

Trenco  
818 Soundside Rd  
Edenton, NC 27932

Re: 24090010-01  
2 Serenity-Roof-B328 A CP GLH

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by Carter Components (Sanford, NC)).

Pages or sheets covered by this seal: I68179957 thru I68179999

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

North Carolina COA: C-0844



September 16, 2024

Gilbert, Eric

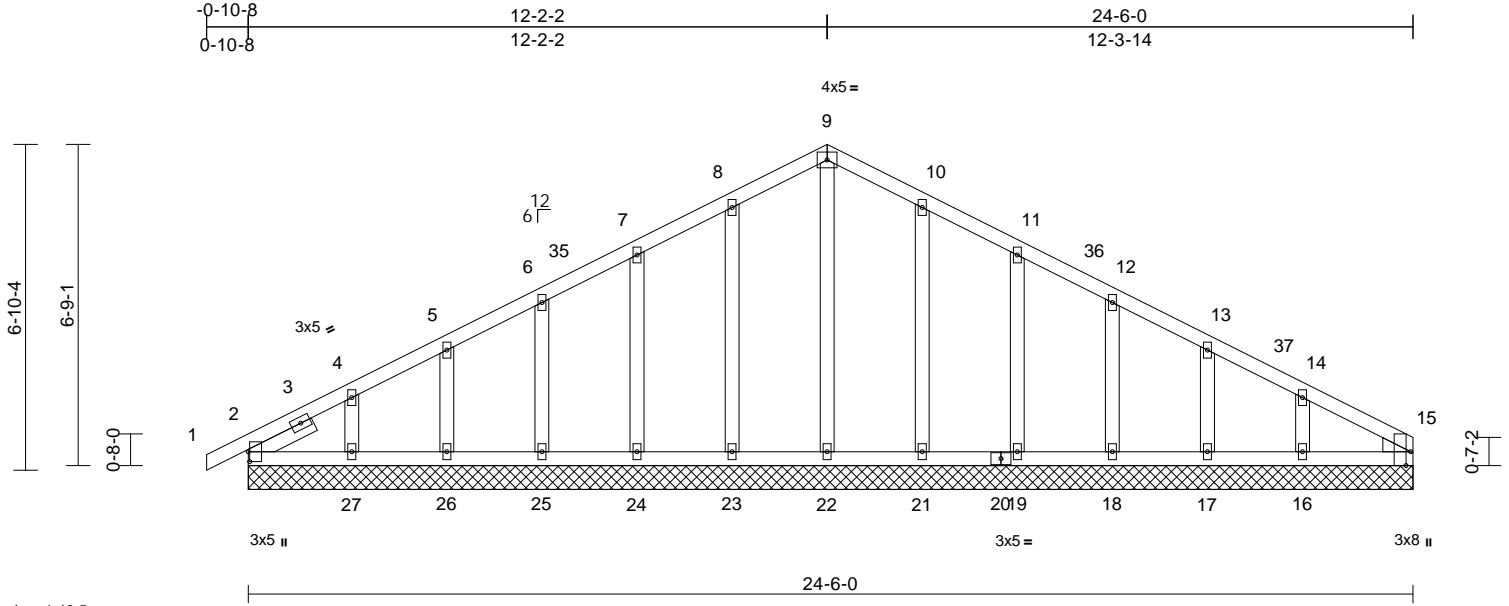
**IMPORTANT NOTE:** The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to MiTek or TRENCO. Any project specific information included is for MiTek's or TRENCO's customers file reference purpose only, and was not taken into account in the preparation of these designs. MiTek or TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

Job 24090010-01	Truss A01	Truss Type Common Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179957
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:13  
ID: \_6rcLElWA7tNlXY?wa67GkyzB5f-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:48.5

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [15:0-3-8,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	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horz(CT)	0.00	15	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 139 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  
 SLIDER Left 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=24-6-0, 15=24-6-0, 16=24-6-0,  
 17=24-6-0, 18=24-6-0, 19=24-6-0,  
 21=24-6-0, 22=24-6-0, 23=24-6-0,  
 24=24-6-0, 25=24-6-0, 26=24-6-0,  
 27=24-6-0, 28=24-6-0, 32=24-6-0

Max Horiz 2=109 (LC 18), 28=109 (LC 18)  
 Max Uplift 2=-13 (LC 15), 16=-71 (LC 15),  
 17=-36 (LC 15), 18=-45 (LC 15),  
 19=-45 (LC 15), 21=-43 (LC 15),  
 23=-45 (LC 14), 24=-44 (LC 14),  
 25=-46 (LC 14), 26=-36 (LC 14),  
 27=-77 (LC 14), 28=-13 (LC 15)

Max Grav 2=149 (LC 1), 15=88 (LC 1),  
 16=197 (LC 37), 17=150 (LC 1),  
 18=178 (LC 22), 19=228 (LC 22),  
 21=245 (LC 22), 22=153 (LC 28),  
 23=245 (LC 21), 24=228 (LC 21),  
 25=176 (LC 21), 26=157 (LC 1),  
 27=171 (LC 36), 28=149 (LC 1),  
 32=88 (LC 1)

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

**TOP CHORD** 1-2=0/23, 2-4=-117/49, 4-5=-87/56,  
 5-6=-66/79, 6-7=-64/102, 7-8=-75/147,  
 8-9=-89/191, 9-10=-89/191, 10-11=-75/147,  
 11-12=-64/101, 12-13=-51/55, 13-14=-59/17,  
 14-15=-77/23

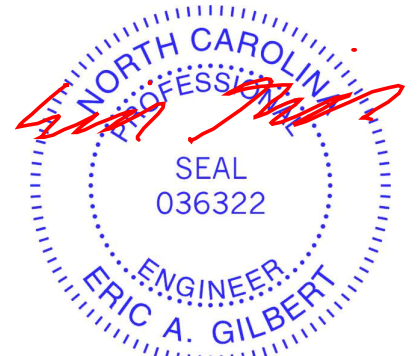
**BOT CHORD** 2-27=-23/89, 26-27=-23/89, 25-26=-23/89,  
 24-25=-23/89, 23-24=-23/89, 22-23=-23/89,  
 21-22=-23/89, 19-21=-23/89, 18-19=-23/89,  
 17-18=-23/89, 16-17=-23/89, 15-16=-23/89

**WEBS** 9-22=-113/15, 8-23=-205/75, 7-24=-188/79,  
 6-25=-135/78, 5-26=-125/72, 4-27=-134/110,  
 10-21=-205/75, 11-19=-188/79,  
 12-18=-136/78, 13-17=-122/73,  
 14-16=-142/127

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-2-2, Exterior(2N) 2-2-2 to 9-2-2, Corner(3R) 9-2-2 to 15-2-2, Exterior(2N) 15-2-2 to 21-6-0, Corner(3E) 21-6-0 to 24-6-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 13 lb uplift at joint 2, 45 lb uplift at joint 23, 44 lb uplift at joint 24, 46 lb uplift at joint 25, 36 lb uplift at joint 26, 77 lb uplift at joint 27, 43 lb uplift at joint 21, 45 lb uplift at joint 19, 45 lb uplift at joint 18, 36 lb uplift at joint 17, 71 lb uplift at joint 16 and 13 lb uplift at joint 2.

**LOAD CASE(S)** Standard



September 16, 2024

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

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



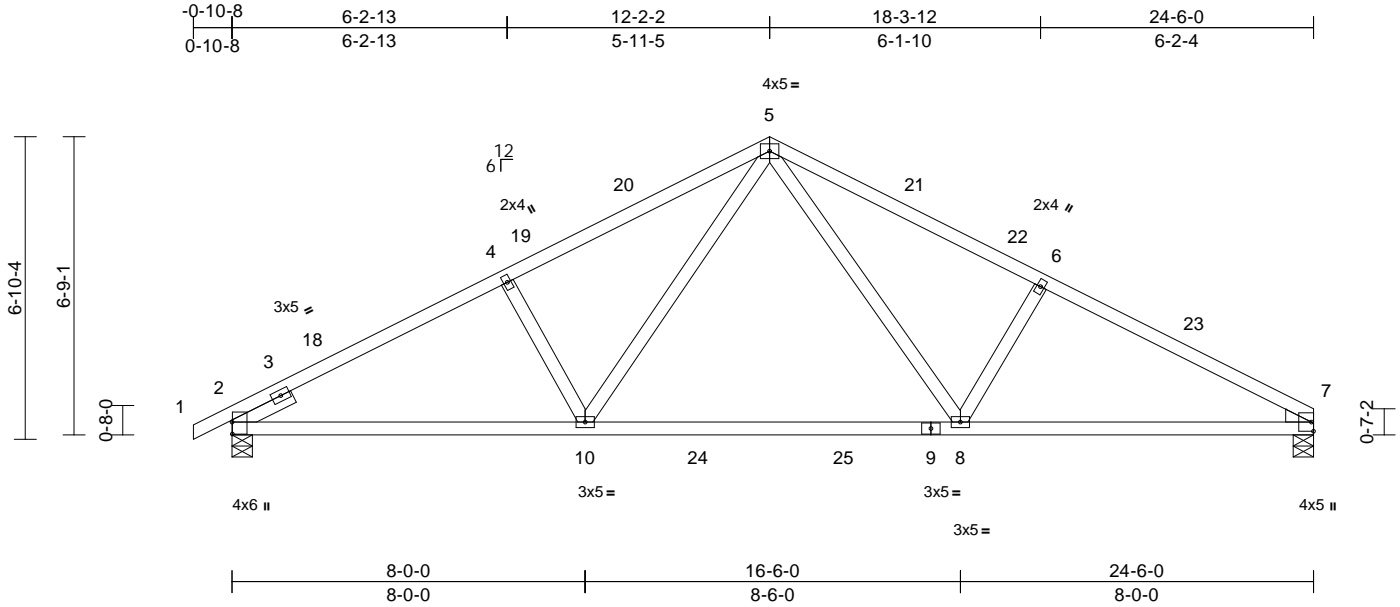
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss A02	Truss Type Common	Qty 9	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179958
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:52.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.98	Vert(LL)	-0.23	8-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.37	8-10	>785	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.30	Horz(CT)	0.05	7	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 115 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 2=0-5-8, 7=0-5-8  
 Max Horiz 2=109 (LC 18)  
 Max Uplift 2=-110 (LC 14), 7=-94 (LC 15)  
 Max Grav 2=1132 (LC 5), 7=1088 (LC 6)

**FORCES**

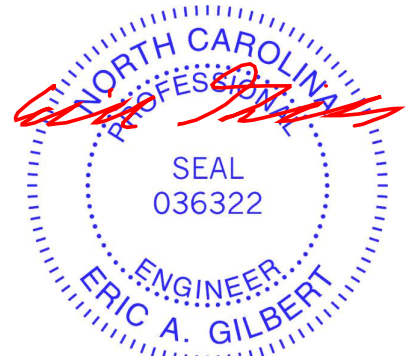
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-1918/250, 4-5=-1977/278, 5-6=-1835/283, 6-7=-1975/258  
 BOT CHORD 2-10=-191/1645, 8-10=-52/1113, 7-8=-163/1696  
 WEBS 4-10=-400/195, 5-10=-91/703, 5-8=-94/741, 6-8=-423/200

**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 9-2-2, Exterior(2R) 9-2-2 to 15-2-2, Interior (1) 15-2-2 to 21-6-0, Exterior(2E) 21-6-0 to 24-6-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

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

**LOAD CASE(S)** Standard



September 16, 2024

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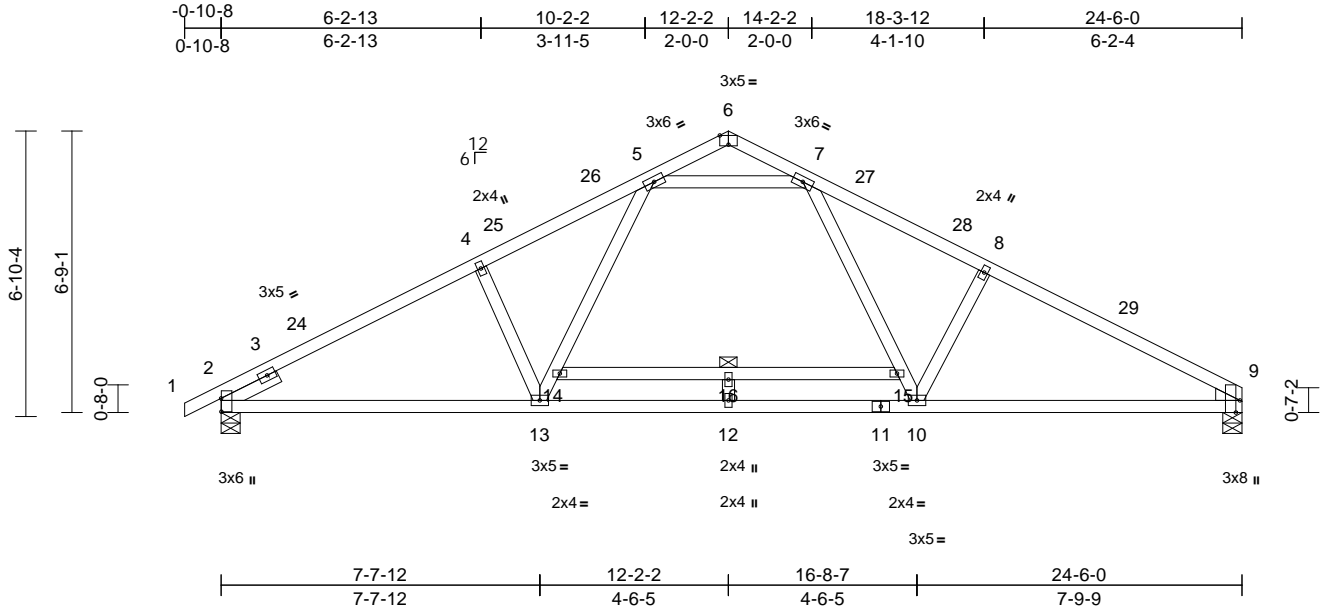
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss A04	Truss Type Common	Qty 6	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179959
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:55.3

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [6:0-2-8,Edge], [9:0-3-8,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	0.68	Vert(LL)	-0.21	10-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.61	Vert(CT)	-0.27	10-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.48	Horz(CT)	0.05	9	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 129 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-5-15 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 14-15

**REACTIONS**

(size) 2=0-5-8, 9=0-5-8  
 Max Horiz 2=109 (LC 18)  
 Max Uplift 2=-110 (LC 14), 9=-94 (LC 15)  
 Max Grav 2=1063 (LC 21), 9=1009 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-1626/240, 4-5=-1512/270, 5-6=-138/46, 6-7=-144/51, 7-8=-1534/271, 8-9=-1682/248  
 BOT CHORD 2-13=-183/1396, 12-13=-80/1071, 10-12=-80/1071, 9-10=-152/1444  
 WEBS 4-13=-364/195, 13-14=-91/495, 5-14=-83/515, 7-15=-76/536, 10-15=-84/517, 8-10=-391/195, 14-16=-26/0, 15-16=-26/0, 12-16=0/50, 5-7=-1034/247

**NOTES**

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 9-2-2, Exterior(2R) 9-2-2 to 15-2-2, Interior (1) 15-2-2 to 21-6-0, Exterior(2E) 21-6-0 to 24-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 9. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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



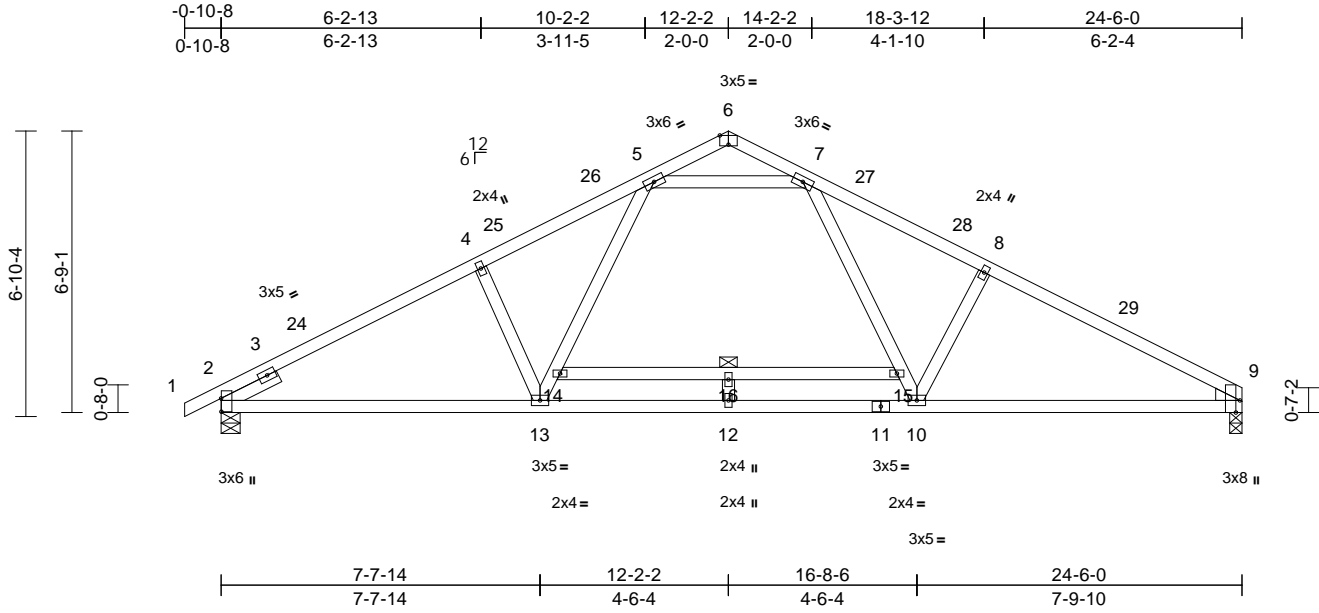
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss A04A	Truss Type Common	Qty 4	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179960
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:55.3

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [6:0-2-8,Edge], [9:0-3-8,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	0.68	Vert(LL)	-0.21	10-23	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.27	10-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.48	Horz(CT)	0.05	9	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 129 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-5-15 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 14-15

**REACTIONS**

(size) 2=0-5-8, 9=0-3-8  
 Max Horiz 2=109 (LC 18)  
 Max Uplift 2=-110 (LC 14), 9=-94 (LC 15)  
 Max Grav 2=1063 (LC 21), 9=1009 (LC 22)

**FORCES**

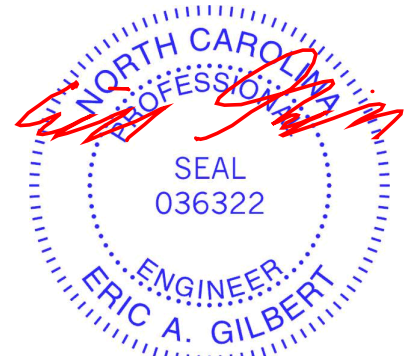
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-1626/240, 4-5=-1511/269, 5-6=-138/46, 6-7=-144/51, 7-8=-1533/271, 8-9=-1682/249  
 BOT CHORD 2-13=-183/1396, 12-13=-80/1071, 10-12=-80/1071, 9-10=-152/1444  
 WEBS 4-13=-364/194, 13-14=-91/495, 5-14=-82/514, 7-15=-76/536, 10-15=-84/517, 8-10=-391/195, 14-16=-26/0, 15-16=-26/0, 5-7=-1034/247, 12-16=0/50

**NOTES**

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 9-2-2, Exterior(2R) 9-2-2 to 15-2-2, Interior (1) 15-2-2 to 21-6-0, Exterior(2E) 21-6-0 to 24-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 9. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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

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



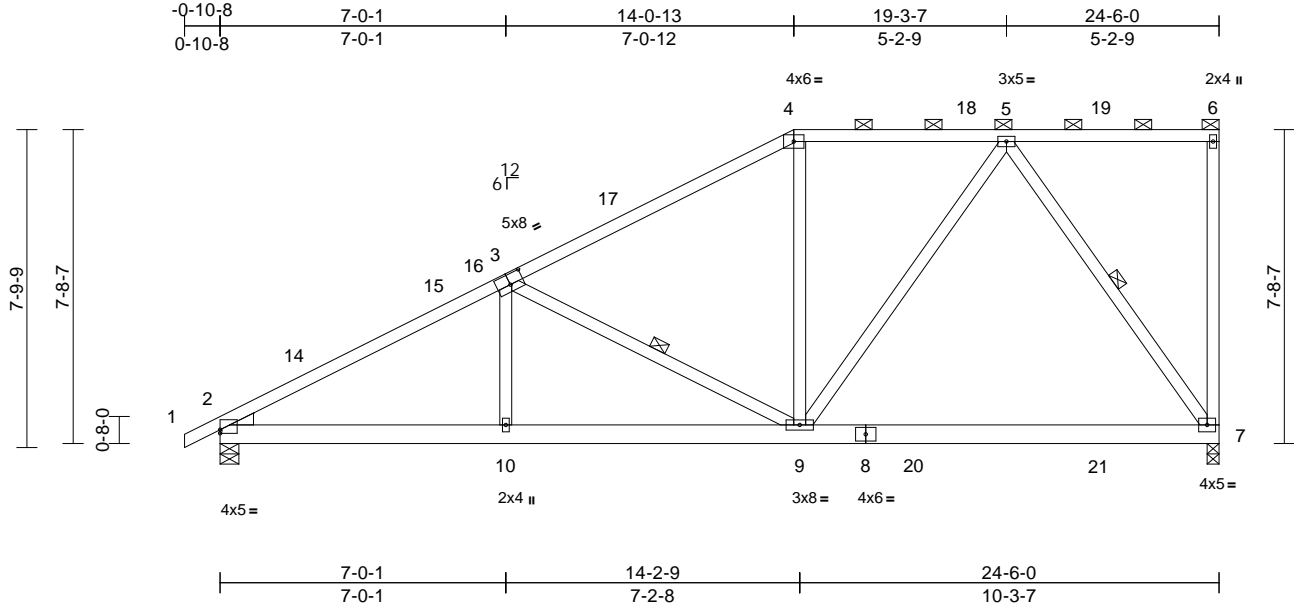
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss A05	Truss Type Half Hip	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179961
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:14  
ID:N\_FUI7kAVpqTDsHve?dz?XyzB8G-RFC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:56.5

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

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	0.88	Vert(LL)	-0.16	7-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.63	Vert(CT)	-0.26	7-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.48	Horz(CT)	0.03	7	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 161 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x6 SP No.2  
 WEBS 2x4 SP No.3  
 WEDGE Left: 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 (5-6-8 max.): 4-6.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 3-9, 5-7

**REACTIONS**

(size) 2=0-5-8, 7=0-3-8  
 Max Horiz 2=272 (LC 14)  
 Max Uplift 2=-123 (LC 14), 7=-123 (LC 14)  
 Max Grav 2=1156 (LC 40), 7=1176 (LC 39)

**FORCES**

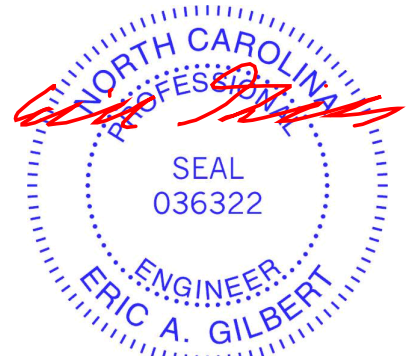
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-2014/185, 4-5=-1065/155, 5-6=-15/0, 6-7=-182/55  
 BOT CHORD 2-10=-344/1796, 9-10=-345/1794, 7-9=-108/683  
 WEBS 3-10=0/226, 3-9=-829/213, 4-9=0/233, 5-9=-82/801, 5-7=-1174/194

**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 9-9-15, Exterior(2R) 9-9-15 to 18-3-12, Interior (1) 18-3-12 to 21-4-4, Exterior(2E) 21-4-4 to 24-4-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

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

LOAD CASE(S) Standard



September 16, 2024

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



818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss A06	Truss Type Half Hip	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179962
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:15  
ID:8\_hfrEPsdpZA5tlv6Y9sy2yzB8g-RfC?PsB70Hq3NSgPqnL8w3uITxbGKwRCDoi7J4zJC?f

Page: 1

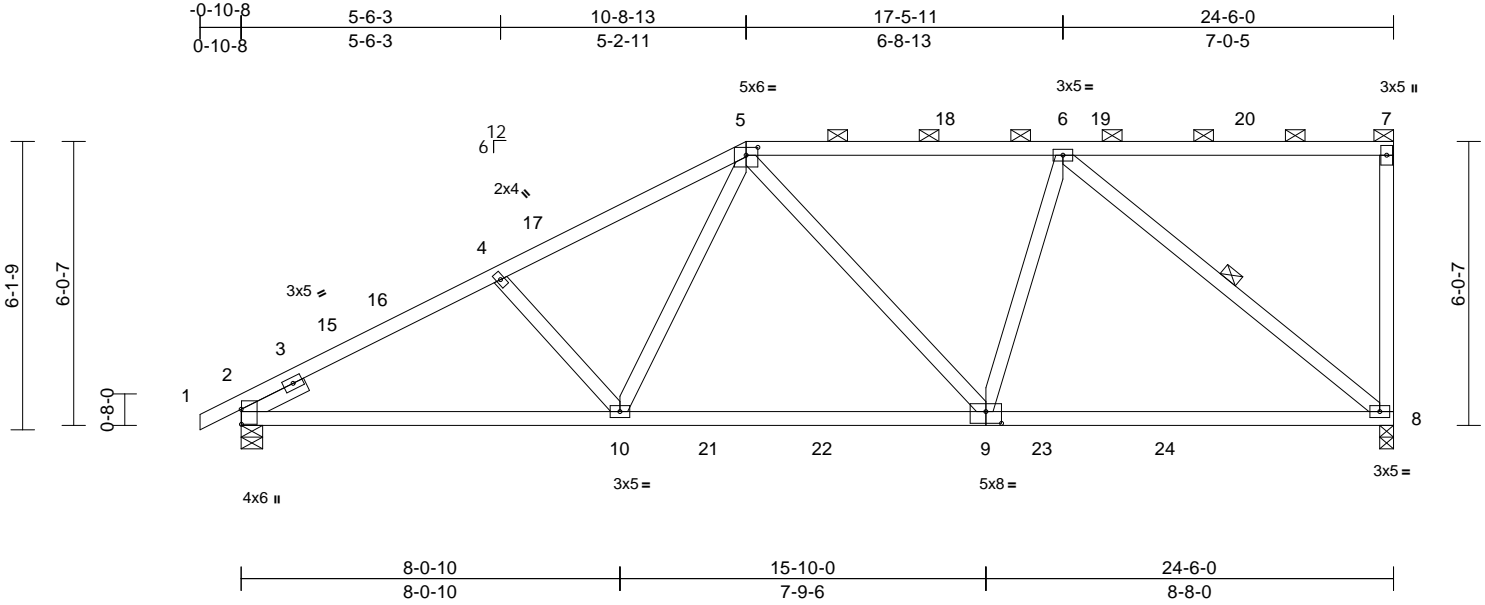


Plate Offsets (X, Y): [2:0-3-13,0-0-1], [5:0-3-0,0-2-0], [9:0-4-0,0-3-0]

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	1.00	Vert(LL)	-0.19	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.89	Vert(CT)	-0.34	8-9	>851	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.65	Horz(CT)	0.05	8	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 134 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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-9-14 oc purlins, except end verticals, and 2-0-0 oc purlins (2-2-0 max.): 5-7.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 6-8

**REACTIONS** (size) 2=0-5-8, 8=0-3-8

Max Horiz 2=211 (LC 14)  
 Max Uplift 2=-132 (LC 14), 8=-136 (LC 11)  
 Max Grav 2=1164 (LC 40), 8=1240 (LC 39)

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

TOP CHORD 1-2=0/23, 2-4=-1992/217, 4-5=-1769/206, 5-6=-1333/124, 6-7=-32/2, 7-8=-253/76  
 BOT CHORD 2-10=-325/1770, 8-10=-203/1322  
 WEBS 5-10=-38/622, 4-10=-414/163, 5-9=-226/124, 6-9=0/523, 6-8=-1563/173

**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 6-5-15, Exterior(2R) 6-5-15 to 14-11-12, Interior (1) 14-11-12 to 21-4-4, Exterior(2E) 21-4-4 to 24-4-4 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

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

**LOAD CASE(S)** Standard



September 16, 2024

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

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818 Soundside Road  
 Edenton, NC 27932



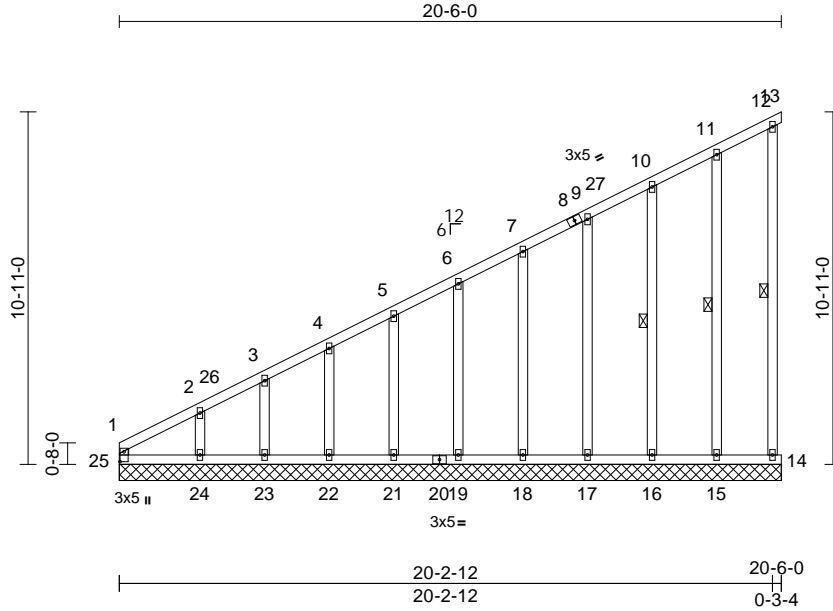


Job 24090010-01	Truss B01	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179964
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:15  
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Page: 1



Scale = 1:71.4

Plate Offsets (X, Y): [25:0-3-11,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.29	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	-0.02	13	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 152 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 12-14:2x4 SP No.2  
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.

WEBS 1 Row at midpt 12-14, 11-15, 10-16  
**REACTIONS** (size) 13=20-6-0, 14=20-6-0, 15=20-6-0, 16=20-6-0, 17=20-6-0, 18=20-6-0, 19=20-6-0, 21=20-6-0, 22=20-6-0, 23=20-6-0, 24=20-6-0, 25=20-6-0

Max Horiz 25=373 (LC 14)  
Max Uplift 13=11 (LC 14), 14=16 (LC 14), 15=41 (LC 14), 16=45 (LC 14), 17=43 (LC 14), 18=44 (LC 14), 19=44 (LC 14), 21=41 (LC 14), 22=53 (LC 14), 23=5 (LC 14), 24=171 (LC 14)  
Max Grav 13=23 (LC 20), 14=83 (LC 20), 15=235 (LC 20), 16=233 (LC 20), 17=177 (LC 20), 18=160 (LC 1), 19=161 (LC 20), 21=159 (LC 1), 22=163 (LC 20), 23=147 (LC 20), 24=202 (LC 1), 25=253 (LC 14)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-25=209/69, 1-2=-492/192, 2-3=-389/156, 3-4=-355/143, 4-5=-306/123, 5-6=-260/105, 6-7=-213/87, 7-9=-167/69, 9-10=-121/52, 10-11=-74/42, 11-12=-45/22, 12-13=-7/9, 12-14=-69/26

**BOT CHORD** 24-25=-1/0, 23-24=-1/0, 22-23=-1/0, 21-22=-1/0, 19-21=-1/0, 18-19=-1/0, 17-18=-1/0, 16-17=-1/0, 15-16=-1/0, 14-15=-1/0  
**WEBS** 11-15=-194/79, 10-16=-193/81, 9-17=-137/79, 7-18=-126/80, 6-19=-127/80, 5-21=-126/78, 4-22=-129/86, 3-23=-113/53, 2-24=-172/204

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-1-12 to 3-1-12, Exterior(2N) 3-1-12 to 20-6-0 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.
- 5) All plates are 2x4 MT20 unless otherwise indicated.
- 6) Gable requires continuous bottom chord bearing.
- 7) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- 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.

- 11) Bearing at joint(s) 13 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 11 lb uplift at joint 13, 16 lb uplift at joint 14, 41 lb uplift at joint 15, 45 lb uplift at joint 16, 43 lb uplift at joint 17, 44 lb uplift at joint 18, 44 lb uplift at joint 19, 41 lb uplift at joint 21, 53 lb uplift at joint 22, 5 lb uplift at joint 23 and 171 lb uplift at joint 24.

**LOAD CASE(S)** Standard



September 16, 2024

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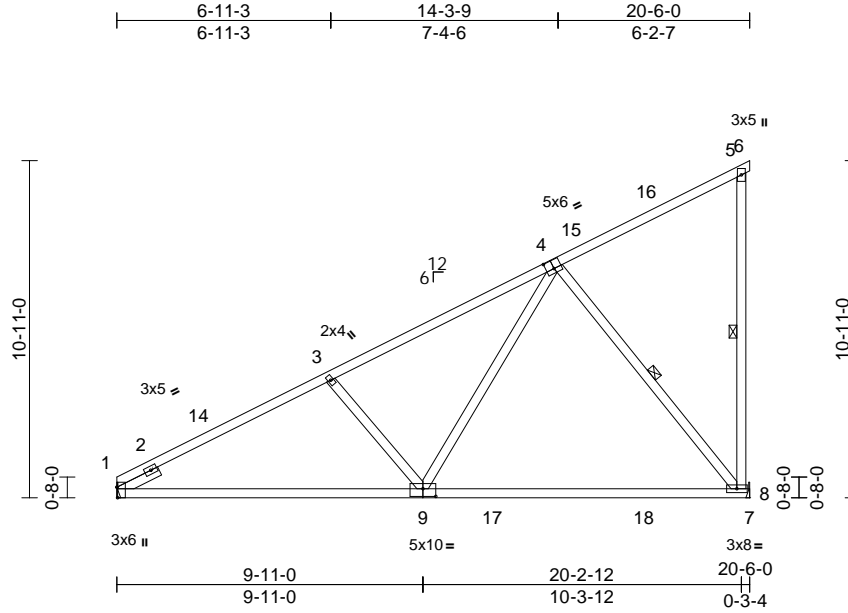
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss B02	Truss Type Monopitch	Qty 9	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179965
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:15  
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Page: 1



Scale = 1:74.6

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

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	0.72	Vert(LL)	-0.48	8-9	>504	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.91	Vert(CT)	-0.73	8-9	>331	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.43	Horz(CT)	0.02	8	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 115 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.1
- WEBS 2x4 SP No.3 \*Except\* 5-8:2x4 SP No.2
- SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 4-8-11 oc purlins, except end verticals.
- BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.
- WEBS 1 Row at midpt 5-8, 4-8

- REACTIONS** (size) 1= Mechanical, 8= Mechanical
- Max Horiz 1=375 (LC 14)
  - Max Uplift 1=-27 (LC 14), 8=-232 (LC 14)
  - Max Grav 1=898 (LC 5), 8=1065 (LC 5)

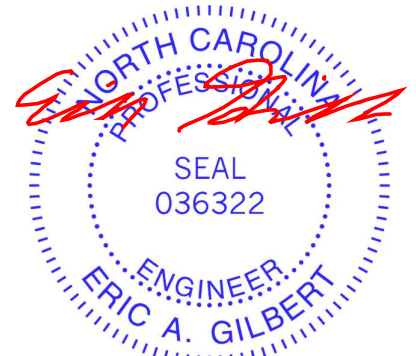
- FORCES** (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-3=-1402/34, 3-5=-1185/96, 5-6=-12/0, 5-8=-271/90
  - BOT CHORD 1-8=-408/1298, 7-8=0/0
  - WEBS 4-8=-923/258, 4-9=-51/875, 3-9=-408/222

**NOTES**

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, 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 232 lb uplift at joint 8 and 27 lb uplift at joint 1.

**LOAD CASE(S)** Standard



September 16, 2024

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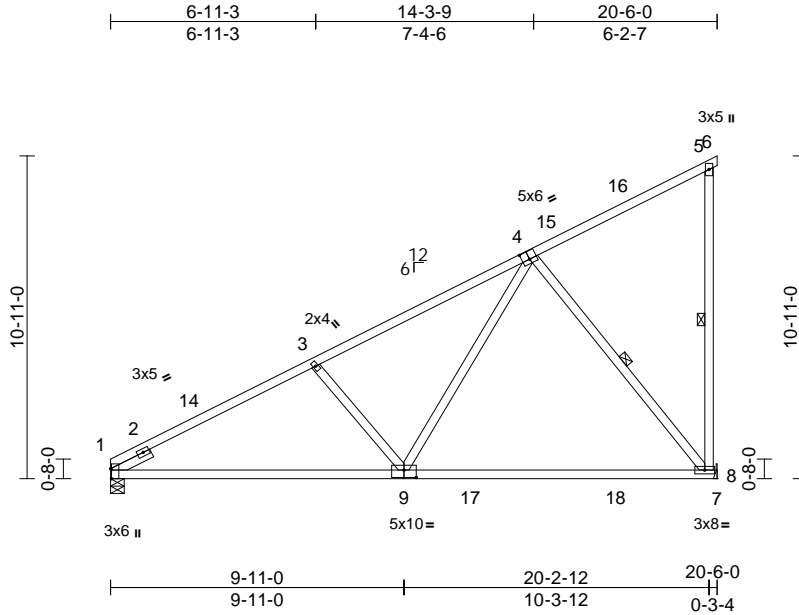
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss B03	Truss Type Monopitch	Qty 2	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179966
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
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Page: 1



Scale = 1:77.9

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

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	Vert(LL)	-0.48	8-9	>504	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.73	8-9	>331	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.02	8	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 115 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 5-8:2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-8-11 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.  
 WEBS 1 Row at midpt 5-8, 4-8

**REACTIONS**

(size) 1=0-5-8, 8= Mechanical  
 Max Horiz 1=375 (LC 14)  
 Max Uplift 1=-27 (LC 14), 8=-232 (LC 14)  
 Max Grav 1=898 (LC 5), 8=1065 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

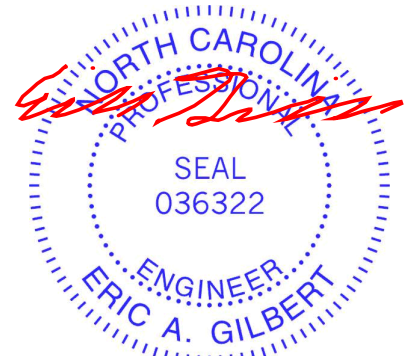
TOP CHORD 1-3=-1402/34, 3-5=-1185/96, 5-6=-12/0, 5-8=-271/90  
 BOT CHORD 1-8=-408/1298, 7-8=0/0  
 WEBS 4-8=-923/258, 4-9=-51/875, 3-9=-408/222

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
 Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.

- 4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 5) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 6) Refer to girder(s) for truss to truss connections.
- 7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 232 lb uplift at joint 8.
- 8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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

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



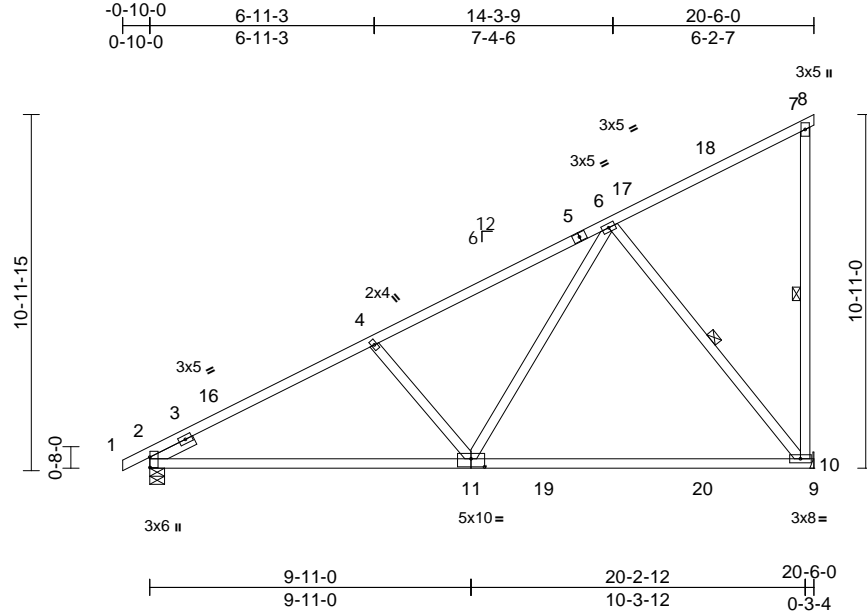
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss B04	Truss Type Monopitch	Qty 3	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179967
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
ID:uKtrJGkYuK\_5qa1S4NLaLYzBNI-RfC?PsB70Hq3NSgPqnl8w3ulTXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:71.1

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [11:0-5-0,0-3-0]

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	0.72	Vert(LL)	-0.48	10-11	>504	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.91	Vert(CT)	-0.73	10-11	>330	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.43	Horz(CT)	0.02	10	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 117 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.1  
 WEBS 2x4 SP No.3 \*Except\* 7-10:2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-10-6 oc purlins, except end verticals.  
 BOT CHORD Rigid ceiling directly applied or 8-3-12 oc bracing.  
 WEBS 1 Row at midpt 7-10, 6-10

**REACTIONS**

(size) 2=0-5-8, 10= Mechanical  
 Max Horiz 2=388 (LC 14)  
 Max Uplift 2=-43 (LC 14), 10=-232 (LC 14)  
 Max Grav 2=942 (LC 5), 10=1071 (LC 5)

**FORCES**

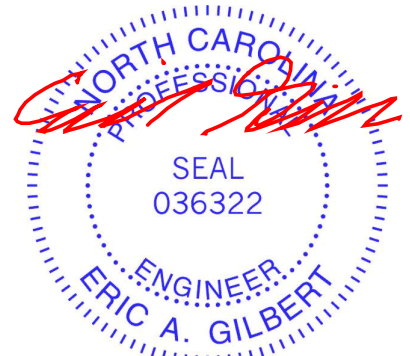
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/22, 2-4=-1400/34, 4-6=-1183/25, 6-7=-155/95, 7-8=-12/0, 7-10=-269/88  
 BOT CHORD 2-10=-399/1296, 9-10=0/0  
 WEBS 6-10=-919/258, 6-11=-52/880, 4-11=-411/224

**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) -0-10-0 to 2-2-0, Interior (1) 2-2-0 to 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 zone; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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, with BCDL = 10.0psf.
- 7) Refer to girder(s) for truss to truss connections.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 232 lb uplift at joint 10.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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

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



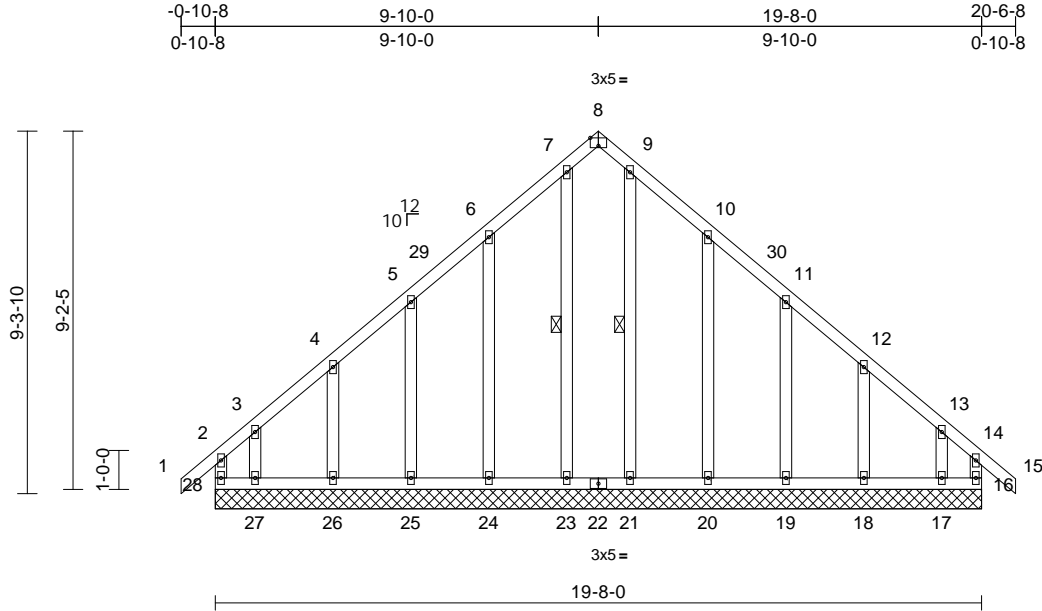
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss C01	Truss Type Common Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179968
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
ID:y?IVUHJnnTWv5Ac?yd58OGyzBFF-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCoD7J4zJC?f

Page: 1



Scale = 1:59.1

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.20	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.00	16	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 142 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.
WEBS	1 Row at midpt 7-23, 9-21

REACTIONS	(size)
Max Horiz	16=19-8-0, 17=19-8-0, 18=19-8-0, 19=19-8-0, 20=19-8-0, 21=19-8-0, 23=19-8-0, 24=19-8-0, 25=19-8-0, 26=19-8-0, 27=19-8-0, 28=19-8-0
Max Uplift	28=236 (LC 12)
Max Grav	16=116 (LC 13), 17=212 (LC 15), 18=68 (LC 15), 19=74 (LC 15), 20=103 (LC 15), 24=101 (LC 14), 25=75 (LC 14), 26=67 (LC 14), 27=225 (LC 14), 28=161 (LC 12)
	16=230 (LC 15), 17=193 (LC 13), 18=176 (LC 26), 19=175 (LC 22), 20=260 (LC 22), 21=210 (LC 22), 23=210 (LC 21), 24=260 (LC 21), 25=175 (LC 21), 26=174 (LC 25), 27=219 (LC 12), 28=252 (LC 14)

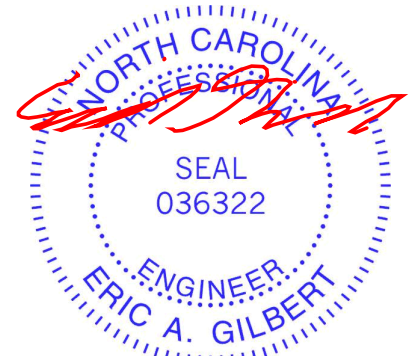
FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	2-28=-173/105, 1-2=0/39, 2-3=-237/179, 3-4=-134/128, 4-5=-105/102, 5-6=-84/122, 6-7=-109/182, 7-8=-85/129, 8-9=-85/129, 9-10=-109/171, 10-11=-64/106, 11-12=-79/73, 12-13=-116/98, 13-14=-218/141, 14-15=0/39, 14-16=-156/74

BOT CHORD	WEBS
27-28=-113/157, 26-27=-113/157, 25-26=-113/157, 24-25=-113/157, 23-24=-113/157, 21-23=-113/157, 20-21=-113/157, 19-20=-113/157, 18-19=-113/157, 17-18=-113/157, 16-17=-113/157	7-23=-175/10, 9-21=-175/6, 6-24=-219/126, 5-25=-147/96, 4-26=-156/100, 3-27=-133/155, 10-20=-219/128, 11-19=-147/96, 12-18=-156/100, 13-17=-124/148

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 6-10-0, Exterior(2R) 6-10-0 to 12-7-12, Interior (1) 12-7-12 to 17-6-8, Exterior(2E) 17-6-8 to 20-6-8 zone; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable requires continuous bottom chord bearing.

- Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
- Gable studs spaced at 2-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 161 lb uplift at joint 28, 116 lb uplift at joint 16, 101 lb uplift at joint 24, 75 lb uplift at joint 25, 67 lb uplift at joint 26, 225 lb uplift at joint 27, 103 lb uplift at joint 20, 74 lb uplift at joint 19, 68 lb uplift at joint 18 and 212 lb uplift at joint 17.

**LOAD CASE(S)** Standard



September 16, 2024

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

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

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**TRENCO**  
A MiTek Affiliate

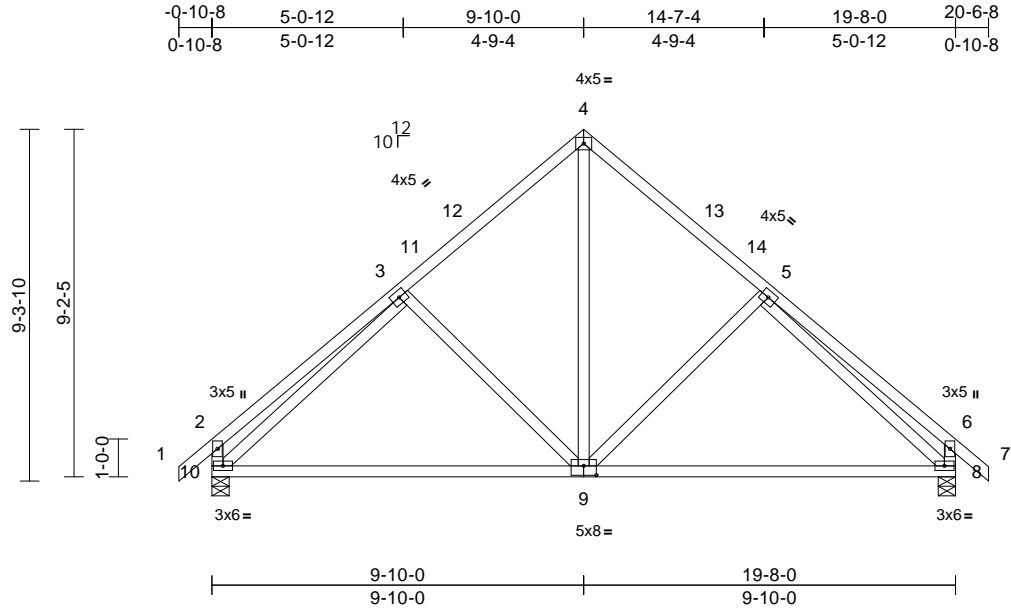
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss C02	Truss Type Common	Qty 6	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179969
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
ID:veOhTnYiJvCs5ZfZ6xbfGyzBEy-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:60.9

Plate Offsets (X, Y): [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	0.50	Vert(LL)	-0.17	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.90	Vert(CT)	-0.35	8-9	>669	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.59	Horz(CT)	0.02	8	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 124 lb	FT = 20%

#### LUMBER

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

#### BRACING

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

#### REACTIONS

(size) 8=0-5-8, 10=0-5-8  
Max Horiz 10=-236 (LC 12)  
Max Uplift 8=-73 (LC 15), 10=-73 (LC 14)  
Max Grav 8=884 (LC 22), 10=884 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

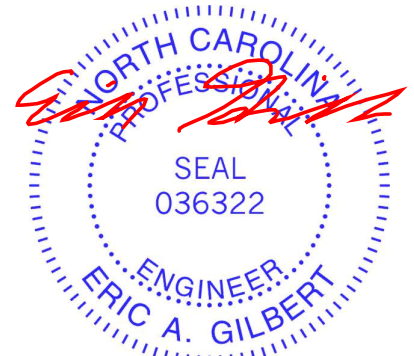
TOP CHORD 1-2=0/39, 2-3=-415/131, 3-4=-757/159,  
4-5=-757/159, 5-6=-395/131, 6-7=0/39,  
2-10=-407/144, 6-8=-394/144  
BOT CHORD 8-10=-100/652  
WEBS 4-9=-82/568, 5-9=-259/212, 3-9=-259/212,  
3-10=-666/53, 5-8=-666/53

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 6-10-0, Exterior(2R) 6-10-0 to 12-10-0, Interior (1) 12-10-0 to 17-6-8, Exterior(2E) 17-6-8 to 20-6-8 zone; 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) 10 and 8. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



September 16, 2024

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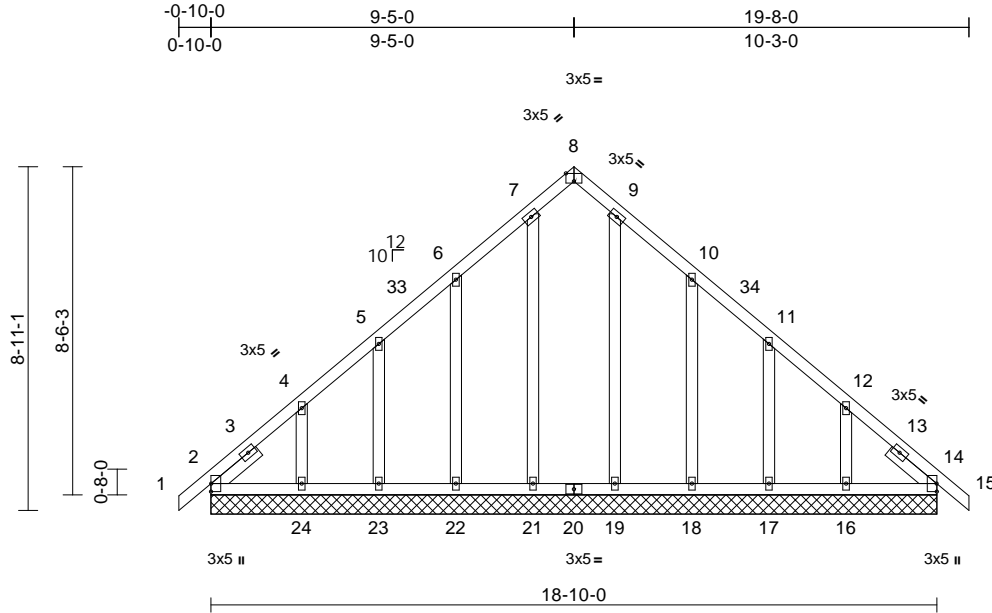
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss E01	Truss Type Common Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179970
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
ID:x0ypEL3Up0yR9Rp3VvFHJqyzBIA-RfC?PsB70Hq3NSgPqnL8w3uITxbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:59.8

Plate Offsets (X, Y): [8:0-2-8,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	0.09	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.01	14	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 127 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=18-10-0, 14=18-10-0, 16=18-10-0, 17=18-10-0, 18=18-10-0, 19=18-10-0, 21=18-10-0, 22=18-10-0, 23=18-10-0, 24=18-10-0, 25=18-10-0, 29=18-10-0  
Max Horiz 2=201 (LC 13), 25=201 (LC 13)  
Max Uplift 2=22 (LC 10), 14=-1 (LC 11), 16=-138 (LC 15), 17=-55 (LC 15), 18=-101 (LC 15), 21=-3 (LC 11), 22=-97 (LC 14), 23=-55 (LC 14), 24=-141 (LC 14), 25=-22 (LC 10), 29=-1 (LC 11)  
Max Grav 2=206 (LC 27), 14=195 (LC 28), 16=216 (LC 26), 17=163 (LC 22), 18=252 (LC 22), 19=217 (LC 22), 21=217 (LC 21), 22=252 (LC 21), 23=163 (LC 21), 24=219 (LC 25), 25=206 (LC 27), 29=195 (LC 28)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/32, 2-4=-252/136, 4-5=-154/92, 5-6=-111/67, 6-7=-110/77, 7-8=-89/67, 8-9=-89/66, 9-10=-110/56, 10-11=-92/40, 11-12=-136/64, 12-14=-232/116, 14-15=0/32

**BOT CHORD** 2-24=-84/227, 23-24=-84/227, 22-23=-84/227, 21-22=-84/227, 19-21=-84/226, 18-19=-84/226, 17-18=-84/226, 16-17=-84/226, 14-16=-84/226  
**WEBS** 7-21=-175/29, 9-19=-175/12, 6-22=-211/118, 5-23=-142/88, 4-24=-175/136, 10-18=-211/122, 11-17=-142/88, 12-16=-175/134

- 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) -0-10-0 to 2-4-4, Interior (1) 2-4-4 to 6-4-4, Exterior(2R) 6-4-4 to 12-5-12, Interior (1) 12-5-12 to 16-5-12, Exterior(2E) 16-5-12 to 19-8-0 zone; 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 22 lb uplift at joint 2, 1 lb uplift at joint 14, 3 lb uplift at joint 21, 97 lb uplift at joint 22, 55 lb uplift at joint 23, 141 lb uplift at joint 24, 101 lb uplift at joint 18, 55 lb uplift at joint 17, 138 lb uplift at joint 16, 22 lb uplift at joint 2 and 1 lb uplift at joint 14.

**LOAD CASE(S)** Standard



September 16, 2024

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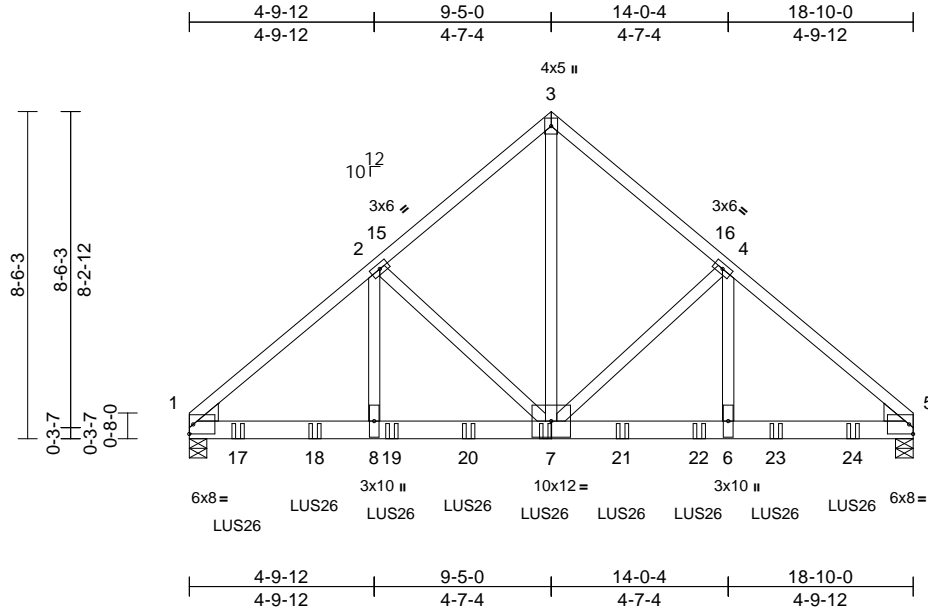
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss E02	Truss Type Common Girder	Qty 1	Ply 2	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179971
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
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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	0.43	Vert(LL)	-0.08	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.78	Vert(CT)	-0.14	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.95	Horz(CT)	0.04	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 249 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP No.2  
WEBS 2x4 SP No.3  
WEDGE Left: 2x6 SP No.2  
Right: 2x6 SP No.2

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 5-2-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 1=0-5-8, 5=0-5-8  
Max Horiz 1=-184 (LC 10)  
Max Uplift 1=-231 (LC 12), 5=-227 (LC 13)  
Max Grav 1=4700 (LC 5), 5=4592 (LC 6)

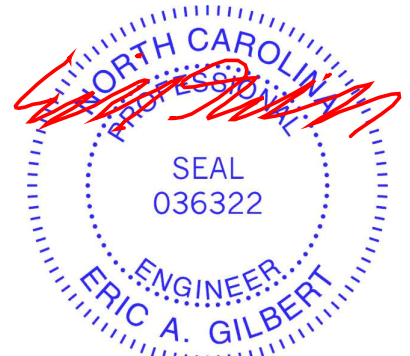
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-5590/301, 2-3=-3907/297,  
3-4=-3906/297, 4-5=-5608/301  
BOT CHORD 1-8=-266/4312, 6-8=-266/4312,  
5-6=-175/4253  
WEBS 3-7=-271/4600, 4-7=-1844/240,  
4-6=-54/2076, 2-7=-1827/238, 2-8=-52/2049

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

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 5. This connection is for uplift only and does not consider lateral forces.
- Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss) or equivalent spaced at 2-0-0 oc max. starting at 1-3-4 from the left end to 17-3-4 to connect truss(es) to back face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.

**LOAD CASE(S)** Standard

- Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-3=-60, 3-5=-60, 9-12=-20  
Concentrated Loads (lb)  
Vert: 7=-813 (B), 17=-813 (B), 18=-813 (B), 19=-813 (B), 20=-813 (B), 21=-813 (B), 22=-813 (B), 23=-813 (B), 24=-813 (B)



September 16, 2024

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818 Soundside Road  
Edenton, NC 27932

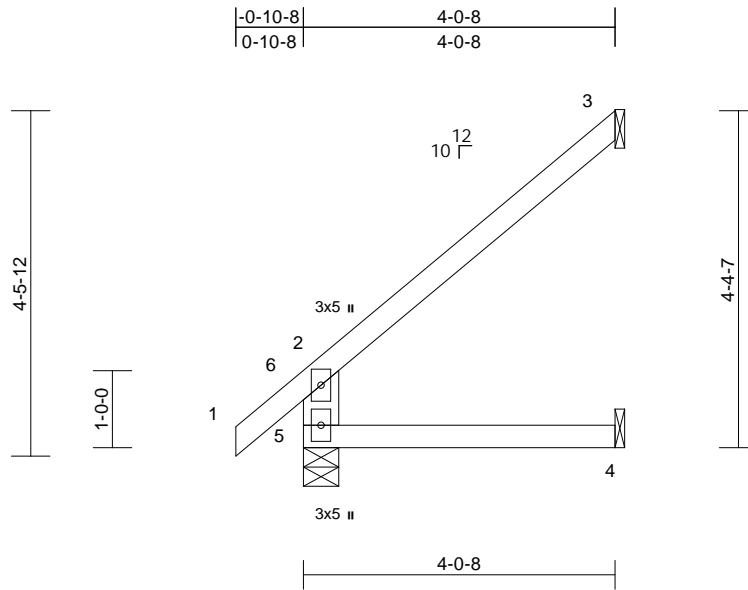


Job 24090010-01	Truss EJ4	Truss Type Jack-Open	Qty 9	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179972
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:16  
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Page: 1



Scale = 1:29.9

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	0.36	Vert(LL)	0.02	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.32	Vert(CT)	-0.02	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.03	3	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 18 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 4-0-8 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=133 (LC 14)  
Max Uplift 3=90 (LC 14), 4=6 (LC 14)  
Max Grav 3=171 (LC 21), 4=71 (LC 7), 5=328 (LC 21)

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

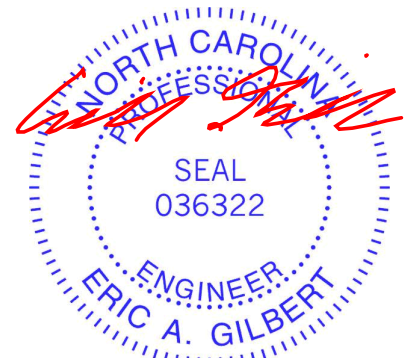
TOP CHORD 2-5=-307/92, 1-2=0/53, 2-3=-144/84  
BOT CHORD 4-5=0/0

#### 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) Bearings are assumed to be: , Joint 5 User Defined .
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 90 lb uplift at joint 3 and 6 lb uplift at joint 4.

**LOAD CASE(S)** Standard



September 16, 2024

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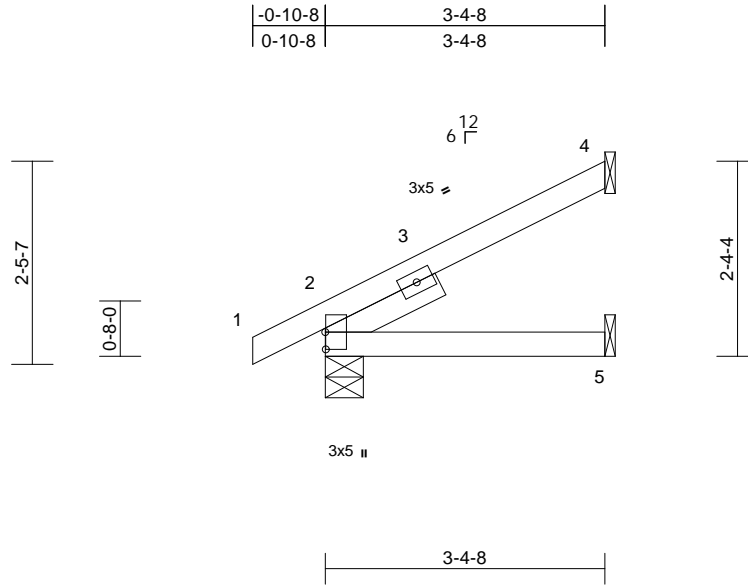
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	2 Serenity-Roof-B328 A CP GLH	168179973
24090010-01	EJ34	Jack-Open	2	1	Job Reference (optional)	

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

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
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Page: 1



Scale = 1:27.8

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

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	Vert(LL)	-0.01	5-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.02	5-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.01	2	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 15 lb	FT = 20%

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 3-4-8 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 4= Mechanical, 5= Mechanical  
Max Horiz 2=74 (LC 14)  
Max Uplift 2=-18 (LC 14), 4=-45 (LC 14)  
Max Grav 2=279 (LC 21), 4=126 (LC 21), 5=59 (LC 7)

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

TOP CHORD 1-2=0/36, 2-4=-98/45  
BOT CHORD 2-5=-113/88

#### 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) Bearings are assumed to be: Joint 2 User Defined .
- 8) Refer to girder(s) for truss to truss connections.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 45 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.

**LOAD CASE(S)** Standard



September 16, 2024

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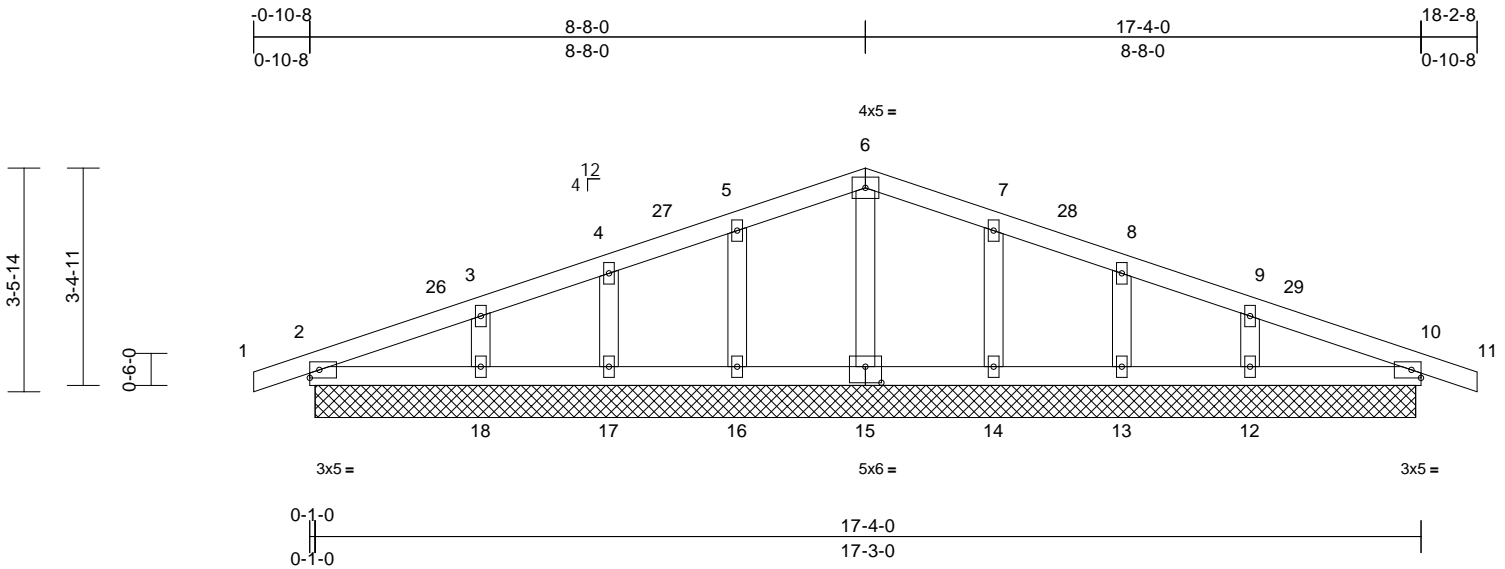
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss F01	Truss Type Common Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179974
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
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Page: 1



Scale = 1:35.9  
Plate Offsets (X, Y): [15:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	10	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 74 lb	FT = 20%

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

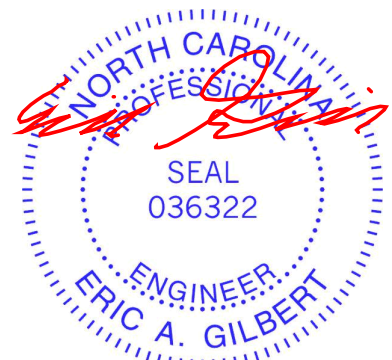
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size)  
2=17-2-0, 10=17-2-0, 12=17-2-0,  
13=17-2-0, 14=17-2-0, 15=17-2-0,  
16=17-2-0, 17=17-2-0, 18=17-2-0,  
19=17-2-0, 23=17-2-0  
Max Horiz 2=-50 (LC 19), 19=-50 (LC 19)  
Max Uplift 2=-38 (LC 10), 10=-45 (LC 11),  
12=-46 (LC 15), 13=-31 (LC 11),  
14=-38 (LC 15), 16=-38 (LC 14),  
17=-30 (LC 10), 18=-49 (LC 14),  
19=-38 (LC 10), 23=-45 (LC 11)  
Max Grav 2=160 (LC 1), 10=160 (LC 1),  
12=249 (LC 22), 13=203 (LC 22),  
14=235 (LC 22), 15=135 (LC 22),  
16=235 (LC 21), 17=203 (LC 21),  
18=249 (LC 21), 19=160 (LC 1),  
23=160 (LC 1)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-60/34, 3-4=-51/47,  
4-5=-54/78, 5-6=-64/121, 6-7=-64/121,  
7-8=-54/78, 8-9=-51/43, 9-10=-48/34,  
10-11=0/17  
BOT CHORD 2-18=-22/45, 17-18=0/45, 16-17=0/45,  
14-16=0/45, 13-14=0/45, 12-13=0/45,  
10-12=-18/45  
WEBS 6-15=-96/12, 5-16=-193/109, 4-17=-170/86,  
3-18=-190/104, 7-14=-193/109,  
8-13=-170/86, 9-12=-190/104

- 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 5-8-0, Corner(3R) 5-8-0 to 11-8-0, Exterior(2N) 11-8-0 to 15-2-8, Corner(3E) 15-2-8 to 18-2-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - All plates are 2x4 MT20 unless otherwise indicated.
  - Gable studs spaced at 2-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.

11) N/A  
12) Non Standard bearing condition. Review required.  
**LOAD CASE(S)** Standard



September 16, 2024

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

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



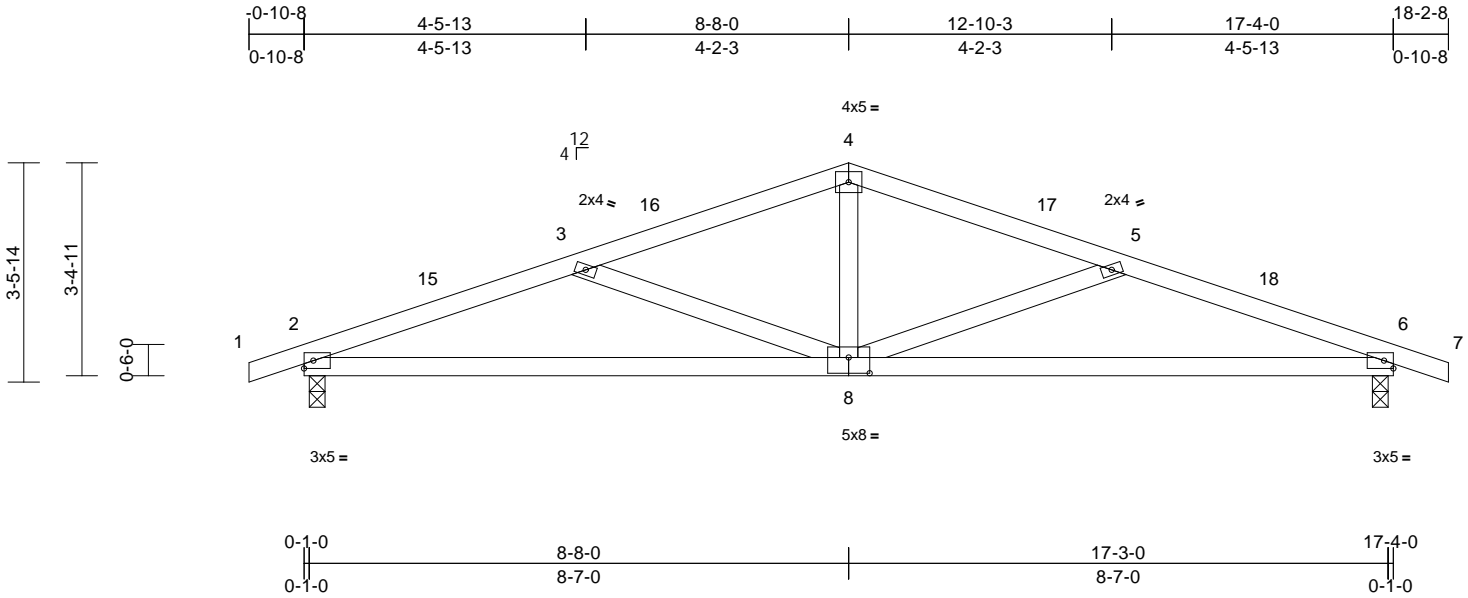
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss F02	Truss Type Common	Qty 4	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179975
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
ID:qaiA6xbzzlROKF1mhdVdcvzBUO-RfC?PsB70Hq3NSgPqnL8w3uTXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:36.7

Plate Offsets (X, Y): [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	0.39	Vert(LL)	0.10	8-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.70	Vert(CT)	-0.19	8-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.24	Horz(CT)	0.03	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 73 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 4-4-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 7-0-4 oc bracing.

**REACTIONS**

(size) 2=0-3-0, 6=0-3-0  
Max Horiz 2=-50 (LC 19)  
Max Uplift 2=-266 (LC 10), 6=-266 (LC 11)  
Max Grav 2=816 (LC 21), 6=816 (LC 22)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-1656/800, 3-4=-1134/656,  
4-5=-1134/656, 5-6=-1656/800, 6-7=0/17  
BOT CHORD 2-6=-692/1528  
WEBS 4-8=-243/461, 5-8=-547/206, 3-8=-547/206

**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 5-8-0, Exterior(2R) 5-8-0 to 11-8-0, Interior (1) 11-8-0 to 15-2-8, Exterior(2E) 15-2-8 to 18-2-8 zone; cantilever left and right exposed; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 6. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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

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



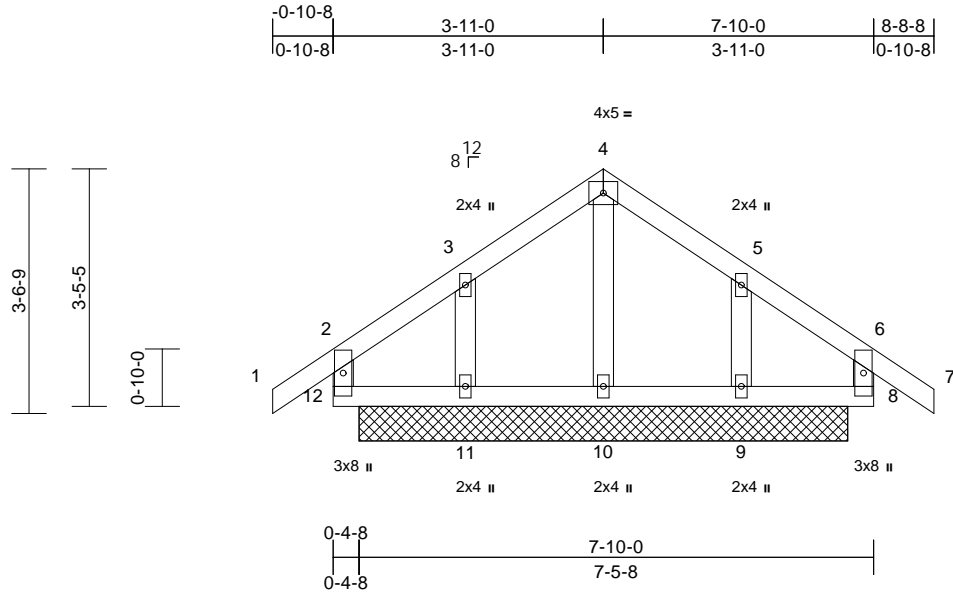
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss G01	Truss Type Common Supported Gable	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179976
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.28	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.23	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.07	Horz(CT)	0.00	9	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 39 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 7-10-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 9=7-1-0, 10=7-1-0, 11=7-1-0  
Max Horiz 11=96 (LC 13)  
Max Uplift 9=-83 (LC 15), 11=-82 (LC 14)  
Max Grav 9=459 (LC 22), 10=260 (LC 22), 11=459 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-12=-51/46, 1-2=0/57, 2-3=-113/228, 3-4=-27/172, 4-5=-29/172, 5-6=-113/228, 6-7=0/57, 6-8=-51/46  
BOT CHORD 11-12=-129/162, 10-11=-129/205, 9-10=-129/205, 8-9=-129/205  
WEBS 4-10=-256/49, 3-11=-301/199, 5-9=-301/197

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 1-11-0, Corner(3R) 1-11-0 to 5-11-0, Corner(3E) 5-11-0 to 8-8-8 zone; 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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).  
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.

**LOAD CASE(S)** Standard



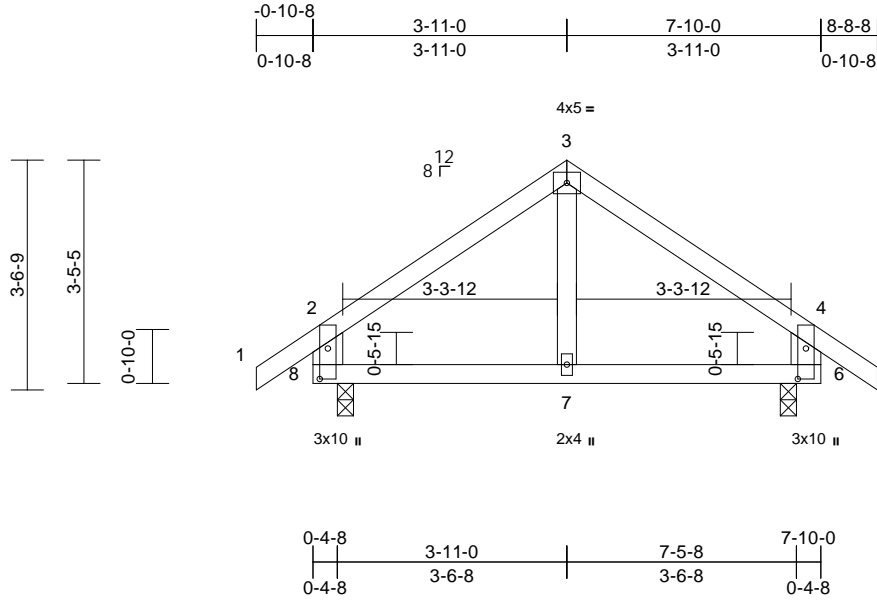
September 16, 2024

Job 24090010-01	Truss G02	Truss Type Common	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179977
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
ID:DP\_INHM2klcG82JXPRlRjVyzBPX-RfC?PsB70Hq3NSgPqnl8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:35.5  
Plate Offsets (X, Y): [6:0-5-10,0-1-8], [8:0-5-10,0-1-8]

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	0.33	Vert(LL)	0.01	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.15	Vert(CT)	-0.01	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 36 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2 \*Except\* 7-3:2x4 SP No.3

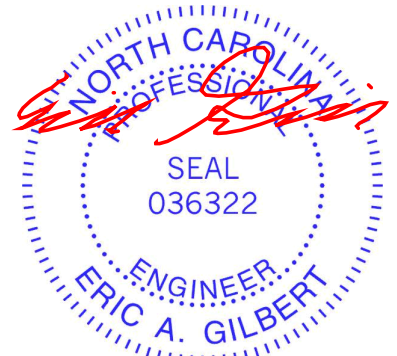
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 6=0-3-0, 8=0-3-0  
Max Horiz 8=98 (LC 13)  
Max Uplift 6=-45 (LC 15), 8=-45 (LC 14)  
Max Grav 6=498 (LC 22), 8=498 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/62, 2-3=-344/190, 3-4=-344/188, 4-5=0/62, 2-8=-455/234, 4-6=-455/232  
BOT CHORD 7-8=-33/184, 6-7=-33/184  
WEBS 3-7=-72/142

- 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.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 45 lb uplift at joint 8 and 45 lb uplift at joint 6.
- LOAD CASE(S)** Standard

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



September 16, 2024

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



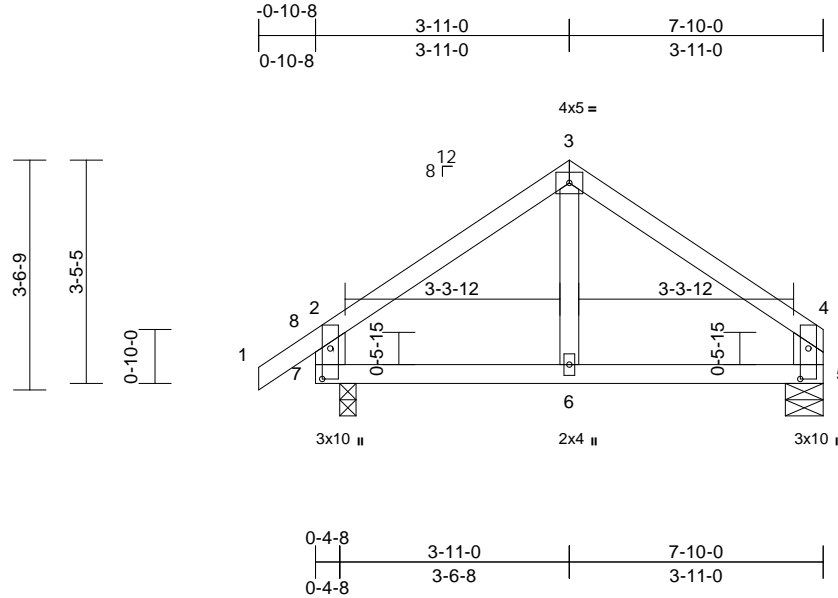
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss G03	Truss Type Common	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179978
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
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Page: 1



Scale = 1:35.5

Plate Offsets (X, Y): [5:0-5-10,0-1-8], [7:0-5-10,0-1-8]

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	0.29	Vert(LL)	0.01	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(CT)	-0.02	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 34 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x6 SP No.2 \*Except\* 6-3:2x4 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) 5=0-7-0, 7=0-3-0  
 Max Horiz 7=82 (LC 11)  
 Max Uplift 5=-23 (LC 15), 7=-45 (LC 14)  
 Max Grav 5=378 (LC 22), 7=450 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/43, 2-3=-337/190, 3-4=-345/186, 2-7=-408/234, 4-5=-332/165  
 BOT CHORD 6-7=-83/194, 5-6=-83/194  
 WEBS 3-6=-65/137

**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, Exterior(2R) 2-1-8 to 4-7-4, Exterior(2E) 4-7-4 to 7-7-4 zone; 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
- 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 4) Unbalanced snow loads have been considered for this design.

- 5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 7) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 45 lb uplift at joint 7.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard



September 16, 2024

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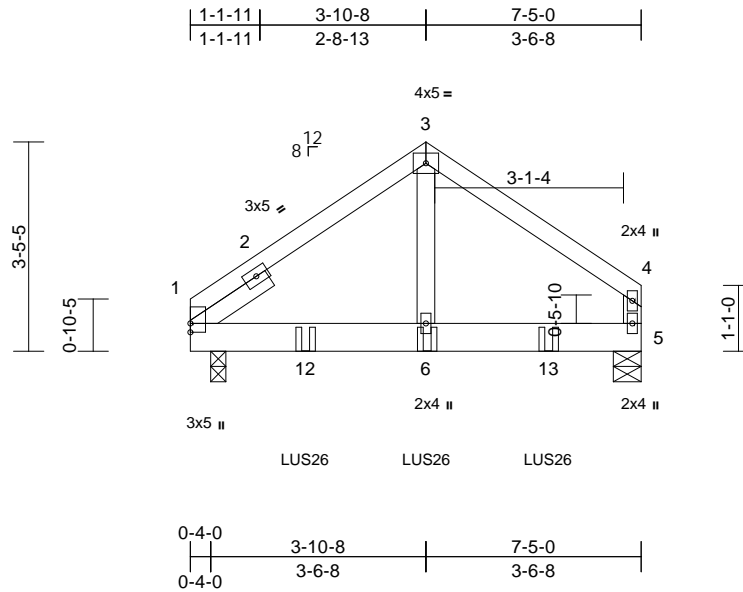
818 Soundside Road  
 Edenton, NC 27932

Job 24090010-01	Truss G04	Truss Type Common Girder	Qty 1	Ply 2	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179979
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
ID:mlX4RCA3yu3lhLxPq??YxydzBOU-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWRcDoi7J4zJC?F

Page: 1



Scale = 1:37.9

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	0.26	Vert(LL)	-0.11	6	>761	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.84	Vert(CT)	-0.19	6	>464	180	
TCDL	10.0	Rep Stress Incr	NO	WB	0.03	Horz(CT)	0.04	1	n/a	n/a	
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 76 lb	FT = 20%

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

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

**REACTIONS** (size) 1=0-3-0, 5=0-5-8  
Max Horiz 1=60 (LC 9)  
Max Uplift 1=-169 (LC 12), 5=-167 (LC 13)  
Max Grav 1=857 (LC 18), 5=814 (LC 19)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-3=-245/126, 3-4=-73/73, 4-5=-164/70  
BOT CHORD 1-6=-57/60, 5-6=0/0  
WEBS 3-6=-261/40

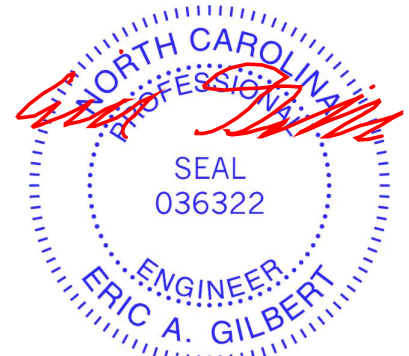
**NOTES**

- 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:  
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.  
Bottom chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.  
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
- All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; 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 a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5 and 1. This connection is for uplift only and does not consider lateral forces.
- Use Simpson Strong-Tie LUS26 (4-10d Girder, 3-10d Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 1-10-12 from the left end to 5-10-12 to connect truss(es) to back face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.

**LOAD CASE(S)** Standard

- 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=-313 (B), 12=-313 (B), 13=-313 (B)



September 16, 2024

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

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

ENGINEERING BY  
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818 Soundside Road  
Edenton, NC 27932

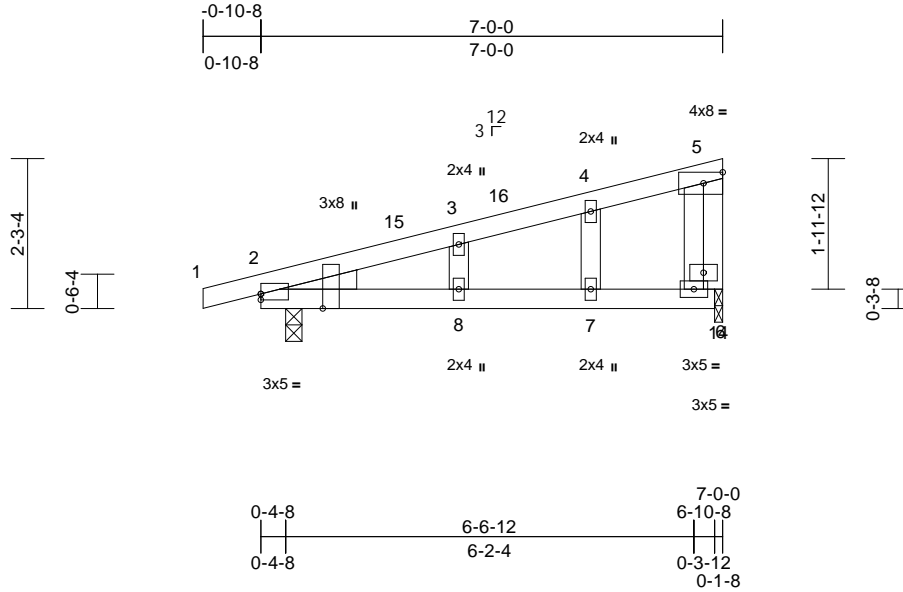


Job 24090010-01	Truss H01	Truss Type Monopitch	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179980
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:17  
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Page: 1



Scale = 1:34.9

Plate Offsets (X, Y): [2:Edge,0-1-1], [2:0-2-10,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	0.60	Vert(LL)	0.06	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.53	Vert(CT)	-0.09	7-8	>944	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.01	Horz(CT)	0.01	2	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 32 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  
WEDGE Left: 2x4 SP No.3

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

**REACTIONS** (size) 2=0-3-0, 14=0-1-8  
Max Horiz 2=72 (LC 10)  
Max Uplift 2=-137 (LC 10), 14=-98 (LC 10)  
Max Grav 2=469 (LC 21), 14=311 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-295/143, 3-4=-277/159, 4-5=-255/176, 5-6=-137/170  
BOT CHORD 2-8=-212/263, 7-8=-212/263, 6-7=-212/263  
WEBS 4-7=-60/47, 3-8=-64/43, 5-14=-333/268

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- Bearing at joint(s) 14 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) 14.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 14. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard

- NOTES**
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 3-8-8, Exterior(2E) 3-8-8 to 6-8-8 zone; cantilever left 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
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.



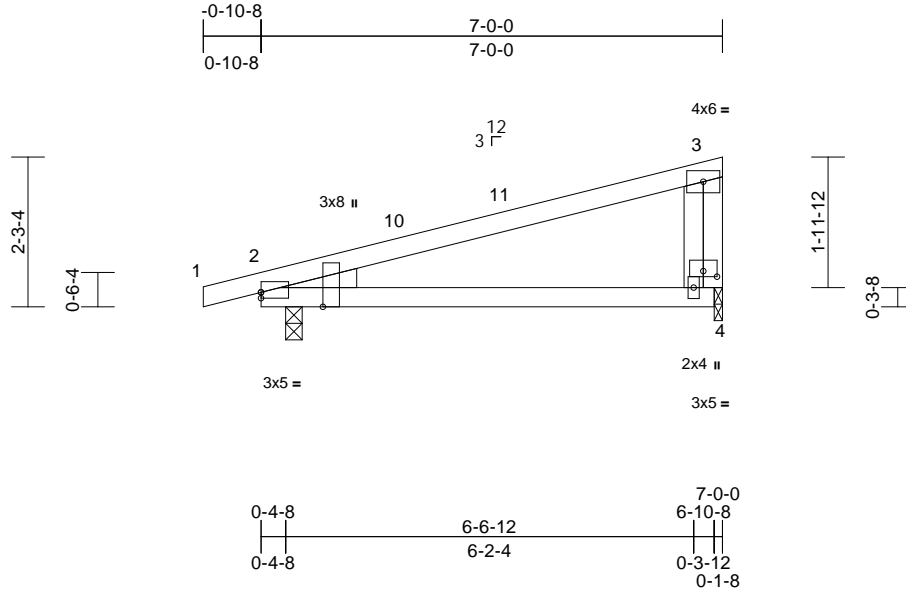
September 16, 2024

Job 24090010-01	Truss H02	Truss Type Monopitch	Qty 5	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179981
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	0.16	4-9	>518	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.21	4-9	>390	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.02	2	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 29 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  
WEDGE Left: 2x4 SP No.3

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

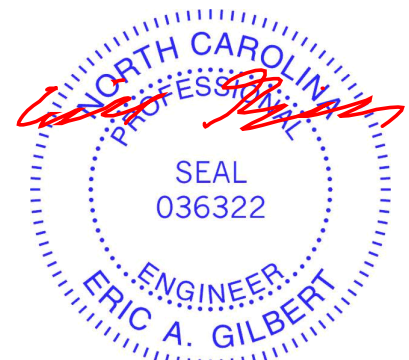
**REACTIONS** (size) 2=0-3-0, 4=0-1-8  
Max Horiz 2=72 (LC 10)  
Max Uplift 2=-133 (LC 10), 4=-102 (LC 10)  
Max Grav 2=457 (LC 21), 4=322 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/18, 2-3=-108/102, 3-4=-225/179  
BOT CHORD 2-4=-135/127

- 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) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 4. This connection is for uplift only and does not consider lateral forces.

**LOAD CASE(S)** Standard

- NOTES**
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 3-8-8, Exterior(2E) 3-8-8 to 6-8-8 zone; cantilever left 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.



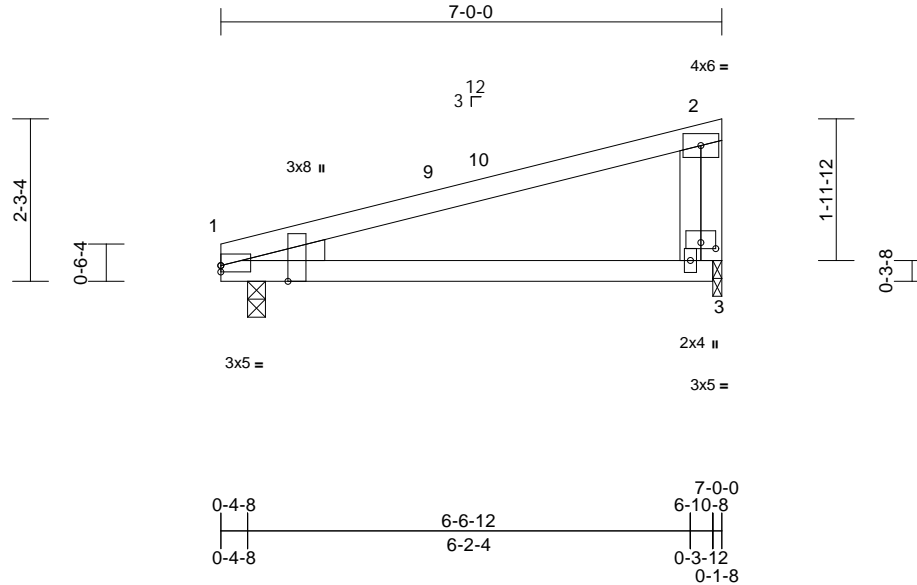
September 16, 2024

Job 24090010-01	Truss H03	Truss Type Monopitch	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179982
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:32.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.82	Vert(LL)	0.17	3-8	>472	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.70	Vert(CT)	-0.22	3-8	>361	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.03	1	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 28 lb	FT = 20%

#### LUMBER

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

#### BRACING

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

#### REACTIONS

(size) 1=0-3-0, 3=0-1-8  
Max Horiz 1=62 (LC 14)  
Max Uplift 1=-97 (LC 10), 3=-105 (LC 10)  
Max Grav 1=373 (LC 21), 3=332 (LC 21)

#### FORCES

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-188/130, 2-3=-230/186  
BOT CHORD 1-3=-217/211

#### NOTES

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 3-8-8, Exterior(2E) 3-8-8 to 6-8-8 zone; cantilever left exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- 3) Unbalanced snow loads have been considered for this design.
- 4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 5) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 6) Bearing at joint(s) 3 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
- 7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 3.
- 8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 3. This connection is for uplift only and does not consider lateral forces.

LOAD CASE(S) Standard



September 16, 2024

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

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



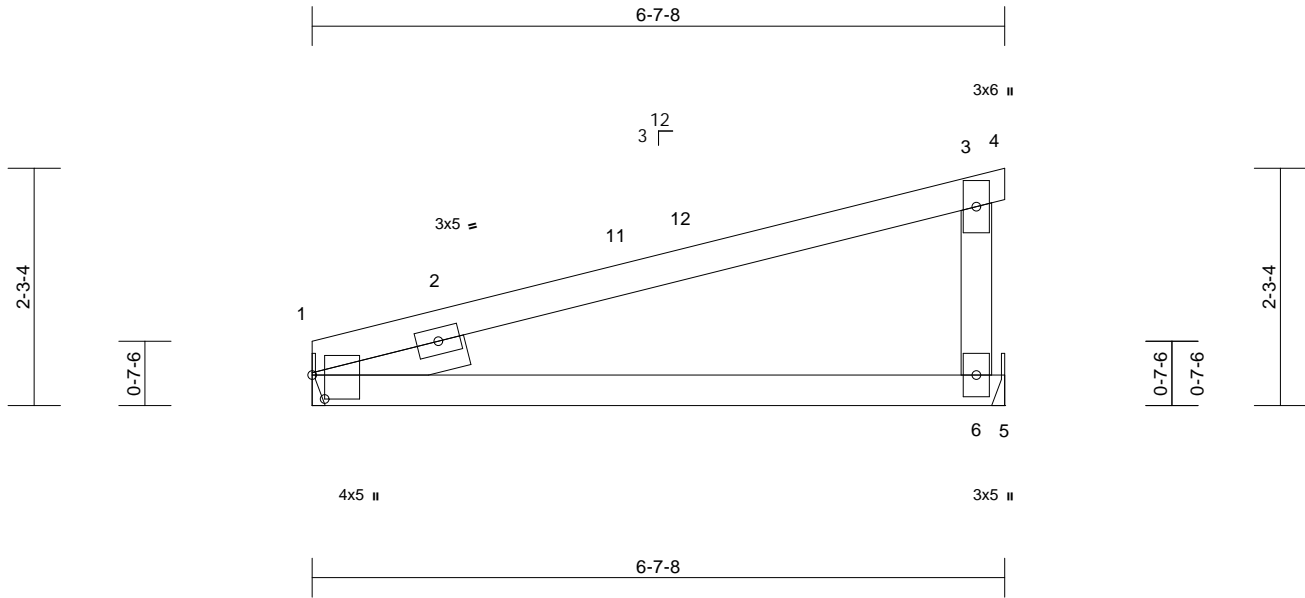
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss H04	Truss Type Monopitch	Qty 3	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179983
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:22  
Plate Offsets (X, Y): [1:0-2-12,0-1-7]

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	Vert(LL)	0.07	6-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.09	6-9	>838	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.02	1	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR							
BCDL	10.0									Weight: 25 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
OTHERS 2x4 SP No.2  
SLIDER Left 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.

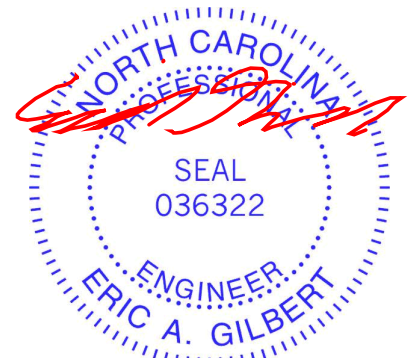
**REACTIONS** (size) 1= Mechanical, 6= Mechanical  
Max Horiz 1=60 (LC 10)  
Max Uplift 1=-85 (LC 10), 6=-109 (LC 20)  
Max Grav 1=333 (LC 20), 6=363 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-3=-272/161, 3-4=-6/0, 3-6=-239/172  
BOT CHORD 1-6=-350/381, 5-6=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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 3-7-8, Exterior(2E) 3-7-8 to 6-7-8 zone; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - 3) Unbalanced snow loads have been considered for this design.
  - 4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.

- 5) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 6) Refer to girder(s) for truss to truss connections.
- 7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 85 lb uplift at joint 1 and 109 lb uplift at joint 6.

**LOAD CASE(S)** Standard



September 16, 2024

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

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

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**TRENCO**  
A MiTek Affiliate

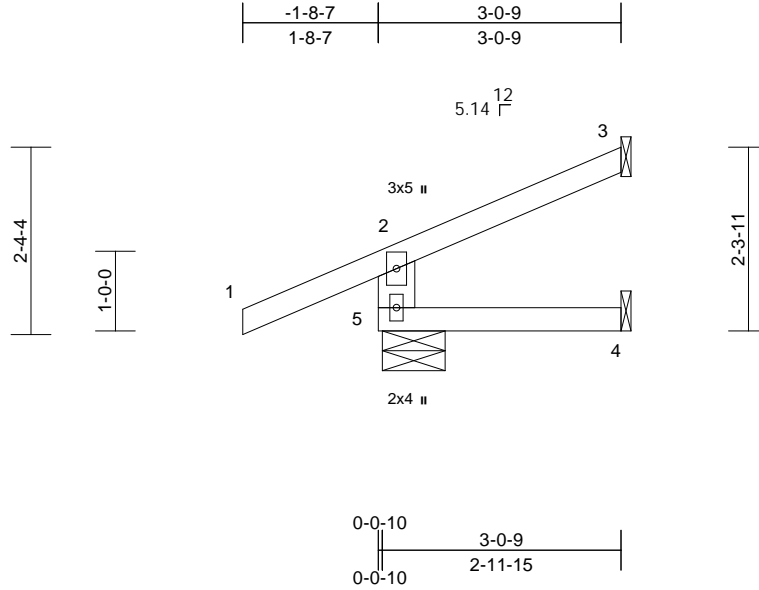
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss HJ211	Truss Type Jack-Open	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179984
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:28.9

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	0.40	Vert(LL)	0.00	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(CT)	-0.01	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.01	3	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 14 lb	FT = 20%

**LUMBER**

TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
WEBS 2x6 SP No.2

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 3-0-9 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 3= Mechanical, 4= Mechanical,  
5=0-9-7  
Max Horiz 5=59 (LC 14)  
Max Uplift 3=-36 (LC 14), 5=-47 (LC 10)  
Max Grav 3=82 (LC 21), 4=46 (LC 7), 5=394 (LC 21)

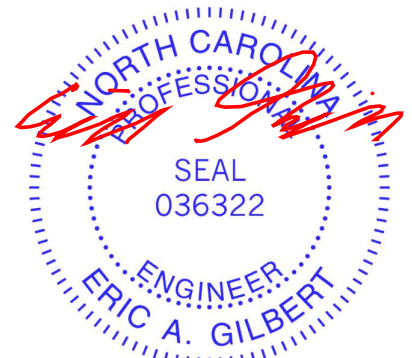
**FORCES** (lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-5=-349/235, 1-2=0/70, 2-3=-68/27  
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 Corner (3) -1-8-7 to 2-6-8, Exterior(2R) 2-6-8 to 2-11-13 zone; end vertical left 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 5 User Defined .
  - 8) Refer to girder(s) for truss to truss connections.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 47 lb uplift at joint 5 and 36 lb uplift at joint 3.
- LOAD CASE(S)** Standard



September 16, 2024

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

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



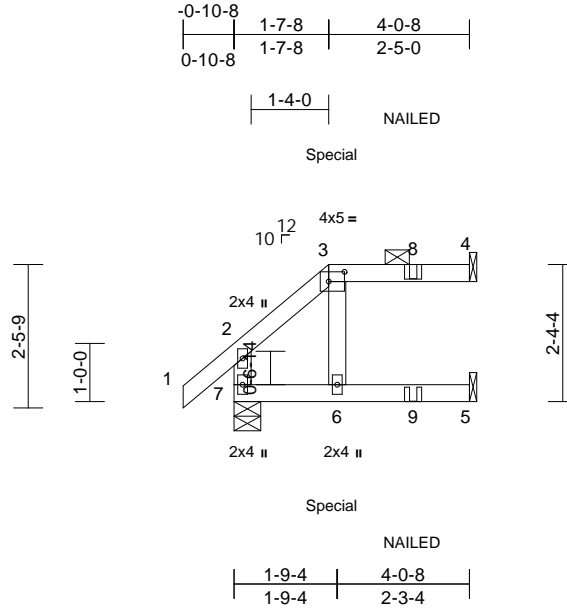
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss J01	Truss Type Jack-Open Girder	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179985
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:39.6

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

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	0.36	Vert(LL)	-0.03	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.43	Vert(CT)	-0.05	5-6	>911	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.02	Horz(CT)	0.07	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 18 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 4-0-8 oc purlins, except end verticals, and 2-0-0 oc purlins: 3-4.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 4= Mechanical, 5= Mechanical, 7=0-5-8  
Max Horiz 7=64 (LC 53)  
Max Uplift 4=-50 (LC 9), 5=-7 (LC 12), 7=-46 (LC 12)  
Max Grav 4=176 (LC 33), 5=115 (LC 30), 7=381 (LC 34)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-7=-266/35, 1-2=0/63, 2-3=-114/21, 3-4=0/0  
BOT CHORD 6-7=-6/7, 5-6=0/0  
WEBS 3-6=-103/80

**NOTES**

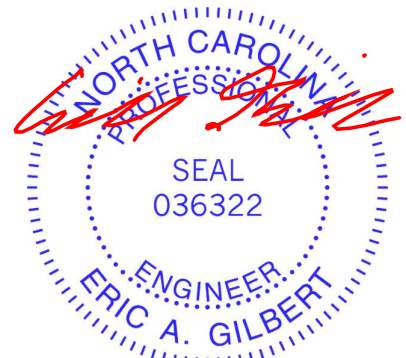
- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; end vertical left exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; 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 7 User Defined .
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 50 lb uplift at joint 4 and 7 lb uplift at joint 5.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7. This connection is for uplift only and does not consider lateral forces.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- "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) 122 lb down and 92 lb up at 1-7-8 on top chord, and 34 lb down and 3 lb up at 1-7-11 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: 1-2=-60, 2-3=-60, 3-4=-60, 5-7=-20  
Concentrated Loads (lb)

Vert: 3=-81 (B), 6=-29 (B), 8=-68 (B), 9=-31 (B)



September 16, 2024

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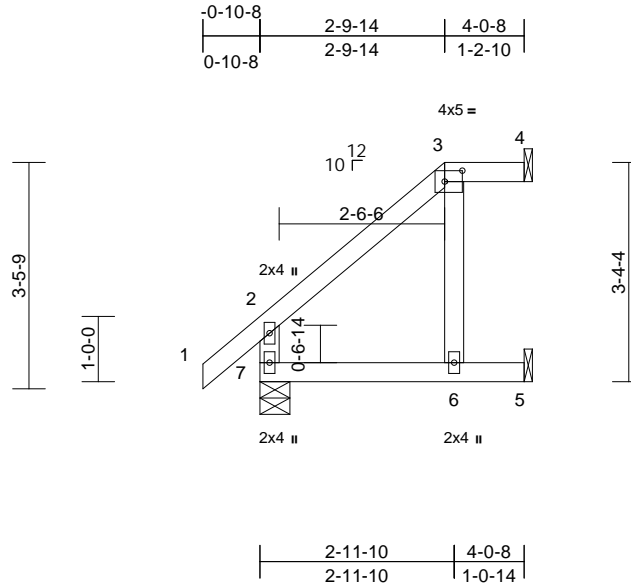
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss J02	Truss Type Jack-Open	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179986
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
ID:oyh2RmOXL\_ipQxTyosdVCHyzBEM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:35.3

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

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	0.23	Vert(LL)	0.03	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.23	Vert(CT)	-0.03	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	-0.04	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 20 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 4-0-8 oc purlins, except end verticals, and 2-0-0 oc purlins: 3-4.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 4= Mechanical, 5= Mechanical,  
7=0-5-8  
Max Horiz 7=100 (LC 14)  
Max Uplift 4=-15 (LC 11), 5=-42 (LC 14), 7=-1 (LC 14)  
Max Grav 4=85 (LC 37), 5=103 (LC 38),  
7=324 (LC 38)

**FORCES**

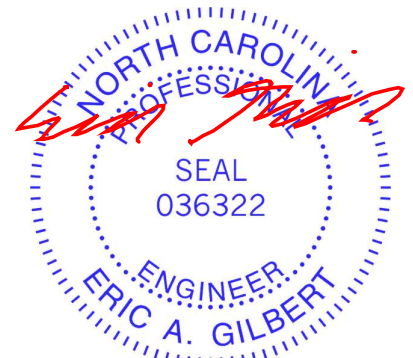
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-7=-261/82, 1-2=0/63, 2-3=-113/60, 3-4=0/0  
BOT CHORD 6-7=-6/6, 5-6=0/0  
WEBS 3-6=-117/125

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

- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Provide adequate drainage to prevent water ponding.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Bearings are assumed to be: , Joint 7 User Defined .
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 15 lb uplift at joint 4 and 42 lb uplift at joint 5.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7. This connection is for uplift only and does not consider lateral forces.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



September 16, 2024

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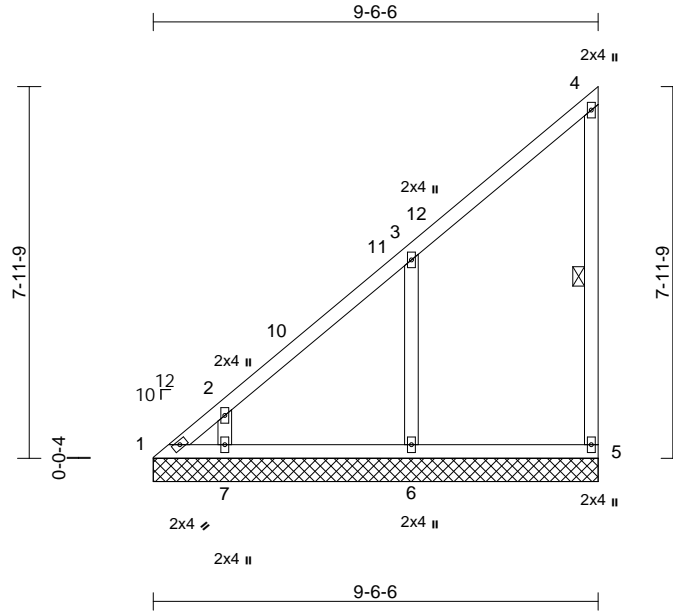
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLC1	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179987
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:49.4

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	0.31	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.17	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	0.00	7	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 50 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.
WEBS	1 Row at midpt 4-5

REACTIONS	
(size)	1=9-6-6, 5=9-6-6, 6=9-6-6, 7=9-6-6
Max Horiz	1=249 (LC 14)
Max Uplift	1=-63 (LC 12), 5=-30 (LC 16), 6=-134 (LC 14), 7=-100 (LC 14)
Max Grav	1=179 (LC 14), 5=218 (LC 5), 6=508 (LC 5), 7=308 (LC 24)

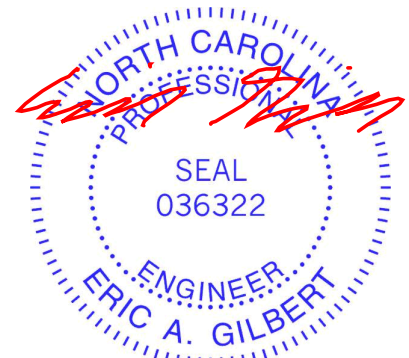
FORCES	
(lb)	- Maximum Compression/Maximum Tension
TOP CHORD	1-2=-433/212, 2-3=-317/158, 3-4=-156/83, 4-5=-171/114
BOT CHORD	1-7=-51/14, 6-7=-3/5, 5-6=-3/5
WEBS	3-6=-393/289, 2-7=-253/183

**NOTES**

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 5-2-1, Exterior(2R) 5-2-1 to 9-4-15 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- 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 63 lb uplift at joint 1, 30 lb uplift at joint 5, 134 lb uplift at joint 6 and 100 lb uplift at joint 7.

**LOAD CASE(S)** Standard



September 16, 2024

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Edenton, NC 27932

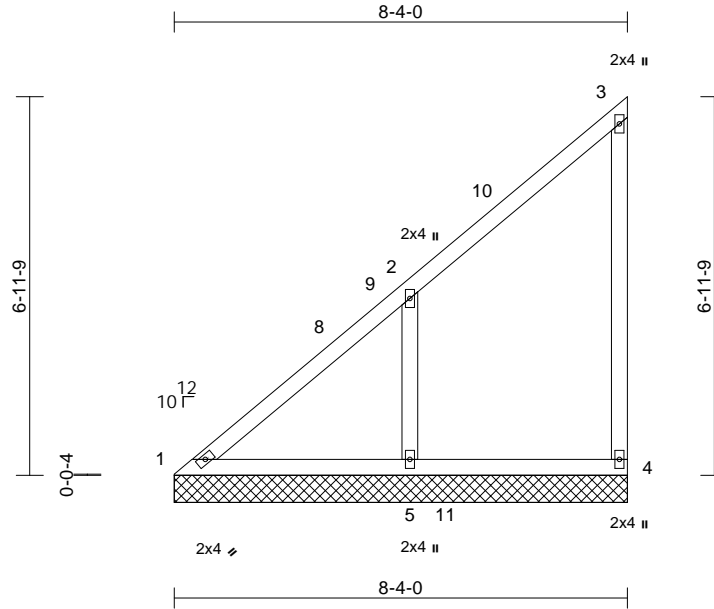


Job 24090010-01	Truss VLC2	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179988
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:18  
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Page: 1



Scale = 1:42.4

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	0.35	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	0.11	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 42 lb	FT = 20%

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

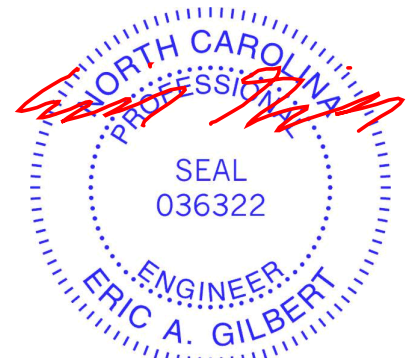
**REACTIONS** (size) 1=8-4-0, 4=8-4-0, 5=8-4-0  
Max Horiz 1=224 (LC 14)  
Max Uplift 4=29 (LC 16), 5=165 (LC 14)  
Max Grav 1=165 (LC 26), 4=201 (LC 5),  
5=554 (LC 5)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-337/179, 2-3=-157/78, 3-4=-163/119  
BOT CHORD 1-5=-96/162, 4-5=0/0  
WEBS 2-5=-420/319

- NOTES**
- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 3-11-10, Exterior(2R) 3-11-10 to 8-2-9 zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - 3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - 4) Unbalanced snow loads have been considered for this design.

- 5) Gable requires continuous bottom chord bearing.
- 6) Gable studs spaced at 4-0-0 oc.
- 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 4 and 165 lb uplift at joint 5.

**LOAD CASE(S)** Standard



September 16, 2024

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



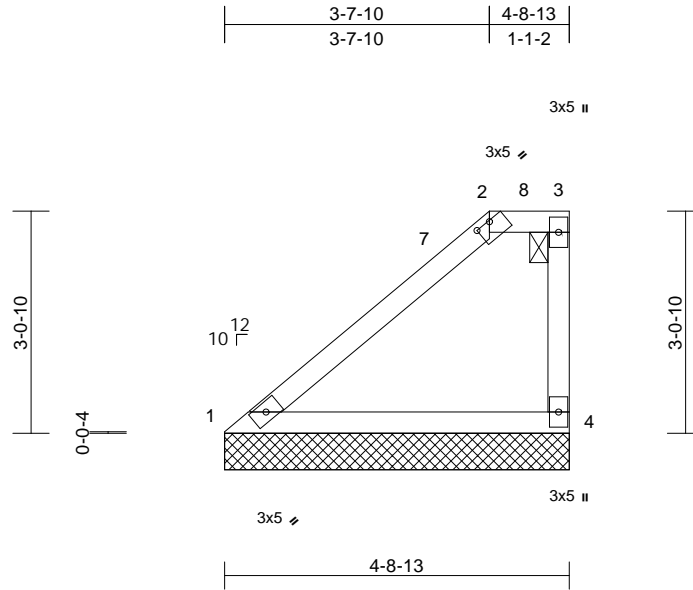


Job 24090010-01	Truss VLC5	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	I68179991
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:31.6

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

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	0.52	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.34	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 19 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 4-8-13 oc purlins, except end verticals, and 2-0-0 oc purlins: 2-3.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS**

(size) 1=4-8-13, 4=4-8-13  
Max Horiz 1=107 (LC 14)  
Max Uplift 4=-56 (LC 14)  
Max Grav 1=261 (LC 37), 4=212 (LC 37)

**FORCES**

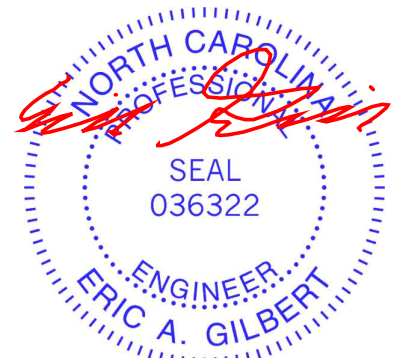
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-322/1, 2-3=-85/49, 3-4=-139/117  
BOT CHORD 1-4=-162/278

**NOTES**

- 1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 3-7-15, Exterior(2E) 3-7-15 to 4-7-6 zone; 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) Provide adequate drainage to prevent water ponding.

- 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 56 lb uplift at joint 4.
- 11) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



September 16, 2024

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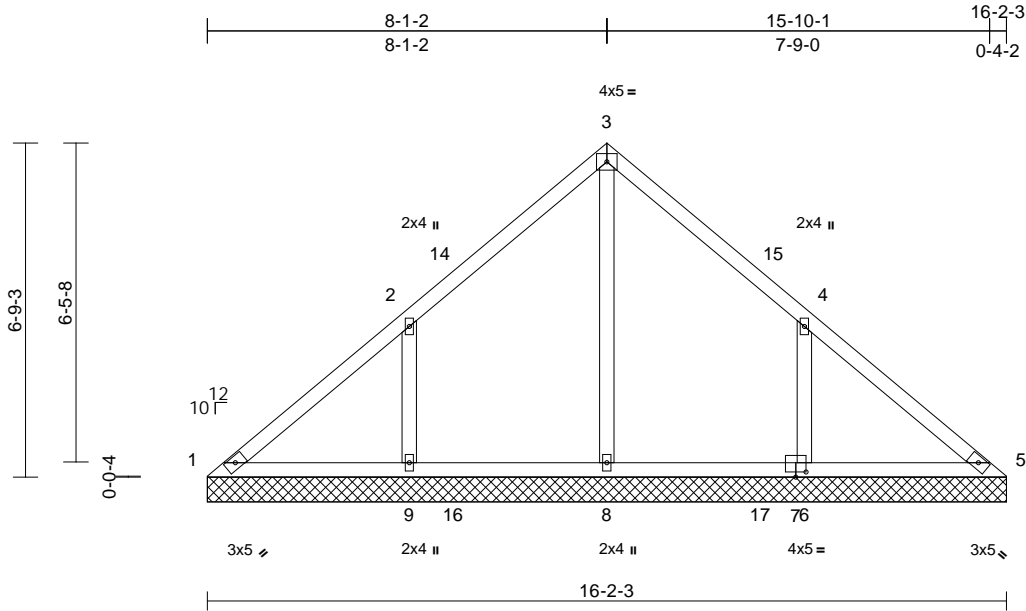
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLE1	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179992
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
ID:DTBTk2IEBbrKjDFXxKE1mCyzBJw-RFC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:46.7

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

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	0.33	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	0.22	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 72 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=16-2-3, 5=16-2-3, 6=16-2-3, 8=16-2-3, 9=16-2-3  
Max Horiz 1=-154 (LC 10)  
Max Uplift 1=-22 (LC 10), 6=-174 (LC 15), 9=-177 (LC 14)  
Max Grav 1=126 (LC 25), 5=105 (LC 21), 6=496 (LC 6), 8=468 (LC 24), 9=496 (LC 5)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-149/216, 2-3=-131/167, 3-4=-131/146, 4-5=-123/175  
BOT CHORD 1-9=-102/134, 8-9=-102/125, 6-8=-102/125, 5-6=-102/125  
WEBS 3-8=-279/0, 2-9=-387/212, 4-6=-387/211

**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) 0-0-5 to 3-0-5, Interior (1) 3-0-5 to 5-1-6, Exterior(2R) 5-1-6 to 11-1-6, Interior (1) 11-1-6 to 13-2-8, Exterior(2E) 13-2-8 to 16-2-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 22 lb uplift at joint 1, 177 lb uplift at joint 9 and 174 lb uplift at joint 6.

**LOAD CASE(S)** Standard



September 16, 2024

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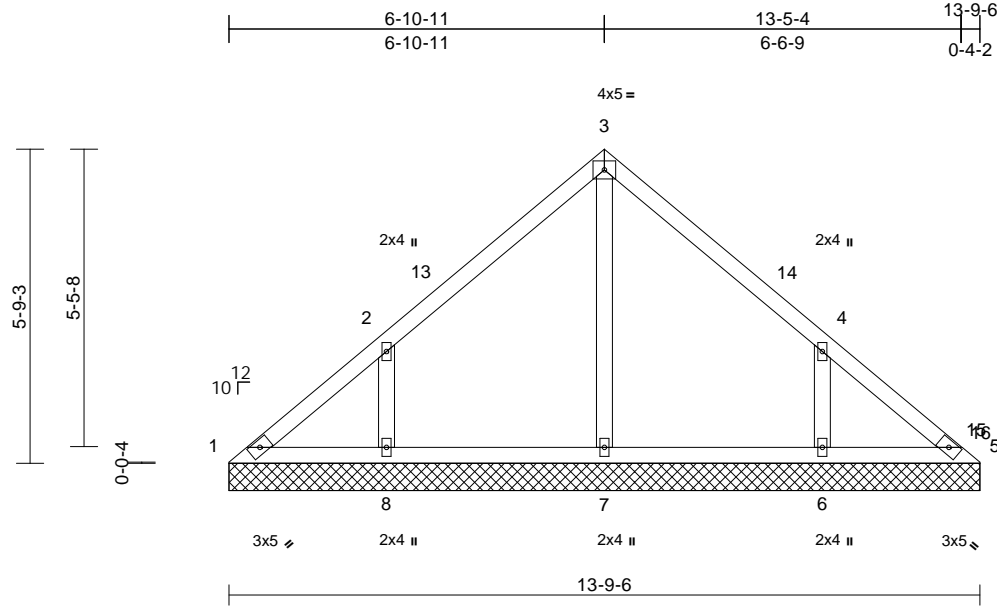
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLE2	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179993
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
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Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 59 lb	FT = 20%

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

**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.

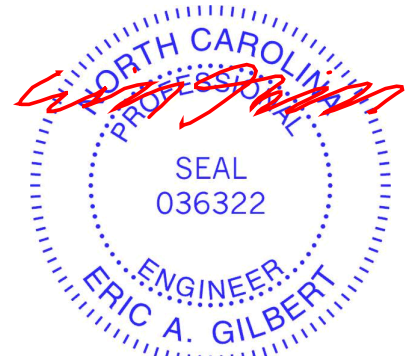
**REACTIONS** (size) 1=13-9-6, 5=13-9-6, 6=13-9-6, 7=13-9-6, 8=13-9-6  
Max Horiz 1=130 (LC 11)  
Max Uplift 1=-25 (LC 10), 6=-147 (LC 15), 8=-151 (LC 14)  
Max Grav 1=115 (LC 25), 5=77 (LC 29), 6=443 (LC 21), 7=288 (LC 20), 8=445 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-143/120, 2-3=-191/114, 3-4=-191/112, 4-5=-103/83  
BOT CHORD 1-8=-47/113, 7-8=-47/85, 6-7=-47/85, 5-6=-47/85  
WEBS 3-7=-206/0, 2-8=-374/193, 4-6=-374/191

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 25 lb uplift at joint 1, 151 lb uplift at joint 8 and 147 lb uplift at joint 6.

**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 2-11-0, Interior (1) 2-11-0 to 3-11-0, Exterior(2R) 3-11-0 to 9-11-0, Interior (1) 9-11-0 to 10-5-3, Exterior(2E) 10-5-3 to 13-5-3 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



September 16, 2024

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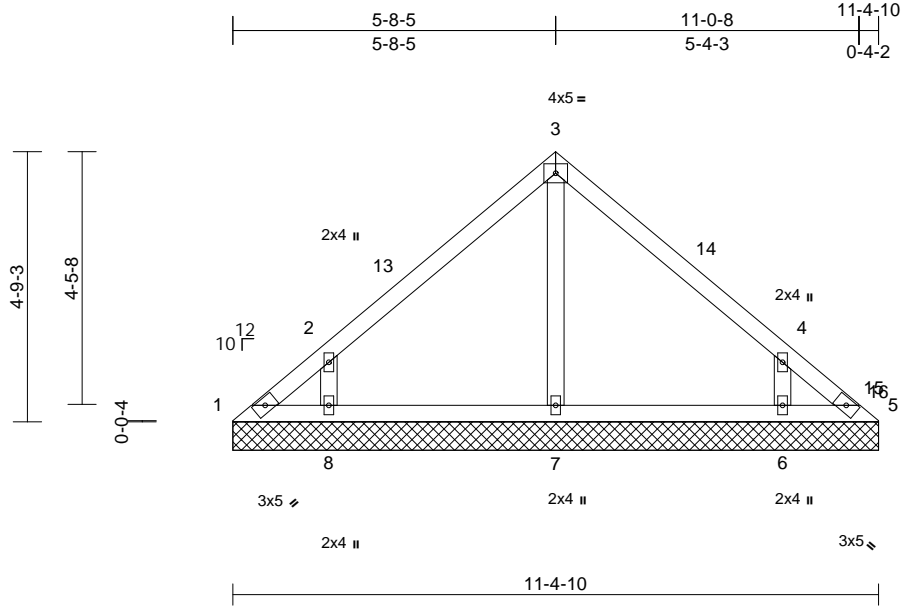
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLE3	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179994
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
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Page: 1



Scale = 1:40.6

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	0.32	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 46 lb	FT = 20%	

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 1=11-4-10, 5=11-4-10, 6=11-4-10, 7=11-4-10, 8=11-4-10  
Max Horiz 1=107 (LC 11)  
Max Uplift 1=-38 (LC 10), 5=-22 (LC 13), 6=-133 (LC 15), 8=-138 (LC 14)  
Max Grav 1=76 (LC 25), 5=55 (LC 15), 6=438 (LC 21), 7=252 (LC 20), 8=441 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

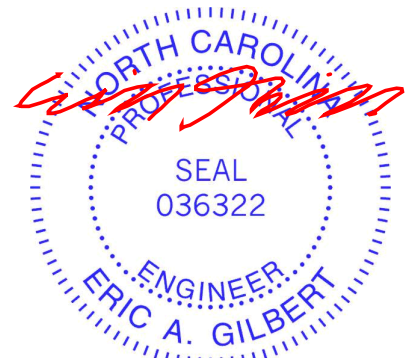
TOP CHORD 1-2=-124/100, 2-3=-224/109, 3-4=-225/109, 4-5=-101/66  
BOT CHORD 1-8=-30/70, 7-8=-23/70, 6-7=-23/70, 5-6=-35/70  
WEBS 3-7=-163/1, 2-8=-432/242, 4-6=-431/236

**NOTES**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 8-0-6, Exterior(2E) 8-0-6 to 11-0-6 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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'-0-0 tall by 2'-0-0 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 38 lb uplift at joint 1, 22 lb uplift at joint 5, 138 lb uplift at joint 8 and 133 lb uplift at joint 6.

**LOAD CASE(S)** Standard



September 16, 2024

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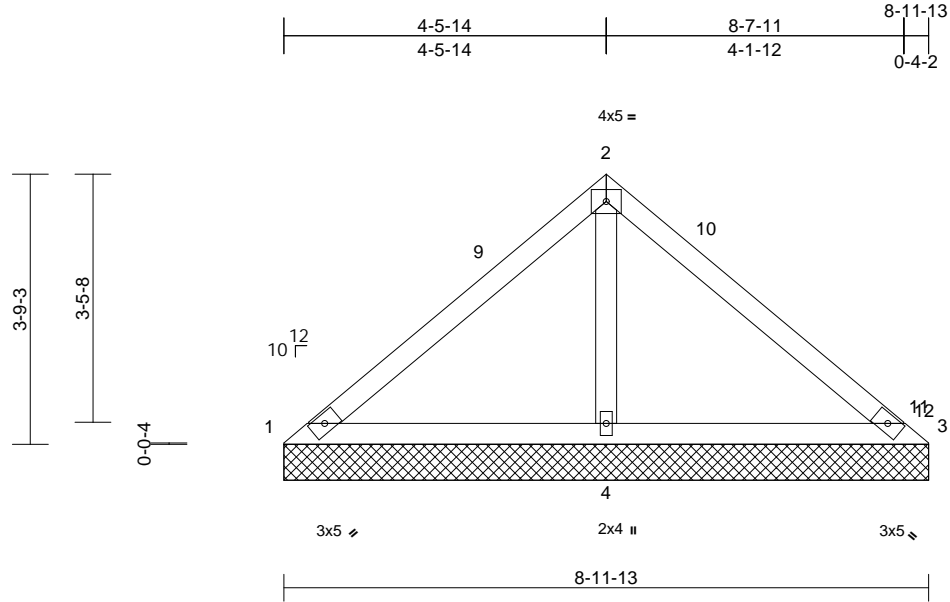
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLE4	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179995
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
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Page: 1



Scale = 1:32.1

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	0.45	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.41	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.16	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 34 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 8-11-13 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=8-11-13, 3=8-11-13, 4=8-11-13  
Max Horiz 1=83 (LC 11)  
Max Uplift 1=57 (LC 21), 3=65 (LC 20), 4=116 (LC 14)  
Max Grav 1=74 (LC 20), 3=66 (LC 21), 4=742 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-140/339, 2-3=-139/348  
BOT CHORD 1-4=-262/187, 3-4=-262/187  
WEBS 2-4=-604/275

**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 5-7-9, Exterior(2E) 5-7-9 to 8-7-9 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 57 lb uplift at joint 1, 65 lb uplift at joint 3 and 116 lb uplift at joint 4.

LOAD CASE(S) Standard



September 16, 2024

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818 Soundside Road  
Edenton, NC 27932

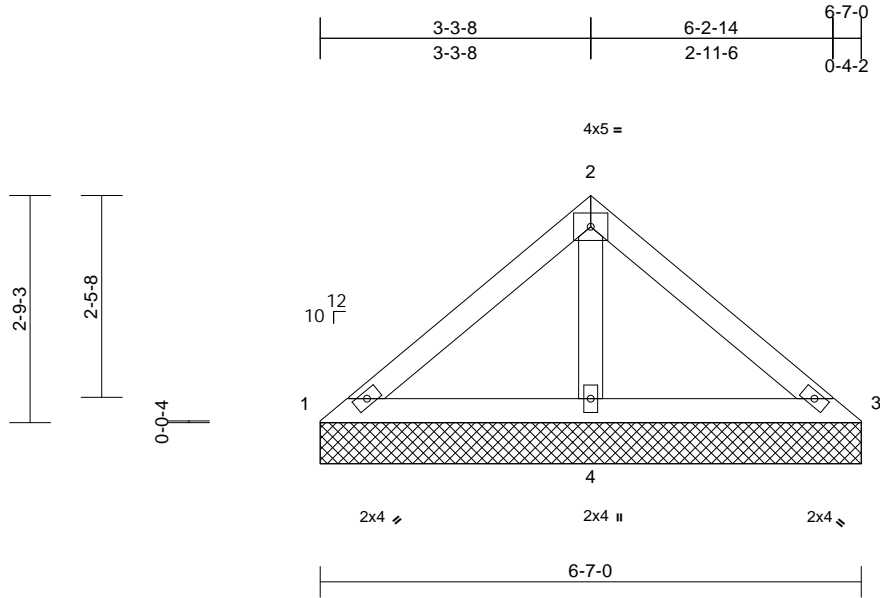


Job 24090010-01	Truss VLE5	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179996
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
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Page: 1



Scale = 1:28

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.20	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.22	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	IRC2021/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 6-7-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=6-7-0, 3=6-7-0, 4=6-7-0  
Max Horiz 1=-60 (LC 12)  
Max Uplift 1=-5 (LC 21), 3=-5 (LC 20), 4=-61 (LC 14)  
Max Grav 1=102 (LC 20), 3=102 (LC 21), 4=461 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-88/190, 2-3=-88/190  
BOT CHORD 1-4=-150/135, 3-4=-150/135  
WEBS 2-4=-359/169

**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 5 lb uplift at joint 1, 5 lb uplift at joint 3 and 61 lb uplift at joint 4.
- LOAD CASE(S)** Standard



September 16, 2024

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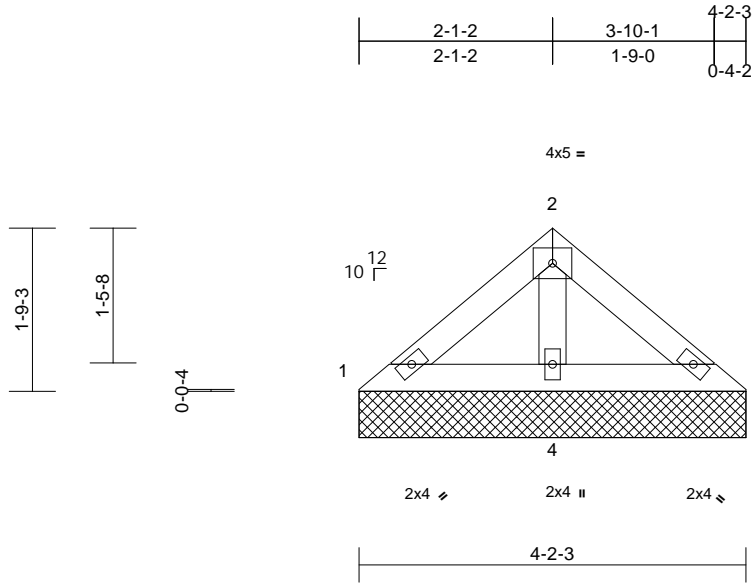
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLE6	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179997
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
ID:?RPKW5fDG37UXz3Ttedno9yzBHP-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWwCDoi7J4zJC?f

Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.06	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 15 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 4-2-3 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=4-2-3, 3=4-2-3, 4=4-2-3  
Max Horiz 1=37 (LC 11)  
Max Uplift 1=-1 (LC 14), 3=-8 (LC 15), 4=-25 (LC 14)  
Max Grav 1=80 (LC 20), 3=80 (LC 21), 4=240 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-72/77, 2-3=-72/77  
BOT CHORD 1-4=-62/70, 3-4=-62/70  
WEBS 2-4=-159/69

- Unbalanced snow loads have been considered for this design.
  - Gable requires continuous bottom chord bearing.
  - Gable studs spaced at 4-0-0 oc.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 1 lb uplift at joint 1, 8 lb uplift at joint 3 and 25 lb uplift at joint 4.
- LOAD CASE(S)** Standard

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



September 16, 2024

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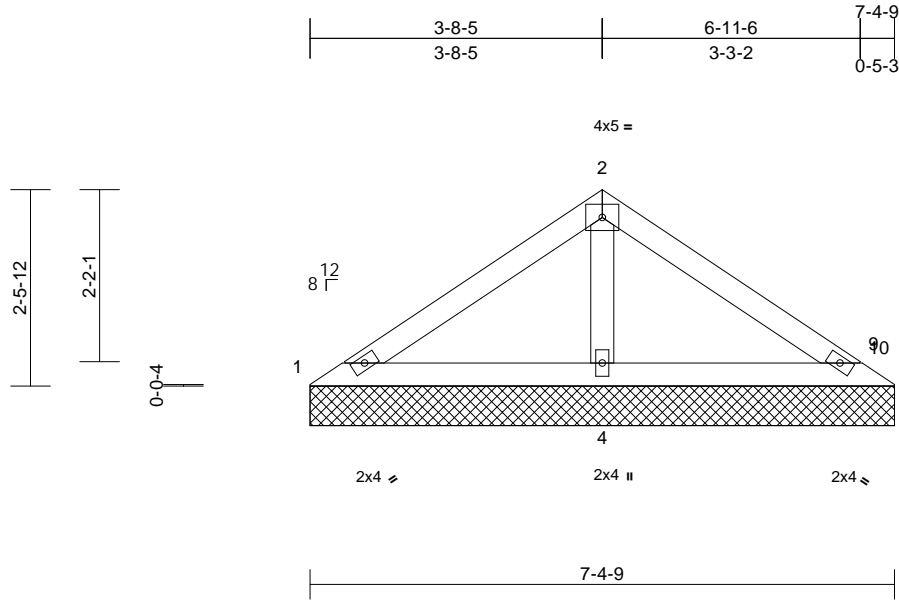
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLG1	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179998
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
ID:aURQiS0qpwcnaEzI3\_tgZTjNsg-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.25	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.25	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	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 25 lb	FT = 20%

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

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 7-2-12 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS** (size) 1=7-4-9, 3=7-4-9, 4=7-4-9  
Max Horiz 1=54 (LC 11)  
Max Uplift 1=-10 (LC 21), 3=-24 (LC 20), 4=-56 (LC 14)  
Max Grav 1=102 (LC 20), 3=67 (LC 21), 4=518 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-96/237, 2-3=-83/237  
BOT CHORD 1-4=-197/126, 3-4=-197/126  
WEBS 2-4=-413/176

- 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 and 24 lb uplift at joint 3.
- LOAD CASE(S)** Standard

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-6 to 3-0-6, Exterior(2R) 3-0-6 to 3-8-11, Exterior(2E) 3-8-11 to 6-11-9 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.



September 16, 2024

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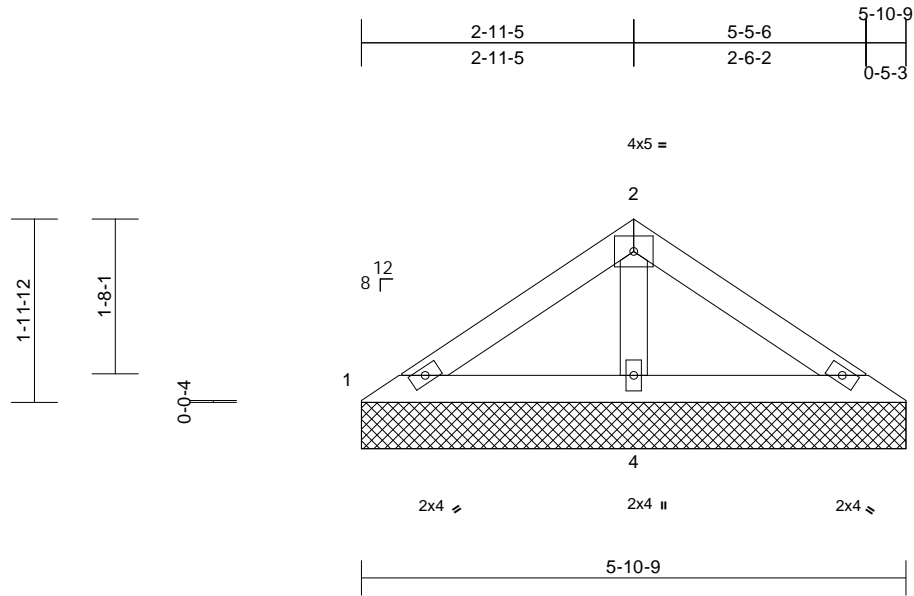
818 Soundside Road  
Edenton, NC 27932

Job 24090010-01	Truss VLG2	Truss Type Valley	Qty 1	Ply 1	2 Serenity-Roof-B328 A CP GLH Job Reference (optional)	168179999
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.73 S Aug 15 2024 Print: 8.730 S Aug 15 2024 MiTek Industries, Inc. Thu Sep 12 11:24:19  
ID:?Kf\_vIGN638x\_JV8EBEMMhyjNsM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrcDoi7J4zJC?f

Page: 1



Scale = 1:24.9

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	0.14	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	0.05	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 20 lb	FT = 20%

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 5-10-9 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

#### REACTIONS

(size) 1=5-10-9, 3=5-10-9, 4=5-10-9  
Max Horiz 1=42 (LC 11)  
Max Uplift 1=-4 (LC 14), 3=-11 (LC 15), 4=-35 (LC 14)  
Max Grav 1=96 (LC 20), 3=96 (LC 21), 4=377 (LC 20)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-95/154, 2-3=-95/154  
BOT CHORD 1-4=-132/101, 3-4=-132/101  
WEBS 2-4=-284/126

#### NOTES

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

- Unbalanced snow loads have been considered for this design.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 4-0-0 oc.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 4 lb uplift at joint 1, 11 lb uplift at joint 3 and 35 lb uplift at joint 4.

**LOAD CASE(S)** Standard



September 16, 2024

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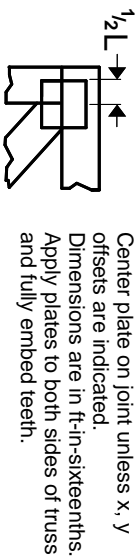
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall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

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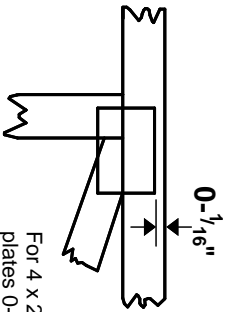
818 Soundside Road  
Edenton, NC 27932

# Symbols

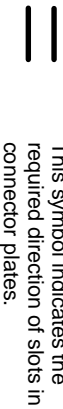
## PLATE LOCATION AND ORIENTATION



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



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



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

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

## PLATE SIZE

**4 X 4**

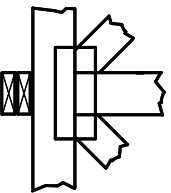
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



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

## BEARING

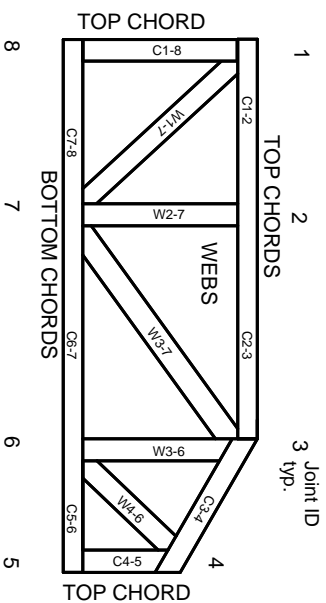


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

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

# Numbering System



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

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

# Product Code Approvals

ICC-ES Reports:

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

# Design General Notes

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

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

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

# General Safety Notes

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

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