

Re: 3562987
Elevate / Raines

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 (Valley Center).

Pages or sheets covered by this seal: I60534892 thru I60534893

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

Missouri COA: Engineering 001193



September 1, 2023

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.

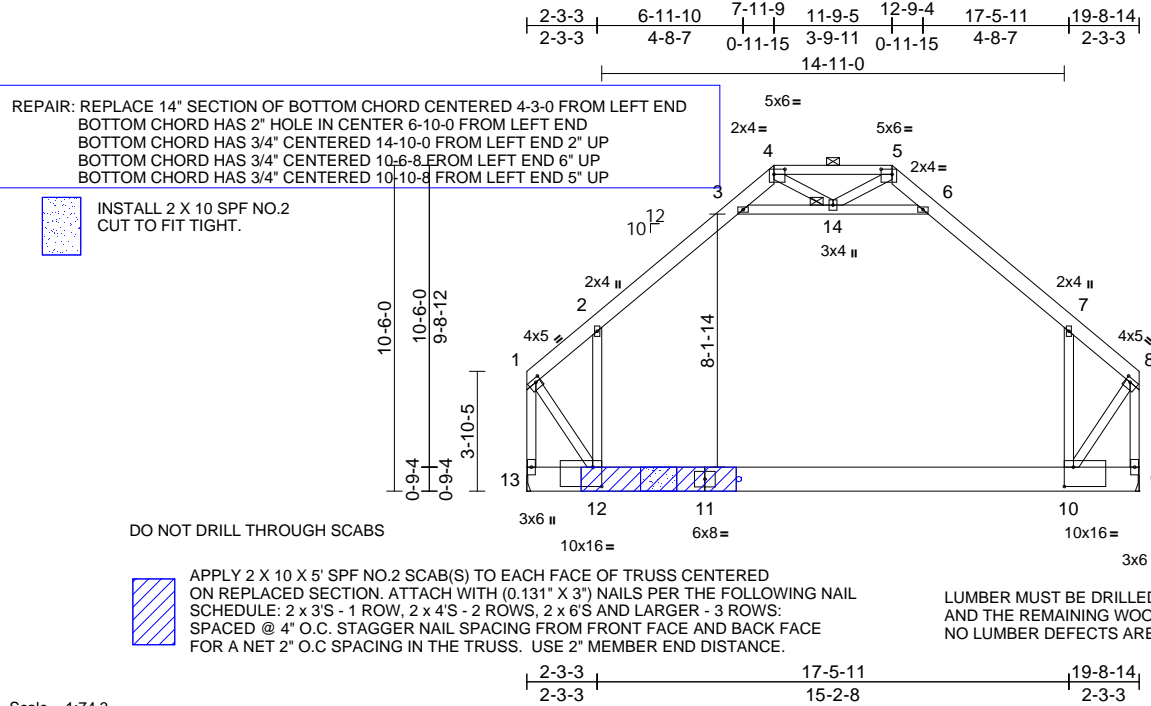
Job 3562987	Truss B7	Truss Type Attic	Qty 7	Ply 1	Elevate / Raines Job Reference (optional)	160534892
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Builders FirstSource (Valley Center), Valley Center, KS - 67147,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Thu Aug 31 17:25:45

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Scale = 1:74.3

Plate Offsets (X, Y): [1:0-2-0,0-1-8], [4:0-4-4,0-2-0], [5:0-4-4,0-2-0], [8:0-2-0,0-1-8], [10:0-3-8,0-7-8], [12:0-3-8,0-7-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP	
TCLL (roof)	25.0	Plate Grip DOL	1.15	TC	0.71	Vert(LL)	-0.33	10-12	>708	240	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.41	Vert(CT)	-0.43	10-12	>546	180		
BCLL	0.0	Rep Stress Incr	YES	WB	0.32	Horz(CT)	0.00	9	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS	Attic	-0.25	10-12	>717	360	Weight: 156 lb	FT = 20%	

LUMBER
TOP CHORD 2x6 SPF No.2 *Except* 4-5:2x4 SPF No.2
BOT CHORD 2x10 SP 2400F 2.0E
WEBS 2x4 SPF No.2

BRACING
TOP CHORD Structural wood sheathing directly applied, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 4-5.
BOT CHORD Rigid ceiling directly applied.
JOINTS 1 Brace at Jt(s): 14

REACTIONS
(size) 9= Mechanical, 13= Mechanical
Max Horiz 13=215 (LC 6)
Max Grav 9=1438 (LC 2), 13=1438 (LC 2)

FORCES
(lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1164/0, 2-3=-938/3, 3-4=-368/217, 4-5=-308/309, 5-6=-368/217, 6-7=-938/3, 7-8=-1163/0, 8-9=-2060/0, 1-13=-2061/0
BOT CHORD 12-13=-196/199, 10-12=0/777, 9-10=-28/33
WEBS 2-12=-409/546, 7-10=-409/546, 3-14=-1009/63, 6-14=-1009/63, 8-10=0/1377, 1-12=0/1377, 4-14=-16/158, 5-14=-16/158

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) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.
10) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
11) Attic room checked for L/360 deflection.
LOAD CASE(S) Standard

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=4.2psf; h=15ft; Cat. II; Exp C; Enclosed; MWFRS (envelope); 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) Ceiling dead load (10.0 psf) on member(s). 2-3, 6-7, 3-14, 6-14
6) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 10-12
7) Refer to girder(s) for truss to truss connections.



September 1, 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.sbcscomponents.com)

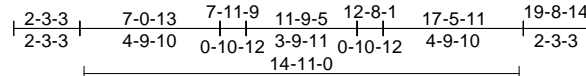


Job 3562987	Truss B8	Truss Type Attic Girder	Qty 1	Ply 2	Elevate / Raines Job Reference (optional)	160534893
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Builders FirstSource (Valley Center), Valley Center, KS - 67147,

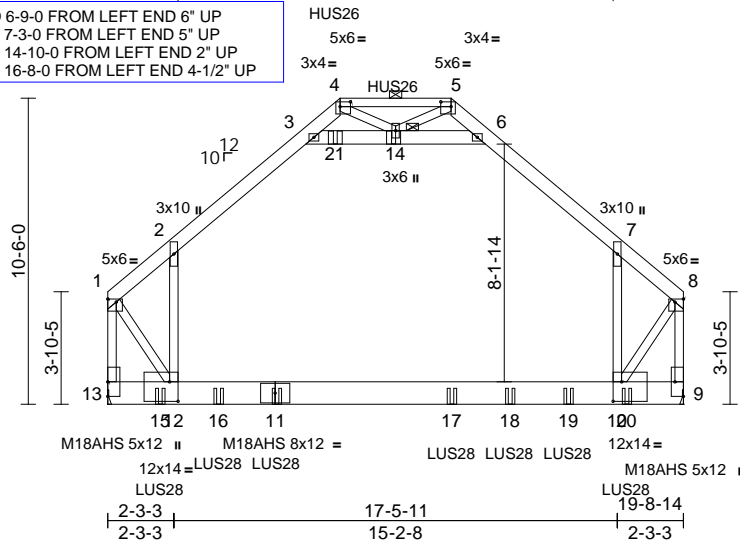
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REPAIR: BOTTOM CHORD HAS 3/4" CENTERED 6-9-0 FROM LEFT END 6" UP
BOTTOM CHORD HAS 3/4" CENTERED 7-3-0 FROM LEFT END 5" UP
BOTTOM CHORD HAS 1/2" CENTERED 14-10-0 FROM LEFT END 2" UP
BOTTOM CHORD HAS 1/2" CENTERED 16-8-0 FROM LEFT END 4-1/2" UP

NO REPAIR REQUIRED



Scale = 1:79

LUMBER MUST BE DRILLED CLEANLY AND ACCURATELY
AND THE REMAINING WOOD MUST BE UNDAMAGED
NO LUMBER DEFECTS ARE TO BE LOCATED WITHIN 12" OF HOLE

Plate Offsets (X, Y): [1:Edge,0-1-4], [4:0-4-4,0-2-0], [5:0-4-4,0-2-0], [8:Edge,0-1-4], [9:Edge,0-3-8], [10:0-3-8,0-8-0], [12:0-3-8,0-8-0]

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	0.71	Vert(LL)	-0.30	10-12	>778	240	MT20	197/144
TCDL	10.0	Lumber DOL	1.15	BC	0.53	Vert(CT)	-0.57	10-12	>411	180	M18AHS	142/136
BCLL	0.0	Rep Stress Incr	NO	WB	0.54	Horz(CT)	0.01	9	n/a	n/a		
BCDL	10.0	Code	IRC2018/TP12014	Matrix-MS	Attic	-0.24	10-12	>775	360		Weight: 320 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x6 SPF 2100F 1.8E *Except* 4-5:2x4 SPF No.2
- BOT CHORD 2x10 SP 2400F 2.0E
- WEBS 2x4 SPF No.2 *Except* 3-6:2x6 SPF No.2
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 4-5.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
- JOINTS 1 Brace at Jt(s): 14
- REACTIONS** (size) 9= Mechanical, 13= Mechanical
Max Horiz 13=215 (LC 5)
Max Uplift 9=408 (LC 9), 13=270 (LC 8)
Max Grav 9=5279 (LC 14), 13=5354 (LC 15)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=-4125/314, 2-3=-2937/186, 3-4=-385/289, 4-5=-630/283, 5-6=-255/345, 6-7=-2750/177, 7-8=-4265/334, 8-9=-7514/551, 1-13=-7293/527
- BOT CHORD 12-13=-192/229, 10-12=-192/2637, 9-10=-29/75
- WEBS 2-12=-387/1733, 7-10=-435/2256, 3-14=-3324/521, 6-14=-3735/507, 8-10=-308/4739, 1-12=-319/4754, 4-14=-53/1055, 5-14=-32/1559
- 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: 2x10 - 2 rows staggered at 0-9-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
2x6 - 3 rows at 0-6-0 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.
 - N/A
 - Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-16; Vult=115mph (3-second gust) Vasd=91mph; TC DL=6.0psf; BCDL=4.2psf; h=15ft; Cat. II; Exp C; Enclosed; MWFRS (envelope); cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
 - Provide adequate drainage to prevent water ponding.
 - All plates are MT20 plates unless otherwise indicated.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - Ceiling dead load (5.0 psf) on member(s). 2-3, 6-7, 3-14, 6-14; Wall dead load (5.0psf) on member(s). 2-12, 7-10
 - Bottom chord live load (40.0 psf) and additional bottom chord dead load (10.0 psf) applied only to room. 10-12
 - Refer to girder(s) for truss to truss connections.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 270 lb uplift at joint 13 and 408 lb uplift at joint 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.
 - Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
 - Use Simpson Strong-Tie LUS28 (6-10d Girder, 3-10d Truss) or equivalent spaced at 6-0-0 oc max. starting at 5-4-3 from the left end to 21-4-3 to connect truss(es) to back face of bottom chord.
 - Use Simpson Strong-Tie HUS26 (14-10d Girder, 4-10d Truss) or equivalent spaced at 2-0-0 oc max. starting at 11-4-3 from the left end to 13-4-3 to connect truss(es) to back face of top chord.
 - Fill all nail holes where hanger is in contact with lumber.
 - Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s). The design/selection of such connection device(s) is the responsibility of others.



September 1, 2023

Continued on page 2

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)

MiTek®

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

Job 3562987	Truss B8	Truss Type Attic Girder	Qty 1	Ply 2	Elevate / Raines Job Reference (optional) I60534893
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19) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard

1) Dead + Roof Live (balanced): Lumber Increase=1.15,

Plate Increase=1.15

Uniform Loads (lb/ft)

Vert: 1-2=-70, 2-3=-80, 3-4=-70, 4-5=-70, 5-6=-70,

6-7=-80, 7-8=-70, 12-13=-20, 10-12=-40, 9-10=-20,

3-21=-10, 14-21=-10, 6-14=-10

Drag: 2-12=-10, 7-10=-10

Concentrated Loads (lb)

Vert: 11=-849 (B), 14=-852 (B), 15=-849 (B),

16=-849 (B), 17=-854 (B), 18=-854 (B), 19=-854 (B),

20=-854 (B), 21=-852 (B)

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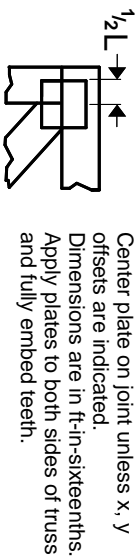
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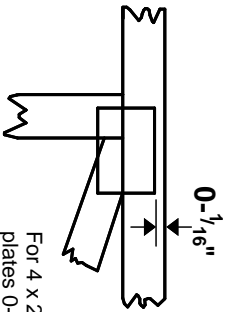
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Symbols

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 MITtek 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

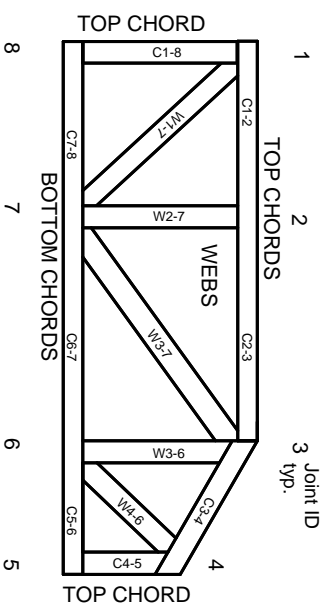


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TFP1: 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-1-1988, ESR-2-362, ESR-2-685, ESR-3-282
ESR-4-722, ESL-1-388

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/TFP 1 section 6.3. These truss designs rely on Lumber values established by others.

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

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