Force Engineering & Testing Inc.
19530 Ramblewood Drive
Humble,TX 77338

Product Evaluation Report

TRI COUNTY METALS

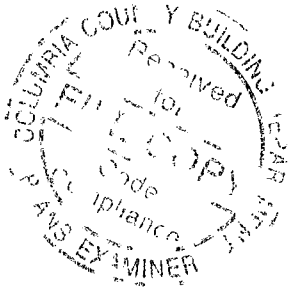
29 Ga. Ultra-Rib Roof Panel over 1x4 Wood Purlins over 15/32" Plywood

Florida Product Approval # 4595.4 R2

Florida Building Code 2010
Per Rule 9N-3
Method: 1 –D

Category: Roofing
Subcategory: Metal Roofing
Compliance Method: 9N-3.005(1)(d)
NON HVHZ

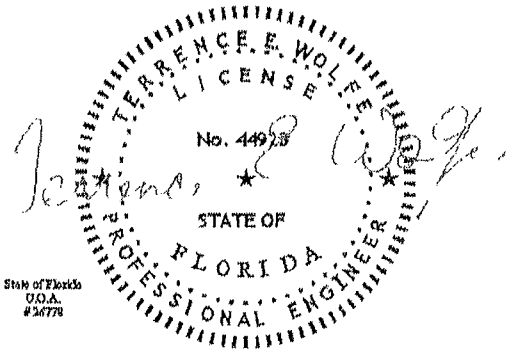
Product Manufacturer:
Tri County Metals
301 SE 16th Street
Trenton, Florida 32693



Engineer Evaluator:
Terrence E. Wolfe, P.E. # 44923
Florida Evaluation ANE ID: 1920

Validator:
Locke Bowden, P.E., FL #49704
9450 Alysbury Place
Montgomery, AL 36117

Contents:
Evaluation Report Pages 1 – 4



State of Florida
C.O.A.
#26778

February 20, 2012

Force Engineering & Testing Inc.
19530 Ramblewood Drive
Humble,TX 77338

Compliance Statement: The product as described in this report has demonstrated compliance with the Florida Building Code 2010, Sections 1504 3 2, 1504 7

Product Description: Ultra-Rib Roof Panel, Min 29 Ga Steel, 36" Wide, through fastened roof panel over 1x4 wood purlins over one layer of asphalt shingles (optional) over min 15/32" Plywood decking Non-Structural Application

Panel Material/Standards: Material Min 29 Ga Steel conforming to Florida Building Code 2010 Section 1507 4 3
Yield Strength Min 80 0 ksi
Corrosion Resistance. Panel Material shall comply with Florida Building Code 2010, Section 1507 4 3

Panel Dimension(s):

Thickness	0 015" min
Width	36"
Rib Height	¾" major rib at 9" O C
Panel Rollformer	MRS Metal Rollforming Systems

Panel Fastener: #9-15 x 1-1/2" HWH Woodgrip with sealing washing or approved equal
¼" minimum penetration through plywood
Corrosion Resistance Per Florida Building Code 2010, Section 1506 6, 1507 4 4

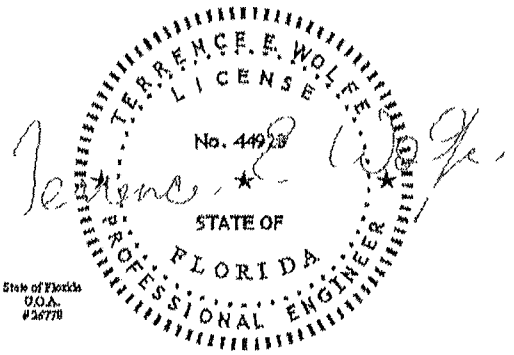
Substrate Description: Min 1x4 No 2 SYP wood purlins over maximum one layer of asphalt shingles/felt paper (optional) over min 15/32" thick over supports at maximum 24" O C The 1x4 wood purlins shall be fastened to the plywood with (1) 8d x 2 ½" Ring Shank Nail at 4" O C Design of 1x4 wood purlins, plywood and plywood supports are outside the scope of this evaluation Must be designed in accordance w/ Florida Building Code 2010

Design Uplift Pressures:

Table "A"

Maximum Total Uplift Design Pressure:	78 5 psf	86 0 psf
Fastener Pattern:	9"-9" 9" 9"	6" 3" 6" 3" 6" 3" 6"
Fastener Spacing:	24" O C	24" O C

*Design Pressure Includes a Safety Factor = 2.0

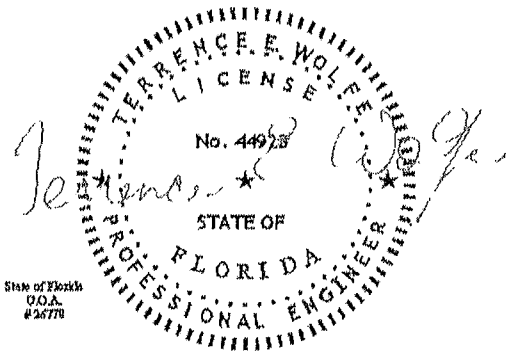


FL# 4595.4 R2

February 20, 2012

Force Engineering & Testing Inc.
19530 Ramblewood Drive
Humble,TX 77338

Code Compliance:	The product described herein has demonstrated compliance with The Florida Building Code 2010, Section 1504 3 2, 1504 7
Evaluation Report Scope:	The product evaluation is limited to compliance with the structural wind load requirements of the Florida Building Code 2010, as relates to Rule 9N-3
Performance Standards:	The product described herein has demonstrated compliance with ▪ UL 580-06 - Test for Uplift Resistance of Roof Assemblies ▪ UL 1897-04 - Uplift Test for Roof Covering Systems ▪ FM 4471, Section 4.4 - Foot Traffic Resistance Test
Reference Data:	1 UL 580-06 / 1897-04 Uplift Test Force Engineering & Testing, Inc (FBC Organization # TST-5328) Report No 136-0027T-12A, B, Dated 02/16/2012 2 FM 4471-10, Section 4 4 Foot Traffic Resistance Test Force Engineering & Testing, Inc (FBC Organization # TST-5328) Report No 136-0027T-12C, Dated 02/16/2012 3 Certificate of Independence By Terrence E Wolfe, P E (No 44923) @ Force Engineering & Testing, Inc (FBC Organization # ANE ID 1920)
Quality Assurance Entity:	The manufacturer has established compliance of roof panel products in accordance with the Florida Building Code and Rule 9N-3 005 (3) for manufacturing under a quality assurance program audited by an approved quality assurance entity
Minimum Slope Range:	Minimum Slope shall comply with Florida Building Code 2010, including Section 1507 4 2 and in accordance with Manufacturers recommendations For slopes less than 3 12, lap sealant must be used in the panel side laps
Installation:	Install per manufacturer's recommended details
Underlayment:	Per Manufacturer's installation guidelines per Florida Building Code 2010 Section 1507 4 5
Roof Panel Fire Classification:	Fire classification is not part of this acceptance
Shear Diaphragm:	Shear diaphragm values are outside the scope of this report



FL# 4595.4 R2

February 20, 2012

Force Engineering & Testing Inc.
19530 Ramblewood Drive
Humble,TX 77338

Design Procedure

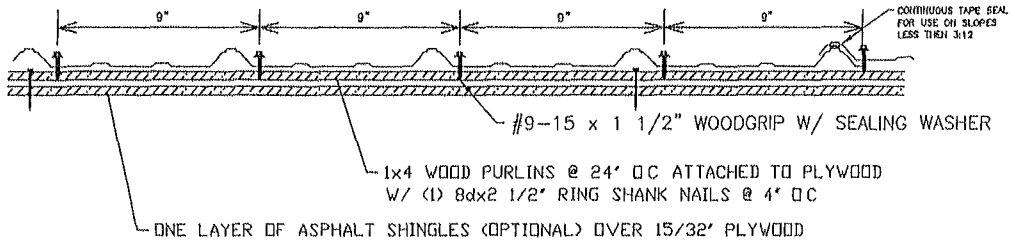
Based on the dimensions of the structure, appropriate wind loads are determined using Chapter 16 of the Florida Building Code 2010 for roof cladding wind loads These component wind loads for roof cladding are compared to the allowable pressure listed above The design professional shall select the appropriate erection details to reference in his drawings for proper fastener attachment to his structure and analyze the panel fasteners for pullout and pullover Support framing must be in compliance with Florida Building Code 2010 Chapter 22 for steel, Chapter 23 for wood and Chapter 16 for structural loading

TERRENCE E. WOLFE
LICENSE
No. 44928
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

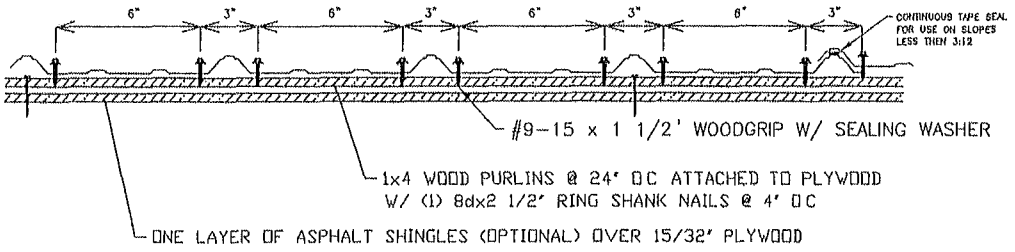
State of Florida
C.O.A.
#26778

MIN. 29 GA. ULTRA-RIB PANEL OVER 1X4 WOOD PURLINS

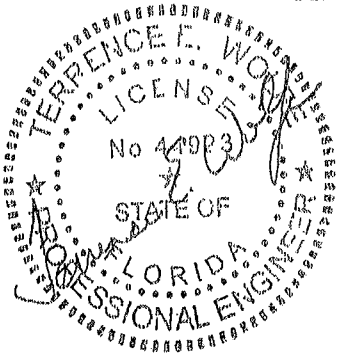
TYPE 1 FASTENER PATTERN AT 24" O.C.



TYPE 2 FASTENER PATTERN AT 24" O.C.



State of Florida
C.O.A.
26776



FEB 20 2012

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

RE: RJH -

MiTek USA, Inc.
6904 Parke East Blvd
Tampa, FL 33610-4115

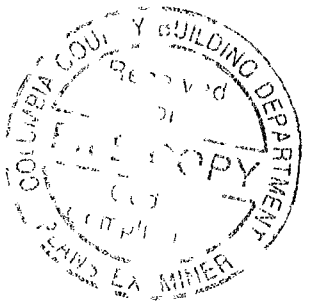
Site Information:
Customer Info: DON DOWNS Project Name: RJH Model:
Lot/Block: . Subdivision: .
Address: .
City: LAKE CITY State: FLORIDA

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

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):
Design Code: FBC2010 Design Program: OnLine Plus 30.0.023□
Wind Code: ASCE 7-10 Wind Speed: 120 mph Floor Load: N/A psf
Roof Load: 40.0 psf

This package includes 2 individual, dated 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.

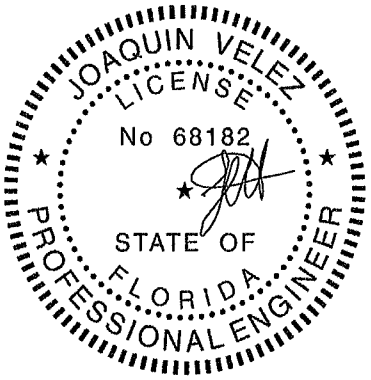
No.	Seal#	Truss Name	Date
1	T5064637	R65	10/3/013
2	T5064638	R76	10/3/013



The truss drawing(s) referenced above have been prepared by MiTek Industries, Inc. under my direct supervision based on the parameters provided by Mayo Truss Company, Inc..

Truss Design Engineer's Name: Velez, Joaquin
My license renewal date for the state of Florida is February 28, 2015.

IMPORTANT NOTE: Truss Engineer's responsibility is solely for design of individual trusses based upon design parameters shown on referenced truss drawings. Parameters have not been verified as appropriate for any use. Any location identification specified is for file reference only and has not been used in preparing design. Suitability of truss designs for any particular building is the responsibility of the building designer, not the Truss Engineer, per ANSI/TPI-1, Chapter 2.

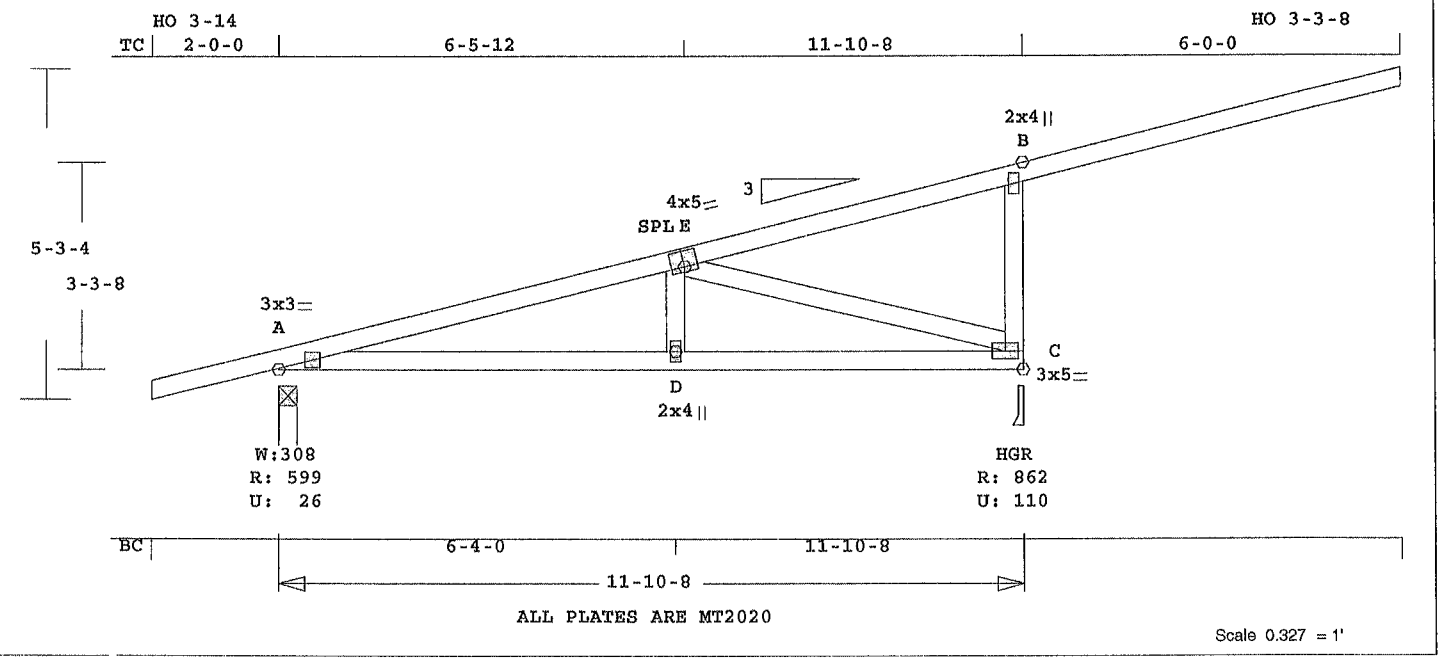


FL Cert. 6634

October 3,2013

Job	Mark	Quan	Type	Span	P1-H1	Left OH	Right OH	Engineering
RJH	R65	18	MONO	111008	3	2- 0- 0	6- 0- 0	T5064637

RJH



MiTek® Online Plus™ APPROX TRUSS WEIGHT 78 9 LBS

Online Plus -- Version 30.0.023
RUN DATE: 03-OCT-13

Southern Pine lumber design values are those effective 06-01-13 by SPIB//ALSC UON

	CSI	-Size-	----Lumber----
TC	0.35	2x 4	SP-#2
BC	0.43	2x 4	SP-#2
WB	0.54	2x 4	SP-#2

Brace truss as follows:

	O.C.	From	To
TC	Cont.	0- 0- 0	11-10- 8
or	48.0"	0- 0- 0	11-10- 8
BC	Cont.	0- 0- 0	11-10- 8
or	120.0"	0- 0- 0	11-10- 8

psf-Ld	Dead	Live
TC	10.0	20.0
BC	10.0	0.0
TC+BC	20.0	20.0
Total	40.0	Spacing 24.0"

Lumber Duration Factor 1.25
Plate Duration Factor 1.25

	Fb	Fc	Ft	Emin
TC	1.15	1.10	1.10	1.10
BC	1.10	1.10	1.10	1.10

Total Load Reactions (Lbs)

Jt	Down	Uplift	Horiz-
A	600	27 U	31 R
C	862	111 U	75 R

Jt	Brg Size	Required
A	3.5"	1.5"
C	3.5"	1.5"

Plus 18 Wind Load Case(s)
Plus 1 UBC LL Load Case(s)
Plus 1 DL Load Case(s)

Membr	CSI	P Lbs	Axl-CSI-Bnd	
----------Top Chords----------				
A -E	0.35	986 C	0.00	0.35
E -B	0.34	67 C	0.00	0.34
--------Bottom Chords---------				
A -D	0.43	965 T	0.19	0.24
D -C	0.33	965 T	0.19	0.14
----------Webs----------				
D -E	0.05	266 T		
E -C	0.54	1007 C		
C -B	0.10	531 C WindLd		

TL Defl -0.12" in A -D L/999
LL Defl -0.05" in A -D L/999
Shear // Grain in A -E 0.24

Plates for each ply each face.
Plate - MT20 20 Ga, Gross Area
Plate - MT2H 20 Ga, Gross Area

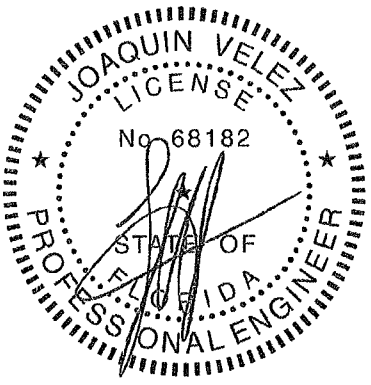
Jt	Type	Plt Size	X	Y	JSI
A	MT20	3.0x 3.0	Ctr	Ctr	0.63
E	MT20	4.0x 5.0	-0.2	1.0	0.93
B	MT20	2.0x 4.0	Ctr	Ctr	0.97
D	MT20	2.0x 4.0	Ctr	Ctr	0.24
C	MT20	3.0x 5.0	Ctr	Ctr	0.71

REVIEWED BY:
MiTek Industries, Inc.
6904 Parke East Blvd.
Tampa, FL 33610

REFER TO ONLINE PLUS GENERAL NOTES AND SYMBOLS SHEET FOR ADDITIONAL SPECIFICATIONS.

NOTES:
Trusses Manufactured by:
Mayo Truss Co. Inc.
Analysis Conforms To:
FBC2010
TPI 2007
OH Loading
Soffit psf 2.0
Excessive Right OH condition. Max allowable length is 3- 7- 8. Support end or provide level return.
This truss has been designed for 20.0 psf LL on the B.C. in areas where a rectangle 3- 6- 0 tall by 2- 0- 0 wide will fit between the B.C. and any other member.
Design checked for 10 psf non-concurrent LL on BC.

Wind Loads - ANSI / ASCE 7-10
Truss is designed as Components and Claddings* for Exterior zone location.
Wind Speed: 120 mph
Risk Category : II
Mean Roof Height: 15-0
Exposure Category: B
Building Type: Enclosed
TC Dead Load: 6.0 psf
BC Dead Load: 6.0 psf
Max comp. force 1007 Lbs
Max tens. force 965 Lbs
Connector Plate Fabrication Tolerance = 20%
This truss is designed for a creep factor of 1.5 which is used to calculate total load deflection.

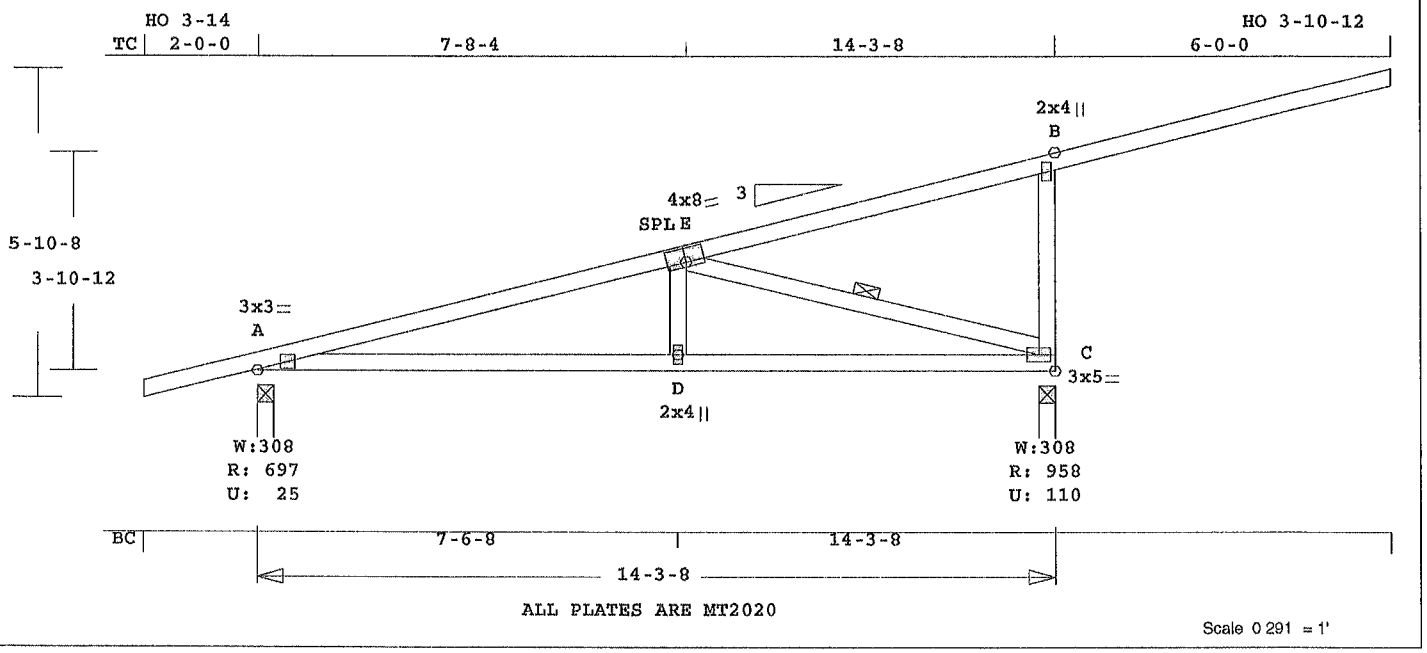


FL Cert. 6634

October 3,2013

Job	Mark	Quan	Type	' Span	P1-H1	Left OH	Right OH	Engineering
RJH	R76	7	MONO	140308	3	2- 0- 0	6- 0- 0	T5064638

RJH



MiTek® Online Plus™ APPROX TRUSS WEIGHT: 92 2 LBS

Online Plus -- Version 30.0.023
RUN DATE: 03-OCT-13

Southern Pine lumber design values are those effective 06-01-13 by SPIB//ALSC UON

	CSI	-Size-	----Lumber----
TC	0.56	2x 4	SP-#2
BC	0.58	2x 4	SP-#2
WB	0.29	2x 4	SP-#2

Brace truss as follows:

	O.C.	From	To
TC	Cont.	0- 0- 0	14- 3- 8
or	48.0"	0- 0- 0	14- 3- 8
BC	Cont.	0- 0- 0	14- 3- 8
or	120.0"	0- 0- 0	14- 3- 8

Continuous Lateral Restraint req'd at mid-point of webs:
E -C
Attach CLR with (2)-10d nails at each web.
Refer to BCSI for diagonal restraint requirements.

psf-Ld	Dead	Live
TC	10.0	20.0
BC	10.0	0.0
TC+BC	20.0	20.0
Total	40.0	Spacing 24.0"

Lumber Duration Factor 1.25
Plate Duration Factor 1.25

	Fb	Fc	Ft	Emin
TC	1.15	1.10	1.10	1.10
BC	1.10	1.10	1.10	1.10

Total Load Reactions (Lbs)

Jt	Down	Uplift	Horiz-
A	697	26 U	38 R
C	958	111 U	91 R

Jt	Brg Size	Required
A	3.5"	1.5"
C	3.5"	1.5"

Plus 18 Wind Load Case(s)
Plus 1 UBC LL Load Case(s)
Plus 1 DL Load Case(s)

Membr CSI P Lbs Axl-CSI-Bnd

Top Chords				
A -E	0.56	1240 C	0.01	0.55
E -B	0.54	75 C	0.00	0.54
Bottom Chords				
A -D	0.58	1213 T	0.24	0.34
D -C	0.48	1213 T	0.15	0.33
Webs				
D -E	0.06	326 T		
E -C	0.29	1263 C		1 Br
C -B	0.13	555 C	WindLd	

TL Defl -0.21" in A -D L/769
LL Defl -0.09" in A -D L/999
Shear // Grain in A -E 0.30

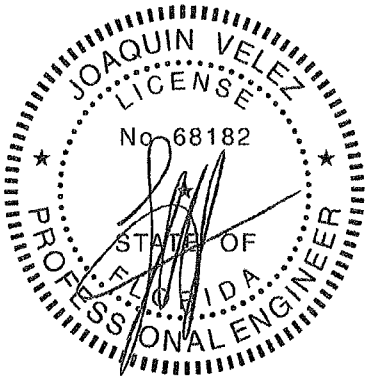
Plates for each ply each face.
Plate - MT20 20 Ga, Gross Area
Plate - MT2H 20 Ga, Gross Area

Jt	Type	Plt Size	X	Y	JSI
A	MT20	3.0x 3.0	Ctr	Ctr	0.75
E	MT20	4.0x 8.0-0.2	1.0		0.79
B	MT20	2.0x 4.0	Ctr	Ctr	0.96
D	MT20	2.0x 4.0	Ctr	Ctr	0.30
C	MT20	3.0x 5.0	Ctr	Ctr	0.74

REVIEWED BY:
MiTek Industries, Inc.
6904 Parke East Blvd.
Tampa, FL 33610

REFER TO ONLINE PLUS GENERAL NOTES AND SYMBOLS SHEET FOR ADDITIONAL SPECIFICATIONS.

NOTES:
Trusses Manufactured by:
Mayo Truss Co. Inc.
Analysis Conforms To:
FBC2010
TPI 2007
OH Loading
Soffit psf 2.0
Excessive Right OH condition.
Max allowable length is 3- 6-12. Support end or provide level return.
This truss has been designed for 20.0 psf LL on the B.C. in areas where a rectangle 3- 6- 0 tall by 2- 0- 0 wide will fit between the B.C. and any other member.
Design checked for 10 psf non-concurrent LL on BC.
Wind Loads - ANSI / ASCE 7-10
Truss is designed as Components and Claddings* for Exterior zone location.
Wind Speed: 120 mph
Risk Category : II
Mean Roof Height: 15-0
Exposure Category: B
Building Type: Enclosed
TC Dead Load: 6.0 psf
BC Dead Load: 6.0 psf
Max comp. force 1263 Lbs
Max tens. force 1213 Lbs
Connector Plate Fabrication Tolerance = 20%
This truss is designed for a creep factor of 1.5 which is used to calculate total load deflection.

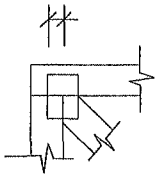


FL Cert. 6634

October 3,2013

ONLINE PLUS GENERAL NOTES & SYMBOLS

PLATE LOCATION



Center plates on joints unless otherwise noted in plate list or on drawing. Dimensions are given in inches (i.e 1 1/2" or 1 5") or IN-16ths (i.e. 108)

FLOOR TRUSS SPLICE (3X2, 4X2, 6X2)

(W) = Wide Face Plate
(N) = Narrow Face Plate

LATERAL BRACING

Designates the location for continuous lateral bracing (CLB) for support of individual truss members only. CLBs must be properly anchored or restrained to prevent simultaneous buckling of adjacent truss members

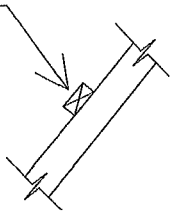
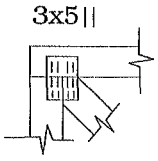


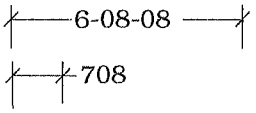
PLATE SIZE AND ORIENTATION

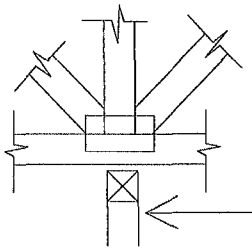


The first dimension is the width measured perpendicular to slots. The second dimension is the length measured parallel to slots Plate orientation, shown next to plate size, indicates direction of slots in connector plates

DIMENSIONS

All dimensions are shown in FT-IN-SX (i.e. 6'-8.5" or 6-08-08) Dimensions less than one foot are shown in IN-SX only (i.e 708)





W = Actual Bearing Width (IN-SX)
R = Reaction (lbs)
U = Uplift (lbs.)

BEARING

When truss is designed to bear on multiple supports, interior bearing locations should be marked on the truss. Interior support or temporary shoring must be in place before trusses are installed If necessary, shim bearings to assure solid contact with truss.

Metal connector plates shall be applied on both faces of truss at each joint. Center the plates, unless indicated otherwise. No loose knots or wane in plate contact area. Splice only where shown. Overall spans assume 4" bearing at each end, unless indicated otherwise. Cutting and fabrication shall be performed using equipment which produces snug-fitting joints and plates. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication and the attached truss designs are not applicable for use with fire retardant lumber and some preservative treatments. Nails specified on Truss Design Drawings refer to common wire nails, except as noted. The attached design drawings were prepared in accordance with " National Design Specifications for Wood Construction" (AF & PA), " National Design Standard for Metal Plate Connected Wood Truss Construction" (ANSI/TPI 1), and HUD Design Criteria for Trussed Rafters.

Mitek Industries Inc. bears no responsibility for the erection of trusses, field bracing or permanent truss bracing. Refer to "Building Component Safety Information" (BCSI 1) as published by Truss Plate Institute, 218 North Lee Street, Suite 312, Alexandria, Virginia 22314. Persons erecting trusses are cautioned to seek professional advice concerning proper erection bracing to prevent toppling and " dominoing ". Care should be taken to prevent damage during fabrication, storage, shipping and erection. Top and bottom chords shall be adequately braced in the absence of sheathing or rigid ceiling, respectively. It is the responsibility of others to ascertain that design loads utilized on these drawings meet or exceed the actual dead loads imposed by the structure and the live loads imposed by the local building code or historical climatic records. When truss hangers are specified on the Truss Design Drawing, they must be installed per manufacturer's details and specifications.

FURNISH A COPY OF THE ATTACHED TRUSS DESIGN DRAWINGS TO ERECTION CONTRACTOR. IT IS THE RESPONSIBILITY OF THE BUILDING DESIGNER TO REVIEW THESE DRAWINGS AND VERIFY THAT DATA, INCLUDING DIMENSIONS & LOADS, CONFORM TO ARCHITECTURAL PLAN / SPECS AND THE TRUSS PLACEMENT DIAGRAM FURNISHED BY THE TRUSS MANUFACTURER.

MiTek®
POWER TO PERFORM.™

MiTek USA, Inc.
6904 Parke East Blvd.
Tampa, FL 33610-4115

Tel: 813-972-1135
Fax: 813-971-6117