

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

Re: 210346 Lot 18 W1

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: I46939772 thru I46939773

My license renewal date for the state of Missouri is December 31, 2021.

Missouri COA: Engineering 001193



July 12,2021

Sevier, Scott

,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 Lot 18 W1 146939772 Units: 1.0 Eng: TH 210346 Α7 HIP Job Reference (optional)

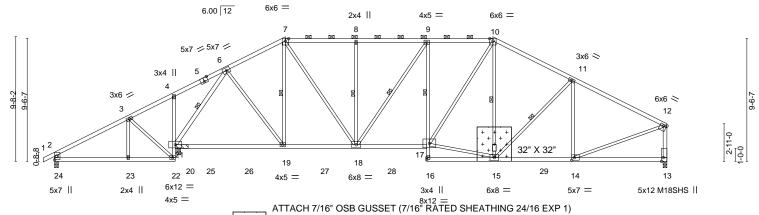
Wheeler Lumber, Waverly, KS - 66871,

8.430 s Jun 2 2021 MiTek Industries, Inc. Fri Jul 9 11:59:10 2021 Page 1

ID:ehbCcHA60Xzxp2EXV2Vt?1yyWkt-I6HpvfbtlHfHuXMfkd9va?iUDQ_6Y4uD75QahKyzosV 28-11-0 34-0-12 5-8-10 3-7-15 3-11-11 4-7-1 5-5-14 5-5-14 5-1-12 6-2-12 7-3-9

Scale = 1:89.5

REPAIR: REPLACED 6" SECTION OF VERTICAL 10-15.



INSTALL 2 X 4 SPF/DF/SP NO.2 CUT TO FIT TIGHT.

TO EACH FACE OF TRUSS WITH (0.131" X 2.5" MIN.) NAILS PER THE FOLLOWING NAIL SCHEDULE: 2 X 3'S - 2 ROWS, 2 X 4'S - 3 ROWS, 2 X 6'S AND LARGER - 4 ROWS: SPACED @ 4" O.C. NAILS TO BE DRIVEN FROM BOTH FACES. STAGGER SPACING FROM FRONT TO BACK FACE FOR A NET 2" O.C. SPACING IN EACH COVERED TRUSS MEMBER. USE 2" MEMBER END DISTANCE.

5-8- 5-8-		17-11-4 8-5-4	23-5-2 5-5-14	28-11-0 5-5-14	34-0-12 5-1-12	40-3-8 6-2-12	47-7-0 7-3-9	\dashv
Plate Offsets (X,Y) [5:0-3-8,Edge], [12:Edge,0-1-12], [13:0-3-8,Edge], [14:0-2-8,0-2-8]								
LOADING (psf) TCLL 25.0 TCDL 20.0 BCLL 0.0 * BCDL 10.0	SPACING- Plate Grip DOL Lumber DOL Rep Stress Incr Code IRC2018/TF	2-0-0 1.15 1.15 YES Pl2014	CSI. TC 0.54 BC 0.86 WB 0.75 Matrix-S	DEFL. Vert(LL) Vert(CT) Horz(CT) Wind(LL)	in (loc) -0.22 19-21 -0.39 19-21 0.09 13 0.08 17-18	l/defl L/d >999 360 >999 240 n/a n/a >999 240	PLATES MT20 M18SHS Weight: 215 lb	GRIP 197/144 197/144 FT = 10%

LUMBER-BRACING-

2x4 SPF No.2 *Except* TOP CHORD 10-12: 2x4 SPF 2100F 1.8E **BOT CHORD**

2x4 SPF No.2 *Except* 4-22,9-16: 2x3 SPF No.2

2x3 SPF No.2 *Except* 6-21,2-24,12-13: 2x4 SPF No.2 TOP CHORD

Structural wood sheathing directly applied or 3-10-6 oc purlins, except end verticals, and 2-0-0 oc purlins (3-3-11 max.): 7-10. **BOT CHORD** Rigid ceiling directly applied or 10-0-0 oc bracing. Except:

1 Row at midpt 9-17

WEBS 6-21, 7-19, 8-18, 9-18, 10-15, 11-15 1 Row at midpt

REACTIONS. (size) 24=0-3-8, 21=(0-3-8 + bearing block) (reg. 0-4-9), 13=0-3-8

Max Horz 24=205(LC 7)

Max Uplift 24=-80(LC 8), 21=-201(LC 8), 13=-175(LC 9) Max Grav 24=512(LC 21), 21=2912(LC 2), 13=2184(LC 2)

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

TOP CHORD 2-3=-407/109, 3-4=-61/348, 4-6=-36/366, 6-7=-2020/247, 7-8=-2375/319,

8-9=-2372/317, 9-10=-2596/337, 10-11=-2420/289, 11-12=-2478/208, 2-24=-470/118,

12-13=-2068/212

BOT CHORD 23-24=-143/260, 22-23=-143/260, 21-22=-82/416, 4-21=-309/116, 19-21=-148/1177,

18-19=-158/1749, 17-18=-210/2601, 9-17=-339/180, 14-15=-141/2118

WEBS 3-22=-586/144, 6-21=-2491/185, 6-19=-14/982, 7-19=-537/106, 7-18=-166/1176, 8-18=-561/176, 9-18=-438/53, 15-17=-109/2075, 10-17=-180/1053, 10-15=-340/149,

11-14=-583/130, 12-14=-113/2170

NOTES-

WEBS

- 1) 2x4 SPF No.2 bearing block 12" long at jt. 21 attached to front face with 2 rows of 10d (0.131"x3") nails spaced 3" o.c. 8 Total fasteners. Bearing is assumed to be SPF No.2.
- 2) Unbalanced roof live loads have been considered for this design.
- 3) 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) gable end zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- 4) Provide adequate drainage to prevent water ponding.
- 5) All plates are MT20 plates unless otherwise indicated
- 6) 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, with BCDL = 10.0psf.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 80 lb uplift at joint 24, 201 lb uplift at joint 21 and 175 lb uplift at joint 13.
- 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) 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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Job Truss Truss Type Qty Lot 18 W1 Units: 1.0 146939773 Eng: TH 210346 В1 Hip

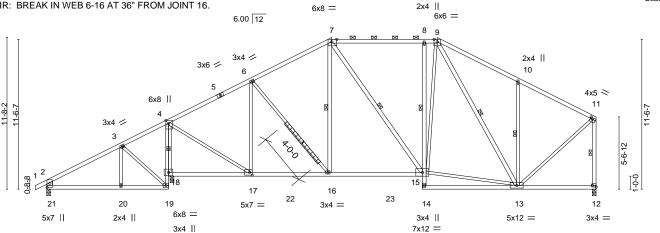
Wheeler Lumber, Waverly, KS - 66871,

Job Reference (optional) 8.430 s Jun 2 2021 MiTek Industries, Inc. Fri Jul 9 11:59:12 2021 Page 1

Scale = 1:88.7

ID:ehbCcHA60Xzxp2EXV2Vt?1yyWkt-hUPaKKd7puv?7qW2s2BNfQnlMEhS0xbWaPvhmDyzosT 28-11-<u>0</u> 30-0-12 36-3-6 42-3-8 5-8-10 6-4-1 6-2-11 6-11-12 6-2-10 6-0-2

REPAIR: BREAK IN WEB 6-16 AT 36" FROM JOINT 16.



APPLY 2 X 4 X 4' SPF/DF/SP NO.2 SCAB TO ONE FACE OF TRUSS CENTERED ON DAMAGE/SPLICE OR AS SHOWN. ATTACH WITH (0.131" X 3") NAILS PER THE FOLLOWING NAIL SCHEDULE: 2 x 3'S - 1 ROW, 2 x 4'S - 2 ROWS 2 x 6'S AND LARGER - 3 ROWS: SPACED @ 2" O.C. USE 2" MEMBER END DISTANCE.

6-0-0 oc bracing: 17-18.

1 Row at midpt

1 Row at midpt

Structural wood sheathing directly applied or 3-9-5 oc purlins,

7-16, 7-15, 9-13, 10-13, 11-12

except end verticals, and 2-0-0 oc purlins (2-2-0 max.): 7-9.

Rigid ceiling directly applied or 10-0-0 oc bracing, Except:

28-11-0 9-4-8 9-6-0 3-7-15 0-1-8 21-11-4 36-0-14 42-3-8 5-8-10 15-8-9 5-8-10 6-2-9 6-2-11 6-11-12 7-1-14 Plate Offsets (X,Y)--[4:0-2-12,Edge], [7:0-4-10,Edge], [11:0-2-0,0-1-8], [12:Edge,0-1-8], [17:0-2-8,0-2-8], [21:0-3-13,0-2-8]

LOADIN	G (nef)	SPACING- 2-0-0	CSI.	DEFL. in (loc) I/defl L/d	PLATES GRIP
	(1 - /			()	
TCLL	25.0	Plate Grip DOL 1.15	TC 0.88	Vert(LL) -0.16 15-16 >999 360	MT20 197/144
TCDL	20.0	Lumber DOL 1.15	BC 0.73	Vert(CT) -0.31 15-16 >999 240	
BCLL	0.0 *	Rep Stress Incr YES	WB 0.92	Horz(CT) 0.05 12 n/a n/a	
BCDL	10.0	Code IRC2018/TPI2014	Matrix-S	Wind(LL) 0.04 15-16 >999 240	Weight: 220 lb FT = 10%

BOT CHORD

WEBS

LUMBER-**BRACING-**TOP CHORD TOP CHORD 2x4 SPF No.2

4x5 =

2x4 SPF No.2 *Except* **BOT CHORD** 4-19: 2x3 SPF No.2

WEBS 2x3 SPF No.2 *Except*

7-16,7-15,9-13,11-12: 2x4 SPF No.2, 2-21: 2x6 SPF No.2

REACTIONS. (size) 21=0-3-8, 18=0-3-8 (req. 0-3-15), 12=0-3-8

Max Horz 21=306(LC 5)

Max Uplift 21=-59(LC 8), 18=-261(LC 8), 12=-148(LC 9)

Max Grav 21=567(LC 16), 18=2497(LC 2), 12=1874(LC 2)

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

2-3=-554/103, 4-6=-1650/180, 6-7=-1748/218, 7-8=-1493/212, 8-9=-1478/211,

9-10=-1396/262, 10-11=-1379/121, 2-21=-511/100, 11-12=-1789/171

BOT CHORD 20-21=-148/342, 19-20=-148/342, 18-19=-77/391, 4-18=-2006/220, 16-17=-142/1378, 15-16=-131/1464, 8-15=-629/233

> 3-19=-530/136, 4-17=-61/1712, 6-17=-713/107, 7-16=-44/286, 13-15=-84/1320, 9-15=-187/976, 9-13=-564/101, 10-13=-600/269, 11-13=-93/1529

NOTES-

WEBS

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate
- 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 6) WARNING: Required bearing size at joint(s) 18 greater than input bearing size.
- 7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 59 lb uplift at joint 21, 261 lb uplift at joint 18 and 148 lb uplift at joint 12.
- 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.
- 9) 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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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 chorembers 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/TP11 Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



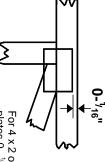
16023 Swingley Ridge Rd Chesterfield, MO 63017

Symbols

PLATE LOCATION AND ORIENTATION



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



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

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

* Plate location details available in MiTek 20/20 software or upon request.

PLATE SIZE



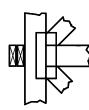
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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



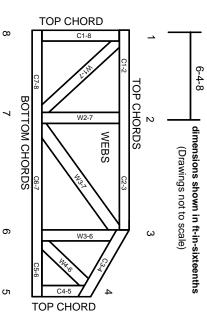
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only

Industry Standards:

National Design Specification for Metal Plate Connected Wood Truss Construction. Design Standard for Bracing.
Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

ANSI/TPI1: DSB-89:

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/TPI 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

- . Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI
- 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.
- Never exceed the design loading shown and never stack materials on inadequately braced trusses.

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- Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
- Cut members to bear tightly against each other.

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- Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
- Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.

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- Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber
- Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
- Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
- Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
- Top chords must be sheathed or purlins provided at spacing indicated on design.
- 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.
- Do not cut or alter truss member or plate without prior approval of an engineer.
- 17. Install and load vertically unless indicated otherwise.
- Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
- Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
- Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.
- 21.The design does not take into account any dynamic or other loads other than those expressly stated.