ENGINEERING BY TRENCO
A MiTek Affiliate

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

RE: 4601913 - 343 SERENITY

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:

Project Customer: Tri Pointe Homes Project Name:
Lot/Block: 343 Subdivision: SERENITY
Address: 64 FIREFLY LANE
City: FUQUAY VARINA State: NC

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

Name: License #:
Address:
City, County: State:

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

Design Code: IRC2015/TPI2014 Design Program: MiTek 20/20 8.8
Wind Code: ASCE 7-10 Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-10
Wind Speed: 115 mph
Roof Load: 40.0 psf Floor Load: N/A psf

This package includes 1 individual, dated Truss Design Drawings and 0 Additional Drawings.

No.	Seal#	Job ID#	Truss Name	Date
1	I74722913	4601913	B01	7/8/25

The truss drawing(s) referenced above have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Builders FirstSource (Apex,NC).

Truss Design Engineer's Name: Gilbert, Eric
My license renewal date for the state of North Carolina is December 31, 2025.

July 8,2025
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.

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Trenco
818 Soundside Rd
Edenton, NC 27932

RE: $JOBNAME - $JOBDESC

Site Information:

Project Customer: $SI_CUSTOMER Project Name: $SI_JOBNAME
Lot/Block: $SI_LOTNUM Subdivision: $SI_SUBDIV
Address: $SI_SITEADDR
City, County: $SI_SITECITY State: $SI_SITESTATE

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Trenco
818 Soundside Rd
Edenton, NC 27932

RE: $JOBNAME - $JOBDESC

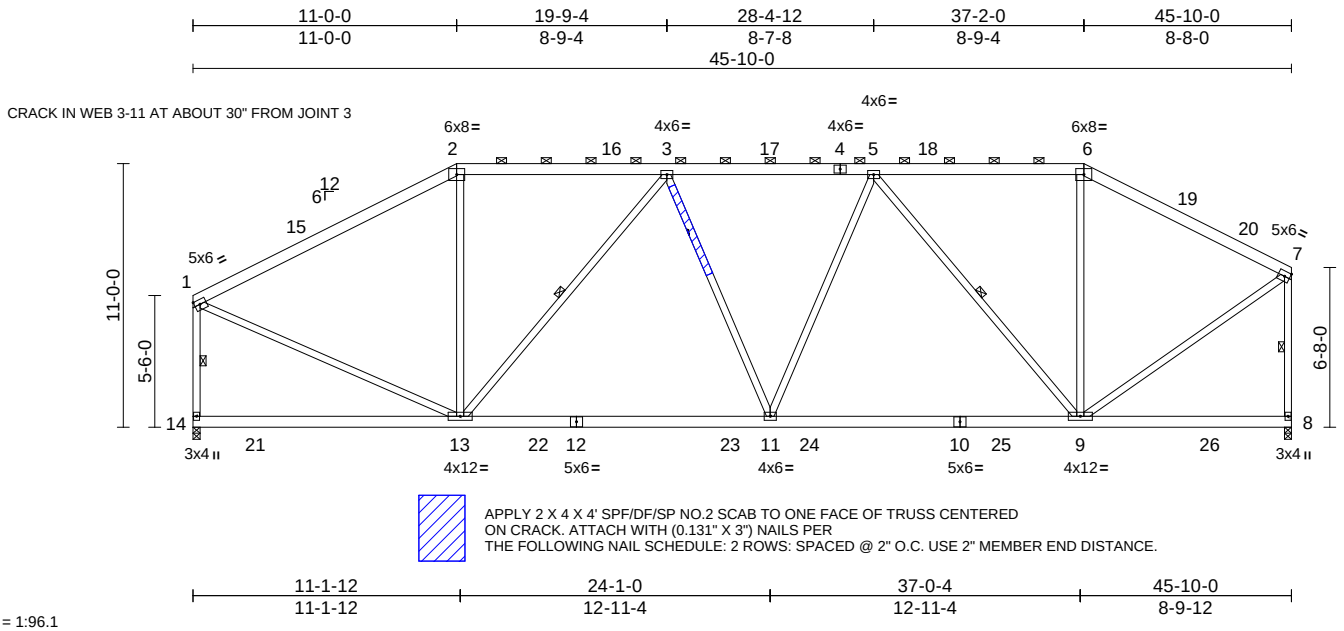
Site Information:

Project Customer: $SI_CUSTOMER Project Name: $SI_JOBNAME
Lot/Block: $SI_LOTNUM Subdivision: $SI_SUBDIV
Address: $SI_SITEADDR
City, County: $SI_SITECITY State: $SI_SITESTATE

Job	Truss	Truss Type	Qty	Ply	343 SERENITY	
4601913	B01	Piggyback Base	9	1	Job Reference (optional)	I74722913

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.83 S Jun 11 2025 Print: 8.830 S Jun 11 2025 MiTek Industries, Inc. Mon Jul 07 18:00:15
ID:kCGVfesEtr1z5wKccS9UD9zNvIP-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:96.1

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

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	0.92	Vert(LL)	-0.21	11-13	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.70	Vert(CT)	-0.36	9-11	>999	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.04	8	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS		Wind(LL)	0.06	11	>999	240	Weight: 371 lb	FT = 20%

LUMBER

TOP CHORD 2x6 SP No.2 *Except* 1-2:2x6 SP 2400F 2.0E or 2x6 SP DSS

BOT CHORD 2x6 SP 2400F 2.0E or 2x6 SP DSS *Except* 10-8:2x6 SP No.2

WEBS 2x4 SP No.3 *Except* 3-13,5-9:2x4 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied or 4-10-7 oc purlins, except end verticals, and 2-0-0 oc purlins (4-9-9 max.): 2-6.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

WEBS 1 Row at midpt 1-14, 7-8, 3-13, 5-9

REACTIONS (size) 8=0-3-8, 14=0-3-8
Max Horiz 14=225 (LC 11)
Max Uplift 8=-72 (LC 13), 14=-81 (LC 12)
Max Grav 8=1942 (LC 2), 14=1897 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-1847/166, 2-3=-1573/210, 3-5=-2170/201, 5-6=-1336/205, 6-7=-1561/173, 1-14=-1754/169, 7-8=-1817/166

BOT CHORD 13-14=-194/190, 11-13=-208/2090, 9-11=-185/2015, 8-9=-60/70

WEBS 2-13=0/400, 6-9=0/332, 1-13=-53/1691, 7-9=-75/1624, 3-11=0/300, 3-13=-887/161, 5-11=0/451, 5-9=-1117/162

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=32ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) 0-1-12 to 4-8-12, Interior (1) 4-8-12 to 11-0-0, Exterior (2) 11-0-0 to 17-5-13, Interior (1) 17-5-13 to 37-2-0, Exterior (2) 37-2-0 to 43-7-13, Interior (1) 43-7-13 to 45-8-4 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
3) Provide adequate drainage to prevent water ponding.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * 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, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 81 lb uplift at joint 14 and 72 lb uplift at joint 8.
7) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

LOAD CASE(S) Standard

July 8,2025

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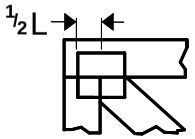
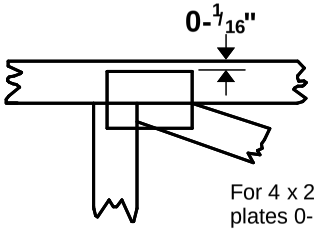
Symbols

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- 1/16" from outside edge of truss.

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

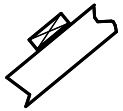
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

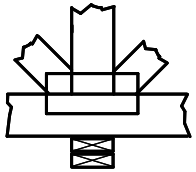
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

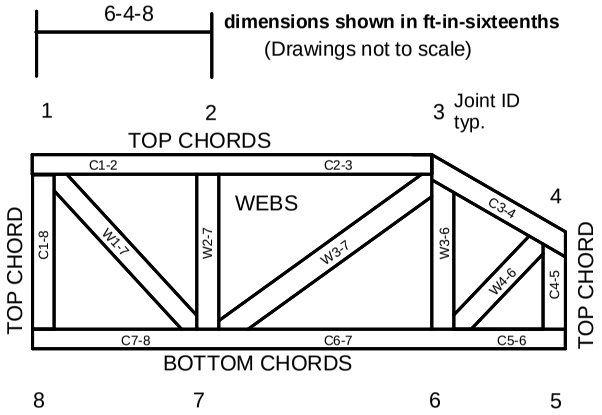


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & 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-1988, ESR-2362, ESR-2685, ESR-3282
ESR-4722, ESL-1388

Design General Notes

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.

MiTek®

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MiTek Engineering Reference Sheet: MII-7473 rev. 1/2/2023

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.
21. The design does not take into account any dynamic or other loads other than those expressly stated.