MiTek®

MiTek, Inc.
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
314.434.1200

Re: 240113
Lot 179 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: I67297520 thru I67297521

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

Missouri COA: Engineering 001193

August 4,2024

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.

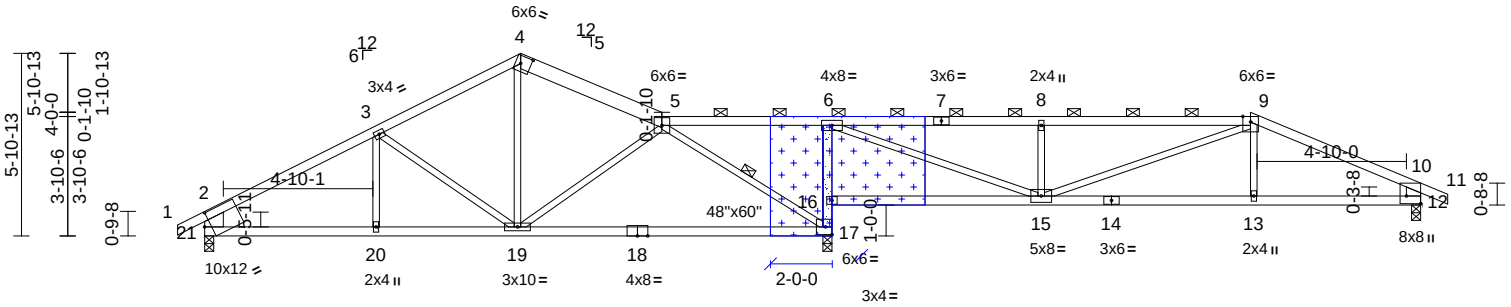
Job	Truss	Truss Type	Qty	Ply	Lot 179 HT	
240113	C4	Roof Special	1	1	Job Reference (optional)	I67297520

Wheeler Lumber, Waverly, KS - 66871,

Run: 8.73 S Jul 24 2024 Print: 8.730 S Jul 24 2024 MiTek Industries, Inc. Fri Aug 02 12:01:31 ID:Lek3CAANj_gYbKvtCQHtmQzKvNM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

-0-10-8	5-6-9	10-2-11	14-9-8	20-2-4	27-0-12	33-10-0	39-4-0	40-2-8
0-10-8	5-6-9	4-8-2	4-6-13	5-4-12	6-10-8	6-9-4	5-6-0	0-10-8

REPAIR:
REPLACE MEMBER 6-17



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

ATTACH 7/16" OSB GUSSET (7/16" RATED SHEATHING 24/16 EXP 1) 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 - 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.

Scale = 1:74.5

5-6-9	10-1-7	20-3-8	27-0-12	33-11-4	39-4-0
5-6-9	4-6-14	10-2-1	6-9-4	6-10-8	5-4-12

Plate Offsets (X, Y): [4:0-3-15,0-3-0], [12:Edge,0-5-8], [21:0-2-7,0-4-14]

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	0.78	Vert(LL)	-0.23	17-19	>999	360	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.49	17-19	>492	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.57	Horz(CT)	0.02	17	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-S		Wind(LL)	0.10	13-15	>999	240	Weight: 139 lb	FT = 10%

LUMBER
TOP CHORD 2x4 SPF No.2 *Except* 4-5:2x6 SPF No.2
BOT CHORD 2x4 SPF 2100F 1.8E *Except* 17-6:2x3 SPF No.2, 14-12,14-16:2x4 SPF No.2
WEBS 2x3 SPF No.2 *Except* 21-2:2x8 SP 2400F 2.0E, 12-10:2x6 SP 2400F 2.0E

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-6-12 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-5 max.): 5-9.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 15-16.
WEBS 1 Row at midpt 5-17

REACTIONS (size) 12=0-3-8, 17=0-3-8, 21=0-3-8
Max Horiz 21=101 (LC 8)
Max Uplift 12=-176 (LC 9), 17=-286 (LC 9), 21=-136 (LC 8)
Max Grav 12=890 (LC 22), 17=1830 (LC 1), 21=936 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/37, 2-3=-1195/165, 3-4=-932/127, 4-5=-896/141, 5-6=0/154, 6-8=-1393/304, 8-9=-1396/305, 9-10=-1349/252, 10-11=0/30, 2-21=-820/170, 10-12=-802/201
BOT CHORD 20-21=-170/967, 19-20=-170/967, 17-19=-70/777, 16-17=-1128/258, 6-16=-1055/291, 15-16=-187/67, 13-15=-170/1159, 12-13=-167/1162
WEBS 3-20=-28/63, 3-19=-279/169, 4-19=-14/413, 5-19=-84/141, 5-17=-1117/151, 6-15=-296/1662, 8-15=-526/215, 9-15=-72/251, 9-13=0/211

NOTES
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) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; 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.
6) Bearings are assumed to be: Joint 21 SPF 2100F 1.8E , Joint 17 SPF 2100F 1.8E , Joint 12 SPF No.2 .
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 136 lb uplift at joint 21, 176 lb uplift at joint 12 and 286 lb uplift at joint 17.
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.

LOAD CASE(S) Standard

STATE OF MISSOURI
SCOTT M. SEVIER
NUMBER PE-2001018807
PROFESSIONAL ENGINEER

August 4,2024

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

Job	Truss	Truss Type	Qty	Ply	Lot 179 HT	I67297521
240113	C6	Roof Special	1	1	Job Reference (optional)	

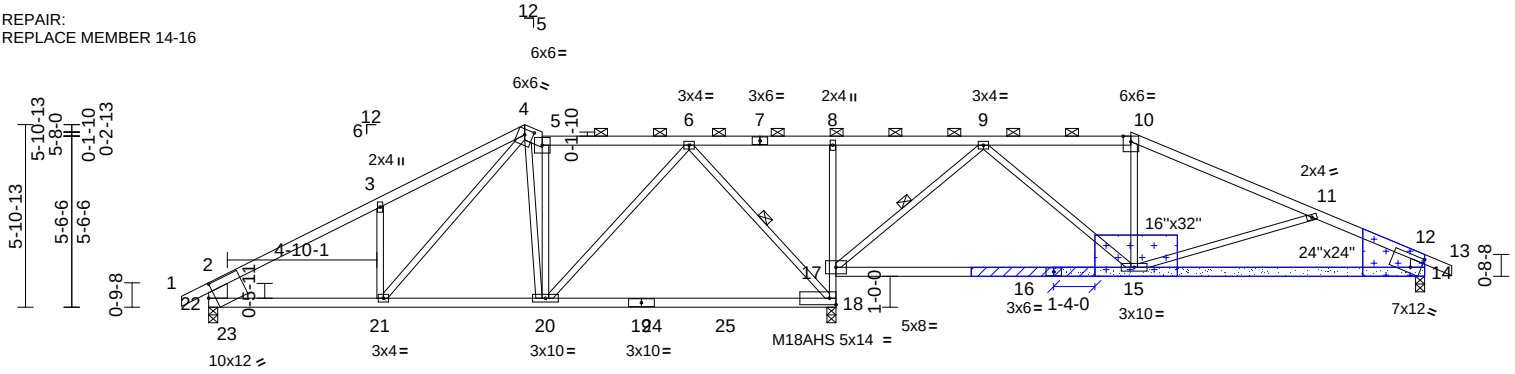
Wheeler Lumber, Waverly, KS - 66871, Run: 8.73 S Jul 24 2024 Print: 8.730 S Jul 24 2024 MiTek Industries, Inc. Fri Aug 02 12:01:32 Page: 1

ID:Lek3CAANj_gYbKvtCQHtmQzKvNM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

-0-10-8 | 5-6-9 | 10-2-11 | 10-9-8 | 15-6-8 | 20-2-4 | 25-0-12 | 29-10-0 | 35-8-3 | 39-4-0 | 40-2-8

0-10-8 | 5-6-9 | 4-8-2 | 0-6-13 | 4-9-0 | 4-7-12 | 4-10-8 | 4-9-4 | 5-10-3 | 3-7-13 | 0-10-8

REPAIR:
REPLACE MEMBER 14-16



ATTACH 7/16" OSB GUSSET (7/16" RATED SHEATHING 24/16 EXP 1) 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 - 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.

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

APPLY 2 X 4 X 4' SPF/DF/SP NO.2 SCAB(S) TO EACH FACE OF TRUSS AS SHOWN. ATTACH WITH (0.131" X 3") NAILS PER THE FOLLOWING NAIL SCHEDULE: 2 x 4'S - 2 ROWS: SPACED @ 4" O.C. STAGGER NAIL SPACING FROM FRONT FACE AND BACK FACE FOR A NET 2" O.C SPACING IN THE TRUSS. USE 2" MEMBER END DISTANCE.

Scale = 1:74.5

5-6-9 | 10-10-12 | 20-3-8 | 29-11-4 | 39-4-0

5-6-9 | 5-4-3 | 9-4-12 | 9-7-12 | 9-4-12

Plate Offsets (X, Y): [4:0-3-3,0-2-2], [14:0-3-15,0-4-14], [22:0-2-7,0-4-14]

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	0.96	Vert(LL)	-0.25	18-20	>960	360	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.84	Vert(CT)	-0.44	18-20	>539	240	M18AHS	142/136
BCLL	0.0*	Rep Stress Incr	YES	WB	0.45	Horz(CT)	-0.03	14	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-S		Wind(LL)	0.06	15-17	>999	240	Weight: 147 lb	FT = 10%

LUMBER

TOP CHORD 2x4 SPF No.2 *Except* 4-5:2x6 SPF No.2

BOT CHORD 2x4 SPF 2100F 1.8E *Except* 18-8:2x3 SPF No.2, 16-14,16-17:2x4 SPF No.2

WEBS 2x3 SPF No.2 *Except* 22-2:2x8 SP 2400F 2.0E, 14-12:2x6 SP 2400F 2.0E

BRACING

TOP CHORD Structural wood sheathing directly applied, except end verticals, and 2-0-0 oc purlins (5-11-2 max.): 5-10.

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

WEBS 1 Row at midpt 9-17, 6-18

REACTIONS (size) 14=0-3-8, 18=0-3-8, 22=0-3-8

Max Horiz 22=101 (LC 8)

Max Uplift 14=-186 (LC 9), 18=-268 (LC 9), 22=-143 (LC 8)

Max Grav 14=887 (LC 24), 18=1934 (LC 2), 22=937 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/37, 2-3=-1204/174, 3-4=-1141/289, 4-5=-884/179, 5-6=-828/151, 6-8=0/206, 8-9=0/219, 9-10=-938/246, 10-11=-1061/224, 11-12=-1309/344, 12-13=0/30, 2-22=-809/175, 12-14=-782/228

BOT CHORD 21-22=-178/998, 20-21=-54/789, 18-20=-53/452, 17-18=-1083/225, 8-17=-346/138, 15-17=-91/548, 14-15=-263/1124

WEBS 3-21=-282/202, 4-21=-194/391, 4-20=-93/459, 6-20=-15/570, 9-17=-976/205, 10-15=-29/156, 5-20=-438/146, 6-18=-950/141, 11-15=-266/190, 9-15=0/523

NOTES

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) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; 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) Bearings are assumed to be: Joint 22 SPF 2100F 1.8E , Joint 18 SPF 2100F 1.8E , Joint 14 SPF No.2 .
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 143 lb uplift at joint 22, 186 lb uplift at joint 14 and 268 lb uplift at joint 18.
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.

LOAD CASE(S) Standard

August 4,2024

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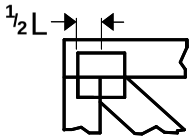
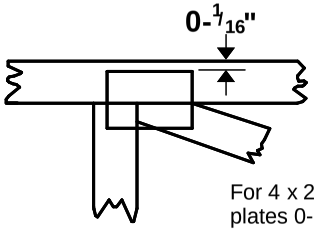
Chesterfield, MO 63017
314.434.1200 / MiTek-US.com

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.

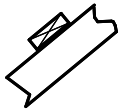
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

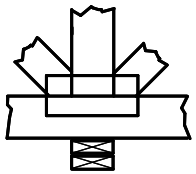
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

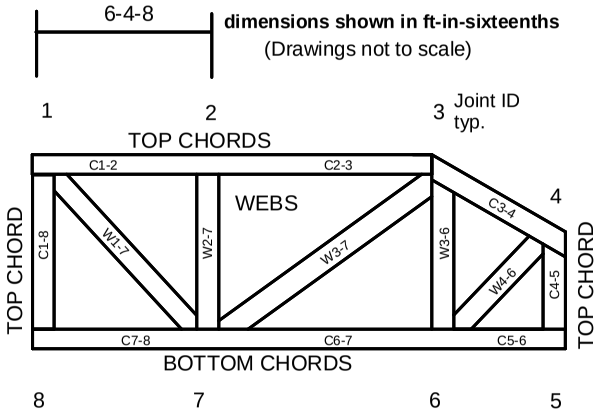


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: 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-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/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

MiTek®

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