

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 24030108-01  
132 Serenity-Roof-B326 BLH COP BR4

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: I64569194 thru I64569231

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

North Carolina COA: C-0844



March 29, 2024

Gilbert, Eric

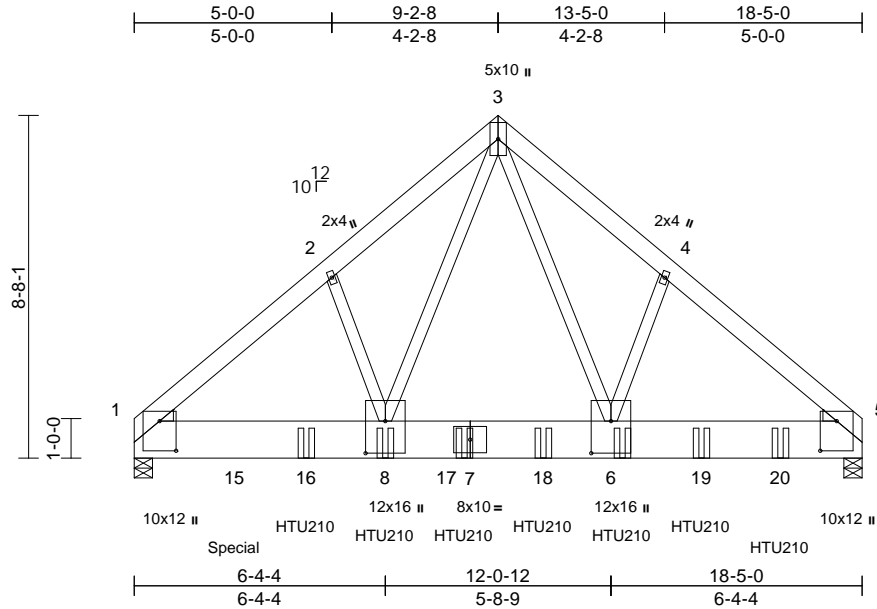
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), 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 24030108-01	Truss D02	Truss Type Common Girder	Qty 1	Ply 3	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569194
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:12  
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Page: 1



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Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.37	Vert(LL)	-0.09	8-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.52	Vert(CT)	-0.15	8-14	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.86	Horz(CT)	0.02	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 544 lb	FT = 20%

**LUMBER**

TOP CHORD 2x6 SP No.2  
 BOT CHORD 2x12 SP 2400F 2.0E  
 WEBS 2x4 SP No.3 \*Except\* 8-3,6-3:2x4 SP No.2  
 WEDGE Left: 2x4 SP No.3  
 Right: 2x4 SP No.3

**BRACING**

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

**REACTIONS**

(size) 1=0-5-8, 5=0-5-8  
 Max Horiz 1=180 (LC 10)  
 Max Grav 1=14904 (LC 21), 5=10832 (LC 6)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 3-4=-12461/0, 4-5=-12592/0, 1-2=-14114/0, 2-3=-14046/0  
 BOT CHORD 1-8=0/10837, 6-8=0/7190, 5-6=0/9583  
 WEBS 2-8=-232/269, 3-8=0/10561, 3-6=0/7003, 4-6=-148/268

**NOTES**

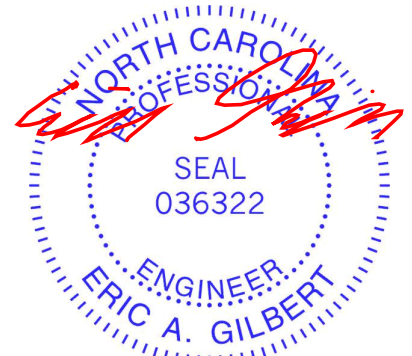
- 3-ply truss to be connected together as follows:  
 Top chords connected with 10d (0.131"x3") nails as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
 Bottom chords connected with Simpson SDS 1/4 x 4-1/2 screws as follows: 2x12 - 3 rows staggered at 0-4-0 oc.  
 Web chords connected with 10d (0.131"x3") 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; 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, with BCDL = 10.0psf.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Use Simpson Strong-Tie HTU210 (32-10d Girder, 14-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 4-4-4 from the left end to 16-4-4 to connect truss(es) to back face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.
- Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 8833 lb down and 522 lb up at 2-6-8 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
 Uniform Loads (lb/ft)  
 Vert: 3-5=-60, 1-3=-60, 9-12=-20  
 Concentrated Loads (lb)

Vert: 7=-1900 (B), 8=-1900 (B), 6=-1900 (B), 15=-5487 (B), 16=-1904 (B), 18=-1900 (B), 19=-1900 (B), 20=-1900 (B)



March 29, 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)



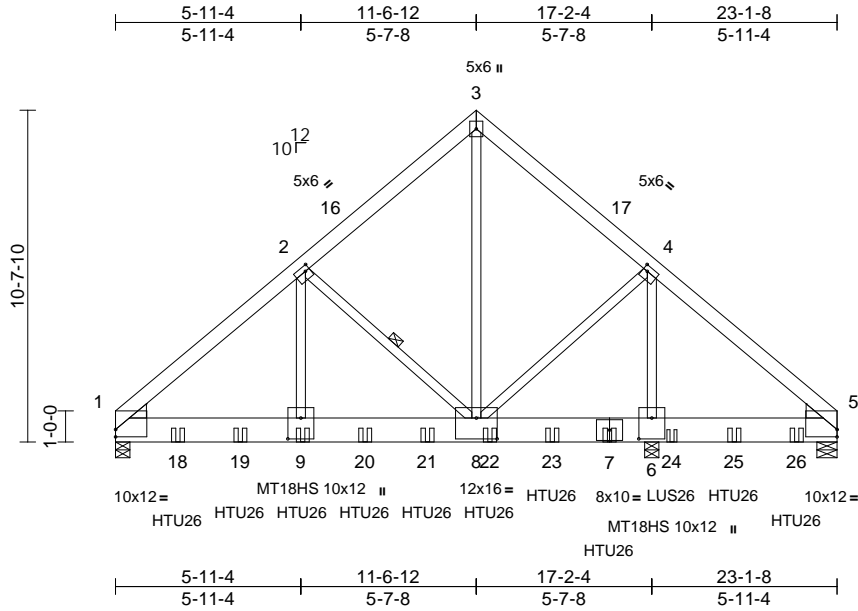
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss B02	Truss Type Common Girder	Qty 1	Ply 2	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569195
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Scale = 1:73.9

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	-0.09	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.36	Vert(CT)	-0.16	8-9	>999	180	MT18HS	244/190
TCDL	10.0	Rep Stress Incr	NO	WB	0.77	Horz(CT)	0.02	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 429 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x6 SP No.2  
BOT CHORD 2x10 SP 2400F 2.0E  
WEBS 2x4 SP No.2  
WEDGE Left: 2x6 SP No.2  
Right: 2x6 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-9-13 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.  
WEBS 1 Row at midpt 2-8

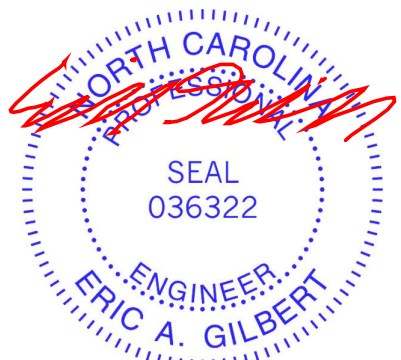
**REACTIONS** (size) 1=0-5-8, 5=0-7-12, 6=0-5-8  
Max Horiz 1=226 (LC 9)  
Max Uplift 5=-507 (LC 13)  
Max Grav 1=8853 (LC 5), 5=648 (LC 19), 6=12887 (LC 6)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-9849/0, 2-3=-5015/0, 3-4=-5020/0, 4-5=-82/408  
BOT CHORD 1-9=0/7513, 8-9=0/7513, 6-8=-301/0, 5-6=-301/4  
WEBS 2-9=0/6306, 2-8=-5109/0, 3-8=0/5958, 4-8=0/5534, 4-6=-7350/0

**NOTES**  
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Bottom chords connected as follows: 2x10 - 3 rows staggered at 0-4-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-5-0 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; TC DL=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.
- All plates are MT20 plates unless otherwise indicated.
- The Fabrication Tolerance at joint 9 = 16%, joint 6 = 16%
- 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) 5. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss) or equivalent spaced at 2-0-0 oc max. starting at 2-0-0 from the left end to 15-10-0 to connect truss(es) to back face of bottom chord.
  - Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss) or equivalent at 17-10-0 from the left end to connect truss(es) to back face of bottom chord.
  - Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 19-10-0 from the left end to 21-10-0 to connect truss(es) to back face of bottom chord.
  - Fill all nail holes where hanger is in contact with lumber.
- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-5=-60, 10-13=-20  
Concentrated Loads (lb)



March 29, 2024

Continued on page 2

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Job 24030108-01	Truss B02	Truss Type Common Girder	Qty 1	Ply <b>2</b>	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569195
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 2

Vert: 7=-1910 (B), 9=-1910 (B), 18=-1910 (B),  
19=-1910 (B), 20=-1910 (B), 21=-1910 (B), 22=-1910  
(B), 23=-1910 (B), 24=-876 (B), 25=-876 (B),  
26=-876 (B)

**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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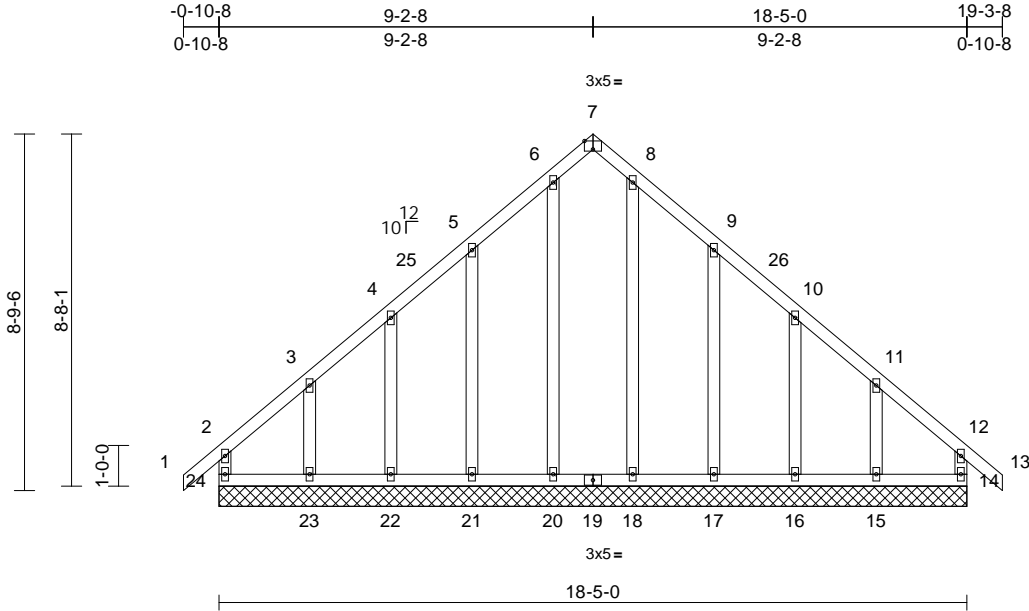
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569196
24030108-01	D01	Common Supported Gable	1	1	Job Reference (optional)	

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

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Page: 1



Scale = 1:56.8  
 Plate Offsets (X, Y): [7:0-2-8,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	0.21	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	0.20	Horz(CT)	0.00	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 126 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)  
 14=18-5-0, 15=18-5-0, 16=18-5-0,  
 17=18-5-0, 18=18-5-0, 20=18-5-0,  
 21=18-5-0, 22=18-5-0, 23=18-5-0,  
 24=18-5-0  
 Max Horiz 24=224 (LC 13)  
 Max Uplift 14=50 (LC 11), 15=163 (LC 15),  
 16=47 (LC 15), 17=116 (LC 15),  
 21=114 (LC 14), 22=47 (LC 14),  
 23=168 (LC 14), 24=69 (LC 10)  
 Max Grav 14=189 (LC 28), 15=219 (LC 25),  
 16=173 (LC 22), 17=253 (LC 22),  
 18=225 (LC 22), 20=225 (LC 21),  
 21=253 (LC 21), 22=173 (LC 21),  
 23=226 (LC 24), 24=204 (LC 25)

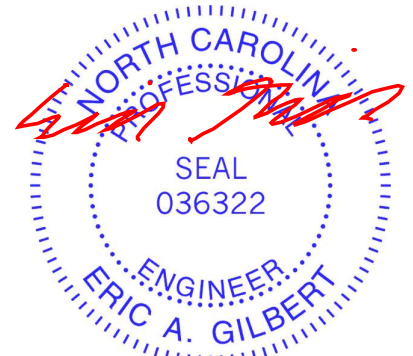
**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 2-24=-167/63, 1-2=0/39, 2-3=-165/140,  
 3-4=-104/90, 4-5=-92/115, 5-6=-114/233,  
 6-7=-91/169, 7-8=-91/169, 8-9=-114/233,  
 9-10=-77/115, 10-11=-89/71, 11-12=-153/116,  
 12-13=0/39, 12-14=-154/47  
 BOT CHORD 23-24=-106/187, 22-23=-106/187,  
 21-22=-106/187, 20-21=-106/187,  
 18-20=-106/187, 17-18=-106/187,  
 16-17=-106/187, 15-16=-106/187,  
 14-15=-106/187

**WEBS** 6-20=-185/8, 8-18=-185/6, 5-21=-213/162,  
 4-22=-133/94, 3-23=-159/159,  
 9-17=-213/162, 10-16=-133/92,  
 11-15=-155/167

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCCL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-2-12, Exterior(2N) 2-2-12 to 6-2-8, Corner(3R) 6-2-8 to 12-2-4, Exterior(2N) 12-2-4 to 16-2-4, Corner(3E) 16-2-4 to 19-3-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 69 lb uplift at joint 24, 50 lb uplift at joint 14, 114 lb uplift at joint 21, 47 lb uplift at joint 22, 168 lb uplift at joint 23, 116 lb uplift at joint 17, 47 lb uplift at joint 16 and 163 lb uplift at joint 15.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



March 29, 2024

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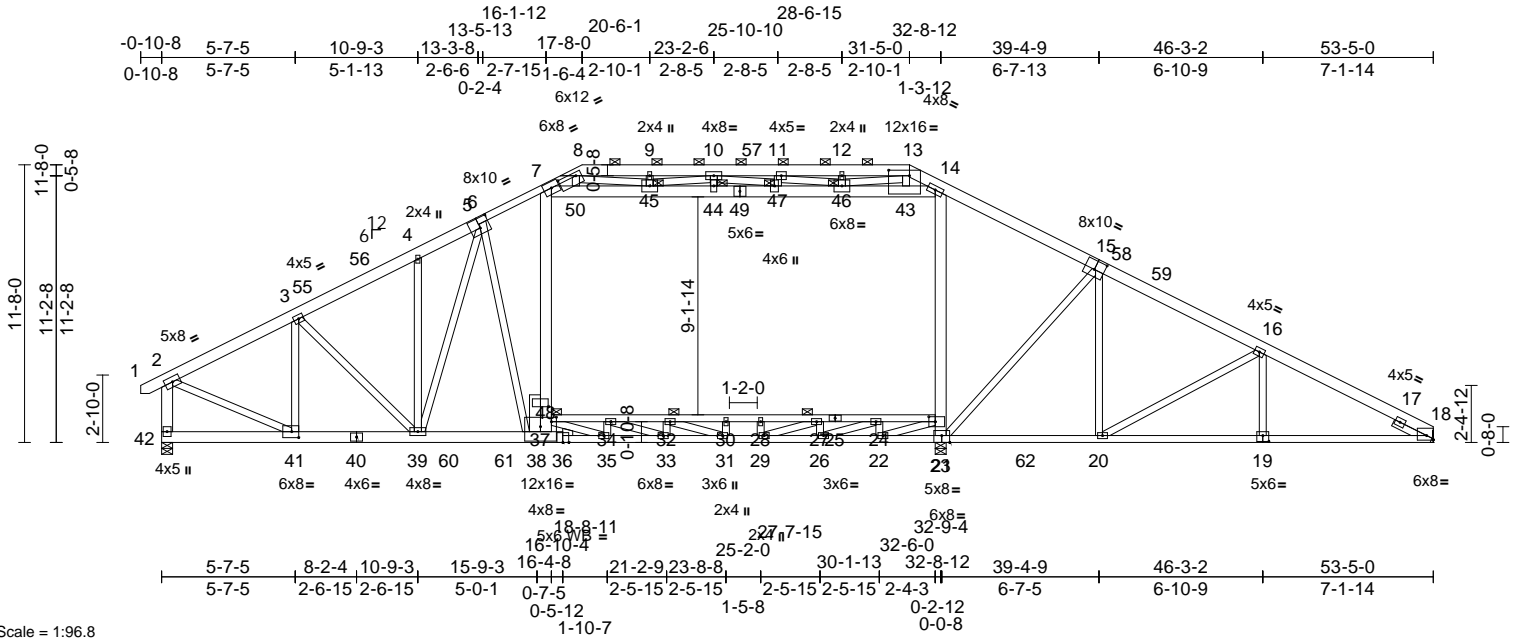
Job 24030108-01	Truss A06	Truss Type Attic Girder	Qty 1	Ply 4	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569197
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:07

Page: 1

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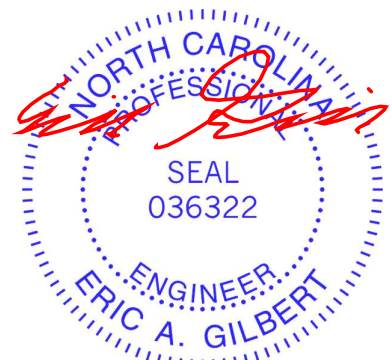
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.94	Vert(LL)	-0.49	35-38	>804	240
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.71	Vert(CT)	-0.73	35-38	>532	180
TCDL	10.0	Rep Stress Incr	NO	WB	0.87	Horz(CT)	0.21	18	n/a	n/a
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.24	23-37	>838	360
BCDL	10.0									

Weight: 2009 lb FT = 20%

**LUMBER**  
**TOP CHORD** 2x6 SP No.2 \*Except\* 5-8:2x4 SP 2400F 2.0E  
**BOT CHORD** 2x4 SP 2400F 2.0E \*Except\* 25-23,25-37:2x4 SP No.2, 40-42:2x6 SP No.2, 40-36:2x6 SP 2400F 2.0E  
**WEBS** 2x4 SP No.3 \*Except\* 42-2,7-38,48-38,49-7,49-14:2x6 SP No.2, 14-21:2x6 SP 2400F 2.0E, 41-2:2x4 SP No.2  
**OTHERS** 2x4 SP No.3  
**SLIDER** Right 2x4 SP No.3 -- 1-6-0  
**BRACING**  
**TOP CHORD** Structural wood sheathing directly applied or 5-10-15 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 8-13.  
**BOT CHORD** Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 34-37,32-34,30-32,28-30,27-28,24-27.  
**JOINTS** 1 Brace at Jt(s): 37, 44, 45, 46, 47  
**REACTIONS** (size) 18= Mechanical, 21=0-5-8, 42=0-5-8  
 Max Horiz 42=185 (LC 10)  
 Max Uplift 18=407 (LC 12), 21=5346 (LC 45), 42=668 (LC 12)  
 Max Grav 18=8868 (LC 46), 21=777 (LC 12), 42=11742 (LC 46)

**NOTES**  
**TOP CHORD** 1-2=0/25, 2-3=13442/761, 3-4=17246/1003, 4-6=18787/1092, 6-7=18557/1088, 7-8=6795/521, 8-9=3060/520, 9-10=3052/521, 10-11=3686/695, 11-12=1498/1776, 12-13=1498/1776, 13-14=4279/403, 14-16=17886/1059, 16-18=17674/875, 2-42=11546/687

- 1) 4-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
 Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
 Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
 Web connected as follows: 2x6 - 2 rows staggered at 0-4-0 oc, Except member 38-48 2x6 - 3 rows staggered at 0-4-0 oc, member 14-21 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
 Attach BC w/ 1/2" diam. bolts (ASTM A-307) in the center of the member w/washers at 4-0-0 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.



March 29, 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	132 Serenity-Roof-B326 BLH COP BR4	I64569197
24030108-01	A06	Attic Girder	1	4	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:07

Page: 2

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- 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) TCELL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 6) Unbalanced snow loads have been considered for this design.
- 7) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 8) Provide adequate drainage to prevent water ponding.
- 9) All plates are 3x5 MT20 unless otherwise indicated.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 12) Ceiling dead load (5.0 psf) on member(s). 7-50, 45-50, 44-45, 44-47, 46-47, 43-46, 14-43; Wall dead load (5.0psf) on member(s).7-37, 14-23
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 34-37, 32-34, 30-32, 28-30, 27-28, 24-27, 23-24
- 14) Refer to girder(s) for truss to truss connections.
- 15) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 407 lb uplift at joint 18 and 5346 lb uplift at joint 21.
- 16) LGT4-SDS3 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 42. This connection is for uplift only and does not consider lateral forces.
- 17) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 18) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 19) This truss has large uplift reaction(s) from gravity load case(s). Proper connection is required to secure truss against upward movement at the bearings. Building designer must provide for uplift reactions indicated.
- 20) LGT4 Hurricane ties must have four studs in line below the truss.
- 21) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 9100 lb down and 774 lb up at 15-11-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
- 22) 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, 2-8=-60, 8-13=-60, 13-18=-60, 42-51=-20, 23-37=-30, 7-50=-10, 45-50=-10, 44-45=-10, 44-49=-10, 47-49=-10, 46-47=-10, 43-46=-10, 14-43=-10  
Drag: 37-48=-10, 7-48=-10, 14-23=-10  
Concentrated Loads (lb)  
Vert: 38=-4881 (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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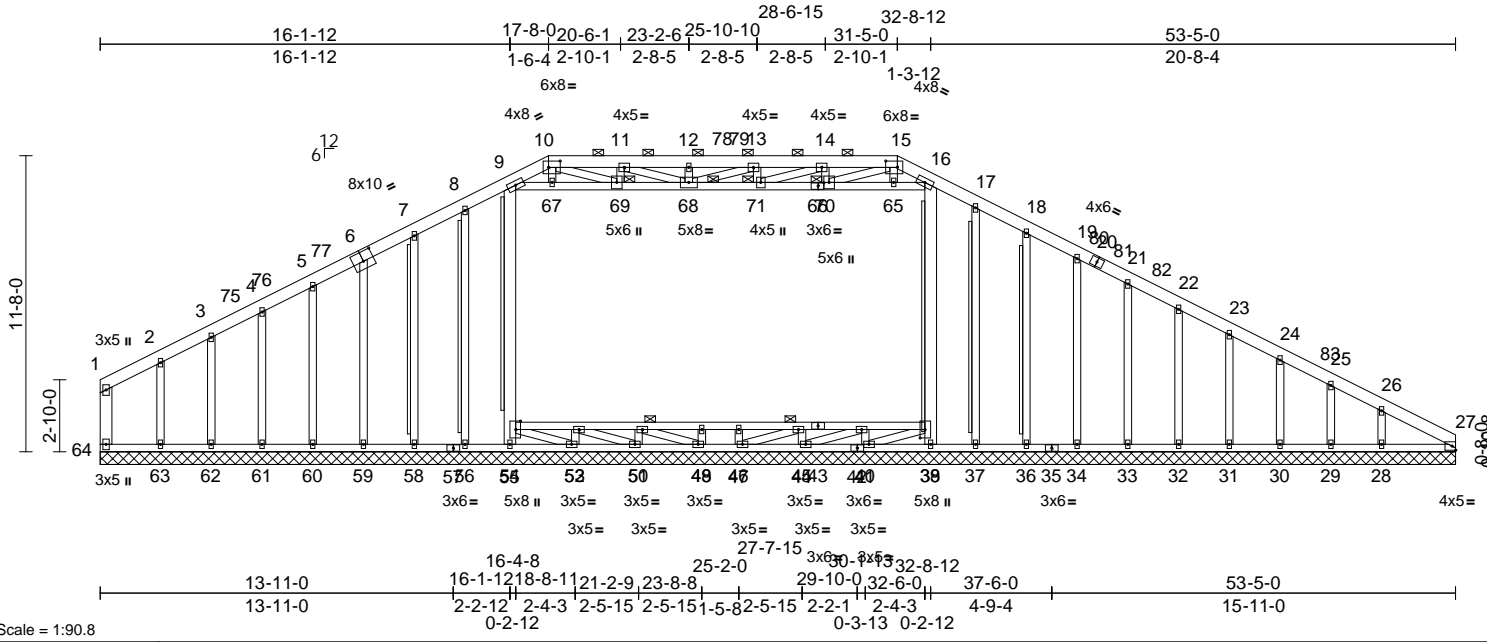
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss A09	Truss Type Attic Supported Gable	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569198
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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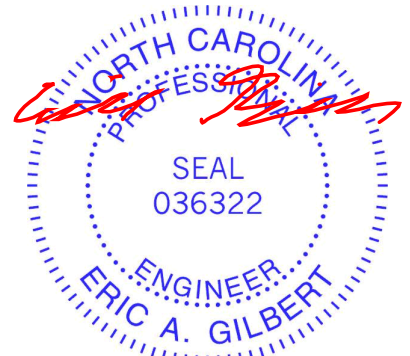


Scale = 1:90.8

Plate Offsets (X, Y): [6:0-5-0,0-4-8], [10:0-5-8,0-3-0], [15:0-5-8,0-3-0], [39:0-4-0,0-2-4], [54:0-4-0,0-2-4], [66:0-2-11,0-1-8]

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	0.43	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	0.62	Horiz(TL)	0.02	27	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 504 lb	FT = 20%

LUMBER		Max Uplift	28--89 (LC 14), 29--189 (LC 15), 30--17 (LC 14), 31--49 (LC 15), 32--43 (LC 15), 33--44 (LC 15), 34--45 (LC 15), 36--46 (LC 15), 37--124 (LC 38), 38--1 (LC 10), 56--115 (LC 38), 58--45 (LC 14), 59--50 (LC 14), 60--37 (LC 14), 61--47 (LC 14), 62--28 (LC 14), 63--119 (LC 14), 64--109 (LC 15)	BOT CHORD	63-64--79/168, 62-63--79/168, 61-62--79/168, 60-61--79/168, 59-60--79/168, 58-59--79/168, 56-58--79/168, 55-56--79/168, 53-55--85/183, 51-53--63/129, 49-51--57/117, 47-49--68/129, 44-47--58/112, 41-44--64/115, 38-41--80/140, 37-38--78/164, 36-37--78/164, 34-36--78/164, 33-34--78/164, 32-33--78/164, 31-32--78/164, 30-31--78/164, 29-30--78/164, 28-29--78/164, 27-28--78/164, 52-54--16/38, 50-52--21/50, 48-50--14/38, 46-48--14/38, 45-46--14/38, 40-45--22/54, 39-40--19/51
TOP CHORD	2x6 SP No.2				
BOT CHORD	2x4 SP No.2 *Except* 35-27,57-42:2x4 SP 2400F 2.0E, 57-64:2x4 SP No.1				
WEBS	2x4 SP No.3 *Except* 9-55,16-38,64-1:2x6 SP No.2, 16-66,66-9:2x4 SP No.2				
OTHERS	2x4 SP No.3 *Except* 0-0,0-0,0-0,0-0,0-0:2x4 SPF No.2(flat)				
BRACING		Max Grav	28--538 (LC 24), 29--71 (LC 18), 30--215 (LC 6), 31--164 (LC 49), 32--177 (LC 37), 33--216 (LC 43), 34--234 (LC 43), 36--217 (LC 43), 37--142 (LC 49), 38--1161 (LC 38), 41--327 (LC 20), 44--301 (LC 20), 47--230 (LC 20), 49--231 (LC 20), 51--301 (LC 20), 53--330 (LC 20), 55--1134 (LC 38), 56--144 (LC 47), 58--228 (LC 41), 59--239 (LC 41), 60--223 (LC 41), 61--191 (LC 35), 62--164 (LC 56), 63--286 (LC 47), 64--100 (LC 50)		
TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins (4-2-4 max.): 10-15.				
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing, Except: 10-0-0 oc bracing: 48-50,46-48,45-46,40-45,39-40.				
WEBS	T-Brace: 2x4 SPF No.2 - 9-54, 16-39, 17-37, 18-36, 8-56, 7-58 Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c., with 3in minimum end distance. Brace must cover 90% of web length.				
JOINTS	1 Brace at Jt(s): 68, 69, 70, 71				
REACTIONS	(size) 27=53-5-0, 28=53-5-0, 29=53-5-0, 30=53-5-0, 31=53-5-0, 32=53-5-0, 33=53-5-0, 34=53-5-0, 36=53-5-0, 37=53-5-0, 38=53-5-0, 41=53-5-0, 44=53-5-0, 47=53-5-0, 49=53-5-0, 51=53-5-0, 53=53-5-0, 55=53-5-0, 56=53-5-0, 58=53-5-0, 59=53-5-0, 60=53-5-0, 61=53-5-0, 62=53-5-0, 63=53-5-0, 64=53-5-0 Max Horiz 64--222 (LC 15)				
		FORCES	(lb) - Maximum Compression/Maximum Tension		
		TOP CHORD	1-2--53/118, 2-3--37/99, 3-4--52/127, 4-5--70/149, 5-7--107/211, 7-8--122/250, 8-9--105/267, 9-10--926/239, 10-11--2068/439, 11-12--2800/569, 12-13--2800/569, 13-14--2724/564, 14-15--1991/436, 15-16--812/241, 16-17--104/278, 17-18--123/270, 18-19--109/246, 19-21--89/222, 21-22--70/199, 22-23--52/176, 23-24--48/153, 24-25--69/135, 25-26--156/123, 26-27--142/144, 1-64--66/91		



March 29, 2024

Continued on page 2

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818 Soundside Road  
Edenton, NC 27932



Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569198
24030108-01	A09	Attic Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:10

Page: 2

ID:8kdnaNVfrXy7X5iJovJ26tzRBB2-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

WEBS 54-55=-1090/1, 9-54=-1078/106, 38-39=-1116/28, 16-39=-1101/123, 48-49=-115/0, 46-47=-115/0, 52-53=-171/0, 53-54=-57/22, 50-51=-147/0, 51-52=-13/11, 49-50=-11/13, 40-41=-173/0, 44-45=-148/0, 40-44=-3/15, 45-47=-10/17, 15-65=-48/11, 9-67=-16/694, 67-69=-15/688, 68-69=-279/2058, 68-71=-412/2714, 70-71=-276/1982, 65-70=-11/565, 16-65=-13/579, 10-67=-15/15, 12-68=-256/65, 11-69=-470/113, 14-70=-483/114, 15-70=-281/1498, 13-71=-239/66, 14-71=-148/778, 13-68=-66/182, 39-41=-27/17, 10-69=-279/1447, 11-68=-145/779, 17-37=-86/159, 18-36=-176/71, 19-34=-194/69, 21-33=-177/67, 22-32=-128/68, 23-31=-118/69, 24-30=-144/52, 25-29=-31/163, 26-28=-346/91, 8-56=-87/150, 7-58=-187/70, 6-59=-199/74, 5-60=-183/61, 4-61=-145/69, 3-62=-120/62, 2-63=-168/118

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; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-2-12 to 5-6-14, Interior (1) 5-6-14 to 10-1-6, Exterior(2R) 10-1-6 to 38-11-10, Interior (1) 38-11-10 to 48-0-14, Exterior(2E) 48-0-14 to 53-5-0 zone; 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.
- Provide adequate drainage to prevent water ponding.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Ceiling dead load (5.0 psf) on member(s). 9-67, 67-69, 68-69, 68-71, 70-71, 65-70, 16-65; Wall dead load (5.0psf) on member(s).9-54, 16-39
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 109 lb uplift at joint 64, 1 lb uplift at joint 38, 124 lb uplift at joint 37, 46 lb uplift at joint 36, 45 lb uplift at joint 34, 44 lb uplift at joint 33, 43 lb uplift at joint 32, 49 lb uplift at joint 31, 17 lb uplift at joint 30, 189 lb uplift at joint 29, 89 lb uplift at joint 28, 115 lb uplift at joint 56, 45 lb uplift at joint 58, 50 lb uplift at joint 59, 37 lb uplift at joint 60, 47 lb uplift at joint 61, 28 lb uplift at joint 62 and 119 lb uplift at joint 63.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.
- Attic room checked for L/360 deflection.

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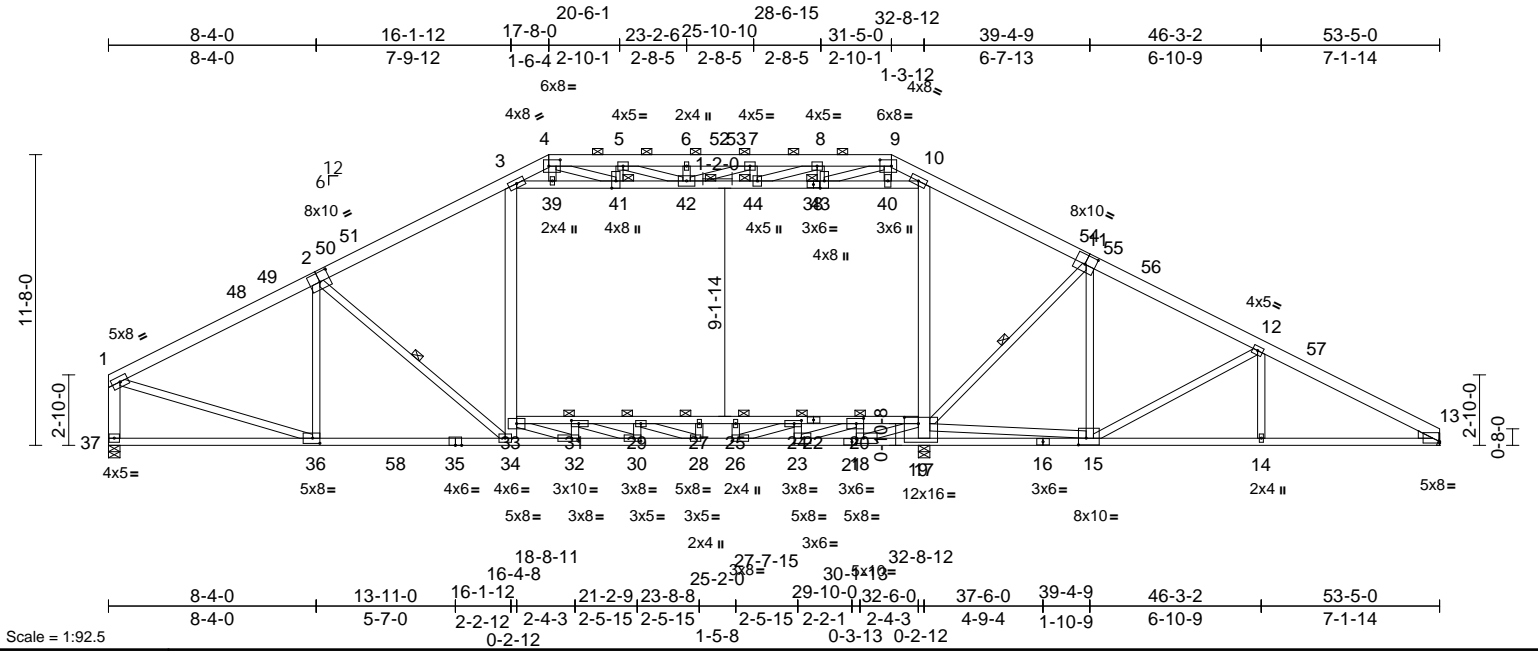
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss A08	Truss Type Attic	Qty 6	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569199
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



[2:0-5-0,0-4-8], [4:0-5-8,0-3-0], [9:0-5-8,0-3-0], [11:0-5-0,0-4-8], [13:Edge,0-0-11], [15:0-3-12,0-3-4], [17:0-6-12,0-3-0], [18:0-3-8,0-2-8], [20:0-3-8,0-2-8], [21:0-2-2,0-1-8], [23:0-3-8,0-2-8], [24:0-3-8,0-1-8], [26:0-3-8,0-1-8], [30:0-3-8,0-1-8], [31:0-3-8,0-1-8], [32:0-3-8,0-1-8], [36:0-3-8,0-2-8], [41:0-3-8,0-2-0],

Plate Offsets (X, Y): [43:0-3-8,0-2-0]

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	Vert(LL)	-0.47	27-29	>822	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.77	27-29	>509	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.14	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH	Attic	-0.35	19-33	>568	360		
BCDL	10.0										

Weight: 453 lb FT = 20%

LUMBER	TOP CHORD	BOT CHORD	WEBS	WEDGE	BRACING	TOP CHORD	BOT CHORD	WEBS	REACTIONS	FORCES	TOP CHORD	NOTES	
TOP CHORD	2x6 SP No.2	BOT CHORD	36-37=107/246, 34-36=17/3372, 32-34=0/3291, 30-32=0/4893, 28-30=0/6218, 26-28=0/6109, 23-26=0/4206, 18-23=0/1402, 17-18=2240/0, 15-17=2057/0, 14-15=0/4054, 13-14=56/4054, 31-33=1860/0, 29-31=3333/0, 27-29=3224/0, 25-27=3224/0, 24-25=3224/0, 20-24=1321/723, 19-20=42/2039	2x4 SP No.2 *Except* 37-35:2x4 SP No.1, 16-13,35-21:2x4 SP 2400F 2.0E	2x4 SP No.3 *Except* 3-34,10-17,37-1:2x6 SP No.2, 38-10,36-1,38-3:2x4 SP No.2, 33-32,31-30,29-28,19-18,20-23,24-26,15-19: 2x4 SP No.1	Right: 2x4 SP No.3	Structural wood sheathing directly applied or 2-11-0 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-14 max.): 4-9.	Rigid ceiling directly applied or 2-5-1 oc bracing.	2-36=699/70, 2-34=132/368, 33-34=40/280, 3-33=0/1154, 17-19=1413/169, 10-19=33/1155, 11-15=255/99, 12-15=577/208, 12-14=0/244, 3-39=2106/13, 39-41=2044/13, 41-42=1781/599, 42-44=1691/1229, 43-44=1896/449, 40-43=2317/29, 10-40=2457/29, 1-36=0/3431, 27-28=104/36, 25-26=393/0, 32-33=0/2241, 31-32=836/0, 30-31=0/1561, 29-30=322/34, 28-29=400/61, 18-19=0/3886, 18-20=1374/0, 20-23=0/2972, 23-24=930/0, 24-26=0/2017, 4-39=0/305, 9-40=0/567, 4-41=298/1341, 5-41=433/119, 5-42=167/660, 6-42=200/79, 9-43=292/1457, 8-43=481/114, 8-44=139/829, 7-44=245/65, 7-42=159/109, 15-19=0/5271, 11-19=580/316	13= Mechanical, 17=0-5-8, 37=0-5-8	(lb) - Maximum Compression/Maximum Tension	1-3=4036/14, 3-4=2078/107, 4-5=3066/337, 5-6=3578/492, 6-7=3578/492, 7-8=3636/482, 8-9=2881/356, 9-10=1879/124, 10-12=4101/51, 12-13=4669/39, 1-37=2945/55	1) Unbalanced roof live loads have been considered for this design.
WEBS	2x4 SP No.2	2x4 SP No.2	2x4 SP No.3										
WEDGE													
BRACING													
TOP CHORD													
BOT CHORD													
WEBS													
JOINTS													
REACTIONS													
FORCES													
TOP CHORD													



March 29, 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 24030108-01	Truss A08	Truss Type Attic	Qty 6	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 I64569199 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:09  
ID:h5TFO2tZyfWTVvSpKto8\_zRQij-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 2

- 7) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 8) Ceiling dead load (5.0 psf) on member(s). 3-39, 39-41, 41-42, 42-44, 43-44, 40-43, 10-40; Wall dead load (5.0psf) on member(s).3-33, 10-19
- 9) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 31-33, 29-31, 27-29, 25-27, 24-25, 20-24, 19-20
- 10) Refer to girder(s) for truss to truss connections.
- 11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 37 and 17. This connection is for uplift only and does not consider lateral forces.
- 12) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 13) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 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.**

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Edenton, NC 27932

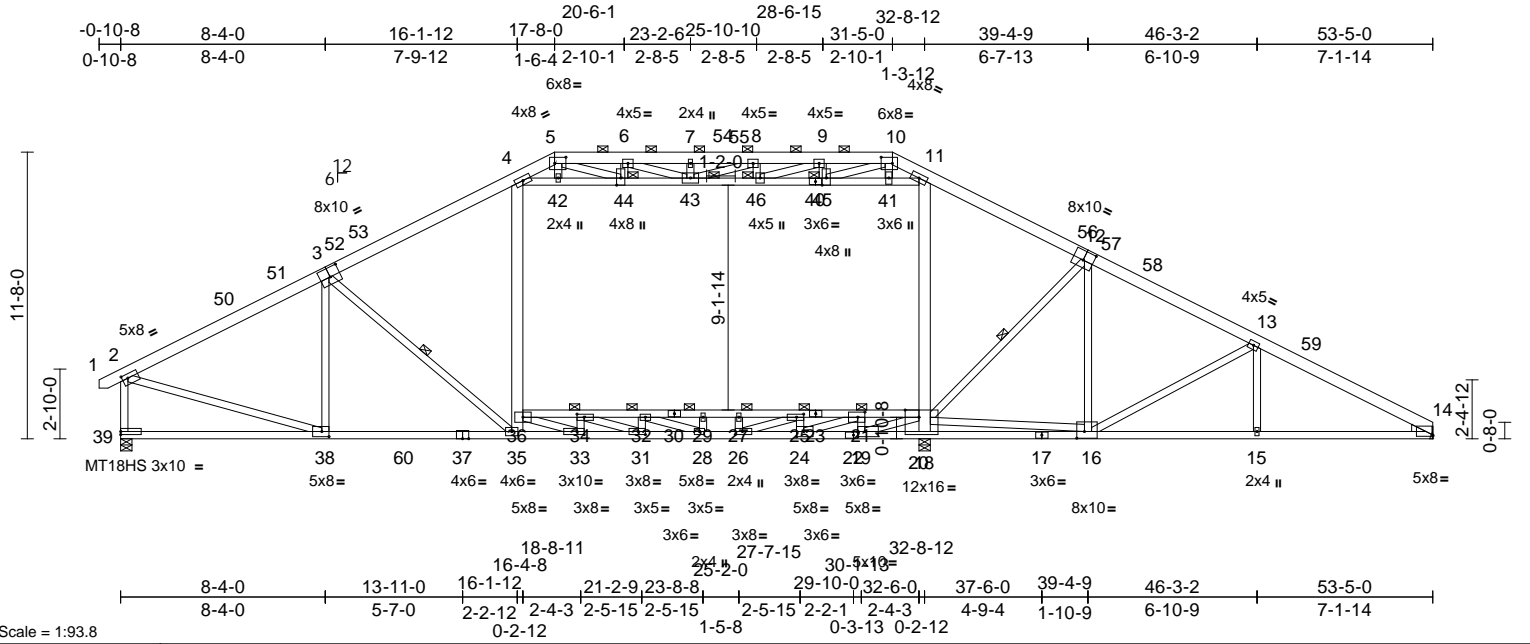
Job 24030108-01	Truss A07	Truss Type Attic	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569200
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:08

Page: 1

ID:1d51NYb\_Snpjgiff0e1reGzRBHO-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWRcDoi7J4zJC?f



[2:0-2-12,0-2-0], [3:0-5-0,0-4-8], [5:0-5-8,0-3-0], [10:0-5-8,0-3-0], [12:0-5-0,0-4-8], [14:Edge,0-0-11], [16:0-3-12,0-3-4], [19:0-3-8,0-2-8], [20:0-6-12,Edge], [21:0-3-8,0-2-8], [22:0-2-2,0-1-8], [24:0-3-8,0-2-8], [25:0-3-8,0-1-8], [26:0-3-8,0-1-8], [31:0-3-8,0-1-8], [33:0-3-8,0-1-8], [34:0-3-8,0-1-8], [38:0-3-8,0-2-8],

Plate Offsets (X, Y): [44:0-3-8,0-2-0], [45:0-3-8,0-2-0]

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	Vert(LL)	-0.48	29-32	>819	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.77	29-32	>506	180	MT18HS	244/190
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.14	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH	Attic	-0.35	20-36	>568	360		
BCDL	10.0									Weight: 453 lb	FT = 20%

LUMBER					
TOP CHORD	2x6 SP No.2	BOT CHORD	34-36=-1865/0, 32-34=-3331/0, 29-32=-3215/0, 27-29=-3215/0, 25-27=-3215/0, 21-25=-1305/738, 20-21=-41/2070, 38-39=-107/221, 35-38=-15/3420, 33-35=0/3318, 31-33=0/4918, 28-31=0/6229, 26-28=0/6113, 24-26=0/4202, 19-24=0/1393, 18-19=-2253/0, 16-18=-2068/0, 15-16=0/4071, 14-15=-55/4071	2)	Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCCL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-6 to 4-7-12, Interior (1) 4-7-12 to 10-1-6, Exterior(2R) 10-1-6 to 38-11-10, Interior (1) 38-11-10 to 48-0-14, Exterior(2E) 48-0-14 to 53-5-0 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
WEBS	2x4 SP No.3 *Except* 4-35,11-18:2x6 SP No.2, 40-11,38-2,40-4:2x4 SP No.2, 36-33,34-31,32-28,21-24,25-26,20-19,16-20: 2x4 SP No.1	WEBS	3-38=-675/76, 35-36=-43/295, 4-36=0/1163, 18-20=-1416/167, 11-20=32/1160, 12-16=-258/97, 13-15=0/244, 4-42=-2107/6, 42-44=-2045/6, 43-44=-1786/597, 43-46=-1701/1223, 45-46=-1909/442, 41-45=-2335/27, 11-41=-2476/28, 2-38=0/3452, 28-29=-102/37, 26-27=-394/0, 33-34=-833/0, 33-36=0/2241, 31-32=-320/36, 31-34=0/1554, 28-32=-406/60, 19-21=-1376/0, 24-25=-932/0, 21-24=0/2977, 25-26=0/2025, 10-41=0/571, 5-42=0/305, 7-43=-200/79, 6-44=-432/119, 9-45=-482/114, 10-45=-292/1458, 8-46=-246/65, 9-46=-139/831, 8-43=-157/110, 13-16=-576/208, 3-35=-154/347, 19-20=0/3892, 16-20=0/5301, 12-20=-586/316, 5-44=-297/1338, 6-43=-168/658	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
WEDGE	Right: 2x4 SP No.3			4)	Unbalanced snow loads have been considered for this design.
BRACING				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.
TOP CHORD	Structural wood sheathing directly applied or 2-10-14 oc purlins, except end verticals, and 2-0-0 oc purlins (3-8-13 max.): 5-10.			6)	Provide adequate drainage to prevent water ponding.
BOT CHORD	Rigid ceiling directly applied or 2-2-0 oc bracing.				
WEBS	1 Row at midpt 3-35, 12-20				
JOINTS	1 Brace at Jt(s): 43, 44, 45, 46				
REACTIONS	(size) 14= Mechanical, 18=0-5-8, 39=0-5-8 Max Horiz 39=-190 (LC 12) Max Uplift 18=-62 (LC 15), 39=-28 (LC 14) Max Grav 14=2299 (LC 48), 18=1775 (LC 40), 39=2992 (LC 38)				
FORCES	(lb) - Maximum Compression/Maximum Tension				
TOP CHORD	1-2=0/23, 2-4=-4062/10, 4-5=-2092/107, 5-6=-3079/340, 6-7=-3587/495, 7-8=-3587/495, 8-9=-3645/485, 9-10=-2887/358, 10-11=-1884/127, 11-13=-4121/49, 13-14=-4688/32, 2-39=-2988/71				

**NOTES**

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



March 29, 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 24030108-01	Truss A07	Truss Type Attic	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 I64569200 Job Reference (optional)
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:08  
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Page: 2

- 7) All plates are MT20 plates unless otherwise indicated.
- 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, with BCDL = 10.0psf.
- 10) Ceiling dead load (5.0 psf) on member(s). 4-42, 42-44, 43-44, 43-46, 45-46, 41-45, 11-41; Wall dead load (5.0psf) on member(s).4-36, 11-20
- 11) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 34-36, 32-34, 29-32, 27-29, 25-27, 21-25, 20-21
- 12) Refer to girder(s) for truss to truss connections.
- 13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 39 and 18. This connection is for uplift only and does not consider lateral forces.
- 14) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 16) 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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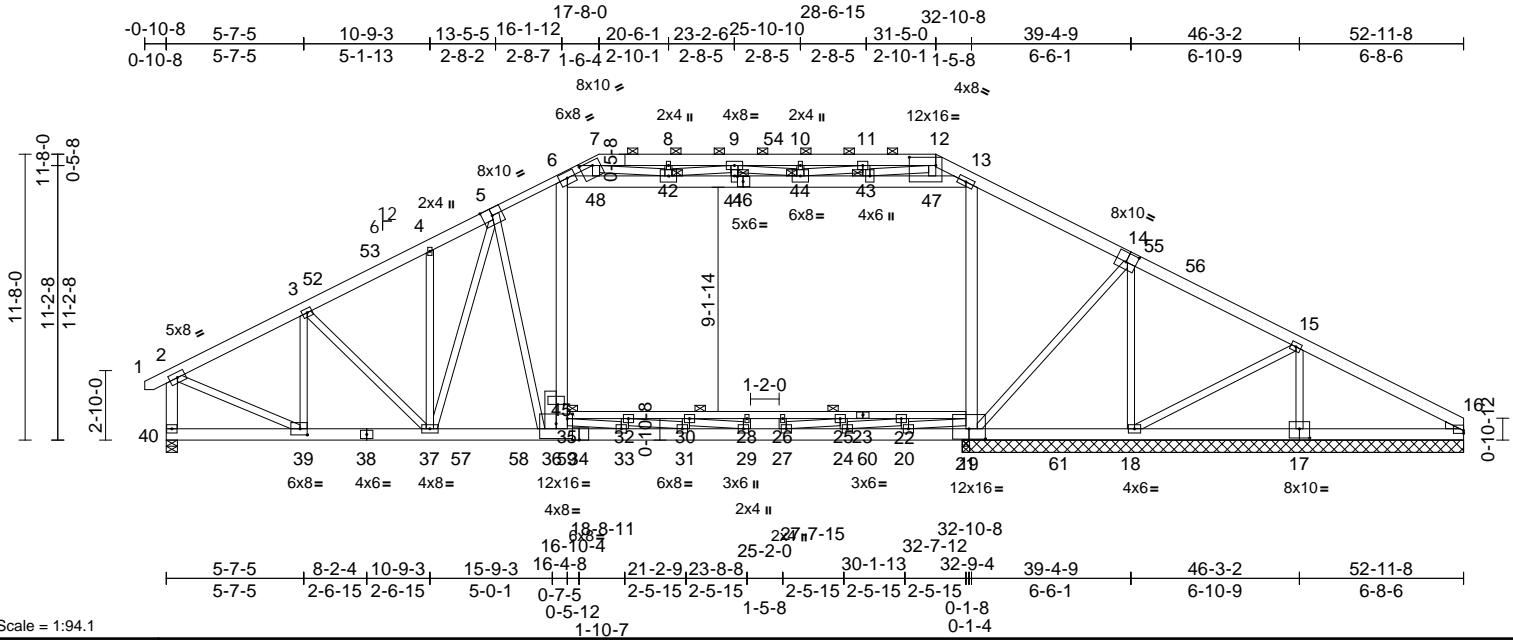
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss A05	Truss Type Attic Girder	Qty 1	Ply 4	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569201
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:07  
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Page: 1



Scale = 1:94.1

[7:0-6-4,0-2-4], [12:1-1-0,0-4-0], [14:0-5-0,0-4-8], [16:Edge,0-1-5], [17:0-5-0,0-4-8], [21:0-8-0,0-5-0], [34:0-3-4,Edge], [35:0-8-0,0-4-12], [35:0-1-8,0-6-15],

Plate Offsets (X, Y): [39:0-3-8,0-3-0], [46:0-2-12,0-2-8]

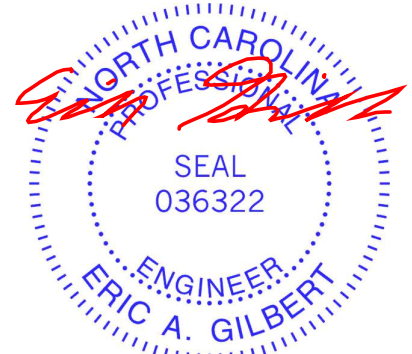
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.94	Vert(LL)	-0.37	33-36	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.56	33-36	>703	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.97	Horz(CT)	0.11	16	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.18	21-35	>999	360		
BCDL	10.0											

Weight: 2104 lb FT = 20%

LUMBER		
TOP CHORD	2x6 SP No.2 *Except* 5-7:2x4 SP No.1	
BOT CHORD	2x6 SP 2400F 2.0E *Except* 23-21,23-35:2x4 SP No.2, 38-40,17-16:2x6 SP No.2	
WEBS	2x4 SP No.3 *Except* 40-2.6-36,13-19,45-36,46-6,46-13:2x6 SP No.2, 39-2:2x4 SP No.2	
WEDGE	Right: 2x4 SP No.3	
BRACING		
TOP CHORD	Structural wood sheathing directly applied or 4-7-10 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 7-12.	
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 32-35,30-32,28-30,26-28,25-26,22-25.	
JOINTS	1 Brace at Jt(s): 35, 41, 42, 43, 44	
REACTIONS	(size) 16=20-5-8, 17=20-5-8, 18=20-5-8, 19=20-5-8, 40=0-5-8, 49=20-5-8	
	Max Horiz 40=182 (LC 10)	
	Max Uplift 16=151 (LC 13), 17=319 (LC 12), 18=240 (LC 13), 19=10248 (LC 46), 40=690 (LC 12), 49=151 (LC 13)	
	Max Grav 16=3001 (LC 46), 17=7106 (LC 23), 18=4185 (LC 46), 19=1025 (LC 12), 40=11867 (LC 46), 49=3001 (LC 46)	
FORCES	(lb) - Maximum Compression/Maximum Tension	

TOP CHORD	
1-2=0/25, 2-3=-13595/787, 3-4=-17405/1036, 4-6=-18801/1123, 6-7=-5901/493, 7-8=-2690/499, 8-9=-2683/500, 9-10=-2405/1763, 10-11=-2405/1763, 11-12=-2057/988, 12-13=-3882/380, 13-15=-18187/1097, 15-16=-5584/329, 2-40=-11679/710	
BOT CHORD	
39-40=-129/435, 37-39=-737/12154, 36-37=-844/14781, 18-20=-735/13006, 31-33=-395/17238, 29-31=-7/18596, 27-29=0/19361, 24-27=-54/18028, 20-24=-378/14781, 18-20=-735/13006, 16-18=-241/4880, 32-35=-1124/0, 30-32=-2935/0, 28-30=-3797/0, 26-28=-3797/0, 25-26=-3797/0, 22-25=-2415/0, 21-22=-470/1841	
WEBS	
35-36=-620/7425, 6-35=-537/8654, 19-21=-664/7226, 13-21=-524/7563, 14-18=-7994/467, 15-17=-6969/419, 32-33=-850/0, 33-35=0/3504, 30-31=-612/0, 31-32=0/1900, 29-30=0/904, 20-22=-1495/0, 24-25=-683/0, 22-24=0/3569, 25-27=0/1449, 9-41=-141/2636, 8-42=-606/63, 11-43=-637/113, 10-44=-153/32, 15-18=-391/7523, 20-21=0/2270, 14-19=-373/7032, 6-48=-11223/711, 42-48=-10400/662, 41-42=-11969/709, 41-44=-11973/710, 43-44=-17476/1058, 43-47=-13172/824, 13-47=-13557/845, 4-37=-719/158, 5-37=-2622/132, 3-39=-5345/374, 3-37=-246/4959, 2-39=-679/12888, 12-47=-149/2544, 9-42=-4491/349, 12-43=-4442/244, 28-29=-219/0, 26-27=-301/0, 5-36=-135/1913, 7-48=-150/2340, 7-42=-5736/319, 11-44=-789/354, 9-44=-6455/395	

- NOTES**
- 1) 4-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
Web connected as follows: 2x6 - 2 rows staggered at 0-4-0 oc, Except member 36-45 2x6 - 3 rows staggered at 0-4-0 oc, member 13-19 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 oc.  
Attach BC w/ 1/2" diam. bolts (ASTM A-307) in the center of the member w/washers at 4-0-0 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.



March 29, 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	132 Serenity-Roof-B326 BLH COP BR4	I64569201
24030108-01	A05	Attic Girder	1	4	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:07

Page: 2

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- 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) TCELL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 6) Unbalanced snow loads have been considered for this design.
- 7) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 8) Provide adequate drainage to prevent water ponding.
- 9) All plates are 4x5 MT20 unless otherwise indicated.
- 10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 12) Ceiling dead load (5.0 psf) on member(s). 6-48, 42-48, 41-42, 41-44, 43-44, 43-47, 13-47; Wall dead load (5.0psf) on member(s).6-35, 13-21
- 13) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 32-35, 30-32, 28-30, 26-28, 25-26, 22-25, 21-22
- 14) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 10248 lb uplift at joint 19.
- 15) LGT4-SDS3 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 40. This connection is for uplift only and does not consider lateral forces.
- 16) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 16, 18, and 17. This connection is for uplift only and does not consider lateral forces.
- 17) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 18) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 19) This truss has large uplift reaction(s) from gravity load case(s). Proper connection is required to secure truss against upward movement at the bearings. Building designer must provide for uplift reactions indicated.
- 20) LGT4 Hurricane ties must have four studs in line below the truss.
- 21) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 608 lb down and 52 lb up at 28-7-12, and 9100 lb down and 774 lb up at 16-0-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
- 22) 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, 2-7=-60, 7-12=-60, 12-16=-60, 40-49=-20, 21-35=-30, 6-48=-10, 42-48=-10, 41-42=-10, 41-46=-10, 44-46=-10, 43-44=-10, 43-47=-10, 13-47=-10  
Drag: 35-45=-10, 6-45=-10, 13-21=-10  
Concentrated Loads (lb)  
Vert: 36=-4881 (F), 60=-326 (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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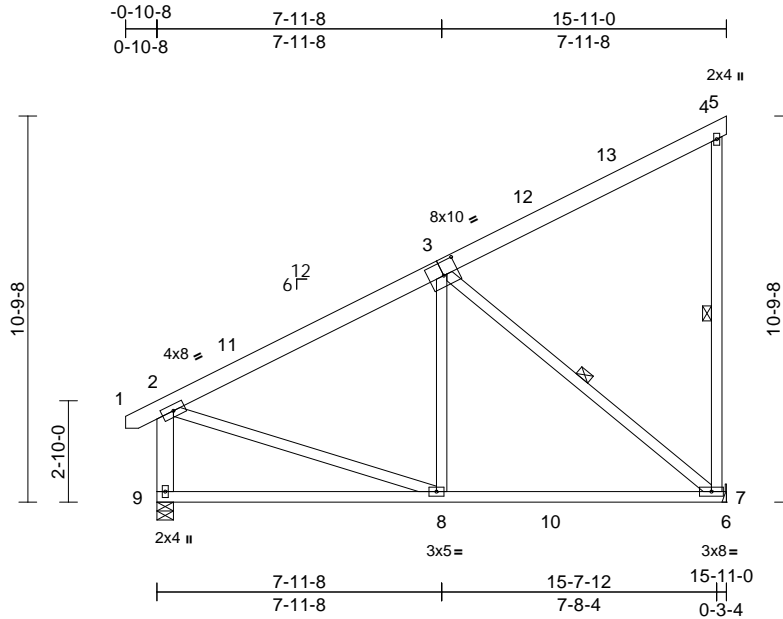
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss G01	Truss Type Monopitch	Qty 5	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569202
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:12  
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Page: 1



Scale = 1:64.4

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.49	Vert(LL)	-0.12	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.66	Vert(CT)	-0.20	7-8	>909	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.39	Horz(CT)	-0.01	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 123 lb	FT = 20%

**LUMBER**

TOP CHORD 2x6 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 9-2:2x6 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6'-0-0 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 10'-0-0 oc bracing.  
 WEBS 1 Row at midpt 4-7, 3-7

**REACTIONS**

(size) 7= Mechanical, 9=0-5-8  
 Max Horiz 9=269 (LC 14)  
 Max Uplift 7=219 (LC 14)  
 Max Grav 7=825 (LC 5), 9=743 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 4-7=-321/119, 2-9=-646/82, 1-2=0/25,  
 2-4=-678/91, 4-5=-12/0  
 BOT CHORD 8-9=-322/219, 7-8=-199/606, 6-7=0/0  
 WEBS 3-8=0/310, 3-7=-773/257, 2-8=0/485

**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) -0-8-6 to 2-3-10, Interior (1) 2-3-10 to 12-11-0, Exterior(2E) 12-11-0 to 15-11-0 zone; cantilever left and right 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.
- 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 219 lb uplift at joint 7.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 2024

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

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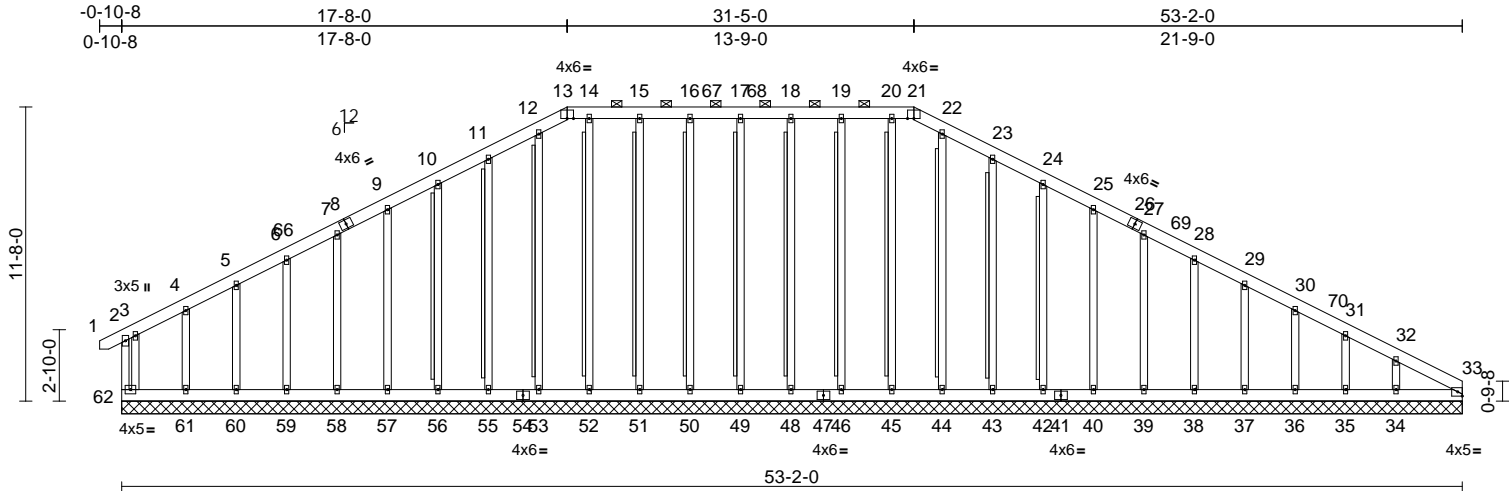


Job 24030108-01	Truss A01	Truss Type Piggyback Base Supported Gable	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569203
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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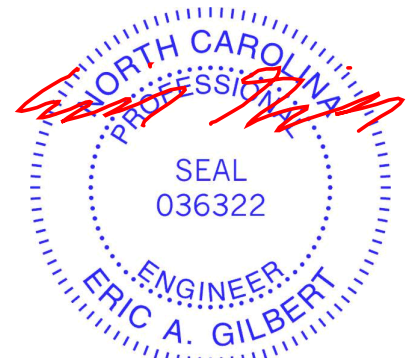
Page: 1



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Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.01	33	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 545 lb	FT = 20%

LUMBER		Max Uplift		TOP CHORD	
TOP CHORD	2x6 SP No.2	33--35 (LC 14), 34--96 (LC 15), 35--28 (LC 15), 36--47 (LC 15), 37--43 (LC 15), 38--44 (LC 15), 39--44 (LC 15), 40--43 (LC 15), 42--46 (LC 15), 43--51 (LC 15), 46--29 (LC 11), 48--28 (LC 11), 49--25 (LC 10), 50--28 (LC 11), 51--28 (LC 10), 55--53 (LC 14), 56--46 (LC 14), 57--43 (LC 14), 58--44 (LC 14), 59--45 (LC 14), 60--27 (LC 14), 61--116 (LC 14), 62--33 (LC 15), 63--35 (LC 14)		2-62--123/160, 1-2--0/23, 2-3--69/80, 3-4--73/64, 4-5--75/97, 5-6--85/148, 6-7--98/192, 7-9--115/238, 9-10--130/283, 10-11--146/329, 11-12--163/378, 12-13--161/378, 13-14--151/373, 14-15--151/373, 15-16--151/373, 16-17--151/373, 17-18--151/373, 18-19--151/373, 19-20--151/373, 20-21--151/373, 21-22--161/378, 22-23--163/378, 23-24--146/329, 24-25--130/283, 25-27--115/238, 27-28--98/198, 28-29--94/174, 29-30--106/151, 30-31--120/128, 31-32--141/106, 32-33--185/113	
BOT CHORD	2x6 SP No.2				
WEBS	2x4 SP No.3				
OTHERS	2x4 SP No.2 *Except* 43-23,42-24,40-25,39-27,38-28,37-29,36-30, 35-31,34-32,55-11,56-10,57-9,58-7,59-6,60-5 ,61-4,62-3:2x4 SP No.3				
BRACING		Max Grav			
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.): 13-21.	33=135 (LC 28), 34=217 (LC 59), 35=143 (LC 1), 36=164 (LC 45), 37=159 (LC 1), 38=171 (LC 45), 39=220 (LC 45), 40=230 (LC 45), 42=229 (LC 45), 43=230 (LC 45), 44=211 (LC 45), 45=192 (LC 40), 46=220 (LC 40), 48=218 (LC 40), 49=216 (LC 40), 50=218 (LC 40), 51=220 (LC 40), 52=192 (LC 40), 53=214 (LC 43), 55=235 (LC 43), 56=233 (LC 43), 57=233 (LC 43), 58=232 (LC 43), 59=188 (LC 43), 60=158 (LC 1), 61=182 (LC 51), 62=163 (LC 1), 63=135 (LC 28)			
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.				
WEBS	T-Brace: 2x4 SP No.2 - 17-49, 18-48, 19-46, 20-45, 22-44, 23-43, 24-42, 16-50, 15-51, 14-52, 12-53, 11-55, 10-56 Fasten (2X) T and I braces to narrow edge of web with 10d (0.131"x3") nails, 6in o.c., with 3in minimum end distance. Brace must cover 90% of web length.				
REACTIONS	(size)				
	33=53-2-0, 34=53-2-0, 35=53-2-0, 36=53-2-0, 37=53-2-0, 38=53-2-0, 39=53-2-0, 40=53-2-0, 42=53-2-0, 43=53-2-0, 44=53-2-0, 45=53-2-0, 46=53-2-0, 48=53-2-0, 49=53-2-0, 50=53-2-0, 51=53-2-0, 52=53-2-0, 53=53-2-0, 55=53-2-0, 56=53-2-0, 57=53-2-0, 58=53-2-0, 59=53-2-0, 60=53-2-0, 61=53-2-0, 62=53-2-0, 63=53-2-0				
	Max Horiz 62=186 (LC 12)				
FORCES		(lb) - Maximum Compression/Maximum Tension			



March 29, 2024

Continued on page 2

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

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569203
24030108-01	A01	Piggyback Base Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:05

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**BOT CHORD** 61-62=-86/182, 60-61=-86/182,  
59-60=-86/182, 58-59=-86/182,  
57-58=-86/182, 56-57=-86/182,  
55-56=-86/182, 53-55=-86/182,  
52-53=-86/182, 51-52=-86/182,  
50-51=-86/182, 49-50=-86/182,  
48-49=-86/182, 46-48=-86/182,  
45-46=-86/182, 44-45=-86/182,  
43-44=-86/182, 42-43=-86/182,  
40-42=-86/182, 39-40=-86/182,  
38-39=-86/182, 37-38=-86/182,  
36-37=-86/182, 35-36=-86/182,  
34-35=-86/182, 33-34=-86/182

**WEBS** 17-49=-176/57, 18-48=-178/62,  
19-46=-180/60, 20-45=-152/14,  
22-44=-171/10, 23-43=-190/88,  
24-42=-189/81, 25-40=-190/77,  
27-39=-180/77, 28-38=-131/77,  
29-37=-126/77, 30-36=-128/80,  
31-35=-119/103, 32-34=-156/155,  
16-50=-178/62, 15-51=-180/60,  
14-52=-152/8, 12-53=-174/0, 11-55=-195/88,  
10-56=-193/81, 9-57=-193/77, 7-58=-192/77,  
6-59=-148/77, 5-60=-123/90, 4-61=-143/165,  
3-62=-174/99

- 15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.  
16) Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.

**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 Corner(3E) -0-8-6 to 4-6-8, Exterior(2N) 4-6-8 to 12-4-3, Corner(3R) 12-4-3 to 22-11-13, Exterior(2N) 22-11-13 to 26-1-3, Corner(3R) 26-1-3 to 36-6-8, Exterior(2N) 36-6-8 to 47-10-3, Corner(3E) 47-10-3 to 53-2-0 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.
- Provide adequate drainage to prevent water ponding.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 62, 25 lb uplift at joint 49, 28 lb uplift at joint 48, 29 lb uplift at joint 46, 51 lb uplift at joint 43, 46 lb uplift at joint 42, 43 lb uplift at joint 40, 44 lb uplift at joint 39, 44 lb uplift at joint 38, 43 lb uplift at joint 37, 47 lb uplift at joint 36, 28 lb uplift at joint 35, 96 lb uplift at joint 34, 28 lb uplift at joint 50, 28 lb uplift at joint 51, 53 lb uplift at joint 55, 46 lb uplift at joint 56, 43 lb uplift at joint 57, 44 lb uplift at joint 58, 45 lb uplift at joint 59, 27 lb uplift at joint 60, 116 lb uplift at joint 61, 35 lb uplift at joint 33 and 35 lb uplift at joint 33.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

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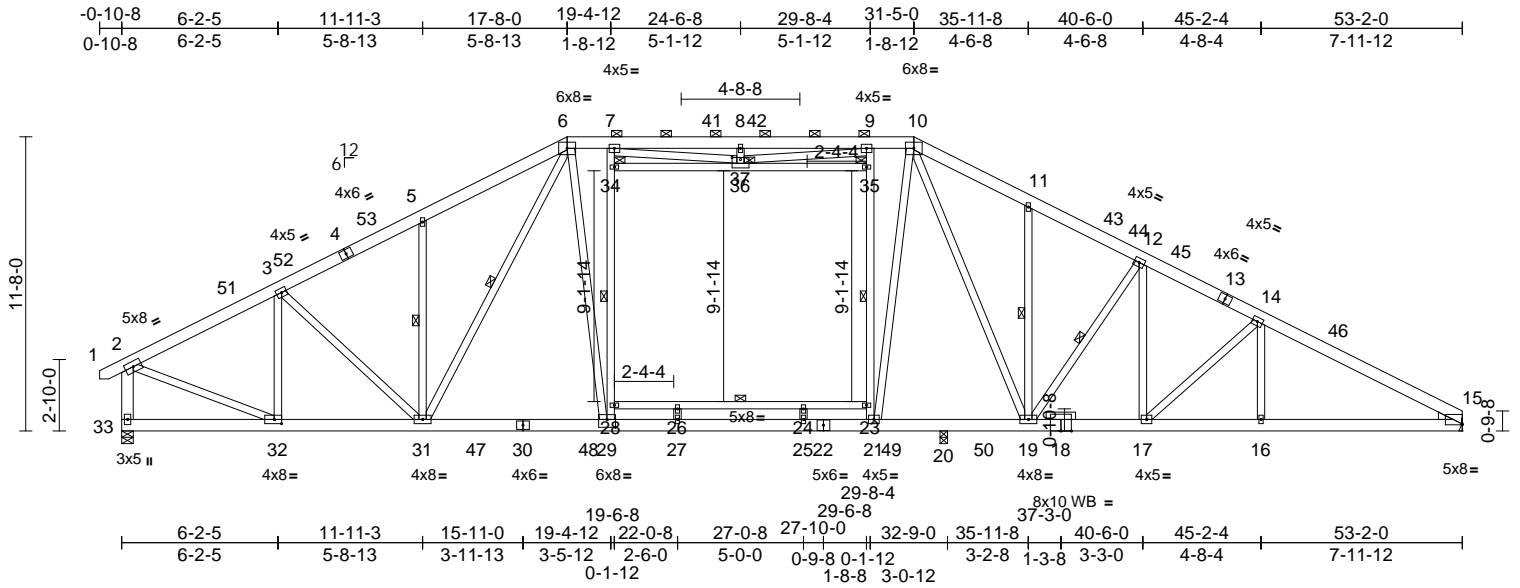
Job 24030108-01	Truss A03	Truss Type Piggyback Base	Qty 8	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569204
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:06

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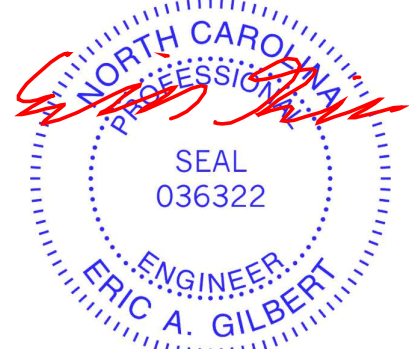


Scale = 1:91.4

Plate Offsets (X, Y): [15:Edge,0-0-7], [29:0-4-0,0-3-12], [32:0-3-8,0-2-0], [36:0-4-0,0-1-0]

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	0.64	Vert(LL)	-0.34	24-26	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.66	24-26	>587	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.10	15	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 502 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x6 SP No.2
- BOT CHORD 2x6 SP 2400F 2.0E \*Except\* 28-23:2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 33-2:2x6 SP No.2, 2-32,6-31,10-19,7-29,9-21,6-29,10-21:2x4 SP No.2
- OTHERS 2x4 SP No.3
- WEDGE Right: 2x4 SP No.3
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 3-2-13 oc purlins, except end verticals, and 2-0-0 oc purlins (3-4-15 max.): 6-10.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 26-28,24-26,23-24.
- WEBS 1 Row at midpt 5-31, 11-19, 12-19, 6-31, 29-34, 21-35
- JOINTS 1 Brace at Jt(s): 34, 35, 36
- REACTIONS** (size) 15= Mechanical, 20=0-3-8, 33=0-5-8
- Max Horiz 33=187 (LC 12)
- Max Uplift 20=198 (LC 15), 33=114 (LC 14)
- Max Grav 15=2251 (LC 47), 20=1008 (LC 39), 33=2644 (LC 37)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 6-7=-3185/122, 7-8=-3587/323, 8-9=-3663/330, 9-10=-3163/119, 10-11=-3635/209, 11-12=-3596/143, 12-14=-4129/109, 14-15=-4460/100, 2-33=-2696/139, 1-2=0/25, 2-3=-3178/117, 3-5=-3599/163, 5-6=-3667/284
- BOT CHORD 32-33=-113/233, 31-32=-132/2740, 29-31=0/2923, 27-29=0/3111, 25-27=0/3111, 21-25=0/3111, 20-21=0/2868, 19-20=0/2868, 17-19=0/3595, 16-17=-1/3869, 15-16=-57/3869, 26-28=-90/37, 24-26=-90/37, 23-24=-90/37
- WEBS 24-25=-224/0, 14-16=0/165, 26-27=-218/0, 3-32=-873/107, 5-31=-592/201, 3-31=0/528, 12-17=-73/680, 14-17=-382/187, 11-19=-455/168, 12-19=-917/180, 2-32=-21/2820, 6-31=-296/537, 10-19=-234/590, 28-29=-552/207, 28-34=-505/227, 7-34=-489/225, 21-23=-974/202, 23-35=-899/225, 9-35=-883/223, 6-29=0/1237, 34-36=-12/48, 35-36=-136/17, 36-37=-33/5, 8-37=-217/83, 7-37=-357/635, 9-37=-294/817, 10-21=0/1480
- 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) -0-8-6 to 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
- 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) 200.0lb AC unit load placed on the bottom chord, 24-6-8 from left end, supported at two points, 5-0-0 apart.
- 7) Provide adequate drainage to prevent water ponding.
- 8) All plates are 2x4 MT20 unless otherwise indicated.
- 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, with BCDL = 10.0psf.
- 11) Refer to girder(s) for truss to truss connections.
- 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 33 and 20. This connection is for uplift only and does not consider lateral forces.
- 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.



March 29, 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](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	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569204
24030108-01	A03	Piggyback Base	8	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:06  
 ID:OFJFx3IDTxFbWWzrBXohbzzRCTM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDoi7J4zJC?f

Page: 2

14) 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.**

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818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss A04	Truss Type Piggyback Base	Qty 3	Ply 1	132 Serenity-Roof-B326 BLH COP BR4	I64569205
					Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:06

Page: 1

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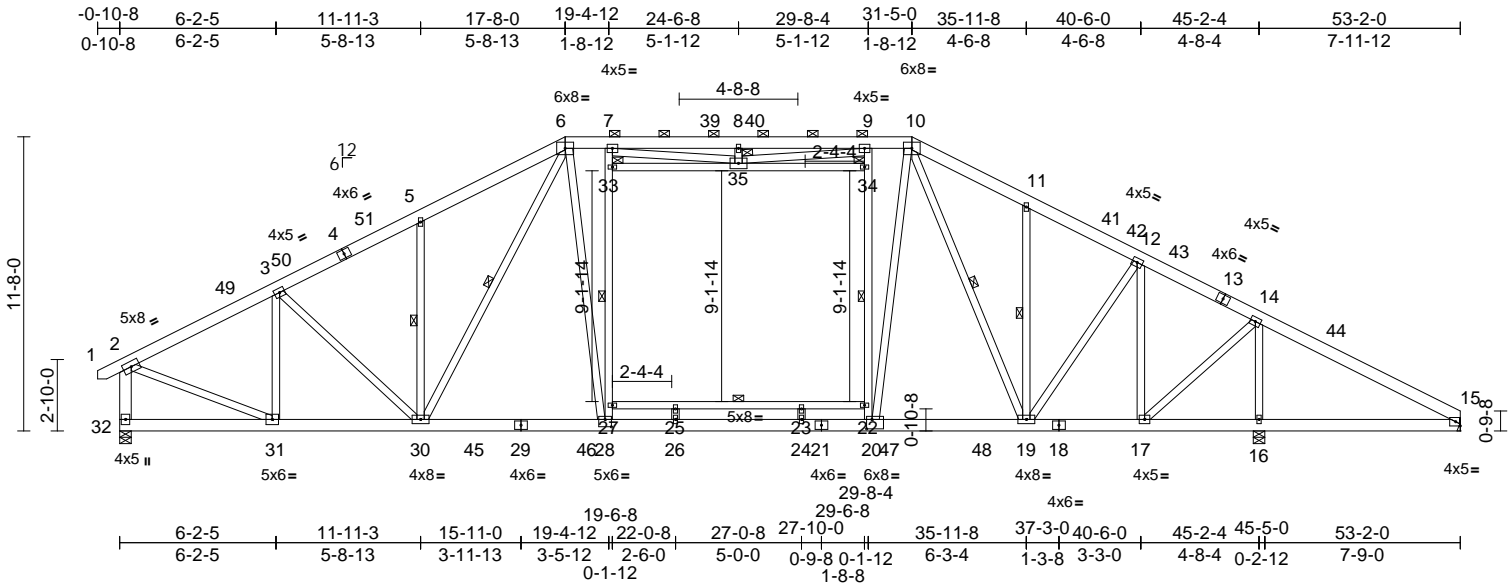


Plate Offsets (X, Y): [20:0-2-8,0-4-8], [28:0-3-0,0-3-8]

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)	-0.33	25-27	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.64	Vert(CT)	-0.59	23-25	>916	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.90	Horz(CT)	0.09	15	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 500 lb	FT = 20%

**LUMBER**

TOP CHORD 2x6 SP No.2

BOT CHORD 2x6 SP No.2 \*Except\* 18-21,21-29:2x6 SP 2400F 2.0E, 27-22:2x4 SP No.2

WEBS 2x4 SP No.3 \*Except\* 32-2:2x6 SP No.2, 2-31,6-30,10-19,7-28,9-20,6-28,10-20:2x4 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-9-7 oc purlins, except end verticals, and 2-0-0 oc purlins (3-6-0 max.): 6-10.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:

WEBS 1 Row at midpt 5-30, 6-30, 11-19, 10-19, 28-33, 20-34

JOINTS 1 Brace at Jt(s): 33, 34, 35

**REACTIONS** (size) 15= Mechanical, 16=0-5-8, 32=0-5-8

Max Horiz 32=187 (LC 12)

Max Uplift 15=193 (LC 14), 16=299 (LC 15), 32=97 (LC 14)

Max Grav 15=931 (LC 37), 16=2637 (LC 39), 32=2574 (LC 37)

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

TOP CHORD 6-7=3106/127, 7-8=3563/337, 8-9=3563/337, 9-10=3084/126, 10-11=3139/229, 11-12=3092/136, 12-14=2659/221, 14-15=1527/445, 2-32=2657/135, 1-2=0/25, 2-3=3127/96, 3-5=3538/136, 5-6=3607/257

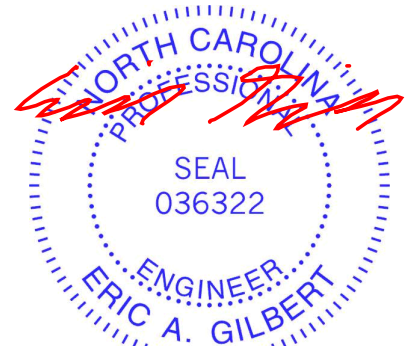
**BOT CHORD** 31-32=-112/227, 30-31=-114/2694, 28-30=0/2855, 26-28=0/3027, 24-26=0/3027, 20-24=0/3027, 19-20=0/2722, 17-19=-79/2256, 16-17=-332/1312, 15-16=-332/1312, 25-27=-74/34, 23-25=-74/34, 22-23=-74/34 25-26=-209/0, 23-24=-245/0, 14-16=-2330/325, 2-31=-3/2777, 3-31=860/99, 3-30=0/518, 5-30=-592/201, 6-30=-306/595, 14-17=-65/1856, 12-17=-1110/145, 12-19=-24/781, 11-19=-469/168, 10-19=-569/0, 27-28=-555/253, 27-33=-510/276, 7-33=-495/272, 20-22=-934/225, 22-34=-876/246, 9-34=-851/243, 6-28=0/1177, 33-35=-41/82, 34-35=-180/37, 8-35=-230/82, 7-35=-321/680, 9-35=-294/803, 10-20=0/1919

**WEBS**

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 200.0lb AC unit load placed on the bottom chord, 24-6-8 from left end, supported at two points, 5-0-0 apart.
- Provide adequate drainage to prevent water ponding.
- All plates are 2x4 MT20 unless otherwise indicated.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, 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 193 lb uplift at joint 15.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 32 and 16. This connection is for uplift only and does not consider lateral forces.

**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) 0-8-6 to 4-7-7, Interior (1) 4-7-7 to 10-1-12, Exterior(2R) 10-1-12 to 38-11-4, Interior (1) 38-11-4 to 47-10-3, Exterior(2E) 47-10-3 to 53-2-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.



March 29, 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	132 Serenity-Roof-B326 BLH COP BR4	I64569205
24030108-01	A04	Piggyback Base	3	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:06  
 ID:DGN6a6f8caCKWpHw1clz1BzRCZx-RfC?PsB70Hq3NSgPqnL8w3uiTXbGKWrCDoi7J4zJC?f

Page: 2

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

**LOAD CASE(S)** Standard

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

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



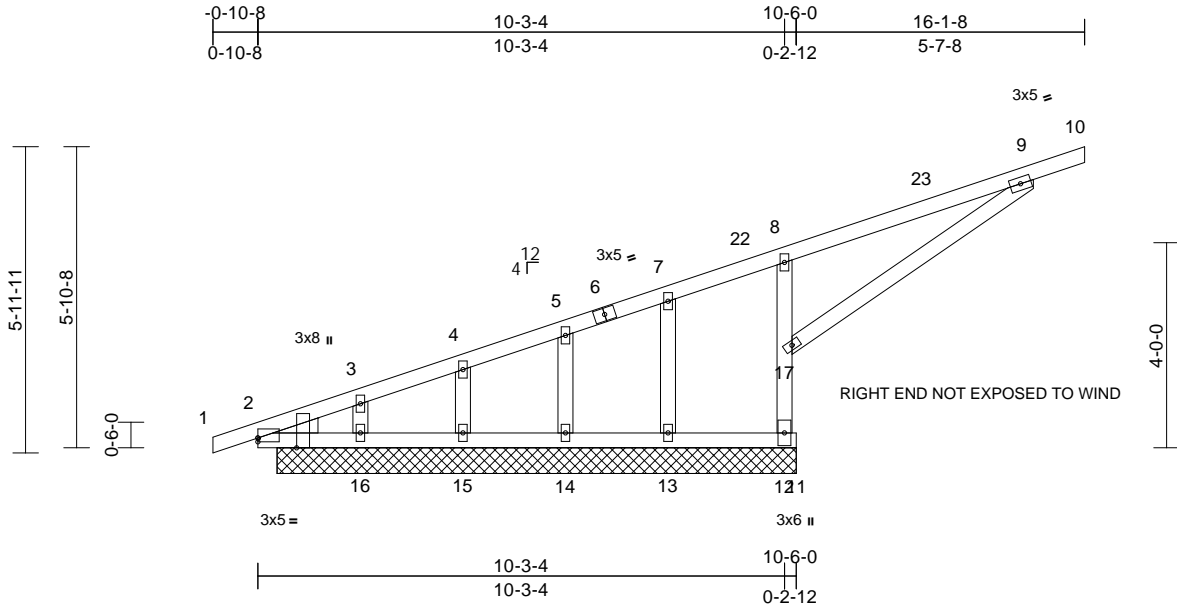
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss H01	Truss Type Monopitch Supported Gable	Qty 2	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569206
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 E Nov 16 2023 Print: 8.730 E Nov 16 2023 MiTek Industries, Inc. Fri Mar 29 15:28:36  
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Page: 1



Scale = 1:44.9  
Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,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	0.75	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.21	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	-0.01	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 67 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP 2400F 2.0E \*Except\* 17-9:2x4 SP No.3  
OTHERS 2x4 SP No.3  
WEDGE Left: 2x4 SP No.3

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing, Except: 10-0-0 oc bracing: 11-12.

**REACTIONS** (lb/size)

2=-1/10-1-8, 12=616/10-1-8,  
13=52/10-1-8, 14=200/10-1-8,  
15=110/10-1-8, 16=253/10-1-8,  
21=-1/10-1-8

Max Horiz 2=210 (LC 10), 21=210 (LC 10)  
Max Uplift 2=-3 (LC 14), 12=-264 (LC 14),  
13=-11 (LC 21), 14=-26 (LC 10),  
15=-155 (LC 14), 21=-3 (LC 14)

Max Grav 2=1 (LC 21), 12=893 (LC 21),  
13=98 (LC 7), 14=202 (LC 21),  
15=171 (LC 21), 16=253 (LC 1),  
21=1 (LC 21)

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

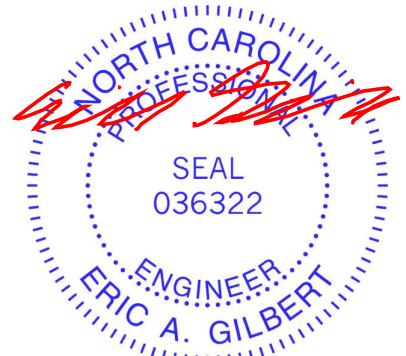
TOP CHORD 1-2=0/17, 2-3=-535/377, 3-4=-531/378,  
4-5=-474/378, 5-6=-435/340, 6-7=-430/359,  
7-22=-437/413, 8-22=-429/432,  
8-23=-579/621, 9-23=-567/743, 9-10=-29/0

BOT CHORD 2-16=-339/244, 15-16=-339/244,  
14-15=-339/244, 13-14=-339/244,  
12-13=-339/244, 11-12=0/0

WEBS 12-17=-870/552, 8-17=-396/210,  
9-17=-810/584, 3-16=-153/3, 4-15=-130/154,  
5-14=-167/99, 7-13=-29/60

- NOTES**
- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-0-0, Interior (1) 2-0-0 to 13-1-8, Exterior(2E) 13-1-8 to 16-1-8 zone; cantilever left and right exposed ;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - 4) Unbalanced snow loads have been considered for this design.
  - 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - 6) All plates are 2x4 MT20 unless otherwise indicated.
  - 7) Gable studs spaced at 2-0-0 oc.
  - 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 3 lb uplift at joint 2, 264 lb uplift at joint 12, 155 lb uplift at joint 15, 26 lb uplift at joint 14, 11 lb uplift at joint 13 and 3 lb uplift at joint 2.
  - 11) Non Standard bearing condition. Review required.

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



March 29, 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)



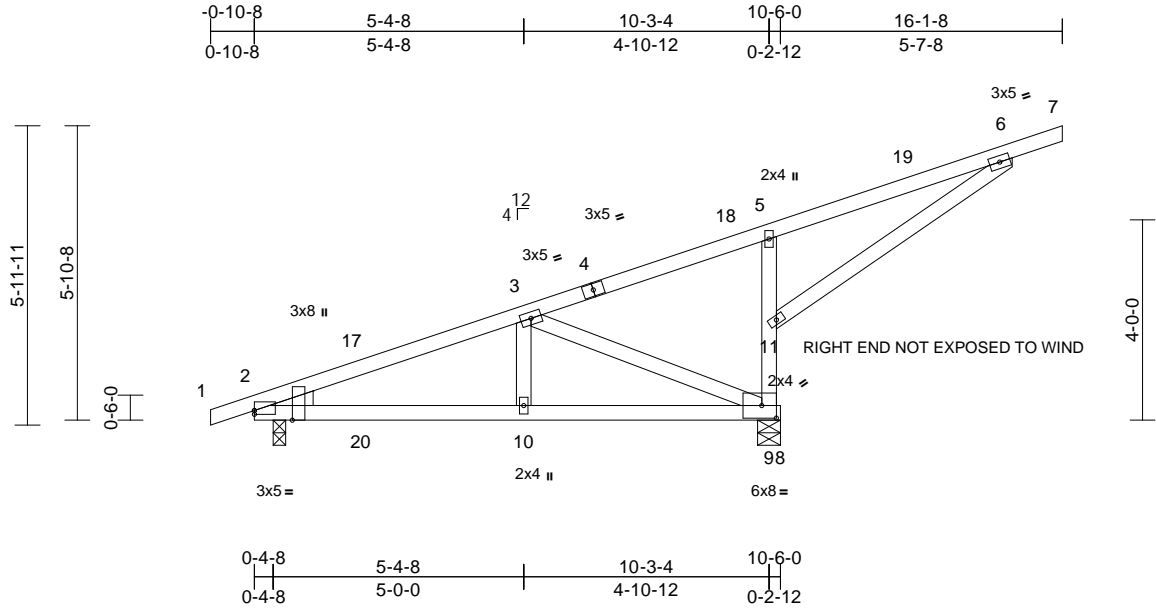
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss H02	Truss Type Monopitch	Qty 6	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569207
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:12  
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Page: 1



Scale = 1:46

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [9:0-3-8,0-3-0]

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	0.71	Vert(LL)	0.04	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(CT)	-0.04	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.71	Horz(CT)	-0.01	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 67 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- WEBS 2x4 SP No.3 \*Except\* 5-9:2x4 SP 2400F 2.0E
- WEDGE Left: 2x4 SP No.3

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
- BOT CHORD Rigid ceiling directly applied or 8-5-13 oc bracing.

**REACTIONS**

- (size) 2=0-3-0, 9=0-5-8
- Max Horiz 2=210 (LC 10)
- Max Uplift 2=-99 (LC 10), 9=-379 (LC 20)
- Max Grav 2=379 (LC 1), 9=1090 (LC 21)

**FORCES**

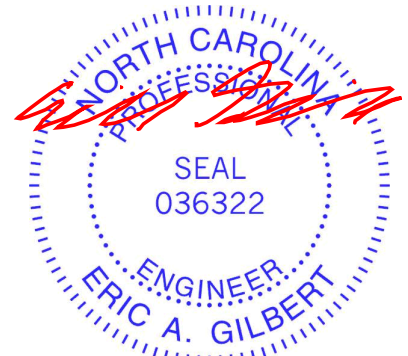
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/17, 2-3=-368/225, 3-5=-447/428, 5-6=-594/757, 6-7=-29/0
- BOT CHORD 2-10=-447/338, 9-10=-447/338, 8-9=0/0
- WEBS 9-11=-840/532, 5-11=-358/182, 3-10=-315/219, 3-9=-563/753, 6-11=-825/599

**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 13-1-8, Exterior(2E) 13-1-8 to 16-1-8 zone; cantilever left 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.
- 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 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 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

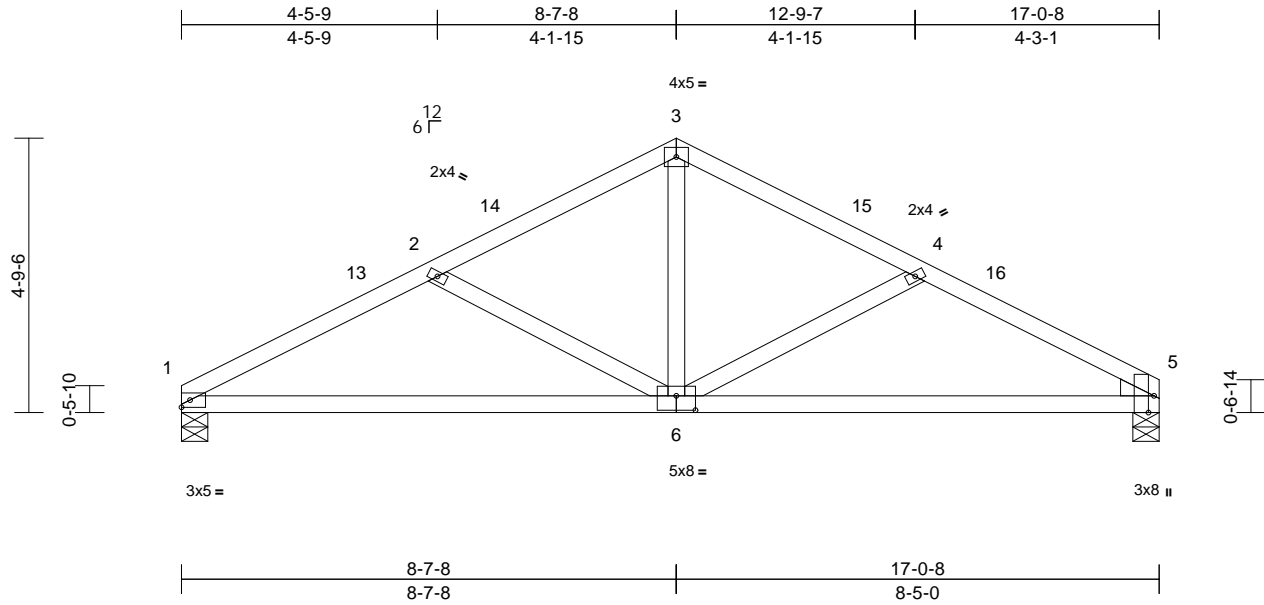


Job 24030108-01	Truss J01	Truss Type Common	Qty 5	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569208
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:12  
ID:yPXMLbyKekkHSiWSIZLGINzRR58-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWRCDoi7J4zJC?f

Page: 1



Scale = 1:40.2

Plate Offsets (X, Y): [5:0-3-8,Edge], [6:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.37	Vert(LL)	-0.09	6-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.19	6-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.02	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 75 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 1=0-5-8, 5=0-5-8  
 Max Horiz 1=71 (LC 14)  
 Max Uplift 1=-66 (LC 14), 5=-64 (LC 15)  
 Max Grav 1=747 (LC 20), 5=746 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-1263/310, 2-3=-883/233, 3-4=-875/232, 4-5=-1219/301  
 BOT CHORD 1-5=-223/1092  
 WEBS 3-6=-53/478, 4-6=-407/160, 2-6=-445/175

**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, Interior (1) 3-0-0 to 5-7-8, Exterior(2R) 5-7-8 to 11-7-8, Interior (1) 11-7-8 to 14-0-8, Exterior(2E) 14-0-8 to 17-0-8 zone;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 5 User Defined .
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 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)



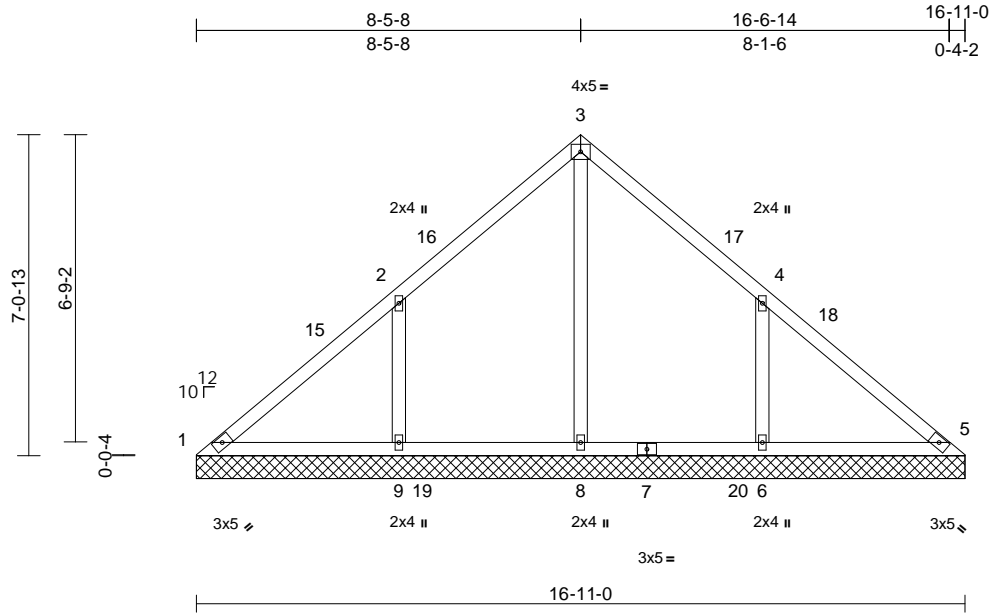
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss VLD1	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569209
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.39	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.41	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 76 lb	FT = 20%

LUMBER	
TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
OTHERS	2x4 SP No.3
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 10-0-0 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing.
REACTIONS (size)	
	1=16-11-0, 5=16-11-0, 6=16-11-0, 8=16-11-0, 9=16-11-0, 14=16-11-0
Max Horiz	1=161 (LC 11)
Max Uplift	1=-58 (LC 10), 6=-184 (LC 15), 9=-189 (LC 14)
Max Grav	1=83 (LC 35), 5=1 (LC 30), 6=513 (LC 6), 8=656 (LC 24), 9=514 (LC 24), 14=1 (LC 30)
FORCES (lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-105/374, 2-3=-24/322, 3-4=-1/301, 4-5=-143/306
BOT CHORD	1-9=-200/77, 8-9=-200/75, 6-8=-200/75, 5-6=-200/75
WEBS	3-8=-474/0, 2-9=-394/222, 4-6=-393/220

- 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 58 lb uplift at joint 1, 189 lb uplift at joint 9 and 184 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 5-5-13, Exterior(2R) 5-5-13 to 11-5-13, Interior (1) 11-5-13 to 13-6-12, Exterior(2E) 13-6-12 to 16-6-12 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



March 29, 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)



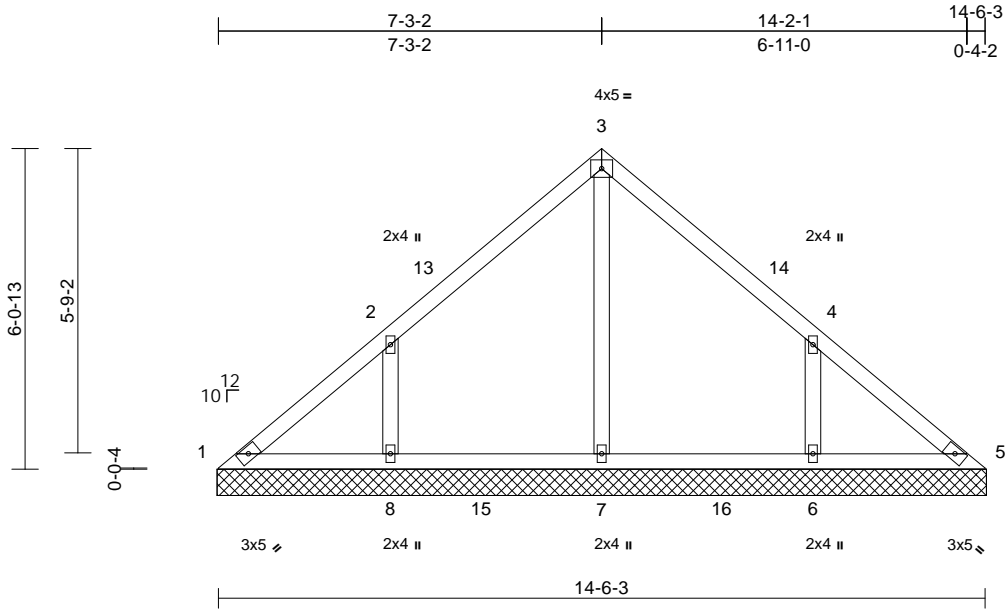
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLD2	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569210
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Scale = 1:43.6

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 63 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=14-6-13, 5=14-6-13, 6=14-6-13,  
7=14-6-13, 8=14-6-13  
Max Horiz 1=138 (LC 13)  
Max Uplift 1=-24 (LC 10), 6=-155 (LC 15),  
8=-158 (LC 14)  
Max Grav 1=123 (LC 25), 5=98 (LC 24),  
6=457 (LC 21), 7=410 (LC 24),  
8=457 (LC 20)

#### FORCES

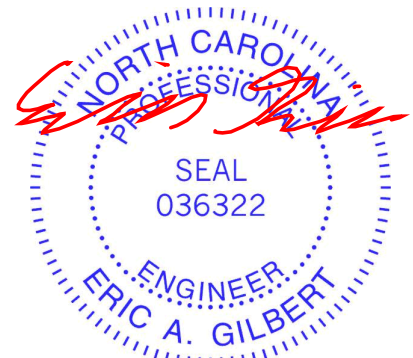
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-154/148, 2-3=-172/123, 3-4=-172/112,  
4-5=-122/112  
BOT CHORD 1-8=-62/127, 7-8=-62/101, 6-7=-62/101,  
5-6=-62/101  
WEBS 3-7=-230/0, 2-8=-375/197, 4-6=-375/195

#### 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 3-3-6, Interior (1) 3-3-6 to 4-3-6, Exterior(2R) 4-3-6 to 10-3-6, Interior (1) 10-3-6 to 11-3-6, Exterior(2E) 11-3-6 to 14-6-13 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 24 lb uplift at joint 1, 158 lb uplift at joint 8 and 155 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



March 29, 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)



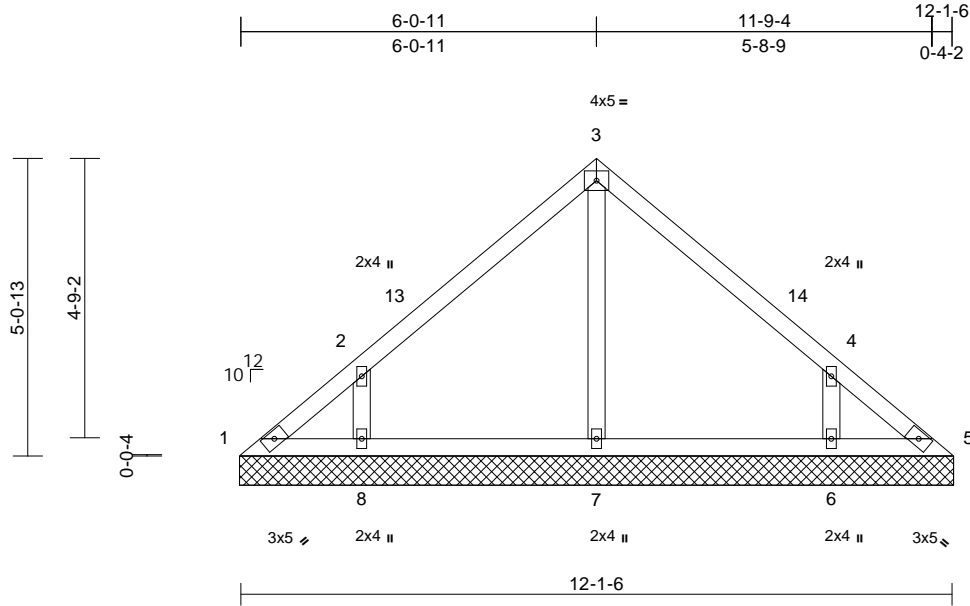
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLD3	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569211
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 50 lb	FT = 20%

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

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

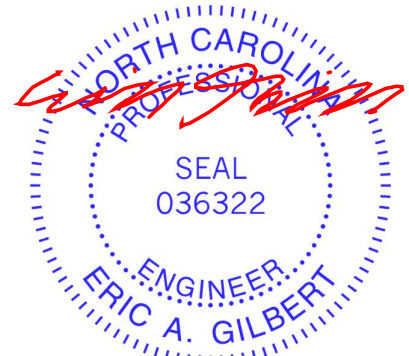
**REACTIONS** (size) 1=12-2-0, 5=12-2-0, 6=12-2-0, 7=12-2-0, 8=12-2-0  
Max Horiz 1=-115 (LC 10)  
Max Uplift 1=-32 (LC 10), 5=-4 (LC 11), 6=-136 (LC 15), 8=-139 (LC 14)  
Max Grav 1=93 (LC 25), 5=72 (LC 24), 6=435 (LC 21), 7=261 (LC 21), 8=435 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-118/101, 2-3=-216/117, 3-4=-216/117, 4-5=-91/63  
BOT CHORD 1-8=-32/78, 7-8=-32/73, 6-7=-32/73, 5-6=-32/73  
WEBS 3-7=-174/0, 2-8=-398/218, 4-6=-398/218

**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 9-2-0, Exterior(2E) 9-2-0 to 12-2-0 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.
- 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 32 lb uplift at joint 1, 4 lb uplift at joint 5, 139 lb uplift at joint 8 and 136 lb uplift at joint 6.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 5.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 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

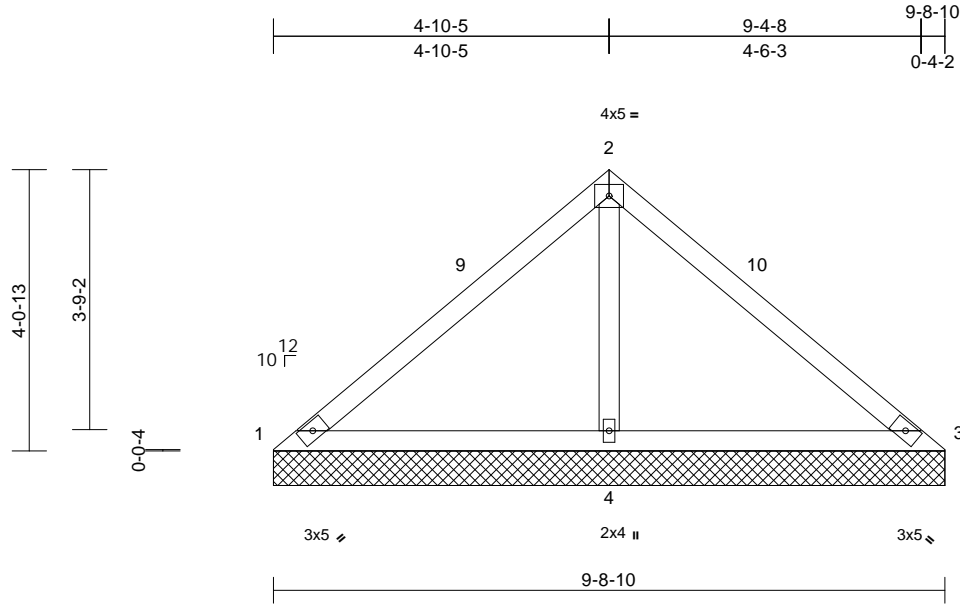
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLD4	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569212
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.46	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.19	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 37 lb	FT = 20%	

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 9-8-10 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-8-10, 3=9-8-10, 4=9-8-10  
Max Horiz 1=-91 (LC 10)  
Max Uplift 1=-51 (LC 21), 3=-51 (LC 20), 4=-110 (LC 14)  
Max Grav 1=95 (LC 20), 3=95 (LC 21), 4=784 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-117/380, 2-3=-117/380  
BOT CHORD 1-4=-248/174, 3-4=-248/174  
WEBS 2-4=-646/274

- 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 51 lb uplift at joint 1, 51 lb uplift at joint 3 and 110 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 6-8-14, Exterior(2E) 6-8-14 to 9-8-14 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.



March 29, 2024

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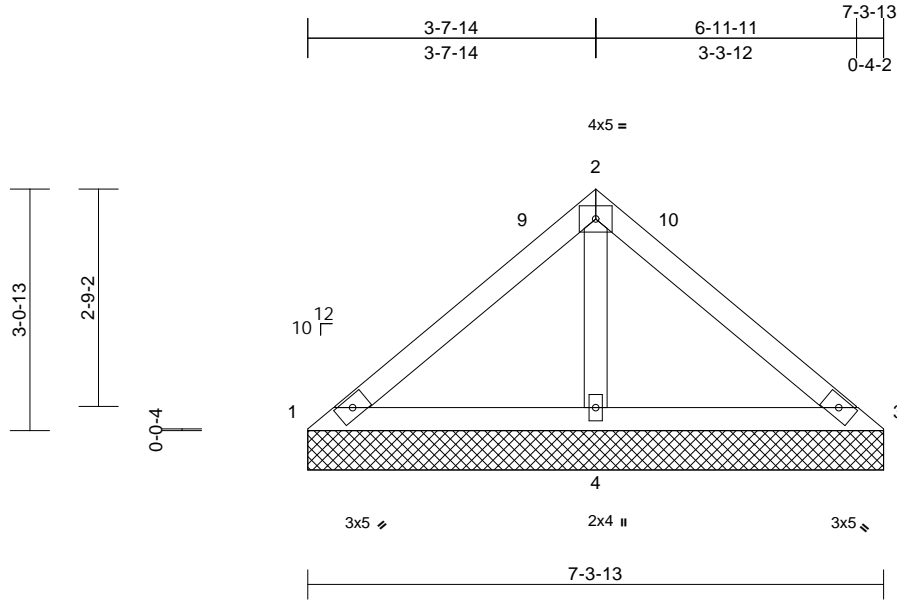
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLD5	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569213
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.26	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 27 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 7-3-13 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-3-13, 3=7-3-13, 4=7-3-13  
Max Horiz 1=-68 (LC 12)  
Max Uplift 1=-19 (LC 21), 3=-19 (LC 20), 4=-75 (LC 14)  
Max Grav 1=105 (LC 20), 3=105 (LC 21), 4=541 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-91/234, 2-3=-91/234  
BOT CHORD 1-4=-183/154, 3-4=-183/154  
WEBS 2-4=-429/203

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 19 lb uplift at joint 1, 19 lb uplift at joint 3 and 75 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

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



March 29, 2024

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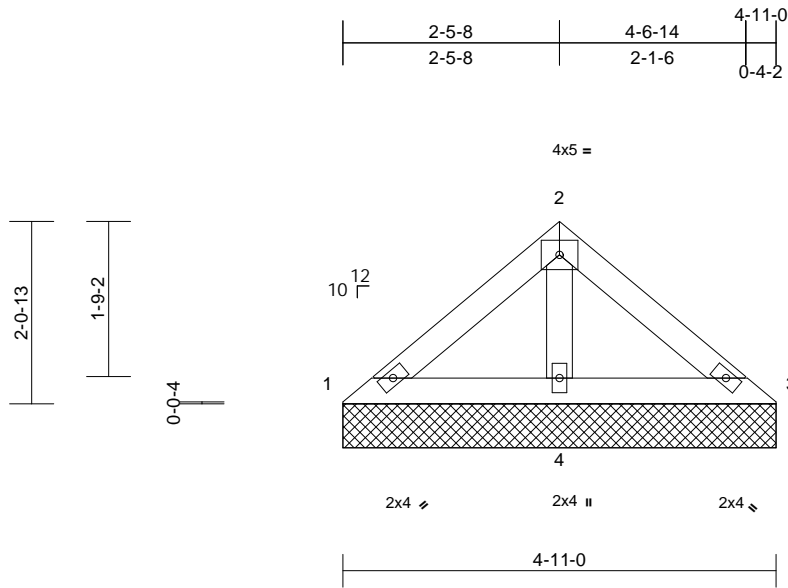
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	164569214
24030108-01	VLD6	Valley	1	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:15  
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Scale = 1:26.2

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	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 18 lb	FT = 20%

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

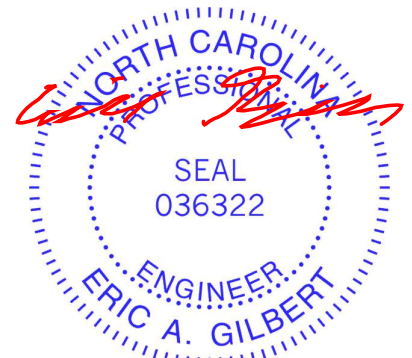
**BRACING**  
 TOP CHORD Structural wood sheathing directly applied or 4-11-0 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-11-0, 3=4-11-0, 4=4-11-0  
 Max Horiz 1=-44 (LC 10)  
 Max Uplift 3=-7 (LC 15), 4=-34 (LC 14)  
 Max Grav 1=89 (LC 20), 3=89 (LC 21), 4=301 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-81/106, 2-3=-81/106  
 BOT CHORD 1-4=-86/90, 3-4=-86/90  
 WEBS 2-4=-215/100

- 5) Unbalanced snow loads have been considered for this design.
  - 6) Gable requires continuous bottom chord bearing.
  - 7) Gable studs spaced at 4-0-0 oc.
  - 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 34 lb uplift at joint 4.
  - 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

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



March 29, 2024

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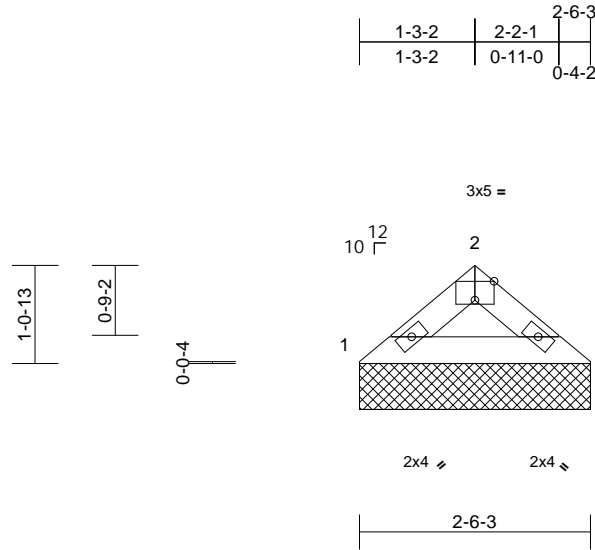
818 Soundside Road  
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569215
24030108-01	VLD7	Valley	1	1	Job Reference (optional)	

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

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Page: 1



Scale = 1:25.1  
 Plate Offsets (X, Y): [2:0-2-8,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.05	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 7 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 2-6-3 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=2-6-3, 3=2-6-3  
 Max Horiz 1=21 (LC 11)  
 Max Uplift 1=9 (LC 14), 3=9 (LC 15)  
 Max Grav 1=114 (LC 20), 3=114 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-144/62, 2-3=-144/62  
 BOT CHORD 1-3=-33/102

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

- 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.



March 29, 2024

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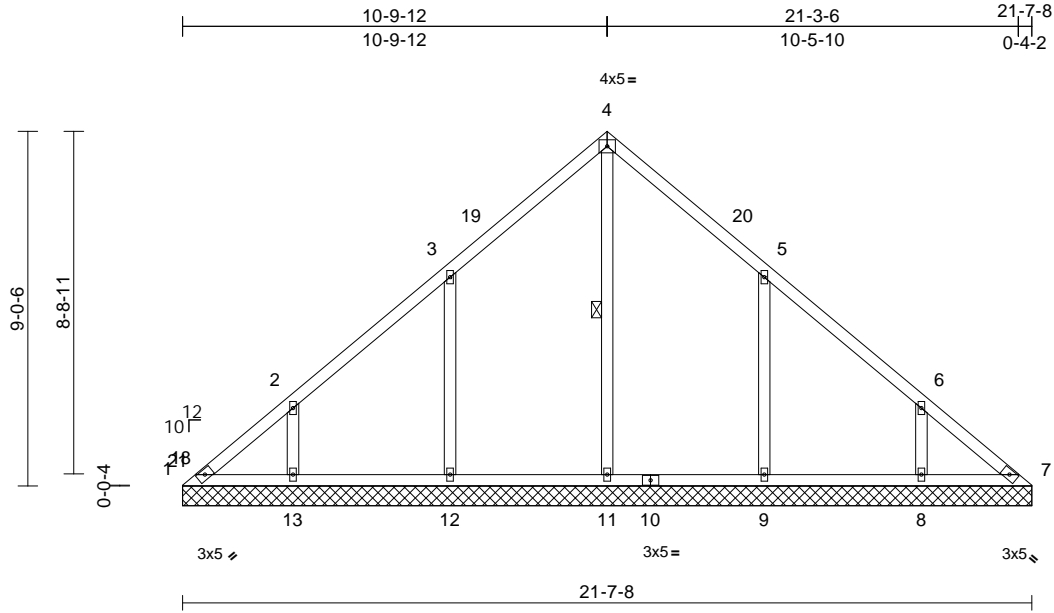


Job 24030108-01	Truss VLB1	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569216
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
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Page: 1



Scale = 1:58.7

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.17	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horiz(TL)	0.01	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 106 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.

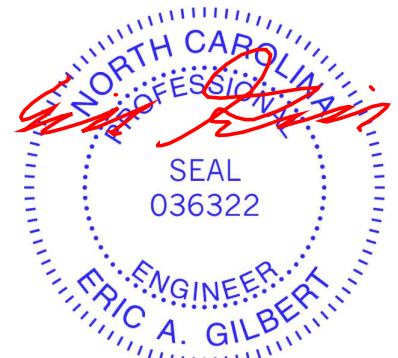
**WEBS** 1 Row at midpt 4-11  
**REACTIONS** (size) 1=21-7-8, 7=21-7-8, 8=21-7-8, 9=21-7-8, 11=21-7-8, 12=21-7-8, 13=21-7-8  
Max Horiz 1=207 (LC 10)  
Max Uplift 1=54 (LC 10), 7=1 (LC 11), 8=115 (LC 15), 9=174 (LC 15), 12=173 (LC 14), 13=118 (LC 14)  
Max Grav 1=134 (LC 25), 7=119 (LC 27), 8=365 (LC 25), 9=473 (LC 6), 11=416 (LC 27), 12=473 (LC 5), 13=368 (LC 24)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-211/174, 2-3=-165/132, 3-4=-188/184, 4-5=-187/157, 5-6=-115/82, 6-7=-166/107  
BOT CHORD 1-13=-79/161, 12-13=-79/161, 11-12=-79/161, 9-11=-79/161, 8-9=-79/161, 7-8=-79/161  
WEBS 4-11=-209/4, 3-12=-376/222, 2-13=-264/163, 5-9=-376/222, 6-8=-265/161

**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) 0-4-13 to 3-4-13, Interior (1) 3-4-13 to 7-10-1, Exterior(2R) 7-10-1 to 13-10-1, Interior (1) 13-10-1 to 18-7-13, Exterior(2E) 18-7-13 to 21-7-13 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 54 lb uplift at joint 1, 1 lb uplift at joint 7, 173 lb uplift at joint 12, 118 lb uplift at joint 13, 174 lb uplift at joint 9 and 115 lb uplift at joint 8.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 2024

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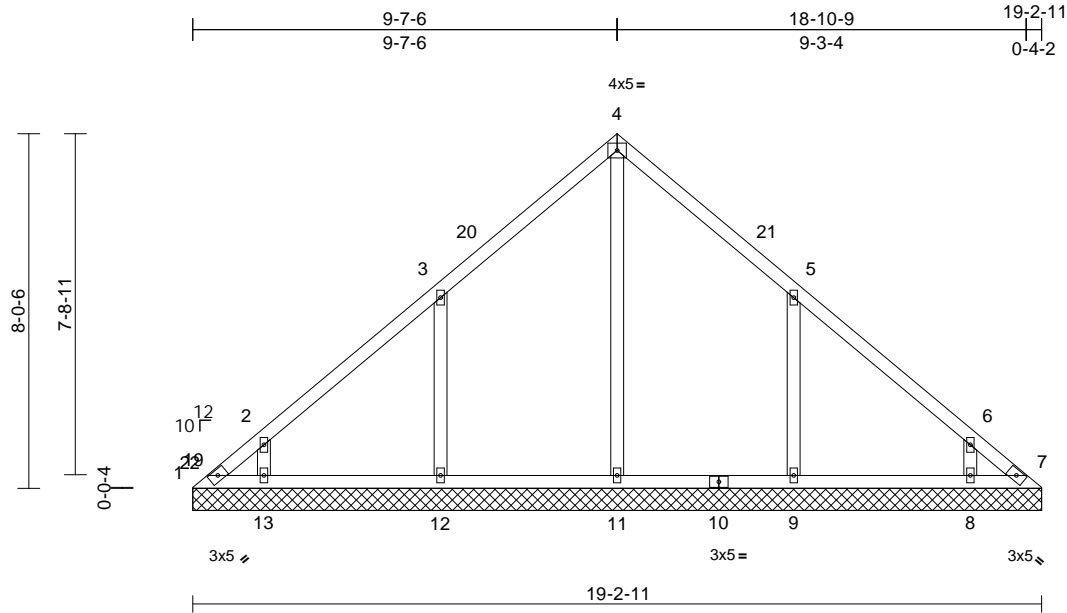
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB2	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569217
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
ID:yJln\_UX?VSB9dbBmLUS1zzRQsC-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCDoi7J4zJC7f

Page: 1



Scale = 1:52.2

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	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.17	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.29	Horiz(TL)	0.00	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 90 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=19-2-11, 7=19-2-11, 8=19-2-11, 9=19-2-11, 11=19-2-11, 12=19-2-11, 13=19-2-11, 18=19-2-11  
Max Horiz 1=180 (LC 10)  
Max Uplift 1=107 (LC 12), 8=54 (LC 15), 9=193 (LC 15), 12=174 (LC 14), 13=100 (LC 14)  
Max Grav 1=126 (LC 11), 7=0 (LC 13), 8=304 (LC 25), 9=477 (LC 25), 11=463 (LC 27), 12=480 (LC 5), 13=314 (LC 29), 18=0 (LC 13)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-218/205, 2-3=-217/187, 3-4=-207/267, 4-5=-207/241, 5-6=-124/66, 6-7=-72/43  
BOT CHORD 1-13=-46/66, 12-13=-18/55, 11-12=-18/55, 9-11=-18/55, 8-9=-18/55, 7-8=-18/55  
WEBS 4-11=-256/59, 3-12=-379/222, 2-13=-259/172, 5-9=-376/229, 6-8=-252/154

**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) 0-4-13 to 3-4-13, Interior (1) 3-4-13 to 6-7-10, Exterior(2R) 6-7-10 to 12-7-10, Interior (1) 12-7-10 to 16-3-0, Exterior(2E) 16-3-0 to 19-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 107 lb uplift at joint 1, 174 lb uplift at joint 12, 100 lb uplift at joint 13, 193 lb uplift at joint 9 and 54 lb uplift at joint 8.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 2024

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

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

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**TRENCO**  
A MiTek Affiliate

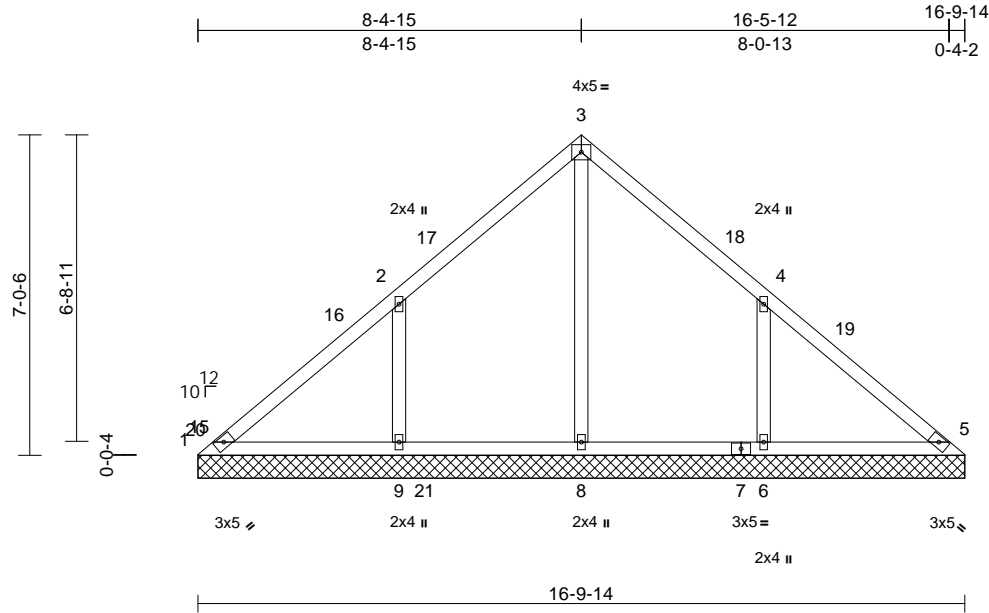
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB3	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569218
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.38	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.41	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 75 lb	FT = 20%

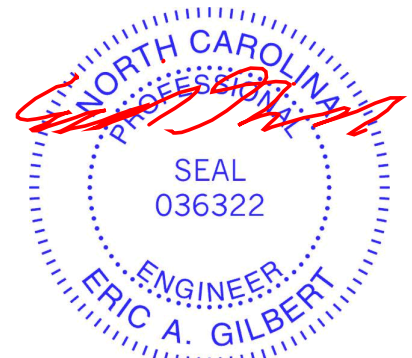
LUMBER	
TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
OTHERS	2x4 SP No.3
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 10-0-0 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing.
REACTIONS (size)	
	1=16-9-14, 5=16-9-14, 6=16-9-14, 8=16-9-14, 9=16-9-14, 14=16-9-14
Max Horiz	1=-157 (LC 10)
Max Uplift	1=-64 (LC 10), 6=-183 (LC 15), 9=-187 (LC 14)
Max Grav	1=76 (LC 13), 5=1 (LC 25), 6=511 (LC 6), 8=654 (LC 24), 9=509 (LC 5), 14=1 (LC 25)
FORCES (lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-104/370, 2-3=-25/319, 3-4=-2/298, 4-5=-139/302
BOT CHORD	1-9=-197/74, 8-9=-197/74, 6-8=-197/74, 5-6=-197/74
WEBS	3-8=-471/0, 2-9=-392/220, 4-6=-392/219

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 64 lb uplift at joint 1, 187 lb uplift at joint 9 and 183 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

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) 0-4-13 to 3-4-13, Interior (1) 3-4-13 to 5-5-4, Exterior(2R) 5-5-4 to 11-5-4, Interior (1) 11-5-4 to 13-10-3, Exterior(2E) 13-10-3 to 16-10-3 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



March 29, 2024

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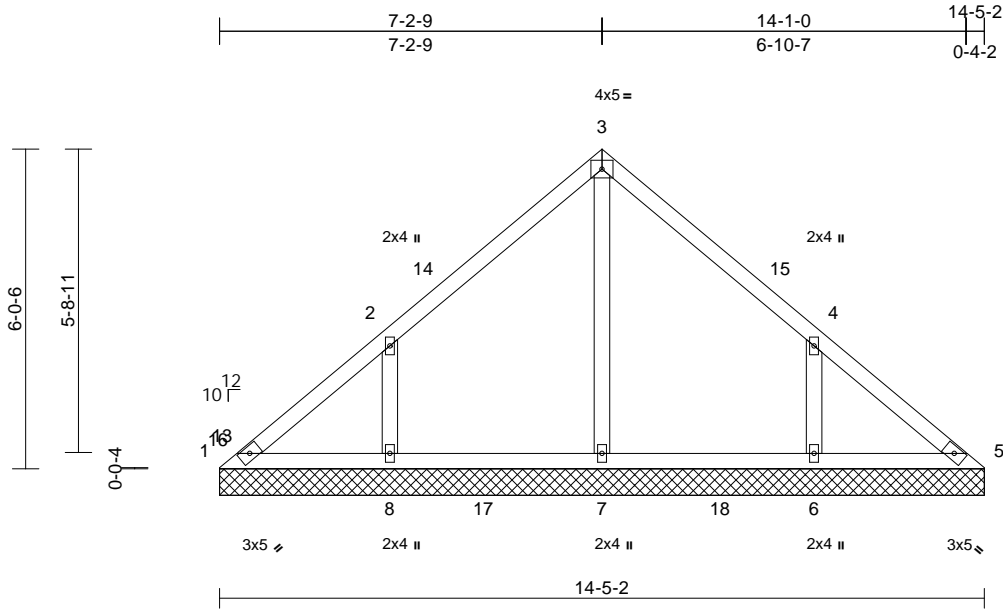
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB4	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569219
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	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	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 62 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=14-5-2, 5=14-5-2, 6=14-5-2, 7=14-5-2, 8=14-5-2
Max Horiz	1=-137 (LC 10)
Max Uplift	1=-29 (LC 10), 6=-154 (LC 15), 8=-156 (LC 14)
Max Grav	1=109 (LC 25), 5=100 (LC 24), 6=454 (LC 21), 7=402 (LC 24), 8=453 (LC 20)
FORCES (lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-141/139, 2-3=-177/119, 3-4=-177/112, 4-5=-122/105
BOT CHORD	1-8=-59/119, 7-8=-59/100, 6-7=-59/100, 5-6=-59/100
WEBS	3-7=-223/0, 2-8=-374/196, 4-6=-375/195

- 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 1, 156 lb uplift at joint 8 and 154 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

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) 0-4-13 to 3-2-14, Interior (1) 3-2-14 to 4-2-14, Exterior(2R) 4-2-14 to 10-2-14, Interior (1) 10-2-14 to 11-2-14, Exterior(2E) 11-2-14 to 14-5-6 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



March 29, 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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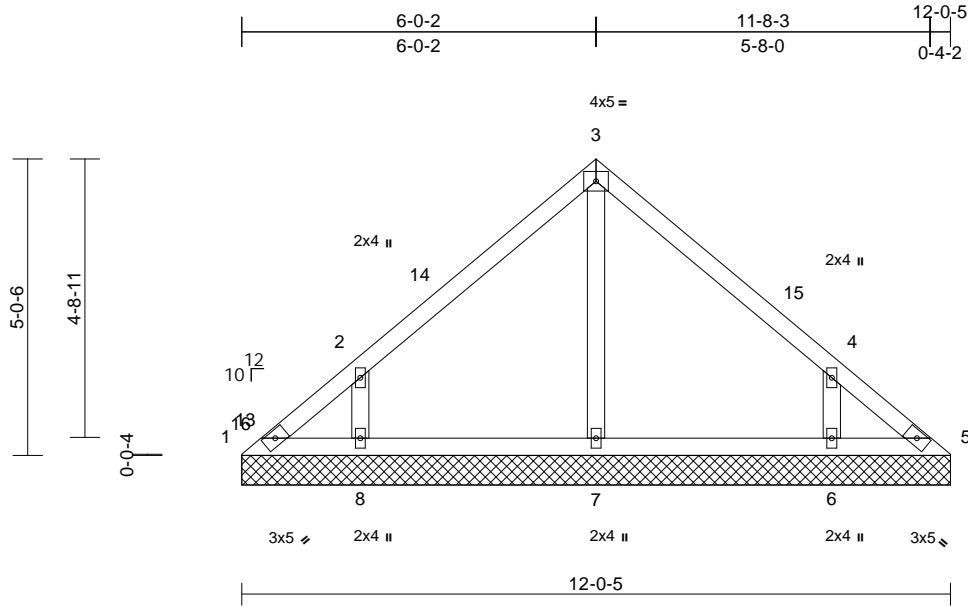
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB5	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569220
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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	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 50 lb	FT = 20%	

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

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

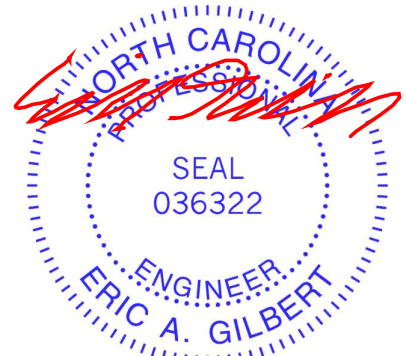
**REACTIONS** (size) 1=12-0-5, 5=12-0-5, 6=12-0-5, 7=12-0-5, 8=12-0-5  
 Max Horiz 1=-113 (LC 10)  
 Max Uplift 1=-38 (LC 10), 5=-6 (LC 11), 6=-136 (LC 15), 8=-138 (LC 14)  
 Max Grav 1=77 (LC 25), 5=71 (LC 29), 6=434 (LC 21), 7=259 (LC 21), 8=432 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-114/100, 2-3=-219/116, 3-4=-218/115, 4-5=-89/63  
 BOT CHORD 1-8=-32/73, 7-8=-31/73, 6-7=-31/73, 5-6=-31/73  
 WEBS 3-7=-172/0, 2-8=-400/215, 4-6=-401/220

**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) 0-4-13 to 3-4-13, Exterior(2R) 3-4-13 to 9-0-10, Exterior(2E) 9-0-10 to 12-0-10 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

- 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 38 lb uplift at joint 1, 6 lb uplift at joint 5, 138 lb uplift at joint 8 and 136 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 2024

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

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

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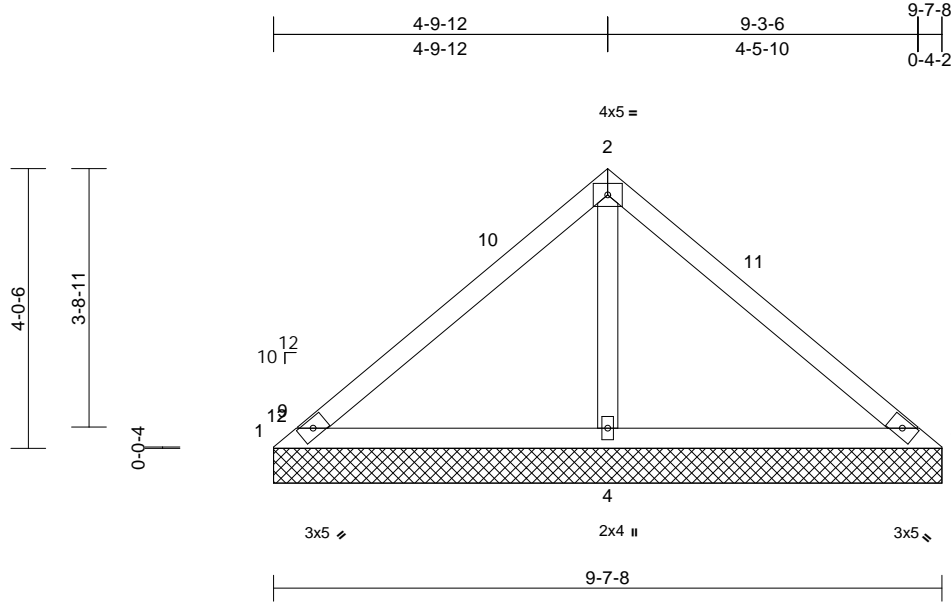
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss VLB6	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569221
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.44	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.42	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 37 lb	FT = 20%	

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 9-7-8 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=9-7-8, 3=9-7-8, 4=9-7-8  
Max Horiz 1=-90 (LC 10)  
Max Uplift 1=-58 (LC 21), 3=-47 (LC 20), 4=-106 (LC 14)  
Max Grav 1=75 (LC 20), 3=94 (LC 21), 4=768 (LC 20)

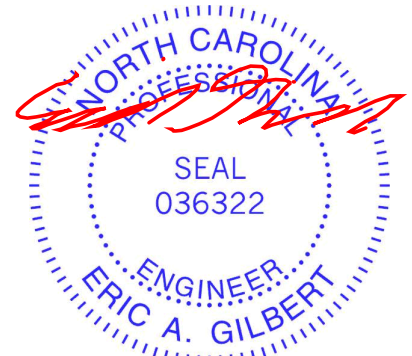
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-111/370, 2-3=-112/367  
BOT CHORD 1-4=-241/170, 3-4=-241/170  
WEBS 2-4=-632/266

- 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 58 lb uplift at joint 1, 47 lb uplift at joint 3 and 106 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-4-13 to 3-4-13, Exterior(2R) 3-4-13 to 6-7-13, Exterior(2E) 6-7-13 to 9-7-13 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.



March 29, 2024

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A MiTek Affiliate

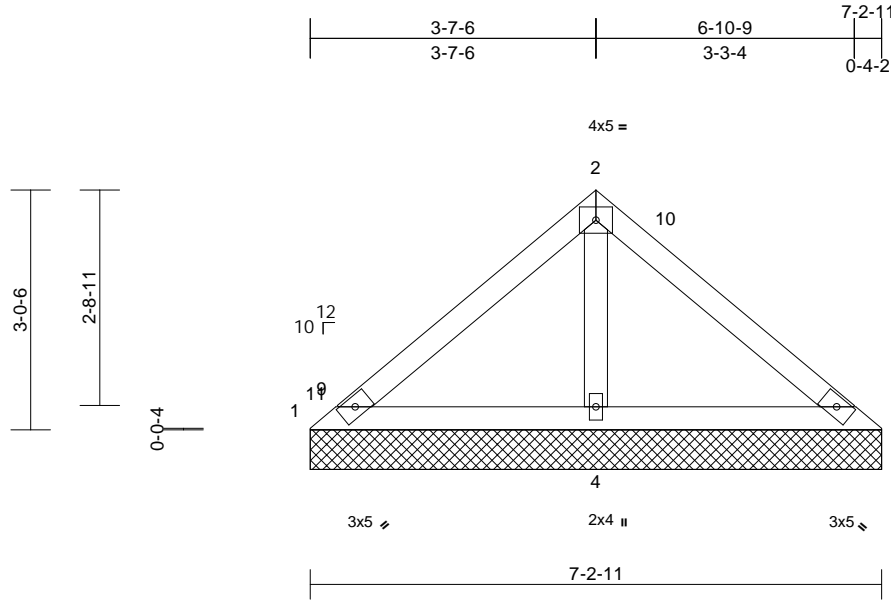
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB7	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569222
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Scale = 1:29.1

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

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 7-2-11 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

#### REACTIONS

(size) 1=7-2-11, 3=7-2-11, 4=7-2-11  
Max Horiz 1=-66 (LC 10)  
Max Uplift 1=-26 (LC 21), 3=-15 (LC 20),  
4=-71 (LC 14)  
Max Grav 1=71 (LC 20), 3=103 (LC 21),  
4=524 (LC 20)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

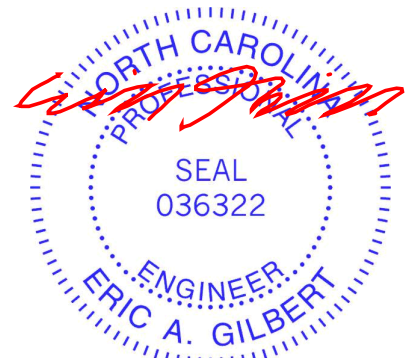
TOP CHORD 1-2=-84/224, 2-3=-87/223  
BOT CHORD 1-4=-176/150, 3-4=-176/150  
WEBS 2-4=-416/192

#### 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) 0-4-13 to 3-7-10, Exterior(2R) 3-7-10 to 4-3-0, Exterior(2E) 4-3-0 to 7-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

- 4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 26 lb uplift at joint 1, 15 lb uplift at joint 3 and 71 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



March 29, 2024

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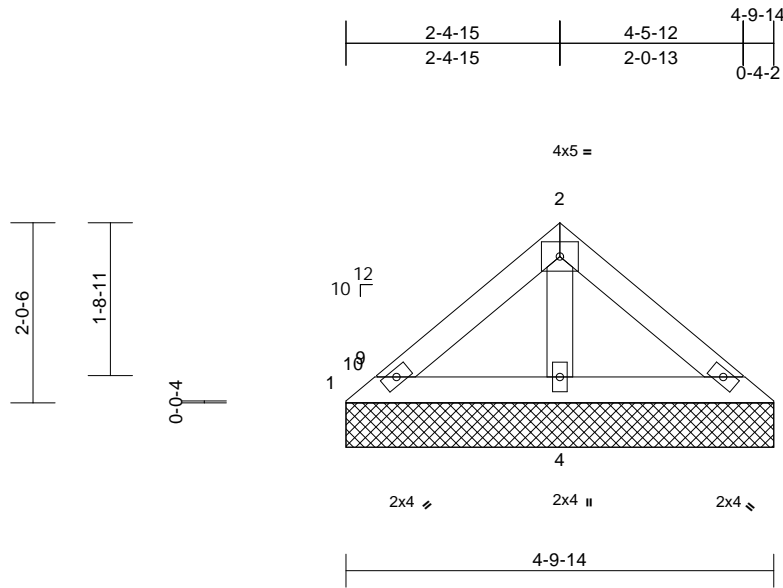
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss VLB8	Truss Type Valley	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569223
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:14  
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Page: 1



Scale = 1:26

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 17 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-9-14 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=4-9-14, 3=4-9-14, 4=4-9-14  
Max Horiz 1=-43 (LC 10)  
Max Uplift 3=-7 (LC 15), 4=-30 (LC 14)  
Max Grav 1=58 (LC 20), 3=86 (LC 21), 4=286 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

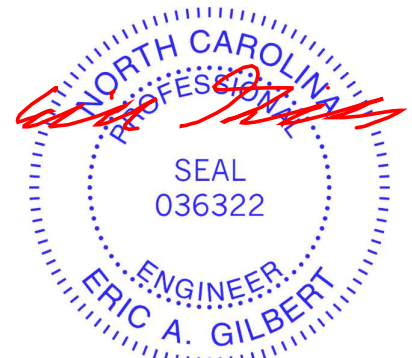
TOP CHORD 1-2=-61/99, 2-3=-79/99  
BOT CHORD 1-4=-81/85, 3-4=-81/85  
WEBS 2-4=-204/92

**NOTES**

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

- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 30 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



March 29, 2024

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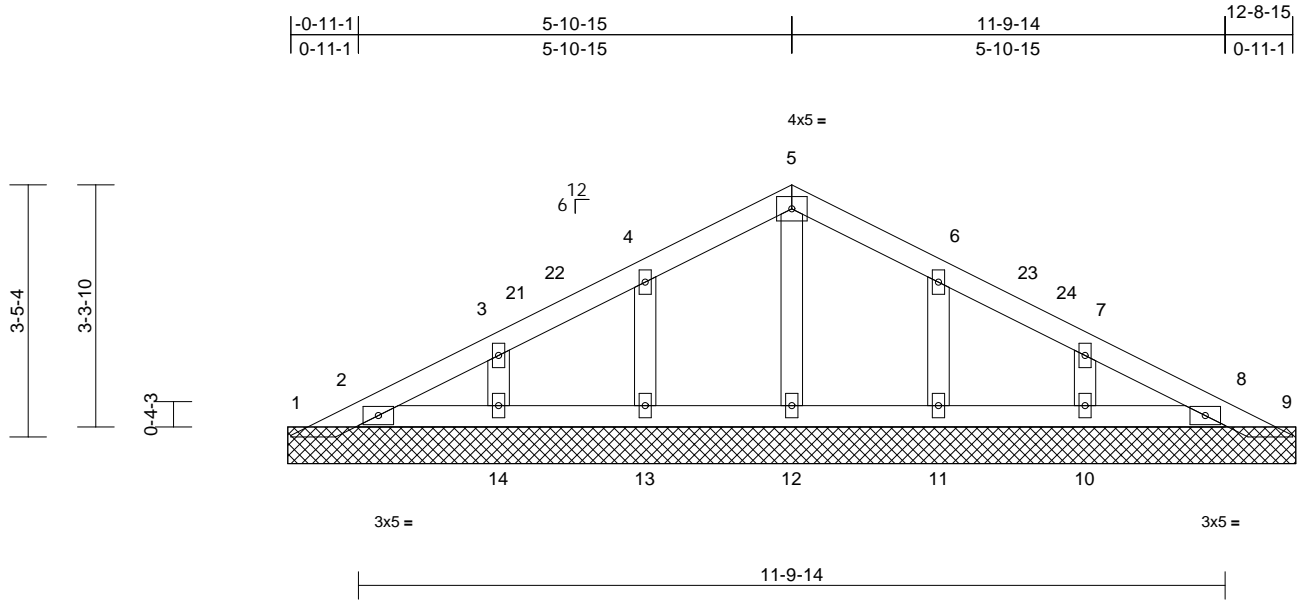


Job 24030108-01	Truss PBA2	Truss Type Piggyback	Qty 2	Ply 4	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569224
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.02	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.01	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.01	Horiz(TL)	0.00	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 207 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.

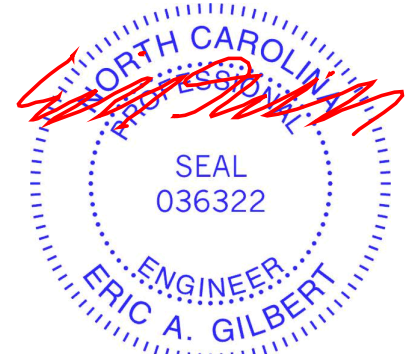
**REACTIONS** (size)  
 1=13-9-0, 2=13-9-0, 8=13-9-0,  
 9=13-9-0, 10=13-9-0, 11=13-9-0,  
 12=13-9-0, 13=13-9-0, 14=13-9-0,  
 15=13-9-0, 18=13-9-0  
 Max Horiz 1=52 (LC 14)  
 Max Uplift 1=-25 (LC 15), 2=-14 (LC 14), 8=-7 (LC 15), 9=-2 (LC 22), 10=-45 (LC 15), 11=-47 (LC 15), 13=-48 (LC 14), 14=-44 (LC 14), 15=-14 (LC 14), 18=-7 (LC 15)  
 Max Grav 1=24 (LC 18), 2=154 (LC 21), 8=142 (LC 22), 9=4 (LC 1), 10=233 (LC 22), 11=245 (LC 22), 12=144 (LC 21), 13=244 (LC 21), 14=234 (LC 21), 15=154 (LC 21), 18=142 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-56/69, 2-3=-48/32, 3-4=-55/50, 4-5=-62/105, 5-6=-62/105, 6-7=-55/40, 7-8=-29/26, 8-9=0/24  
 BOT CHORD 2-14=-15/54, 13-14=-15/54, 12-13=-15/54, 11-12=-15/54, 10-11=-15/54, 8-10=-15/54  
 WEBS 5-12=-103/0, 4-13=-208/121, 3-14=-181/90, 6-11=-208/121, 7-10=-180/91

**NOTES**

- 4-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) 0-4-3 to 3-4-3, Interior (1) 3-4-3 to 3-10-8, Exterior(2R) 3-10-8 to 9-10-8, Interior (1) 9-10-8 to 10-4-13, Exterior(2E) 10-4-13 to 13-4-13 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 14 lb uplift at joint 2, 7 lb uplift at joint 8, 25 lb uplift at joint 1, 2 lb uplift at joint 9, 48 lb uplift at joint 13, 44 lb uplift at joint 14, 47 lb uplift at joint 11, 45 lb uplift at joint 10, 14 lb uplift at joint 2 and 7 lb uplift at joint 8.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
  - See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.
- LOAD CASE(S)** Standard



March 29, 2024

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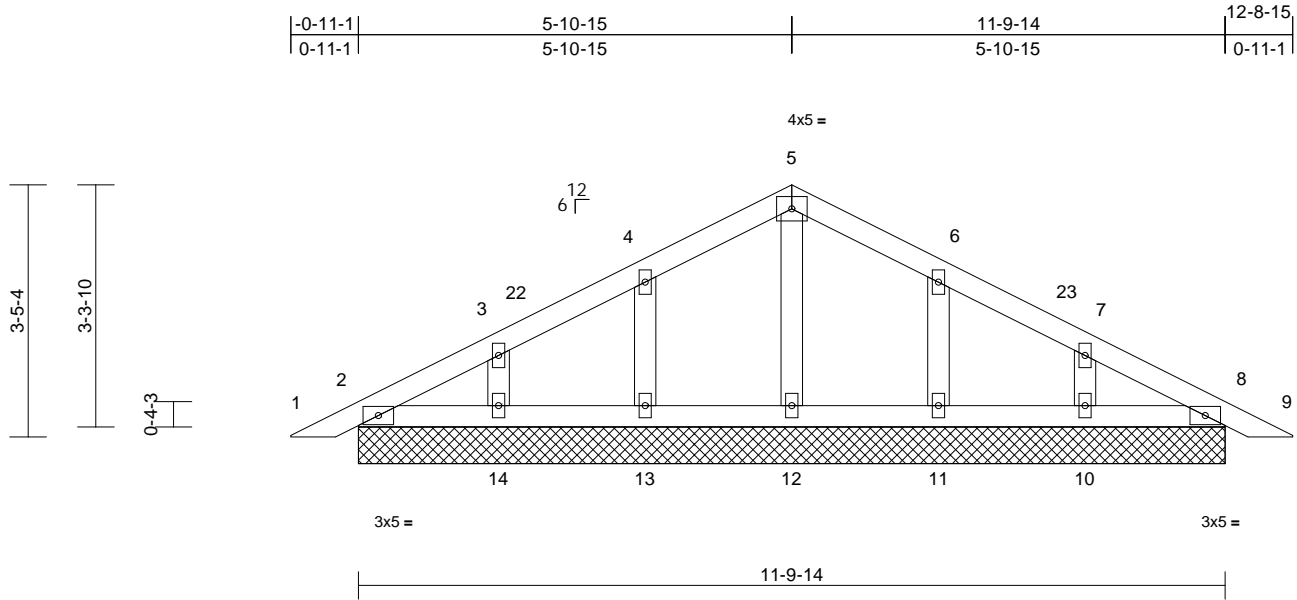
Job 24030108-01	Truss PBA	Truss Type Piggyback	Qty 2	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569225
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13

Page: 1

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Scale = 1:31.4

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	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 52 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
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=11-9-14, 8=11-9-14, 10=11-9-14, 11=11-9-14, 12=11-9-14, 13=11-9-14, 14=11-9-14, 15=11-9-14, 19=11-9-14  
Max Horiz 2=52 (LC 18), 15=52 (LC 18)  
Max Uplift 2=-9 (LC 15), 8=-11 (LC 15), 10=-45 (LC 15), 11=-47 (LC 15), 13=-47 (LC 14), 14=-45 (LC 14), 15=-9 (LC 15), 19=-11 (LC 15)  
Max Grav 2=123 (LC 21), 8=123 (LC 22), 10=237 (LC 22), 11=244 (LC 22), 12=143 (LC 21), 13=244 (LC 21), 14=237 (LC 21), 15=123 (LC 21), 19=123 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-46/33, 3-4=-56/49, 4-5=-63/116, 5-6=-63/116, 6-7=-56/49, 7-8=-29/25, 8-9=0/17  
BOT CHORD 2-14=-9/67, 13-14=-9/67, 12-13=-9/67, 11-12=-9/67, 10-11=-9/67, 8-10=-9/67  
WEBS 5-12=-102/0, 4-13=-208/125, 3-14=-181/113, 6-11=-208/125, 7-10=-181/113

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-4-3 to 3-4-3, Exterior(2N) 3-4-3 to 3-10-8, Corner(3R) 3-10-8 to 9-10-8, Exterior(2N) 9-10-8 to 10-4-13, Corner(3E) 10-4-13 to 13-4-13 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 9 lb uplift at joint 2, 11 lb uplift at joint 8, 47 lb uplift at joint 13, 45 lb uplift at joint 14, 47 lb uplift at joint 11, 45 lb uplift at joint 10, 9 lb uplift at joint 2 and 11 lb uplift at joint 8.

13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.  
14) See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.  
**LOAD CASE(S)** Standard



March 29, 2024

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.**  
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI Quality Criteria and DSB-22** available from Truss Plate Institute (www.tpinst.org) and **BCSI Building Component Safety Information** available from the Structural Building Component Association (www.sbcacomponents.com)

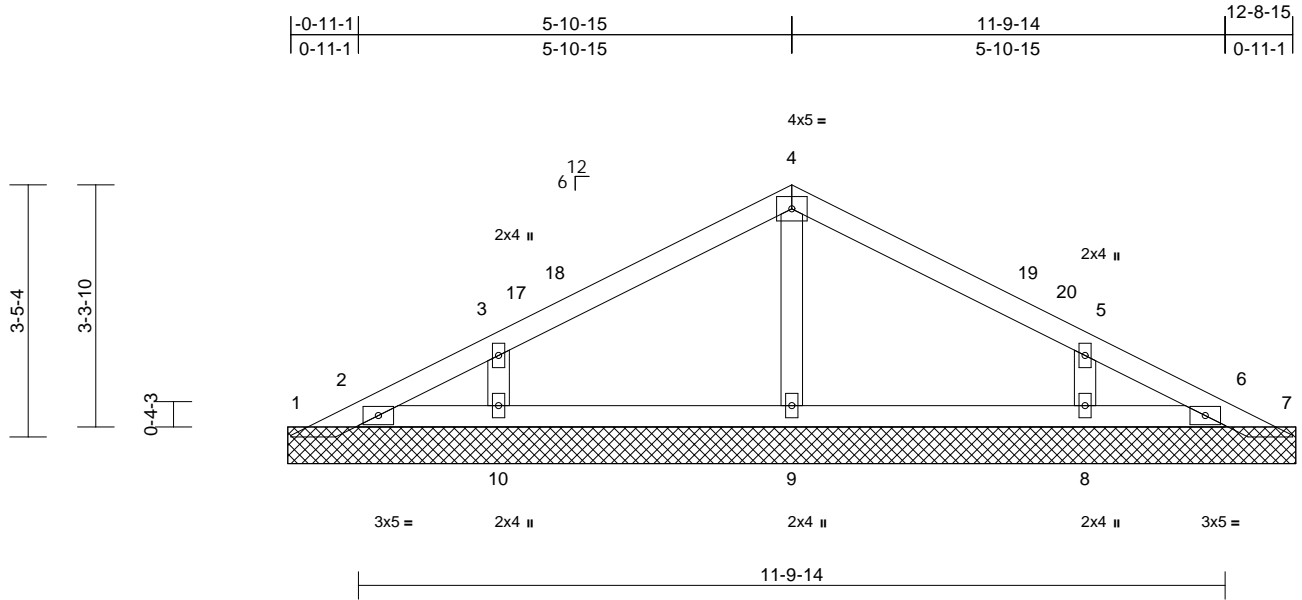
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss PBA1	Truss Type Piggyback	Qty 18	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569226
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:13  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.29	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	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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=13-9-0, 2=13-9-0, 6=13-9-0,  
 7=13-9-0, 8=13-9-0, 9=13-9-0,  
 10=13-9-0, 11=13-9-0, 14=13-9-0  
 Max Horiz 1=52 (LC 14)  
 Max Uplift 1=-25 (LC 15), 7=-12 (LC 15),  
 8=-92 (LC 15), 10=-91 (LC 14)  
 Max Grav 1=47 (LC 21), 2=65 (LC 1), 6=52  
 (LC 1), 7=49 (LC 22), 8=439 (LC  
 22), 9=299 (LC 21), 10=440 (LC  
 21), 11=65 (LC 1), 14=52 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-56/65, 2-3=-54/49, 3-4=-124/93,  
 4-5=-124/93, 5-6=-35/49, 6-7=-20/16  
 BOT CHORD 2-10=-8/44, 9-10=-8/44, 8-9=-8/44, 6-8=-8/44  
 WEBS 4-9=-213/93, 3-10=-386/207, 5-8=-386/207

**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) 0-4-3 to 3-4-3, Interior (1) 3-4-3 to 3-10-8, Exterior(2R) 3-10-8 to 9-10-8, Interior (1) 9-10-8 to 10-4-13, Exterior(2E) 10-4-13 to 13-4-13 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 25 lb uplift at joint 1, 12 lb uplift at joint 7, 91 lb uplift at joint 10 and 92 lb uplift at joint 8.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- See Standard Industry Piggyback Truss Connection Detail for Connection to base truss as applicable, or consult qualified building designer.

**LOAD CASE(S)** Standard



March 29, 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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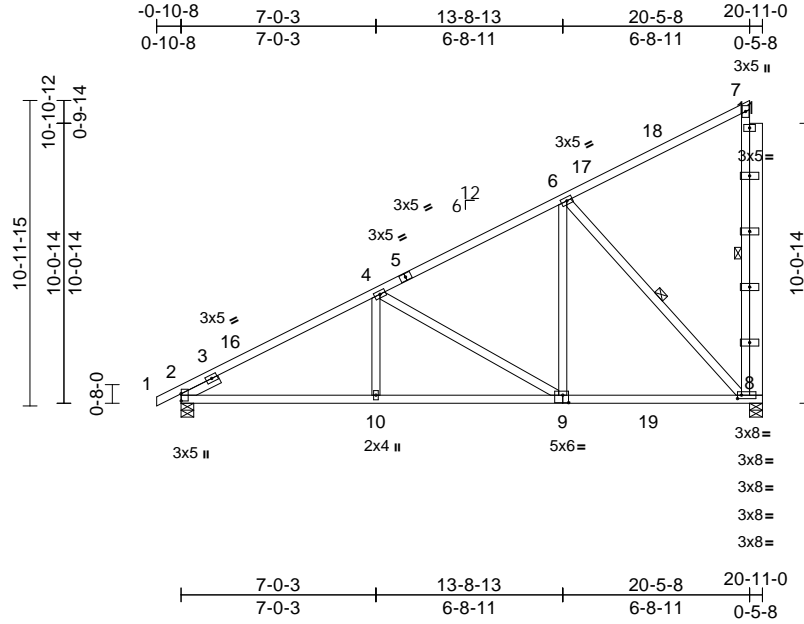
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss C01	Truss Type Half Hip	Qty 4	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569227
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:11  
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Page: 1



Scale = 1:82.9

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.95	Vert(LL)	-0.08	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.68	Vert(CT)	-0.13	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.67	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 148 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 7-8:2x4 SP No.2, 11-8:2x6 SP No.2  
SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-9-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
WEBS 1 Row at midpt 7-8, 6-8

**REACTIONS** (size) 2=0-5-8, 8=0-5-8  
Max Horiz 2=386 (LC 14)  
Max Uplift 2=-48 (LC 14), 8=-343 (LC 14)  
Max Grav 2=948 (LC 5), 8=1731 (LC 21)

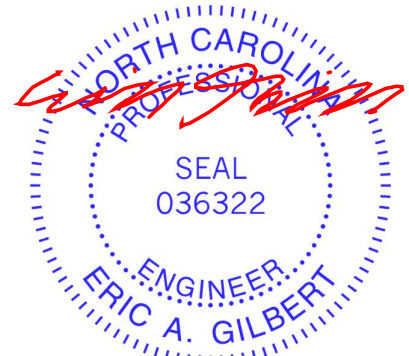
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-1361/28, 4-6=-813/0, 6-7=-164/105, 7-8=-271/93  
BOT CHORD 2-10=-397/1163, 8-10=-317/1163  
WEBS 4-10=0/264, 4-9=-588/185, 6-9=0/584, 6-8=-953/226

- 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) 8 and 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 747 lb down and 128 lb up at 20-5-8 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-7=-60, 8-12=-20  
Concentrated Loads (lb)  
Vert: 8=747

- 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 17-3-12, Exterior(2E) 17-3-12 to 20-3-12 zone; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10



March 29, 2024

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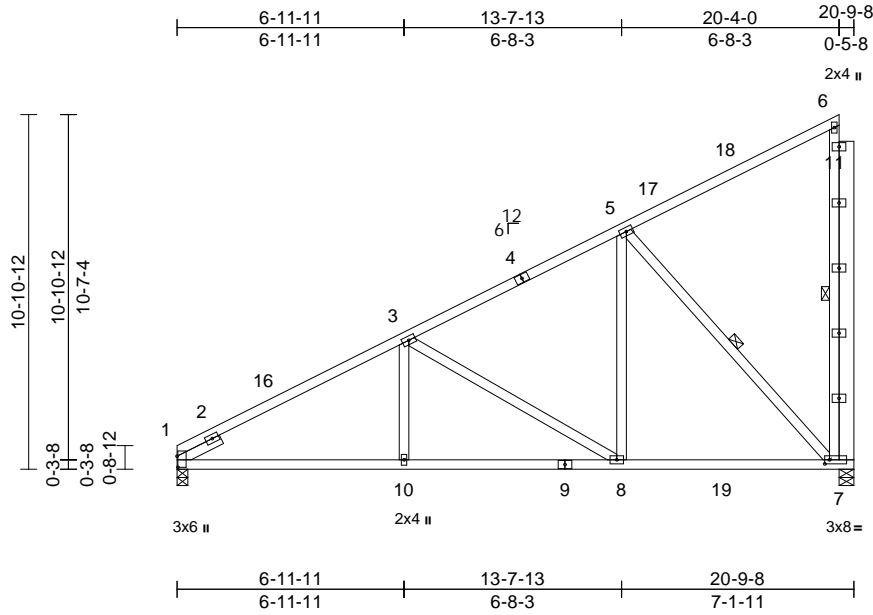
818 Soundside Road  
Edenton, NC 27932

Job 24030108-01	Truss C02	Truss Type Half Hip	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	I64569228
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:11  
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Page: 1



Scale = 1:70.8

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

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	0.92	Vert(LL)	-0.10	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.17	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.64	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 146 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3 \*Except\* 11-7:2x6 SP No.2,  
 6-7:2x4 SP No.2  
 SLIDER Left 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 10-0-0 oc  
 bracing.  
 WEBS 1 Row at midpt 6-7, 5-7

**REACTIONS**

(size) 1=0-4-0, 7=0-5-8  
 Max Horiz 1=370 (LC 14)  
 Max Uplift 1=-29 (LC 14), 7=-343 (LC 14)  
 Max Grav 1=896 (LC 5), 7=1717 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum  
 Tension  
 TOP CHORD 1-3=-1328/28, 3-5=-803/0, 5-6=-152/81  
 BOT CHORD 1-10=-409/1130, 8-10=-316/1130,  
 7-8=-157/661  
 WEBS 6-7=-251/89, 3-10=0/254, 5-8=0/593,  
 5-7=-972/229, 3-8=-562/184

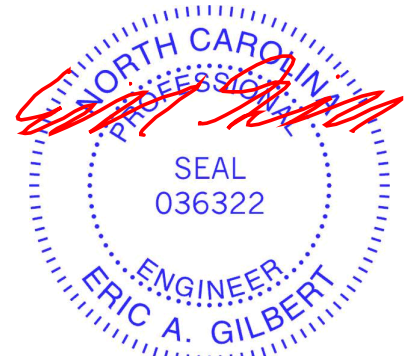
**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
 Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat.  
 II; Exp B; Enclosed; MWFRS (envelope) exterior zone  
 and C-C Exterior(2E) 0-1-8 to 3-1-8, Interior (1) 3-1-8 to  
 17-3-12, Exterior(2E) 17-3-12 to 20-3-12 zone; C-C for  
 members and forces & MWFRS for reactions shown;  
 Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15  
 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate  
 DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9;  
 Cs=1.00; Ct=1.10

- 3) Unbalanced snow loads have been considered for this design.
- 4) Provide adequate drainage to prevent water ponding.
- 5) All plates are 3x5 MT20 unless otherwise indicated.
- 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 7) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 1. This connection is for uplift only and does not consider lateral forces.
- 9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 747 lb down and 129 lb up at 20-9-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

**LOAD CASE(S)** Standard

- 1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
 Uniform Loads (lb/ft)  
 Vert: 1-6=-60, 7-12=-20  
 Concentrated Loads (lb)  
 Vert: 7=-747



March 29, 2024

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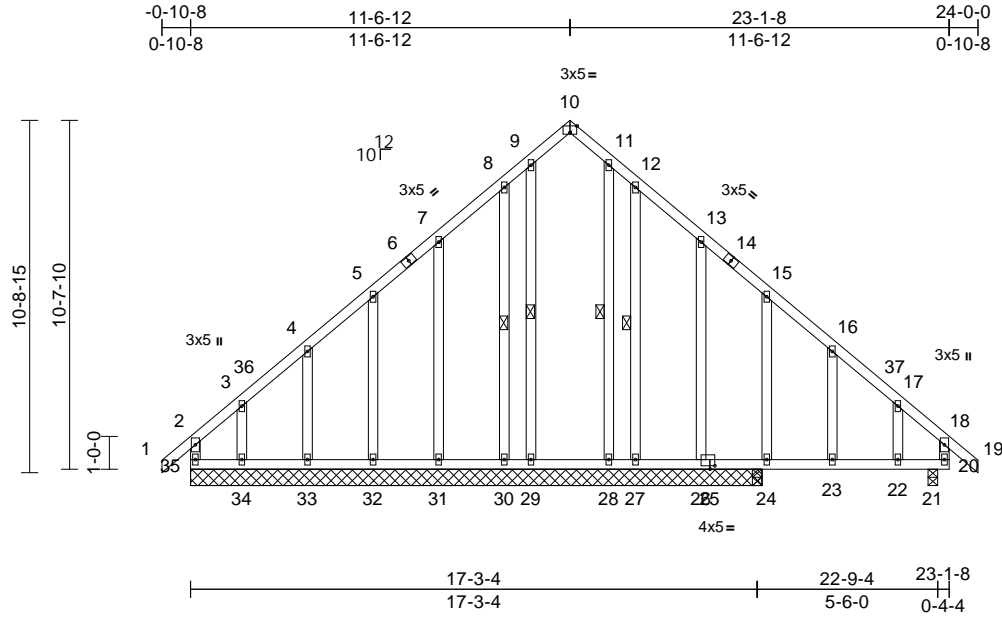
818 Soundside Road  
 Edenton, NC 27932

Job 24030108-01	Truss B03	Truss Type Common Structural Gable	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569229
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:11  
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Page: 1



Scale = 1:70.2

Plate Offsets (X, Y): [10:0-2-8,Edge], [25:0-1-12,0-1-4]

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	0.24	Vert(LL)	0.05	22-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	-0.04	22-23	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.16	Horz(CT)	0.00	21	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 188 lb	FT = 20%

LUMBER	TOP CHORD	1-2=0/38, 2-3=-289/209, 3-4=-219/164, 4-5=-218/164, 5-7=-199/191, 7-8=-197/243, 8-9=-231/343, 9-10=-158/196, 10-11=-159/197, 11-12=-233/344, 12-13=-190/232, 13-15=-189/168, 15-16=-88/59, 16-17=-137/31, 17-18=-172/26, 18-19=0/38, 2-35=-272/142, 18-20=-187/36	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
TOP CHORD	2x4 SP No.2		5) Unbalanced snow loads have been considered for this design.
BOT CHORD	2x4 SP No.2		6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
WEBS	2x4 SP No.3		7) All plates are 2x4 MT20 unless otherwise indicated.
OTHERS	2x4 SP No.3		8) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
BRACING			9) Gable studs spaced at 2-0-0 oc.
TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.		10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.		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, with BCDL = 10.0psf.
WEBS	1 Row at midpt 9-29, 11-28, 8-30, 12-27		
REACTIONS (size)	21=0-3-8, 24=17-5-0, 26=17-5-0, 27=17-5-0, 28=17-5-0, 29=17-5-0, 30=17-5-0, 31=17-5-0, 32=17-5-0, 33=17-5-0, 34=17-5-0, 35=17-5-0		
Max Horiz	35=262 (LC 12)		
Max Uplift	24=248 (LC 15), 26=-2 (LC 14), 27=-168 (LC 15), 28=-35 (LC 13), 29=-55 (LC 13), 30=-113 (LC 14), 31=-84 (LC 14), 32=-76 (LC 14), 33=-54 (LC 14), 34=-201 (LC 14), 35=-178 (LC 10)		
Max Grav	21=321 (LC 25), 24=497 (LC 31), 26=112 (LC 22), 27=211 (LC 22), 28=247 (LC 15), 29=258 (LC 15), 30=174 (LC 21), 31=211 (LC 5), 32=196 (LC 25), 33=195 (LC 25), 34=221 (LC 25), 35=349 (LC 31)		
FORCES	(lb) - Maximum Compression/Maximum Tension		
		NOTES	
		1) Unbalanced roof live loads have been considered for this design.	
		2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 8-6-12, Corner(3R) 8-6-12 to 14-6-12, Exterior(2N) 14-6-12 to 21-0-0, Corner(3E) 21-0-0 to 24-0-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60	
		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.	



March 29, 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	132 Serenity-Roof-B326 BLH COP BR4	I64569229
24030108-01	B03	Common Structural Gable	1	1	Job Reference (optional)	

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

Run: 8.73 S Mar 21 2024 Print: 8.730 S Mar 21 2024 MiTek Industries, Inc. Fri Mar 29 07:58:11  
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Page: 2

- 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 35, 29, 28, 30, 31, 32, 33, 34, 27, 26, and 24. This connection is for uplift only and does not consider lateral forces.
- 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

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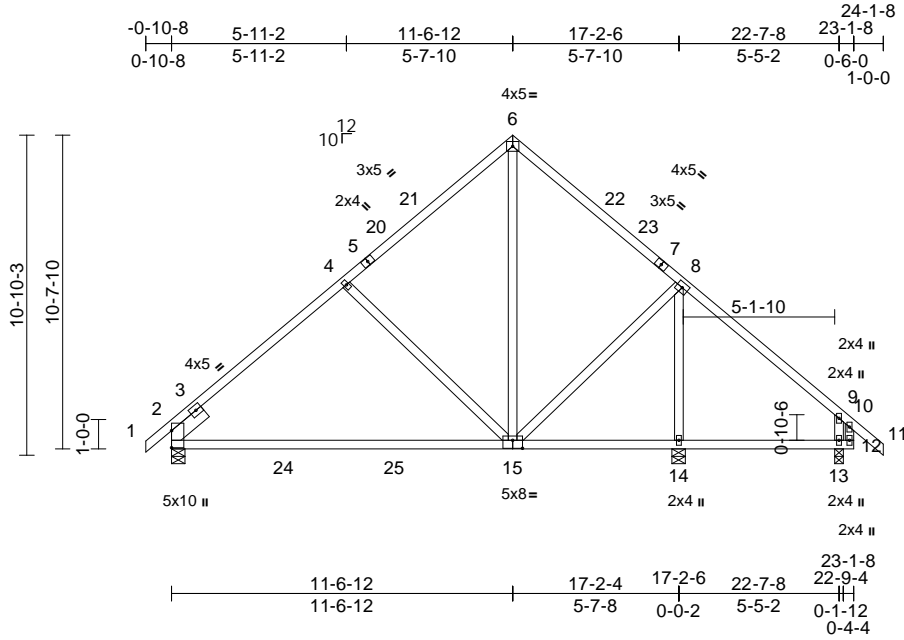
818 Soundside Road  
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	132 Serenity-Roof-B326 BLH COP BR4	I64569230
24030108-01	B01	Common	1	1	Job Reference (optional)	

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

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Page: 1



Scale = 1:78.1

Plate Offsets (X, Y): [15:0-4-0,0-3-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.65	Vert(LL)	-0.47	15-18	>442	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.86	Vert(CT)	-0.76	15-18	>272	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.47	Horz(CT)	0.07	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 134 lb	FT = 20%

**LUMBER**  
 TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3  
 SLIDER Left 2x6 SP No.2 -- 1-6-0

**BRACING**  
 TOP CHORD Structural wood sheathing directly applied or 5-6-15 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 13=0-3-8, 14=0-5-8  
 Max Horiz 2=264 (LC 13)  
 Max Uplift 2=-75 (LC 14), 13=-100 (LC 15), 14=-24 (LC 14)  
 Max Grav 2=892 (LC 5), 13=492 (LC 25), 14=901 (LC 22)

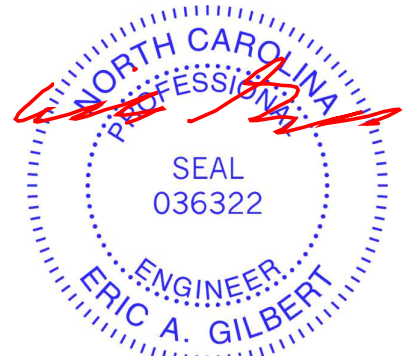
**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/34, 2-4=-1144/150, 4-6=-639/184, 6-8=-597/176, 8-9=-303/117, 9-10=-247/0, 10-11=0/44, 10-12=-224/37  
 BOT CHORD 2-14=-251/721, 13-14=0/167, 12-13=0/167  
 WEBS 6-15=-97/412, 4-15=-368/237, 8-15=-45/421, 9-13=-269/293, 8-14=-827/75

- 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, 13, and 14. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 8-6-12, Exterior(2R) 8-6-12 to 14-6-12, Interior (1) 14-6-12 to 21-1-8, Exterior(2E) 21-1-8 to 24-1-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



March 29, 2024

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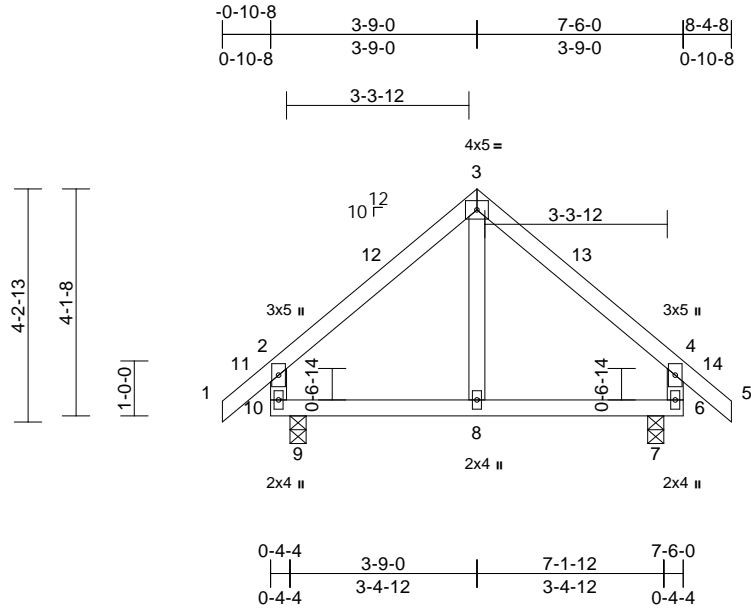


Job 24030108-01	Truss E01	Truss Type Common	Qty 1	Ply 1	132 Serenity-Roof-B326 BLH COP BR4 Job Reference (optional)	164569231
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:41.9

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	0.40	Vert(LL)	-0.01	8	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.29	Vert(CT)	-0.02	8	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	7	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR							
BCDL	10.0									Weight: 37 lb	FT = 20%

#### LUMBER

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

#### 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) 7=0-3-8, 9=0-3-8  
Max Horiz 9=-114 (LC 12)  
Max Uplift 7=-38 (LC 15), 9=-38 (LC 14)  
Max Grav 7=460 (LC 22), 9=460 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/49, 2-3=-269/93, 3-4=-269/91, 4-5=0/49, 2-10=-375/176, 4-6=-375/174  
BOT CHORD 9-10=-11/120, 8-9=-11/120, 7-8=-11/120, 6-7=-11/120  
WEBS 3-8=-26/84

#### 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, Exterior(2R) 2-1-8 to 5-4-8, Exterior(2E) 5-4-8 to 8-4-8 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.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9 and 7. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



March 29, 2024

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**TRENCO**  
A MiTek Affiliate

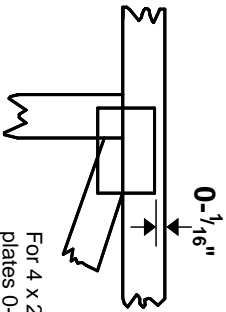
818 Soundside Road  
Edenton, NC 27932

# Symbols

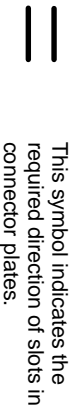
## PLATE LOCATION AND ORIENTATION



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



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



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

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

## PLATE SIZE

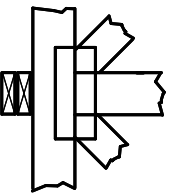
**4 X 4**  
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



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

## BEARING

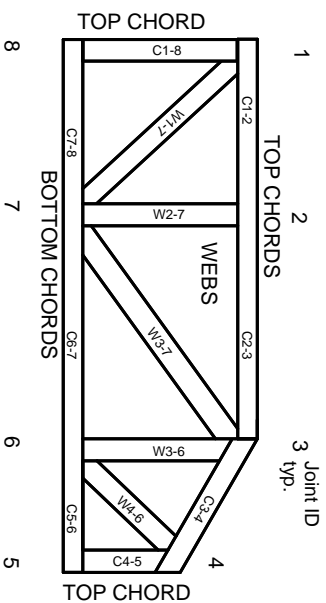


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

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

# Numbering System



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

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

# Product Code Approvals

ICC-ES Reports:

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

# Design General Notes

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

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

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# General Safety Notes

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

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

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MITek Engineering Reference Sheet: MIL-7473 rev. 1/2/2023