



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

Re: LC_VA11705
Vanguard / 11705 Justify Dr

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Builders FirstSource - Colorado Springs.

Pages or sheets covered by this seal: R77774773 thru R77774774

My license renewal date for the state of Colorado is October 31, 2023.



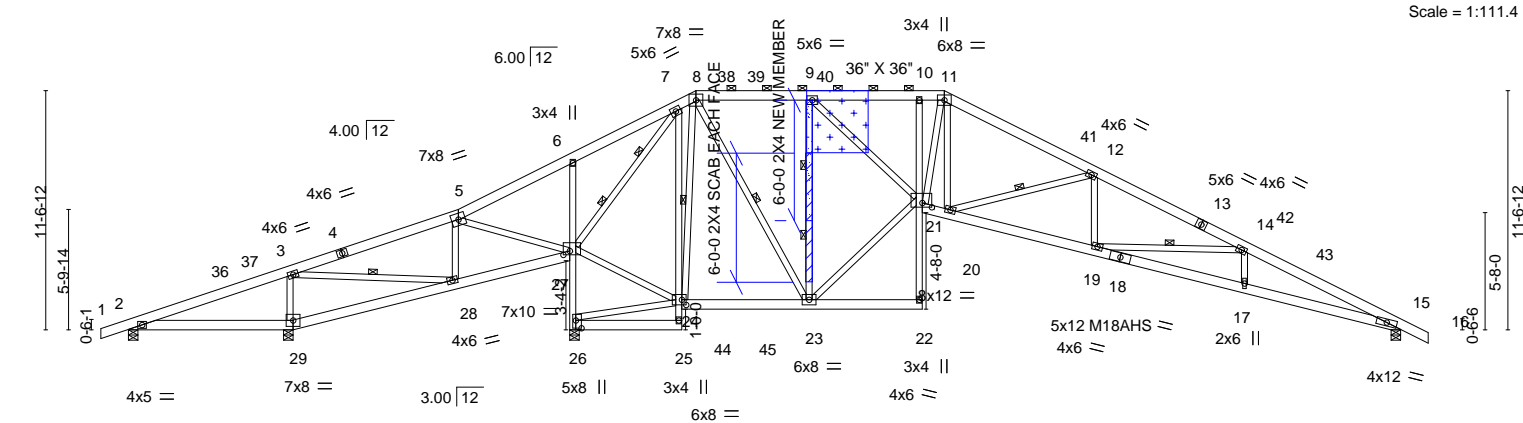
August 14, 2023

Hernandez, Marcos

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	Vanguard / 11705 Justify Dr
LC_VA11705	A1	Piggyback Base	5	1	R77774773

Builders FirstSource (Colorado Springs), Colorado Springs, CO - 80939, 8.630 s Jul 28 2023 MiTek Industries, Inc. Thu Aug 10 09:10:08 2023 Page 1
ID:ehDg3LIG3QMgZeM_E2gZGEzV7HS-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f
-1-4-0 7-11-8 15-11-6 21-4-0 26-9-0 27-5-3 32-10-14 38-4-8 39-5-5 46-8-6 53-11-7 61-6-0 62-10-0
1-4-0 7-11-8 7-11-14 5-4-10 5-5-0 0-8-3 5-5-10 5-5-10 1-0-13 7-3-1 7-3-1 7-6-9 1-4-0



REPAIR: WEB 9-23 HAS 6-0-0 SECTION CUT STARTING AT TOP OF MEMBER, 5X6 PLATES JT 9 MISSING.

	INSTALL 2 X 4 X 6' SPF/DF/SP NO.2 CUT TO FIT TIGHT.		ATTACH 1/2" PLYWOOD OR OSB GUSSET (15/32" RATED SHEATHING 32/16 EXP 1) TO EACH FACE OF TRUSS WITH (0.131" X 2.5" MIN.) NAILS PER THE FOLLOWING NAIL SCHEDULE: 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.
	APPLY 2 X 4 X 6' SPF/DF/SP NO.2 SCAB(S) TO EACH FACE OF TRUSS CENTERED ON SPLICE AS SHOWN. ATTACH WITH (0.131" X 3") NAILS - 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.		
	7-6-0 7-11-8 15-11-6 21-4-0 21-6-12 26-9-0 32-10-14 38-4-8 39-5-5 46-8-6 53-11-7 61-6-0		
	7-6-0 0-5-8 7-11-14 5-4-10 0-2-12 5-2-4 6-1-14 5-5-10 1-0-13 7-3-1 7-3-1 7-6-9		
Plate Offsets (X,Y)-- [21:0-5-8,0-2-8], [24:0-2-8,0-3-0], [26:0-4-8,0-3-4], [27:0-3-12,0-2-4]			

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plate Grip DOL	1.15	TC 0.35	Vert(LL)	-0.47 17-19	>999	240	MT20	185/144
(Roof Snow=30.0)	Lumber DOL	1.15	BC 0.79	Vert(CT)	-0.65 17-19	>744	180	M18AHS	142/136
TCDL 7.5	Rep Stress Incr	YES	WB 0.89	Horz(CT)	0.29 15	n/a	n/a		
BCLL 0.0 *	Code IRC2015/TPI2014		Matrix-MS						
BCDL 7.5								Weight: 443 lb	FT = 12%

LUMBER-	BRACING-
TOP CHORD 2x6 SPF 2100F 1.8E	TOP CHORD Structural wood sheathing directly applied or 3-8-4 oc purlins, except 2-0-0 oc purlins (5-8-10 max.): 8-11.
BOT CHORD 2x6 SPF 2100F 1.8E *Except*	BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
7-6-10-22: 2x4 HF Stud/Std or 2x4 SP No.2 or 2x4 SPF No.2	WEBS 1 Row at midpt 3-28, 8-23, 12-20, 14-19, 8-24
7-25: 2x4 DF No.2 or 2x4 SP No.2 or 2x4 SPF No.2	2 Rows at 1/3 pts 7-27, 9-23
WEBS 2x4 HF Stud/Std or 2x4 SP No.2 or 2x4 SPF No.2 *Except*	
7-27,8-23,9-23,9-21: 2x4 DF No.2 or 2x4 SP No.2 or 2x4 SPF No.2	

REACTIONS.
All bearings 0-5-8.
(lb) - Max Horz 2=326(LC 13)
Max Uplift All uplift 100 lb or less at joint(s) except 2=126(LC 14), 29=308(LC 14), 15=645(LC 14), 26=964(LC 14)
Max Grav All reactions 250 lb or less at joint(s) except 2=469(LC 36), 29=1093(LC 36), 15=2046(LC 45), 26=3537(LC 33)

FORCES.
(lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=112/619, 3-5=254/1317, 5-6=497/2227, 6-7=348/2215, 7-8=762/626, 8-9=1261/761, 9-10=2808/1149, 10-11=2809/1150, 11-12=3267/1214, 12-14=5282/1777, 14-15=6531/2139
BOT CHORD 2-29=566/214, 28-29=595/249, 27-28=1376/519, 26-27=3491/1184, 6-27=717/350, 7-24=257/975, 23-24=65/454, 10-21=314/107, 20-21=572/2839, 19-20=1331/4754, 17-19=1835/5913, 15-17=1829/5883
WEBS 3-29=886/310, 3-28=804/272, 5-28=7/377, 5-27=744/351, 24-27=98/440, 7-27=3357/1171, 8-23=589/1701, 9-23=2409/702, 21-23=179/1522, 9-21=554/2408, 11-21=436/442, 11-20=330/1158, 12-20=2061/758, 12-19=103/515, 14-19=1231/563, 8-24=1029/237

NOTES-
1) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=4.5psf; BCDL=4.5psf; h=15ft; B=45ft; L=62ft; eave=7ft; Cat. II; Exp C; Pr. Enclosed; MWFRS (directional) and C-C Exterior(2) 1-4-0 to 4-8-0, Interior(1) 4-8-0 to 27-5-3, Exterior(2) 27-5-3 to 33-5-3, Interior(1) 33-5-3 to 39-5-5, Exterior(2) 39-5-5 to 45-5-5, Interior(1) 45-5-5 to 62-10-0 zone; cantilever left and right exposed ; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-10; Pf=30.0 psf (flat roof snow); Category II; Exp C; Partially Exp.; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 16.0 psf or 1.00 times flat roof load of 30.0 psf on overhangs non-concurrent with other live loads.
5) WARNING: This long span truss requires extreme care and experience for proper and safe handling and erection. For general handling and erection guidance, see Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses ("BCSI"), jointly produced by SBCA and TPI. The building owner or the owner's authorized agent shall contract with a qualified registered design professional for the design and inspection of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing. MiTek assumes no responsibility for truss manufacture, handling, erection, or



August 14, 2023

Job	Truss	Truss Type	Qty	Ply	Vanguard / 11705 Justify Dr
LC_VA11705	A1	Piggyback Base	5	1	R77774773
Job Reference (optional)					

Builders FirstSource (Colorado Springs),
Colorado Springs, CO - 80939,

8.630 s Jul 28 2023 MiTek Industries, Inc.
Thu Aug 10 09:10:08 2023
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- NOTES-**
- 6) Provide adequate drainage to prevent water ponding.
 - 7) All plates are MT20 plates unless otherwise indicated.
 - 8) Plates checked for a plus or minus 5 degree rotation about its center.
 - 9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - 10) * 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 = 7.5psf.
 - 11) Bearing at joint(s) 15, 26 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
 - 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 126 lb uplift at joint 2, 308 lb uplift at joint 29, 645 lb uplift at joint 15 and 964 lb uplift at joint 26.
 - 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.


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.sbccomponents.com)

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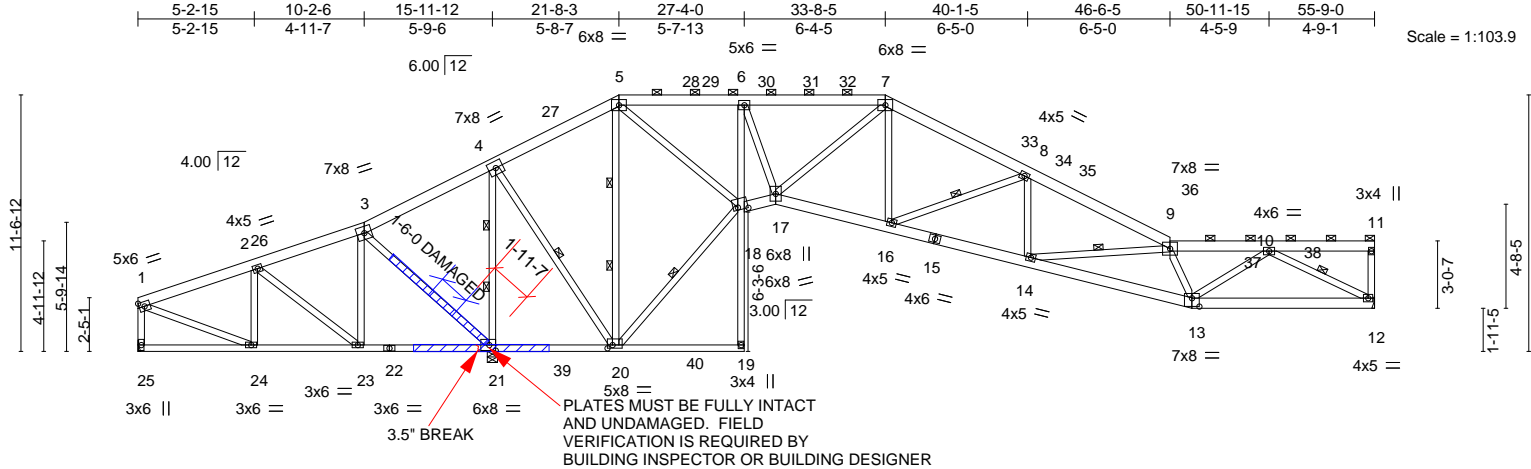
400 Sunrise Ave., Suite 270
Roseville, CA 95661
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Job	Truss	Truss Type	Qty	Ply	Vanguard / 11705 Justify Dr	R77774774
LC_VA11705	A3	Piggyback Base	1	1	Job Reference (optional)	

Builders FirstSource (Colorado Springs), Colorado Springs, CO - 80939,

8.630 s Jul 28 2023 MiTek Industries, Inc. Thu Aug 10 09:10:11 2023 Page 1

ID:ehDg3LIG3QMgZeM_E2gZGEzV7HS-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrdoi7J4zJC?f



REPAIR: WEB 3-21 HAS 1.5' DAMAGED SECTION AT LOCATION SHOWN, BOTTOM CHORD BROKEN LEFT FROM 6X8 PLATES JT 21. 6X8 PLATES JT 21 MUST BE INTACT.

APPLY 2 X 4 X 6" SPF/DF/SP NO.2 SCAB TO ONE FACE OF TRUSS CENTERED ON DAMAGE OR AS SHOWN. ATTACH WITH (0.131" X 3") NAILS 2 ROWS, SPACED @ 2" O.C. USE 2" MEMBER END DISTANCE.

5-2-15	10-2-6	15-11-12	21-8-3	27-4-0	28-9-0	33-8-5	40-1-5	47-6-3	55-9-0
5-2-15	4-11-7	5-9-6	5-8-7	5-7-13	1-5-0	4-11-5	6-5-0	7-4-14	8-2-13

Plate Offsets (X,Y)-- [13:0-4-0,0-4-8], [18:0-5-8,0-1-8], [20:0-2-12,0-1-12], [21:0-3-8,0-3-0]									
LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 30.0	Plate Grip DOL	1.15	TC 0.36	Vert(LL)	-0.29 14	>999	240	MT20	185/144
(Roof Snow=30.0)	Lumber DOL	1.15	BC 0.78	Vert(CT)	-0.41 13-14	>999	180		
TCDL 7.5	Rep Stress Incr	YES	WB 1.00	Horz(CT)	0.16 12	n/a	n/a		
BCLL 0.0 *	Code IRC2015/TPI2014		Matrix-MS						
BCDL 7.5								Weight: 391 lb	FT = 12%

LUMBER-	BRACING-
TOP CHORD 2x6 SPF 2100F 1.8E	TOP CHORD Structural wood sheathing directly applied or 4-9-5 oc purlins, except end verticals, and 2-0-0 oc purlins (5-2-11 max.): 5-7, 9-11.
BOT CHORD 2x6 SPF 2100F 1.8E *Except*	BOT CHORD Rigid ceiling directly applied or 4-2-10 oc bracing.
WEBS 2x4 HF Stud/Std or 2x4 SP No.2 or 2x4 SPF No.2 *Except*	WEBS 1 Row at midpt 4-20, 18-20, 8-16, 9-14, 10-12
4-21,4-20,5-20: 2x4 DF No.2 or 2x4 SP No.2 or 2x4 SPF No.2	2 Rows at 1/3 pts 4-21, 5-20

REACTIONS. (size) 12=Mechanical, 25=Mechanical, 21=0-5-8 (req. 0-6-6)
Max Horz 25=313(LC 13)
Max Uplift 12=283(LC 14), 25=594(LC 19), 21=706(LC 14)
Max Grav 12=1644(LC 33), 25=317(LC 38), 21=4063(LC 34)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=233/1012, 2-3=400/1620, 3-4=525/2133, 4-5=12/572, 5-6=1174/369, 6-7=1494/437, 7-8=2269/618, 8-9=3872/913, 9-10=3523/891, 11-12=259/79, 1-25=281/626
BOT CHORD 24-25=298/272, 23-24=994/129, 21-23=1529/341, 20-21=1827/508, 6-18=1747/409, 17-18=182/1202, 16-17=385/1870, 14-16=735/3461, 13-14=1018/4407, 12-13=621/2398
WEBS 2-24=70/463, 2-23=843/288, 3-23=127/593, 3-21=714/230, 4-21=3539/959, 4-20=584/2678, 5-20=1797/421, 18-20=613/314, 5-18=379/1957, 6-17=194/1264, 7-17=941/256, 7-16=224/1095, 8-16=1622/448, 8-14=54/550, 9-14=1202/327, 9-13=2112/525, 10-13=291/1706, 10-12=2698/692, 1-24=1004/302

- NOTES-**
- 1) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=4.5psf; BCDL=4.5psf; h=15ft; B=45ft; L=56ft; eave=7ft; Cat. II; Exp C; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-1-12 to 5-8-10, Interior(1) 5-8-10 to 21-8-3, Exterior(2) 21-8-3 to 27-2-4, Interior(1) 27-2-4 to 33-8-5, Exterior(2) 33-8-5 to 39-3-3, Interior(1) 39-3-3 to 55-7-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - 2) TCLL: ASCE 7-10; Pf=30.0 psf (flat roof snow); Category II; Exp C; Partially Exp.; Ct=1.10
 - 3) Unbalanced snow loads have been considered for this design.
 - 4) Provide adequate drainage to prevent water ponding.
 - 5) Plates checked for a plus or minus 5 degree rotation about its center.
 - 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - 7) * 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 = 7.5psf.
 - 8) WARNING: Required bearing size at joint(s) 21 greater than input bearing size.
 - 9) Refer to girder(s) for truss to truss connections.
 - 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 283 lb uplift at joint 12, 594 lb uplift at joint 25 and 706 lb uplift at joint 21.
 - 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.



August 14, 2023

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

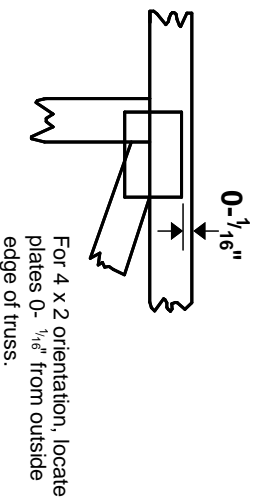
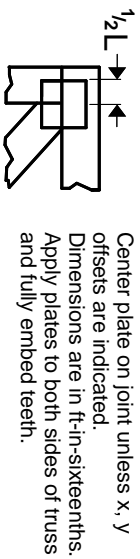
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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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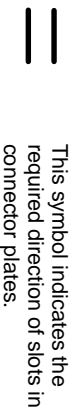
400 Sunrise Ave., Suite 270
Roseville, CA 95661
916.755.3571 / MiTek-US.com

Symbols

PLATE LOCATION AND ORIENTATION



For 4 x 2 orientation, locate plates 0- $\frac{1}{16}$ " from outside edge of truss.



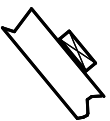
* Plate location details available in MITek software or upon request.

PLATE SIZE

4 X 4

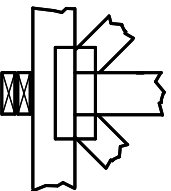
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

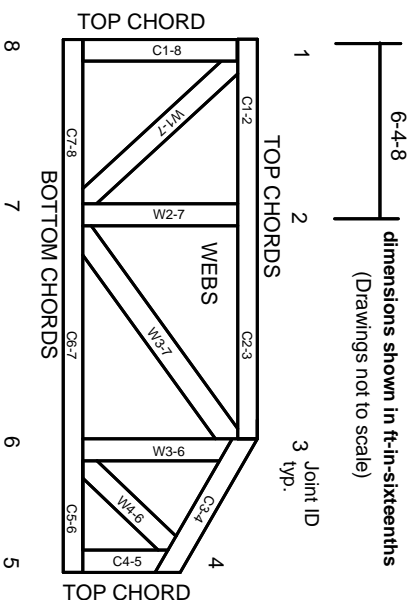


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

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: MII-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.