

RE: T20-02086 - BRITTON

**Site Information:**

Project Customer:    Project Name:

Lot/Block:

Subdivision:

Model:

Address:

City:

State:

**General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):**

Design Code: IRC2018/TPI2014

Design Program: MiTek 20/20 8.3

Wind Code: N/A            Wind Speed: 130 mph

Design Method: User defined

Roof Load: 40.0 psf

Floor Load: N/A psf

Mean Roof Height (feet): 12

Exposure Category: B

No.	Seal#	Truss Name	Date
1	E14130305	T01	3/2/20
2	E14130306	T01GE	3/2/20

**Trenco**

818 Soundside Rd  
Edenton, NC 27932

The truss drawing(s) referenced above have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Longleaf Truss Company.

Truss Design Engineer's Name: Gilbert, Eric

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

**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.



March 2, 2020

Job T20-02086	Truss T01	Truss Type FINK	Qty 13	Ply 1	BRITTON	E14130305
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Longleaf Truss Company, West End, NC - 27376.

8.330 s Feb 13 2020 MiTek Industries, Inc. Mon Mar 2 09:37:00 2020 Page 1  
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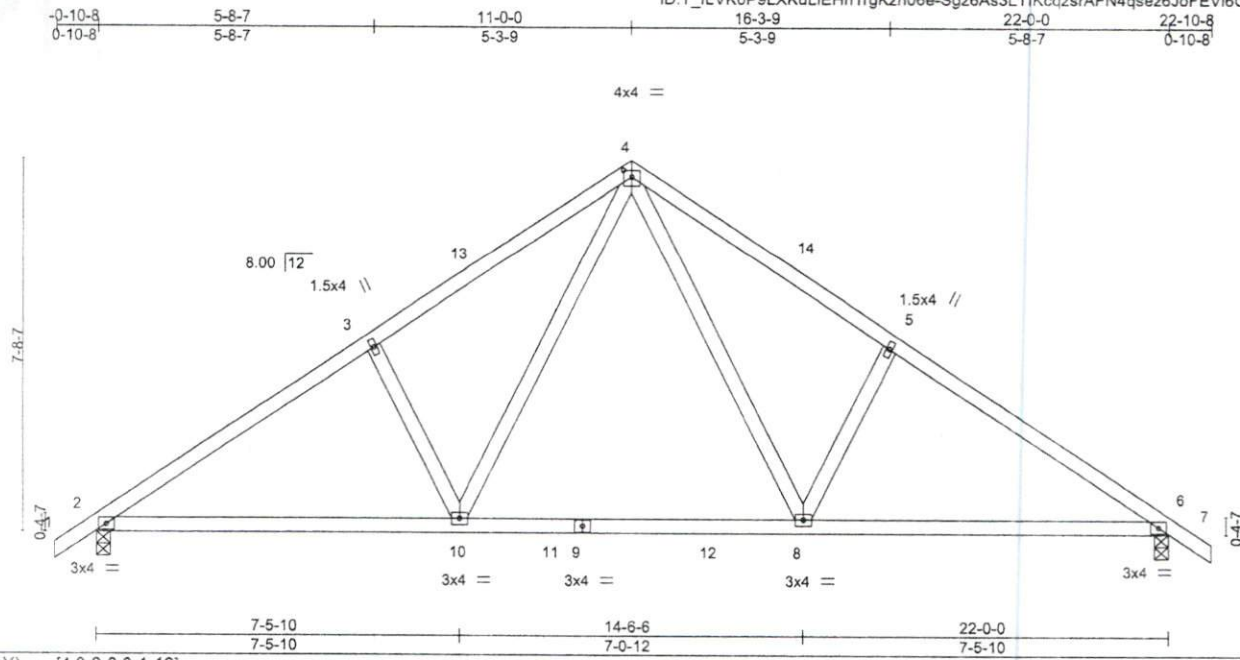


Plate Offsets (X,Y)-- [4:0-2-0,0-1-12]

<b>LOADING</b> (psf)	<b>SPACING-</b>	<b>CSI.</b>	<b>DEFL.</b>	<b>PLATES</b>	<b>GRIP</b>
TCLL (roof) 20.0	2-0-0	TC 0.31	in (loc) l/defl L/d	MT20	244/190
Snow (Pf/Pg) 7.7/10.0	Plate Grip DOL 1.15	BC 0.48	Vert(LL) -0.08 8-10 >999 240		
TCDL 10.0	Lumber DOL 1.15	WB 0.24	Vert(CT) -0.16 6-8 >999 180		
BCLL 0.0	Rep Stress Incr YES	Matrix-S	Horz(CT) 0.03 6 n/a n/a		
BCDL 10.0	Code IRC2018/TPI2014			Weight: 111 lb	FT = 20%

**LUMBER-**  
TOP CHORD 2x4 SP No.1  
BOT CHORD 2x4 SP No.1  
WEBS 2x4 SP No.3

**BRACING-**  
TOP CHORD Sheathed or 5-1-5 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS.** (size) 2=0-3-8, 6=0-3-8  
Max Horz 2=149(LC 11)  
Max Uplift 2=-25(LC 12), 6=-25(LC 12)  
Max Grav 2=1032(LC 24), 6=1032(LC 25)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD 2-3=-1354/35, 3-4=-1259/87, 4-5=-1259/87, 5-6=-1354/35  
BOT CHORD 2-10=0/1171, 8-10=0/765, 6-8=0/1074  
WEBS 3-10=-304/112, 4-10=-12/637, 4-8=-12/638, 5-8=-304/112

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=12ft; B=45ft; L=24ft; eave=4ft; Cat. II, Exp B; Enclosed; MWFRS (directional); cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=10.0 psf; Pf=7.7 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 7.7 psf on overhangs non-concurrent with other live loads.
  - 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, with BCDL = 10.0psf.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 25 lb uplift at joint 2 and 25 lb uplift at joint 6.
  - 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.



**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.

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

Job T20-02086	Truss T01GE	Truss Type GABLE	Qty 2	Ply 1	BRITTON	E14130306
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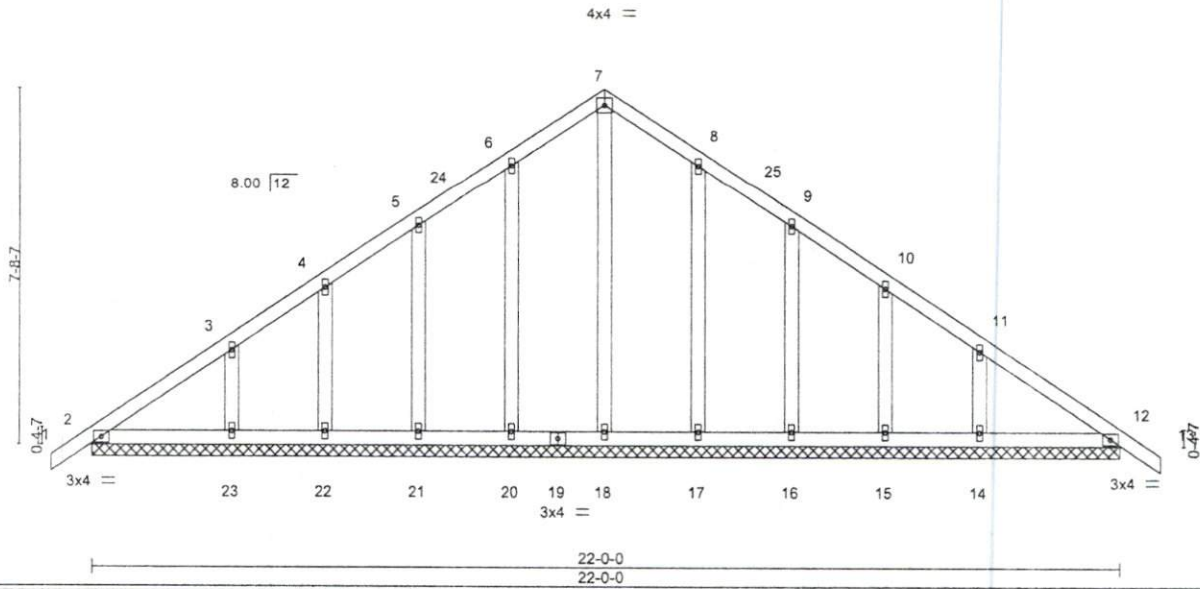
Longleaf Truss Company, West End, NC - 27376.

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0-10-8 11-0-0 22-0-0 22-10-8  
 0-10-8 11-0-0 11-0-0 22-10-8 0-10-8

Scale = 1:49.4



<b>LOADING (psf)</b>	<b>SPACING-</b>	<b>CSI.</b>	<b>DEFL.</b>	<b>PLATES</b>	<b>GRIP</b>
TCLL (roof) 20.0	2-0-0	TC 0.06	in (loc) l/defl L/d	MT20	244/190
Snow (Pf/Pg) 7.7/10.0	Plate Grip DOL 1.15	BC 0.05	Vert(LL) 0.00 13 n/r 120		
TCDL 10.0	Lumber DOL 1.15	WB 0.10	Vert(CT) 0.00 13 n/r 120		
BCLL 0.0	Rep Stress Incr YES	Matrix-S	Horz(CT) 0.00 12 n/a n/a		
BCDL 10.0	Code IRC2018/TPI2014			Weight: 132 lb	FT = 20%

**LUMBER-**  
 TOP CHORD 2x4 SP No.1  
 BOT CHORD 2x4 SP No.1  
 OTHERS 2x4 SP No.3

**BRACING-**  
 TOP CHORD Sheathed or 6-0-0 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS.** All bearings 22-0-0.  
 (lb) - Max Horz 2--149(LC 10)  
 Max Uplift All uplift 100 lb or less at joint(s) 20, 21, 22, 23, 17, 16, 15, 14  
 Max Grav All reactions 250 lb or less at joint(s) 2, 12, 18, 20, 21, 22, 23, 17, 16, 15, 14

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

**NOTES-**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=12ft; B=45ft; L=24ft; eave=2ft; Cat. II; Exp B; Enclosed; MWFRS (directional); cantilever left and right exposed; end vertical left and right exposed; 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) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=10.0 psf; Pf=7.7 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; 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 1.00 times flat roof load of 7.7 psf on overhangs non-concurrent with other live loads.
- 7) All plates are 1.5x4 MT20 unless otherwise indicated.
- 8) Gable requires continuous bottom chord bearing.
- 9) Gable studs spaced at 2-0-0 oc.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* 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.
- 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 20, 21, 22, 23, 17, 16, 15, 14.
- 13) 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.



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

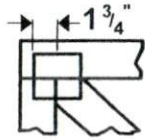
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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.

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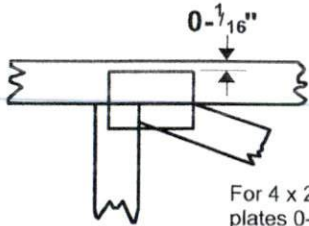
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 Edenton, NC 27932

# 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

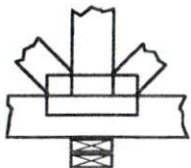
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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

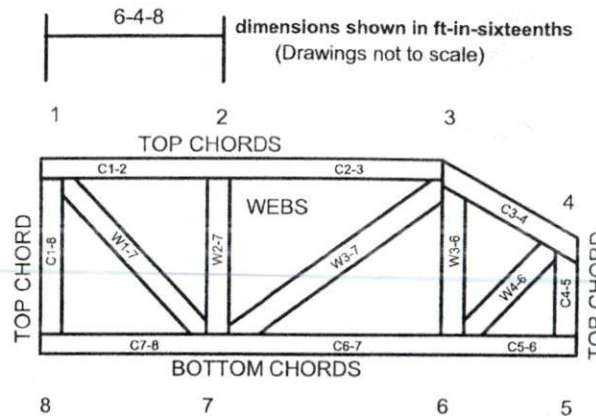


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

## 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

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.

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MiTek Engineering Reference Sheet: MII-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 Tor I 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/TPI 1.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
- 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/TPI 1 Quality Criteria.