

Trenco
818 Soundside Rd
Edenton, NC 27932

Re: 44696487
345 SERENITY - A01, E01, E02, G01 - TRI POINTE HOMES

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Stock Building Supply.

Pages or sheets covered by this seal: T37941486 thru T37941489

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

North Carolina COA: C-0844

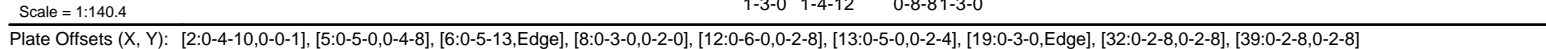


July 16, 2025

Velez, Joaquin

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.

Builders FirstSource (Middlesex, NC), Middlesex, NC - 27557, Run: 8.83 S Jun 11 2025 Print: 8.830 S Jun 11 2025 MiTek Industries, Inc. Wed Jul 16 13:31:16 Page: 1
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LUMBER		WEBS	32-33=0/351, 6-32=0/1180, 17-19=-10/159,	7) * This truss has been designed for a live load of 20.0psf
TOP CHORD	2x6 SP 2400F 2.0E or 2x6 SP DSS *Except*		19-39=-1072/199, 7-37=-2973/0,	on the bottom chord in all areas where a rectangle
	8-12:2x4 SP No.2, 12-14:2x6 SP No.2		37-41=-2348/0, 40-41=-2129/0,	3-06-00 tall by 2-00-00 wide will fit between the bottom
BOT CHORD	2x4 SP No.1		39-40=-2713/96, 38-39=-3124/79,	chord and any other members, with BCDL = 10.0psf.
WEBS	2x4 SP No.3 *Except*		13-38=-3200/80, 14-16=0/2452,	8) Ceiling dead load (5.0 psf) on member(s). 6-7, 7-37,
	6-33,39-17, 7-36,16-14,13-19,36-13:2x4 SP		8-37=-13/482, 12-38=-1/398,	37-41, 40-41, 39-40, 38-39, 13-38; Wall dead load
	No.2, 19-16:2x4 SP No.1		12-39=-1133/254, 13-16=-2074/0,	(5.0psf) on member(s).6-32, 19-39
SLIDER	Left 2x6 SP No.2 -- 2-0-0		16-19=0/4278, 13-19=0/3197, 18-19=0/1792,	9) Bottom chord live load (40.0 psf) and additional bottom
BRACING			31-32=-91/789, 18-20=-1776/0,	chord dead load (5.0 psf) applied only to room. 30-32,
TOP CHORD	Structural wood sheathing directly applied or		30-31=-906/30, 20-22=0/1148,	28-30, 26-28, 25-26, 23-25, 20-23, 19-20
	3-3-5 oc purlins, except end verticals, and		29-30=-135/380, 22-23=-1182/0,	10) Refer to girder(s) for truss to truss connections.
	2-0-0 oc purlins (4-10-10 max.): 8-12.		28-29=-201/334, 23-24=0/1289,	11) Graphical purlin representation does not depict the size
BOT CHORD	Rigid ceiling directly applied or 2-2-0 oc		27-28=-668/129, 26-27=-40/226,	or the orientation of the purlin along the top and/or
	bracing.		24-25=-460/0, 11-39=-1373/301,	bottom chord.
WEBS	1 Row at midpt 19-39, 7-41, 32-35, 5-32		11-40=-147/694, 10-40=-527/211,	12) Attic room checked for L/360 deflection.
WEBS	2 Rows at 1/3 pts 14-15, 13-16		10-41=-247/70, 9-41=-18/297,	LOAD CASE(S) Standard
JOINTS	1 Brace at Jt(s): 39,		9-37=-801/159, 4-35=0/282, 5-35=-157/199,	
	20, 20, 23, 28, 40,		32-35=-121/891, 5-32=-776/183	

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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/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.sbccomponents.com)



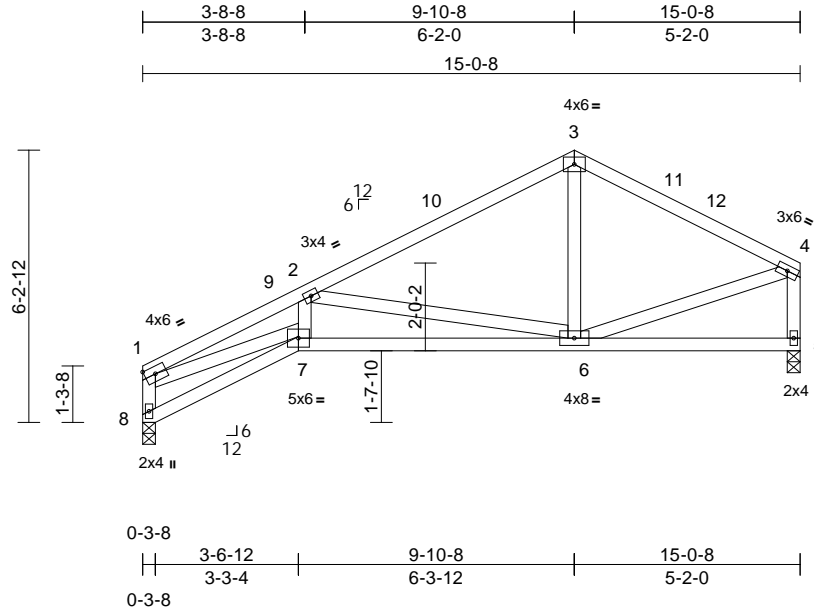
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	345 SERENITY - A01, E01, E02, G01 - TRI POINTE
44696487	E01	Roof Special	12	1	T37941487
Job Reference (optional)					

Builders FirstSource (Middlesex, NC), Middlesex, NC - 27557,

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Scale = 1:52.7

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.51	Vert(LL)	-0.07	6-7	>999	360	MT20
TCDL	10.0	Lumber DOL	1.15	BC	0.55	Vert(CT)	-0.17	6-7	>999	240	244/190
BCLL	0.0*	Rep Stress Incr	YES	WB	0.73	Horz(CT)	0.07	5	n/a	n/a	
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	0.05	6-7	>999	240	Weight: 81 lb FT = 20%

LUMBER

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

BRACING

TOP CHORD Structural wood sheathing directly applied or 4-4-9 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 5=0-3-8, 8=0-3-8

Max Horiz 8=109 (LC 9)
Max Uplift 5=-12 (LC 12), 8=-22 (LC 12)
Max Grav 5=590 (LC 1), 8=590 (LC 1)

FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-8=-569/72, 1-2=-1676/199, 2-3=-628/73,
3-4=-616/80, 4-5=-556/88

BOT CHORD 7-8=-117/133, 6-7=-240/1427, 5-6=-29/47

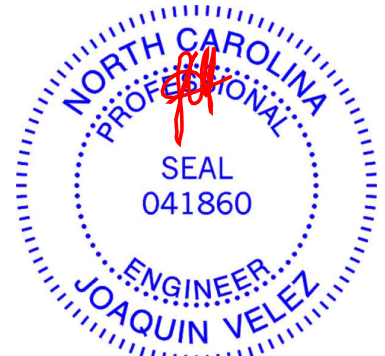
WEBS 1-7=-151/1446, 2-7=-11/383, 2-6=-957/230,
3-6=0/262, 4-6=-20/483

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust)
Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) 0-1-12 to 3-1-12, Interior (1) 3-1-12 to 9-10-8, Exterior (2) 9-10-8 to 12-10-8, Interior (1) 12-10-8 to 14-10-12 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.

- Bearing at joint(s) 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 22 lb uplift at joint 8 and 12 lb uplift at joint 5.

LOAD CASE(S) Standard



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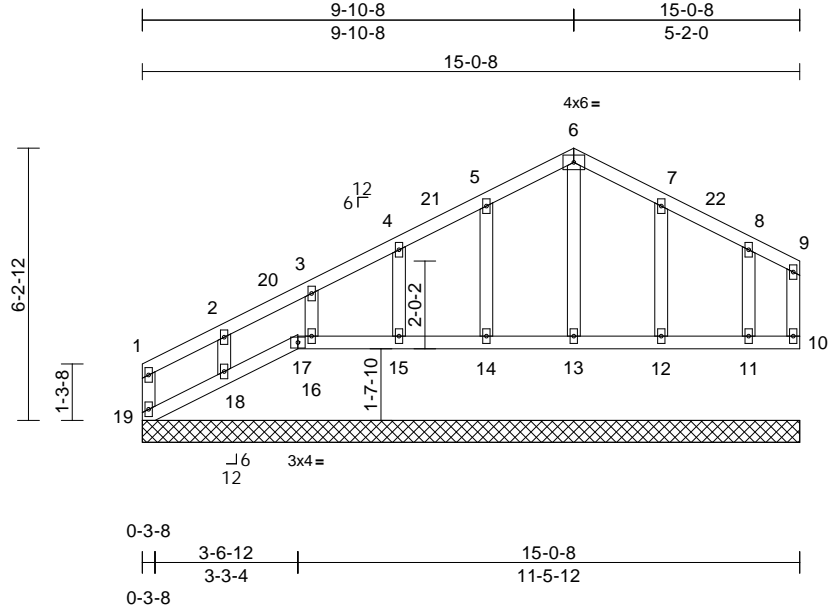
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	345 SERENITY - A01, E01, E02, G01 - TRI POINTE
44696487	E02	Roof Special Supported Gable	1	1	T37941488
Job Reference (optional)					

Builders FirstSource (Middlesex, NC), Middlesex, NC - 27557,

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Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.13	Vert(LL)	n/a	-	n/a	999	MT20
TCDL	10.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999	244/190
BCLL	0.0*	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	10	n/a	n/a	
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MR							Weight: 76 lb FT = 20%

LUMBER

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

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 17-18.

REACTIONS	(size)	10=15-0-8, 11=15-0-8, 12=15-0-8, 13=15-0-8, 14=15-0-8, 15=15-0-8, 16=15-0-8, 17=15-0-8, 18=15-0-8, 19=15-0-8
	Max Horiz	19=109 (LC 9)
	Max Uplift	10=67 (LC 12), 11=18 (LC 8), 12=33 (LC 13), 14=31 (LC 12), 15=30 (LC 12), 16=34 (LC 12), 17=2 (LC 17), 18=92 (LC 12), 19=20 (LC 8)
	Max Grav	10=45 (LC 19), 11=146 (LC 20), 12=175 (LC 24), 13=144 (LC 1), 14=169 (LC 23), 15=159 (LC 1), 16=156 (LC 23), 17=13 (LC 12), 18=164 (LC 19), 19=105 (LC 20)

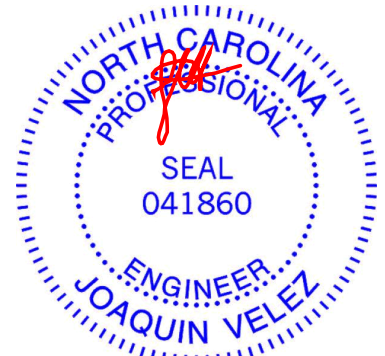
FORCES

	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	1-19=-62/10, 1-2=-79/46, 2-3=-51/42, 3-4=-44/83, 4-5=-47/123, 5-6=-62/162, 6-7=-63/153, 7-8=-46/90, 8-9=-30/59, 9-10=-26/51
BOT CHORD	18-19=-71/62, 17-18=-51/46, 16-17=-46/39, 15-16=-46/39, 14-15=-46/39, 13-14=-46/39, 12-13=-46/39, 11-12=-46/39, 10-11=-46/39
WEBS	6-13=-105/0, 5-14=-129/115, 4-15=-118/71, 3-16=-121/69, 2-18=-122/134, 7-12=-134/118, 8-11=-97/72

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner (3) 0-1-12 to 3-1-12, Exterior (2) 3-1-12 to 9-10-8, Corner (3) 9-10-8 to 12-10-8, Exterior (2) 12-10-8 to 14-10-12 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.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 20 lb uplift at joint 19, 2 lb uplift at joint 17, 67 lb uplift at joint 10, 31 lb uplift at joint 14, 30 lb uplift at joint 15, 34 lb uplift at joint 16, 92 lb uplift at joint 18, 33 lb uplift at joint 12 and 18 lb uplift at joint 11.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 17, 10, 13, 14, 15, 16, 18, 12, 11.

LOAD CASE(S) Standard



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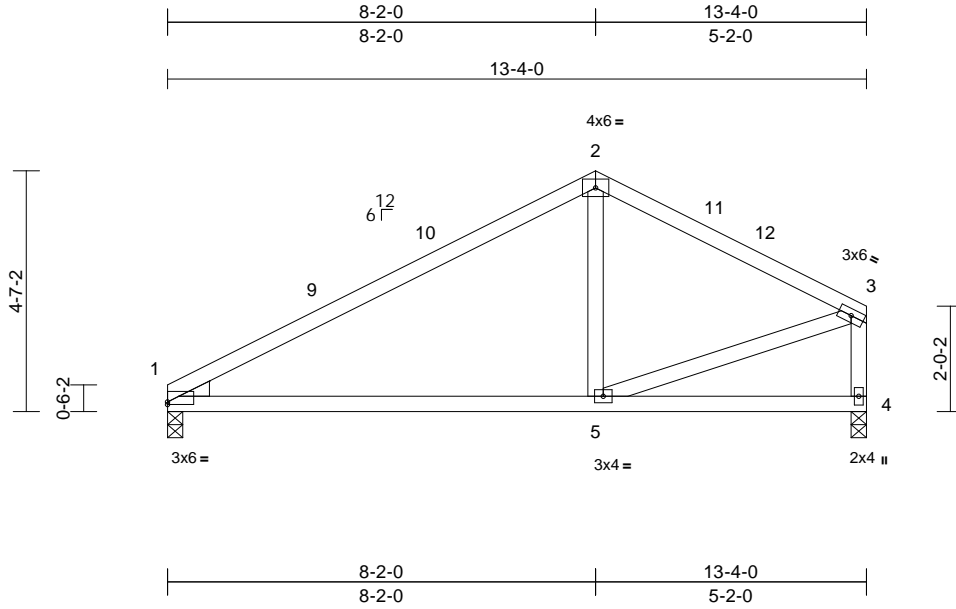
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Job	Truss	Truss Type	Qty	Ply	345 SERENITY - A01, E01, E02, G01 - TRI POINTE
44696487	G01	Common	6	1	T37941489
Job Reference (optional)					

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Page: 1



Scale = 1:44

Plate Offsets (X, Y): [1:Edge,0-0-10]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.97	Vert(LL)	-0.11	5-8	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.67	Vert(CT)	-0.25	5-8	>625	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.19	Horz(CT)	0.03	1	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	0.11	5-8	>999	240	Weight: 59 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3
WEDGE Left: 2x4 SP No.3

- 5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 23 lb uplift at joint 1 and 7 lb uplift at joint 4.

LOAD CASE(S) Standard

BRACING

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

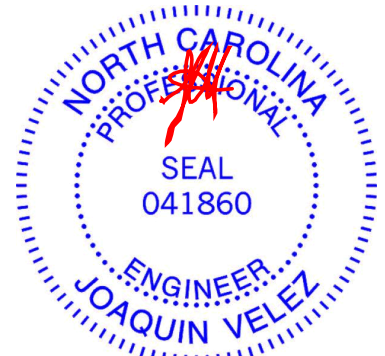
REACTIONS (size) 1=0-3-8, 4=0-3-8
Max Horiz 1=78 (LC 11)
Max Uplift 1=-23 (LC 12), 4=-7 (LC 13)
Max Grav 1=528 (LC 1), 4=528 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-625/98, 2-3=-574/76, 3-4=-512/86
BOT CHORD 1-5=-170/463, 4-5=-25/41
WEBS 2-5=0/205, 3-5=-22/466

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=115mph (3-second gust)
Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 8-2-0, Exterior (2) 8-2-0 to 11-2-0, Interior (1) 11-2-0 to 13-2-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.



July 16, 2025

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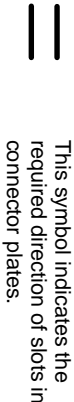
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818 Soundside Road
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Symbols

PLATE LOCATION AND ORIENTATION



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

PLATE SIZE

4 X 4

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

LATERAL BRACING LOCATION



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

BEARING

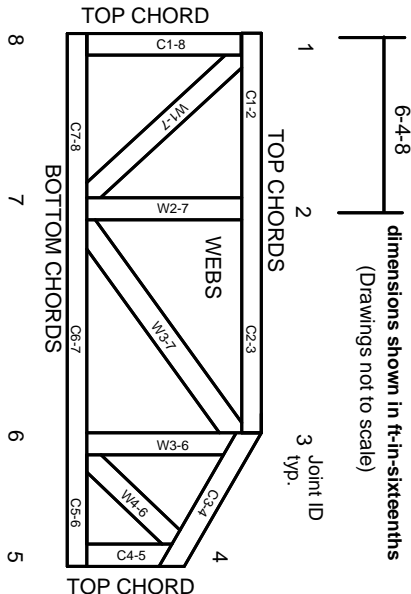


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



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

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

Product Code Approvals

ICC-ES Reports:

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

Design General Notes

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

Lumber design values are in accordance with ANSI/TP1 1 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 I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TP1 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TP1 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

MITek

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MITek Engineering Reference Sheet: MII-7473 rev. 1/2/2023