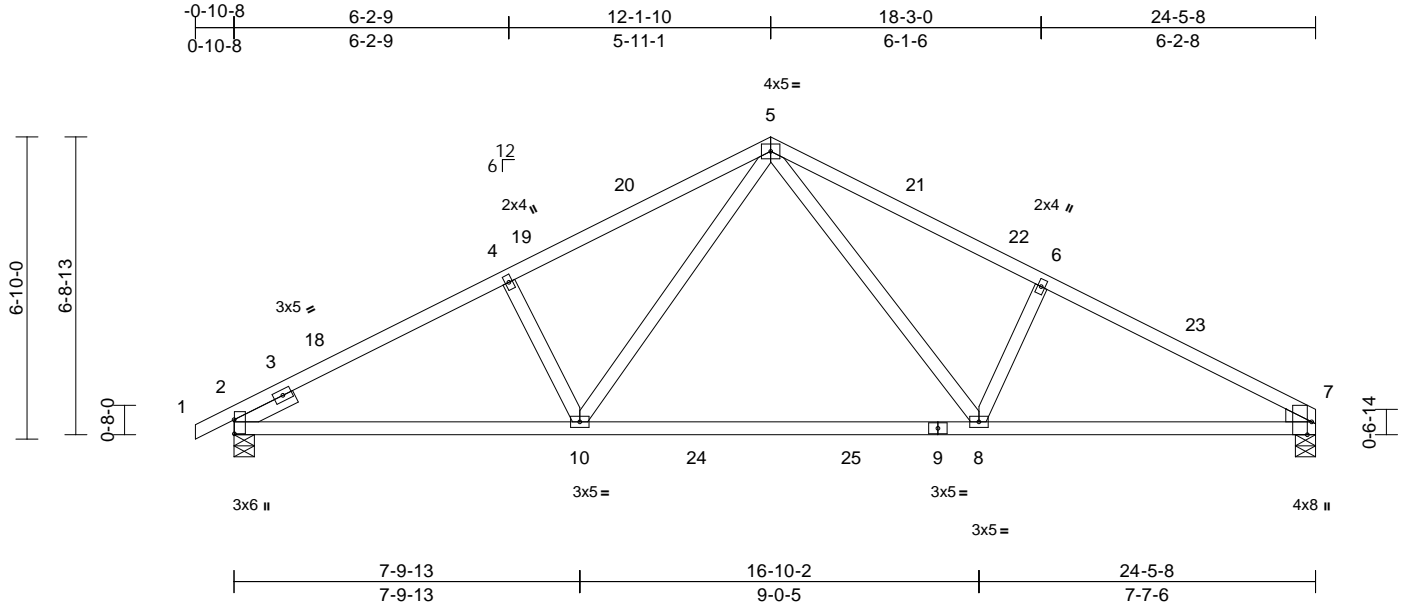


Job 23070130-01	Truss A	Truss Type Common	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054052
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:15  
ID:s:L1H2zO6Ev519wGE9Ha53QyzB67-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDo7J4zJC?f

Page: 1



Scale = 1:52.1

Plate Offsets (X, Y): [2:0-3-13,0-0-1], [7:0-3-8,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	0.97	Vert(LL)	-0.27	8-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.88	Vert(CT)	-0.46	8-10	>640	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.32	Horz(CT)	0.05	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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**

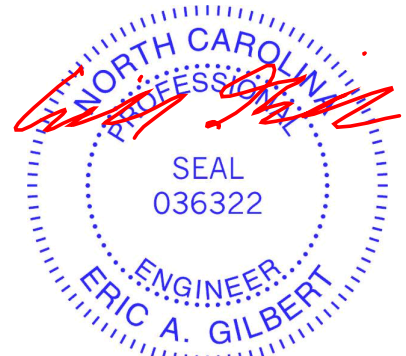
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/23, 2-4=-1775/247, 4-5=-1666/281, 5-6=-1740/295, 6-7=-1846/254
- BOT CHORD 2-10=-185/1538, 8-10=-53/1016, 7-8=-159/1602
- WEBS 4-10=-397/196, 5-10=-93/721, 6-8=-424/201, 5-8=-108/782

**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 9-1-10, Exterior(2R) 9-1-10 to 15-1-10, Interior (1) 15-1-10 to 21-5-8, Exterior(2E) 21-5-8 to 24-5-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

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

**LOAD CASE(S)** Standard



August 10, 2023

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

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



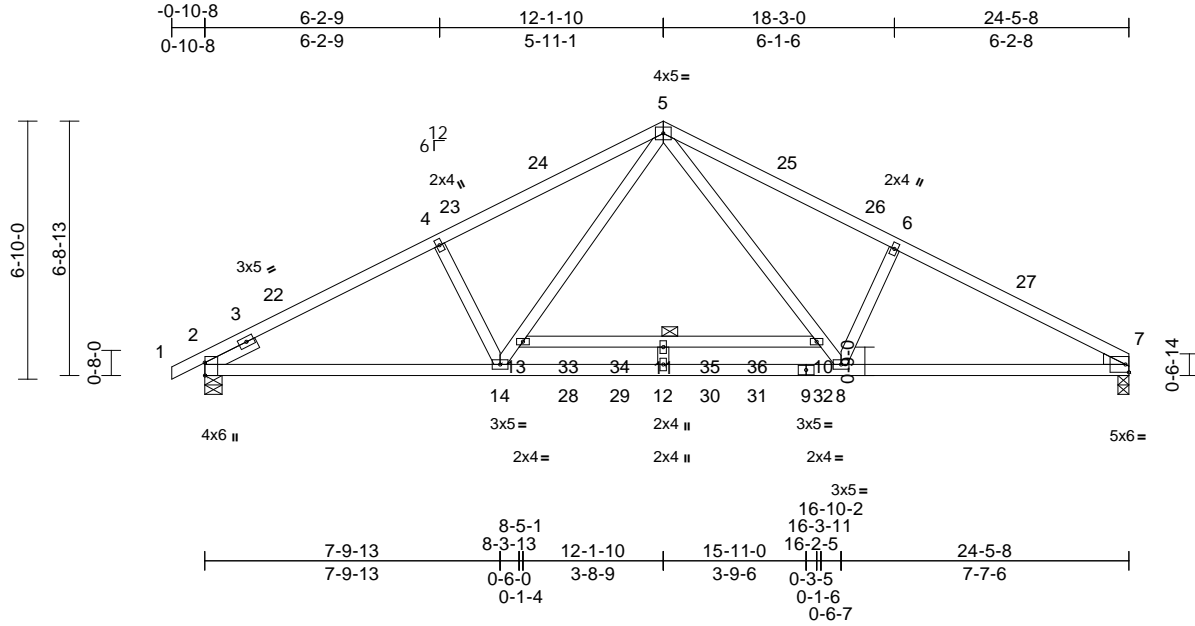
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss A1	Truss Type Common	Qty 10	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054053
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:17  
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Page: 1



Scale = 1:61  
Plate Offsets (X, Y): [2:0-4-1,Edge]

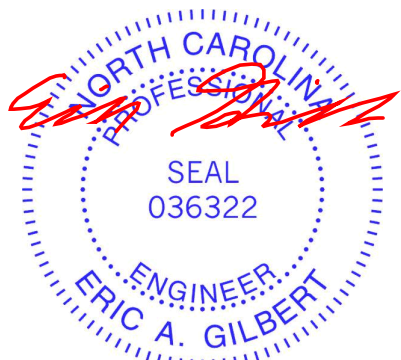
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.80	Vert(LL)	-0.31	10-11	>932	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	1.00	Vert(CT)	-0.70	10-11	>422	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.63	Horz(CT)	0.06	7	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 127 lb	FT = 20%

- LUMBER**
- TOP CHORD 2x4 SP No.1
  - BOT CHORD 2x4 SP No.1 \*Except\* 13-10:2x4 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 2-2-0 oc purlins.
  - BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing. Except: 4-7-0 oc bracing: 10-13
- REACTIONS**
- (size) 2=0-5-8, 7=0-3-8
  - Max Horiz 2=109 (LC 18)
  - Max Grav 2=1384 (LC 5), 7=1340 (LC 6)
- FORCES**
- (lb) - Maximum Compression/Maximum Tension
  - TOP CHORD 1-2=0/23, 2-4=-2303/0, 4-5=-2194/0, 5-6=-2283/0, 6-7=-2390/0
  - BOT CHORD 2-14=-57/1998, 12-14=0/1479, 8-12=0/1479, 7-8=0/2078, 11-13=-158/0, 10-11=-158/0
  - WEBS 4-14=-369/220, 13-14=0/800, 5-13=0/1005, 5-10=0/1072, 8-10=-10/864, 6-8=-401/221, 11-12=-39/23

- 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) 200.0lb AC unit load placed on the bottom chord, 12-1-10 from left end, supported at two points, 5-0-0 apart.
- 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) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

- NOTES**
- 1) Unbalanced roof live loads have been considered for this design.
  - 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 9-1-10, Exterior(2R) 9-1-10 to 15-1-10, Interior (1) 15-1-10 to 21-5-8, Exterior(2E) 21-5-8 to 24-5-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



August 10, 2023

**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)



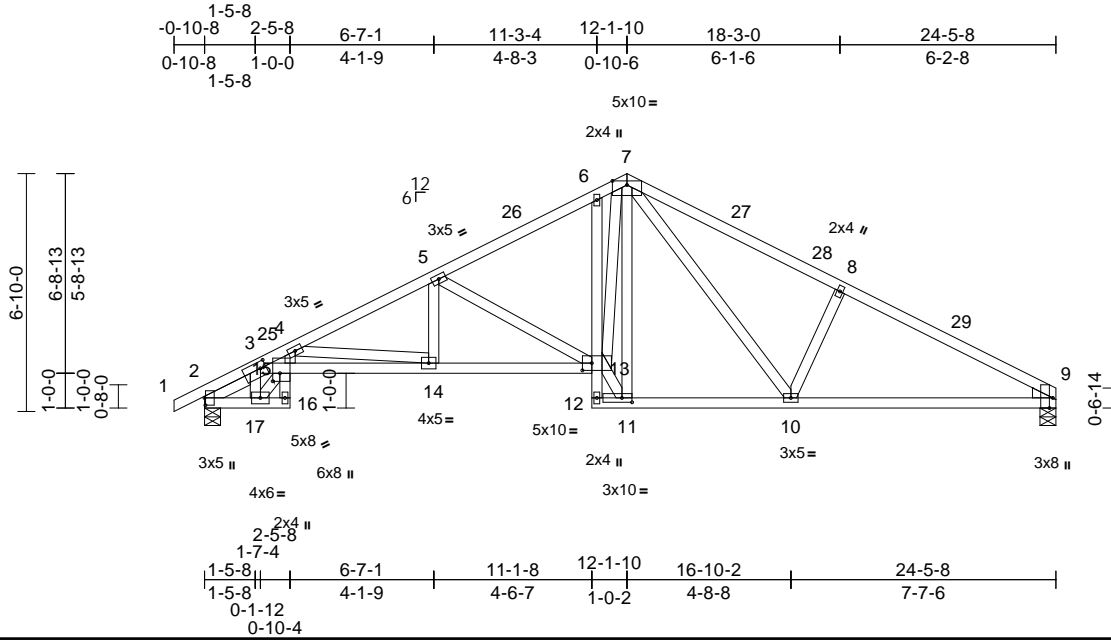
Job 23070130-01	Truss A2	Truss Type Roof Special	Qty 8	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054054
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:18

Page: 1

ID:AJ7UwEiUaQqakg5B2g1fzPyzB4Q-RfC?PsB70Hq3NSgPqnL8w3uITxBGKWrCDoi7J4zJC?f



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)	-0.14	14-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.91	Vert(CT)	-0.27	14-15	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.76	Horz(CT)	0.18	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 148 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2 \*Except\* 16-15,6-12:2x4 SP No.3, 3-13:2x4 SP No.1  
WEBS 2x4 SP No.3  
WEDGE Right: 2x4 SP No.3  
SLIDER Left 2x4 SP 2400F 2.0E -- 1-5-14

**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:  
9-2-3 oc bracing: 14-15  
6-0-0 oc bracing: 12-13.

**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=1066 (LC 21), 9=1008 (LC 22)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/23, 2-3=-650/81, 3-4=-3912/462, 4-5=-2201/295, 5-6=-1452/259, 6-7=-1316/290, 7-8=-1576/302, 8-9=-1703/260  
BOT CHORD 2-17=-180/1184, 16-17=-30/178, 15-16=-8/102, 3-15=-290/2172, 14-15=-464/3249, 13-14=-198/1957, 12-13=-66/0, 6-13=-202/160, 11-12=-27/151, 10-11=-44/959, 9-10=-165/1468  
WEBS 7-11=-812/54, 11-13=-26/1261, 7-10=-135/590, 7-13=-151/1507, 8-10=-422/197, 5-13=-866/171, 5-14=0/400, 3-17=-1515/234, 15-17=-277/1846, 4-15=-77/932, 4-14=-1305/268

- 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 9-1-10, Exterior(2R) 9-1-10 to 15-1-10, Interior (1) 15-1-10 to 21-5-8, Exterior(2E) 21-5-8 to 24-5-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - 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.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

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



August 10, 2023

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

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



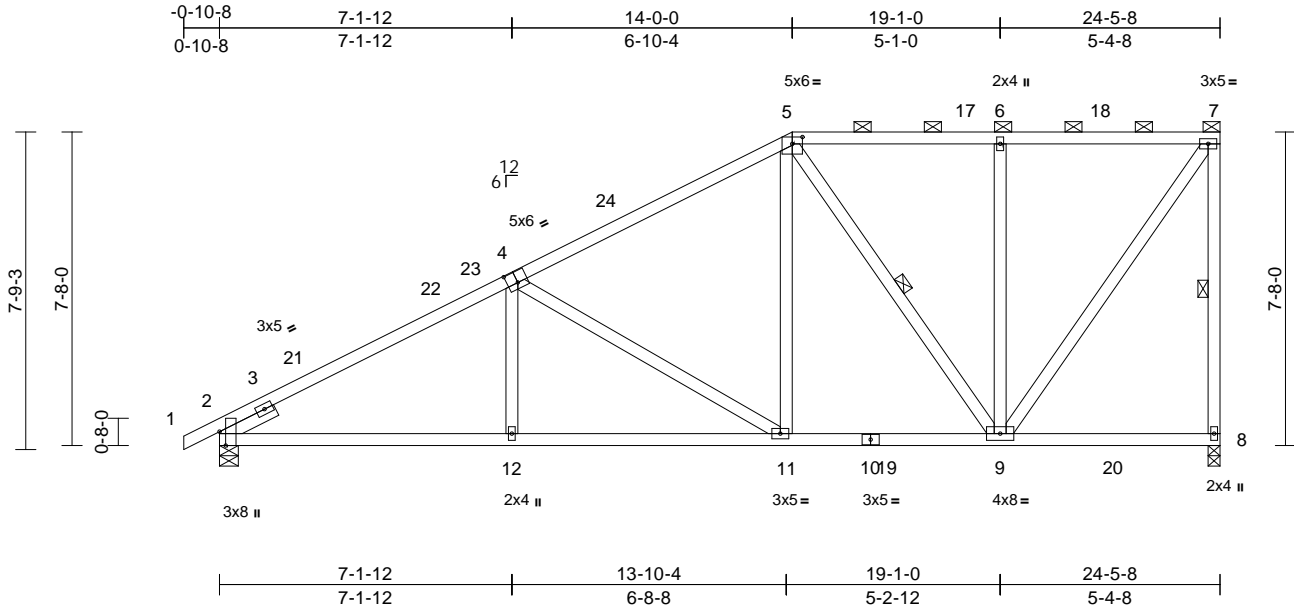
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss A3	Truss Type Half Hip	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054055
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:18  
ID:N\_FUI7kAVpQTDsHve?dz?XyzB8G-RFC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:56.3

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

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	0.86	Vert(LL)	-0.10	11-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.71	Vert(CT)	-0.18	11-12	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.85	Horz(CT)	0.04	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 153 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 2-2-0 oc purlins, except end verticals, and 2-0-0 oc purlins (6-0-0 max.): 5-7.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.  
 WEBS 1 Row at midpt 7-8, 5-9

**REACTIONS**

(size) 2=0-5-8, 8=0-3-8  
 Max Horiz 2=279 (LC 13)  
 Max Uplift 2=-142 (LC 14), 8=-139 (LC 11)  
 Max Grav 2=1156 (LC 38), 8=1179 (LC 37)

**FORCES**

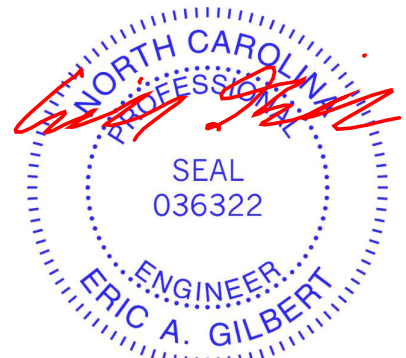
(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 5-6=-659/188, 6-7=-659/188, 7-8=-1071/157, 1-2=0/23, 2-5=-1789/217  
 BOT CHORD 2-12=-253/1545, 11-12=-238/1540, 9-11=-157/904, 8-9=-93/133  
 WEBS 4-12=0/269, 4-11=740/192, 5-11=-23/621, 5-9=-570/106, 6-9=-529/156, 7-9=-137/1122

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

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

**LOAD CASE(S)** Standard



August 10, 2023

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

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



818 Soundside Road  
 Edenton, NC 27932

Job 23070130-01	Truss A4	Truss Type Half Hip	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054056
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:19  
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Page: 1

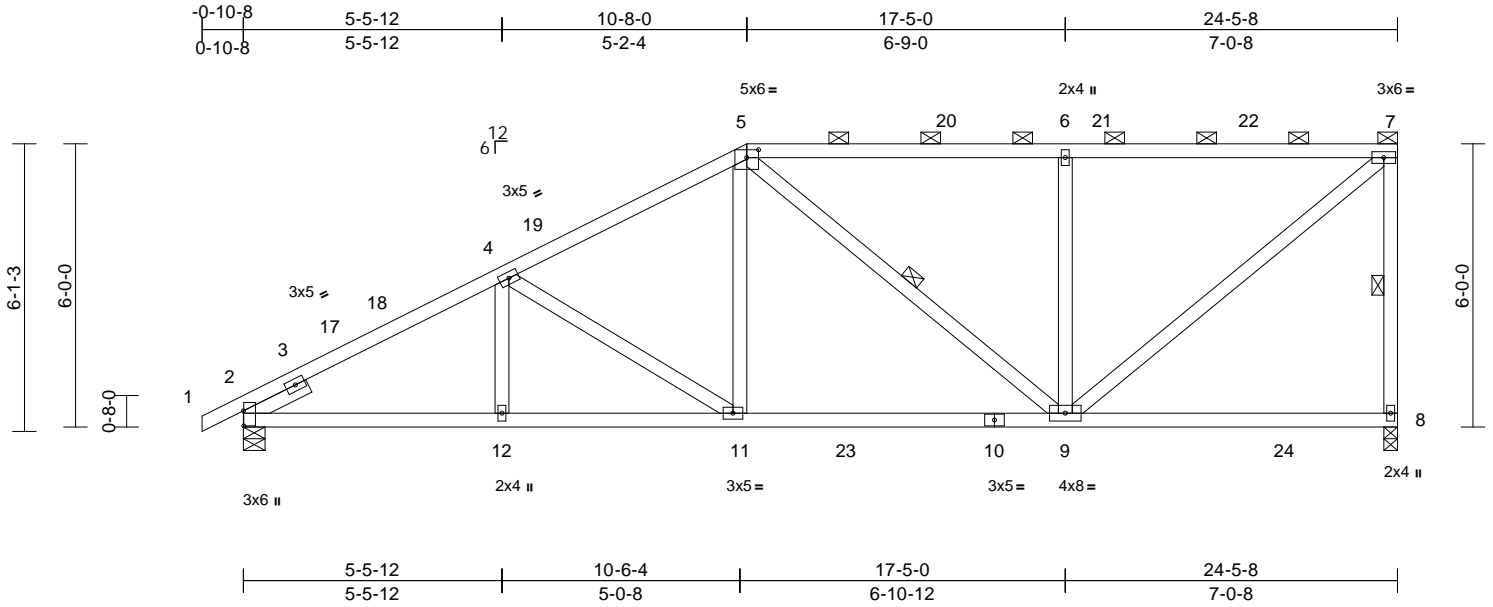


Plate Offsets (X, Y): [2:0-3-13,0-0-1], [5:0-3-0,0-2-0]

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	1.00	Vert(LL)	-0.09	9-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.70	Vert(CT)	-0.16	9-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.59	Horz(CT)	0.04	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 141 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 3-8-4 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 7-8, 5-9

**REACTIONS**

(size) 2=0-5-8, 8=0-3-8  
 Max Horiz 2=217 (LC 13)  
 Max Uplift 2=-143 (LC 14), 8=-146 (LC 11)  
 Max Grav 2=1150 (LC 38), 8=1241 (LC 37)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/23, 2-4=-1789/224, 4-5=-1359/205, 5-6=-1115/189, 6-7=-1115/189, 7-8=-1122/177  
 BOT CHORD 2-12=-229/1543, 11-12=-229/1543, 9-11=-185/1188, 8-9=-69/105  
 WEBS 4-12=0/163, 4-11=-524/135, 5-11=0/517, 5-9=-358/79, 6-9=-704/201, 7-9=-172/1414

**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 6-5-1, Exterior(2R) 6-5-1 to 14-10-15, Interior (1) 14-10-15 to 21-3-12, Exterior(2E) 21-3-12 to 24-3-12 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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(8) and 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 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



August 10, 2023

**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.sbccomponents.com)



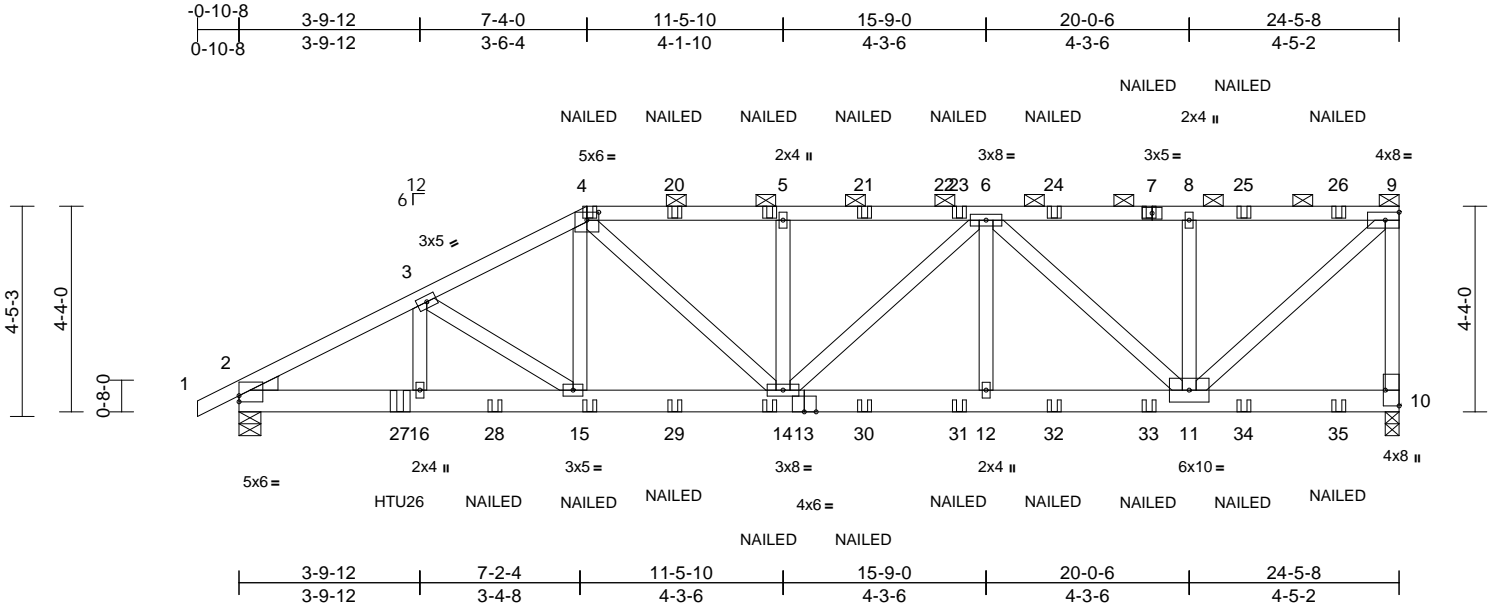
818 Soundside Road  
 Edenton, NC 27932

Job 23070130-01	Truss A5GR	Truss Type Half Hip Girder	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054057
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:20  
ID:LxL4nxEDZSif7glvCyYAAlyzBCF-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKwRcDoi7J4zJC?f

Page: 1



Scale = 1:48.6

Plate Offsets (X, Y): [2:Edge,0-1-9], [4:0-3-0,0-2-0], [10:Edge,0-3-8]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.87	Vert(LL)	-0.13	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.21	12-14	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.77	Horz(CT)	0.05	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 164 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 SP 2400F 2.0E \*Except\* 13-10:2x6 SP No.2  
WEBS 2x4 SP No.3 \*Except\* 14-4,14-6,11-6,11-9:2x4 SP No.2  
WEDGE Left: 2x4 SP No.3  
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 2-11-11 oc purlins, except end verticals, and 2-0-0 oc purlins (2-9-2 max.): 4-9.  
BOT CHORD Rigid ceiling directly applied or 7-7-3 oc bracing.  
**REACTIONS** (size) 2=0-5-8, 10=0-3-8  
Max Horiz 2=152 (LC 11)  
Max Uplift 2=-547 (LC 12), 10=-643 (LC 9)  
Max Grav 2=1963 (LC 34), 10=2010 (LC 33)  
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/35, 2-3=-3183/955, 3-4=-2869/951, 4-5=-3065/1014, 5-6=-3065/1014, 6-8=-1846/604, 8-9=-1846/604, 9-10=-1922/639  
BOT CHORD 2-16=-868/2770, 15-16=-868/2770, 14-15=-854/2540, 12-14=-952/2858, 11-12=-952/2858, 10-11=-42/49  
WEBS 3-16=-4/95, 3-15=-339/99, 4-15=-97/512, 4-14=-268/727, 5-14=-593/264, 6-14=-122/347, 6-12=0/245, 6-11=-1377/453, 8-11=-613/277, 9-11=-792/2475

**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; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 10. This connection is for uplift only and does not consider lateral forces.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent at 3-4-12 from the left end to connect truss(es) to front face of bottom chord.
- Fill all nail holes where hanger is in contact with lumber.
- "NAILED" indicates 3-10d (0.148"x3") or 3-12d (0.148"x3.25") toe-nails per NDS guidelines.

- 15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).  
**LOAD CASE(S)** Standard  
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15  
Uniform Loads (lb/ft)  
Vert: 1-4=-60, 4-9=-60, 10-17=-20  
Concentrated Loads (lb)  
Vert: 7=-116 (F), 15=-33 (F), 14=-33 (F), 4=-116 (F), 5=-116 (F), 20=-116 (F), 21=-116 (F), 23=-116 (F), 24=-116 (F), 25=-116 (F), 26=-116 (F), 27=-259 (F), 28=-130 (F), 29=-33 (F), 30=-33 (F), 31=-33 (F), 32=-33 (F), 33=-33 (F), 34=-33 (F), 35=-33 (F)



August 10, 2023

**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.sbccomponents.com)



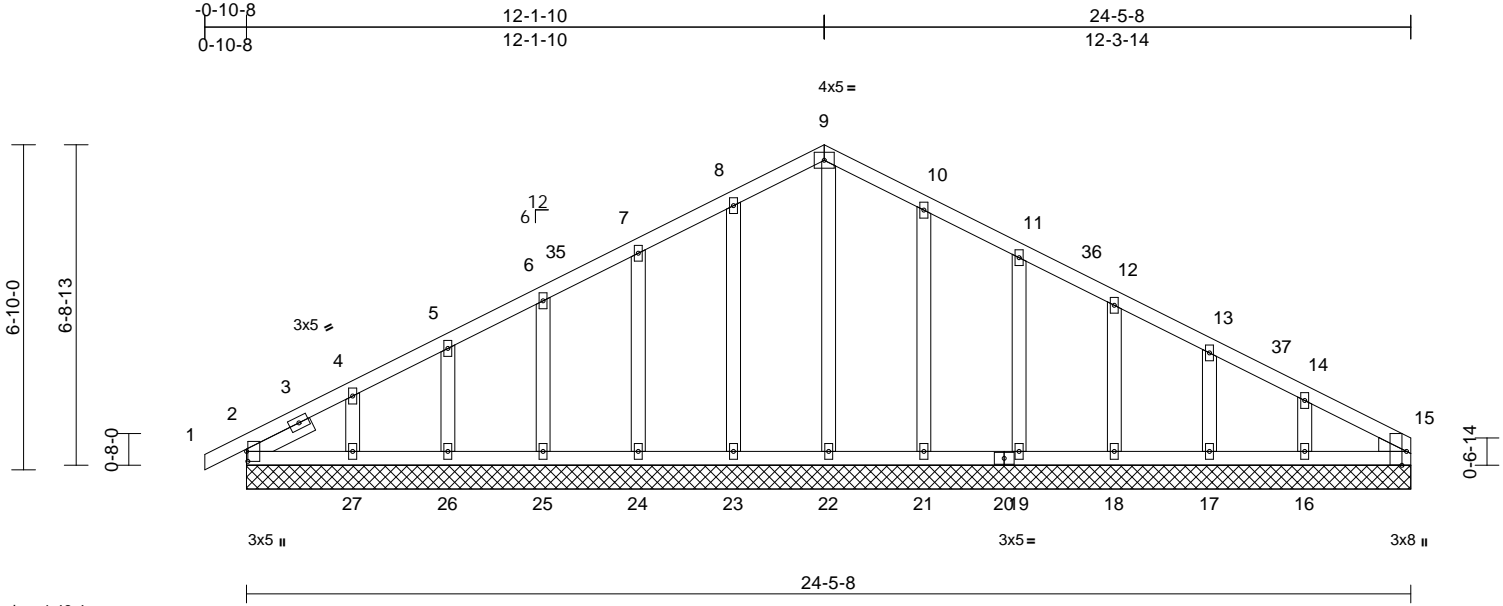
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss AGE	Truss Type Common Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054058
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:21  
ID: \_6rcLElwA7tlnXY?wa67GkyzB5f-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?f

Page: 1



Scale = 1:48.4

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	0.08	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	0.12	Horz(CT)	0.00	15	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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=24-5-8, 15=24-5-8, 16=24-5-8, 17=24-5-8, 18=24-5-8, 19=24-5-8, 21=24-5-8, 22=24-5-8, 23=24-5-8, 24=24-5-8, 25=24-5-8, 26=24-5-8, 27=24-5-8, 28=24-5-8, 32=24-5-8
Max Horiz		2=109 (LC 18), 28=109 (LC 18)
Max Uplift		2=-13 (LC 15), 16=-69 (LC 15), 17=-37 (LC 15), 18=-45 (LC 15), 19=-44 (LC 15), 21=-46 (LC 15), 23=-42 (LC 14), 24=-45 (LC 14), 25=-46 (LC 14), 26=-35 (LC 14), 27=-78 (LC 14), 28=-13 (LC 15)
Max Grav		2=151 (LC 1), 15=84 (LC 1), 16=191 (LC 35), 17=152 (LC 1), 18=175 (LC 22), 19=225 (LC 22), 21=251 (LC 22), 22=152 (LC 27), 23=239 (LC 21), 24=231 (LC 21), 25=178 (LC 21), 26=156 (LC 1), 27=175 (LC 34), 28=151 (LC 1), 32=84 (LC 1)
FORCES	(lb) - Maximum Compression/Maximum Tension	

TOP CHORD	1-2=0/23, 2-4=-116/48, 4-5=-86/55, 5-6=-65/78, 6-7=-54/101, 7-8=-65/147, 8-9=-82/189, 9-10=-82/190, 10-11=-63/144, 11-12=-52/98, 12-13=-47/53, 13-14=-59/17, 14-15=-78/24
BOT CHORD	2-27=-24/91, 26-27=-24/91, 25-26=-24/91, 24-25=-24/91, 23-24=-24/91, 22-23=-24/91, 21-22=-24/90, 19-21=-24/90, 18-19=-24/90, 17-18=-24/90, 16-17=-24/90, 15-16=-24/90
WEBS	9-22=-112/14, 8-23=-198/72, 7-24=-191/80, 6-25=-138/78, 5-26=-119/72, 4-27=-124/112, 10-21=-211/78, 11-19=-185/79, 12-18=-133/77, 13-17=-117/76, 14-16=-130/124

- NOTES**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) 0-10-8 to 2-2-12, Exterior (2N) 2-2-12 to 9-1-10, Corner(3R) 9-1-10 to 15-1-10, Exterior(2N) 15-1-10 to 21-5-8, Corner(3E) 21-5-8 to 24-5-8 zone; cantilever left and right exposed ; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); 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, 42 lb uplift at joint 23, 45 lb uplift at joint 24, 46 lb uplift at joint 25, 35 lb uplift at joint 26, 78 lb uplift at joint 27, 46 lb uplift at joint 21, 44 lb uplift at joint 19, 45 lb uplift at joint 18, 37 lb uplift at joint 17, 69 lb uplift at joint 16 and 13 lb uplift at joint 2.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.



August 10, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

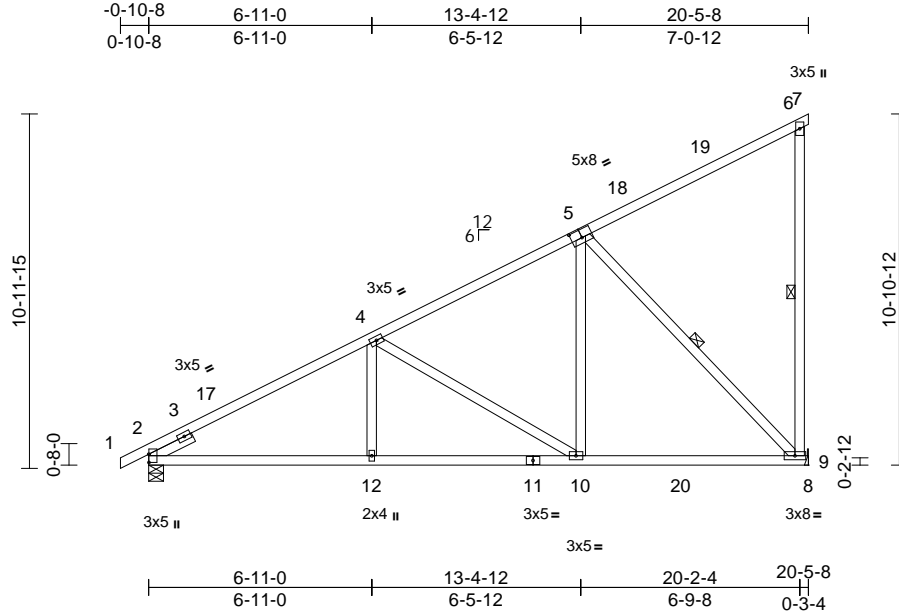
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss B	Truss Type Monopitch	Qty 3	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	I60054059
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:21  
ID:uKtrJGkYuK\_5qa1S4NLaLYzBNI-RfC?PsB70Hq3NSgPqnl8w3ulTXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:71.5

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

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	0.87	Vert(LL)	-0.09	9-10	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.61	Vert(CT)	-0.16	9-10	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.60	Horz(CT)	0.03	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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 \*Except\* 6-9:2x4 SP No.2
- SLIDER Left 2x4 SP No.3 -- 1-6-0

**BRACING**

- TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
- WEBS 1 Row at midpt 6-9, 5-9

**REACTIONS**

- (size) 2=0-5-8, 9= Mechanical
- Max Horiz 2=388 (LC 14)
- Max Uplift 2=44 (LC 14), 9=231 (LC 14)
- Max Grav 2=934 (LC 5), 9=1050 (LC 5)

**FORCES**

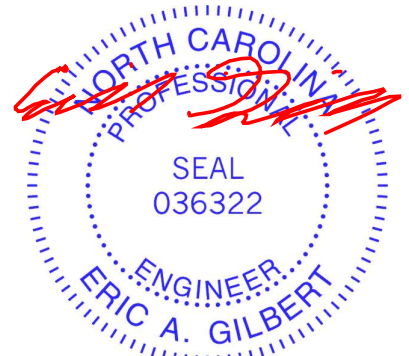
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-2=0/23, 2-4=-1334/20, 4-6=-812/112, 6-7=-12/0, 6-9=-309/105
- BOT CHORD 2-12=-397/1138, 10-12=-313/1138, 9-10=-159/673, 8-9=0/0
- WEBS 4-12=0/253, 4-10=-560/178, 5-10=0/579, 5-9=-946/225

**NOTES**

- Wind: ASCE 7-16; Vult=130mph (3-second gust)  
Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft;  
Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 17-5-8, Exterior(2E) 17-5-8 to 20-5-8 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10

- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 231 lb uplift at joint 9.
- One H2.5A Simpson Strong-Tie connectors recommended to connect to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

**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

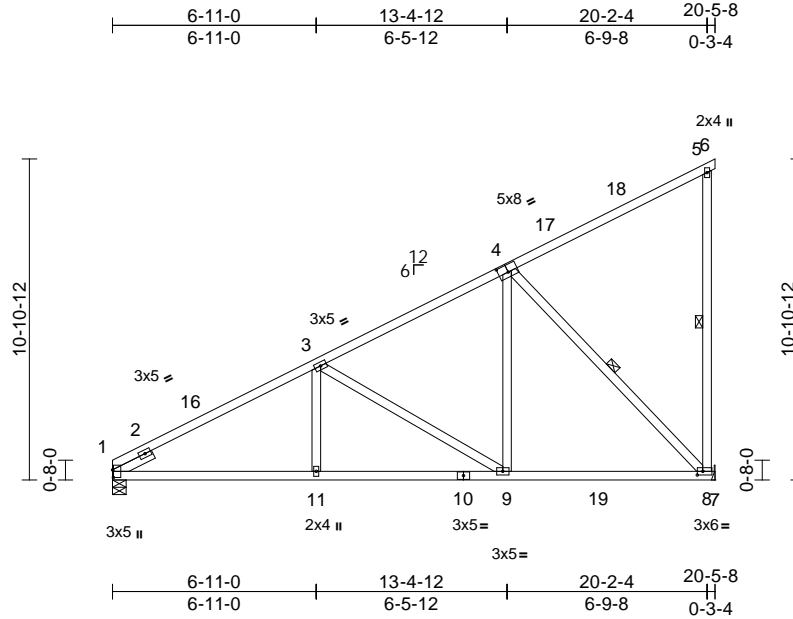


Job 23070130-01	Truss B1	Truss Type Monopitch	Qty 2	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	I60054060
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:21  
ID:KLLp2cdP9FdyXYyQD889fRyzBLJ-RfC?PsB70Hq3NSgPqnL8w3uITxBGKWrcDoi7J4zJC7f

Page: 1



Scale = 1:78.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	1.00	Vert(LL)	-0.11	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.19	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.60	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 122 lb	FT = 20%

**LUMBER**

- TOP CHORD 2x4 SP No.2
- BOT CHORD 2x4 SP No.2
- 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.
- BOT CHORD Rigid ceiling directly applied or 10-0-0 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=-231 (LC 14)
- Max Grav 1=888 (LC 5), 8=1044 (LC 5)

**FORCES**

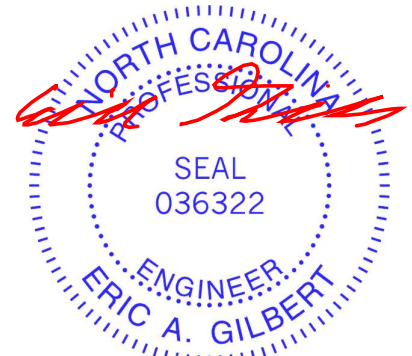
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-3=-1333/21, 3-5=-814/89, 5-6=-12/0
- BOT CHORD 1-11=-408/1138, 9-11=-314/1138, 8-9=-161/676, 7-8=0/0
- WEBS 3-11=0/251, 5-8=-291/100, 4-9=0/590, 4-8=-973/231, 3-9=-557/177

**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 17-5-8, Exterior(2E) 17-5-8 to 20-5-8 zone; cantilever left and right exposed ; end vertical left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 231 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.
- 9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

**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)



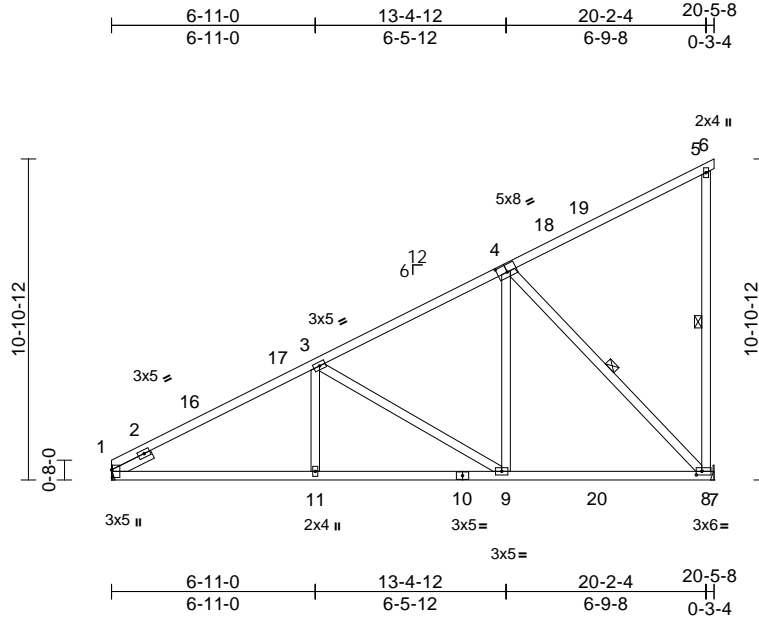
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss B2	Truss Type Monopitch	Qty 9	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	I60054061
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:22  
ID:DTBTk2iEBbrKjDFXxkE1mCyzBJw-RfC?PsB70Hq3NSgPqnL8w3uITXbGKwRCDoi7J4zJC?F

Page: 1



Scale = 1:78.2

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	1.00	Vert(LL)	-0.11	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.19	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.60	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 122 lb	FT = 20%

#### LUMBER

TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 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.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

WEBS 1 Row at midpt 5-8, 4-8

#### REACTIONS

(size) 1= Mechanical, 8= Mechanical  
 Max Horiz 1=294 (LC 14)  
 Max Uplift 8=98 (LC 14)  
 Max Grav 1=888 (LC 5), 8=1044 (LC 5)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-3=-1333/0, 3-5=-814/89, 5-6=-12/0

BOT CHORD 1-11=-341/1138, 9-11=-201/1138,  
 8-9=-104/676, 7-8=0/0

WEBS 3-11=0/251, 5-8=-291/92, 4-9=0/590,  
 4-8=-973/149, 3-9=-557/127

#### 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 16-2-9, Exterior(2R) 16-2-9 to 20-5-8 zone; cantilever left and right exposed; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 98 lb uplift at joint 8.
- 8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



August 10, 2023

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

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ENGINEERING BY  
**TRENCO**  
 A MITek Affiliate

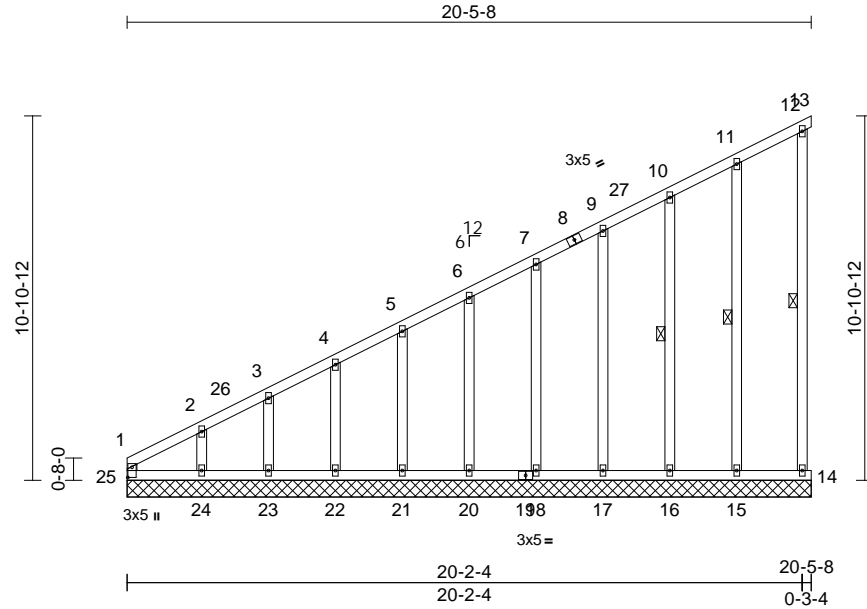
818 Soundside Road  
 Edenton, NC 27932

Job 23070130-01	Truss B2GE	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054062
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8:63 S Jul 28 2023 Print: 8:630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:22  
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Page: 1



Scale = 1:68.9

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	0.28	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.14	Horiz(TL)	-0.02	13	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 150 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, 10-16, 11-15

**REACTIONS** (size)  
13=20-5-8, 14=20-5-8, 15=20-5-8, 16=20-5-8, 17=20-5-8, 18=20-5-8, 20=20-5-8, 21=20-5-8, 22=20-5-8, 23=20-5-8, 24=20-5-8, 25=20-5-8  
Max Horiz 25=367 (LC 14)  
Max Uplift 13=9 (LC 14), 14=-20 (LC 14), 15=-44 (LC 14), 16=-45 (LC 14), 17=-43 (LC 14), 18=-44 (LC 14), 20=-44 (LC 14), 21=-42 (LC 14), 22=-53 (LC 14), 23=-9 (LC 14), 24=-174 (LC 14)  
Max Grav 13=18 (LC 20), 14=102 (LC 20), 15=252 (LC 20), 16=225 (LC 20), 17=171 (LC 20), 18=160 (LC 1), 20=161 (LC 20), 21=160 (LC 1), 22=162 (LC 20), 23=153 (LC 20), 24=186 (LC 1), 25=265 (LC 14)

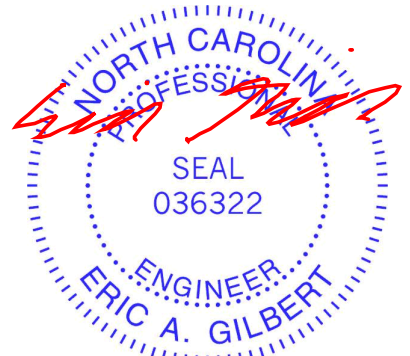
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-25=-223/75, 1-2=-498/193, 2-3=-398/159, 3-4=-360/145, 4-5=-311/125, 5-6=-265/107, 6-7=-219/89, 7-9=-173/71, 9-10=-126/53, 10-11=-80/43, 11-12=-50/26, 12-13=-6/7, 12-14=-86/33

**BOT CHORD** 24-25=-1/1, 23-24=-1/1, 22-23=-1/1, 21-22=-1/1, 20-21=-1/1, 18-20=-1/1, 17-18=-1/1, 16-17=-1/1, 15-16=-1/1, 14-15=-1/1  
**WEBS** 6-20=-120/80, 5-21=-120/79, 4-22=-121/84, 3-23=-116/60, 2-24=-136/201, 7-18=-120/80, 9-17=-131/80, 10-16=-186/79, 11-15=-208/85

**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 20-5-8 zone; cantilever left and right exposed; end vertical left exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 9 lb uplift at joint 13, 20 lb uplift at joint 14, 44 lb uplift at joint 20, 42 lb uplift at joint 21, 53 lb uplift at joint 22, 9 lb uplift at joint 23, 174 lb uplift at joint 24, 44 lb uplift at joint 18, 43 lb uplift at joint 17, 45 lb uplift at joint 16 and 44 lb uplift at joint 15.
  - 13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

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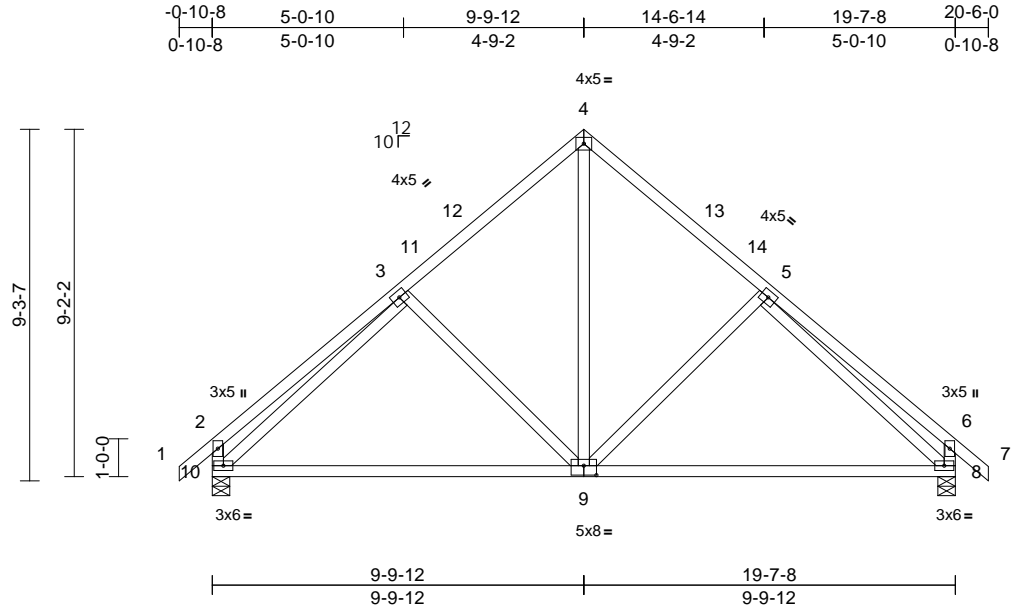
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss C	Truss Type Common	Qty 6	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	I60054063
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:22  
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	0.49	Vert(LL)	-0.17	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.90	Vert(CT)	-0.34	8-9	>673	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.59	Horz(CT)	0.02	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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=883 (LC 22), 10=883 (LC 21)

**FORCES**

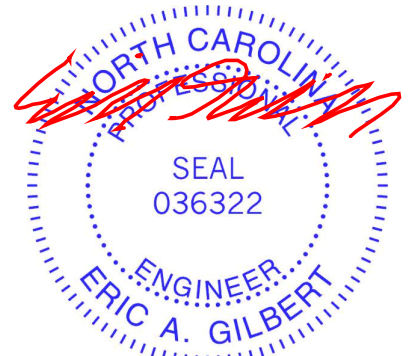
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/39, 2-3=-365/131, 3-4=-756/158, 4-5=-756/158, 5-6=-365/130, 6-7=0/39, 2-10=-380/143, 6-8=-379/143  
BOT CHORD 8-10=-99/651  
WEBS 4-9=-82/512, 5-9=-259/212, 3-9=-259/212, 3-10=-665/53, 5-8=-665/53

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 6-9-12, Exterior(2R) 6-9-12 to 12-9-12, Interior (1) 12-9-12 to 17-6-0, Exterior(2E) 17-6-0 to 20-6-0 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.
- 8) 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.
- 9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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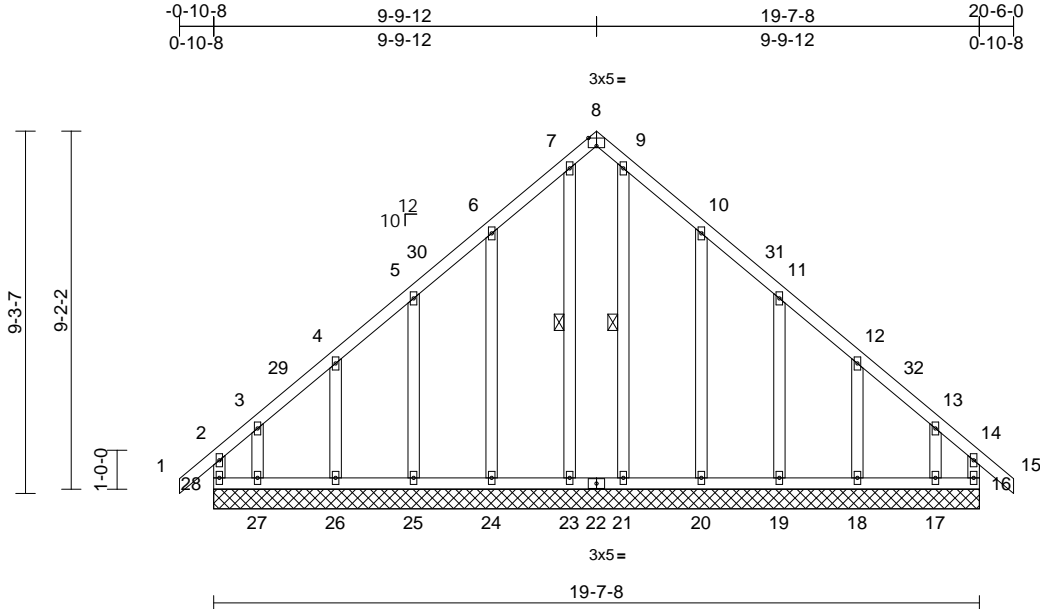
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss CGE	Truss Type Common Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054064
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:23  
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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	0.11	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.19	Horz(CT)	0.00	16	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 143 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=19-7-8, 17=19-7-8, 18=19-7-8, 19=19-7-8, 20=19-7-8, 21=19-7-8, 23=19-7-8, 24=19-7-8, 25=19-7-8, 26=19-7-8, 27=19-7-8, 28=19-7-8
Max Uplift	28=-236 (LC 12)
Max Grav	16=102 (LC 13), 17=-187 (LC 15), 18=-67 (LC 15), 19=-75 (LC 15), 20=98 (LC 15), 24=-97 (LC 14), 25=-76 (LC 14), 26=-66 (LC 14), 27=-199 (LC 14), 28=-147 (LC 12)
	16=190 (LC 15), 17=186 (LC 13), 18=175 (LC 25), 19=179 (LC 22), 20=264 (LC 22), 21=197 (LC 22), 23=197 (LC 21), 24=264 (LC 21), 25=179 (LC 21), 26=173 (LC 28), 27=212 (LC 12), 28=228 (LC 11)

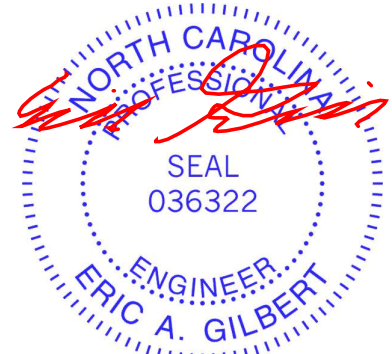
FORCES	(lb) - Maximum Compression/Maximum Tension
TOP CHORD	2-28=-169/107, 1-2=0/39, 2-3=-210/178, 3-4=-126/128, 4-5=-105/109, 5-6=-82/157, 6-7=-119/260, 7-8=-88/182, 8-9=-88/182, 9-10=-119/260, 10-11=-65/157, 11-12=-75/83, 12-13=-96/97, 13-14=-190/137, 14-15=0/39, 14-16=-144/76

BOT CHORD	
	27-28=-112/179, 26-27=-112/179, 25-26=-112/179, 24-25=-112/179, 23-24=-112/179, 21-23=-112/179, 20-21=-112/179, 19-20=-112/179, 18-19=-112/179, 17-18=-112/179, 16-17=-112/179
WEBS	
	7-23=-165/14, 9-21=-165/14, 6-24=-222/139, 5-25=-140/102, 4-26=-136/113, 3-27=-130/145, 10-20=-222/139, 11-19=-140/103, 12-18=-137/112, 13-17=-120/139

**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 6-9-12, Corner(3R) 6-9-12 to 12-9-12, Exterior (2N) 12-9-12 to 17-6-0, Corner(3E) 17-6-0 to 20-6-0 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.
  - 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 147 lb uplift at joint 28, 102 lb uplift at joint 16, 97 lb uplift at joint 24, 76 lb uplift at joint 25, 66 lb uplift at joint 26, 199 lb uplift at joint 27, 98 lb uplift at joint 20, 75 lb uplift at joint 19, 67 lb uplift at joint 18 and 187 lb uplift at joint 17.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

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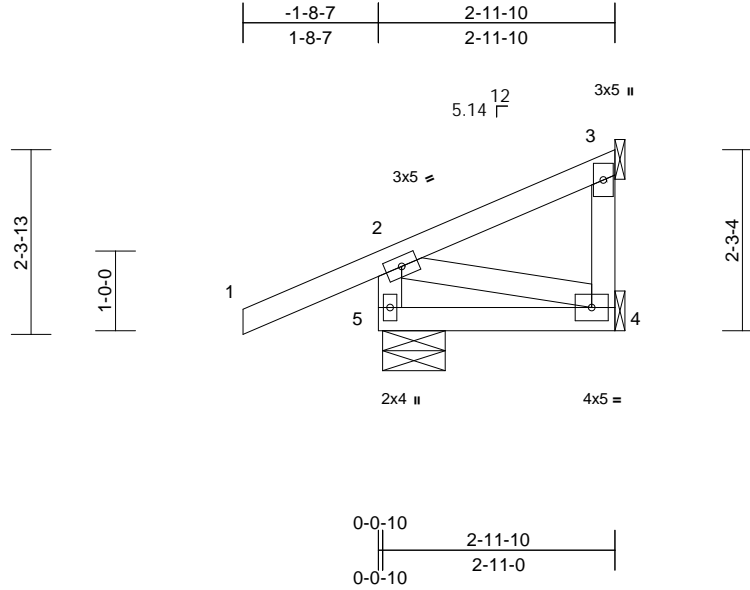
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss CJ1	Truss Type Jack-Open Structural Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054065
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:23  
ID:sO9akXcGp1tsoTjN9u??hcyzBDb-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCdoi7J4zJC?f

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	0.36	Vert(LL)	0.00	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(CT)	-0.01	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 19 lb	FT = 20%

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 2-11-10 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=86 (LC 13)  
Max Uplift 3=-22 (LC 11), 4=-2 (LC 11), 5=-58 (LC 10)  
Max Grav 3=64 (LC 21), 4=54 (LC 7), 5=377 (LC 21)

**FORCES**

(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/67, 2-3=-71/54, 3-4=0/0, 2-5=-350/247  
BOT CHORD 4-5=-82/78  
WEBS 2-4=-54/104

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

- 5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 6) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- 7) Refer to girder(s) for truss to truss connections.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 2 lb uplift at joint 4.
- 9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 3. This connection is for uplift only and does not consider lateral forces.
- 10) One RT8A MiTek 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.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 12) Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.

**LOAD CASE(S)** Standard



August 10, 2023

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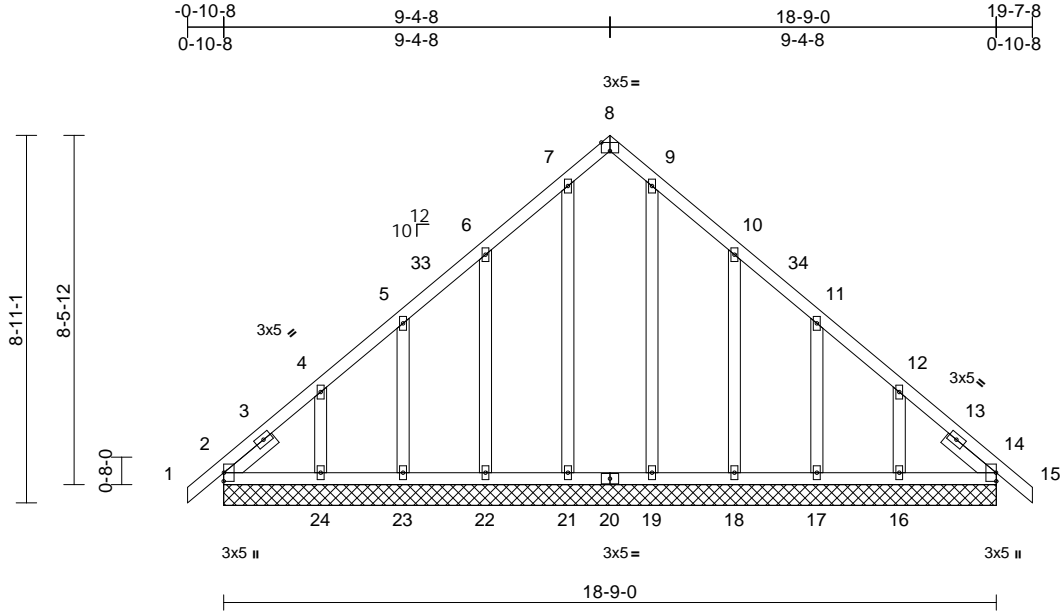
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss EGE	Truss Type Common Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054066
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:23  
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Page: 1



Scale = 1:55.9

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	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.10	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	IRC2018/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.

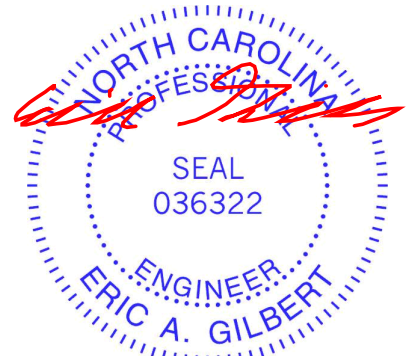
**REACTIONS** (size)  
2=18-9-0, 14=18-9-0, 16=18-9-0, 17=18-9-0, 18=18-9-0, 19=18-9-0, 21=18-9-0, 22=18-9-0, 23=18-9-0, 24=18-9-0, 25=18-9-0, 29=18-9-0  
Max Horiz 2=201 (LC 13), 25=201 (LC 13)  
Max Uplift 2=25 (LC 10), 14=2 (LC 11), 16=136 (LC 15), 17=56 (LC 15), 18=102 (LC 15), 21=3 (LC 11), 22=98 (LC 14), 23=55 (LC 14), 24=139 (LC 14), 25=25 (LC 10), 29=2 (LC 11)  
Max Grav 2=203 (LC 26), 14=191 (LC 27), 16=215 (LC 25), 17=164 (LC 22), 18=256 (LC 22), 19=214 (LC 22), 21=214 (LC 21), 22=256 (LC 21), 23=164 (LC 21), 24=218 (LC 24), 25=203 (LC 26), 29=191 (LC 27)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/34, 2-4=245/139, 4-5=148/94, 5-6=108/70, 6-7=106/88, 7-8=82/91, 8-9=82/91, 9-10=106/88, 10-11=85/39, 11-12=127/63, 12-14=223/113, 14-15=0/34

**BOT CHORD** 2-24=-84/253, 23-24=-84/253, 22-23=-84/253, 21-22=-84/253, 19-21=-84/253, 18-19=-84/253, 17-18=-84/253, 16-17=-84/253, 14-16=-84/253  
**WEBS** 7-21=-174/28, 9-19=-174/5, 6-22=-215/140, 5-23=-128/96, 4-24=-155/155, 10-18=-215/140, 11-17=-128/96, 12-16=-152/155

- 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 2-4-4, Exterior(2N) 2-4-4 to 6-4-4, Corner(3R) 6-4-4 to 12-4-12, Exterior(2N) 12-4-12 to 16-4-12, Corner(3E) 16-4-12 to 19-7-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
  - 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 25 lb uplift at joint 2, 2 lb uplift at joint 14, 3 lb uplift at joint 21, 98 lb uplift at joint 22, 55 lb uplift at joint 23, 139 lb uplift at joint 24, 102 lb uplift at joint 18, 56 lb uplift at joint 17, 136 lb uplift at joint 16, 25 lb uplift at joint 2 and 2 lb uplift at joint 14.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

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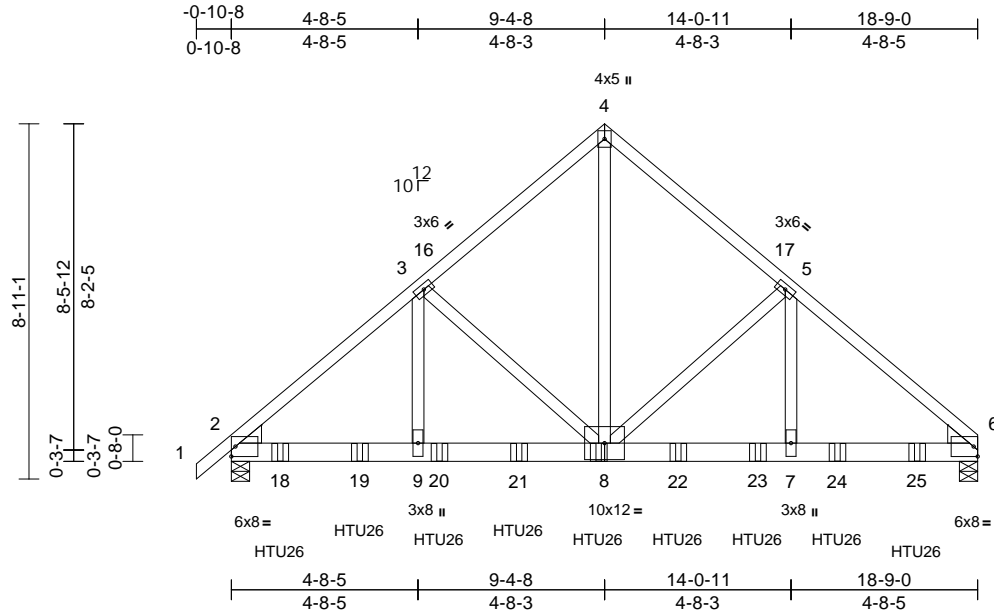
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss EGR	Truss Type Common Girder	Qty 1	Ply 2	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054067
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:24  
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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	Vert(LL)	-0.08	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.14	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	Horz(CT)	0.04	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0										
										Weight: 251 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

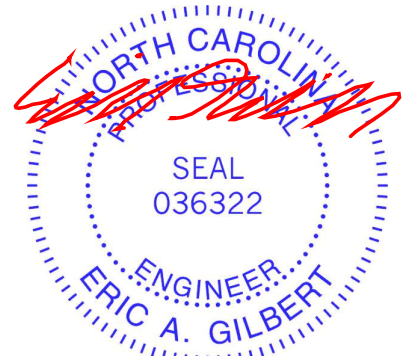
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 5-3-5 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 6=0-5-8  
Max Horiz 2=195 (LC 11)  
Max Grav 2=4697 (LC 5), 6=4543 (LC 6)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/34, 2-3=-5535/0, 3-4=-3862/0,  
4-5=-3862/0, 5-6=-5558/0  
BOT CHORD 2-9=-36/4269, 7-9=0/4269, 6-7=0/4216  
WEBS 4-8=0/4537, 5-8=-1805/0, 5-7=0/2023,  
3-8=-1782/0, 3-9=0/1991

- 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; cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
  - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
  - Unbalanced snow loads have been considered for this design.
  - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
  - Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-12 oc max. starting at 1-2-12 from the left end to 17-2-12 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: 1-4=-60, 4-6=-60, 10-13=-20  
Concentrated Loads (lb)  
Vert: 8=-811 (B), 18=-811 (B), 19=-811 (B), 20=-811 (B), 21=-811 (B), 22=-811 (B), 23=-811 (B), 24=-811 (B), 25=-811 (B)



August 10, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932



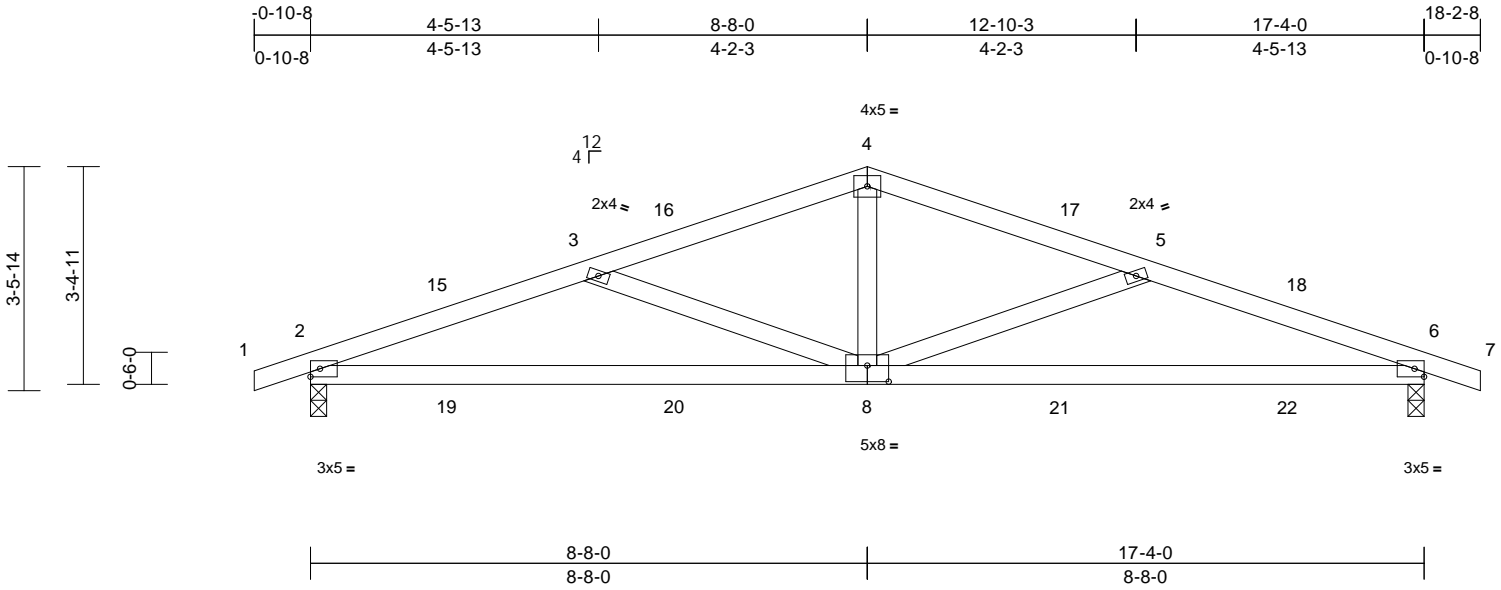
Job 23070130-01	Truss F	Truss Type Common	Qty 4	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054068
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:24

Page: 1

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Scale = 1:35.9  
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)	0.22	8-11	>949	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	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 73 lb	FT = 20%	

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x4 SP No.2  
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 4-7-0 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=-1656/1476, 3-4=-1134/1295, 4-5=-1134/1295, 5-6=-1656/1476, 6-7=0/17  
BOT CHORD 2-6=-1340/1528  
WEBS 4-8=-655/461, 5-8=-547/253, 3-8=-547/253

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

**LOAD CASE(S)** Standard

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



August 10, 2023

**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)



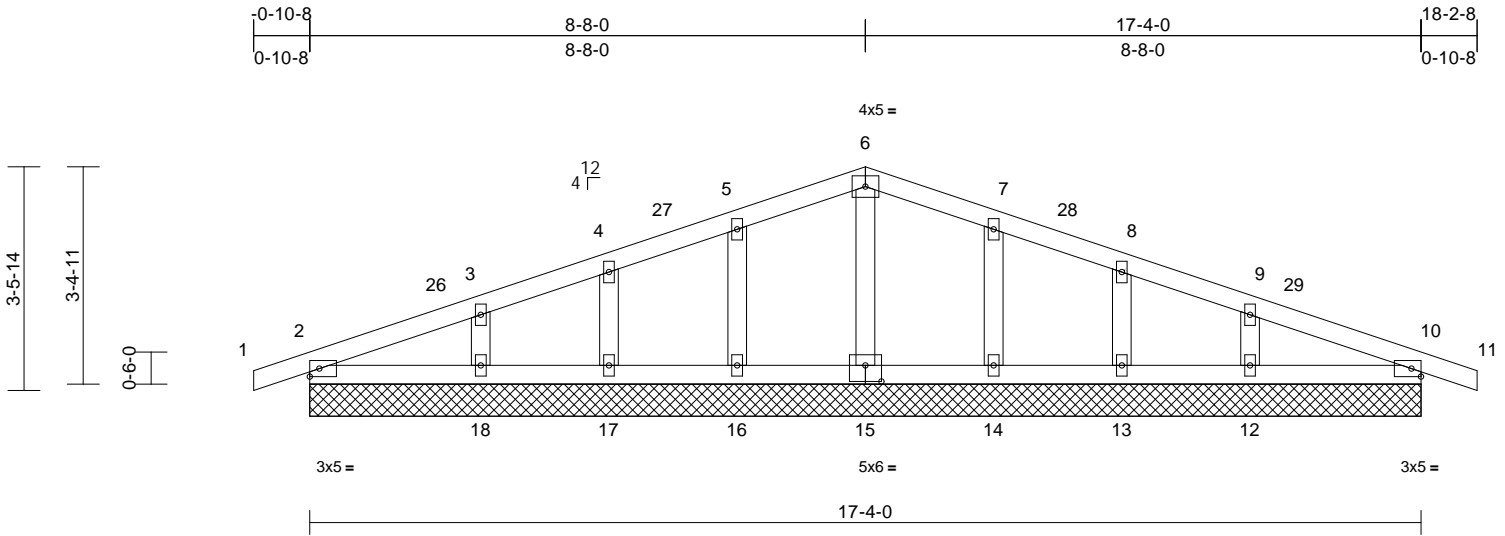
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss FGE	Truss Type Common Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054069
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:25  
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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	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.00	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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=17-4-0, 10=17-4-0, 12=17-4-0, 13=17-4-0, 14=17-4-0, 15=17-4-0, 16=17-4-0, 17=17-4-0, 18=17-4-0, 19=17-4-0, 23=17-4-0  
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 21), 16=235 (LC 21), 17=203 (LC 21), 18=249 (LC 21), 19=160 (LC 1), 23=160 (LC 1)

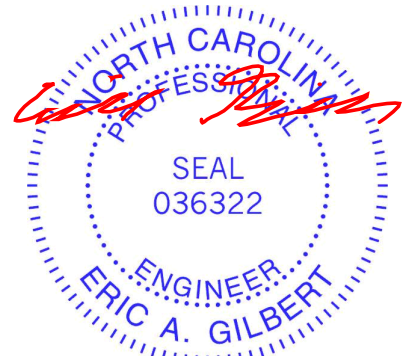
**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/17, 2-3=-60/34, 3-4=-51/47, 4-5=-49/78, 5-6=-53/121, 6-7=-53/121, 7-8=-49/78, 8-9=-51/43, 9-10=-48/34, 10-11=0/17  
BOT CHORD 2-18=-22/45, 17-18=0/45, 16-17=0/45, 14-16=0/45, 13-14=0/45, 12-13=0/45, 10-12=-18/45  
WEBS 6-15=-96/12, 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 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 38 lb uplift at joint 2, 45 lb uplift at joint 10, 38 lb uplift at joint 16, 30 lb uplift at joint 17, 49 lb uplift at joint 18, 38 lb uplift at joint 14, 31 lb uplift at joint 13, 46 lb uplift at joint 12, 38 lb uplift at joint 2 and 45 lb uplift at joint 10.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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

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



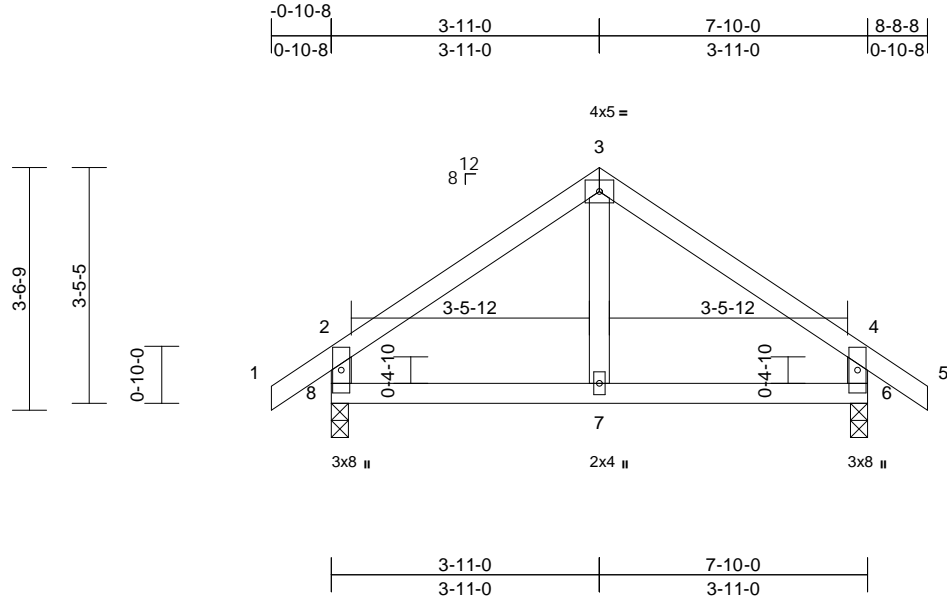
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss G	Truss Type Common	Qty 2	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054070
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:25  
ID:DP\_INHM2klcG82JXPRlrjVyzBPX-RfC?PsB70Hq3NSgPqnL8w3uTXbGKWrCDoi7J4zJC?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	0.36	Vert(LL)	0.01	6-7	>999	240	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.16	Vert(CT)	-0.01	7-8	>999	180	
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	6	n/a	n/a	
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR							
BCDL	10.0									Weight: 35 lb	FT = 20%

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

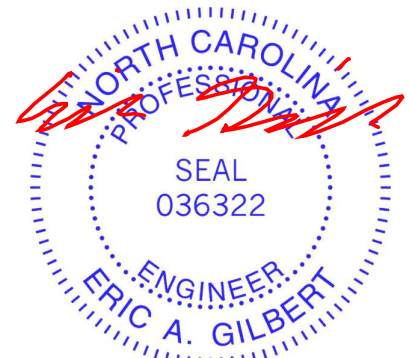
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 6=0-3-0, 8=0-3-0  
Max Horiz 8=96 (LC 13)  
Max Uplift 6=-44 (LC 15), 8=-44 (LC 14)  
Max Grav 6=497 (LC 22), 8=497 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/57, 2-3=-358/322, 3-4=-358/321, 4-5=0/57, 2-8=-454/309, 4-6=-454/307  
BOT CHORD 7-8=-119/196, 6-7=-119/196  
WEBS 3-7=-224/148

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
  - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 8 and 6. This connection is for uplift only and does not consider lateral forces.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

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



August 10, 2023

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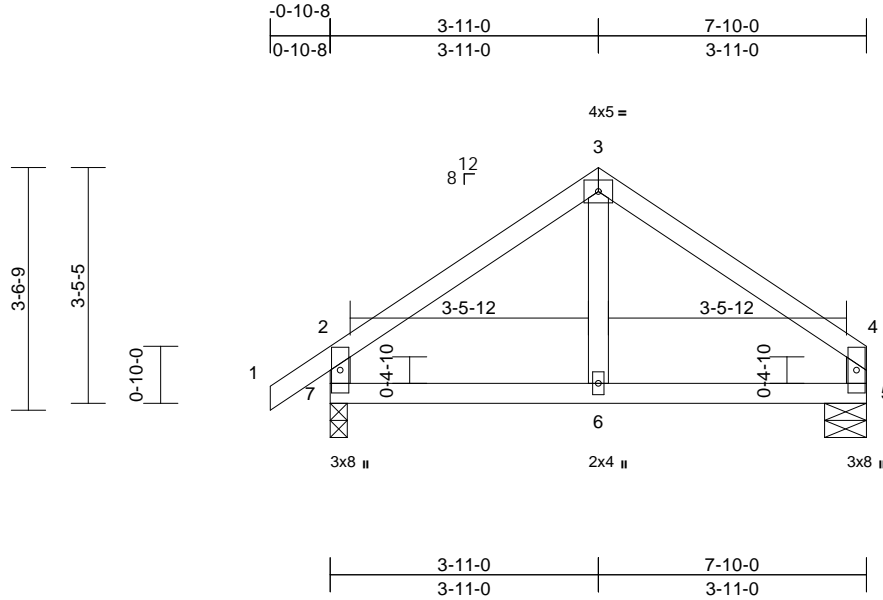
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss G1	Truss Type Common	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054071
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:25  
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Page: 1



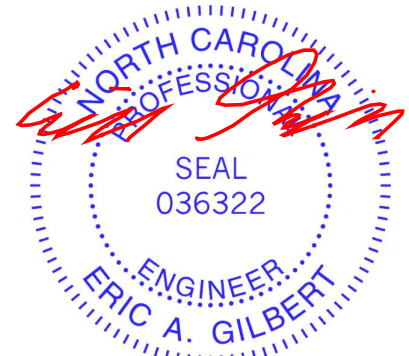
Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.37	Vert(LL)	0.02	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.18	Vert(CT)	-0.02	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0											
											Weight: 33 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)	
	5=0-7-5, 7=0-3-0
Max Horiz	7=91 (LC 11)
Max Uplift	5=-24 (LC 15), 7=-44 (LC 14)
Max Grav	5=387 (LC 22), 7=442 (LC 21)
FORCES (lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/34, 2-3=-352/323, 3-4=-359/318, 2-7=-399/309, 4-5=-341/243
BOT CHORD	6-7=-167/205, 5-6=-167/205
WEBS	3-6=-217/144

- 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) 7. This connection is for uplift only and does not consider lateral forces.
- One RT8A MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 5. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

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



August 10, 2023

**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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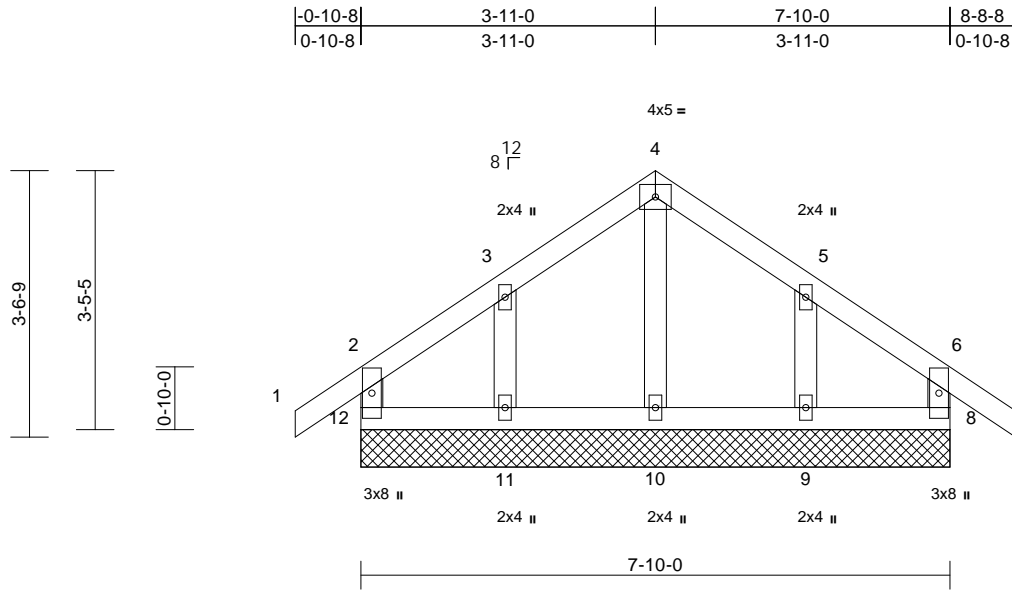
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss GGE	Truss Type Common Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054072
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:26  
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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	0.13	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/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 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

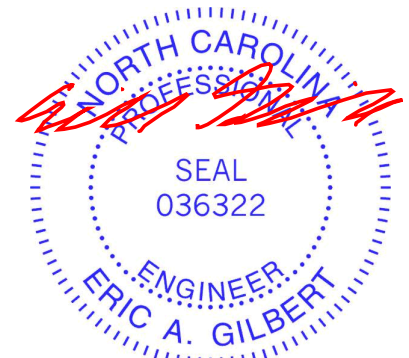
**REACTIONS** (size) 8=7-10-0, 9=7-10-0, 10=7-10-0, 11=7-10-0, 12=7-10-0  
Max Horiz 12=96 (LC 13)  
Max Uplift 8=-26 (LC 14), 9=-69 (LC 15), 11=-70 (LC 14), 12=-29 (LC 15)  
Max Grav 8=211 (LC 22), 9=230 (LC 22), 10=174 (LC 22), 11=230 (LC 21), 12=211 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 2-12=-193/164, 1-2=0/57, 2-3=-52/62, 3-4=-76/155, 4-5=-76/156, 5-6=-45/60, 6-7=0/57, 6-8=-193/160  
BOT CHORD 11-12=-44/85, 10-11=-44/85, 9-10=-44/85, 8-9=-44/85  
WEBS 4-10=-134/0, 3-11=-193/143, 5-9=-193/148

**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; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- Gable requires continuous bottom chord bearing.
- 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 29 lb uplift at joint 12, 26 lb uplift at joint 8, 70 lb uplift at joint 11 and 69 lb uplift at joint 9.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

**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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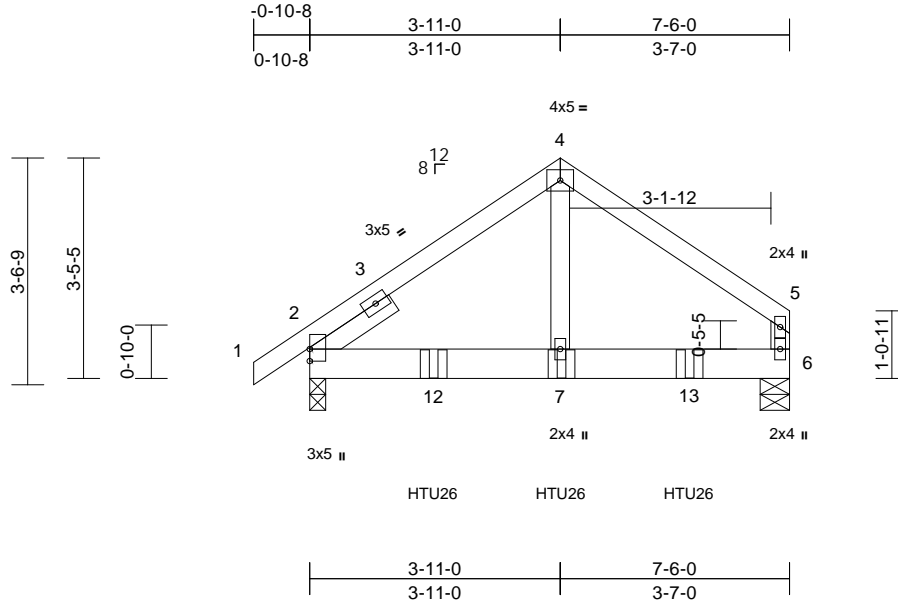
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss GGR	Truss Type Common Girder	Qty 1	Ply 2	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054073
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:26  
ID:mlX4RCA3yu3lhLxPq??YxydzBOU-RfC?PsB70Hq3NSgPqnL8w3uITxBGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:36

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)	-0.16	7-10	>549	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	1.00	Vert(CT)	-0.26	7-10	>337	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.03	Horz(CT)	0.05	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 80 lb	FT = 20%

**LUMBER**  
TOP CHORD 2x4 SP No.2  
BOT CHORD 2x6 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 6-0-0 oc purlins, except end verticals.  
BOT CHORD Rigid ceiling directly applied.

**REACTIONS** (size) 2=0-3-0, 6=0-5-8  
Max Horiz 2=85 (LC 11)  
Max Uplift 2=-193 (LC 12), 6=-195 (LC 13)  
Max Grav 2=894 (LC 19), 6=907 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/29, 2-4=-580/196, 4-5=-77/77, 5-6=-173/67  
BOT CHORD 2-7=-51/59, 6-7=-10/7  
WEBS 4-7=-292/34

**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 to loads noted as (F) or (B), unless otherwise indicated.
- Unbalanced roof live loads have been considered for this design.

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- 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.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 1-11-4 from the left end to 5-11-4 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: 1-4=-60, 4-5=-60, 6-8=-20

Concentrated Loads (lb)  
Vert: 7=-335 (B), 12=-335 (B), 13=-335 (B)



August 10, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

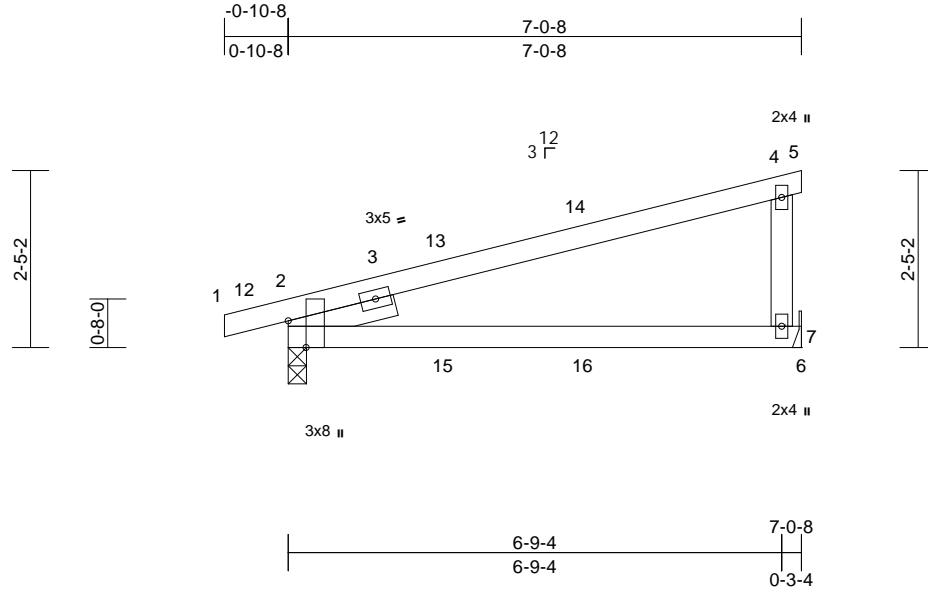
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss H	Truss Type Monopitch	Qty 5	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054074
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:26  
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Page: 1



Scale = 1:31.6

Plate Offsets (X, Y): [2:0-4-6,Edge]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.93	Vert(LL)	0.32	7-10	>256	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.59	Vert(CT)	-0.26	7-10	>314	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.05	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 28 lb	FT = 20%	

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

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

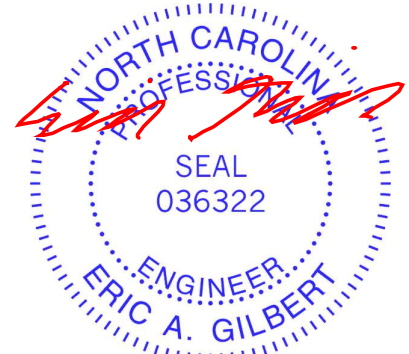
**REACTIONS** (size) 2=0-3-0, 7= Mechanical  
Max Horiz 2=80 (LC 13)  
Max Uplift 2=-130 (LC 10), 7=-108 (LC 10)  
Max Grav 2=424 (LC 21), 7=381 (LC 21)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/16, 2-4=-290/447, 4-5=-6/0, 4-7=-268/207  
BOT CHORD 2-7=-304/400, 6-7=0/0

- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
- Refer to girder(s) for truss to truss connections.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 108 lb uplift at joint 7.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

- 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 4-0-8, Exterior(2E) 4-0-8 to 7-0-8 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.



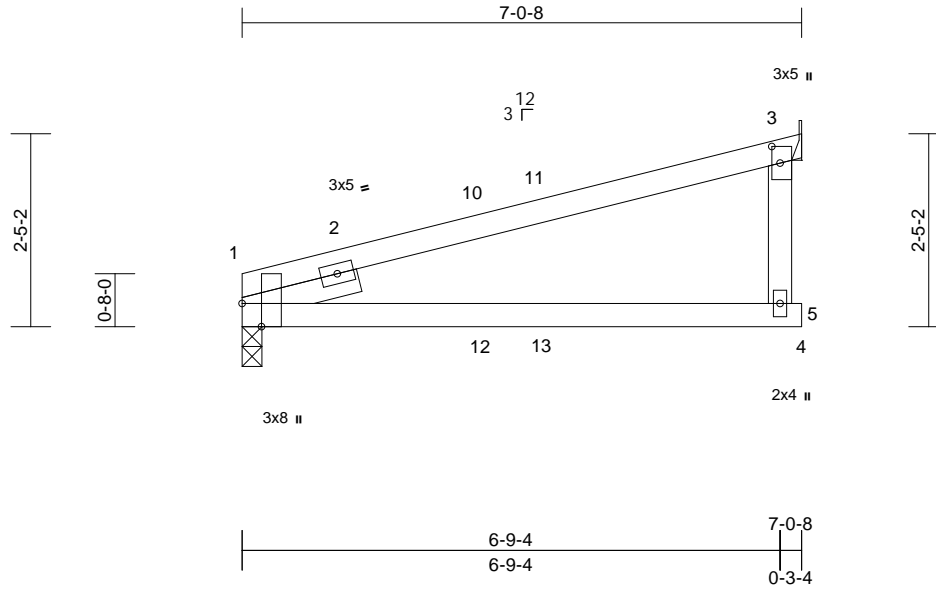
August 10, 2023

Job 23070130-01	Truss H1	Truss Type Monopitch	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	I60054075
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:26  
ID:9RTNzVL\_Ho91hITa2VJNs?yzBQq-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:29

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

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	0.95	Vert(LL)	0.34	5-8	>240	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.63	Vert(CT)	0.27	5-8	>302	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.06	1	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 26 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

- (size) 1=0-3-0, 3= Mechanical
- Max Horiz 1=75 (LC 13)
- Max Uplift 1=97 (LC 10), 3=104 (LC 10)
- Max Grav 1=356 (LC 20), 3=361 (LC 20)

**FORCES**

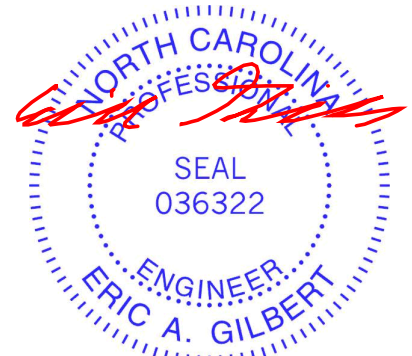
- (lb) - Maximum Compression/Maximum Tension
- TOP CHORD 1-3=-315/529, 3-5=-251/137
- BOT CHORD 1-5=-319/426, 4-5=0/0

**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) 0-0-0 to 3-0-0, Interior (1) 3-0-0 to 3-9-4, Exterior(2E) 3-9-4 to 6-9-4 zone; cantilever left and right exposed; end vertical left and right exposed; porch left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 at joint(s) 1.
- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 104 lb uplift at joint 3.
- 9) 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.
- 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 11) Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.

**LOAD CASE(S)** Standard



August 10, 2023

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818 Soundside Road  
Edenton, NC 27932

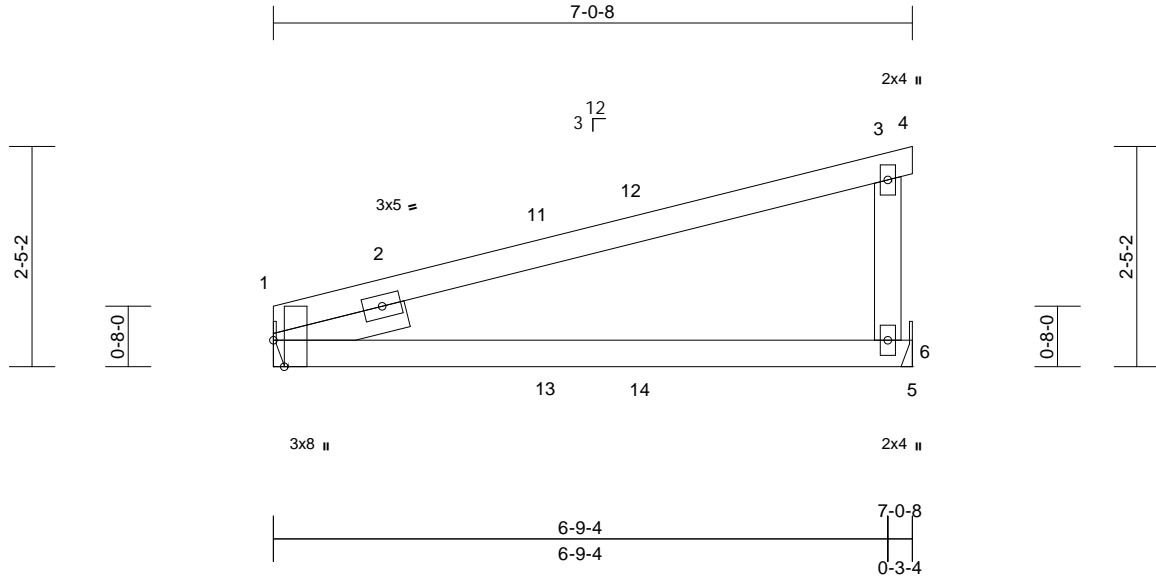


Job 23070130-01	Truss H2	Truss Type Monopitch	Qty 3	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054076
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:27  
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Page: 1



Scale = 1:25.4

Plate Offsets (X, Y): [1:0-3-8,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	0.95	Vert(LL)	0.33	6-9	>243	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.27	6-9	>305	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.06	1	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 26 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS** (size) 1= Mechanical, 6= Mechanical  
 Max Horiz 1=76 (LC 13)  
 Max Uplift 1=96 (LC 10), 6=110 (LC 20)  
 Max Grav 1=355 (LC 20), 6=385 (LC 20)

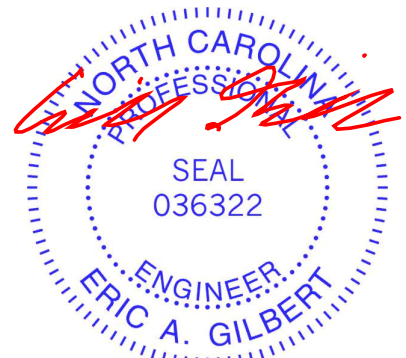
**FORCES**

(lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-3=-315/524, 3-4=-6/0, 3-6=-270/213  
 BOT CHORD 1-6=-318/425, 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 4-0-8, Exterior(2E) 4-0-8 to 7-0-8 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
- 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 96 lb uplift at joint 1 and 110 lb uplift at joint 6.
  - 8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

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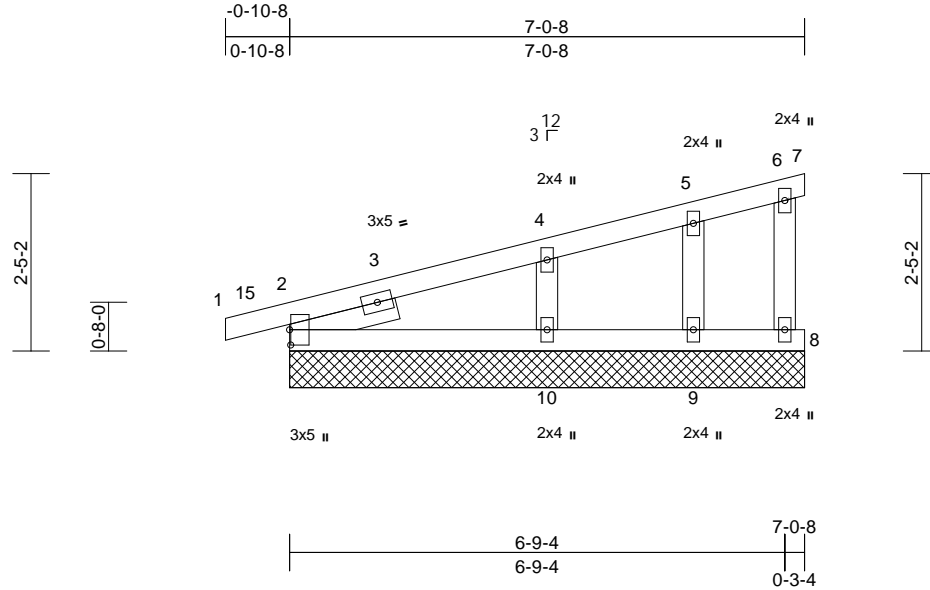
818 Soundside Road  
 Edenton, NC 27932

Job 23070130-01	Truss HGE	Truss Type Monopitch Supported Gable	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054077
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:27  
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Page: 1



Loading (psf)		Spacing		CSI		DEFL		PLATES		GRIP		
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.16	Vert(LL)	n/a	in (loc)	l/defl	L/d	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	0.07	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 31 lb	FT = 20%

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

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

**REACTIONS (size)**  
2=7-0-8, 7=7-0-8, 8=7-0-8,  
9=7-0-8, 10=7-0-8, 11=7-0-8  
Max Horiz 2=80 (LC 13), 11=80 (LC 13)  
Max Uplift 2=-41 (LC 10), 7=-3 (LC 13), 8=-14 (LC 14), 9=-14 (LC 10), 10=-61 (LC 14), 11=-41 (LC 10)  
Max Grav 2=226 (LC 21), 7=1 (LC 21), 8=85 (LC 21), 9=120 (LC 21), 10=368 (LC 21), 11=226 (LC 21)

**FORCES (lb) - Maximum Compression/Maximum Tension**  
TOP CHORD 1-2=0/16, 2-4=-89/81, 4-5=-43/52, 5-6=-32/46, 6-7=-5/0, 6-8=-69/54  
BOT CHORD 2-10=-26/48, 9-10=-26/48, 8-9=-26/48  
WEBS 4-10=-267/234, 5-9=-112/105

**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) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 7-0-8 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.
- 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 41 lb uplift at joint 2, 3 lb uplift at joint 7, 14 lb uplift at joint 8, 61 lb uplift at joint 10, 14 lb uplift at joint 9 and 41 lb uplift at joint 2.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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

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

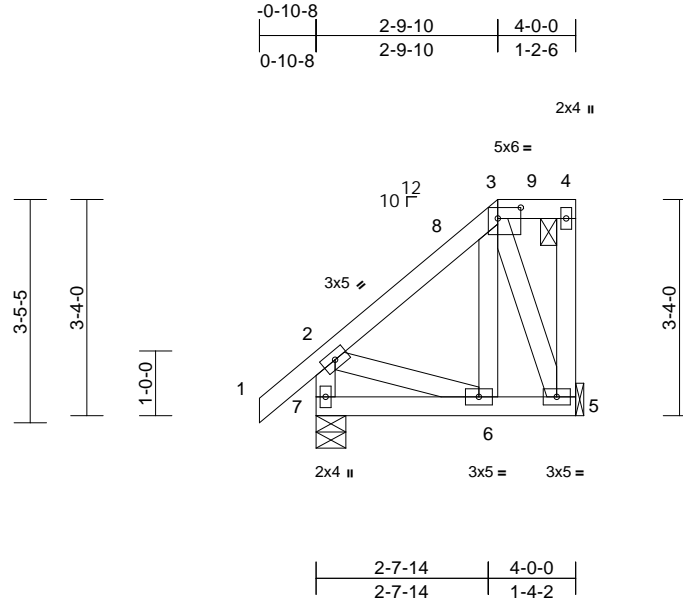


Job 23070130-01	Truss I1	Truss Type Half Hip	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054079
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:27  
ID:oyh2Rm0XL\_ipQxTy0sdVCHyzBEM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Page: 1



Scale = 1:35.5

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

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	0.15	Vert(LL)	0.00	6-7	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.05	Vert(CT)	0.00	6-7	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 32 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 5= Mechanical, 7=0-5-8  
Max Horiz 7=121 (LC 11)  
Max Uplift 5=-54 (LC 11), 7=-24 (LC 14)  
Max Grav 5=150 (LC 35), 7=319 (LC 36)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

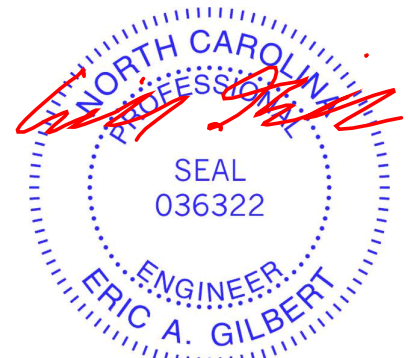
TOP CHORD 1-2=0/63, 2-3=-153/36, 3-4=-39/57, 4-5=-51/25, 2-7=-297/126  
BOT CHORD 6-7=-118/136, 5-6=-41/95  
WEBS 3-6=-4/87, 3-5=-166/68, 2-6=-40/120

**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 2-9-10, Exterior(2E) 2-9-10 to 3-10-4 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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.
- Refer to girder(s) for truss to truss connections.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 5. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

**LOAD CASE(S)** Standard



August 10, 2023

**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)



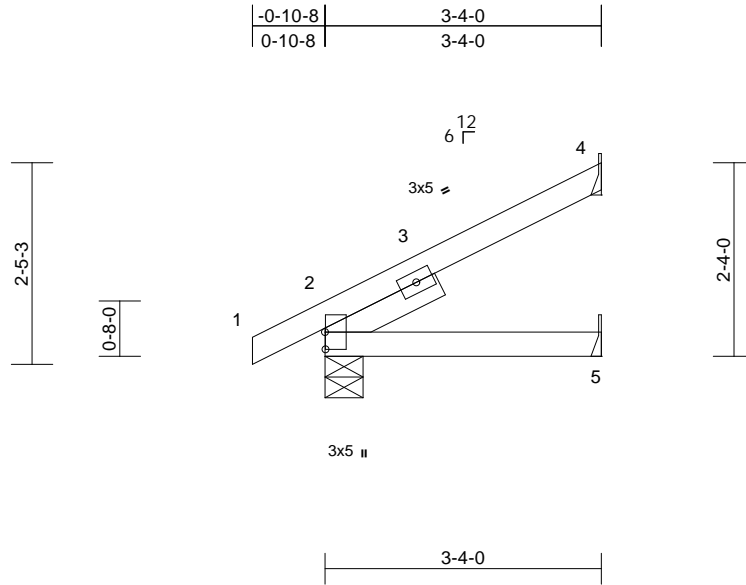
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss J	Truss Type Jack-Open	Qty 2	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054080
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:28  
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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	0.20	Vert(LL)	-0.01	5-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.15	Vert(CT)	-0.01	5-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.01	2	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 14 lb	FT = 20%

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

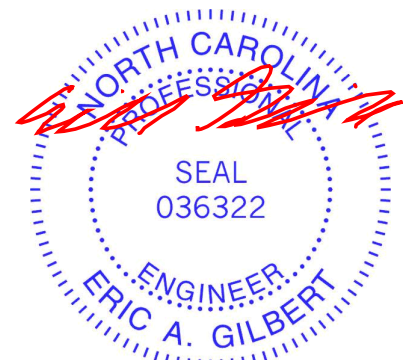
**BRACING**  
TOP CHORD Structural wood sheathing directly applied or 3-4-0 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS** (size) 2=0-5-8, 4= Mechanical, 5= Mechanical  
Max Horiz 2=74 (LC 14)  
Max Uplift 2=-18 (LC 14), 4=-44 (LC 14)  
Max Grav 2=276 (LC 21), 4=124 (LC 21), 5=58 (LC 7)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=0/36, 2-4=-96/44  
BOT CHORD 2-5=-110/78

- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - All bearings are assumed to be User Defined crushing capacity of 425 psi.
  - Refer to girder(s) for truss to truss connections.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 44 lb uplift at joint 4.
  - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
  - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

- NOTES**
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; 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
  - 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.



August 10, 2023

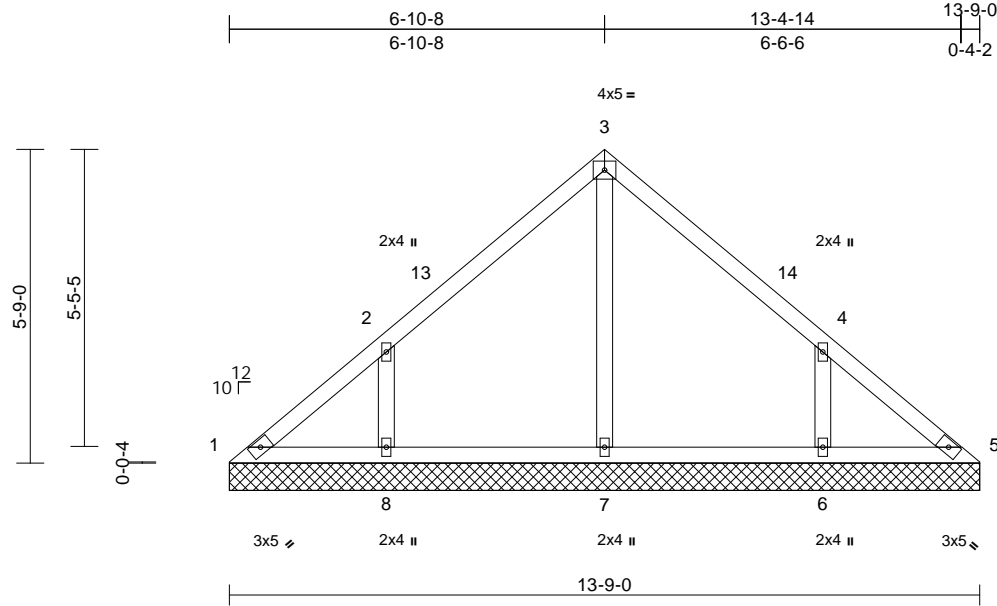


Job 23070130-01	Truss V2	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054082
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:28  
ID:XFryJlebWm?dvpUHJx6YFyyzBHQ-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	0.33	Vert(LL)	n/a	-	n/a	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.11	Vert(TL)	n/a	-	n/a		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horiz(TL)	0.00	5	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 59 lb	FT = 20%

**LUMBER**

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

**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=13-9-0, 5=13-9-0, 6=13-9-0, 7=13-9-0, 8=13-9-0  
Max Horiz 1=-131 (LC 12)  
Max Uplift 1=-26 (LC 10), 6=-148 (LC 15), 8=-151 (LC 14)  
Max Grav 1=115 (LC 24), 5=91 (LC 23), 6=444 (LC 21), 7=288 (LC 21), 8=444 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-143/120, 2-3=-191/116, 3-4=-191/114, 4-5=-113/83  
BOT CHORD 1-8=-50/113, 7-8=-50/91, 6-7=-50/91, 5-6=-50/91  
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 26 lb uplift at joint 1, 151 lb uplift at joint 8 and 148 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard

**NOTES**

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



August 10, 2023

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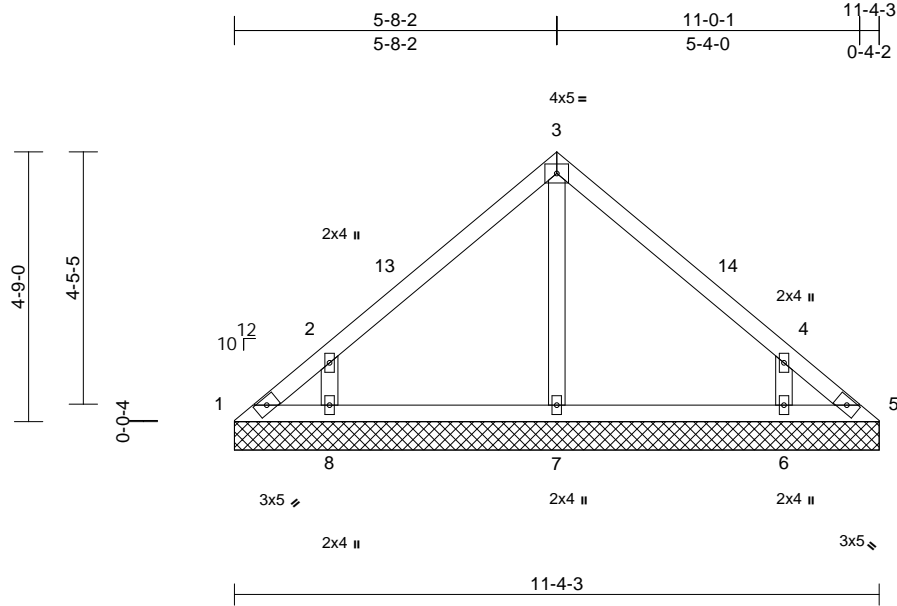
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V3	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054083
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:29  
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Page: 1



<b>Scale = 1:40.6</b>					
<b>Loading</b> (psf)	<b>Spacing</b> 2-0-0	<b>CSI</b>	<b>DEFL</b> in (loc) l/defl L/d	<b>PLATES</b>	<b>GRIP</b>
TCLL (roof) 20.0	Plate Grip DOL 1.15	TC 0.32	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 IRC2018/TPI2014	Matrix-MSH			
BCDL 10.0				Weight: 46 lb	FT = 20%

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

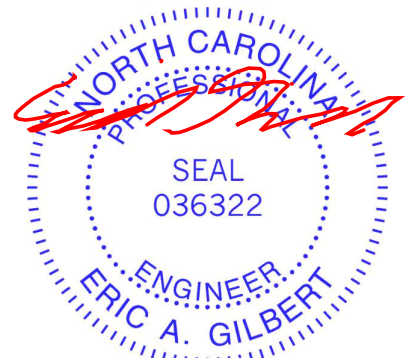
**REACTIONS** (size) 1=11-4-3, 5=11-4-3, 6=11-4-3, 7=11-4-3, 8=11-4-3  
Max Horiz 1=-107 (LC 10)  
Max Uplift 1=-39 (LC 10), 5=-12 (LC 11), 6=-134 (LC 15), 8=-138 (LC 14)  
Max Grav 1=75 (LC 24), 5=56 (LC 26), 6=442 (LC 21), 7=252 (LC 21), 8=442 (LC 20)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-123/101, 2-3=-224/112, 3-4=-224/112, 4-5=-100/66  
BOT CHORD 1-8=-33/74, 7-8=-25/74, 6-7=-25/74, 5-6=-34/74  
WEBS 3-7=-163/0, 2-8=-434/243, 4-6=-434/243

**NOTES**  
1) Unbalanced roof live loads have been considered for this design.  
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 8-4-8, Exterior(2E) 8-4-8 to 11-4-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

- 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 39 lb uplift at joint 1, 12 lb uplift at joint 5, 138 lb uplift at joint 8 and 134 lb uplift at joint 6.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

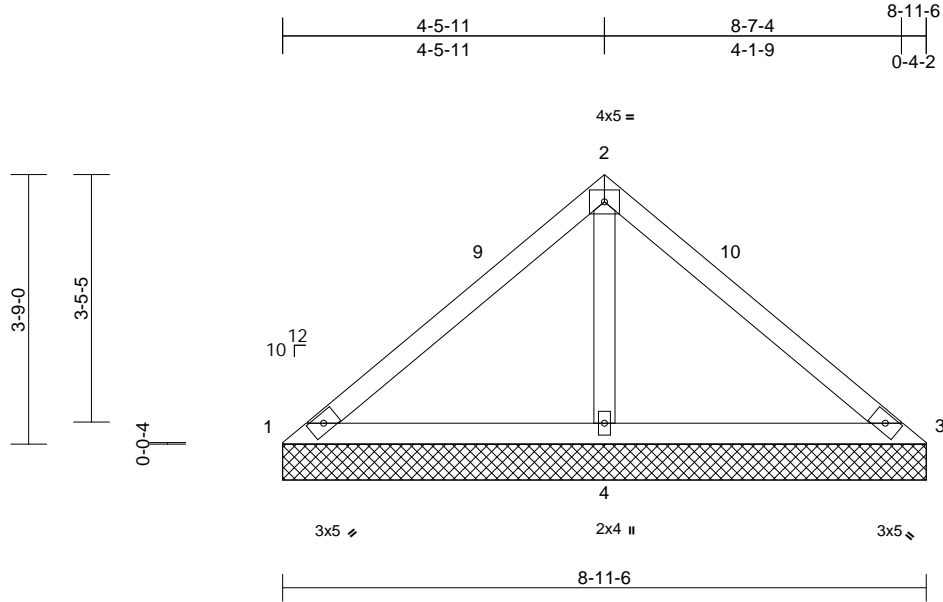


Job 23070130-01	Truss V4	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054084
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:32

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.44	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.40	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 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 8-11-6 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=8-11-6, 3=8-11-6, 4=8-11-6  
Max Horiz 1=-84 (LC 10)  
Max Uplift 1=-55 (LC 21), 3=-55 (LC 20), 4=-114 (LC 14)  
Max Grav 1=75 (LC 20), 3=75 (LC 21), 4=732 (LC 21)

**FORCES**

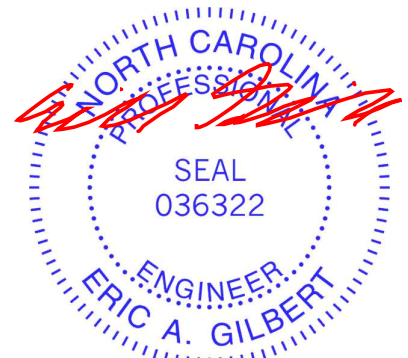
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-137/342, 2-3=-137/342  
BOT CHORD 1-4=-231/197, 3-4=-231/197  
WEBS 2-4=-551/273

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 5-11-11, Exterior(2E) 5-11-11 to 8-11-11 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 55 lb uplift at joint 1, 55 lb uplift at joint 3 and 114 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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

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



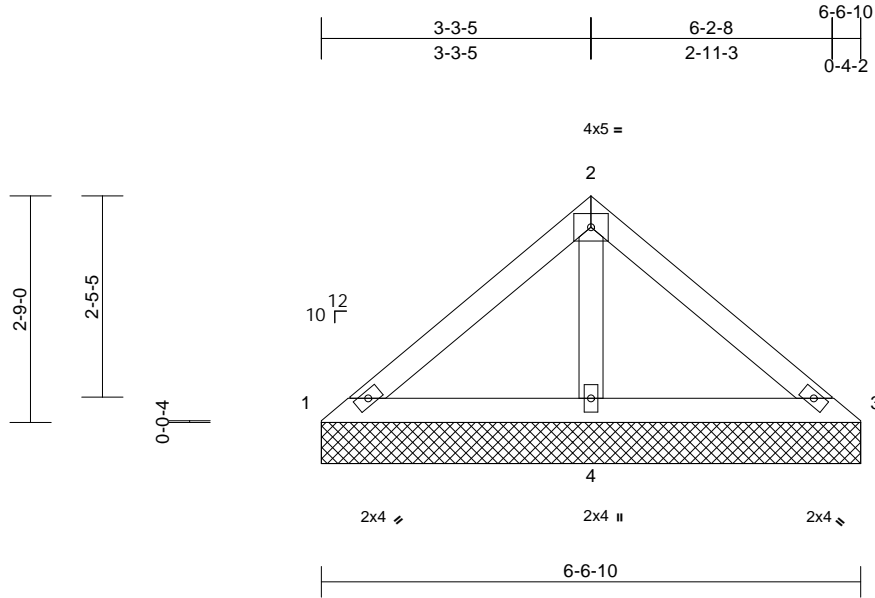
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V5	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054085
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:29  
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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	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.21	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.07	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 24 lb	FT = 20%

**LUMBER**

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

**BRACING**

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

**REACTIONS**

(size) 1=6-6-10, 3=6-6-10, 4=6-6-10  
Max Horiz 1=60 (LC 11)  
Max Uplift 1=-5 (LC 21), 3=-5 (LC 20), 4=-60 (LC 14)  
Max Grav 1=102 (LC 20), 3=102 (LC 21), 4=457 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

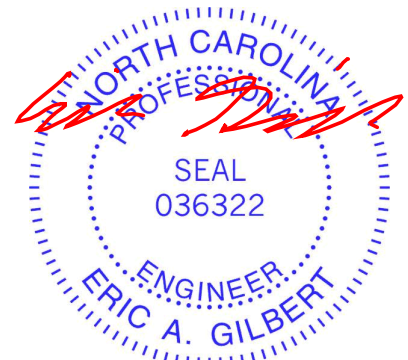
TOP CHORD 1-2=-88/188, 2-3=-88/188  
BOT CHORD 1-4=-136/134, 3-4=-136/134  
WEBS 2-4=-316/168

**NOTES**

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

- 5) Unbalanced snow loads have been considered for this design.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 4-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 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 60 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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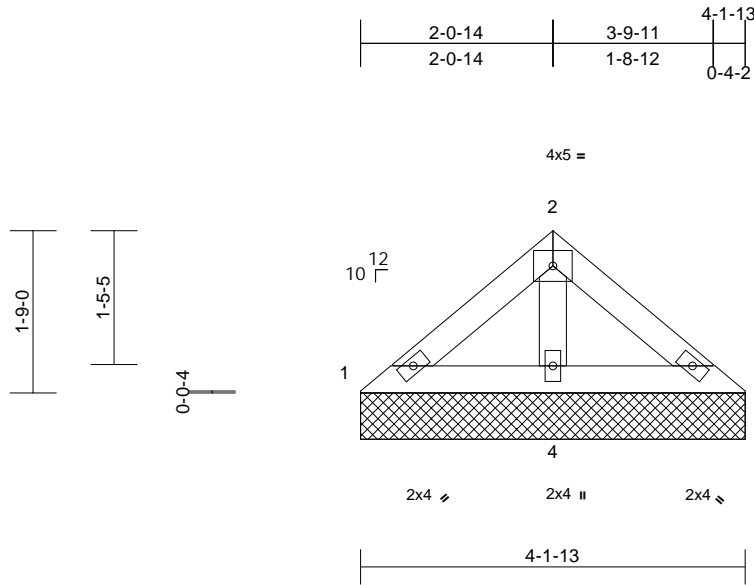
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V6	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054086
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:29  
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Page: 1



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Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.06	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	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 14 lb	FT = 20%	

**LUMBER**

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

**BRACING**

TOP CHORD Structural wood sheathing directly applied or 4-1-13 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=4-1-13, 3=4-1-13, 4=4-1-13  
Max Horiz 1=37 (LC 11)  
Max Uplift 1=-1 (LC 14), 3=-8 (LC 15), 4=-25 (LC 14)  
Max Grav 1=79 (LC 20), 3=79 (LC 21), 4=238 (LC 20)

**FORCES**

(lb) - Maximum Compression/Maximum Tension

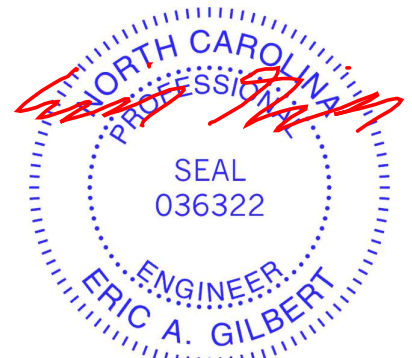
TOP CHORD 1-2=-72/76, 2-3=-72/76  
BOT CHORD 1-4=-60/69, 3-4=-60/69  
WEBS 2-4=-136/67

**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 1 lb uplift at joint 1, 8 lb uplift at joint 3 and 25 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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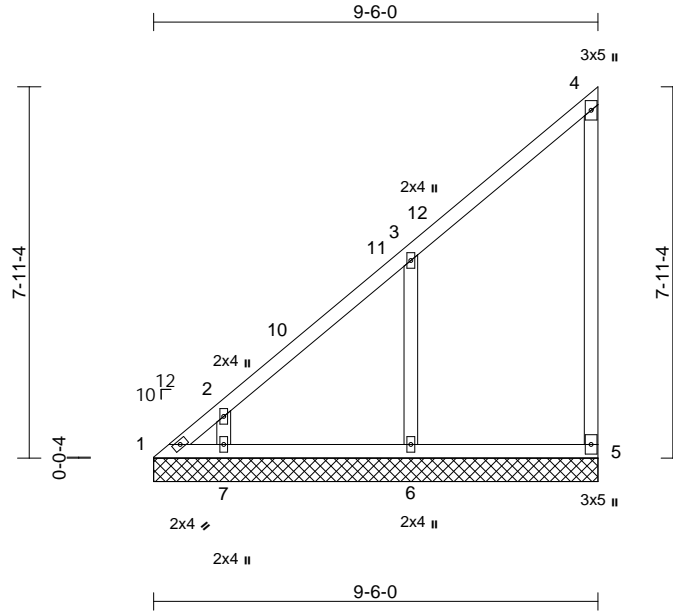
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V11	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054087
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:30  
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Page: 1



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Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.65	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	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
										Weight: 50 lb	FT = 20%	

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

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

**REACTIONS** (size) 1=9-6-0, 5=9-6-0, 6=9-6-0, 7=9-6-0  
Max Horiz 1=271 (LC 11)  
Max Uplift 1=-91 (LC 12), 5=-65 (LC 11), 6=-136 (LC 14), 7=-100 (LC 14)  
Max Grav 1=159 (LC 11), 5=218 (LC 5), 6=508 (LC 5), 7=307 (LC 23)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-272/327, 2-3=-224/278, 3-4=-174/157, 4-5=-171/72  
BOT CHORD 1-7=-118/134, 6-7=-96/134, 5-6=-96/134  
WEBS 3-6=-393/257, 2-7=-223/202

- 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 5-1-10, Exterior(2R) 5-1-10 to 9-4-9 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
  - 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 65 lb uplift at joint 5, 91 lb uplift at joint 1, 136 lb uplift at joint 6 and 100 lb uplift at joint 7.
- 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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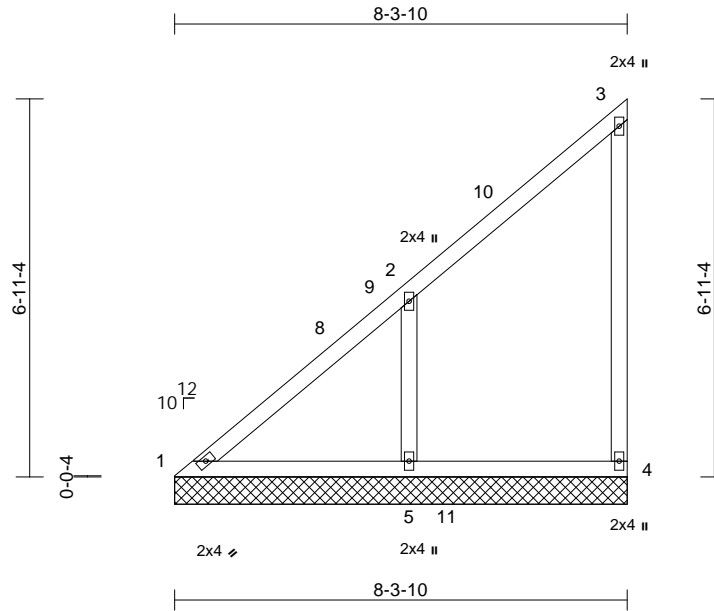
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V12	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054088
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:30  
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Page: 1



Scale = 1:42.3

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	0.74	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	IRC2018/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=8-3-10, 4=8-3-10, 5=8-3-10
Max Horiz	1=235 (LC 11)
Max Uplift	1=-19 (LC 10), 4=-58 (LC 11), 5=-165 (LC 14)
Max Grav	1=199 (LC 24), 4=201 (LC 5), 5=552 (LC 5)

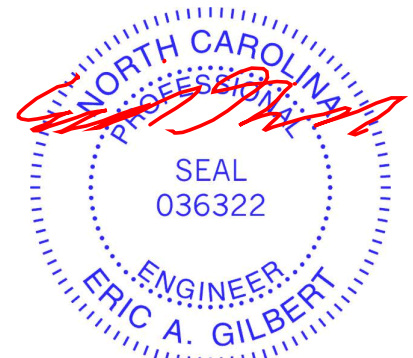
FORCES	
(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=-259/278, 2-3=-171/157, 3-4=-163/76
BOT CHORD	1-5=-83/208, 4-5=-83/119
WEBS	2-5=-419/319

**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 3-11-4, Exterior(2R) 3-11-4 to 8-2-2 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 58 lb uplift at joint 4, 19 lb uplift at joint 1 and 165 lb uplift at joint 5.
- 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



August 10, 2023

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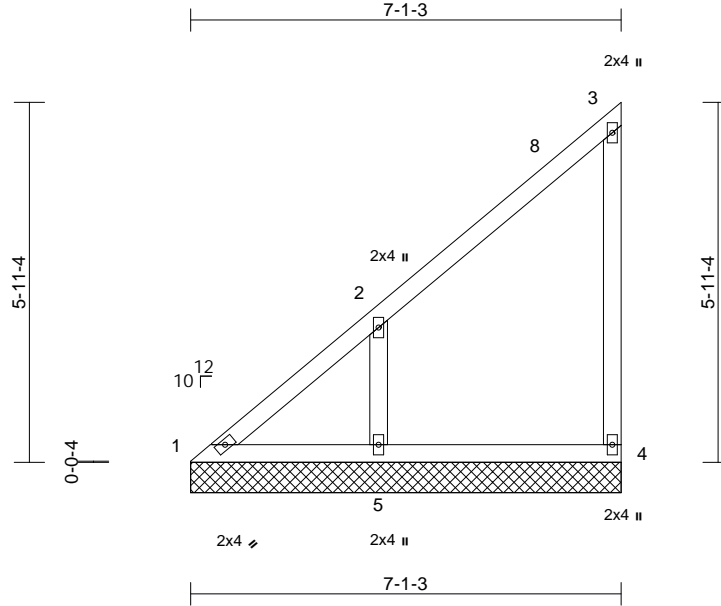
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V13	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054089
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:30  
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Page: 1



Scale = 1:38

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	0.12	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
										Weight: 35 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=7-1-3, 4=7-1-3, 5=7-1-3

Max Horiz	1=199 (LC 11)
Max Uplift	1=-26 (LC 10), 4=-53 (LC 11), 5=-148 (LC 14)
Max Grav	1=137 (LC 24), 4=198 (LC 20), 5=466 (LC 20)

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

TOP CHORD	1-2=-183/256, 2-3=-155/148, 3-4=-167/71
BOT CHORD	1-5=-70/151, 4-5=-70/102
WEBS	2-5=-383/290

**NOTES**

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

- 4) Unbalanced snow loads have been considered for this design.
  - 5) Gable requires continuous bottom chord bearing.
  - 6) Gable studs spaced at 4-0-0 oc.
  - 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 53 lb uplift at joint 4, 26 lb uplift at joint 1 and 148 lb uplift at joint 5.
  - 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

**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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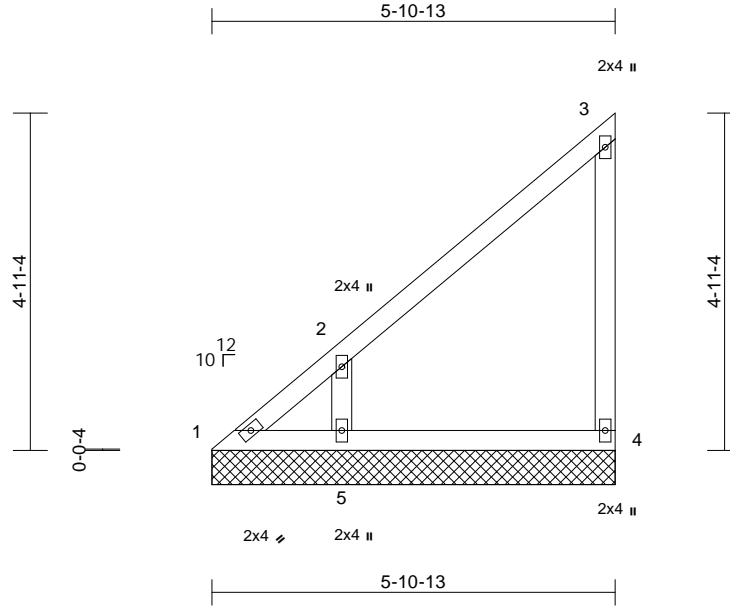
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V14	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054090
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:30  
ID:MmrMPskg4jTiKoxm8YEuR8yzBG?-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWRCDoi7J4zJC?f

Page: 1



Scale = 1:33.7

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.35	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	0.10	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0											
											Weight: 27 lb	FT = 20%

#### LUMBER

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

#### BRACING

TOP CHORD	Structural wood sheathing directly applied or 5-10-13 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

#### REACTIONS

(size)	1=5-10-13, 4=5-10-13, 5=5-10-13
Max Horiz	1=163 (LC 11)
Max Uplift	1=-49 (LC 12), 4=-46 (LC 11), 5=-133 (LC 14)
Max Grav	1=98 (LC 11), 4=199 (LC 20), 5=451 (LC 20)

#### FORCES

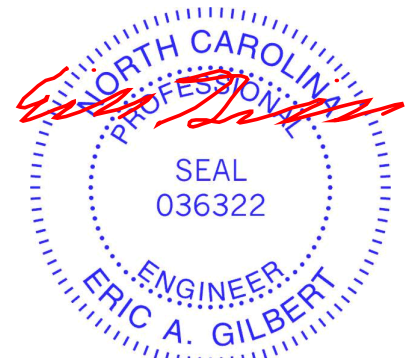
(lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-222/247, 2-3=-155/134, 3-4=-165/64
BOT CHORD	1-5=-69/84, 4-5=-57/84
WEBS	2-5=-416/334

#### NOTES

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

- 4) Unbalanced snow loads have been considered for this design.
  - 5) Gable requires continuous bottom chord bearing.
  - 6) Gable studs spaced at 4-0-0 oc.
  - 7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 8) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 46 lb uplift at joint 4, 49 lb uplift at joint 1 and 133 lb uplift at joint 5.
  - 10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard



August 10, 2023

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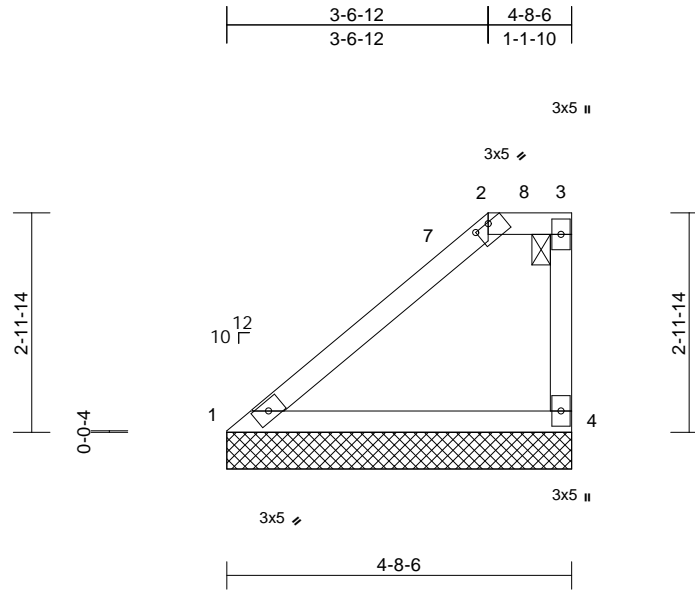
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	89 Serenity-Roof-B328 A LH CP TMB	I60054091
23070130-01	V15	Valley	1	1	Job Reference (optional)	

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

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:31  
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Page: 1



Scale = 1:31.4

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	0.51	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	IRC2018/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 2x4 SP No.3

**BRACING**  
 TOP CHORD Structural wood sheathing directly applied or 4-8-6 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.

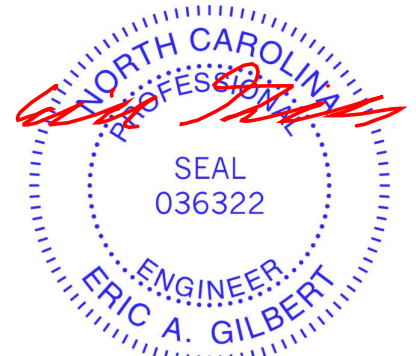
**REACTIONS** (size) 1=4-8-6, 4=4-8-6  
 Max Horiz 1=100 (LC 11)  
 Max Uplift 1=-12 (LC 14), 4=-39 (LC 11)  
 Max Grav 1=259 (LC 35), 4=208 (LC 35)

**FORCES** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=-320/51, 2-3=-76/90, 3-4=-113/90  
 BOT CHORD 1-4=-98/251

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- Provide adequate drainage to prevent water ponding.
- 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 39 lb uplift at joint 4 and 12 lb uplift at joint 1.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- 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

- 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 3-7-1, Exterior(2E) 3-7-1 to 4-6-15 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.



August 10, 2023

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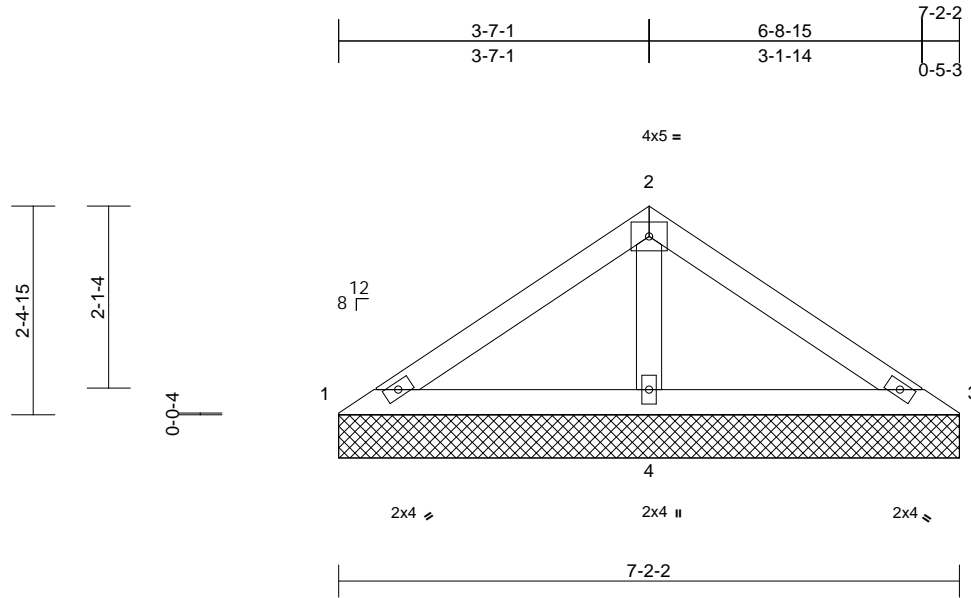


Job 23070130-01	Truss V21	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054092
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Carter Components (Sanford), Sanford, NC - 27332,

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Page: 1



Scale = 1:26.6

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	0.23	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.24	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 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 7-2-2 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

**REACTIONS**

(size) 1=7-2-2, 3=7-2-2, 4=7-2-2  
Max Horiz 1=53 (LC 11)  
Max Uplift 1=-10 (LC 21), 3=-10 (LC 20),  
4=-52 (LC 14)  
Max Grav 1=104 (LC 20), 3=104 (LC 21),  
4=505 (LC 20)

**FORCES**

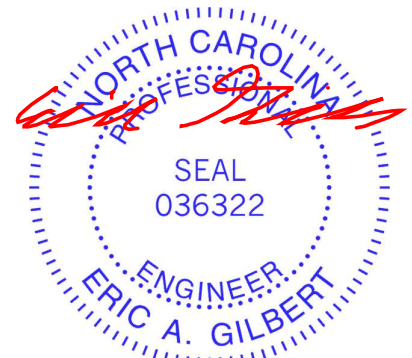
(lb) - Maximum Compression/Maximum Tension  
TOP CHORD 1-2=-98/230, 2-3=-98/230  
BOT CHORD 1-4=-163/129, 3-4=-163/129  
WEBS 2-4=-355/166

**NOTES**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-6 to 3-0-6, Exterior(2R) 3-0-6 to 4-2-8, Exterior(2E) 4-2-8 to 7-2-8 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
- 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 10 lb uplift at joint 1, 10 lb uplift at joint 3 and 52 lb uplift at joint 4.
- 11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

**LOAD CASE(S)** Standard



August 10, 2023

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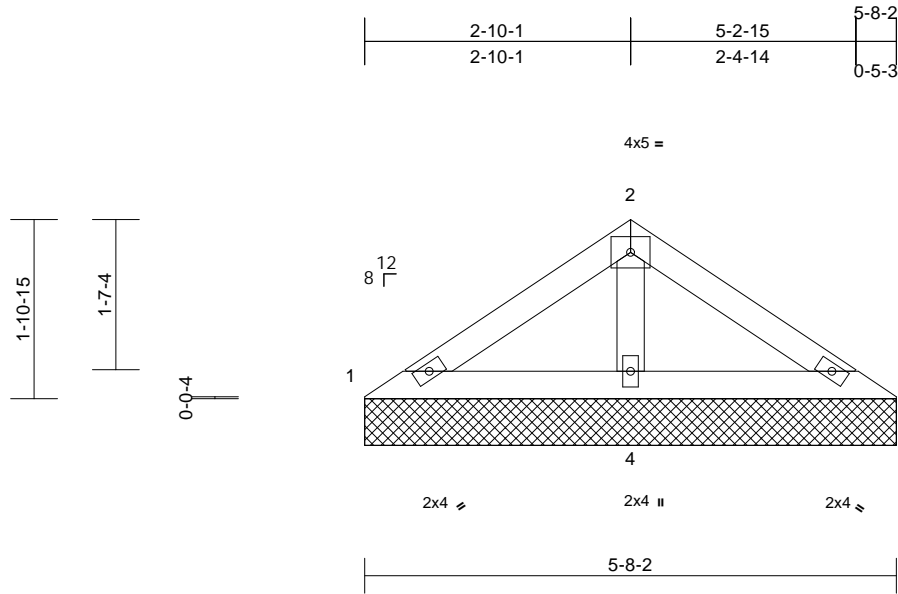
818 Soundside Road  
Edenton, NC 27932

Job 23070130-01	Truss V22	Truss Type Valley	Qty 1	Ply 1	89 Serenity-Roof-B328 A LH CP TMB Job Reference (optional)	160054093
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Carter Components (Sanford), Sanford, NC - 27332,

Run: 8.63 S Jul 28 2023 Print: 8.630 S Jul 28 2023 MiTek Industries, Inc. Wed Aug 09 12:00:31  
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Page: 1



Scale = 1:24.6

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	0.12	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.14	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horiz(TL)	0.00	4	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP							
BCDL	10.0									Weight: 19 lb	FT = 20%

#### LUMBER

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

#### BRACING

TOP CHORD Structural wood sheathing directly applied or 5-8-2 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

#### REACTIONS

(size) 1=5-8-2, 3=5-8-2, 4=5-8-2  
Max Horiz 1=41 (LC 11)  
Max Uplift 1=-4 (LC 14), 3=-11 (LC 15), 4=-33 (LC 14)  
Max Grav 1=94 (LC 20), 3=94 (LC 21), 4=358 (LC 20)

#### FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-93/144, 2-3=-93/144  
BOT CHORD 1-4=-108/95, 3-4=-108/95  
WEBS 2-4=-232/118

#### NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C 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 33 lb uplift at joint 4.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



August 10, 2023

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ENGINEERING BY  
**TRENCO**  
A MiTek Affiliate

818 Soundside Road  
Edenton, NC 27932

# Symbols

## PLATE LOCATION AND ORIENTATION



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



For 4 x 2 orientation, locate plates 0- 1/16\"/>

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

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

## PLATE SIZE

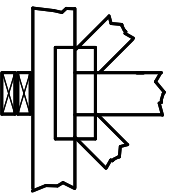
**4 X 4**  
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



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

## BEARING

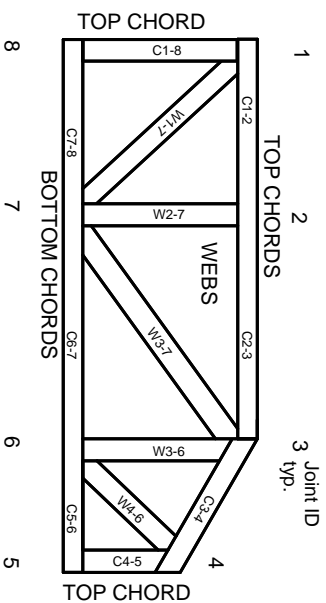


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

## Industry Standards:

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

# Numbering System



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

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

# Product Code Approvals

ICC-ES Reports:

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

# Design General Notes

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

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

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# General Safety Notes

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

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

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