

PRR6520160868  
257 SE Coyle Dr



**MiTek USA, Inc.**  
16023 Swingley Ridge Rd  
Chesterfield, MO 63017  
314-434-1200

Re: 460097  
Lot 106 MC

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

Pages or sheets covered by this seal: I28162059 thru I28162059

My license renewal date for the state of Missouri is December 31, 2017.

Missouri COA: 001193

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



November 1, 2016

Scott Sevier

**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdictions(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. Any project specific information included is for MiTek's customer's file reference purpose only, and was not taken into account in the preparation of these designs. MiTek 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 the design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

|               |             |                                   |          |          |                         |
|---------------|-------------|-----------------------------------|----------|----------|-------------------------|
| Job<br>460097 | Truss<br>E2 | Truss Type<br>Roof Special Girder | Qty<br>1 | Ply<br>2 | Lot 106 MC<br>128162059 |
|---------------|-------------|-----------------------------------|----------|----------|-------------------------|

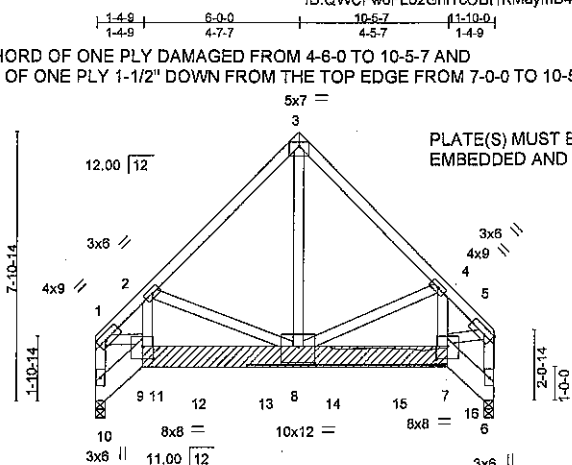
Wheeler Lumber LLC, Waverly, KS 66871

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REPAIR: 1" SECTION ON THE BOTTOM CHORD OF ONE PLY DAMAGED FROM 4-6-0 TO 10-5-7 AND CRACK IN THE BOTTOM CHORD OF ONE PLY 1-1/2" DOWN FROM THE TOP EDGE FROM 7-0-0 TO 10-5-7.

Scale: 3/16"=1'



PLATE(S) MUST BE FULLY EMBEDDED AND UNDISTURBED.

APPLY 2 X 8 SPF/DF/SP NO.2 SCAB(S) TO ONE FACE OF TRUSS CENTERED ON DAMAGE. ATTACH WITH (2 ROWS) OF USP 1/4" X 4.5" WS45 SCREWS OR EQUIVALENT FASTENERS 4" ON CENTER EACH ROW STAGGERED. A MINIMUM OF 4" END DISTANCE MUST BE PROVIDED AT ALL TRUSS MEMBERS. DO NOT OVERDRIVE THE SCREWS OR DRILL THROUGH METAL CONNECTOR PLATES. ALL SCREWS MUST BE INSTALLED FROM LOADED FACE OF TRUSS.

|                       |  |
|-----------------------|--|
| Plate Offsets (X,Y)-- | [1:0-2-15.Edge], [5:0-2-15.Edge], [7:0-4-0-0-4-8], [8:0-6-0,0-5-12], [9:0-4-0-0-4-8] |
|-----------------------|--|

| LOADING (psf) | SPACING-             | CSI.     | DEFL.                       | PLATES         | GRIP     |
|---------------|----------------------|----------|-----------------------------|----------------|----------|
| TCLL 25.0     | 2-0-0                | TC 0.25  | in (loc) l/defl L/d         | MT20           | 197/144  |
| TCDL 10.0     | Plate Grip DCL 1.15  | BC 0.25  | Vert(LL) -0.03 8-9 >999 360 |                |          |
| BCLL 0.0 *    | Lumber DCL 1.15      | WB 0.49  | Vert(TL) -0.07 8-9 >999 240 |                |          |
| BCDL 10.0     | Rep Stress Incr NO   | (Matrix) | Horz(TL) 0.06 6 n/a n/a     |                |          |
|               | Code IRC2012/TPI2007 |          |                             | Weight: 175 lb | FT = 20% |

**LUMBER-**  
TOP CHORD 2x4 SPF No.2  
BOT CHORD 2x8 SP 2400F 2.0E  
WEBS 2x4 SPF No.2

**BRACING-**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS.** (lb/size) 10=4478/0-3-8, 6=4595/0-3-8  
Max Horz 10=213(LC 5)  
Max Uplift 10=137(LC 9), 6=142(LC 8)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD 1-2=-3932/152, 2-3=-3167/173, 3-4=-3161/186, 4-5=-3538/121, 1-10=-3935/135, 5-6=-3895/111  
BOT CHORD 10-11=-531/241, 9-11=-266/478, 9-12=-273/2751, 12-13=-273/2735, 8-13=-273/2719, 8-14=-111/2465,  
14-15=-111/2482, 7-15=-112/2498, 7-16=-54/370, 6-16=-552/44  
WEBS 2-9=-161/712, 2-8=-654/212, 3-8=-122/4010, 4-8=-390/177, 4-7=-127/361, 1-9=-159/3149, 5-7=-119/2972


- NOTES-**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x8 - 2 rows staggered at 0-4-0 oc.  
Webs connected as follows: 2x4 - 1 row at 0-9-0 oc.
  - All loads are considered equally applied to all piles, 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.
  - Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=115mph (3-second gust) V(IRC2012)=91mph; TCCL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; enclosed; MWFRS (envelope) gable end zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DCL=1.33 plate grip DCL=1.33
  - 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.
  - Bearing at joint(s) 10, 6 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 10=137, 6=142.
  - "Semi-rigid pitchbreaks including heels" Member end fixity model was used in the analysis and design of this truss.
  - Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 1339 lb down and 36 lb up at 1-0-0, 1339 lb down and 36 lb up at 3-0-0, 1339 lb down and 36 lb up at 5-0-0, 1339 lb down and 36 lb up at 7-0-0, and 1339 lb down and 36 lb up at 9-0-0, and 1339 lb down and 36 lb up at 11-0-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard  
1) Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (plf)  
Vert: 1-3=-70, 3-5=-70, 9-10=-20, 7-9=-20, 6-7=-20



November 1, 2016

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MH-7473 rev. 10/03/2015 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, 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 ANSITPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



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**LOAD CASE(S)** Standard

Concentrated Loads (lb)

Vert: 11=-1339(B) 12=-1339(B) 13=-1339(B) 14=-1339(B) 15=-1339(B) 16=-1339(B)

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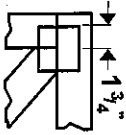
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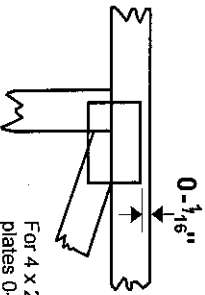
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# Symbols

## 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- $\frac{1}{16}$ " from outside edge of truss.

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

\* Plate location details available in **MITek 20120 software** or upon request.

## PLATE SIZE

**4 X 4**

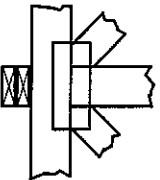
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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



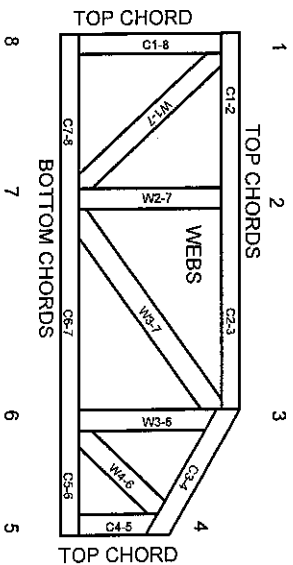
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

## Industry Standards:

- ANSI/TP11: 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

6-4-8 dimensions shown in ft-in-sixteenths (Drawings not to scale)



**JOINTS ARE GENERALLY NUMBERED/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 section 6.3. These truss designs rely on lumber values established by others.

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MITek Engineering Reference Sheet: Mill-7473 rev. 10/03/2015

# General Safety Notes

**Failure to Follow Could Cause Property Damage or Personal Injury**

- Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
- Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative "for" bracing should be considered.
- Never exceed the design loading shown and never stack materials on inadequately braced trusses.
- Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
- Cut members to bear tightly against each other.
- Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TP1.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1.
- Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
- Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
- Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
- Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
- Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
- Top chords must be sheathed or purlins provided at spacing indicated on design.
- Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
- Connections not shown are the responsibility of others.
- Do not cut or alter truss member or plate without prior approval of an engineer.
- Install and load vertically unless indicated otherwise.
- Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
- Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
- Design assumes manufacture in accordance with ANSI/TP1 Quality Criteria.