

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 23080111-01  
91 Serenity-Roof-B330 E COP TMB

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: I60702977 thru I60703022

My license renewal date for the state of North Carolina is December 31, 2023.

North Carolina COA: C-0844



September 12, 2023

Gilbert, Eric

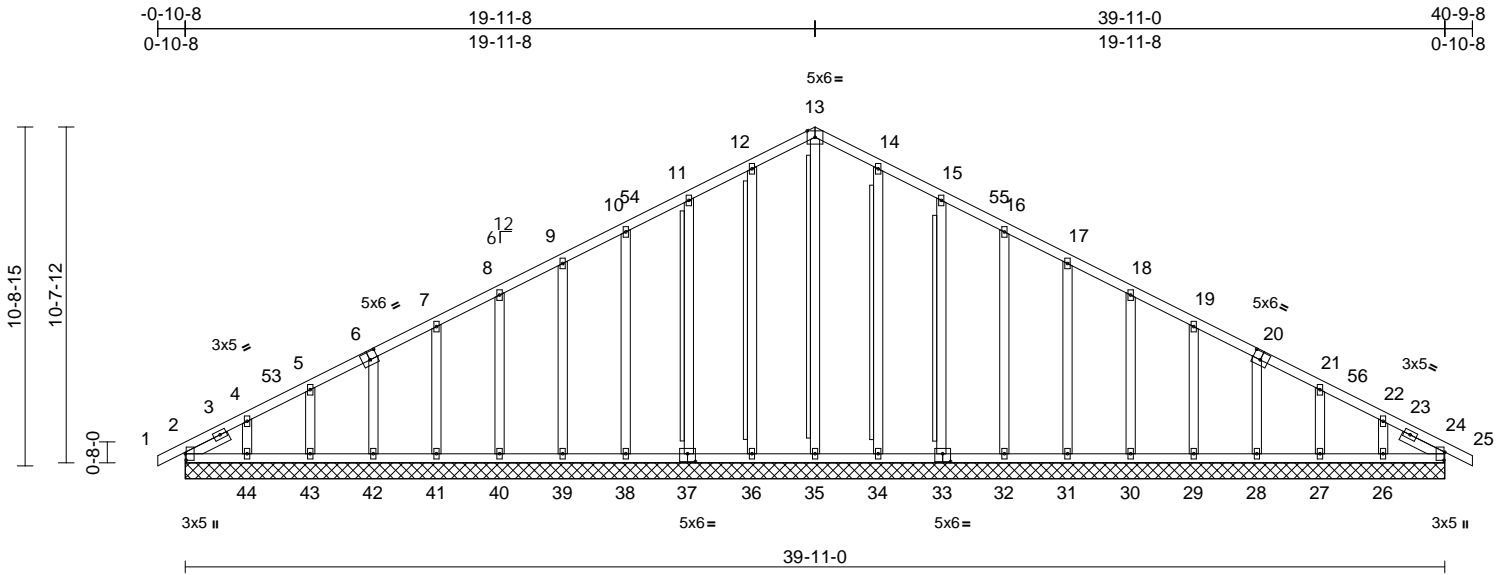
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 23080111-01	Truss A01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702977
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:03:57  
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Page: 1



Scale = 1:73

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [6:0-3-0,0-3-0], [20:0-3-0,0-3-0], [24:0-3-1,0-0-5], [33:0-3-0,0-3-0], [37:0-3-0,0-3-0]

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	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	24	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 285 lb	FT = 20%

LUMBER		Max Uplift	2=-21 (LC 10), 26=-81 (LC 15), 27=-31 (LC 15), 28=-45 (LC 15), 29=-47 (LC 15), 30=-43 (LC 15), 31=-44 (LC 15), 32=-43 (LC 15), 33=-48 (LC 15), 34=-36 (LC 15), 36=-39 (LC 14), 37=-47 (LC 14), 38=-44 (LC 14), 39=-44 (LC 14), 40=-43 (LC 14), 41=-47 (LC 14), 42=-46 (LC 14), 43=-28 (LC 14), 44=-96 (LC 14), 45=-21 (LC 10)	BOT CHORD	2-44=-42/164, 43-44=-42/164, 42-43=-42/164, 41-42=-45/168, 40-41=-45/168, 39-40=-45/168, 38-39=-45/168, 36-38=-45/168, 35-36=-45/168, 34-35=-45/168, 32-34=-45/168, 31-32=-45/168, 30-31=-45/168, 29-30=-45/168, 28-29=-45/168, 27-28=-42/164, 26-27=-42/164, 24-26=-42/164
TOP CHORD	2x4 SP No.2				
BOT CHORD	2x4 SP No.2				
OTHERS	2x4 SP No.3 *Except* 35-13:2x4 SP No.2, 0-0,0-0,0-0,0-0,0-0:2x4 SPF No.2(flat)				
SLIDER	Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0				
BRACING					
TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins.				
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.				
WEBS	T-Brace: 2x4 SPF No.2 - 13-35, 12-36, 11-37, 14-34, 15-33 Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c., with 3in minimum end distance. Brace must cover 90% of web length.				
REACTIONS	(size)	2=39-11-0, 24=39-11-0, 26=39-11-0, 27=39-11-0, 28=39-11-0, 29=39-11-0, 30=39-11-0, 31=39-11-0, 32=39-11-0, 33=39-11-0, 34=39-11-0, 35=39-11-0, 36=39-11-0, 37=39-11-0, 38=39-11-0, 39=39-11-0, 40=39-11-0, 41=39-11-0, 42=39-11-0, 43=39-11-0, 44=39-11-0, 45=39-11-0, 49=39-11-0			
		Max Horiz	2=-165 (LC 15), 45=-165 (LC 15)		

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.



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Continued on page 2

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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/TPH Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	91 Serenity-Roof-B330 E COP TMB	I60702977
23080111-01	A01	Common Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:03:57  
 ID:94aeZ53wRfHxaJ4LIBSgWSzF\_tZ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?f

Page: 2

- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
 Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft;  
 Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior  
 zone and C-C Corner(3E) -0-10-8 to 3-1-6, Exterior(2N)  
 3-1-6 to 15-11-8, Corner(3R) 15-11-8 to 23-11-8,  
 Exterior(2N) 23-11-8 to 36-9-10, Corner(3E) 36-9-10 to  
 40-9-8 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) 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) T CLL: 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
- 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 20.0 psf on  
 overhangs non-concurrent with other live loads.
- 7) All plates are 2x4 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  
 3-06-00 tall by 2-00-00 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 21 lb uplift at joint  
 2, 39 lb uplift at joint 36, 47 lb uplift at joint 37, 44 lb  
 uplift at joint 38, 44 lb uplift at joint 39, 43 lb uplift at joint  
 40, 47 lb uplift at joint 41, 46 lb uplift at joint 42, 28 lb  
 uplift at joint 43, 96 lb uplift at joint 44, 36 lb uplift at joint  
 34, 48 lb uplift at joint 33, 43 lb uplift at joint 32, 44 lb  
 uplift at joint 31, 43 lb uplift at joint 30, 47 lb uplift at joint  
 29, 45 lb uplift at joint 28, 31 lb uplift at joint 27, 81 lb  
 uplift at joint 26 and 21 lb uplift at joint 2.
- 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.
- 14) Warning: Additional permanent and stability bracing for  
 truss system (not part of this component design) is  
 always required.

**LOAD CASE(S)** Standard

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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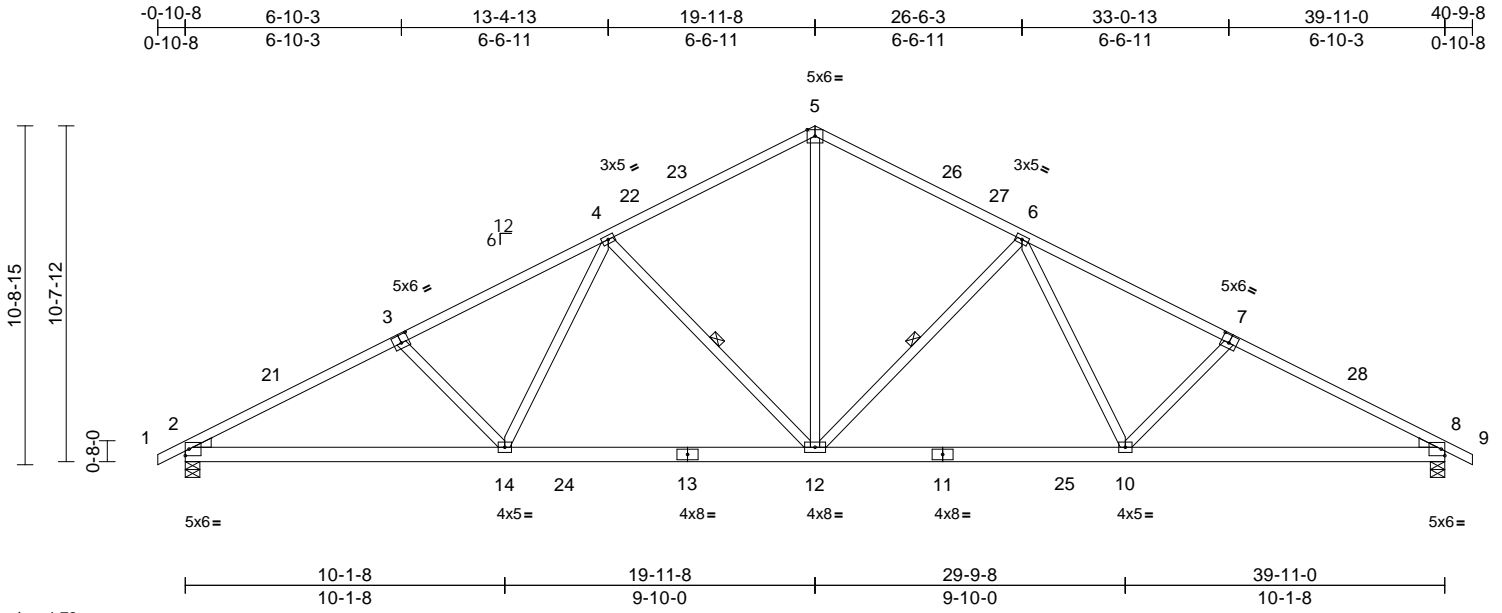
818 Soundside Road  
 Edenton, NC 27932

Job 23080111-01	Truss A02	Truss Type Common	Qty 4	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702978
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:03:59  
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Page: 1



Scale = 1:73  
Plate Offsets (X, Y): [3:0-3-0,0-3-0], [7:0-3-0,0-3-0]

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	0.72	Vert(LL)	-0.23	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.84	Vert(CT)	-0.41	12-14	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.61	Horz(CT)	0.10	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 243 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2 \*Except\* 3-5,7-5:2x4 SP No.1  
BOT CHORD 2x6 SP No.2  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3  
Right: 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-7-10 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 6-12, 4-12

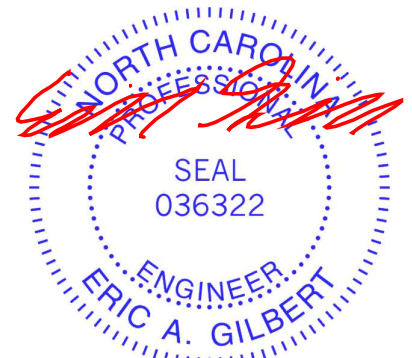
**REACTIONS** (size) 2=0-5-8, 8=0-5-8  
Max Horiz 2=-165 (LC 15)  
Max Uplift 2=-170 (LC 14), 8=-170 (LC 15)  
Max Grav 2=1799 (LC 3), 8=1799 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-3117/325, 4-5=-2067/334, 5-6=-2067/334, 6-8=-3117/325, 8-9=0/23  
BOT CHORD 2-14=-336/2715, 12-14=-188/2271, 10-12=-107/2271, 8-10=-189/2715  
WEBS 5-12=-118/1480, 6-12=-794/244, 6-10=-29/618, 7-10=-345/202, 4-12=-794/244, 4-14=-28/618, 3-14=-345/202

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-1-6, Interior (1) 3-1-6 to 15-11-10, Exterior(2R) 15-11-10 to 23-11-6, Interior (1) 23-11-6 to 36-9-10, Exterior(2E) 36-9-10 to 40-9-8 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
- TCLL: 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
- 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 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(2) and 8. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

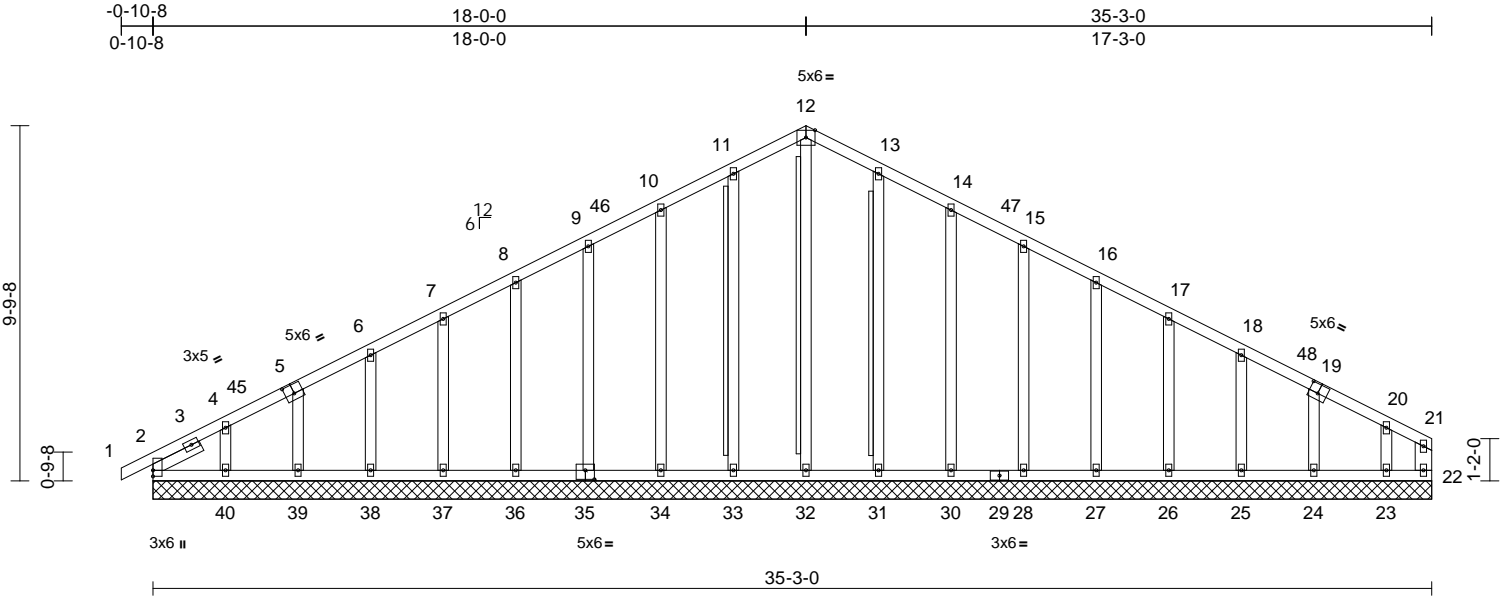
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702979
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:00  
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Page: 1



Scale = 1:63.5

Plate Offsets (X, Y): [5:0-3-0,0-3-0], [19:0-3-0,0-3-0], [35:0-3-0,0-3-0]

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.20	Horz(CT)	0.00	22	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 244 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2  
OTHERS 2x4 SP No.3 \*Except\* 0-0,0-0,0-0:2x4 SPF No.2(flat)  
SLIDER Left 2x4 SP No.3 -- 1-6-0

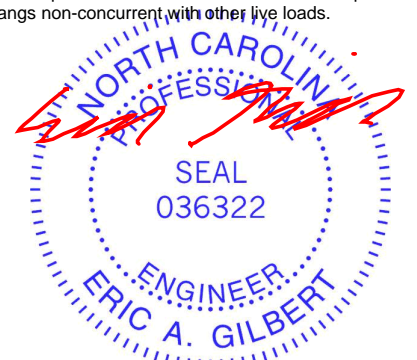
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS T-Brace: 2x4 SPF No.2 - 12-32, 11-33, 13-31  
Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c., with 3in minimum end distance.  
Brace must cover 90% of web length.

**REACTIONS** (size)  
2=35-3-0, 22=35-3-0, 23=35-3-0, 24=35-3-0, 25=35-3-0, 26=35-3-0, 27=35-3-0, 28=35-3-0, 30=35-3-0, 31=35-3-0, 32=35-3-0, 33=35-3-0, 34=35-3-0, 35=35-3-0, 36=35-3-0, 37=35-3-0, 38=35-3-0, 39=35-3-0, 40=35-3-0, 41=35-3-0  
Max Horiz 2=161 (LC 14), 41=161 (LC 14)  
Max Uplift 2=-37 (LC 15), 23=-121 (LC 15), 24=-36 (LC 15), 25=-46 (LC 15), 26=-42 (LC 15), 27=-43 (LC 15), 28=-42 (LC 15), 30=-47 (LC 15), 31=-35 (LC 15), 33=-39 (LC 14), 34=-44 (LC 14), 35=-42 (LC 14), 36=-44 (LC 14), 37=-40 (LC 14), 38=-49 (LC 14), 39=-28 (LC 14), 40=-99 (LC 14), 41=-37 (LC 15)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-178/88, 4-6=-129/105, 6-7=-73/127, 7-8=-57/150, 8-9=-63/172, 9-10=-82/209, 10-11=-100/255, 11-12=-117/295, 12-13=-117/295, 13-14=-100/255, 14-15=-82/209, 15-16=-64/166, 16-17=-47/122, 17-18=-34/78, 18-20=-60/34, 20-21=-99/30, 21-22=-66/11  
BOT CHORD 2-40=-23/80, 39-40=-23/80, 38-39=-27/84, 37-38=-27/84, 36-37=-27/84, 34-36=-27/84, 33-34=-26/83, 32-33=-26/83, 31-32=-26/83, 30-31=-26/83, 28-30=-26/83, 27-28=-26/83, 26-27=-26/83, 25-26=-26/83, 24-25=-26/83, 23-24=-22/77, 22-23=-22/77  
WEBS 12-32=-194/44, 11-33=-198/64, 10-34=-182/80, 9-35=-132/74, 8-36=-117/75, 7-37=-115/74, 6-38=-123/80, 5-39=-115/70, 4-40=-102/121, 13-31=-198/64, 14-30=-182/80, 15-28=-131/74, 16-27=-117/75, 17-26=-115/74, 18-25=-123/78, 19-24=-118/107, 20-23=-81/130

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-7-13, Exterior (2N) 2-7-13 to 14-5-11, Corner(3R) 14-5-11 to 21-6-5, Exterior(2N) 21-6-5 to 31-5-15, Corner(3E) 31-5-15 to 35-0-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.
- TCLL: 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.



September 12, 2023

Continued on page 2

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818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB I60702979 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:00  
ID:HSVLvMXIBUOh6Uln9Dc1gjzEzgn-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

Page: 2

- 7) All plates are 2x4 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 3-06-00 tall by 2-00-00 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 37 lb uplift at joint 2, 39 lb uplift at joint 33, 44 lb uplift at joint 34, 42 lb uplift at joint 35, 44 lb uplift at joint 36, 40 lb uplift at joint 37, 49 lb uplift at joint 38, 28 lb uplift at joint 39, 99 lb uplift at joint 40, 35 lb uplift at joint 31, 47 lb uplift at joint 30, 42 lb uplift at joint 28, 43 lb uplift at joint 27, 42 lb uplift at joint 26, 46 lb uplift at joint 25, 36 lb uplift at joint 24, 121 lb uplift at joint 23 and 37 lb uplift at joint 2.
- 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.
- 14) Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.

**LOAD CASE(S)** Standard

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacompnents.com](http://www.sbcacompnents.com))



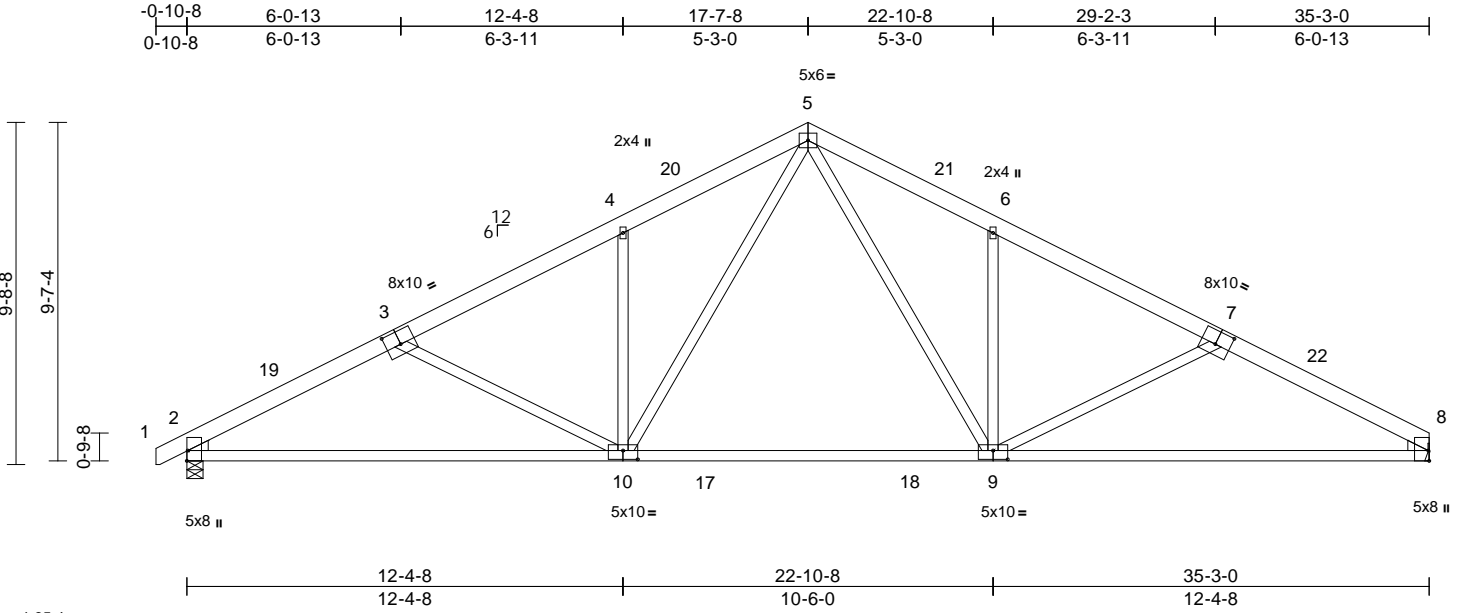
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B02	Truss Type Common	Qty 2	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702980
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:00  
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Page: 1



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	0.34	Vert(LL)	-0.33	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.61	Vert(CT)	-0.48	9-16	>881	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.46	Horz(CT)	0.07	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 219 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x4 SP 2400F 2.0E  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3  
Right: 2x4 SP No.3

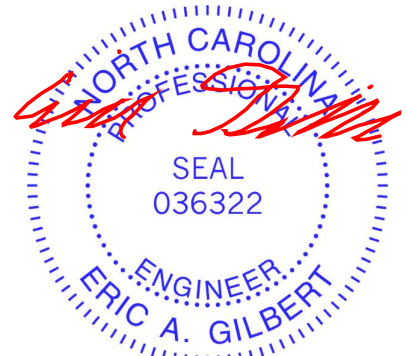
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-4-15 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 8= Mechanical  
Max Horiz 2=153 (LC 14), 8=-135 (LC 15)  
Max Uplift 2=-151 (LC 14), 8=-135 (LC 15)  
Max Grav 2=1583 (LC 3), 8=1541 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-2573/299, 4-5=-2305/375, 5-6=-2306/376, 6-8=-2576/305  
BOT CHORD 2-8=-304/2238  
WEBS 5-10=-204/1098, 5-9=-204/1099, 3-10=-346/189, 4-10=-496/222, 6-9=-494/222, 7-9=-351/191

- TCLL: 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
- 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 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 135 lb uplift at joint 8.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



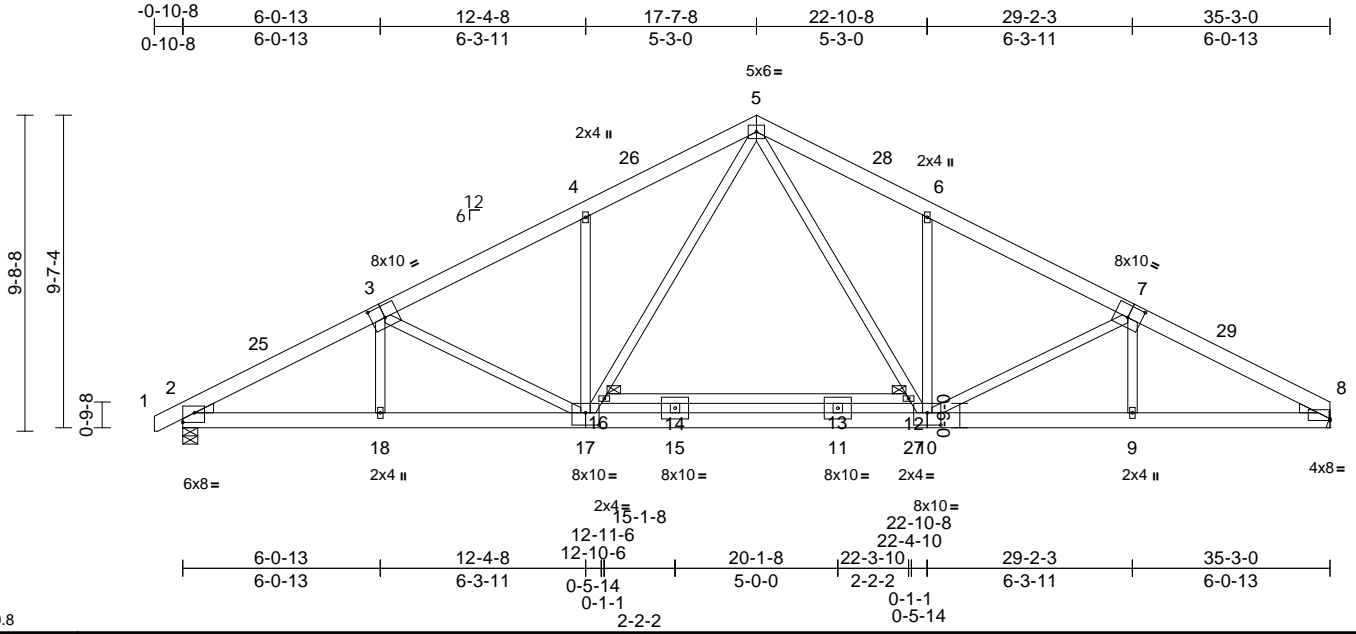
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B03	Truss Type Common	Qty 4	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702981
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:01  
ID:MV7Qc?M0dtQGkhooWQpRiZzEzeQ-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:70.8  
Plate Offsets (X, Y): [2:Edge,0-3-8], [3:0-5-0,0-4-8], [7:0-5-0,0-4-8], [8:Edge,0-0-11], [10:0-5-0,0-4-8], [17:0-5-0,0-4-8]

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	0.31	Vert(LL)	-0.25	13-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.50	13-14	>839	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.06	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 271 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x6 SP 2400F 2.0E \*Except\* 16-12:2x4 SP No.2  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3  
Right: 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-10-7 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 8= Mechanical  
Max Horiz 2=153 (LC 14)  
Max Grav 2=1884 (LC 3), 8=1842 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-3226/0, 4-5=-3020/8, 5-6=-3022/9, 6-8=-3238/0  
BOT CHORD 2-18=-74/2825, 15-18=-21/2826, 11-15=0/1926, 9-11=0/2824, 8-9=-10/2824, 14-16=-9/31, 13-14=-9/31, 12-13=-9/31  
WEBS 4-17=-473/211, 16-17=-35/1432, 5-16=-12/1458, 3-17=-313/242, 5-12=-12/1461, 10-12=-34/1435, 6-10=-473/209, 7-10=-313/245, 3-18=-61/20, 7-9=-105/0, 14-15=-191/0, 11-13=-192/0

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-14 to 2-8-7, Interior (1) 2-8-7 to 14-1-3, Exterior(2R) 14-1-3 to 21-1-13, Interior (1) 21-1-13 to 31-8-11, Exterior(2E) 31-8-11 to 35-3-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

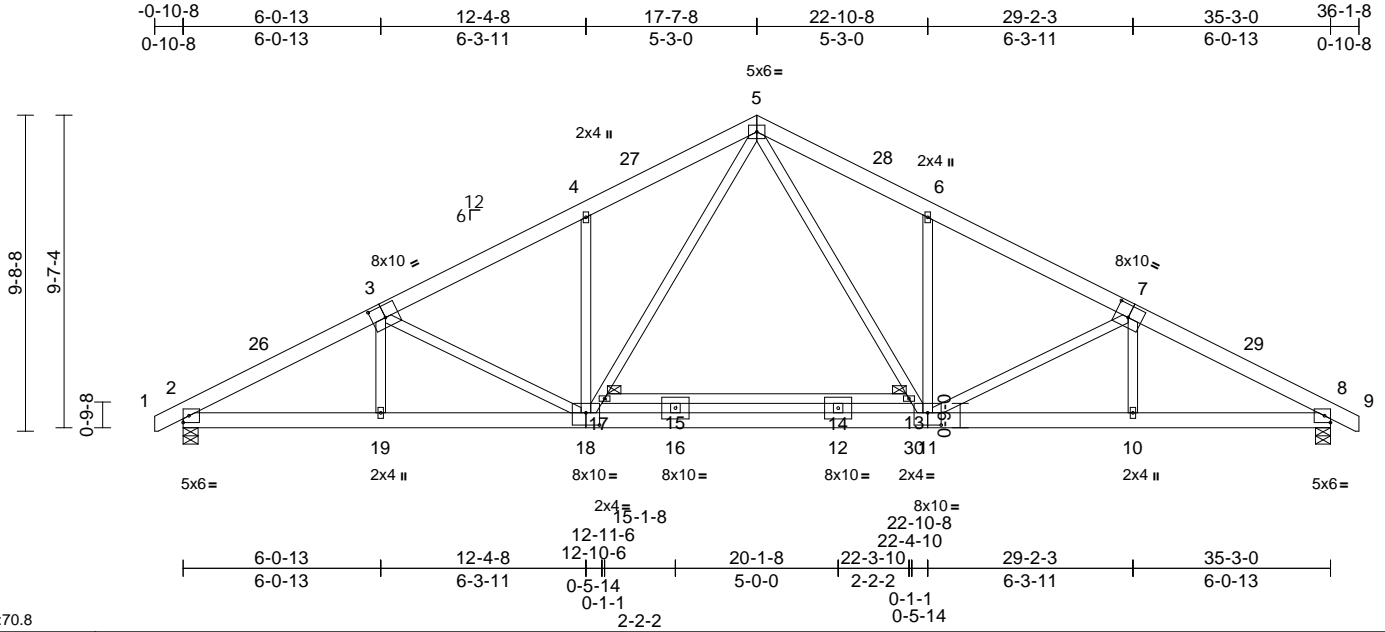


Job 23080111-01	Truss B03A	Truss Type Common	Qty 3	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702982
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:70.8

Plate Offsets (X, Y): [3:0-5-0,0-4-8], [7:0-5-0,0-4-8], [11:0-5-0,0-4-8], [18:0-5-0,0-4-8]

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	0.32	Vert(LL)	-0.25	14-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.50	14-15	>838	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.39	Horz(CT)	0.06	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 272 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x6 SP 2400F 2.0E \*Except\* 17-13:2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 18-5,11-5:2x4 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-10-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 8=0-5-8  
Max Horiz 2=146 (LC 14)  
Max Grav 2=1884 (LC 3), 8=1884 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-3233/0, 4-5=-3022/6, 5-6=-3022/6, 6-8=-3233/0, 8-9=0/22  
BOT CHORD 2-19=-127/2818, 16-19=-15/2819, 12-16=0/1923, 10-12=0/2819, 8-10=0/2818, 15-17=-8/33, 14-15=-8/33, 13-14=-8/33  
WEBS 4-18=-475/209, 3-19=-68/21, 17-18=-35/1436, 5-17=-12/1461, 7-10=-106/0, 3-18=-307/242, 6-11=-475/209, 5-13=-12/1461, 11-13=-34/1436, 15-16=-192/0, 12-14=-192/0, 7-11=-307/244

- TCLL: 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 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.

**LOAD CASE(S)** Standard

- 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-14 to 2-8-7, Interior (1) 2-8-7 to 14-1-3, Exterior(2R) 14-1-3 to 21-1-13, Interior (1) 21-1-13 to 32-6-9, Exterior(2E) 32-6-9 to 36-0-14 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**  
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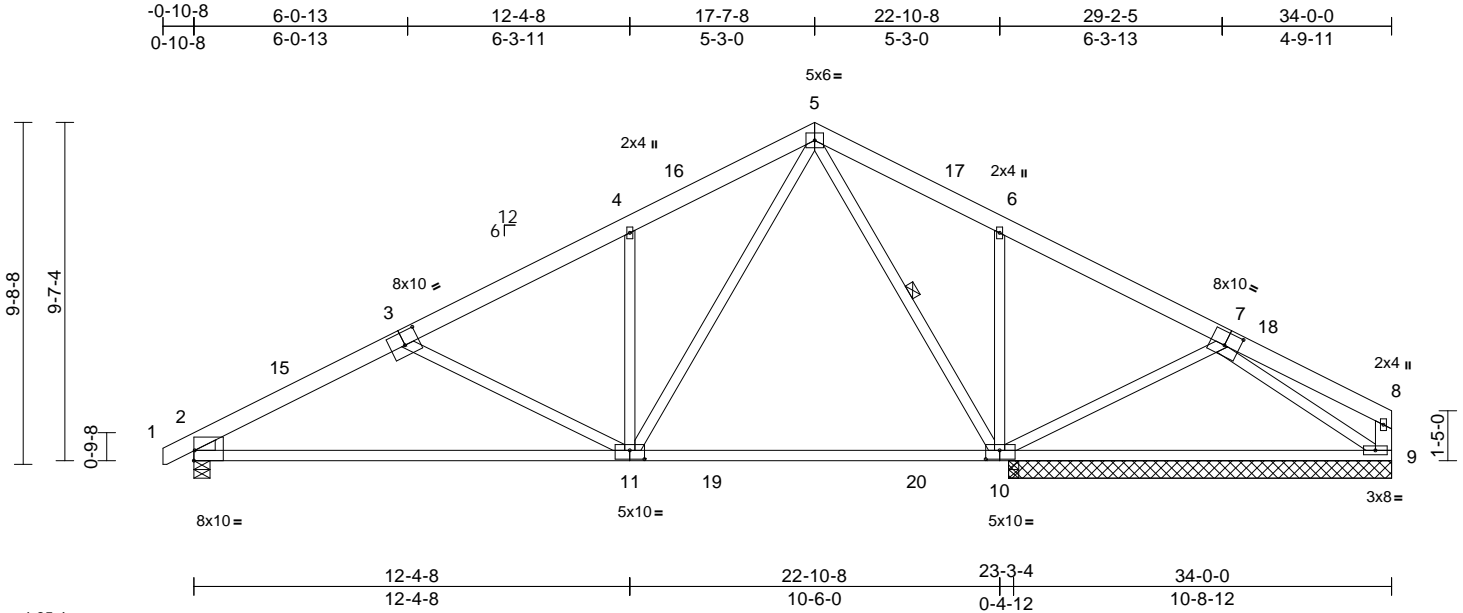
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B04	Truss Type Common	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702983
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:02  
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Page: 1



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	0.29	Vert(LL)	-0.31	10-11	>873	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.54	9-10	>244	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.52	Horz(CT)	0.02	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 223 lb	FT = 20%

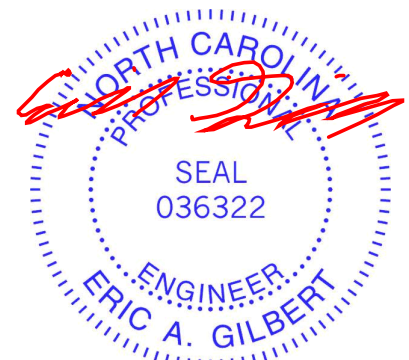
**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x4 SP No.1 \*Except\* 2-11:2x4 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 9-8:2x6 SP No.2, 11-5,10-5:2x4 SP No.2  
WEDGE Left: 2x4 SP No.3

**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.  
WEBS 1 Row at midpt 5-10

**REACTIONS**  
(size) 2=0-5-8, 9=10-10-8, 10=10-10-8  
Max Horiz 2=168 (LC 14)  
Max Uplift 2=-99 (LC 14), 9=-8 (LC 15), 10=-168 (LC 15)  
Max Grav 2=994 (LC 5), 9=338 (LC 37), 10=1759 (LC 3)

**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-1395/173, 4-5=-1093/218, 5-6=-9/311, 6-8=-232/345, 8-9=-174/34  
2-9=-232/1223  
BOT CHORD 2-9=-232/1223  
WEBS 4-11=-483/223, 3-11=-425/199, 6-10=-501/218, 7-10=-388/210, 5-11=-208/1138, 7-9=-99/187, 5-10=-1017/182

- 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) -0-9-14 to 2-9-10, Interior (1) 2-9-10 to 14-0-0, Exterior(2R) 14-0-0 to 21-3-0, Interior (1) 21-3-0 to 30-1-12, Exterior(2E) 30-1-12 to 33-9-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
  - 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 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - N/A
  - 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.
- LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

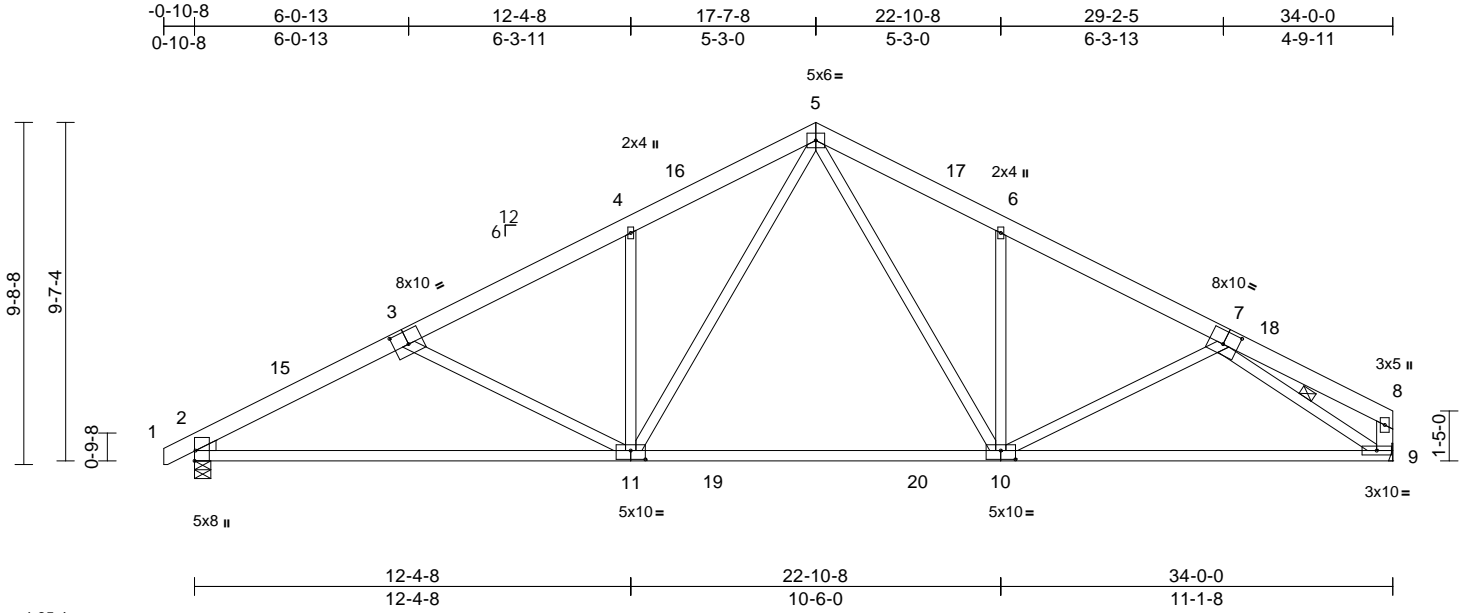
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B05	Truss Type Common	Qty 4	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702984
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



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	0.30	Vert(LL)	-0.36	10-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.97	Vert(CT)	-0.58	9-10	>697	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.43	Horz(CT)	0.08	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 223 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x4 SP No.1 \*Except\* 2-11:2x4 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 9-8:2x6 SP No.2, 11-5,10-5:2x4 SP No.2  
WEDGE Left: 2x4 SP No.3

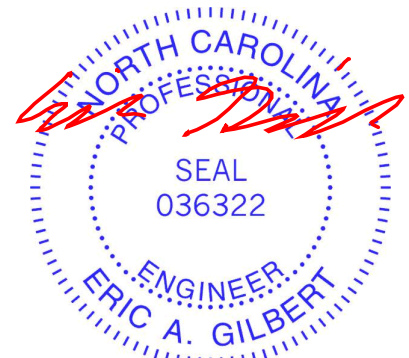
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-6-15 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
WEBS 1 Row at midpt 7-9

**REACTIONS**  
(size) 2=0-5-8, 9= Mechanical  
Max Horiz 2=152 (LC 18)  
Max Uplift 2=-149 (LC 14), 9=-122 (LC 15)  
Max Grav 2=1518 (LC 3), 9=1480 (LC 3)

**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-2444/293, 4-5=-2188/368, 5-6=-2061/358, 6-8=-2047/255, 8-9=-264/58  
BOT CHORD 2-9=-296/2122  
WEBS 7-9=-1749/244, 4-11=-495/222, 5-11=-204/1101, 3-11=-353/189, 5-10=-181/902, 6-10=-489/215, 7-10=-44/187

- 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) -0-9-14 to 2-9-10, Interior (1) 2-9-10 to 14-0-0, Exterior(2R) 14-0-0 to 21-3-0, Interior (1) 21-3-0 to 30-1-12, Exterior(2E) 30-1-12 to 33-9-4 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
- TCLL: 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
- 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 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 122 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

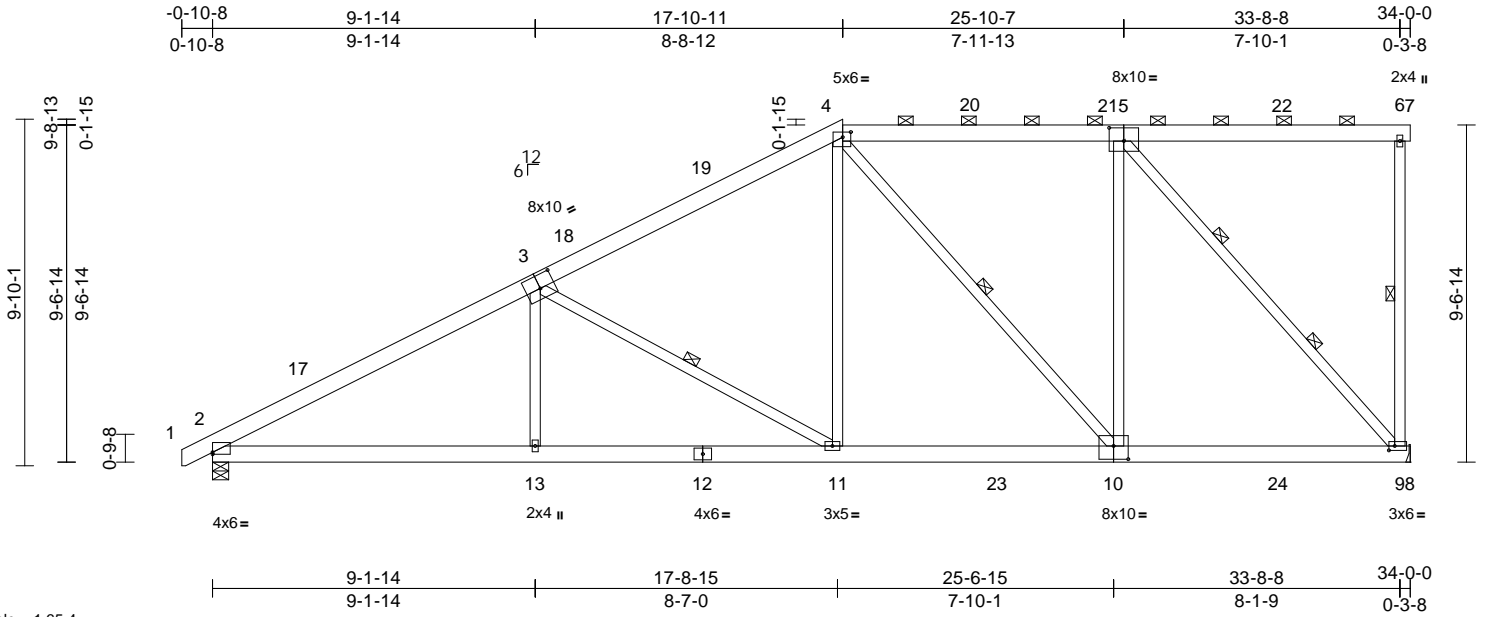
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B06	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702985
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:03  
ID:6tPM5lr?FJUMxDStPvqO5SzF\_Wb-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?l

Page: 1



Scale = 1:65.4

Plate Offsets (X, Y): [2:Edge,0-0-11], [3:0-5-0,0-4-8], [4:0-2-12,0-1-12], [5:0-5-0,0-4-8], [9:0-2-0,0-1-8], [10:0-5-0,0-4-8]

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	0.62	Vert(LL)	-0.11	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.61	Vert(CT)	-0.20	11-13	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.86	Horz(CT)	0.06	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 260 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x6 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 4-10,5-9:2x4 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-5-4 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 4-7.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 6-9, 4-10, 3-11  
WEBS 2 Rows at 1/3 pts 5-9

**REACTIONS** (size) 2=0-5-8, 9= Mechanical  
Max Horiz 2=337 (LC 14)  
Max Uplift 2=-126 (LC 14), 9=-176 (LC 11)  
Max Grav 2=1546 (LC 38), 9=1720 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/22, 2-4=-2556/187, 4-6=-1180/138, 6-7=0/0  
BOT CHORD 2-13=-381/2204, 11-13=-382/2201, 9-11=-219/1424, 8-9=0/0  
WEBS 4-11=-30/787, 6-9=-292/80, 4-10=-638/144, 5-10=-3/884, 5-9=-1774/211, 3-11=-917/255, 3-13=0/350

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-14 to 2-9-10, Interior (1) 2-9-10 to 14-3-3, Exterior(2R) 14-3-3 to 21-6-3, Interior (1) 21-6-3 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 176 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.
- 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

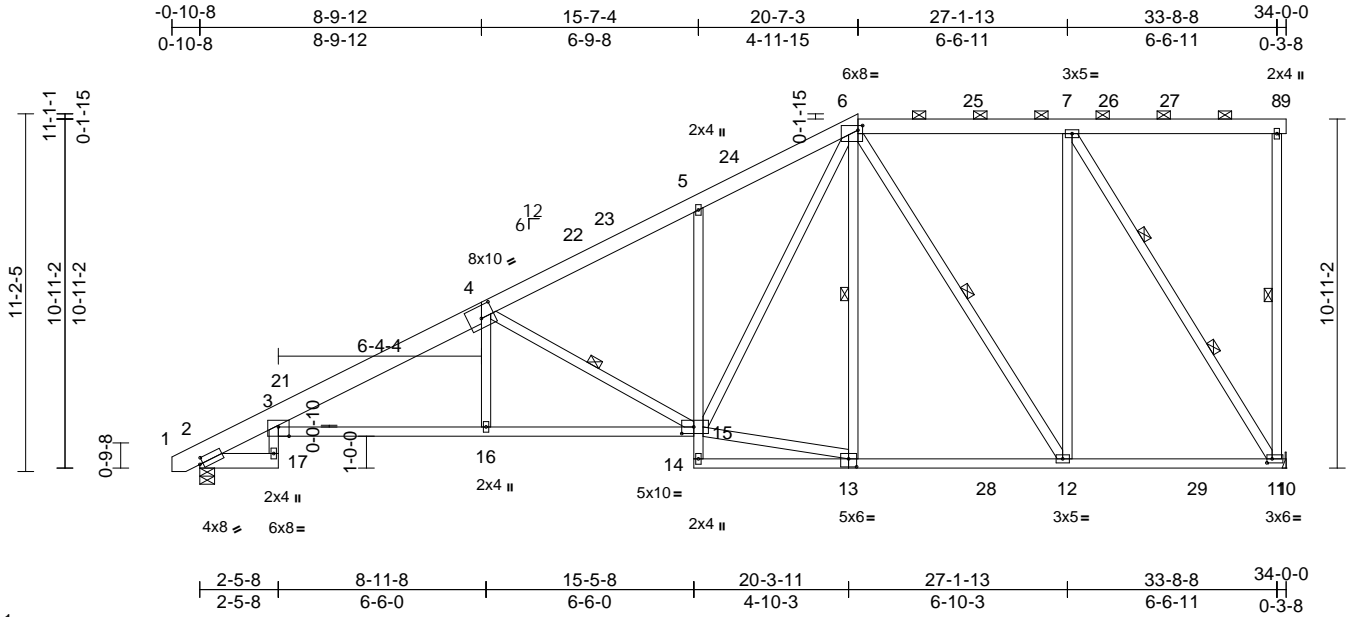
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B07	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702986
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:03  
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Page: 1



Scale = 1:72.1

Plate Offsets (X, Y): [2:0-1-4,0-2-3], [3:0-4-0,Edge], [4:0-5-0,0-4-8], [6:0-1-12,0-1-12], [11:0-2-0,0-1-8], [13:0-3-0,0-3-0], [15:0-4-8,0-2-8]

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	0.75	Vert(LL)	-0.33	3-16	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.92	Vert(CT)	-0.61	3-16	>662	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.81	Horz(CT)	0.34	11	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 282 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2 \*Except\* 1-4:2x8 SP 2400F 2.0E  
BOT CHORD 2x4 SP No.2 \*Except\* 2-17:2x6 SP No.2, 3-15:2x4 SP No.1, 5-14:2x4 SP No.3  
WEBS 2x4 SP No.2 \*Except\* 4-16,15-4,13-15:2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-1-1 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 6-9.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
WEBS 1 Row at midpt 4-15, 6-12, 6-13, 8-11  
WEBS 2 Rows at 1/3 pts 7-11

**REACTIONS** (size) 2=0-5-8, 11= Mechanical  
Max Horiz 2=387 (LC 14)  
Max Uplift 2=-124 (LC 14), 11=-162 (LC 11)  
Max Grav 2=1540 (LC 38), 11=1613 (LC 37)

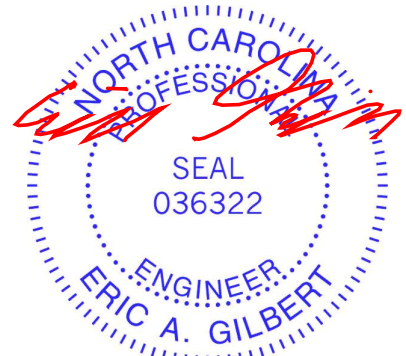
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-800/0, 3-5=-2997/274, 5-6=-2090/305, 6-7=-830/113, 7-8=0/0, 8-9=0/0  
BOT CHORD 2-17=-204/401, 3-17=-80/365, 3-16=-551/2808, 15-16=-545/2808, 14-15=0/75, 5-15=-424/185, 12-14=-187/1157, 11-12=-112/828, 10-11=0/0  
WEBS 4-16=0/233, 4-15=-1133/274, 13-15=-163/1143, 6-15=-322/1410, 6-12=-770/164, 7-12=-47/986, 6-13=-89/127, 8-11=-249/68, 7-11=-1568/212

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-7-14 to 2-11-10, Interior (1) 2-11-10 to 16-11-11, Exterior(2R) 16-11-11 to 24-2-11, Interior (1) 24-2-11 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 162 lb uplift at joint 11.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

13) 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

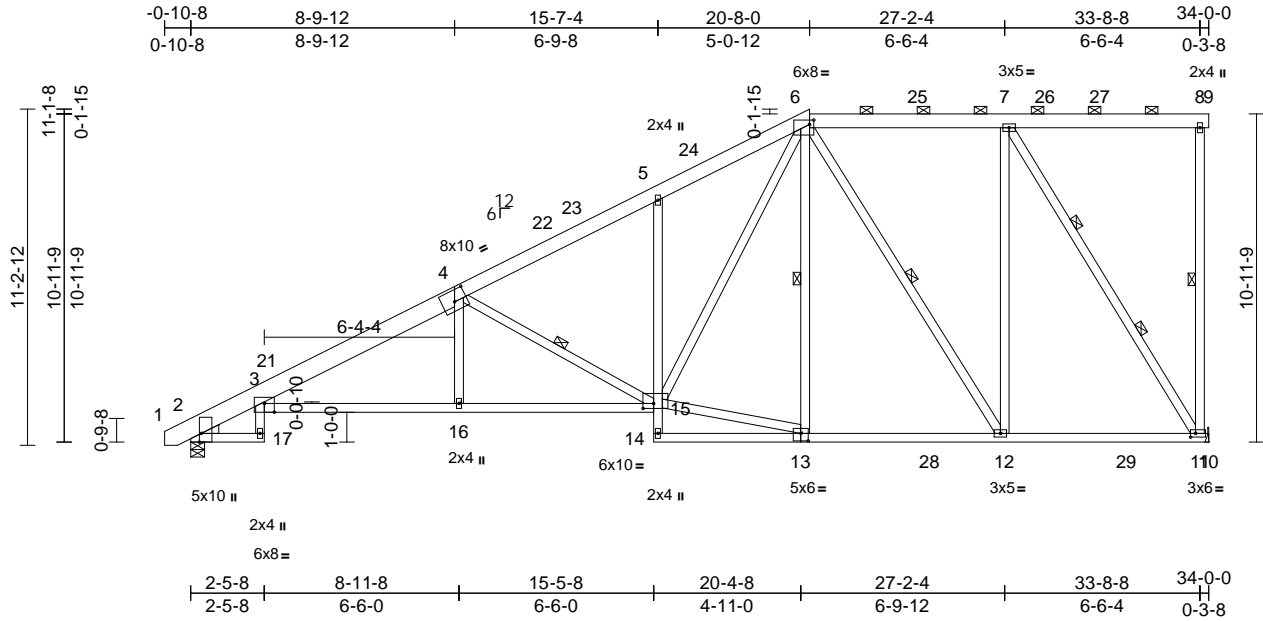
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B08	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702987
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:04  
ID:qCQDRPFmxy5us2K9CGvbovf\_Un-RfC?PsB70Hq3NSgPqnl8w3uTXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:77

Plate Offsets (X, Y): [2:0-3-8,Edge], [3:0-4-0,Edge], [4:0-5-0,0-4-8], [6:0-1-12,0-1-12], [11:0-2-0,0-1-8], [13:0-3-0,0-3-0], [15:0-4-4,0-2-0]

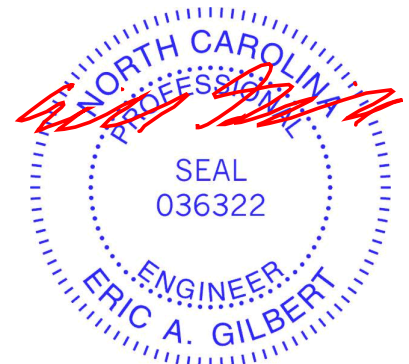
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.75	Vert(LL)	-0.33	3-16	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.92	Vert(CT)	-0.61	3-16	>658	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.81	Horz(CT)	0.36	11	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 281 lb	FT = 20%

LUMBER	
TOP CHORD	2x6 SP No.2 *Except* 1-4:2x8 SP 2400F 2.0E
BOT CHORD	2x4 SP No.2 *Except* 17-3,5-14:2x4 SP No.3, 3-15:2x4 SP No.1
WEBS	2x4 SP No.2 *Except* 4-16,15-4,13-15:2x4 SP No.3
WEDGE	Left: 2x4 SP No.3
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 4-1-1 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 6-9.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 2-2-0 oc bracing: 3-16 8-4-10 oc bracing: 15-16.
WEBS	1 Row at midpt 4-15, 6-12, 6-13, 8-11
WEBS	2 Rows at 1/3 pts 7-11
REACTIONS	
(size)	2=0-5-8, 11= Mechanical
Max Horiz	2=388 (LC 14)
Max Uplift	2=-123 (LC 14), 11=-163 (LC 11)
Max Grav	2=1540 (LC 38), 11=1611 (LC 37)
FORCES	
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/18, 2-3=-761/0, 3-5=-2996/281, 5-6=-2092/309, 6-7=-823/113, 7-8=0/0, 8-9=0/0
BOT CHORD	2-17=-198/362, 3-17=-49/225, 3-16=-560/2808, 15-16=-554/2808, 14-15=0/77, 5-15=-427/186, 12-14=-188/1152, 11-12=-112/820, 10-11=0/0
WEBS	4-16=0/233, 4-15=-1131/279, 13-15=-164/1136, 6-15=-326/1412, 6-12=-774/166, 7-12=-50/989, 6-13=-85/130, 8-11=-248/68, 7-11=-1564/213

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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-7-14 to 2-11-10, Interior (1) 2-11-10 to 17-0-8, Exterior(2R) 17-0-8 to 24-3-8, Interior (1) 24-3-8 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 163 lb uplift at joint 11.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

- 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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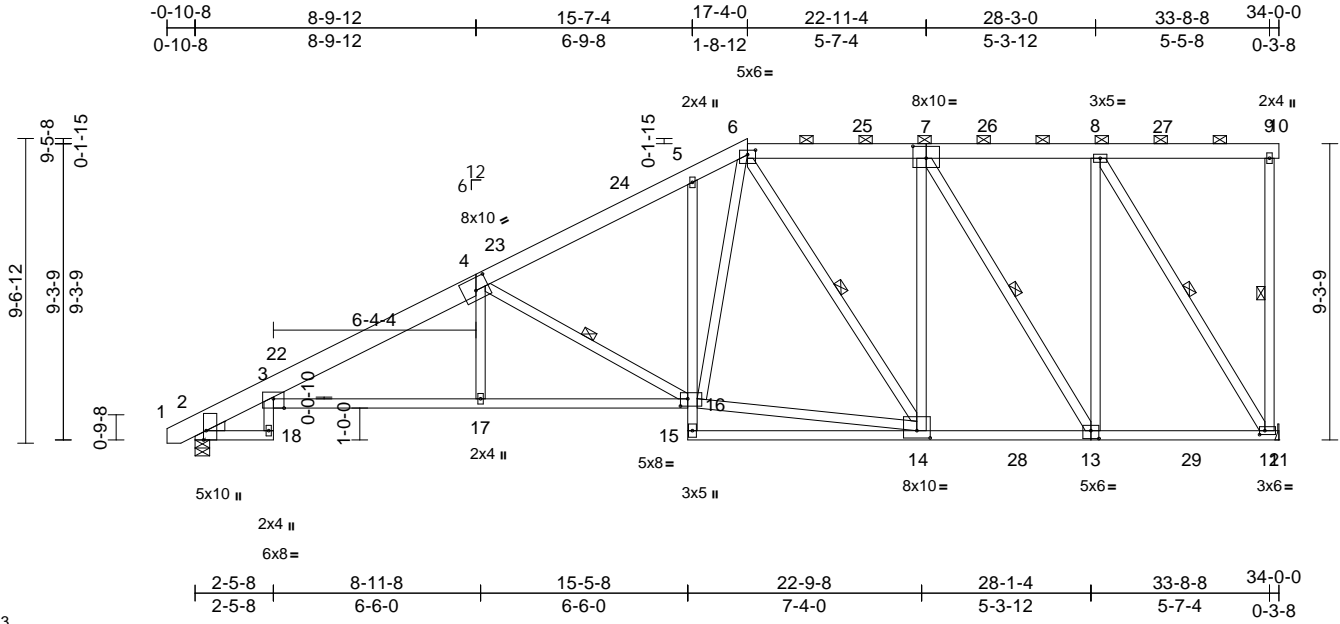
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B09	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702988
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:04  
ID:JQDRPFmxy5us2K9CGvbozV\_Un-RfC?PsB70Hq3NSgPqL8w3uTXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:72.3

Plate Offsets (X, Y): [2:0-3-8,Edge], [3:0-4-0,Edge], [4:0-5-0,0-4-8], [6:0-3-0,0-1-12], [7:0-5-0,0-4-8], [12:0-2-0,0-1-8], [13:0-3-0,0-3-0], [14:0-5-0,0-2-12], [16:0-2-12,0-2-12]

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	0.74	Vert(LL)	-0.32	3-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.90	Vert(CT)	-0.60	3-17	>674	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.35	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 281 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2 \*Except\* 4-1:2x8 SP 2400F 2.0E  
BOT CHORD 2x4 SP No.2 \*Except\* 18-3,5-15:2x4 SP No.3, 3-16:2x4 SP No.1  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-2-11 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 6-10.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 8-11-7 oc bracing: 3-17 9-1-14 oc bracing: 16-17.  
WEBS 1 Row at midpt 4-16, 6-14, 7-13, 9-12, 8-12

**REACTIONS** (size) 2=0-5-8, 12= Mechanical  
Max Horiz 2=327 (LC 14)  
Max Uplift 2=-118 (LC 14), 12=-179 (LC 11)  
Max Grav 2=1516 (LC 38), 12=1670 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-743/0, 3-5=-2954/268, 5-6=-1880/298, 6-8=-1330/172, 8-9=0/0, 9-10=0/0  
BOT CHORD 2-18=-170/356, 3-18=-42/221, 3-17=-470/2772, 16-17=-464/2772, 15-16=0/134, 5-16=-226/176, 14-15=-10/125, 12-14=-170/1319, 11-12=0/0  
WEBS 4-17=0/235, 4-16=-1218/274, 7-14=-35/597, 6-14=-615/163, 14-16=-240/1386, 7-13=-864/143, 8-13=-54/996, 6-16=-214/1128, 9-12=-220/60, 8-12=-1670/188

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-7-14 to 2-11-10, Interior (1) 2-11-10 to 13-8-8, Exterior(2R) 13-8-8 to 20-11-8, Interior (1) 20-11-8 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 179 lb uplift at joint 12.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

13) 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



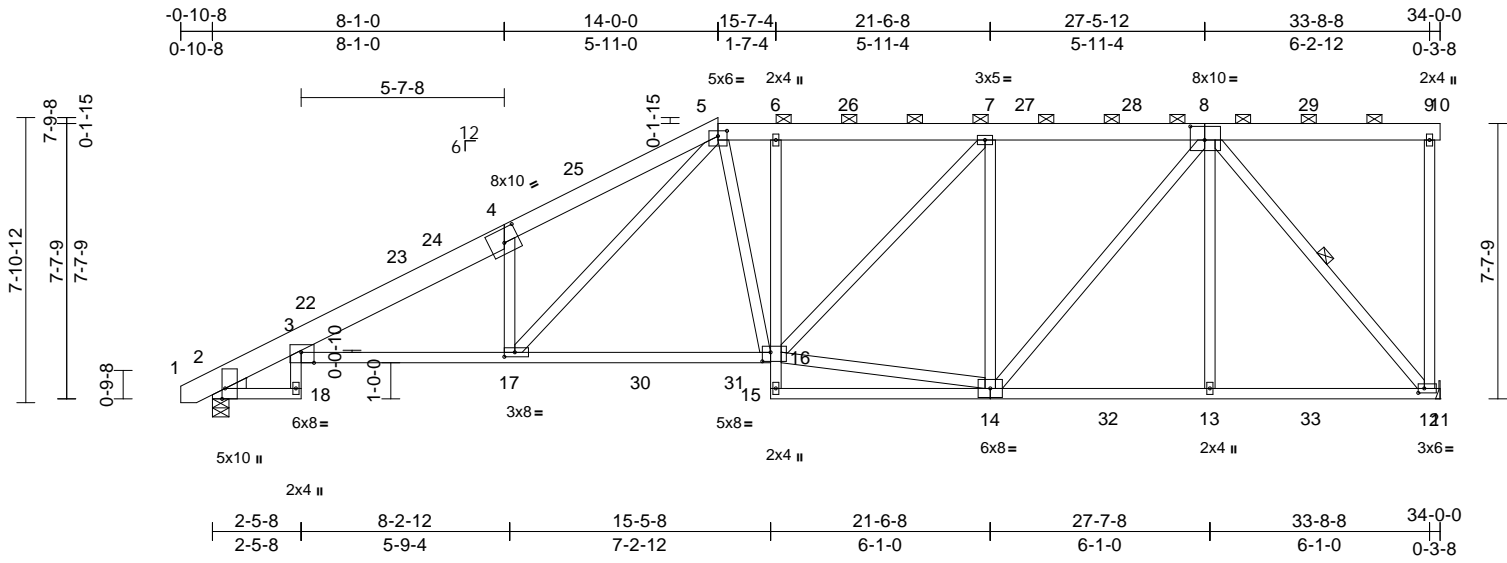
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B10	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702989
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:05  
ID: jCQDRPFmxy5us2K9CGvbovf\_Un-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCdoi7J4zJC?f

Page: 1



Scale = 1:63.8

Plate Offsets (X, Y): [2:0-3-8,Edge], [3:0-4-4,Edge], [4:0-5-0,0-4-8], [5:0-3-0,0-1-12], [8:0-4-12,0-4-8], [12:0-2-0,0-1-8], [16:0-2-12,0-3-0], [17:0-3-8,0-1-8]

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	0.72	Vert(LL)	-0.29	16-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.92	Vert(CT)	-0.53	3-17	>765	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.87	Horz(CT)	0.33	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 261 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2 \*Except\* 4-1:2x8 SP 2400F 2.0E  
BOT CHORD 2x4 SP No.2 \*Except\* 18-3,6-15:2x4 SP No.3, 3-16:2x4 SP No.1  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-8-4 oc purlins, except 2-0-0 oc purlins (4-9-9 max.): 5-10.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 2-2-0 oc bracing: 3-17.  
WEBS 1 Row at midpt 8-12

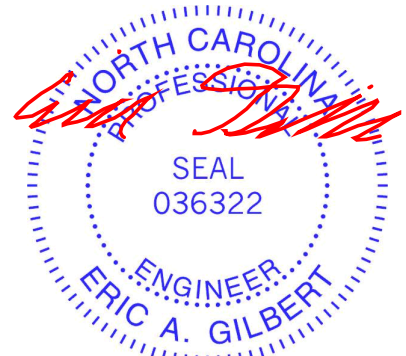
**REACTIONS** (size) 2=0-5-8, 12= Mechanical  
Max Horiz 2=266 (LC 14)  
Max Uplift 2=-105 (LC 14), 12=-192 (LC 11)  
Max Grav 2=1516 (LC 38), 12=1687 (LC 37)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-743/8, 3-5=-3236/453, 5-6=-2108/289, 6-7=-2094/288, 7-9=-1762/194, 9-10=0/0  
BOT CHORD 2-18=-139/356, 3-18=-33/221, 3-17=-453/2848, 16-17=-298/1964, 15-16=0/109, 6-16=-460/118, 13-15=-136/1213, 12-13=-135/1219, 11-12=0/0  
WEBS 4-17=-971/305, 7-16=-136/609, 7-14=-769/199, 8-14=-121/871, 14-16=-179/1733, 8-13=0/344, 5-17=-277/1449, 5-16=-93/598, 9-12=-253/67, 8-12=-1871/207

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-7-14 to 2-11-10, Interior (1) 2-11-10 to 10-4-8, Exterior(2R) 10-4-8 to 17-7-8, Interior (1) 17-7-8 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 192 lb uplift at joint 12.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

13) 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



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Edenton, NC 27932

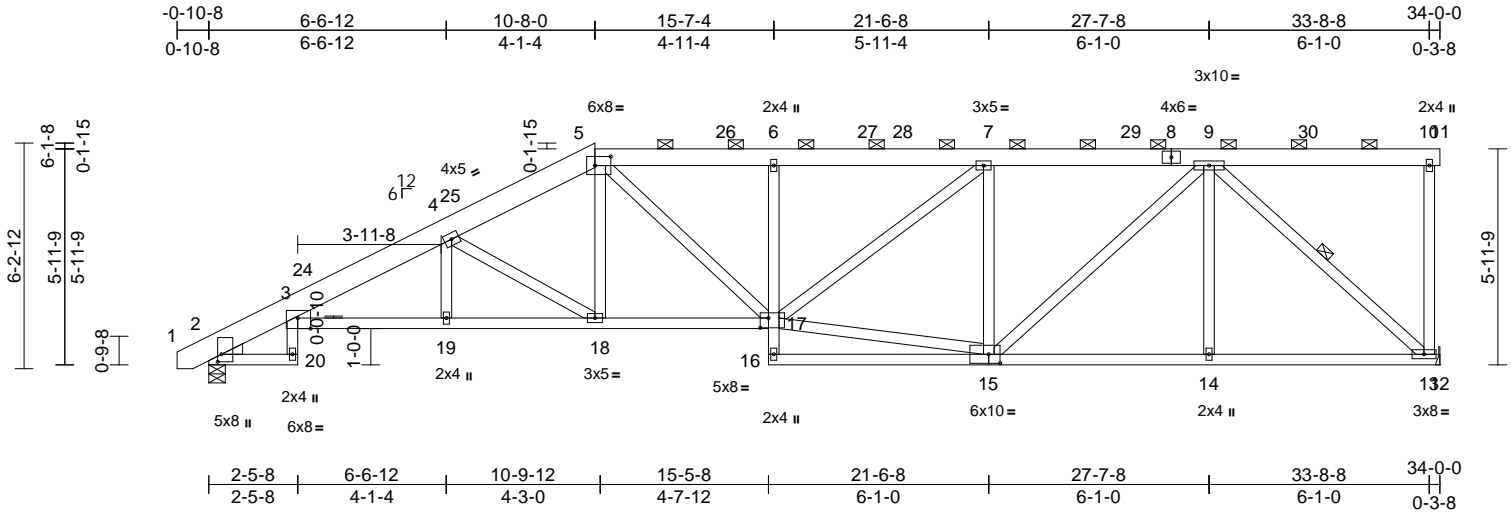


Job 23080111-01	Truss B11	Truss Type Half Hip	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702990
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:05  
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Page: 1



Scale = 1:63.6

Plate Offsets (X, Y): [2:0-2-8,0-1-4], [3:0-4-4,Edge], [5:0-5-4,0-3-0], [15:0-3-12,0-3-0], [17:0-2-12,0-3-4]

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	0.62	Vert(LL)	-0.20	17-18	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.87	Vert(CT)	-0.39	17-18	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.84	Horz(CT)	0.28	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 246 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2 \*Except\* 1-5:2x8 SP 2400F 2.0E  
BOT CHORD 2x4 SP No.2 \*Except\* 20-3,6-16:2x4 SP No.3, 3-17:2x4 SP No.1  
WEBS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 5-0-0 oc purlins, except 2-0-0 oc purlins (4-2-3 max.): 5-11.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 8-9-10 oc bracing: 3-19 8-11-9 oc bracing: 18-19.  
WEBS 1 Row at midpt 9-13

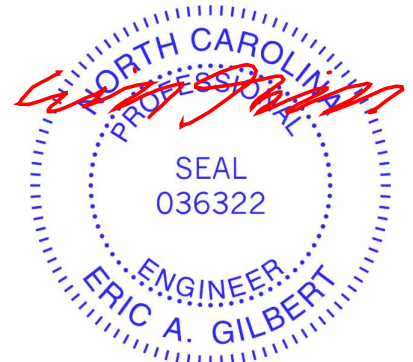
**REACTIONS** (size) 2=0-5-8, 13= Mechanical  
Max Horiz 2=204 (LC 14)  
Max Uplift 2=-83 (LC 14), 13=-202 (LC 11)  
Max Grav 2=1391 (LC 2), 13=1644 (LC 35)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-676/29, 3-4=-3037/390, 4-5=-2607/343, 5-6=-2793/346, 6-7=-2775/345, 7-9=-2155/272, 9-10=0/0, 10-11=0/0  
BOT CHORD 2-20=-118/325, 3-20=-30/194, 3-19=-500/2930, 18-19=-497/2921, 17-18=-333/2311, 16-17=0/110, 6-17=-496/142, 14-16=-184/1461, 13-14=-184/1461, 12-13=0/0  
WEBS 5-17=-141/658, 7-17=-149/783, 7-15=-858/201, 9-15=-119/948, 15-17=-266/2032, 9-14=0/272, 5-18=-47/654, 4-19=-97/78, 4-18=-1077/208, 10-13=-247/65, 9-13=-1984/250

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-7-14 to 2-11-10, Interior (1) 2-11-10 to 7-0-8, Exterior(2R) 7-0-8 to 14-3-8, Interior (1) 14-3-8 to 30-4-8, Exterior(2E) 30-4-8 to 34-0-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 202 lb uplift at joint 13.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

13) 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



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 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 and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



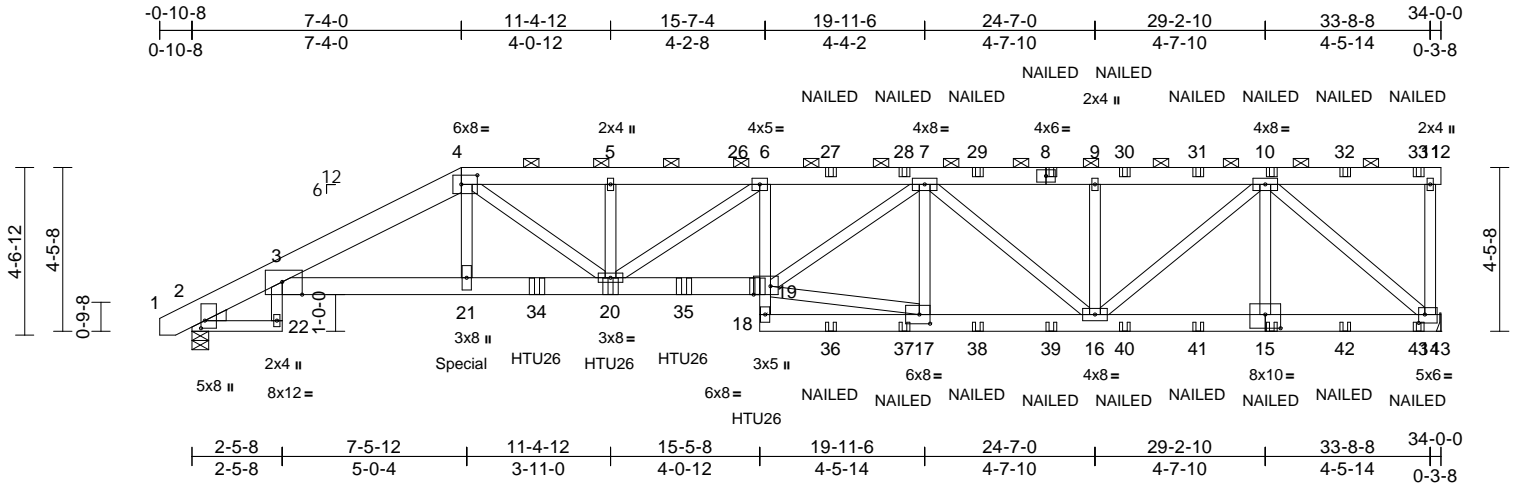
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B12	Truss Type Half Hip Girder	Qty 1	Ply 2	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702991
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:07  
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Page: 1



Scale = 1:62.7  
Plate Offsets (X, Y): [2:0-2-8,0-1-4], [3:0-6-8,Edge], [4:0-5-4,0-3-0], [14:0-2-0,0-2-12], [15:0-5-0,0-4-8], [17:0-3-8,0-3-0], [19:0-5-8,Edge]

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	0.78	Vert(LL)	-0.32	19-20	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.72	Vert(CT)	-0.50	19-20	>808	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.66	Horz(CT)	0.29	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 513 lb	FT = 20%

**LUMBER**

TOP CHORD 2x6 SP No.2 \*Except\* 1-4:2x8 SP 2400F 2.0E

BOT CHORD 2x4 SP No.2 \*Except\* 22-3:2x4 SP No.3, 3-19:2x6 SP 2400F 2.0E, 15-13,15-18:2x6 SP No.2

WEBS 2x4 SP No.3 \*Except\* 17-19:2x4 SP No.2

WEDGE Left: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except 2-0-0 oc purlins (5-4-2 max.): 4-12.

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

**REACTIONS** (size) 2=0-5-8, 14= Mechanical  
Max Horiz 2=149 (LC 12)  
Max Uplift 2=-820 (LC 9), 14=-1037 (LC 9)  
Max Grav 2=2779 (LC 1), 14=2996 (LC 33)

**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/27, 2-3=-1459/399, 3-4=-6982/2300, 4-5=-8034/2704, 5-6=-8034/2704, 6-7=-8219/2807, 7-9=-4948/1717, 9-10=-4946/1717, 10-11=0/0, 11-12=0/0

BOT CHORD 2-22=-250/622, 3-22=-134/444, 3-21=-2467/6504, 20-21=-2788/6572, 16-19=-1875/5407, 16-30=-7719/1357, 6-19=-199/134, 17-18=-297/872, 16-17=-2136/6174, 14-16=-1009/2914, 13-14=0/0

WEBS 4-21=-348/1085, 4-20=-682/1818, 5-20=206/171, 6-20=387/180, 17-19=-1875/5407, 7-19=-827/2521, 7-17=-979/410, 7-16=-1621/553, 9-16=-516/253, 10-16=-936/2685, 10-15=0/275, 10-14=-8903/1354, 11-14=-803/137

- NOTES**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x8 - 2 rows staggered at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc, Except member 4-21 2x4 - 1 row at 0-8-0 oc.
  - All loads are considered equally applied to all plies, 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 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; end vertical left 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); 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
  - 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 20.0 psf on overhangs non-concurrent with other live loads.
  - Provide adequate drainage to prevent water ponding.
  - 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1037 lb uplift at joint 14.
- LGT2 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 9-4-12 from the left end to 15-4-12 to connect truss(es) to front face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.
- "NAILED" indicates 3-10d (0.148"x3") or 3-12d (0.148"x3.25") toe-nails per NDS guidelines.

September 12, 2023

Continued on page 2

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss B12	Truss Type Half Hip Girder	Qty 1	Ply 2	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	I60702991
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 2

- 19) LGT2 Hurricane ties must have two studs in line below the truss.
- 20) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 626 lb down and 269 lb up at 7-4-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-4=-60, 4-12=-60, 22-23=-20, 3-19=-20, 13-18=-20  
Concentrated Loads (lb)  
Vert: 8=-109 (F), 21=-626 (F), 20=-233 (F), 19=-233 (F), 15=-33 (F), 10=-109 (F), 27=-109 (F), 28=-109 (F), 29=-109 (F), 30=-109 (F), 31=-109 (F), 32=-109 (F), 33=-120 (F), 34=-233 (F), 35=-233 (F), 36=-33 (F), 37=-33 (F), 38=-33 (F), 39=-33 (F), 40=-33 (F), 41=-33 (F), 42=-33 (F), 43=-37 (F)

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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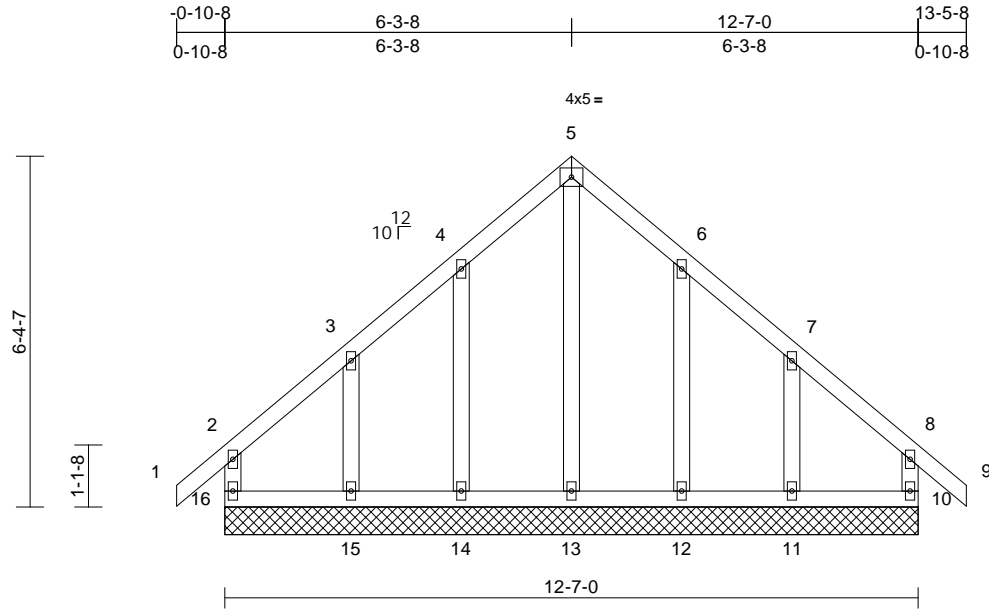
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss C01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702992
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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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	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.00	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR							
BCDL	10.0									Weight: 77 lb	FT = 20%

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

**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.

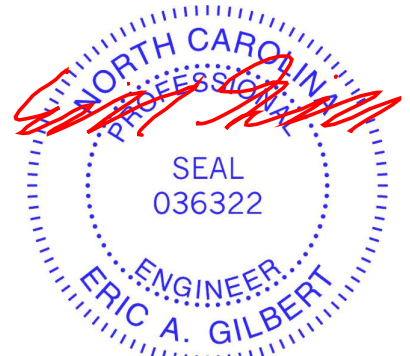
**REACTIONS** (size)  
10=12-7-0, 11=12-7-0, 12=12-7-0, 13=12-7-0, 14=12-7-0, 15=12-7-0, 16=12-7-0  
Max Horiz 16=171 (LC 13)  
Max Uplift 10=56 (LC 14), 11=118 (LC 15), 12=65 (LC 15), 14=65 (LC 14), 15=121 (LC 14), 16=61 (LC 10)  
Max Grav 10=168 (LC 24), 11=215 (LC 25), 12=273 (LC 22), 13=194 (LC 31), 14=273 (LC 21), 15=220 (LC 24), 16=178 (LC 25)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-16=-143/165, 1-2=0/39, 2-3=-108/103, 3-4=-86/209, 4-5=-133/306, 5-6=-134/306, 6-7=-85/211, 7-8=-97/90, 8-9=0/39, 8-10=-135/157  
BOT CHORD 15-16=-80/96, 14-15=-80/96, 13-14=-80/96, 12-13=-80/96, 11-12=-80/96, 10-11=-80/96  
WEBS 5-13=-306/69, 4-14=-234/128, 3-15=-161/164, 6-12=-234/125, 7-11=-161/175

**NOTES**  
1) 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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-3-8, Exterior(2N) 2-3-8 to 3-3-8, Corner(3R) 3-3-8 to 9-3-8, Exterior(2N) 9-3-8 to 10-3-8, Corner(3E) 10-3-8 to 13-5-8 zone; 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
- 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.
- TCLL: 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 61 lb uplift at joint 16, 56 lb uplift at joint 10, 65 lb uplift at joint 14, 121 lb uplift at joint 15, 65 lb uplift at joint 12 and 118 lb uplift at joint 11.

14) 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.  
**LOAD CASE(S)** Standard



September 12, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

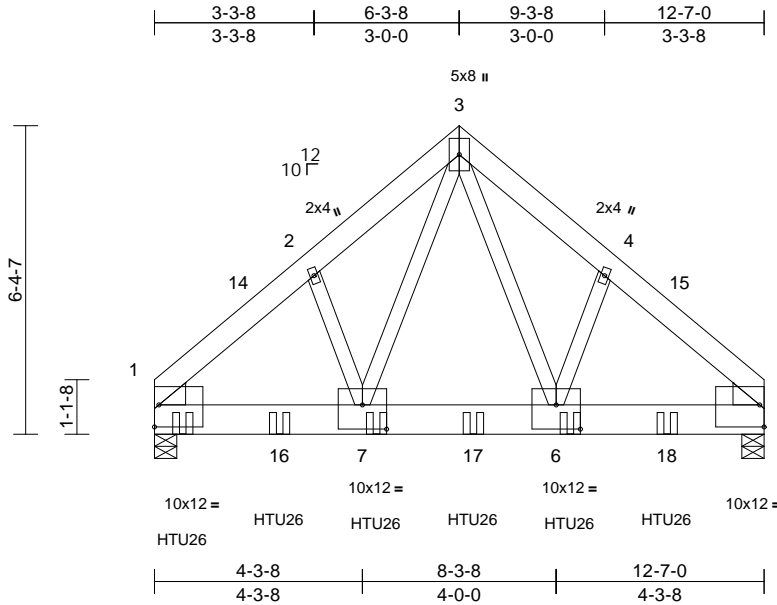
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss C02	Truss Type Common Girder	Qty 1	Ply 2	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702993
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Scale = 1:47.6

Plate Offsets (X, Y): [1:Edge,0-5-7], [5:Edge,0-5-7], [6:0-6-0,0-6-0], [7:0-6-0,0-6-0]

Loading	(psf)	Spacing		CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	2-0-0	TC	0.25	Vert(LL)	-0.04	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.26	Vert(CT)	-0.07	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.81	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 213 lb	FT = 20%

#### LUMBER

TOP CHORD 2x6 SP No.2  
BOT CHORD 2x8 SP 2400F 2.0E  
WEBS 2x4 SP No.3  
WEDGE Left: 2x6 SP No.2  
Right: 2x6 SP No.2

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 1=0-5-8, 5=0-5-8  
Max Horiz 1=123 (LC 11)  
Max Grav 1=6513 (LC 5), 5=4826 (LC 6)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-5760/0, 2-3=-5619/0, 3-4=-5241/0, 4-5=-5408/0  
BOT CHORD 1-7=0/4301, 6-7=0/3057, 5-6=0/3991  
WEBS 3-6=-87/3020, 4-6=0/322, 3-7=0/3894, 2-7=0/253

#### NOTES

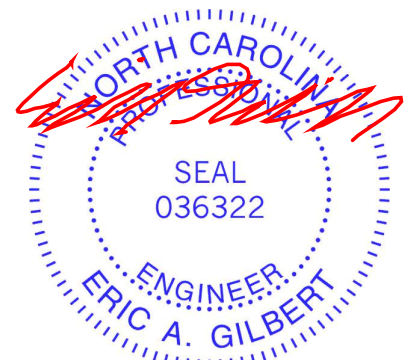
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x8 - 2 rows staggered at 0-6-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.

- All loads are considered equally applied to all plies, 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 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; 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); 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
- Unbalanced snow loads have been considered for this design.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 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.

- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 0-7-0 from the left end to 10-7-0 to connect truss(es) to back face of bottom chord.

- Fill all nail holes where hanger is in contact with lumber.
- LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-5=-60, 8-11=-20  
Concentrated Loads (lb)  
Vert: 6=-1389 (B), 7=-1586 (B), 10=-1591 (B), 16=-1586 (B), 17=-1586 (B), 18=-1389 (B)



September 12, 2023

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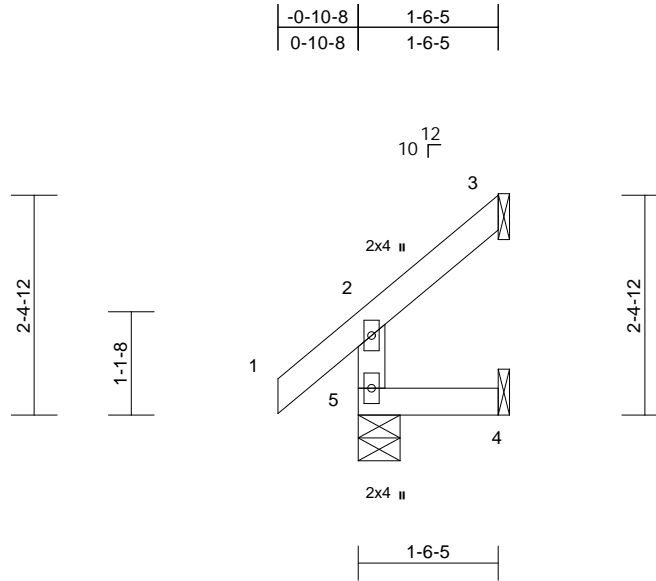
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss CJ16	Truss Type Jack-Open	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702994
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:09  
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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	0.23	Vert(LL)	0.00	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	Vert(CT)	0.00	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 8 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 1-6-5 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 3= Mechanical, 4= Mechanical,  
5=0-5-8  
Max Horiz 5=57 (LC 14)  
Max Uplift 3=-40 (LC 14), 4=-12 (LC 14)  
Max Grav 3=35 (LC 21), 4=25 (LC 7), 5=205 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-5=-185/84, 1-2=0/60, 2-3=-59/36  
BOT CHORD 4-5=0/0

**NOTES**

- 1) 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) zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Bearings are assumed to be: , Joint 5 User Defined crushing capacity of 425 psi.
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 12 lb uplift at joint 4 and 40 lb uplift at joint 3.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

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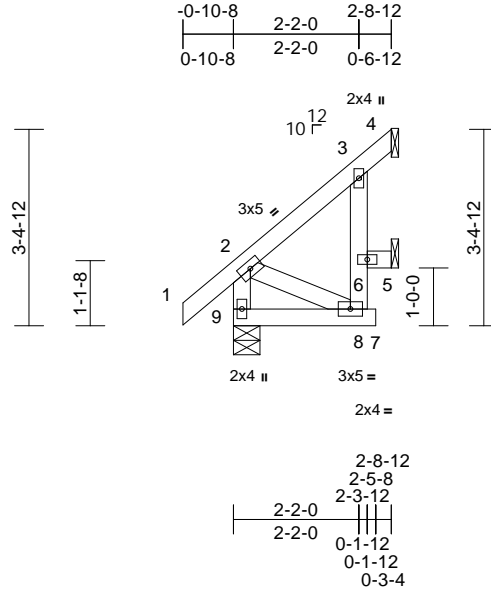
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss CJ28	Truss Type Jack-Open	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702995
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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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	0.15	Vert(LL)	0.01	7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	-0.01	7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 19 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-8-12 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 4= Mechanical, 5= Mechanical,  
9=0-5-8  
Max Horiz 9=92 (LC 14)  
Max Uplift 4=-75 (LC 14)  
Max Grav 4=129 (LC 21), 5=10 (LC 7), 9=272 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-9=-252/34, 1-2=0/65, 2-3=-97/39, 3-4=-101/84

BOT CHORD 8-9=-195/54, 7-8=0/0, 5-6=0/0

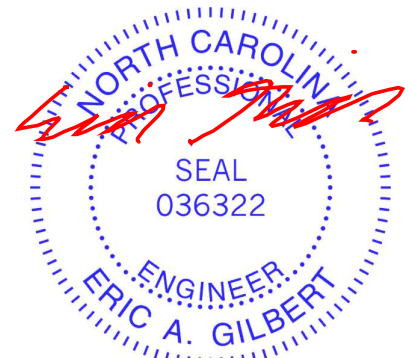
WEBS 2-8=-59/213, 6-8=-72/53, 3-6=-69/63

**NOTES**

- 1) 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) zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Bearings are assumed to be: , Joint 9 User Defined crushing capacity of 425 psi.
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 75 lb uplift at joint 4.
- 10) 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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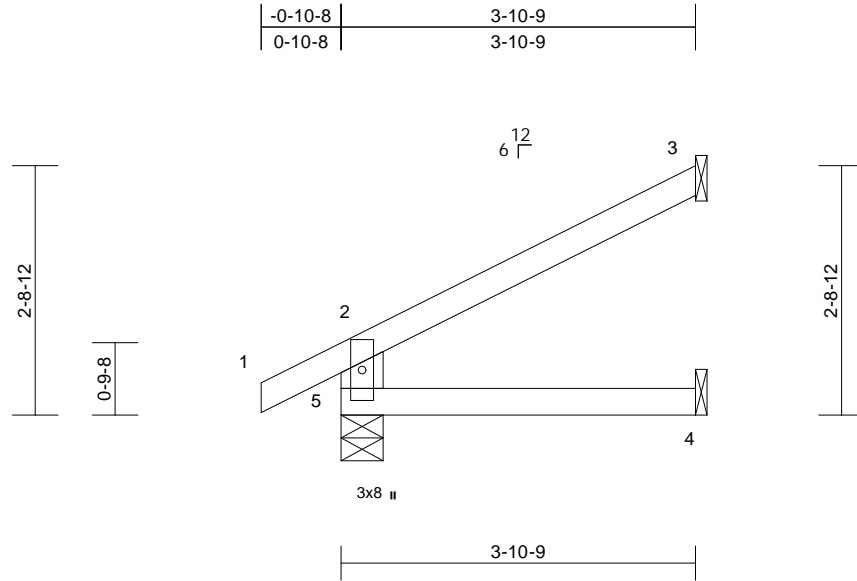
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss CJ310	Truss Type Jack-Open	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702996
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:09  
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Page: 1



Scale = 1:25.2

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	0.28	Vert(LL)	0.01	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	Vert(CT)	-0.02	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.01	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 15 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-10-9 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 3= Mechanical, 4= Mechanical,  
5=0-5-8  
Max Horiz 5=76 (LC 14)  
Max Uplift 3=-55 (LC 14), 5=-19 (LC 14)  
Max Grav 3=145 (LC 21), 4=67 (LC 7), 5=326 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-5=-300/145, 1-2=0/47, 2-3=-87/49  
BOT CHORD 4-5=0/0

#### NOTES

- 1) 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) 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
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Bearings are assumed to be: , Joint 5 User Defined crushing capacity of 425 psi.
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 19 lb uplift at joint 5 and 55 lb uplift at joint 3.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

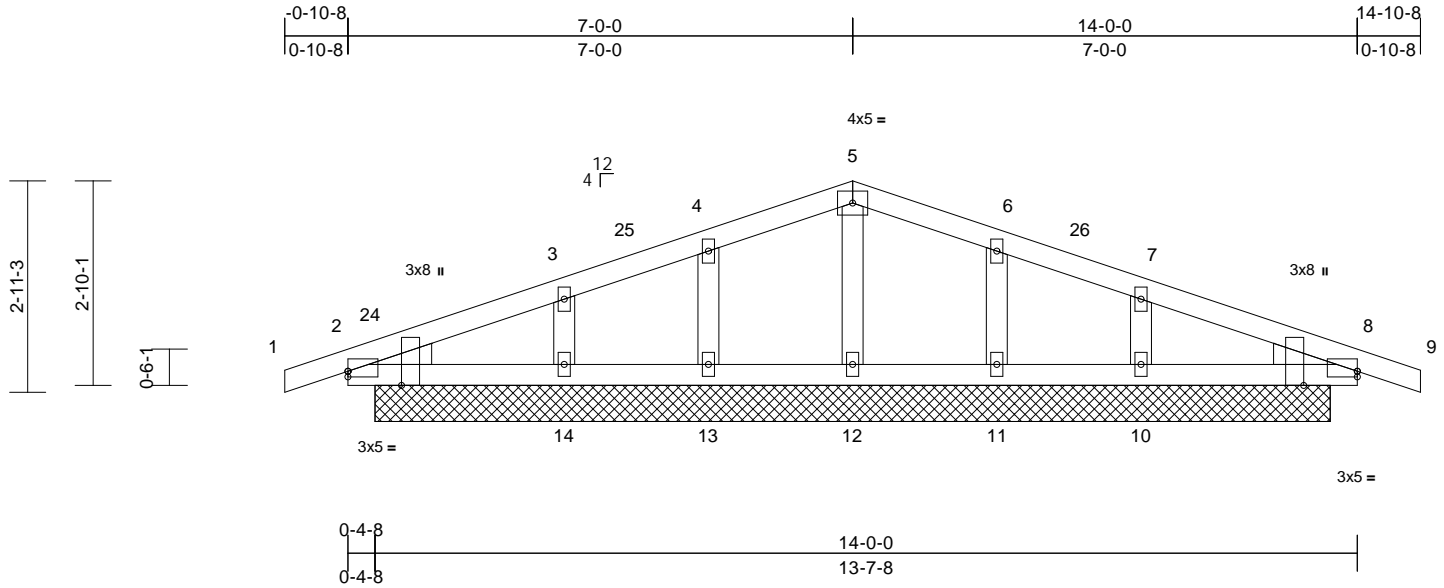


Job 23080111-01	Truss D01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702997
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:10  
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Page: 1



Scale = 1:32  
Plate Offsets (X, Y): [2:Edge,0-0-15], [2:0-2-6,Edge], [8:Edge,0-0-15], [8:0-2-6,Edge]

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	0.30	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.20	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	-0.01	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 59 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3  
Right: 2x4 SP No.3

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

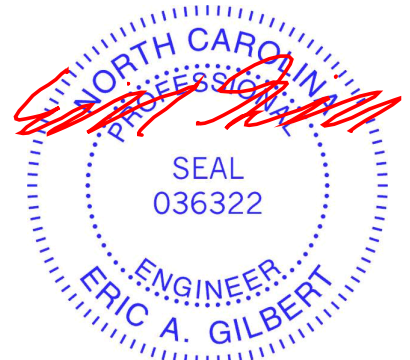
**REACTIONS** (size) 2=13-3-0, 8=13-3-0, 10=13-3-0, 11=13-3-0, 12=13-3-0, 13=13-3-0, 14=13-3-0, 18=13-3-0, 21=13-3-0  
Max Horiz 2=42 (LC 14), 18=42 (LC 14)  
Max Uplift 2=-1 (LC 21), 8=-73 (LC 34), 10=-44 (LC 15), 11=-35 (LC 11), 12=-48 (LC 10), 13=-22 (LC 14), 14=-76 (LC 10), 18=-1 (LC 21), 21=-73 (LC 34)  
Max Grav 2=0 (LC 10), 8=130 (LC 22), 10=303 (LC 22), 11=204 (LC 22), 12=423 (LC 21), 13=121 (LC 21), 14=441 (LC 21), 18=0 (LC 10), 21=130 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-220/435, 3-4=-165/403, 4-5=-123/414, 5-6=-122/397, 6-7=-170/394, 7-8=-217/408, 8-9=0/17  
BOT CHORD 2-14=-367/260, 13-14=-367/260, 12-13=-367/260, 11-12=-367/260, 10-11=-367/260, 8-10=-367/260  
WEBS 5-12=-362/181, 4-13=-144/108, 3-14=-278/154, 6-11=-182/127, 7-10=-214/128

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 4-0-0, Corner(3R) 4-0-0 to 10-0-0, Exterior(2N) 10-0-0 to 11-10-8, Corner(3E) 11-10-8 to 14-10-8 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
- 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.
- TCLL: 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1 lb uplift at joint 2, 73 lb uplift at joint 8, 48 lb uplift at joint 12, 22 lb uplift at joint 13, 76 lb uplift at joint 14, 35 lb uplift at joint 11, 44 lb uplift at joint 10, 1 lb uplift at joint 2 and 73 lb uplift at joint 8.
  - Non Standard bearing condition. Review required.
  - 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.
- LOAD CASE(S)** Standard



September 12, 2023

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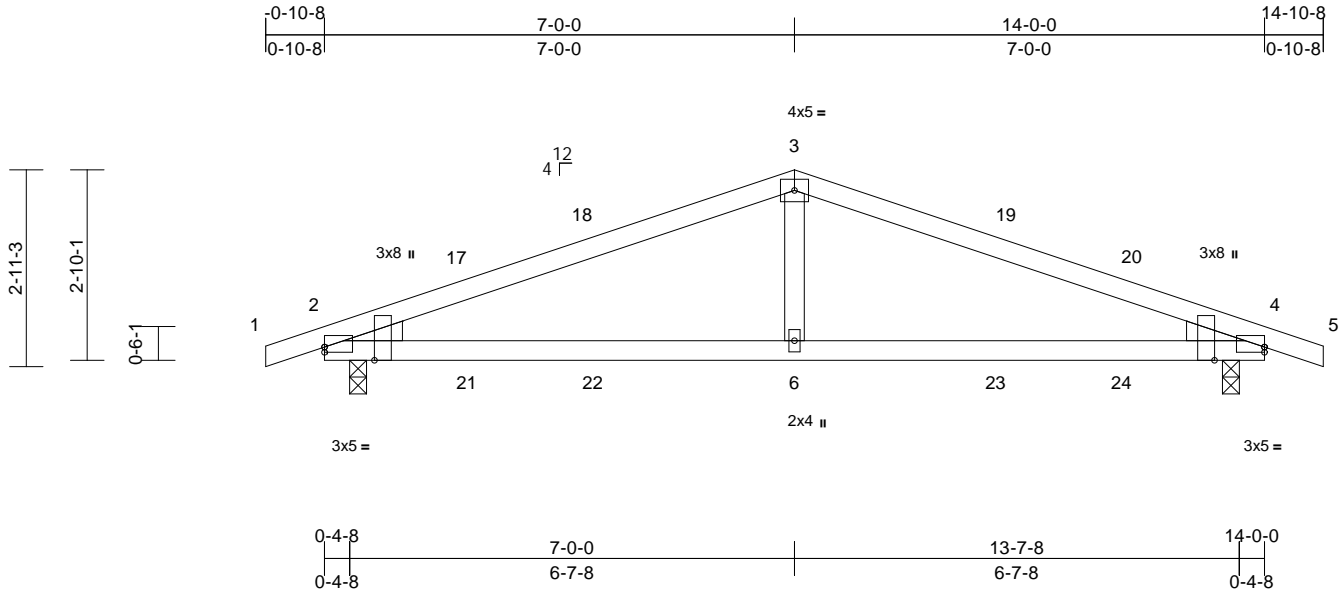
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss D02	Truss Type Common	Qty 4	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702998
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:10  
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Page: 1



Scale = 1:34.3

Plate Offsets (X, Y): [2:Edge,0-0-15], [2:0-2-6,Edge], [4:Edge,0-0-15], [4:0-2-6,Edge]

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	0.72	Vert(LL)	-0.09	6-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.54	Vert(CT)	-0.12	6-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horz(CT)	0.02	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 52 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3  
 WEDGE Left: 2x4 SP No.3  
 Right: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-1-5 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 5-10-2 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 4=0-3-0  
 Max Horiz 2=42 (LC 18)  
 Max Uplift 2=-223 (LC 10), 4=-223 (LC 11)  
 Max Grav 2=712 (LC 21), 4=712 (LC 22)

**FORCES**

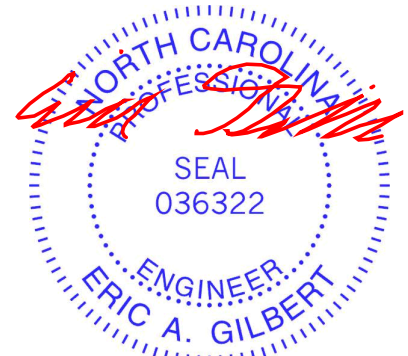
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/17, 2-3=-893/1088, 3-4=-893/1088, 4-5=0/17  
 BOT CHORD 2-6=-927/766, 4-6=-927/766  
 WEBS 3-6=-419/265

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 4-0-0, Exterior(2R) 4-0-0 to 10-0-0, Interior (1) 10-0-0 to 11-10-8, Exterior(2E) 11-10-8 to 14-10-8 zone; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 3) TCLL: 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 7) \* 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.
- 8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 4. This connection is for uplift only and does not consider lateral forces.
- 9) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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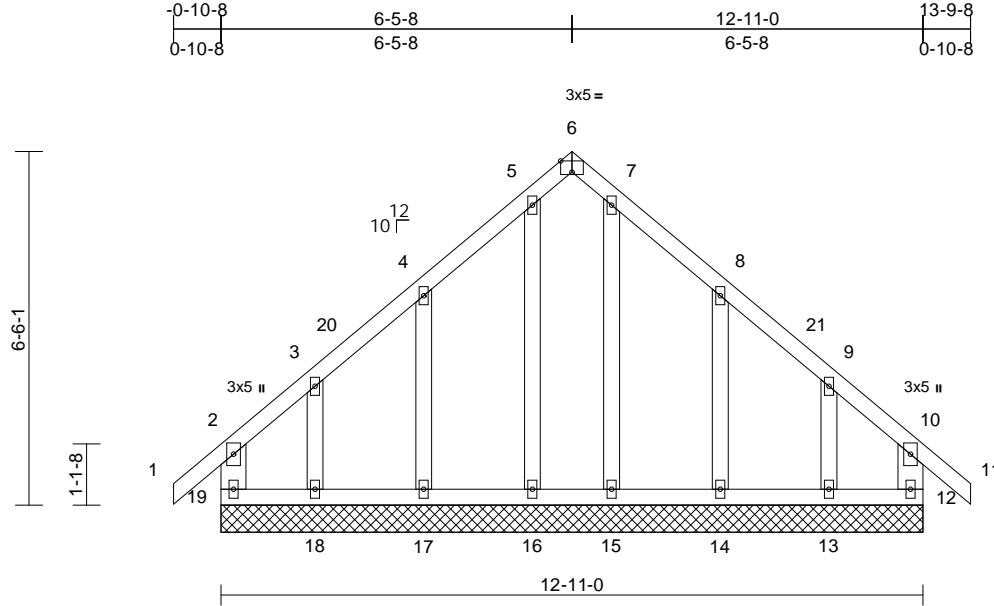
818 Soundside Road  
 Edenton, NC 27932

Job 23080111-01	Truss E01	Truss Type Common Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160702999
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:42.4

Plate Offsets (X, Y): [6:0-2-8,Edge]

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	0.15	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.11	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 85 lb	FT = 20%

**LUMBER**

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x6 SP No.2
OTHERS	2x4 SP No.3

**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**

(size)	12=12-11-0, 13=12-11-0, 14=12-11-0, 15=12-11-0, 16=12-11-0, 17=12-11-0, 18=12-11-0, 19=12-11-0
Max Horiz	19=-177 (LC 12)
Max Uplift	12=-61 (LC 11), 13=-131 (LC 15), 14=-87 (LC 15), 17=-85 (LC 14), 18=-135 (LC 14), 19=-78 (LC 10)
Max Grav	12=158 (LC 24), 13=190 (LC 25), 14=268 (LC 22), 15=208 (LC 22), 16=208 (LC 21), 17=268 (LC 21), 18=198 (LC 24), 19=172 (LC 25)

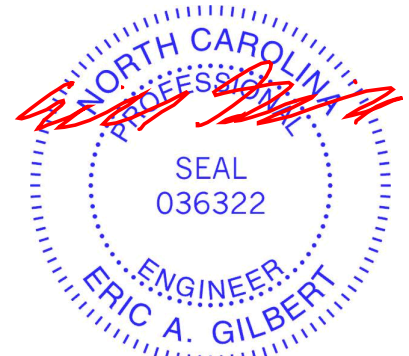
**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	2-19=-136/75, 1-2=0/42, 2-3=-111/109, 3-4=-67/91, 4-5=-91/215, 5-6=-76/164, 6-7=-76/164, 7-8=-91/215, 8-9=-54/93, 9-10=-95/91, 10-11=0/42, 10-12=-125/60
BOT CHORD	18-19=-89/161, 17-18=-89/161, 16-17=-89/161, 15-16=-89/161, 14-15=-89/161, 13-14=-89/161, 12-13=-89/161
WEBS	5-16=-175/6, 7-15=-175/0, 4-17=-225/172, 3-18=-138/151, 8-14=-225/169, 9-13=-134/168

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 3-5-8, Corner(3R) 3-5-8 to 9-2-4, Exterior(2N) 9-2-4 to 10-9-8, Corner(3E) 10-9-8 to 13-9-8 zone; 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
- 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.
- TCLL: 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
- 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 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 78 lb uplift at joint 19, 61 lb uplift at joint 12, 85 lb uplift at joint 17, 135 lb uplift at joint 18, 87 lb uplift at joint 14 and 131 lb uplift at joint 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.
- LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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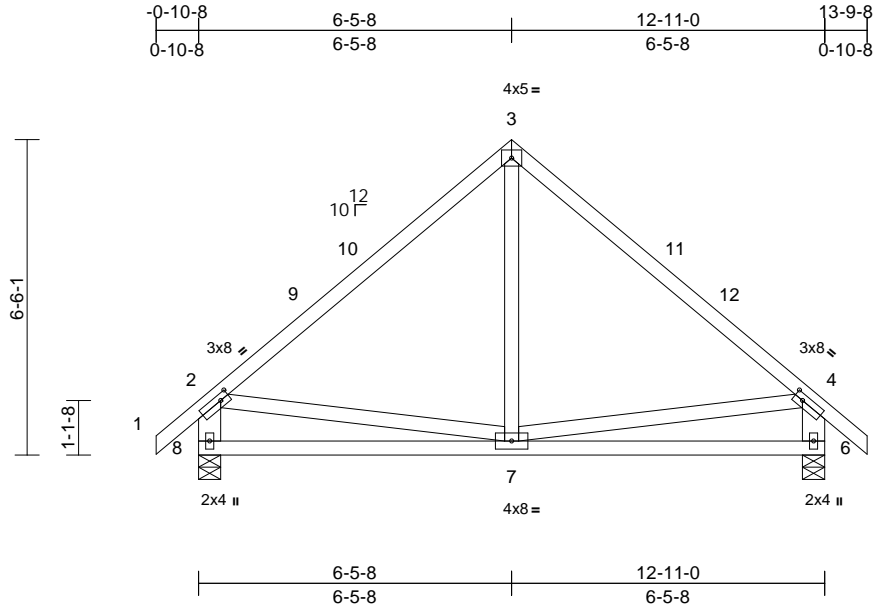
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss E02	Truss Type Common	Qty 3	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703000
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:11  
ID:wb1oEU3ot9zDodjclXhweSzF\_Yu-RfC?PsB70Hq3NSgPqnl8w3uITXbGKWrCD0i7J4zJC?f

Page: 1



Scale = 1:47.5

Plate Offsets (X, Y): [2:0-2-4,0-1-8], [4:0-2-4,0-1-8]

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	0.79	Vert(LL)	-0.03	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.34	Vert(CT)	-0.06	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 78 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 8-2,6-4:2x6 SP 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 10'-0-0 oc bracing.

**REACTIONS**

(size) 6=0-5-8, 8=0-5-8  
 Max Horiz 8=177 (LC 13)  
 Max Uplift 6=-53 (LC 15), 8=-53 (LC 14)  
 Max Grav 6=648 (LC 22), 8=648 (LC 21)

**FORCES**

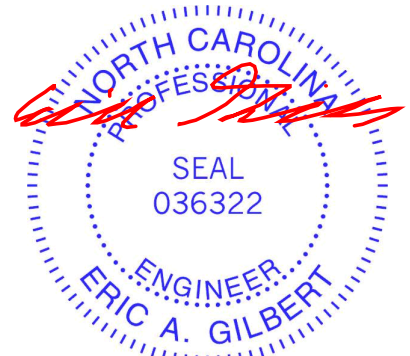
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/42, 2-3=-573/133, 3-4=-573/133, 4-5=0/42, 2-8=-594/176, 4-6=-594/171  
 BOT CHORD 7-8=-221/380, 6-7=-156/363  
 WEBS 3-7=0/252, 2-7=-118/259, 4-7=-124/262

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 3-5-8, Exterior(2R) 3-5-8 to 9-5-8, Interior (1) 9-5-8 to 10-9-8, Exterior(2E) 10-9-8 to 13-9-8 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
- TCLL: 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

- 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 20.0 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'-0-0 tall by 2'-0-0 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8 and 6. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

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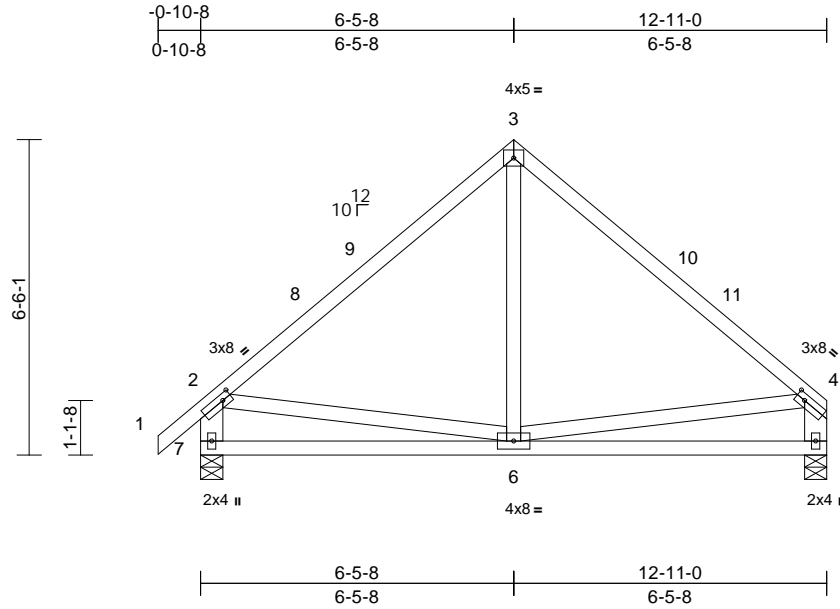
818 Soundside Road  
 Edenton, NC 27932

Job 23080111-01	Truss E03	Truss Type Common	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	I60703001
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:11  
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Page: 1



Scale = 1:47.5

Plate Offsets (X, Y): [2:0-2-4,0-1-8], [4:0-2-4,0-1-8]

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	0.90	Vert(LL)	-0.03	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.34	Vert(CT)	-0.06	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 77 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 7-2,5-4:2x6 SP No.2

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

- (size) 5=0-5-8, 7=0-5-8
- Max Horiz 7=155 (LC 11)
- Max Uplift 5=-32 (LC 15), 7=-52 (LC 14)
- Max Grav 5=579 (LC 22), 7=650 (LC 21)

**FORCES**

- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/42, 2-3=-575/132, 3-4=-563/124, 2-7=-595/175, 4-5=-524/126
- BOT CHORD 6-7=-250/360, 5-6=-94/244
- WEBS 3-6=0/248, 2-6=-117/257, 4-6=-52/212

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 3-5-8, Exterior(2R) 3-5-8 to 9-8-4, Exterior(2E) 9-8-4 to 12-8-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
- 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 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 5. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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818 Soundside Road  
Edenton, NC 27932

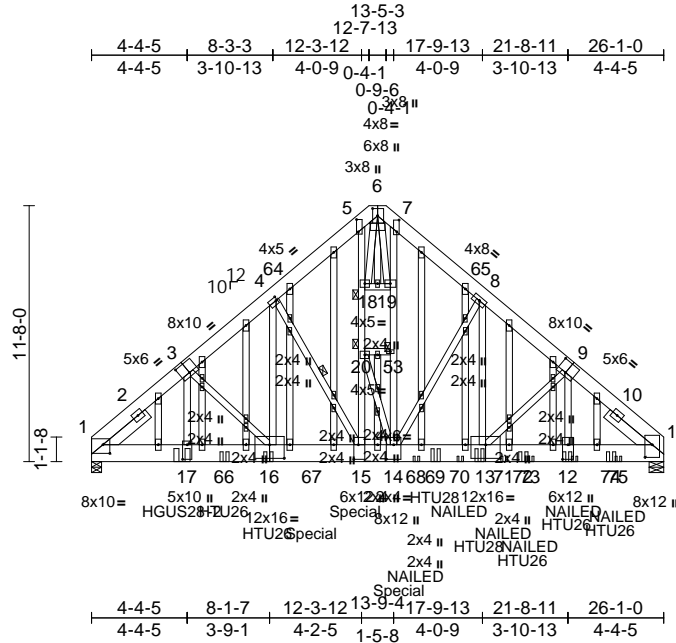
Job 23080111-01	Truss E04	Truss Type Common Girder	Qty 1	Ply 2	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703002
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:12

Page: 1

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Scale = 1:105

[1:0-3-12,0-4-12], [3:0-5-0,0-6-0], [4:0-0-12,0-2-0], [5:0-6-11,0-1-0], [6:0-4-0,0-2-12], [6:0-4-0,0-4-0], [7:0-6-7,0-1-4], [9:0-5-0,0-6-0], [11:0-6-14,0-4-0], [12:0-8-0,0-3-0],  
Plate Offsets (X, Y): [13:0-8-0,0-7-8], [14:0-8-0,0-4-0], [15:0-8-0,0-2-8], [16:0-8-0,0-7-8], [17:0-8-0,0-2-8]

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	0.23	Vert(LL)	-0.11	16-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.37	Vert(CT)	-0.19	16-17	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.90	Horz(CT)	0.06	11	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 856 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x8 SP 2400F 2.0E  
BOT CHORD 2x10 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 5-15,7-14:2x4 SP No.2  
OTHERS 2x4 SP No.3  
SLIDER Left 2x6 SP No.2 -- 2-6-0, Right 2x6 SP No.2 -- 2-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 4-15  
JOINTS 1 Brace at Jt(s): 18, 20, 53

**REACTIONS**  
(size) 1=0-5-8, 11=0-8-0  
Max Horiz 1=-251 (LC 48)  
Max Uplift 1=-1764 (LC 12), 11=-1279 (LC 13)  
Max Grav 1=10010 (LC 18), 11=10176 (LC 6)

**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-4=-12896/2260, 4-5=-8981/1386, 5-6=-7700/1234, 6-7=-7958/1251, 7-8=-9052/1376, 8-11=-12001/1551  
BOT CHORD 1-17=-1737/9372, 15-17=-1755/9427, 14-15=-888/6862, 12-14=-1087/8844, 11-12=-1084/8808

**WEBS**  
15-20=-883/5137, 18-20=-870/5434, 5-18=-343/2459, 14-53=-784/5581, 19-53=-788/5611, 7-19=-289/2071, 18-19=-49/378, 14-20=-42/470, 6-18=-557/3090, 6-19=-527/3584, 4-15=-3739/876, 4-16=-875/4327, 3-16=-1078/599, 3-17=-808/2466, 8-14=-2783/440, 8-13=-361/3366, 9-13=-772/172, 9-12=-162/1693, 20-53=-598/85

**NOTES**  
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x8 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x10 - 2 rows staggered at 0-6-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc, Except member 3-17 2x4 - 2 rows staggered at 0-5-0 oc, Except member 9-12 2x4 - 2 rows staggered at 0-5-0 oc.  
2) All loads are considered equally applied to all plies, 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.  
3) Unbalanced roof live loads have been considered for this design.  
4) 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; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60

- 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.
- TCLL: 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
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.



September 12, 2023

Continued on page 2

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	91 Serenity-Roof-B330 E COP TMB	I60703002
23080111-01	E04	Common Girder	1	2	Job Reference (optional)	

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

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Page: 2

- 12) LGT2 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 11. This connection is for uplift only and does not consider lateral forces.
- 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.
- 14) Use Simpson Strong-Tie HGUS28-2 (36-10d Girder, 6-10d Truss) or equivalent at 4-1-8 from the left end to connect truss(es) to back face of bottom chord.
- 15) Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 11-7-8 oc max. starting at 6-0-12 from the left end to 23-8-4 to connect truss(es) to back face of bottom chord.
- 16) Use Simpson Strong-Tie HTU28 (26-10d Girder, 14-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 15-8-4 from the left end to 17-8-4 to connect truss(es) to back face of bottom chord.
- 17) Fill all nail holes where hanger is in contact with lumber.
- 18) WARNING: The following hangers are manually applied but fail due to geometric considerations: HGUS28-2 on back face at 4-1-8 from the left end.
- 19) "NAILED" indicates 3-10d (0.148"x3") or 3-12d (0.148"x3.25") toe-nails per NDS guidelines.
- 20) LGT2 Hurricane ties must have two studs in line below the truss.
- 21) LGT2 Hurricane tie uses 1/4x1-1/4 Titen masonry screws into wall.
- 22) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 1650 lb down and 191 lb up at 10-0-12, and 1591 lb down and 175 lb up at 12-0-12, and 1593 lb down and 174 lb up at 14-0-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-6=-60, 6-11=-60, 54-58=-20  
Concentrated Loads (lb)  
Vert: 16=-1614 (B), 15=-1481 (B), 14=-1483 (B), 17=-2976 (B), 13=-1330 (B), 12=-1375 (F=-45, B=-1330), 66=-1624 (B), 67=-1587 (B), 68=23 (F), 69=-1570 (B), 70=23 (F), 71=23 (F), 72=-1330 (B), 73=-45 (F), 74=-1330 (B), 75=-45 (F)

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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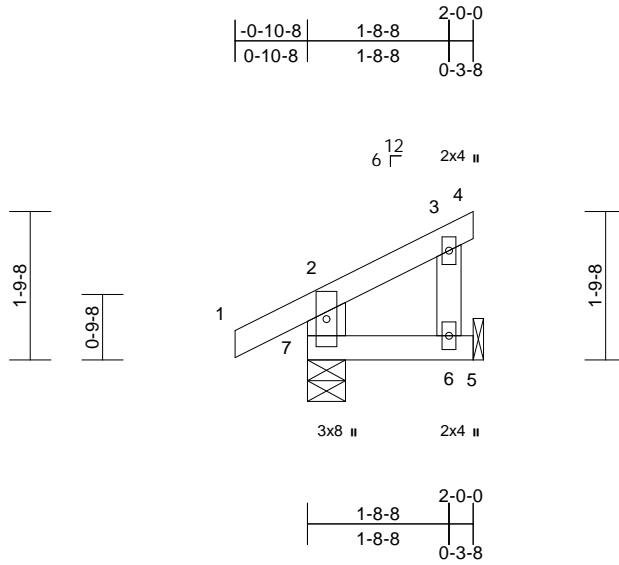
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss EJ2	Truss Type Jack-Closed	Qty 3	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703003
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:13  
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Page: 1



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	0.12	Vert(LL)	0.00	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	0.00	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.01	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 11 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2 \*Except\* 3-6:2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 5= Mechanical, 7=0-5-8  
Max Horiz 7=42 (LC 14)  
Max Uplift 5=-24 (LC 14), 7=-19 (LC 14)  
Max Grav 5=65 (LC 21), 7=221 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-7=-184/101, 1-2=0/43, 2-3=-39/19, 3-4=-11/0  
BOT CHORD 6-7=0/0, 5-6=0/0  
WEBS 3-6=-66/40

- 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) Bearings are assumed to be: Joint 7 User Defined crushing capacity of 425 psi.
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 19 lb uplift at joint 7 and 24 lb uplift at joint 5.
- 10) 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.
- LOAD CASE(S)** Standard

- NOTES**
- 1) 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) zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 2) TCLL: 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
  - 3) Unbalanced snow loads have been considered for this design.
  - 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.



September 12, 2023

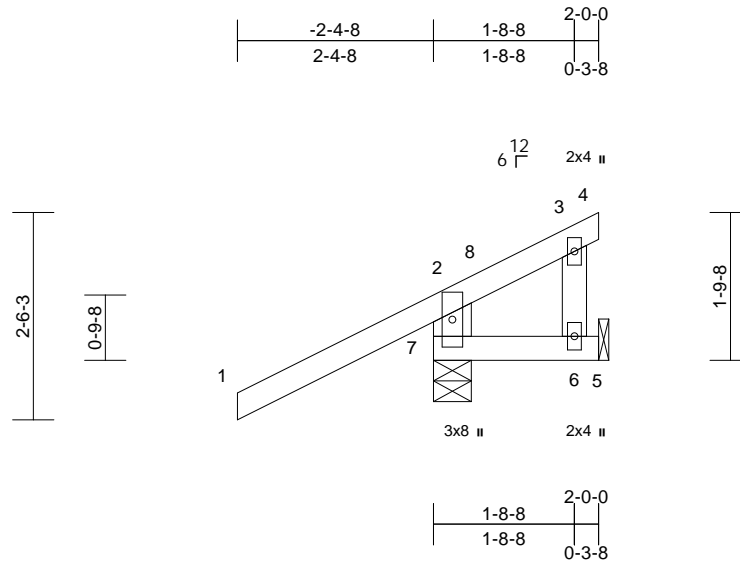


Job 23080111-01	Truss EJ2A	Truss Type Jack-Closed	Qty 3	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703004
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:14  
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Page: 1



Scale = 1:27.9

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	0.77	Vert(LL)	0.00	6-7	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	0.00	6-7	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	5	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 13 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2 \*Except\* 3-6:2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 5= Mechanical, 7=0-5-8  
Max Horiz 7=73 (LC 14)  
Max Uplift 5=-80 (LC 20), 7=-82 (LC 14)  
Max Grav 5=30 (LC 10), 7=523 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-7=-458/278, 1-2=0/109, 2-3=-96/26, 3-4=-12/0  
BOT CHORD 6-7=0/0, 5-6=0/0  
WEBS 3-6=-64/72

**NOTES**

- 1) 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) -2-4-8 to 0-7-8, Interior (1) 0-7-8 to 2-0-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Bearings are assumed to be: Joint 7 User Defined crushing capacity of 425 psi.
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 82 lb uplift at joint 7 and 80 lb uplift at joint 5.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

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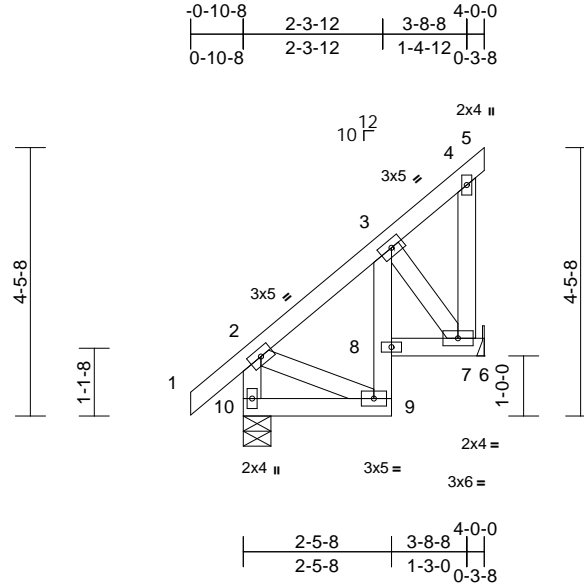
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss EJ4V	Truss Type JACK	Qty 5	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703005
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:14  
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Page: 1



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	Vert(LL)	0.00	8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	0.00	8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.01	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 30 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 9-3:2x4 SP No.3  
WEBS 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 9-10.

**REACTIONS** (size) 7= Mechanical, 10=0-5-8  
Max Horiz 10=132 (LC 14)  
Max Uplift 7=106 (LC 14)  
Max Grav 7=253 (LC 21), 10=292 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-10=-279/41, 1-2=0/39, 2-3=-184/0, 3-4=-57/37, 4-5=-20/0  
BOT CHORD 9-10=-201/100, 8-9=-53/43, 3-8=-25/57, 7-8=-99/103, 6-7=0/0  
WEBS 2-9=-34/136, 4-7=-89/42, 3-7=-163/156

- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Bearings are assumed to be: Joint 10 User Defined crushing capacity of 425 psi.
  - Refer to girder(s) for truss to truss connections.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 106 lb uplift at joint 7.
  - 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.
- LOAD CASE(S)** Standard

- NOTES**
- 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) zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
  - 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 20.0 psf on overhangs non-concurrent with other live loads.



September 12, 2023

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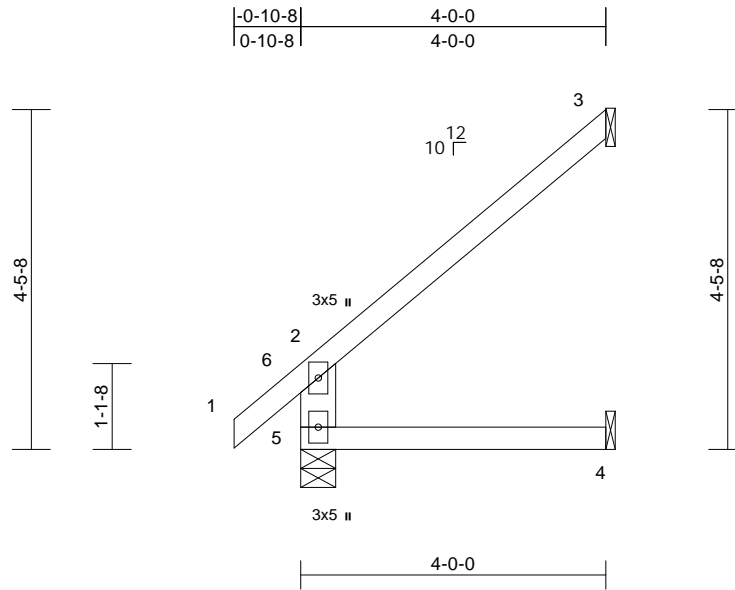
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss EV4	Truss Type Jack-Open	Qty 9	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703006
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:14  
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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	0.35	Vert(LL)	0.03	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.34	Vert(CT)	-0.02	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.04	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
										Weight: 18 lb	FT = 20%	

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 3= Mechanical, 4= Mechanical,  
5=0-5-8  
Max Horiz 5=130 (LC 14)  
Max Uplift 3=-91 (LC 14), 4=-9 (LC 14)  
Max Grav 3=169 (LC 21), 4=70 (LC 7), 5=326 (LC 21)

**FORCES**

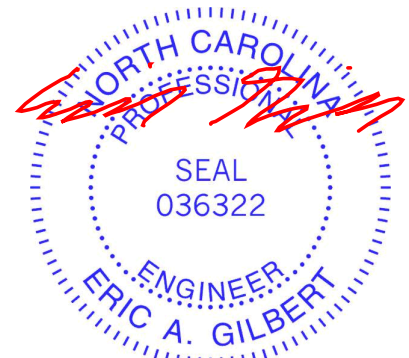
(lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-5=-305/88, 1-2=0/53, 2-3=-142/83  
BOT CHORD 4-5=0/0

**NOTES**

- 1) 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) 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
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Bearings are assumed to be: , Joint 5 User Defined crushing capacity of 425 psi.
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 91 lb uplift at joint 3 and 9 lb uplift at joint 4.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

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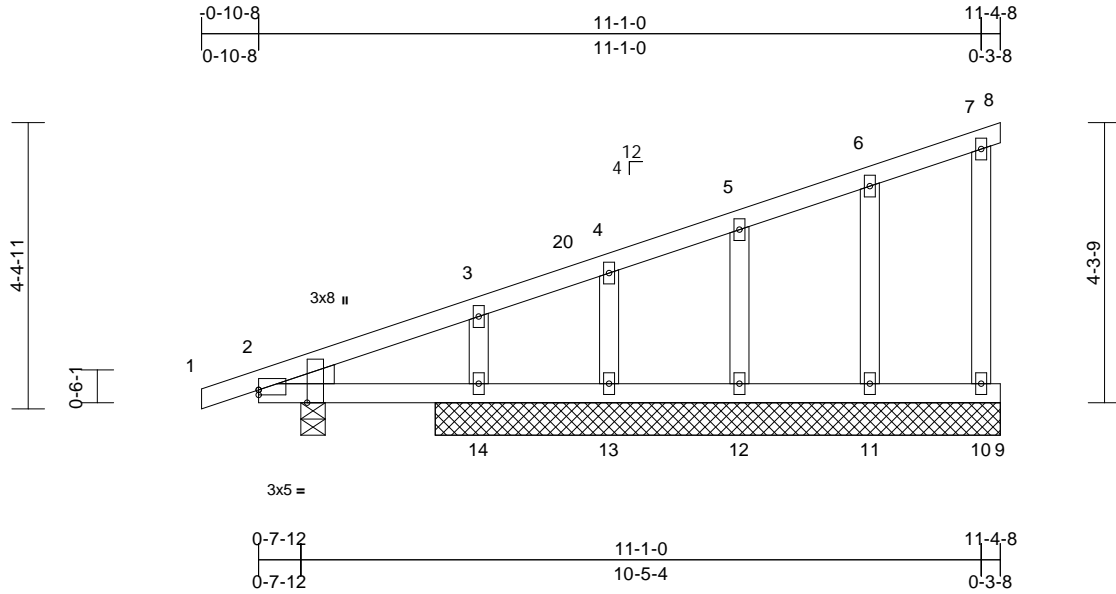
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss F01	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703007
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35.3

Plate Offsets (X, Y): [2:Edge,0-0-15], [2:0-2-6,Edge]

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	0.07	Vert(LL)	0.00	14-19	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	0.00	14-19	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 55 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3  
OTHERS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3

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

**REACTIONS** (size)  
2=0-4-8, 8=8-8-0, 9=8-8-0,  
10=8-8-0, 11=8-8-0, 12=8-8-0,  
13=8-8-0, 14=8-8-0  
Max Horiz 2=153 (LC 10)  
Max Uplift 2=-6 (LC 10), 8=-2 (LC 21), 9=-20 (LC 7), 10=-11 (LC 14), 11=-34 (LC 10), 12=-37 (LC 14), 13=-24 (LC 10), 14=-71 (LC 14)  
Max Grav 2=228 (LC 21), 8=0 (LC 14), 9=-6 (LC 14), 10=121 (LC 21), 11=216 (LC 21), 12=223 (LC 21), 13=197 (LC 21), 14=180 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-222/122, 3-4=-165/49, 4-5=-122/39, 5-6=-74/28, 6-7=-29/15, 7-8=-9/0  
BOT CHORD 2-14=-105/144, 13-14=0/0, 12-13=0/0, 11-12=0/0, 10-11=0/0, 9-10=0/0  
WEBS 6-11=-178/124, 5-12=-182/127, 4-13=-160/113, 3-14=-132/158, 7-10=-89/62

**NOTES**

- 1) 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 Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 8-4-8, Corner(3E) 8-4-8 to 11-4-8 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) All plates are 2x4 MT20 unless otherwise indicated.
- 7) Gable studs spaced at 2-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 2 lb uplift at joint 8, 20 lb uplift at joint 9, 34 lb uplift at joint 11, 37 lb uplift at joint 12, 24 lb uplift at joint 13, 71 lb uplift at joint 14, 11 lb uplift at joint 10 and 6 lb uplift at joint 2.
- 11) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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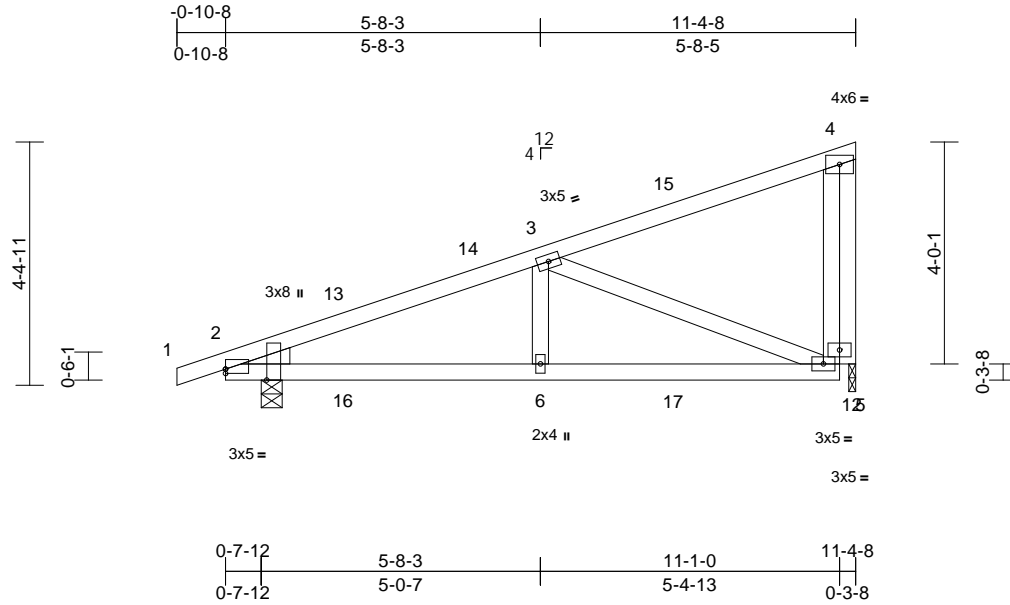
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss F02	Truss Type Monopitch	Qty 6	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703008
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:15  
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Page: 1



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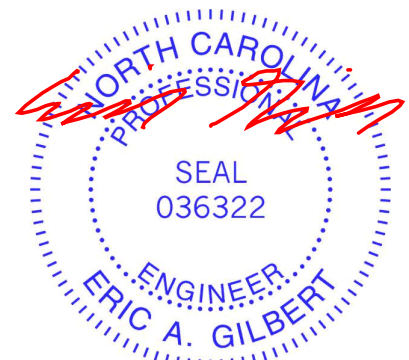
Plate Offsets (X, Y): [2:Edge,0-0-15], [2:0-2-6,Edge]

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	0.50	Vert(LL)	0.09	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(CT)	-0.07	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.45	Horz(CT)	0.01	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 59 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x4 SP No.2
  - BOT CHORD 2x4 SP No.2
  - WEBS 2x4 SP No.3
  - OTHERS 2x4 SP No.3
  - WEDGE Left: 2x4 SP No.3
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
  - BOT CHORD Rigid ceiling directly applied or 6-1-9 oc bracing.
- REACTIONS** (size) 2=0-4-8, 12=0-1-8
- Max Horiz 2=150 (LC 10)
  - Max Uplift 2=-190 (LC 10), 12=-176 (LC 10)
  - Max Grav 2=600 (LC 21), 12=529 (LC 21)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/17, 2-3=-823/674, 3-4=-149/24, 4-5=-439/322
  - BOT CHORD 2-6=-770/741, 5-6=-770/741
  - WEBS 3-6=-286/207, 3-5=-724/755, 4-12=-531/565

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) 12 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 at joint(s) 12.
  - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 12. This connection is for uplift only and does not consider lateral forces.
  - 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.
- LOAD CASE(S)** Standard

- NOTES**
- 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) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 8-1-0, Exterior(2E) 8-1-0 to 11-1-0 zone; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; 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); 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
  - Unbalanced snow loads have been considered for this design.



September 12, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

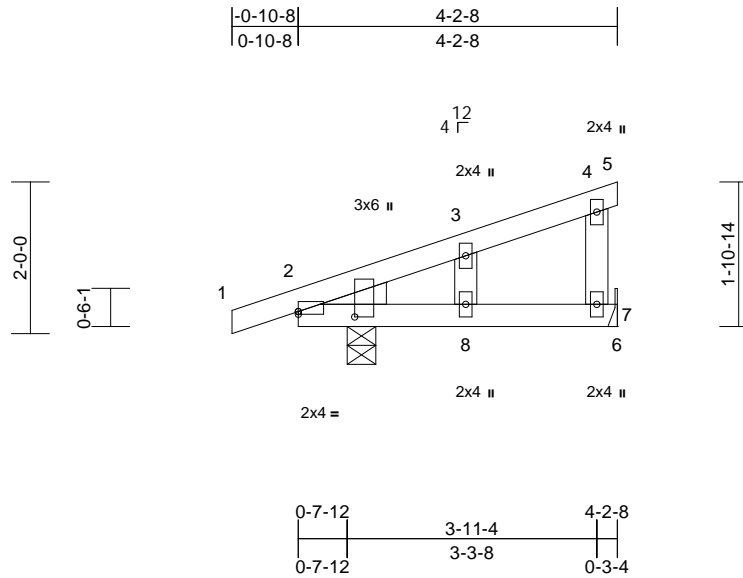
Job	Truss	Truss Type	Qty	Ply	91 Serenity-Roof-B330 E COP TMB	160703009
23080111-01	F03	Monopitch Structural Gable	1	1	Job Reference (optional)	

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:15

Page: 1

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Scale = 1:30.4

Plate Offsets (X, Y): [2:Edge,0-0-7], [2:0-0-14,0-8-15]

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	0.17	Vert(LL)	0.02	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(CT)	0.02	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.01	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 19 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3  
 OTHERS 2x4 SP No.3  
 WEDGE Left: 2x4 SP No.3

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-2-8 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-4-8, 7= Mechanical  
 Max Horiz 2=65 (LC 10)  
 Max Uplift 2=-100 (LC 10), 7=-53 (LC 10)  
 Max Grav 2=359 (LC 21), 7=178 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension

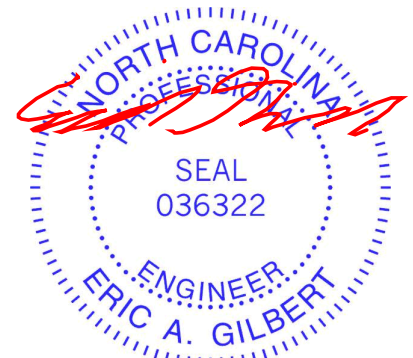
TOP CHORD 1-2=0/25, 2-3=-201/177, 3-4=-51/26, 4-5=-8/0, 4-7=-122/139  
 BOT CHORD 2-8=-152/223, 7-8=0/0, 6-7=0/0  
 WEBS 3-8=-63/36

#### NOTES

- 1) 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 Corner(3E) zone; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) Gable studs spaced at 2-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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.
- 9) Refer to girder(s) for truss to truss connections.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 53 lb uplift at joint 7.
- 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 12) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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**TRENCO**  
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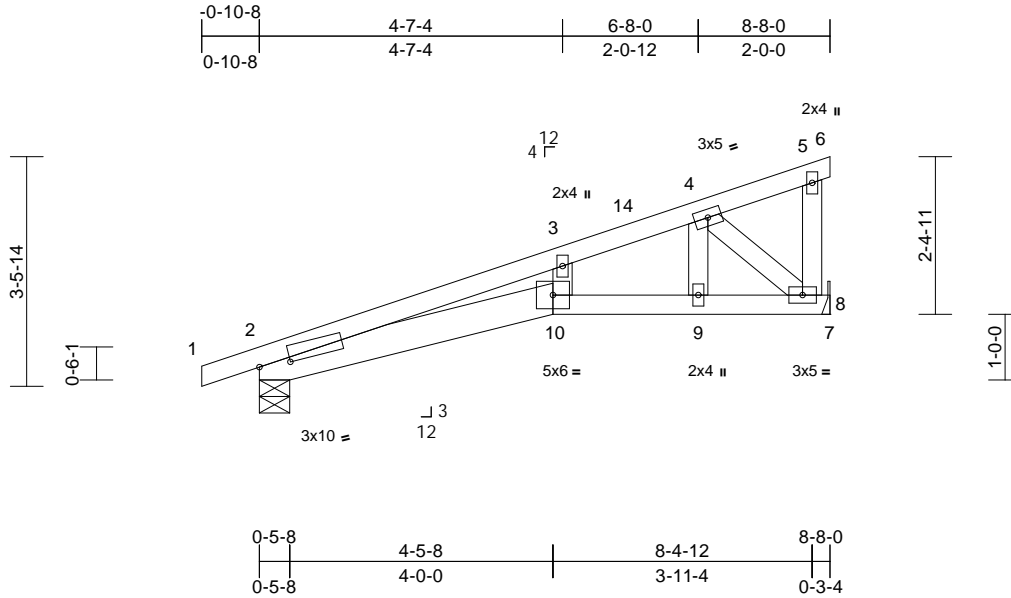
818 Soundside Road  
 Edenton, NC 27932

Job 23080111-01	Truss G01	Truss Type Monopitch Structural Gable	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703010
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35  
Plate Offsets (X, Y): [2:0-5-11,0-0-7]

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	0.84	Vert(LL)	-0.14	10	>719	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.57	Vert(CT)	-0.22	10	>454	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.06	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 40 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP No.2 \*Except\* 10-7:2x4 SP No.2  
WEBS 2x4 SP No.3  
OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-11-15 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 9-8-7 oc bracing.

**REACTIONS**

(size) 2=0-5-8, 8= Mechanical  
Max Horiz 2=120 (LC 10)  
Max Uplift 2=66 (LC 10), 8=75 (LC 14)  
Max Grav 2=463 (LC 21), 8=478 (LC 21)

**FORCES**

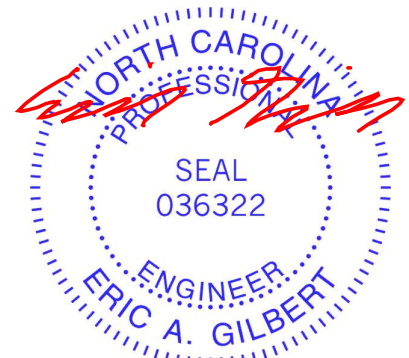
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-969/301, 3-4=-736/257,  
4-5=-82/9, 5-6=-8/0, 5-8=-35/82  
BOT CHORD 2-10=-397/888, 9-10=-348/769,  
8-9=-348/769, 7-8=0/0  
WEBS 3-10=-105/318, 4-9=-45/212, 4-8=-997/451

**NOTES**

- 1) 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) 0-10-8 to 1-11-4, Interior (1) 1-11-4 to 5-8-0, Exterior(2E) 5-8-0 to 8-8-0 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) Gable studs spaced at 2-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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.
- 9) Refer to girder(s) for truss to truss connections.
- 10) Bearing at joint(s) 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 75 lb uplift at joint 8.
- 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 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.

**LOAD CASE(S)** Standard



September 12, 2023

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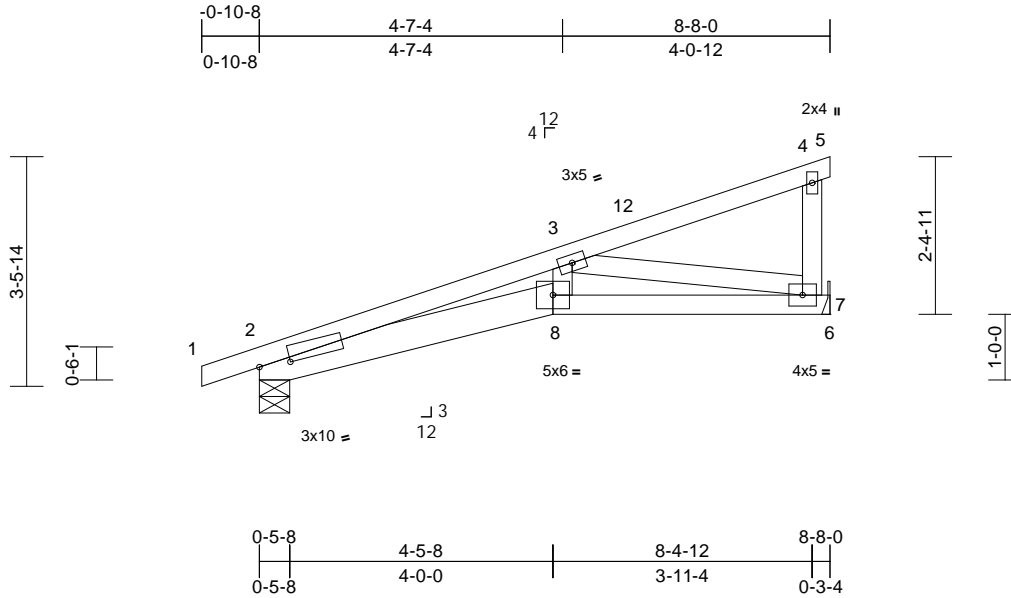
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss G02	Truss Type Monopitch	Qty 6	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703011
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35

Plate Offsets (X, Y): [2:0-5-11,0-0-7]

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	0.33	Vert(LL)	-0.06	8	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.39	Vert(CT)	-0.09	8	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.43	Horz(CT)	0.03	7	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 41 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP No.2 \*Except\* 8-6:2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-8-13 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 7-5-12 oc bracing.

**REACTIONS**

(size) 2=0-5-8, 7= Mechanical  
Max Horiz 2=120 (LC 10)  
Max Uplift 2=-66 (LC 10), 7=-75 (LC 14)  
Max Grav 2=463 (LC 21), 7=478 (LC 21)

**FORCES**

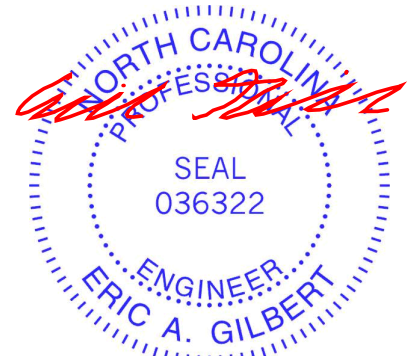
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-1490/561, 3-4=-58/38, 4-5=-8/0, 4-7=-179/107  
BOT CHORD 2-8=-665/1426, 7-8=-619/1303, 6-7=0/0  
WEBS 3-8=-123/407, 3-7=-1328/631

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 1-11-4, Interior (1) 1-11-4 to 5-8-0, Exterior(2E) 5-8-0 to 8-8-0 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Refer to girder(s) for truss to truss connections.
- 8) Bearing at joint(s) 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 75 lb uplift at joint 7.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 11) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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Edenton, NC 27932

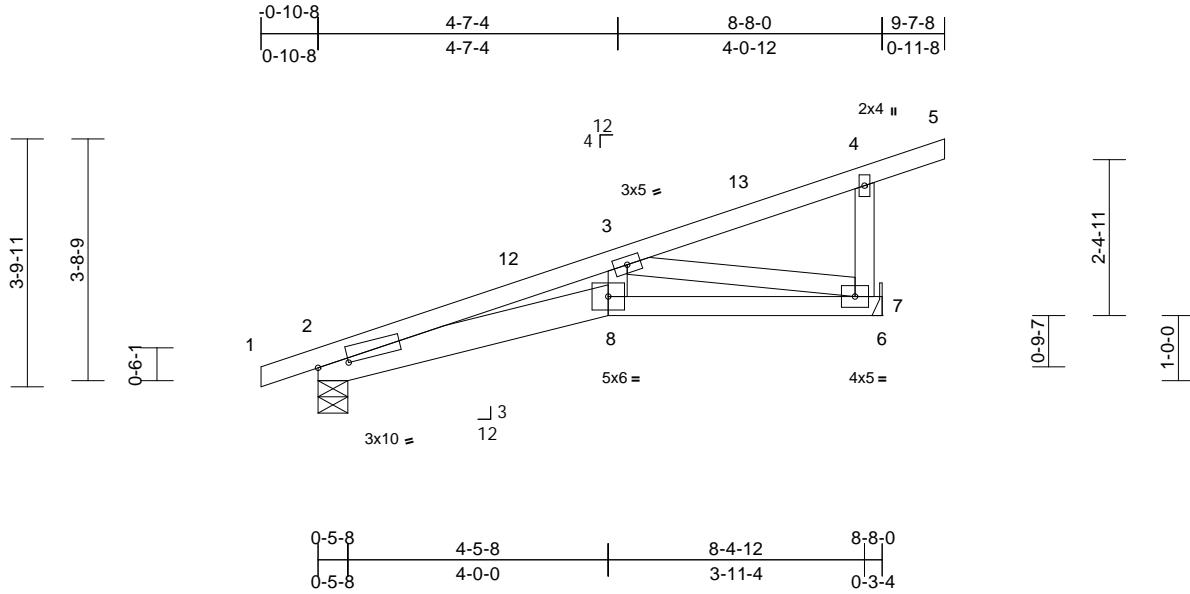


Job 23080111-01	Truss G03	Truss Type Monopitch	Qty 3	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703012
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35.4

Plate Offsets (X, Y): [2:0-5-11, 0-0-7]

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	0.27	Vert(LL)	-0.05	8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.36	Vert(CT)	-0.08	8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.39	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 42 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP No.2 \*Except\* 8-6:2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-11-10 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 8-0-13 oc bracing.

**REACTIONS**

(size) 2=0-5-8, 7= Mechanical  
Max Horiz 2=130 (LC 10)  
Max Uplift 2=-60 (LC 10), 7=-100 (LC 14)  
Max Grav 2=432 (LC 21), 7=561 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-1350/435, 3-4=-91/56, 4-5=-35/0, 4-7=-286/226  
BOT CHORD 2-8=-574/1295, 7-8=-531/1183, 6-7=0/0  
WEBS 3-8=-111/375, 3-7=-1205/541

**NOTES**

- 1) 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) -0-10-8 to 1-11-4, Interior (1) 1-11-4 to 6-7-8, Exterior(2E) 6-7-8 to 9-7-8 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Refer to girder(s) for truss to truss connections.
- 8) Bearing at joint(s) 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint 7.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 11) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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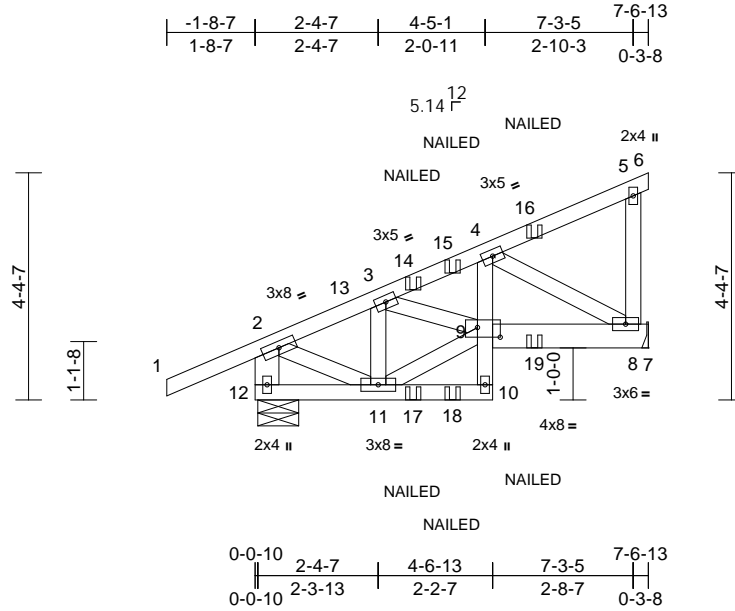
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss HJ76	Truss Type Diagonal Hip Girder	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703013
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:16  
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Page: 1



Scale = 1:44.3

Plate Offsets (X, Y): [9:0-5-4,0-2-4]

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	0.30	Vert(LL)	-0.01	10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.13	Vert(CT)	-0.01	10	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.14	Horz(CT)	0.01	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 53 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2 \*Except\* 10-4:2x4 SP No.3, 9-7:2x6 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 12-2:2x6 SP 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 10-0-0 oc bracing.

**REACTIONS**

(size) 8= Mechanical, 12=0-9-7  
 Max Horiz 12=129 (LC 12)  
 Max Uplift 8=-127 (LC 12), 12=-78 (LC 8)  
 Max Grav 8=431 (LC 19), 12=493 (LC 19)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 2-12=-475/89, 1-2=0/46, 2-3=-348/53, 3-4=-509/126, 4-5=-80/35, 5-6=-11/0  
 BOT CHORD 11-12=-135/18, 10-11=-4/13, 9-10=0/32, 4-9=-26/164, 8-9=-172/466, 7-8=0/0  
 WEBS 5-8=-143/55, 4-8=-536/197, 2-11=-50/299, 3-11=-215/73, 9-11=-124/301, 3-9=-68/190

**NOTES**

- 1) 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; end vertical left exposed; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: 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
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any 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) Refer to girder(s) for truss to truss connections.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 127 lb uplift at joint 8.
- 9) One RT8A MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 12. This connection is for uplift only and does not consider lateral forces.
- 10) 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.
- 11) "NAILED" indicates 3-10d (0.148"x3") or 2-12d (0.148"x3.25") toe-nails per NDS guidelines.
- 12) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
 Uniform Loads (lb/ft)  
 Vert: 1-2=-60, 2-6=-60, 10-12=-20, 7-9=-20  
 Concentrated Loads (lb)  
 Vert: 15=-33 (B), 16=-59 (F), 17=1 (F), 18=-10 (B)



September 12, 2023

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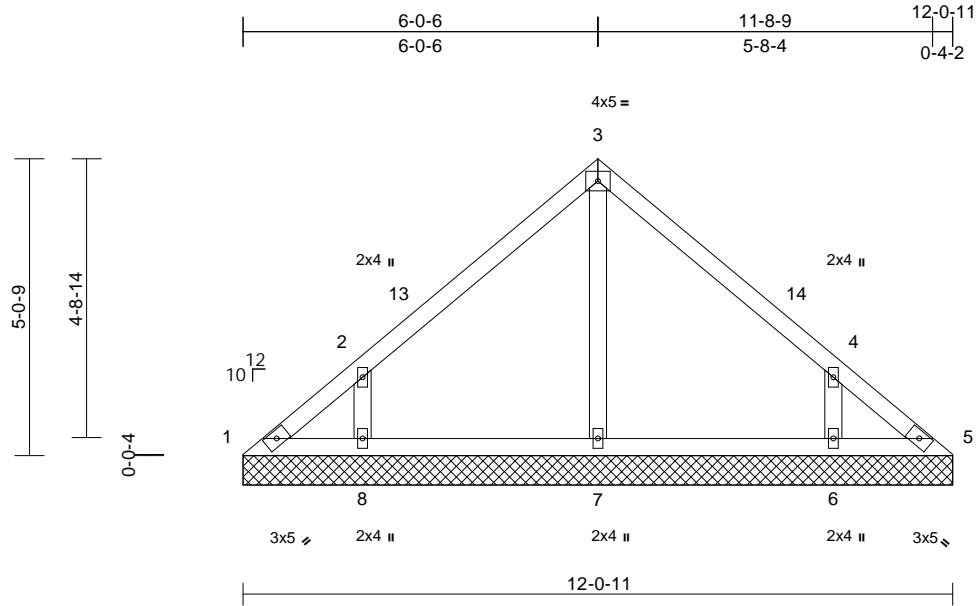
818 Soundside Road  
 Edenton, NC 27932

Job 23080111-01	Truss VLC1	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703014
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:17  
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Page: 1



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	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 50 lb	FT = 20%	

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3

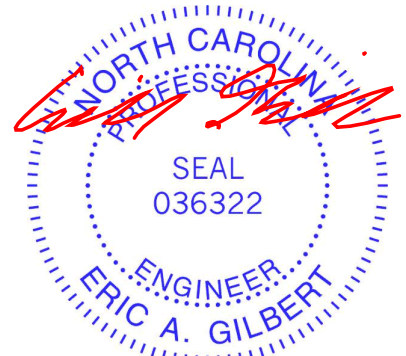
**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=12-0-11, 5=12-0-11, 6=12-0-11, 7=12-0-11, 8=12-0-11  
Max Horiz 1=-114 (LC 12)  
Max Uplift 1=-33 (LC 10), 5=-5 (LC 11), 6=-136 (LC 15), 8=-140 (LC 14)  
Max Grav 1=92 (LC 24), 5=71 (LC 23), 6=434 (LC 21), 7=260 (LC 21), 8=434 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-115/101, 2-3=-217/116, 3-4=-217/116, 4-5=-89/63  
BOT CHORD 1-8=-32/76, 7-8=-31/73, 6-7=-31/73, 5-6=-31/73  
WEBS 3-7=-173/0, 2-8=-400/219, 4-6=-400/219

- 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.
  - TCLL: 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
  - Unbalanced snow loads have been considered for this design.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 4-0-0 oc.
  - 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 1, 5 lb uplift at joint 5, 140 lb uplift at joint 8 and 136 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.
- LOAD CASE(S)** Standard



September 12, 2023

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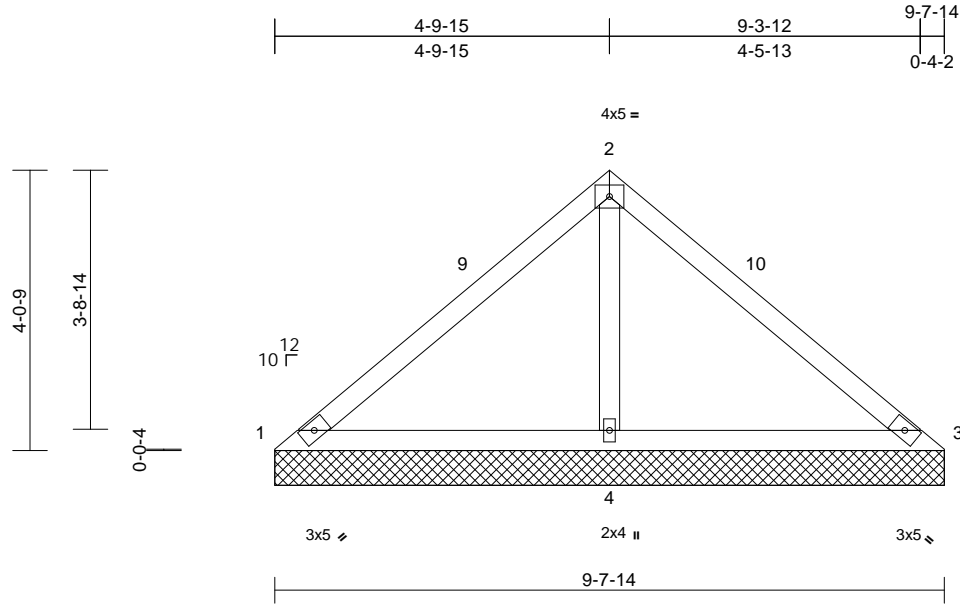
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLC2	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703015
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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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	0.45	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 37 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 9-7-14 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-7-14, 3=9-7-14, 4=9-7-14  
Max Horiz 1=91 (LC 11)  
Max Uplift 1=-50 (LC 21), 3=-50 (LC 20), 4=-109 (LC 14)  
Max Grav 1=95 (LC 20), 3=95 (LC 21), 4=776 (LC 21)

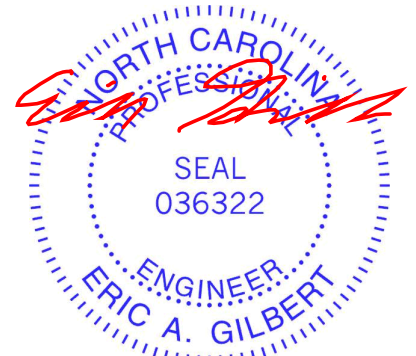
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-115/375, 2-3=-115/375  
BOT CHORD 1-4=-215/173, 3-4=-215/173  
WEBS 2-4=-599/272

- TCLL: 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
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- 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 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 50 lb uplift at joint 1, 50 lb uplift at joint 3 and 109 lb uplift at joint 4.
- 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.

**LOAD CASE(S)** Standard

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 6-8-3, Exterior(2E) 6-8-3 to 9-8-3 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
- 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.



September 12, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

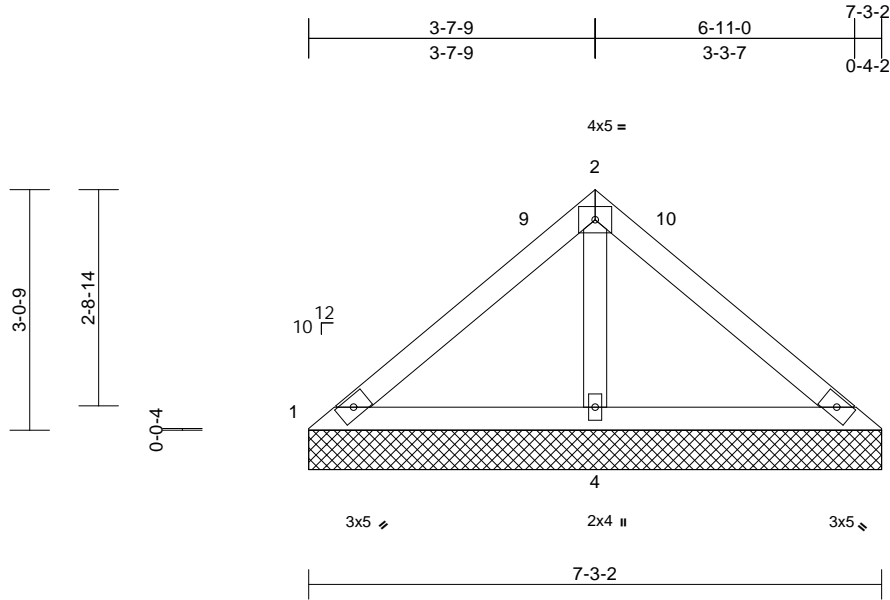
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLC3	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703016
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:17  
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Page: 1



Scale = 1:29.2

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	0.26	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 27 lb	FT = 20%	

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 7-3-2 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=7-3-2, 3=7-3-2, 4=7-3-2  
Max Horiz 1=-67 (LC 10)  
Max Uplift 1=-18 (LC 21), 3=-18 (LC 20),  
4=-74 (LC 14)  
Max Grav 1=105 (LC 20), 3=105 (LC 21),  
4=535 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-89/230, 2-3=-89/230  
BOT CHORD 1-4=-162/152, 3-4=-162/152  
WEBS 2-4=-381/200

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 4-3-6, Exterior(2E) 4-3-6 to 7-3-6 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) 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); 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
- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 18 lb uplift at joint 1, 18 lb uplift at joint 3 and 74 lb uplift at joint 4.
- 11) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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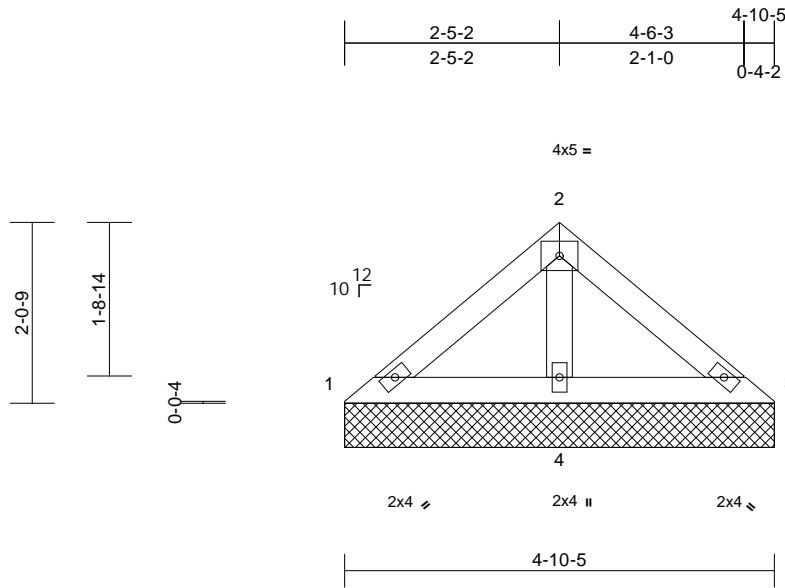
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLC4	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703017
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:17  
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Page: 1



Scale = 1:26.1

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	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 17 lb	FT = 20%	

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-10-5 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=4-10-5, 3=4-10-5, 4=4-10-5  
Max Horiz 1=44 (LC 11)  
Max Uplift 3=-7 (LC 15), 4=-33 (LC 14)  
Max Grav 1=88 (LC 20), 3=88 (LC 21), 4=295 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-81/104, 2-3=-81/104  
BOT CHORD 1-4=-80/88, 3-4=-80/88  
WEBS 2-4=-183/97

**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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 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) 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); 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

- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 33 lb uplift at joint 4.
- 11) 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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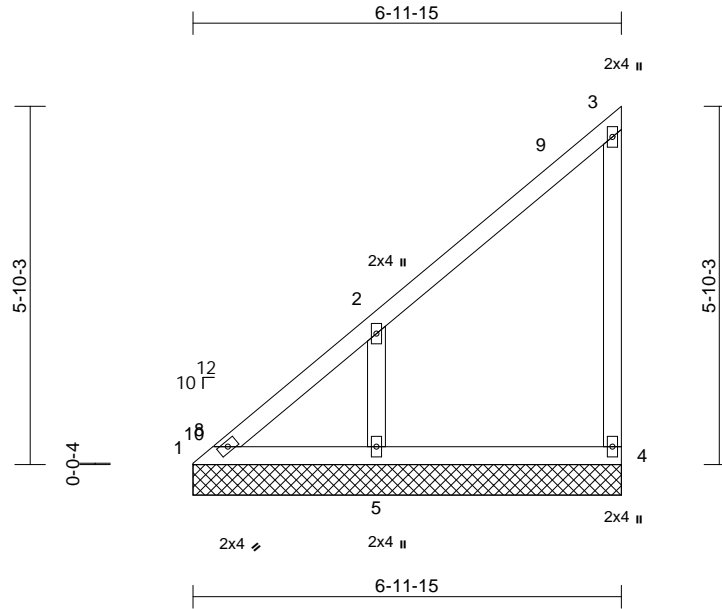
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLE1	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703018
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:18  
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Page: 1



Scale = 1:37.6

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	0.35	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 34 lb	FT = 20%	

**LUMBER**

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
OTHERS	2x4 SP No.3

**BRACING**

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size)

1=6-11-15, 4=6-11-15, 5=6-11-15
Max Horiz 1=187 (LC 14)
Max Uplift 1=-7 (LC 12), 4=-47 (LC 14), 5=-145 (LC 14)
Max Grav 1=124 (LC 14), 4=199 (LC 20), 5=461 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-304/160, 2-3=-154/81, 3-4=-167/114
BOT CHORD	1-5=-62/64, 4-5=0/0
WEBS	2-5=-382/290

**NOTES**

- 1) 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) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 47 lb uplift at joint 4, 7 lb uplift at joint 1 and 145 lb uplift at joint 5.
- 10) 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.

**LOAD CASE(S)** Standard



September 12, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**

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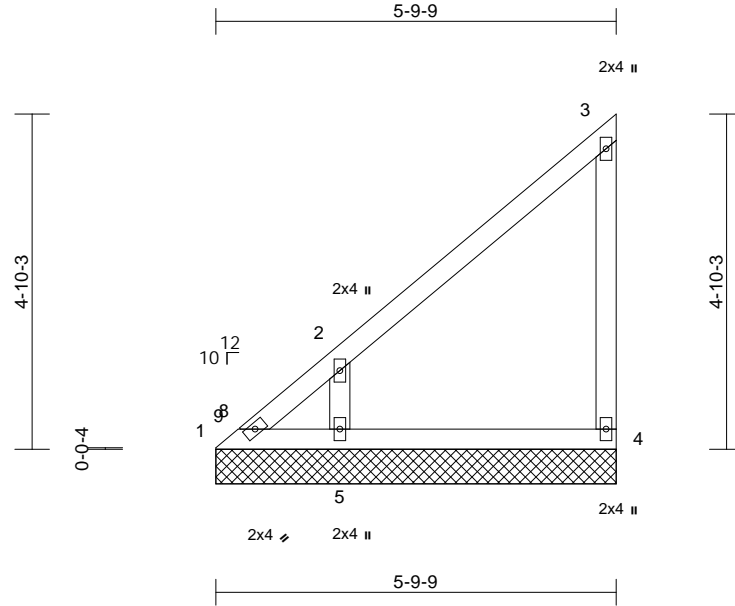
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLE2	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703019
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:18  
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Page: 1



Scale = 1:33.4

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	0.34	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 27 lb	FT = 20%

**LUMBER**

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
OTHERS	2x4 SP No.3

**BRACING**

TOP CHORD	Structural wood sheathing directly applied or 5-9-9 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size)	1=5-9-9, 4=5-9-9, 5=5-9-9
Max Horiz	1=158 (LC 14)
Max Uplift	1=-48 (LC 12), 4=-61 (LC 14), 5=-130 (LC 14)
Max Grav	1=128 (LC 14), 4=199 (LC 20), 5=450 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

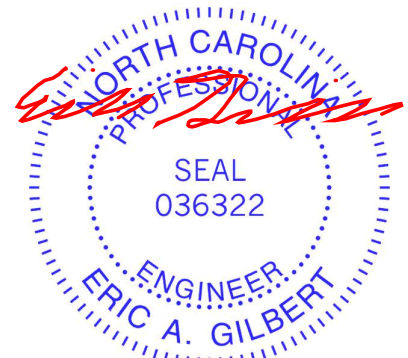
TOP CHORD	1-2=-335/171, 2-3=-156/79, 3-4=-165/125
BOT CHORD	1-5=-55/0, 4-5=0/0
WEBS	2-5=-425/341

**NOTES**

- 1) 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) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 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.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 61 lb uplift at joint 4, 48 lb uplift at joint 1 and 130 lb uplift at joint 5.
- 10) 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.

**LOAD CASE(S)** Standard



September 12, 2023

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818 Soundside Road  
Edenton, NC 27932

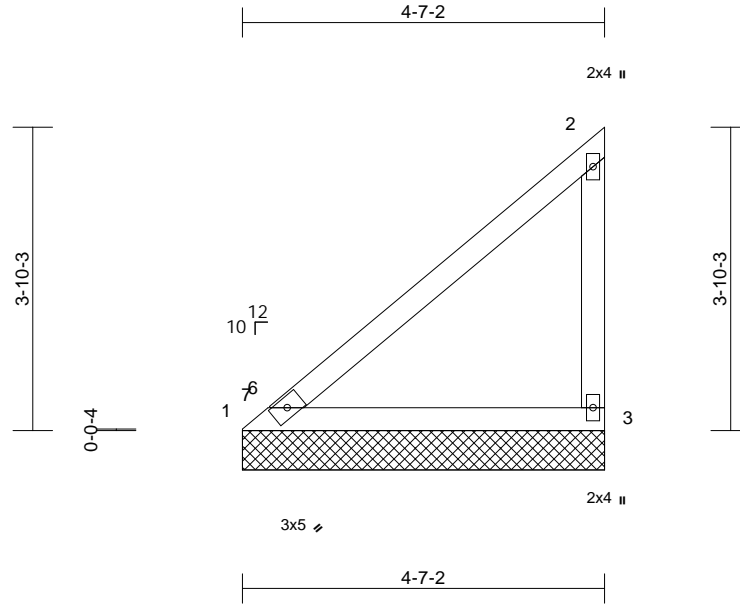


Job 23080111-01	Truss VLE3	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703020
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:18  
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Page: 1



Scale = 1:29.2

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	0.43	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.01	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 20 lb	FT = 20%	

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-7-2 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=4-7-2, 3=4-7-2

Max Horiz 1=121 (LC 14)  
Max Uplift 3=-79 (LC 14)  
Max Grav 1=219 (LC 20), 3=267 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-280/94, 2-3=-185/142  
BOT CHORD 1-3=-146/220

**NOTES**

- 1) 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) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 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.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 79 lb uplift at joint 3.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

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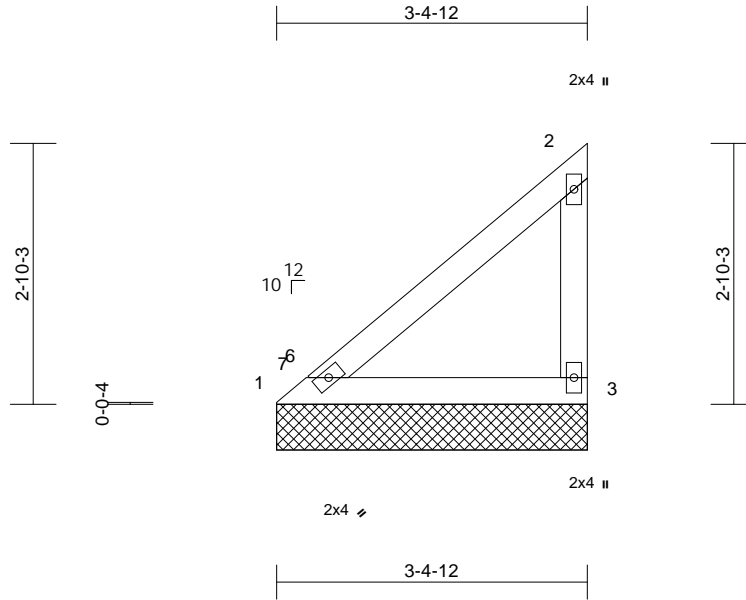
818 Soundside Road  
Edenton, NC 27932

Job 23080111-01	Truss VLE4	Truss Type Valley	Qty 1	Ply 1	91 Serenity-Roof-B330 E COP TMB Job Reference (optional)	160703021
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:18  
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Page: 1



Scale = 1:25.2

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	0.19	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 14 lb	FT = 20%	

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-4-12 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 1=3-4-12, 3=3-4-12  
Max Horiz 1=85 (LC 14)  
Max Uplift 3=-56 (LC 14)  
Max Grav 1=153 (LC 20), 3=185 (LC 20)

#### FORCES

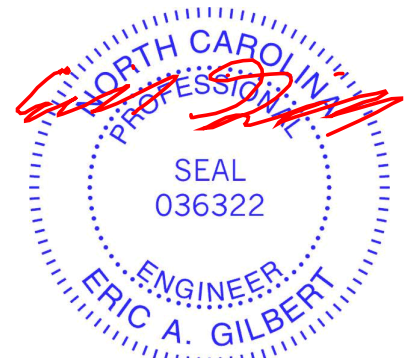
(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-197/64, 2-3=-123/107  
BOT CHORD 1-3=-110/152

#### NOTES

- 1) 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) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 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.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 56 lb uplift at joint 3.
  - 10) 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.
- LOAD CASE(S)** Standard



September 12, 2023

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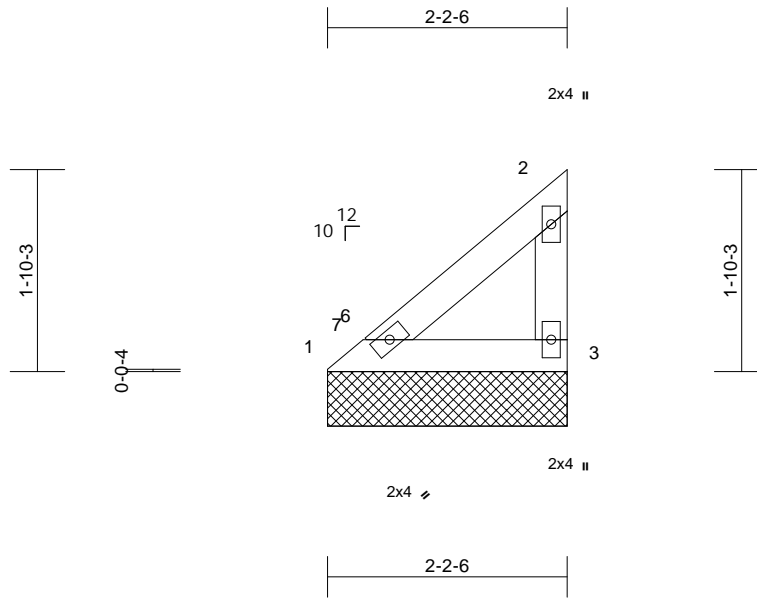
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	91 Serenity-Roof-B330 E COP TMB	160703022
23080111-01	VLE5	Valley	1	1	Job Reference (optional)	

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Tue Sep 12 06:04:18  
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Page: 1



Scale = 1:21.1

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	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 9 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 2-2-10 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS (size)

1=2-2-6, 3=2-2-6  
Max Horiz 1=48 (LC 14)  
Max Uplift 3=-33 (LC 14)  
Max Grav 1=80 (LC 20), 3=106 (LC 20)

#### FORCES (lb) - Maximum Compression/Maximum Tension

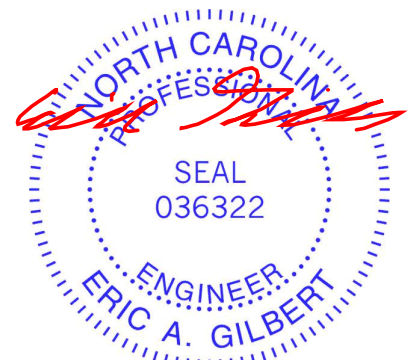
TOP CHORD 1-2=-100/35, 2-3=-66/66  
BOT CHORD 1-3=-67/76

#### NOTES

- 1) 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) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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.
- 3) TCLL: 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) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 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.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 3.
- 10) 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.

#### LOAD CASE(S) Standard



September 12, 2023

#### WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.

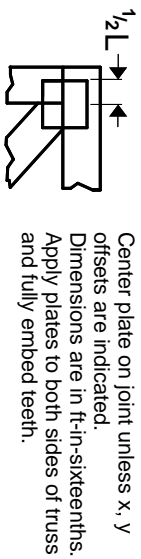
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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 and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))



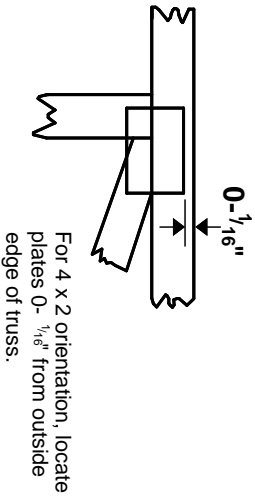
818 Soundside Road  
Edenton, NC 27932

# Symbols

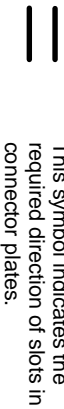
## PLATE LOCATION AND ORIENTATION



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.



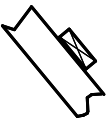
This symbol indicates the required direction of slots in connector plates.

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

## PLATE SIZE

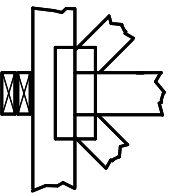
**4 X 4**  
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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

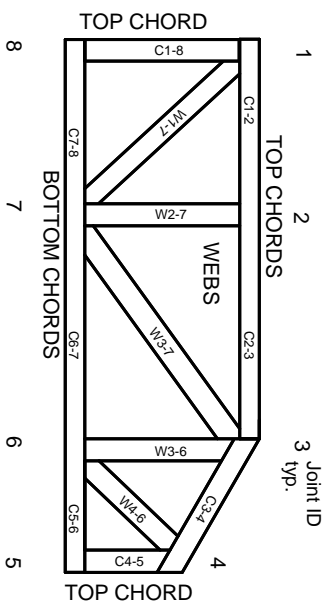


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

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

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**MITek**

ENGINEERING BY  
**TRENGO**  
A MITek Affiliate

MITek Engineering Reference Sheet: MIL-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/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.