

Trenco
818 Soundside Rd
Edenton, NC 27932

Re: 25040098-01
918 Serenity-Roof-B326 B CP GRH

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: I74542857 thru I74542857

My license renewal date for the state of North Carolina is December 31, 2025.

North Carolina COA: C-0844



June 30, 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.

Job	Truss	Truss Type	Qty	Ply	918 Serenity-Roof-B326 B CP GRH	Units: 1.0 Eng: JRC
25040098-01	A08	Attic	6	1	Job Reference (optional)	174542857

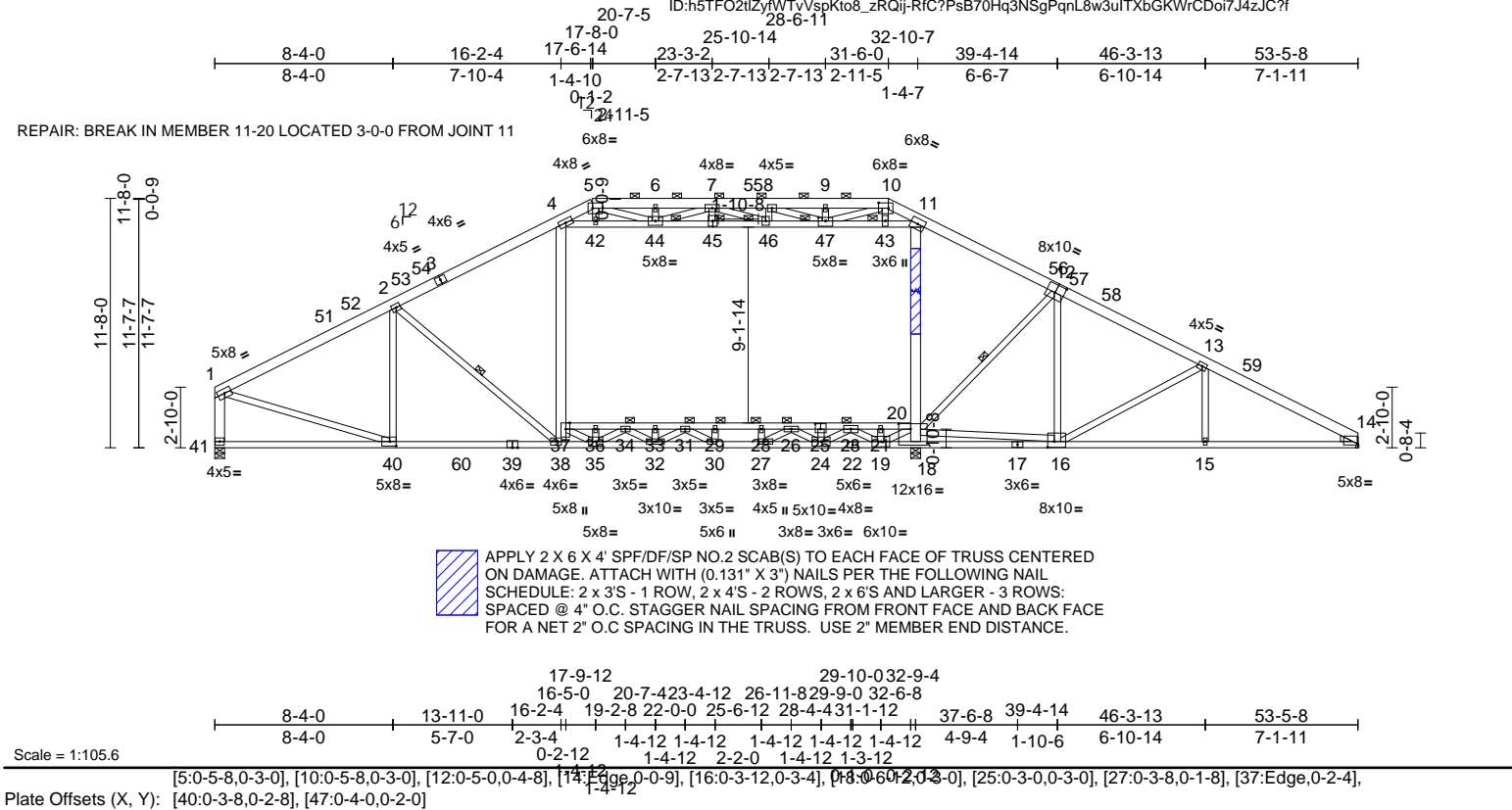
Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Feb 19 2025 Print: 8.730 S Feb 19 2025 MiTek Industries, Inc. Fri Jun 27 12:38:57

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REPAIR: BREAK IN MEMBER 11-20 LOCATED 3-0-0 FROM JOINT 11



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)	-0.47	30-32	>836	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.95	Vert(CT)	-0.76	30-32	>512	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.15	14	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.32	20-37	>605	360		
BCDL	10.0											
											Weight: 453 lb	FT = 20%

LUMBER		BOT CHORD		WEBS		WEDGE		BRACING		REACTIONS		FORCES		NOTES	
TOP CHORD	2x6 SP No.2	2x4 SP No.1 *Except* 37-25,22-17:2x4 SP No.2, 17-14,39-22:2x4 SP 2400F 2.0E	2x4 SP No.3 *Except* 4-38,11-18,41-1:2x6 SP No.2, 4-45,40-1,19-20,35-37,19-23,35-34,24-23,32-34,24-26,32-31,27-26,30-31,45-11:2x4 SP No.2, 20-16:2x4 SP No.1	Right: 2x4 SP No.3	Structural wood sheathing directly applied or 2-9-12 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-9 max.): 5-10.	Rigid ceiling directly applied or 2-6-0 oc bracing.	1 Row at midpt 2-38, 12-20, 11-47	1 Brace at Jt(s): 44, 45, 46, 47, 23, 34, 26, 31	(size) 14= Mechanical, 18=0-5-8, 41=0-5-8	Max Horiz 41=222 (LC 15)	Max Grav 14=2293 (LC 47), 18=1786 (LC 39), 41=2957 (LC 37)	(lb) - Maximum Compression/Maximum Tension	1-2=-3909/0, 2-4=-4057/0, 4-5=-2341/100, 5-6=-3002/359, 6-7=-2993/361, 7-8=-3600/503, 8-9=-2737/395, 9-10=-2737/395, 10-11=-1774/149, 11-13=-4089/46, 13-14=-4643/46, 1-41=-2957/19	1) Unbalanced roof live loads have been considered for this design.	
BOT CHORD	2x4 SP No.1 *Except* 37-25,22-17:2x4 SP No.2, 17-14,39-22:2x4 SP 2400F 2.0E	2x4 SP No.3 *Except* 4-38,11-18,41-1:2x6 SP No.2, 4-45,40-1,19-20,35-37,19-23,35-34,24-23,32-34,24-26,32-31,27-26,30-31,45-11:2x4 SP No.2, 20-16:2x4 SP No.1													
WEBS	2x4 SP No.3 *Except* 4-38,11-18,41-1:2x6 SP No.2, 4-45,40-1,19-20,35-37,19-23,35-34,24-23,32-34,24-26,32-31,27-26,30-31,45-11:2x4 SP No.2, 20-16:2x4 SP No.1														
WEDGE	Right: 2x4 SP No.3														
BRACING															
TOP CHORD	Structural wood sheathing directly applied or 2-9-12 oc purlins, except end verticals, and 2-0-0 oc purlins (3-9-9 max.): 5-10.														
BOT CHORD	Rigid ceiling directly applied or 2-6-0 oc bracing.														
WEBS	1 Row at midpt 2-38, 12-20, 11-47														
JOINTS	1 Brace at Jt(s): 44, 45, 46, 47, 23, 34, 26, 31														
REACTIONS	(size) 14= Mechanical, 18=0-5-8, 41=0-5-8														
FORCES	(lb) - Maximum Compression/Maximum Tension														
TOP CHORD	1-2=-3909/0, 2-4=-4057/0, 4-5=-2341/100, 5-6=-3002/359, 6-7=-2993/361, 7-8=-3600/503, 8-9=-2737/395, 9-10=-2737/395, 10-11=-1774/149, 11-13=-4089/46, 13-14=-4643/46, 1-41=-2957/19														

40-41=104/246, 38-40=0/3385, 35-38=0/3320, 32-35=0/5160, 30-32=0/6293, 27-30=0/6093, 24-27=0/4802, 19-24=0/1826, 18-19=2291/0, 16-18=2098/0, 15-16=0/4026, 14-15=64/4026, 36-37=1129/0, 34-36=1129/0, 33-34=3123/0, 31-33=3123/0, 29-31=3183/0, 28-29=3183/0, 26-28=3183/0, 23-26=704/942, 21-23=0/3270, 20-21=0/3270

2-40=705/62, 2-38=131/400, 37-38=45/325, 4-37=0/1181, 18-20=1397/105, 11-20=46/1135, 12-20=570/324, 12-16=271/93, 13-16=555/210, 13-15=0/243, 4-42=1878/67, 42-44=1804/66, 44-46=1587/1326, 46-47=1783/1225, 43-47=2448/0, 11-43=2544/0, 1-40=0/3450, 5-42=0/324, 10-43=0/447, 5-44=341/1085, 6-44=46/157, 7-44=845/121, 7-45=0/60, 7-46=279/3, 8-46=0/129, 8-47=919/115, 9-47=170/78, 10-47=314/1436, 19-20=0/2696, 35-37=0/1556, 19-21=351/0, 35-36=230/0, 19-23=2163/0, 34-35=1298/0, 23-24=0/2102, 32-34=0/1056, 24-25=319/0, 32-33=185/0, 24-26=1402/0, 31-32=307/178, 26-27=0/1523, 30-31=356/12, 27-28=531/0, 29-30=2/94, 16-20=0/5300

2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-2-12 to 5-6-14, Interior (1) 5-6-14 to 10-1-4, Exterior(2R) 10-1-4 to 39-0-12, Interior (1) 39-0-12 to 48-1-6, Exterior(2E) 48-1-6 to 53-5-8 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

3) TCLK: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

4) Unbalanced snow loads have been considered for this design.

5) Provide adequate drainage to prevent water ponding.

6) All plates are 2x4 MT20 unless otherwise indicated.

7) This truss has been designed for a 3.0 psf bottom chord live load nonconcurrent with any other live loads.

PROFESSIONAL SEAL
ENGINEER
ERIC A. GILBERT
036322
June 30, 2025



June 30,2025

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25040098-01	A08	Attic	6	1	174542857
Job Reference (optional)					

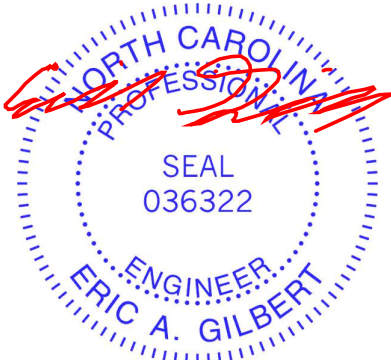
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- 8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 9) Ceiling dead load (5.0 psf) on member(s). 4-42, 42-44, 44-45, 45-46, 46-47, 43-47, 11-43; Wall dead load (5.0psf) on member(s).4-37, 11-20
- 10) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 36-37, 34-36, 33-34, 31-33, 29-31, 28-29, 26-28, 25-26, 23-25, 21-23, 20-21
- 11) Refer to girder(s) for truss to truss connections.
- 12) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 13) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard



June 30,2025

Symbols

PLATE LOCATION AND ORIENTATION



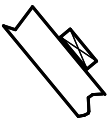
* Plate location details available in MITek software or upon request.

PLATE SIZE

4 X 4

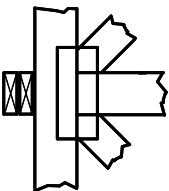
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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.

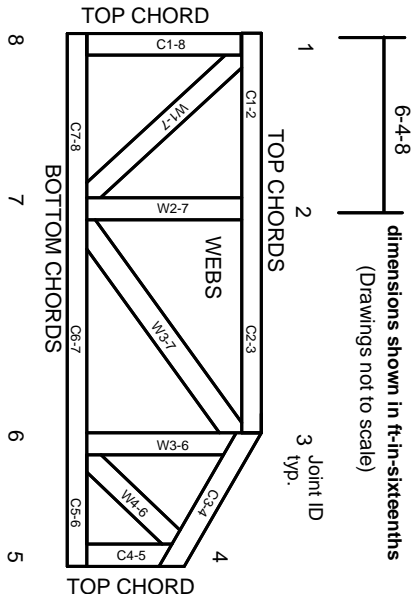
BEARING



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/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: 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/TP1 section 6.3. These truss designs rely on lumber values established by others.

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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/TP1 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1 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/TP1 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.