



Lumber design values are in accordance with ANSI/TPI 1 section 6.3
These truss designs rely on lumber values established by others.

RE: 4768186 - HOWE RES.

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

Site Information:

Customer Info: AMIRA CUSTOM HOMES Project Name: Howe Res. Model: Custom
Lot/Block: N/A Subdivision: N.A
Address: PID 10-7S-17-09974-301, N/A
City: Columbia Cty State: FL

Name Address and License # of Structural Engineer of Record, If there is one, for the building.

Name: License #:
Address: State:
City:

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):

Design Code: FBC2023/TPI2014 Design Program: MiTek 20/20 8.8
Wind Code: ASCE 7-22 Wind Speed: 130 mph
Roof Load: 40.0 psf Floor Load: N/A psf

This package includes 5 individual, Truss Design Drawings and 0 Additional Drawings.
With my seal affixed to this sheet, I hereby certify that I am the Truss Design Engineer and this index sheet conforms to 61G15-31.003, section 5 of the Florida Board of Professional Engineers Rules.

No.	Seal#	Truss Name	Date
1	T38327844	T01	8/25/25
2	T38327845	T01G	8/25/25
3	T38327846	T02	8/25/25
4	T38327847	T02G	8/25/25
5	T38327848	T03G	8/25/25



Review for Code Compliance
Universal Engineering Science

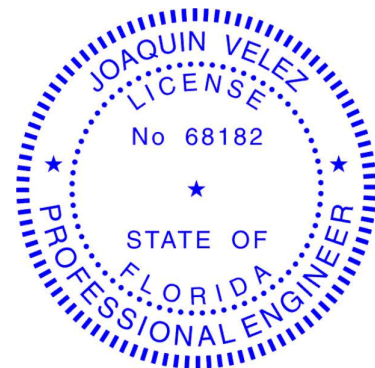
Joselyn Perrell
Examiner-License No.

PX2707 10/20/2025

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

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

Truss Design Engineer's Name: Velez, Joaquin
My license renewal date for the state of Florida is February 28, 2027.



Joaquin Velez PE No.68182
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

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.

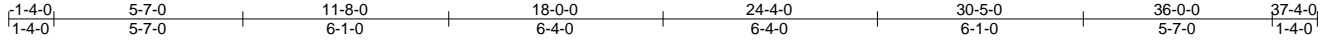
August 25,2025

Job 4768186	Truss T01	Truss Type Common	Qty 6	Ply 1	HOWE RES.	T38327844
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Builders FirstSource (Lake City, FL), Lake City, FL - 32055,

8.830 s Aug 14 2025 MiTek Industries, Inc. Mon Aug 25 09:11:53 2025 Page 1

ID:Q1FFZpONoiYUal8R35ESM3yupsu-lxhcASKvvrY00590ch_oxXYzPcbQfRu4eF_8_SykLvk



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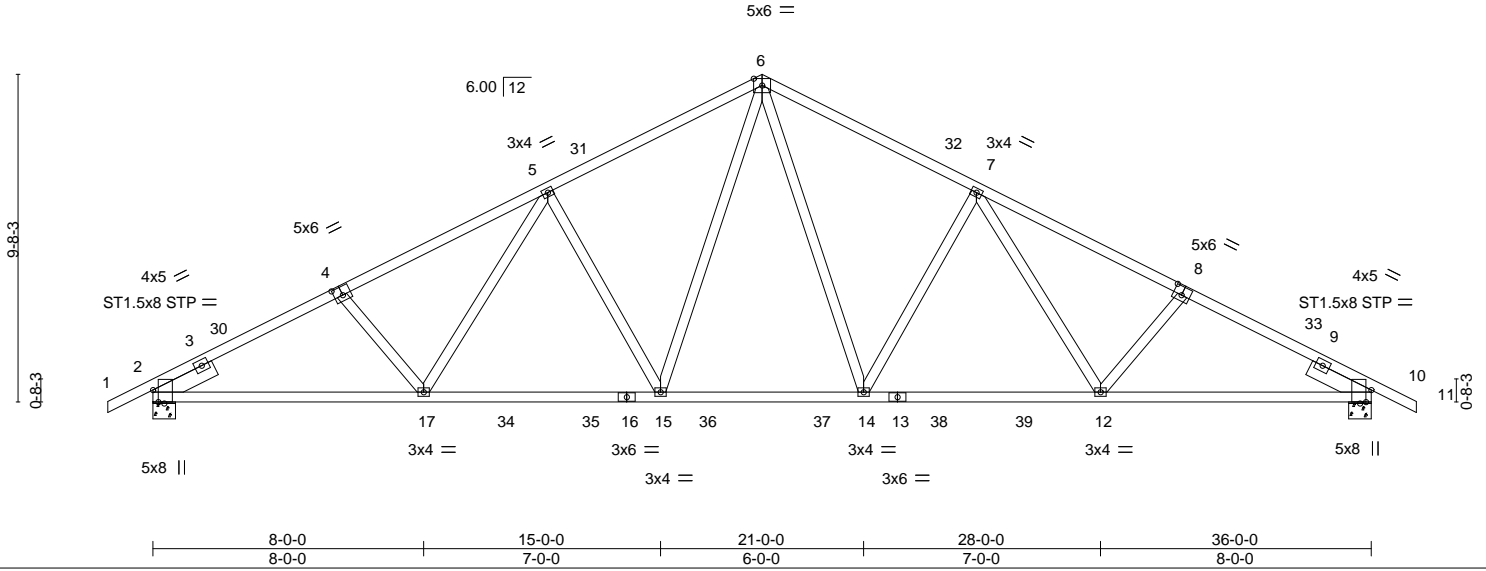



Plate Offsets (X,Y)-- [2:0-4-4,Edge], [4:0-3-0,0-3-0], [8:0-3-0,0-3-0], [10:0-4-4,Edge]

LOADING (psf)	SPACING-	CSI.	DEFL.	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 1.25	TC 0.98	in (loc) l/defl L/d	MT20	244/190
TCDL 10.0	Lumber DOL 1.25	BC 0.82	Vert(LL) -0.25 15-17 >999 240		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.52	Vert(CT) -0.43 15-17 >993 180		
BCDL 10.0	Code FBC2023/TP12014	Matrix-MS	Horz(CT) 0.13 10 n/a n/a	Weight: 208 lb	FT = 20%

LUMBER-	BRACING-
TOP CHORD 2x4 SP No.2 *Except* 1-4,8-11: 2x4 SP No.1	TOP CHORD Structural wood sheathing directly applied.
BOT CHORD 2x4 SP No.1 *Except* 13-16: 2x4 SP No.2	BOT CHORD Rigid ceiling directly applied or 8-5-3 oc bracing.
WEBS 2x4 SP No.3	
SLIDER Left 2x6 SP No.2 1-11-8, Right 2x6 SP No.2 1-11-8	

REACTIONS. (size) 2=0-8-0, 10=0-8-0
 Max Horz 2=161(LC 12)
 Max Uplift 2=-375(LC 12), 10=-375(LC 13)
 Max Grav 2=1660(LC 2), 10=1660(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
 TOP CHORD 2-4=-2536/552, 4-5=-2419/543, 5-6=-2023/491, 6-7=-2023/491, 7-8=-2419/543, 8-10=-2536/552
 BOT CHORD 2-17=-553/2180, 15-17=-415/1977, 14-15=-202/1502, 12-14=-276/1977, 10-12=-392/2176
 WEBS 6-14=-238/783, 7-14=-538/296, 7-12=-80/335, 6-15=-238/783, 5-15=-538/296, 5-17=-80/335

 **Review for Code Compliance**
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 Examiner-License No.

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-22; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Zone3 1-4-0 to 2-3-3, Zone1 2-3-3 to 18-0-0, Zone2 18-0-0 to 23-1-2, Zone1 23-1-2 to 37-4-0 zone; 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
 - Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * 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 = 10.0psf.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (it=lb) 2=375, 10=375.

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Joaquin Velez PE No.68182
 MiTek Inc. DBA MiTek USA FL Cert 6634
 16023 Swingley Ridge Rd.
 Chesterfield, MO 63017
 Date:

August 25, 2025

Job 4768186	Truss T01G	Truss Type Common Supported Gable	Qty 1	Ply 1	HOWE RES.	T38327845
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Builders FirstSource (Lake City, FL),

Lake City, FL - 32055,

8.830 s Aug 14 2025 MiTek Industries, Inc. Mon Aug 25 09:11:54 2025 Page 1

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Job Reference (optional)

1-4-0 18-0-0 36-0-0 37-4-0
1-4-0 18-0-0 18-0-0 1-4-0

Scale = 1:66.1

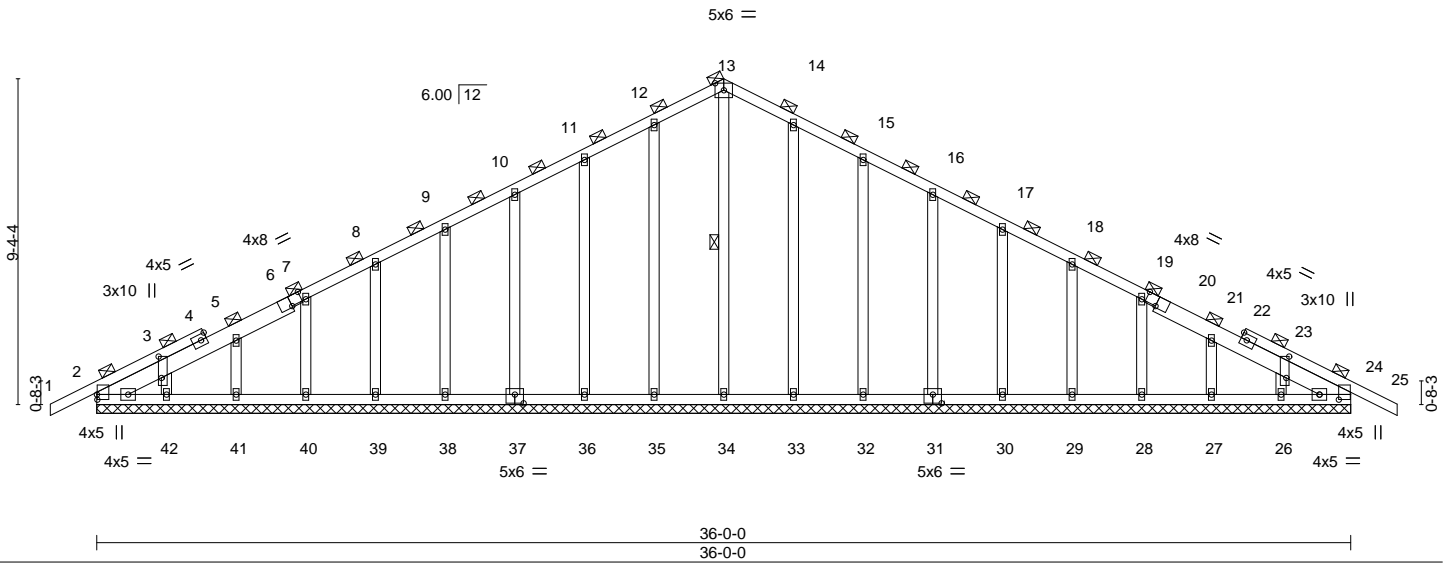


Plate Offsets (X,Y)-- [2:0-1-12,0-0-2], [3:0-7-6,0-1-0], [6:0-3-14,Edge], [20:0-3-14,Edge], [23:0-7-6,0-1-0], [24:0-1-12,0-6-10], [31:0-3-0,0-3-0], [37:0-3-0,0-3-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 1.25	TC 0.11	Vert(LL) -0.00	25	n/r	120	MT20	244/190
TCDL 10.0	Lumber DOL 1.25	BC 0.03	Vert(CT) -0.01	25	n/r	120		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.16	Horz(CT) 0.01	24	n/a	n/a		
BCDL 10.0	Code FBC2023/TPI2014	Matrix-S					Weight: 253 lb	FT = 20%

LUMBER-

TOP CHORD 2x4 SP No.2 *Except*
2-6,20-24: 2x6 SP No.2
BOT CHORD 2x4 SP No.2 P
OTHERS 2x4 SP No.3

BRACING-

TOP CHORD 2-0-0 oc purlins (6-0-0 max.).
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 13-34

REACTIONS.

All bearings 36-0-0.
(lb) - Max Horz 2=156(LC 12)
Max Uplift All uplift 100 lb or less at joint(s) 2, 35, 36, 37, 38, 39, 40, 41, 42, 33, 32, 31, 30, 29, 28, 27, 26, 24
Max Grav All reactions 250 lb or less at joint(s) 2, 34, 35, 36, 37, 38, 39, 40, 41, 42, 33, 32, 31, 30, 29, 28, 27, 26, 24

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 12-13=-105/266, 13-14=-105/266



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Lawrence Powell
Examiner-License No.

PX2707 10/20/2025

NOTES-

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-22; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Zone3 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * 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.
- Lumber designated with a "P" is pressure-treated with preservatives. Plate lateral resistance values have been reduced 20% where used in this lumber. Plates should be protected from corrosion per the recommendation of the treatment company. Borate or other suitable treatment may be used if it does not corrode the plates. If ACQ, CBA, or CA-B treated lumber is used, improved corrosion protection is required, and G185 galvanized plates may be used with this design. Incising factors have not been considered for this design. Building designer to verify suitability of this product for its intended use.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 35, 36, 37, 38, 39, 40, 41, 42, 33, 32, 31, 30, 29, 28, 27, 26, 24.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Joaquin Velez PE No.68182
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd.
Chesterfield, MO 63017
Date:

August 25, 2025

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 4768186	Truss T02	Truss Type Roof Special	Qty 16	Ply 1	HOWE RES.	T38327846
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Builders FirstSource (Lake City, FL),

Lake City, FL - 32055,

8.830 s Aug 14 2025 MiTek Industries, Inc. Mon Aug 25 09:11:55 2025 Page 1

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Scale = 1:85.3

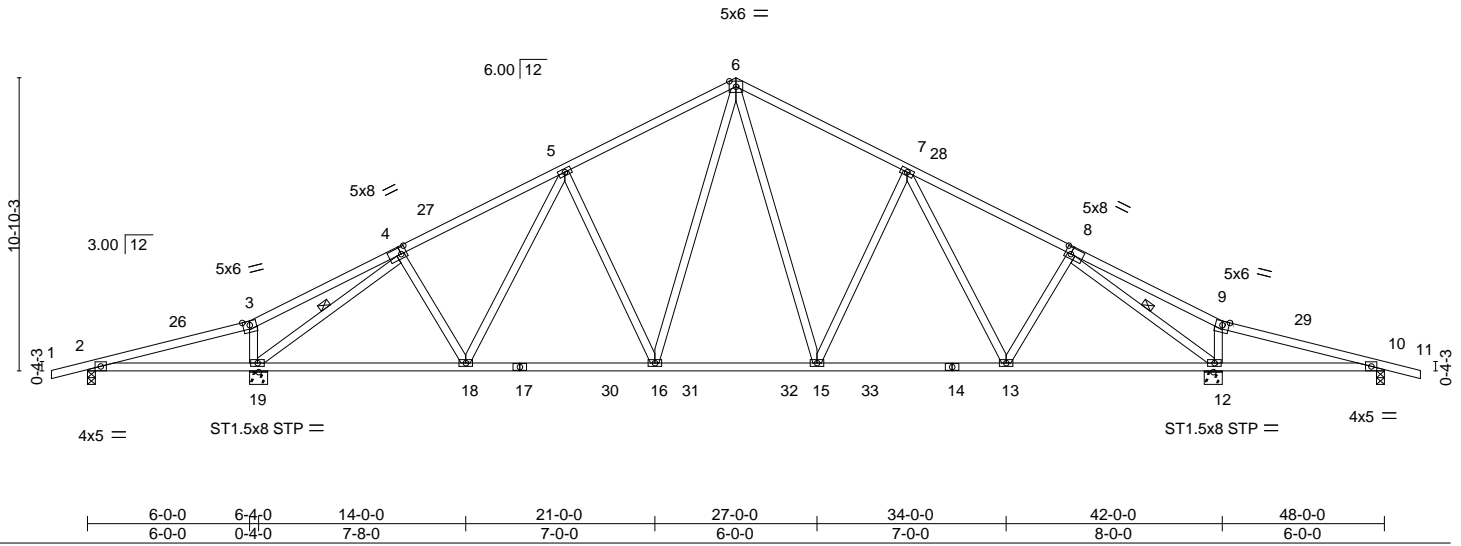


Plate Offsets (X,Y)-- [4:0-2-8,0-3-0], [8:0-2-8,0-3-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 1.25	TC 0.46	Vert(LL) -0.16	13-15	>999	240	MT20	244/190
TCDL 10.0	Lumber DOL 1.25	BC 0.75	Vert(CT) -0.27	13-15	>999	180		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.63	Horz(CT) 0.09	12	n/a	n/a		
BCDL 10.0	Code FBC2023/TPI2014	Matrix-MS					Weight: 270 lb	FT = 20%

LUMBER-
 TOP CHORD 2x4 SP No.2
 BOT CHORD 2x4 SP No.2
 WEBS 2x4 SP No.3

BRACING-
 TOP CHORD Structural wood sheathing directly applied or 3-10-14 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
 WEBS 1 Row at midpt 8-12, 4-19

REACTIONS. All bearings 0-3-8 except (jt=length) 12=0-8-0, 19=0-8-0.
 (lb) - Max Horz 2=180(LC 12)
 Max Uplift All uplift 100 lb or less at joint(s) except 2=198(LC 8), 12=424(LC 13), 19=443(LC 12), 10=190(LC 9)
 Max Grav All reactions 250 lb or less at joint(s) except 2=286(LC 25), 12=1920(LC 2), 19=1920(LC 2), 10=286(LC 26)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
 TOP CHORD 4-5=-1987/460, 5-6=-1773/455, 6-7=-1773/469, 7-8=-1987/483
 BOT CHORD 18-19=-404/1644, 16-18=-327/1680, 15-16=-156/1348, 13-15=-207/1668, 12-13=-251/1619
 WEBS 6-15=-226/671, 7-15=-440/278, 8-13=0/259, 8-12=-2196/426, 9-12=-313/182, 6-16=-219/671, 5-16=-440/271, 4-18=0/251, 4-19=-2196/481, 3-19=-313/166



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PX2707 10/20/2025

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-22; Vult=130mph (3-second gust) Vasd=101mph; TC DL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Zone3 -1-4-0 to 3-5-10, Zone1 3-5-10 to 24-0-0, Zone2 24-0-0 to 30-9-7, Zone1 30-9-7 to 49-4-0 zone; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
 - All plates are 3x6 MT20 unless otherwise indicated.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * 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 = 10.0psf.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 198 lb uplift at joint 2, 424 lb uplift at joint 12, 443 lb uplift at joint 19 and 190 lb uplift at joint 10.

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Joaquin Velez PE No.68182
 MiTek Inc. DBA MiTek USA FL Cert 6634
 16023 Swingley Ridge Rd.
 Chesterfield, MO 63017
 Date:

August 25, 2025

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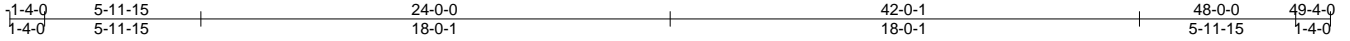
16023 Swingley Ridge Rd.
 Chesterfield, MO 63017
 314.434.1200 / MiTek-US.com

Job	Truss	Truss Type	Qty	Ply	HOWE RES.	T38327847
4768186	T02G	Roof Special Supported Gable	1	1		

Builders FirstSource (Lake City, FL), Lake City, FL - 32055,

8.830 s Aug 14 2025 MiTek Industries, Inc. Mon Aug 25 09:11:56 2025 Page 1

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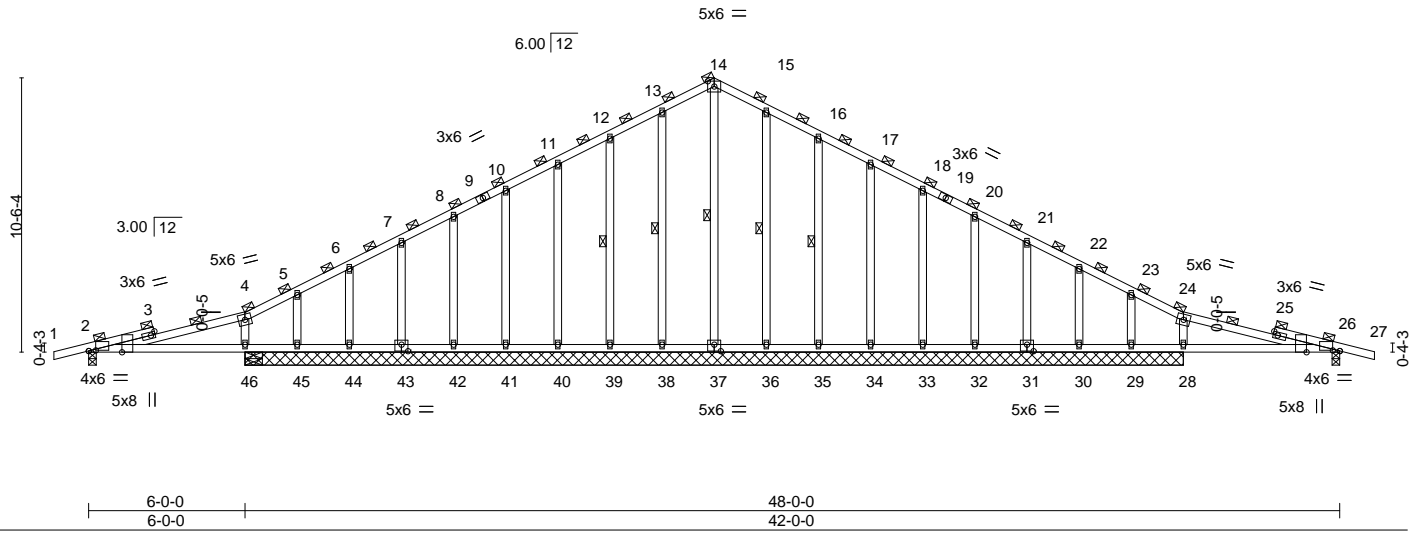


Plate Offsets (X,Y)-- [2:0-3-4,0-0-5], [2:0-0-9,Edge], [26:0-3-4,0-0-5], [26:0-0-9,Edge], [31:0-3-0,0-3-0], [37:0-3-0,0-3-0], [43:0-3-0,0-3-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 1.25	TC 0.44	in (loc) l/defl L/d	MT20	244/190
TCDL 10.0	Lumber DOL 1.25	BC 0.26	Vert(LL) 0.04 2-46 >999 240		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.12	Vert(CT) -0.06 2-46 >999 180		
BCDL 10.0	Code FBC2023/TPI2014	Matrix-S	Horz(CT) 0.01 26 n/a n/a		
				Weight: 307 lb	FT = 20%

LUMBER-

TOP CHORD 2x4 SP No.2
 BOT CHORD 2x4 SP No.2 P
 OTHERS 2x4 SP No.3

BRACING-

TOP CHORD 2-0-0 oc purlins (10-0-0 max.).
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
 WEBS 1 Row at midpt 14-37, 13-38, 12-39, 15-36, 16-35

REACTIONS.

All bearings 36-0-0 except (jt=length) 2=0-3-8, 26=0-3-8.
 (lb) - Max Horz 46=175(LC 16)
 Max Uplift All uplift 100 lb or less at joint(s) 38, 39, 40, 41, 42, 43, 44, 45, 36, 35, 34, 33, 32, 31, 30, 29 except 2=-180(LC 8), 26=-175(LC 9), 46=-208(LC 8), 28=-200(LC 9)
 Max Grav All reactions 250 lb or less at joint(s) 37, 38, 39, 40, 41, 42, 43, 44, 45, 36, 35, 34, 33, 32, 31, 30, 29 except 2=298(LC 25), 26=298(LC 26), 46=399(LC 25), 46=393(LC 1), 28=399(LC 26)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 12-13=-77/288, 13-14=-94/343, 14-15=-94/343, 15-16=-77/288
 WEBS 4-46=-261/183, 24-28=-261/183

NOTES-

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-22; Vult=130mph (3-second gust) Vasd=101mph; TC DL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Zone3 zone; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * 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.
- Lumber designated with a "P" is pressure-treated with preservatives. Plate lateral resistance values have been reduced 20% where used in this lumber. Plates should be protected from corrosion per the recommendation of the treatment company. Borate or other suitable treatment may be used if it does not corrode the plates. If ACQ, CBA, or CA-B treated lumber is used, improved corrosion protection is required, and G185 galvanized plates may be used with this design. Incising factors have not been considered for this design. Building designer to verify suitability of this product for its intended use.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 38, 39, 40, 41, 42, 43, 44, 45, 36, 35, 34, 33, 32, 31, 30, 29 except (jt=lb) 2=180, 26=175, 46=208, 28=200.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.



Review for Code Compliance
 Universal Engineering Science

Signature
 Examiner-License No.

PX2707 10/20/2025

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Joaquin Velez PE No.68182
 MiTek Inc. DBA MiTek USA FL Cert 6634
 16023 Swingley Ridge Rd.
 Chesterfield, MO 63017
 Date:

August 25, 2025

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

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

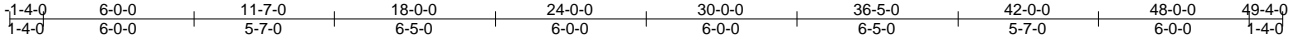
Job	Truss	Truss Type	Qty	Ply	HOWE RES.	T38327848
4768186	T03G	GABLE	1	1		

Builders FirstSource (Lake City, FL),

Lake City, FL - 32055,

8.830 s Aug 14 2025 MiTek Industries, Inc. Mon Aug 25 09:11:57 2025 Page 1

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Scale = 1:91.7

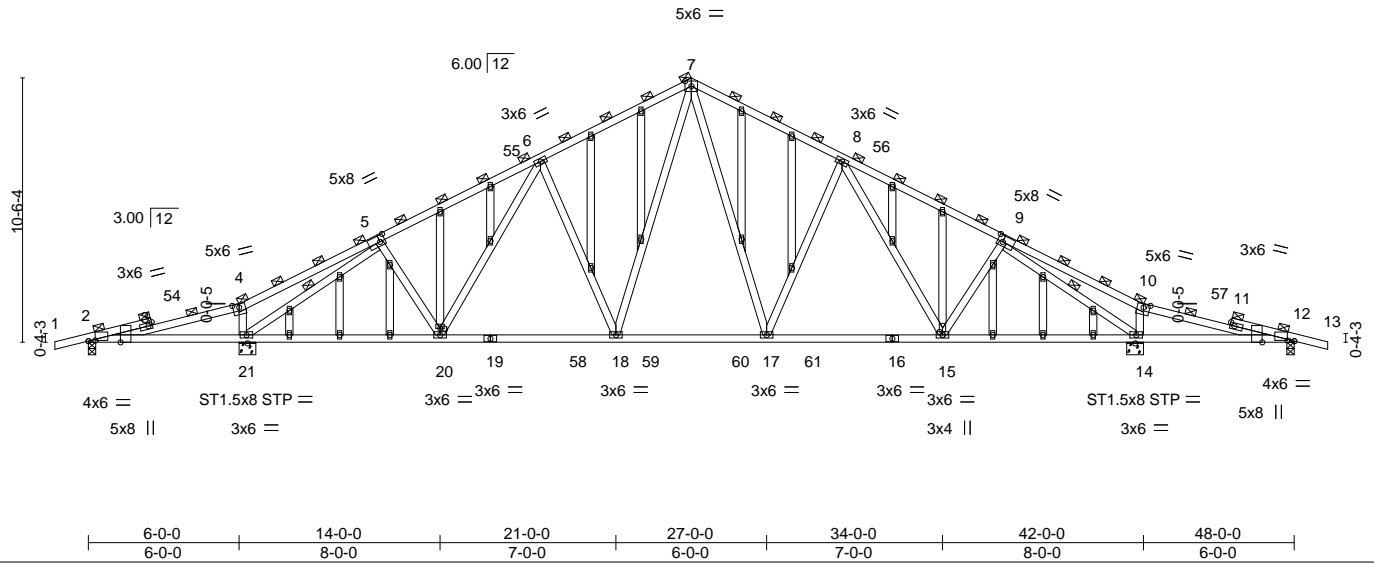


Plate Offsets (X,Y)-- [2:0-3-4,0-0-5], [2:0-0-9,Edge], [4:0-3-0,0-1-10], [5:0-2-8,0-3-0], [9:0-2-8,0-3-0], [10:0-3-0,0-1-10], [12:0-3-4,0-0-5], [12:0-0-9,Edge], [15:0-1-8,0-1-8], [20:0-2-0,0-0-2]

LOADING (psf)	SPACING-	2-0-0	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL	1.25	TC 0.47	Vert(LL)	-0.17 15-17	>999	240	MT20	244/190
TCDL 10.0	Lumber DOL	1.25	BC 0.77	Vert(CT)	-0.29 15-17	>999	180		
BCLL 0.0 *	Rep Stress Incr	YES	WB 0.65	Horz(CT)	0.10 14	n/a	n/a		
BCDL 10.0	Code	FBC2023/TPI2014	Matrix-MS					Weight: 345 lb	FT = 20%

LUMBER-
 TOP CHORD 2x4 SP No.2
 BOT CHORD 2x4 SP No.2
 WEBS 2x4 SP No.3
 OTHERS 2x4 SP No.3

BRACING-
 TOP CHORD 2-0-0 oc purlins (3-8-9 max.).
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.
 WEBS 1 Row at midpt 9-14, 5-21

REACTIONS. All bearings 0-3-8 except (jt=length) 21=0-8-0, 14=0-8-0.
 (lb) - Max Horz 2=175(LC 12)
 Max Uplift All uplift 100 lb or less at joint(s) except 2=179(LC 8), 12=173(LC 9), 21=441(LC 12), 14=428(LC 13)
 Max Grav All reactions 250 lb or less at joint(s) except 2=278(LC 25), 12=278(LC 26), 21=1918(LC 2), 14=1918(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
 TOP CHORD 4-5=-84/253, 5-6=-2108/480, 6-7=-1837/467, 7-8=-1837/477, 8-9=-2108/497
 BOT CHORD 20-21=-439/1796, 18-20=-338/1751, 17-18=-166/1394, 15-17=-221/1732, 14-15=-283/1753
 WEBS 7-17=-236/709, 8-17=-466/284, 9-14=-2351/490, 10-14=-275/158, 7-18=-231/709, 6-18=-466/279, 5-21=-2351/539, 4-21=-275/142



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 Universal Engineering Science

Lauren Pennell
 Examiner-License No.

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- NOTES-**
- Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-22; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Zone3 -1-4-0 to 3-5-10, Zone1 3-5-10 to 24-0-0, Zone2 24-0-0 to 30-9-7, Zone1 30-9-7 to 49-4-0 zone; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
 - Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
 - All plates are 2x4 MT20 unless otherwise indicated.
 - Gable studs spaced at 2-0-0 oc.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * 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 = 10.0psf.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 179 lb uplift at joint 2, 173 lb uplift at joint 12, 441 lb uplift at joint 21 and 428 lb uplift at joint 14.
 - Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

This item has been digitally signed and sealed by Velez, Joaquin, PE on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Joaquin Velez PE No.68182
 MiTek Inc. DBA MiTek USA FL Cert 6634
 16023 Swingley Ridge Rd.
 Chesterfield, MO 63017
 Date:

August 25, 2025

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

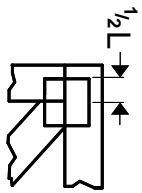
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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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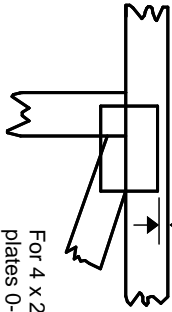
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Symbols

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

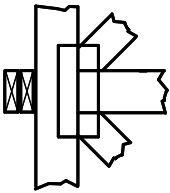
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

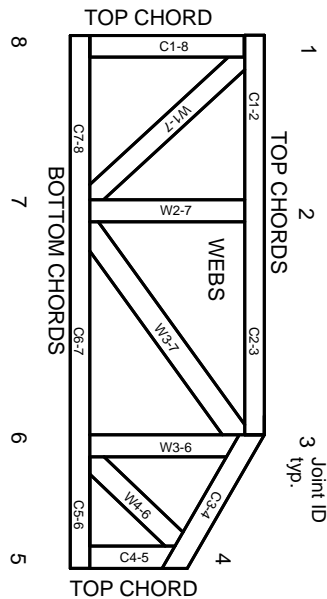


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/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-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/TP1 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/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.



MITtek Engineering Reference Sheet: Mill-7473 rev. 1/2/2023

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Lester Pennell
Examiner-License No.

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10/20/2025