



MiTek USA, Inc.

16023 Swingley Ridge Rd
Chesterfield, MO 63017
314-434-1200

Re: P220523-P220523-02
Roof - Osage Lot 51

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Premier Building Supply (Springhill, KS) 20300 W 207th Street.

Pages or sheets covered by this seal: I57225099 thru I57225100

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

Missouri COA: Engineering 001193



March 16, 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	Truss	Truss Type	Qty	Ply	Roof - Osage Lot 51	157225099
P220523-P220523-02	A3	Common	2	1	Job Reference (optional)	

Premier Building Supply (Springhill, KS), Spring Hills, KS - 66083,

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Page: 1

REPAIR:

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BREAK IN MEMBER 14-15 LOCATED JUST BEYOND PLATE AT 15.

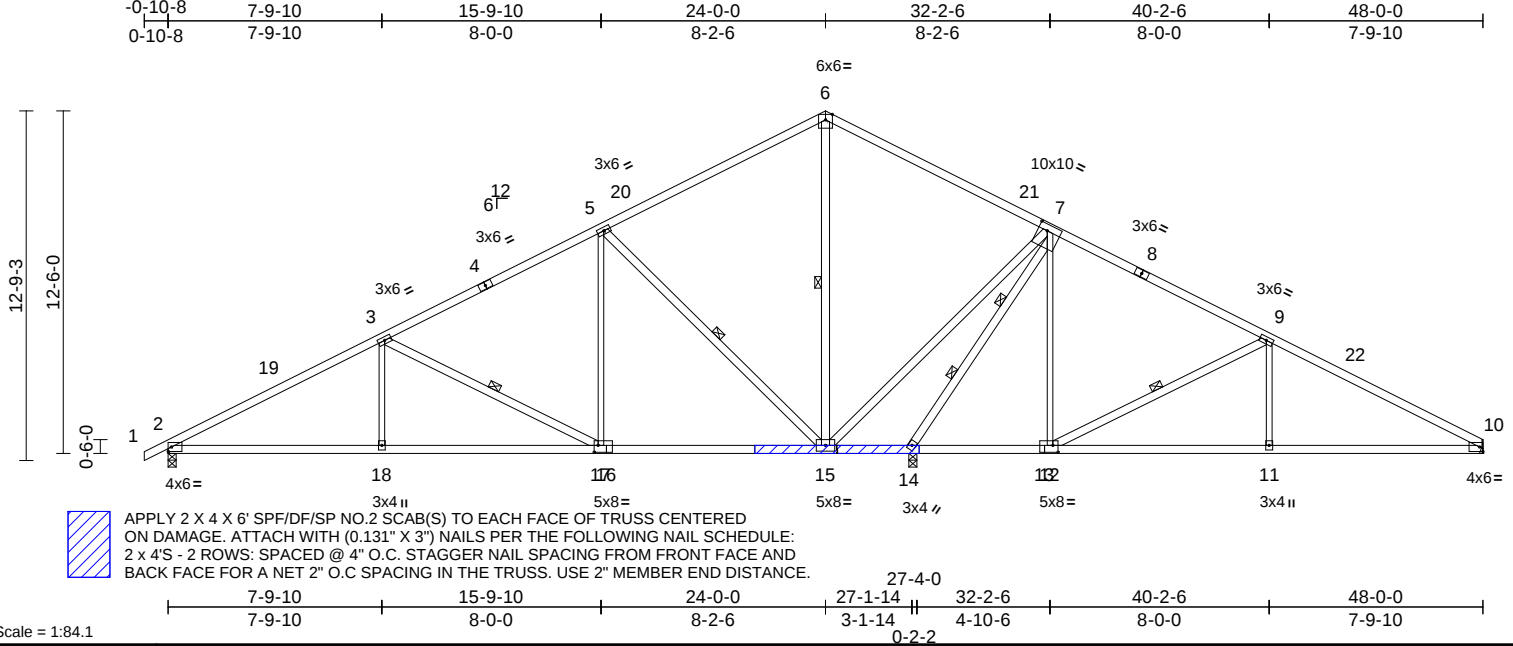


Plate Offsets (X, Y): [7:0-4-0,0-2-12], [13:0-2-4,0-3-0], [16:0-1-12,0-3-0]

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	1.00	Vert(LL)	-0.12	15-17	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.75	Vert(CT)	-0.27	15-17	>999	180		
BCLL	0.0	Rep Stress Incr	YES	WB	0.85	Horz(CT)	0.06	10	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-S							Weight: 262 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
 BOT CHORD 2x4 SP No.2
 WEBS 2x4 SP No.2 *Except*
 18-3,17-5,12-7,11-9:2x3 SPF No.2

BRACING

TOP CHORD Structural wood sheathing directly applied.
 BOT CHORD Rigid ceiling directly applied or 4-9-5 oc bracing.
 WEBS 1 Row at midpt 3-17, 5-15, 6-15, 9-12
 WEBS 2 Rows at 1/3 pts 7-14

REACTIONS

(size) 2=0-3-8, 10= Mechanical, 14=0-3-8
 Max Horiz 2=239 (LC 12)
 Max Uplift 2=-220 (LC 12), 10=-169 (LC 13),
 14=-304 (LC 12)
 Max Grav 2=1163 (LC 25), 10=804 (LC 26),
 14=2486 (LC 1)

FORCES

(lb) - Maximum Compression/Maximum Tension
 TOP CHORD 1-2=0/17, 2-3=-1827/313, 3-5=-1032/232,
 5-6=-199/200, 6-7=-142/194, 7-9=-400/179,
 9-10=-1208/261
 BOT CHORD 2-18=-404/1514, 17-18=-404/1514,
 15-17=-154/814, 14-15=-1366/355,
 12-14=-60/248, 11-12=-131/996,
 10-11=-131/996
 WEBS 3-18=0/338, 3-17=-792/281, 5-17=-27/579,
 5-15=-1075/374, 6-15=-520/46,
 7-15=-307/1922, 7-12=-40/523,
 9-12=-849/286, 9-11=0/361, 7-14=-2809/415

NOTES

1) Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=115mph (3-second gust)
 Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft;
 Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope)
 exterior zone and C-C Exterior(2E) -0-10-8 to 4-1-8,
 Interior (1) 4-1-8 to 24-0-0, Exterior(2R) 24-0-0 to
 31-0-14, Interior (1) 31-0-14 to 47-11-4 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
- This truss has been designed for a 10.0 psf bottom
 chord live load nonconcurrent with any other live loads.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to
 bearing plate capable of withstanding 220 lb uplift at
 joint 2, 169 lb uplift at joint 10 and 304 lb uplift at joint
 14.
- 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.

LOAD CASE(S) Standard



March 16, 2023

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/TPI1 Quality Criteria, DSB-89 and BCSI Building Component

Safety Information available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



16023 Swingley Ridge Rd
 Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	Roof - Osage Lot 51	I57225100
P220523-P220523-02	A6	Common Supported Gable	2	1	Job Reference (optional)	

Premier Building Supply (Springhill, KS), Spring Hills, KS - 66083,
REPAIR:
BREAK IN MEMBER 9-10 JUST BEYOND PLATE AT JOINT 9.

Run: 8.63 S Nov 19 2022 Print: 8.630 S Nov 19 2022 MiTek Industries, Inc. Thu Mar 16 13:01:38
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Page: 1

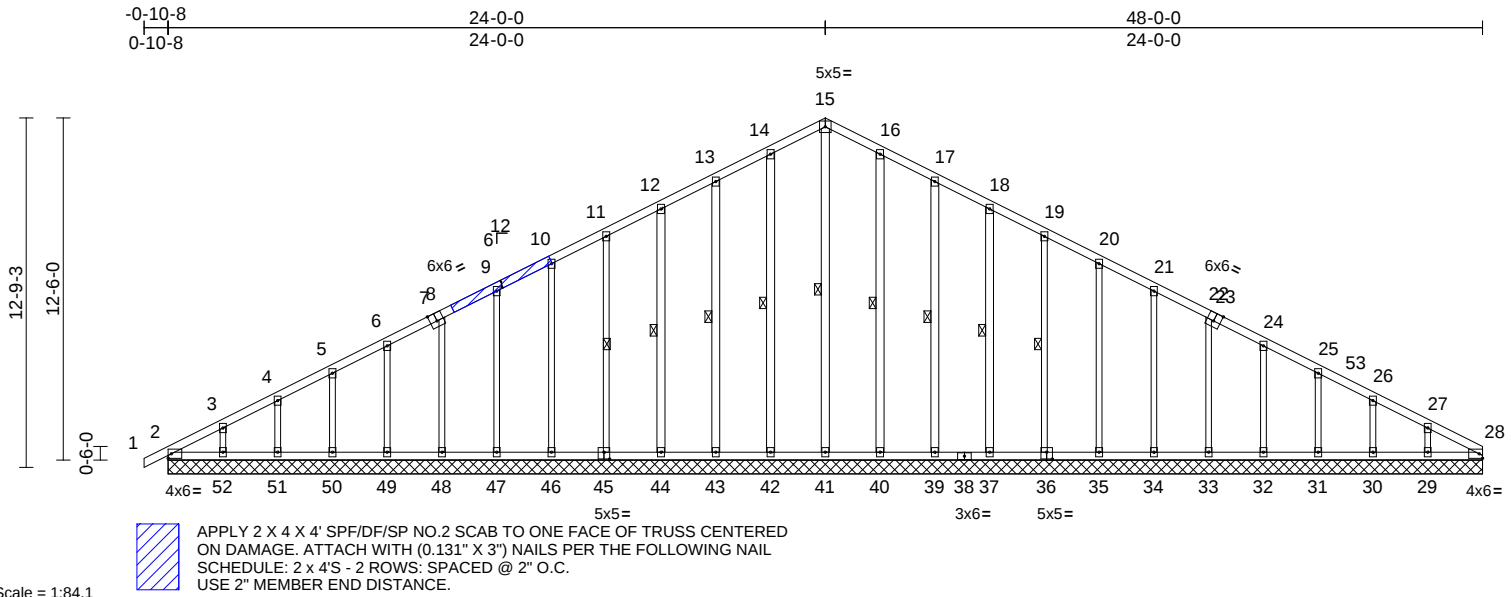


Plate Offsets (X, Y): [7:0-3-0,Edge], [23:0-3-0,Edge], [36:0-2-8,0-3-0], [45:0-2-8,0-3-0]

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	0.11	Vert(LL)	n/a	-	n/a	999	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999	
BCLL	0.0	Rep Stress Incr	YES	WB	0.20	Horz(CT)	0.02	28	n/a	n/a	
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-S							
Weight: 317 lb FT = 20%											

LUMBER		Max Grav	2=185 (LC 21), 28=114 (LC 22), 29=203 (LC 26), 30=174 (LC 26), 31=182 (LC 1), 32=180 (LC 26), 33=180 (LC 26), 34=180 (LC 1), 35=180 (LC 26), 36=178 (LC 1), 37=184 (LC 1), 39=178 (LC 26), 40=189 (LC 26), 41=261 (LC 13), 42=189 (LC 25), 43=178 (LC 25), 44=184 (LC 1), 45=178 (LC 1), 46=180 (LC 25), 47=180 (LC 1), 48=180 (LC 25), 49=180 (LC 25), 50=180 (LC 1), 51=179 (LC 25), 52=182 (LC 25)	WEBS	15-41=-291/65, 16-40=-149/79, 17-39=-138/105, 18-37=-142/97, 19-36=-138/95, 20-35=-141/97, 21-34=-140/96, 22-33=-140/97, 24-32=-140/96, 25-31=-141/102, 26-30=-136/140, 27-29=-153/185, 14-42=-149/79, 13-43=-138/105, 12-44=-142/97, 11-45=-138/95, 10-46=-141/97, 9-47=-140/96, 8-48=-140/96, 6-49=-140/97, 5-50=-140/97, 4-51=-140/123, 3-52=-139/172
TOP CHORD	2x4 SP No.2				
BOT CHORD	2x4 SP No.2				
OTHERS	2x3 SPF No.2 *Except* 41-15,40-16,39-17,37-18,42-14,43-13,44-12: 2x4 SP No.2				
BRACING					
TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins.				
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.				
WEBS	1 Row at midpt 15-41, 16-40, 17-39, 18-37, 19-36, 14-42, 13-43, 12-44, 11-45				
REACTIONS (size)					
Max Horiz	2=239 (LC 16)				
Max Uplift	2=-32 (LC 8), 29=90 (LC 13), 30=58 (LC 13), 31=62 (LC 13), 32=61 (LC 13), 33=61 (LC 13), 34=61 (LC 13), 35=63 (LC 13), 36=60 (LC 13), 37=61 (LC 13), 39=68 (LC 13), 40=48 (LC 13), 42=53 (LC 12), 43=66 (LC 12), 44=61 (LC 12), 45=60 (LC 12), 46=63 (LC 12), 47=61 (LC 12), 48=61 (LC 12), 49=61 (LC 12), 50=61 (LC 12), 51=61 (LC 12), 52=90 (LC 12)				
FORCES		(lb) - Maximum Compression/Maximum Tension			
TOP CHORD		15-16=-155/432, 16-17=-138/386, 17-18=-118/329, 18-19=-99/275, 19-20=-80/221, 20-21=-61/167, 21-22=-45/113, 22-24=-50/59, 24-25=-76/38, 25-26=-115/34, 26-27=-162/50, 27-28=-236/79, 1-2=0/17, 2-3=-327/107, 3-4=-260/105, 4-5=-212/119, 5-6=-163/133, 6-8=-127/152, 8-9=-96/180, 9-10=-80/208, 10-11=-80/236, 11-12=-99/275, 12-13=-118/329, 13-14=-138/386, 14-15=-155/432			
BOT CHORD		2-52=-66/234, 51-52=-66/234, 50-51=-66/234, 49-50=-66/234, 48-49=-66/234, 47-48=-66/234, 46-47=-66/234, 44-46=-66/234, 43-44=-65/233, 42-43=-65/233, 41-42=-65/233, 40-41=-65/233, 39-40=-65/233, 37-39=-65/233, 35-37=-66/234, 34-35=-66/234, 33-34=-66/234, 32-33=-66/234, 31-32=-66/234, 30-31=-66/234, 29-30=-66/234, 28-29=-66/234			

NOTES
1) Unbalanced roof live loads have been considered for this design.



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Continued on page 2

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/TPI1 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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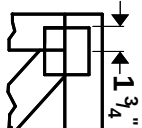
Job	Truss	Truss Type	Qty	Ply	Roof - Osage Lot 51
P220523-P220523-02	A6	Common Supported Gable	2	1	I57225100
					Job Reference (optional)

- 2) Wind: ASCE 7-16; Vult=115mph (3-second gust)
Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=35ft;
Ke=1.00; Cat. II; Exp C; Enclosed; MWFRS (envelope)
exterior zone and C-C Corner(3E) -0-10-8 to 4-0-0,
Exterior(2N) 4-0-0 to 24-0-0, Corner(3R) 24-0-0 to
29-0-0, Exterior(2N) 29-0-0 to 48-0-0 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
- 3) 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.
- 4) All plates are 3x4 MT20 unless otherwise indicated.
- 5) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 2-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
- 8) Provide mechanical connection (by others) of truss to
bearing plate capable of withstanding 48 lb uplift at joint
40, 68 lb uplift at joint 39, 61 lb uplift at joint 37, 60 lb
uplift at joint 36, 63 lb uplift at joint 35, 61 lb uplift at joint
34, 61 lb uplift at joint 33, 61 lb uplift at joint 32, 62 lb
uplift at joint 31, 58 lb uplift at joint 30, 90 lb uplift at joint
29, 53 lb uplift at joint 42, 66 lb uplift at joint 43, 61 lb
uplift at joint 44, 60 lb uplift at joint 45, 63 lb uplift at joint
46, 61 lb uplift at joint 47, 61 lb uplift at joint 48, 61 lb
uplift at joint 49, 61 lb uplift at joint 50, 61 lb uplift at joint
51, 90 lb uplift at joint 52 and 32 lb uplift at joint 2.
- 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.

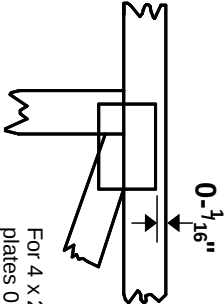
LOAD CASE(S) Standard

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- $\frac{3}{16}$ " from outside edge of truss.

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

*** Plate location details available in MiTek 2012 software or upon request.**

PLATE SIZE

4 X 4

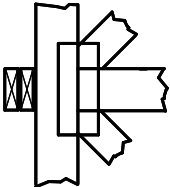
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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



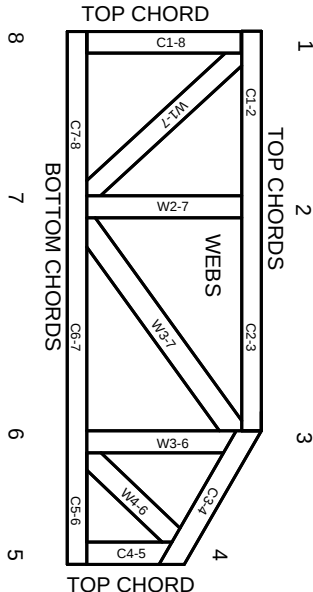
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TP1.1: 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.