



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

Re: 211674
1626 Plan

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

Pages or sheets covered by this seal: I49411385 thru I49411385

My license renewal date for the state of Missouri is December 31, 2023.

Missouri COA: Engineering 001193



December 28, 2021

Sevier, Scott ,Engineer

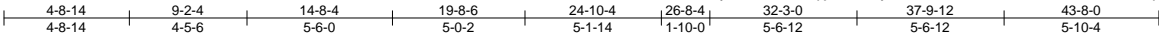
IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which 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	Ply	1626 Plan	Units: 1.0 Eng: JRC	I49411385
211674	A1B	PIGGYBACK BASE	2	2	Job Reference (optional)		

Heartland Truss, Inc., Plattsburg, MO.

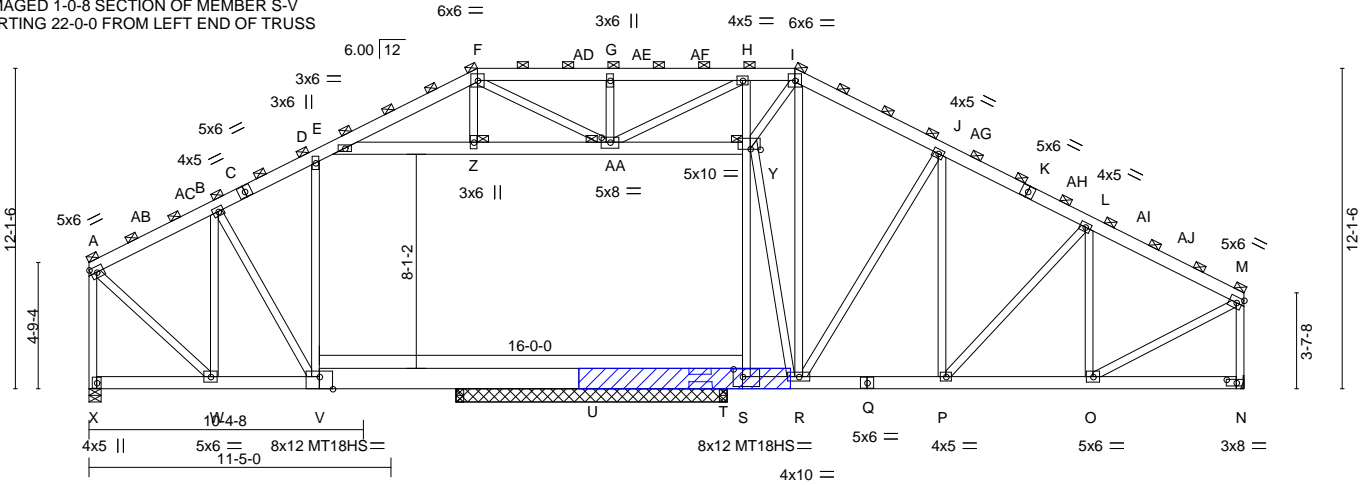
8.430 s Nov 30 2020 MiTek Industries, Inc. Thu Dec 23 16:16:05 2021 Page 1

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Scale = 1:87.1

REPAIR: DAMAGED 1-0-8 SECTION OF MEMBER S-V
STARTING 22-0-0 FROM LEFT END OF TRUSS



APPLY 2 X 10 X 8' SP 2400F 2.0E SCAB(S) TO ONE FACE OF TRUSS CENTERED ON NEW MEMBER. ATTACH WITH MiTek Pro Series WS/WSWH45 WOOD SCREWS OR EQUIVALENT FASTENER PER THE FOLLOWING SCHEDULE: 2 x 4'S - 2 ROWS, 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.

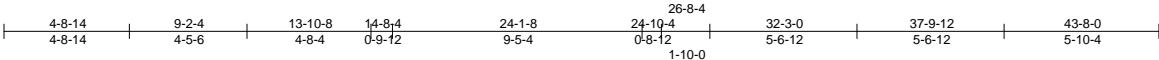


Plate Offsets (X,Y)-- [N:0-4-8,0-1-8], [S:0-4-4,0-3-8], [V:0-6-0,Edge], [Y:0-4-8,0-0-4], [AA:0-4-0,0-2-4]												
LOADING (psf)		SPACING- 4-0-0		CSI.		DEFL. in (loc) I/defl L/d				PLATES GRIP		
TCLL	25.0	Plate Grip DOL	1.15	TC	0.50	Vert(LL)	-0.12	U-V	>999	240	MT20	244/190
(Roof Snow=25.0)		Lumber DOL	1.15	BC	0.31	Vert(CT)	-0.18	U-V	>999	180	MT18HS	244/190
TCDL	10.0	Rep Stress Incr	NO	WB	0.68	Horz(CT)	0.03	N	n/a	n/a		
BCLL	0.0	Code IRC2018/TPI2014		Matrix-MS		Attic	-0.12	U-V	2058	360	Weight: 913 lb	FT = 20%
BCDL	10.0											

LUMBER-

TOP CHORD 2x6 SP No.1
BOT CHORD 2x6 SP 2400F 2.0E *Except*
S-V: 2x10 SP 2400F 2.0E, N-Q: 2x6 SP No.1
WEBS 2x4 SP No.3 *Except*
H-S,A-W,M-O: 2x4 SP No.2, E-Y: 2x6 SP No.1

BRACING-

TOP CHORD 2-0-0 oc purlins (6-0-0 max.), except end verticals
(Switched from sheeted: Spacing > 2-8-0).
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
JOINTS 1 Brace at Jt(s): I, Y, A, M, Z, F, AA

REACTIONS.

All bearings 10-3-0 except (jt=length) X=0-5-8, N=Mechanical, T=0-3-8.
(lb) - Max Horz X=504(LC 8)
Max Uplift All uplift 100 lb or less at joint(s) except X=-403(LC 12), N=-216(LC 12), T=-604(LC 8)
Max Grav All reactions 250 lb or less at joint(s) except X=4380(LC 33), N=4100(LC 33), U=2789(LC 18), U=1012(LC 1), T=1979(LC 20)

FORCES.

(lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD A-AB=-3187/362, AB-AC=-3023/402, B-AC=-2759/406, B-C=-3812/466, C-D=-3627/503, D-E=-3700/628, E-F=-3005/632, F-AD=-3329/767, G-AD=-3329/767, G-AE=-3329/767, AE-AF=-3329/767, H-AF=-3329/767, H-I=-1955/564, I-J=-3624/689, J-AG=-3798/620, K-AG=-4032/613, K-AH=-4084/585, L-AH=-4332/566, L-AI=-3570/470, AI-AJ=-3817/439, M-AJ=-3993/436, A-X=-4321/453, M-N=-3983/426
BOT CHORD W-X=-387/436, V-W=-295/2808, U-V=-229/3337, T-U=-226/3316, S-T=-222/3319, R-S=-225/3309, Q-R=-123/3606, P-Q=-123/3606, O-P=-106/3419
WEBS B-W=-2167/254, B-V=0/1148, D-V=-817/322, S-Y=-1731/553, H-Y=-1939/387, R-Y=-1893/458, I-R=-338/2364, E-Z=-1373/440, Z-AA=-1380/432, Y-AA=-1321/192, A-W=-324/3688, F-AA=-140/792, G-AA=-1246/298, H-AA=-351/1970, I-Y=-2022/222, J-R=-1261/438, J-P=-225/355, L-P=-91/588, L-O=-1669/254, M-O=-218/3856

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 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x10 - 2 rows staggered at 0-9-0 oc.
Webs connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered 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: D-7-16; Vult=115mph (3-second gust) Vasd=91mph; TCCL=6.0psf; BCDL=6.0psf; h=20ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-1-12 to 4-8-14, Interior(1) 4-8-14 to 8-6-2, Exterior(2R) 8-6-2 to 32-10-6, Interior(1) 32-10-6 to 39-1-14, Exterior(2E) 39-1-14 to 43-6-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.33 plate grip DOL=1.33
- TCLL: ASCE 7-16; Pf=25.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat C; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.

6) Provide adequate drainage to prevent water ponding.

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/TPI 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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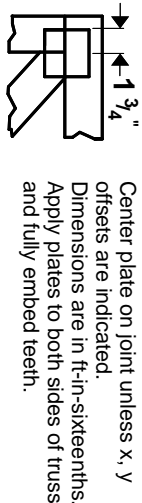
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NOTES-

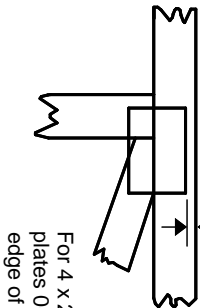
- 7) All plates are MT20 plates unless otherwise indicated.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) Ceiling dead load (5.0 psf) on member(s). D-E, E-Z, Z-AA, Y-AA
- 10) Bottom chord live load (40.0 psf) and additional bottom chord dead load (10.0 psf) applied only to room. U-V, T-U, S-T
- 11) Refer to girder(s) for truss to truss connections.
- 12) Bearing at joint(s) X considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 13) Provide metal plate or equivalent at bearing(s) N to support reaction shown.
- 14) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 403 lb uplift at joint X, 216 lb uplift at joint N and 604 lb uplift at joint T.
- 15) 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.
- 16) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 17) Attic room checked for L/360 deflection.

Symbols

PLATE LOCATION AND ORIENTATION



0-¹/₁₆"



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

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—
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

4 X 4

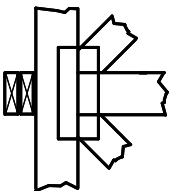
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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



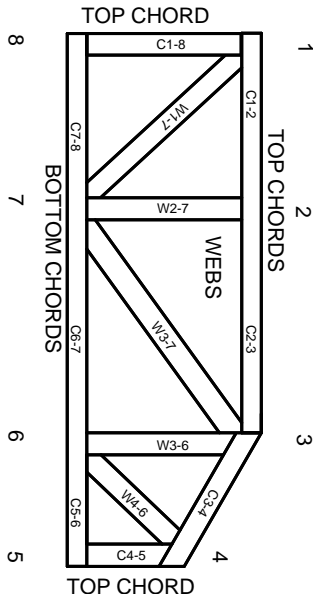
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

Numbering System

6-4-8 dimensions shown in ft-in-sixteenths (Drawings not to scale)



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 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.