

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 20020002  
KMB - Neuman Barn

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Carter Components (Sanford, NC)).

Pages or sheets covered by this seal: E14307020 thru E14307021

My license renewal date for the state of North Carolina is December 31, 2020.

North Carolina COA: C-0844



April 17, 2020

Gilbert, Eric

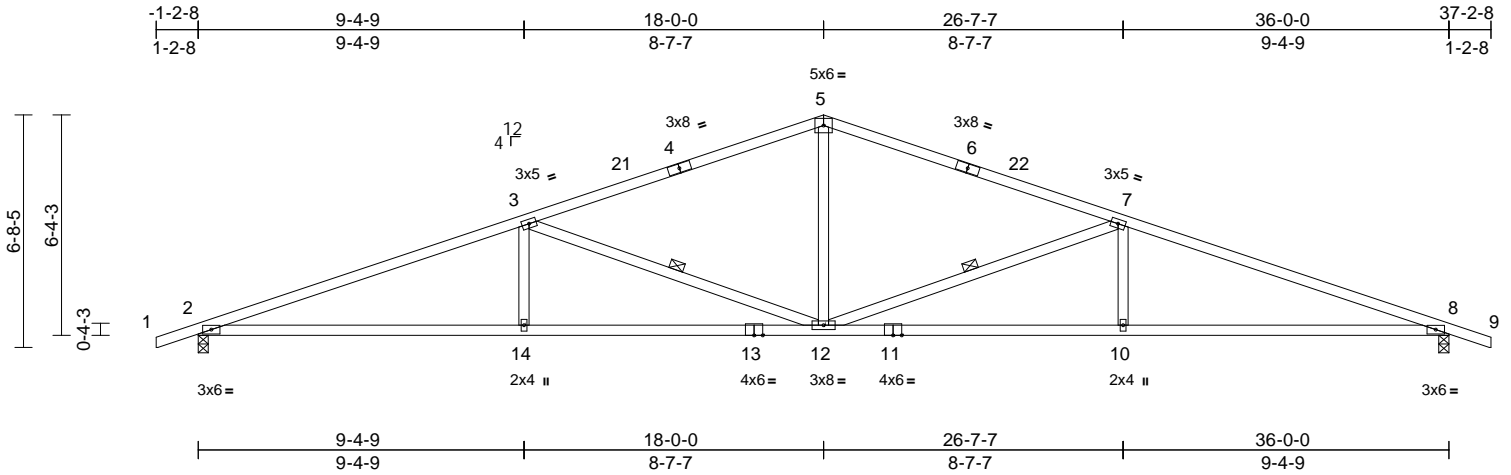
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 20020002	Truss A	Truss Type Common	Qty 14	Ply 1	KMB - Neuman Barn Job Reference (optional)	E14307020
-----------------	------------	----------------------	-----------	----------	---	-----------

Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.33 S Mar 23 2020 Print: 8.330 S Mar 23 2020 MITek Industries, Inc. Fri Apr 17 07:22:41  
ID:2HcX7TOh3WshKl3FzdlTjnzQ89L-v889TT1G6A1v58XzXM6cOvop2To2AE5dpvCcDszPttk

Page: 1



Scale = 1:66.3

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.58	Vert(LL)	-0.23	10-20	>999	240	MT20	244/190
Snow (Pf/Pg)	13.9/20.0	Lumber DOL	1.15	BC	0.96	Vert(CT)	-0.52	10-20	>839	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.49	Horz(CT)	0.16	8	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 157 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP 2400F 2.0E  
 BOT CHORD 2x4 SP No.1 \*Except\* 13-11:2x4 SP No.2  
 WEBS 2x4 SP No.2 \*Except\* 7-10,3-14:2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-6-1 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
 WEBS 1 Row at midpt 7-12, 3-12

**REACTIONS**

(size) 2=0-3-8, 8=0-3-8  
 Max Horiz 2=-63 (LC 16)  
 Max Uplift 2=-51 (LC 11), 8=-51 (LC 12)  
 Max Grav 2=1511 (LC 2), 8=1511 (LC 2)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/28, 2-3=-3558/849, 3-21=-2394/592, 4-21=-2309/606, 4-5=-2302/621, 5-6=-2302/621, 6-22=-2309/606, 7-22=-2394/592, 7-8=-3559/849, 8-9=0/28  
 BOT CHORD 2-14=-702/3327, 13-14=-702/3327, 12-13=-702/3327, 11-12=-708/3327, 10-11=-708/3327, 8-10=-708/3327  
 WEBS 5-12=-149/1001, 7-12=-1243/371, 7-10=0/210, 3-12=-1243/371, 3-14=0/210

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior (2) 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=1.33

- 3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.15); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.
- 5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) One RT7A USP connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 8. This connection is for uplift only and does not consider lateral forces.
- 8) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



April 17, 2020

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-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 **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



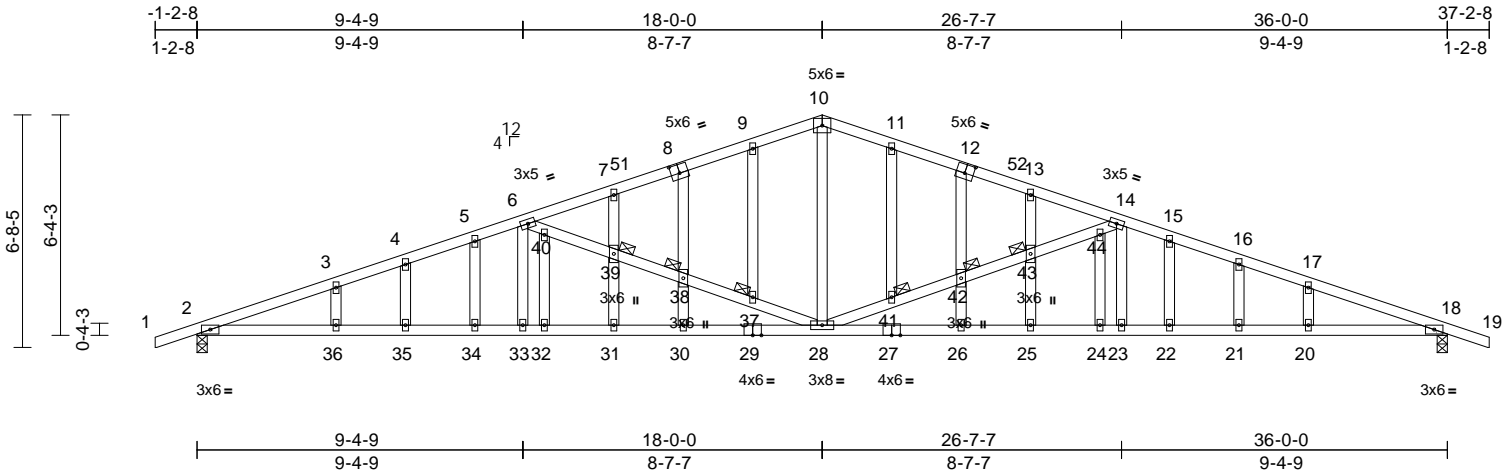
818 Soundside Road  
Edenton, NC 27932

Job 20020002	Truss AE	Truss Type Common Structural Gable	Qty 2	Ply 1	KMB - Neuman Barn Job Reference (optional)	E14307021
-----------------	-------------	---------------------------------------	----------	----------	---	-----------

Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.33 S Mar 23 2020 Print: 8.330 S Mar 23 2020 MiTek Industries, Inc. Fri Apr 17 07:22:44  
ID:ISPm7sLwIGIAfSOTfSlxzQ86p-G5x2WB5OwigBCvQwKvIn5yVegUZERyDMzBvNu3zPttf

Page: 1



Scale = 1:66.3

Plate Offsets (X, Y): [8:0-3-0,0-3-0], [12:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.66	Vert(LL)	-0.29	20-21	>999	240	MT20	244/190
Snow (Pf/Pg)	13.9/20.0	Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.59	20-21	>737	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.30	Horz(CT)	0.13	18	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 218 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP 2400F 2.0E \*Except\* 29-27:2x4 SP No.1
- WEBS 2x4 SP No.2 \*Except\* 14-23,6-33:2x4 SP No.3
- OTHERS 2x4 SP No.3
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 2-3-11 oc purlins.
- BOT CHORD Rigid ceiling directly applied or 7-6-2 oc bracing.
- JOINTS 1 Brace at Jt(s): 37, 38, 39, 41, 42, 43
- REACTIONS** (size) 2=0-3-8, 18=0-3-8  
Max Horiz 2=63 (LC 16)  
Max Uplift 2=51 (LC 11), 18=51 (LC 12)  
Max Grav 2=1511 (LC 2), 18=1511 (LC 2)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/28, 2-3=-3547/804, 3-4=-3512/834, 4-5=-3495/858, 5-6=-3469/876, 6-7=-2371/580, 7-51=-2325/597, 8-51=-2312/601, 8-9=-2324/632, 9-10=-2295/648, 10-11=-2295/648, 11-12=-2324/632, 12-52=-2312/601, 13-52=-2325/597, 13-14=-2371/580, 14-15=-3469/876, 15-16=-3495/858, 16-17=-3512/834, 17-18=-3547/804, 18-19=0/28
- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior (2) 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=1.33
  - 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) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load; Lumber DOL=1.15 Plate DOL=1.15); Pg=20.0 psf (ground snow); Pf=13.9 psf (flat roof snow; Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; Ct=1.10
- 5) Unbalanced snow loads have been considered for this design.
- 6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 13.9 psf on overhangs non-concurrent with other live loads.
- 7) All plates are 2x4 MT20 unless otherwise indicated.
- 8) Gable studs spaced at 2-0-0 oc.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 10) One RT7A USP connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 18. This connection is for uplift only and does not consider lateral forces.



April 17, 2020

Continued on page 2

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



818 Soundside Road  
Edenton, NC 27932

Job 20020002	Truss AE	Truss Type Common Structural Gable	Qty 2	Ply 1	KMB - Neuman Barn Job Reference (optional)	E14307021
-----------------	-------------	---------------------------------------	----------	----------	---	-----------

Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.33 S Mar 23 2020 Print: 8.330 S Mar 23 2020 MiTek Industries, Inc. Fri Apr 17 07:22:44  
ID:ISPm7sLlWlGIAfSOTffSlxzQ86p-G5x2WB5OwigBCvQwKvin5yVegUZErYDMzBvNu3zPttf

Page: 2

- 11) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.**

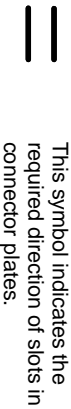
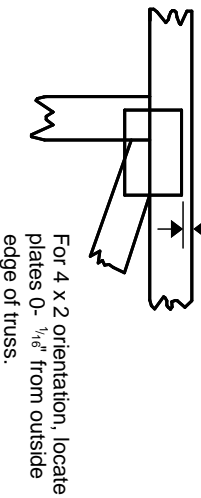
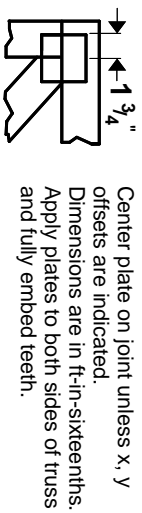
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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 **ANSI/TPI1 Quality Criteria, DSB-89 and BCS1 Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



818 Soundside Road  
Edenton, NC 27932

# Symbols

## PLATE LOCATION AND ORIENTATION



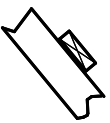
\* Plate location details available in **MITrak 20/20 software or upon request.**

## PLATE SIZE

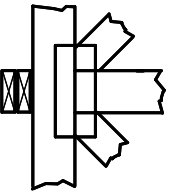
**4 X 4**

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

## LATERAL BRACING LOCATION



## BEARING

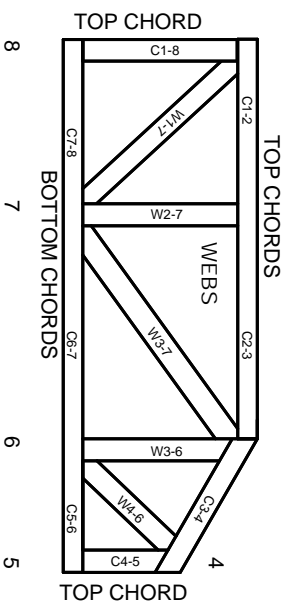


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

## Industry Standards:

ANSI/TPI 1: 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

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

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

© 2012 MITTEK® All Rights Reserved



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



# 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.