

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 24090060-01  
174 Serenity-Roof-B330 A CP 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: I68464864 thru I68464905

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

North Carolina COA: C-0844



September 26, 2024

Gilbert, Eric

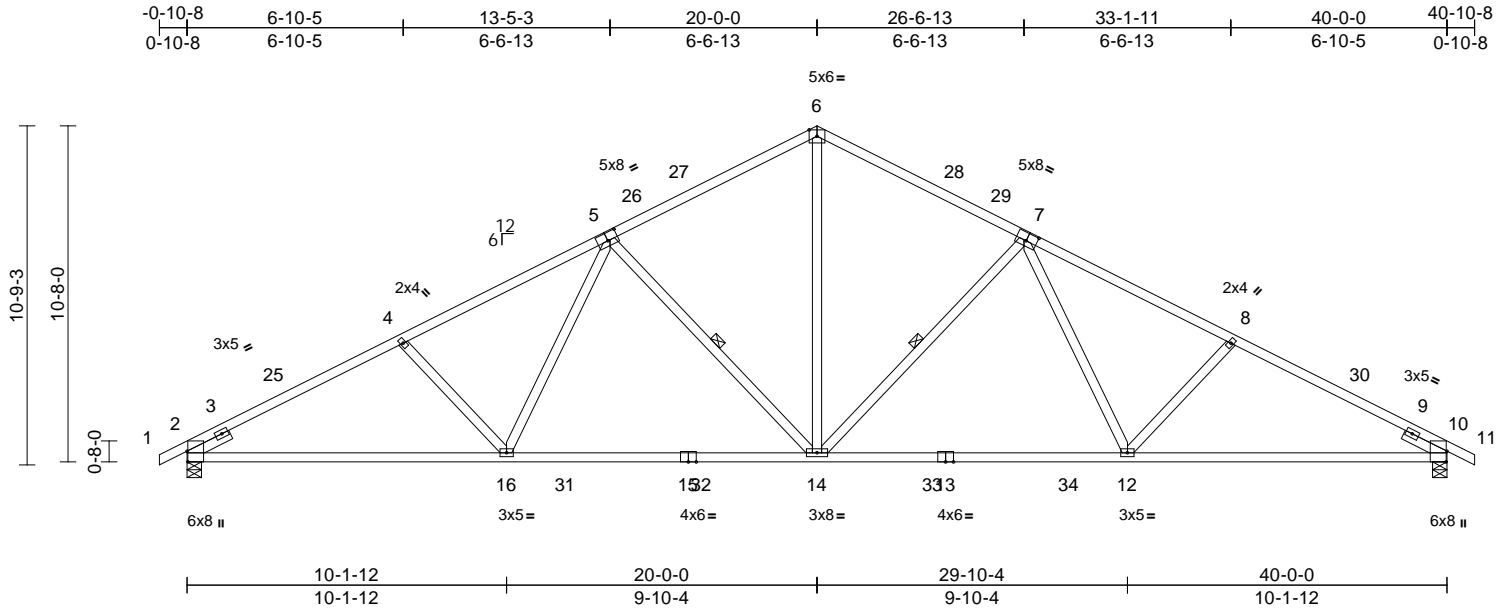
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 24090060-01	Truss A01	Truss Type Common	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464864
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:08  
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Page: 1



Scale = 1:73.1

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	0.87	Vert(LL)	-0.37	14-16	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	1.00	Vert(CT)	-0.64	14-16	>754	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.41	Horz(CT)	0.15	10	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 213 lb	FT = 20%

**LUMBER**  
TOP CHORD 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 or 2-2-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
WEBS 1 Row at midpt 7-14, 5-14

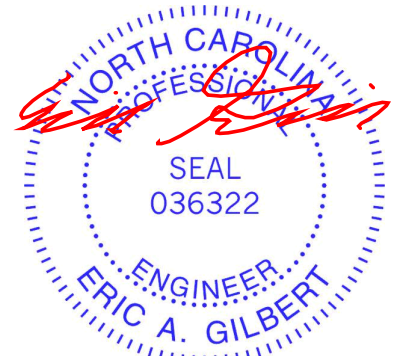
**REACTIONS** (size) 2=0-5-8, 10=0-5-8  
Max Horiz 2=-165 (LC 15)  
Max Uplift 2=-170 (LC 14), 10=-170 (LC 15)  
Max Grav 2=1809 (LC 3), 10=1809 (LC 3)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-3431/321, 4-6=-3226/333, 6-8=-3226/333, 8-10=-3431/321, 10-11=0/23  
BOT CHORD 2-16=-330/2978, 14-16=-191/2524, 12-14=-109/2524, 10-12=-185/2978  
WEBS 6-14=-114/1658, 7-14=-853/247, 7-12=-25/626, 8-12=-301/191, 5-14=-853/247, 5-16=-25/626, 4-16=-301/191

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-1-8, Interior (1) 3-1-8 to 16-0-0, Exterior(2R) 16-0-0 to 24-0-0, Interior (1) 24-0-0 to 36-10-8, Exterior(2E) 36-10-8 to 40-10-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 26, 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)



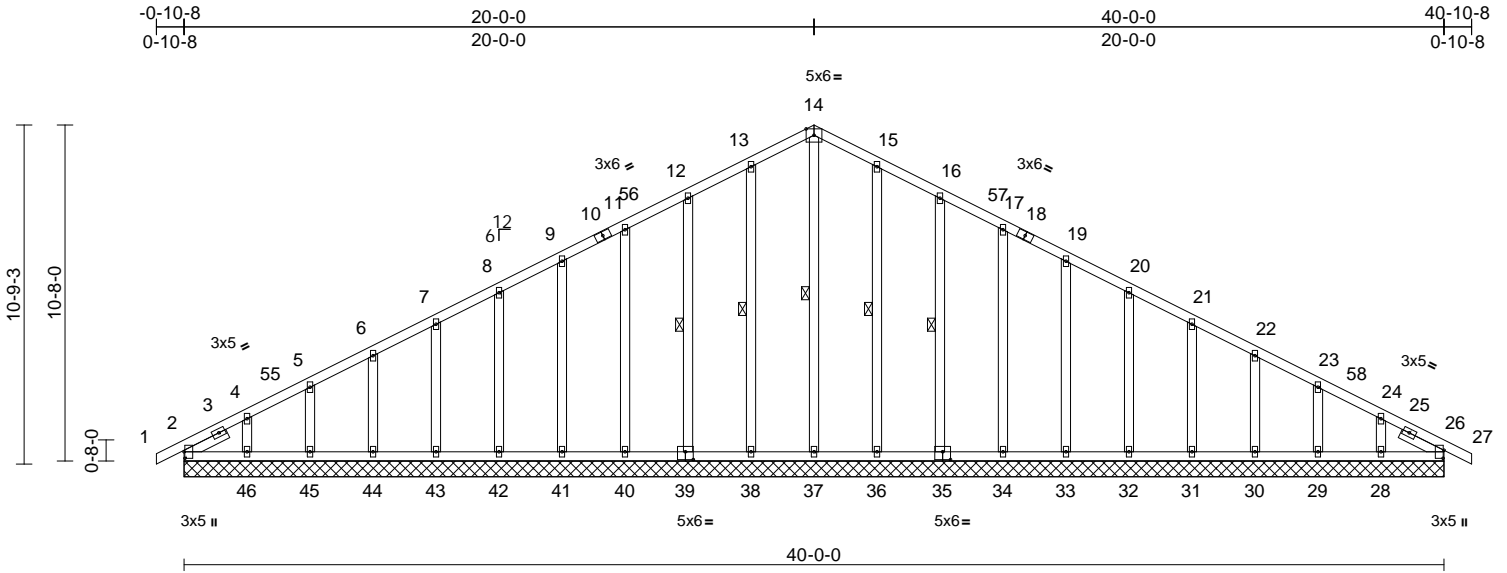
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss A02	Truss Type Common Supported Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464865
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:09  
ID:94aeZ53wRfHxaJ4LIBSgWSzF\_tZ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC7f

Page: 1



Scale = 1:73.1

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [26:0-3-1,0-0-5], [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	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	26	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 286 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)  
2=40-0-0, 26=40-0-0, 28=40-0-0, 29=40-0-0, 30=40-0-0, 31=40-0-0, 32=40-0-0, 33=40-0-0, 34=40-0-0, 35=40-0-0, 36=40-0-0, 37=40-0-0, 38=40-0-0, 39=40-0-0, 40=40-0-0, 41=40-0-0, 42=40-0-0, 43=40-0-0, 44=40-0-0, 45=40-0-0, 46=40-0-0, 47=40-0-0, 51=40-0-0  
Max Horiz 2=165 (LC 14), 47=165 (LC 14)  
Max Uplift 2=-21 (LC 10), 28=-80 (LC 15), 29=-36 (LC 15), 30=-46 (LC 15), 31=-43 (LC 15), 32=-44 (LC 15), 33=-44 (LC 15), 34=-44 (LC 15), 35=-48 (LC 15), 36=-35 (LC 15), 38=-39 (LC 14), 39=-47 (LC 14), 40=-44 (LC 14), 41=-43 (LC 14), 42=-44 (LC 14), 43=-43 (LC 14), 44=-46 (LC 14), 45=-33 (LC 14), 46=-96 (LC 14), 47=-21 (LC 10)

Max Grav 2=162 (LC 27), 26=139 (LC 1), 28=161 (LC 37), 29=160 (LC 1), 30=160 (LC 37), 31=160 (LC 1), 32=161 (LC 22), 33=160 (LC 37), 34=179 (LC 22), 35=233 (LC 22), 36=247 (LC 22), 37=200 (LC 28), 38=247 (LC 21), 39=233 (LC 21), 40=179 (LC 21), 41=160 (LC 36), 42=161 (LC 21), 43=160 (LC 1), 44=160 (LC 36), 45=160 (LC 1), 46=161 (LC 36), 47=162 (LC 27), 51=139 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-216/79, 4-5=-167/82, 5-6=-129/94, 6-7=-96/108, 7-8=-74/131, 8-9=-62/154, 9-11=-72/178, 11-12=-85/201, 12-13=-104/225, 13-14=-121/245, 14-15=-121/237, 15-16=-104/200, 16-17=-85/156, 17-19=-72/122, 19-20=-60/89, 20-21=-48/62, 21-22=-44/39, 22-23=-66/27, 23-24=-99/35, 24-26=-144/59, 26-27=0/23  
BOT CHORD 2-46=-44/154, 45-46=-44/154, 44-45=-44/154, 43-44=-44/154, 42-43=-44/154, 41-42=-44/154, 40-41=-44/154, 38-40=-44/154, 37-38=-44/153, 36-37=-44/153, 34-36=-44/154, 33-34=-44/154, 32-33=-44/154, 31-32=-44/154, 30-31=-44/154, 29-30=-44/154, 28-29=-44/154, 26-28=-44/154

**WEBS** 14-37=-168/45, 13-38=-205/71, 12-39=-193/71, 11-40=-140/67, 9-41=-126/68, 8-42=-126/68, 7-43=-126/67, 6-44=-127/69, 5-45=-126/62, 4-46=-131/100, 15-36=-205/71, 16-35=-193/72, 17-34=-140/67, 19-33=-126/68, 20-32=-126/68, 21-31=-126/68, 22-30=-127/69, 23-29=-126/64, 24-28=-131/89

**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 3-1-8, Interior (1) 3-1-8 to 16-0-0, Exterior(2R) 16-0-0 to 24-0-0, Interior (1) 24-0-0 to 36-10-8, Exterior(2E) 36-10-8 to 40-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



September 26, 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	174 Serenity-Roof-B330 A CP BNS GLH	I68464865
24090060-01	A02	Common Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:09  
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) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 38, 39, 40, 41, 42, 43, 44, 45, 46, 36, 35, 34, 33, 32, 31, 30, 29, and 28. This connection is for uplift only and does not consider lateral forces.

**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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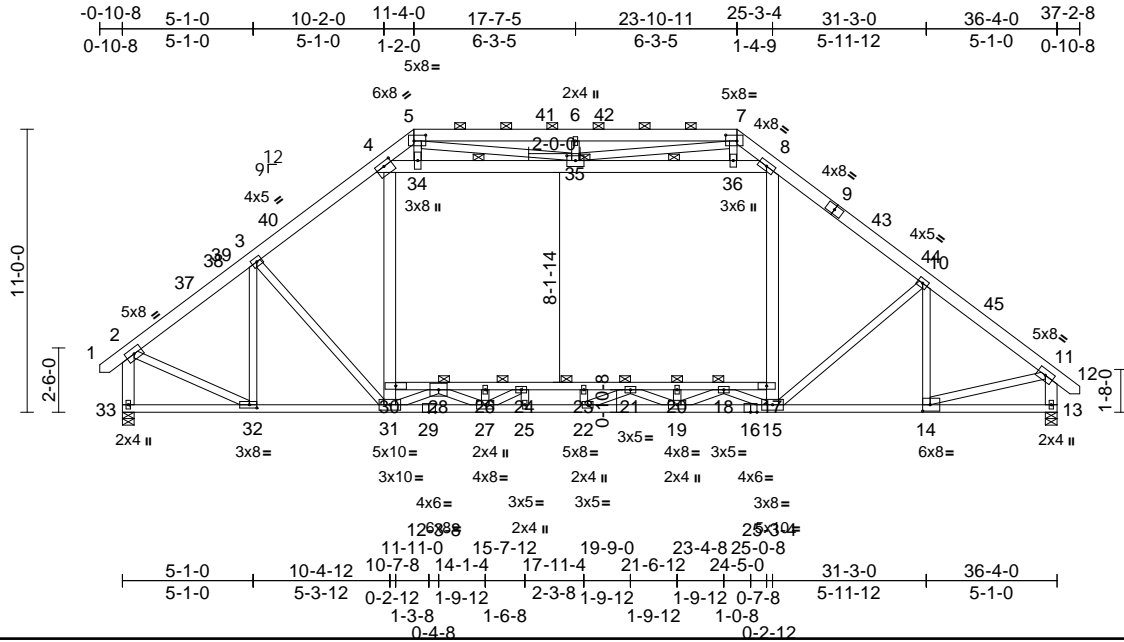
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss B01	Truss Type Attic	Qty 3	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464866
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:89.6  
Plate Offsets (X, Y): [4:0-4-0,0-2-0], [5:0-5-8,0-2-12], [7:0-5-4,0-2-12], [14:0-3-8,0-3-0], [32:0-3-8,0-1-8], [35:0-4-0,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.57	Vert(LL)	-0.34	14-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.97	Vert(CT)	-0.51	19-22	>837	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.78	Horz(CT)	0.09	13	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.30	17-30	>596	360		
BCDL	10.0											
											Weight: 359 lb	FT = 20%

LUMBER	WEBS	NOTES
<b>TOP CHORD</b> 2x6 SP No.2 <b>BOT CHORD</b> 2x4 SP No.1 *Except* 30-17:2x4 SP No.2, 29-16:2x4 SP 2400F 2.0E <b>WEBS</b> 2x4 SP No.3 *Except* 4-31:2x6 SP 2400F 2.0E, 8-15,4-8,33-2,13-11:2x6 SP No.2	3-32=-724/0, 3-31=-99/578, 30-31=0/695, 4-30=0/881, 15-17=0/792, 8-17=0/980, 10-15=-201/349, 10-14=-479/0, 4-34=-1661/79, 34-35=-1582/73, 35-36=-1450/22, 8-36=-1491/24, 2-32=0/1841, 11-14=0/2041, 5-34=-33/548, 6-35=-539/147, 7-36=-17/421, 7-35=-558/1204, 5-35=-543/1335, 28-31=-1827/0, 24-27=-1290/0, 24-25=-4/301, 15-18=-1749/0, 18-19=0/1225, 19-20=-194/0, 19-21=-681/16, 21-22=-246/248, 22-23=-104/49, 26-27=-104/8, 27-28=0/1265	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) Ceiling dead load (5.0 psf) on member(s). 4-34, 34-35, 35-36, 8-36; Wall dead load (5.0psf) on member (s).4-30, 8-17 10) 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, 23-24, 21-23, 20-21, 18-20, 17-18 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord. 12) Attic room checked for L/360 deflection.
<b>BRACING</b> <b>TOP CHORD</b> Structural wood sheathing directly applied or 4-0-11 oc purlins, except end verticals, and 2-0-0 oc purlins (4-0-1 max.): 5-7. <b>BOT CHORD</b> Rigid ceiling directly applied or 2-10-3 oc bracing. <b>WEBS</b> 1 Row at midpt 4-35, 8-35 <b>JOINTS</b> 1 Brace at Jt(s): 35, 28, 18, 21	<b>LOAD CASE(S)</b> Standard	<b>REACTIONS</b> (size) 13=0-5-8, 33=0-5-8 Max Horiz 33=291 (LC 12) Max Grav 13=2167 (LC 48), 33=2202 (LC 48)
<b>FORCES</b> (lb) - Maximum Compression/Maximum Tension <b>TOP CHORD</b> 1-2=0/33, 2-3=-2330/0, 3-4=-2636/0, 4-5=-1513/234, 5-6=-2487/524, 6-7=-2487/524, 7-8=-1533/226, 8-10=-2806/0, 10-11=-2664/0, 11-12=0/33, 2-33=-2322/0, 11-13=-2298/0 <b>BOT CHORD</b> 32-33=-230/292, 31-32=0/1803, 27-31=0/2814, 25-27=0/4772, 22-25=0/4772, 19-22=0/4685, 15-19=0/3211, 14-15=0/2096, 13-14=-3/148, 28-30=-207/1160, 26-28=-2016/0, 24-26=-2016/0, 23-24=-3077/0, 21-23=-3077/0, 20-21=-2376/0, 18-20=-2376/0, 17-18=-351/528	<b>LOAD CASE(S)</b> Standard	<b>NOTES</b> 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) -0-8-4 to 2-11-6, Interior (1) 2-11-6 to 6-2-5, Exterior(2R) 6-2-5 to 16-5-11, Interior (1) 16-5-11 to 18-9-0, Exterior(2R) 18-9-0 to 29-0-5, Interior (1) 29-0-5 to 33-4-10, Exterior(2E) 33-4-10 to 37-0-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60 3) 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) Provide adequate drainage to prevent water ponding.



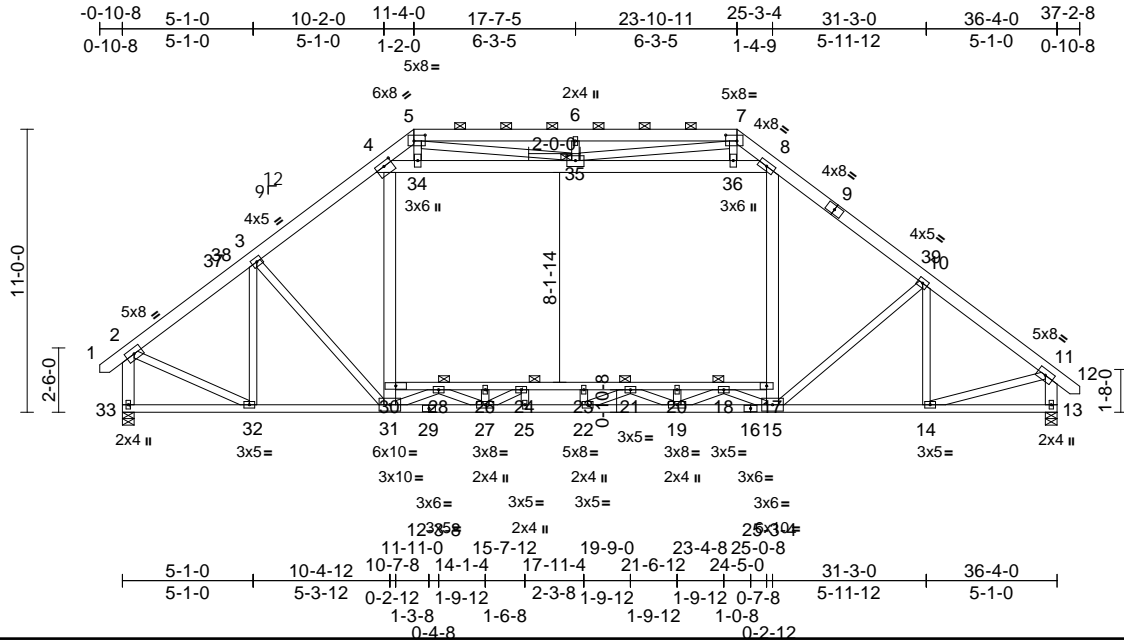


Job 24090060-01	Truss B02	Truss Type Attic Girder	Qty 1	Ply 2	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464867
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:10  
ID:HiLQKPKHOQTU5G6uHHvM5y8nJN-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwRCDoiJ4zJC?f

Page: 1



Scale = 1:89.6

Plate Offsets (X, Y): [4:0-4-0,0-2-0], [5:0-5-4,0-2-12], [7:0-5-4,0-2-12], [35:0-4-0,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.45	Vert(LL)	-0.22	18-20	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.36	19-22	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.69	Horz(CT)	0.08	13	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.17	17-30	>999	360		
BCDL	10.0											
											Weight: 718 lb	FT = 20%

LUMBER	WEBS	NOTES
<b>TOP CHORD</b> 2x6 SP No.2 <b>BOT CHORD</b> 2x4 SP No.2 <b>WEBS</b> 2x4 SP No.3 *Except* 4-31,8-15,4-8,33-2,13-11:2x6 SP No.2	3-32=-960/0, 3-31=-126/871, 30-31=0/1317, 4-30=0/1512, 15-17=0/1447, 8-17=0/1642, 4-34=-2455/156, 34-35=-2347/147, 35-36=-2165/105, 8-36=-2218/109, 2-32=0/2388, 11-14=0/2592, 10-15=-154/495, 10-14=-638/17, 5-34=-49/664, 5-35=-534/1225, 6-35=-544/148, 7-35=-698/1031, 7-36=-30/459, 15-18=-1706/0, 28-31=-1779/0, 18-19=0/1301, 27-28=0/1309, 19-20=-261/0, 26-27=-142/13, 19-21=-594/52, 24-27=-1262/0, 21-22=-222/247, 24-25=-2/280, 22-23=-108/52	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. 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) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 10) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 11) Ceiling dead load (5.0 psf) on member(s). 4-34, 34-35, 35-36, 8-36; Wall dead load (5.0psf) on member (s). 4-30, 8-17
- 12) 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, 23-24, 21-23, 20-21, 18-20, 17-18



September 26, 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 24090060-01	Truss B02	Truss Type Attic Girder	Qty 1	Ply <b>2</b>	174 Serenity-Roof-B330 A CP BNS GLH I68464867 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:10  
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Page: 2

- 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 839 lb down and 71 lb up at 25-3-4, and 839 lb down and 71 lb up at 10-4-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
- 15) 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, 7-11=-60,  
11-12=-60, 13-33=-20, 17-30=-30, 4-34=-10,  
34-35=-10, 35-36=-10, 8-36=-10  
Drag: 4-30=-10, 8-17=-10  
Concentrated Loads (lb)  
Vert: 31=-450 (F), 15=-450 (F)

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

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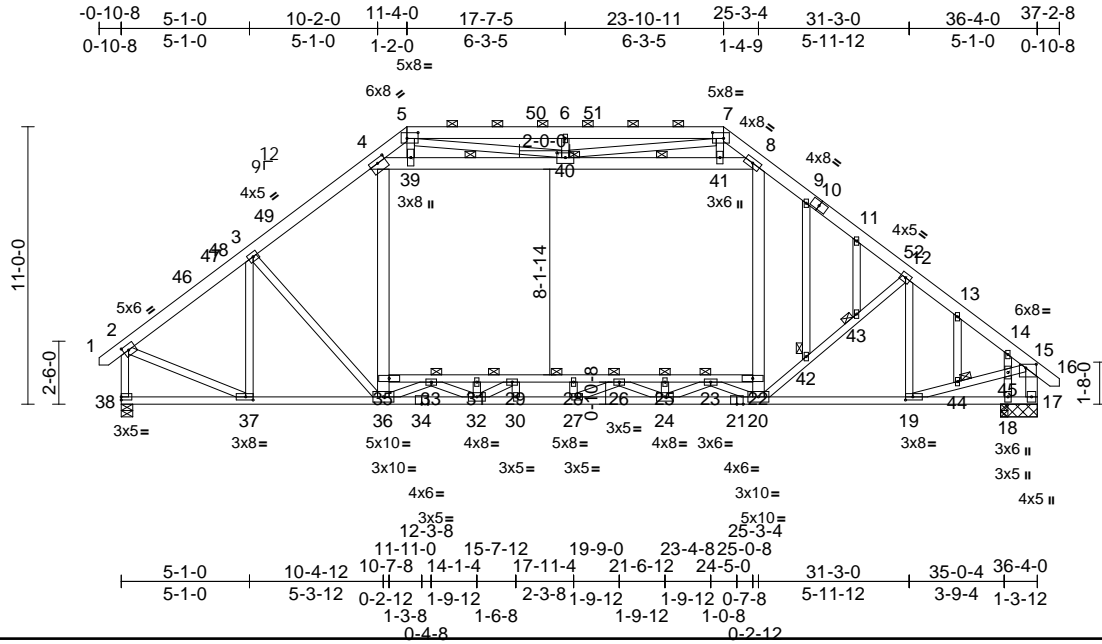
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss B03	Truss Type Attic Structural Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464868
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:10  
ID:jfMMLnrRxWpjnpkdD7ldQkzF\_VJ-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwRcDoi7JzJc?F

Page: 1



Scale = 1:91.4

Plate Offsets (X, Y): [2:0-2-8,0-2-8], [4:0-4-0,0-2-0], [5:0-5-4,0-2-12], [7:0-5-4,0-2-12], [15:0-5-0,0-1-12], [19:0-3-8,0-1-8], [37:0-3-8,0-1-8], [40:0-4-0,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.47	Vert(LL)	-0.28	23-25	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.91	Vert(CT)	-0.48	24-27	>869	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.88	Horz(CT)	0.09	18	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.25	22-35	>728	360		
BCDL	10.0											
											Weight: 378 lb	FT = 20%

**LUMBER**  
**TOP CHORD** 2x6 SP No.2  
**BOT CHORD** 2x4 SP No.1 \*Except\* 35-22:2x4 SP No.2, 34-21:2x4 SP 2400F 2.0E  
**WEBS** 2x4 SP No.3 \*Except\* 4-36,8-20,4-8,17-15:2x6 SP No.2, 19-15:2x4 SP No.2  
**OTHERS** 2x4 SP No.3

**BRACING**  
**TOP CHORD** Structural wood sheathing directly applied or 4-4-1 oc purlins, except end verticals, and 2-0-0 oc purlins (4-0-1 max.): 5-7.  
**BOT CHORD** Rigid ceiling directly applied or 2-9-12 oc bracing.  
**WEBS** 1 Row at midpt 4-40, 8-40  
**JOINTS** 1 Brace at Jt(s): 23, 33, 26, 40, 42, 43, 44

**REACTIONS** (size) 17=1-5-8, 18=0-3-8, 38=0-5-8  
 Max Horiz 38=290 (LC 12)  
 Max Uplift 17=458 (LC 11), 18=519 (LC 15)  
 Max Grav 17=1518 (LC 44), 18=1812 (LC 46), 38=2168 (LC 48)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
**TOP CHORD** 1-2=0/30, 2-3=-2328/0, 3-4=-2610/0, 4-5=-1529/224, 5-6=-2492/514, 6-7=-2492/514, 7-8=-1503/213, 8-9=-2570/0, 9-11=-2603/0, 11-12=-2680/0, 12-13=-2332/0, 13-14=-2428/0, 14-15=-1932/40, 15-16=0/33, 2-38=-2289/0, 15-17=-1509/218

**BOT CHORD** 37-38=-244/283, 36-37=0/1812, 32-36=0/2923, 30-32=0/4838, 27-30=0/4838, 24-27=0/4682, 20-24=0/3087, 19-20=0/1859, 18-19=-461/193, 17-18=-461/193, 33-35=-116/739, 31-33=-2198/0, 29-31=-2198/0, 28-29=-3188/0, 26-28=-3188/0, 25-26=-2366/0, 23-25=-2366/0, 22-23=-222/559  
**WEBS** 3-37=-697/0, 3-36=-90/527, 35-36=0/705, 4-35=0/885, 20-22=0/738, 8-22=0/926, 20-42=0/433, 42-43=0/418, 12-43=0/438, 12-19=-623/33, 4-39=-1514/30, 39-40=-1441/25, 40-41=-1450/35, 8-41=-1491/37, 2-37=0/1872, 19-44=0/2184, 44-45=0/2166, 15-45=0/2149, 20-23=-1779/0, 33-36=-1780/0, 23-24=0/1252, 32-33=0/1226, 24-25=-196/0, 31-32=-111/3, 24-26=-740/0, 29-32=-1148/0, 26-27=-117/278, 29-30=0/258, 27-28=-112/23, 5-39=-20/522, 5-40=-534/1306, 6-40=-539/147, 7-40=-513/1256, 7-41=-17/426, 9-42=-55/38, 11-43=-38/6, 13-44=0/63, 14-45=-1167/364, 18-45=-1263/405

**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) -0-8-4 to 2-11-6, Interior (1) 2-11-6 to 6-2-5, Exterior(2R) 6-2-5 to 16-5-11, Interior (1) 16-5-11 to 18-9-0, Exterior(2R) 18-9-0 to 29-2-0, Interior (1) 29-2-0 to 33-2-0, Exterior(2E) 33-2-0 to 37-0-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- All plates are 2x4 MT20 unless otherwise indicated.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.



September 26, 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 24090060-01	Truss B03	Truss Type Attic Structural Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH I68464868 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:10  
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Page: 2

- 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). 4-39, 39-40, 40-41, 8-41; Wall dead load (5.0psf) on member (s).4-35, 8-22
- 14) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 33-35, 31-33, 29-31, 28-29, 26-28, 25-26, 23-25, 22-23
- 15) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 17. This connection is for uplift only and does not consider lateral forces.
- 16) H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18. This connection is for uplift only and does not consider lateral forces.
- 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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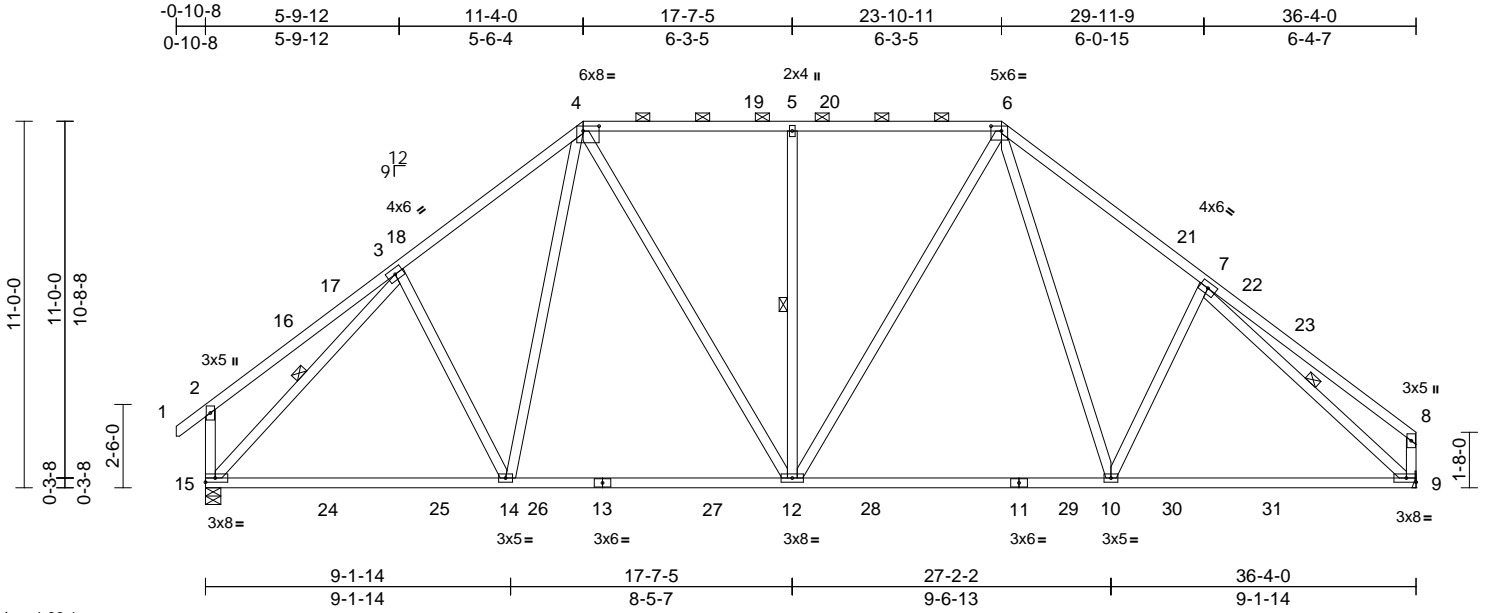
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss B04	Truss Type Piggyback Base	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464869
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:11  
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Page: 1



Scale = 1:69.1

Plate Offsets (X, Y): [4:0-5-12,0-1-12], [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	0.91	Vert(LL)	-0.28	10-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.97	Vert(CT)	-0.45	10-12	>970	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.79	Horz(CT)	0.07	9	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 252 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.1 \*Except\* 13-11:2x4 SP No.2  
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, except end verticals, and 2-0-0 oc purlins (3-1-0 max.): 4-6.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
WEBS 1 Row at midpt 3-15, 7-9, 5-12

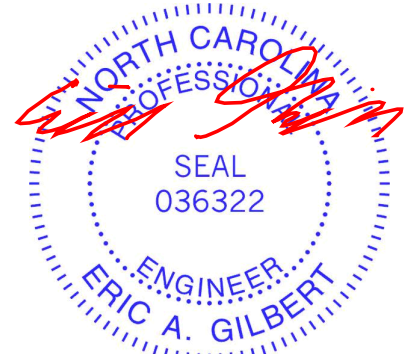
**REACTIONS** (size) 9= Mechanical, 15=0-5-8  
Max Horiz 15=283 (LC 12)  
Max Uplift 9=138 (LC 15), 15=149 (LC 14)  
Max Grav 9=1711 (LC 47), 15=1770 (LC 47)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/35, 2-3=-277/125, 3-4=-1993/271,  
4-5=-1782/278, 5-6=-1782/278,  
6-7=-2205/302, 7-8=-326/123,  
2-15=-323/140, 8-9=-308/121  
BOT CHORD 14-15=-194/1430, 12-14=-137/1394,  
10-12=-36/1446, 9-10=-88/1670  
WEBS 3-15=-1958/134, 7-9=-2096/90,  
4-14=-77/482, 3-14=-114/338,  
4-12=-144/632, 5-12=-691/184,  
6-12=-146/529, 6-10=-105/680,  
7-10=-258/249

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-15 to 2-9-11, Interior (1) 2-9-11 to 6-2-5, Exterior(2R) 6-2-5 to 16-5-11, Interior (1) 16-5-11 to 18-9-0, Exterior(2R) 18-9-0 to 29-0-5, Interior (1) 29-0-5 to 32-6-10, Exterior(2E) 32-6-10 to 36-2-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 138 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.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



September 26, 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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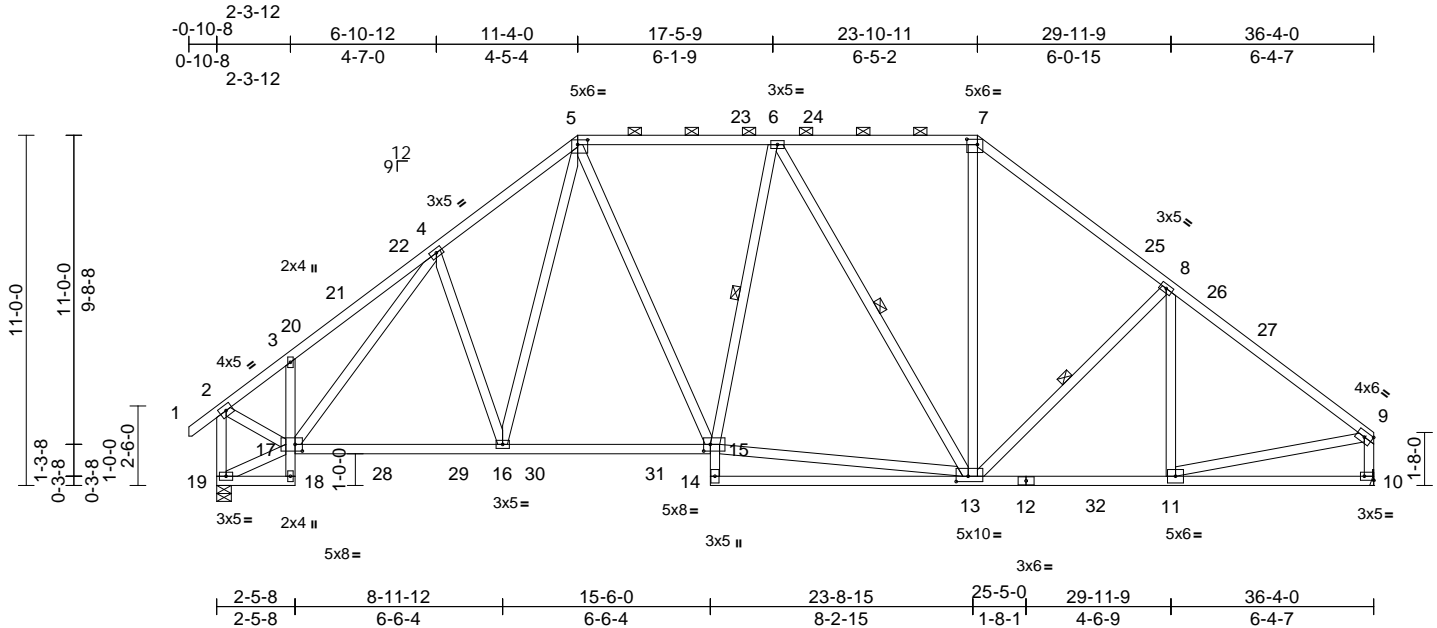
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss B05	Truss Type Piggyback Base	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464870
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:11  
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Page: 1



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Plate Offsets (X, Y): [5:0-3-12,0-1-12], [7:0-4-0,0-2-0], [10:Edge,0-1-8], [13:0-4-8,0-2-0], [15:0-2-8,0-2-8], [17:0-2-12,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.92	Vert(LL)	-0.14	13-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.79	Vert(CT)	-0.30	13-14	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.62	Horz(CT)	0.09	10	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 277 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 18-3,15-14:2x4 SP No.3  
WEBS 2x4 SP No.3 \*Except\* 15-5,13-6,13-7:2x4 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-8-10 oc purlins, except end verticals, and 2-0-0 oc purlins (2-2-0 max.): 5-7.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:  
6-0-0 oc bracing: 18-19.  
WEBS 1 Row at midpt 6-15, 6-13, 8-13

**REACTIONS** (size) 10= Mechanical, 19=0-5-8  
Max Horiz 19=283 (LC 12)  
Max Uplift 10=139 (LC 15), 19=148 (LC 14)  
Max Grav 10=1635 (LC 47), 19=1711 (LC 47)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/35, 2-3=-1705/170, 3-4=-1822/303, 4-5=-2133/306, 5-6=-1780/268, 6-7=-1482/268, 7-8=-1909/267, 8-9=-2106/191, 2-19=-1873/193, 9-10=-1724/172  
BOT CHORD 18-19=-28/22, 17-18=0/41, 3-17=-262/164, 16-17=-201/1637, 15-16=-152/1473, 14-15=0/150, 13-14=0/76, 11-13=-75/1631, 10-11=-41/134  
WEBS 5-15=-128/587, 13-15=-142/1666, 6-15=-188/232, 6-13=-628/203, 7-13=-52/742, 8-13=-439/191, 8-11=-174/84, 9-11=-38/1545, 17-19=-264/276, 2-17=-122/1518, 4-17=-516/154, 4-16=-314/224, 5-16=-126/653

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-15 to 2-9-11, Interior (1) 2-9-11 to 6-2-5, Exterior(2R) 6-2-5 to 16-5-11, Interior (1) 16-5-11 to 18-9-0, Exterior(2R) 18-9-0 to 29-0-5, Interior (1) 29-0-5 to 32-6-10, Exterior(2E) 32-6-10 to 36-2-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 139 lb uplift at joint 10.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 19. This connection is for uplift only and does not consider lateral forces.

12) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.  
**LOAD CASE(S)** Standard



September 26, 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.sbccomponents.com)



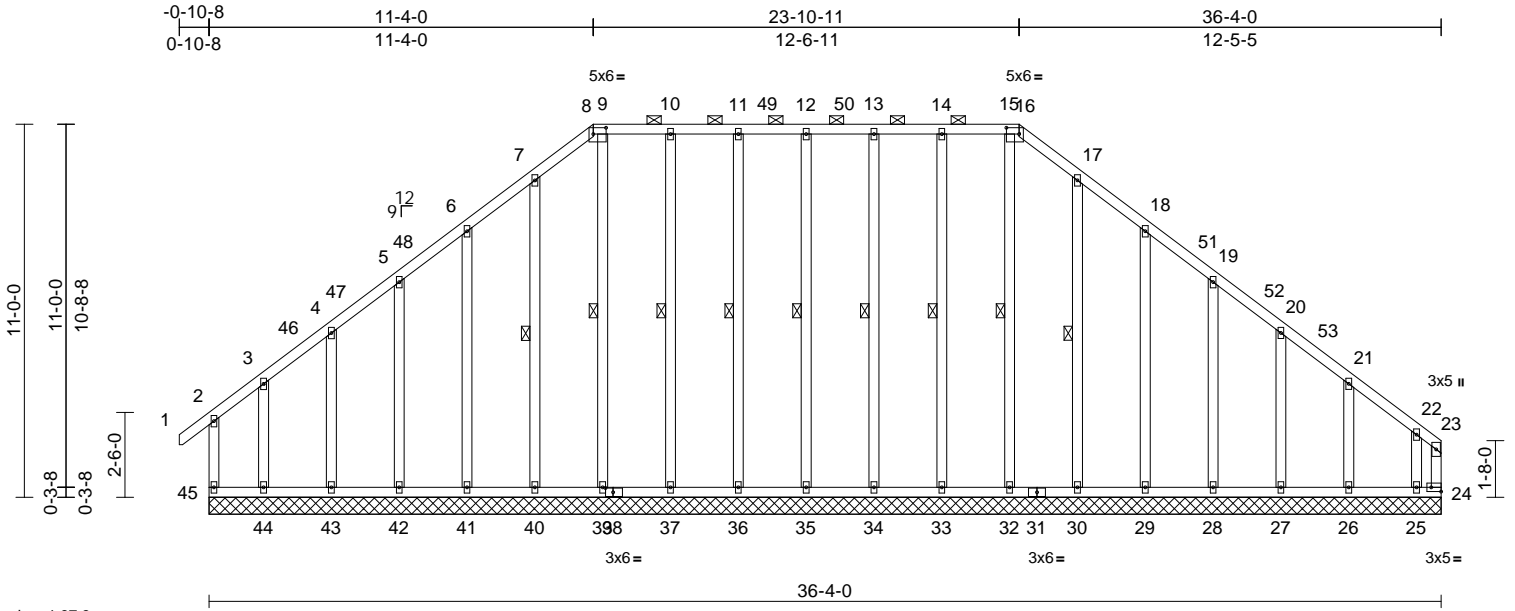
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss B06	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464871
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:11  
ID:va6oJ\_bKLZdDLTYr9PwpzF\_UL-RFC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:67.9

Plate Offsets (X, Y): [8:0-4-8,0-2-4], [16:0-4-8,0-2-4], [24:Edge,0-1-8], [38:0-2-11,0-1-8]

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	0.23	Horz(CT)	-0.01	24	n/a	n/a		
BCLL	0.0*	Code	IRC2021/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\*  
35-12,34-13,33-14,32-15,36-11,37-10,39-9:2x  
4 SP No.2

Max Grav 24=613 (LC 10), 25=602 (LC 13),  
26=167 (LC 26), 27=183 (LC 53),  
28=231 (LC 45), 29=232 (LC 45),  
30=234 (LC 45), 32=230 (LC 54),  
33=238 (LC 40), 34=229 (LC 40),  
35=230 (LC 40), 36=229 (LC 40),  
37=238 (LC 40), 39=203 (LC 56),  
40=234 (LC 43), 41=232 (LC 43),  
42=230 (LC 43), 43=182 (LC 43),  
44=247 (LC 12), 45=199 (LC 53)

**WEBS**  
12-35=190/49, 13-34=189/52,  
14-33=198/59, 15-32=190/62,  
17-30=194/69, 18-29=192/99,  
19-28=190/89, 20-27=144/90,  
21-26=138/95, 22-25=277/244,  
11-36=189/52, 10-37=198/57,  
9-39=163/35, 7-40=194/64, 6-41=192/100,  
5-42=190/90, 4-43=148/87, 3-44=153/122

**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.

**FORCES**  
(lb) - Maximum Compression/Maximum  
Tension  
TOP CHORD 2-45=-141/78, 1-2=0/35, 2-3=-92/97,  
3-4=-68/114, 4-5=-96/156, 5-6=-125/193,  
6-7=-147/257, 7-8=-166/310, 8-9=-137/273,  
9-10=-137/273, 10-11=-137/273,  
11-12=-137/273, 12-13=-137/273,  
13-14=-137/273, 14-15=-137/273,  
15-16=-137/273, 16-17=-165/321,  
17-18=-147/298, 18-19=-157/255,  
19-20=-177/217, 20-21=-196/203,  
21-22=-215/209, 22-23=-345/342,  
23-24=-342/339

**NOTES**  
1) Unbalanced roof live loads have been considered for  
this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat.  
II; Exp B; Enclosed; MWFRS (envelope) exterior zone  
and C-C Exterior(2E) 0-9-15 to 2-9-11, Interior (1)  
2-9-11 to 6-2-5, Exterior(2R) 6-2-5 to 16-5-11, Interior (1)  
16-5-11 to 18-9-0, Exterior(2R) 18-9-0 to 29-0-5, Interior  
(1) 29-0-5 to 32-6-10, Exterior(2E) 32-6-10 to 36-2-4  
zone; cantilever left and right exposed; end vertical left  
and right exposed; C-C for members and forces &  
MWFRS for reactions shown; Lumber DOL=1.60 plate  
grip DOL=1.60

**REACTIONS** (size)  
24=36-4-0, 25=36-4-0, 26=36-4-0,  
27=36-4-0, 28=36-4-0, 29=36-4-0,  
30=36-4-0, 32=36-4-0, 33=36-4-0,  
34=36-4-0, 35=36-4-0, 36=36-4-0,  
37=36-4-0, 39=36-4-0, 40=36-4-0,  
41=36-4-0, 42=36-4-0, 43=36-4-0,  
44=36-4-0, 45=36-4-0  
Max Horiz 45=-283 (LC 12)  
Max Uplift 24=-622 (LC 13), 25=-511 (LC 10),  
26=-62 (LC 15), 27=-68 (LC 15),  
28=-65 (LC 15), 29=-75 (LC 15),  
30=-45 (LC 15), 32=-22 (LC 12),  
33=-35 (LC 11), 34=-28 (LC 15),  
35=-25 (LC 10), 36=-28 (LC 14),  
37=-33 (LC 14), 40=-41 (LC 14),  
41=-76 (LC 14), 42=-68 (LC 14),  
43=-54 (LC 14), 44=-162 (LC 11),  
45=-128 (LC 10)

**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,  
37-39=-202/196, 36-37=-202/196,  
35-36=-202/196, 34-35=-202/196,  
33-34=-202/196, 32-33=-202/196,  
30-32=-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



September 26, 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/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	Truss	Truss Type	Qty	Ply	174 Serenity-Roof-B330 A CP BNS GLH	I68464871
24090060-01	B06	Piggyback Base Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:11  
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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 622 lb uplift at joint 24.
- 15) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 45, 35, 34, 33, 32, 30, 29, 28, 27, 26, 25, 36, 37, 40, 41, 42, 43, and 44. This connection is for uplift only and does not consider lateral forces.
- 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

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

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



818 Soundside Road  
Edenton, NC 27932





Job 24090060-01	Truss C01	Truss Type Attic	Qty 3	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464872
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:12  
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Page: 2

- 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) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-40, 40-41, 41-42, 9-42, 4-43; Wall dead load (5.0psf) on member(s).3-38, 10-18, 31-43, 5-43
- 10) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 29-31, 27-29, 25-27, 24-25, 22-24, 21-22, 19-21, 18-19, 36-38, 35-36, 33-35, 31-33
- 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 12) 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.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))



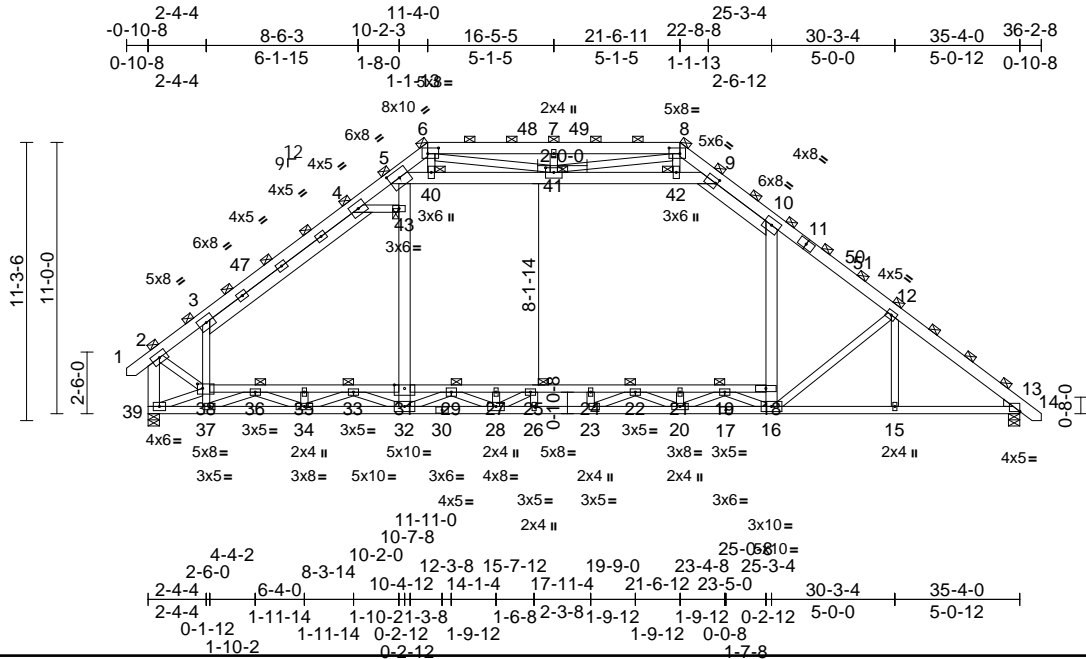
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss C02	Truss Type Attic Girder	Qty 2	Ply 2	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464873
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:12  
ID:VP5mnZE7ejTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3lTXbGKWrCDoi7J4zJC?f

Page: 1

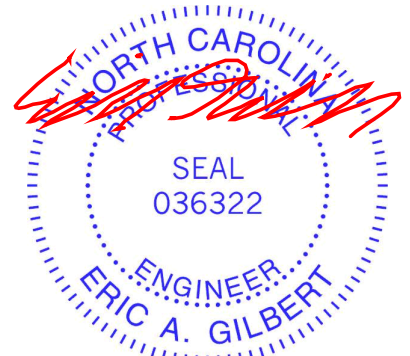


Scale = 1:93.4

Plate Offsets (X, Y): [5:0-5-0,0-3-12], [6:0-5-4,0-2-12], [8:0-5-4,0-2-12], [9:0-0-14,0-2-12], [10:0-0-14,0-2-12], [13:Edge,0-0-1], [38:0-2-8,0-2-2], [41:0-4-0,0-2-4]

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	0.78	Vert(LL)	-0.24	20-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.45	20-23	>946	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.92	Horz(CT)	0.09	13	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.16	18-31	>999	360		
BCDL	10.0											
											Weight: 739 lb	FT = 20%

LUMBER	WEBS	NOTES
<b>TOP CHORD</b> 2x6 SP No.2 *Except* 8-11:2x6 SP 2400F 2.0E <b>BOT CHORD</b> 2x4 SP No.2 *Except* 30-17:2x4 SP No.1 <b>WEBS</b> 2x4 SP No.3 *Except* 10-16,5-9,39-2,5-32,9-10,4-3:2x6 SP No.2 Right: 2x4 SP No.3 <b>WEDGE</b> <b>BRACING</b> <b>TOP CHORD</b> 2-0-0 oc purlins (5-4-10 max.), except end verticals (Switched from sheeted: Spacing > 2-8-0). <b>BOT CHORD</b> Rigid ceiling directly applied or 6-0-0 oc bracing. <b>JOINTS</b> 1 Brace at Jt(s): 6, 8, 2, 19, 22, 29, 36, 33, 40, 41, 42, 43 <b>REACTIONS</b> (size) 13=0-5-8, 39=0-5-8 Max Horiz 39=-432 (LC 10) Max Grav 13=3443 (LC 44), 39=4313 (LC 44) <b>FORCES</b> (lb) - Maximum Compression/Maximum Tension <b>TOP CHORD</b> 1-2=0/50, 2-3=-4165/0, 3-4=-4765/0, 4-5=-4173/0, 5-6=-1800/178, 6-7=-1988/1100, 7-8=-1988/1100, 8-9=-1161/848, 9-10=-3523/0, 10-12=-4743/0, 12-13=-5104/0, 13-14=0/37, 2-39=-4774/0 <b>BOT CHORD</b> 37-39=-1966/630, 34-37=-627/1142, 32-34=-668/1826, 28-32=-369/3380, 26-28=0/6659, 23-26=0/6659, 20-23=0/6680, 16-20=0/4673, 15-16=0/3969, 13-15=0/3969, 29-31=-666/4338, 27-29=-1809/1417, 25-27=-1809/1417, 24-25=-3459/23, 22-24=-3459/23, 21-22=-2733/0, 19-21=-2733/0, 18-19=-432/1105, 36-38=0/5230, 35-36=-357/2742, 33-35=-357/2742, 31-33=-467/3781	37-38=0/1080, 3-38=-1172/154, 16-18=0/1474, 10-18=0/1746, 12-16=-742/336, 12-15=0/230, 5-40=-2857/120, 40-41=-2756/107, 41-42=-4929/0, 9-42=-4977/0, 31-32=0/1716, 31-43=0/2309, 5-43=0/2395, 25-26=-13/436, 25-28=-2184/0, 27-28=-165/51, 16-19=-2414/0, 19-20=0/1735, 20-21=-347/0, 20-22=-830/374, 22-23=-829/414, 23-24=-98/211, 29-32=-2826/0, 28-29=0/2300, 34-35=-420/0, 36-37=-2224/0, 34-36=0/1087, 33-34=-99/362, 32-33=-853/48, 38-39=-248/1805, 2-38=0/4351, 6-40=-71/639, 6-41=-2061/494, 7-41=-701/156, 8-41=-364/1400, 8-42=0/632, 4-43=-538/141	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. 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) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads. 10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members. 11) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-40, 40-41, 41-42, 9-42, 4-43; Wall dead load (5.0psf) on member(s).3-38, 10-18, 31-43, 5-43		



September 26, 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	174 Serenity-Roof-B330 A CP BNS GLH	I68464873
24090060-01	C02	Attic Girder	2	<b>2</b>	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:12  
 ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCDoi7J4zJC?f

Page: 2

- 12) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 29-31, 27-29, 25-27, 24-25, 22-24, 21-22, 19-21, 18-19, 36-38, 35-36, 33-35, 31-33
- 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 14) 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.**

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute ([www.tpinst.org](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))



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 Edenton, NC 27932

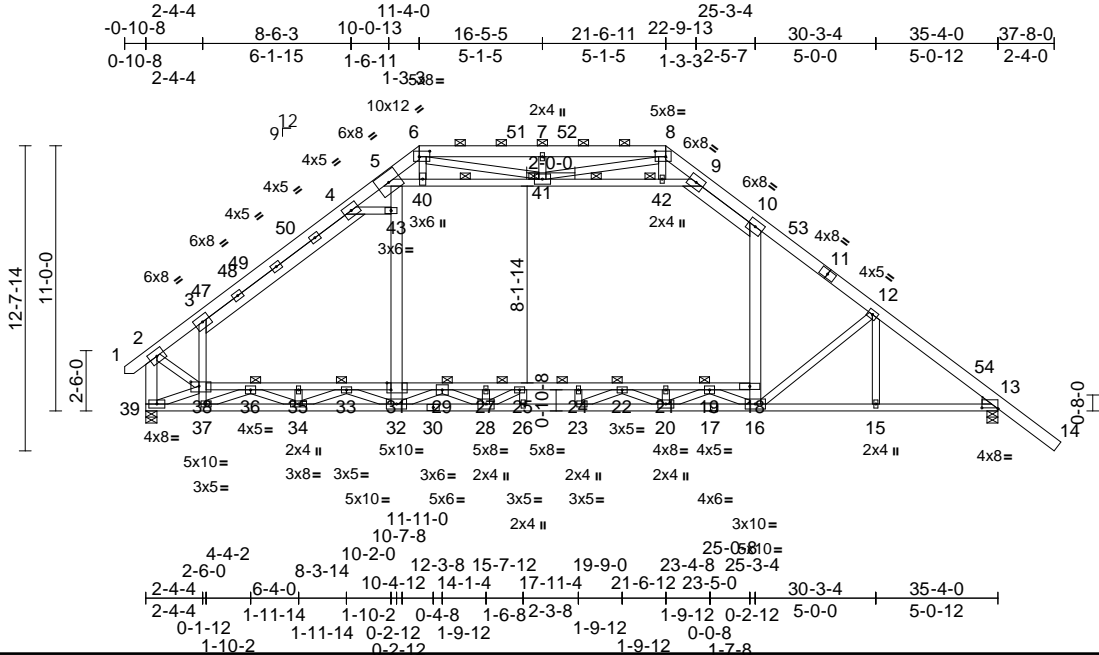
Job 24090060-01	Truss C03	Truss Type Attic	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464874
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:13

Page: 1

ID:VP5mnZE7ejTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITxBGKWRcD0iJ4zJC?f



Scale = 1:95.5

Plate Offsets (X, Y): [6:0-5-4,0-2-12], [8:0-5-4,0-2-12], [13:0-8-0,0-0-7], [31:0-8-0-3-8], [38:0-4-1,0-2-2]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.75	Vert(LL)	-0.29	20-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.89	Vert(CT)	-0.55	20-23	>769	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.72	Horz(CT)	0.10	13	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH		Attic	-0.19	18-31	>949	360		
BCDL	10.0											
											Weight: 364 lb	FT = 20%

LUMBER	TOP CHORD	BOT CHORD	WEBS	WEDGE	BRACING	TOP CHORD	BOT CHORD	WEBS	REACTIONS	FORCES	TOP CHORD	NOTES		
2x6 SP No.2 *Except* 8-11:2x6 SP 2400F 2.0E	2x4 SP No.1 *Except* 31-18,38-31:2x4 SP No.2, 30-17:2x4 SP 2400F 2.0E	2x4 SP No.3 *Except* 10-16:2x6 SP 2400F 2.0E, 5-9,38-2:2x4 SP No.2, 39-2,5-32,9-10,4-3:2x6 SP No.2	Right: 2x4 SP No.3	Structural wood sheathing directly applied or 3-2-2 oc purlins, except end verticals, and 2-0-0 oc purlins (5-6-2 max.): 6-8. Rigid ceiling directly applied or 3-4-6 oc bracing.	1 Row at midpt 5-41 2 Rows at 1/3 pts 9-41 1 Brace at Jt(s): 19, 22, 29, 36, 33, 41	13=0-5-8, 39=0-5-8 Max Horiz 39=-309 (LC 12) Max Grav 13=2383 (LC 48), 39=2867 (LC 48)	(lb) - Maximum Compression/Maximum Tension 1-2=0/33, 2-3=-2932/0, 3-4=-3375/0, 4-5=-2893/0, 5-6=-1360/50, 6-7=-1572/535, 7-8=-1572/535, 8-9=-799/377, 9-10=-2541/0, 10-12=-3378/0, 12-13=-3628/0, 13-14=0/89, 2-39=-3339/0	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) -0-8-4 to 2-10-2, Interior (1) 2-10-2 to 6-4-1, Exterior(2R) 6-4-1 to 26-6-10, Interior (1) 26-6-10 to 34-3-4, Exterior(2E) 34-3-4 to 37-9-10 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) Provide adequate drainage to prevent water ponding.	7) All plates are 2x4 MT20 unless otherwise indicated.



September 26, 2024

Continued on page 2

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

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818 Soundside Road  
Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	174 Serenity-Roof-B330 A CP BNS GLH	I68464874
24090060-01	C03	Attic	4	1	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:13  
 ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 2

- 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) Ceiling dead load (5.0 psf) on member(s). 3-4, 9-10, 5-40, 40-41, 41-42, 9-42, 4-43; Wall dead load (5.0psf) on member(s).3-38, 10-18, 31-43, 5-43
- 11) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 29-31, 27-29, 25-27, 24-25, 22-24, 21-22, 19-21, 18-19, 36-38, 35-36, 33-35, 31-33
- 12) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 13) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

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

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818 Soundside Road  
 Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	174 Serenity-Roof-B330 A CP BNS GLH	I68464875
24090060-01	C04	Attic Structural Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:14

Page: 2

ID:HSVLvMXIBUOh6Uln9Dc1gJzEzgn-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCDoi7J4zJC?f

- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-4 to 2-10-2, Interior (1) 2-10-2 to 6-4-1, Exterior(2R) 6-4-1 to 26-8-2, Interior (1) 26-8-2 to 32-5-0, Exterior(2E) 32-5-0 to 36-0-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- 4) T CLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 5) Unbalanced snow loads have been considered for this design.
- 6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 7) 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). 12-13, 4-62, 55-62, 55-56, 56-57, 57-58, 58-59, 59-63, 12-63; Wall dead load (5.0psf) on member(s).3-52, 13-27, 4-44
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 41-44, 39-41, 37-39, 35-37, 33-35, 31-33, 28-31, 27-28, 50-52, 48-50, 46-48, 44-46
- 14) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 54, 53, 26, 25, 24, 23, 22, 21, 45, and 19. This connection is for uplift only and does not consider lateral forces.
- 15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 16) 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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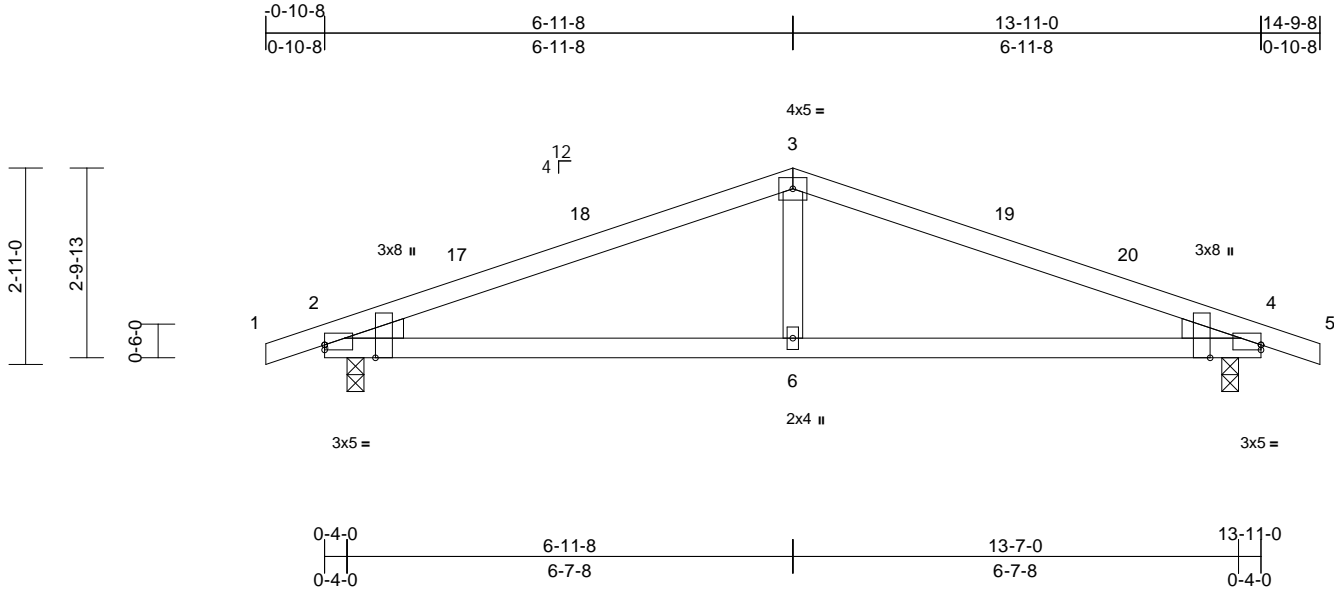
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss D01	Truss Type Common	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464876
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:14  
ID:nqLL14Jf5JAmMe82YAnIwAzF\_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	IRC2021/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.

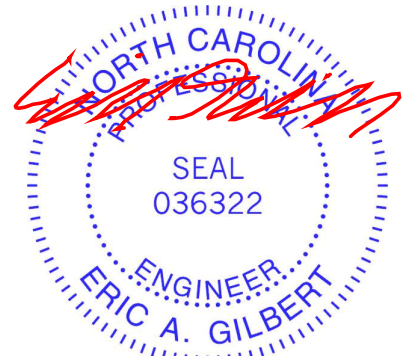
**REACTIONS** (size) 2=0-3-0, 4=0-3-0  
Max Horiz 2=41 (LC 14)  
Max Uplift 2=-221 (LC 10), 4=-221 (LC 11)  
Max Grav 2=708 (LC 21), 4=708 (LC 22)

**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

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 4. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard

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



September 26, 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)



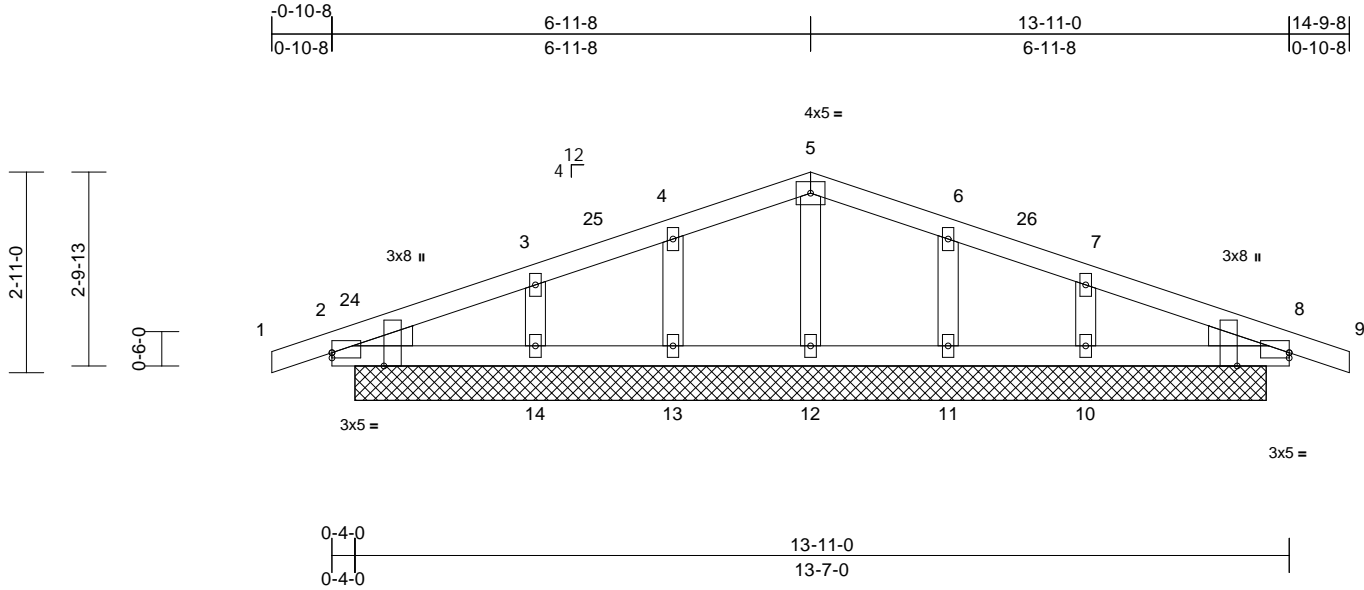
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss D02	Truss Type Common Supported Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464877
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:14  
ID:1TK06ScRmkTOI44B0PU7Miyar2O-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwCD0i7J4zJC?f

Page: 1



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	1-11-4	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	0.19	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	IRC2021/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.2  
Right: 2x4 SP No.2

**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.

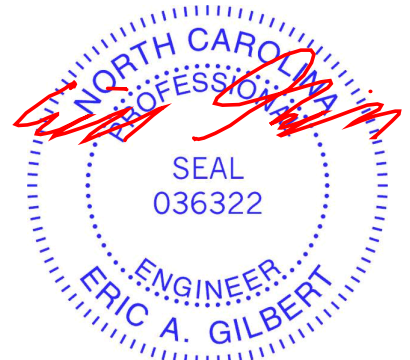
**REACTIONS** (size)  
2=13-3-0, 8=13-3-0, 10=13-3-0, 11=13-3-0, 12=13-3-0, 13=13-3-0, 14=13-3-0, 18=13-3-0, 21=13-3-0  
Max Horiz 2=40 (LC 14), 18=40 (LC 14)  
Max Uplift 2=-1 (LC 21), 8=-68 (LC 36), 10=-43 (LC 15), 11=-34 (LC 11), 12=-46 (LC 10), 13=-22 (LC 14), 14=-73 (LC 10), 18=-1 (LC 21), 21=-68 (LC 36)  
Max Grav 2=0 (LC 10), 8=124 (LC 22), 10=293 (LC 22), 11=199 (LC 22), 12=407 (LC 21), 13=120 (LC 21), 14=423 (LC 21), 18=0 (LC 10), 21=124 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-213/418, 3-4=-160/389, 4-5=-119/399, 5-6=-118/383, 6-7=-165/380, 7-8=-210/393, 8-9=0/16  
BOT CHORD 2-14=-354/252, 13-14=-354/252, 12-13=-354/252, 11-12=-354/252, 10-11=-354/252, 8-10=-354/252  
WEBS 5-12=-349/176, 4-13=-141/106, 3-14=-266/148, 6-11=-177/124, 7-10=-205/123

**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.

12) Non Standard bearing condition. Review required.  
**LOAD CASE(S)** Standard



September 26, 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

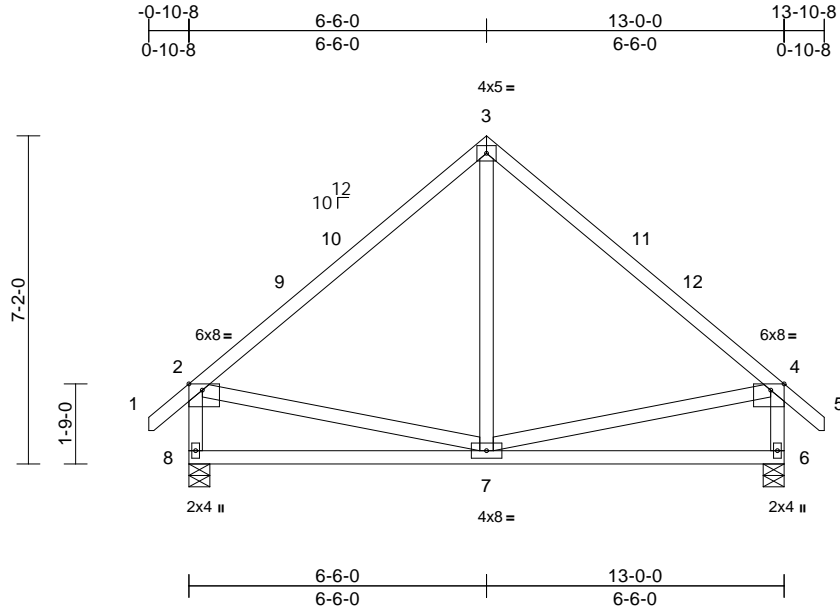


Job 24090060-01	Truss E01	Truss Type Common	Qty 3	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464878
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:14  
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Page: 1



Scale = 1:50.3

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	0.77	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	0.09	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 80 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 5-8-3 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 6=0-5-8, 8=0-5-8  
Max Horiz 8=196 (LC 13)  
Max Uplift 6=-49 (LC 15), 8=-49 (LC 14)  
Max Grav 6=648 (LC 22), 8=648 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/37, 2-3=-546/139, 3-4=-546/139, 4-5=0/37, 2-8=-590/171, 4-6=-590/160  
BOT CHORD 7-8=-208/283, 6-7=-98/208  
WEBS 3-7=0/226, 2-7=-59/224, 4-7=-61/224

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-9-14 to 2-2-2, Interior (1) 2-2-2 to 3-6-0, Exterior(2R) 3-6-0 to 9-6-0, Interior (1) 9-6-0 to 10-9-14, Exterior(2E) 10-9-14 to 13-9-14 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8 and 6. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



September 26, 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](http://www.tpinst.org)) and **BCSI Building Component Safety Information** available from the Structural Building Component Association ([www.sbcacomponents.com](http://www.sbcacomponents.com))



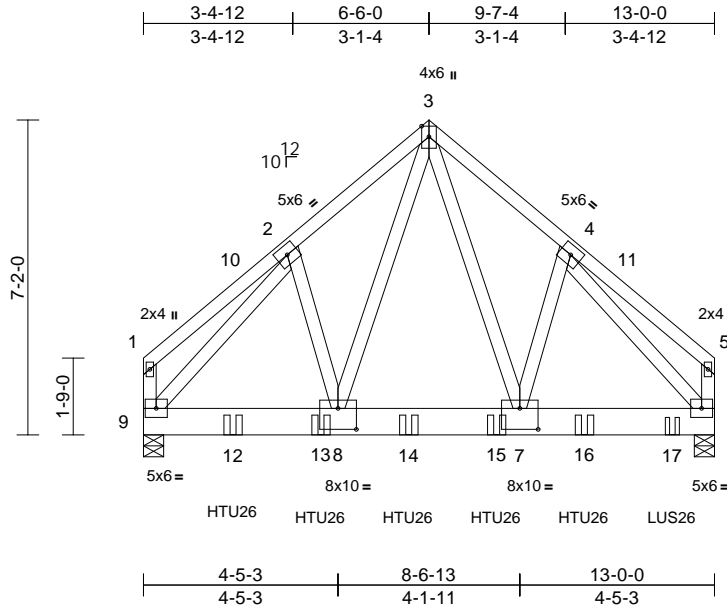
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss E02	Truss Type Common Girder	Qty 1	Ply 2	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464879
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:14  
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Page: 1



Scale = 1:52.5

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	0.66	Vert(LL)	-0.04	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(CT)	-0.07	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.61	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 227 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 5-9-14 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=-172 (LC 10)  
Max Uplift 6=-274 (LC 13), 9=-428 (LC 12)  
Max Grav 6=4618 (LC 6), 9=4925 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-510/100, 2-3=-4408/490,  
3-4=-4293/465, 4-5=-470/88, 1-9=-414/90,  
5-6=-386/81  
BOT CHORD 8-9=-316/3084, 7-8=-220/2477,  
6-7=-237/3001  
WEBS 3-7=-288/2634, 4-7=-130/998,  
3-8=-355/2934, 2-8=-135/1019,  
2-9=-4498/377, 4-6=-4419/362

**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.
- Use Simpson Strong-Tie HTU26 (10-16d Girder, 14-10dx1 1/2 Truss) or equivalent spaced at 2-0-0 oc max. starting at 2-0-8 from the left end to 10-0-8 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 12-0-8 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=-1489 (B), 13=-1489 (B), 14=-1489 (B),  
15=-1489 (B), 16=-1489 (B), 17=-442 (B)



September 26, 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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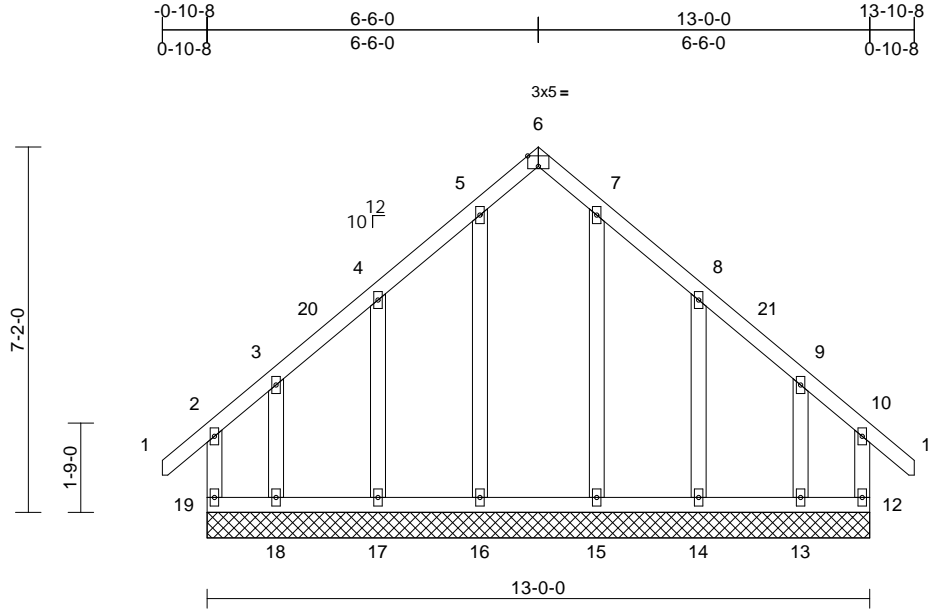
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss E03	Truss Type Common Supported Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464880
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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Page: 1



Scale = 1:45.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.20	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	0.14	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 88 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size)	12=13-0-0, 13=13-0-0, 14=13-0-0, 15=13-0-0, 16=13-0-0, 17=13-0-0, 18=13-0-0, 19=13-0-0
Max Horiz	19=196 (LC 13)
Max Uplift	12=-131 (LC 11), 13=-160 (LC 10), 14=-104 (LC 15), 17=-103 (LC 14), 18=-167 (LC 11), 19=-140 (LC 10)
Max Grav	12=212 (LC 25), 13=256 (LC 26), 14=250 (LC 22), 15=264 (LC 6), 16=264 (LC 5), 17=250 (LC 21), 18=262 (LC 25), 19=220 (LC 26)

**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	2-19=-156/94, 1-2=0/37, 2-3=-128/119, 3-4=-71/88, 4-5=-94/195, 5-6=-92/153, 6-7=-92/153, 7-8=-95/195, 8-9=-66/87, 9-10=-120/112, 10-11=0/37, 10-12=-151/88
BOT CHORD	18-19=-103/109, 17-18=-103/109, 16-17=-103/109, 15-16=-103/109, 14-15=-103/109, 13-14=-103/109, 12-13=-103/109
WEBS	5-16=-210/0, 7-15=-210/0, 4-17=-209/164, 3-18=-146/125, 8-14=-209/160, 9-13=-143/124

**NOTES**

- Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-14 to 2-2-2, Interior (1) 2-2-2 to 3-4-4, Exterior(2R) 3-4-4 to 9-7-12, Interior (1) 9-7-12 to 10-9-14, Exterior(2E) 10-9-14 to 13-9-14 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.

- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 19, 12, 17, 18, 14, and 13. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 26, 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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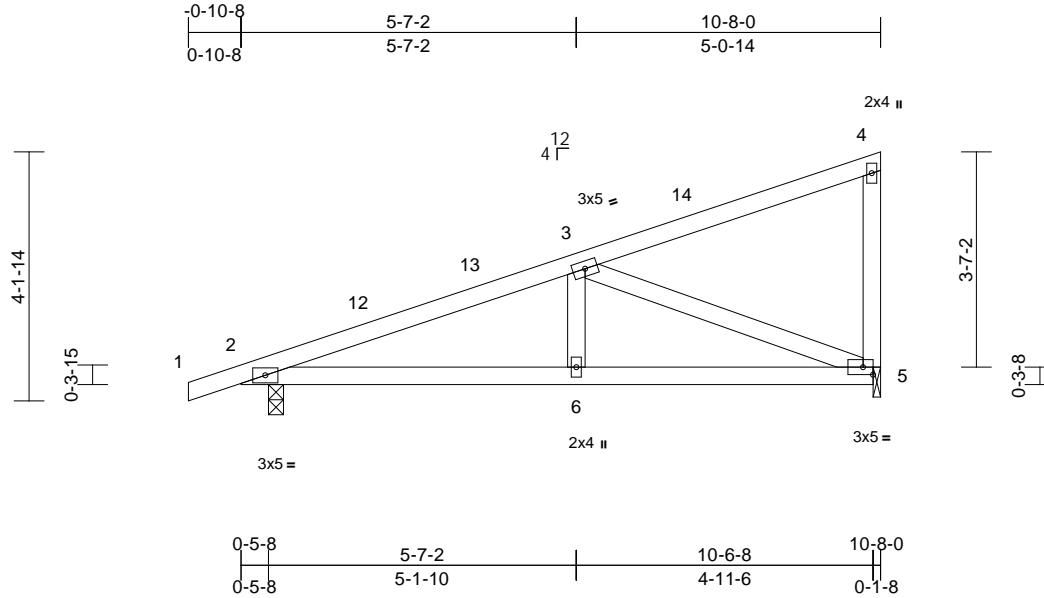
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss F01	Truss Type Monopitch	Qty 2	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464881
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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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	0.40	Vert(LL)	0.03	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(CT)	-0.04	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.44	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 49 lb	FT = 20%

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

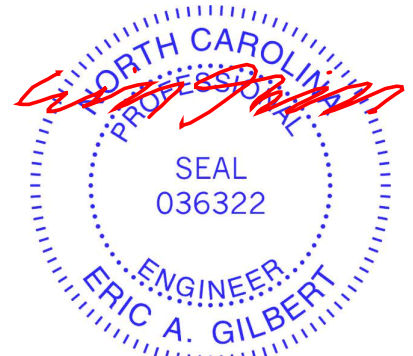
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 9-2-5 oc bracing.

**REACTIONS** (size) 2=0-3-0, 5=0-1-8  
Max Horiz 2=147 (LC 13)  
Max Uplift 2=-190 (LC 10), 5=-159 (LC 10)  
Max Grav 2=559 (LC 21), 5=525 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-858/428, 3-4=-104/64, 4-5=-187/105  
BOT CHORD 2-6=-404/775, 5-6=-404/775  
WEBS 3-6=-80/216, 3-5=-803/487

- 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 5 SP No.3 .
  - 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.
  - Provide mechanical connection (by others) of truss to bearing plate at joint(s) 2, 5.
  - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 5. This connection is for uplift only and does not consider lateral forces.
- 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 7-6-4, Exterior(2E) 7-6-4 to 10-6-4 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
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.



September 26, 2024

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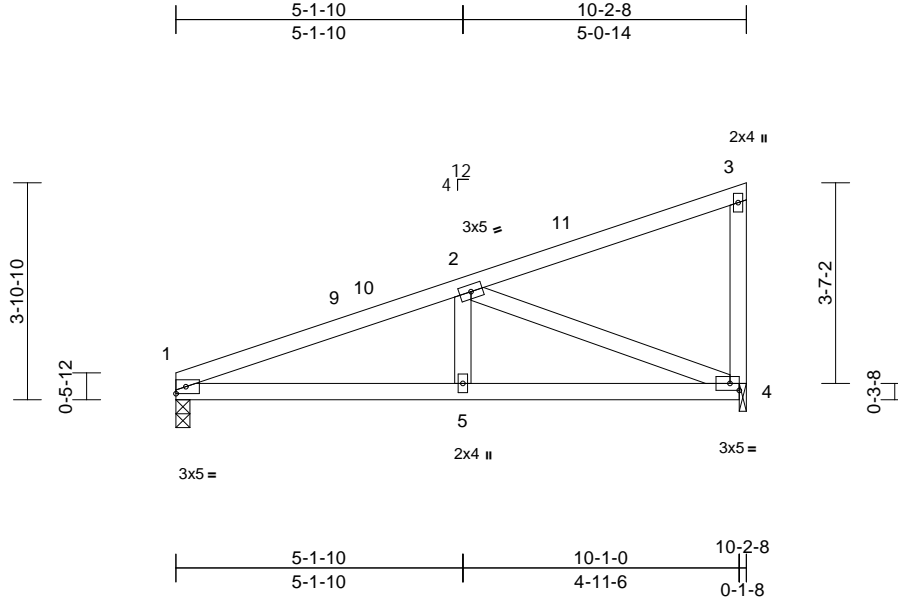
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss F02	Truss Type Monopitch	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464882
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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Page: 1



Scale = 1:41.2

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	0.03	5-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.04	5-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/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 8-6-4 oc bracing.

**REACTIONS** (size) 1=0-3-0, 4=0-1-8

Max Horiz 1=139 (LC 13)  
Max Uplift 1=-141 (LC 10), 4=-162 (LC 10)  
Max Grav 1=464 (LC 21), 4=530 (LC 21)

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

TOP CHORD 1-2=-879/481, 2-3=-103/65, 3-4=-186/104  
BOT CHORD 1-5=-463/796, 4-5=-463/796  
WEBS 2-5=-94/219, 2-4=-827/552

#### 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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 7-0-12, Exterior(2E) 7-0-12 to 10-0-12 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
- 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.
  - Bearings are assumed to be: , Joint 4 SP No.3 .
  - 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.
  - Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
  - 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.
- LOAD CASE(S)** Standard



September 26, 2024

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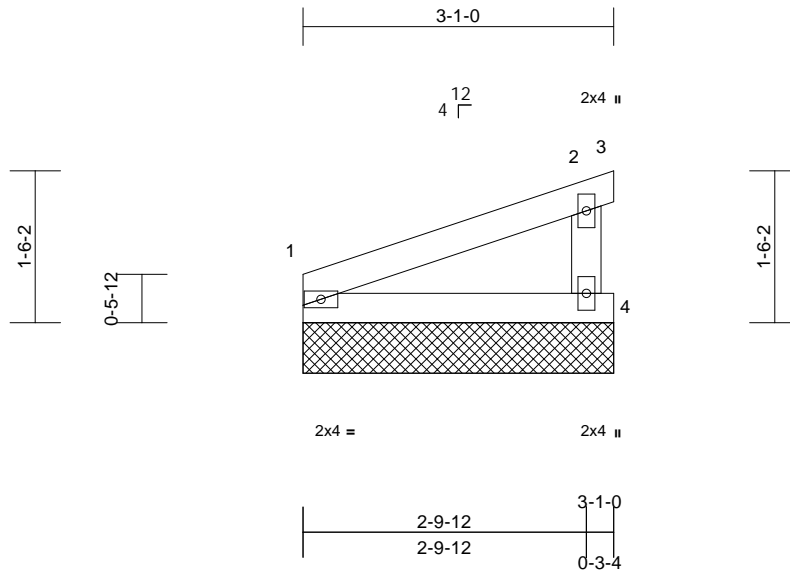


Job 24090060-01	Truss F04	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464884
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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Scale = 1:22.9

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	1	n/a	n/a		
BCLL	0.0*	Code	IRC2021/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 3-1-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=3-1-0, 3=3-1-0, 4=3-1-0, 5=3-1-0  
Max Horiz 1=43 (LC 13), 5=43 (LC 13)  
Max Uplift 1=-8 (LC 10), 3=-183 (LC 20),  
4=-80 (LC 14), 5=-8 (LC 10)  
Max Grav 1=126 (LC 20), 3=49 (LC 14),  
4=375 (LC 20), 5=126 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-30/49, 2-3=-65/48, 2-4=-332/278  
BOT CHORD 1-4=-47/54

**NOTES**

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

- 6) Gable studs spaced at 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 183 lb uplift at joint 3.
  - 10) 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.
- LOAD CASE(S)** Standard



September 26, 2024

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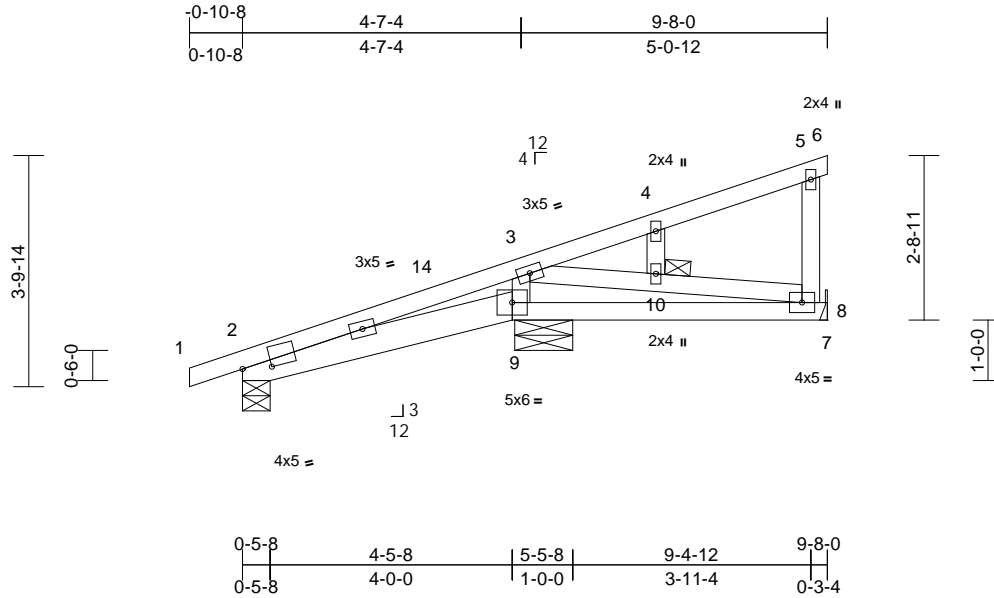


Job 24090060-01	Truss G02	Truss Type Monopitch Structural Gable	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464886
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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Page: 1



Scale = 1:38.1

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	0.31	Vert(LL)	-0.02	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(CT)	-0.03	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 47 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x6 SP No.2 \*Except\* 9-7:2x4 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.

JOINTS 1 Brace at Jt(s): 10

**REACTIONS** (size) 2=0-5-8, 8= Mechanical, 9=0-11-8  
 Max Horiz 2=121 (LC 11)  
 Max Uplift 2=-43 (LC 10), 8=-39 (LC 14), 9=-73 (LC 14)  
 Max Grav 2=221 (LC 21), 8=281 (LC 21), 9=513 (LC 21)

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

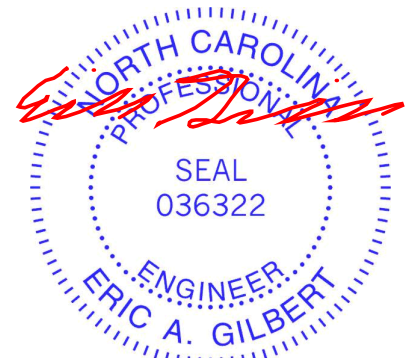
TOP CHORD 1-2=0/17, 2-3=-144/55, 3-4=-105/24, 4-5=-65/30, 5-6=-8/0, 5-8=-177/93  
 BOT CHORD 2-9=-108/202, 8-9=-77/147, 7-8=0/0  
 WEBS 3-9=-377/185, 3-10=-101/105, 8-10=-111/112, 4-10=-71/47

**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.
- 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 39 lb uplift at joint 8 and 73 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 26, 2024

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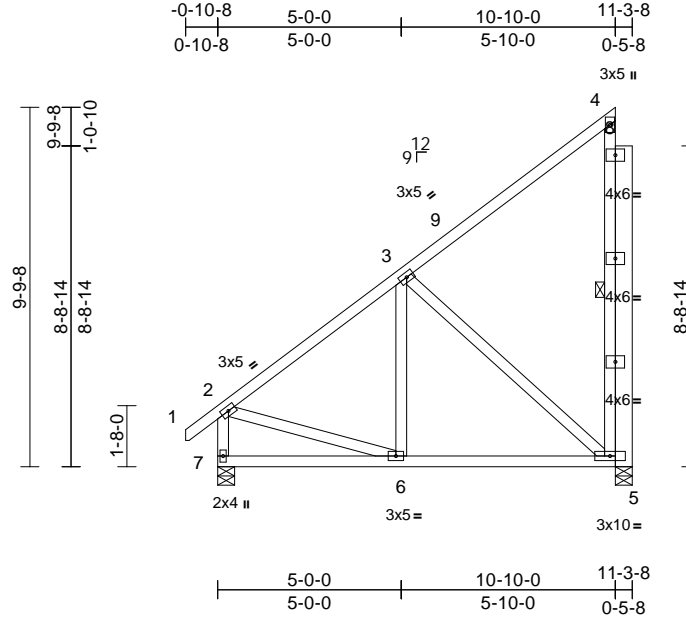
818 Soundside Road  
 Edenton, NC 27932

Job 24090060-01	Truss H01	Truss Type Monopitch	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464887
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
ID: jzudvf5?HySB7qACgSkvP7y94VX-RfC?PsB70Hq3NSgPqnL8w3ulTXhGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:62.8

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	0.64	Vert(LL)	-0.03	5-6	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.29	Vert(CT)	-0.06	5-6	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.51	Horz(CT)	0.01	5	n/a	n/a	
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 99 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=344 (LC 11)
Max Uplift	5=-200 (LC 14), 7=-14 (LC 14)
Max Grav	5=955 (LC 21), 7=535 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/35, 2-3=-468/99, 3-4=-239/197, 4-5=-695/109, 2-7=-494/139
BOT CHORD	6-7=-330/481, 5-6=-140/461
WEBS	3-6=0/192, 3-5=-468/196, 2-6=-49/314

**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) -0-9-15 to 2-2-1, Interior (1) 2-2-1 to 7-8-4, Exterior(2E) 7-8-4 to 10-8-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

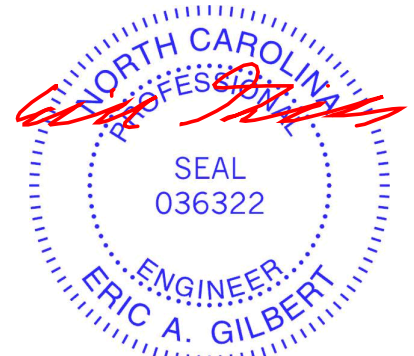
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- Unbalanced snow loads have been considered for this design.

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Bearing at joint(s) 5 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) 7 and 5. This connection is for uplift only and does not consider lateral forces.
- 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, 5-7=-20  
Concentrated Loads (lb)  
Vert: 4=-380 (F)



September 26, 2024

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Edenton, NC 27932

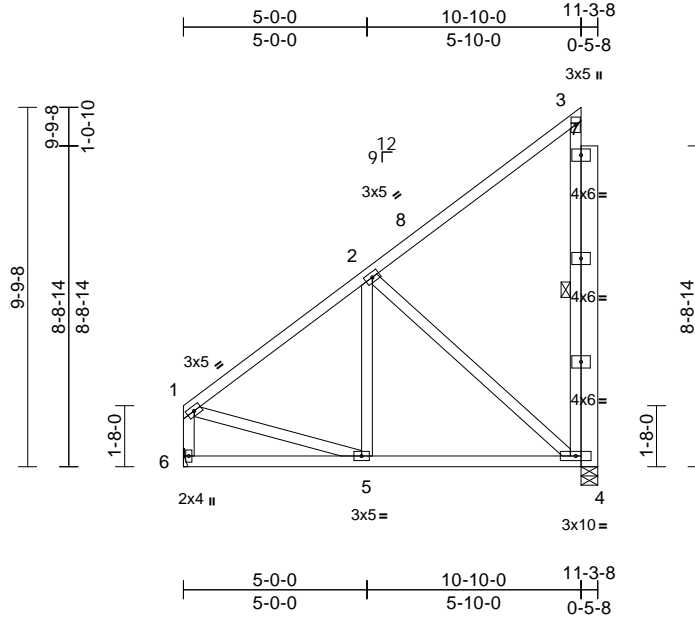


Job 24090060-01	Truss H02	Truss Type Monopitch	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464888
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:15  
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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	0.62	Vert(LL)	-0.03	4-5	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	Vert(CT)	-0.05	4-5	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.51	Horz(CT)	0.01	4	n/a	n/a	
BCLL	0.0*	Code	IRC2021/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.

**REACTIONS** (size) 4=0-5-8, 6= Mechanical  
 Max Horiz 6=322 (LC 11)  
 Max Uplift 4=194 (LC 14)  
 Max Grav 4=940 (LC 20), 6=459 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-455/90, 2-3=-233/191, 3-4=-688/107, 1-6=-420/95  
 BOT CHORD 5-6=-308/467, 4-5=-134/453  
 WEBS 2-5=0/186, 2-4=-462/197, 1-5=-43/304

- 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) 0-1-12 to 3-1-12, Interior (1) 3-1-12 to 7-8-4, Exterior(2E) 7-8-4 to 10-8-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 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.
  - Bearings are assumed to be: , Joint 4 SP No.2 .
  - Refer to girder(s) for truss to truss connections.
  - 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.
  - 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.
- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
 Uniform Loads (lb/ft)  
 Vert: 1-3=-58, 4-6=-19  
 Concentrated Loads (lb)  
 Vert: 3=-380



September 26, 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/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

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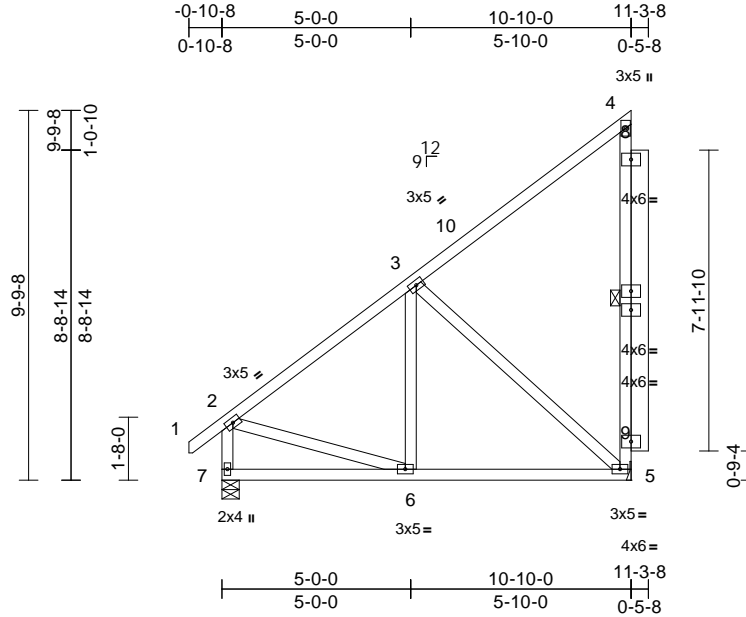
818 Soundside Road  
 Edenton, NC 27932

Job 24090060-01	Truss H03	Truss Type Monopitch	Qty 2	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464889
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:16  
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Page: 1



Scale = 1:61

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.74	Vert(LL)	-0.03	5-6	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.32	Vert(CT)	-0.06	5-6	>999	180	
TCDL	10.0	Rep Stress Incr	NO	WB	0.52	Horz(CT)	0.01	5	n/a	n/a	
BCLL	0.0*	Code	IRC2021/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 *Except* 4-5:2x4 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.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS	1 Row at midpt 4-5

**REACTIONS**

(size)	5= Mechanical, 7=0-5-8
Max Horiz	7=344 (LC 11)
Max Uplift	5=-202 (LC 14), 7=-11 (LC 14)
Max Grav	5=966 (LC 21), 7=522 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/35, 2-3=-452/95, 3-4=-231/212, 4-5=-706/108, 2-7=-482/138
BOT CHORD	6-7=-330/484, 5-6=-138/449
WEBS	3-6=0/197, 3-5=-475/203, 2-6=-61/304

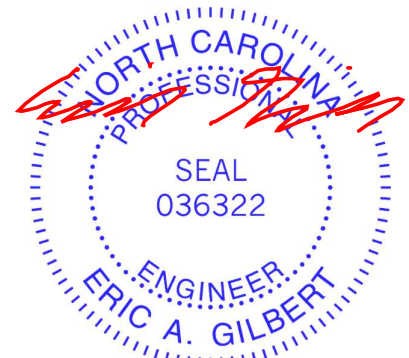
**NOTES**

- 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) -0-9-15 to 2-2-1, Interior (1) 2-2-1 to 7-8-4, Exterior(2E) 7-8-4 to 10-8-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.

- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) Refer to girder(s) for truss to truss connections.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 202 lb uplift at joint 5.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7. This connection is for uplift only and does not consider lateral forces.
- 10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 458 lb down and 79 lb up at 11-0-12 on top chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-4=-60, 5-7=-200  
Concentrated Loads (lb)  
Vert: 4=-380



September 26, 2024

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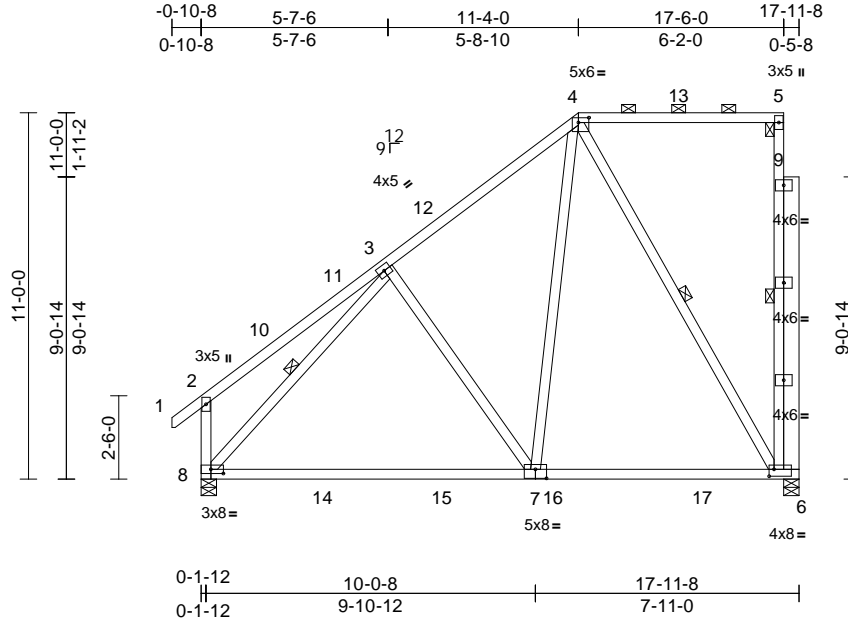


Job 24090060-01	Truss J01	Truss Type Piggyback Base	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464891
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:16  
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Page: 1



Scale = 1:69.2

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

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	0.98	Vert(LL)	-0.31	7-8	>666	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.85	Vert(CT)	-0.52	7-8	>399	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.58	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 154 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.2 \*Except\* 8-2,8-3,7-3:2x4 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, and 2-0-0 oc purlins (5-3-4 max.): 4-5.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 5-6, 4-6, 3-8

**REACTIONS**

(size) 6=0-5-8, 8=0-5-8  
 Max Horiz 8=391 (LC 11)  
 Max Uplift 6=-235 (LC 11), 8=-68 (LC 14)  
 Max Grav 6=1324 (LC 43), 8=928 (LC 44)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/35, 2-3=-266/106, 3-4=-703/191, 4-5=-142/187, 5-6=-772/152, 2-8=-310/124  
 BOT CHORD 6-8=-240/791  
 WEBS 4-6=-849/150, 3-8=-753/79, 4-7=-70/678, 3-7=-293/233

**NOTES**

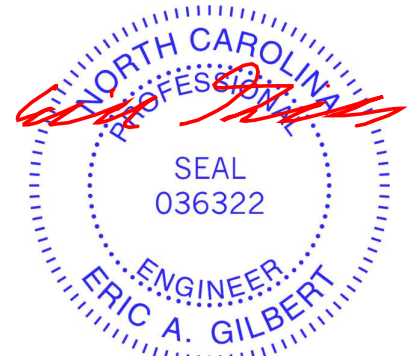
- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-15 to 2-2-1, Interior (1) 2-2-1 to 7-1-1, Exterior(2R) 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

- 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) Provide adequate drainage to prevent water ponding.
- 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, with BCDL = 10.0psf.
- 9) Bearing at joint(s) 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 6 and 8. This connection is for uplift only and does not consider lateral forces.
- 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 12) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 444 lb down and 92 lb up at 283568622 on top chord. The design/selection of such connection device(s) is the responsibility of others.
- 13) 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, 4-5=-60, 6-8=-20

Concentrated Loads (lb)  
 Vert: 5=-436 (F)



September 26, 2024

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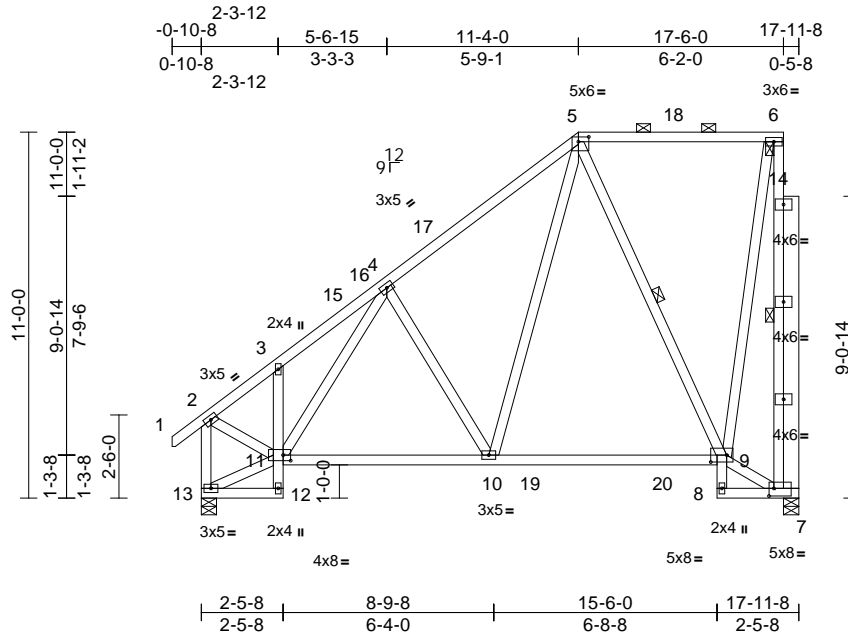
818 Soundside Road  
 Edenton, NC 27932

Job 24090060-01	Truss J02	Truss Type Piggyback Base	Qty 2	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464892
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:16  
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Page: 1



Scale = 1:69.2

Plate Offsets (X, Y): [5:0-3-12,0-1-12], [7:0-1-12,0-2-12], [9:0-5-12,0-2-8], [11:0-2-12,0-2-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.94	Vert(LL)	-0.11	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.18	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.32	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 176 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 12-3,9-8:2x4 SP No.3  
WEBS 2x4 SP No.3 \*Except\* 9-5:2x4 SP No.2, 7-6:2x4 SP 2400F 2.0E  
OTHERS 2x6 SP No.2

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

**REACTIONS**  
(size) 7=0-5-8, 13=0-5-8  
Max Horiz 13=303 (LC 14)  
Max Uplift 7=244 (LC 14), 13=9 (LC 14)  
Max Grav 7=1266 (LC 43), 13=918 (LC 44)

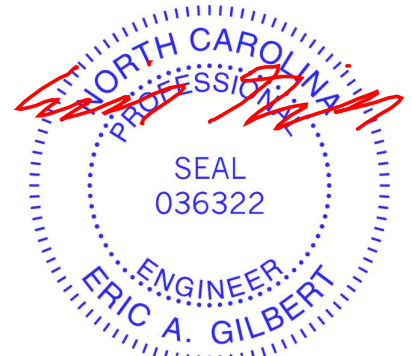
**FORCES**  
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/35, 2-3=-847/132, 3-4=-834/200, 4-5=-849/127, 5-6=-168/32, 6-7=-1450/243, 2-13=-963/159  
BOT CHORD 12-13=-25/1, 11-12=0/42, 3-11=-125/79, 10-11=-293/774, 9-10=-123/418, 8-9=-19/17, 7-8=-106/0  
WEBS 5-9=-618/224, 7-9=0/163, 6-9=-146/769, 4-11=-222/71, 4-10=-378/263, 5-10=-141/654, 11-13=-322/176, 2-11=-72/697

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-9-15 to 2-2-11, Interior (1) 2-2-11 to 7-1-1, Exterior(2R) 7-1-1 to 14-2-8, Exterior (2E) 14-2-8 to 17-2-8 zone; cantilever left exposed; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 13. This connection is for uplift only and does not consider lateral forces.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 444 lb down and 92 lb up at 283568622 on top chord. The design/selection of such connection device(s) is the responsibility of others.

12) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

**LOAD CASE(S)** Standard  
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-2=-60, 2-5=-60, 5-6=-60, 12-13=-20, 9-11=-20, 7-8=-20  
Concentrated Loads (lb)  
Vert: 6=-436 (F)



September 26, 2024

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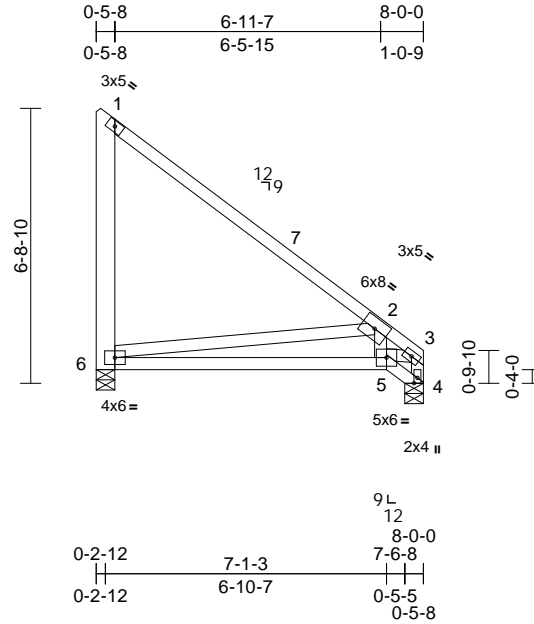


Job 24090060-01	Truss K01	Truss Type Roof Special	Qty 4	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464893
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:16  
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Page: 1



Scale = 1:56.3

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	1.00	Vert(LL)	-0.13	5-6	>682	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.68	Vert(CT)	-0.27	5-6	>339	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.02	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 53 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 6-1:2x6 SP No.2

**BRACING**

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

**REACTIONS**

(size) 4=0-5-8, 6=0-5-8  
 Max Horiz 6=-224 (LC 10)  
 Max Uplift 4=-4 (LC 15), 6=-92 (LC 15)  
 Max Grav 4=359 (LC 21), 6=440 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-237/119, 2-3=-644/140, 3-4=-355/12, 1-6=-268/221  
 BOT CHORD 5-6=-239/751, 4-5=-16/20  
 WEBS 3-5=-228/764, 2-5=-165/124, 2-6=-760/588

**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) 0-2-12 to 3-2-12, Interior (1) 3-2-12 to 4-10-4, Exterior(2E) 4-10-4 to 7-10-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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) Bearing at joint(s) 4, 6 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 7) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 4 and 6. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 26, 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)



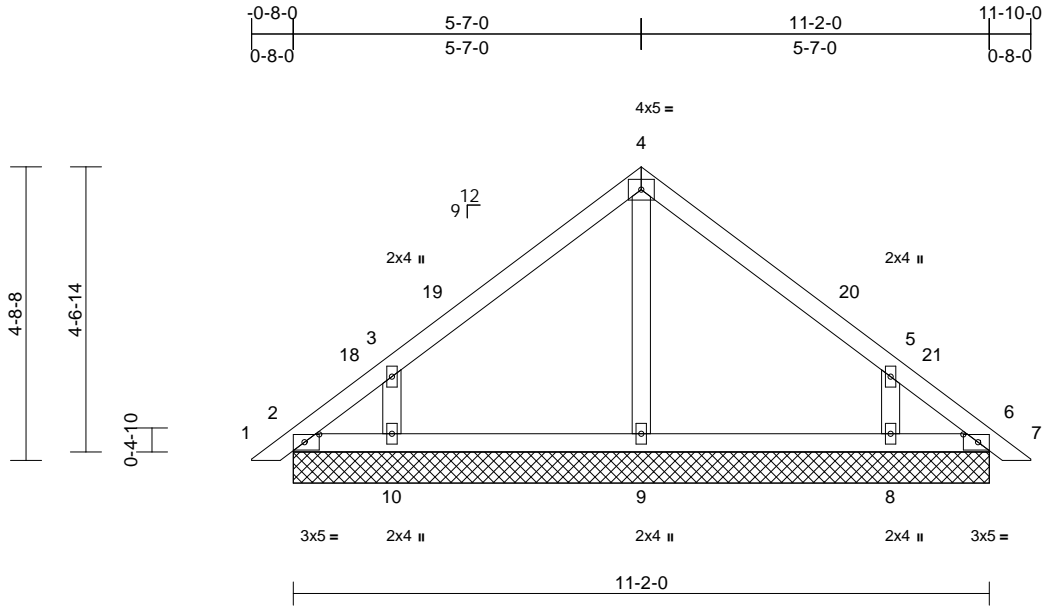
818 Soundside Road  
 Edenton, NC 27932

Job 24090060-01	Truss PB1	Truss Type Piggyback	Qty 8	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464894
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
ID:iEW3YzPcKaFU49JpJ8F7u4y94Qj-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWRcDoi7J4zJC?f

Page: 1



Scale = 1:37

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	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 49 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=11-2-0, 6=11-2-0, 8=11-2-0, 9=11-2-0, 10=11-2-0, 11=11-2-0, 15=11-2-0  
Max Horiz 2=-106 (LC 12), 11=-106 (LC 12)  
Max Uplift 2=-36 (LC 10), 6=-16 (LC 11), 8=-132 (LC 15), 10=-133 (LC 14), 11=-36 (LC 10), 15=-16 (LC 11)  
Max Grav 2=86 (LC 26), 6=70 (LC 25), 8=432 (LC 22), 9=281 (LC 21), 10=432 (LC 21), 11=86 (LC 26), 15=70 (LC 25)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/16, 2-3=-106/91, 3-4=-189/97, 4-5=-189/97, 5-6=-83/57, 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=-193/18, 3-10=-404/209, 5-8=-404/209

**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 9-3-9, Exterior(2E) 9-3-9 to 12-3-9 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.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



September 26, 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)



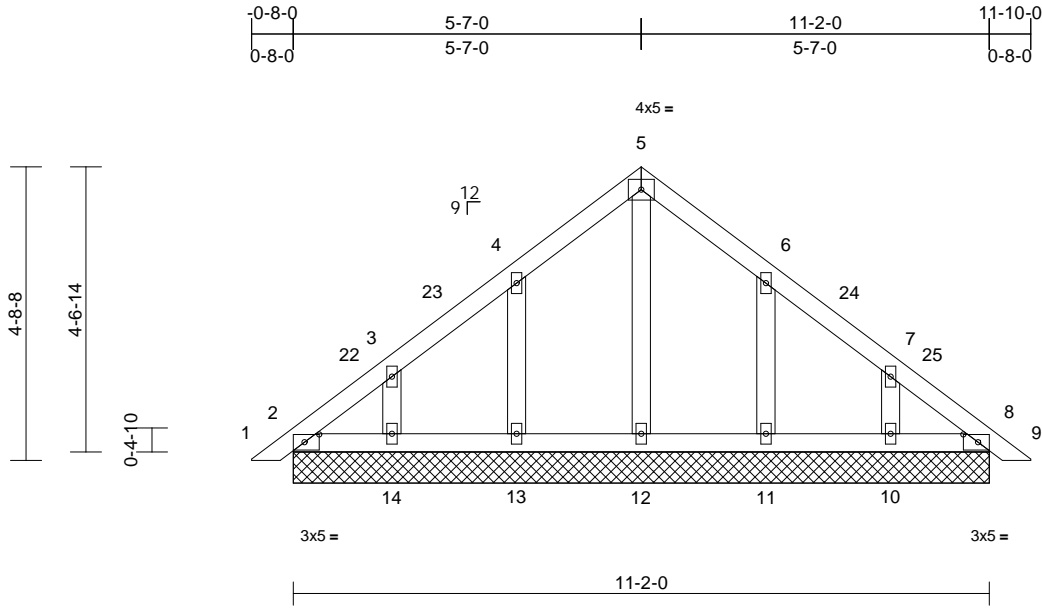
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss PB1GE	Truss Type Piggyback	Qty 2	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464895
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Scale = 1:37  
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	IRC2021/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=11-2-0, 8=11-2-0, 10=11-2-0,  
11=11-2-0, 12=11-2-0, 13=11-2-0,  
14=11-2-0, 15=11-2-0, 19=11-2-0  
Max Horiz 2=-106 (LC 12), 15=-106 (LC 12)  
Max Uplift 2=-18 (LC 10), 10=-67 (LC 15),  
11=-70 (LC 15), 13=-71 (LC 14),  
14=-68 (LC 14), 15=-18 (LC 10)  
Max Grav 2=102 (LC 26), 8=93 (LC 1),  
10=209 (LC 22), 11=269 (LC 22),  
12=132 (LC 28), 13=269 (LC 21),  
14=209 (LC 21), 15=102 (LC 26),  
19=93 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-89/76, 3-4=-86/57,  
4-5=-97/107, 5-6=-97/107, 6-7=-83/41,  
7-8=-66/42, 8-9=0/16  
BOT CHORD 2-14=-34/84, 13-14=-34/84, 12-13=-34/84,  
11-12=-34/84, 10-11=-34/84, 8-10=-34/84  
WEBS 5-12=-92/0, 4-13=-229/116, 3-14=-168/91,  
6-11=-229/116, 7-10=-168/91

**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) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 9-3-9, Exterior(2E) 9-3-9 to 12-3-9 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

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 live load of 20.0 psf on overhangs non-concurrent with other live loads.

7) All plates are 2x4 MT20 unless otherwise indicated.  
8) Gable requires continuous bottom chord bearing.  
9) Gable studs spaced at 2-0-0 oc.  
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.  
11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 13, 14, 11, and 10. This connection is for uplift only and does not consider lateral forces.

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

**LOAD CASE(S)** Standard



September 26, 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

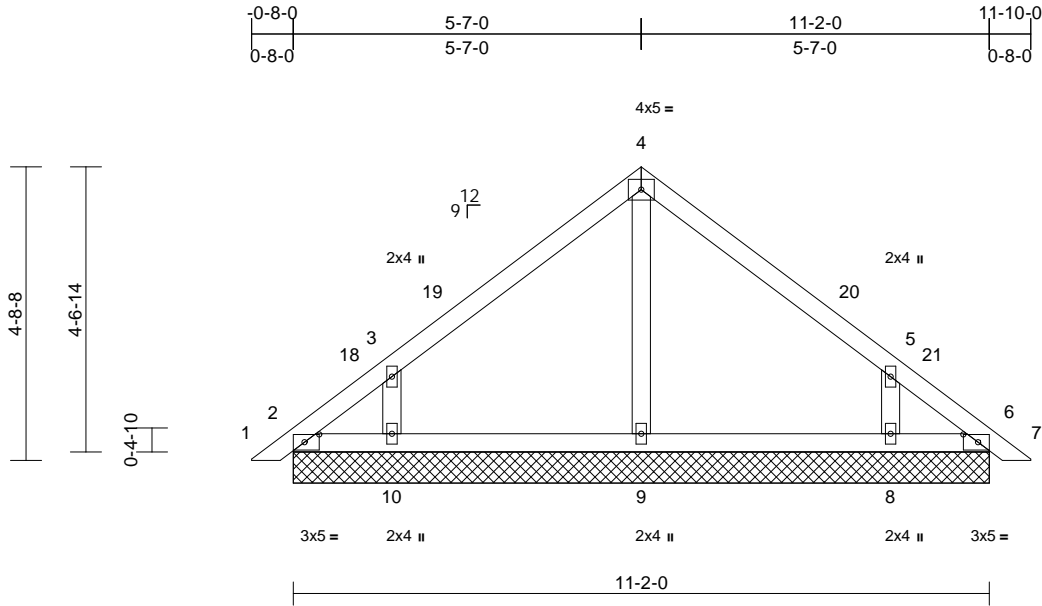
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss PB1GR	Truss Type Piggyback	Qty 1	Ply 2	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464896
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Scale = 1:37

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	IRC2021/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=11-2-0, 6=11-2-0, 8=11-2-0, 9=11-2-0, 10=11-2-0, 11=11-2-0, 15=11-2-0  
Max Horiz 2=-106 (LC 12), 11=-106 (LC 12)  
Max Uplift 2=-36 (LC 10), 6=-16 (LC 11), 8=-132 (LC 15), 10=-133 (LC 14), 11=-36 (LC 10), 15=-16 (LC 11)  
Max Grav 2=85 (LC 26), 6=69 (LC 25), 8=432 (LC 22), 9=282 (LC 21), 10=432 (LC 21), 11=85 (LC 26), 15=69 (LC 25)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-105/91, 3-4=-189/97, 4-5=-189/97, 5-6=-82/57, 6-7=0/16  
BOT CHORD 2-10=-29/72, 9-10=-28/72, 8-9=-28/72, 6-8=-28/72  
WEBS 4-9=-193/18, 3-10=-402/208, 5-8=-402/208

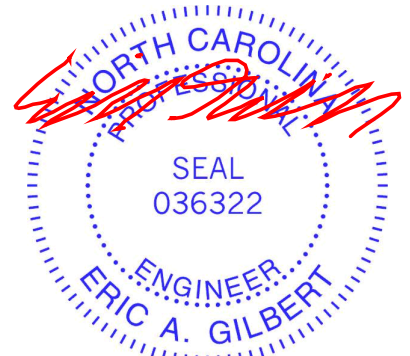
**NOTES**

- 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 9-3-9, Exterior(2E) 9-3-9 to 12-3-9 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.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



September 26, 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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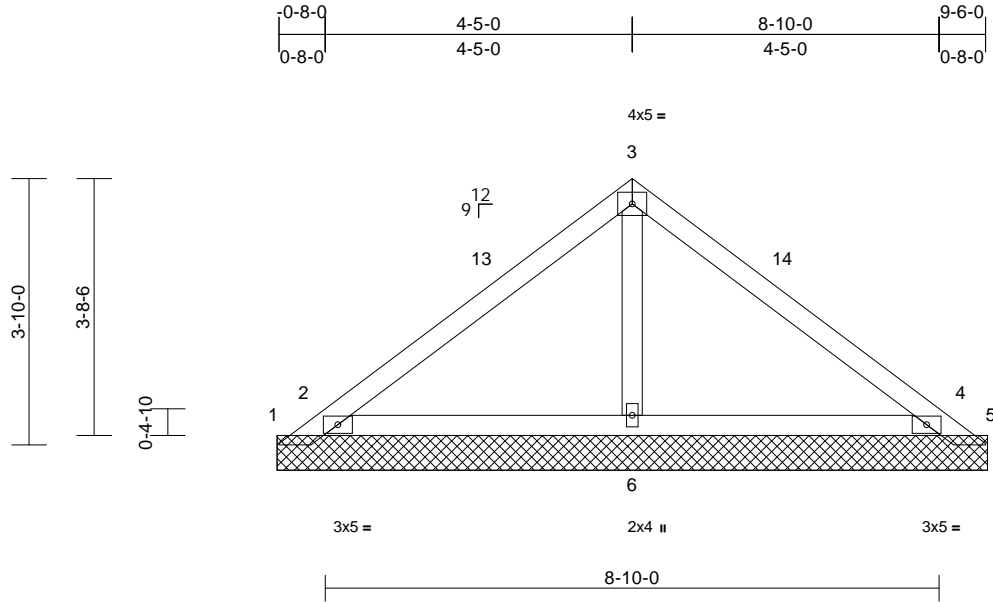
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss PB2	Truss Type Piggyback	Qty 7	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464897
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Scale = 1:33.2

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.57	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.14	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
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 6-0-0 oc purlins.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size)

- 1=10-2-11, 2=10-2-11, 4=10-2-11, 5=10-2-11, 6=10-2-11, 7=10-2-11, 10=10-2-11
- Max Horiz 1=85 (LC 11)
- Max Uplift 1=-531 (LC 21), 2=-255 (LC 14), 4=-235 (LC 15), 5=-528 (LC 22), 7=-255 (LC 14), 10=-235 (LC 15)
- Max Grav 1=207 (LC 14), 2=932 (LC 21), 4=921 (LC 22), 5=170 (LC 15), 6=255 (LC 21), 7=932 (LC 21), 10=921 (LC 22)

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

- TOP CHORD 1-2=-170/341, 2-3=-218/255, 3-4=-218/253, 4-5=-140/339
- BOT CHORD 2-6=-194/103, 4-6=-194/103
- WEBS 3-6=-140/16

**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) 0-3-1 to 3-3-1, Exterior(2R) 3-3-1 to 6-11-9, Exterior(2E) 6-11-9 to 9-11-9 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 531 lb uplift at joint 1 and 528 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.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



September 26, 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

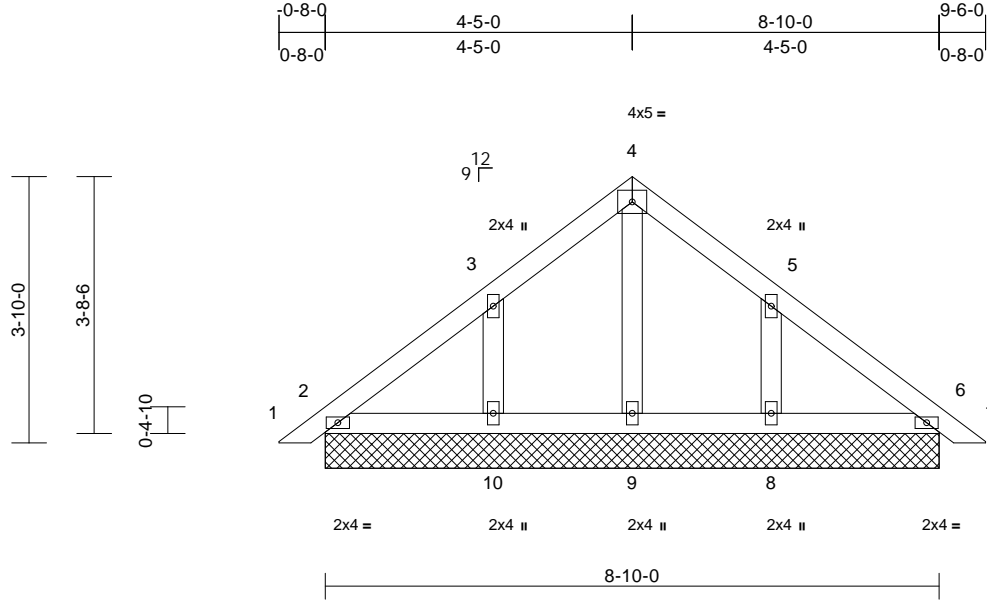


Job 24090060-01	Truss PB2GE	Truss Type Piggyback	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464898
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.11	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 41 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.

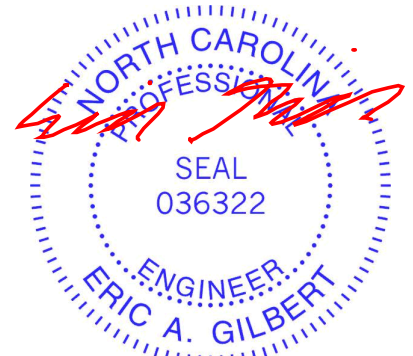
**REACTIONS** (size) 2=8-10-0, 6=8-10-0, 8=8-10-0, 9=8-10-0, 10=8-10-0, 11=8-10-0, 15=8-10-0  
Max Horiz 2=-85 (LC 12), 11=-85 (LC 12)  
Max Uplift 2=-7 (LC 15), 8=-95 (LC 15), 10=-96 (LC 14), 11=-7 (LC 15)  
Max Grav 2=164 (LC 21), 6=164 (LC 22), 8=335 (LC 22), 9=101 (LC 28), 10=335 (LC 21), 11=164 (LC 21), 15=164 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-3=-74/58, 3-4=-106/95, 4-5=-106/95, 5-6=-64/50, 6-7=0/16  
BOT CHORD 2-10=-25/76, 9-10=-25/76, 8-9=-25/76, 6-8=-25/76  
WEBS 4-9=-70/4, 3-10=-260/149, 5-8=-260/149

**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) 0-3-1 to 3-1-5, Exterior(2R) 3-1-5 to 7-1-5, Exterior(2E) 7-1-5 to 9-11-9 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 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, 10, and 8. This connection is for uplift only and does not consider lateral forces.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



September 26, 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/TP1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)



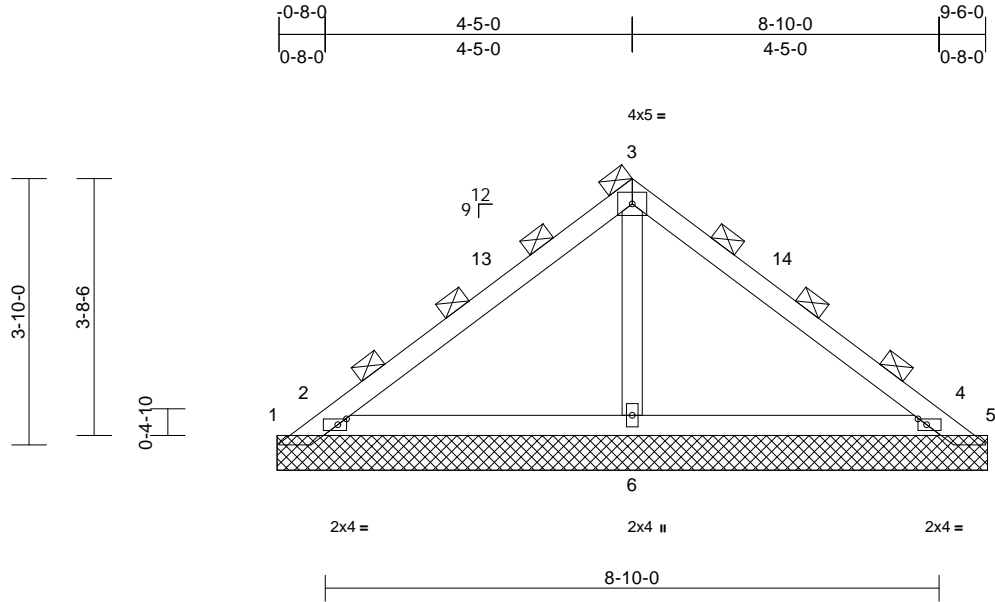
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss PB2GR	Truss Type Piggyback	Qty 2	Ply 2	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	I68464899
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Scale = 1:33.2

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

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	0.47	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	NO	WB	0.02	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
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

**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) 1=10-2-11, 2=10-2-11, 4=10-2-11, 5=10-2-11, 6=10-2-11, 7=10-2-11, 10=10-2-11
- Max Horiz 1=128 (LC 13)
- Max Uplift 1=-763 (LC 21), 2=-372 (LC 14), 4=-341 (LC 15), 5=-759 (LC 22), 7=-372 (LC 14), 10=-341 (LC 15)
- Max Grav 1=300 (LC 14), 2=1361 (LC 21), 4=1343 (LC 22), 5=246 (LC 15), 6=389 (LC 21), 7=1361 (LC 21), 10=1343 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

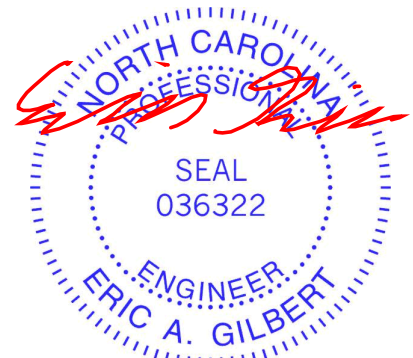
- TOP CHORD 1-2=-248/491, 2-3=-323/382, 3-4=-323/379, 4-5=-200/489
- BOT CHORD 2-6=-307/168, 4-6=-307/168
- WEBS 3-6=-215/25

**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 6-11-9, Exterior(2E) 6-11-9 to 9-11-9 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 763 lb uplift at joint 1 and 759 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.

- 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



September 26, 2024

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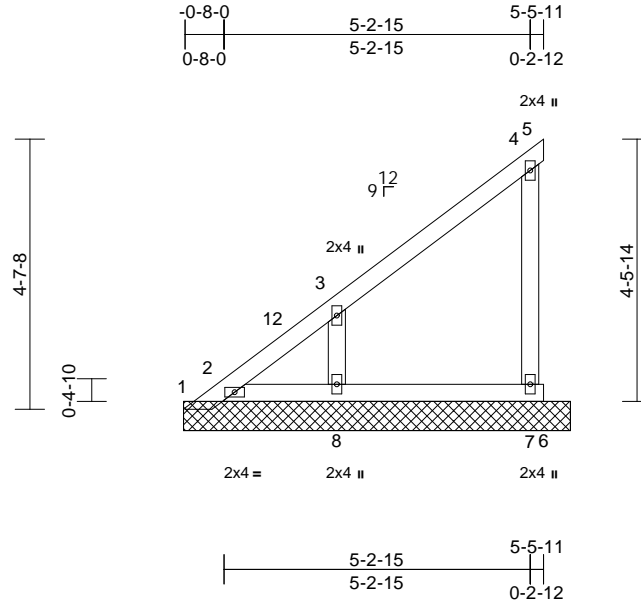
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss PB3	Truss Type Piggyback	Qty 3	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464900
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:39.5

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.20	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.14	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/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.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

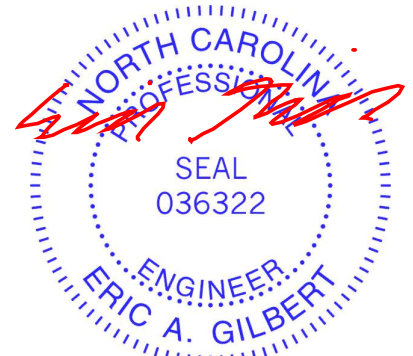
REACTIONS	
(size)	1=6-7-8, 2=6-7-8, 5=6-7-8, 6=6-7-8, 7=6-7-8, 8=6-7-8, 9=6-7-8
Max Horiz	1=163 (LC 14)
Max Uplift	1=-35 (LC 12), 2=-10 (LC 14), 5=-219 (LC 21), 6=-160 (LC 7), 7=-102 (LC 14), 8=-110 (LC 14), 9=-10 (LC 14)
Max Grav	1=109 (LC 14), 2=83 (LC 30), 5=94 (LC 14), 6=48 (LC 10), 7=524 (LC 21), 8=374 (LC 21), 9=83 (LC 30)

FORCES	
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-281/137, 2-3=-245/129, 3-4=-109/96, 4-5=-145/88
BOT CHORD	2-8=-26/14, 7-8=0/0, 6-7=0/0
WEBS	3-8=-320/224, 4-7=-403/273

- NOTES**
- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

- 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.
- 5) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 9) Bearing at joint(s) 2, 1, 5, 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 160 lb uplift at joint 6, 35 lb uplift at joint 1 and 219 lb uplift at joint 5.
- 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 8, and 7. This connection is for uplift only and does not consider lateral forces.
- 12) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



September 26, 2024

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

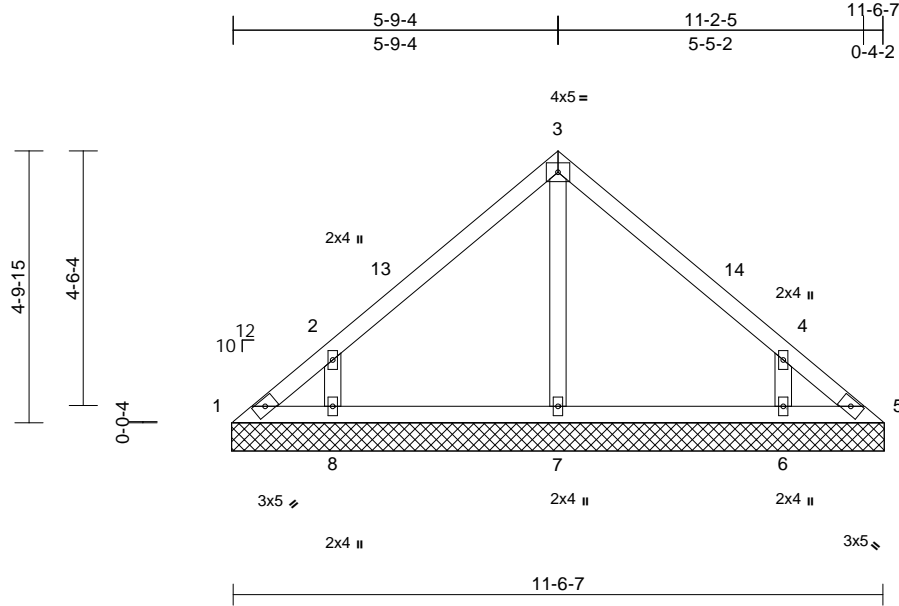
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss V1	Truss Type Valley	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464901
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 47 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.

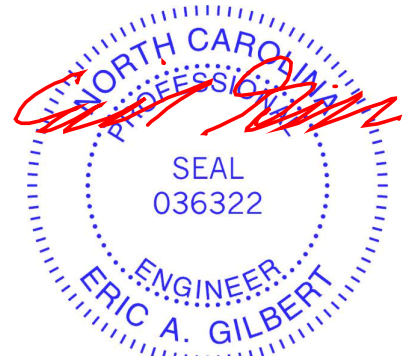
**REACTIONS** (size) 1=11-7-1, 5=11-7-1, 6=11-7-1, 7=11-7-1, 8=11-7-1  
Max Horiz 1=-109 (LC 10)  
Max Uplift 1=-36 (LC 10), 5=-9 (LC 11), 6=-134 (LC 15), 8=-137 (LC 14)  
Max Grav 1=80 (LC 25), 5=60 (LC 24), 6=439 (LC 21), 7=254 (LC 20), 8=439 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-119/100, 2-3=-223/114, 3-4=-223/114, 4-5=-95/64  
BOT CHORD 1-8=-31/73, 7-8=-27/73, 6-7=-27/73, 5-6=-30/73  
WEBS 3-7=-165/0, 2-8=-423/235, 4-6=-423/235

**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) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 8-7-1, Exterior(2E) 8-7-1 to 11-7-1 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 36 lb uplift at joint 1, 9 lb uplift at joint 5, 137 lb uplift at joint 8 and 134 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

**LOAD CASE(S)** Standard



September 26, 2024

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

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

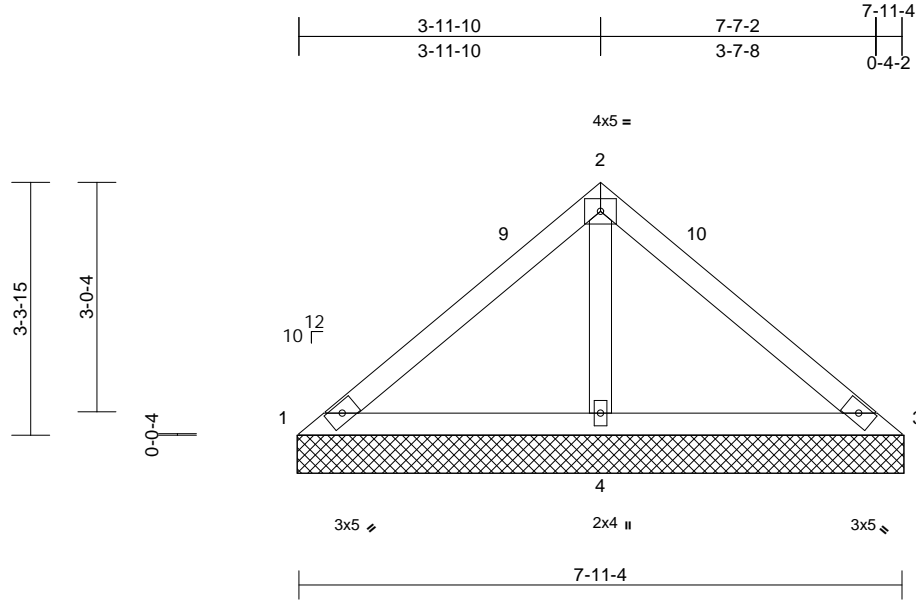
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss V2	Truss Type Valley	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464902
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:17  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.32	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.11	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 30 lb	FT = 20%	

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 7-11-4 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-11-14, 3=7-11-14, 4=7-11-14  
Max Horiz 1=-74 (LC 10)  
Max Uplift 1=-37 (LC 21), 3=-37 (LC 20), 4=-91 (LC 14)  
Max Grav 1=101 (LC 20), 3=101 (LC 21), 4=628 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-113/286, 2-3=-113/286  
BOT CHORD 1-4=-222/174, 3-4=-222/174  
WEBS 2-4=-507/236

- 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 37 lb uplift at joint 1, 37 lb uplift at joint 3 and 91 lb uplift at joint 4.
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.
- 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) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 4-11-14, Exterior(2E) 4-11-14 to 7-11-14 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.



September 26, 2024

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818 Soundside Road  
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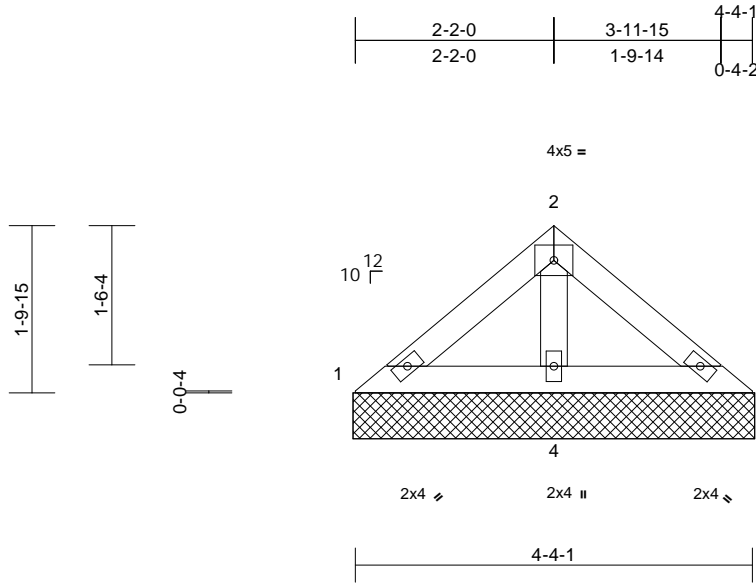


Job 24090060-01	Truss V3	Truss Type Valley	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464903
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:18  
ID:\_Pct1VqtCUIRorSEgzcdUCzF\_Jj-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	0.06	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	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	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 15 lb	FT = 20%	

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

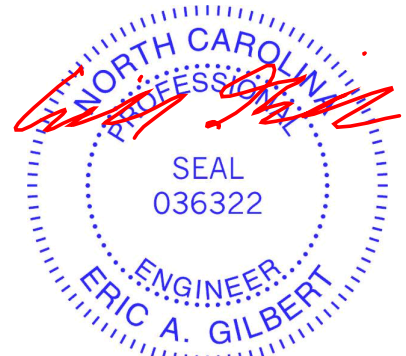
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-4-1 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-4-10, 3=4-4-10, 4=4-4-10  
Max Horiz 1=38 (LC 11)  
Max Uplift 1=-1 (LC 14), 3=-8 (LC 15), 4=-27 (LC 14)  
Max Grav 1=82 (LC 20), 3=82 (LC 21), 4=258 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-75/87, 2-3=-75/87  
BOT CHORD 1-4=-70/75, 3-4=-70/75  
WEBS 2-4=-176/77

- Unbalanced snow loads have been considered for this design.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 4-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1 lb uplift at joint 1, 8 lb uplift at joint 3 and 27 lb uplift at joint 4.
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.
- LOAD CASE(S)** Standard

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



September 26, 2024

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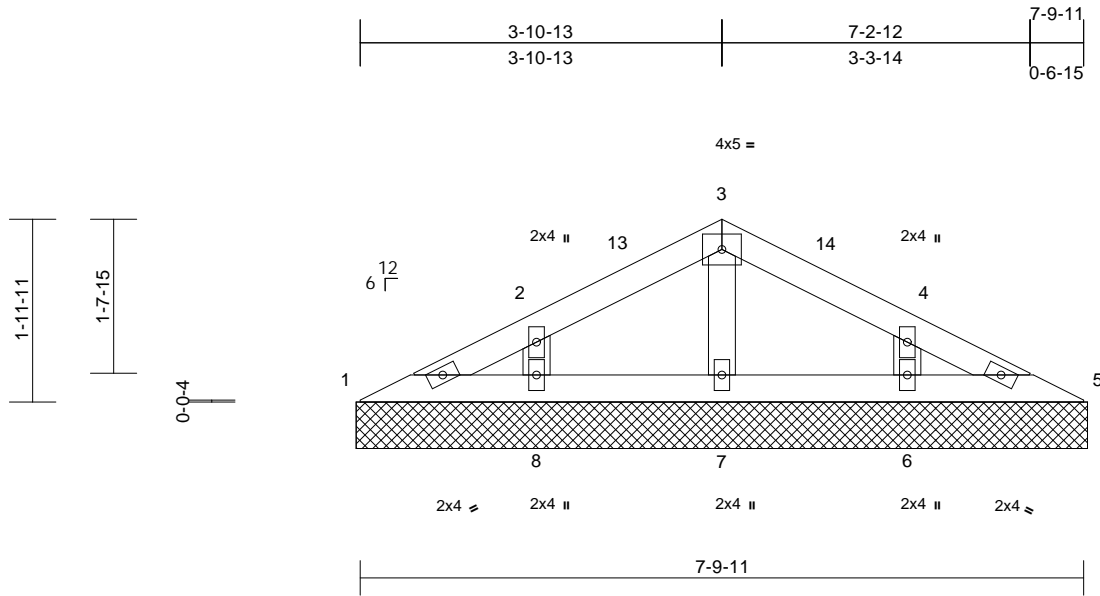
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss V4	Truss Type Valley	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464904
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Wed Sep 25 08:02:18  
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Page: 1



Loading (psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	Plate Grip DOL	1.15	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	Lumber DOL	1.15	BC	0.03	Vert(TL)	n/a	-	n/a	999		
TCDL	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	Code	IRC2021/TPI2014	Matrix-MP								
BCDL										Weight: 26 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 6-0-0 oc bracing.

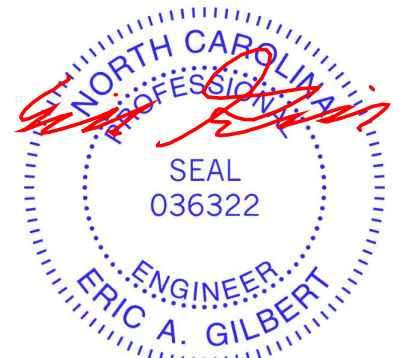
**REACTIONS** (size) 1=7-10-11, 5=7-10-11, 6=7-10-11, 7=7-10-11, 8=7-10-11  
Max Horiz 1=29 (LC 14)  
Max Uplift 1=-3 (LC 15), 5=-5 (LC 15), 6=-50 (LC 15), 8=-51 (LC 14)  
Max Grav 1=81 (LC 20), 5=81 (LC 21), 6=265 (LC 21), 7=144 (LC 20), 8=265 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-73/54, 2-3=-39/57, 3-4=-39/57, 4-5=-73/54  
BOT CHORD 1-8=-22/57, 7-8=-22/34, 6-7=-22/34, 5-6=-22/57  
WEBS 3-7=-107/41, 2-8=-207/131, 4-6=-207/131

**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) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 4-10-11, Exterior(2E) 4-10-11 to 7-10-11 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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 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, 5 lb uplift at joint 5, 51 lb uplift at joint 8 and 50 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.

**LOAD CASE(S)** Standard



September 26, 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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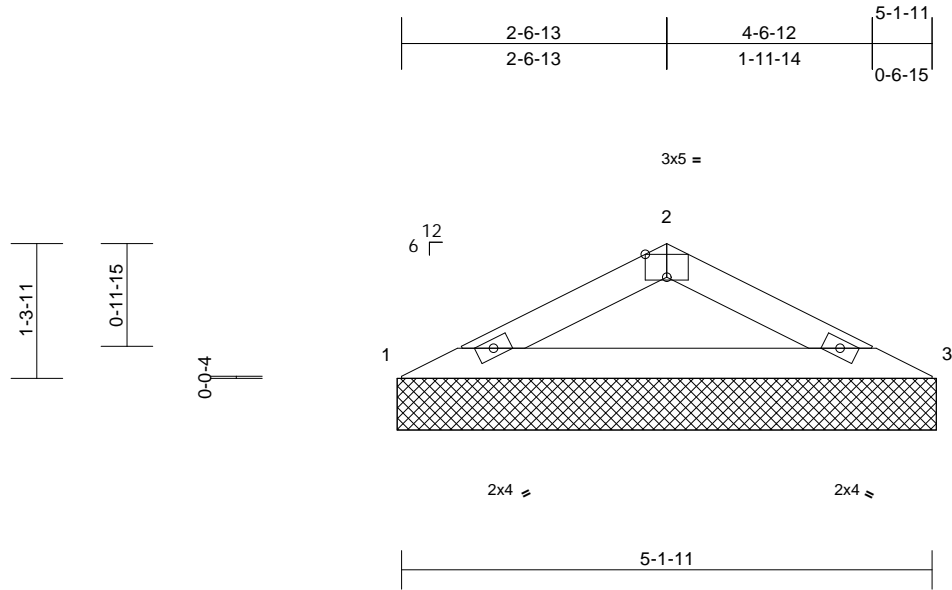
818 Soundside Road  
Edenton, NC 27932

Job 24090060-01	Truss V5	Truss Type Valley	Qty 1	Ply 1	174 Serenity-Roof-B330 A CP BNS GLH Job Reference (optional)	168464905
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:22.3

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	0.23	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	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 14 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 5-1-11 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=5-2-11, 3=5-2-11  
Max Horiz 1=-18 (LC 19)  
Max Uplift 1=-21 (LC 14), 3=-21 (LC 15)  
Max Grav 1=241 (LC 20), 3=241 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-437/191, 2-3=-437/191  
BOT CHORD 1-3=-158/383

**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 21 lb uplift at joint 1 and 21 lb uplift at joint 3.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.

**LOAD CASE(S)** Standard



September 26, 2024

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

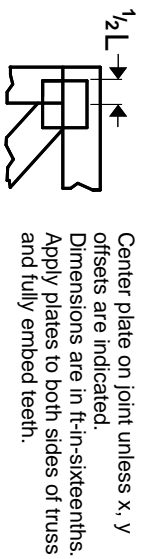
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# Symbols

## 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

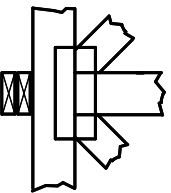
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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.

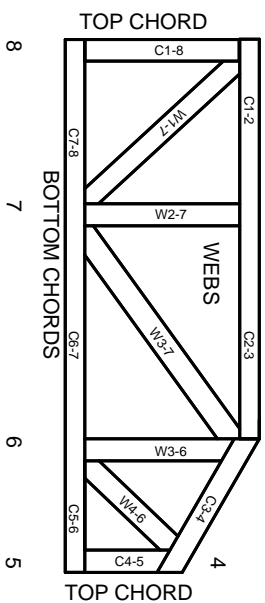
## Industry Standards:

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

**MITek**

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