

Re: 241114  
Lot 115 MN

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Wheeler - Waverly.

Pages or sheets covered by this seal: I72277963 thru I72277963

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

Missouri COA: Engineering 001193



March 26, 2025

Galinski, John ,Engineer

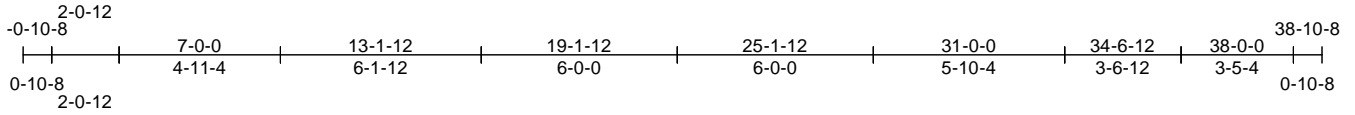
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 241114	Truss A1	Truss Type Hip Girder	Qty 1	Ply 3	Lot 115 MN Job Reference (optional)	I72277963
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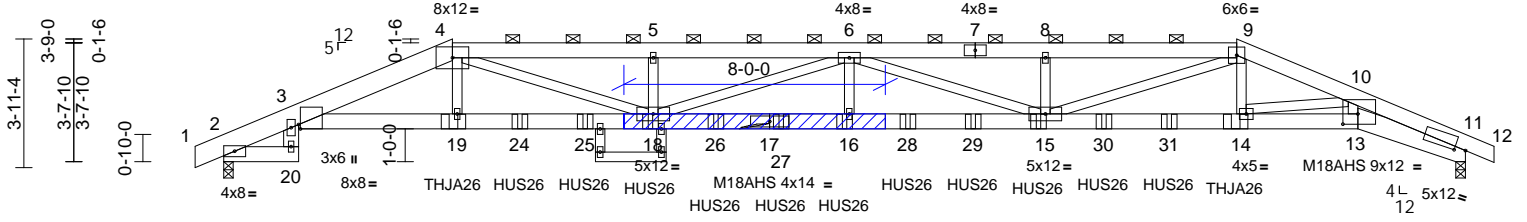
Wheeler Lumber, Waverly, KS - 66871,

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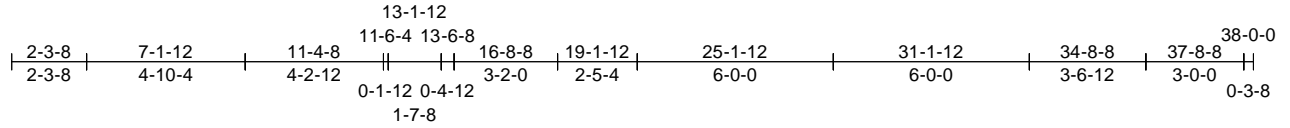
Page: 1



REPAIR: 11" SECTION OF THE BOTTOM CHORD DAMAGED AT JOINT 17 ON THE MIDDLE PLY ONLY



APPLY 2 X 6 X 8' SP 2400F 2.0E SCAB TO ONE FACE OF TRUSS CENTERED ON DAMAGE.  
ATTACH WITH MiTek Pro Series WS/WSWH6 WOOD SCREWS OR EQUIVALENT FASTENER PER THE FOLLOWING SCHEDULE: 2 x 6'S AND LARGER - 3 ROWS: SPACED @ 4" O.C.  
USE 4" MEMBER END DISTANCE AND 1-1/4" EDGE DISTANCE. DO NOT OVERDRIVE THE SCREWS OR DRILL THROUGH METAL CONNECTOR PLATES. ALL SCREWS MUST BE INSTALLED FROM SCAB FACE OF TRUSS.



Scale = 1:70.5

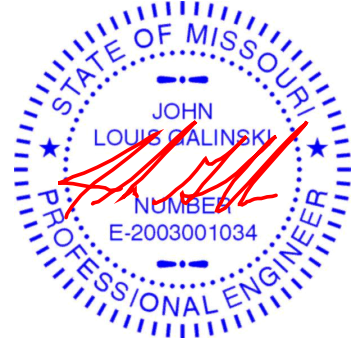
Plate Offsets (X, Y): [3:0-0-11,Edge], [11:0-4-0,0-1-0], [13:0-5-8,0-3-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.64	Vert(LL)	-0.53	16-18	>855	360	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.50	Vert(CT)	-0.92	16-18	>493	240	M18AHS	186/179
BCLL	0.0*	Rep Stress Incr	NO	WB	0.48	Horz(CT)	0.39	11	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-S		Wind(LL)	0.46	16-18	>979	240	Weight: 715 lb	FT = 10%

- LUMBER**
- TOP CHORD 2x6 SP 2400F 2.0E \*Except\* 1-4:2x8 SP 2400F 2.0E
- BOT CHORD 2x6 SP 2400F 2.0E \*Except\* 2-20:2x6 SPF No.2, 13-11:2x8 SP 2400F 2.0E, 21-22:2x4 SPF No.2
- WEBS 2x4 SPF No.2 \*Except\* 20-3:2x6 SPF No.2
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 4-9.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
- REACTIONS** (size) 2=0-3-8, 11=0-3-8  
Max Horiz 2=59 (LC 8)  
Max Uplift 2=-963 (LC 4), 11=-995 (LC 5)  
Max Grav 2=4098 (LC 1), 11=4099 (LC 1)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/6, 2-3=-2208/532, 3-4=-12697/3110, 4-5=-17358/4402, 5-6=-17358/4402, 6-8=-17151/4391, 8-9=-17152/4392, 9-10=-12688/3210, 10-11=-15824/3848, 11-12=0/3
- BOT CHORD 2-20=0/0, 3-19=-2914/12122, 18-19=-2933/12221, 16-18=-4836/19272, 15-16=-4836/19272, 14-15=-2912/11787, 13-14=-3147/12996, 11-13=-3444/14262
- WEBS 3-20=-65/341, 4-19=-282/1404, 9-14=-456/1932, 10-14=-1117/275, 10-13=-826/3643, 4-18=-1479/5580, 5-18=-294/232, 6-16=-198/993, 6-18=-2115/561, 8-15=-436/186, 9-15=-1491/5843, 6-15=-2337/569

- 3-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x8 - 2 rows staggered at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x8 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.
- 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.
- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed; end vertical left and right exposed; 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 2x4 (||) 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.
- All bearings are assumed to be SPF No.2.
- Bearing at joint(s) 11 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 963 lb uplift at joint 2 and 995 lb uplift at joint 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.
  - Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
  - Use Simpson Strong-Tie THJA26 (THJA26 on 2 ply, Right Hand Hip) or equivalent at 7-0-6 from the left end to connect truss(es) to back face of bottom chord.
  - Use Simpson Strong-Tie HUS26 (14-16d Girder, 4-16d Truss) or equivalent spaced at 2-0-0 oc max. starting at 9-0-12 from the left end to 28-11-4 to connect truss(es) to back face of bottom chord.
  - Use Simpson Strong-Tie THJA26 (THJA26 on 2 ply, Left Hand Hip) or equivalent at 30-11-10 from the left end to connect truss(es) to back face of bottom chord.
  - Fill all nail holes where hanger is in contact with lumber.
  - Filler applied to ply: 1(Front)
- LOAD CASE(S)** Standard
- Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)



March 26, 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 the 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.sbcsccomponents.com)



Job 241114	Truss A1	Truss Type Hip Girder	Qty 1	Ply <b>3</b>	Lot 115 MN Job Reference (optional)	I72277963
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Page: 2

Vert: 1-4=-70, 4-9=-70, 9-12=-70, 2-20=-20,  
3-13=-20, 11-13=-20

Concentrated Loads (lb)

Vert: 19=-814 (B), 14=-785 (B), 18=-278 (B),  
16=-278 (B), 15=-278 (B), 24=-278 (B), 25=-278 (B),  
26=-278 (B), 27=-278 (B), 28=-278 (B), 29=-278 (B),  
30=-278 (B), 31=-278 (B)

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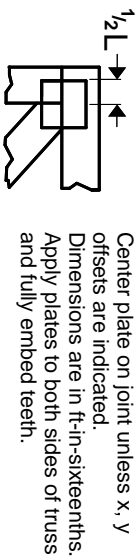
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcsccomponents.com](http://www.sbcsccomponents.com))

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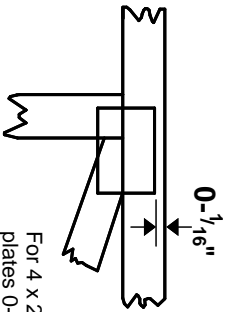
16023 Swingley Ridge Rd.  
Chesterfield, MO 63017  
314.434.1200 / MiTek-US.com

# Symbols

## PLATE LOCATION AND ORIENTATION



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



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



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

\* Plate location details available in MITtek 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

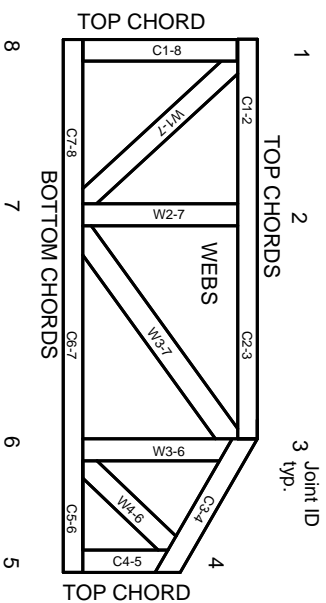


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

ANSI/TFP1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-22: Design Standard for Bracing.  
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System



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

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

## Product Code Approvals

ICC-ES Reports:

ESR-1-1988, ESR-2-362, ESR-2-685, ESR-3-282  
ESR-4-722, ESL-1-388

## 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/TFP 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/TFP 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TFP 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/TFP 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

# MITek®

MITtek Engineering Reference Sheet: Mill-7473 rev. 1/2/2023