MiTek USA, Inc.
7777 Greenback Lane
Suite 109
Citrus Heights, CA, 95610
Telephone 916/676-1900
Fax 916/676-1909

Re: A38312
[redacted] 40x72 POLE BARN

The truss drawing(s) referenced below have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Automated Structures.

Pages or sheets covered by this seal: R44834823 thru R44834824

My license renewal date for the state of Utah is March 31, 2017.

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

July 1,2015

Ong, Choo Soon

The seal on these drawings indicate acceptance of professional engineering responsibility solely for the truss components shown. The suitability and use of this component for any particular building is the responsibility of the building designer, per ANSI/TPI 1.

Job	Truss	Truss Type	Qty	Ply	0x72 POLE BARN	
A38312	A1	POLE BARN	11			R44834823

Job Reference (optional)

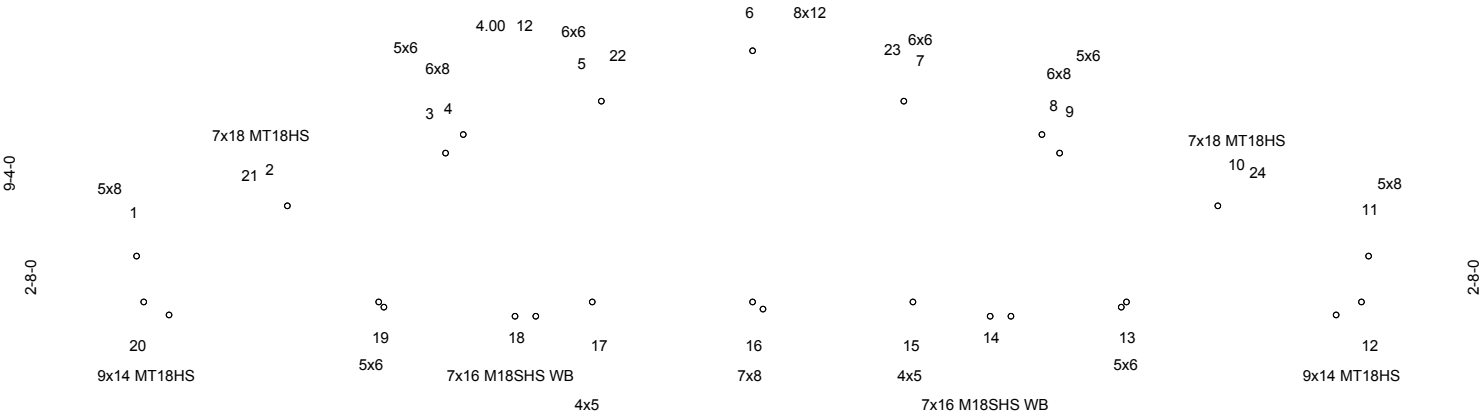
Automated Structures, Ogden, UT, 84401 — 7.630 s Jun 23 2015 MiTek Industries, Inc. Wed Jul 01 06:54:42 2015 Page 1

ID:1ceUi8A4gnr0DrMV528Up0z11zQ-AxVnt4SVQJThcOZgISmdRtunOxuHzCoWrDl6orz0UJR

5-2-10	10-1-12	15-0-0	20-0-0	25-0-0	29-10-4	34-9-6	40-0-0
5-2-10	4-11-2	4-10-4	5-0-0	5-0-0	4-10-4	4-11-2	5-2-10

THIS DRAWING ASSUMES NO RESPONSIBILITY FOR THE DESIGN OF THE LATERAL BRACING SHOWN. DUE TO THE WIDE SPACING OF THE TRUSSES, SPECIAL CONSIDERATIONS MUST BE GIVEN IN THIS AREA. IT IS THE RESPONSIBILITY OF THE PROJECT ENGINEER/ARCHITECT TO SPECIFY PROPER BRACING SIZE AND ATTACHMENT.

Scale = 1:73.9



8-0-0	15-0-0	20-0-0	25-0-0	32-0-0	40-0-0
8-0-0	7-0-0	5-0-0	5-0-0	7-0-0	8-0-0

Plate Offsets (X,Y)-- [12:0-9-12,0-5-0], [13:0-2-0,0-2-0], [16:0-4-0,0-2-12], [19:0-2-0,0-2-0], [20:0-9-12,0-5-0]

LOADING (psf)
TCLL 73.0
(Roof Snow=73.0)
TCDL 6.0
BCLL 0.0 *
BCDL 3.0

SPACING-	6-0-0	**CSI.**		**DEFL.**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
Plate Grip DOL	1.00	TC	0.91	Vert(LL)	-0.59	17	>811	240	MT20	185/144
Lumber DOL	1.00	BC	0.97	Vert(TL)	-0.69	17	>683	180	M18SHS	220/195
Rep Stress Incr	NO	WB	0.96	Horz(TL)	0.37	12	n/a	n/a	MT18HS	185/148
Code	IBC2012/TPI2007	(Matrix)							Weight: 356 lb	FT = 20%

LUMBER-
TOP CHORD 2x10 DF SS
BOT CHORD 2x6 DF 2400F 2.0E
WEBS 2x4 SPF Stud *Except*
6-16,7-16,5-16: 2x4 DF 1800F 1.6E, 10-13,2-19: 2x4 HF No.2
2-20,10-12: 2x6 DF 2400F 2.0E
OTHERS 2x4 SPF Stud *Except*
1-20,11-12: 2x6 DF 1800F 1.6E

BRACING-
TOP CHORD 2-0-0 oc purlins (2-1-12 max.).
BOT CHORD 4-0-0 oc bracing.
WEBS 1 Row at midpt 7-16, 9-15, 9-13, 5-16, 3-17, 3-19
2 Rows at 1/3 pts 2-20, 10-12

REACTIONS. (lb/size) 20=9727/0-6-0 (min. 0-3-15), 12=9727/0-6-0 (min. 0-3-15)
Max Horz 20=532(LC 13)
Max Uplift 20=-1351(LC 14), 12=-1351(LC 14)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-21=-794/257, 2-21=-244/273, 2-3=-13641/2360, 3-4=-13889/2453, 4-5=-13504/2479, 5-22=-12056/2298, 6-22=-11829/2326, 6-23=-11829/2326, 7-23=-12056/2298, 7-8=-13504/2478, 8-9=-13889/2452, 9-10=-13641/2357, 10-24=-242/272, 11-24=-794/256, 1-20=-1326/315, 11-12=-1326/318
BOT CHORD 19-20=-1873/11023, 18-19=-2169/13403, 17-18=-2169/13403, 16-17=-2023/12811, 15-16=-1978/12811, 14-15=-2137/13403, 13-14=-2137/13403, 12-13=-1866/11023
WEBS 6-16=-879/4646, 7-16=-4313/588, 7-15=-267/1100, 9-15=-1390/467, 9-13=-2022/305, 10-13=-283/2560, 5-16=-4313/587, 5-17=-267/1100, 3-17=-1390/467, 3-19=-2022/308, 2-19=-286/2560, 2-20=-13479/2226, 10-12=-13479/2221

NOTES-
1) Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TCDL=3.6psf; BCDL=1.2psf; h=21ft; B=45ft; L=40ft; eave=5ft; Cat. II; Exp C; enclosed; MWFRS (directional) and C-C Exterior(2) 0-2-12 to 4-2-12, Interior(1) 4-2-12 to 20-0-0, Exterior(2) 20-0-0 to 24-0-0 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
2) TCLL: ASCE 7-10; Pf=73.0 psf (flat roof snow); Category II; Exp C; Partially Exp.; Ct=1.2
3) Unbalanced snow loads have been considered for this design.
4) The bottom chord dead load shown is sufficient only to cover the truss weight itself and does not allow for any additional load to be added to the bottom chord.
5) All plates are MT20 plates unless otherwise indicated.
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.
8) Bearing at joint(s) 20, 12 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) This truss is designed in accordance with the 2012 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
10) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

July 1,2015

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERANCE PAGE MII-7473 rev. 02/16/2015 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. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibillity of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 781 N. Lee Street, Suite 312, Alexandria, VA 22314.

MiTek
7777 Greenback Lane
Suite 109
Citrus Heights, CA 95610

Job	Truss	Truss Type	Qty	Ply		R44834824
A38312	A2F	40/40	3	1	0x72 POLE BARN	

Job Reference (optional)

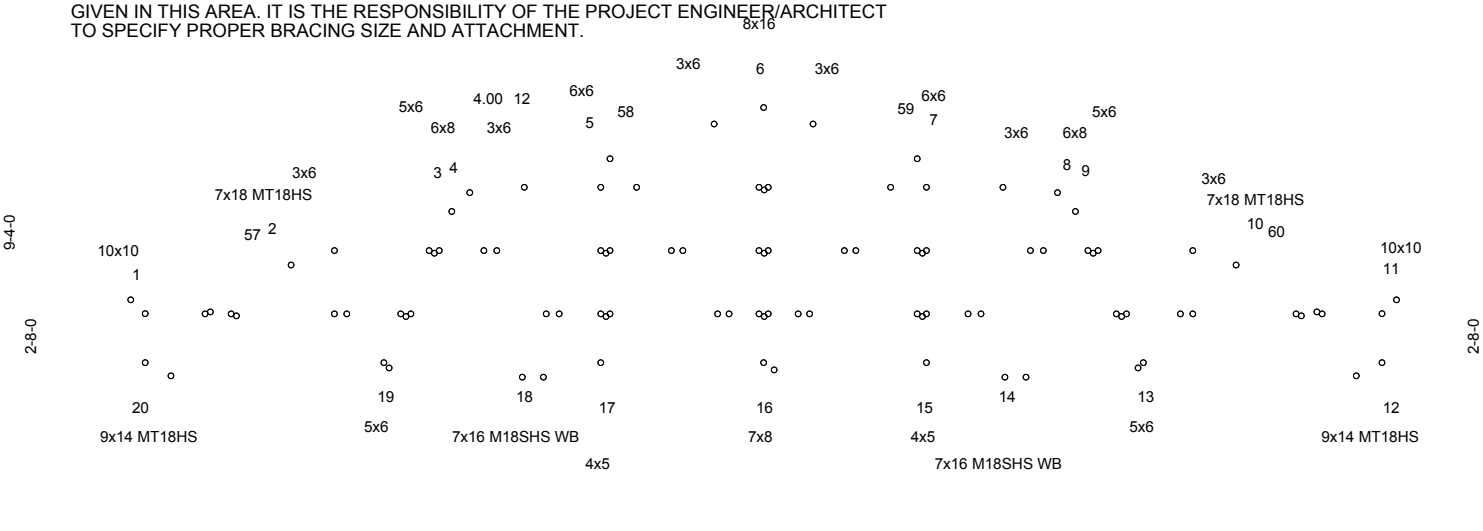
Automated Structures, Ogden, UT, 84401 — 7.630 s Jun 23 2015 MiTek Industries, Inc. Wed Jul 01 06:54:46 2015 Page 1

ID:1ceUi8A4gnr0DrMV528Up0z11zQ-3jkHjRV0UY_750sRXIqZcj2TNYFDv0o5mrjKxcz0UJN

5-2-10	10-1-12	15-0-0	20-0-0	25-0-0	29-10-4	34-9-6	40-0-0
5-2-10	4-11-2	4-10-4	5-0-0	5-0-0	4-10-4	4-11-2	5-2-10

THIS DRAWING ASSUMES NO RESPONSIBILITY FOR THE DESIGN OF THE LATERAL BRACING SHOWN. DUE TO THE WIDE SPACING OF THE TRUSSES, SPECIAL CONSIDERATIONS MUST BE GIVEN IN THIS AREA. IT IS THE RESPONSIBILITY OF THE PROJECT ENGINEER/ARCHITECT TO SPECIFY PROPER BRACING SIZE AND ATTACHMENT.

Scale = 1:72.8



8-0-0	15-0-0	20-0-0	25-0-0	32-0-0	40-0-0
8-0-0	7-0-0	5-0-0	5-0-0	7-0-0	8-0-0

Plate Offsets (X,Y)-- [1:Edge,0-5-4], [11:Edge,0-5-4], [12:0-9-12,0-5-0], [13:0-2-0,0-2-0], [16:0-4-0,0-2-12], [19:0-2-0,0-2-0], [20:0-9-12,0-5-0], [21:0-2-0,0-0-12], [23:0-2-0,0-0-12], [24:0-1-14,0-1-0], [26:0-1-8,0-1-0], [28:0-1-8,0-1-0], [30:0-1-8,0-1-0], [32:0-1-14,0-1-0], [33:0-2-0,0-0-12], [35:0-2-0,0-0-12], [36:0-1-14,0-1-0], [39:0-1-8,0-1-0], [41:0-1-8,0-1-0], [43:0-1-8,0-1-0], [46:0-1-14,0-1-0], [49:0-1-8,0-1-0]

LOADING (psf)

TCLL	73.0
(Roof Snow=73.0)	
TCDL	6.0
BCLL	0.0 *
BCDL	3.0

SPACING-	6-0-0
Plate Grip DOL	1.00
Lumber DOL	1.00
Rep Stress Incr	NO
Code	IBC2012/TPI2007

CSI.	
TC	0.91
BC	0.97
WB	0.96
(Matrix)	

DEFL.	in	(loc)	l/defl	L/d
Vert(LL)	-0.59	17	>811	240
Vert(TL)	-0.69	17	>683	180
Horz(TL)	0.37	12	n/a	n/a

PLATES	**GRIP**
MT20	185/144
M18SHS	220/195
MT18HS	185/148
Weight: 448 lb	FT = 20%

LUMBER-

TOP CHORD	2x10 DF SS
BOT CHORD	2x6 DF 2400F 2.0E
WEBS	2x4 SPF Stud *Except*
	6-16,7-16,5-16: 2x4 DF 1800F 1.6E, 10-13,2-19: 2x4 HF No.2
	2-20,10-12: 2x6 DF 2400F 2.0E
OTHERS	2x4 SPF Stud *Except*
	1-20,11-12: 2x6 DF 1800F 1.6E, 18-18,14-14: 2x4 HF No.2

BRACING-

TOP CHORD	2-0-0 oc purlins (2-1-12 max.).
BOT CHORD	4-0-0 oc bracing.
WEBS	1 Row at midpt 7-16, 9-15, 9-13, 5-16, 3-17, 3-19
	2 Rows at 1/3 pts 2-20, 10-12

REACTIONS. (lb/size) 20=9727/0-6-0 (min. 0-3-15), 12=9727/0-6-0 (min. 0-3-15)
Max Horz 20=532(LC 13)
Max Uplift 20=-1351(LC 14), 12=-1351(LC 14)

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

TOP CHORD	1-57=-794/257, 2-57=-244/273, 2-3=-13641/2360, 3-4=-13889/2453, 4-5=-13504/2479, 5-58=-12056/2298, 6-58=-11829/2326, 6-59=-11829/2326, 7-59=-12056/2298, 7-8=-13504/2478, 8-9=-13889/2452, 9-10=-13641/2357, 10-60=-242/272, 11-60=-794/256, 1-20=-1326/315, 11-12=-1326/318
BOT CHORD	19-20=-1873/11023, 18-19=-2169/13403, 17-18=-2169/13403, 16-17=-2023/12811, 15-16=-1978/12811, 14-15=-2137/13403, 13-14=-2137/13403, 12-13=-1866/11023
WEBS	6-16=-879/4646, 7-16=-4313/588, 7-15=-267/1100, 9-15=-1390/467, 9-13=-2022/305, 10-13=-283/2560, 5-16=-4313/587, 5-17=-267/1100, 3-17=-1390/467, 3-19=-2022/308, 2-19=-286/2560, 2-20=-13479/2226, 10-12=-13479/2221

NOTES-

1) Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TCDL=3.6psf; BCDL=1.2psf; h=21ft; B=45ft; L=40ft; eave=5ft; Cat. II; Exp C; enclosed; MWFRS (directional) and C-C Exterior(2) 0-2-12 to 4-2-12, Interior(1) 4-2-12 to 20-0-0, Exterior(2) 20-0-0 to 24-0-0 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
2) 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.
3) TCLL: ASCE 7-10; Pf=73.0 psf (flat roof snow); Category II; Exp C; Partially Exp.; Ct=1.2
4) Unbalanced snow loads have been considered for this design.
5) The bottom chord dead load shown is sufficient only to cover the truss weight itself and does not allow for any additional load to be added to the bottom chord.
6) All plates are MT20 plates unless otherwise indicated.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Horizontal gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

Continued on page 2

July 1,2015

MiTek
7777 Greenback Lane
Suite 109
Citrus Heights, CA 95610

NOTES-

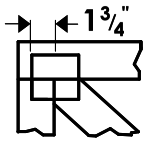
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
11) Bearing at joint(s) 20, 12 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
12) This truss is designed in accordance with the 2012 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
13) "Semi-rigid pitchbreaks with fixed heels" Member end fixity model was used in the analysis and design of this truss.

LOAD CASE(S) Standard

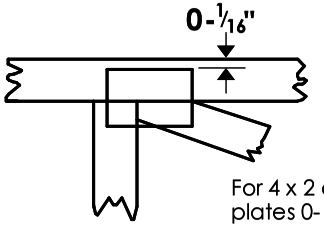
MiTek
7777 Greenback Lane
Suite 109
Citrus Heights, CA 95610

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.

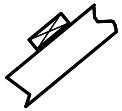
*** Plate location details available in MiTek 20/20 software or upon request.**

PLATE SIZE

4 x 4

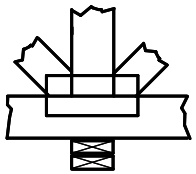
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

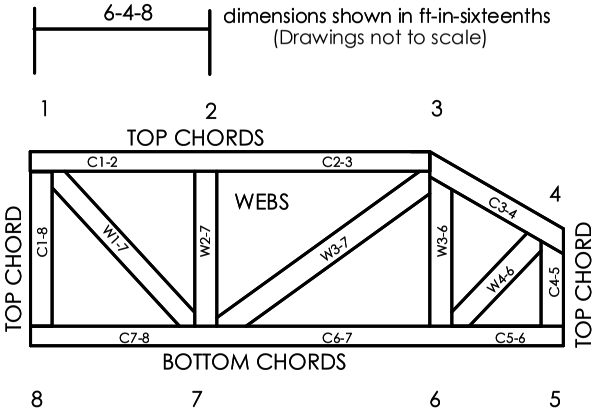


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & 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-1311, ESR-1352, ESR1988
ER-3907, ESR-2362, ESR-1397, ESR-3282

MiTek

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/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 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/TPI 1 Quality Criteria.