

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 24040186-01  
133 Serenity-Roof-B330 B COP BNS GLH

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: I65567105 thru I65567149

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

North Carolina COA: C-0844



May 14, 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.

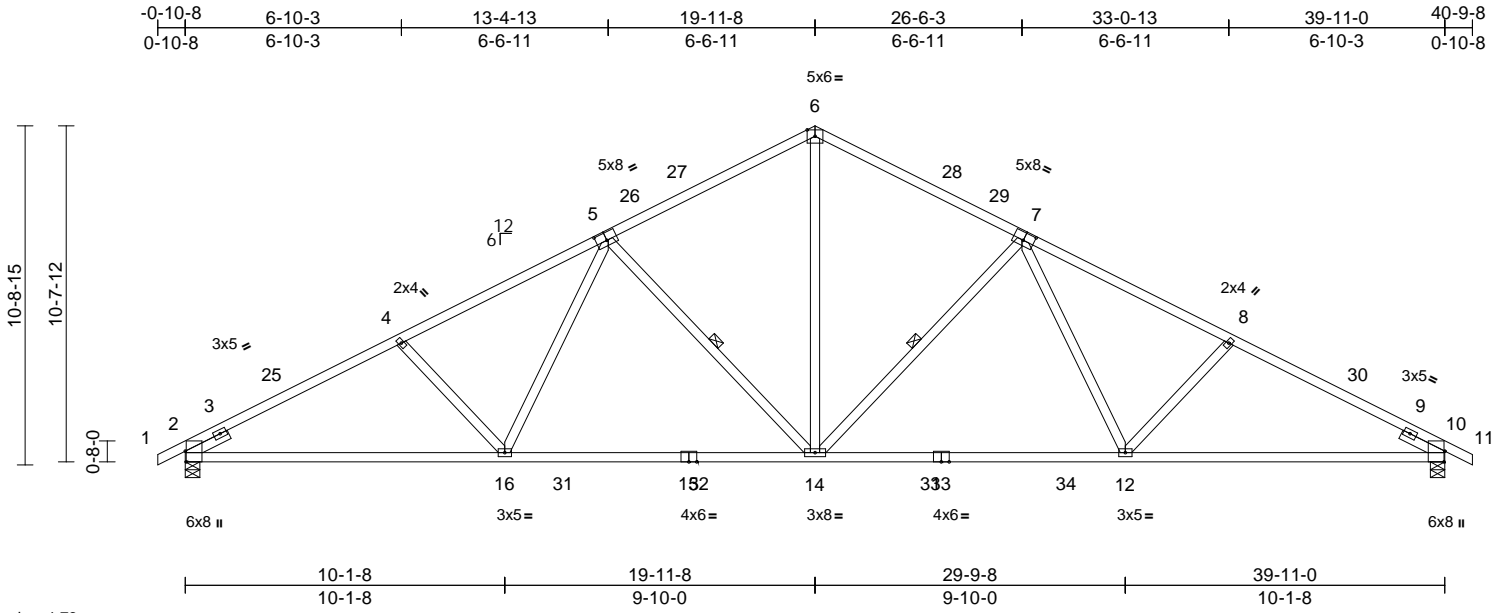
Job 24040186-01	Truss A	Truss Type Common	Qty 4	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567105
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:46

Page: 1

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Scale = 1:73

Plate Offsets (X, Y): [2:0-4-1,Edge], [5:0-4-0,0-3-0], [7:0-4-0,0-3-0], [10:0-4-1,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	0.99	Vert(LL)	-0.37	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.64	12-14	>751	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.40	Horz(CT)	0.14	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 213 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2 \*Except\* 1-5,7-11:2x4 SP No.1  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 14-6:2x4 SP No.2  
 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 2-2-0 oc bracing.

WEBS 1 Row at midpt 7-14, 5-14

**REACTIONS**

(size) 2=0-5-8, 10=0-5-8  
 Max Horiz 2=165 (LC 14), 10=-170 (LC 15)  
 Max Uplift 2=-170 (LC 14), 10=-190/2516,  
 Max Grav 2=1805 (LC 3), 10=1805 (LC 3)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-3423/320, 4-6=-3218/333,  
 6-8=-3218/333, 8-10=-3423/320, 10-11=0/233  
 BOT CHORD 2-16=-329/2971, 14-16=-190/2516,  
 12-14=-108/2516, 10-12=-184/2971  
 WEBS 6-14=-116/1657, 7-14=-850/247,  
 7-12=-26/626, 8-12=-301/191,  
 5-14=-850/247, 5-16=-25/626, 4-16=-301/191

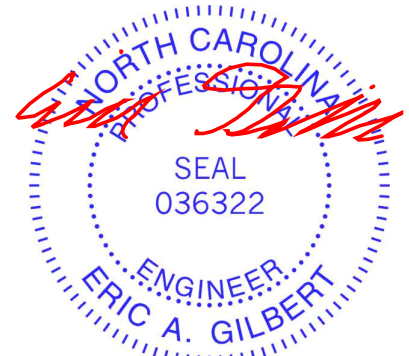
**NOTES**

- 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 3-1-6, Interior (1) 3-1-6 to 15-11-10, Exterior(2R) 15-11-10 to 23-11-6, Interior (1) 23-11-6 to 36-9-10, Exterior(2E) 36-9-10 to 40-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

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, with BCDL = 10.0psf.
- 8) 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.
- 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



May 14, 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)



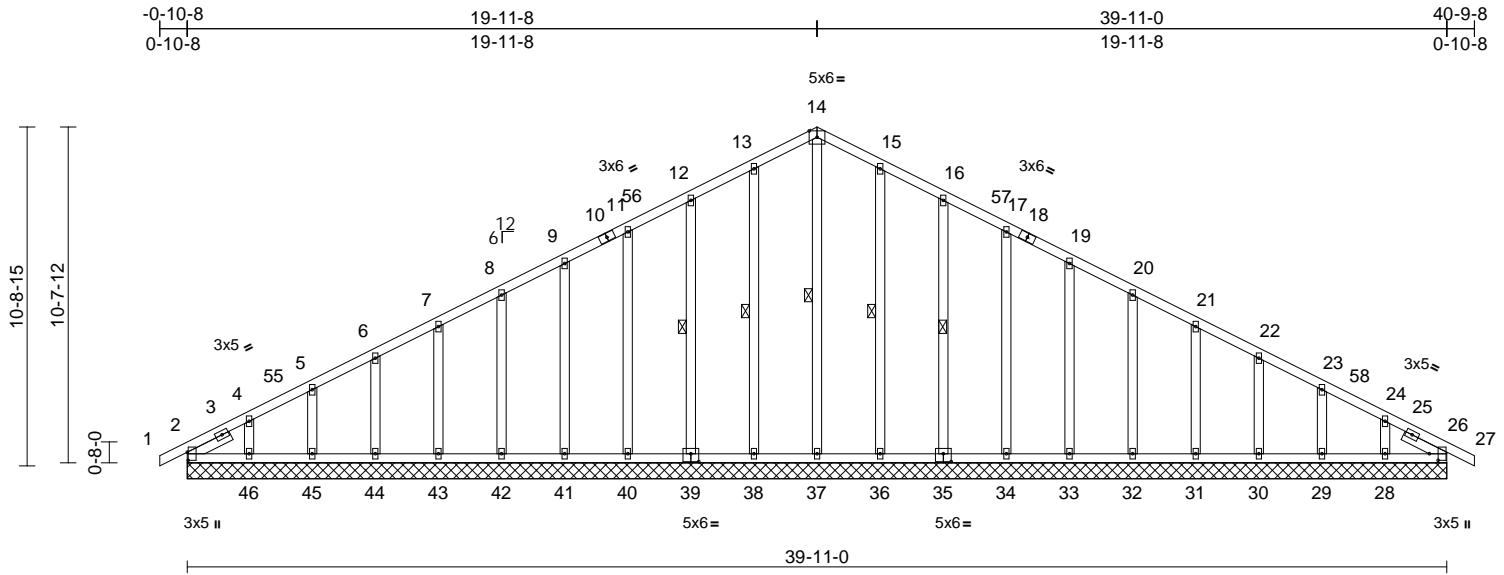
818 Soundside Road  
 Edenton, NC 27932

Job 24040186-01	Truss AGE	Truss Type Common Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567106
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:47  
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Page: 1



Scale = 1:73  
Plate Offsets (X, Y): [2:0-3-1,0-0-5], [26:0-2-8,0-3-5], [35:0-3-0,0-3-0], [39:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	26	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 285 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3 \*Except\* 37-14:2x4 SP No.2  
SLIDER Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 14-37, 13-38, 12-39, 15-36, 16-35

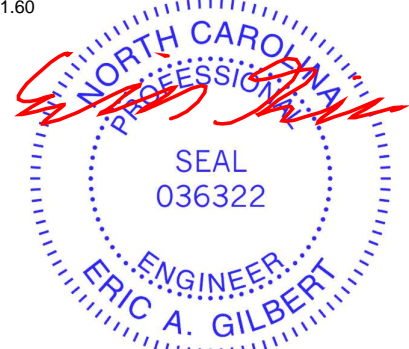
**REACTIONS** (size)  
Max Horiz 2=-165 (LC 15), 51=-165 (LC 15)  
Max Uplift 2=-21 (LC 10), 28=-80 (LC 15), 29=-37 (LC 15), 30=-46 (LC 15), 31=-43 (LC 15), 32=-44 (LC 15), 33=-44 (LC 15), 34=-43 (LC 15), 35=-48 (LC 15), 36=-36 (LC 15), 38=-39 (LC 14), 39=-47 (LC 14), 40=-43 (LC 14), 41=-44 (LC 14), 42=-44 (LC 14), 43=-43 (LC 14), 44=-46 (LC 14), 45=-34 (LC 14), 46=-96 (LC 14), 51=-21 (LC 10)

Max Grav 2=161 (LC 27), 26=138 (LC 22), 28=158 (LC 37), 29=160 (LC 22), 30=160 (LC 37), 31=160 (LC 1), 32=161 (LC 22), 33=160 (LC 37), 34=180 (LC 22), 35=232 (LC 22), 36=245 (LC 22), 37=201 (LC 28), 38=245 (LC 21), 39=232 (LC 21), 40=180 (LC 21), 41=160 (LC 36), 42=161 (LC 21), 43=160 (LC 1), 44=160 (LC 36), 45=160 (LC 21), 46=158 (LC 36), 47=138 (LC 22), 51=161 (LC 27)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-216/79, 4-5=-168/81, 5-6=-129/94, 6-7=-96/107, 7-8=-74/130, 8-9=-61/154, 9-11=-72/177, 11-12=-84/221, 12-13=-103/269, 13-14=-120/309, 14-15=-120/309, 15-16=-103/269, 16-17=-84/221, 17-19=-72/176, 19-20=-60/131, 20-21=-48/86, 21-22=-44/40, 22-23=-66/27, 23-24=-100/35, 24-26=-144/59, 26-27=0/23  
BOT CHORD 2-46=-44/167, 45-46=-44/167, 44-45=-44/167, 43-44=-44/167, 42-43=-44/167, 41-42=-44/167, 40-41=-44/167, 38-40=-44/167, 37-38=-44/167, 36-37=-44/167, 34-36=-44/167, 33-34=-44/167, 32-33=-44/167, 31-32=-44/167, 30-31=-44/167, 29-30=-44/167, 28-29=-44/167, 26-28=-44/167

**WEBS** 14-37=-204/45, 13-38=-205/66, 12-39=-192/83, 11-40=-140/76, 9-41=-126/77, 8-42=-126/77, 7-43=-126/77, 6-44=-126/77, 5-45=-126/81, 4-46=-129/135, 15-36=-205/66, 16-35=-192/83, 17-34=-140/76, 19-33=-126/77, 20-32=-126/77, 21-31=-126/77, 22-30=-126/77, 23-29=-126/81, 24-28=-129/135

**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) -0-10-8 to 3-1-6, Exterior(2N) 3-1-6 to 15-11-8, Corner(3R) 15-11-8 to 23-11-8, Exterior(2N) 23-11-8 to 36-9-10, Corner(3E) 36-9-10 to 40-9-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



May 14, 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.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPH Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	133 Serenity-Roof-B330 B COP BNS GLH
24040186-01	AGE	Common Supported Gable	1	1	I65567106
					Job Reference (optional)

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

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:47  
ID:94aeZ53wRfHxaJ4LIBSgWSzF\_tZ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 2

- 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 7) All plates are 2x4 MT20 unless otherwise indicated.
- 8) Gable requires continuous bottom chord bearing.
- 9) Gable studs spaced at 2-0-0 oc.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 21 lb uplift at joint 2, 39 lb uplift at joint 38, 47 lb uplift at joint 39, 43 lb uplift at joint 40, 44 lb uplift at joint 41, 44 lb uplift at joint 42, 43 lb uplift at joint 43, 46 lb uplift at joint 44, 34 lb uplift at joint 45, 96 lb uplift at joint 46, 36 lb uplift at joint 36, 48 lb uplift at joint 35, 43 lb uplift at joint 34, 44 lb uplift at joint 33, 44 lb uplift at joint 32, 43 lb uplift at joint 31, 46 lb uplift at joint 30, 37 lb uplift at joint 29, 80 lb uplift at joint 28 and 21 lb uplift at joint 2.
- 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

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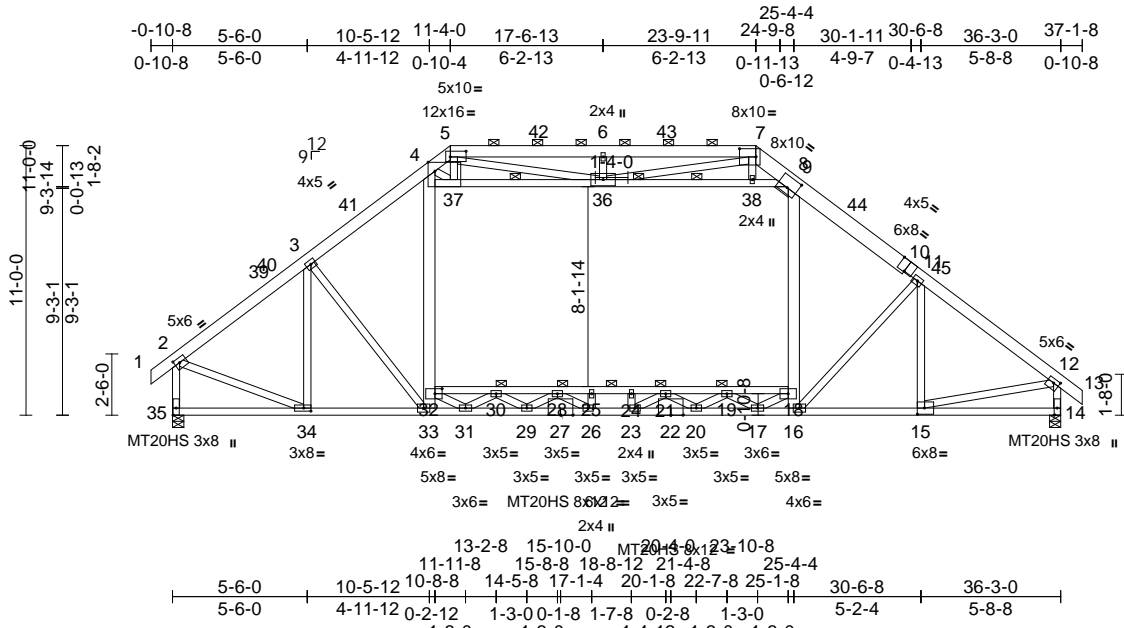
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss B	Truss Type Attic	Qty 3	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567107
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:47  
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Page: 1

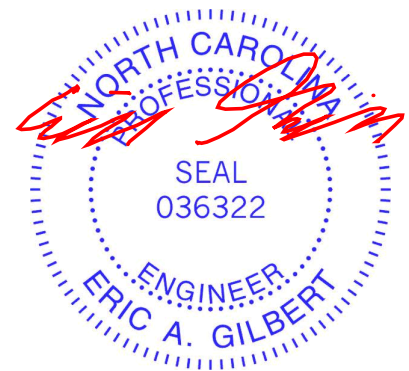


Scale = 1:94  
Plate Offsets (X, Y): [2:0-2-8,0-2-4], [4:0-3-5,Edge], [5:0-7-12,0-2-12], [7:0-8-0,0-4-0], [9:0-5-0,0-5-4], [10:0-4-0,Edge], [12:0-2-12,0-2-0], [15:0-3-8,0-3-0], [32:0-3-8,0-2-8], [34:0-3-8,0-1-8]

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	0.48	Vert(LL)	-0.29	18-19	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.98	Vert(CT)	-0.51	19-21	>853	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.97	Horz(CT)	0.10	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.23	18-32	>788	360		
BCDL	10.0											
											Weight: 356 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x6 SP No.2 \*Except\* 7-10:2x8 SP 2400F 2.0E, 8-9:2x4 SP No.2
- BOT CHORD 2x4 SP No.1 \*Except\* 32-18:2x4 SP No.2, 27-22:2x4 SP 2400F 2.0E
- WEBS 2x4 SP No.3 \*Except\* 4-33,9-16:2x6 SP No.2, 4-8:2x4 SP No.2
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 4-3-14 oc purlins, except end verticals, and 2-0-0 oc purlins (4-0-4 max.): 5-7.
- BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
- WEBS 1 Row at midpt 4-36, 8-36
- JOINTS 1 Brace at Jt(s): 19, 30, 21, 28, 36
- REACTIONS** (size) 14=0-5-8, 35=0-5-8  
Max Horiz 35=-292 (LC 12)  
Max Grav 14=2181 (LC 48), 35=2204 (LC 48)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/37, 2-3=-2487/0, 3-4=-2739/0, 4-5=-1822/67, 5-6=-2761/392, 6-7=-2761/392, 7-8=-1666/270, 8-9=-2209/24, 9-11=-2916/0, 11-12=-2856/0, 12-13=0/37, 2-35=-2394/0, 12-14=-2378/0
- BOT CHORD 34-35=-241/292, 33-34=0/1918, 31-33=-105/1502, 29-31=0/3373, 26-29=0/4561, 23-26=0/4915, 20-23=0/4688, 17-20=0/3769, 16-17=0/1958, 15-16=0/2230, 14-15=-10/144, 30-32=-529/312, 28-30=-2307/0, 25-28=-3245/0, 24-25=-3245/0, 21-24=-3245/0, 19-21=-2513/0, 18-19=-986/85
- WEBS** 3-34=-704/0, 3-33=-88/540, 32-33=-85/187, 4-32=0/913, 16-18=-74/327, 9-18=0/1091, 11-16=-359/288, 11-15=-419/2, 4-37=-1397/10, 36-37=-1137/14, 36-38=-1221/135, 8-38=-1244/133, 2-34=0/1954, 12-15=0/2148, 17-18=0/1302, 31-32=0/1241, 17-19=-1310/0, 30-31=-1422/0, 19-20=0/745, 29-30=0/841, 20-21=-617/0, 28-29=-713/0, 21-23=-49/309, 26-28=0/481, 25-26=-187/0, 23-24=-132/17, 6-36=-548/162, 5-37=0/742, 7-38=0/166, 5-36=-526/1454, 7-36=-503/1316
- 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 2-9-0, Interior (1) 2-9-0 to 7-8-8, Exterior(2R) 7-8-8 to 14-11-8, Interior (1) 14-11-8 to 20-2-3, Exterior(2R) 20-2-3 to 27-5-3, Interior (1) 27-5-3 to 33-6-0, Exterior(2E) 33-6-0 to 37-1-8 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=1.0; 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 MT20 plates unless otherwise indicated.
  - All plates are 3x5 MT20 unless otherwise indicated.

- 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.
  - Ceiling dead load (5.0 psf) on member(s). 8-9, 4-37, 36-37, 36-38, 8-38; Wall dead load (5.0psf) on member (s). 4-32, 9-18
  - Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 30-32, 28-30, 25-28, 24-25, 21-24, 19-21, 18-19
  - 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.
  - Attic room checked for L/360 deflection.
- LOAD CASE(S)** Standard



May 14, 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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**ENGINEERING BY**  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

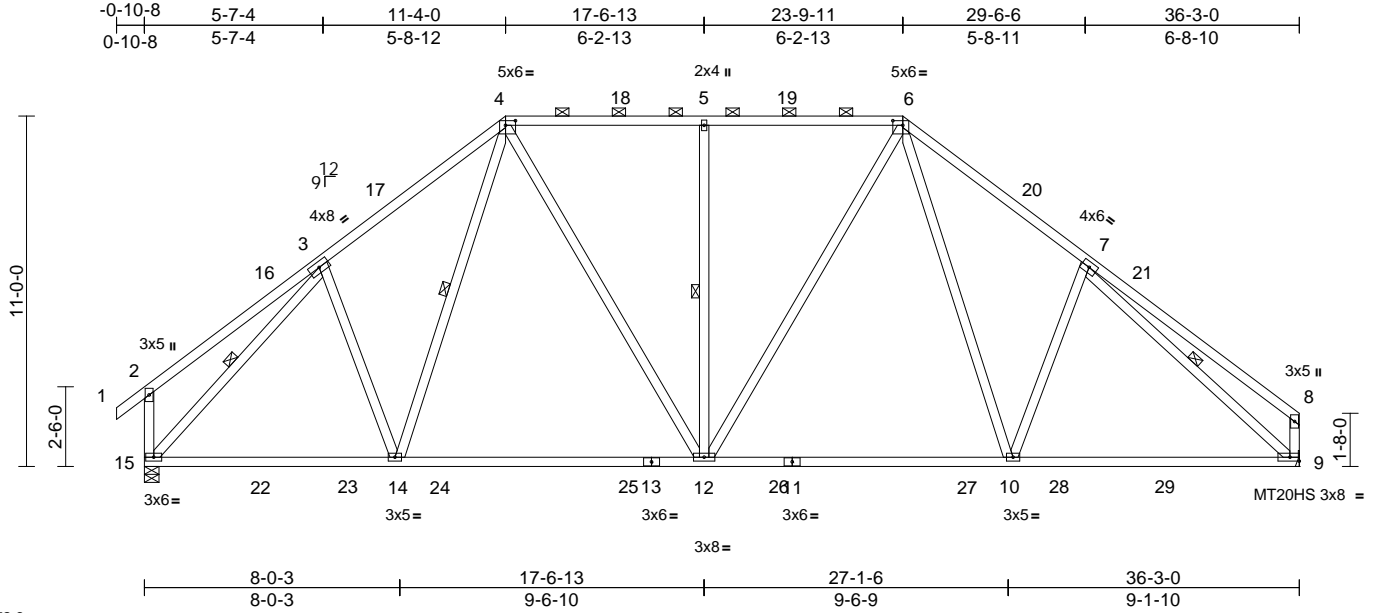


Job 24040186-01	Truss B1	Truss Type Piggyback Base	Qty 5	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567108
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:48  
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Page: 1



Scale = 1:72.3

Plate Offsets (X, Y): [4:0-3-12,0-1-12], [6:0-3-12,0-1-12]

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	0.89	Vert(LL)	-0.24	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.39	12-14	>999	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.88	Horz(CT)	0.07	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 252 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\*  
 14-4,12-4,12-5,12-6,10-6:2x4 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals, and 2-0-0 oc purlins (3-6-12 max.): 4-6.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 3-15, 7-9, 4-14, 5-12

**REACTIONS**

(size) 9= Mechanical, 15=0-5-8  
 Max Horiz 15=283 (LC 12)  
 Max Uplift 9=81 (LC 15), 15=90 (LC 14)  
 Max Grav 9=1713 (LC 47), 15=1770 (LC 47)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/37, 2-3=-244/119, 3-4=-2119/290,  
 4-5=-1872/281, 5-6=-1872/281,  
 6-7=-2314/314, 7-8=-358/145,  
 2-15=-301/133, 8-9=-353/135  
 BOT CHORD 14-15=-191/1491, 12-14=-140/1417,  
 10-12=-36/1485, 9-10=-36/1735  
 WEBS 3-15=-2121/122, 7-9=-2135/76,  
 4-14=-118/474, 3-14=-98/384,  
 4-12=-133/687, 5-12=-687/183,  
 6-12=-142/553, 6-10=-138/698,  
 7-10=-279/270

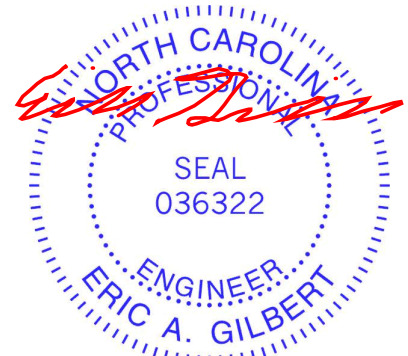
**NOTES**

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 2-9-0, Interior (1) 2-9-0 to 7-8-8, Exterior(2R) 7-8-8 to 14-11-8, Interior (1) 14-11-8 to 20-2-3, Exterior(2R) 20-2-3 to 27-5-3, Interior (1) 27-5-3 to 32-5-12, Exterior(2E) 32-5-12 to 36-1-4 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.
- All plates are MT20 plates unless otherwise indicated.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 81 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 15. This connection is for uplift only and does not consider lateral forces.

- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



May 14, 2024

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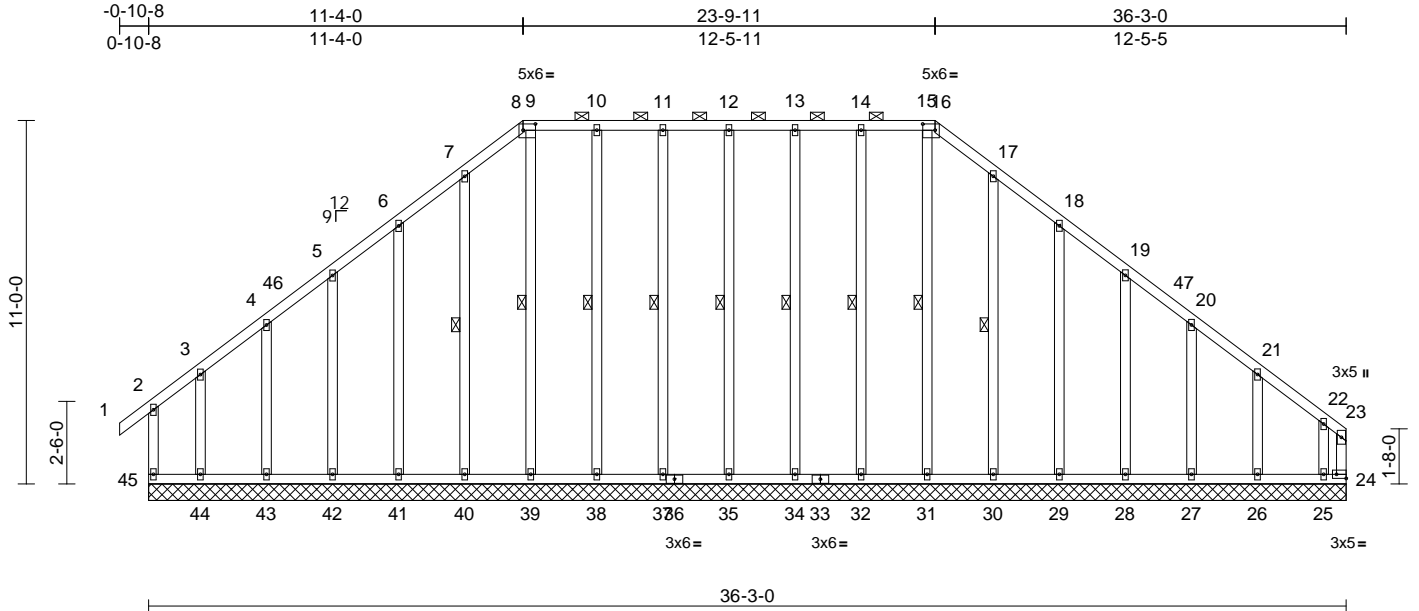
818 Soundside Road  
 Edenton, NC 27932

Job 24040186-01	Truss B1GE	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567109
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:48  
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Page: 1



Scale = 1:69.7

Plate Offsets (X, Y): [8:0-4-8,0-2-4], [16:0-4-8,0-2-4], [24:Edge,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	0.48	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.25	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.24	Horz(CT)	-0.01	24	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 326 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 \*Except\*  
35-12,34-13,32-14,31-15,37-11,38-10,39-9;2x  
4 SP No.2

**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.): 8-16.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc  
bracing.

**WEBS** 1 Row at midpt 12-35, 13-34, 14-32,  
15-31, 17-30, 11-37,  
10-38, 9-39, 7-40

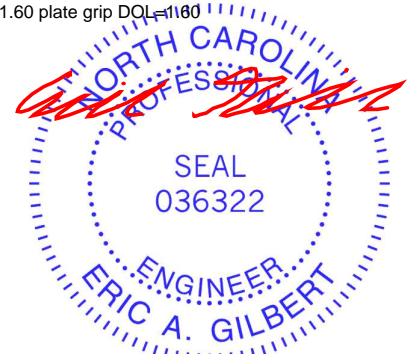
**REACTIONS** (size)  
24=36-3-0, 25=36-3-0, 26=36-3-0,  
27=36-3-0, 28=36-3-0, 29=36-3-0,  
30=36-3-0, 31=36-3-0, 32=36-3-0,  
34=36-3-0, 35=36-3-0, 37=36-3-0,  
38=36-3-0, 39=36-3-0, 40=36-3-0,  
41=36-3-0, 42=36-3-0, 43=36-3-0,  
44=36-3-0, 45=36-3-0  
Max Horiz 45=-283 (LC 12)  
Max Uplift 24=-660 (LC 13), 25=-540 (LC 10),  
26=-64 (LC 15), 27=-68 (LC 15),  
28=-65 (LC 15), 29=-74 (LC 15),  
30=-49 (LC 15), 31=-22 (LC 12),  
32=-34 (LC 11), 34=-26 (LC 11),  
35=-25 (LC 10), 37=-26 (LC 11),  
38=-31 (LC 10), 40=-45 (LC 14),  
41=-75 (LC 14), 42=-68 (LC 14),  
43=-55 (LC 14), 44=-164 (LC 11),  
45=-131 (LC 10)

Max Grav 24=644 (LC 10), 25=634 (LC 13),  
26=169 (LC 26), 27=182 (LC 53),  
28=230 (LC 45), 29=231 (LC 45),  
30=235 (LC 45), 31=228 (LC 54),  
32=238 (LC 40), 34=229 (LC 40),  
35=230 (LC 40), 37=229 (LC 40),  
38=238 (LC 40), 39=213 (LC 54),  
40=235 (LC 43), 41=232 (LC 43),  
42=229 (LC 43), 43=181 (LC 43),  
44=247 (LC 12), 45=202 (LC 53)

**FORCES** (lb) - Maximum Compression/Maximum  
Tension  
TOP CHORD 2-45=-143/83, 1-2=0/37, 2-3=-92/97,  
3-4=-72/113, 4-5=-108/158, 5-6=-145/221,  
6-7=-186/290, 7-8=-215/341, 8-9=-179/297,  
9-10=-179/297, 10-11=-179/297,  
11-12=-179/297, 12-13=-179/297,  
13-14=-179/297, 14-15=-179/297,  
15-16=-179/297, 16-17=-215/341,  
17-18=-186/298, 18-19=-158/255,  
19-20=-177/217, 20-21=-194/204,  
21-22=-217/211, 22-23=-352/351,  
23-24=-353/353  
BOT CHORD 44-45=-202/196, 43-44=-202/196,  
42-43=-202/196, 41-42=-202/196,  
40-41=-202/196, 39-40=-202/196,  
38-39=-202/196, 37-38=-202/196,  
35-37=-202/196, 34-35=-202/196,  
32-34=-202/196, 31-32=-202/196,  
30-31=-202/196, 29-30=-202/196,  
28-29=-202/196, 27-28=-202/196,  
26-27=-202/196, 25-26=-202/196,  
24-25=-202/196

**WEBS** 12-35=-190/49, 13-34=-189/50,  
14-32=-198/58, 15-31=-188/62,  
17-30=-195/73, 18-29=-204/98,  
19-28=-197/90, 20-27=-156/89,  
21-26=-152/96, 22-25=-287/253,  
11-37=-189/50, 10-38=-198/55,  
9-39=-173/40, 7-40=-195/69, 6-41=-204/99,  
5-42=-197/90, 4-43=-161/88, 3-44=-150/121

**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) -0-10-8 to 2-9-0, Exterior(2N) 2-9-0  
to 7-6-13, Corner(3R) 7-6-13 to 14-11-8, Exterior(2N)  
14-11-8 to 20-2-3, Corner(3R) 20-2-3 to 27-6-13,  
Exterior(2N) 27-6-13 to 32-5-12, Corner(3E) 32-5-12 to  
36-1-4 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



May 14, 2024

Continued on page 2

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818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	133 Serenity-Roof-B330 B COP BNS GLH I65567109
24040186-01	B1GE	Piggyback Base Supported Gable	1	1	Job Reference (optional)

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

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:48  
ID:va6oJ\_bKLZdwDLTYr9P9wpzF\_UL-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?

Page: 2

- 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) TCLK: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 5) Unbalanced snow loads have been considered for this design.
- 6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 7) Provide adequate drainage to prevent water ponding.
- 8) All plates are 2x4 MT20 unless otherwise indicated.
- 9) Gable requires continuous bottom chord bearing.
- 10) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- 11) Gable studs spaced at 2-0-0 oc.
- 12) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 13) \* 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.
- 14) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 131 lb uplift at joint 45, 660 lb uplift at joint 24, 25 lb uplift at joint 35, 26 lb uplift at joint 34, 34 lb uplift at joint 32, 22 lb uplift at joint 31, 49 lb uplift at joint 30, 74 lb uplift at joint 29, 65 lb uplift at joint 28, 68 lb uplift at joint 27, 64 lb uplift at joint 26, 540 lb uplift at joint 25, 26 lb uplift at joint 37, 31 lb uplift at joint 38, 45 lb uplift at joint 40, 75 lb uplift at joint 41, 68 lb uplift at joint 42, 55 lb uplift at joint 43 and 164 lb uplift at joint 44.
- 15) 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.
- 16) 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

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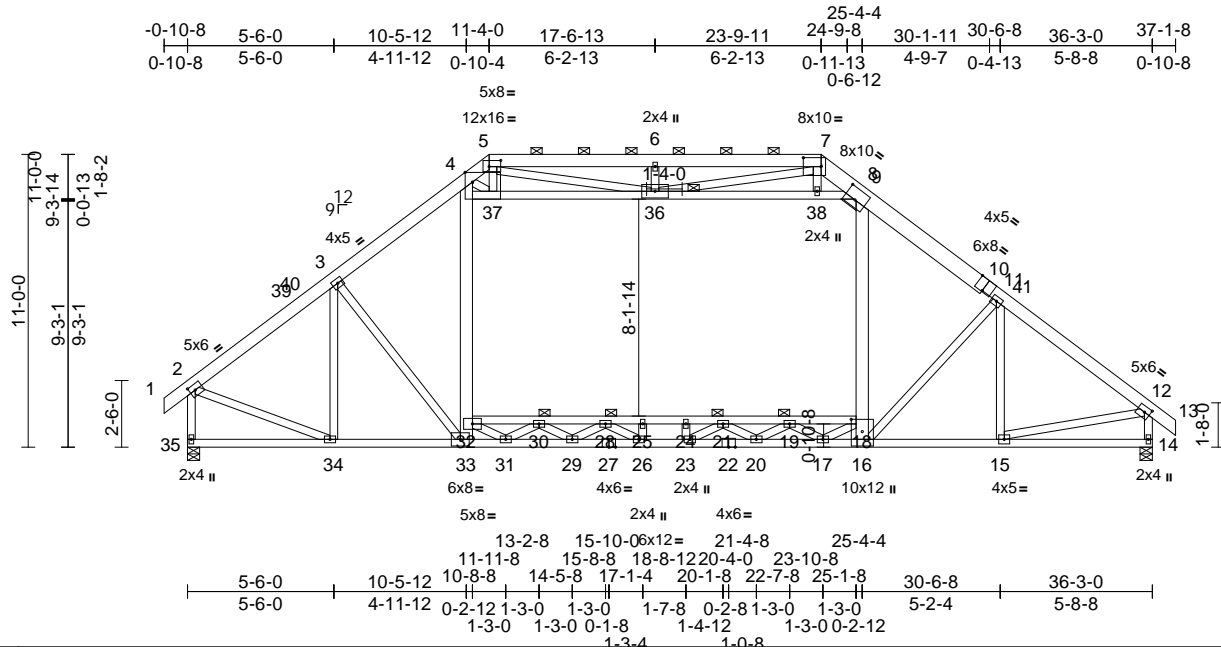


Job 24040186-01	Truss BGR	Truss Type Attic Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567110
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:48  
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Page: 1



Scale = 1:86.6

Plate Offsets (X, Y): [2:0-2-8,0-2-8], [4:0-3-5,Edge], [5:0-5-4,0-2-12], [7:0-8-0,0-4-0], [9:0-5-0,0-5-0], [10:0-4-0,Edge], [12:0-2-8,0-2-8], [18:0-5-8,0-5-0]

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	0.35	Vert(LL)	-0.18	18-19	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.30	19-21	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.60	Horz(CT)	0.06	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.13	18-32	>999	360		
BCDL	10.0											
											Weight: 711 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2 \*Except\* 7-10:2x8 SP 2400F 2.0E, 8-9:2x4 SP No.2  
BOT CHORD 2x4 SP No.1 \*Except\* 32-18:2x4 SP No.2, 22-27:2x4 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 4-33,9-16:2x6 SP No.2, 4-8:2x4 SP No.2

**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.): 5-7.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**JOINTS**  
1 Brace at Jt(s): 19, 30, 21, 28, 36

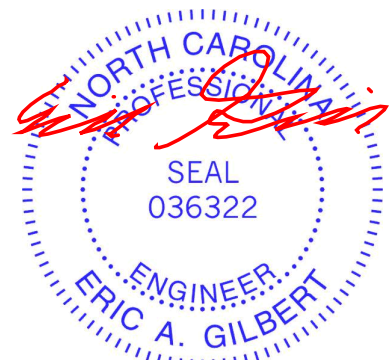
**REACTIONS**  
(size) 14=0-5-8, 35=0-5-8  
Max Horiz 35=292 (LC 10)  
Max Grav 14=2906 (LC 48), 35=2982 (LC 46)

**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/37, 2-3=-3043/0, 3-4=-3405/0, 4-5=-1965/102, 5-6=-2784/417, 6-7=-2784/417, 7-8=-1683/294, 8-9=-2552/46, 9-11=-3617/0, 11-12=-3465/0, 12-13=0/37, 2-35=-2916/0, 12-14=-2846/1  
BOT CHORD 34-35=-237/297, 33-34=-14/2523, 31-33=-171/2261, 29-31=0/4103, 26-29=0/5207, 23-26=0/5594, 20-23=0/5387, 17-20=0/4392, 16-17=0/2616, 15-16=0/2709, 14-15=-12/128, 30-32=-387/399, 28-30=-2203/0, 25-28=-3191/0, 24-25=-3191/0, 21-24=-3191/0, 19-21=-2496/0, 18-19=-1014/88

**WEBS**  
3-34=-900/1, 3-33=-111/797, 32-33=-125/856, 4-32=0/1568, 2-34=0/2454, 16-18=-127/1021, 9-18=0/1784, 11-15=-551/26, 4-37=-2016/108, 36-37=-1656/93, 36-38=-1804/249, 8-38=-1833/249, 17-18=0/1296, 31-32=0/1216, 17-19=-1282/0, 30-31=-1439/0, 19-20=0/721, 29-30=0/858, 20-21=-595/0, 28-29=-732/0, 21-23=-64/284, 26-28=0/524, 25-26=-202/1, 23-24=-126/21, 6-36=-540/161, 5-37=-28/1016, 7-38=0/208, 5-36=-521/1417, 7-36=-500/1296, 11-16=-298/367, 12-15=0/2662

**NOTES**  
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x8 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc, 2x6 - 2 rows staggered at 0-9-0 oc.  
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.  
3) Unbalanced roof live loads have been considered for this design.  
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60

5) 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  
6) Unbalanced snow loads have been considered for this design.  
7) 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.  
8) Provide adequate drainage to prevent water ponding.  
9) All plates are 3x5 MT20 unless otherwise indicated.  
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) Ceiling dead load (5.0 psf) on member(s): 8-9, 4-37, 36-37, 36-38, 8-38; Wall dead load (5.0psf) on member (s): 4-32, 9-18



May 14, 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.**  
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPH Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

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

Job 24040186-01	Truss BGR	Truss Type Attic Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH I65567110 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:48  
ID:HiLQkPKHOQTU5G6uHHvM5iy8nJN-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 2

- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 30-32, 28-30, 25-28, 24-25, 21-24, 19-21, 18-19
- 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.
- 15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 16) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 839 lb down and 71 lb up at 10-5-12, and 839 lb down and 71 lb up at 25-4-4 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
- 17) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-5=-60, 5-7=-60, 7-8=-60, 8-9=-70, 9-12=-60, 12-13=-60, 14-35=-20, 18-32=-30, 4-37=-10, 36-37=-10, 36-38=-10, 8-38=-10  
Drag: 4-32=-10, 9-18=-10  
Concentrated Loads (lb)  
Vert: 33=-450 (F), 16=-450 (F)

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818 Soundside Road  
Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	133 Serenity-Roof-B330 B COP BNS GLH I65567111
24040186-01	BSE	Attic Structural Gable	1	1	Job Reference (optional)

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

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:49  
ID:jfIMlNrRxVpjnpkdD7ldQkzF\_VJ-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?#

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) Provide adequate drainage to prevent water ponding.
- 8) All plates are MT20 plates unless otherwise indicated.
- 9) All plates are 2x4 MT20 unless otherwise indicated.
- 10) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- 11) Gable studs spaced at 2-0-0 oc.
- 12) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 13) \* 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.
- 14) Ceiling dead load (5.0 psf) on member(s). 8-9, 4-42, 41-42, 41-43, 8-43; Wall dead load (5.0psf) on member (s).4-37, 9-23
- 15) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 35-37, 33-35, 30-33, 29-30, 26-29, 24-26, 23-24
- 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.
- 17) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 18) Attic room checked for L/360 deflection.

**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 24040186-01	Truss C	Truss Type Attic	Qty 6	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH I65567112 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Tue May 14 11:23:19  
ID:VP5mnZE7ejTka?ri?H4b3zEzov-CE5cOHxWQEpOHioWZFTThIAGK48LI0sy\_FUyOMxzGbk7

Page: 2

- 6) 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 7) Provide adequate drainage to prevent water ponding.
- 8) All plates are MT20 plates unless otherwise indicated.
- 9) All plates are 3x5 MT20 unless otherwise indicated.
- 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) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-39, 39-42, 40-42, 9-40, 4-41; Wall dead load (5.0psf) on member(s).3-36, 10-17, 29-41, 5-41
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 27-29, 25-27, 23-25, 21-23, 18-21, 17-18, 34-36, 32-34, 29-32
- 14) Refer to girder(s) for truss to truss connections.
- 15) n/a
- 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.
- 17) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 18) Attic room checked for L/360 deflection.

**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 24040186-01	Truss C1	Truss Type Attic	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH I65567113 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:50  
ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

Page: 2

- 6) 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 7) Provide adequate drainage to prevent water ponding.
- 8) All plates are MT20 plates unless otherwise indicated.
- 9) All plates are 3x5 MT20 unless otherwise indicated.
- 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) Ceiling dead load (5.0 psf) on member(s). 3-4, 5-40, 40-43, 41-43, 9-41, 4-42, 9-10; Wall dead load (5.0psf) on member(s).3-37, 10-18, 30-42, 5-42
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 28-30, 26-28, 24-26, 22-24, 19-22, 18-19, 35-37, 33-35, 30-33
- 14) Bearings are assumed to be: , Joint 13 SP No.1 .
- 15) 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.
- 16) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 17) Attic room checked for L/360 deflection.

**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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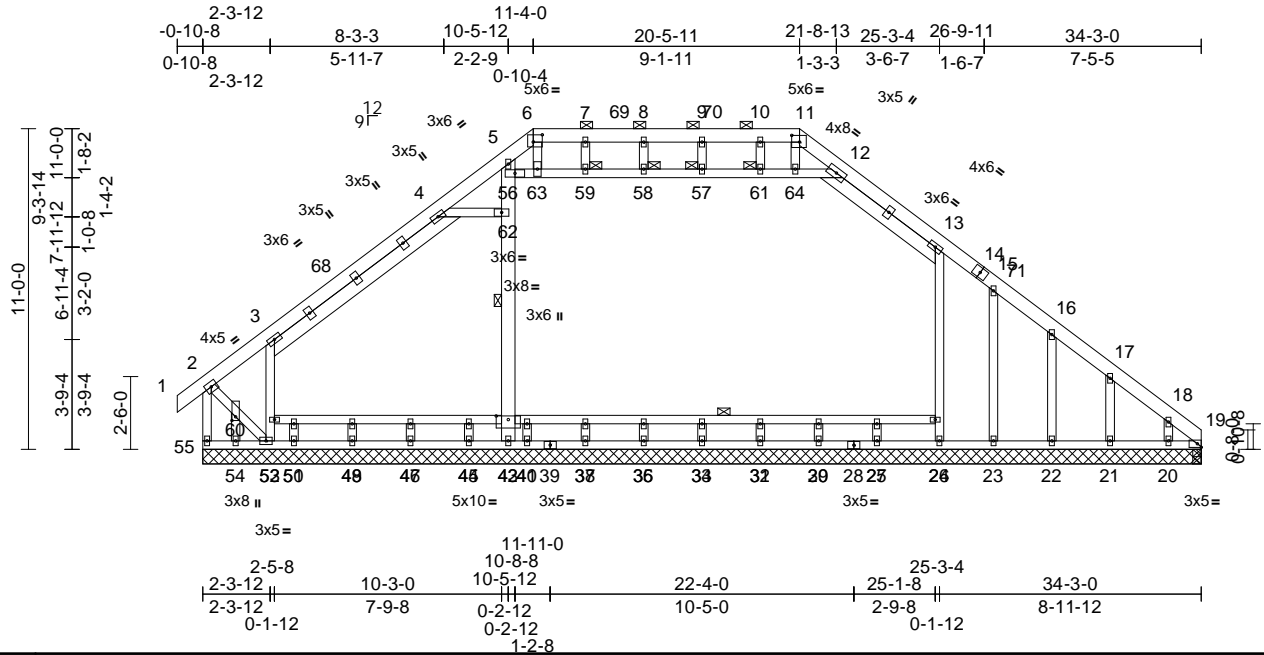
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss CGE	Truss Type Attic Structural Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567114
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Tue May 14 11:27:00  
ID:HSVLvMXIBUOh6Uln9Dc1gJzEzgn-Elx9mrc8N7f2lgB\_?AwWInvCBEWxt0W3N\_ZcezGbgg

Page: 1

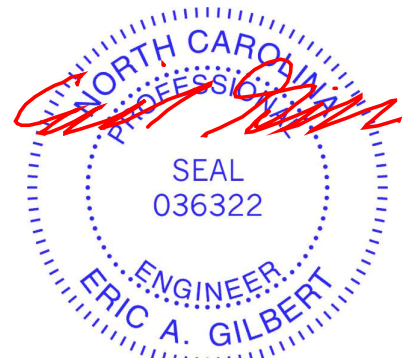


Scale = 1:79

Plate Offsets (X, Y): [6:0-3-12,0-3-0], [11:0-3-4,0-2-12], [43:0-5-0,0-1-8], [60:0-1-9,0-1-8]

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	0.50	Vert(LL)	0.00	13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	-0.01	13	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.42	Horz(CT)	0.03	19	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 314 lb	FT = 20%

LUMBER	Max Grav	19=615 (LC 41), 20=96 (LC 13), 21=184 (LC 27), 22=172 (LC 27), 23=82 (LC 54), 24=662 (LC 46), 25=303 (LC 21), 30=248 (LC 21), 31=263 (LC 21), 33=260 (LC 21), 35=258 (LC 21), 37=268 (LC 21), 41=262 (LC 52), 42=506 (LC 44), 45=234 (LC 21), 47=264 (LC 21), 49=266 (LC 21), 51=217 (LC 21), 53=384 (LC 12), 54=49 (LC 7), 55=1084 (LC 22), 65=615 (LC 41)	BOT CHORD	54-55=240/247, 53-54=240/247, 51-53=70/552, 49-51=70/552, 47-49=70/552, 45-47=70/552, 42-45=70/552, 41-42=67/566, 39-41=67/566, 37-39=67/566, 35-37=67/566, 33-35=67/566, 31-33=67/566, 30-31=67/566, 28-30=67/566, 25-28=67/566, 24-25=67/566, 23-24=70/605, 22-23=70/605, 21-22=70/605, 20-21=70/605, 19-20=70/605, 40-43=3/45, 38-40=3/45, 36-38=3/45, 34-36=3/45, 32-34=3/45, 29-32=3/45, 27-29=3/45, 26-27=3/45, 50-52=5/71, 48-50=5/71, 46-48=5/71, 44-46=5/71, 43-44=5/71
TOP CHORD	2x6 SP No.2			
BOT CHORD	2x4 SP No.2			
WEBS	2x4 SP No.3 *Except* 56-12:2x4 SP No.2, 5-42:2x6 SP No.2			
OTHERS	2x4 SP No.3			
BRACING				
TOP CHORD	Structural wood sheathing directly applied or 5-8-7 oc purlins, except end verticals, and 2-0-0 oc purlins (5-9-13 max.): 6-11.			
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 54-55,53-54.			
WEBS	1 Row at midpt 43-56			
JOINTS	1 Brace at Jt(s): 57, 58, 59, 61			
REACTIONS	(lb/size) 19=555/34-3-0, 20=3/34-3-0, 21=179/34-3-0, 22=163/34-3-0, 23=2/34-3-0, 24=554/34-3-0, 25=115/34-3-0, 30=95/34-3-0, 31=101/34-3-0, 33=100/34-3-0, 35=100/34-3-0, 37=100/34-3-0, 41=118/34-3-0, 42=364/34-3-0, 45=87/34-3-0, 47=102/34-3-0, 49=100/34-3-0, 51=88/34-3-0, 53=62/34-3-0, 54=22/34-3-0, 55=998/34-3-0, 65=555/34-3-0			
	Max Horiz 55=280 (LC 12)			
	Max Uplift 19=60 (LC 11), 20=109 (LC 57), 21=64 (LC 15), 22=68 (LC 15), 23=93 (LC 57), 42=14 (LC 11), 53=415 (LC 55), 55=297 (LC 10), 65=60 (LC 11)			
		FORCES (lb) - Maximum Compression/Maximum Tension		
		TOP CHORD 1-2=0/37, 2-3=730/222, 3-68=932/170, 4-68=817/200, 4-5=818/277, 5-6=1286/258, 6-7=1083/249, 7-69=1083/249, 8-69=1083/249, 8-9=1083/249, 9-70=1083/249, 10-70=1083/249, 10-11=1083/249, 11-12=-1192/254, 12-13=933/245, 13-14=686/167, 14-15=712/155, 15-71=751/103, 16-71=781/96, 16-17=778/84, 17-18=767/90, 18-19=810/98, 2-55=1064/292		



May 14, 2024

Continued on page 2

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818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)
24040186-01	CGE	Attic Structural Gable	1	1	I65567114

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

Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Tue May 14 11:27:00

Page: 2

ID:HSVLvMXIBUOh6Uln9Dc1gJzEzgn-Elx9mrc8N7f2lgB\_?AwWInvCBEwXgt0W3N\_ZcezGbgg

WEBS 52-53=-612/194, 3-52=-609/224,  
24-26=-635/11, 13-26=-597/81,  
56-63=-204/423, 59-63=-186/472,  
58-59=-186/472, 57-58=-186/472,  
57-61=-186/472, 61-64=-186/472,  
12-64=-188/442, 2-60=-233/840,  
53-60=-235/848, 9-57=-15/17, 33-34=-220/0,  
8-58=-2/24, 35-36=-219/0, 7-59=-142/39,  
37-38=-226/0, 40-41=-230/14, 44-45=-197/0,  
46-47=-224/0, 48-49=-225/0, 50-51=-185/0,  
54-60=-11/3, 10-61=-107/40, 31-32=-223/0,  
29-30=-208/0, 25-27=-261/0, 15-23=-44/132,  
16-22=-150/91, 17-21=-159/91,  
18-20=-65/103, 42-43=-496/20,  
43-62=-547/113, 56-62=-461/134,  
5-56=-572/174, 4-62=-168/141,  
6-63=-65/434, 11-64=-45/242

#### 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) -0-10-8 to 2-7-13, Exterior(2N) 2-7-13 to 7-9-11, Corner(3R) 7-9-11 to 15-1-8, Exterior (2N) 15-1-8 to 16-11-6, Corner(3R) 16-11-6 to 23-11-15, Exterior(2N) 23-11-15 to 30-8-11, Corner(3E) 30-8-11 to 34-3-0 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
- 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) 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) Provide adequate drainage to prevent water ponding.
- 8) All plates are 2x4 MT20 unless otherwise indicated.
- 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) Ceiling dead load (5.0 psf) on member(s). 3-4, 12-13, 56-63, 59-63, 58-59, 57-58, 57-61, 61-64, 12-64, 4-62; Wall dead load (5.0psf) on member(s).3-52, 13-26, 43-62, 56-62
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 40-43, 38-40, 36-38, 34-36, 32-34, 29-32, 27-29, 26-27, 50-52, 48-50, 46-48, 44-46, 43-44
- 14) Bearings are assumed to be: , Joint 19 User Defined crushing capacity of 425 psi.
- 15) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 55, 53, 23, 22, 21, 20, 42, and 19. This connection is for uplift only and does not consider lateral forces.
- 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.
- 17) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 18) Attic room checked for L/360 deflection.

**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



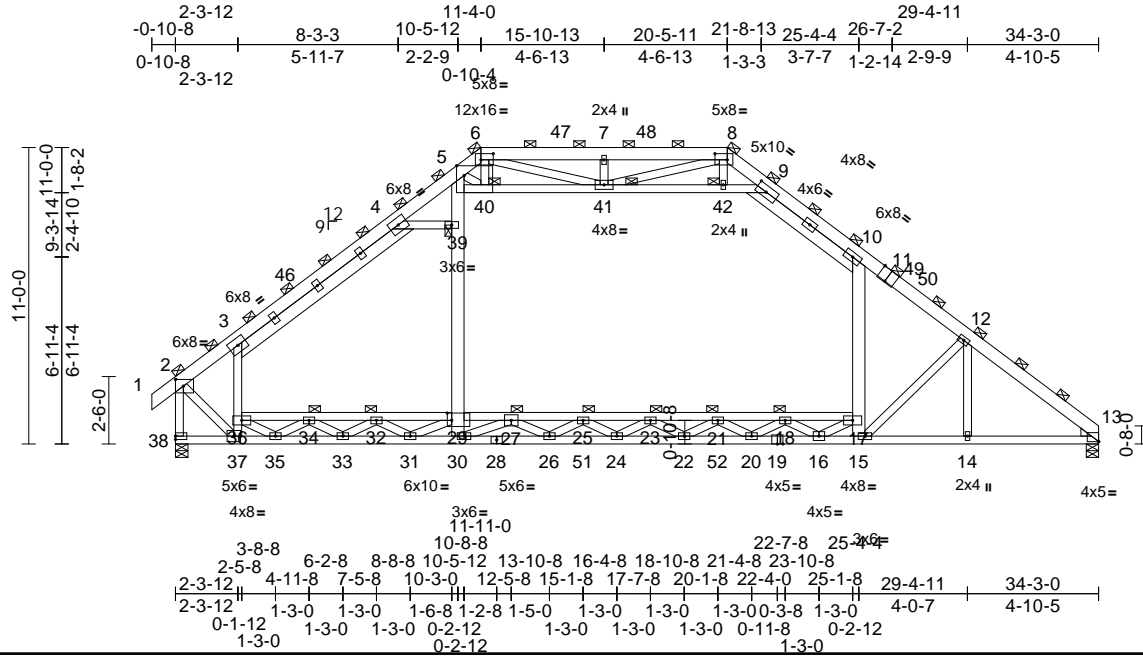
Job 24040186-01	Truss CGR	Truss Type Attic Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567115
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:51

Page: 1

ID:VP5mnZE7ejTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKwRcDoi7J4zJC?f



Scale = 1:85.5

Plate Offsets (X, Y): [2:0-3-8,0-3-0], [5:0-3-5,Edge], [6:0-5-8,0-2-12], [8:0-5-8,0-2-12], [9:0-4-11,0-2-12], [11:0-4-0,Edge], [13:Edge,0-0-1], [29:0-2-0,0-3-4]

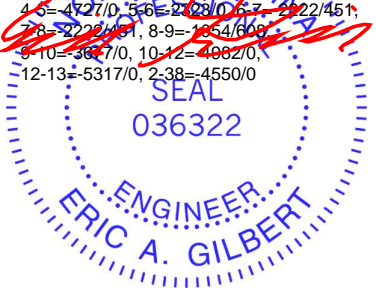
Loading	(psf)	Spacing	3-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.79	Vert(LL)	-0.25	21-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.96	Vert(CT)	-0.51	21-23	>796	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.97	Horz(CT)	0.10	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.08	29-36	>999	360		
BCDL	10.0											
											Weight: 700 lb	FT = 20%

**LUMBER**  
**TOP CHORD** 2x6 SP 2400F 2.0E \*Except\* 6-8,9-10:2x6 SP No.2  
**BOT CHORD** 2x4 SP No.2 \*Except\* 28-19:2x4 SP No.1  
**WEBS** 2x4 SP No.3 \*Except\* 3-37:2x4 SP No.1, 10-15,5-30,4-3:2x6 SP No.2, 5-9:2x4 SP No.2  
**WEDGE** Right: 2x4 SP No.3  
**BRACING**  
**TOP CHORD** 2-0-0 oc purlins (6-0-0 max.), except end verticals  
 (Switched from sheeted: Spacing > 2-8-0). Rigid ceiling directly applied or 5-10-1 oc bracing.  
**BOT CHORD**  
**JOINTS** 1 Brace at Jt(s): 6, 8, 2, 34, 32, 27, 25, 23, 21, 18, 39, 40, 41, 42  
**REACTIONS** (size) 13=0-5-8, 38=0-5-8  
 Max Horiz 38=420 (LC 10)  
 Max Grav 13=3507 (LC 44), 38=4325 (LC 44)  
**FORCES** (lb) - Maximum Compression/Maximum Tension  
**TOP CHORD** 1-2=0/55, 2-3=3264/0, 3-4=4842/0, 4-5=4727/0, 5-6=2428/0, 6-7=2222/451, 7-8=2222/407, 8-9=1854/606, 9-10=367/0, 10-11=4982/0, 12-13=5317/0, 2-38=4550/0

**BOT CHORD** 37-38=-405/373, 35-37=0/2528, 33-35=0/2911, 31-33=-151/2769, 30-31=-884/1205, 26-30=-202/3205, 24-26=0/5982, 22-24=0/7321, 20-22=0/7209, 16-20=0/5822, 15-16=0/3427, 14-15=0/4147, 13-14=0/4147, 27-29=-108/4779, 25-27=-1380/1234, 23-25=-3536/0, 21-23=-4130/0, 18-21=-3312/0, 17-18=-1357/208, 34-36=-33/1468, 32-34=-255/1511, 29-32=-236/2448  
**WEBS** 36-37=-2510/0, 3-36=-2469/0, 15-17=0/854, 10-17=0/1967, 12-15=-992/284, 12-14=-38/191, 5-40=-2205/222, 40-41=-1827/187, 41-42=-4782/0, 9-42=-4824/0, 2-37=0/4586, 29-30=0/1541, 29-39=0/2770, 5-39=0/2805, 35-36=-559/172, 34-35=-734/0, 33-34=-192/147, 32-33=-51/397, 31-32=-1082/0, 29-31=0/1388, 27-30=-3343/0, 26-27=0/2121, 25-26=-1773/0, 24-25=0/1088, 23-24=-861/19, 22-23=-128/474, 21-22=-263/274, 20-21=-839/67, 18-20=0/1094, 16-18=-1918/0, 16-17=0/1840, 4-39=-171/519, 6-40=-80/1084, 7-41=-605/180, 8-42=0/322, 8-41=0/2290, 6-41=-1532/412

- 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 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.

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



May 14, 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.**  
 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 24040186-01	Truss CGR	Truss Type Attic Girder	Qty 1	Ply <b>2</b>	133 Serenity-Roof-B330 B COP BNS GLH I65567115 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:51  
ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 2

- 8) 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 9) Provide adequate drainage to prevent water ponding.
- 10) All plates are 3x5 MT20 unless otherwise indicated.
- 11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 12) \* 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.
- 13) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-40, 40-41, 41-42, 9-42, 4-39; Wall dead load (5.0psf) on member(s).3-36, 10-17, 29-39, 5-39
- 14) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 27-29, 25-27, 23-25, 21-23, 18-21, 17-18, 34-36, 32-34, 29-32
- 15) 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.
- 16) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 17) Attic room checked for L/360 deflection.

**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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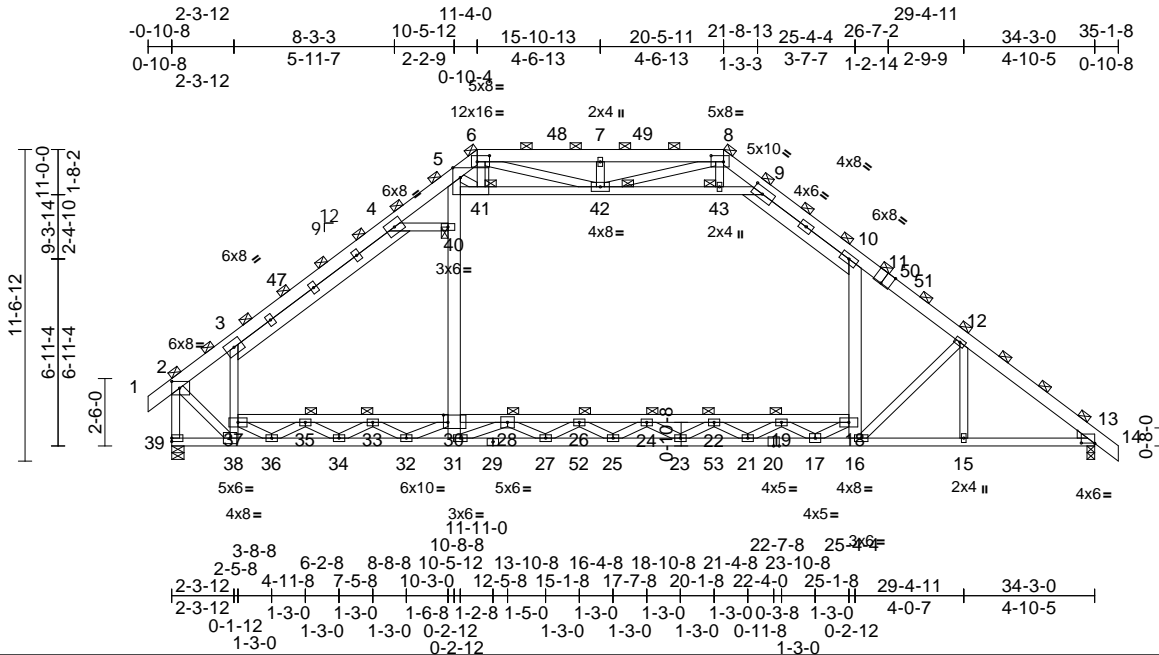
Job 24040186-01	Truss CGR1	Truss Type Attic Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567116
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:52

Page: 1

ID:VP5mZEEjtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWRcDoi7J4zJC?f



Scale = 1:85.5

Plate Offsets (X, Y): [2:0-3-8,0-3-0], [5:0-3-5,Edge], [6:0-5-8,0-2-12], [8:0-5-8,0-2-12], [9:0-4-11,0-2-12], [11:0-4-0,Edge], [13:0-6-0,0-0-3], [30:0-2-0,0-3-4]

Loading	(psf)	Spacing	3-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.79	Vert(LL)	-0.25	22-24	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.96	Vert(CT)	-0.51	22-24	>797	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.97	Horz(CT)	0.09	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.08	30-37	>999	360		
BCDL	10.0											
											Weight: 706 lb	FT = 20%

LUMBER		BOT CHORD			
TOP CHORD	2x6 SP 2400F 2.0E *Except* 6-8-9-10:2x6 SP No.2	38-39=-413/388, 36-38=0/2543, 34-36=0/2926, 32-34=-144/2786, 31-32=-886/1220, 27-31=-195/3221, 25-27=0/5983, 23-25=0/7321, 21-23=0/7208, 17-21=0/5819, 16-17=0/3415, 15-16=0/4139, 13-15=0/4139, 28-30=-93/4763, 26-28=-1392/1228, 24-26=-3538/0, 22-24=-4131/0, 19-22=-3312/0, 18-19=-1353/212, 35-37=-30/1462, 33-35=-246/1506, 30-33=-224/2440			
BOT CHORD	2x4 SP No.2 *Except* 29-20:2x4 SP No.1	37-38=-2514/0, 3-37=-2471/0, 16-18=0/848, 10-18=0/1965, 12-16=-982/280, 12-15=-36/193, 5-41=-2204/222, 41-42=-1826/187, 42-43=-4786/0, 9-43=-4827/0, 2-38=0/4588, 30-31=0/1541, 30-40=0/2770, 5-40=0/2805, 36-37=-557/168, 35-36=-733/0, 34-35=-192/145, 33-34=-49/396, 32-33=-1081/0, 30-32=0/1387, 28-31=-3343/0, 27-28=0/2119, 26-27=-1771/0, 25-26=0/1085, 24-25=-858/18, 23-24=-127/472, 22-23=-261/273, 21-22=-839/65, 19-21=0/1095, 17-19=-1919/0, 17-18=0/1841, 4-40=0/171517, 6-41=0/801084, 7-42=0/605180, 8-43=0/322, 8-42=0/2291, 6-42=-1534/412			
WEBS	2x4 SP No.3 *Except* 3-38:2x4 SP No.1, 10-16:5-31,4-3:2x6 SP No.2, 5-9:2x4 SP No.2				
WEDGE	Right: 2x4 SP No.3				
BRACING		WEBS			
TOP CHORD	2-0-0 oc purlins (6-0-0 max.), except end verticals (Switched from sheeted: Spacing > 2-8-0). Rigid ceiling directly applied or 5-10-1 oc bracing.				
BOT CHORD					
JOINTS	1 Brace at Jt(s): 6, 8, 2, 35, 33, 28, 26, 24, 22, 19, 40, 41, 42, 43				
REACTIONS	(size) 13=0-3-8, 39=0-5-8 Max Horiz 39=-435 (LC 10) Max Grav 13=3574 (LC 44), 39=4330 (LC 44)				
FORCES	(lb) - Maximum Compression/Maximum Tension				
TOP CHORD	1-2=0/55, 2-3=-3267/0, 3-4=-4846/0, *5=-4725/0, 5-6=2322/0, 6-7=-2222/451, 7-8=-1054/608, 8-9=-1054/608, 9-10=-3677/0, 10-12=-4978/0, 12-13=-5314/0, 13-14=0/47, 2-39=4554/0				

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



May 14, 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 24040186-01	Truss CGR1	Truss Type Attic Girder	Qty 1	Ply <b>2</b>	133 Serenity-Roof-B330 B COP BNS GLH I65567116 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:52

Page: 2

ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

- 8) 200.0lb AC unit load placed on the bottom chord, 17-7-8 from left end, supported at two points, 5-0-0 apart.
- 9) Provide adequate drainage to prevent water ponding.
- 10) All plates are 3x5 MT20 unless otherwise indicated.
- 11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 12) \* 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.
- 13) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-41, 41-42, 42-43, 9-43, 4-40; Wall dead load (5.0psf) on member(s).3-37, 10-18, 30-40, 5-40
- 14) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 28-30, 26-28, 24-26, 22-24, 19-22, 18-19, 35-37, 33-35, 30-33
- 15) Bearings are assumed to be: , Joint 13 SP No.2 .
- 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.
- 17) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 18) Attic room checked for L/360 deflection.

**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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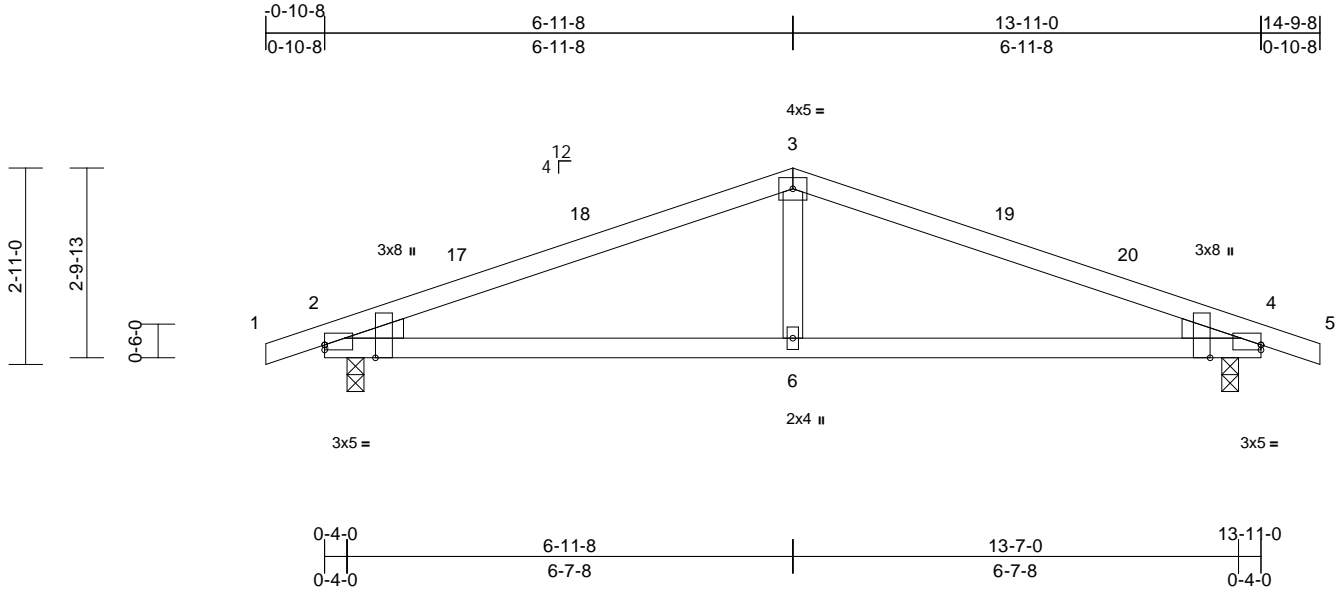
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss D	Truss Type Common	Qty 4	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567117
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:52  
ID:nqLL14Jf5JAmMe82YAnlwAzF\_pM-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwRCDoi7J4zJC?F

Page: 1



Scale = 1:34.2

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [4:Edge,0-0-14], [4:0-2-5,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)	-0.09	6-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.56	Vert(CT)	-0.13	6-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horz(CT)	0.02	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 51 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-1-1 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 8-6-15 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 4=0-3-0  
 Max Horiz 2=41 (LC 14)  
 Max Uplift 2=-221 (LC 10), 4=-221 (LC 11)  
 Max Grav 2=708 (LC 21), 4=708 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/17, 2-3=-901/594, 3-4=-901/594, 4-5=0/17  
 BOT CHORD 2-6=-458/775, 4-6=-458/775  
 WEBS 3-6=-116/268

**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 3-11-8, Exterior(2R) 3-11-8 to 9-11-8, Interior (1) 9-11-8 to 11-9-8, Exterior(2E) 11-9-8 to 14-9-8 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



May 14, 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)



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 Edenton, NC 27932



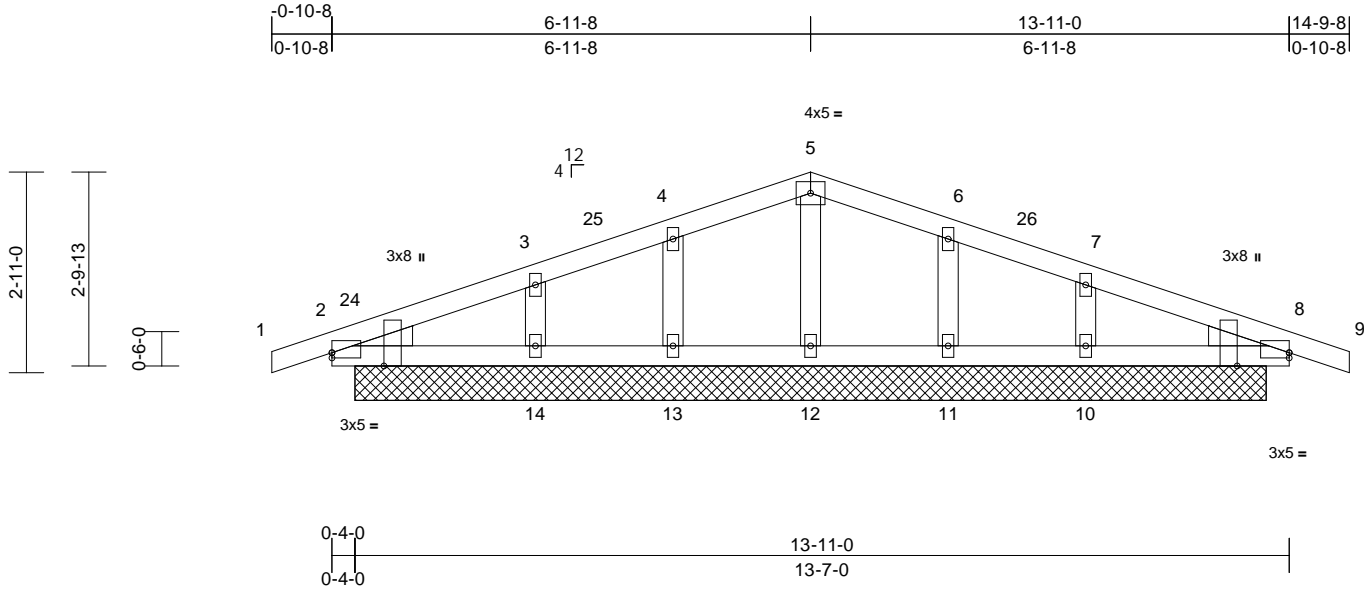
Job 24040186-01	Truss DGE	Truss Type Common Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567118
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:52

Page: 1

ID:UUQhZhEGk9Im0a6ieC968izF\_pT-RfC?PsB70Hq3NSgPqnl8w3uITxbGKWrCdoi7J4zJC7f



Scale = 1:33.5

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [8:Edge,0-0-14], [8:0-2-5,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	0.29	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	-0.01	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 59 lb	FT = 20%

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

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

**REACTIONS** (size)  
2=13-3-0, 8=13-3-0, 10=13-3-0, 11=13-3-0, 12=13-3-0, 13=13-3-0, 14=13-3-0, 18=13-3-0, 21=13-3-0  
Max Horiz 2=41 (LC 14), 18=41 (LC 14)  
Max Uplift 2=-1 (LC 21), 8=-71 (LC 36), 10=-44 (LC 15), 11=-35 (LC 11), 12=-47 (LC 10), 13=-23 (LC 14), 14=-75 (LC 10), 18=-1 (LC 21), 21=-71 (LC 36)  
Max Grav 2=0 (LC 10), 8=128 (LC 22), 10=302 (LC 22), 11=205 (LC 22), 12=420 (LC 21), 13=123 (LC 21), 14=437 (LC 21), 18=0 (LC 10), 21=128 (LC 22)

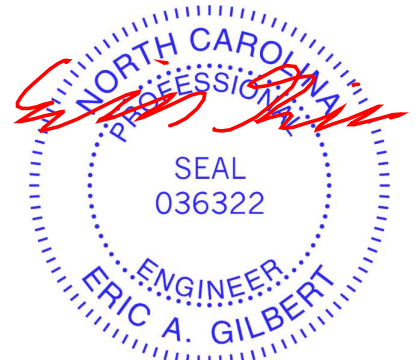
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-220/432, 3-4=-165/401, 4-5=-123/411, 5-6=-122/395, 6-7=-170/392, 7-8=-217/405, 8-9=0/17  
BOT CHORD 2-14=-365/260, 13-14=-365/260, 12-13=-365/260, 11-12=-365/260, 10-11=-365/260, 8-10=-365/260  
WEBS 5-12=-360/181, 4-13=-146/110, 3-14=-275/153, 6-11=-183/128, 7-10=-212/127

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 3-11-8, Corner(3R) 3-11-8 to 9-11-8, Exterior(2N) 9-11-8 to 11-9-8, Corner(3E) 11-9-8 to 14-9-8 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
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 8, 12, 13, 14, 11, 10, and 8. This connection is for uplift only and does not consider lateral forces.

- Non Standard bearing condition. Review required.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



May 14, 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/TPH Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



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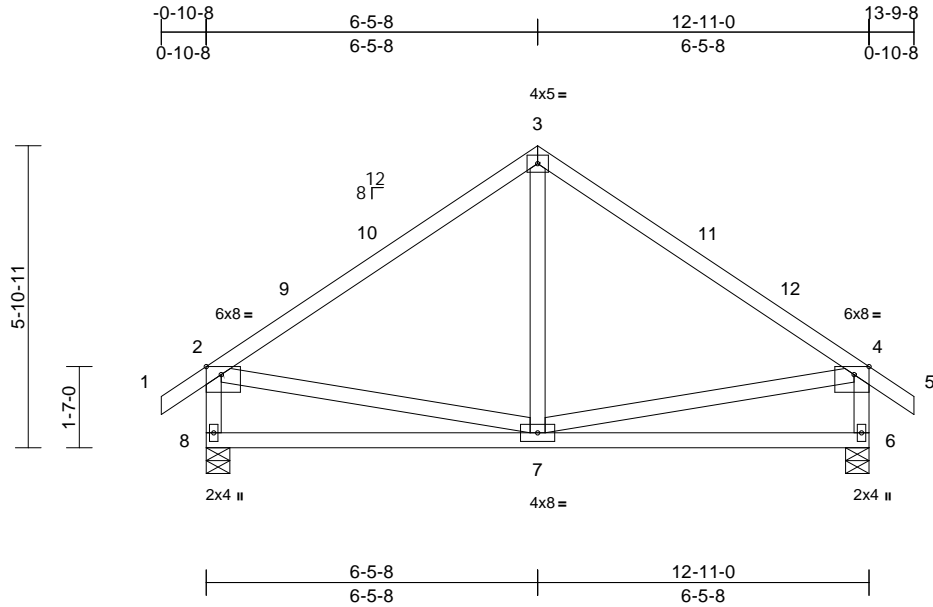
Job 24040186-01	Truss E	Truss Type Common	Qty 3	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I6567119
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:52

Page: 1

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Scale = 1:44.9

Plate Offsets (X, Y): [2:0-3-8,Edge], [4:0-3-8,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	0.75	Vert(LL)	-0.03	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.35	Vert(CT)	-0.07	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.11	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 75 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 8-2,6-4:2x4 SP No.2

**BRACING**

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

**REACTIONS**

- (size) 6=0-5-8, 8=0-5-8
- Max Horiz 8=161 (LC 13)
- Max Uplift 6=-59 (LC 15), 8=-59 (LC 14)
- Max Grav 6=653 (LC 22), 8=653 (LC 21)

**FORCES**

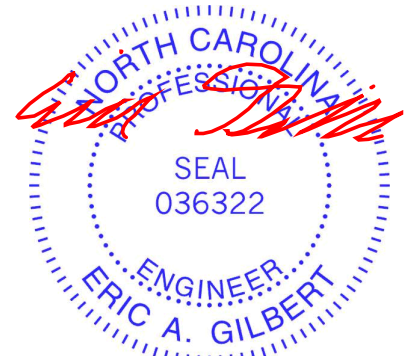
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/34, 2-3=-564/121, 3-4=-564/121, 4-5=0/34, 2-8=-595/165, 4-6=-595/156
- BOT CHORD 7-8=-168/269, 6-7=-86/236
- WEBS 3-7=0/216, 2-7=-37/269, 4-7=-39/269

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-10-8 to 2-1-8, Interior (1) 2-1-8 to 3-5-8, Exterior(2R) 3-5-8 to 9-5-8, Interior (1) 9-5-8 to 10-9-8, Exterior(2E) 10-9-8 to 13-9-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3'-0" tall by 2'-0" wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8 and 6. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



May 14, 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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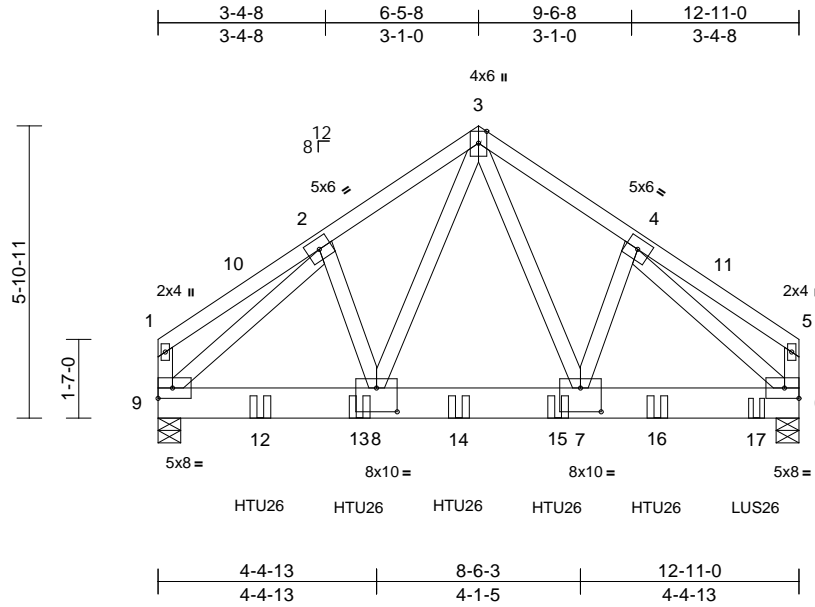


Job 24040186-01	Truss EGR	Truss Type Common Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567121
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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Page: 1



Scale = 1:46.4  
Plate Offsets (X, Y): [7:0-5-0,0-5-12], [8:0-5-0,0-5-12]

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	0.73	Vert(LL)	-0.04	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	Vert(CT)	-0.08	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.62	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 206 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x8 SP 2400F 2.0E  
WEBS 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-4-14 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 6=0-5-8, 9=0-5-8

Max Horiz 9=140 (LC 36)  
Max Uplift 6=-147 (LC 13), 9=-280 (LC 12)  
Max Grav 6=4837 (LC 6), 9=5024 (LC 5)

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

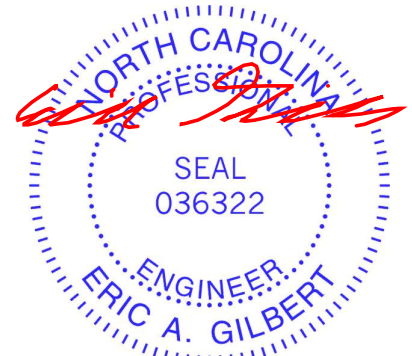
TOP CHORD 1-2=-567/76, 2-3=-5069/353, 3-4=-4973/332,  
4-5=-534/65, 1-9=-420/70, 5-6=-400/63  
BOT CHORD 8-9=-235/3839, 7-8=-147/3128,  
6-7=-188/3765  
WEBS 3-7=-175/2745, 4-7=-93/1126,  
3-8=-224/2972, 2-8=-96/1143,  
2-9=-4996/255, 4-6=-4935/243

**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: 2x8 - 2 rows staggered at 0-6-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
- All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
- Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9 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 10-0-12 to connect truss(es) to back face of bottom chord.
  - Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss, Single Ply Girder) or equivalent at 12-0-12 from the left end to connect truss(es) to back face of bottom chord.
  - Fill all nail holes where hanger is in contact with lumber.
- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15

Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-5=-60, 6-9=-20  
Concentrated Loads (lb)  
Vert: 12=-1487 (B), 13=-1487 (B), 14=-1487 (B),  
15=-1487 (B), 16=-1487 (B), 17=-451 (B)



May 14, 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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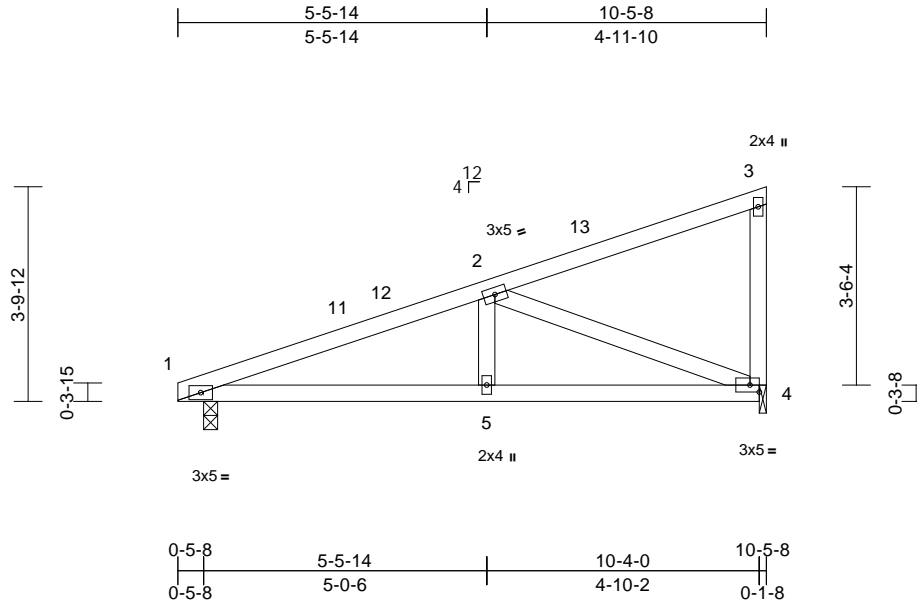
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss F	Truss Type Monopitch	Qty 6	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567122
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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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	0.39	Vert(LL)	0.03	5-10	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(CT)	-0.04	5-10	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.42	Horz(CT)	0.01	4	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0										
										Weight: 46 lb	FT = 20%

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

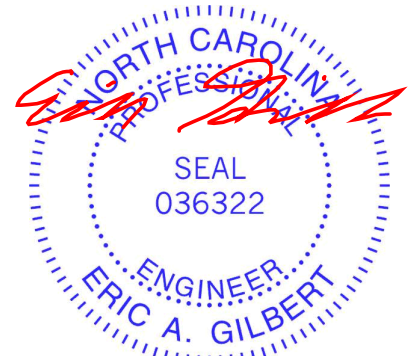
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 8-9-11 oc bracing.

**REACTIONS** (size) 1=0-3-0, 4=0-1-8  
Max Horiz 1=138 (LC 13)  
Max Uplift 1=-152 (LC 10), 4=-159 (LC 10)  
Max Grav 1=494 (LC 21), 4=520 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-860/456, 2-3=-101/63, 3-4=-182/102  
BOT CHORD 1-5=-437/778, 4-5=-437/778  
WEBS 2-5=-89/213, 2-4=-808/522

- 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 .
  - 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

- 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 7-3-12, Exterior(2E) 7-3-12 to 10-3-12 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.



May 14, 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

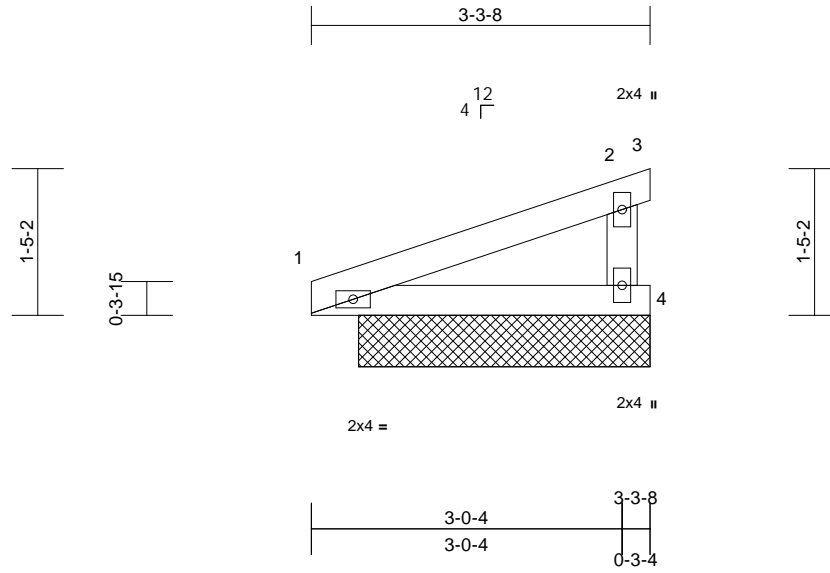


Job 24040186-01	Truss F1GE	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH I65567123 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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Page: 1



Scale = 1:22.4

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	0.09	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: 11 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 3-3-8 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=2-10-0, 3=2-10-0, 4=2-10-0, 7=2-10-0  
Max Horiz 1=43 (LC 11), 7=43 (LC 11)  
Max Uplift 1=-13 (LC 10), 3=-139 (LC 20), 4=-70 (LC 14), 7=-13 (LC 10)  
Max Grav 1=169 (LC 20), 3=38 (LC 14), 4=306 (LC 20), 7=169 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-28/48, 2-3=-51/43, 2-4=-273/271  
BOT CHORD 1-4=-40/41

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 13 lb uplift at joint 1, 139 lb uplift at joint 3 and 13 lb uplift at joint 1.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 4. This connection is for uplift only and does not consider lateral forces.
- 10) Non Standard bearing condition. Review required.
- 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



May 14, 2024

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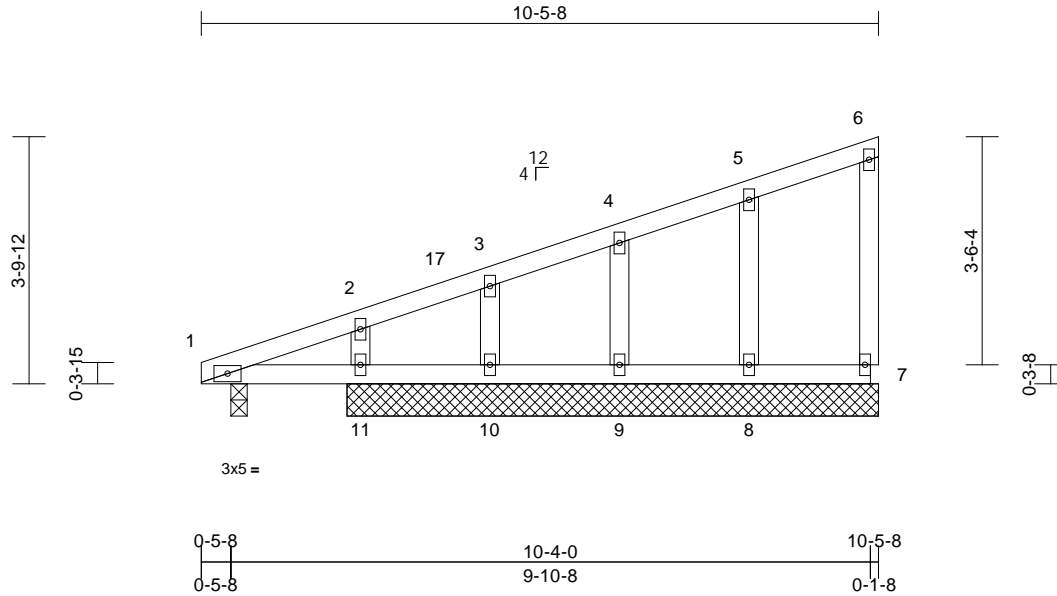
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss FGE	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567124
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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Page: 1



Scale = 1:35.6

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.17	Vert(LL)	0.00	11-16	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	0.00	11-16	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 46 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, 7=8-2-8, 8=8-2-8, 9=8-2-8, 10=8-2-8, 11=8-2-8
Max Horiz	1=138 (LC 13)
Max Uplift	7=-12 (LC 11), 8=-34 (LC 10), 9=-35 (LC 14), 10=-30 (LC 10), 11=-50 (LC 14)
Max Grav	1=108 (LC 26), 7=84 (LC 21), 8=227 (LC 21), 9=219 (LC 21), 10=204 (LC 21), 11=174 (LC 1)

#### FORCES

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-135/133, 2-3=-91/116, 3-4=-78/103, 4-5=-68/90, 5-6=-55/69, 6-7=-68/39
BOT CHORD	1-11=-59/88, 10-11=-44/79, 9-10=-44/79, 8-9=-44/79, 7-8=-44/79
WEBS	5-8=-186/118, 4-9=-179/135, 3-10=-166/128, 2-11=-142/141

#### NOTES

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-0-0 to 3-0-0, Exterior(2N) 3-0-0 to 7-3-12, Corner(3E) 7-3-12 to 10-3-12 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

- 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) All plates are 2x4 MT20 unless otherwise indicated.
- 6) Gable studs spaced at 2-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7, 8, 9, 10, and 11. 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



May 14, 2024

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

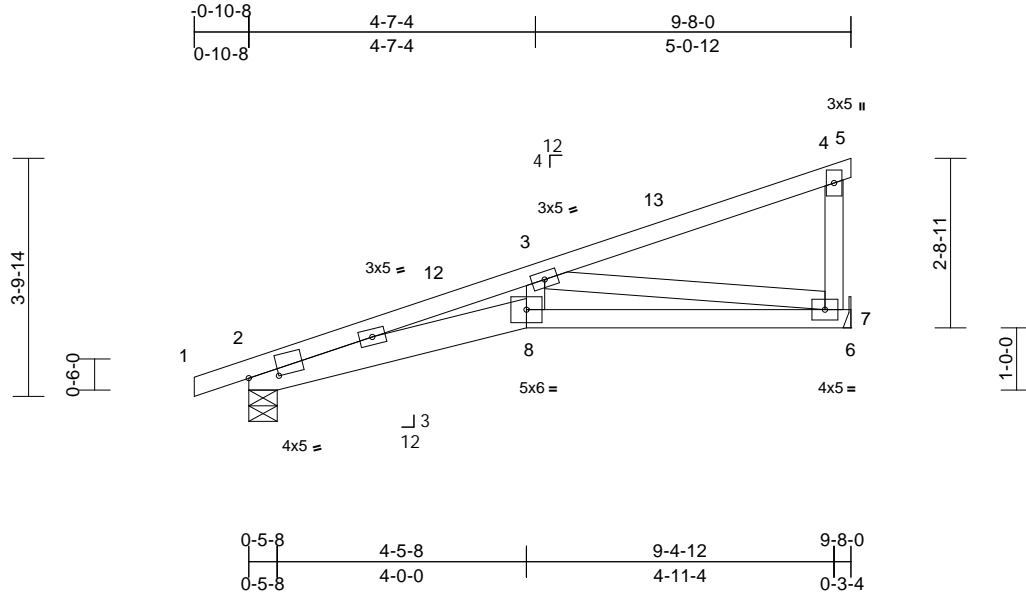
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss G	Truss Type Monopitch	Qty 9	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567125
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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Page: 1



Scale = 1:37

Plate Offsets (X, Y): [2:0-5-12,0-1-0]

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	0.60	Vert(LL)	-0.08	8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.52	Vert(CT)	-0.13	7-8	>872	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.05	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 46 lb	FT = 20%

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-5-5 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 7-11-15 oc bracing.

**REACTIONS** (size) 2=0-5-8, 7= Mechanical  
Max Horiz 2=121 (LC 11)  
Max Uplift 2=-81 (LC 10), 7=-74 (LC 14)  
Max Grav 2=491 (LC 21), 7=524 (LC 21)

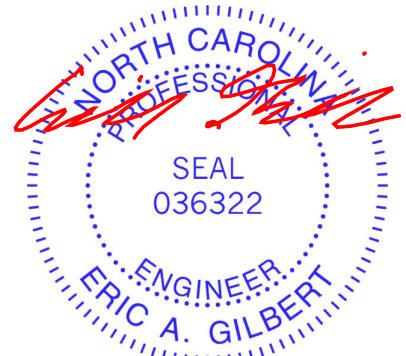
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-1714/550, 3-4=-154/35, 4-5=-8/0, 4-7=-224/119  
BOT CHORD 2-8=-574/1652, 7-8=-544/1531, 6-7=0/0  
WEBS 3-8=-70/407, 3-7=-1460/561

#### 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 1-11-13, Interior (1) 1-11-13 to 6-8-0, Exterior(2E) 6-8-0 to 9-8-0 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.
- 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) 2 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 74 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) 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



May 14, 2024

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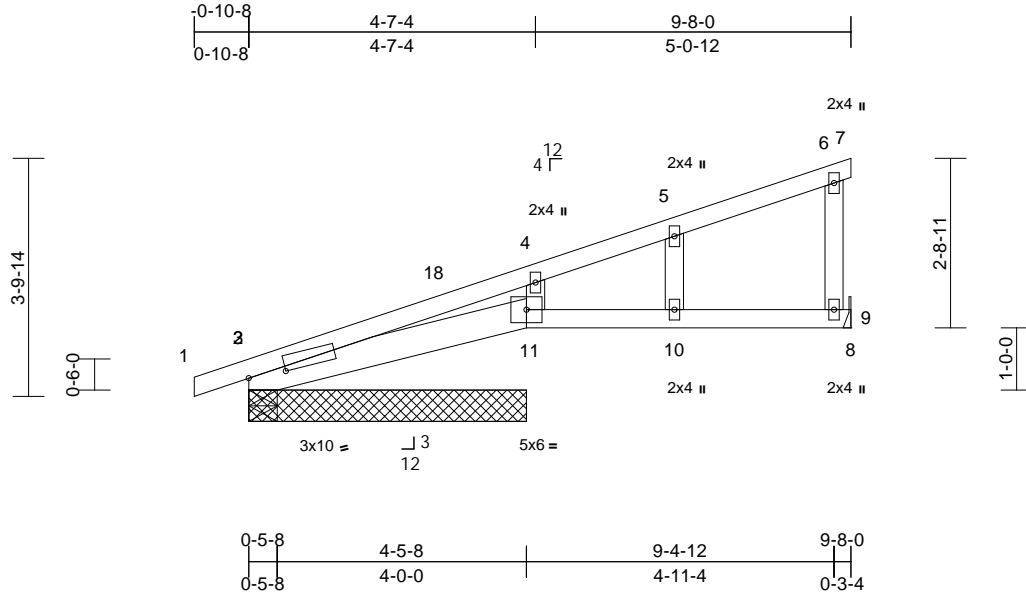
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss GSE	Truss Type Monopitch	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567126
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:53  
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Page: 1



Scale = 1:37

Plate Offsets (X, Y): [3:0-7-4,0-0-7]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.42	Vert(LL)	-0.02	10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	-0.03	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 41 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x6 SP No.2 \*Except\* 11-8:2x4 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) 2=0-5-8, 3=4-5-8, 9= Mechanical, 11=4-5-8, 12=4-5-8  
 Max Horiz 3=164 (LC 11), 12=164 (LC 11)  
 Max Uplift 2=-36 (LC 10), 3=-120 (LC 10), 9=-26 (LC 14), 11=-148 (LC 14), 12=-120 (LC 10)  
 Max Grav 2=88 (LC 21), 3=330 (LC 1), 9=256 (LC 21), 11=628 (LC 21), 12=330 (LC 1)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/17, 2-3=-149/129, 3-4=-429/446, 4-5=-114/19, 5-6=-70/36, 6-7=-8/0, 6-9=-168/73  
 BOT CHORD 3-11=-631/574, 10-11=-18/64, 9-10=-18/64, 8-9=0/0  
 WEBS 4-11=-397/209, 5-10=-81/83

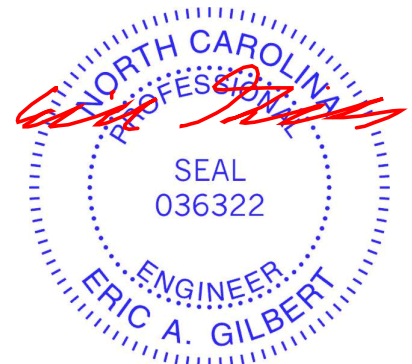
**NOTES**

1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 1-11-13, Interior (1) 1-11-13 to 6-8-0, Exterior(2E) 6-8-0 to 9-8-0 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.
- 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.
- Bearings are assumed to be: Joint 3 SP No.2, Joint 2 SP No.2.
- Refer to girder(s) for truss to truss connections.
- Bearing at joint(s) 3, 11, 2, 3 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 26 lb uplift at joint 9, 148 lb uplift at joint 11 and 36 lb uplift at joint 2.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 3. 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.

15) 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



May 14, 2024

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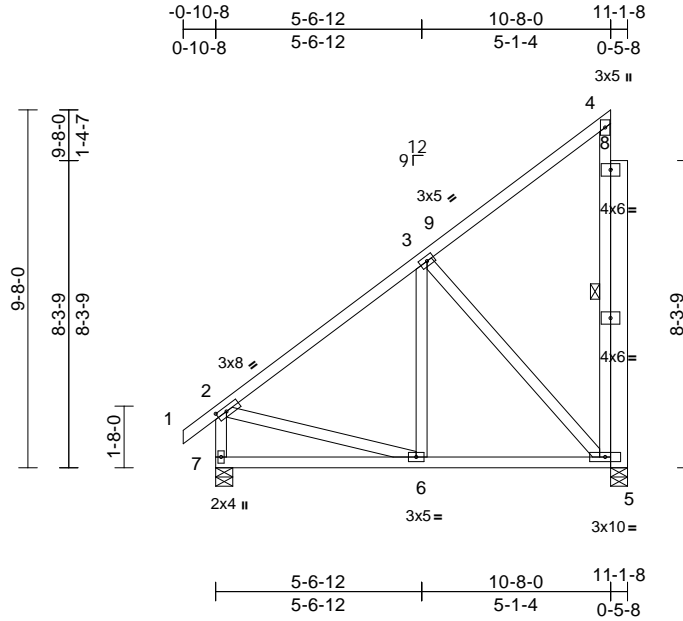
818 Soundside Road  
 Edenton, NC 27932

Job 24040186-01	Truss H1	Truss Type Monopitch	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567127
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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Page: 1



Scale = 1:62.2

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.60	Vert(LL)	-0.02	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.29	Vert(CT)	-0.04	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.48	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
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	2x6 SP No.2

**BRACING**

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS	1 Row at midpt 4-5

**REACTIONS**

(size)	5=0-5-8, 7=0-5-8
Max Horiz	7=340 (LC 11)
Max Uplift	5=-198 (LC 14), 7=-15 (LC 14)
Max Grav	5=948 (LC 21), 7=532 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/37, 2-3=-451/98, 3-4=-222/185, 4-5=-663/96, 2-7=-483/146
BOT CHORD	6-7=-332/507, 5-6=-128/418
WEBS	3-6=0/203, 3-5=-464/195, 2-6=-115/269

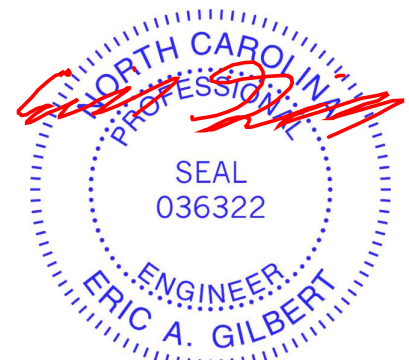
**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 7-6-4, Exterior(2E) 7-6-4 to 10-6-4 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
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.

- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) 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.
- 8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 5. This connection is for uplift only and does not consider lateral forces.
- 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.
- 10) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-4=-60, 5-7=-20  
Concentrated Loads (lb)  
Vert: 4=-380 (F)



May 14, 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)



818 Soundside Road  
Edenton, NC 27932

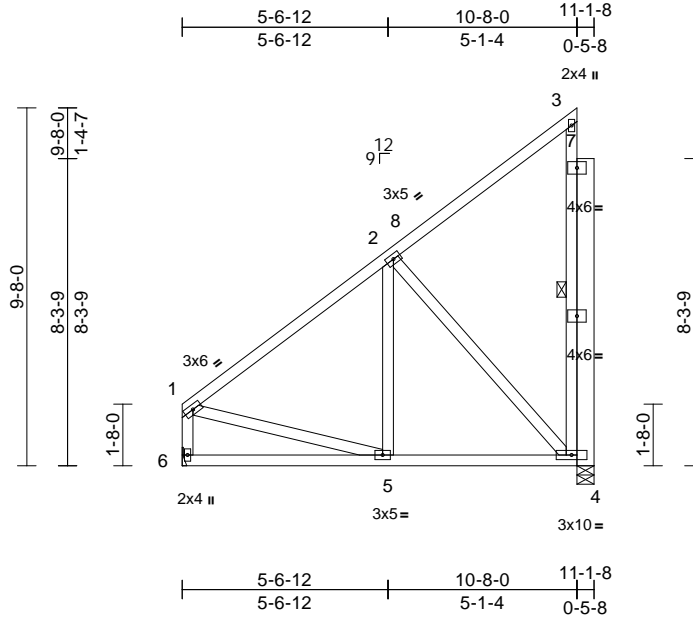


Job 24040186-01	Truss H2	Truss Type Monopitch	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567128
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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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	0.60	Vert(LL)	-0.02	5-6	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.30	Vert(CT)	-0.04	5-6	>999	180	
TCDL	10.0	Rep Stress Incr	NO	WB	0.49	Horz(CT)	0.01	4	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0										
										Weight: 97 lb	FT = 20%

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

**BRACING**  
 TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 3-4

**REACTIONS** (size) 4=0-5-8, 6= Mechanical  
 Max Horiz 6=328 (LC 11)  
 Max Uplift 4=196 (LC 14)  
 Max Grav 4=951 (LC 20), 6=468 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-451/92, 2-3=-223/184, 3-4=-660/95, 1-6=-419/101

BOT CHORD 5-6=-316/495, 4-5=-128/424  
 WEBS 2-5=0/202, 2-4=-472/195, 1-5=-99/275

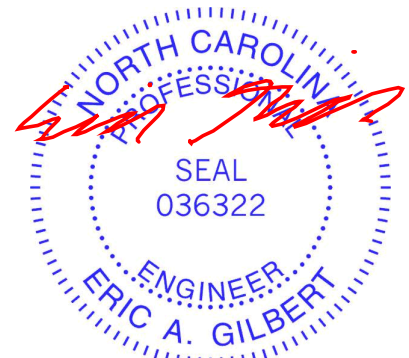
**NOTES**

- 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) 0-1-12 to 3-1-12, Interior (1) 3-1-12 to 7-6-4, Exterior(2E) 7-6-4 to 10-6-4 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
- 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) Refer to girder(s) for truss to truss connections.
- 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) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 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.
- 10) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
 Uniform Loads (lb/ft)  
 Vert: 1-3=-60, 4-6=-20  
 Concentrated Loads (lb)  
 Vert: 3=-380 (F)



May 14, 2024

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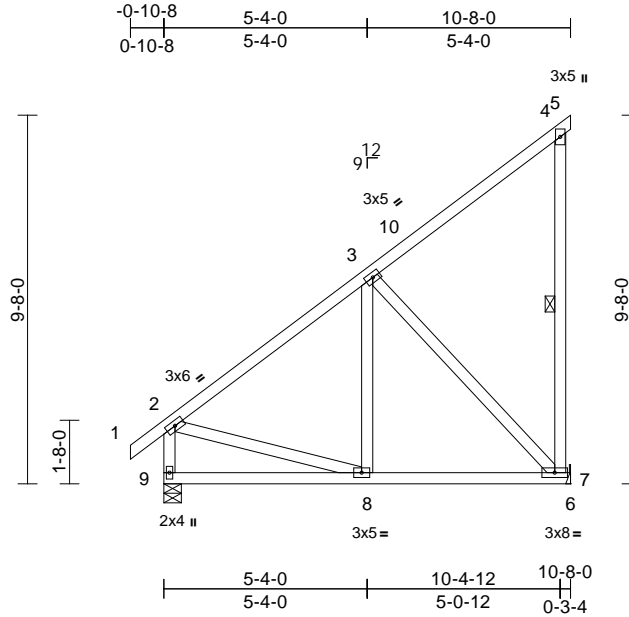
818 Soundside Road  
 Edenton, NC 27932

Job 24040186-01	Truss H3	Truss Type Monopitch	Qty 2	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567129
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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Page: 1



<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	0.90	Vert(LL)	-0.03	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.26	Vert(CT)	-0.05	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.47	Horz(CT)	0.01	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 78 lb	FT = 20%

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

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

**REACTIONS** (size) 7= Mechanical, 9=0-5-8  
Max Horiz 9=340 (LC 11)  
Max Uplift 7=-146 (LC 14), 9=-6 (LC 14)  
Max Grav 7=583 (LC 21), 9=509 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/37, 2-3=-429/97, 3-4=-210/188, 4-5=-17/0, 4-7=-248/82, 2-9=-462/150  
BOT CHORD 8-9=-328/494, 7-8=-128/409, 6-7=0/0  
WEBS 3-8=0/200, 3-7=-461/199, 2-8=-108/269

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3'-0" x 6'-0" tall by 2'-0" 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 146 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 7-8-0, Exterior(2E) 7-8-0 to 10-8-0 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.



May 14, 2024

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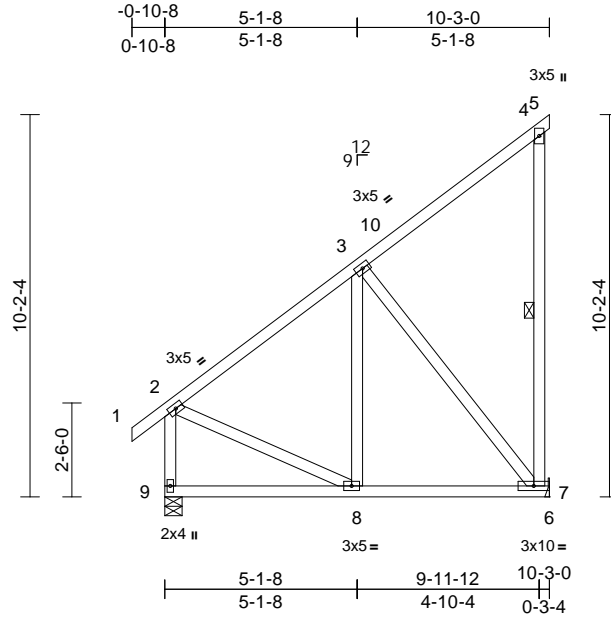
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss I1	Truss Type Monopitch	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567130
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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Page: 1



Scale = 1:61.4

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	Vert(LL)	-0.03	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.04	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.01	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 81 lb	FT = 20%

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

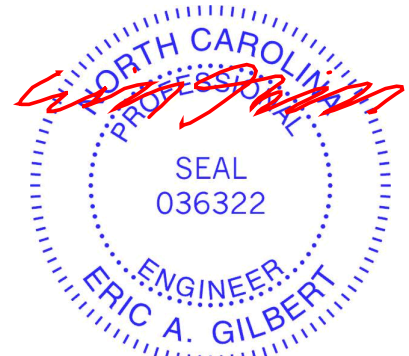
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 4-7

**REACTIONS** (size) 7= Mechanical, 9=0-5-8  
Max Horiz 9=357 (LC 11)  
Max Uplift 7=157 (LC 11)  
Max Grav 7=565 (LC 21), 9=494 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/37, 2-3=-379/96, 3-4=-209/190, 4-5=-17/0, 4-7=-240/81, 2-9=-450/148  
BOT CHORD 8-9=-337/482, 7-8=-142/376, 6-7=0/0  
WEBS 3-8=0/173, 3-7=-447/200, 2-8=-120/275

- 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 157 lb uplift at joint 7.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

- NOTES**
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 7-3-0, Exterior(2E) 7-3-0 to 10-3-0 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.



May 14, 2024

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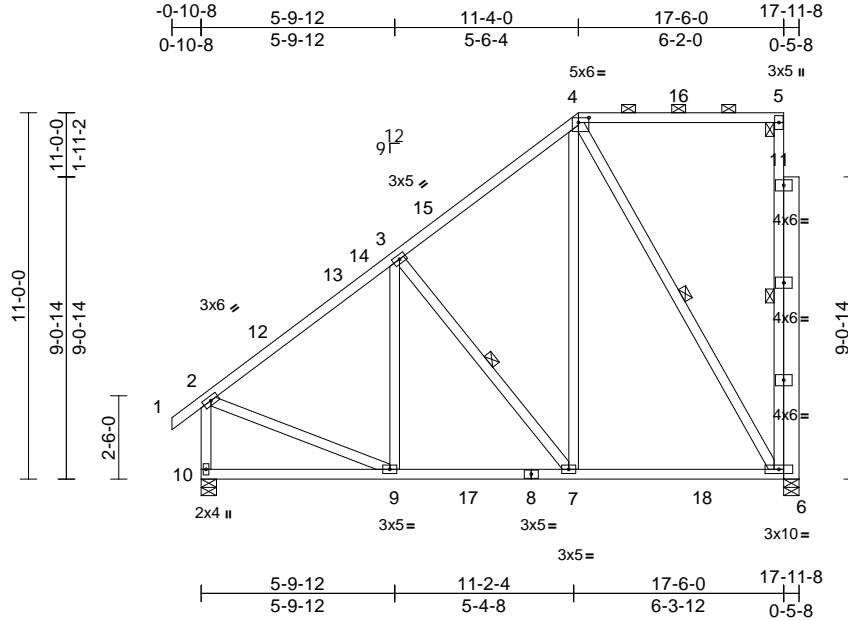
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss J2	Truss Type Piggyback Base	Qty 3	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567131
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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Page: 1



Scale = 1:69.2

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

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	0.90	Vert(LL)	-0.07	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(CT)	-0.12	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.57	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 161 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 5-6,7-4,6-4:2x4 SP No.2
- OTHERS 2x6 SP No.2

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (4-10-14 max.): 4-5.
- BOT CHORD Rigid ceiling directly applied or 9-6-15 oc bracing.
- WEBS 1 Row at midpt 5-6, 3-7, 4-6

**REACTIONS**

- (size) 6=0-5-8, 10=0-5-8
- Max Horiz 10=392 (LC 13)
- Max Uplift 6=-235 (LC 11), 10=-69 (LC 14)
- Max Grav 6=1315 (LC 43), 10=910 (LC 44)

**FORCES**

- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/37, 2-3=-808/114, 3-4=-613/196, 4-5=-143/186, 5-6=-773/151, 2-10=-820/133
- BOT CHORD 9-10=-375/448, 7-9=-219/826, 6-7=-158/529
- WEBS 3-9=-88/121, 3-7=-454/188, 4-7=-77/618, 4-6=-829/151, 2-9=-7/621

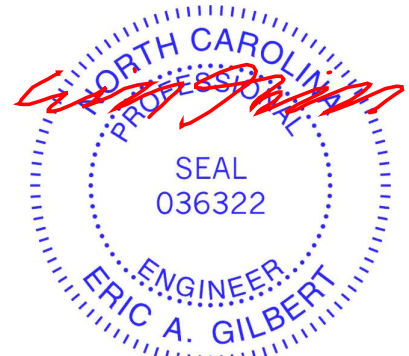
**NOTES**

- 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 7-1-1, Exterior(2R) 7-1-1 to 14-4-4, Exterior(2E) 14-4-4 to 17-4-4 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, with BCDL = 10.0psf.
- Bearing at joint(s) 6 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 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.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

**LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-4=-60, 4-5=-60, 6-10=-20  
Concentrated Loads (lb)  
Vert: 5=-436 (F)



May 14, 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)



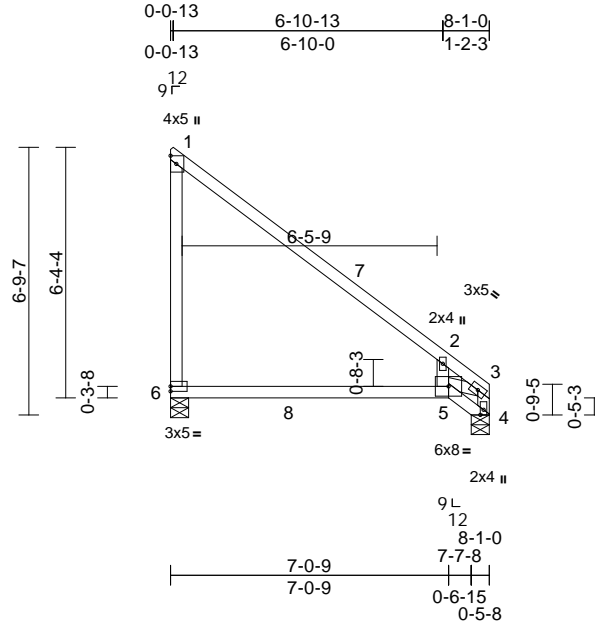
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss K1	Truss Type Roof Special	Qty 4	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567132
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
ID: jzudvf5?HySB7qACgSkvP7y94VX-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

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	0.95	Vert(LL)	-0.24	5-6	>398	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.76	Vert(CT)	-0.40	5-6	>233	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horz(CT)	-0.15	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 39 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.1  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 6-1:2x4 SP No.2

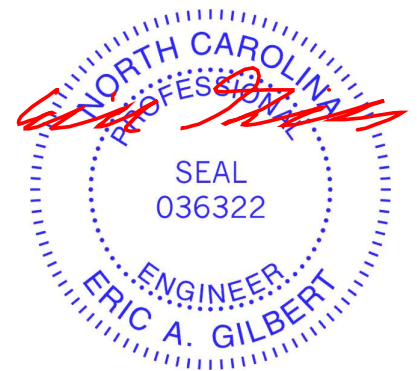
**BRACING**  
TOP CHORD Structural wood sheathing directly applied, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 4=0-5-8, 6=0-5-8  
Max Horiz 4=-226 (LC 10)  
Max Uplift 6=-101 (LC 15)  
Max Grav 4=383 (LC 24), 6=468 (LC 6)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-237/154, 2-3=-283/0, 3-4=-238/0, 1-6=-331/280  
BOT CHORD 5-6=-110/77, 4-5=-434/158  
WEBS 2-5=-199/147, 3-5=-136/433

- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 7) Bearings are assumed to be: , Joint 6 SP No.2 .
- 8) 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.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 6. 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

- 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) 0-1-12 to 3-1-12, Interior (1) 3-1-12 to 4-11-4, Exterior(2E) 4-11-4 to 7-11-4 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
  - 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) Provide adequate drainage to prevent water ponding.
  - 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.



May 14, 2024

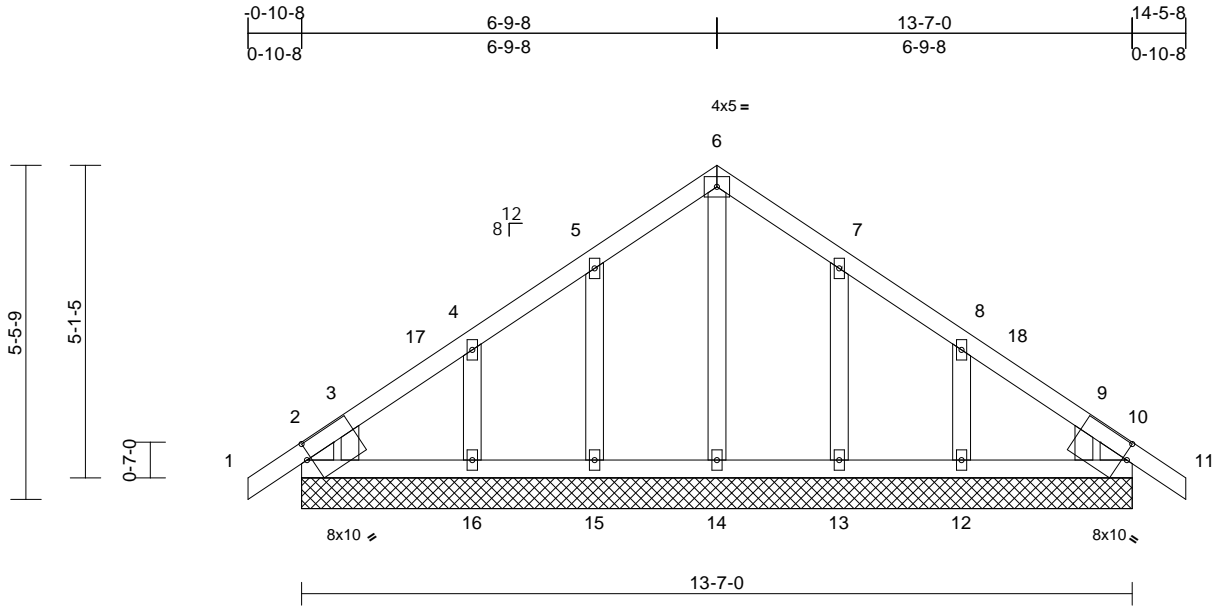


Job 24040186-01	Truss L01	Truss Type Common Supported Gable	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567133
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:54  
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Page: 1



Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	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	0.06	Horz(CT)	0.00	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 73 lb	FT = 20%

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

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

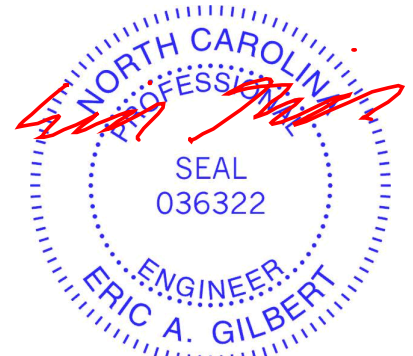
**REACTIONS** (size) 2=13-7-0, 10=13-7-0, 12=13-7-0, 13=13-7-0, 14=13-7-0, 15=13-7-0, 16=13-7-0  
Max Horiz 2=116 (LC 13)  
Max Uplift 2=-1 (LC 15), 10=-3 (LC 15), 12=-77 (LC 15), 13=-57 (LC 15), 15=-58 (LC 14), 16=-68 (LC 14)  
Max Grav 2=175 (LC 21), 10=175 (LC 22), 12=245 (LC 22), 13=242 (LC 22), 14=142 (LC 28), 15=242 (LC 21), 16=245 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/35, 2-3=-100/57, 3-4=-79/79, 4-5=-81/71, 5-6=-84/140, 6-7=-84/140, 7-8=-76/71, 8-9=-50/41, 9-10=-71/18, 10-11=0/35  
BOT CHORD 2-16=-40/120, 15-16=-36/118, 14-15=-36/118, 13-14=-36/118, 12-13=-36/118, 10-12=-40/120  
WEBS 6-14=-101/0, 5-15=-207/103, 4-16=-197/125, 7-13=-207/103, 8-12=-197/125

**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) -0-10-8 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
- 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) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 7) All plates are 2x4 MT20 unless otherwise indicated.
- 8) Gable requires continuous bottom chord bearing.
- 9) Gable studs spaced at 2-0-0 oc.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1 lb uplift at joint 2, 3 lb uplift at joint 10, 58 lb uplift at joint 15, 68 lb uplift at joint 16, 57 lb uplift at joint 13 and 77 lb uplift at joint 12.

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



May 14, 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/TPH Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



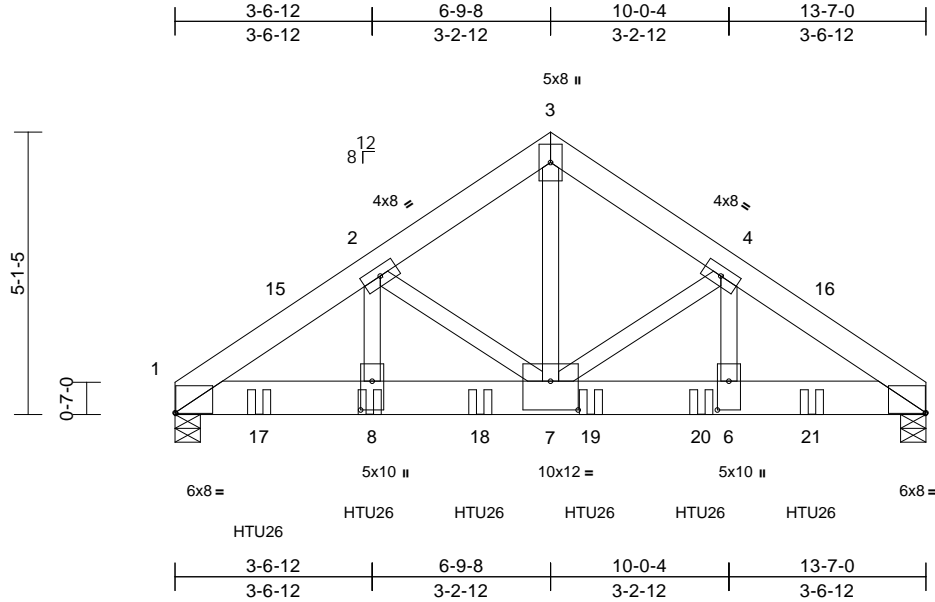
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss L02	Truss Type Common Girder	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567134
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
ID:JS2JQ00P25JO8ydTLdvPlzGcCJ-RfC?PsB70Hq3NSgPqnL8w3uITxbGKwRcDoi7J4zJC7f

Page: 1



Scale = 1:41.7

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

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.48	Vert(LL)	-0.06	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.47	Vert(CT)	-0.13	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.77	Horz(CT)	0.03	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 207 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x6 SP No.2
- BOT CHORD 2x8 SP 2400F 2.0E
- WEBS 2x4 SP No.3 \*Except\* 7-3:2x4 SP No.1

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 4-3-1 oc purlins.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

- (size) 1=0-5-8, 5=0-5-8
- Max Horiz 1=103 (LC 8)
- Max Grav 1=7850 (LC 5), 5=7302 (LC 6)

**FORCES**

- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=-11098/0, 2-3=-7970/0, 3-4=-7966/0, 4-5=-10953/0
- BOT CHORD 1-8=0/9233, 7-8=0/9233, 6-7=0/9094, 5-6=0/9094
- WEBS 2-8=0/3513, 2-7=-3225/0, 3-7=0/8375, 4-7=-3052/0, 4-6=0/3365

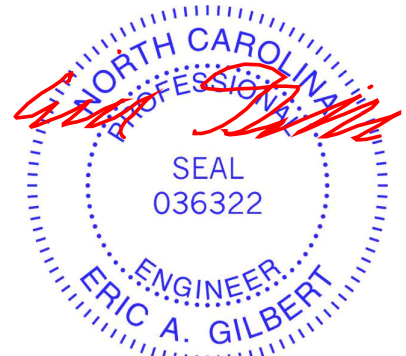
**NOTES**

- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x8 - 3 rows staggered at 0-5-0 oc.  
Web connected as follows: 2x4 - 2 rows staggered at 0-3-0 oc.
- All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
- Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Use Simpson Strong-Tie HTU26 (20-16d Girder, 11-10dx1 1/2 Truss) 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: 1-3=-58, 3-5=-58, 9-12=-19  
Concentrated Loads (lb)  
Vert: 8=-1994 (B), 17=-1994 (B), 18=-1994 (B), 19=-1994 (B), 20=-1994 (B), 21=-1994 (B)



May 14, 2024

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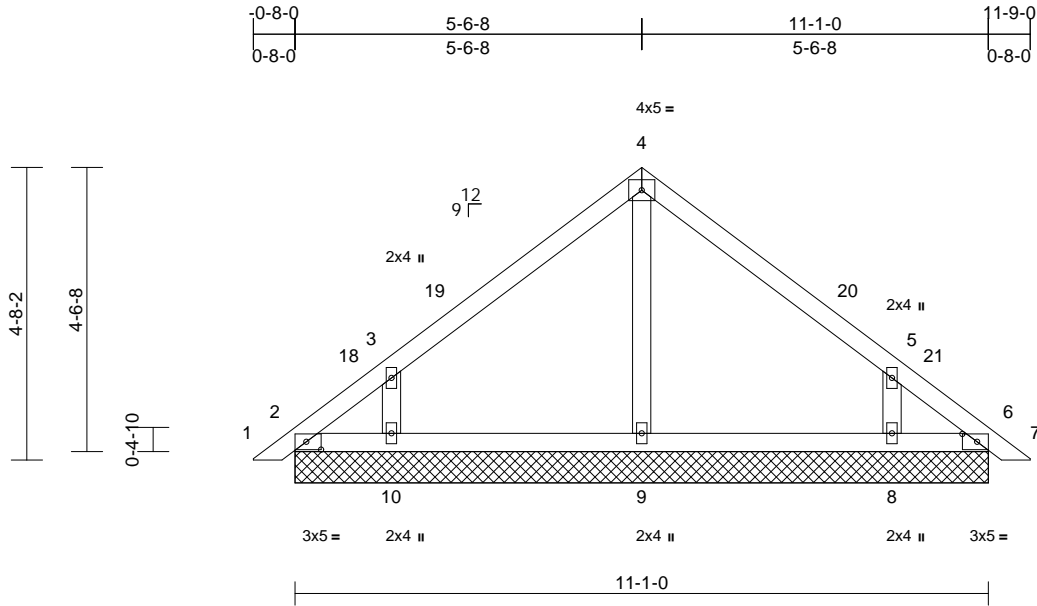
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss PB1	Truss Type Piggyback	Qty 8	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567135
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
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Page: 1



Scale = 1:36.8

Plate Offsets (X, Y): [2:0-2-13,0-1-8], [6:0-2-13,0-1-8]

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	0.30	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	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: 48 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=11-1-0, 6=11-1-0, 8=11-1-0, 9=11-1-0, 10=11-1-0, 11=11-1-0, 15=11-1-0  
Max Horiz 2=-105 (LC 12), 11=-105 (LC 12)  
Max Uplift 2=-37 (LC 10), 6=-17 (LC 11), 8=-132 (LC 15), 10=-133 (LC 14), 11=-37 (LC 10), 15=-17 (LC 11)  
Max Grav 2=83 (LC 26), 6=67 (LC 25), 8=433 (LC 22), 9=281 (LC 22), 10=433 (LC 21), 11=83 (LC 26), 15=67 (LC 25)

**FORCES**

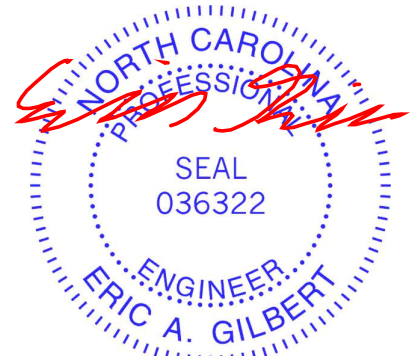
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-107/92, 3-4=-189/96, 4-5=-189/96, 5-6=-84/58, 6-7=0/16  
BOT CHORD 2-10=-28/72, 9-10=-28/72, 8-9=-28/72, 6-8=-28/72  
WEBS 4-9=-193/19, 3-10=-407/211, 5-8=-407/211

**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) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 9-2-9, Exterior(2E) 9-2-9 to 12-2-9 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 live load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 6, 10, and 8. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

13) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.  
**LOAD CASE(S)** Standard



May 14, 2024

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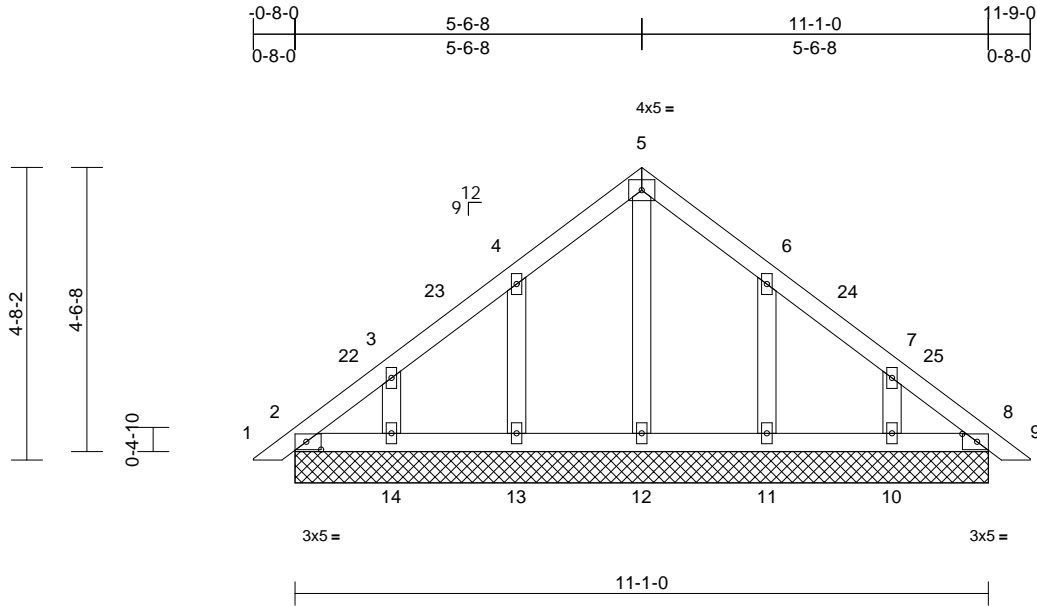
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss PB1GE	Truss Type Piggyback	Qty 2	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567136
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
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Page: 1



Scale = 1:36.8

Plate Offsets (X, Y): [2:0-2-13,0-1-8], [8:0-2-13,0-1-8]

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	0.09	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	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 56 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=11-1-0, 8=11-1-0, 10=11-1-0,  
11=11-1-0, 12=11-1-0, 13=11-1-0,  
14=11-1-0, 15=11-1-0, 19=11-1-0  
Max Horiz 2=-105 (LC 12), 15=-105 (LC 12)  
Max Uplift 2=-18 (LC 10), 10=-66 (LC 15),  
11=-71 (LC 15), 13=-71 (LC 14),  
14=-67 (LC 14), 15=-18 (LC 10)  
Max Grav 2=100 (LC 26), 8=91 (LC 1),  
10=207 (LC 22), 11=269 (LC 22),  
12=131 (LC 28), 13=269 (LC 21),  
14=207 (LC 21), 15=100 (LC 26),  
19=91 (LC 1)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/16, 2-3=-89/75, 3-4=-86/57,  
4-5=-97/106, 5-6=-97/106, 6-7=-83/41,  
7-8=-66/42, 8-9=0/16  
BOT CHORD 2-14=-34/83, 13-14=-34/83, 12-13=-34/83,  
11-12=-34/83, 10-11=-34/83, 8-10=-34/83  
WEBS 5-12=-91/0, 4-13=-229/117, 3-14=-167/91,  
6-11=-229/117, 7-10=-167/91

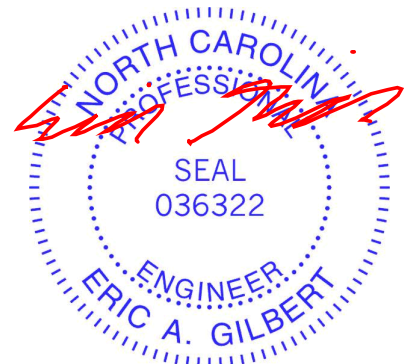
**NOTES**

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) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 9-2-9, Exterior(2E) 9-2-9 to 12-2-9 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 live 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, 13, 14, 11, 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.

14) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



May 14, 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

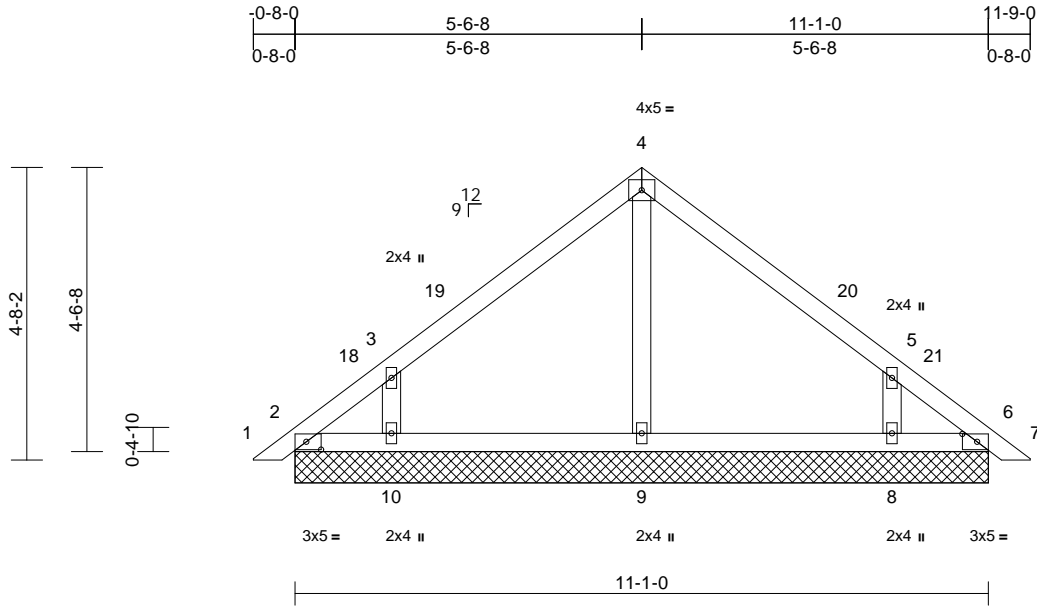


Job 24040186-01	Truss PB1GR	Truss Type Piggyback	Qty 1	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567137
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
ID:nQ3TCLVnyvfTTDuVPZSo4yy90TY-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:36.8

Plate Offsets (X, Y): [2:0-2-13,0-1-8], [6:0-2-13,0-1-8]

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	0.15	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	0.04	Horz(CT)	0.00	15	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 97 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=11-1-0, 6=11-1-0, 8=11-1-0, 9=11-1-0, 10=11-1-0, 11=11-1-0, 15=11-1-0  
Max Horiz 2=-105 (LC 12), 11=-105 (LC 12)  
Max Uplift 2=-37 (LC 10), 6=-17 (LC 11), 8=-132 (LC 15), 10=-133 (LC 14), 11=-37 (LC 10), 15=-17 (LC 11)  
Max Grav 2=83 (LC 26), 6=67 (LC 25), 8=433 (LC 22), 9=282 (LC 22), 10=433 (LC 21), 11=83 (LC 26), 15=67 (LC 25)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-106/92, 3-4=-189/97, 4-5=-189/97, 5-6=-83/58, 6-7=0/16  
BOT CHORD 2-10=-29/71, 9-10=-28/71, 8-9=-28/71, 6-8=-28/71  
WEBS 4-9=-193/19, 3-10=-406/210, 5-8=-406/210

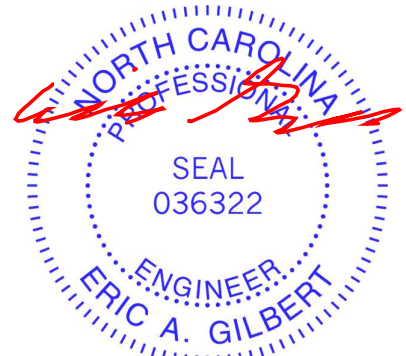
**NOTES**

1) 2-ply truss to be connected together as follows:  
Top chords connected with 10d (0.131"x3") nails as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected with 10d (0.131"x3") nails 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 and C-C Exterior(2E) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 9-2-9, Exterior(2E) 9-2-9 to 12-2-9 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.
- 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.

- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 6, 10, and 8. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



May 14, 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)



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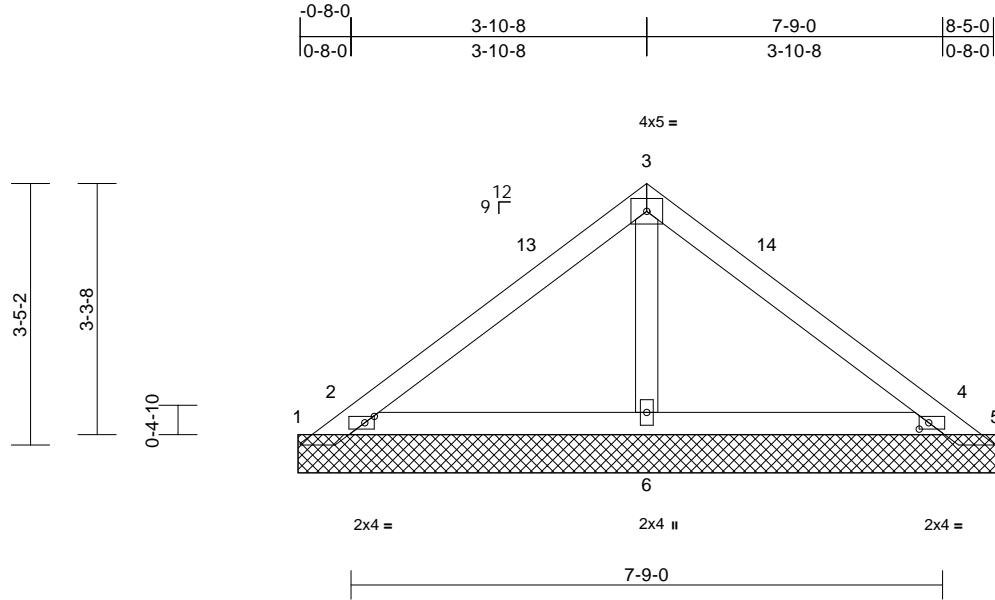


Job 24040186-01	Truss PB2	Truss Type Piggyback	Qty 7	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567138
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
ID:9tVbUfm9bkrGxna7Y?YDo6y91zG-RfC?PsB70Hq3NSgPqnl8w3uITXbGKwRCDoi7J4zJC?f

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	0.42	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 32 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=9-1-11, 2=9-1-11, 4=9-1-11, 5=9-1-11, 6=9-1-11, 7=9-1-11, 10=9-1-11  
Max Horiz 1=-76 (LC 10)  
Max Uplift 1=-376 (LC 21), 2=-200 (LC 14), 4=-182 (LC 15), 5=-373 (LC 22), 7=-200 (LC 14), 10=-182 (LC 15)  
Max Grav 1=159 (LC 14), 2=743 (LC 21), 4=732 (LC 22), 5=126 (LC 15), 6=224 (LC 21), 7=743 (LC 21), 10=732 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-135/259, 2-3=-184/175, 3-4=-184/174, 4-5=-112/257  
BOT CHORD 2-6=-132/82, 4-6=-132/82  
WEBS 3-6=-121/15

**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) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 5-10-9, Exterior(2E) 5-10-9 to 8-10-9 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 376 lb uplift at joint 1 and 373 lb uplift at joint 5.
- 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.
- 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) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.  
**LOAD CASE(S)** Standard



May 14, 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)



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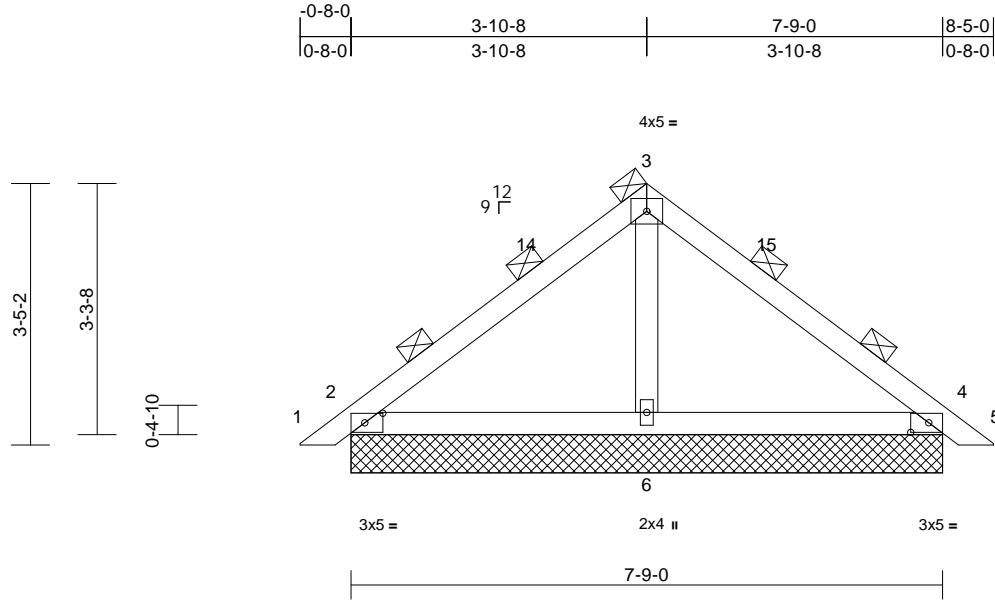


Job 24040186-01	Truss PB2GR	Truss Type Piggyback	Qty 2	Ply 2	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567140
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:55  
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Page: 1



Scale = 1:30.2

Plate Offsets (X, Y): [2:0-2-13,0-1-8], [4:0-2-13,0-1-8]

Loading	(psf)	Spacing	3-0-0	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	0.26	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	NO	WB	0.02	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 65 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD 2-0-0 oc purlins (6-0-0 max.)  
(Switched from sheeted: Spacing > 2-8-0).  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 2=7-9-0, 4=7-9-0, 6=7-9-0, 7=7-9-0, 11=7-9-0  
Max Horiz 2=114 (LC 13), 7=114 (LC 13)  
Max Uplift 2=61 (LC 14), 4=76 (LC 15), 7=61 (LC 14), 11=76 (LC 15)  
Max Grav 2=477 (LC 21), 4=477 (LC 22), 6=385 (LC 21), 7=477 (LC 21), 11=477 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/40, 2-3=-314/156, 3-4=-314/156, 4-5=0/40  
BOT CHORD 2-6=-58/158, 4-6=-33/158  
WEBS 3-6=-148/3

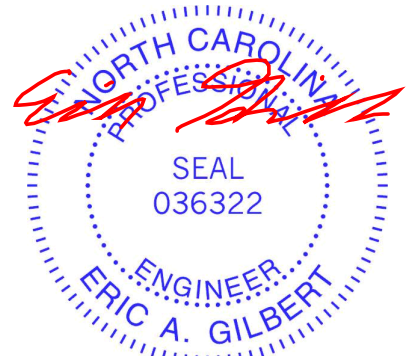
**NOTES**

- 2-ply truss to be connected together as follows:  
Top chords connected with 10d (0.131"x3") nails as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected with 10d (0.131"x3") nails 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 and C-C Exterior(2E) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 5-10-9, Exterior(2E) 5-10-9 to 8-10-9 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 live load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- 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.
- 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.

- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.
- 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



May 14, 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)



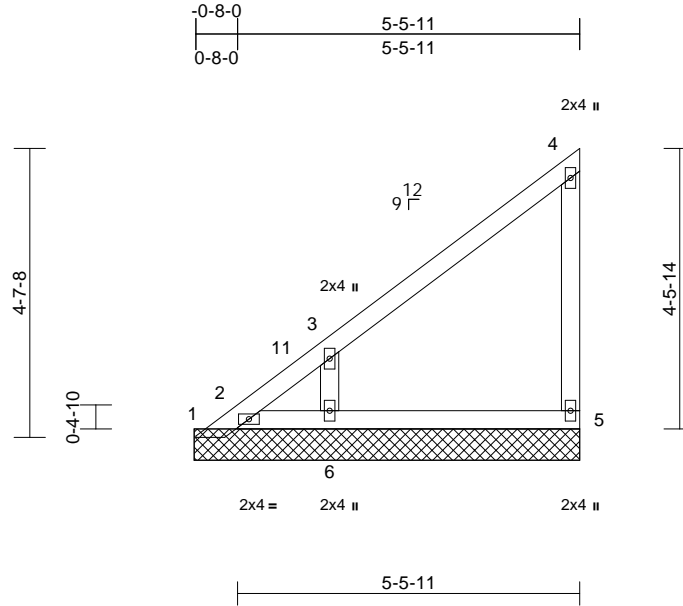
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss PB3	Truss Type Piggyback	Qty 3	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567141
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
ID: jzudvf5?HySB7qACgSkvP7y94VX-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKwRcD0i7J4zJC?f

Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.34	Vert(LL)	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-MP								
BCDL	10.0											
										Weight: 27 lb	FT = 20%	

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

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

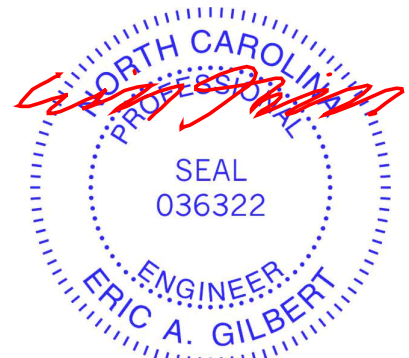
REACTIONS	
(size)	1=6-2-0, 2=6-2-0, 5=6-2-0, 6=6-2-0, 7=6-2-0
Max Horiz	1=151 (LC 11)
Max Uplift	1=-38 (LC 10), 2=-139 (LC 21), 5=-36 (LC 11), 6=-141 (LC 14), 7=-139 (LC 21)
Max Grav	1=124 (LC 26), 2=62 (LC 14), 5=192 (LC 21), 6=507 (LC 21), 7=62 (LC 14)

FORCES	
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-190/233, 2-3=-196/226, 3-4=-143/117, 4-5=-160/54
BOT CHORD	2-6=-52/76, 5-6=-52/76
WEBS	3-6=-446/316

- NOTES**
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; 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.
- Bearing at joint(s) 2, 1, 2 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 38 lb uplift at joint 1.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5, 2, 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.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



May 14, 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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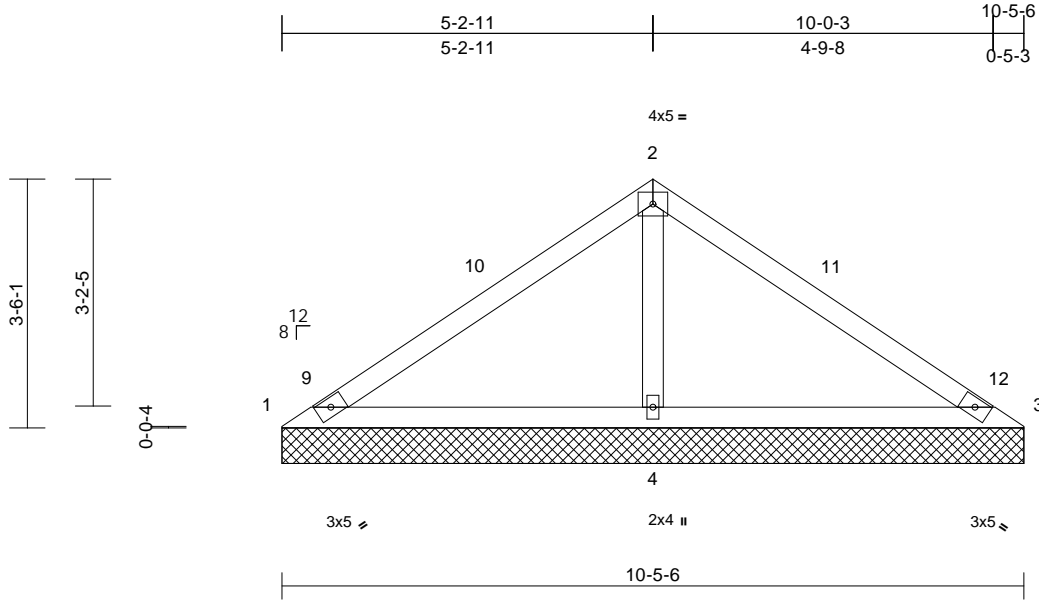
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V1	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567142
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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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	0.51	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.47	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.17	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 37 lb	FT = 20%

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

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

**REACTIONS** (size) 1=10-5-6, 3=10-5-6, 4=10-5-6  
Max Horiz 1=-78 (LC 10)  
Max Uplift 1=-62 (LC 21), 3=-62 (LC 20), 4=-92 (LC 14)  
Max Grav 1=95 (LC 20), 3=95 (LC 21), 4=846 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-109/441, 2-3=-109/441  
BOT CHORD 1-4=-319/158, 3-4=-319/158  
WEBS 2-4=-700/235

**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) 0-0-6 to 3-0-6, Exterior(2R) 3-0-6 to 7-5-12, Exterior(2E) 7-5-12 to 10-5-12 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  
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 62 lb uplift at joint 1, 62 lb uplift at joint 3 and 92 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



May 14, 2024

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Edenton, NC 27932

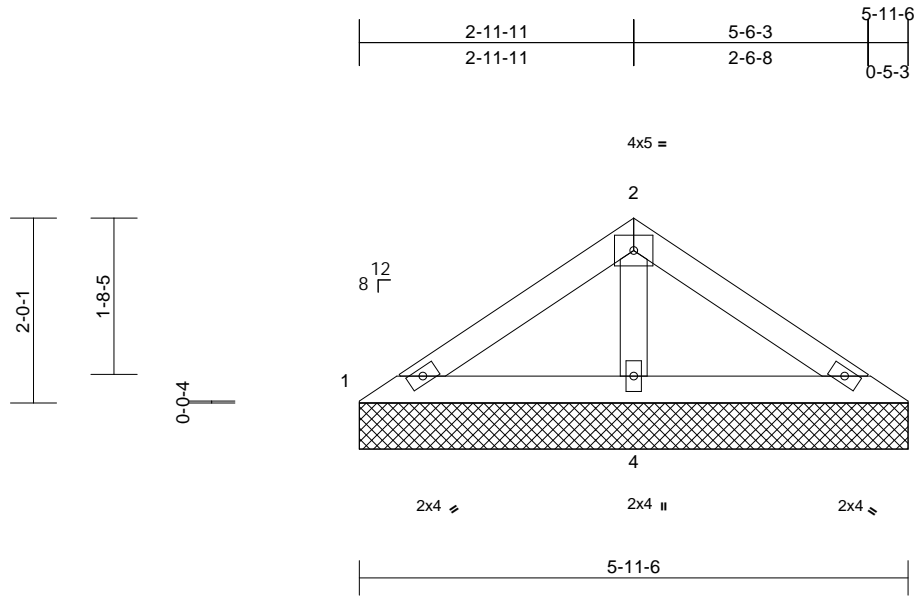


Job 24040186-01	Truss V2	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567143
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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Scale = 1:25

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	0.14	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horiz(TL)	0.00	4	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 5-11-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

#### REACTIONS

(size) 1=5-11-6, 3=5-11-6, 4=5-11-6  
Max Horiz 1=-43 (LC 12)  
Max Uplift 1=-3 (LC 14), 3=-11 (LC 15), 4=-36 (LC 14)  
Max Grav 1=97 (LC 20), 3=97 (LC 21), 4=383 (LC 20)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

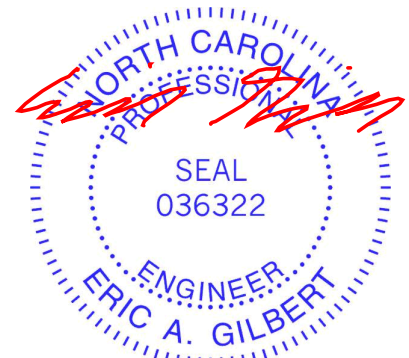
TOP CHORD 1-2=-95/158, 2-3=-95/158  
BOT CHORD 1-4=-135/102, 3-4=-135/102  
WEBS 2-4=-290/128

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C 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 3 lb uplift at joint 1, 11 lb uplift at joint 3 and 36 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



May 14, 2024

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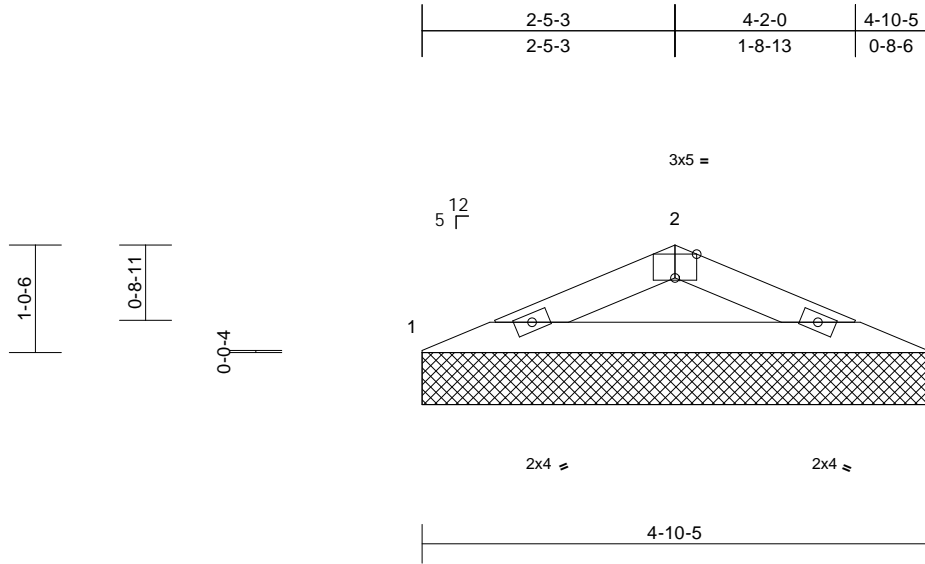
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V04	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567144
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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Page: 1



Scale = 1:22.1

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	0.19	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.01	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 13 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 4-10-5 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 1=4-10-5, 3=4-10-5  
Max Horiz 1=14 (LC 14)  
Max Uplift 1=20 (LC 14), 3=20 (LC 15)  
Max Grav 1=219 (LC 20), 3=219 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

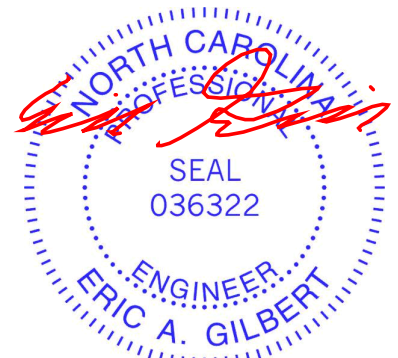
TOP CHORD 1-2=-434/193, 2-3=-434/193  
BOT CHORD 1-3=-165/391

#### 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 20 lb uplift at joint 1 and 20 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



May 14, 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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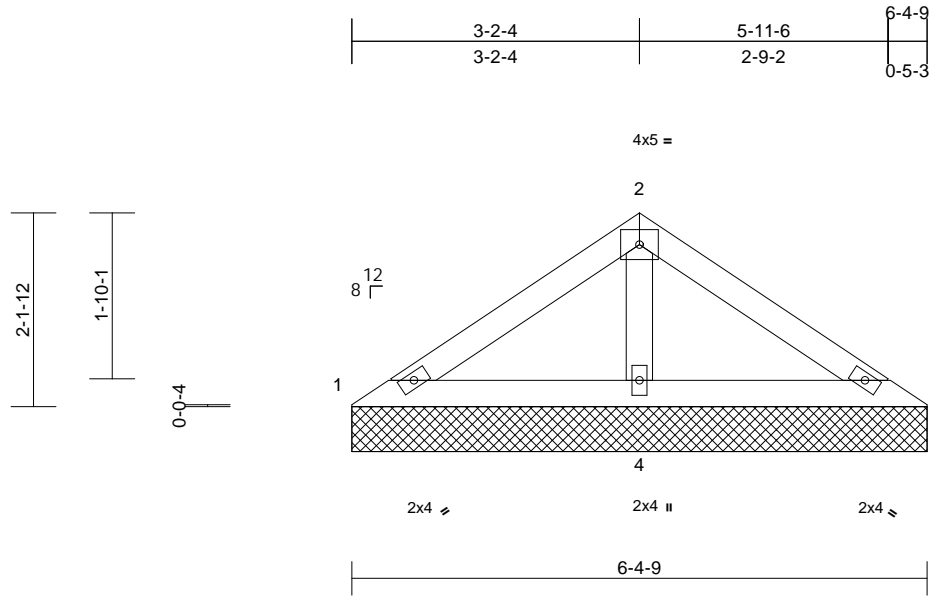
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V06	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567145
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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Page: 1



Scale = 1:25.6

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.17	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 22 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 6-4-9 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=6-4-9, 3=6-4-9, 4=6-4-9  
Max Horiz 1=46 (LC 13)  
Max Uplift 1=-2 (LC 14), 3=-10 (LC 15), 4=-41 (LC 14)  
Max Grav 1=100 (LC 20), 3=100 (LC 21), 4=424 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

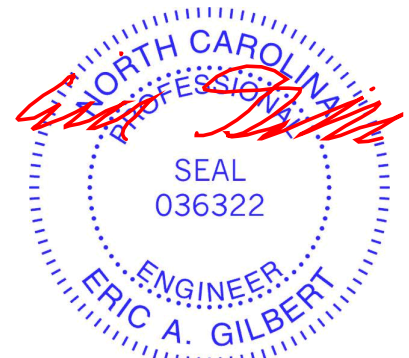
TOP CHORD 1-2=-97/182, 2-3=-97/182  
BOT CHORD 1-4=-155/112, 3-4=-155/112  
WEBS 2-4=-326/142

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- 4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 2 lb uplift at joint 1, 10 lb uplift at joint 3 and 41 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



May 14, 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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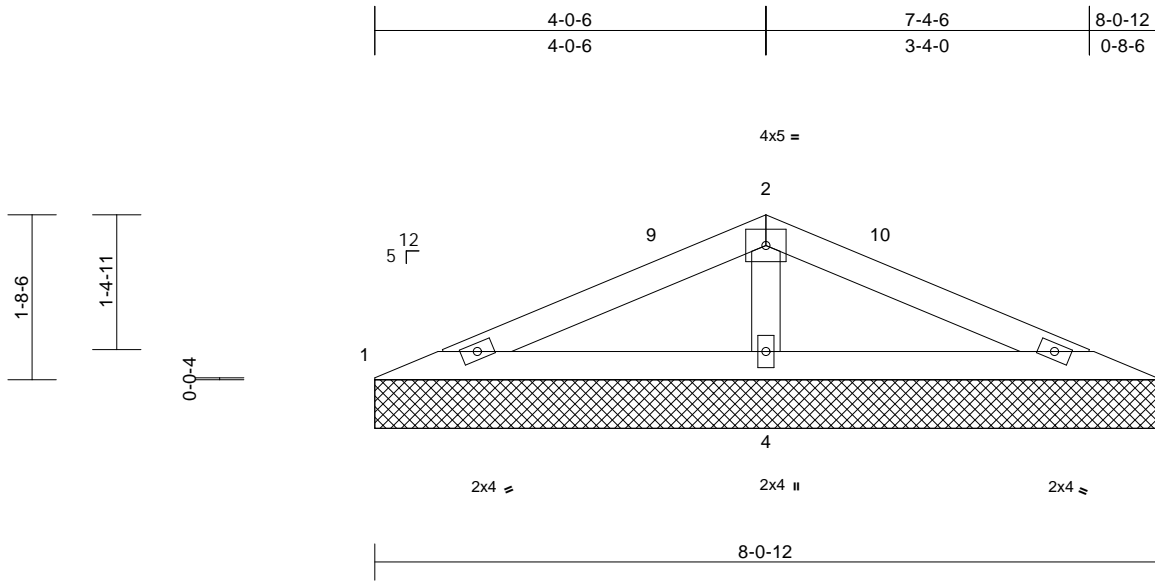
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V08	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567146
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
ID:logDP99T7E8NNE1\_pwsF1nzGcDQ-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCDoi7J4zJC7f

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	0.26	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	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: 24 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 8-0-12 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=8-0-12, 3=8-0-12, 4=8-0-12  
Max Horiz 1=24 (LC 14)  
Max Uplift 1=-14 (LC 14), 3=-19 (LC 15), 4=-38 (LC 14)  
Max Grav 1=123 (LC 20), 3=123 (LC 21), 4=521 (LC 20)

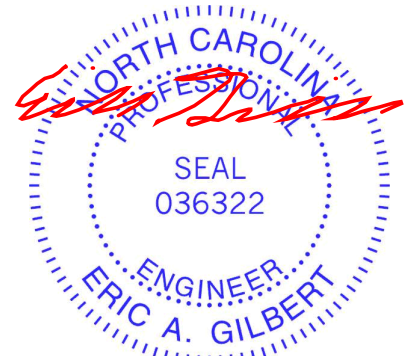
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-155/284, 2-3=-155/284  
BOT CHORD 1-4=-257/152, 3-4=-257/152  
WEBS 2-4=-377/202

- 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 14 lb uplift at joint 1, 19 lb uplift at joint 3 and 38 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-10 to 3-0-10, Exterior(2R) 3-0-10 to 5-1-5, Exterior(2E) 5-1-5 to 8-1-5 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.



May 14, 2024

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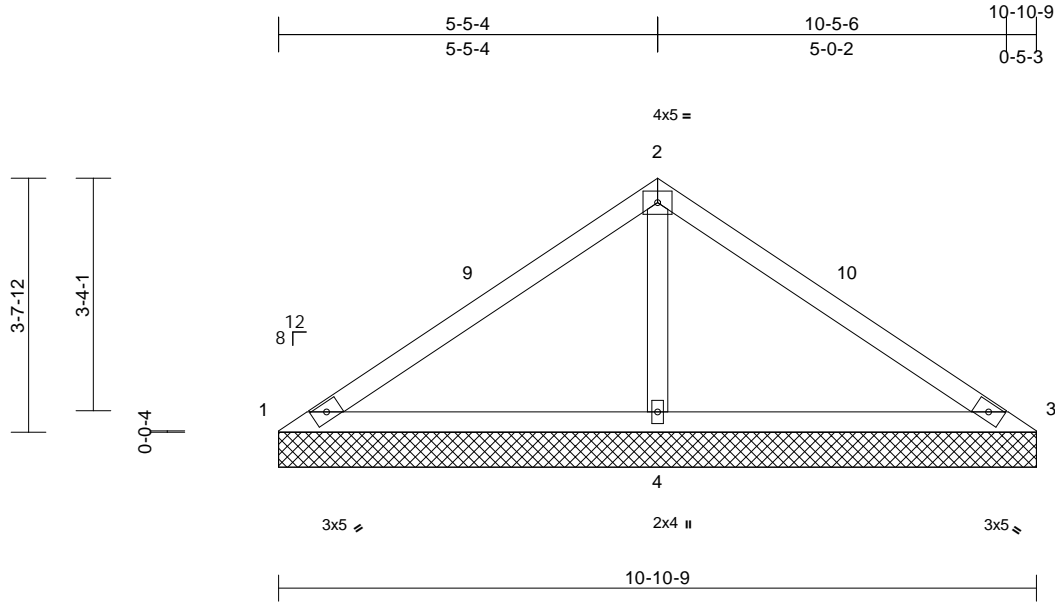
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V10	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567147
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
ID:LPYS\_T7Dbcug7wtciWpnyMzGcDS-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrcDoi7J4zJC?f

Page: 1



Scale = 1:33.1

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	0.56	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	0.19	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 39 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=10-10-9, 3=10-10-9, 4=10-10-9  
Max Horiz 1=-82 (LC 10)  
Max Uplift 1=-69 (LC 21), 3=-69 (LC 20),  
4=-100 (LC 14)  
Max Grav 1=83 (LC 20), 3=83 (LC 21), 4=889 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

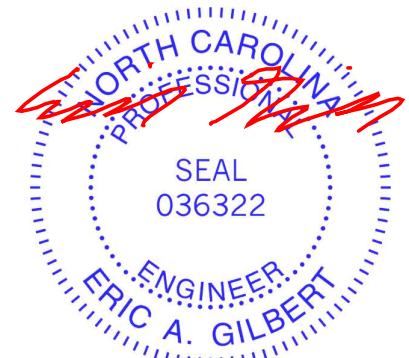
TOP CHORD 1-2=-116/469, 2-3=-116/469  
BOT CHORD 1-4=-344/165, 3-4=-344/165  
WEBS 2-4=-745/246

**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) 0-0-6 to 3-0-6, Exterior(2R) 3-0-6 to 7-10-15, Exterior(2E) 7-10-15 to 10-10-15 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 69 lb uplift at joint 1, 69 lb uplift at joint 3 and 100 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



May 14, 2024

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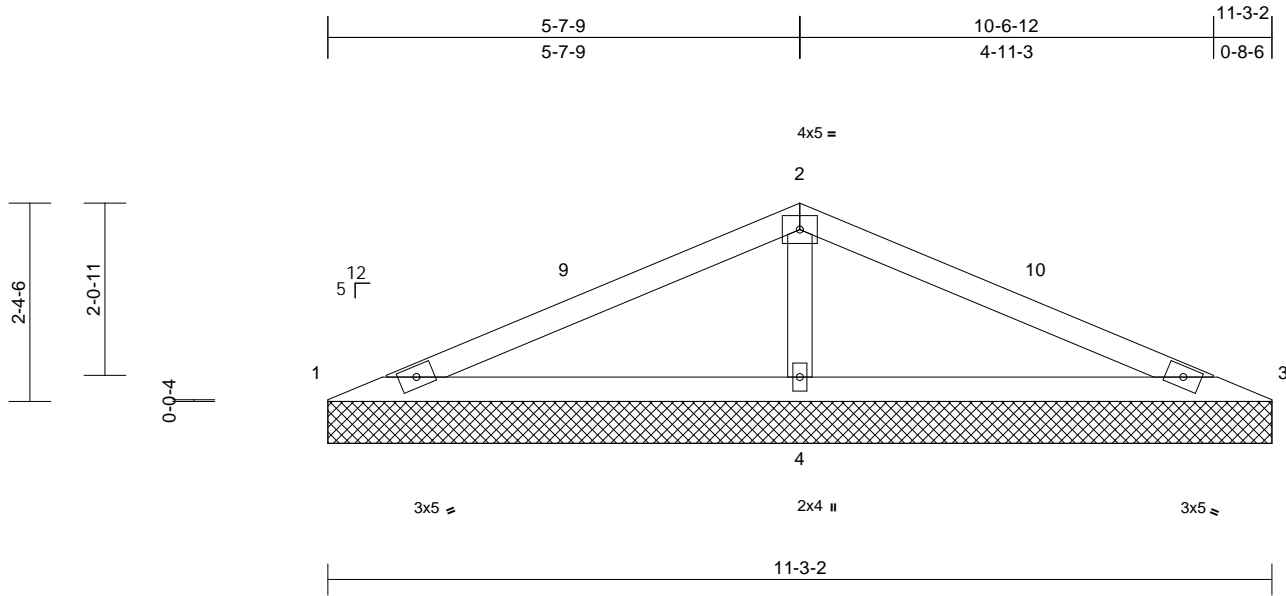


Job 24040186-01	Truss V11	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	I65567148
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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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	0.52	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.51	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 35 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=11-3-2, 3=11-3-2, 4=11-3-2  
Max Horiz 1=35 (LC 18)  
Max Uplift 1=-30 (LC 21), 3=-30 (LC 20), 4=-61 (LC 14)  
Max Grav 1=140 (LC 20), 3=140 (LC 21), 4=816 (LC 20)

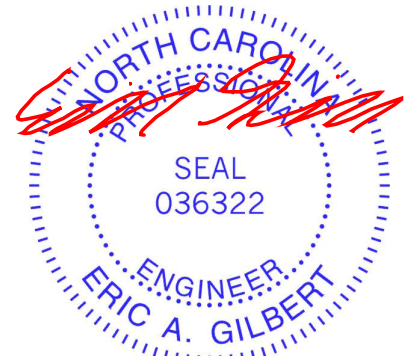
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-181/492, 2-3=-181/492  
BOT CHORD 1-4=-403/206, 3-4=-403/206  
WEBS 2-4=-634/316

- 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 30 lb uplift at joint 1, 30 lb uplift at joint 3 and 61 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-10 to 3-0-10, Exterior(2R) 3-0-10 to 8-3-12, Exterior(2E) 8-3-12 to 11-3-12 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
- 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.



May 14, 2024

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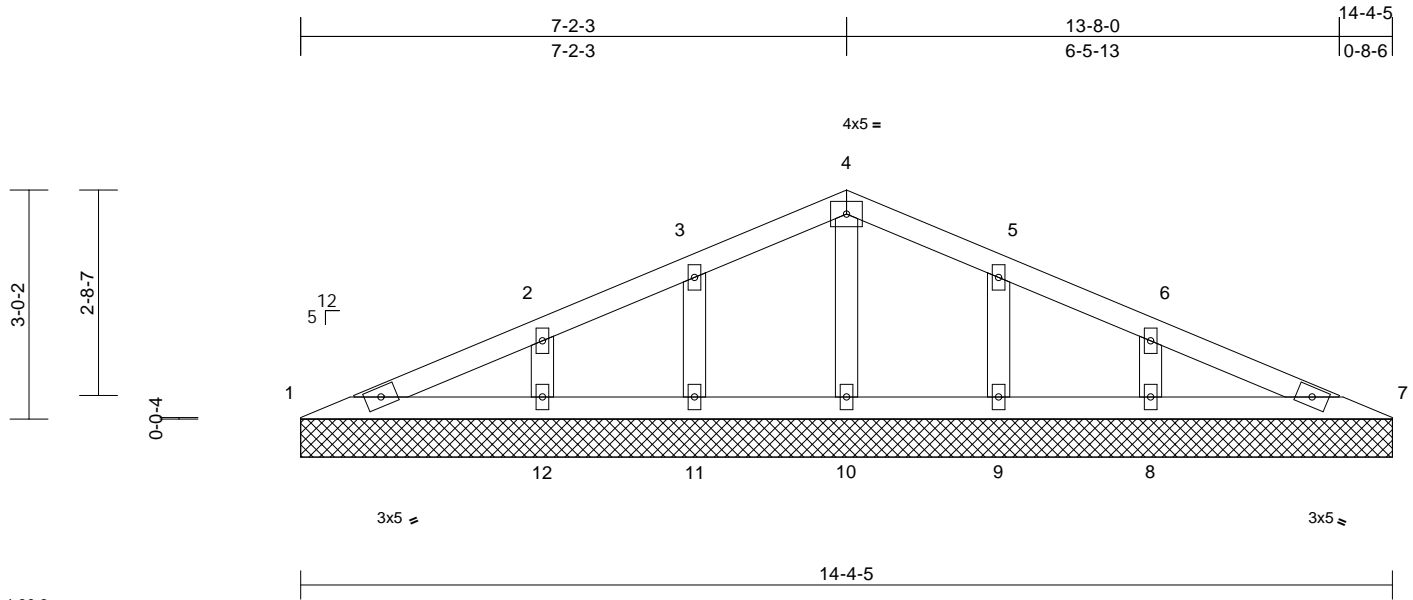
818 Soundside Road  
Edenton, NC 27932

Job 24040186-01	Truss V14	Truss Type Valley	Qty 1	Ply 1	133 Serenity-Roof-B330 B COP BNS GLH Job Reference (optional)	165567149
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 9.04 S 8.73 Apr 25 2024 Print: 8.730 S Apr 25 2024 MiTek Industries, Inc. Tue May 14 11:16:56  
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Page: 1



Scale = 1:30.3

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 53 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.

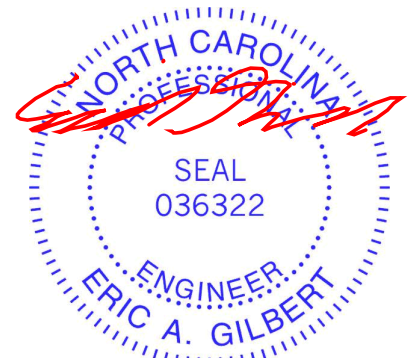
**REACTIONS** (size)  
1=14-4-5, 7=14-4-5, 8=14-4-5,  
9=14-4-5, 10=14-4-5, 11=14-4-5,  
12=14-4-5  
Max Horiz 1=44 (LC 18)  
Max Uplift 1=-3 (LC 15), 7=-10 (LC 15), 8=-51 (LC 15), 9=-36 (LC 15), 11=-36 (LC 14), 12=-52 (LC 14)  
Max Grav 1=97 (LC 20), 7=97 (LC 21), 8=320 (LC 21), 9=196 (LC 21), 10=201 (LC 1), 11=196 (LC 20), 12=320 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-141/100, 2-3=-7/83, 3-4=-1/90, 4-5=-1/86, 5-6=0/83, 6-7=-141/100  
BOT CHORD 1-12=-66/124, 11-12=-66/73, 10-11=-66/73, 9-10=-66/73, 8-9=-66/73, 7-8=-66/124  
WEBS 4-10=-154/25, 3-11=-178/92, 2-12=-221/116, 5-9=-178/92, 6-8=-221/116

**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) 0-0-10 to 3-2-12, Exterior(2N) 3-2-12 to 4-2-12, Corner(3R) 4-2-12 to 10-2-12, Exterior (2N) 10-2-12 to 11-2-12, Corner(3E) 11-2-12 to 14-4-15 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.
- 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 3 lb uplift at joint 1, 10 lb uplift at joint 7, 36 lb uplift at joint 11, 52 lb uplift at joint 12, 36 lb uplift at joint 9 and 51 lb uplift at joint 8.
- 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



May 14, 2024

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

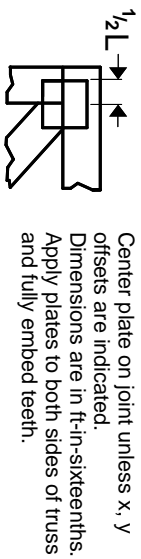
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Edenton, NC 27932

# Symbols

## PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- 1/16" from outside edge of truss.



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

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

## PLATE SIZE

**4 X 4**

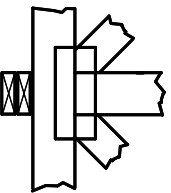
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T or I bracing if indicated.

## BEARING



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

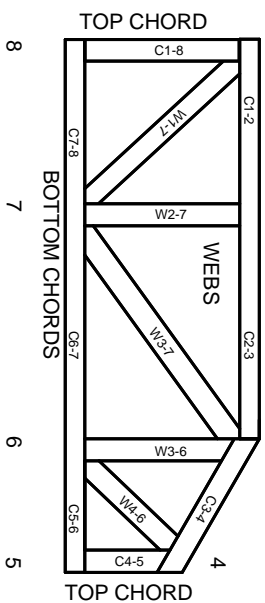
## Industry Standards:

ANSI/TP1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-22: Design Standard for Bracing.  
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System



1 TOP CHORDS  
2 Joint ID  
3 typ.



**JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.**

**CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.**

# Product Code Approvals

ICC-ES Reports:

ESR-1988, ESR-2362, ESR-2685, ESR-3282  
ESR-4722, ESL-1388

# Design General Notes

Trusses are designed for wind loads in the plane of the truss unless otherwise shown.

Lumber design values are in accordance with ANSI/TP1 section 6.3. These truss designs rely on Lumber values established by others.

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# General Safety Notes

## Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability/bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TP1 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TP1 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TP1 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.

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