

Job 23070011-01	Truss A	Truss Type Attic	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707151
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8:63 S Apr 6 2023 Print: 8:630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:03

Page: 1

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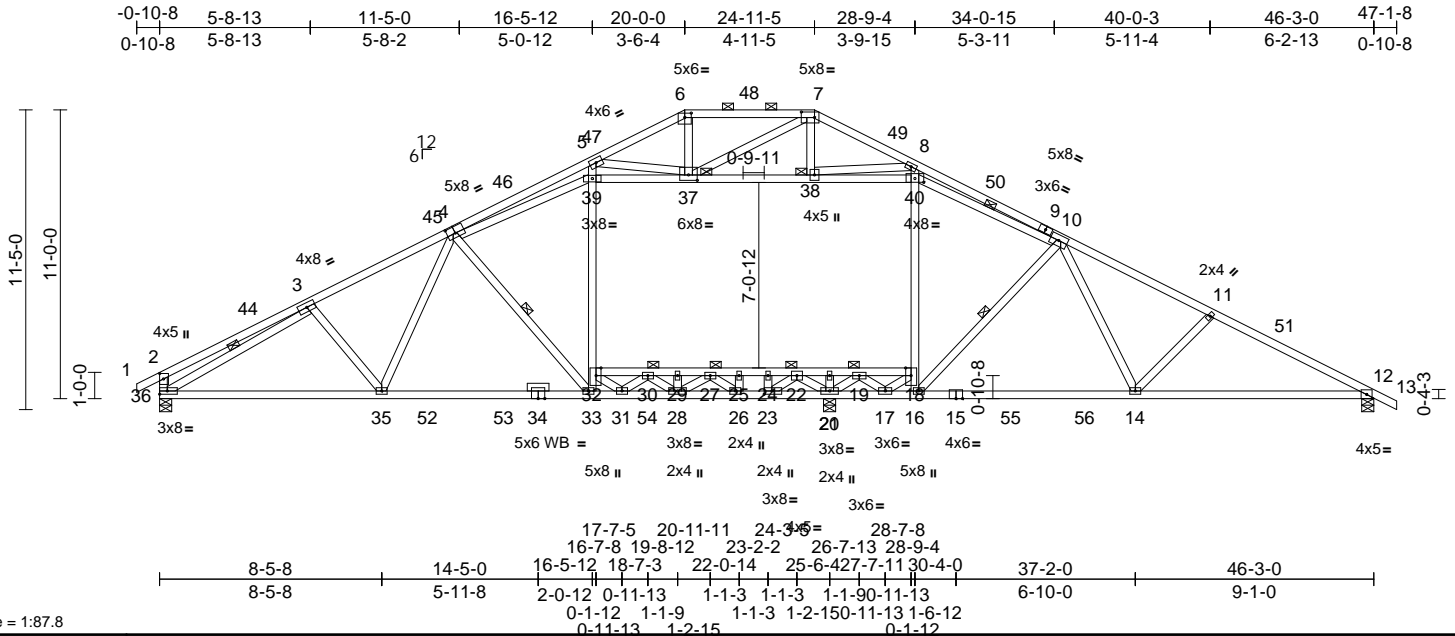


Plate Offsets (X, Y): [2:0-2-8,0-1-12], [4:0-3-12,0-3-0], [6:0-3-0,0-2-0], [7:0-6-0,0-2-8], [23:0-3-8,0-1-8], [32:Edge,0-2-4], [37:0-4-0,0-2-8], [40:0-4-0,0-1-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.79	Vert(LL)	-0.50	33-35	>608	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.90	Vert(CT)	-0.80	33-35	>379	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.12	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.31	18-32	>479	360		
BCDL	10.0											
											Weight: 338 lb	FT = 20%

LUMBER	TOP CHORD	BOT CHORD	WEBS	OTHERS	BRACING	TOP CHORD	BOT CHORD	WEBS	REACTIONS	FORCES	TOP CHORD	
2x4 SP 2400F 2.0E	2x4 SP 2400F 2.0E *Except* 32-18:2x4 SP No.1	2x4 SP No.3 *Except* 5-33:2x4 SP No.1, 8-16,39-40:2x4 SP No.2	2x4 SP No.3	Structural wood sheathing directly applied or 3-9-1 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 6-7.	Rigid ceiling directly applied or 6-0-0 oc bracing.	1 Row at midpt 4-33, 10-16, 3-36, 10-40	1 Brace at Jt(s): 37, 38, 30, 19, 27, 22	(size) 12=0-5-8, 20=0-5-8, 36=0-5-8 Max Horiz 36=-177 (LC 19) Max Uplift 12=-4 (LC 14), 36=-120 (LC 14) Max Grav 12=1763 (LC 46), 20=2210 (LC 38), 36=2074 (LC 36)	(lb) - Maximum Compression/Maximum Tension 1-2=0/27, 2-3=-585/108, 3-5=-3977/232, 5-6=-1361/149, 6-7=-1213/152, 7-8=-850/148, 8-10=-622/248, 10-11=-3060/79, 11-12=-3264/86, 12-13=0/23, 2-36=-453/136	35-36=-231/2789, 33-35=-115/2734, 31-33=-10/2605, 28-31=0/2973, 26-28=-93/2584, 23-26=-769/1912, 20-23=-1648/862, 17-20=-1140/588, 16-17=0/1854, 14-16=0/2417, 12-14=0/2891, 30-32=-620/158, 29-30=-889/661, 27-29=-889/661, 25-27=-479/1870, 24-25=-479/1870, 22-24=-479/1870, 21-22=-261/3673, 19-21=-261/3673, 18-19=0/1618	3-35=-46/200, 4-35=-28/340, 4-33=-738/206, 32-33=-38/726, 32-39=-8/1047, 5-39=0/1503, 16-18=0/864, 18-40=-345/188, 8-40=-625/97, 10-16=-639/261, 10-14=-47/635, 11-14=-362/180, 37-39=-131/1680, 37-38=-1907/135, 38-40=-2708/193, 3-36=-2772/72, 6-37=0/283, 7-38=-314/55, 5-37=-2853/185, 8-38=-71/881, 7-37=-92/897, 20-21=409/0, 28-29=-114/0, 31-32=-336/277, 30-31=-406/297, 28-30=-374/130, 17-18=-1751/59, 17-19=-237/1383, 19-20=-1515/201, 27-28=-40/669, 26-27=-1108/0, 25-26=0/408, 20-22=-1373/0, 22-23=0/1701, 23-24=-708/0, 4-39=-163/1277, 10-40=-2362/159	3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10 4) Unbalanced snow loads have been considered for this design. 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads. 6) Provide adequate drainage to prevent water ponding. 7) All plates are 3x5 MT20 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). 37-39, 37-38, 38-40; Wall dead load (5.0psf) on member(s).32-39, 18-40

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-9-0, Interior (1) 3-9-0 to 13-5-8, Exterior(2R) 13-5-8 to 31-5-13, Interior (1) 31-5-13 to 42-6-0, Exterior(2E) 42-6-0 to 47-1-8 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



Continued on page 2

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss A	Truss Type Attic	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707151
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:03  
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Page: 2

- 11) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 30-32, 29-30, 27-29, 25-27, 24-25, 22-24, 21-22, 19-21, 18-19
- 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 36 and 12. This connection is for uplift only and does not consider lateral forces.
- 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- 15) Attic room checked for L/360 deflection.

**LOAD CASE(S)** Standard

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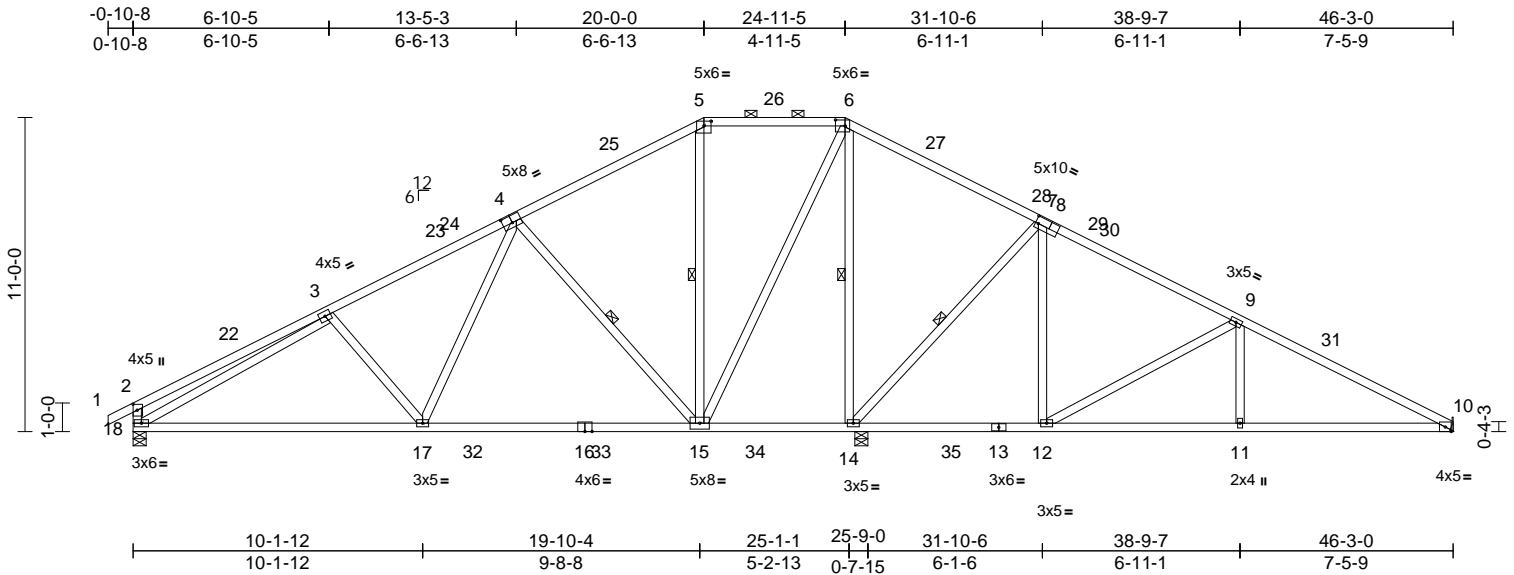
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss A1	Truss Type Piggyback Base	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707152
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:06  
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Page: 1



Scale = 1:80.7

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

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	0.94	Vert(LL)	-0.28	15-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.44	15-17	>687	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.96	Horz(CT)	0.03	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 281 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 18-16:2x4 SP No.1  
WEBS 2x4 SP No.3 \*Except\* 15-5,15-6,14-6:2x4 SP No.2

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

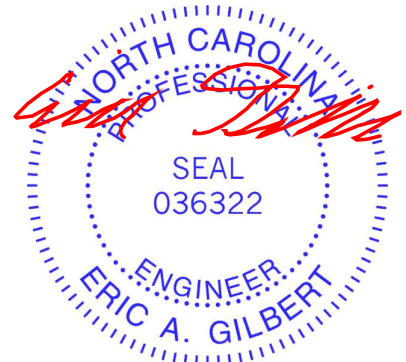
**REACTIONS** (size)  
10= Mechanical, 14=0-5-8, 18=0-5-8  
Max Horiz 18=163 (LC 19)  
Max Uplift 10=106 (LC 15), 14=-149 (LC 15), 18=137 (LC 14)  
Max Grav 10=666 (LC 38), 14=2830 (LC 46), 18=991 (LC 36)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/27, 2-3=-514/159, 3-5=-1121/199, 5-6=-154/185, 6-7=0/783, 7-9=-309/144, 9-10=-953/186, 2-18=-447/169  
BOT CHORD 17-18=-252/1078, 15-17=-118/708, 14-15=-586/247, 12-14=-57/195, 11-12=-80/804, 10-11=-80/804  
WEBS 3-17=-297/197, 4-17=-21/656, 4-15=-894/240, 5-15=-394/69, 6-15=-172/1376, 6-14=-1845/179, 7-14=-1040/234, 7-12=-1/625, 9-12=-740/191, 9-11=0/314, 3-18=-813/51

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-9-0, Interior (1) 3-9-0 to 13-2-11, Exterior(2R) 13-2-11 to 31-5-13, Interior (1) 31-5-13 to 41-7-8, Exterior(2E) 41-7-8 to 46-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 106 lb uplift at joint 10.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 14. This connection is for uplift only and does not consider lateral forces.
- H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18. This connection is for uplift only and does not consider lateral forces.

- 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.
  - Additional room checked for L/360 deflection.
- LOAD CASE(S)** Standard



July 24, 2023

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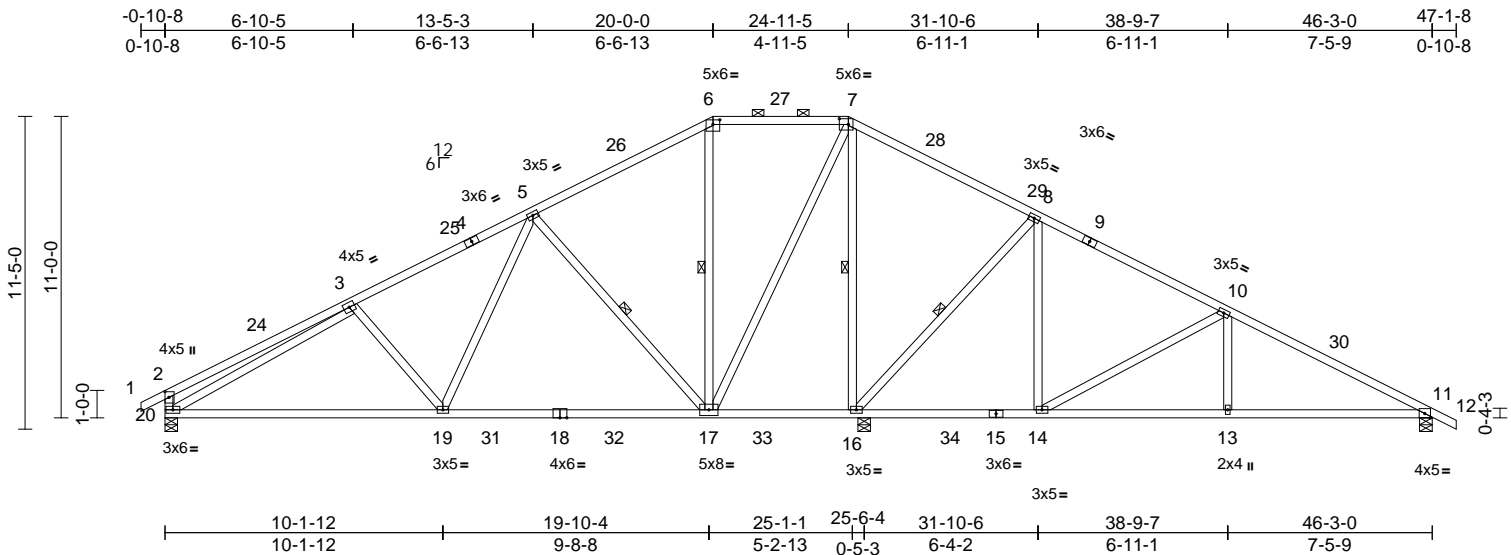
Job 23070011-01	Truss A1A	Truss Type Piggyback Base	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707153
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:06

Page: 1

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Scale = 1:84.1

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.95	Vert(LL)	-0.29	17-19	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.45	17-19	>664	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.98	Horz(CT)	0.03	11	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 282 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2 \*Except\* 20-18:2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 17-6,17-7,16-7:2x4 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 6-7.  
 BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.  
 WEBS 1 Row at midpt 5-17, 6-17, 7-16, 8-16

**REACTIONS**

(size) 11=0-5-8, 16=0-5-8, 20=0-5-8  
 Max Horiz 20=177 (LC 19)  
 Max Uplift 11=127 (LC 15), 16=-143 (LC 15), 20=-138 (LC 14)  
 Max Grav 11=709 (LC 38), 16=2841 (LC 46), 20=993 (LC 36)

**FORCES**

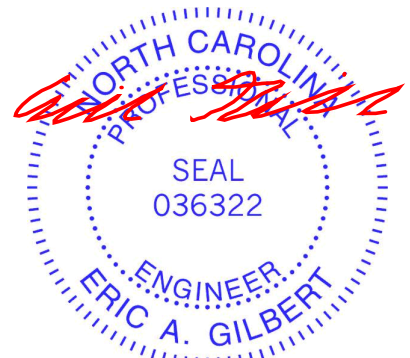
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/27, 2-3=-504/155, 3-5=-1127/202, 5-6=-277/190, 6-7=-155/193, 7-8=0/789, 8-10=-305/150, 10-11=-964/190, 11-12=0/23, 2-20=-439/176  
 BOT CHORD 19-20=-248/1086, 17-19=-108/695, 16-17=-591/255, 14-16=-62/193, 13-14=-70/797, 11-13=-70/797  
 WEBS 3-19=-306/202, 5-19=-26/668, 5-17=-894/240, 6-17=-390/63, 7-17=-170/1380, 7-16=-1854/170, 8-16=-1037/234, 8-14=0/624, 10-14=-735/188, 10-13=0/313, 3-20=-835/58

**NOTES**

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-9-0, Interior (1) 3-9-0 to 13-5-3, Exterior(2R) 13-5-3 to 31-5-13, Interior (1) 31-5-13 to 42-6-0, Exterior(2E) 42-6-0 to 47-1-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 16. This connection is for uplift only and does not consider lateral forces.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 20 and 11. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
  - Attic room checked for L/360 deflection.
- LOAD CASE(S)** Standard



July 24, 2023

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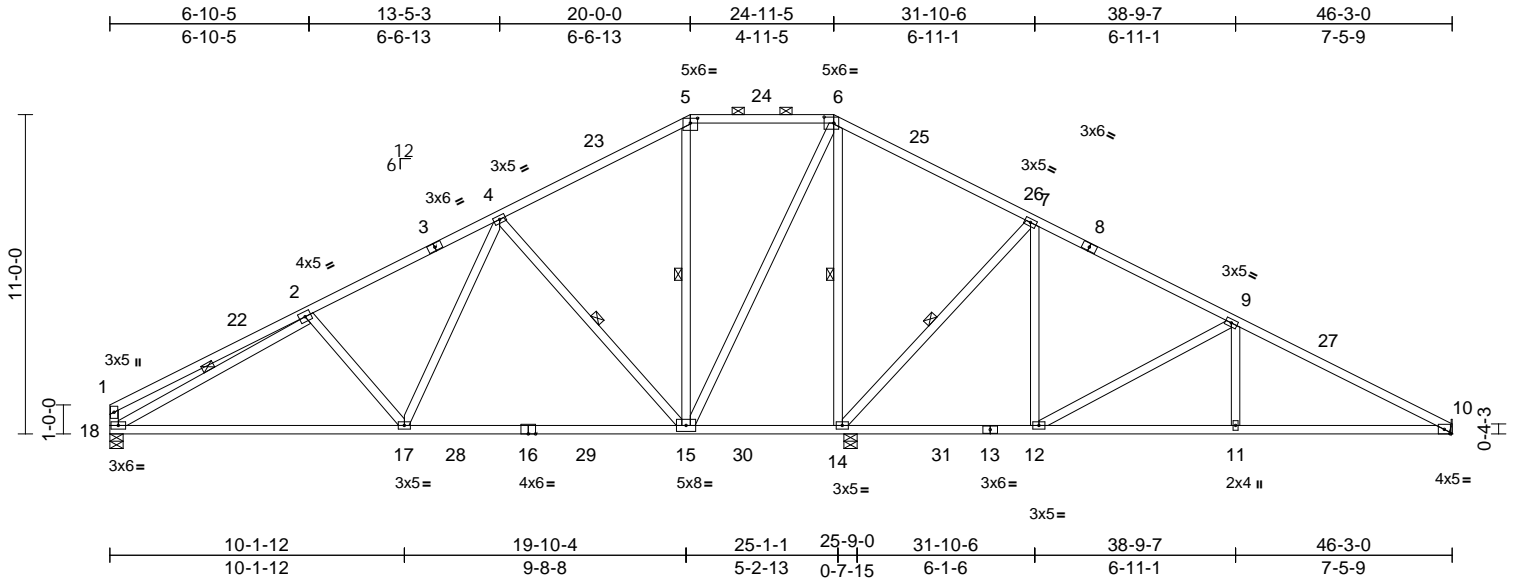
Job 23070011-01	Truss A2	Truss Type Piggyback Base	Qty 3	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707154
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:07

Page: 1

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Scale = 1:79.4

Plate Offsets (X, Y): [5:0-3-0,0-2-0], [6:0-4-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.95	Vert(LL)	-0.29	15-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.45	15-17	>663	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.97	Horz(CT)	0.03	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 279 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 16-18:2x4 SP No.1  
WEBS 2x4 SP No.3 \*Except\* 15-5,14-6,15-6:2x4 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 5-6.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.  
WEBS 1 Row at midpt 4-15, 7-14, 5-15, 6-14, 2-18

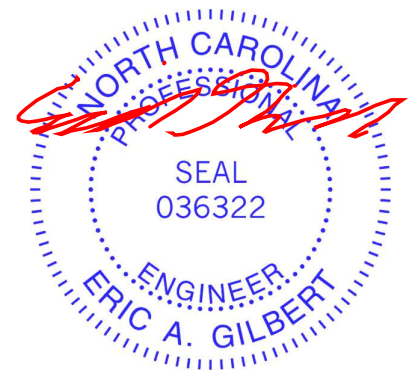
**REACTIONS** (size) 10= Mechanical, 14=0-5-8, 18=0-5-8  
Max Horiz 18=171 (LC 19)  
Max Uplift 10=106 (LC 15), 14=-151 (LC 15), 18=115 (LC 14)  
Max Grav 10=662 (LC 37), 14=2850 (LC 45), 18=932 (LC 35)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-429/96, 2-4=-1116/198, 4-5=-267/193, 5-6=-146/181, 6-7=0/797, 7-9=-300/142, 9-10=-944/184, 1-18=-327/108  
BOT CHORD 17-18=-253/1081, 15-17=-109/679, 14-15=-598/249, 12-14=-67/188, 11-12=-78/796, 10-11=-78/796  
WEBS 2-17=-317/206, 4-17=-29/676, 4-15=-885/240, 7-14=-1035/234, 7-12=-1/625, 9-12=-740/191, 9-11=0/314, 5-15=-389/66, 6-14=-1861/184, 2-18=-909/113, 6-15=-174/1385

**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) 0-1-12 to 4-9-4, Interior (1) 4-9-4 to 13-5-3, Exterior(2R) 13-5-3 to 31-5-13, Interior (1) 31-5-13 to 41-7-8, Exterior(2E) 41-7-8 to 46-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 106 lb uplift at joint 10.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 14. This connection is for uplift only and does not consider lateral forces.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
  - Attic room checked for L/360 deflection.
- LOAD CASE(S)** Standard



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
Edenton, NC 27932



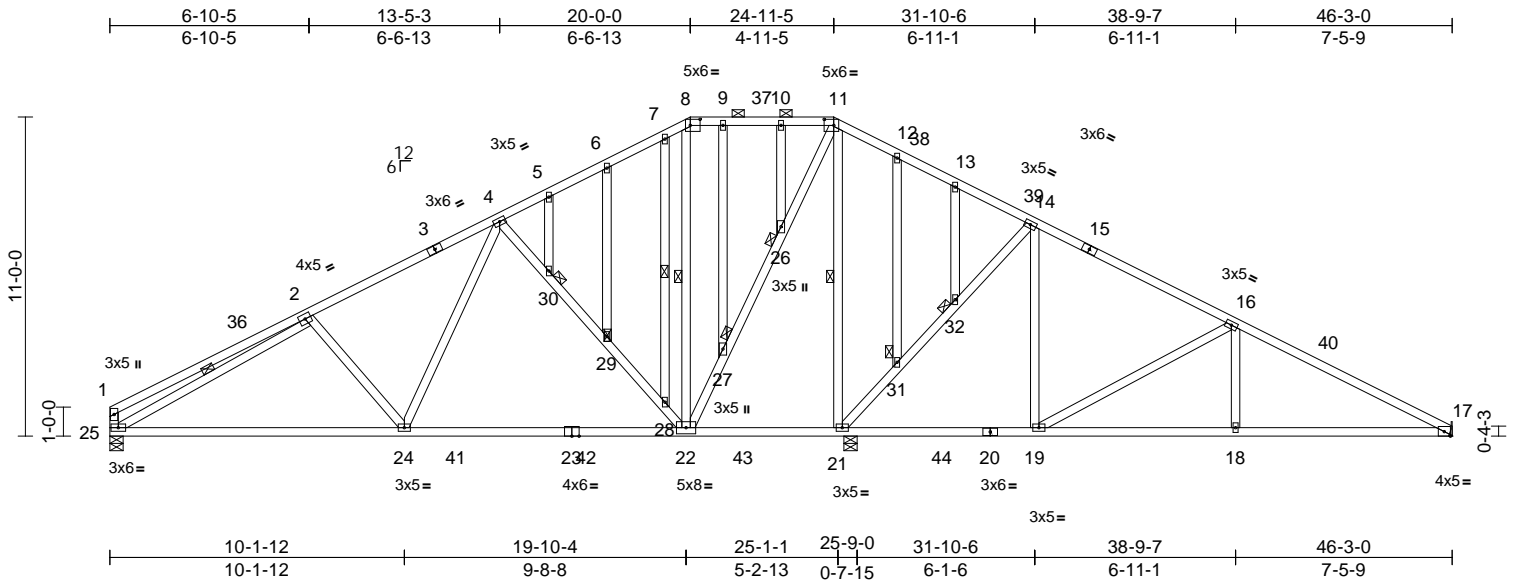
Job 23070011-01	Truss A2SE	Truss Type Piggyback Base Structural Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707155
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:07

Page: 1

ID: zcu8QfCkUFbkKPv6?I54zN8R5-RfC?PsB70Hq3NSgPqnL8w3uLTxBGKwRCDoi7J4zJC7f



Scale = 1:79.4

Plate Offsets (X, Y): [8:0-4-0,0-2-8], [11:0-4-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.75	Vert(LL)	-0.28	22-24	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.79	Vert(CT)	-0.44	22-24	>684	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.94	Horz(CT)	0.03	17	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 341 lb	FT = 20%

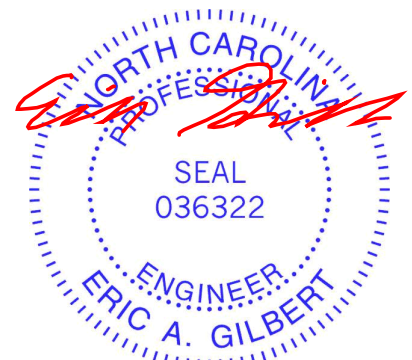
LUMBER	
TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.1 *Except* 23-20:2x4 SP No.2
WEBS	2x4 SP No.3 *Except* 22-8,22-11,21-11:2x4 SP No.2
OTHERS	2x4 SP No.3
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 4-9-15 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 8-11.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing.
WEBS	1 Row at midpt 8-22, 11-21, 2-25, 7-28
JOINTS	1 Brace at Jt(s): 26, 27, 29, 30, 31, 32
REACTIONS	(size)
	17= Mechanical, 21=0-5-8, 25=0-5-8
	Max Horiz 25=-171 (LC 19)
	Max Uplift 17=-103 (LC 15), 21=-155 (LC 15), 25=-113 (LC 14)
	Max Grav 17=663 (LC 36), 21=2847 (LC 44), 25=934 (LC 34)
FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	1-2=-429/95, 2-4=-1118/194, 4-5=-271/127, 5-6=-185/159, 6-7=-157/176, 7-8=-89/181, 8-9=-143/178, 9-10=-143/178, 10-11=-143/178, 11-12=0/770, 12-13=0/730, 13-14=0/679, 14-16=-295/135, 16-17=-966/180, 1-25=-325/107
BOT CHORD	24-25=-251/1083, 22-24=-104/676, 21-22=-598/253, 19-21=-72/180, 18-19=-75/802, 17-18=-75/802

WEBS	
	2-24=-319/209, 4-24=-31/675, 4-30=-893/239, 29-30=-845/220, 28-29=-890/244, 22-28=-928/248, 8-22=-311/54, 22-27=-175/1341, 26-27=-178/1391, 11-26=-185/1416, 11-21=-1801/172, 21-31=-1072/245, 31-32=-1016/225, 14-32=-1002/219, 14-19=-3/629, 16-19=-746/196, 16-18=0/315, 2-25=-913/112, 10-26=-69/14, 9-27=-62/2, 7-28=-54/18, 6-29=-77/32, 5-30=-25/68, 12-31=-95/27, 13-32=-25/10

**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) 0-1-12 to 4-9-4, Interior (1) 4-9-4 to 13-5-3, Exterior(2R) 13-5-3 to 31-5-13, Interior (1) 31-5-13 to 41-7-8, Exterior(2E) 41-7-8 to 46-3-0 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) Provide adequate drainage to prevent water ponding.
- 7) All plates are 2x4 MT20 unless otherwise indicated.
- 8) Gable studs spaced at 2-0-0 oc.

- 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 103 lb uplift at joint 17.
- 13) H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 21. This connection is for uplift only and does not consider lateral forces.
- 14) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 25. This connection is for uplift only and does not consider lateral forces.
- 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.



July 24, 2023

Continued on page 2

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
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Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707155
23070011-01	A2SE	Piggyback Base Structural Gable	1	1	Job Reference (optional)	

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

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Page: 2

16) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



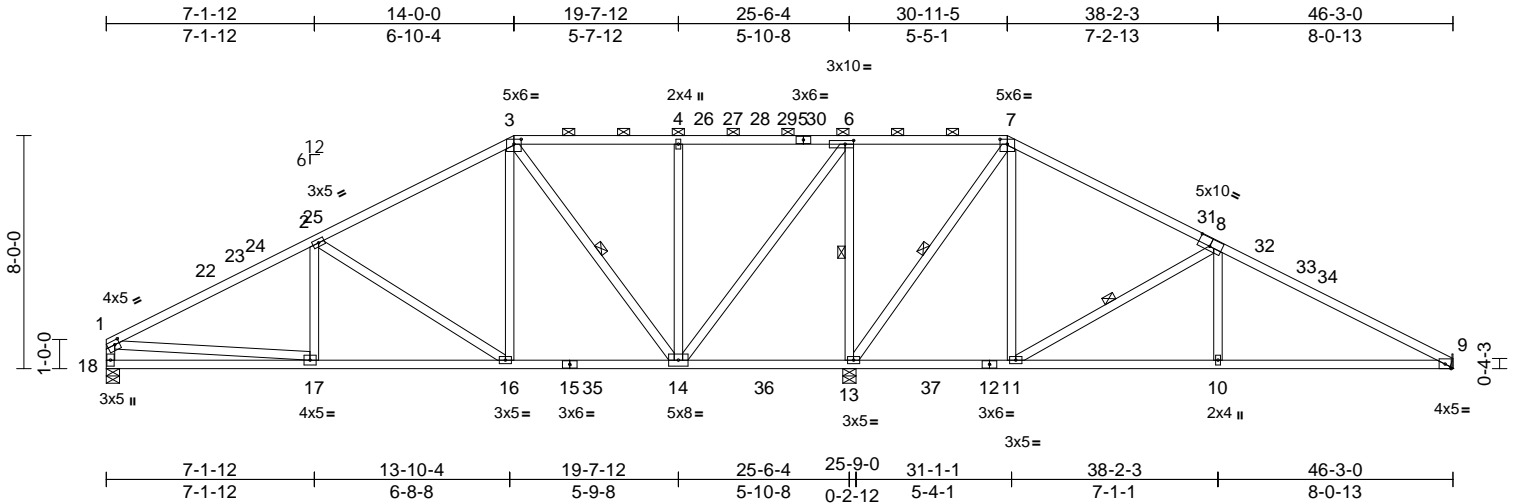
818 Soundside Road  
 Edenton, NC 27932

Job 23070011-01	Truss A3	Truss Type Hip	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707156
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:08  
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Page: 1



Scale = 1:79.1

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

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	0.94	Vert(LL)	-0.15	10-21	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.79	Vert(CT)	-0.30	10-21	>832	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.93	Horz(CT)	0.02	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 274 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2 \*Except\* 7-8,8-9:2x4 SP No.1

BOT CHORD 2x4 SP No.2

WEBS 2x4 SP No.3

**BRACING**

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

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

6-0-0 oc bracing: 13-14,11-13.

WEBS 1 Row at midpt 3-14, 6-13, 7-13, 8-11

**REACTIONS** (size) 9= Mechanical, 13=0-5-8, 18=0-5-8

Max Horiz 18=123 (LC 19)

Max Uplift 9=116 (LC 15), 13=147 (LC 15), 18=129 (LC 14)

Max Grav 9=723 (LC 42), 13=2602 (LC 43), 18=998 (LC 34)

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

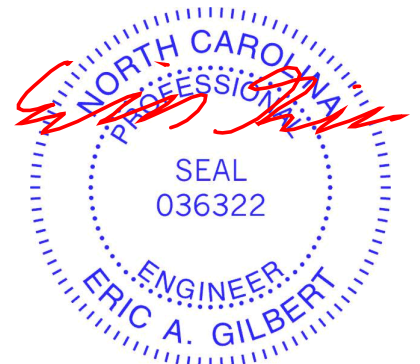
TOP CHORD 1-2=-1453/209, 2-3=-806/198, 3-4=-244/157, 4-6=-244/157, 6-7=0/807, 7-9=-1080/248, 1-18=-911/166

BOT CHORD 17-18=-141/315, 16-17=-207/1231, 14-16=-56/632, 13-14=-807/199, 11-13=-173/129, 10-11=-91/898, 9-10=-87/908

WEBS 2-17=0/237, 2-16=-776/178, 3-16=-24/651, 3-14=-838/101, 4-14=-540/155, 6-14=-186/1390, 6-13=-1546/230, 7-13=-1259/131, 7-11=-36/737, 8-11=-1005/224, 8-10=0/342, 1-17=-66/977

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-1-12 to 4-9-4, Interior (1) 4-9-4 to 7-5-8, Exterior(2R) 7-5-8 to 20-6-8, Interior (1) 20-6-8 to 24-4-13, Exterior(2R) 24-4-13 to 37-5-13, Interior (1) 37-5-13 to 41-7-8, Exterior(2E) 41-7-8 to 46-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 116 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18 and 13. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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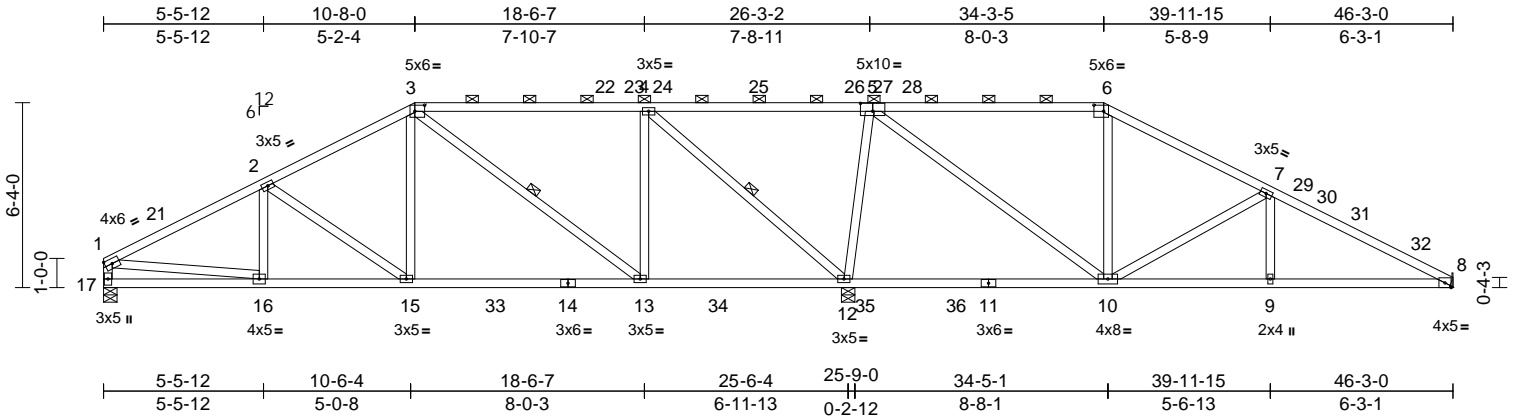


Job 23070011-01	Truss A4	Truss Type Hip	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707157
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:79

Plate Offsets (X, Y): [3:0-4-0,0-2-8], [5:0-5-0,0-3-4], [6:0-4-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.90	Vert(LL)	-0.18	10-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.67	Vert(CT)	-0.32	10-12	>782	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.90	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 253 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-2-13 oc purlins, except end verticals, and 2-0-0 oc purlins (2-4-4 max.): 3-6.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:  
 6-0-0 oc bracing: 10-12.  
 WEBS 1 Row at midpt 3-13, 4-12

**REACTIONS**

(size) 8= Mechanical, 12=0-5-8, 17=0-5-8  
 Max Horiz 17=97 (LC 19)  
 Max Uplift 8=-121 (LC 15), 12=-191 (LC 10), 17=-135 (LC 14)  
 Max Grav 8=830 (LC 42), 12=2610 (LC 43), 17=1069 (LC 34)

**FORCES**

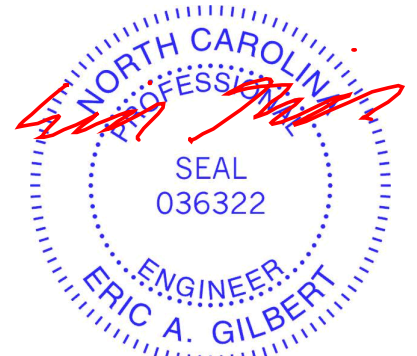
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-1502/218, 2-3=-1093/220, 3-4=-515/177, 4-6=-418/786, 6-7=-605/183, 7-8=-1354/230, 1-17=-986/164  
 BOT CHORD 16-17=-96/246, 15-16=-206/1270, 13-15=-104/909, 12-13=-79/578, 10-12=-646/159, 9-10=-134/1148, 8-9=-134/1148  
 WEBS 2-16=-60/97, 2-15=-520/123, 3-15=0/552, 3-13=-652/68, 4-13=0/686, 4-12=-1654/228, 5-12=-1239/268, 5-10=-121/1246, 6-10=-273/98, 7-10=-843/178, 7-9=0/225, 1-16=-111/1062

**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) 0-1-12 to 4-9-4, Exterior(2R) 4-9-4 to 17-2-8, Interior (1) 17-2-8 to 27-8-13, Exterior (2R) 27-8-13 to 40-9-13, Interior (1) 40-9-13 to 41-7-8, Exterior(2E) 41-7-8 to 46-3-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 121 lb uplift at joint 8.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 17 and 12. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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818 Soundside Road  
Edenton, NC 27932

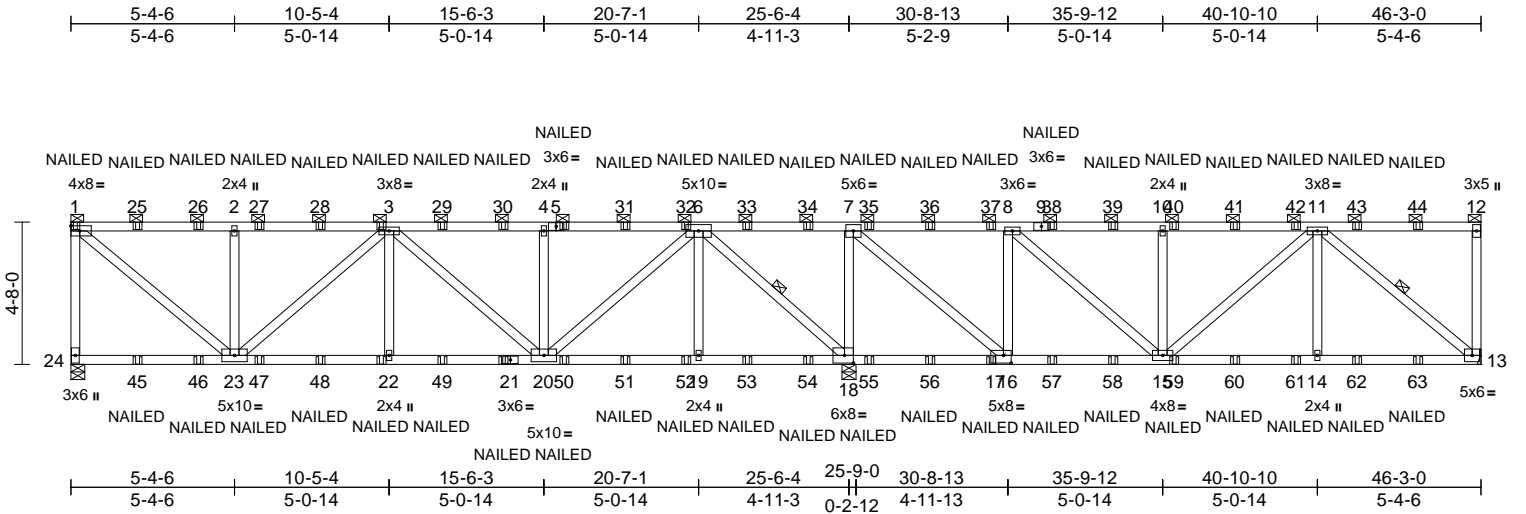
Job 23070011-01	Truss A5GR	Truss Type Flat Girder	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707158
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:12

Page: 1

ID:HjeCNLLgXZBAcW565Rxb8gzNA2n-RfC?PsB70Hq3NSgPqnL8w3u1TXbGKwRCDoi7J4zJC?f



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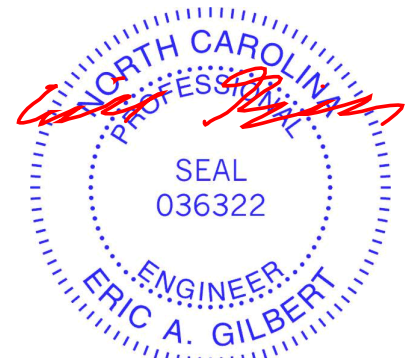
Plate Offsets (X, Y): [16:0-3-0,0-3-0], [18:0-3-8,0-3-0]

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	0.91	Vert(LL)	0.10	20-22	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.17	20-22	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.88	Horz(CT)	0.04	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 283 lb	FT = 20%

LUMBER	
TOP CHORD	2x4 SP No.1 *Except* 9-12:2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3 *Except* 23-1,16-7,13-11:2x4 SP No.2
BRACING	
TOP CHORD	2-0-0 oc purlins (4-3-8 max.): 1-12, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 4-1-15 oc bracing.
WEBS	1 Row at midpt 6-18, 11-13
REACTIONS (size)	
	13= Mechanical, 18=0-5-8, 24=0-5-8
Max Horiz	24=150 (LC 8)
Max Uplift	13=418 (LC 8), 18=1674 (LC 9), 24=615 (LC 8)
Max Grav	13=1115 (LC 1), 18=4295 (LC 1), 24=1620 (LC 1)
FORCES (lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-24=-1549/624, 1-2=-1541/617, 2-3=-1541/617, 3-4=-1629/654, 4-6=-1629/654, 6-7=-750/1833, 7-8=-96/76, 8-10=-974/427, 10-11=-974/427, 11-12=-68/52, 12-13=-216/108
BOT CHORD	23-24=-118/127, 22-23=-857/2029, 20-22=-857/2029, 19-20=-153/294, 18-19=-153/294, 16-18=-1833/731, 15-16=-45/53, 14-15=-421/1014, 13-14=-421/1014
WEBS	1-23=-785/1975, 2-23=-655/343, 3-23=-645/277, 3-22=0/274, 3-20=-529/226, 4-20=-616/320, 6-20=-704/1762, 6-19=0/270, 6-18=-2843/1119, 7-18=-2204/933, 7-16=-952/2459, 8-16=-1407/628, 8-15=-473/1219, 10-15=-582/302, 11-15=-52/23, 11-14=0/314, 11-13=-1288/503

- NOTES**
- 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.
  - Provide adequate drainage to prevent water ponding.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Refer to girder(s) for truss to truss connections.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 418 lb uplift at joint 13 and 1674 lb uplift at joint 18.
  - H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 24. This connection is for uplift only and does not consider lateral forces.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
  - Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
  - "NAILED" indicates 3-10d (0.148"x3") or 3-12d (0.148"x3.25") toe-nails per NDS guidelines.
  - In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-12=-60, 13-24=-20  
Concentrated Loads (lb)  
Vert: 1=-67, 5=-118 (B), 21=-32 (B), 3=-118 (B), 22=-32 (B), 17=-32 (B), 25=-118 (B), 26=-118 (B), 27=-118 (B), 28=-118 (B), 29=-118 (B), 30=-118 (B), 31=-118 (B), 32=-118 (B), 33=-118 (B), 34=-118 (B), 35=-118 (B), 36=-118 (B), 37=-118 (B), 38=-118 (B), 39=-118 (B), 40=-118 (B), 41=-118 (B), 42=-118 (B), 43=-118 (B), 44=-118 (B), 45=-32 (B), 46=-32 (B), 47=-32 (B), 48=-32 (B), 49=-32 (B), 50=-32 (B), 51=-32 (B), 52=-32 (B), 53=-32 (B), 54=-32 (B), 55=-32 (B), 56=-32 (B), 57=-32 (B), 58=-32 (B), 59=-32 (B), 60=-32 (B), 61=-32 (B), 62=-32 (B), 63=-32 (B)



July 24, 2023

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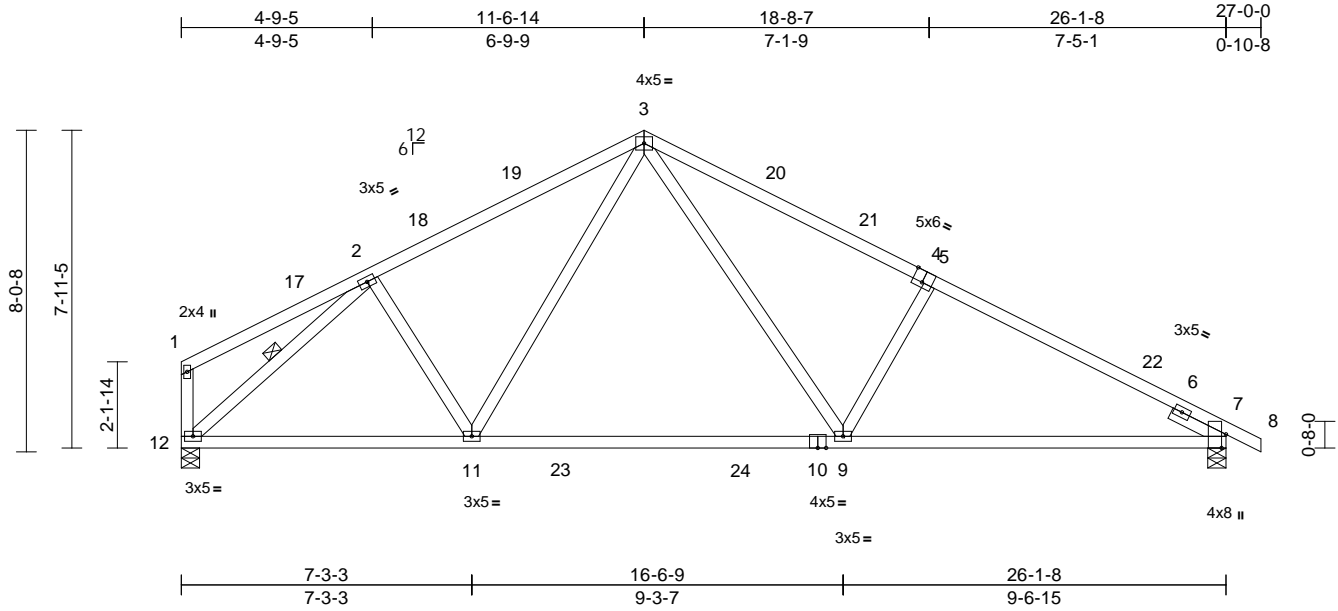
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss B	Truss Type Common	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707159
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:57.6

Plate Offsets (X, Y): [4:0-3-0,Edge], [7:0-4-1,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.92	Vert(LL)	-0.29	9-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.43	9-11	>717	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.38	Horz(CT)	0.05	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 137 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.1 \*Except\* 3-4:2x4 SP 2400F 2.0E, 4-8:2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3  
SLIDER Right 2x4 SP No.3 -- 1-6-0

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.  
WEBS 1 Row at midpt 2-12

**REACTIONS** (size) 7=0-5-8, 12=0-5-8  
Max Horiz 12=141 (LC 12)  
Max Uplift 7=-124 (LC 15), 12=-86 (LC 14)  
Max Grav 7=1203 (LC 6), 12=1150 (LC 5)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-102/75, 2-3=-1352/250, 3-5=-1697/278, 5-7=-1852/247, 7-8=0/23, 1-12=-115/61  
BOT CHORD 11-12=-120/1094, 9-11=-3/966, 7-9=-156/1603  
WEBS 2-11=-81/199, 3-11=-51/370, 3-9=-114/834, 5-9=-470/234, 2-12=-1442/155

- 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) 12 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

**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) 2-5-8 to 5-5-8, Interior (1) 5-5-8 to 10-10-10, Exterior(2R) 10-10-10 to 16-10-10, Interior (1) 16-10-10 to 26-3-12, Exterior(2E) 26-3-12 to 29-3-12 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



July 24, 2023

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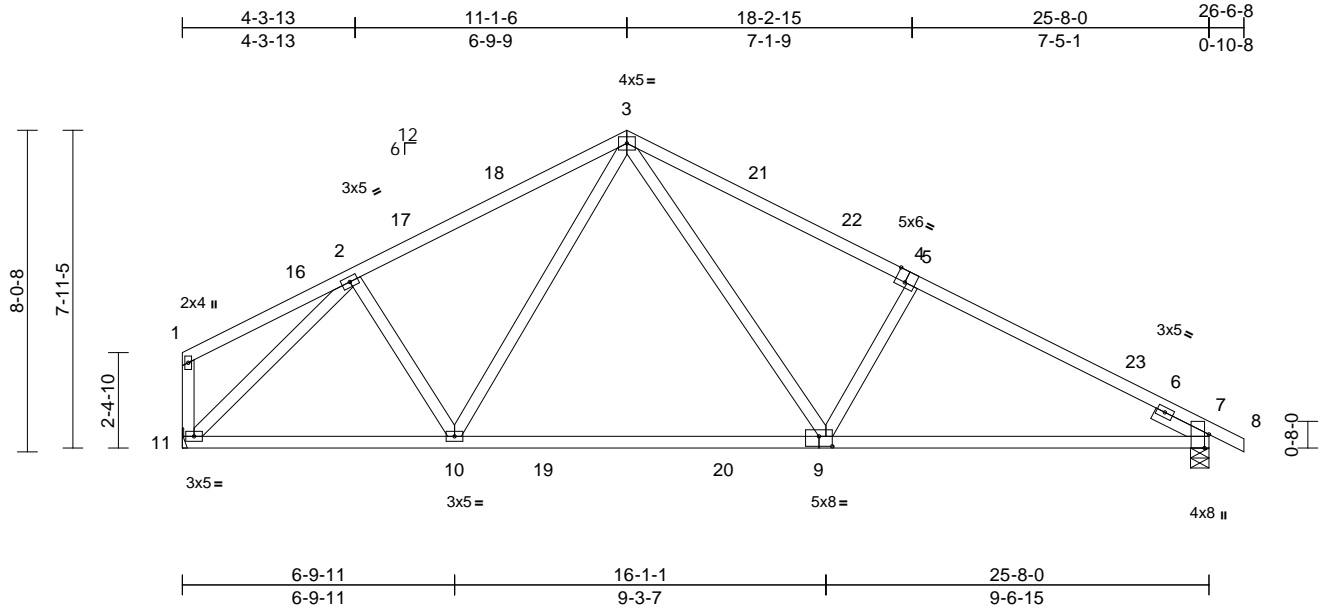
Job 23070011-01	Truss B1	Truss Type Common	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707160
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:13

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Scale = 1:57.6

Plate Offsets (X, Y): [5:0-3-0,Edge], [7:0-4-1,Edge], [9:0-4-0,0-3-0]

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	0.99	Vert(LL)	-0.26	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.40	9-10	>765	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.92	Horz(CT)	0.04	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 135 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.1 \*Except\* 4-8:2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3  
 SLIDER Right 2x4 SP No.3 -- 1-6-0

**BRACING**

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

**REACTIONS**

(size) 7=0-5-8, 11= Mechanical  
 Max Horiz 11=-147 (LC 12)  
 Max Uplift 7=-123 (LC 15), 11=-82 (LC 14)  
 Max Grav 7=1185 (LC 6), 11=1131 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-81/75, 2-3=-1271/245, 1-11=-88/52,  
 3-5=-1645/274, 5-7=-1813/249, 7-8=0/23  
 BOT CHORD 10-11=-108/994, 7-10=-158/1570  
 WEBS 2-10=-28/252, 3-10=-46/299, 3-9=-108/828,  
 5-9=-477/234, 2-11=-1391/155

**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) 2-11-0 to 5-11-0, Interior (1) 5-11-0 to 10-10-10, Exterior(2R) 10-10-10 to 16-10-10, Interior (1) 16-10-10 to 26-3-12, Exterior(2E) 26-3-12 to 29-3-12 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.
- 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 7) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 82 lb uplift at joint 11.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7. This connection is for uplift only and does not consider lateral forces.
- 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



July 24, 2023

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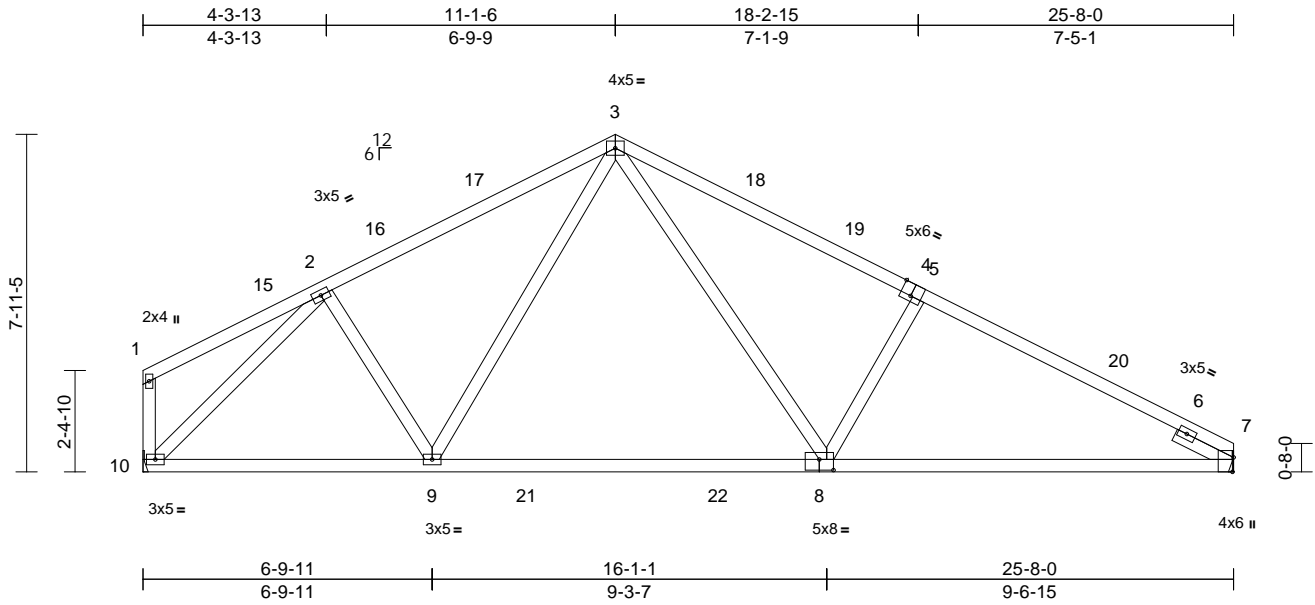


Job 23070011-01	Truss B2	Truss Type Common	Qty 8	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707161
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:54.2  
Plate Offsets (X, Y): [4:0-3-0,Edge], [7:0-4-1,Edge], [8:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.97	Vert(LL)	-0.26	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	1.00	Vert(CT)	-0.40	8-9	>767	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.92	Horz(CT)	0.04	7	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.1 \*Except\* 4-7:2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3  
SLIDER Right 2x4 SP No.3 -- 1-6-0

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

**REACTIONS** (size) 7= Mechanical, 10= Mechanical  
Max Horiz 10=-140 (LC 12)  
Max Uplift 7=-106 (LC 15), 10=-82 (LC 14)  
Max Grav 7=1140 (LC 6), 10=1131 (LC 5)

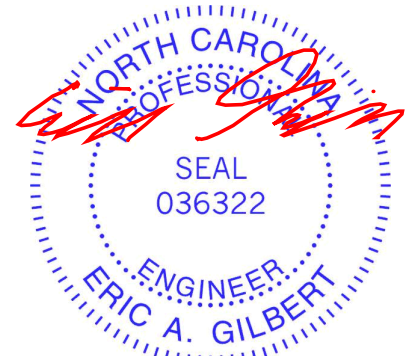
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-81/75, 2-3=-1271/246, 3-5=-1648/278, 5-7=-1816/253, 1-10=-88/52  
BOT CHORD 9-10=-114/991, 7-9=-182/1575  
WEBS 2-9=-28/252, 3-9=-46/299, 3-8=-109/832, 5-8=-479/235, 2-10=-1391/157

- 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.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 106 lb uplift at joint 7 and 82 lb uplift at joint 10.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

- 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) 2-11-0 to 5-11-0, Interior (1) 5-11-0 to 10-10-10, Exterior(2R) 10-10-10 to 16-10-10, Interior (1) 16-10-10 to 25-5-4, Exterior(2E) 25-5-4 to 28-5-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



July 24, 2023

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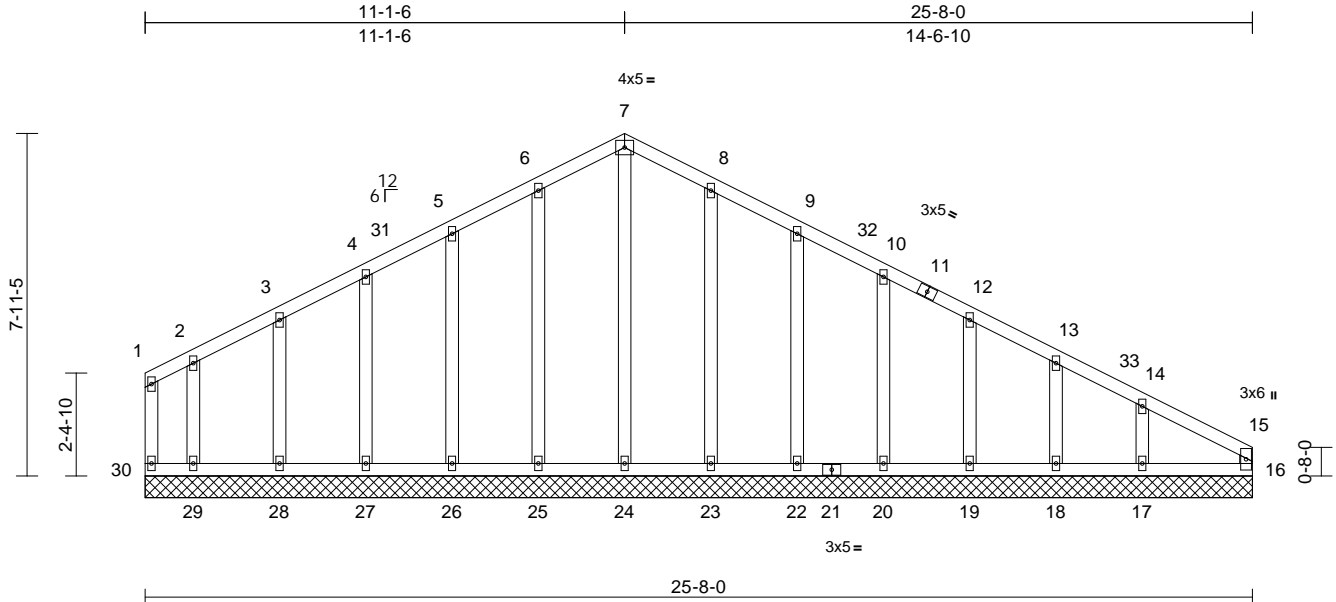


Job 23070011-01	Truss B2GE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707162
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:13  
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Page: 1



Scale = 1:53.4

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horiz(TL)	0.00	16	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 163 lb	FT = 20%

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

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

**REACTIONS** (size)  
16=25-8-0, 17=25-8-0, 18=25-8-0,  
19=25-8-0, 20=25-8-0, 22=25-8-0,  
23=25-8-0, 24=25-8-0, 25=25-8-0,  
26=25-8-0, 27=25-8-0, 28=25-8-0,  
29=25-8-0, 30=25-8-0  
Max Horiz 30=143 (LC 10)  
Max Uplift 16=29 (LC 11), 17=93 (LC 15),  
18=28 (LC 15), 19=48 (LC 15),  
20=42 (LC 15), 22=46 (LC 15),  
23=42 (LC 15), 25=41 (LC 14),  
26=46 (LC 14), 27=43 (LC 14),  
28=43 (LC 14), 29=62 (LC 14),  
30=31 (LC 15)  
Max Grav 16=114 (LC 23), 17=205 (LC 34),  
18=147 (LC 21), 19=163 (LC 34),  
20=174 (LC 21), 22=228 (LC 21),  
23=245 (LC 21), 24=176 (LC 25),  
25=245 (LC 20), 26=228 (LC 20),  
27=174 (LC 20), 28=166 (LC 1),  
29=136 (LC 23), 30=45 (LC 29)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-30=-33/29, 1-2=-43/42, 2-3=-54/100,  
3-4=-71/157, 4-5=-86/200, 5-6=-102/248,  
6-7=-118/290, 7-8=-118/290, 8-9=-102/248,  
9-10=-86/201, 10-12=-71/156,  
12-13=-85/109, 13-14=-95/84,  
14-15=-127/84, 15-16=-86/38

**BOT CHORD** 29-30=-71/118, 28-29=-71/118,  
27-28=-71/118, 26-27=-71/118,  
25-26=-71/118, 24-25=-71/118,  
23-24=-71/118, 22-23=-71/118,  
20-22=-71/118, 19-20=-71/118,  
18-19=-71/118, 17-18=-71/118,  
16-17=-71/118  
**WEBS** 7-24=-190/41, 6-25=-205/69, 5-26=-188/82,  
4-27=-134/73, 3-28=-124/103, 2-29=-97/106,  
8-23=-205/69, 9-22=-188/82, 10-20=-135/76,  
12-19=-122/80, 13-18=-112/66,  
14-17=-150/147

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 2-11-0 to 5-10-10, Exterior (2N) 5-10-10 to 10-10-10, Corner(3R) 10-10-10 to 16-10-10, Exterior(2N) 16-10-10 to 25-3-8, Corner(3E) 25-3-8 to 28-3-8 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  
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) All plates are 2x4 MT20 unless otherwise indicated.  
7) Gable requires continuous bottom chord bearing.  
8) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).

9) Gable studs spaced at 2-0-0 oc.  
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.  
11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.  
12) N/A  
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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

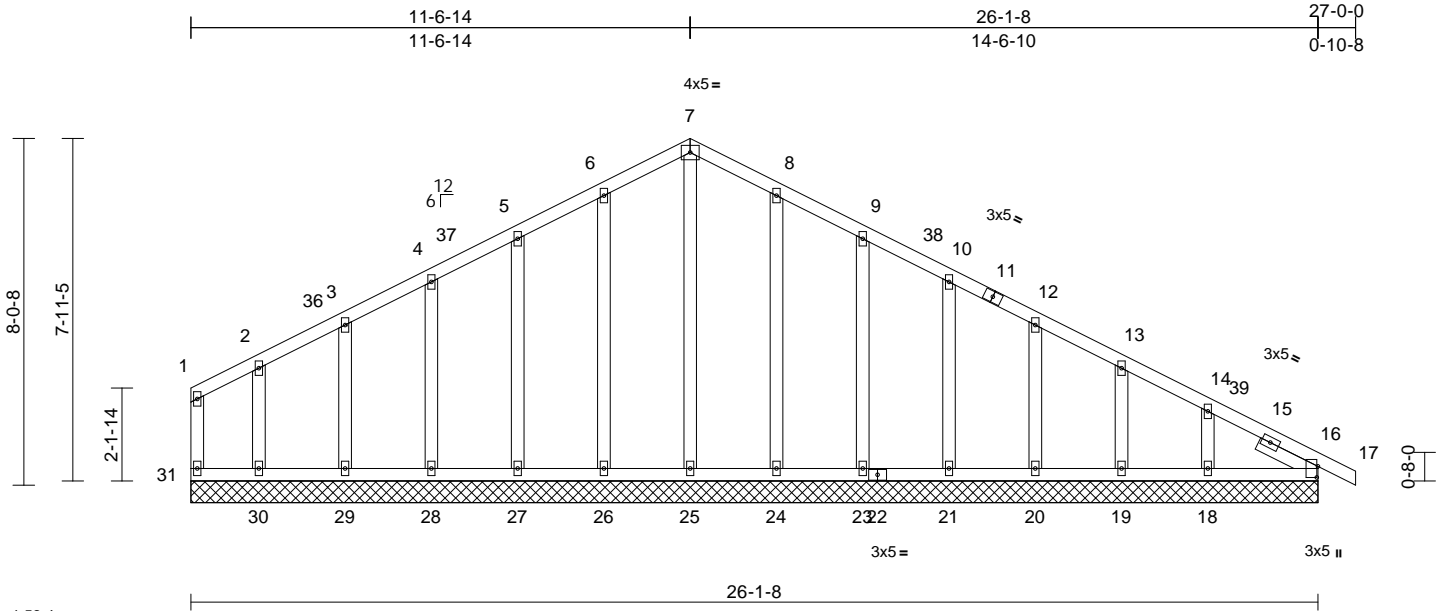


Job 23070011-01	Truss BSE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707163
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:14  
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Page: 1



Scale = 1:53.4

Plate Offsets (X, Y): [16:0-3-1,0-0-5]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	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	0.22	Horz(CT)	0.01	16	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 167 lb	FT = 20%

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

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

**REACTIONS** (size)  
16=26-1-8, 18=26-1-8, 19=26-1-8,  
20=26-1-8, 21=26-1-8, 23=26-1-8,  
24=26-1-8, 25=26-1-8, 26=26-1-8,  
27=26-1-8, 28=26-1-8, 29=26-1-8,  
30=26-1-8, 31=26-1-8, 32=26-1-8  
31=141 (LC 12)  
Max Horiz 16=38 (LC 11), 18=84 (LC 15),  
19=32 (LC 15), 20=47 (LC 15),  
21=43 (LC 15), 23=46 (LC 15),  
24=42 (LC 15), 26=40 (LC 14),  
27=46 (LC 14), 28=44 (LC 14),  
29=41 (LC 14), 30=62 (LC 14),  
31=19 (LC 15), 32=38 (LC 11)  
Max Grav 16=153 (LC 24), 18=199 (LC 35),  
19=149 (LC 22), 20=163 (LC 35),  
21=174 (LC 22), 23=228 (LC 22),  
24=245 (LC 22), 25=181 (LC 26),  
26=245 (LC 21), 27=228 (LC 21),  
28=174 (LC 21), 29=164 (LC 1),  
30=146 (LC 34), 31=51 (LC 26),  
32=153 (LC 24)

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

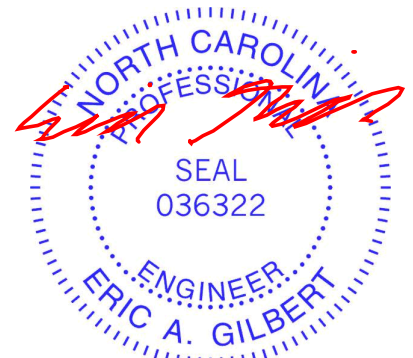
**TOP CHORD** 1-31=37/38, 1-2=39/44, 2-3=53/108,  
3-4=70/160, 4-5=85/204, 5-6=101/251,  
6-7=117/293, 7-8=117/293, 8-9=101/251,  
9-10=85/204, 10-12=71/159,  
12-13=84/113, 13-14=95/88,  
14-16=120/87, 16-17=0/23

**BOT CHORD** 30-31=61/140, 29-30=61/140,  
28-29=61/140, 27-28=61/140,  
26-27=61/140, 25-26=61/140,  
24-25=61/140, 23-24=61/140,  
21-23=61/140, 20-21=61/140,  
19-20=61/140, 18-19=61/140,  
16-18=61/140

**WEBS** 7-25=193/41, 6-26=205/69, 5-27=188/82,  
4-28=135/74, 3-29=123/92, 2-30=110/119,  
8-24=205/69, 9-23=188/82, 10-21=135/76,  
12-20=121/79, 13-19=115/70,  
14-18=140/107

**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) 2-5-8 to 5-5-8, Exterior(2N) 5-5-8 to 10-10-10, Corner(3R) 10-10-10 to 16-10-10, Exterior(2N) 16-10-10 to 26-3-12, Corner(3E) 26-3-12 to 29-3-12 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60  
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10  
5) Unbalanced snow loads have been considered for this design.  
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.  
7) All plates are 2x4 MT20 unless otherwise indicated.  
8) Gable requires continuous bottom chord bearing.  
9) Gable studs spaced at 2-0-0 oc.  
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.  
11) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.



July 24, 2023

Continued on page 2

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707163
23070011-01	BSE	Common Supported Gable	1	1	Job Reference (optional)	

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

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:14  
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Page: 2

12) N/A

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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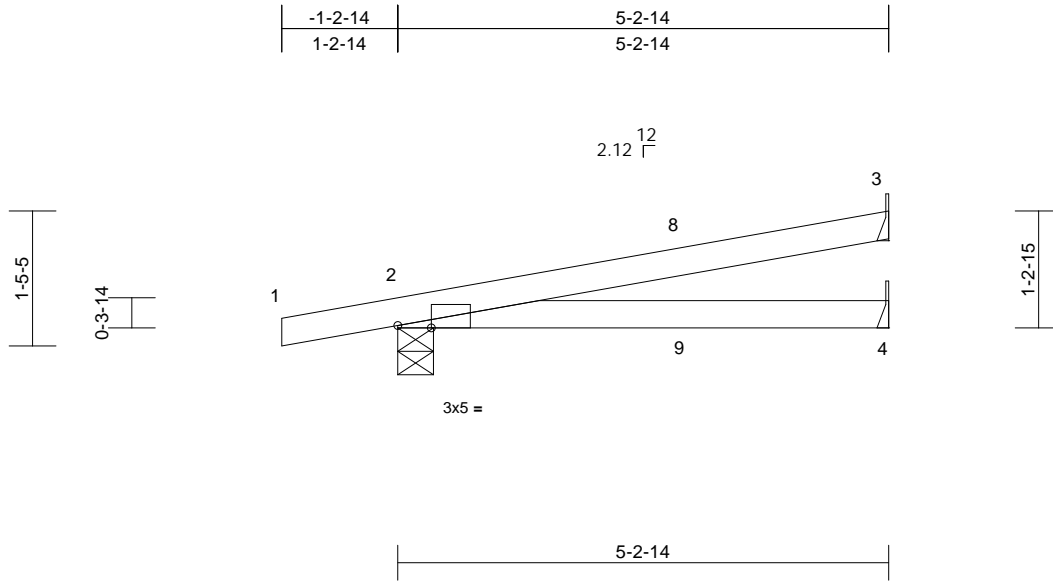


Job 23070011-01	Truss CJ1	Truss Type Jack-Open	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707165
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:14  
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Page: 1



Scale = 1:24.6

Plate Offsets (X, Y): [2:0-4-5,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	Vert(LL)	0.12	4-7	>534	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	0.09	4-7	>661	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.00	2	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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 5-2-14 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size) 2=0-4-9, 3= Mechanical, 4= Mechanical  
Max Horiz 2=44 (LC 10)  
Max Uplift 2=-126 (LC 10), 3=-52 (LC 10), 4=-24 (LC 10)  
Max Grav 2=374 (LC 21), 3=167 (LC 21), 4=90 (LC 7)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

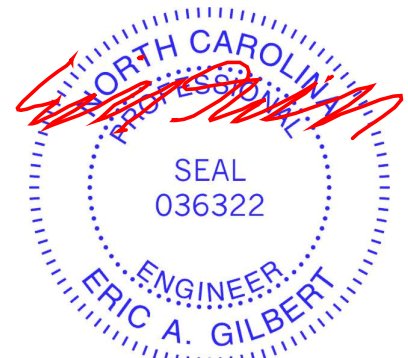
TOP CHORD 1-2=-0/17, 2-3=-202/312  
BOT CHORD 2-4=-326/184

#### 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 Corner (3) -1-2-14 to 3-0-1, Exterior(2R) 3-0-1 to 5-2-2 zone; cantilever left and right exposed; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.

- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) All bearings are assumed to be User Defined crushing capacity of 425 psi.
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 52 lb uplift at joint 3 and 24 lb uplift at joint 4.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



July 24, 2023

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**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



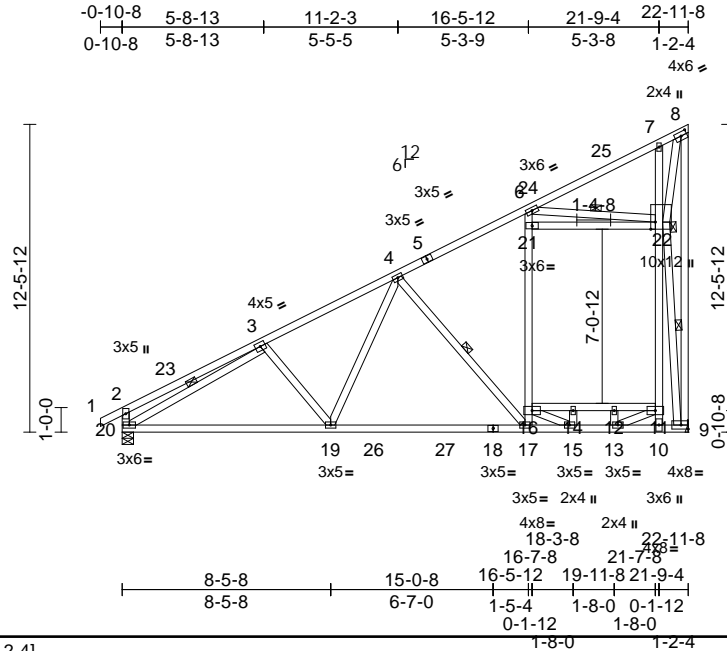
Job 23070011-01	Truss D	Truss Type Roof Special	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707166
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:14

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Scale = 1:93.4

Plate Offsets (X, Y): [8:0-2-15,0-2-0], [22:0-3-8,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.81	Vert(LL)	-0.39	17-19	>692	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.88	Vert(CT)	-0.71	17-19	>384	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.82	Horz(CT)	0.04	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.15	11-16	>425	360		
BCDL	10.0											
											Weight: 206 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.1 \*Except\* 16-11:2x4 SP No.3, 18-9:2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 8-9,21-22:2x4 SP No.2, 6-17,7-10,22-9:2x4 SP 2400F 2.0E

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-5-10 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 10-13.  
WEBS 1 Row at midpt 4-17, 3-20, 6-22, 9-22  
JOINTS 1 Brace at Jt(s): 22

**REACTIONS** (size) 9= Mechanical, 20=0-5-8  
Max Horiz 20=432 (LC 14)  
Max Uplift 9=-30 (LC 14), 20=-1 (LC 14)  
Max Grav 9=1733 (LC 5), 20=1170 (LC 5)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/27, 2-3=-396/100, 3-4=-1548/0, 4-6=-912/0, 6-7=-155/885, 7-8=-43/566, 8-9=-254/2354, 2-20=-362/137  
BOT CHORD 19-20=-327/1392, 17-19=-187/1142, 15-17=-111/1331, 13-15=0/870, 10-13=-90/12, 9-10=-34/474, 14-16=-348/0, 12-14=-348/0, 11-12=-348/0  
WEBS 3-19=-170/193, 4-19=-49/483, 4-17=-617/203, 16-17=-68/693, 16-21=0/715, 6-21=0/725, 10-11=-19/548, 11-22=0/1092, 7-22=-671/181, 21-22=-78/821, 3-20=-1301/0, 6-22=-2129/179, 14-15=-71/177, 12-13=-447/6, 15-16=-619/167, 11-13=0/1063, 9-22=-4429/319, 8-22=-2513/235

**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 19-9-12, Exterior(2E) 19-9-12 to 22-9-12 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
- 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 3x5 MT20 unless otherwise indicated.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Ceiling dead load (5.0 psf) on member(s). 21-22; Wall dead load (5.0psf) on member(s). 16-21, 11-22
- Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 14-16, 12-14, 11-12
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 30 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 20. 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.
  - Attic room checked for L/360 deflection.
- LOAD CASE(S)** Standard



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



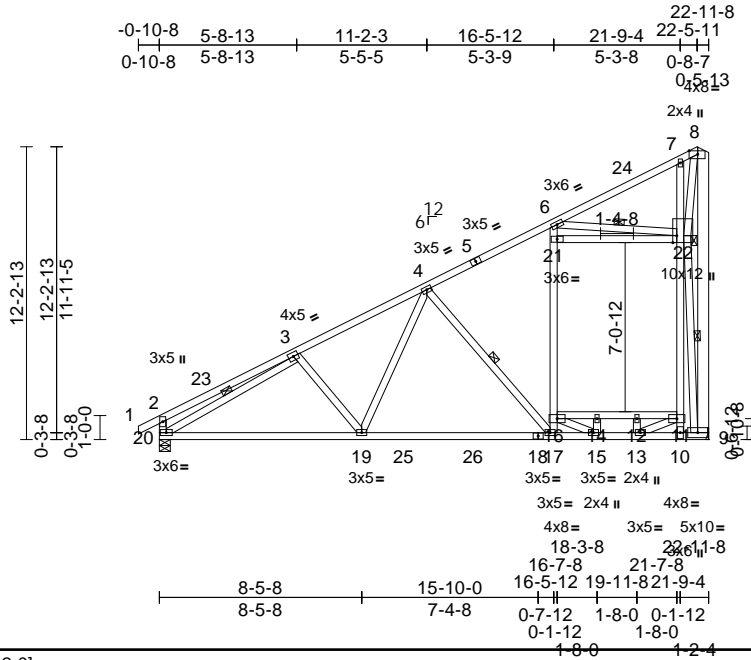
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss D1	Truss Type Attic	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707167
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:15  
ID:Fy1HrcKyGuPyxZ9iHgDKRhzN8iJ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRcDoi7J4zJC7f

Page: 1



Scale = 1:96.3  
Plate Offsets (X, Y): [8:0-4-5,Edge], [22:0-3-8,0-2-0]

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	0.83	Vert(LL)	-0.40	17-19	>678	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.72	17-19	>378	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.87	Horz(CT)	0.04	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH		Attic	-0.15	11-16	>420	360		
BCDL	10.0											
											Weight: 215 lb	FT = 20%

LUMBER	BRACING	REACTIONS	FORCES	NOTES
<b>TOP CHORD</b> 2x4 SP No.2 <b>BOT CHORD</b> 2x4 SP No.1 *Except* 16-11:2x4 SP No.3, 18-9:2x4 SP No.2 <b>WEBS</b> 2x4 SP No.3 *Except* 6-17,7-10,22-9:2x4 SP 2400F 2.0E, 21-22:2x4 SP No.2, 9-8:2x6 SP No.2	<b>TOP CHORD</b> Structural wood sheathing directly applied or 4-5-11 oc purlins, except end verticals. <b>BOT CHORD</b> Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 10-13. <b>WEBS</b> 1 Row at midpt 4-17, 3-20, 6-22, 9-22 <b>JOINTS</b> 1 Brace at Jt(s): 22	<b>(size)</b> 9= Mechanical, 20=0-5-8 <b>Max Horiz</b> 20=430 (LC 14) <b>Max Uplift</b> 9=-28 (LC 14), 20=-2 (LC 14) <b>Max Grav</b> 9=1738 (LC 5), 20=1167 (LC 5)	<b>(lb) - Maximum Compression/Maximum Tension</b> <b>TOP CHORD</b> 1-2=0/27, 2-3=-396/100, 3-4=-1542/0, 4-6=-904/0, 6-7=-155/908, 7-8=-42/599, 2-20=-362/137, 8-9=-285/2634 <b>BOT CHORD</b> 19-20=-327/1387, 17-19=-187/1136, 15-17=-110/1330, 13-15=0/877, 10-13=-103/11, 9-10=-34/464, 14-16=-361/0, 12-14=-361/0, 11-12=-361/0 <b>WEBS</b> 3-19=-171/192, 4-19=-49/485, 4-17=-619/203, 16-17=-68/691, 16-21=0/717, 6-21=0/727, 10-11=-20/517, 11-22=0/1073, 7-22=-642/182, 21-22=-77/830, 3-20=-1296/0, 6-22=-2149/179, 14-15=-71/176, 12-13=-445/5, 15-16=-614/165, 11-13=0/1088, 9-22=-4693/348, 8-22=-2840/261	1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 19-8-12, Exterior(2E) 19-8-12 to 22-8-12 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) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10 3) Unbalanced snow loads have been considered for this design. 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads. 5) 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) Ceiling dead load (5.0 psf) on member(s). 16-21, 11-22 9) Bottom chord live load (40.0 psf) and additional bottom chord dead load (5.0 psf) applied only to room. 14-16, 12-14, 11-12 10) Refer to girder(s) for truss to truss connections. 11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 28 lb uplift at joint 9. 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 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. 14) Attic room checked for L/360 deflection.

NOTES



**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

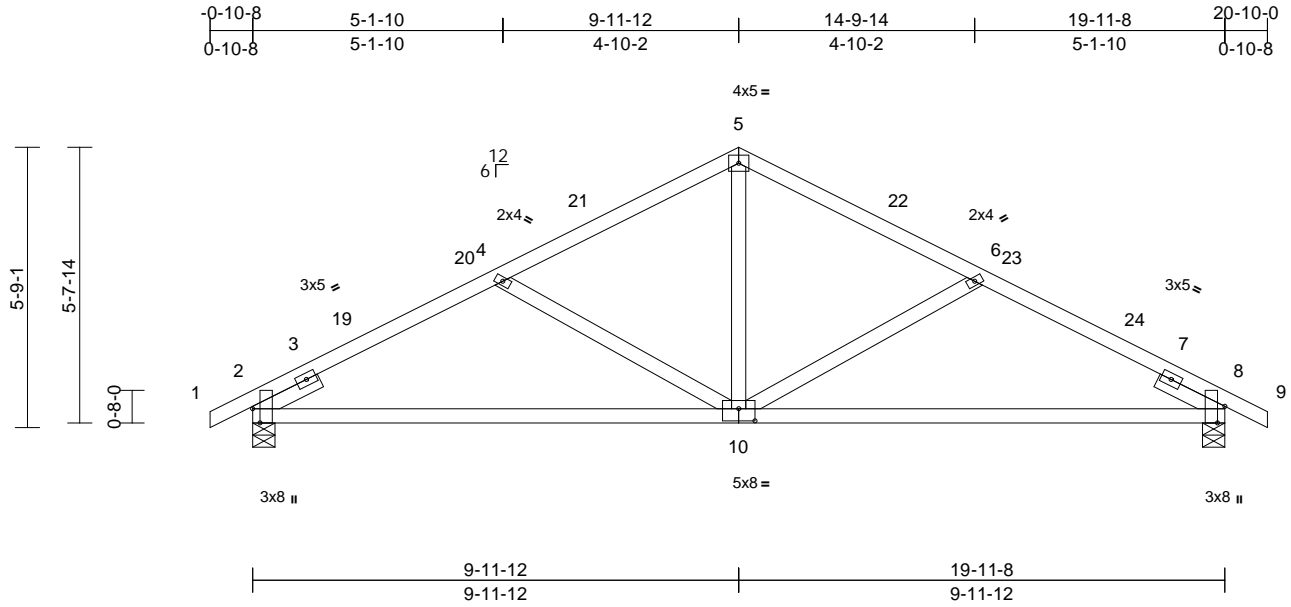
**ENGINEERING BY**  
**TRENCO**  
 A MiTek Affiliate  
 818 Soundside Road  
 Edenton, NC 27932

Job 23070011-01	Truss E	Truss Type Common	Qty 9	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707168
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:15  
ID:TUcY?D4EtpNrlg1CyUeezN9j?-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:47.3

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

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	0.53	Vert(LL)	-0.13	10-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.26	10-17	>906	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.27	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 94 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-10-7 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

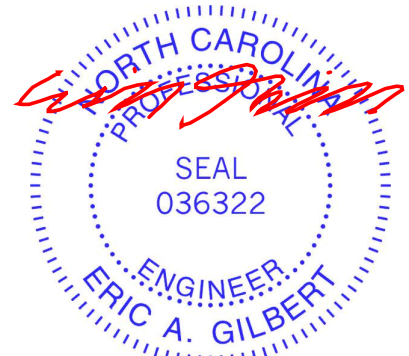
**REACTIONS** (size) 2=0-5-8, 8=0-5-8  
Max Horiz 2=-86 (LC 15)  
Max Uplift 2=-93 (LC 14), 8=-93 (LC 15)  
Max Grav 2=901 (LC 21), 8=901 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-1335/271, 4-5=-987/211, 5-6=-987/211, 6-8=-1335/271, 8-9=0/23  
BOT CHORD 2-8=-183/1156  
WEBS 5-10=-31/542, 6-10=-430/173, 4-10=-430/173

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 6-11-12, Exterior(2R) 6-11-12 to 12-11-12, Interior (1) 12-11-12 to 17-10-0, Exterior(2E) 17-10-0 to 20-10-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 8. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



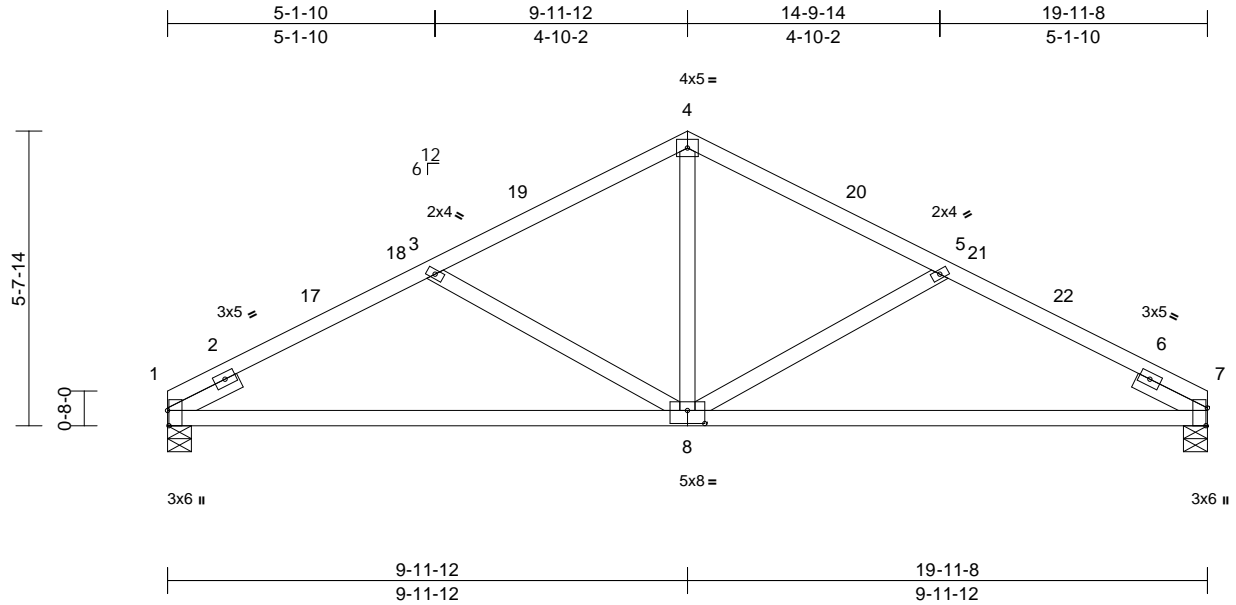
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss E1	Truss Type Common	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707169
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:15  
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Page: 1



Scale = 1:44.2

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

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	0.53	Vert(LL)	-0.13	8-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.27	8-15	>901	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.28	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 92 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.3  
 SLIDER Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

**BRACING**

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

**REACTIONS**

(size) 1=0-5-8, 7=0-5-8  
 Max Horiz 1=79 (LC 14)  
 Max Uplift 1=76 (LC 14), 7=76 (LC 15)  
 Max Grav 1=848 (LC 20), 7=848 (LC 21)

**FORCES**

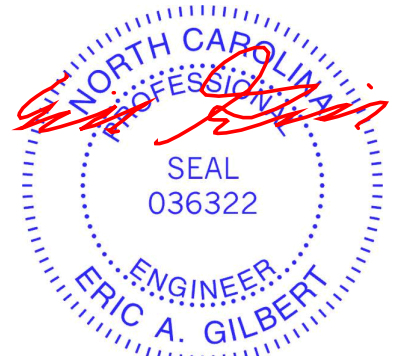
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-3=-1342/280, 3-4=-992/217, 4-5=-992/217, 5-7=-1342/280  
 BOT CHORD 1-7=-195/1164  
 WEBS 4-8=-38/544, 5-8=-435/174, 3-8=-435/174

**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, Interior (1) 3-0-0 to 6-11-12, Exterior(2R) 6-11-12 to 12-11-12, Interior (1) 12-11-12 to 16-11-8, Exterior(2E) 16-11-8 to 19-11-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 7. This connection is for uplift only and does not consider lateral forces.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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818 Soundside Road  
 Edenton, NC 27932

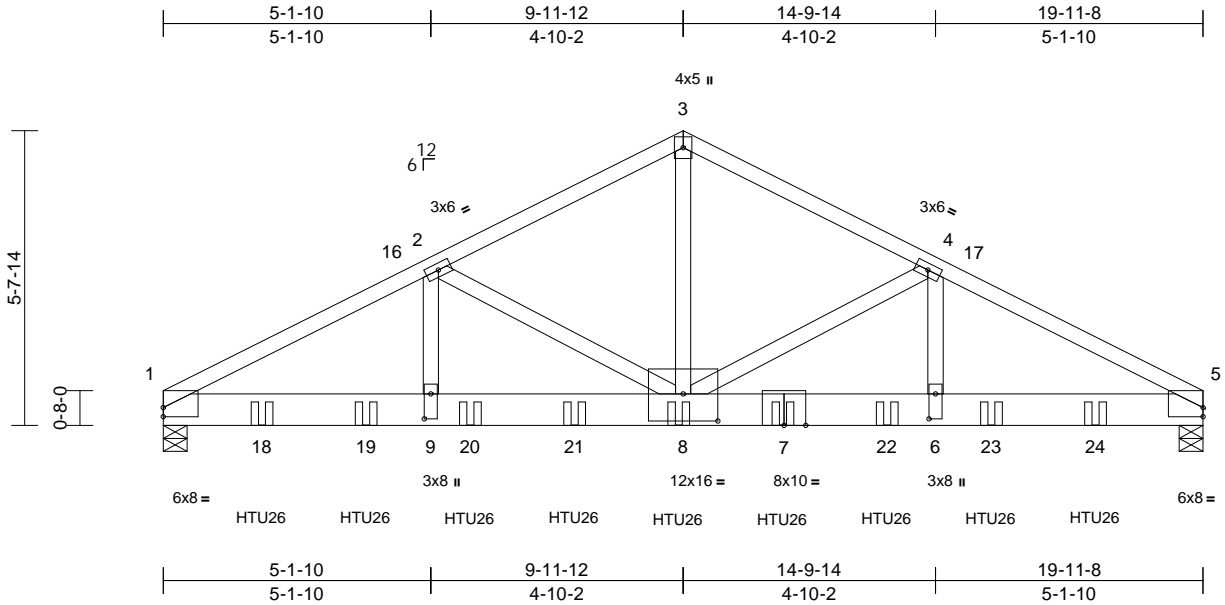


Job 23070011-01	Truss E1GR	Truss Type Common Girder	Qty 1	Ply 2	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707170
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:16  
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Page: 1



Scale = 1:44.2

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

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	0.67	Vert(LL)	-0.13	6-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.35	Vert(CT)	-0.23	6-8	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.73	Horz(CT)	0.04	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 249 lb	FT = 20%

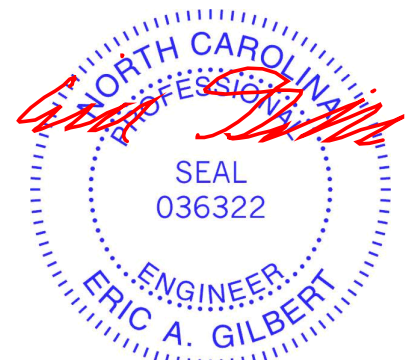
- LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x8 SP 2400F 2.0E  
WEBS 2x4 SP No.3 \*Except\* 8-3:2x4 SP No.2
- BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-8-3 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
- REACTIONS** (size) 1=0-5-8, 5=0-5-8  
Max Horiz 1=-79 (LC 38)  
Max Uplift 1=-504 (LC 12), 5=-498 (LC 13)  
Max Grav 1=5773 (LC 5), 5=5701 (LC 6)
- FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-9654/846, 2-3=-7065/646,  
3-4=-7065/646, 4-5=-9660/847  
BOT CHORD 1-9=-775/8586, 8-9=-775/8586,  
6-8=-697/8591, 5-6=-697/8591  
WEBS 3-8=-483/5974, 4-8=-2698/332,  
4-6=-141/2231, 2-8=-2692/330,  
2-9=-139/2223

- 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.
- LGT2 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.
- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 1-10-12 from the left end to 17-10-12 to connect truss(es) to back face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.
- LGT2 Hurricane ties must have two studs in line below the truss.

Concentrated Loads (lb)  
Vert: 7=-1012 (B), 8=-1012 (B), 18=-1012 (B),  
19=-1012 (B), 20=-1012 (B), 21=-1012 (B),  
22=-1012 (B), 23=-1012 (B), 24=-1012 (B)

- NOTES**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x8 - 2 rows staggered at 0-7-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
  - All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
  - Unbalanced roof live loads have been considered for this design.

- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



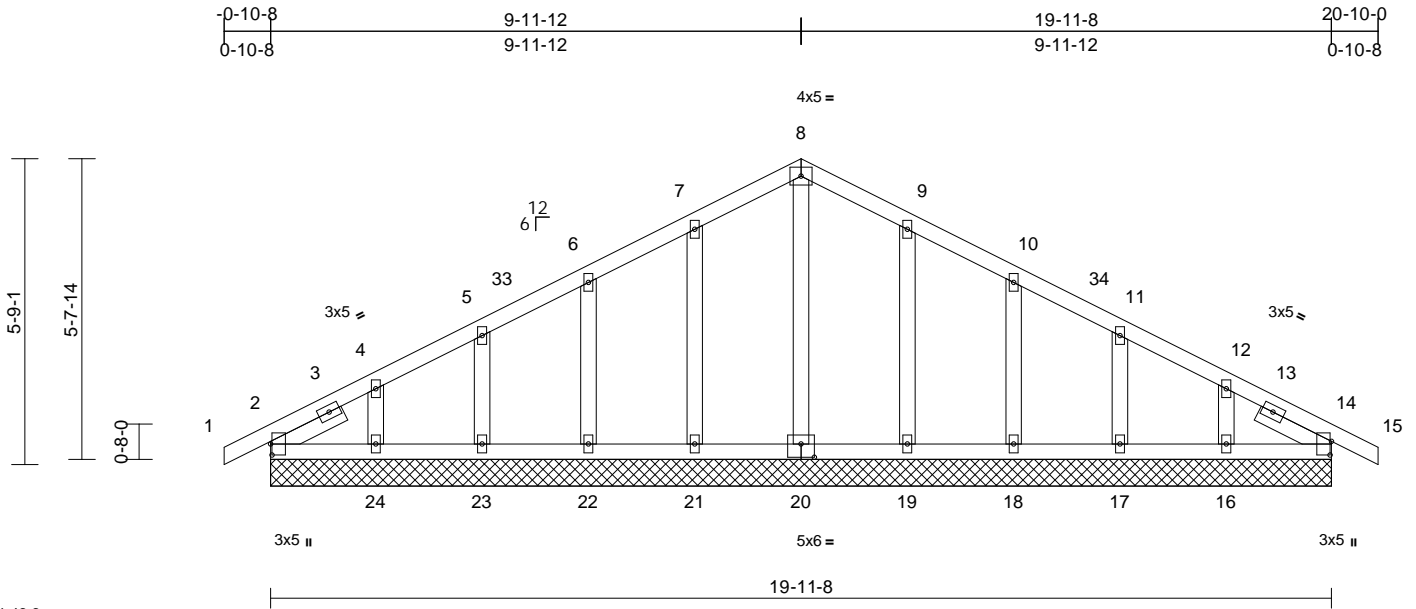


Job 23070011-01	Truss EGE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707171
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:16  
ID:EUINV6mMuY3jlg1DkUOb9zN9jP-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?F

Page: 1



Scale = 1:43.3

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [14:0-3-1,0-0-5], [20:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	0.00	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 109 lb	FT = 20%

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

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

**REACTIONS** (size)  
2=19-11-8, 14=19-11-8,  
16=19-11-8, 17=19-11-8,  
18=19-11-8, 19=19-11-8,  
20=19-11-8, 21=19-11-8,  
22=19-11-8, 23=19-11-8,  
24=19-11-8, 25=19-11-8,  
29=19-11-8  
Max Horiz 2=-86 (LC 15), 25=-86 (LC 15)  
Max Uplift 2=-15 (LC 15), 16=61 (LC 15),  
17=-40 (LC 15), 18=-45 (LC 15),  
19=45 (LC 15), 21=45 (LC 14),  
22=45 (LC 14), 23=-38 (LC 14),  
24=-69 (LC 14), 25=-15 (LC 15)  
Max Grav 2=141 (LC 21), 14=141 (LC 22),  
16=159 (LC 35), 17=175 (LC 22),  
18=228 (LC 22), 19=245 (LC 22),  
20=148 (LC 27), 21=245 (LC 21),  
22=228 (LC 21), 23=175 (LC 21),  
24=159 (LC 34), 25=141 (LC 21),  
29=141 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-4=-91/48, 4-5=-68/56,  
5-6=-51/80, 6-7=-59/121, 7-8=-65/168,  
8-9=-65/168, 9-10=-59/121, 10-11=-49/73,  
11-12=-43/27, 12-14=-54/22, 14-15=0/23

**BOT CHORD** 2-24=-13/90, 23-24=-13/90, 22-23=-13/90,  
21-22=-13/90, 19-21=-13/90, 18-19=-13/90,  
17-18=-13/90, 16-17=-13/90, 14-16=-13/90  
**WEBS** 8-20=-108/0, 7-21=-205/81, 6-22=-188/83,  
5-23=-136/79, 4-24=-115/102, 9-19=-205/81,  
10-18=-188/83, 11-17=-136/79,  
12-16=-115/102

- 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; BCCL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 1-11-12, Exterior (2N) 1-11-12 to 6-11-12, Corner(3R) 6-11-12 to 12-11-12, Exterior(2N) 12-11-12 to 17-10-0, Corner(3E) 17-10-0 to 20-10-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 15 lb uplift at joint 2, 45 lb uplift at joint 21, 45 lb uplift at joint 22, 38 lb uplift at joint 23, 69 lb uplift at joint 24, 45 lb uplift at joint 19, 45 lb uplift at joint 18, 40 lb uplift at joint 17, 61 lb uplift at joint 16 and 15 lb uplift at joint 2.
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2, 25.
  - 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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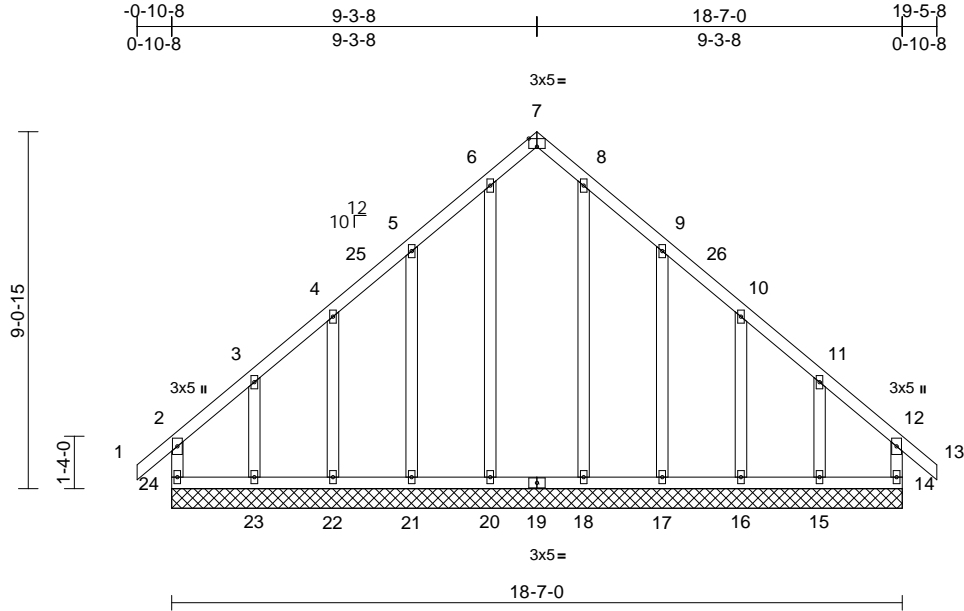
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss FGE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707172
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:16  
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Page: 1



Scale = 1:58.6

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	0.24	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.13	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.24	Horz(CT)	0.00	14	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 130 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=18-7-0, 15=18-7-0, 16=18-7-0, 17=18-7-0, 18=18-7-0, 20=18-7-0, 21=18-7-0, 22=18-7-0, 23=18-7-0, 24=18-7-0  
Max Horiz 24=237 (LC 13)  
Max Uplift 14=81 (LC 11), 15=189 (LC 15), 16=40 (LC 15), 17=129 (LC 15), 21=128 (LC 14), 22=39 (LC 14), 23=193 (LC 14), 24=96 (LC 10)  
Max Grav 14=225 (LC 24), 15=266 (LC 25), 16=189 (LC 25), 17=240 (LC 22), 18=265 (LC 6), 20=265 (LC 5), 21=240 (LC 21), 22=188 (LC 24), 23=272 (LC 24), 24=236 (LC 25)

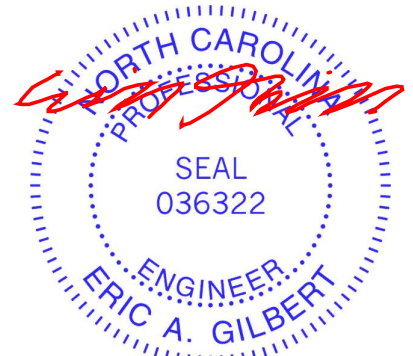
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-24=-177/78, 1-2=0/39, 2-3=-163/144, 3-4=-100/94, 4-5=-94/150, 5-6=-139/283, 6-7=-108/197, 7-8=-108/197, 8-9=-139/283, 9-10=-85/150, 10-11=-88/83, 11-12=-149/129, 12-13=0/39, 12-14=-168/67  
BOT CHORD 23-24=-117/156, 22-23=-117/156, 21-22=-117/156, 20-21=-117/156, 18-20=-117/156, 17-18=-117/156, 16-17=-117/156, 15-16=-117/156, 14-15=-117/156

**WEBS** 6-20=-208/12, 8-18=-208/12, 5-21=-202/183, 4-22=-130/87, 3-23=-164/169, 9-17=-202/183, 10-16=-130/87, 11-15=-160/169

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-4, Exterior(2N) 2-1-4 to 6-1-4, Corner(3R) 6-1-4 to 12-5-12, Exterior(2N) 12-5-12 to 16-5-8, Corner(3E) 16-5-8 to 19-5-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 96 lb uplift at joint 24, 81 lb uplift at joint 14, 128 lb uplift at joint 21, 39 lb uplift at joint 22, 193 lb uplift at joint 23, 129 lb uplift at joint 17, 40 lb uplift at joint 16 and 189 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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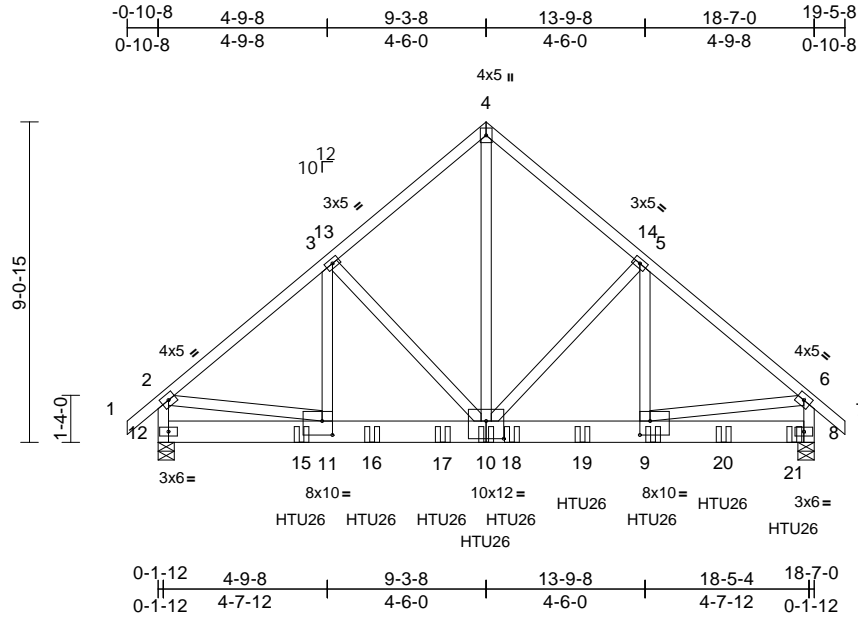
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss FGR	Truss Type Common Girder	Qty 1	Ply 2	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707173
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:17  
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Page: 1

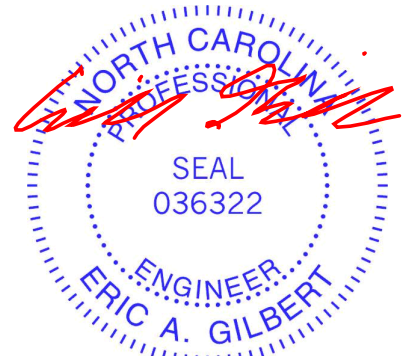


Scale = 1:65.3

Plate Offsets (X, Y): [9:0-3-8,0-4-12], [10:0-6-0,0-6-0], [11:0-3-8,0-4-12]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.65	Vert(LL)	-0.06	10-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.17	Vert(CT)	-0.09	10-11	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.79	Horz(CT)	0.01	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 311 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x4 SP No.2  
BOT CHORD 2x8 SP 2400F 2.0E  
WEBS 2x4 SP No.3
- BRACING**
- TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
- REACTIONS** (size) 8=0-5-8, 12=0-5-8  
Max Horiz 12=232 (LC 10)  
Max Uplift 8=759 (LC 13), 12=770 (LC 12)  
Max Grav 8=4329 (LC 20), 12=3726 (LC 19)
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/39, 2-3=-4299/902, 3-4=-3374/717, 4-5=-3375/717, 5-6=-4149/760, 6-7=0/39, 2-12=-3499/727, 6-8=-3368/614  
BOT CHORD 11-12=-277/510, 9-11=-687/3260, 8-9=-113/402  
WEBS 4-10=-808/3863, 5-10=-969/280, 5-9=-145/990, 3-10=-1105/439, 3-11=-352/1106, 2-11=-536/2970, 6-9=-432/2795
- NOTES**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x8 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
  - All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
  - Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Bearing at joint(s) 12, 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
  - LGT2 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 12 and 8. This connection is for uplift only and does not consider lateral forces.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
  - 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 4-0-12 from the left end to 18-0-4 to connect truss(es) to front face of bottom chord.
  - Fill all nail holes where hanger is in contact with lumber.
  - LGT2 Hurricane ties must have two studs in line below the truss.



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
Edenton, NC 27932

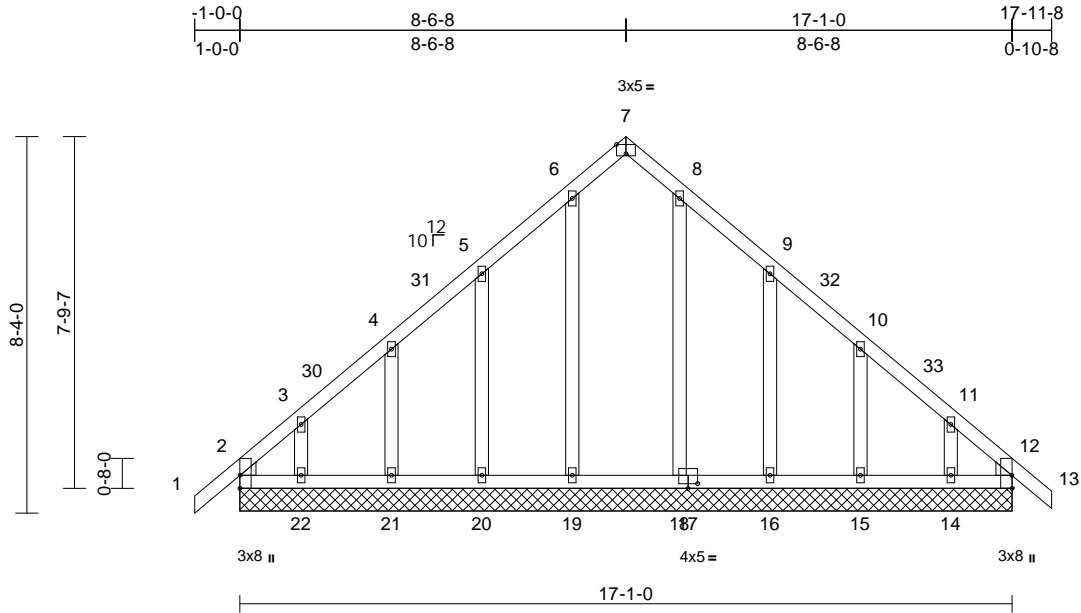
Job 23070011-01	Truss GGE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707174
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:17

Page: 1

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Scale = 1:51

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

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	0.08	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 108 lb	FT = 20%

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

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

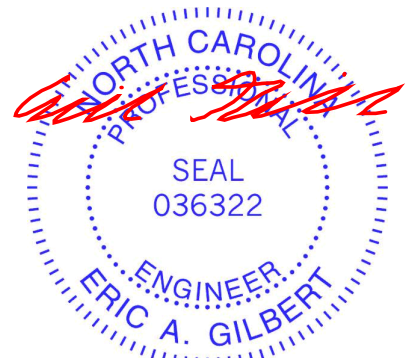
**REACTIONS** (size)  
2=17-1-0, 12=17-1-0, 14=17-1-0, 15=17-1-0, 16=17-1-0, 18=17-1-0, 19=17-1-0, 20=17-1-0, 21=17-1-0, 22=17-1-0, 23=17-1-0, 27=17-1-0  
Max Horiz 2=186 (LC 13), 23=186 (LC 13)  
Max Uplift 2=-32 (LC 12), 12=-20 (LC 13), 14=-127 (LC 15), 15=-66 (LC 15), 16=-96 (LC 15), 18=-7 (LC 15), 19=-19 (LC 14), 20=-93 (LC 14), 21=-67 (LC 14), 22=-127 (LC 14), 23=-32 (LC 12), 27=-20 (LC 13)  
Max Grav 2=211 (LC 26), 12=196 (LC 27), 14=181 (LC 25), 15=209 (LC 25), 16=245 (LC 22), 18=250 (LC 6), 19=250 (LC 5), 20=245 (LC 21), 21=210 (LC 24), 22=178 (LC 24), 23=211 (LC 26), 27=196 (LC 27)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/38, 2-3=-260/124, 3-4=-182/98, 4-5=-114/68, 5-6=-108/51, 6-7=-93/71, 7-8=-93/71, 8-9=-108/40, 9-10=-104/47, 10-11=-167/79, 11-12=-263/121, 12-13=0/34

**BOT CHORD** 2-22=-122/266, 21-22=-80/266, 20-21=-80/266, 19-20=-80/266, 18-19=-80/266, 16-18=-80/266, 15-16=-80/266, 14-15=-80/266, 12-14=-80/266  
**WEBS** 6-19=-189/47, 8-18=-189/35, 5-20=-207/139, 4-21=-137/115, 3-22=-114/132, 9-16=-207/139, 10-15=-136/115, 11-14=-115/138

- 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) -1-0-0 to 2-0-0, Exterior(2N) 2-0-0 to 5-4-4, Corner(3R) 5-4-4 to 11-8-12, Exterior(2N) 11-8-12 to 14-11-8, Corner(3E) 14-11-8 to 17-11-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 2-0-0 oc.

- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 32 lb uplift at joint 2, 20 lb uplift at joint 12, 19 lb uplift at joint 19, 7 lb uplift at joint 18, 93 lb uplift at joint 20, 67 lb uplift at joint 21, 127 lb uplift at joint 22, 96 lb uplift at joint 16, 66 lb uplift at joint 15, 127 lb uplift at joint 14, 32 lb uplift at joint 2 and 20 lb uplift at joint 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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 ANSITPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
Edenton, NC 27932

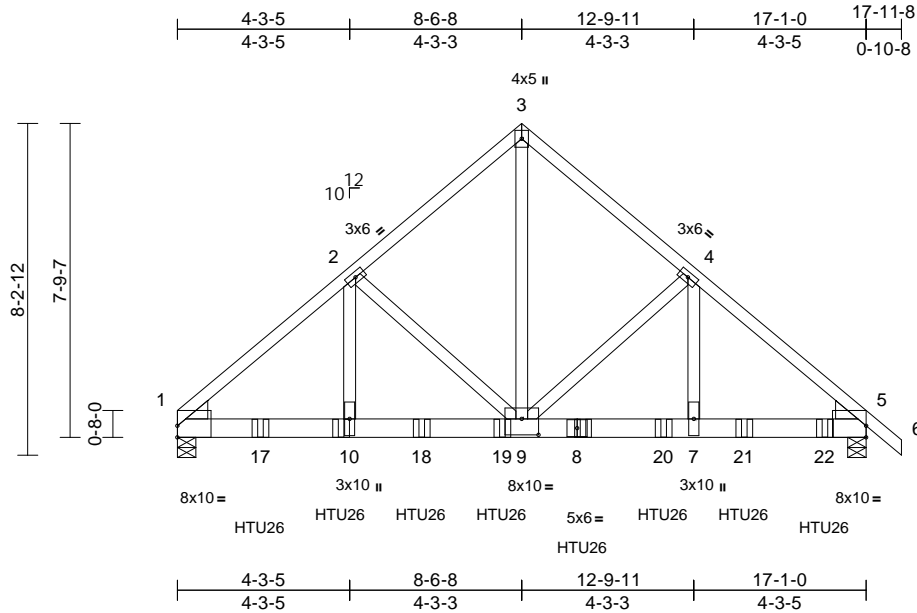


Job 23070011-01	Truss GGR	Truss Type Common Girder	Qty 1	Ply 2	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707175
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:17  
ID:wjlhZ15f8a710LuvdXqYzN95D-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCdoi7J4zJC?f

Page: 1



Scale = 1:57.1

Plate Offsets (X, Y): [1:Edge,0-3-7], [5:Edge,0-3-7], [9:0-5-0,0-4-12]

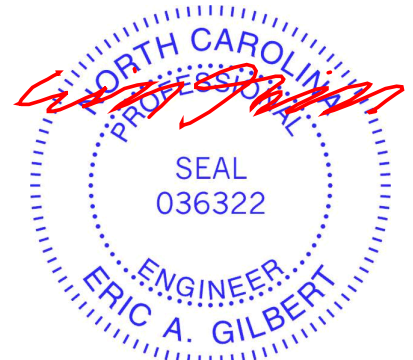
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.41	Vert(LL)	-0.08	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.95	Vert(CT)	-0.15	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.64	Horz(CT)	0.03	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 229 lb	FT = 20%

LUMBER	
TOP CHORD	2x4 SP No.2
BOT CHORD	2x6 SP No.2
WEBS	2x4 SP No.3 *Except* 9-3:2x4 SP No.2
WEDGE	Left: 2x6 SP No.2 Right: 2x6 SP No.2
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 4-10-11 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=-178 (LC 36)
Max Uplift	1=-493 (LC 12), 5=-569 (LC 13)
Max Grav	1=4849 (LC 5), 5=5449 (LC 6)
FORCES	
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-6213/653, 2-3=-4399/538, 3-4=-4401/539, 4-5=-6239/656, 5-6=0/34
BOT CHORD	1-10=-523/4712, 9-10=-523/4712, 7-9=-442/4741, 5-7=-442/4741
WEBS	3-9=-585/5224, 4-9=-1936/329, 4-7=-196/2237, 2-9=-1897/326, 2-10=-193/2208

- NOTES**
- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-8-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-7-0 oc.
  - All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- LGT2 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.
- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 2-0-12 from the left end to 16-0-12 to connect truss(es) to back face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.
- LGT2 Hurricane ties must have two studs in line below the truss.

- LOAD CASE(S)** Standard
- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-6=-60, 11-14=-20  
Concentrated Loads (lb)  
Vert: 8=-1036 (B), 10=-1036 (B), 17=-1036 (B),  
18=-1036 (B), 19=-1036 (B), 20=-1036 (B),  
21=-1036 (B), 22=-1036 (B)



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

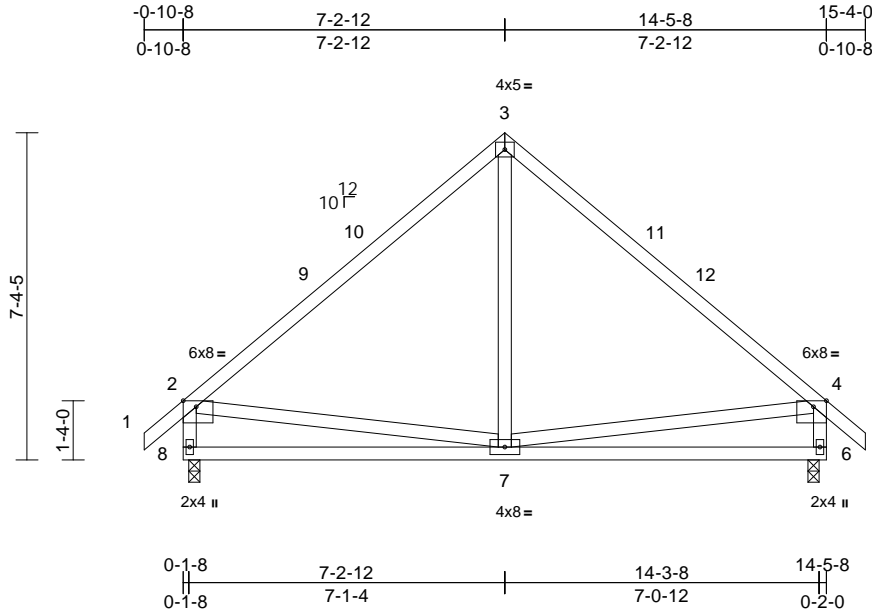


Job 23070011-01	Truss H	Truss Type Common	Qty 4	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707176
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:51.8

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.93	Vert(LL)	-0.05	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.45	Vert(CT)	-0.10	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horz(CT)	0.01	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 87 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 6=0-3-0, 8=0-3-0  
 Max Horiz 8=-197 (LC 12)  
 Max Uplift 6=-56 (LC 15), 8=-56 (LC 14)  
 Max Grav 6=702 (LC 22), 8=702 (LC 21)

**FORCES**

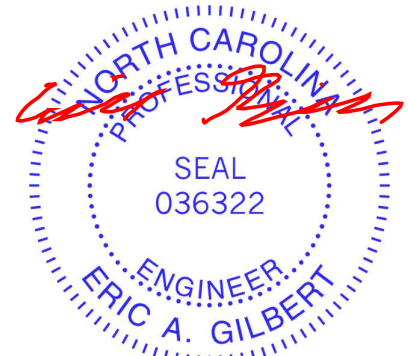
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/39, 2-3=-629/133, 3-4=-629/133, 4-5=0/39, 2-8=-638/160, 4-6=-638/160  
 BOT CHORD 7-8=-244/412, 6-7=-169/358  
 WEBS 3-7=0/286, 2-7=-119/280, 4-7=-124/281

**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 4-2-12, Exterior(2R) 4-2-12 to 10-2-12, Interior (1) 10-2-12 to 12-4-0, Exterior(2E) 12-4-0 to 15-4-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8. This connection is for uplift only and does not consider lateral forces.
- One RT8A MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 6. This connection is for uplift only and does not consider lateral forces.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



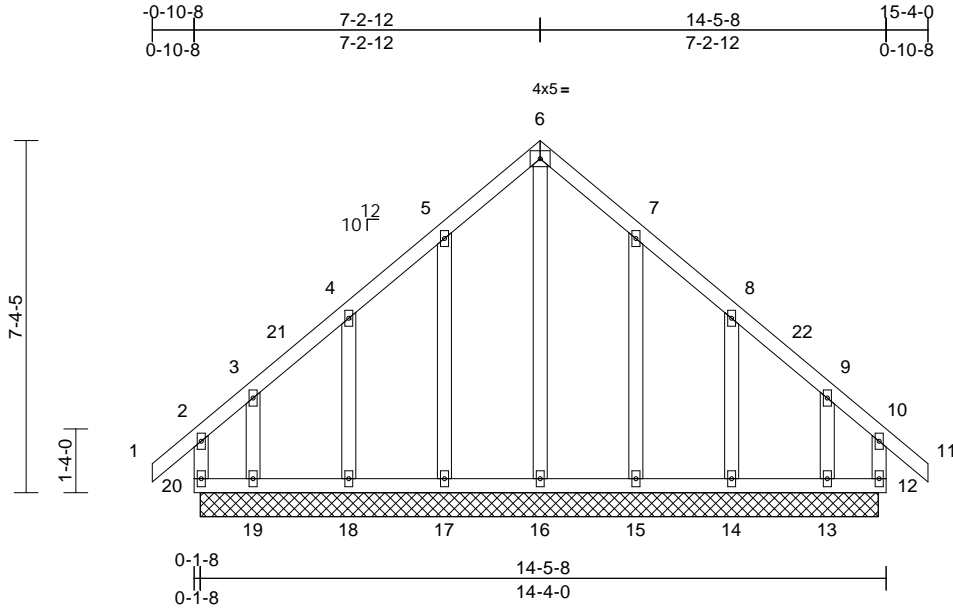
818 Soundside Road  
 Edenton, NC 27932

Job 23070011-01	Truss HGE	Truss Type Common Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707177
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:18  
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Page: 1



Scale = 1:48.1

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	0.17	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.33	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 97 lb	FT = 20%

LUMBER	
TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
OTHERS	2x4 SP No.3
BRACING	
TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing.
REACTIONS	(size)
	12=14-2-0, 13=14-2-0, 14=14-2-0, 15=14-2-0, 16=14-2-0, 17=14-2-0, 18=14-2-0, 19=14-2-0, 20=14-2-0
Max Horiz	20=197 (LC 12)
Max Uplift	12=124 (LC 11), 13=136 (LC 15), 14=73 (LC 15), 15=75 (LC 15), 17=75 (LC 14), 18=73 (LC 14), 19=141 (LC 14), 20=145 (LC 10)
Max Grav	12=183 (LC 24), 13=202 (LC 25), 14=212 (LC 22), 15=271 (LC 22), 16=219 (LC 15), 17=271 (LC 21), 18=212 (LC 21), 19=215 (LC 12), 20=200 (LC 25)
FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	2-20=-151/109, 1-2=0/39, 2-3=-133/133, 3-4=-84/141, 4-5=-101/248, 5-6=-148/337, 6-7=-148/337, 7-8=-101/248, 8-9=-70/141, 9-10=-114/116, 10-11=0/39, 10-12=-139/109
BOT CHORD	19-20=-99/98, 18-19=-99/98, 17-18=-99/98, 16-17=-99/98, 15-16=-99/98, 14-15=-99/98, 13-14=-99/98, 12-13=-99/98
WEBS	6-16=-350/90, 5-17=-231/116, 4-18=-170/142, 3-19=-134/118, 7-15=-231/116, 8-14=-170/142, 9-13=-129/118

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 4-2-12, Corner(3R) 4-2-12 to 10-2-12, Exterior (2N) 10-2-12 to 12-4-0, Corner(3E) 12-4-0 to 15-4-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- 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.

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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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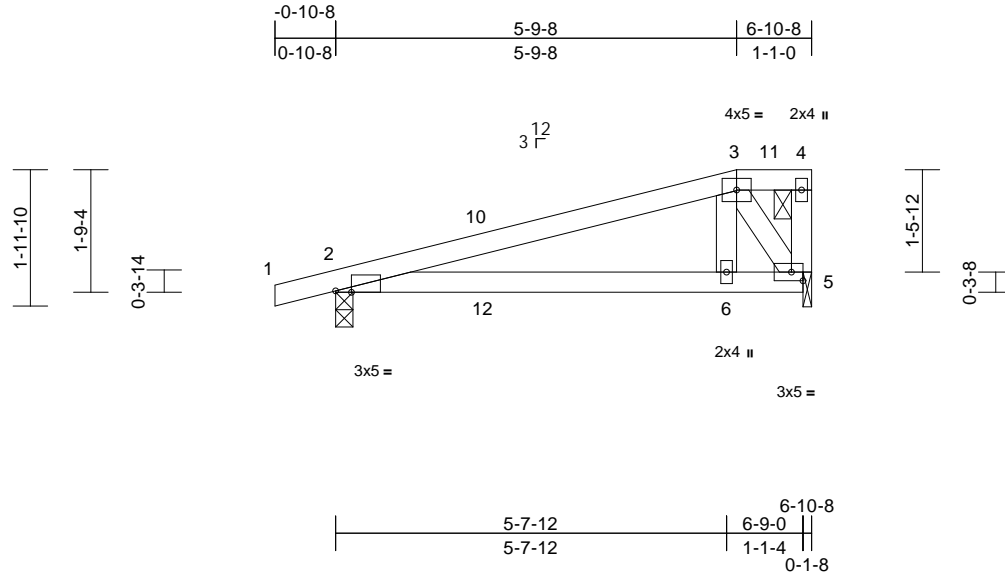
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss I	Truss Type Half Hip	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707178
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:18  
ID:SW4Vi3ynHQFvvt5iQ5eZDzN9lw-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:33.3

Plate Offsets (X, Y): [2:0-2-12,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	0.55	Vert(LL)	0.11	6-9	>708	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.10	6-9	>822	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.22	Horz(CT)	0.00	5	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0										
										Weight: 28 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 3-4.  
BOT CHORD Rigid ceiling directly applied or 7-6-15 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 5=0-1-8  
Max Horiz 2=64 (LC 10)  
Max Uplift 2=-130 (LC 10), 5=-105 (LC 10)  
Max Grav 2=408 (LC 36), 5=290 (LC 36)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-331/418, 3-4=0/0, 4-5=-38/30  
BOT CHORD 2-6=-446/284, 5-6=-393/256  
WEBS 3-6=-539/279, 3-5=-479/733

**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 5-9-8, Exterior(2E) 5-9-8 to 6-8-12 zone; cantilever left and right exposed; end vertical 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.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Bearings are assumed to be: Joint 5 SP No.3 crushing capacity of 565 psi.
- Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 5. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



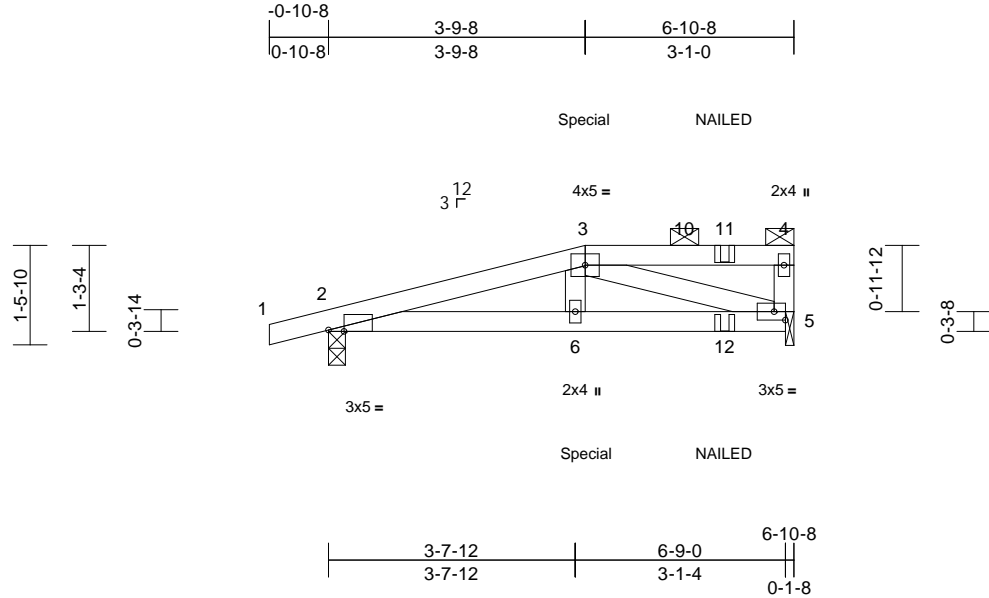
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss IGR	Truss Type Half Hip Girder	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707179
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:18  
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Page: 1



Scale = 1:34

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.30	Vert(LL)	-0.02	6-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.46	Vert(CT)	-0.04	6-9	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.26	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 28 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-6-4 oc purlins, except end verticals, and 2-0-0 oc purlins: 3-4.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 5=0-1-8  
Max Horiz 2=46 (LC 8)  
Max Uplift 2=-165 (LC 8), 5=-161 (LC 8)  
Max Grav 2=511 (LC 34), 5=503 (LC 33)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/17, 2-3=-1019/301, 3-4=0/0, 4-5=-153/48  
BOT CHORD 2-6=-302/969, 5-6=-293/938  
WEBS 3-6=-61/218, 3-5=-989/308

**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; cantilever left and right exposed; end vertical left exposed; porch left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Bearings are assumed to be: Joint 5 SP No.3 crushing capacity of 565 psi.
- Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 5. This connection is for uplift only and does not consider lateral forces.
- 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.
- "NAILED" indicates 3-10d (0.148"x3") or 3-12d (0.148"x3.25") toe-nails per NDS guidelines.
- Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 166 lb down and 106 lb up at 3-9-8 on top chord, and 95 lb down and 70 lb up at 3-9-8 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
- In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-4=-60, 5-7=-20  
Concentrated Loads (lb)  
Vert: 6=-95 (F), 3=-147 (F), 11=-69 (F), 12=-42 (F)



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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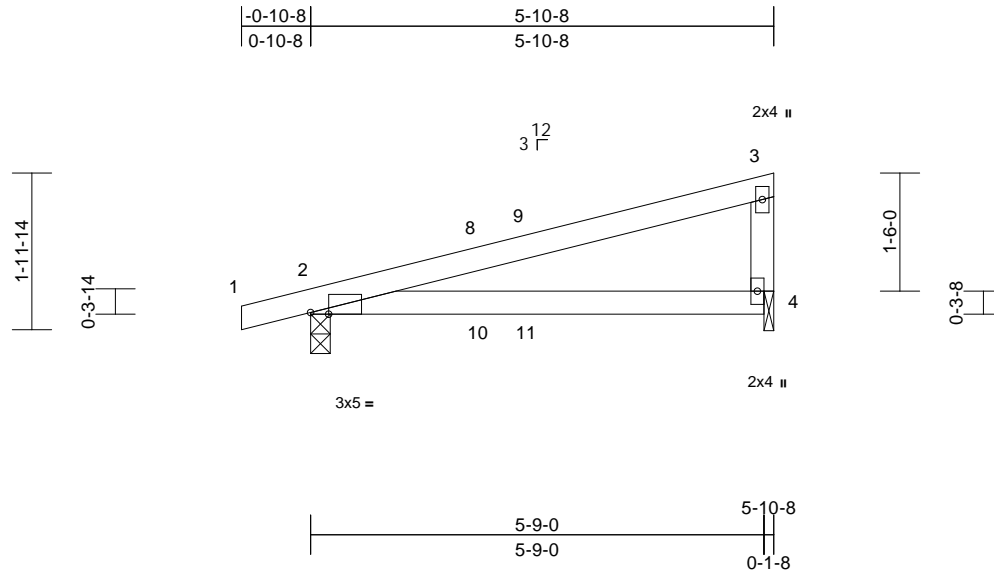
Job 23070011-01	Truss J	Truss Type Monopitch	Qty 8	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707180
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1

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Scale = 1:29.2

Plate Offsets (X, Y): [2:0-2-12,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	0.63	Vert(LL)	0.18	4-7	>373	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.57	Vert(CT)	0.15	4-7	>467	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 21 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-10-8 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 4=0-1-8  
 Max Horiz 2=63 (LC 10)  
 Max Uplift 2=-114 (LC 10), 4=-91 (LC 10)  
 Max Grav 2=381 (LC 21), 4=295 (LC 21)

**FORCES**

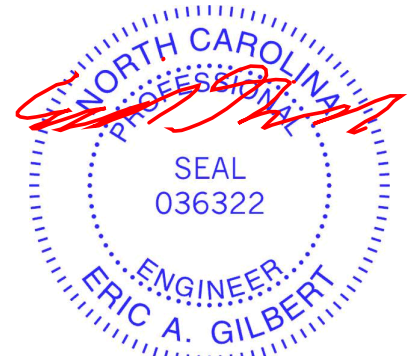
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/18, 2-3=-202/253, 3-4=-204/203  
 BOT CHORD 2-4=-282/183

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 2-8-12, Exterior(2E) 2-8-12 to 5-8-12 zone; cantilever left and right exposed; end vertical 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
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) Bearings are assumed to be: Joint 4 SP No.3 crushing capacity of 565 psi.
- 8) Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 9) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 4. This connection is for uplift only and does not consider lateral forces.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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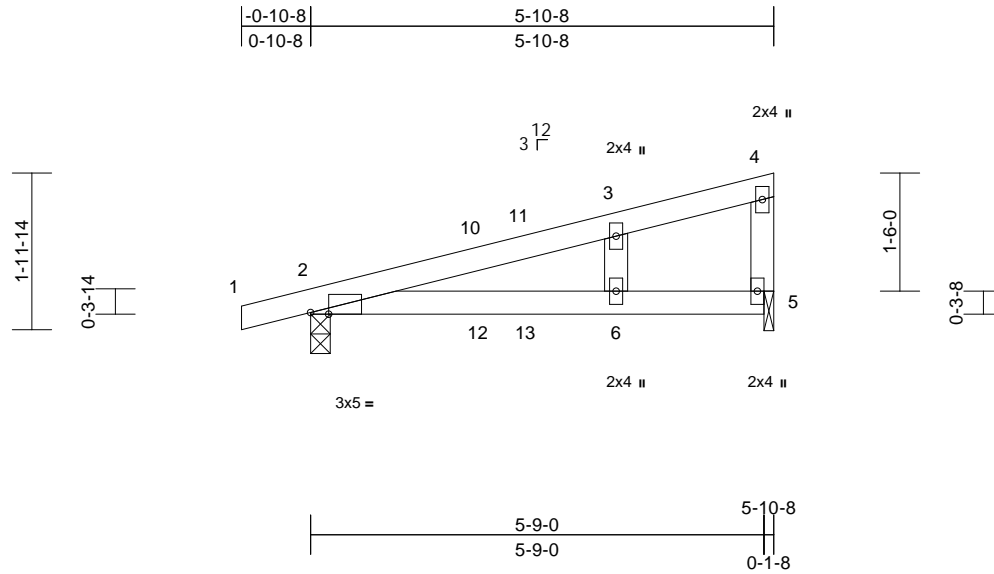


Job 23070011-01	Truss JSE	Truss Type Monopitch	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707181
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:29.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.54	Vert(LL)	0.18	6-9	>374	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.58	Vert(CT)	-0.16	6-9	>431	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.02	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 22 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-10-8 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 5=0-1-8  
Max Horiz 2=60 (LC 13)  
Max Uplift 2=-118 (LC 10), 5=-87 (LC 21)  
Max Grav 2=381 (LC 21), 5=295 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/18, 2-3=-208/266, 3-4=-27/36, 4-5=-166/198  
BOT CHORD 2-6=-268/183, 5-6=-25/27  
WEBS 3-6=-87/51

**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 2-8-12, Exterior(2E) 2-8-12 to 5-8-12 zone; cantilever left and right exposed; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Bearings are assumed to be: Joint 5 SP No.3 crushing capacity of 565 psi.
- Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 5. This connection is for uplift only and does not consider lateral forces.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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Edenton, NC 27932

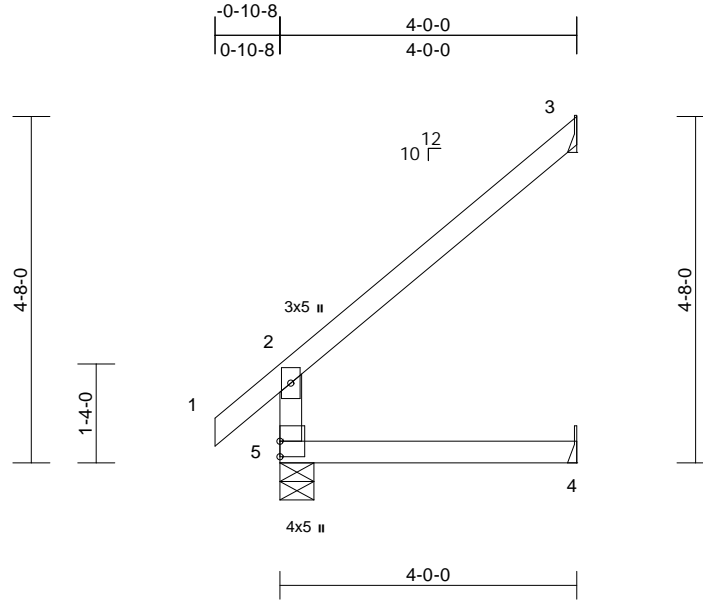
Job 23070011-01	Truss K	Truss Type Jack-Open	Qty 22	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707182
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Carter Components (Sanford), Sanford, NC - 27332,

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Scale = 1:31

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.52	Vert(LL)	0.03	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.36	Vert(CT)	-0.03	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.06	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 17 lb	FT = 20%

#### LUMBER

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

#### BRACING

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

**REACTIONS** (size) 3= Mechanical, 4= Mechanical, 5=0-5-8  
Max Horiz 5=129 (LC 14)  
Max Uplift 3=-99 (LC 14), 4=-8 (LC 14)  
Max Grav 3=178 (LC 21), 4=73 (LC 7), 5=307 (LC 21)

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

TOP CHORD 2-5=-283/75, 1-2=0/39, 2-3=-142/88  
BOT CHORD 4-5=0/0

#### NOTES

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - 7) All bearings are assumed to be User Defined crushing capacity of 425 psi.
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 99 lb uplift at joint 3 and 8 lb uplift at joint 4.
  - 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



July 24, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

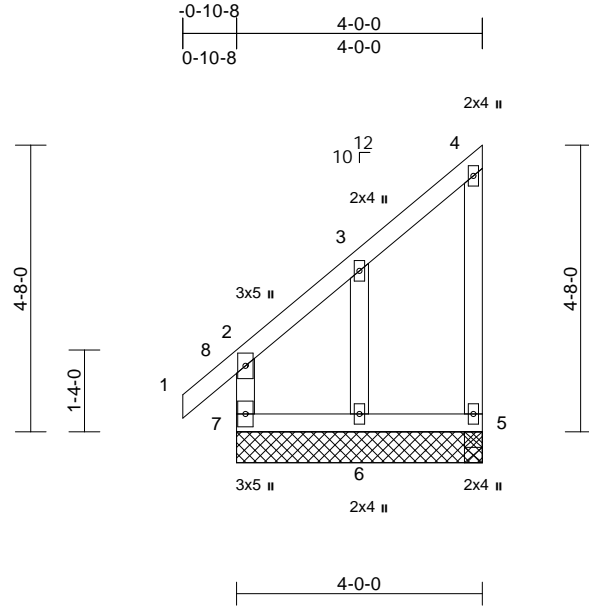
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss KSE	Truss Type Jack-Open Supported Gable	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707183
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:37.5

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.43	Vert(LL)	0.00	6-7	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	0.00	6-7	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.00	5	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR							
BCDL	10.0									Weight: 27 lb	FT = 20%

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

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

REACTIONS	
(lb/size)	5=63/0-3-8, 6=155/4-0-0, 7=141/4-0-0
Max Horiz	7=162 (LC 13)
Max Uplift	5=-25 (LC 11), 6=-143 (LC 14), 7=-52 (LC 10)
Max Grav	5=96 (LC 21), 6=252 (LC 21), 7=198 (LC 29)

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

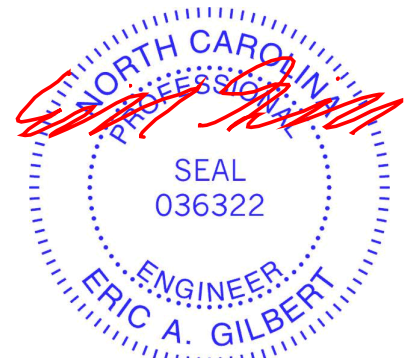
WEBS	
3-6=	210/308

**NOTES**

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

- 5) 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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- 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) N/A
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



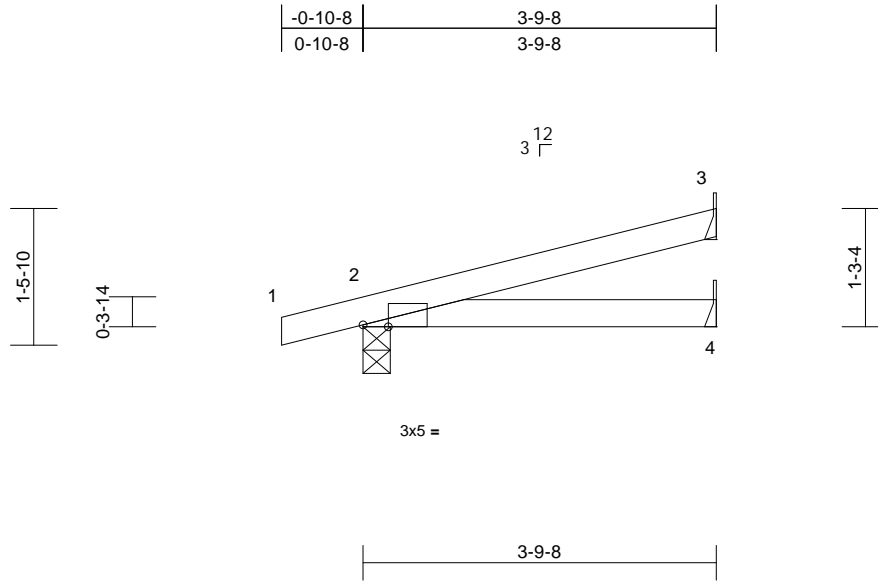
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss L	Truss Type Jack-Open	Qty 2	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	I59707184
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:19  
ID:0VeXzj3w0U2B1x69gl2EJzN9oM-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

Page: 1



Loading		Spacing		CSI		DEFL		PLATES		GRIP		
(psf)		2-0-0				in	(loc)	l/defl	L/d			
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.22	Vert(LL)	0.03	4-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	Vert(CT)	0.03	4-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 13 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-9-8 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

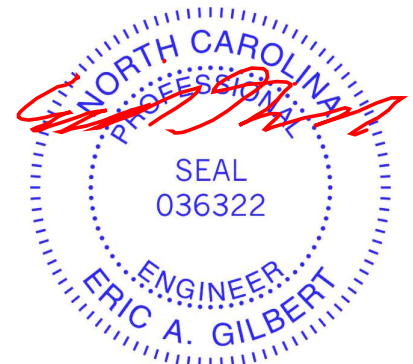
**REACTIONS** (size) 2=0-3-8, 3= Mechanical, 4= Mechanical  
Max Horiz 2=45 (LC 10)  
Max Uplift 2=-88 (LC 10), 3=-39 (LC 10), 4=-18 (LC 10)  
Max Grav 2=277 (LC 21), 3=125 (LC 21), 4=65 (LC 7)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-113/146  
BOT CHORD 2-4=-165/95

- 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.
- All bearings are assumed to be User Defined crushing capacity of 425 psi.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 39 lb uplift at joint 3 and 18 lb uplift at joint 4.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

- NOTES**
- 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) zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.



July 24, 2023

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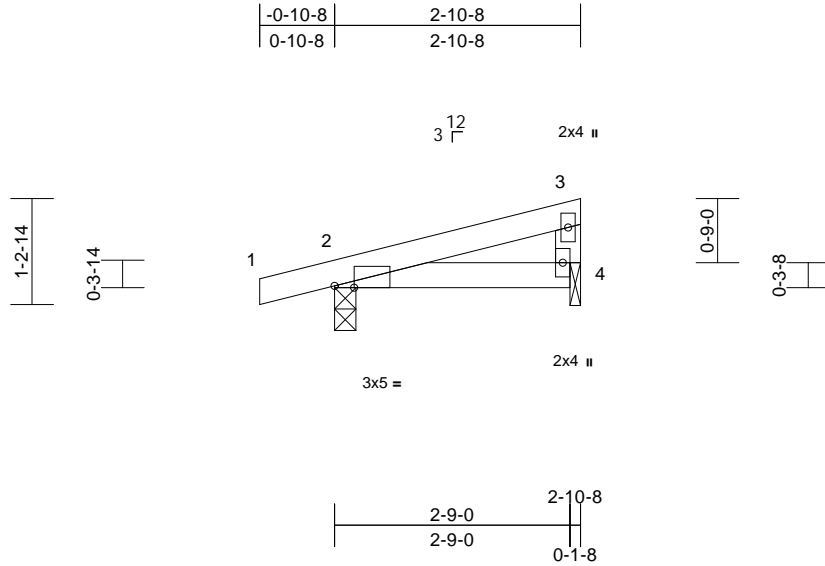
ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate  
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707185
23070011-01	M	Monopitch	9	1	Job Reference (optional)	

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

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:20  
 ID:5kfnl3EnG04C0h4kyiUr4bzNAIQ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:26.9

Plate Offsets (X, Y): [2:0-2-12,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	Vert(LL)	0.01	4-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	0.01	4-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 11 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 2=0-3-0, 4=0-1-8  
 Max Horiz 2=31 (LC 13)  
 Max Uplift 2=-77 (LC 10), 4=-37 (LC 10)  
 Max Grav 2=221 (LC 21), 4=127 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/17, 2-3=-68/93, 3-4=-83/94  
 BOT CHORD 2-4=-92/52

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) Bearings are assumed to be: Joint 4 SP No.3 crushing capacity of 565 psi.
- 8) Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 9) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- 10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 4 and 2. This connection is for uplift only and does not consider lateral forces.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



July 24, 2023

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 Edenton, NC 27932

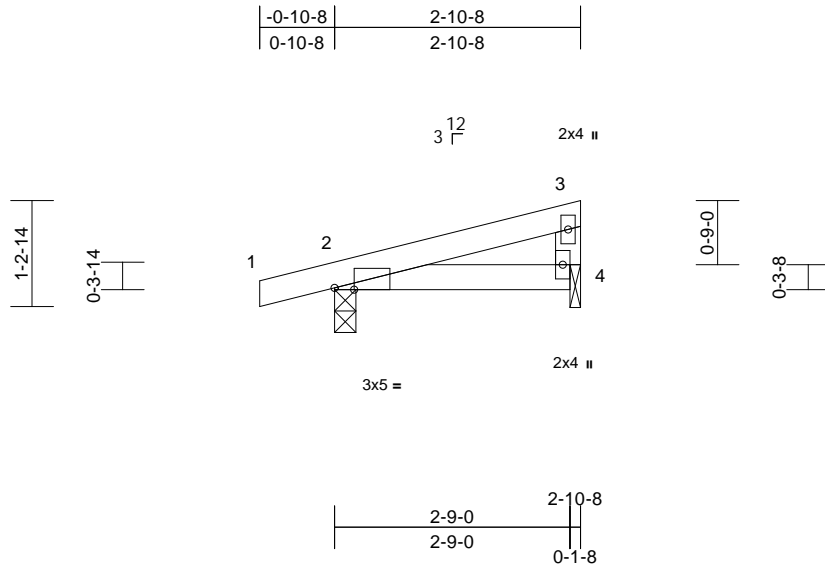


Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707186
23070011-01	MSE	Monopitch Structural Gable	2	1	Job Reference (optional)	

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

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:20  
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Page: 1



Scale = 1:26.9

Plate Offsets (X, Y): [2:0-2-12, 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	Vert(LL)	0.01	4-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	0.01	4-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 11 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 2=0-3-0, 4=0-1-8  
Max Horiz 2=31 (LC 13)  
Max Uplift 2=-77 (LC 10), 4=-37 (LC 10)  
Max Grav 2=221 (LC 21), 4=127 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-68/93, 3-4=-83/94  
BOT CHORD 2-4=-92/52

**NOTES**

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

- 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) Gable studs spaced at 2-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 9) Bearings are assumed to be: Joint 4 SP No.3 crushing capacity of 565 psi.
- 10) Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 11) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- 12) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 4 and 2. This connection is for uplift only and does not consider lateral forces.
- 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



July 24, 2023

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818 Soundside Road  
Edenton, NC 27932

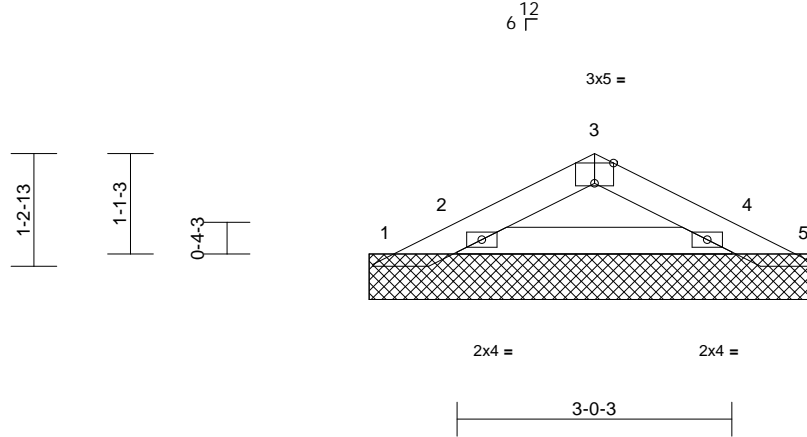
Job 23070011-01	Truss PB1	Truss Type Piggyback	Qty 9	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707187
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:20  
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Page: 1

-0-11-1	1-6-1	3-0-3	3-11-4
0-11-1	1-6-1	1-6-1	0-11-1



Scale = 1:25.3

Plate Offsets (X, Y): [3:0-2-8,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	0.06	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 13 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-11-5 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=4-11-5, 2=4-11-5, 4=4-11-5, 5=4-11-5, 6=4-11-5, 9=4-11-5  
Max Horiz 1=-17 (LC 15)  
Max Uplift 1=-21 (LC 7), 2=-18 (LC 14), 4=-17 (LC 15), 5=-19 (LC 7), 6=-18 (LC 14), 9=-17 (LC 15)  
Max Grav 1=5 (LC 14), 2=228 (LC 21), 4=216 (LC 22), 5=-1 (LC 14), 6=228 (LC 21), 9=216 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-17/39, 2-3=-92/60, 3-4=-93/60, 4-5=0/34  
BOT CHORD 2-4=-1/76

**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 17 lb uplift at joint 4, 21 lb uplift at joint 1, 19 lb uplift at joint 5 and 17 lb uplift at joint 4.
- 11) N/A

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

**LOAD CASE(S)** Standard



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



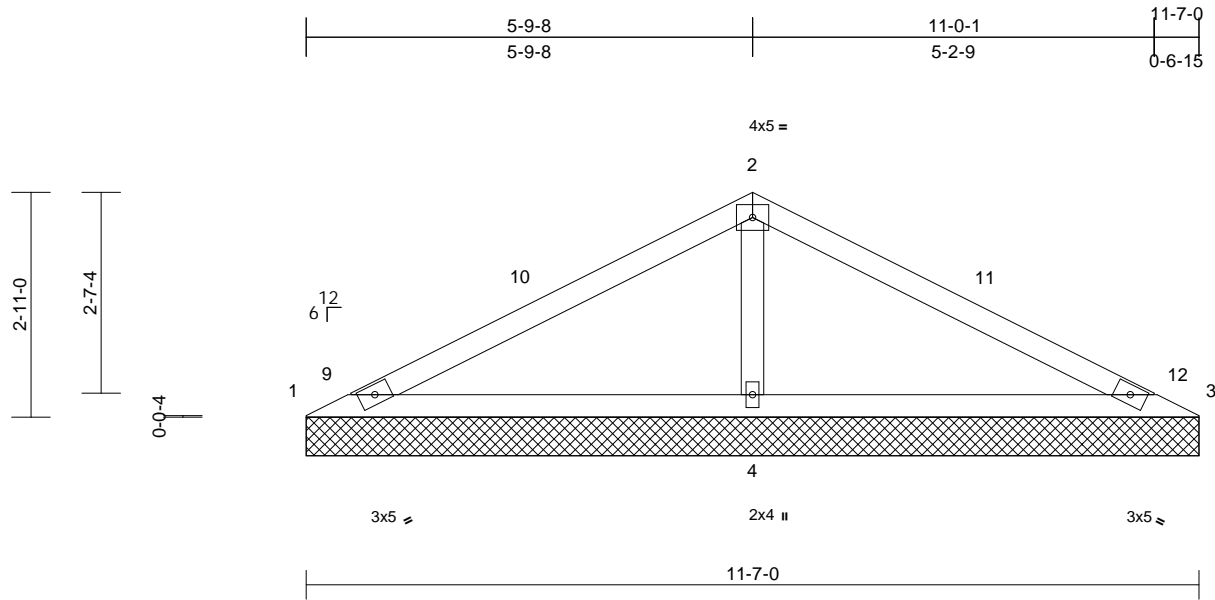
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V1	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707188
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:20  
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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	0.59	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.54	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.16	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 38 lb	FT = 20%

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

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

**REACTIONS** (size) 1=11-7-0, 3=11-7-0, 4=11-7-0  
Max Horiz 1=44 (LC 18)  
Max Uplift 1=-59 (LC 21), 3=-59 (LC 20), 4=-78 (LC 14)  
Max Grav 1=109 (LC 20), 3=109 (LC 21), 4=904 (LC 20)

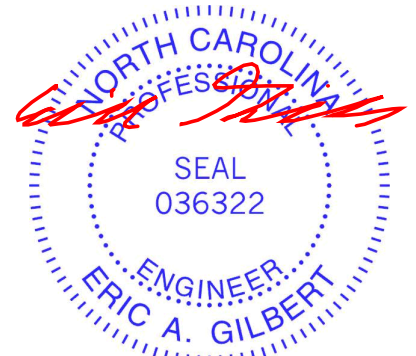
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-177/527, 2-3=-177/527  
BOT CHORD 1-4=-376/229, 3-4=-376/229  
WEBS 2-4=-704/357

- 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 59 lb uplift at joint 1, 59 lb uplift at joint 3 and 78 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) 0-0-8 to 3-0-8, Exterior(2R) 3-0-8 to 8-7-8, Exterior(2E) 8-7-8 to 11-7-8 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.



July 24, 2023

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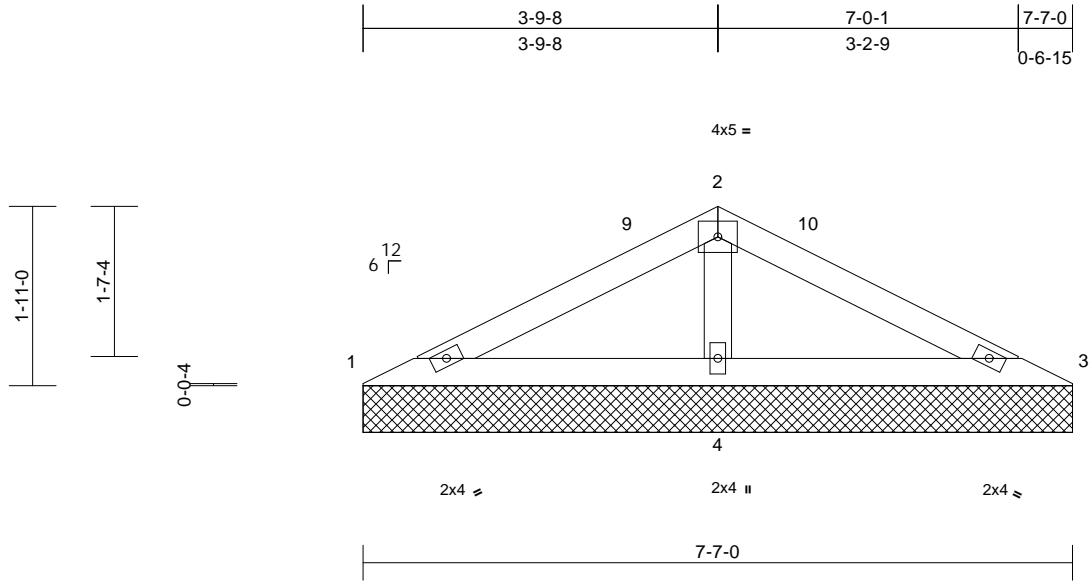
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V2	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707189
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:20  
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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	0.24	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	0.07	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 24 lb	FT = 20%	

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

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

**REACTIONS** (size) 1=7-7-0, 3=7-7-0, 4=7-7-0  
Max Horiz 1=-28 (LC 15)  
Max Uplift 1=-10 (LC 14), 3=-16 (LC 15), 4=-40 (LC 14)  
Max Grav 1=112 (LC 20), 3=112 (LC 21), 4=506 (LC 20)

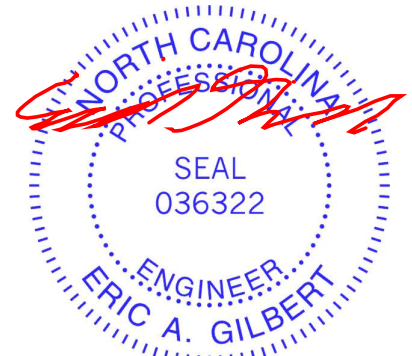
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-126/255, 2-3=-126/255  
BOT CHORD 1-4=-189/147, 3-4=-189/147  
WEBS 2-4=-347/203

- 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 10 lb uplift at joint 1, 16 lb uplift at joint 3 and 40 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) 0-0-8 to 3-0-8, Exterior(2R) 3-0-8 to 4-7-8, Exterior(2E) 4-7-8 to 7-7-8 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.



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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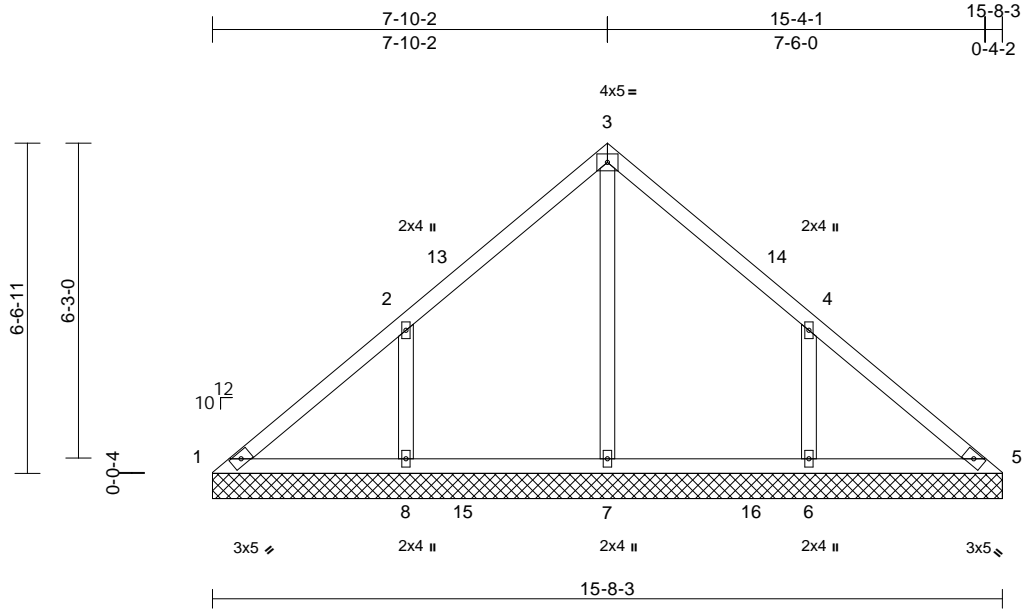
Job 23070011-01	Truss V3	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707190
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:21

Page: 1

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Scale = 1:45.7

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	0.32	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	0.20	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 69 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=15-8-3, 5=15-8-3, 6=15-8-3, 7=15-8-3, 8=15-8-3
- Max Horiz 1=-149 (LC 10)
- Max Uplift 1=-22 (LC 10), 6=-168 (LC 15), 8=-171 (LC 14)
- Max Grav 1=127 (LC 24), 5=103 (LC 21), 6=481 (LC 6), 7=449 (LC 23), 8=481 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

- TOP CHORD 1-2=-152/192, 2-3=-145/151, 3-4=-145/131, 4-5=-124/153
- BOT CHORD 1-8=-87/134, 7-8=-87/118, 6-7=-87/118, 5-6=-87/118
- WEBS 3-7=-261/0, 2-8=-382/207, 4-6=-382/205

**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 4-10-6, Exterior(2R) 4-10-6 to 10-10-6, Interior (1) 10-10-6 to 12-8-8, Exterior(2E) 12-8-8 to 15-8-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 22 lb uplift at joint 1, 171 lb uplift at joint 8 and 168 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



July 24, 2023

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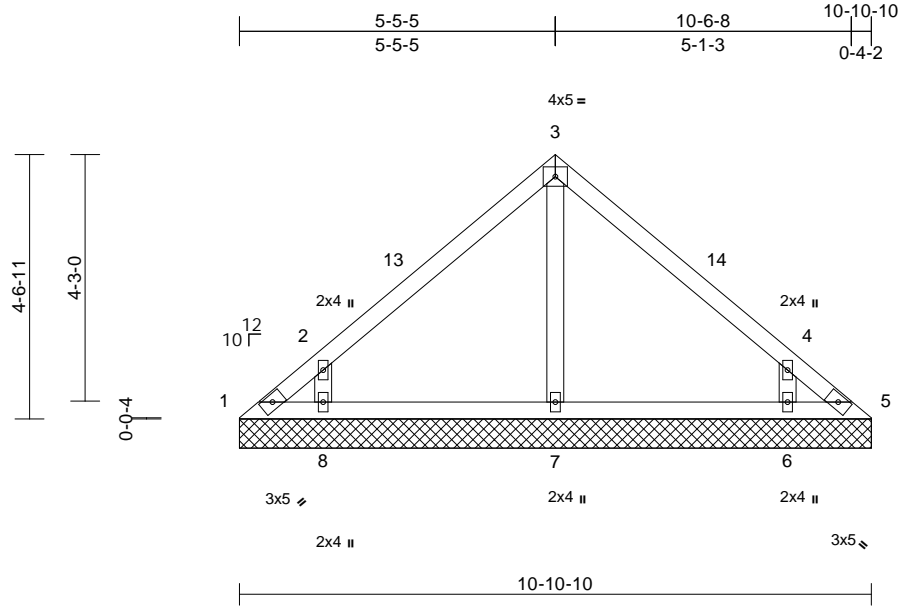


Job 23070011-01	Truss V5	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707192
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:21  
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Page: 1



Scale = 1:39.7

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.13	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 44 lb	FT = 20%	

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 1=10-10-10, 5=10-10-10,  
6=10-10-10, 7=10-10-10,  
8=10-10-10  
Max Horiz 1=-102 (LC 10)  
Max Uplift 1=-51 (LC 12), 5=-25 (LC 13),  
6=-135 (LC 15), 8=-139 (LC 14)  
Max Grav 1=71 (LC 11), 5=52 (LC 15), 6=454  
(LC 21), 7=248 (LC 20), 8=454 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-137/106, 2-3=-227/109, 3-4=-227/109,  
4-5=-115/78  
BOT CHORD 1-8=-41/73, 7-8=-22/73, 6-7=-22/73,  
5-6=-48/73  
WEBS 3-7=-159/4, 2-8=-476/272, 4-6=-476/272

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 7-10-14, Exterior(2E) 7-10-14 to 10-10-14 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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, 25 lb uplift at joint 5, 139 lb uplift at joint 8 and 135 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



July 24, 2023

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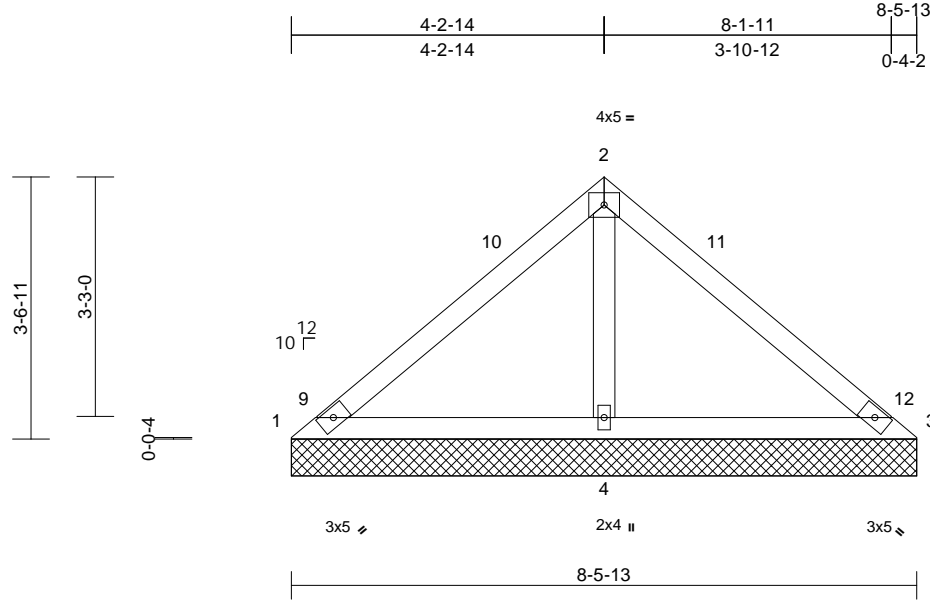
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V6	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707193
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:21  
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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	0.37	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 32 lb	FT = 20%

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

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

**REACTIONS** (size) 1=8-5-13, 3=8-5-13, 4=8-5-13  
Max Horiz 1=-79 (LC 10)  
Max Uplift 1=-45 (LC 21), 3=-45 (LC 20), 4=-102 (LC 14)  
Max Grav 1=88 (LC 20), 3=88 (LC 21), 4=680 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-124/312, 2-3=-124/312  
BOT CHORD 1-4=-211/184, 3-4=-211/184  
WEBS 2-4=-505/253

- 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 45 lb uplift at joint 1, 45 lb uplift at joint 3 and 102 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 5-6-2, Exterior(2E) 5-6-2 to 8-6-2 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.



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



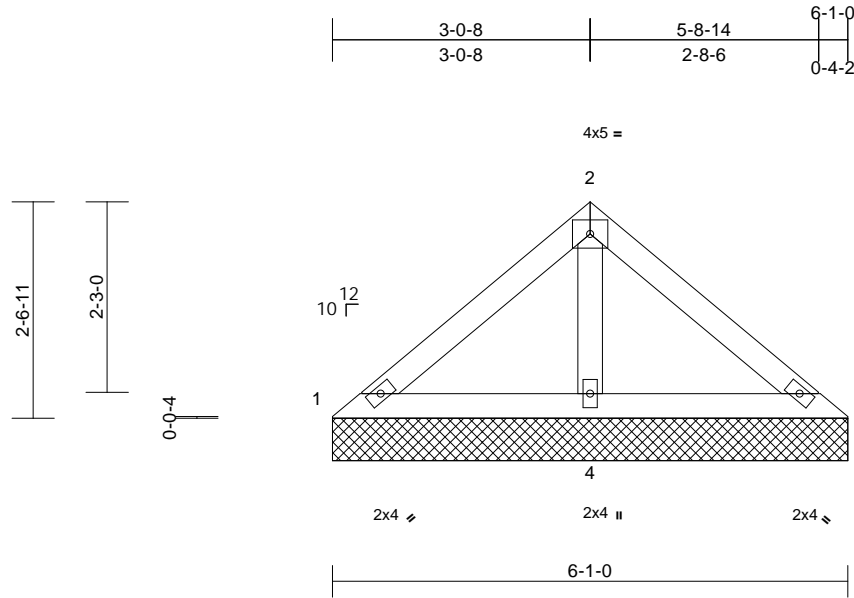
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V7	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707194
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:21  
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Page: 1



Scale = 1:27.2

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	0.16	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	0.06	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 22 lb	FT = 20%	

#### LUMBER

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

#### BRACING

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

#### REACTIONS

(size) 1=6-1-0, 3=6-1-0, 4=6-1-0  
Max Horiz 1=-56 (LC 10)  
Max Uplift 3=-3 (LC 15), 4=-52 (LC 14)  
Max Grav 1=100 (LC 20), 3=100 (LC 21),  
4=409 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-88/162, 2-3=-88/162  
BOT CHORD 1-4=-120/123, 3-4=-120/123  
WEBS 2-4=-276/150

#### 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 3 lb uplift at joint 3 and 52 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

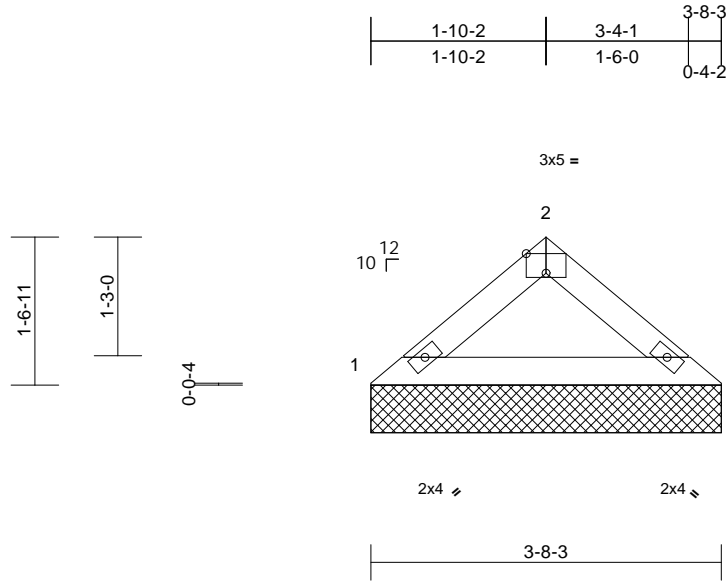
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707195
23070011-01	V8	Valley	1	1	Job Reference (optional)	

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

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:22  
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Scale = 1:24.2

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	0.10	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 11 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-8-3 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=3-8-3, 3=3-8-3  
 Max Horiz 1=32 (LC 11)  
 Max Uplift 1=-12 (LC 14), 3=-12 (LC 15)  
 Max Grav 1=173 (LC 20), 3=173 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-224/84, 2-3=-224/84  
 BOT CHORD 1-3=-51/163

**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 12 lb uplift at joint 1 and 12 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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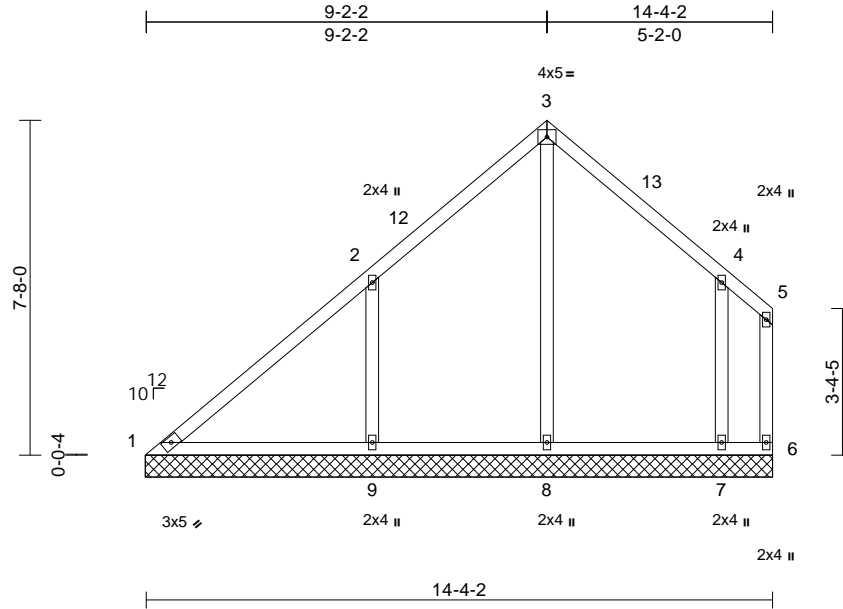


Job 23070011-01	Truss V11	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707196
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Carter Components (Sanford), Sanford, NC - 27332,

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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	0.39	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	0.26	Horiz(TL)	0.01	9	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  
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.

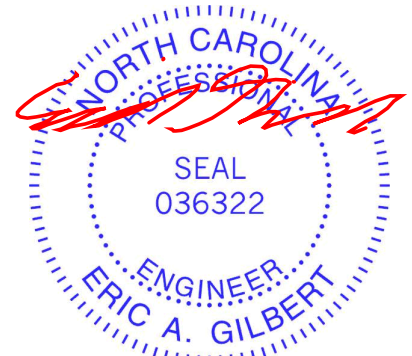
**REACTIONS** (size)  
1=14-4-6, 6=14-4-6, 7=14-4-6, 8=14-4-6, 9=14-4-6  
Max Horiz 1=214 (LC 11)  
Max Uplift 1=-49 (LC 10), 6=-142 (LC 6), 7=-167 (LC 15), 8=-15 (LC 11), 9=-209 (LC 14)  
Max Grav 1=237 (LC 24), 6=60 (LC 15), 7=513 (LC 6), 8=434 (LC 23), 9=590 (LC 23)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-318/222, 2-3=-173/204, 3-4=-147/202, 4-5=-66/118, 5-6=-68/120  
BOT CHORD 1-9=-53/203, 8-9=-46/64, 7-8=-46/64, 6-7=-46/64  
WEBS 3-8=-252/69, 2-9=-419/240, 4-7=-414/210

**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, Interior (1) 3-0-0 to 6-2-6, Exterior(2R) 6-2-6 to 11-2-10, Exterior (2E) 11-2-10 to 14-2-10 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, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 142 lb uplift at joint 6, 49 lb uplift at joint 1, 15 lb uplift at joint 8, 209 lb uplift at joint 9 and 167 lb uplift at joint 7.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

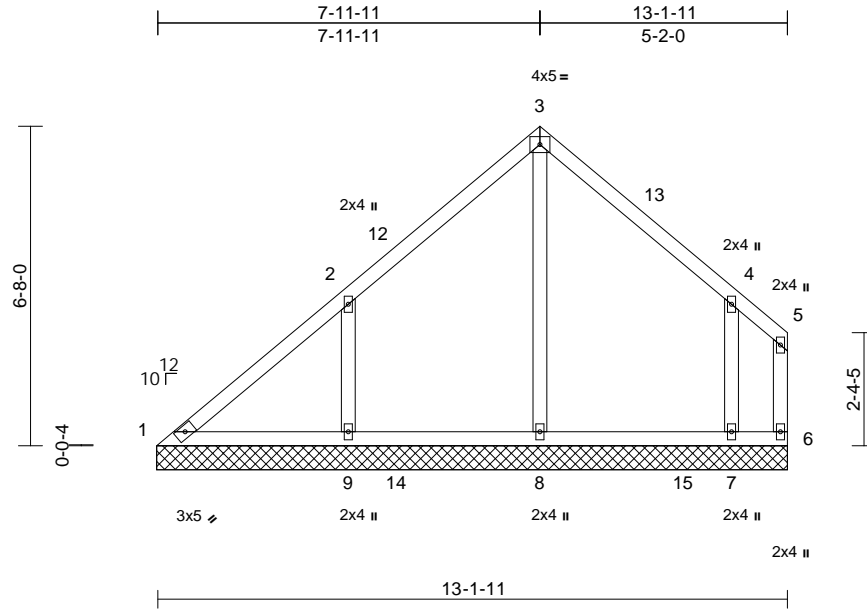
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V12	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707197
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:48.1

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.20	Horiz(TL)	0.00	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 65 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)

1=13-2-0, 6=13-2-0, 7=13-2-0, 8=13-2-0, 9=13-2-0
Max Horiz 1=178 (LC 11)
Max Uplift 1=50 (LC 10), 6=132 (LC 21), 7=175 (LC 15), 9=176 (LC 14)
Max Grav 1=183 (LC 24), 6=65 (LC 15), 7=486 (LC 21), 8=452 (LC 23), 9=490 (LC 5)

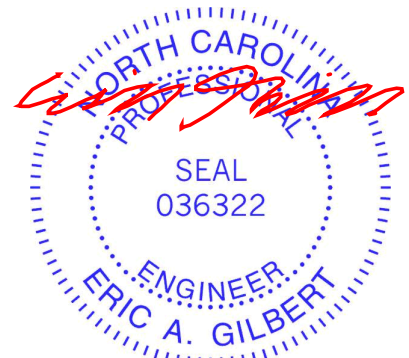
**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-242/189, 2-3=-153/180, 3-4=-147/180, 4-5=-58/118, 5-6=-67/120
BOT CHORD	1-9=-43/145, 8-9=-37/49, 7-8=-37/49, 6-7=-37/49
WEBS	3-8=-258/49, 2-9=-385/214, 4-7=-414/211

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

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 132 lb uplift at joint 6, 50 lb uplift at joint 1, 176 lb uplift at joint 9 and 175 lb uplift at joint 7.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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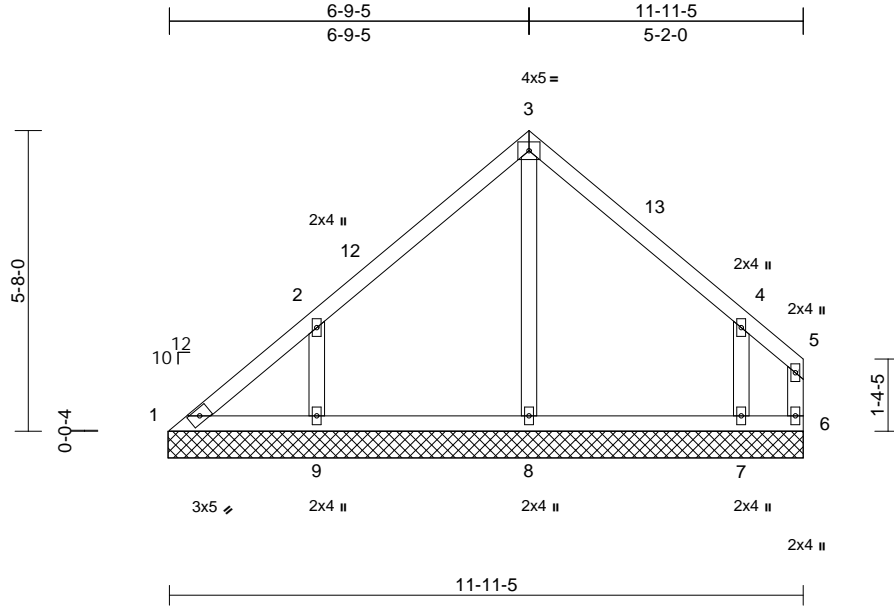
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V13	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707198
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:22  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a		
TCDL	10.0	Rep Stress Incr	YES	WB	0.14	Horiz(TL)	0.00	6	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 55 lb	FT = 20%

**LUMBER**

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

**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)

1=11-11-10, 6=11-11-10,	
7=11-11-10, 8=11-11-10,	
9=11-11-10	
Max Horiz	1=142 (LC 11)
Max Uplift	1=-45 (LC 10), 6=-118 (LC 21),
	7=-188 (LC 15), 9=-150 (LC 14)
Max Grav	1=120 (LC 24), 6=85 (LC 15),
	7=475 (LC 21), 8=336 (LC 21),
	9=438 (LC 20)

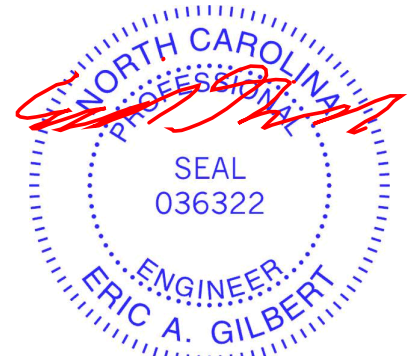
**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-155/148, 2-3=-166/148, 3-4=-154/150,
	4-5=-73/111, 5-6=-80/115
BOT CHORD	1-9=-35/85, 8-9=-34/41, 7-8=-34/41,
	6-7=-34/41
WEBS	3-8=-253/24, 2-9=-374/214, 4-7=-414/225

- 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 2-9-10, Interior (1) 2-9-10 to 3-9-10, Exterior(2R) 3-9-10 to 8-9-14, Exterior (2E) 8-9-14 to 11-9-14 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 118 lb uplift at joint 6, 45 lb uplift at joint 1, 150 lb uplift at joint 9 and 188 lb uplift at joint 7.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



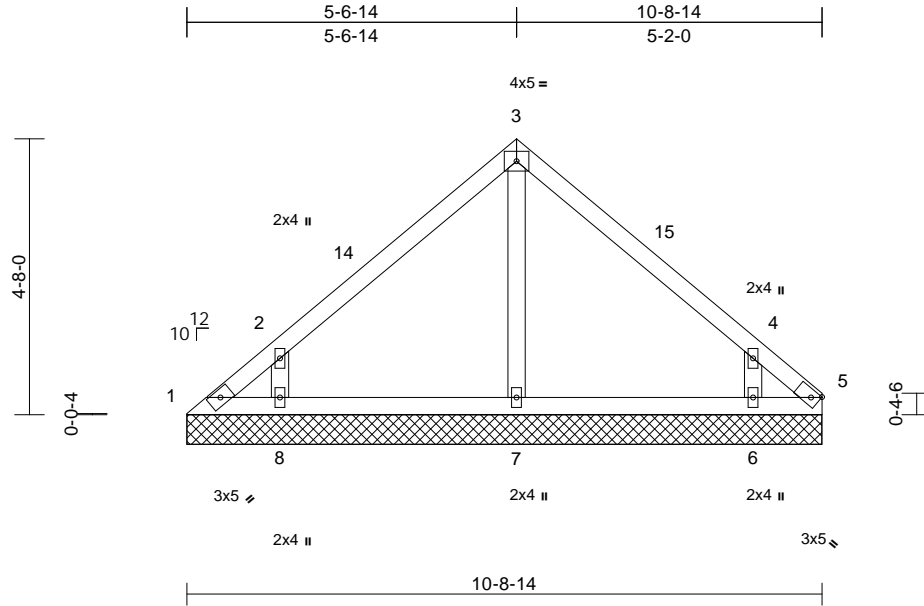
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V14	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707199
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:22  
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Page: 1



Scale = 1:39

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 44 lb	FT = 20%	

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 1=10-8-14, 5=10-8-14, 6=10-8-14, 7=10-8-14, 8=10-8-14, 13=10-8-14  
Max Horiz 1=105 (LC 11)  
Max Uplift 1=-70 (LC 10), 5=-1 (LC 15), 6=-122 (LC 15), 8=-140 (LC 14), 13=-1 (LC 15)  
Max Grav 1=93 (LC 13), 5=0 (LC 13), 6=434 (LC 21), 7=295 (LC 20), 8=441 (LC 20), 13=0 (LC 13)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-153/145, 2-3=-188/174, 3-4=-267/173, 4-5=-138/40  
BOT CHORD 1-8=-44/90, 7-8=-7/90, 6-7=-7/90, 5-6=-7/90  
WEBS 3-7=-208/40, 2-8=-447/265, 4-6=-440/249

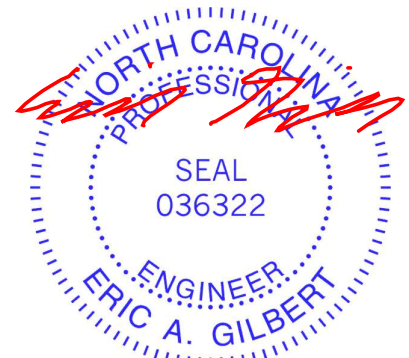
**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 7-9-3, Exterior(2E) 7-9-3 to 10-9-3 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

- 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 studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 9) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
- 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 70 lb uplift at joint 1.
- 11) N/A

- 12) Non Standard bearing condition. Review required.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



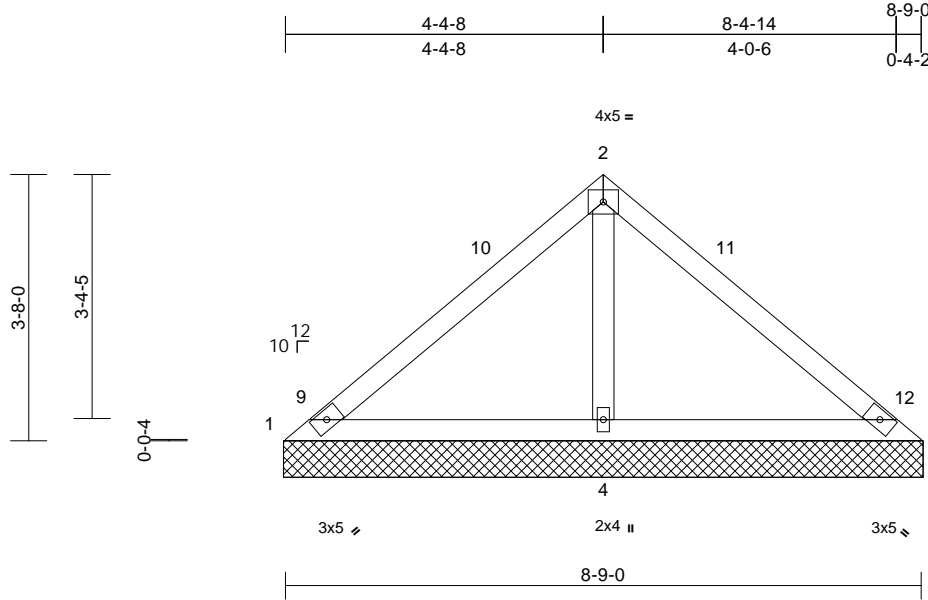
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V15	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707200
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:23  
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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	0.42	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.39	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 33 lb	FT = 20%

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

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

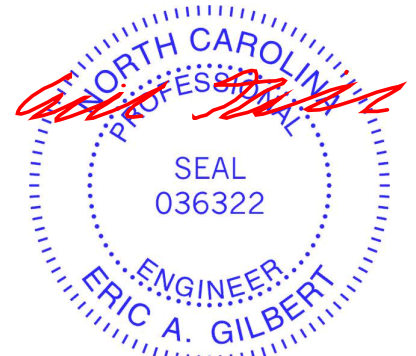
**REACTIONS** (size) 1=8-9-10, 3=8-9-10, 4=8-9-10  
Max Horiz 1=82 (LC 11)  
Max Uplift 1=-57 (LC 21), 3=-57 (LC 20), 4=-111 (LC 14)  
Max Grav 1=79 (LC 20), 3=79 (LC 21), 4=728 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-138/344, 2-3=-138/344  
BOT CHORD 1-4=-230/197, 3-4=-230/197  
WEBS 2-4=-550/272

- 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 5-9-10, Exterior(2E) 5-9-10 to 8-9-10 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 3) 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 57 lb uplift at joint 1, 57 lb uplift at joint 3 and 111 lb uplift at joint 4.
- 11) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



818 Soundside Road  
Edenton, NC 27932

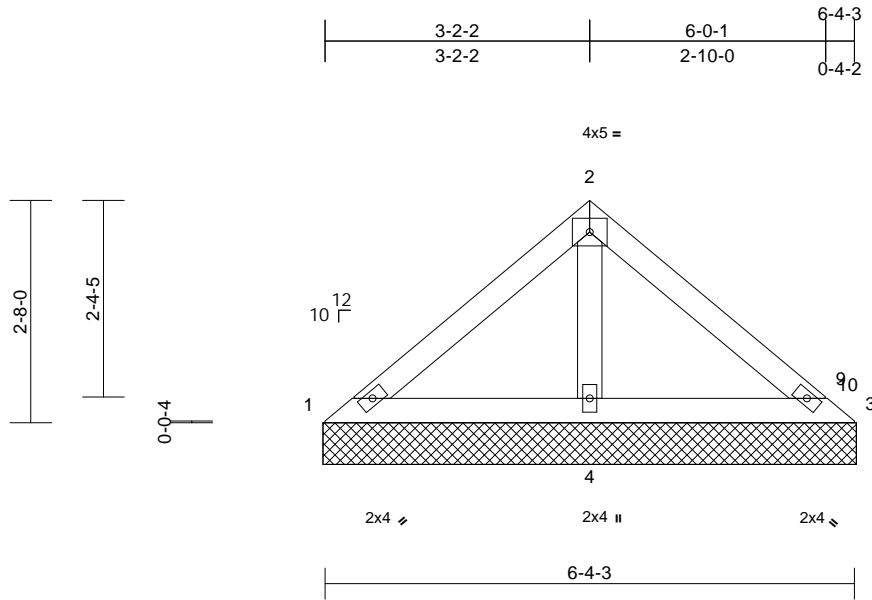


Job 23070011-01	Truss V16	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707201
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:27.6

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	0.18	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.20	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.07	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 23 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 6'-4'-3" oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6'-0'-0" oc bracing.

**REACTIONS**

(size) 1=6'-4'-13, 3=6'-4'-13, 4=6'-4'-13  
Max Horiz 1=58 (LC 11)  
Max Uplift 1=-2 (LC 21), 3=-14 (LC 20), 4=-59 (LC 14)  
Max Grav 1=98 (LC 20), 3=66 (LC 21), 4=438 (LC 21)

**FORCES**

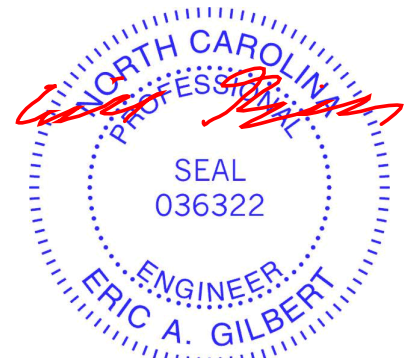
(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-85/179, 2-3=-72/179  
BOT CHORD 1-4=-127/121, 3-4=-127/121  
WEBS 2-4=-302/168

**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'-0'-0" tall by 2'-0'-0" wide will fit between the bottom chord and any other members.
  - 10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 2 lb uplift at joint 1, 14 lb uplift at joint 3 and 59 lb uplift at joint 4.
  - 11) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.
  - 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



July 24, 2023

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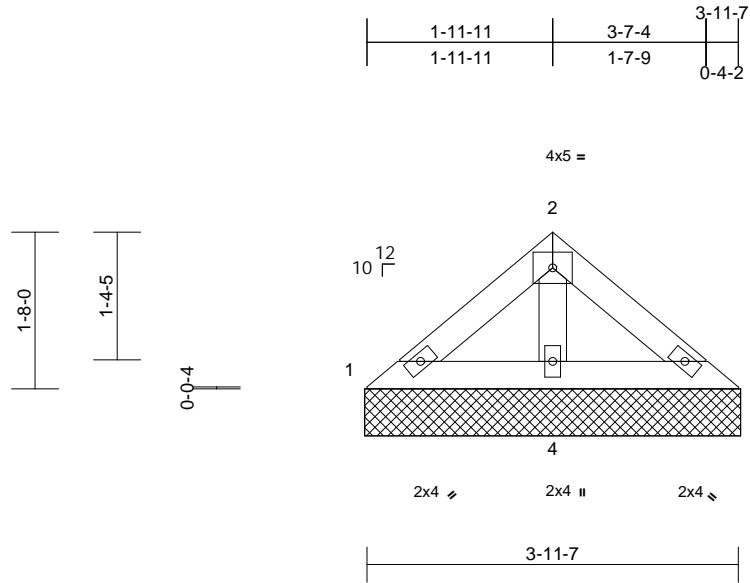
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V17	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707202
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Carter Components (Sanford), 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	0.05	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.07	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 14 lb	FT = 20%	

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-11-7 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-0-0, 3=4-0-0, 4=4-0-0  
Max Horiz 1=35 (LC 11)  
Max Uplift 1=-2 (LC 14), 3=-8 (LC 15), 4=-23 (LC 14)  
Max Grav 1=76 (LC 20), 3=76 (LC 21), 4=227 (LC 21)

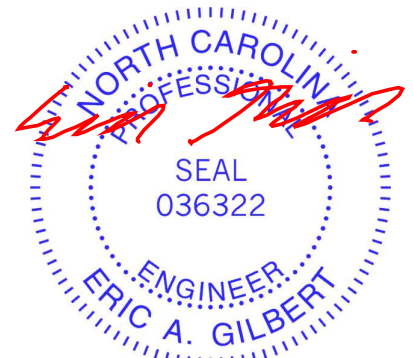
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-69/72, 2-3=-69/72  
BOT CHORD 1-4=-57/66, 3-4=-57/66  
WEBS 2-4=-128/63

- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 2 lb uplift at joint 1, 8 lb uplift at joint 3 and 23 lb uplift at joint 4.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1, 3.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**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



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



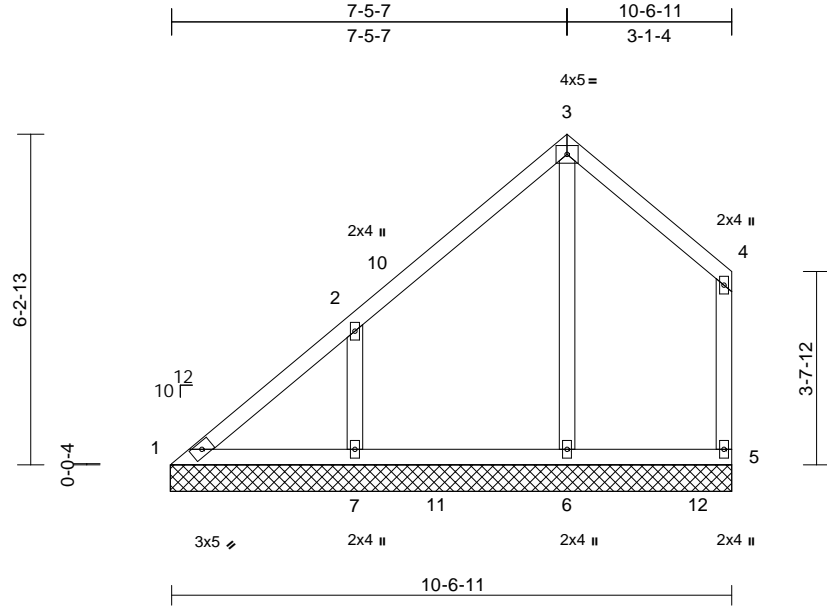
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V21	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707203
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:23  
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Page: 1



Scale = 1:43.4

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	0.27	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.14	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 52 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS** (size)

1=10-7-0, 5=10-7-0, 6=10-7-0, 7=10-7-0
Max Horiz 1=184 (LC 11)
Max Uplift 1=-43 (LC 10), 5=-50 (LC 10), 6=-28 (LC 11), 7=-160 (LC 14)
Max Grav 1=170 (LC 24), 5=188 (LC 21), 6=406 (LC 23), 7=450 (LC 23)

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

TOP CHORD	1-2=-224/162, 2-3=-168/140, 3-4=-113/160, 4-5=-163/135
BOT CHORD	1-7=-44/149, 6-7=-42/62, 5-6=-42/62
WEBS	3-6=-227/77, 2-7=-320/248

- 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 4-5-12, Exterior(2R) 4-5-12 to 7-5-12, Exterior (2E) 7-5-12 to 10-5-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 50 lb uplift at joint 5, 43 lb uplift at joint 1, 28 lb uplift at joint 6 and 160 lb uplift at joint 7.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



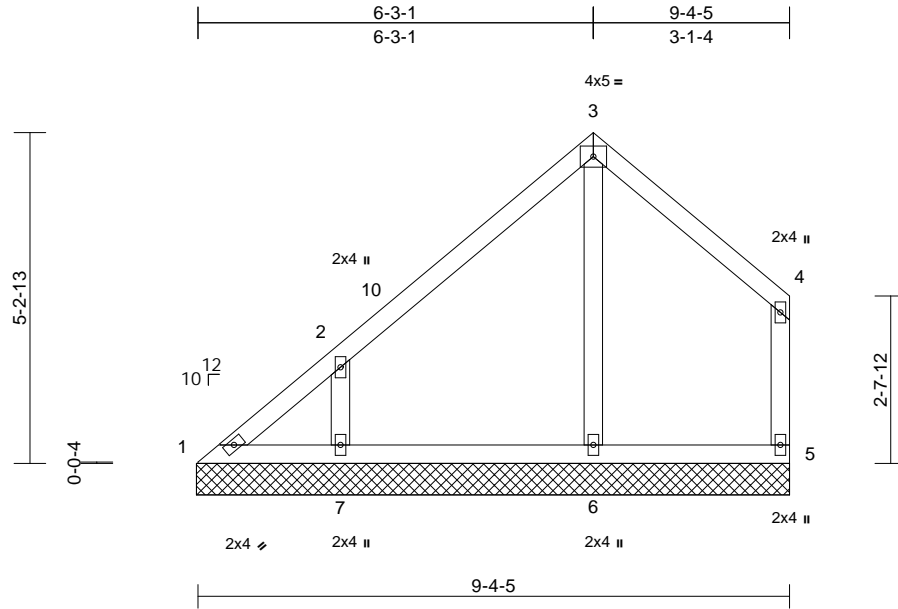
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V22	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707204
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:24  
ID:2abpVGE1e02R17vN32HUHzNA2w-RfC?PsB70Hq3NSgPqnL8w3uITxbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:36.4

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	0.28	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.10	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.11	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 44 lb	FT = 20%	

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size)	1=9-4-10, 5=9-4-10, 6=9-4-10, 7=9-4-10
Max Horiz	1=148 (LC 11)
Max Uplift	1=-52 (LC 10), 5=-50 (LC 15), 6=-18 (LC 11), 7=-138 (LC 14)
Max Grav	1=109 (LC 13), 5=194 (LC 21), 6=303 (LC 20), 7=373 (LC 20)

**FORCES**

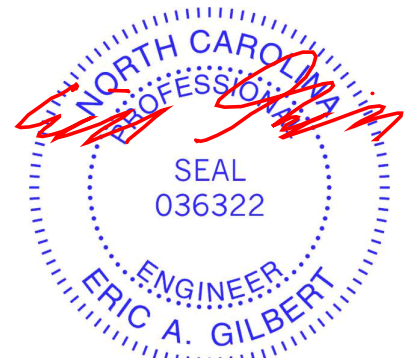
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-160/148, 2-3=-158/123, 3-4=-122/142, 4-5=-170/126
BOT CHORD	1-7=-30/77, 6-7=-30/44, 5-6=-30/44
WEBS	3-6=-223/66, 2-7=-321/263

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 6-3-6, Exterior(2E) 6-3-6 to 9-2-14 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 50 lb uplift at joint 5, 52 lb uplift at joint 1, 18 lb uplift at joint 6 and 138 lb uplift at joint 7.
- Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
- 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



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



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Edenton, NC 27932



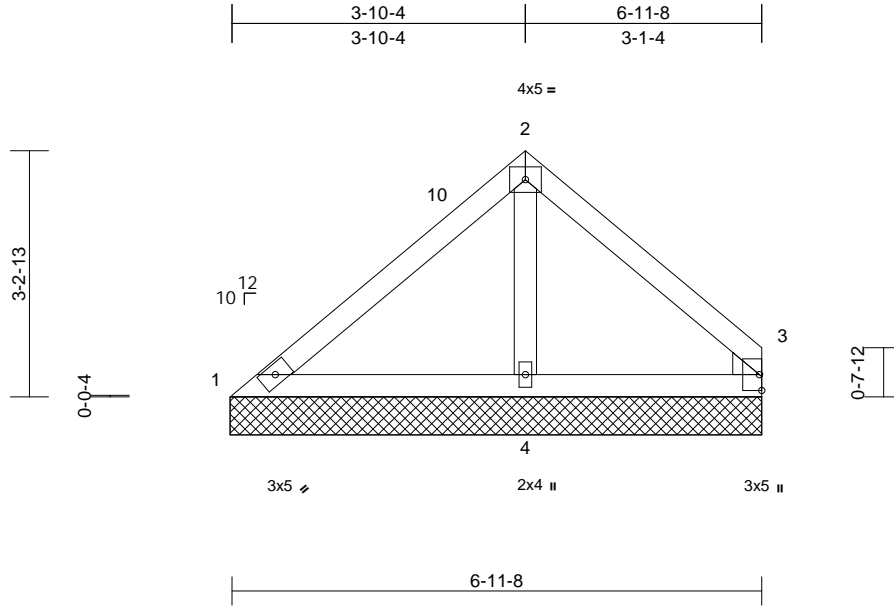


Job 23070011-01	Truss V24	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707206
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:30.3

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.28	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.30	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 28 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.3  
WEDGE 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 6-0-0 oc bracing.

**REACTIONS** (size)  
1=6-11-13, 3=6-11-13, 4=6-11-13, 5=6-11-13  
Max Horiz 1=70 (LC 11)  
Max Uplift 1=-26 (LC 15), 3=-37 (LC 15), 4=-78 (LC 14), 5=-37 (LC 15)  
Max Grav 1=120 (LC 28), 3=198 (LC 21), 4=507 (LC 20), 5=198 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-147/192, 2-3=-140/143  
BOT CHORD 1-4=-94/107, 3-4=-94/105  
WEBS 2-4=-337/146

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Exterior(2R) 3-0-0 to 3-10-9, Exterior(2E) 3-10-9 to 6-11-13 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 26 lb uplift at joint 1.
  - N/A
  - Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 1.
  - 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



July 24, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

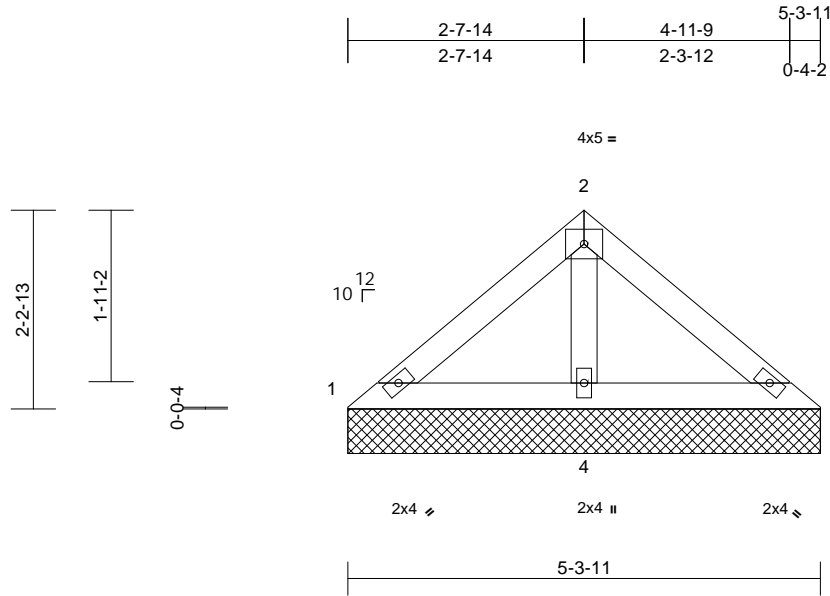
818 Soundside Road  
Edenton, NC 27932

Job 23070011-01	Truss V25	Truss Type Valley	Qty 1	Ply 1	13 Serenity-Roof-B329 A GRH CP Job Reference (optional)	159707207
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:24  
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Page: 1



Scale = 1:25.9

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.11	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.13	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: 19 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 5-3-11 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=5-3-11, 3=5-3-11, 4=5-3-11  
Max Horiz 1=-48 (LC 12)  
Max Uplift 3=-6 (LC 15), 4=-40 (LC 14)  
Max Grav 1=93 (LC 20), 3=93 (LC 21), 4=335 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-85/124, 2-3=-85/124  
BOT CHORD 1-4=-94/101, 3-4=-94/101  
WEBS 2-4=-215/117

**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 6 lb uplift at joint 3 and 40 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



July 24, 2023

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**ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component**

**Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



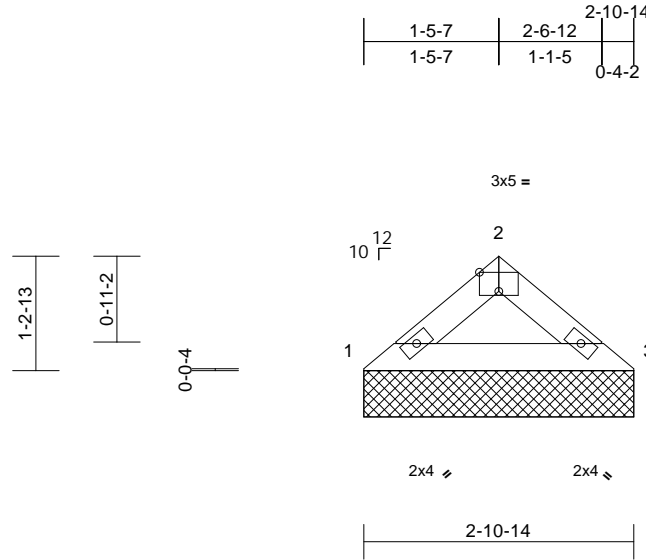
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	13 Serenity-Roof-B329 A GRH CP	I59707208
23070011-01	V26	Valley	1	1	Job Reference (optional)	

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

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Mon Jul 24 10:40:24  
ID: XxNbF6uyOuJ?zBujaJEcKgZNA0n-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:24.8  
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	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.06	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: 9 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 2-10-14 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=2-10-14, 3=2-10-14  
Max Horiz 1=24 (LC 10)  
Max Uplift 1=-10 (LC 14), 3=-10 (LC 15)  
Max Grav 1=133 (LC 20), 3=133 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-166/70, 2-3=-166/70  
BOT CHORD 1-3=-40/120

- 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 10 lb uplift at joint 1 and 10 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**
- 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.



July 24, 2023

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.**

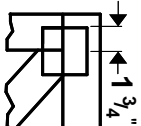
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall 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, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601



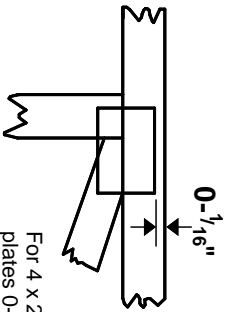
818 Soundside Road  
Edenton, NC 27932

# 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 20/20 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 where bearings occur. Min size shown is for crushing only.

### Industry Standards:

ANSI/TFP1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-89: Design Standard for Bracing, Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System

6-4-8  
dimensions shown in ft-in-sixteenths  
(Drawings not to scale)



**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-1311, ESR-1352, ESR1988  
ER-3907, ESR-2362, ESR-1397, ESR-3282

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

Lumber design values are in accordance with ANSI/TFP 1 section 6.3 These truss designs rely on lumber values established by others.

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MITek Engineering Reference Sheet: MII-7473 rev. 5/19/2020



# 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/TFP 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TFP 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. Rewriting pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TFP 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.