



MiTek, Inc.
400 Sunrise Ave., Suite 270
Roseville, CA 95661
916.755.3571

Re: MTR641110F
MIKE ROACH

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

Pages or sheets covered by this seal: R84577235 thru R84577238

My license renewal date for the state of Colorado is October 31, 2025.



September 30, 2024

Zhao, Xiaoming

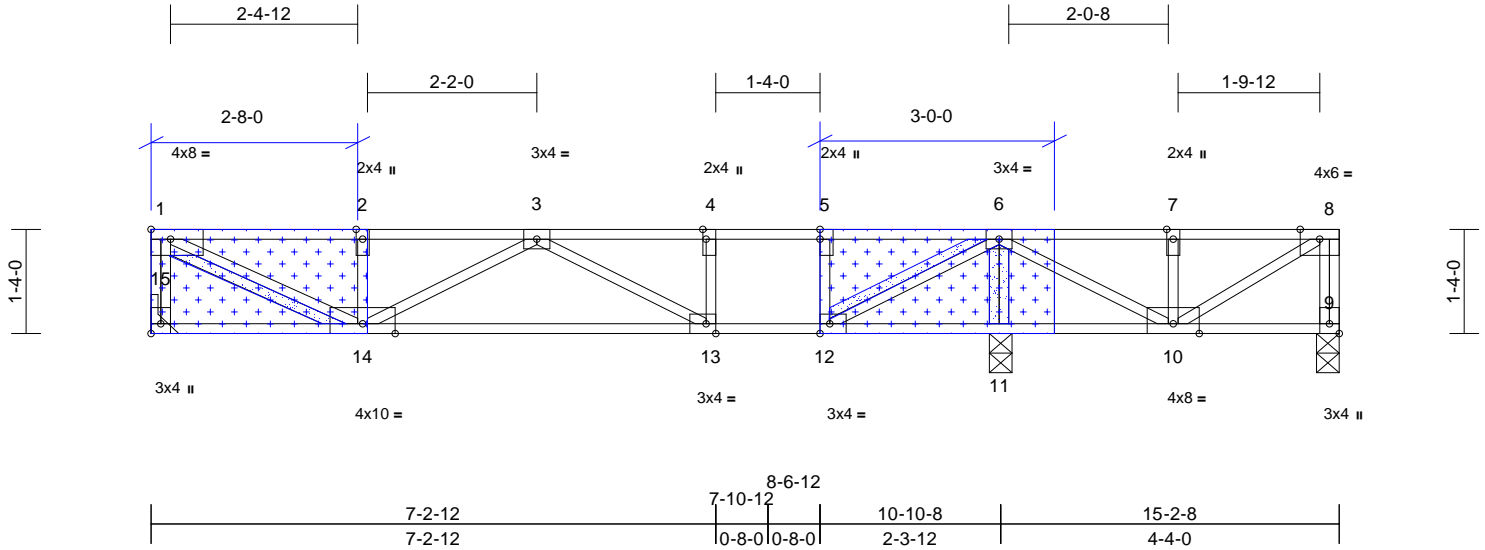
IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which 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	MIKE ROACH	R84577235
MTR641110F	F1r	Floor	30	1	Job Reference (optional)	

Alpine Truss, Montrose, CO - 81401,

Run: 8.81 E May 16 2024 Print: 8.810 E May 16 2024 MiTek Industries, Inc. Mon Sep 30 10:13:47
ID:HUBrBB?Ea6JcXUApITRZ21zE?Ep-b5u87_jdhdf00ELaV_2nizjztEQpa?Q3zWfDhyYTdl

Page: 1



Scale = 1:29.5									
Plate Offsets (X, Y): [1:Edge,0-1-8], [4:0-1-8,Edge], [5:0-1-8,Edge], [9:Edge,0-1-8], [12:0-1-8,Edge], [13:0-1-8,Edge], [15:Edge,0-1-8]									
Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl
TCLL	40.0	Plate Grip DOL	1.00	TC	0.74	Vert(LL)	-0.12	13-14	>999
TCDL	50.0	Lumber DOL	1.00	BC	0.80	Vert(CT)	-0.31	13-14	>420
BCLL	0.0	Rep Stress Incr	NO	WB	1.00	Horz(CT)	0.02	9	n/a
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-SH					
						PLATES		GRIP	
						MT20		169/123	
						Weight: 59 lb		FT = 0%F, 10%E	

LUMBER
TOP CHORD 2x4 SPF 1650F 1.5E(flat)
BOT CHORD 2x4 SPF 1650F 1.5E(flat)
WEBS 2x4 WW Stud(flat)

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (lb/size) 9=350/0-3-8, 11=2075/0-3-8, 15=742/ Mechanical
Max Grav 9=376 (LC 7), 11=2075 (LC 1), 15=743 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-15=-740/0, 8-9=-366/0, 1-2=-1303/0, 2-3=-1303/0, 3-4=-1458/0, 4-5=-1458/0, 5-6=-1458/0, 6-7=-457/0, 7-8=-457/0
BOT CHORD 14-15=0/0, 13-14=0/1703, 12-13=0/1458, 11-12=0/324, 10-11=0/324, 9-10=0/0
WEBS 4-13=0/28, 5-12=-457/0, 3-13=-291/0, 3-14=-454/0, 2-14=-308/0, 1-14=0/1439, 6-12=0/1381, 6-10=0/261, 7-10=-306/0, 8-10=0/534, 6-11=-2111/0

- NOTES**
- Unbalanced floor live loads have been considered for this design.
 - N/A
 - All bearings are assumed to be SPF 1650F 1.5E crushing capacity of 425 psi.
 - Refer to girder(s) for truss to truss connections.

- 5) N/A
- 6) 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.
- 7) Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- LOAD CASE(S)** Standard
- 1) Dead + Floor Live (balanced): Lumber Increase=1.00, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 9-15=-13, 1-8=-120
Concentrated Loads (lb)
Vert: 6=-1173
REPAIR: BEARING ADDED JT 11, POINT LOAD 1173LBS ADDED JT 6.
TCDL CHANGED FROM 10PSF TO 50PSF



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



ATTACH 3/4" PLYWOOD OR OSB GUSSET (23/32" RATED SHEATHING 48/24 EXP 1) may be notched to accommodate hanger jt 15 TO EACH SIDE OF TRUSS WITH ONE ROW OF (0.131" X 2.5") NAILS SPACED 2" O.C. FROM EACH FACE INTO EACH COVERED TRUSS MEMBER. IN ADDITION TO REQUIRED NAILING, CONSTRUCTION QUALITY ADHESIVE RECOMMENDED TO REDUCE POTENTIAL SQUEAKS.



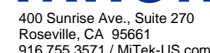
September 30, 2024

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 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)

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Job	Truss	Truss Type	Qty	Ply	MIKE ROACH	R84577237
MTR641110F	F6R	Floor	8	1	Job Reference (optional)	

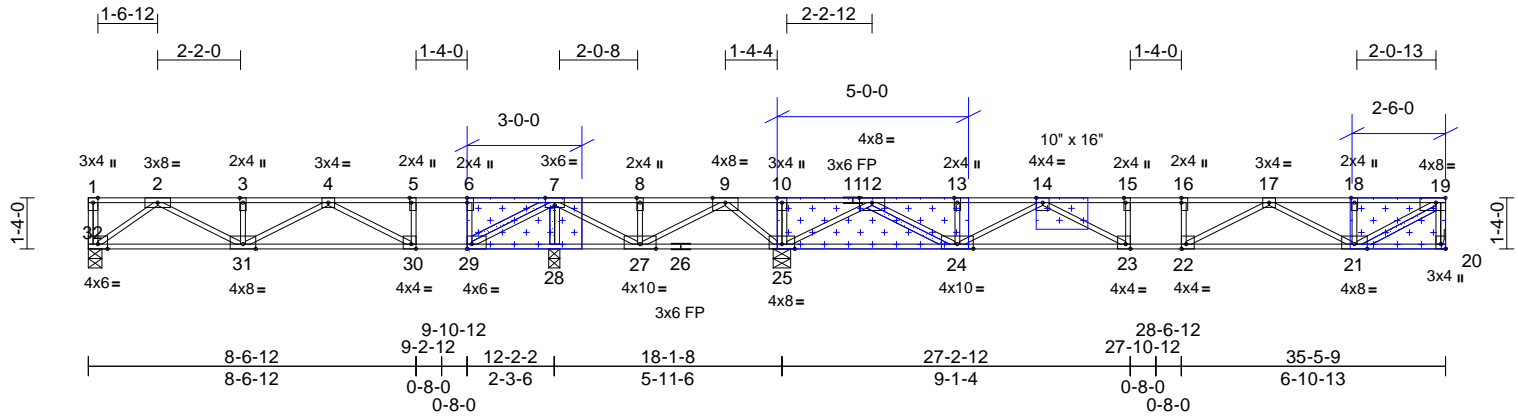
Alpine Truss, Montrose, CO - 81401,

Run: 8.81 E May 16 2024 Print: 8.810 E May 16 2024 MiTek Industries, Inc. Mon Sep 30 10:31:15

Page: 1

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Scale = 1:60.2



REPAIR: BEARING ADDED JT 28,
POINT LOAD 1360LBS ADDED JT 7.
TCDL CHANGED FROM 10PSF TO 50PSF

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

ATTACH 3/4" PLYWOOD OR OSB GUSSET (23/32" RATED SHEATHING 48/24 EXP 1) TO
EACH SIDE OF TRUSS WITH ONE ROW OF (0.131" X 2.5") NAILS SPACED 2" O.C. FROM
EACH FACE INTO EACH COVERED TRUSS MEMBER. IN ADDITION TO REQUIRED NAILING,
CONSTRUCTION QUALITY ADHESIVE RECOMMENDED TO REDUCE POTENTIAL SQUEAKS.

[5:0-1-8,Edge], [6:0-1-8,Edge], [7:0-3-0,Edge], [15:0-1-8,Edge], [16:0-1-8,Edge], [19:0-3-0,Edge], [20:Edge,0-1-8], [22:0-1-8,Edge], [23:0-1-8,Edge], [29:0-1-8,Edge],
Plate Offsets (X, Y): [30:0-1-8,Edge]

Loading	(psf)	Spacing	1-4-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.94	Vert(LL)	-0.16	30-31	>910	720	MT20	197/144
TCDL	50.0	Lumber DOL	1.00	BC	1.00	Vert(CT)	-0.41	30-31	>354	240		
BCLL	0.0	Rep Stress Incr	NO	WB	1.00	Horz(CT)	0.05	20	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-SH							Weight: 132 lb	FT = 0%F, 10%E

LUMBER
TOP CHORD 2x4 SPF 1650F 1.5E(flat)
BOT CHORD 2x4 SPF 1650F 1.5E(flat)
WEBS 2x4 WW Stud(flat) *Except* 27-9:2x4 SPF 1650F 1.5E(flat)

WEBS
5-30=0/113, 6-29=-539/0, 10-25=-262/0,
15-23=-251/0, 16-22=-194/0, 4-30=-583/0,
4-31=-269/0, 3-31=-232/0, 2-31=0/965,
2-32=-1256/0, 7-29=0/1695, 7-27=-795/0,
8-27=-316/0, 9-27=0/1380, 9-25=-1335/0,
14-23=0/715, 14-24=-1183/0, 13-24=-265/0,
12-24=0/1855, 12-25=-2512/0, 17-22=0/542,
17-21=-1027/0, 18-21=-297/0, 19-21=0/1783,
7-28=-2255/0

Vert: 20-32=-13, 1-19=-120
Concentrated Loads (lb)
Vert: 7=-1360

BRACING
TOP CHORD Structural wood sheathing directly applied or
6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc
bracing.

REACTIONS (lb/size) 20=957/ Mechanical,
25=2301/0-5-8, 28=1981/0-3-8,
32=816/0-4-4
Max Grav 20=961 (LC 5), 25=2320 (LC 11),
28=2189 (LC 3), 32=818 (LC 5)

FORCES (lb) - Maximum Compression/Maximum
Tension
TOP CHORD 1-32=-73/0, 19-20=-953/0, 1-2=0/0,
2-3=-1870/0, 3-4=-1870/0, 4-5=-1608/0,
5-6=-1608/0, 6-7=-1608/0, 7-8=0/581,
8-9=0/581, 9-10=0/2605, 10-11=0/2609,
11-12=0/2609, 12-13=-1288/0,
13-14=-1288/0, 14-15=-2860/0,
15-16=-2860/0, 16-17=-2860/0,
17-18=-1571/0, 18-19=-1571/0
BOT CHORD 31-32=0/1022, 30-31=0/2106, 29-30=0/1608,
28-29=-10/180, 27-28=-10/180,
26-27=-1706/0, 25-26=-1706/0,
24-25=-400/0, 23-24=0/2322, 22-23=0/2860,
21-22=0/2474, 20-21=0/0

NOTES

- Unbalanced floor live loads have been considered for this design.
- Bearings are assumed to be: Joint 32 SPF 1650F 1.5E crushing capacity of 425 psi, Joint 25 SPF 1650F 1.5E crushing capacity of 425 psi, Joint 28 SPF 1650F 1.5E crushing capacity of 425 psi.
- Refer to girder(s) for truss to truss connections.
- n/a
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard

- Dead + Floor Live (balanced): Lumber Increase=1.00, Plate Increase=1.00
Uniform Loads (lb/ft)



September 30, 2024

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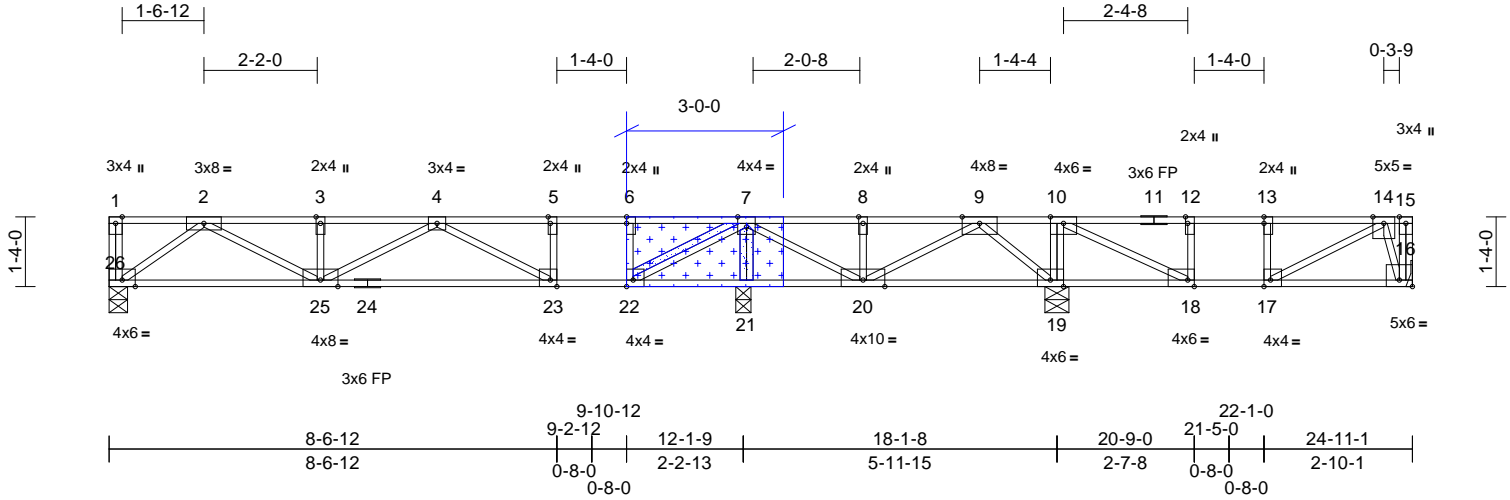
Job	Truss	Truss Type	Qty	Ply	MIKE ROACH	R84577238
MTR641110F	F7R	Floor	10	1	Job Reference (optional)	

Alpine Truss, Montrose, CO - 81401,

Run: 8.81 E May 16 2024 Print: 8.810 E May 16 2024 MiTek Industries, Inc. Mon Sep 30 10:21:03
ID:QjsKHKB2T8Se976z0eObqzE?JQ-q_Eze3_6?abXJEhN1Ys0NvnQSD_JzjubJp7kWQyYTWU

Page: 1

Scale = 1:44.1



REPAIR: BEARING ADDED JT 21,
POINT LOAD 1360LBS ADDED JT 7.
TCDL CHANGED FROM 10PSF TO 50PSF

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

ATTACH 3/4" PLYWOOD OR OSB GUSSET (23/32" RATED SHEATHING 48/24 EXP 1) TO EACH SIDE OF TRUSS WITH ONE ROW OF (0.131" X 2.5") NAILS SPACED 2" O.C. FROM EACH FACE INTO EACH COVERED TRUSS MEMBER. IN ADDITION TO REQUIRED NAILING, CONSTRUCTION QUALITY ADHESIVE RECOMMENDED TO REDUCE POTENTIAL SQUEAKS.

Plate Offsets (X, Y): [5:0-1-8,Edge], [6:0-1-8,Edge], [7:0-2-0,Edge], [12:0-1-8,Edge], [13:0-1-8,Edge], [16:Edge,0-1-8], [17:0-1-8,Edge], [18:0-1-8,Edge], [22:0-1-8,Edge], [23:0-1-8,Edge]

Loading	(psf)	Spacing	1-4-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	Vert(LL)	-0.16	23-25	>904	720	MT20	197/144
TCDL	50.0	Lumber DOL	1.00	BC	Vert(CT)	-0.41	23-25	>351	240		
BCLL	0.0	Rep Stress Incr	NO	WB	Horz(CT)	0.03	16	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-SH						Weight: 95 lb	FT = 0%F, 10%E

LUMBER

TOP CHORD 2x4 SPF 1650F 1.5E(flat)
BOT CHORD 2x4 SPF 1650F 1.5E(flat)
WEBS 2x4 WW Stud(flat)

BRACING

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (lb/size) 16=410/ Mechanical, 19=934/0-5-8, 21=2492/0-3-8, 26=814/0-4-4
Max Grav 16=416 (LC 5), 19=951 (LC 11), 21=2520 (LC 14), 26=816 (LC 5)

FORCES

(lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-26=-73/0, 15-16=0/106, 1-2=0/0, 2-3=-1863/0, 3-4=-1863/0, 4-5=-1591/0, 5-6=-1591/0, 6-7=-1591/0, 7-8=-560/0, 8-9=-560/0, 9-10=0/231, 10-11=-536/0, 11-12=-536/0, 12-13=-536/0, 13-14=-536/0, 14-15=0/0
BOT CHORD 25-26=0/1019, 24-25=0/2095, 23-24=0/2095, 22-23=0/1591, 21-22=-23/163, 20-21=-23/163, 19-20=0/365, 18-19=-231/0, 17-18=0/536, 16-17=0/174
WEBS 5-23=0/115, 6-22=-538/0, 10-19=-568/0, 12-18=-273/0, 13-17=-180/0, 4-23=-591/0, 4-25=-264/0, 3-25=-232/0, 2-25=0/960, 2-26=-1253/0, 7-22=0/1692, 7-20=0/524, 8-20=-310/0, 9-20=0/317, 9-19=-538/0, 10-18=0/722, 14-17=0/412, 14-16=-527/0, 7-21=-2584/0

NOTES

- Unbalanced floor live loads have been considered for this design.
- Bearings are assumed to be: Joint 26 SPF 1650F 1.5E crushing capacity of 425 psi, Joint 19 SPF 1650F 1.5E crushing capacity of 425 psi, Joint 21 SPF 1650F 1.5E crushing capacity of 425 psi.
- Refer to girder(s) for truss to truss connections.
- N/A
- 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.
- Recommend 2x6 strongbacks, on edge, spaced at 10-00-00 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
- CAUTION, Do not erect truss backwards.

LOAD CASE(S) Standard

- Dead + Floor Live (balanced): Lumber Increase=1.00, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 16-26=-13, 1-15=-120
Concentrated Loads (lb)
Vert: 7=-1360



September 30, 2024

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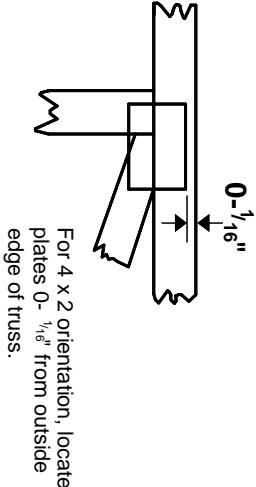
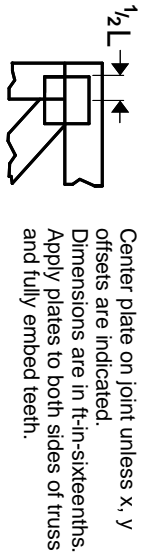
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall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

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Symbols

PLATE LOCATION AND ORIENTATION



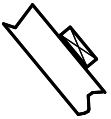
—
This symbol indicates the required direction of slots in connector plates.

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

PLATE SIZE

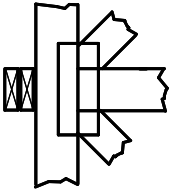
4 X 4
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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.

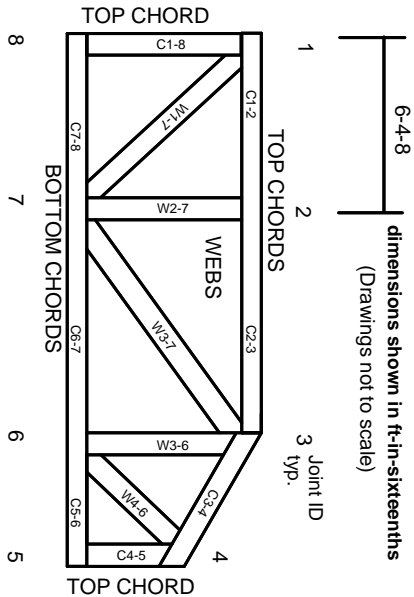
BEARING



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/TP1: 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/TP1 1 section 6.3. These truss designs rely on lumber values established by others.

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MITek Engineering Reference Sheet: MIL-7473 rev. 1/2/2023

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.