



MiTek USA, Inc.
16023 Swingley Ridge Rd
Chesterfield, MO 63017
314-434-1200

Re: 220101
Lot 143 HT

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: I53152014 thru I53152014

My license renewal date for the state of Missouri is December 31, 2022.

Missouri COA: Engineering 001193



July 19, 2022

Fox, Steve, 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	Truss	Truss Type	Qty	Ply	Lot 143 HT	Units: 1.0	I53152014
220101	R1	Half Hip Girder	1	2		Eng: TH	

Wheeler Lumber, Waverly, KS - 66871,
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7-1-6
7-1-6

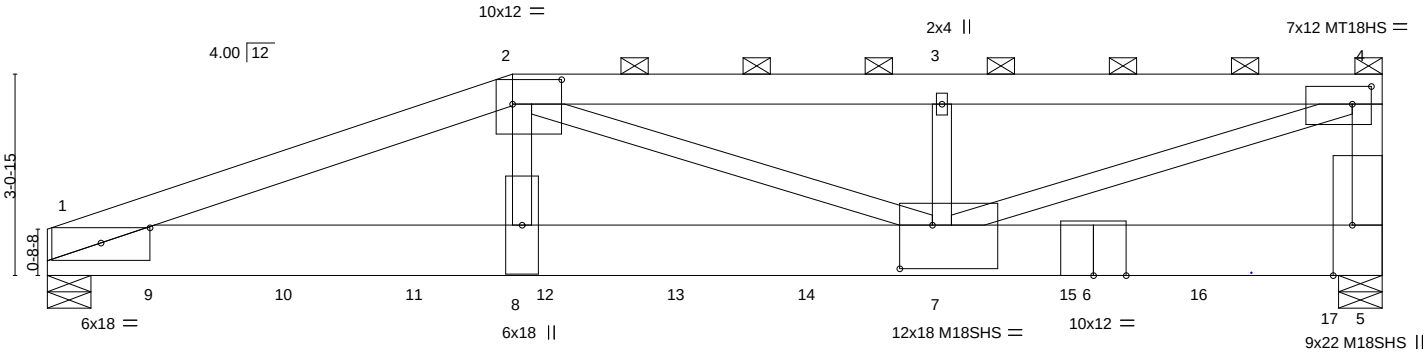
13-8-3
6-6-13

20-5-0
6-8-13

REPAIR: 1/4" HOLE IN THE BOTTOM CHORD 24" FROM THE RIGHT END AND 1/2" UP FROM BOTTOM EDGE OF CHORD.

NO REPAIR REQUIRED.

Scale = 1:35.2



LUMBER MUST BE DRILLED CLEANLY AND ACCURATELY
AND THE REMAINING WOOD MUST BE UNDAMAGED

7-1-6			13-8-3			20-5-0			
7-1-6			6-6-13			6-8-13			
Plate Offsets (X,Y)-- [1:0-9-0,0-2-13], [2:0-9-0,0-4-8], [4:0-3-8,0-3-4], [5:0-9-4,Edge], [7:0-6-0,0-8-0]									
LOADING (psf)		SPACING- 2-0-0		CSI.		DEFL. in (loc) l/defl L/d		PLATES GRIP	
TCLL	25.0	Plate Grip DOL	1.15	TC	0.80	Vert(LL)	-0.30 7-8 >795 360	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.92	Vert(CT)	-0.53 7-8 >450 240	M18SHS	197/144
BCLL	0.0 *	Rep Stress Incr	NO	WB	0.92	Horz(CT)	0.06 5 n/a n/a	MT18HS	197/144
BCDL	10.0	Code IRC2018/TPI2014		Matrix-S		Wind(LL)	0.18 7-8 >999 240	Weight: 280 lb	FT = 10%

LUMBER-

TOP CHORD 2x6 SPF 1650F 1.4E

BOT CHORD 2x10 SP DSS

WEBS 2x4 SPF No.2 *Except*

4-5: 2x6 SPF No.2, 2-7,4-7: 2x4 SPF 2100F 1.8E

BRACING-

TOP CHORD Structural wood sheathing directly applied or 3-6-12 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-1 max.): 2-4.

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

REACTIONS. (size) 1=0-8-0, 5=0-8-0

Max Horz 1=83(LC 5)

Max Uplift 1=-890(LC 4), 5=-95(LC 4)

Max Grav 1=8861(LC 1), 5=10216(LC 1)

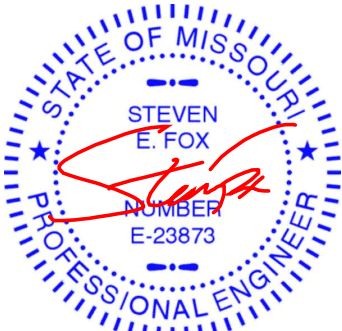
FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 1-2=-19330/1745, 2-3=-17184/1025, 3-4=-17184/1025, 4-5=-6569/432

BOT CHORD 1-8=-1626/18122, 7-8=-1670/18506, 5-7=-20/840

WEBS 2-8=-737/6490, 2-7=-1412/758, 3-7=-362/265, 4-7=-1069/17478

- NOTES-**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x6 - 2 rows staggered at 0-4-0 oc.
Bottom chords connected as follows: 2x10 - 2 rows staggered at 0-5-0 oc.
Webs connected as follows: 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.
 - Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope); 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.
 - 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 890 lb uplift at joint 1 and 95 lb uplift at joint 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.
 - Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.



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Continued on page 2

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NOTES-

11) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 754 lb down and 153 lb up at 1-7-12, 347 lb down and 24 lb up at 1-7-12, 1123 lb down and 175 lb up at 3-7-12, 754 lb down and 182 lb up at 3-7-12, 967 lb down and 31 lb up at 5-7-12, 754 lb down and 94 lb up at 5-7-12, 967 lb down and 70 lb up at 7-7-12, 754 lb down and 109 lb up at 7-7-12, 1051 lb down and 190 lb up at 9-7-12, 754 lb down and 109 lb up at 9-7-12, 1057 lb down and 163 lb up at 11-7-12, 754 lb down and 109 lb up at 11-7-12, 1057 lb down and 23 lb up at 13-7-12, 754 lb down and 109 lb up at 13-7-12, 1057 lb down at 15-7-12, 754 lb down and 109 lb up at 15-7-12, 1053 lb down at 17-7-12, 754 lb down and 109 lb up at 17-7-12, and 1062 lb down at 19-7-12, and 759 lb down and 104 lb up at 19-7-12 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=1.15

Uniform Loads (plf)

Vert: 1-2=-70, 2-4=-70, 1-5=-20

Concentrated Loads (lb)

Vert: 7=-1812(F=-754, B=-1057) 9=-1101(F=-754, B=-347) 10=-1878(F=-754, B=-1123) 11=-1721(F=-754, B=-967) 12=-1721(F=-754, B=-967) 13=-1805(F=-754, B=-1051) 14=-1812(F=-754, B=-1057) 15=-1812(F=-754, B=-1057) 16=-1807(F=-754, B=-1053) 17=-1821(F=-759, B=-1062)

 **WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

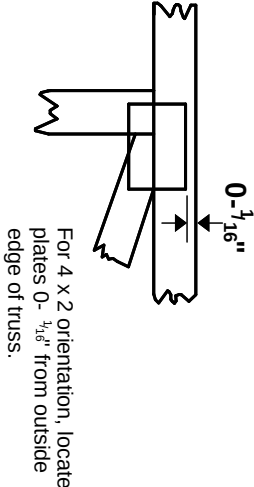
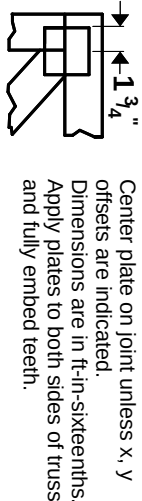
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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Symbols

PLATE LOCATION AND ORIENTATION



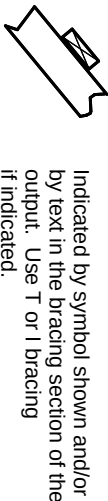
For 4 x 2 orientation, locate plates 0- 3/16" from outside edge of truss.

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

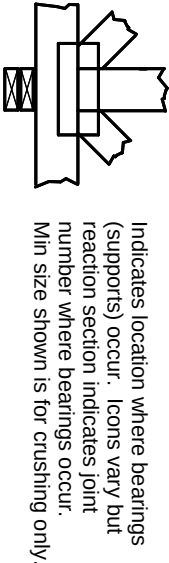
PLATE SIZE

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

LATERAL BRACING LOCATION

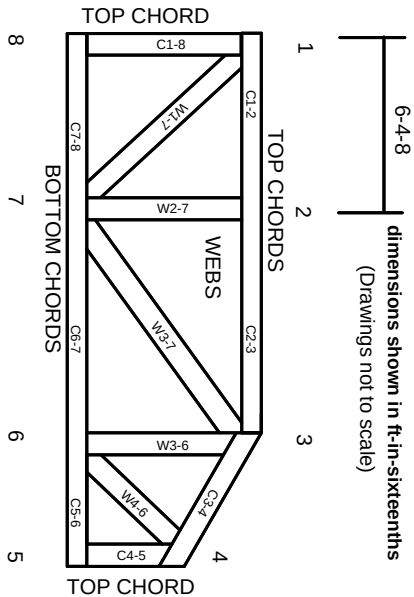


BEARING



Industry Standards:
ANSI/TP1.1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & 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-1311, ESR-1352, ESR1988
ER-3907, ESR-2362, ESR-1397, ESR-3282

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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Mitek Engineering Reference Sheet: MII-7473 rev. 5/19/2020

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 T or 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.