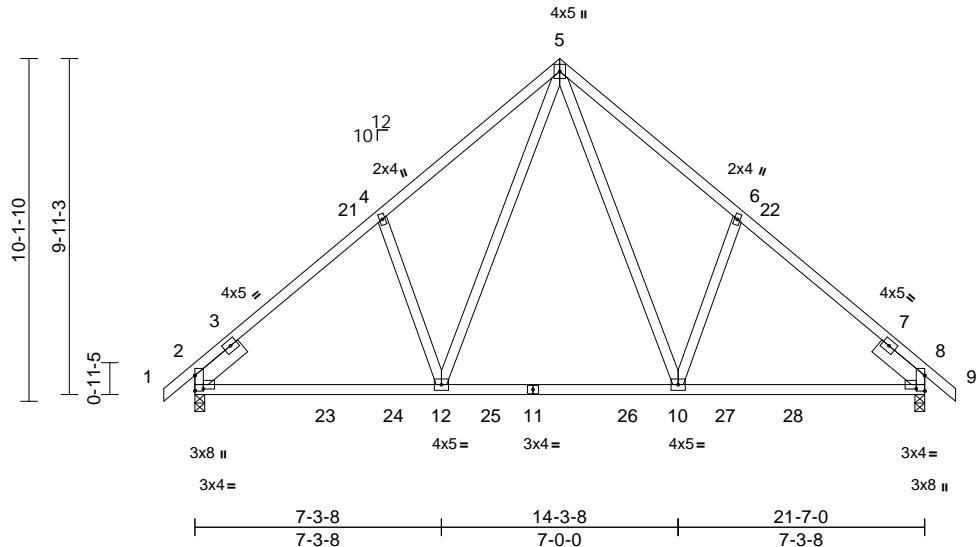
Job Q2502514	Truss C02	Truss Type Common	Qty 4	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203916
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:08
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Page: 1

-0-11-0 5-6-8 10-9-8 16-0-8 21-7-0 22-6-0
0-11-0 5-6-8 5-3-0 5-3-0 5-6-8 0-11-0



Scale = 1:68.1

Plate Offsets (X, Y): [2:0-3-0,0-4-12], [8:0-3-0,0-4-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.10	10-12	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.16	10-12	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.03	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 132 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2
SLIDER Left 2x6 SP No.1 -- 1-9-14, Right 2x6 SP No.1 -- 1-9-14

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size)

2=0-3-8, 8=0-3-8
Max Horiz 2=204 (LC 11)
Max Uplift 2=29 (LC 12), 8=29 (LC 12)
Max Grav 2=1053 (LC 17), 8=1053 (LC 18)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/35, 2-4=-1133/91, 4-5=-1071/180, 5-6=-1071/180, 6-8=-1132/91, 8-9=0/35
BOT CHORD 2-12=-66/930, 10-12=0/639, 8-10=-41/830
WEBS 5-10=-81/589, 6-10=-271/168, 5-12=-81/589, 4-12=-271/168

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft; B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
-0-11-0 to 4-10-3, Interior (1) 4-10-3 to 10-9-8, Exterior (2R) 10-9-8 to 16-6-11, Interior (1) 16-6-11 to 22-6-0
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
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 2 and 29 lb uplift at joint 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.
- This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S)

Standard



October 22, 2025

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

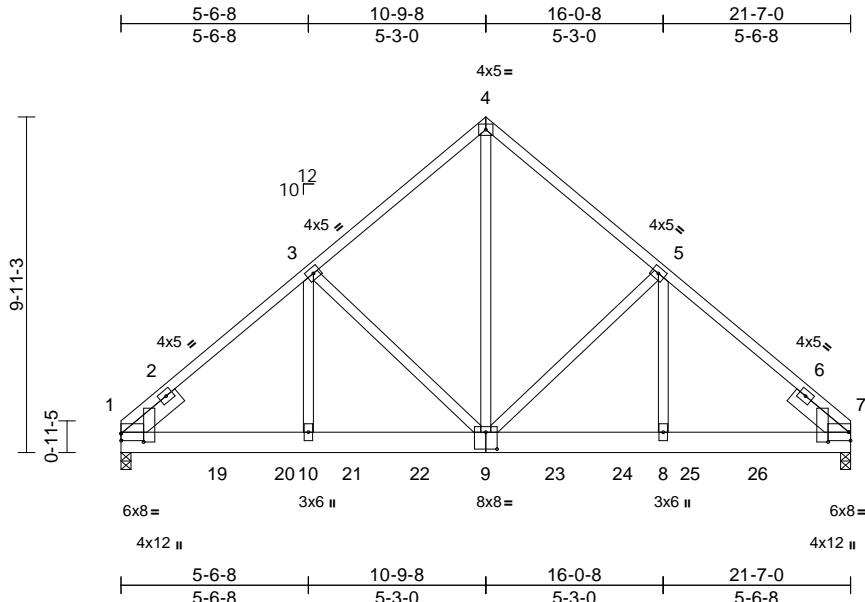
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **DSB-22** available from the Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

Job Q2502514	Truss C03	Truss Type Common Girder	Qty 1	Ply 3	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203917
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Wed Oct 22 14:14:04
ID:J30GUDWY2hXjy0Ax8cmvRz4T_H-EhCmCDDO163kWFbdllQtbnwdTgH7jSFGMU40eMyR?V1

Page: 1



Scale = 1:68.2

Plate Offsets (X, Y): [1:Edge,0-2-8], [1:0-3-0,0-8-0], [7:0-3-8,0-7-6], [9:0-4-0,0-6-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.04	9-10	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.07	9-10	>999	180		
BCLL	0.0*	Rep Stress Incr	NO	WB	Horz(CT)	0.02	7	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-MS						Weight: 498 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x8 SP No.1
WEBS 2x4 SP No.2
SLIDER Left 2x6 SP No.1 -- 2-0-0, Right 2x6 SP No.1 -- 2-0-0

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.

REACTIONS (size) 1=0-3-8, 7=0-3-8

Max Horiz 1=185 (LC 6)

Max Grav 1=3682 (LC 13), 7=3777 (LC 14)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 1-2=2981/0, 2-3=3851/0, 3-4=2845/0, 4-5=2845/0, 5-6=3876/0, 6-7=2634/0

BOT CHORD 1-19=0/3008, 19-20=0/3008, 10-20=0/3008,

10-21=0/3008, 21-22=0/3008, 9-22=0/3008,

9-23=0/2927, 23-24=0/2927, 8-24=0/2927,

8-25=0/2927, 25-26=0/2927, 7-26=0/2927

WEBS 4-9=0/3253, 5-9=1172/0, 5-8=0/1226,

3-9=-1143/0, 3-10=0/1191

NOTES

1) 3-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.

Bottom chords connected as follows: 2x8 - 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=120mph (3-second gust)

Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft; B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B; Enclosed; MWFRS (directional); cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60

5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

7) 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.

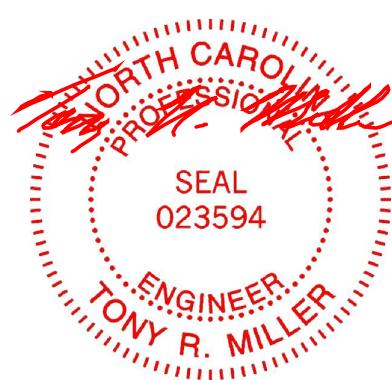
8) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 533 lb down at 0-10-4, 530 lb down at 2-10-4, 530 lb down at 4-10-4, 530 lb down at 6-10-4, 530 lb down at 8-10-4, 530 lb down at 10-10-4, 530 lb down at 12-10-4, 530 lb down at 14-10-4, 530 lb down at 16-10-4, and 571 lb down and 22 lb up at 18-10-4, and 575 lb down and 20 lb up at 20-10-4 on bottom chord.

The design/selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard

1) Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-4=60, 4-7=60, 11-15=-20

Concentrated Loads (lb)
Vert: 9=-442 (B), 13=-445 (B), 17=-520 (B), 19=-442 (B), 20=-442 (B), 21=-442 (B), 22=-442 (B), 23=-442 (B), 24=-442 (B), 25=-442 (B), 26=-516 (B)



October 22, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from the Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

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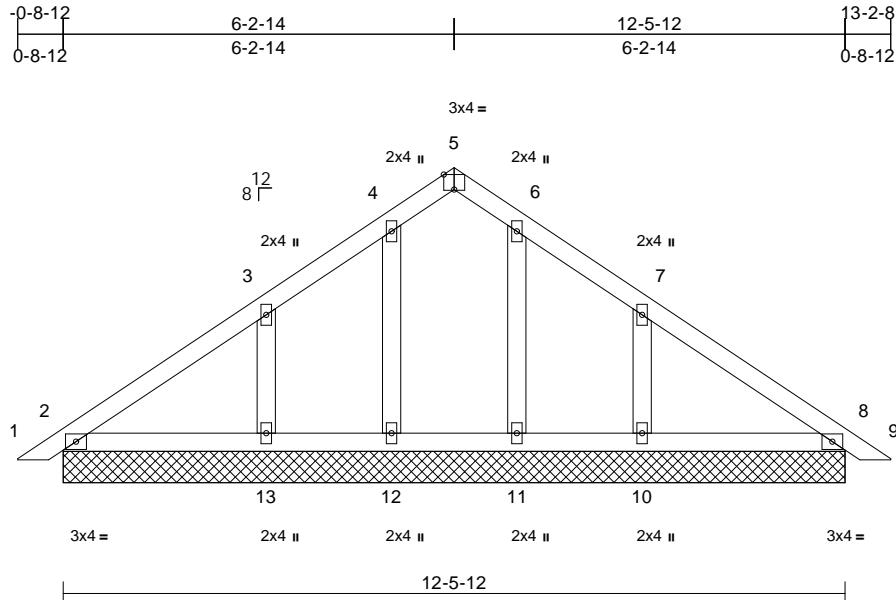
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss PB01	Truss Type Piggyback	Qty 2	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203918
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:09
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Page: 1



Scale = 1:36.8

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.09	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 59 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3 *Except* 12-4,11-6:2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 2=12-5-12, 8=12-5-12, 10=12-5-12,
11=12-5-12, 12=12-5-12,
13=12-5-12

Max Horiz 2=86 (LC 11)
Max Uplift 10=43 (LC 12), 13=-43 (LC 12)
Max Grav 2=160 (LC 1), 8=160 (LC 1),
10=270 (LC 18), 11=107 (LC 1),
12=110 (LC 17), 13=268 (LC 17)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/16, 2-3=-89/52, 3-4=-87/56,
4-5=60/73, 5-6=60/74, 6-7=83/51,
7-8=-80/36, 8-9=0/16

BOT CHORD 2-13=-35/137, 12-13=-35/137,
11-12=-35/137, 10-11=-35/137, 8-10=-35/137

WEBS 3-13=-185/180, 4-12=-84/31, 7-10=-187/181,
6-11=-79/26

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=2ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Corner(3E)
0-3-5 to 6-0-2, Exterior(2N) 6-0-0 to 7-0-0, Corner(3R)
7-0-0 to 12-10-0, Exterior(2N) 12-10-0 to 13-8-11 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

- 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.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- All bearings are assumed to be SP No.2.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 43 lb uplift at joint 13 and 43 lb uplift at joint 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.
- This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

LOAD CASE(S) Standard



October 22, 2025



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

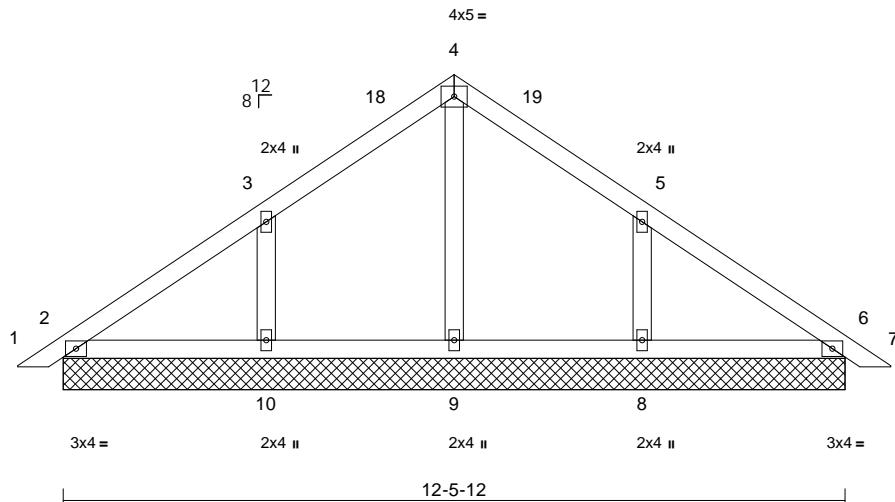
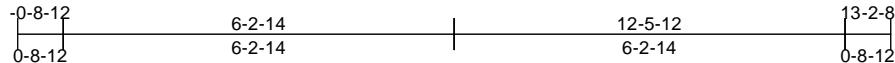
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

Job Q2502514	Truss PB02	Truss Type Piggyback	Qty 22	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203919
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:09
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Page: 1



Scale = 1:36.8

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.00	6	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 55 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
OTHERS	2x4 SP No.3 *Except* 9-4:2x4 SP No.2
BRACING	
TOP CHORD	Structural wood sheathing directly applied.
BOT CHORD	Rigid ceiling directly applied.
REACTIONS (size)	2=12-5-12, 6=12-5-12, 8=12-5-12, 9=12-5-12, 10=12-5-12
Max Horiz	2=.86 (LC 10)
Max Uplift	2=.6 (LC 12), 6=.6 (LC 12), 8=.41 (LC 12), 10=.41 (LC 12)
Max Grav	2=156 (LC 1), 6=156 (LC 1), 8=299 (LC 18), 9=164 (LC 1), 10=299 (LC 17)

FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	1-2=0/16, 2-3=-94/59, 3-4=-100/129, 4-5=-95/126, 5-6=70/32, 6-7=0/16
BOT CHORD	2-10=-18/86, 9-10=-18/86, 8-9=-18/86, 6-8=-18/86
WEBS	3-10=-214/196, 5-8=-214/196, 4-9=-117/0

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=2ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Corner(3E)
0-3-5 to 6-0-9, Exterior(2N) 6-0-9 to 7-0-0, Corner(3R)
7-0-0 to 12-10-0, Exterior(2N) 12-10-0 to 13-8-11 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
- 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.

- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 6 lb uplift at joint 2,
6 lb uplift at joint 6, 41 lb uplift at joint 10, 41 lb uplift at
joint 8, 6 lb uplift at joint 2 and 6 lb uplift at joint 6.
- 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.
- See Standard Industry Piggyback Truss Connection
Detail for Connection to base truss as applicable, or
consult qualified building designer.

LOAD CASE(S) Standard



October 22, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

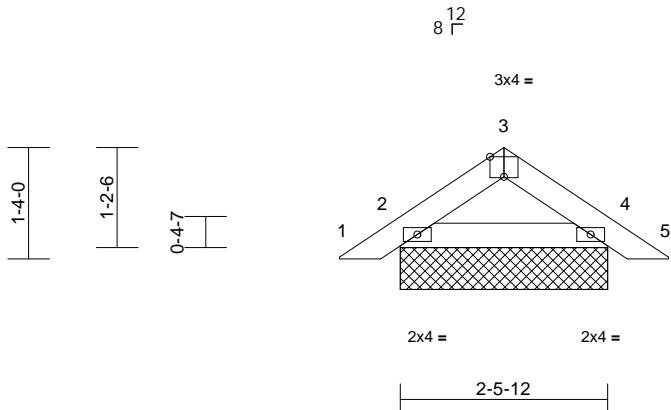
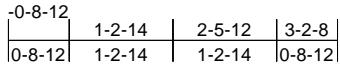
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

Job Q2502514	Truss PB04	Truss Type Piggyback	Qty 7	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203920
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:09
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Page: 1



Scale = 1:27.6

Plate Offsets (X, Y): [3:0-2-0,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.03	Vert(LL)	n/a	-	n/a	999	MT20
TCDL	10.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	n/a	-	n/a	999	
BCLL	0.0*	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	10	n/a	n/a	
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 11 lb FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 2=2-5-12, 4=2-5-12

Max Horiz 2=2-22 (LC 10)

Max Uplift 2=2-12 (LC 12), 4=8 (LC 12)

Max Grav 2=129 (LC 1), 4=135 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/16, 2-3=-69/33, 3-4=-70/31, 4-5=0/16

BOT CHORD 2-4=0/57

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) 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
- 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.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- All bearings are assumed to be SP No.2.

- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 12 lb uplift at joint
2, 8 lb uplift at joint 4, 12 lb uplift at joint 2 and 8 lb uplift
at joint 4.
- 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.
- See Standard Industry Piggyback Truss Connection
Detail for Connection to base truss as applicable, or
consult qualified building designer.

LOAD CASE(S) Standard



October 22, 2025



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-743 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY
TRENCO
A MiTek Affiliate

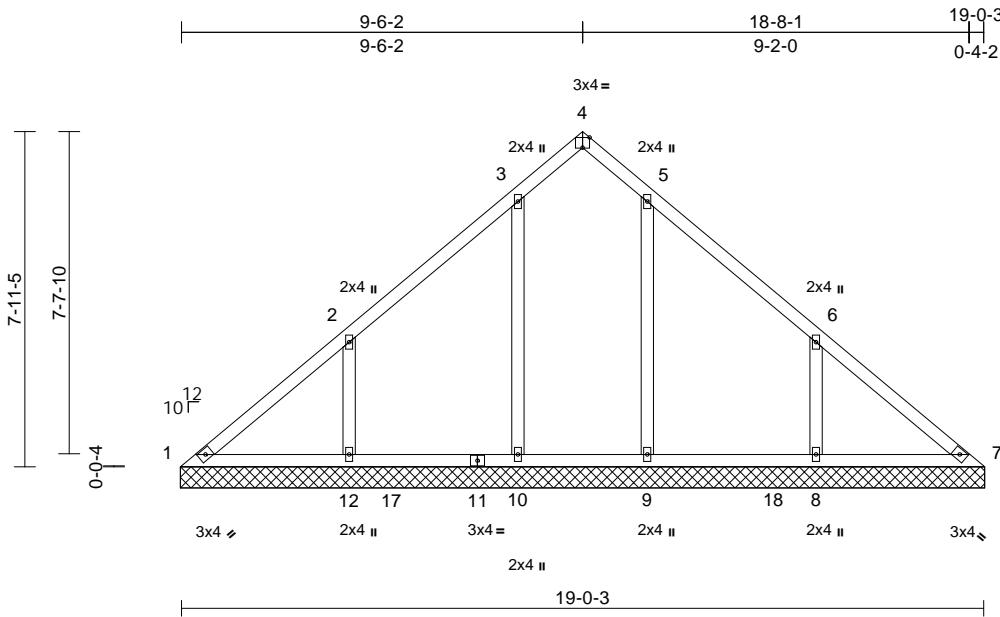
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss V01	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203921
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

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Page: 1



Scale = 1:54.6

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horiz(TL)	0.01	7	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 90 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 1=19-0-13, 7=19-0-13, 8=19-0-13,
9=19-0-13, 10=19-0-13,
12=19-0-13
Max Horiz 1=162 (LC 11)
Max Uplift 8=65 (LC 12), 9=32 (LC 12),
10=32 (LC 12), 12=65 (LC 12)
Max Grav 1=144 (LC 18), 7=131 (LC 17),
8=472 (LC 18), 9=391 (LC 18),
10=399 (LC 17), 12=476 (LC 17)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-199/164, 2-3=-89/111, 3-4=-52/28,
4-5=-52/28, 5-6=-82/98, 6-7=-196/152
BOT CHORD 1-12=-121/184, 10-12=-121/184,
9-10=-121/184, 8-9=-121/184, 7-8=-121/184
WEBS 2-12=-283/140, 3-10=-233/106,
6-8=-282/140, 5-9=-224/105

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
0-0 to 5-9-3, Interior (1) 5-9-3 to 9-6-6, Exterior(2R)
9-6-6 to 15-0-13, Interior (1) 15-0-13 to 19-0-13 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

- 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.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 65 lb uplift at joint 12, 32 lb uplift at joint 10, 65 lb uplift at joint 8 and 32 lb uplift at joint 9.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 7.
- 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.
- This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S) Standard



October 22, 2025

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

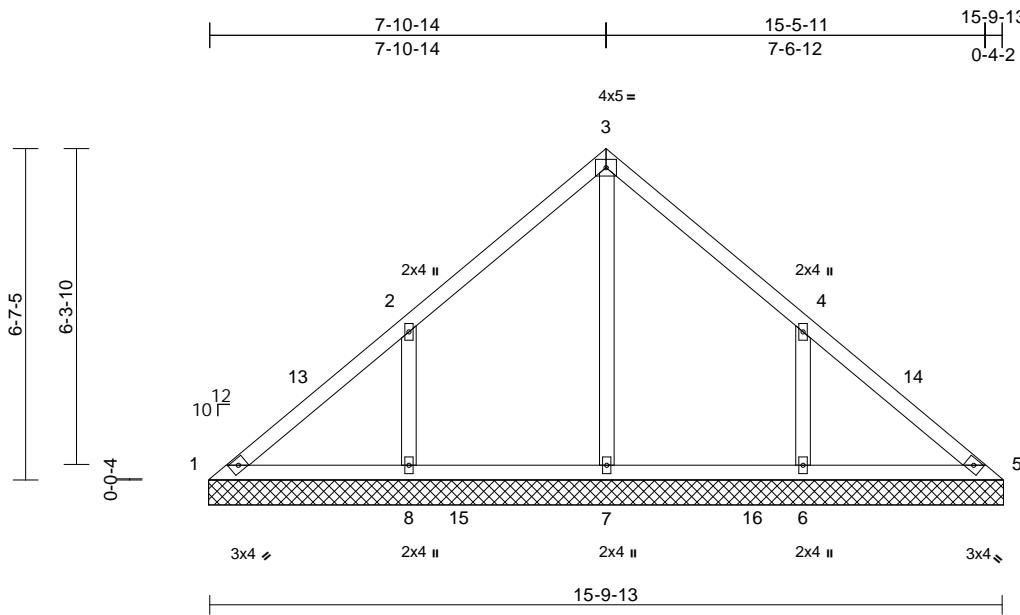
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Job Q2502514	Truss V02	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203922
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

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Page: 1



Scale = 1:46

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horiz(TL)	0.00	5	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 70 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 1=15-10-6, 5=15-10-6, 6=15-10-6,
7=15-10-6, 8=15-10-6
Max Horiz 1=134 (LC 10)
Max Uplift 6=73 (LC 12), 8=73 (LC 12)
Max Grav 1=120 (LC 18), 5=100 (LC 24),
6=468 (LC 18), 7=465 (LC 17),
8=472 (LC 17)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=143/203, 2-3=43/144, 3-4=42/122,
4-5=111/169
BOT CHORD 1-8=89/125, 7-8=89/90, 6-7=89/90,
5-6=89/90
WEBS 2-8=289/166, 4-6=287/166, 3-7=282/0

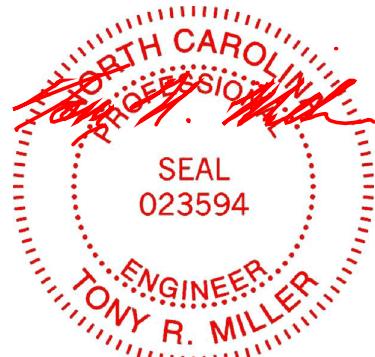
NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=1.60 psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
0-0-0 to 5-9-3, Interior (1) 5-9-3 to 7-11-3, Exterior(2R)
7-11-3 to 13-8-6, Interior (1) 13-8-6 to 15-10-6 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
- 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.
- Gable requires continuous bottom chord bearing.

- 5) Gable studs spaced at 4-0-0 oc.
- 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 8) All bearings are assumed to be SP No.2 .
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 73 lb uplift at joint 8 and 73 lb uplift at joint 6.
- 10) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 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.
- 12) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S)

Standard



October 22, 2025

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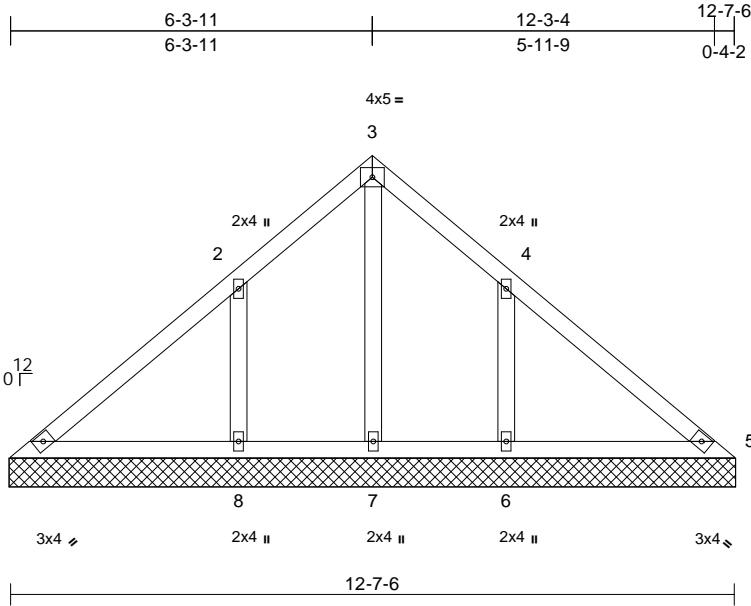
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job Q2502514	Truss V03	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203923
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

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Page: 1



Scale = 1:40.2

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horiz(TL)	0.00	5	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 57 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 1=12-8-0, 5=12-8-0, 6=12-8-0,
7=12-8-0, 8=12-8-0
Max Horiz 1=106 (LC 11)
Max Uplift 6=61 (LC 12), 8=61 (LC 12)
Max Grav 1=83 (LC 23), 5=82 (LC 24), 6=343
(LC 18), 7=230 (LC 1), 8=346 (LC
17)

FORCES (lb) - Maximum Compression/Maximum
Tension

TOP CHORD 1-2=-88/216, 2-3=0/132, 3-4=0/130,
4-5=-79/188
BOT CHORD 1-8=-123/114, 7-8=-123/114, 6-7=-124/114,
5-6=-124/114
WEBS 2-8=-236/162, 4-6=-235/161, 3-7=-228/0

NOTES

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp. B;
Enclosed; MWFRS (directional) and C-C Exterior(2E)
0-0-0 to 5-9-3, Interior (1) 5-9-3 to 6-4-0, Exterior(2R)
6-4-0 to 11-10-5, Interior (1) 11-10-5 to 12-8-0 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) Gable requires continuous bottom chord bearing.

- 5) Gable studs spaced at 4-0-0 oc.
- 6) This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- 7) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- 8) All bearings are assumed to be SP No.2 .
- 9) Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 61 lb uplift at joint
8 and 61 lb uplift at joint 6.
- 10) Beveled plate or shim required to provide full bearing
surface with truss chord at joint(s) 1, 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.
- 12) This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

LOAD CASE(S)

Standard



October 22, 2025

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-743 rev. 1/2/2023 BEFORE USE.**

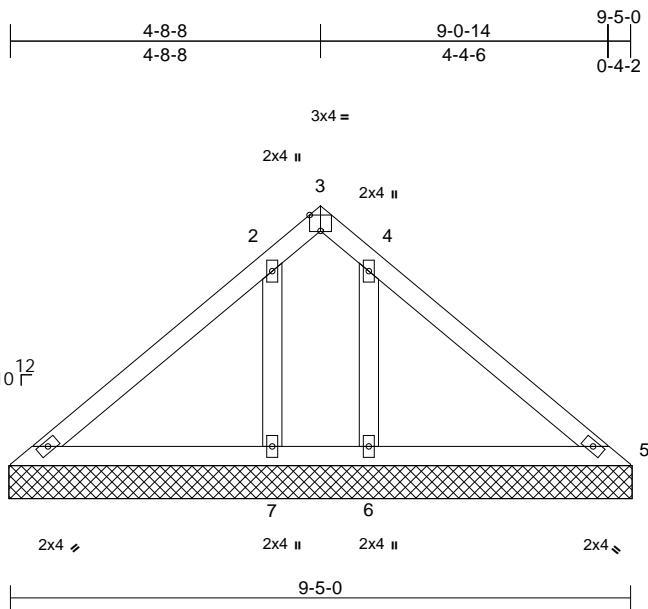
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **DSB-22** available from the Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

Job Q2502514	Truss V04	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203924
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Carolina Structural Systems (Star, NC), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:09
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Page: 1



Scale = 1:35

Plate Offsets (X, Y): [3:0-2-0,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horiz(TL)	0.00	5	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 39 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 1=9-5-10, 5=9-5-10, 6=9-5-10,
7=9-5-10

Max Horiz 1=78 (LC 11)
Max Uplift 1=-3 (LC 24), 5=-3 (LC 23), 6=-37
(LC 12), 7=-37 (LC 12)
Max Grav 1=61 (LC 23), 5=61 (LC 24), 6=360
(LC 18), 7=372 (LC 17)

FORCES (lb) - Maximum Compression/Maximum
Tension

TOP CHORD 1-2=-142/244, 2-3=-13/98, 3-4=-18/99,
4-5=-129/242

BOT CHORD 1-7=-174/159, 6-7=-174/159, 5-6=-174/159

WEBS 2-7=-289/163, 4-6=-278/134

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) 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
- 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.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.

- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 3 lb uplift at joint 1,
3 lb uplift at joint 5, 37 lb uplift at joint 7 and 37 lb uplift at
joint 6.
- Beveled plate or shim required to provide full bearing
surface with truss chord at joint(s) 1, 5.
- 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

LOAD CASE(S) Standard



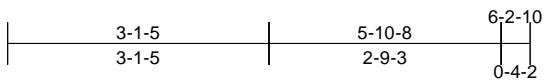
October 22, 2025

Job Q2502514	Truss V05	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203925
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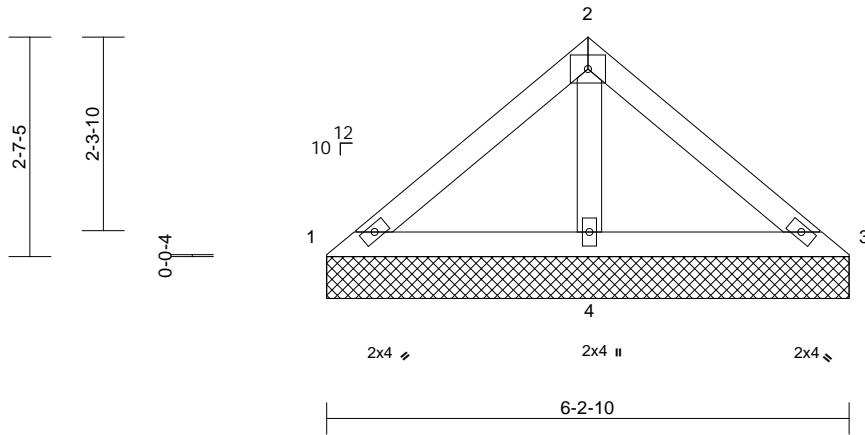
Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

Run: 8.73 S Aug 13 2025 Print: 8.730 S Aug 13 2025 MiTek Industries, Inc. Tue Oct 21 07:56:09
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Page: 1



4x5 =



Scale = 1:27.4

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horiz(TL)	0.00	3	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS						Weight: 23 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
OTHERS 2x4 SP No.3

BRACING

TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 1=6-2-10, 3=6-2-10, 4=6-2-10
Max Horiz 1=51 (LC 10)
Max Uplift 4=19 (LC 12)
Max Grav 1=69 (LC 23), 3=67 (LC 24), 4=399 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-60/139, 2-3=-57/141
BOT CHORD 1-4=-112/108, 3-4=-113/109
WEBS 2-4=-269/139

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft, L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) 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
- 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.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.

- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 19 lb uplift at joint
4.
- 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.
- This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

LOAD CASE(S) Standard



October 22, 2025

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

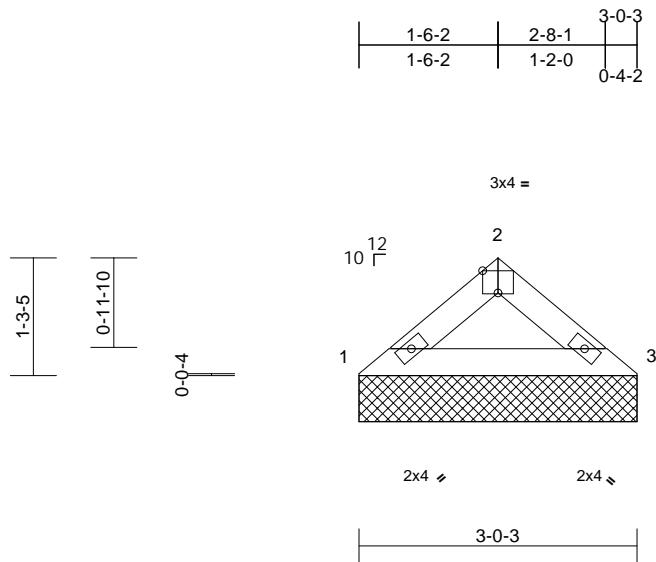
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria** and **DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcaccomponents.com)

Job Q2502514	Truss V06	Truss Type Valley	Qty 1	Ply 1	Brown 25-FAY-SAN-044 Job Reference (optional)	I77203926
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Carolina Structural Systems (Star, NC)), Ether, NC - 27247,

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Page: 1



Scale = 1:25

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.06	Vert(TL)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	3	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-MP							Weight: 9 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied or 3-0-3 oc purlins.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=3-0-3, 3=3-0-3

Max Horiz 1=-23 (LC 10)

Max Uplift 1=-1 (LC 12), 3=-1 (LC 12)

Max Grav 1=121 (LC 1), 3=121 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-156/64, 2-3=-156/64

BOT CHORD 1-3=-42/118

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=28ft;
B=55ft; L=58ft; eave=7ft; Ke=1.00; Cat. II; Exp B;
Enclosed; MWFRS (directional) 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
- 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.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.

- * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-0-0 tall by 2-0-0 wide will fit between the bottom
chord and any other members.
- All bearings are assumed to be SP No.2 .
- Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 1 lb uplift at joint 1
and 1 lb uplift at joint 3.
- 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



October 22, 2025



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see [ANSI/TPI1 Quality Criteria](#) and [DSB-22](#) available from Truss Plate Institute ([www.tpinst.org](#)) and [BCSI Building Component Safety Information](#) available from the Structural Building Component Association ([www.sbcacomponents.com](#))

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

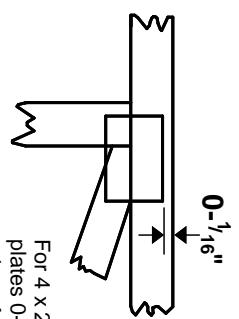
Symbols

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- $\frac{1}{16}$ " from outside edge of truss.



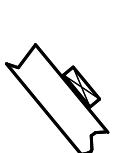
This symbol indicates the required direction of slots in connector plates.

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

PLATE SIZE

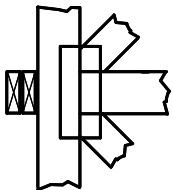
4 x 4

LATERAL BRACING LOCATION



BEARING

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

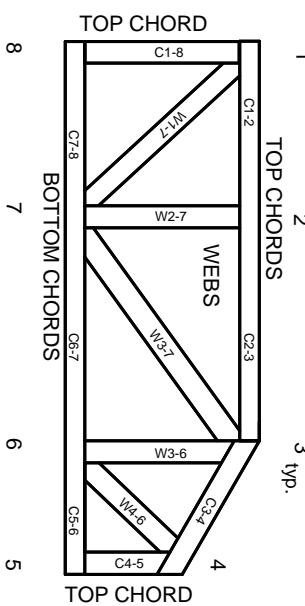


Industry Standards:

ANSI/TP1: 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

6-4-8 dimensions shown in ft-in-sixteenths
(Drawings not to scale)



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/TP1 section 6.3. These truss designs rely on lumber values established by others.

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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! 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/TP1.

7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1.

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/TP1 Quality Criteria.

21. The design does not take into account any dynamic or other loads other than those expressly stated.

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ENGINEERING BY
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