

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 24020103  
131 SERENITY - 327-A

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: I63986041 thru I63986072

My license renewal date for the state of North Carolina is December 31, 2024.

North Carolina COA: C-0844



March 4, 2024

Gilbert, Eric

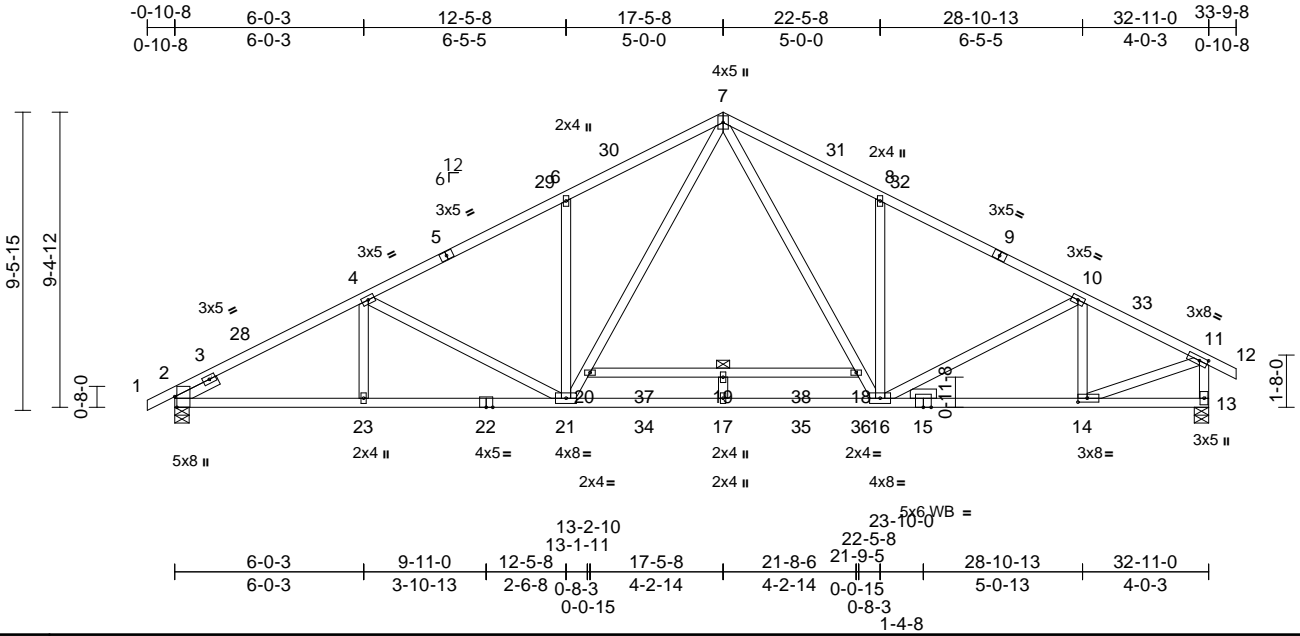
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 24020103	Truss A	Truss Type Common	Qty 6	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986041
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:31  
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Page: 1



Scale = 1:73.4  
Plate Offsets (X, Y): [2:0-4-1,Edge], [11:0-3-3,0-1-8], [14:0-3-8,0-1-8]

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	0.76	Vert(LL)	-0.45	19	>874	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.93	Vert(CT)	-0.89	19	>441	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.79	Horz(CT)	0.08	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 210 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2 \*Except\* 1-5:2x4 SP No.1  
BOT CHORD 2x4 SP No.1 \*Except\* 15-13:2x4 SP No.2, 22-15:2x4 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 21-7,16-7:2x4 SP No.2  
OTHERS 2x4 SP No.3  
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-2-14 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing. Except: 6-0-0 oc bracing: 18-20

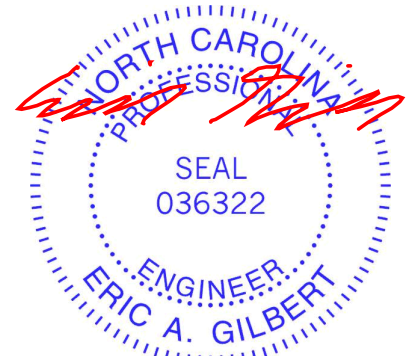
**REACTIONS**  
(size) 2=0-5-8, 13=0-5-8  
Max Horiz 2=145 (LC 18)  
Max Uplift 2=6 (LC 14)  
Max Grav 2=1747 (LC 5), 13=1795 (LC 3)

**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-2947/0, 4-6=-2660/0, 6-7=-2697/30, 7-8=-2471/39, 8-10=-2456/0, 10-11=-2088/0, 11-12=0/27, 11-13=-1706/47  
BOT CHORD 2-23=-157/2571, 21-23=-30/2571, 17-21=0/1690, 16-17=0/1690, 14-16=0/1836, 13-14=0/58, 19-20=-38/21, 18-19=-38/21  
WEBS 11-14=0/1901, 4-23=-4/102, 4-21=-351/223, 6-21=-503/209, 8-16=-492/215, 20-21=-97/1275, 7-20=-27/1427, 7-18=-36/1059, 16-18=-105/907, 10-14=-577/0, 10-16=0/393, 17-19=-65/19

**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 2-5-0, Interior (1) 2-5-0 to 14-2-0, Exterior(2R) 14-2-0 to 20-9-0, Interior (1) 20-9-0 to 30-6-0, Exterior(2E) 30-6-0 to 33-9-8 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.
- 200.0lb AC unit load placed on the bottom chord, 17-5-8 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.
- 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



March 4, 2024

**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)



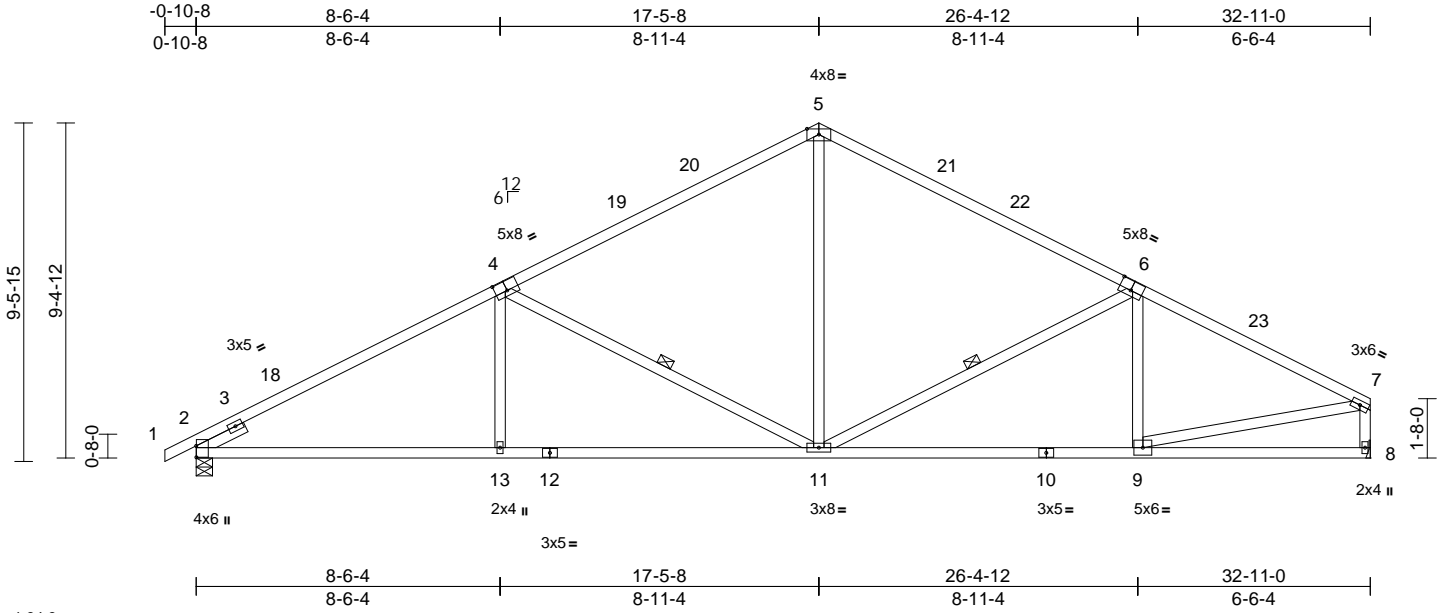
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss A2	Truss Type Common	Qty 6	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986042
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:34  
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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	0.98	Vert(LL)	-0.13	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.88	Vert(CT)	-0.32	11-13	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.63	Horz(CT)	0.08	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 174 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP 2400F 2.0E \*Except\* 1-4,6-7:2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3  
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 6-11, 4-11

**REACTIONS** (size) 2=0-5-8, 8= Mechanical  
Max Horiz 2=153 (LC 18)  
Max Uplift 2=-148 (LC 14), 8=-116 (LC 15)  
Max Grav 2=1368 (LC 21), 8=1310 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-5=-2212/260, 5-7=-1798/260, 7-8=-1255/166  
BOT CHORD 2-13=-304/1900, 11-13=-244/1896, 9-11=-111/1555, 8-9=-25/82  
WEBS 5-11=-12/753, 6-11=-470/205, 7-9=-99/1522, 4-13=0/330, 4-11=-822/254, 6-9=-179/121

- 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.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 116 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

- 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 2-5-0, Interior (1) 2-5-0 to 14-2-0, Exterior(2R) 14-2-0 to 20-9-0, Interior (1) 20-9-0 to 29-5-12, Exterior(2E) 29-5-12 to 32-9-4 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



March 4, 2024

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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/TP1 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)



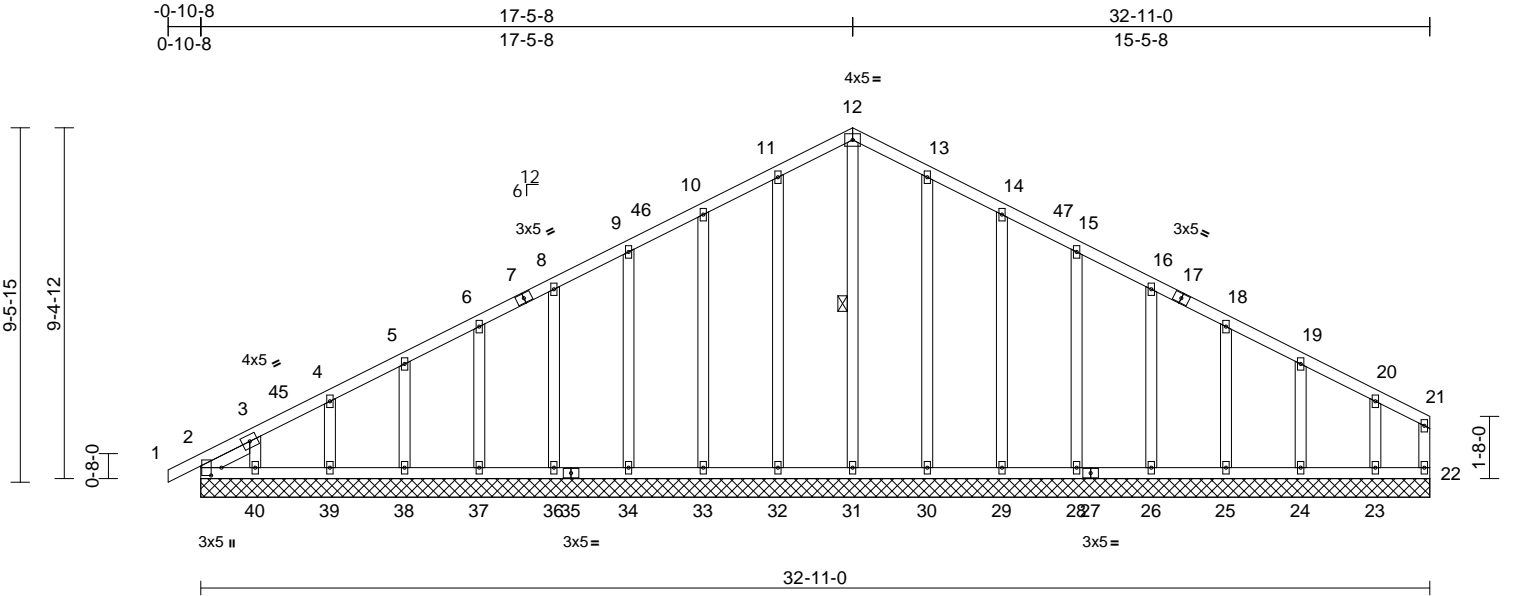
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss A2GE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986043
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:34  
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Page: 1



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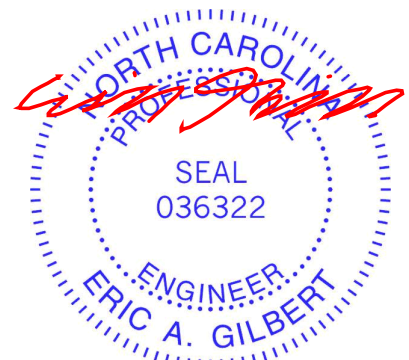
Plate Offsets (X, Y): [2:0-2-8,0-3-5]

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	0.06	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.26	Horz(CT)	0.00	22	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 225 lb	FT = 20%

LUMBER	TOP CHORD	BOT CHORD	WEBS	OTHERS	SLIDER	BRACING	TOP CHORD	BOT CHORD	WEBS	REACTIONS	Max Horiz	Max Uplift	FORCES	TOP CHORD	BOT CHORD	WEBS	
2x4 SP No.2	2x4 SP No.2	2x4 SP No.3	2x4 SP No.3	2x4 SP No.3	Left 2x4 SP No.3 -- 1-5-14	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.	Rigid ceiling directly applied or 10-0-0 oc bracing.	1 Row at midpt	12-31	(size) 2=32-11-0, 22=32-11-0, 23=32-11-0, 24=32-11-0, 25=32-11-0, 26=32-11-0, 28=32-11-0, 29=32-11-0, 30=32-11-0, 31=32-11-0, 32=32-11-0, 33=32-11-0, 34=32-11-0, 36=32-11-0, 37=32-11-0, 38=32-11-0, 39=32-11-0, 40=32-11-0, 41=32-11-0	2=153 (LC 18)	2=-58 (LC 10), 23=-87 (LC 15), 24=-38 (LC 15), 25=-45 (LC 15), 26=-43 (LC 15), 28=-43 (LC 15), 29=-48 (LC 15), 30=-36 (LC 15), 32=40 (LC 14), 33=-46 (LC 14), 34=-43 (LC 14), 36=-44 (LC 14), 37=-44 (LC 14), 38=-44 (LC 14), 39=-43 (LC 14), 40=-78 (LC 14), 41=-58 (LC 10)	2=-58 (LC 10), 23=-87 (LC 15), 24=-38 (LC 15), 25=-45 (LC 15), 26=-43 (LC 15), 28=-43 (LC 15), 29=-48 (LC 15), 30=-36 (LC 15), 32=40 (LC 14), 33=-46 (LC 14), 34=-43 (LC 14), 36=-44 (LC 14), 37=-44 (LC 14), 38=-44 (LC 14), 39=-43 (LC 14), 40=-78 (LC 14), 41=-58 (LC 10)	(lb) - Maximum Compression/Maximum Tension	1-2=0/23, 2-3=-75/51, 3-4=-138/100, 4-5=-108/122, 5-6=-95/145, 6-8=-82/177, 8-9=-70/222, 9-10=-76/267, 10-11=-95/315, 11-12=-112/355, 12-13=-112/355, 13-14=-95/315, 14-15=-76/267, 15-16=-58/223, 16-18=-40/177, 18-19=-37/133, 19-20=-36/78, 20-21=-51/42, 21-22=-43/6	2-40=-22/70, 39-40=-22/70, 38-39=-22/70, 37-38=-22/70, 36-37=-22/70, 34-36=-22/70, 33-34=-22/70, 32-33=-22/70, 31-32=-22/70, 30-31=-22/70, 29-30=-22/70, 28-29=-22/70, 26-28=-22/70, 25-26=-22/70, 24-25=-22/70, 23-24=-22/70, 22-23=-22/70	12-31=-244/38, 11-32=-204/65, 10-33=-188/84, 9-34=-135/76, 8-36=-120/77, 6-37=-121/78, 5-38=-119/76, 4-39=-124/84, 3-40=-97/101, 13-30=-204/65, 14-29=-188/84, 15-28=-135/76, 16-26=-120/78, 18-25=-120/75, 19-24=-123/99, 20-23=-106/135

**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 2-5-0, Exterior(2N) 2-5-0 to 14-2-0, Corner(3R) 14-2-0 to 20-9-0, Exterior (2N) 20-9-0 to 29-5-8, Corner(3E) 29-5-8 to 32-9-4 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
- 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.



March 4, 2024

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

Job 24020103	Truss A2GE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	I63986043
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:34  
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Page: 2

- 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) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 32, 33, 34, 36, 37, 38, 39, 40, 30, 29, 28, 26, 25, 24, and 23. This connection is for uplift only and does not consider lateral forces.
- 13) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2, 41.
- 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

**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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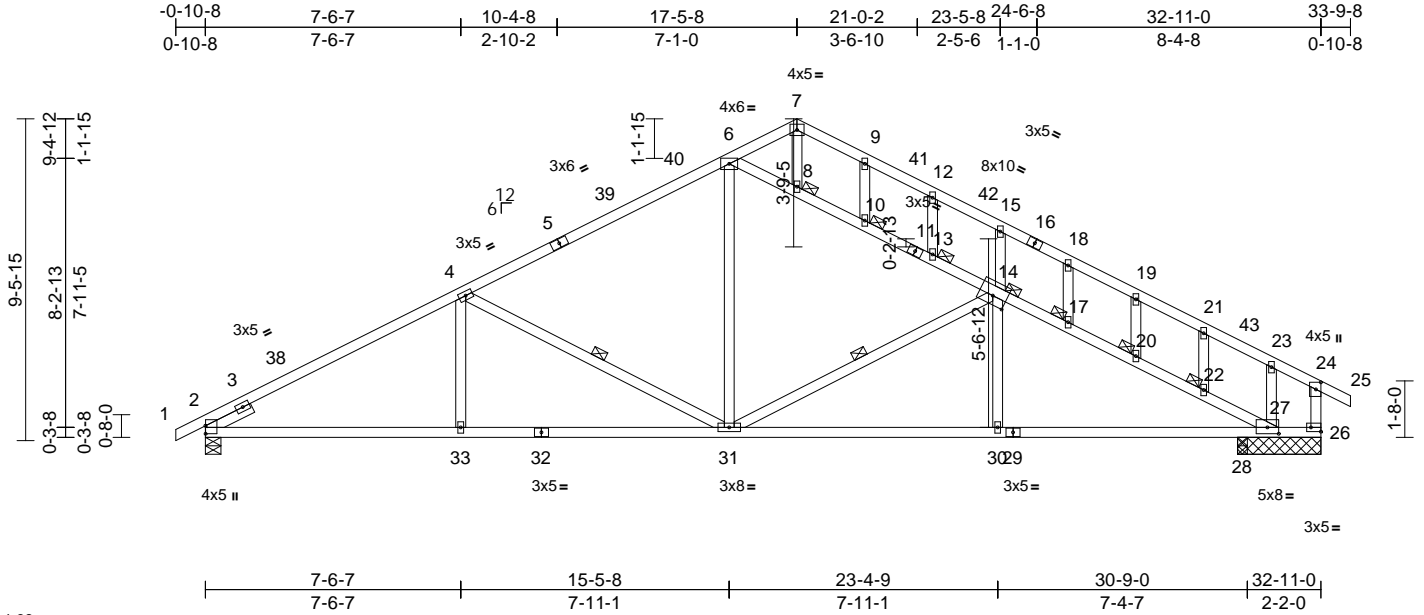
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss ASE	Truss Type Common	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986044
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:35  
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Page: 1



Scale = 1:68

Plate Offsets (X, Y): [2:0-2-13,0-0-1], [14:0-5-0,0-3-0], [24:0-2-8,0-1-12], [26:Edge,0-1-8], [27:0-4-0,0-2-4]

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	0.86	Vert(LL)	-0.11	31-33	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.27	31-33	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.31	Horz(CT)	0.09	26	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 208 lb	FT = 20%

LUMBER	WEBS	NOTES
TOP CHORD 2x4 SP No.2	7-8=-76/87, 9-10=-109/57, 12-13=-108/27, 14-15=-301/153, 17-18=-73/28, 19-20=-46/34, 21-22=-172/46, 23-27=-111/228, 6-31=0/745, 14-31=-717/152, 14-30=0/290, 4-33=0/282, 4-31=-634/211	10) * 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. 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 27. 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. 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
BOT CHORD 2x4 SP No.2		
WEBS 2x4 SP No.3		
OTHERS 2x4 SP No.3		
SLIDER Left 2x4 SP No.3 -- 1-6-0		
BRACING		
TOP CHORD Structural wood sheathing directly applied or 3-0-12 oc purlins, except end verticals.		
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.		
WEBS 1 Row at midpt 14-31, 4-31		
JOINTS 1 Brace at Jt(s): 8, 10, 13, 17, 20, 22, 14		
REACTIONS (size)	2=0-5-8, 26=2-5-8, 27=2-5-8, 28=0-3-8	
Max Horiz 2=145 (LC 18)		
Max Uplift 2=-139 (LC 14), 27=-464 (LC 15)		
Max Grav 2=1314 (LC 21), 26=482 (LC 22), 27=679 (LC 1), 28=540 (LC 7)		
FORCES (lb) - Maximum Compression/Maximum Tension		
TOP CHORD 1-2=0/23, 2-4=-2122/219, 4-6=-1526/232, 6-7=-291/172, 7-9=-261/156, 9-12=-297/119, 12-15=-332/101, 15-18=-257/44, 18-19=-278/24, 19-21=-319/2, 21-23=-295/0, 23-24=-338/34, 24-25=0/27, 24-26=-340/37, 6-8=-1348/202, 8-10=-1341/186, 10-13=-1361/198, 13-14=-1376/201, 14-17=-1818/206, 17-20=-1848/215, 20-22=-1868/226, 22-27=-1951/244		
BOT CHORD 2-33=-257/1825, 31-33=-232/1825, 30-31=-34/1775, 28-30=-34/1775, 27-28=-34/1775, 26-27=0/239		



March 4, 2024

**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

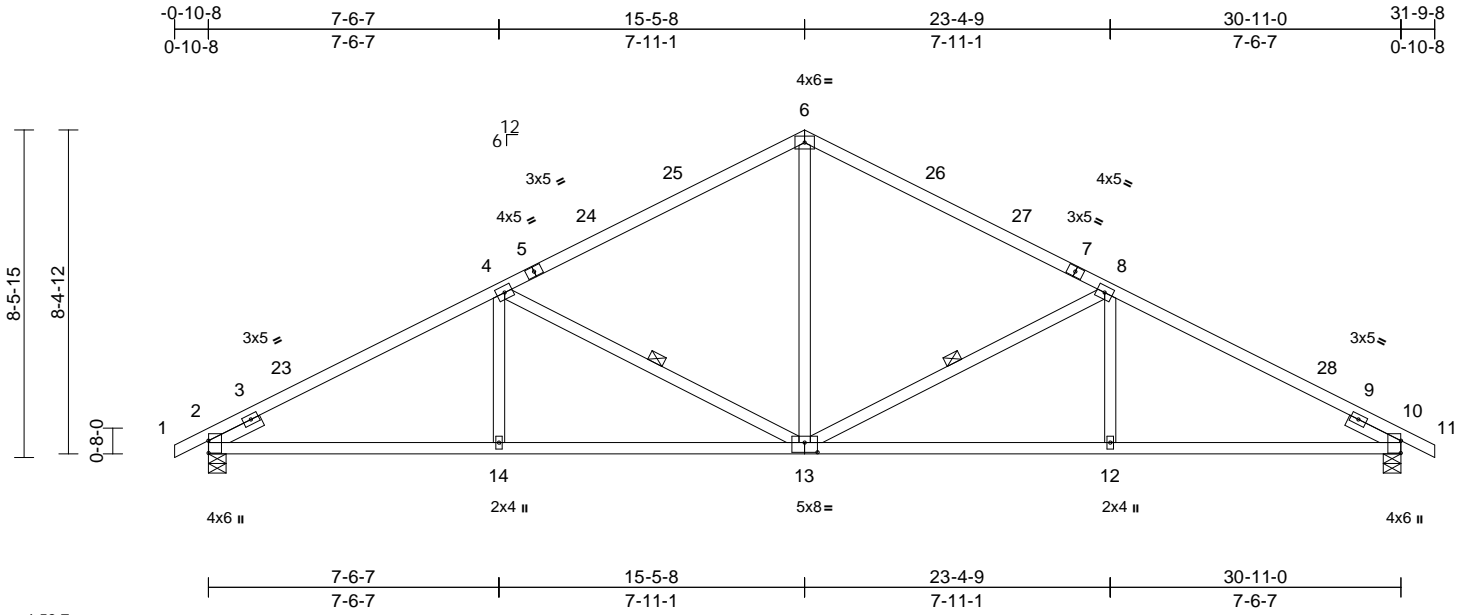
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss B	Truss Type Common	Qty 3	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986045
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:35  
ID:WwcS\_ow9RvOcm3mRjBta1yz6RCI-RfC?PsB70Hq3NSgPqL8w3uITXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:59.7

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [4:0-0-0,0-0-0], [10:0-3-13,0-0-1], [10:0-0-0,0-0-0], [13:0-4-0,0-3-0]

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	0.96	Vert(LL)	-0.11	13-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.79	Vert(CT)	-0.27	13-14	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.31	Horz(CT)	0.09	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 154 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP 2400F 2.0E \*Except\* 1-5,7-11:2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3  
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.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 8-13, 4-13

**REACTIONS** (size) 2=0-5-8, 10=0-5-8  
Max Horiz 2=-129 (LC 15)  
Max Uplift 2=-135 (LC 14), 10=-135 (LC 15)  
Max Grav 2=1292 (LC 21), 10=1292 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-2087/235, 4-6=-1473/245, 6-8=-1473/245, 8-10=-2087/235, 10-11=0/23  
BOT CHORD 2-14=-246/1798, 12-14=-214/1798, 10-12=-145/1797  
WEBS 6-13=-15/762, 8-13=-713/220, 8-12=0/282, 4-13=-713/220, 4-14=0/282

**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 2-2-10, Interior (1) 2-2-10 to 12-4-6, Exterior(2R) 12-4-6 to 18-6-10, Interior (1) 18-6-10 to 28-8-6, Exterior(2E) 28-8-6 to 31-9-8 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. 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



March 4, 2024

**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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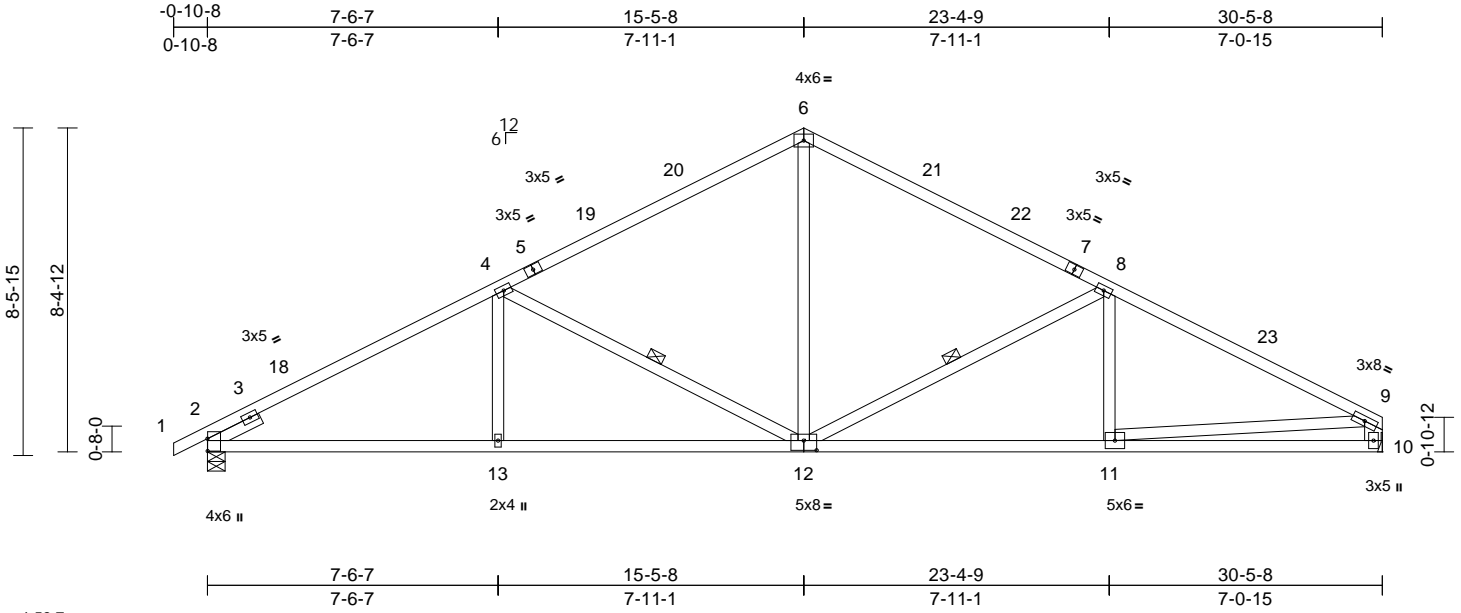
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss B1	Truss Type Common	Qty 6	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986046
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:36  
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Page: 1



Scale = 1:59.7

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [12:0-4-0,0-3-0]

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	0.97	Vert(LL)	-0.10	12-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.25	12-13	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.59	Horz(CT)	0.07	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 159 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP 2400F 2.0E \*Except\* 1-5:2x4 SP No.2, 7-9:2x4 SP No.1  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 10-9:2x6 SP No.2  
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 8-12, 4-12

**REACTIONS** (size) 2=0-5-8, 10= Mechanical  
Max Horiz 2=135 (LC 18)  
Max Uplift 2=-135 (LC 14), 10=-112 (LC 15)  
Max Grav 2=1271 (LC 21), 10=1212 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-2044/231, 4-6=-1414/241, 6-8=-1417/242, 8-9=-1941/224, 9-10=-1144/160  
BOT CHORD 2-13=-246/1760, 11-13=-214/1760, 10-11=-55/281  
WEBS 6-12=-15/727, 8-12=-631/205, 8-11=-3/199, 4-12=-719/220, 4-13=0/285, 9-11=-79/1430

- 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 2-2-1, Interior (1) 2-2-1 to 12-4-15, Exterior(2R) 12-4-15 to 18-6-1, Interior (1) 18-6-1 to 27-2-3, Exterior(2E) 27-2-3 to 30-2-12 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.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 112 lb uplift at joint 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.
- 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



March 4, 2024

**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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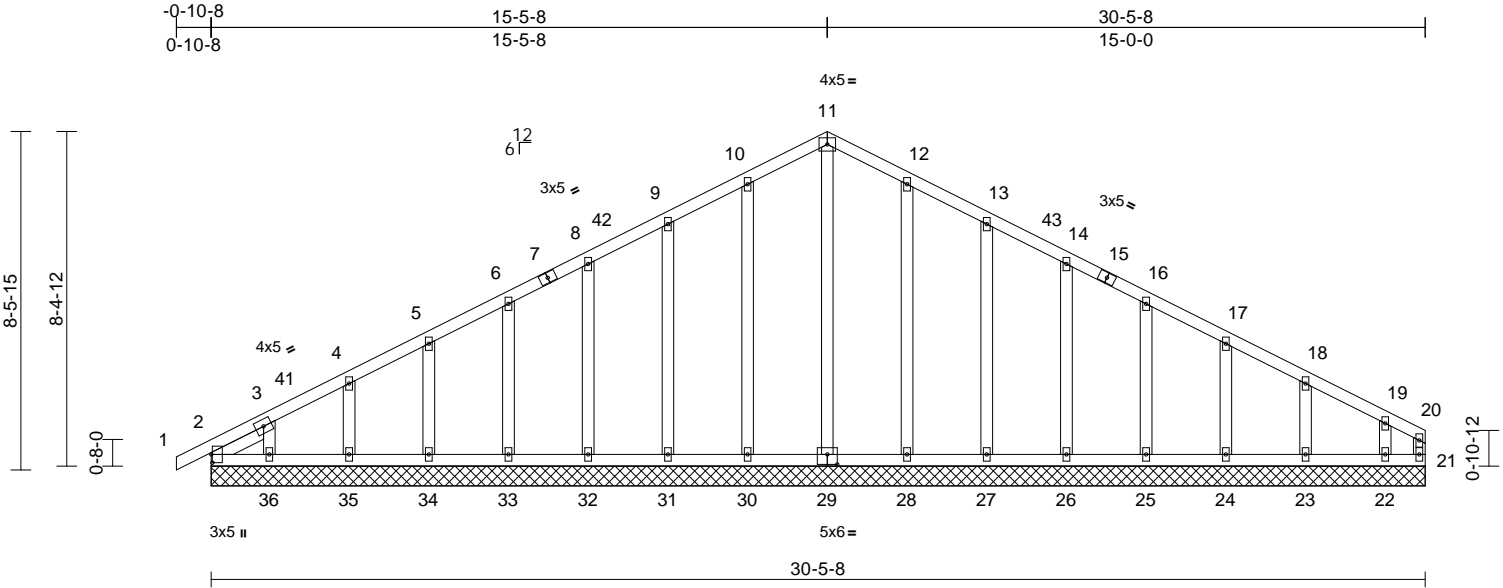


Job 24020103	Truss B1GE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986047
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:36  
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Page: 1



Scale = 1:57.8

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [29:0-3-0,0-3-0]

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	0.07	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.00	21	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 192 lb	FT = 20%

LUMBER	FORCES	NOTES
<b>TOP CHORD</b> 2x4 SP No.2 <b>BOT CHORD</b> 2x4 SP No.2 <b>WEBS</b> 2x4 SP No.3 <b>OTHERS</b> 2x4 SP No.3 <b>SLIDER</b> Left 2x4 SP No.3 -- 1-5-14 <b>BRACING</b> <b>TOP CHORD</b> Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals. <b>BOT CHORD</b> Rigid ceiling directly applied or 10-0-0 oc bracing. <b>REACTIONS</b> (size) Max Horiz 2=134 (LC 18), 37=134 (LC 18) Max Uplift 2=-32 (LC 10), 21=-2 (LC 13), 22=-113 (LC 15), 23=-39 (LC 15), 24=-45 (LC 15), 25=-44 (LC 15), 26=-43 (LC 15), 27=-47 (LC 15), 28=-40 (LC 15), 30=-42 (LC 14), 31=-46 (LC 14), 32=-43 (LC 14), 33=-44 (LC 14), 34=-44 (LC 14), 35=-43 (LC 14), 36=-76 (LC 14), 37=-32 (LC 10) Max Grav 2=134 (LC 30), 21=112 (LC 15), 22=128 (LC 35), 23=166 (LC 1), 24=159 (LC 22), 25=160 (LC 1), 26=175 (LC 22), 27=228 (LC 22), 28=244 (LC 22), 29=182 (LC 27), 30=244 (LC 21), 31=228 (LC 21), 32=175 (LC 21), 33=160 (LC 1), 34=159 (LC 21), 35=165 (LC 1), 36=131 (LC 34), 37=134 (LC 30)	<b>(lb) - Maximum Compression/Maximum Tension</b> <b>TOP CHORD</b> 1-2=0/23, 2-3=-71/41, 3-4=-123/72, 4-5=-91/86, 5-6=-71/109, 6-8=-61/133, 8-9=-59/173, 9-10=-78/220, 10-11=-96/262, 11-12=-96/262, 12-13=-78/220, 13-14=-59/173, 14-16=-41/128, 16-17=-38/83, 17-18=-45/39, 18-19=-66/31, 19-20=-109/45, 20-21=-72/23 <b>BOT CHORD</b> 2-36=-21/105, 35-36=-21/105, 34-35=-21/105, 33-34=-21/105, 32-33=-21/105, 31-32=-21/105, 30-31=-21/105, 28-30=-21/105, 27-28=-21/105, 26-27=-21/105, 25-26=-21/105, 24-25=-21/105, 23-24=-21/105, 22-23=-21/105, 21-22=-21/105 <b>WEBS</b> 11-29=-166/25, 10-30=-204/70, 9-31=-188/81, 8-32=-135/76, 6-33=-120/78, 5-34=-120/76, 4-35=-124/82, 3-36=-96/106, 12-28=-204/70, 13-27=-188/81, 14-26=-135/76, 16-25=-120/78, 17-24=-120/74, 18-23=-124/100, 19-22=-97/143	<b>3)</b> 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. <b>4)</b> 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 <b>5)</b> Unbalanced snow loads have been considered for this design. <b>6)</b> 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. <b>7)</b> All plates are 2x4 MT20 unless otherwise indicated. <b>8)</b> Gable requires continuous bottom chord bearing. <b>9)</b> Gable studs spaced at 2-0-0 oc. <b>10)</b> This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads. <b>11)</b> * 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.
	<b>NOTES</b> <b>1)</b> Unbalanced roof live loads have been considered for this design. <b>2)</b> 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 2-2-1, Exterior(2N) 2-2-1 to 12-4-15, Corner(3R) 12-4-15 to 18-6-1, Exterior (2N) 18-6-1 to 27-3-3, Corner(3E) 27-3-3 to 30-3-12 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	



March 4, 2024

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	Truss	Truss Type	Qty	Ply	131 SERENITY - 327-A	I63986047
24020103	B1GE	Common Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:36  
 ID:kEyumvGz1eadDrk1IGCRPhz6RZY-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWwCDoi7J4zJC?f

Page: 2

12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 21, 2, 30, 31, 32, 33, 34, 35, 36, 28, 27, 26, 25, 24, 23, and 22. 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

**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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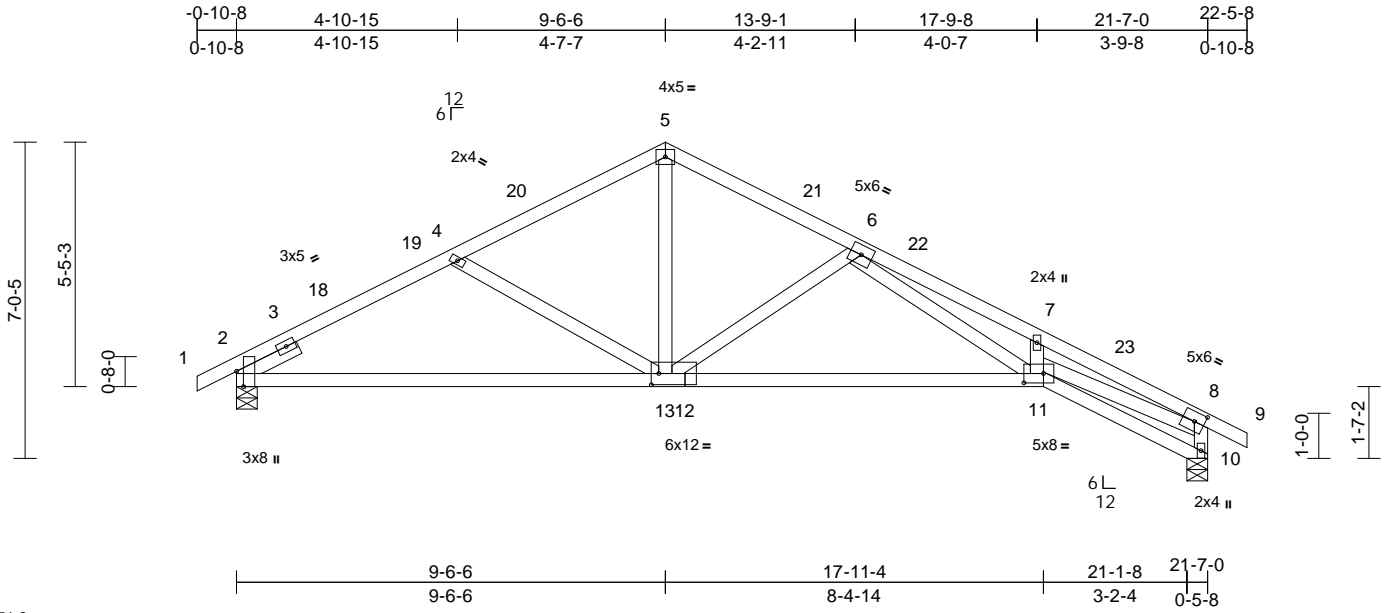
818 Soundside Road  
 Edenton, NC 27932

Job 24020103	Truss C	Truss Type Roof Special	Qty 4	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986048
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:42:15  
ID:IXiJ0Luyki5W8bFrb88Afoz6iod-1HAAaSp9Sy?fHxWAPUpoiGIRCFvgA53CFF0Hn5zeMr7

Page: 1



Scale = 1:51.2

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

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	0.52	Vert(LL)	-0.17	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.85	Vert(CT)	-0.42	11-13	>616	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.65	Horz(CT)	0.18	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 111 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 11-8:2x4 SP No.2
- SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 2-11-5 oc purlins, except end verticals.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

- (lb/size) 2=910/0-5-8, 10=919/0-5-8
- Max Horiz 2=-117 (LC 15)
- Max Uplift 2=-89 (LC 14), 10=-114 (LC 15)
- Max Grav 2=946 (LC 21), 10=968 (LC 22)

**FORCES**

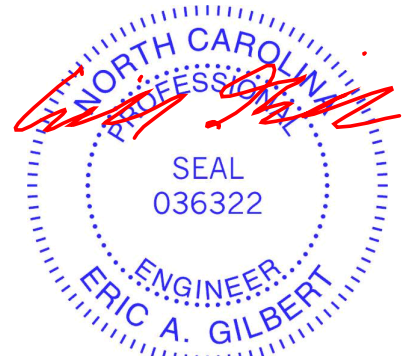
- (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
- TOP CHORD 2-4=-1431/257, 4-5=-1105/205, 5-6=-1152/210, 6-7=-3104/394, 7-8=-3154/310, 8-10=-1004/193
- BOT CHORD 2-13=-138/1238, 11-13=-82/1550
- WEBS 4-13=-398/165, 5-13=-52/674, 6-13=-745/193, 6-11=-174/1501, 8-11=-176/2643

**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 6-6-6, Exterior(2R) 6-6-6 to 12-6-6, Interior (1) 12-6-6 to 19-5-8, Exterior(2E) 19-5-8 to 22-5-8 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.
- Bearing at joint(s) 10 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 10 and 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



March 4, 2024

**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

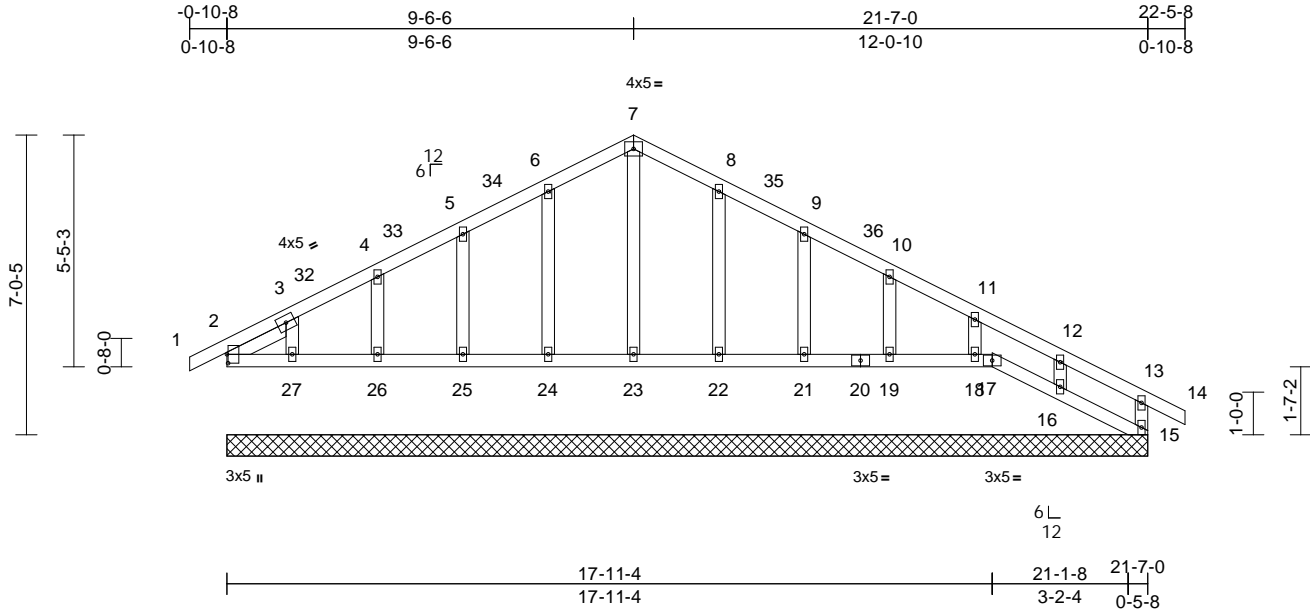
Job 24020103	Truss CGE	Truss Type Roof Special Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986049
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:42:57

Page: 1

ID:IXiJ0Luyki5W8bFrb88Afoz6iod-GYGRc9K7K9QYxYIRQ04uyKauvanPkgX8Sw3n5zeMqS



Scale = 1:54  
Plate Offsets (X, Y): [2:0-2-8,0-0-5]

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	0.10	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	0.00	15	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 112 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  
SLIDER Left 2x4 SP No.3 -- 1-6-14

**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.

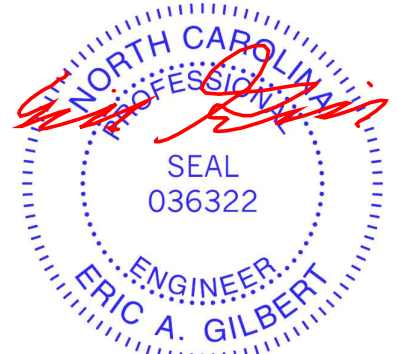
**REACTIONS** All bearings 21-7-0.  
(lb) - Max Horiz 2=-117 (LC 15)  
Max Uplift All uplift 100 (lb) or less at joint(s) 2, 15, 16, 17, 18, 19, 21, 22, 24, 25, 26, 27  
Max Grav All reactions 250 (lb) or less at joint (s) 2, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27

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

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=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 6-6-6, Exterior(2R) 6-6-6 to 12-6-6, Interior (1) 12-6-6 to 19-5-8, Exterior(2E) 19-5-8 to 22-5-8 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 requires continuous bottom chord bearing.
- 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.
- One RT4 MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 15, 2, 17, 24, 25, 26, 27, 22, 21, 19, 18, and 16. This connection is for uplift only and does not consider lateral forces.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2, 17, 23, 24, 25, 26, 27, 22, 21, 19, 18, 16.
- 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



March 4, 2024

**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)



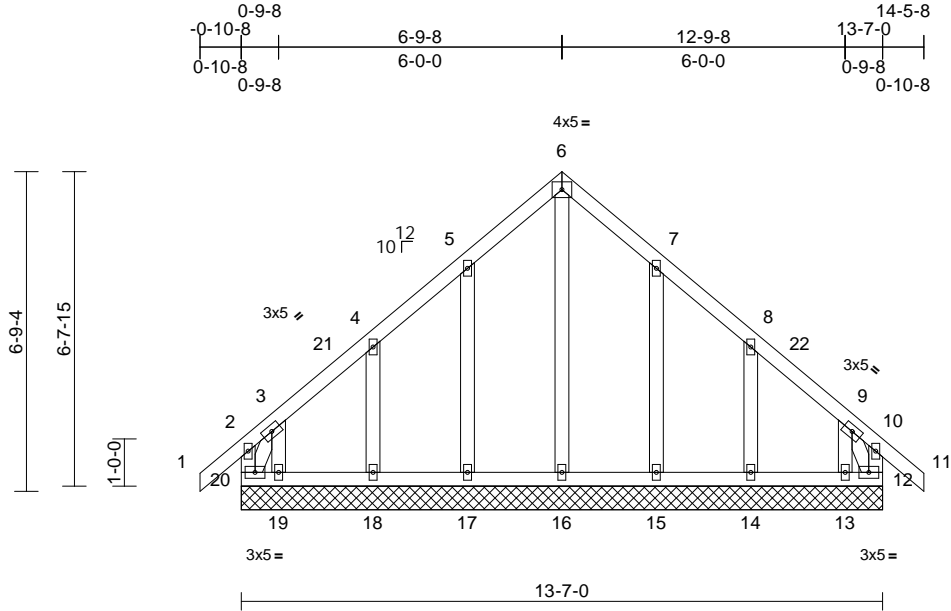
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss DGE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986050
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:37  
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Page: 1



Scale = 1:48.8

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	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.17	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 89 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.

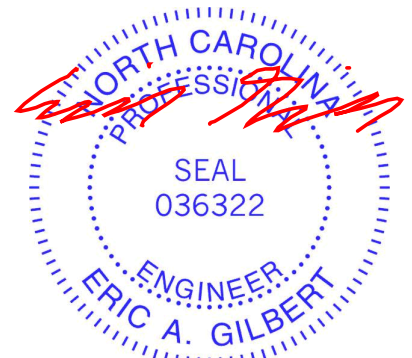
**REACTIONS** (size)  
12=13-7-0, 13=13-7-0, 14=13-7-0, 15=13-7-0, 16=13-7-0, 17=13-7-0, 18=13-7-0, 19=13-7-0  
Max Horiz 19=177 (LC 12)  
Max Uplift 12=197 (LC 11), 13=162 (LC 10), 14=81 (LC 15), 15=76 (LC 15), 17=65 (LC 14), 18=118 (LC 14), 19=21 (LC 15)  
Max Grav 12=229 (LC 10), 13=223 (LC 29), 14=209 (LC 22), 15=273 (LC 22), 16=236 (LC 30), 17=281 (LC 21), 18=181 (LC 24), 19=190 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-20=-64/112, 1-2=0/39, 2-3=-16/70, 3-4=-38/75, 4-5=-84/141, 5-6=-131/236, 6-7=-132/236, 7-8=-91/144, 8-9=-113/137, 9-10=-22/54, 10-11=0/39, 10-12=-74/112  
BOT CHORD 19-20=-66/99, 18-19=-130/155, 17-18=-130/155, 16-17=-130/155, 15-16=-130/155, 14-15=-130/155, 13-14=-130/155, 12-13=-130/155  
WEBS 6-16=-221/69, 5-17=-236/124, 4-18=-156/155, 3-19=-113/135, 7-15=-233/125, 8-14=-168/149, 9-13=-167/176, 3-20=-121/83, 9-12=-213/186

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- 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 2-1-8, Exterior(2N) 2-1-8 to 3-9-8, Corner(3R) 3-9-8 to 9-9-8, Exterior(2N) 9-9-8 to 11-5-8, Corner(3E) 11-5-8 to 14-5-8 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 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.

- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 17, 18, 19, 15, 14, 13, 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



March 4, 2024

**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  
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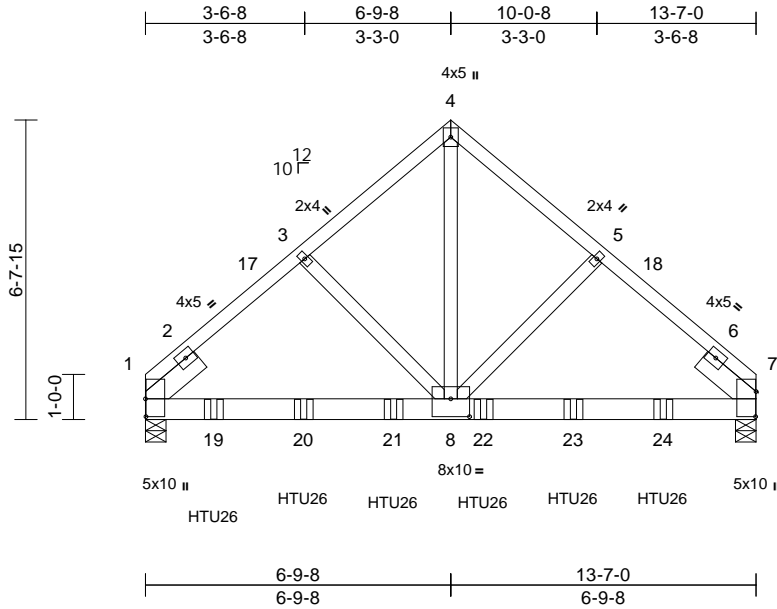
Job 24020103	Truss DGR	Truss Type Common Girder	Qty 1	Ply 2	131 SERENITY - 327-A Job Reference (optional)	163986051
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:38

Page: 1

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Scale = 1:51.3

Plate Offsets (X, Y): [1:0-4-12,0-0-2], [7:0-6-11,0-0-2], [8:0-5-0,0-4-12]

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	0.32	Vert(LL)	-0.07	8-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.63	Vert(CT)	-0.13	8-11	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.95	Horz(CT)	0.02	1	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 175 lb	FT = 20%

**LUMBER**

TOP CHORD	2x4 SP No.2
BOT CHORD	2x6 SP 2400F 2.0E
WEBS	2x4 SP No.3
SLIDER	Left 2x6 SP No.2 -- 1-6-0, Right 2x6 SP No.2 -- 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.

**REACTIONS**

(size)	1=0-5-8, 7=0-5-8
Max Horiz	1=-133 (LC 10)
Max Uplift	1=-424 (LC 12), 7=-395 (LC 13)
Max Grav	1=4337 (LC 18), 7=4052 (LC 19)

**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-3=-4030/435, 3-4=-3888/456, 4-5=-3884/456, 5-7=-4003/434
BOT CHORD	1-8=-351/3096, 7-8=-291/3075
WEBS	4-8=-502/4594, 5-8=-260/139, 3-8=-290/142

**NOTES**

- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 7. 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.
- 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 1-6-4 from the left end to 11-6-4 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: 1-4=-60, 4-7=-60, 9-13=-20  
Concentrated Loads (lb)

Vert: 19=-1192 (B), 20=-1192 (B), 21=-1192 (B), 22=-1192 (B), 23=-1192 (B), 24=-1192 (B)



March 4, 2024

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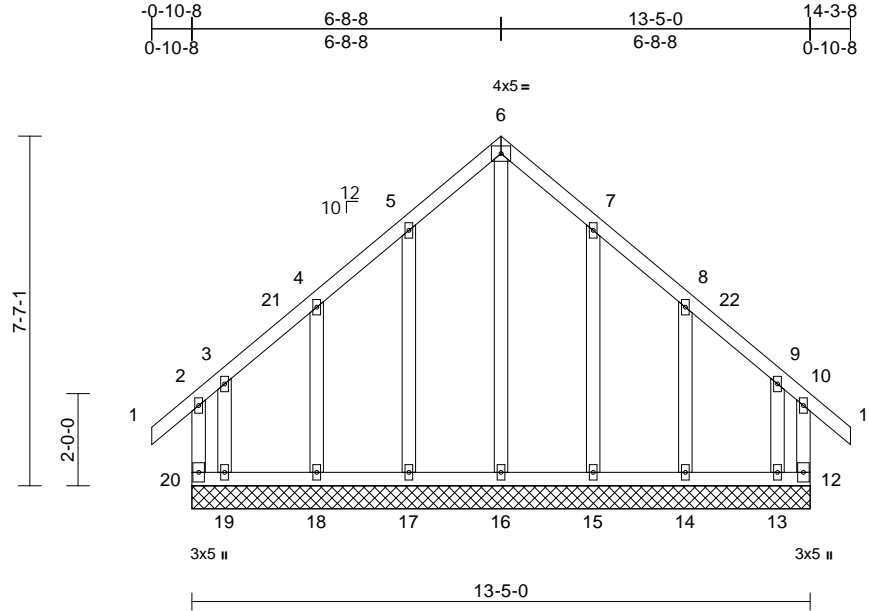
Job 24020103	Truss EGE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986052
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:43:12

Page: 1

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Scale = 1:50

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)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.15	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.37	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 98 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.

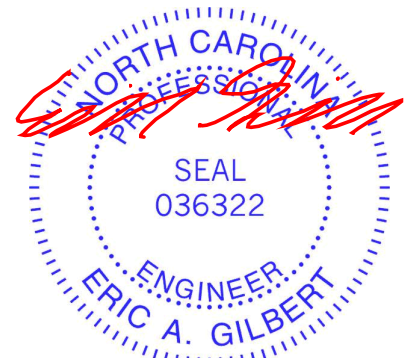
**REACTIONS** All bearings 13-5-0.  
(lb) - Max Horiz 20=210 (LC 13)  
Max Uplift All uplift 100 (lb) or less at joint(s) 14, 15, 17, 18 except 12=317 (LC 11), 13=293 (LC 10), 19=308 (LC 11), 20=335 (LC 10)  
Max Grav All reactions 250 (lb) or less at joint (s) 14, 16, 18 except 12=338 (LC 12), 13=375 (LC 13), 15=272 (LC 22), 17=272 (LC 21), 19=391 (LC 12), 20=357 (LC 13)

**FORCES** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD 4-5=-77/269, 5-6=-125/361, 6-7=-125/360, 7-8=-77/269  
WEBS 6-16=-375/60

**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 2-1-8, Exterior(2N) 2-1-8 to 3-8-8, Corner(3R) 3-8-8 to 9-8-8, Exterior(2N) 9-8-8 to 11-3-8, Corner(3E) 11-3-8 to 14-3-8 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 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.
- One RT5 MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 20, 12, and 19. This connection is for uplift only and does not consider lateral forces.

- One RT4 MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 17, 18, 15, 14, and 13. 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



March 4, 2024

**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

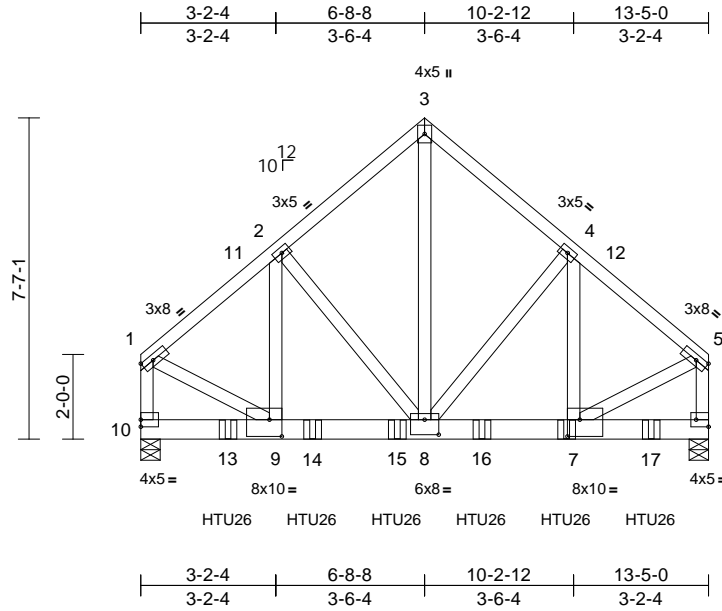
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss EGR	Truss Type Common Girder	Qty 1	Ply 2	131 SERENITY - 327-A Job Reference (optional)	163986053
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:39  
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Page: 1



Scale = 1:54.4

Plate Offsets (X, Y): [6:Edge,0-2-0], [7:0-3-8,0-4-12], [8:0-4-0,0-4-4], [9:0-3-8,0-4-12]

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	0.49	Vert(LL)	-0.03	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.63	Vert(CT)	-0.06	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.73	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 217 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP No.2  
WEBS 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) 6=0-5-8, 10=0-5-8  
Max Horiz 10=187 (LC 9)  
Max Uplift 6=-437 (LC 13), 10=-392 (LC 12)  
Max Grav 6=4699 (LC 19), 10=4249 (LC 18)

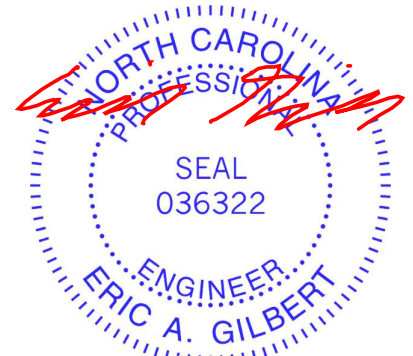
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-3660/378, 2-3=-3079/379,  
3-4=-3079/379, 4-5=-3717/383,  
1-10=-3895/375, 5-6=-3940/379  
BOT CHORD 9-10=-177/210, 8-9=-314/2768,  
7-8=-250/2811, 6-7=-29/122  
WEBS 1-9=-264/3070, 5-7=-266/3085, 2-9=-94/798,  
2-8=-768/176, 3-8=-398/3523, 4-8=-836/183,  
4-7=-104/887

**NOTES**  
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-7-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-6-0 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.

- 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 10 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.
- 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 2-0-12 from the left end to 12-0-12 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  
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-5=-60, 6-10=-20

Concentrated Loads (lb)  
Vert: 7=-1290 (B), 13=-1290 (B), 14=-1290 (B),  
15=-1290 (B), 16=-1290 (B), 17=-1290 (B)



March 4, 2024

**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.sbccomponents.com)

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818 Soundside Road  
Edenton, NC 27932

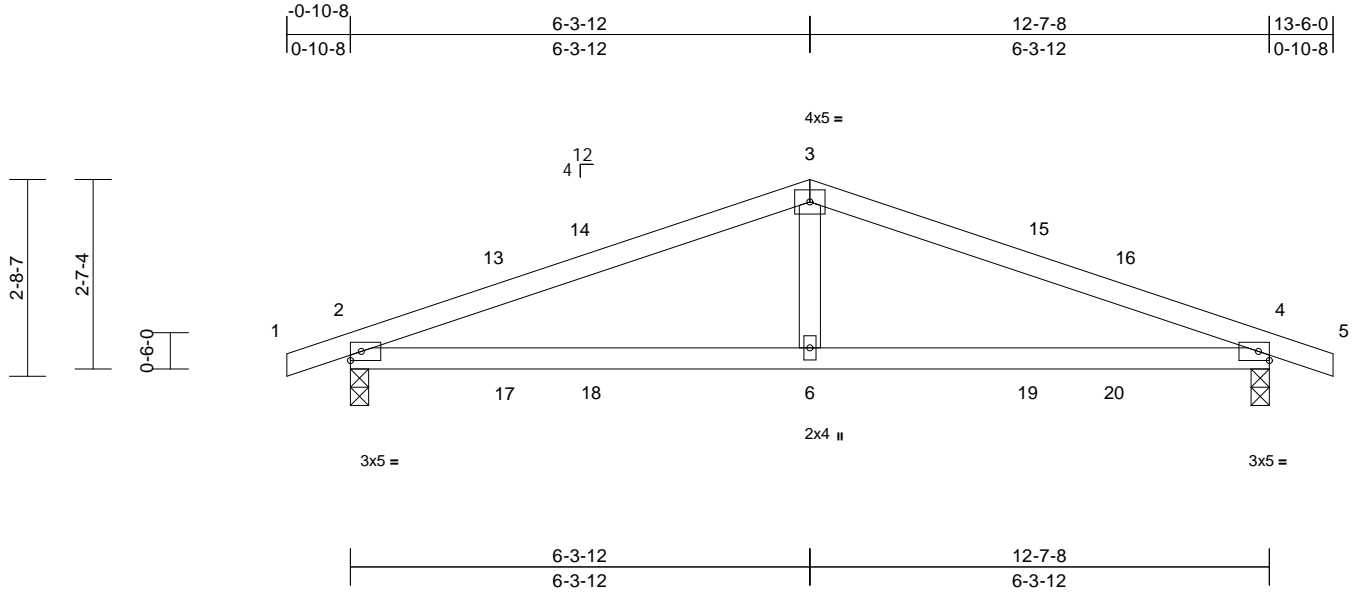


Job 24020103	Truss F	Truss Type Common	Qty 5	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986054
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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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	0.75	Vert(LL)	0.10	6-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.53	Vert(CT)	-0.11	6-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horz(CT)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 45 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 3-9-3 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 5-5-6 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 4=0-3-0  
Max Horiz 2=-38 (LC 15)  
Max Uplift 2=-203 (LC 10), 4=-203 (LC 11)  
Max Grav 2=651 (LC 21), 4=651 (LC 22)

**FORCES**

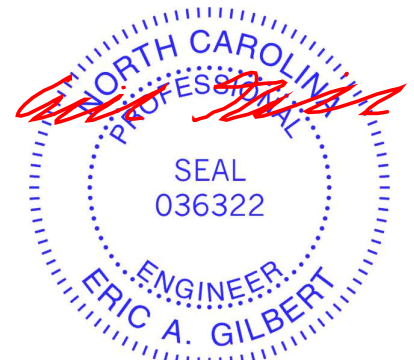
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-913/1196, 3-4=-913/1196, 4-5=0/17  
BOT CHORD 2-6=-1038/782, 4-6=-1038/782  
WEBS 3-6=-454/271

**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 3-3-12, Exterior(2R) 3-3-12 to 9-3-12, Interior (1) 9-3-12 to 10-6-0, Exterior(2E) 10-6-0 to 13-6-0 zone; cantilever left and right exposed ; 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



March 4, 2024

**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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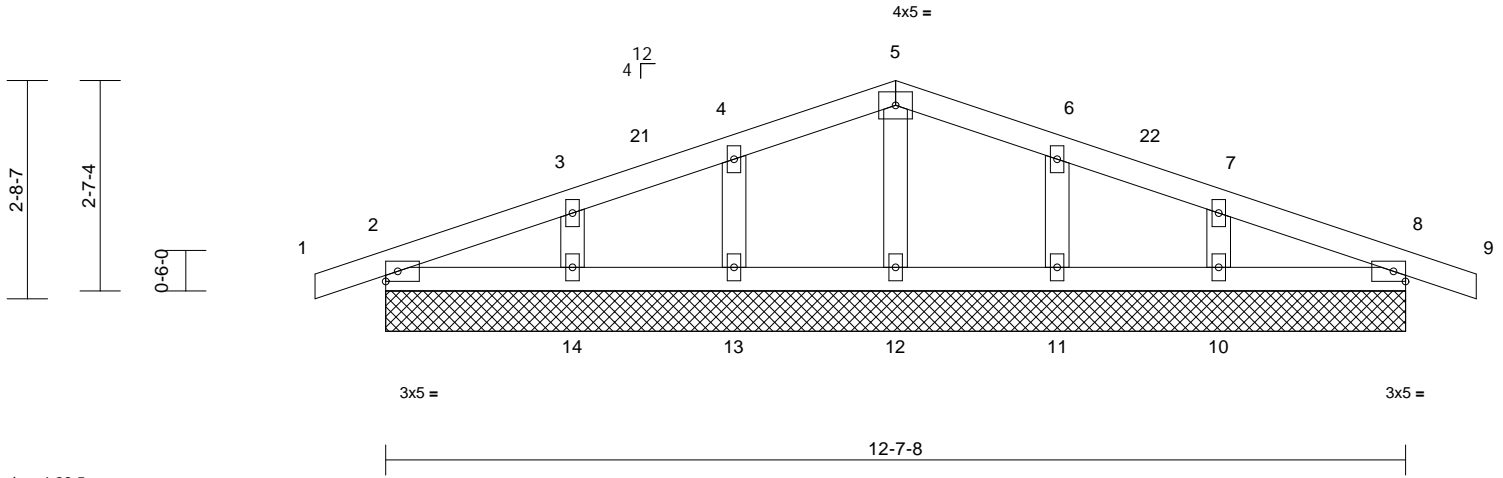
Job 24020103	Truss FGE	Truss Type Common Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986055
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:40  
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Page: 1

-0-10-8	6-3-12	12-7-8	13-6-0
0-10-8	6-3-12	6-3-12	0-10-8



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	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 51 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)  
2=12-7-8, 8=12-7-8, 10=12-7-8,  
11=12-7-8, 12=12-7-8, 13=12-7-8,  
14=12-7-8, 15=12-7-8, 18=12-7-8  
Max Horiz 2=-38 (LC 15), 15=-38 (LC 15)  
Max Uplift 2=-41 (LC 10), 8=-47 (LC 11),  
10=-39 (LC 15), 11=-37 (LC 11),  
13=-36 (LC 10), 14=-41 (LC 14),  
15=-41 (LC 10), 18=-47 (LC 11)  
Max Grav 2=176 (LC 21), 8=176 (LC 22),  
10=250 (LC 22), 11=222 (LC 22),  
12=139 (LC 1), 13=222 (LC 21),  
14=250 (LC 21), 15=176 (LC 21),  
18=176 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-52/35, 3-4=-51/56,  
4-5=-54/108, 5-6=-54/108, 6-7=-51/56,  
7-8=-52/35, 8-9=0/17  
BOT CHORD 2-14=-20/44, 13-14=0/44, 12-13=0/44,  
11-12=0/44, 10-11=0/44, 8-10=-20/44  
WEBS 5-12=-97/46, 4-13=-187/141, 3-14=-192/120,  
6-11=-187/141, 7-10=-192/120

**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 2-3-12, Exterior (2N) 2-3-12 to 3-3-12, Corner(3R) 3-3-12 to 9-3-12, Exterior(2N) 9-3-12 to 10-3-12, Corner(3E) 10-3-12 to 13-6-0 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 requires continuous bottom chord bearing.
- 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 8, 13, 14, 11, and 10. This connection is for uplift only and does not consider lateral forces.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2, 15.

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



March 4, 2024

**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)

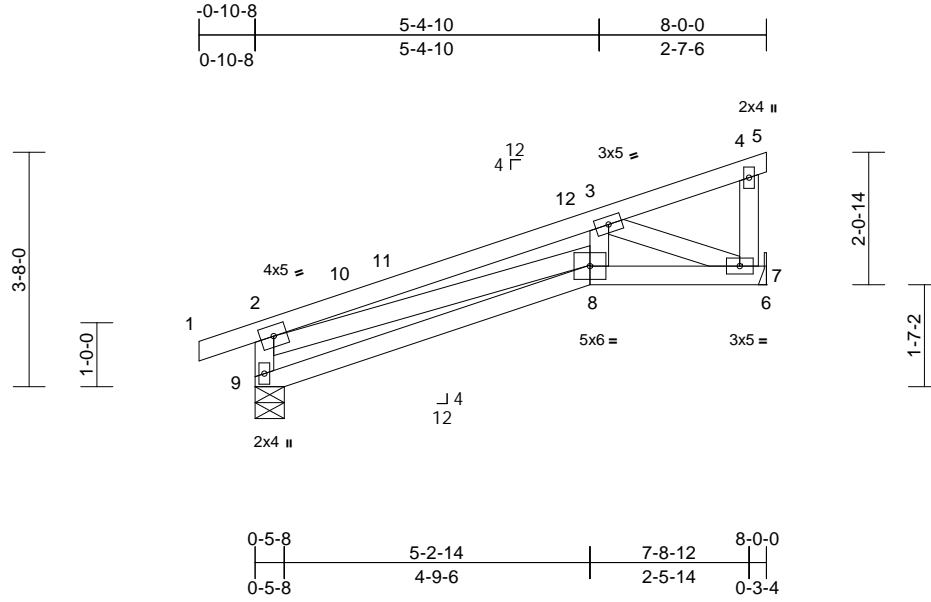
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss G	Truss Type Monopitch	Qty 2	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986056
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:40  
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Page: 1



Scale = 1:36

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.58	Vert(LL)	-0.05	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.33	Vert(CT)	-0.10	8-9	>930	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.39	Horz(CT)	0.02	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 2x4 SP No.2  
WEBS 2x4 SP No.3

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-6-4 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 8-8-2 oc bracing.

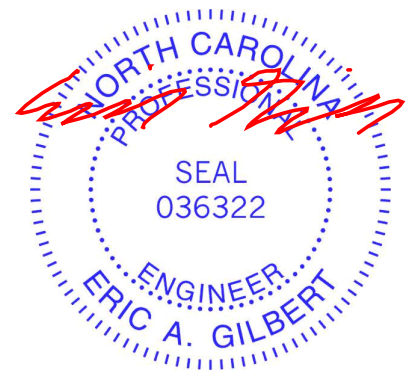
**REACTIONS** (size) 7= Mechanical, 9=0-5-8  
Max Horiz 9=113 (LC 11)  
Max Uplift 7=-66 (LC 14), 9=-71 (LC 10)  
Max Grav 7=436 (LC 21), 9=443 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-9=-392/293, 1-2=0/19, 2-3=-1029/453, 3-4=-54/27, 4-5=-8/0, 4-7=-60/15  
BOT CHORD 8-9=-144/129, 7-8=-467/896, 6-7=0/0  
WEBS 2-8=-351/946, 3-8=-56/233, 3-7=-960/534

- 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.
- Bearing at joint(s) 9 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 capable of withstanding 66 lb uplift at joint 7.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9. 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 5-0-0, Exterior(2E) 5-0-0 to 8-0-0 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.



March 4, 2024

**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)

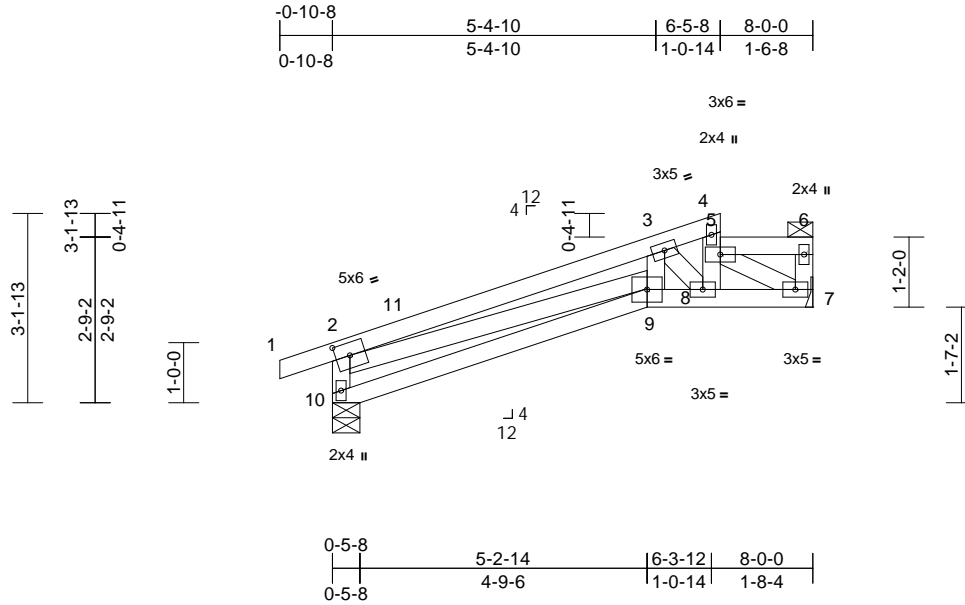
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss G1	Truss Type Half Hip	Qty 7	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986057
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:38.4

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

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	0.60	Vert(LL)	0.03	9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.33	Vert(CT)	-0.07	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.02	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 42 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 5-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 5-8, 5-6.  
BOT CHORD Rigid ceiling directly applied or 7-5-7 oc bracing.

**REACTIONS**

(size) 7= Mechanical, 10=0-5-8  
Max Horiz 10=87 (LC 15)  
Max Uplift 7=-77 (LC 14), 10=-77 (LC 10)  
Max Grav 7=541 (LC 36), 10=525 (LC 36)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-10=-544/378, 1-2=0/27, 2-3=-1216/645, 3-4=-646/412, 5-8=-256/393, 4-5=-139/37, 5-6=-57/53, 6-7=-145/105  
BOT CHORD 9-10=-262/301, 8-9=-621/1033, 7-8=-413/712  
WEBS 2-9=-400/848, 3-9=-101/318, 3-8=-628/414, 5-7=-753/453

**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 7-10-4 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.
- 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.
- Bearing at joint(s) 10 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 capable of withstanding 77 lb uplift at joint 7.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 10. 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.
- Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 221 lb down and 110 lb up at 6-3-12 on top chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)

Vert: 1-2=-60, 2-4=-60, 5-6=-115, 9-10=-20, 7-9=-20  
Concentrated Loads (lb)  
Vert: 4=-180



March 4, 2024

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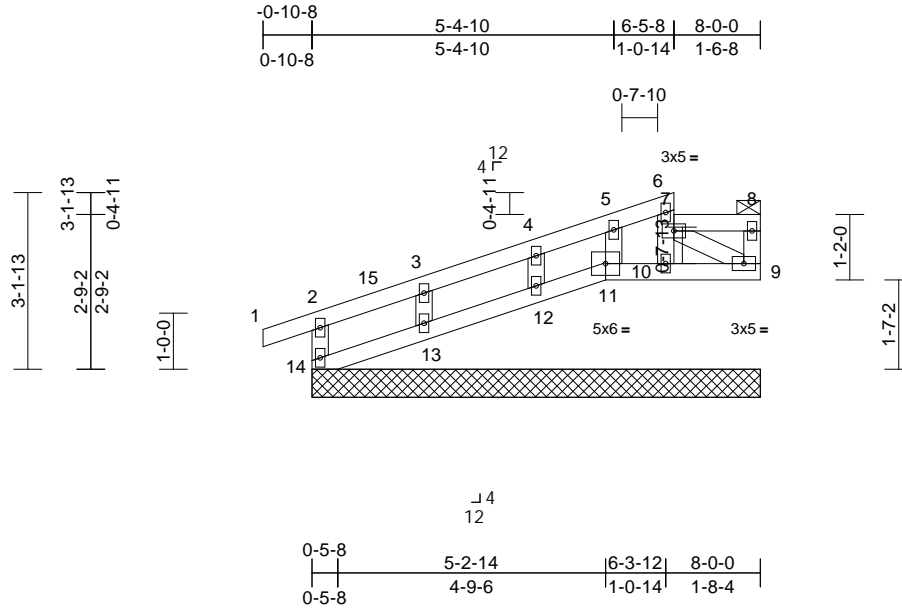
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss G1GE	Truss Type Half Hip Supported Gable	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986058
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:41  
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Page: 1



Scale = 1:41.1

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	0.13	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
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, and 2-0-0 oc purlins (6-0-0 max.): 7-10, 7-8.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing. Except: 10-0-0 oc bracing: 9-10.

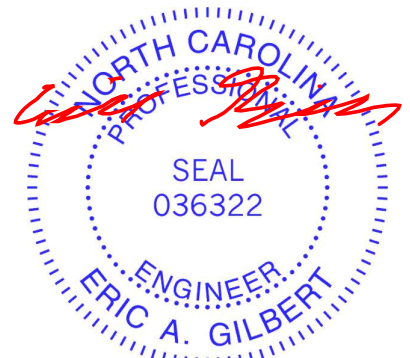
**REACTIONS** (size)  
9=8-0-0, 10=8-0-0, 11=8-0-0, 12=8-0-0, 13=8-0-0, 14=8-0-0  
Max Horiz 14=87 (LC 15)  
Max Uplift 9=-54 (LC 15), 10=-4 (LC 11), 11=-22 (LC 14), 12=-33 (LC 10), 13=-42 (LC 14), 14=-27 (LC 10)  
Max Grav 9=124 (LC 35), 10=338 (LC 39), 11=118 (LC 36), 12=183 (LC 36), 13=199 (LC 36), 14=182 (LC 36)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-14=-163/148, 1-2=0/27, 2-3=-22/33, 3-4=-29/48, 4-5=-41/98, 5-6=-52/126, 7-10=-308/137, 6-7=-218/138, 7-8=-19/36, 8-9=-104/89  
BOT CHORD 13-14=-101/90, 12-13=-99/88, 11-12=-98/85, 10-11=-99/85, 9-10=-127/104  
WEBS 4-12=-149/144, 3-13=-156/152, 5-11=-104/52, 7-9=-83/150

**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 2-0-0, Exterior(2N) 2-0-0 to 3-3-12, Corner(3E) 3-3-12 to 7-10-4 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
- 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.
- Provide adequate drainage to prevent water ponding.
- 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 22 lb uplift at joint 11, 33 lb uplift at joint 12 and 42 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) 14, 10, and 9. This connection is for uplift only and does not consider lateral forces.
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 11, 10, 12, 13, 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.
  - 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  
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-6=-60, 7-8=-115, 11-14=-20, 9-11=-20  
Concentrated Loads (lb)  
Vert: 6=-180



March 4, 2024

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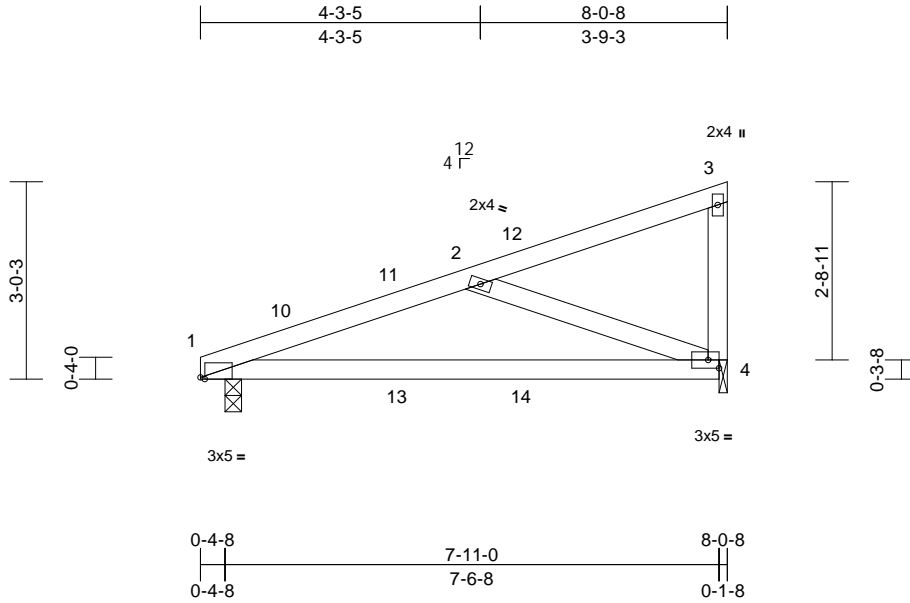
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss H	Truss Type Monopitch	Qty 6	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986059
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35.2  
Plate Offsets (X, Y): [1:0-0-13,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	0.54	Vert(LL)	0.27	4-9	>346	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.67	Vert(CT)	0.22	4-9	>438	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.22	Horz(CT)	0.01	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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 5-5-13 oc bracing.

**REACTIONS**

(size) 1=0-3-0, 4=0-1-8  
Max Horiz 1=106 (LC 13)  
Max Uplift 1=-117 (LC 10), 4=-121 (LC 10)  
Max Grav 1=414 (LC 21), 4=407 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-641/528, 2-3=-69/57, 3-4=-134/65  
BOT CHORD 1-4=-567/593  
WEBS 2-4=-630/656

**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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 4-10-12, Exterior(2E) 4-10-12 to 7-10-12 zone; cantilever left and right exposed ; 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
- 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 a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 5) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 6) Bearings are assumed to be : Joint 4 SP No.3 crushing capacity of 565 psi.
- 7) Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 8) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 4. 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.

**LOAD CASE(S)** Standard



March 4, 2024

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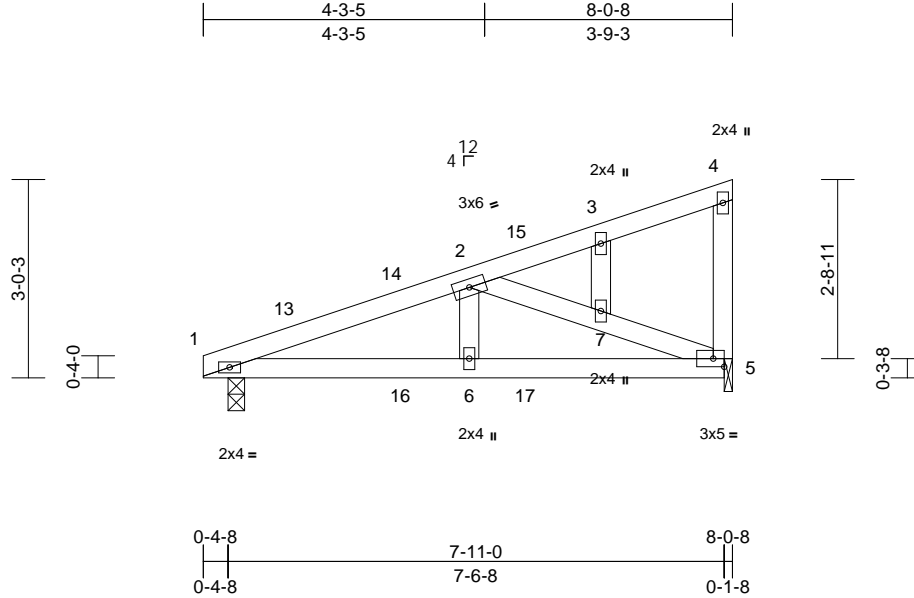
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss H1	Truss Type Monopitch	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986060
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:35

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	Vert(LL)	0.03	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	0.03	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 37 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 6-8-9 oc bracing.

REACTIONS	(size)	1=0-3-0, 5=0-1-8
Max Horiz	1=103 (LC 13)	
Max Uplift	1=-113 (LC 10), 5=-117 (LC 10)	
Max Grav	1=401 (LC 21), 5=394 (LC 21)	

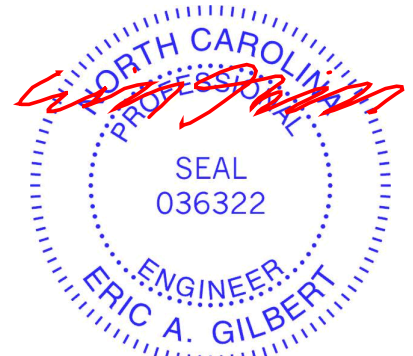
FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	1-2=-670/722, 2-3=-60/53, 3-4=-44/51, 4-5=-101/58
BOT CHORD	1-6=-708/601, 5-6=-707/601
WEBS	2-7=-625/791, 5-7=-655/817, 3-7=-87/77, 2-6=-281/162

**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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 4-10-12, Exterior(2E) 4-10-12 to 7-10-12 zone; cantilever left and right exposed; 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
- 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 studs spaced at 2-0-0 oc.
- 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) Bearings are assumed to be: , Joint 5 SP No.3 crushing capacity of 565 psi.
- 9) Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 10) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
- 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. 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



March 4, 2024

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

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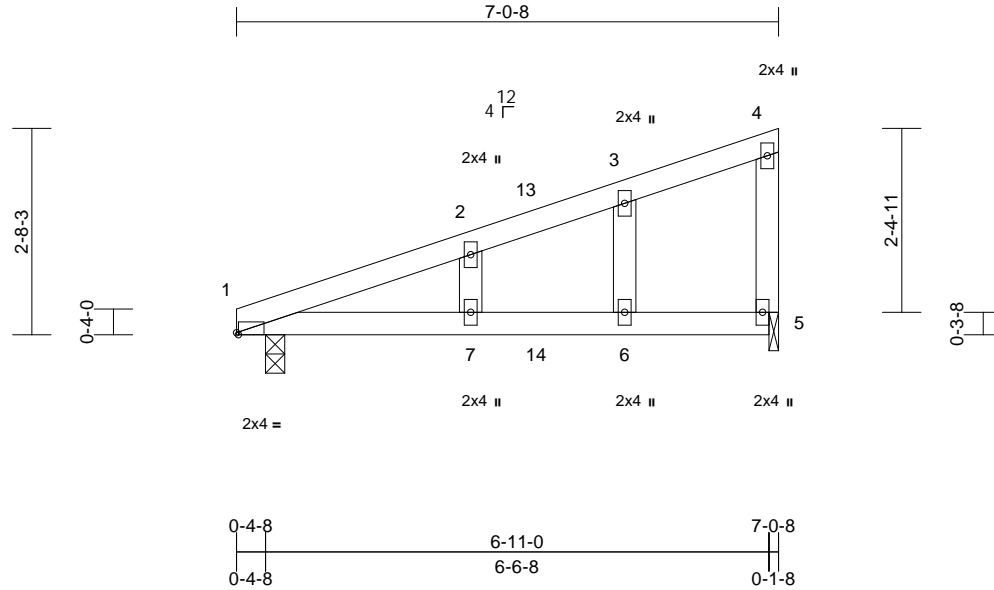
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss H2	Truss Type Monopitch	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	I63986061
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:42  
ID:nv1ri\_avzKYzZiWeAl69NZz6RTz-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?#

Page: 1



Scale = 1:29.9

Plate Offsets (X, Y): [1:0-0-5,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)	0.32	6-7	>255	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.30	6-7	>275	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.02	Horz(CT)	-0.01	1	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 28 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=0-3-0, 5=0-1-8  
 Max Horiz 1=93 (LC 13)  
 Max Uplift 1=-103 (LC 10), 5=-105 (LC 10)  
 Max Grav 1=386 (LC 21), 5=354 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-125/139, 2-3=-51/65, 3-4=-40/61, 4-5=-198/215  
 BOT CHORD 1-7=-165/124, 6-7=-30/44, 5-6=-30/44  
 WEBS 3-6=-77/44, 2-7=-75/43

**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) 0-0-0 to 3-0-8, Interior (1) 3-0-8 to 3-10-12, Exterior(2E) 3-10-12 to 6-10-12 zone; cantilever left and right exposed; 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
- 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 studs spaced at 2-0-0 oc.
- 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) Bearings are assumed to be: , Joint 5 SP No.3 crushing capacity of 565 psi.
- 9) Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 10) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
- 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. 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



March 4, 2024

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818 Soundside Road  
 Edenton, NC 27932

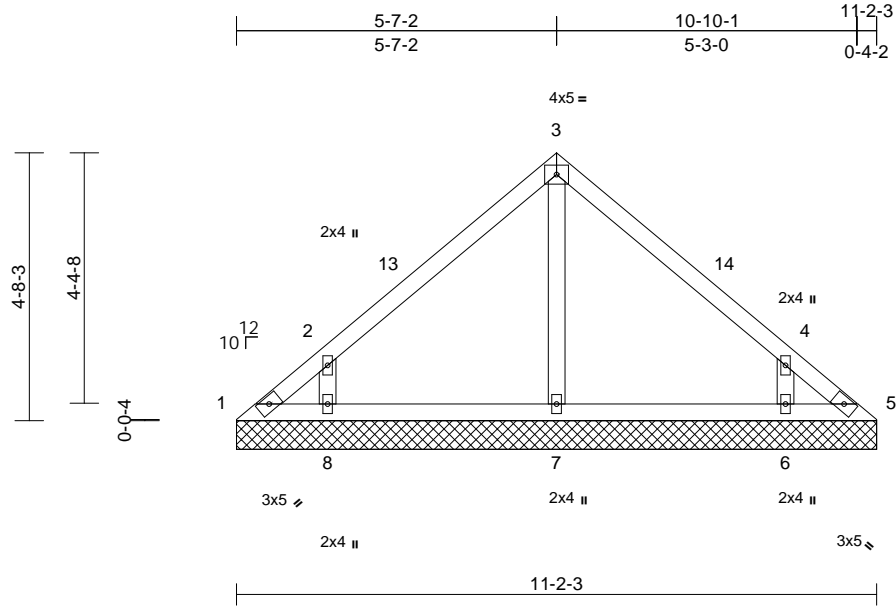


Job 24020103	Truss V1	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986062
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:43:40  
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Page: 1



Scale = 1:40.3

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.32	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	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 45 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** All bearings 11-2-3.

(lb) - Max Horiz 1=105 (LC 13)  
Max Uplift All uplift 100 (lb) or less at joint(s)  
1, 5 except 6=135 (LC 15), 8=139 (LC 14)  
Max Grav All reactions 250 (lb) or less at joint (s)  
1, 5 except 6=446 (LC 21), 7=251 (LC 21), 8=446 (LC 20)

**FORCES**

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

**WEBS**

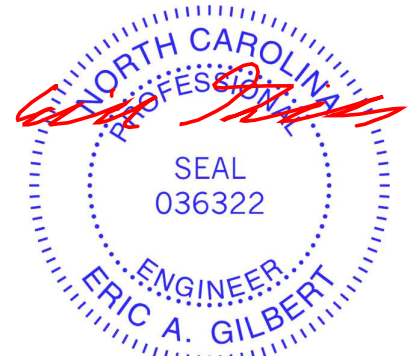
2-8=447/252, 4-6=447/252

**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 8-2-8, Exterior(2E) 8-2-8 to 11-2-8 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.
- 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 100 lb uplift at joint(s) 1, 5 except (jt=lb) 8=138, 6=134.
- 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



March 4, 2024

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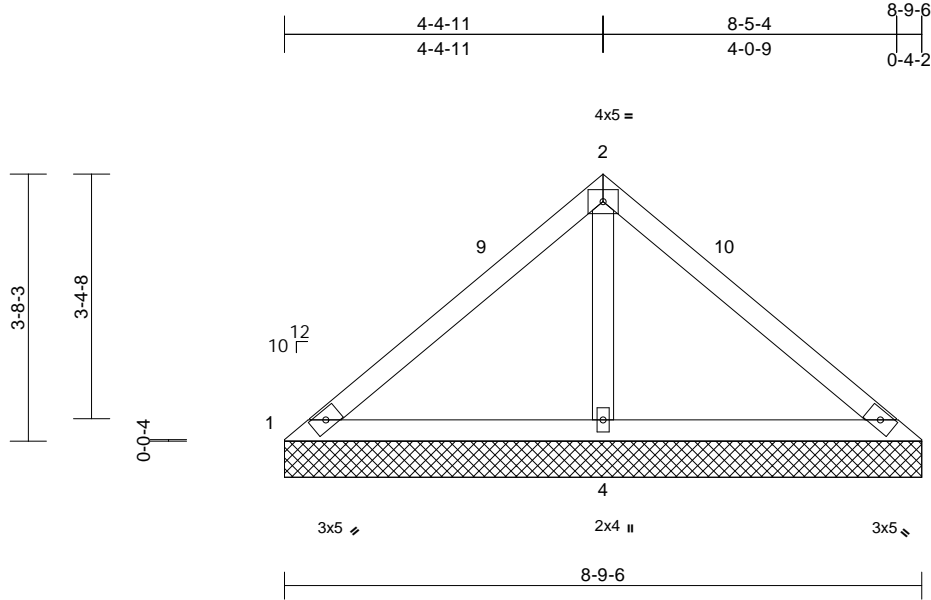
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss V2	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986063
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



<b>Scale = 1:31.8</b>					
<b>Loading</b> (psf)	<b>Spacing</b> 2-0-0	<b>CSI</b>	<b>DEFL</b> in (loc) l/defl L/d	<b>PLATES</b>	<b>GRIP</b>
TCLL (roof) 20.0	Plate Grip DOL 1.15	TC 0.42	Vert(LL) n/a - n/a 999	MT20	244/190
Snow (Pf) 20.0	Lumber DOL 1.15	BC 0.39	Vert(TL) n/a - n/a 999		
TCDL 10.0	Rep Stress Incr YES	WB 0.15	Horiz(TL) 0.00 4 n/a n/a		
BCLL 0.0*	Code IRC2018/TPI2014	Matrix-MP			
BCDL 10.0				Weight: 33 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 8-9-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

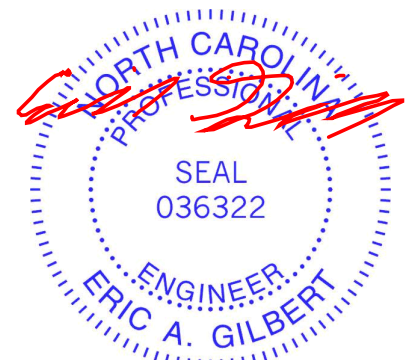
**REACTIONS** (lb/size) 1=22/8-9-6, 3=22/8-9-6, 4=659/8-9-6  
Max Horiz 1=-82 (LC 10)  
Max Uplift 1=-50 (LC 21), 3=-50 (LC 20), 4=-109 (LC 14)  
Max Grav 1=76 (LC 20), 3=76 (LC 21), 4=710 (LC 20)

**FORCES** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD 1-2=-132/329, 2-3=-132/329  
WEBS 2-4=-532/266

**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 5-9-11, Exterior(2E) 5-9-11 to 8-9-11 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.

- 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



March 4, 2024

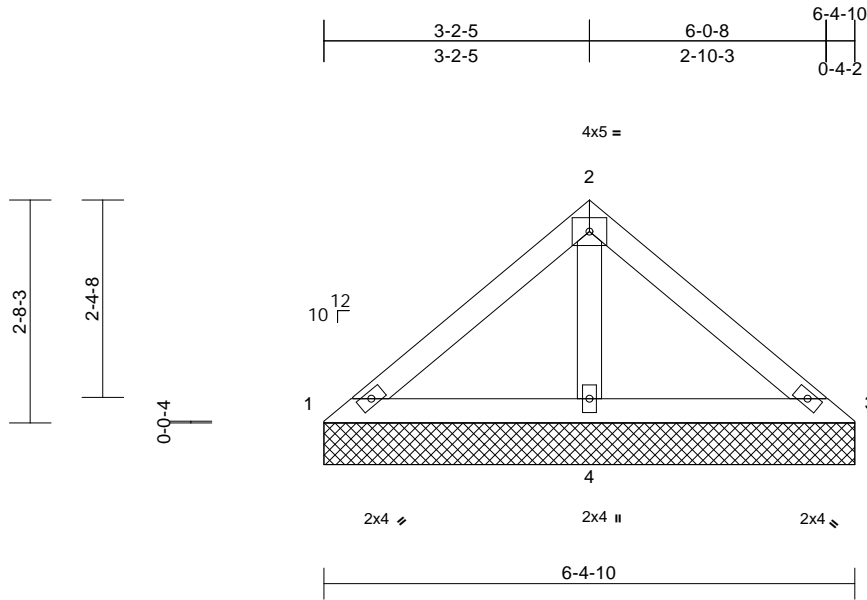
Job 24020103	Truss V3	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986064
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:44:04

Page: 1

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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	0.18	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.20	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.07	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 23 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 6-4-10 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

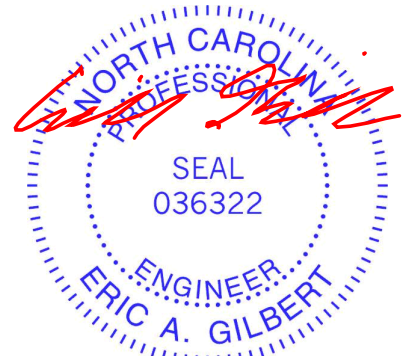
**REACTIONS** (lb/size) 1=47/6-4-10, 3=47/6-4-10, 4=417/6-4-10  
Max Horiz 1=-58 (LC 10)  
Max Uplift 1=-2 (LC 21), 3=-3 (LC 10), 4=-57 (LC 14)  
Max Grav 1=101 (LC 20), 3=101 (LC 21), 4=440 (LC 20)

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

**WEBS** 2-4=-301/162

- 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 2 lb uplift at joint 1, 3 lb uplift at joint 3 and 57 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) 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



March 4, 2024

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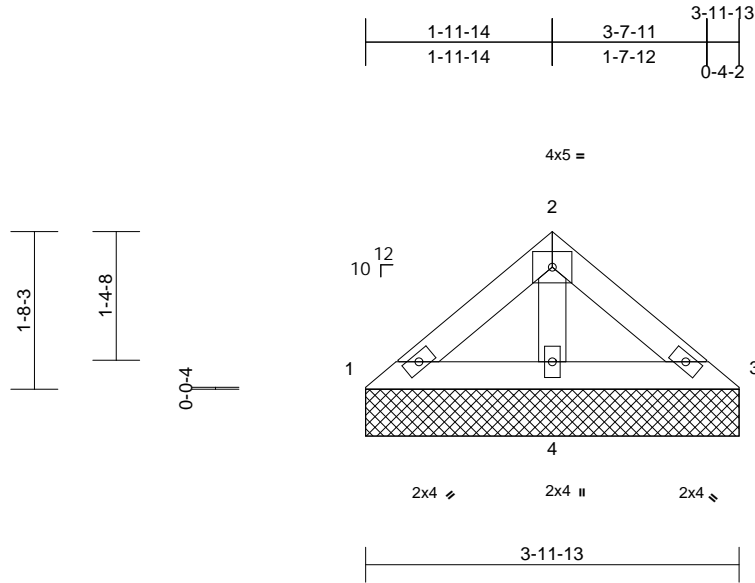
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss V4	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	I63986065
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:43  
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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	0.05	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.07	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horiz(TL)	0.00	4	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  
OTHERS 2x4 SP No.3

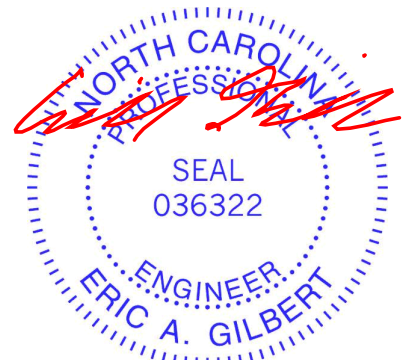
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-11-13 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=3-11-13, 3=3-11-13, 4=3-11-13  
Max Horiz 1=-35 (LC 12)  
Max Uplift 1=-1 (LC 14), 3=-8 (LC 15), 4=-23 (LC 14)  
Max Grav 1=77 (LC 20), 3=77 (LC 21), 4=225 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-69/70, 2-3=-69/70  
BOT CHORD 1-4=-55/65, 3-4=-55/65  
WEBS 2-4=-126/62

- 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 1 lb uplift at joint 1, 8 lb uplift at joint 3 and 23 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) 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



March 4, 2024

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

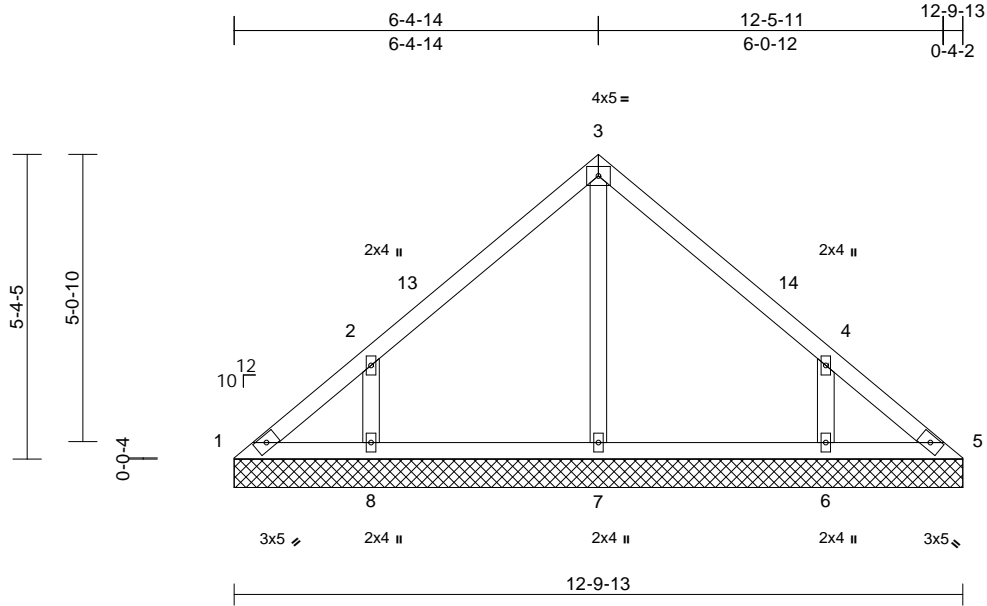
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss V5	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986066
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:43  
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Page: 1



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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	0.32	Vert(LL)	n/a	-	n/a	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	5	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 54 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=12-9-13, 5=12-9-13, 6=12-9-13, 7=12-9-13, 8=12-9-13  
Max Horiz 1=-121 (LC 10)  
Max Uplift 1=-29 (LC 10), 6=-140 (LC 15), 8=-144 (LC 14)  
Max Grav 1=105 (LC 24), 5=82 (LC 23), 6=435 (LC 21), 7=271 (LC 20), 8=435 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-131/107, 2-3=-207/116, 3-4=-207/116, 4-5=-103/66  
BOT CHORD 1-8=-38/96, 7-8=-38/80, 6-7=-38/80, 5-6=-38/80  
WEBS 3-7=-186/0, 2-8=-382/202, 4-6=-382/202

**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, Interior (1) 3-0-5 to 3-5-3, Exterior(2R) 3-5-3 to 9-5-3, Interior (1) 9-5-3 to 9-10-2, Exterior(2E) 9-10-2 to 12-10-2 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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 29 lb uplift at joint 1, 144 lb uplift at joint 8 and 140 lb uplift at joint 6.
- 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



March 4, 2024

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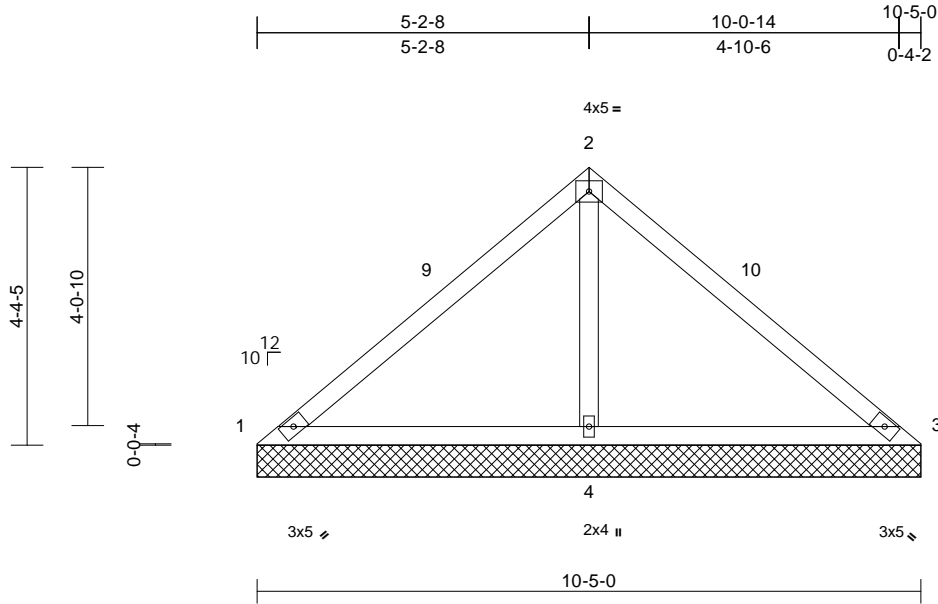
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss V6	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986067
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:43  
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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	0.54	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.50	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.24	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 40 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 10-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

#### REACTIONS

(size) 1=10-5-0, 3=10-5-0, 4=10-5-0  
Max Horiz 1=-98 (LC 12)  
Max Uplift 1=-69 (LC 21), 3=-69 (LC 20), 4=-127 (LC 14)  
Max Grav 1=90 (LC 20), 3=90 (LC 21), 4=870 (LC 20)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

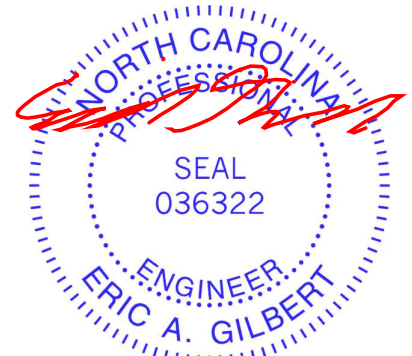
TOP CHORD 1-2=-133/431, 2-3=-133/431  
BOT CHORD 1-4=-245/189, 3-4=-245/189  
WEBS 2-4=-681/298

#### 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 7-5-5, Exterior(2E) 7-5-5 to 10-5-5 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.
- 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 69 lb uplift at joint 1, 69 lb uplift at joint 3 and 127 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



March 4, 2024

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A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

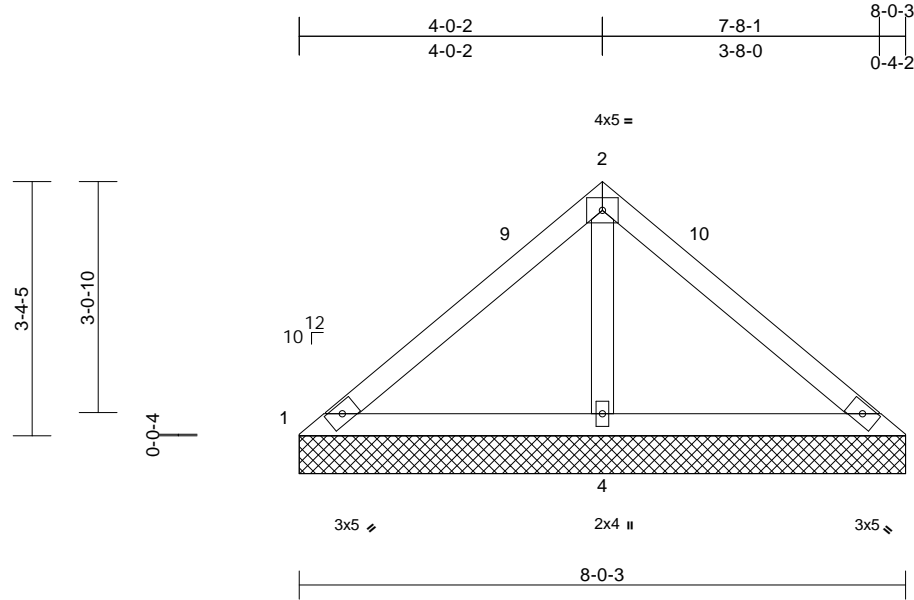
Job 24020103	Truss V7	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986068
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 E Dec 13 2023 Print: 8.630 E Dec 13 2023 MiTek Industries, Inc. Mon Mar 04 07:44:24

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Scale = 1:30.5

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	0.33	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.11	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 30 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 8-0-3 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(lb/size) 1=33/8-0-3, 3=33/8-0-3,  
 4=576/8-0-3  
 Max Horiz 1=-74 (LC 10)  
 Max Uplift 1=-34 (LC 21), 3=-34 (LC 20),  
 4=-91 (LC 14)  
 Max Grav 1=105 (LC 20), 3=105 (LC 21),  
 4=625 (LC 20)

**FORCES**

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

TOP CHORD 1-2=-110/281, 2-3=-110/281

WEBS 2-4=-458/233

**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 5-0-8, Exterior(2E) 5-0-8 to 8-0-8 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.
- 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 34 lb uplift at joint 1, 34 lb uplift at joint 3 and 91 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



March 4, 2024

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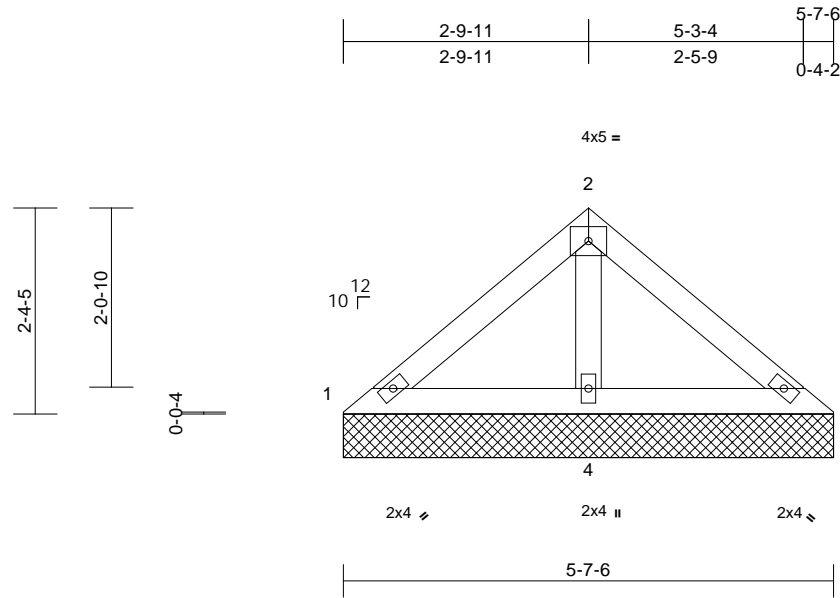
818 Soundside Road  
 Edenton, NC 27932

Job 24020103	Truss V8	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986069
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:44  
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Page: 1



Scale = 1:26.4

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	0.13	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.15	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horiz(TL)	0.00	4	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  
OTHERS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-7-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=5-7-6, 3=5-7-6, 4=5-7-6  
Max Horiz 1=51 (LC 11)  
Max Uplift 3=-5 (LC 15), 4=-44 (LC 14)  
Max Grav 1=96 (LC 20), 3=96 (LC 21), 4=364 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-86/138, 2-3=-86/138  
BOT CHORD 1-4=-104/110, 3-4=-104/110  
WEBS 2-4=-239/130

**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) 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.
- 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 5 lb uplift at joint 3 and 44 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



March 4, 2024

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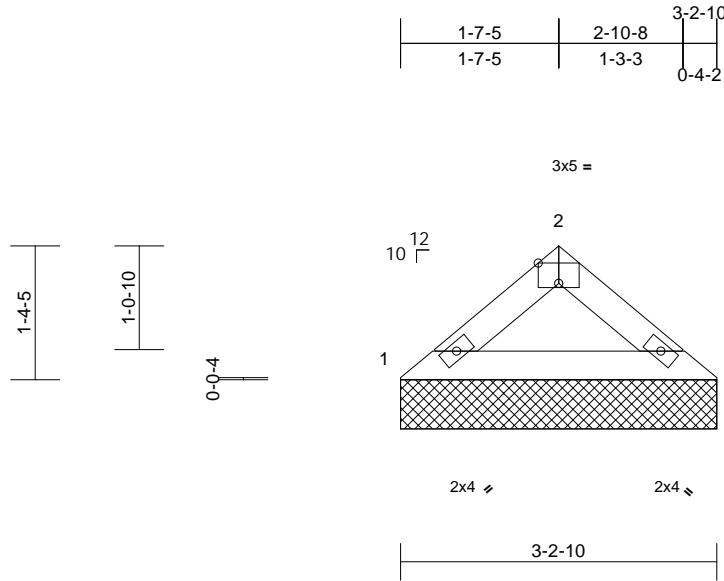


Job	Truss	Truss Type	Qty	Ply	131 SERENITY - 327-A	163986070
24020103	V9	Valley	1	1	Job Reference (optional)	

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

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:44  
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Page: 1



Scale = 1:23.4

Plate Offsets (X, Y): [2:0-2-8,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	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.07	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: 10 lb	FT = 20%	

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-2-10 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 1=3-2-10, 3=3-2-10  
Max Horiz 1=-27 (LC 12)  
Max Uplift 1=-11 (LC 14), 3=-11 (LC 15)  
Max Grav 1=149 (LC 20), 3=149 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-189/76, 2-3=-189/76  
BOT CHORD 1-3=-45/137

#### 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) 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.
- 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 11 lb uplift at joint 1 and 11 lb uplift at joint 3.
- 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



March 4, 2024

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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))

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

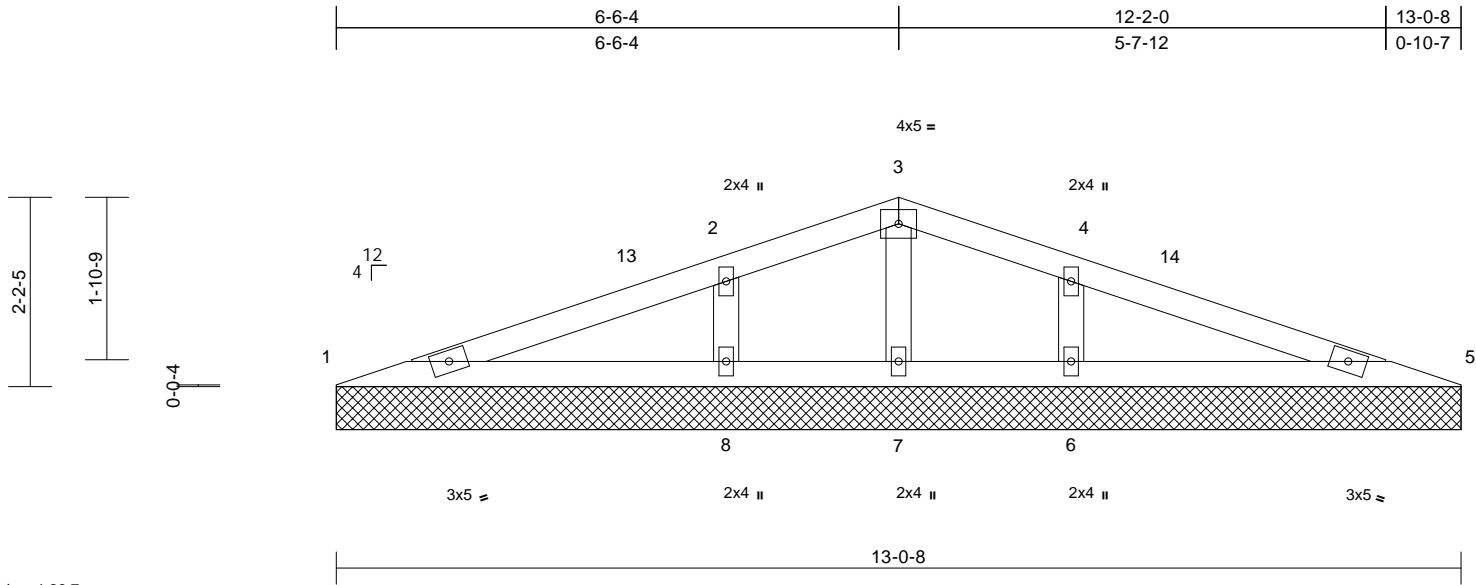
818 Soundside Road  
Edenton, NC 27932

Job 24020103	Truss V10	Truss Type Valley	Qty 1	Ply 1	131 SERENITY - 327-A Job Reference (optional)	163986071
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:45  
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Scale = 1:26.7

Loading (psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	Plate Grip DOL	1.15	TC	0.27	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	Lumber DOL	1.15	BC	0.25	Vert(TL)	n/a	-	n/a	999		
TCDL	Rep Stress Incr	YES	WB	0.06	Horiz(TL)	0.00	8	n/a	n/a		
BCLL	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL										Weight: 42 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 10-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=13-0-8, 5=13-0-8, 6=13-0-8,  
7=13-0-8, 8=13-0-8  
Max Horiz 1=31 (LC 18)  
Max Uplift 1=-14 (LC 10), 5=-18 (LC 15),  
6=-70 (LC 15), 8=-71 (LC 14)  
Max Grav 1=147 (LC 20), 5=147 (LC 21),  
6=472 (LC 21), 7=133 (LC 21),  
8=472 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-235/258, 2-3=-25/206, 3-4=-25/206,  
4-5=-235/258  
BOT CHORD 1-8=-192/213, 7-8=-192/136, 6-7=-192/136,  
5-6=-192/213  
WEBS 3-7=-168/82, 2-8=-317/196, 4-6=-317/196

**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 Corner(3E) 0-1-12 to 3-1-12, Exterior(2N) 3-1-12 to 3-8-0, Corner(3R) 3-8-0 to 9-8-0, Exterior(2N) 9-8-0 to 10-2-4, Corner(3E) 10-2-4 to 13-2-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 3) 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 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 14 lb uplift at joint 1, 18 lb uplift at joint 5, 71 lb uplift at joint 8 and 70 lb uplift at joint 6.
- 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



March 4, 2024

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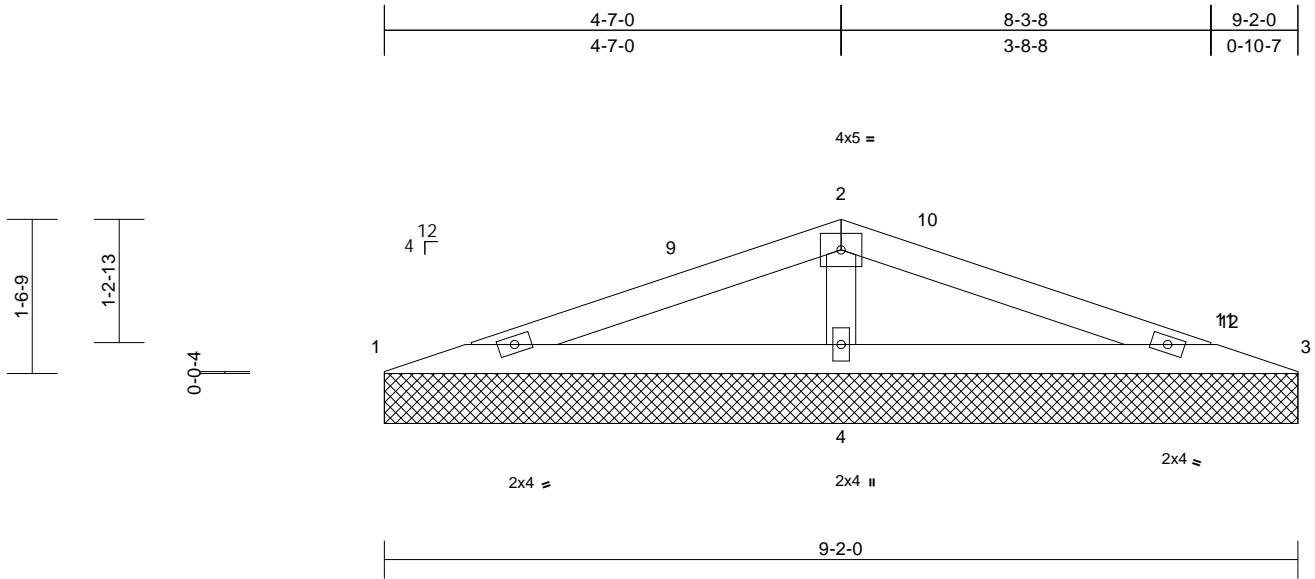
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	131 SERENITY - 327-A	I63986072
24020103	V11	Valley	1	1	Job Reference (optional)	

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

Run: 8.92 S 8.63 Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Fri Mar 01 13:09:45  
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Scale = 1:23.1

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	0.27	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.30	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-MSH								
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 9-2-0 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

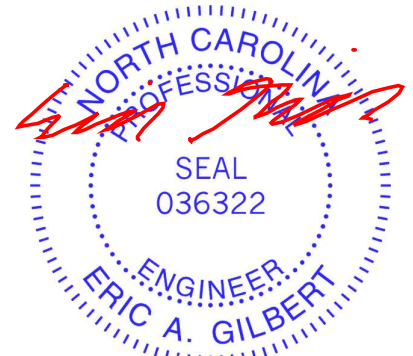
**REACTIONS** (size) 1=9-2-0, 3=9-2-0, 4=9-2-0  
 Max Horiz 1=27 (LC 14)  
 Max Uplift 1=-19 (LC 14), 3=-5 (LC 15), 4=-51 (LC 10)  
 Max Grav 1=143 (LC 20), 3=84 (LC 21), 4=558 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-221/314, 2-3=-174/309  
 BOT CHORD 1-4=-252/200, 3-4=-252/182  
 WEBS 2-4=-390/290

**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) 0-0-12 to 3-0-12, Exterior (2R) 3-0-12 to 5-4-11, Exterior(2E) 5-4-11 to 8-4-11 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.

- 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 19 lb uplift at joint 1, 5 lb uplift at joint 3 and 51 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



March 4, 2024

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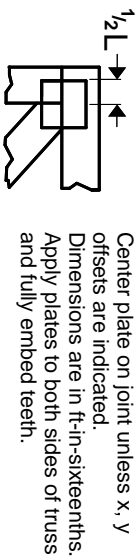
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall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



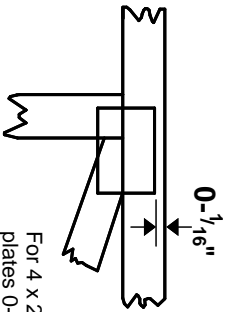
818 Soundside Road  
 Edenton, NC 27932

# 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-  $\frac{1}{16}$ \" 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

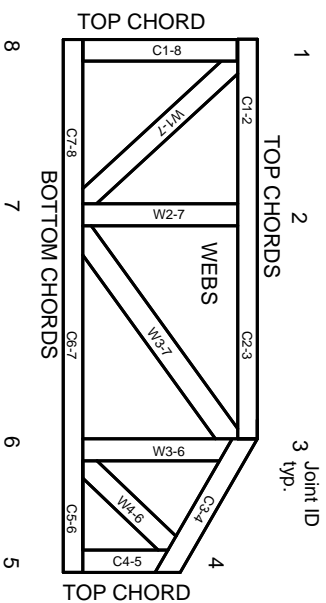


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## 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 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.