ENGINEERING BY TRENCO
A MiTek Affiliate

RE: 24020082
138 Serenity

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:

Customer: Project Name: 24020082
Lot/Block: Model:
Address: Subdivision:
City: State:

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):

Design Code: IRC2018/TPI2014 Design Program: MiTek 20/20 8.6
Wind Code: ASCE 7-16 Wind Speed: 130 mph
Roof Load: 40.0 psf Floor Load: N/A psf

This package includes 29 individual, dated Truss Design Drawings and 0 Additional Drawings.

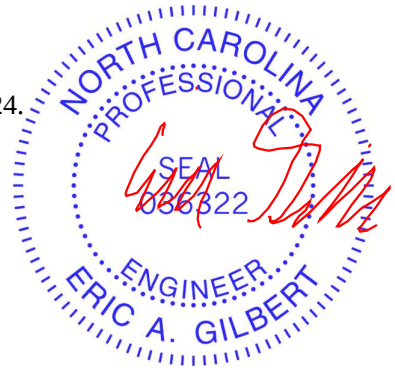
No.	Seal#	Truss Name	Date	No.	Seal#	Truss Name	Date
1	I61412506	A	10/16/2023	21	I61412526	G	10/16/2023
2	I61412507	AGE	10/16/2023	22	I61412527	GSE	10/16/2023
3	I61412508	B	10/16/2023	23	I61412528	V1	10/16/2023
4	I61412509	B1	10/16/2023	24	I61412529	V2	10/16/2023
5	I61412510	B1GE	10/16/2023	25	I61412530	V3	10/16/2023
6	I61412511	B2	10/16/2023	26	I61412531	V4	10/16/2023
7	I61412512	B3	10/16/2023	27	I61412532	V5	10/16/2023
8	I61412513	BSE	10/16/2023	28	I61412533	V11	10/16/2023
9	I61412514	C	10/16/2023	29	I61412534	V12	10/16/2023
10	I61412515	C1	10/16/2023				
11	I61412516	CGE	10/16/2023				
12	I61412517	D	10/16/2023				
13	I61412518	DGE	10/16/2023				
14	I61412519	E	10/16/2023				
15	I61412520	EGE	10/16/2023				
16	I61412521	EGR	10/16/2023				
17	I61412522	F	10/16/2023				
18	I61412523	F1	10/16/2023				
19	I61412524	F1GE	10/16/2023				
20	I61412525	FGE	10/16/2023				

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

Truss Design Engineer's Name: Gilbert, Eric

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

North Carolina COA: C-0844



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

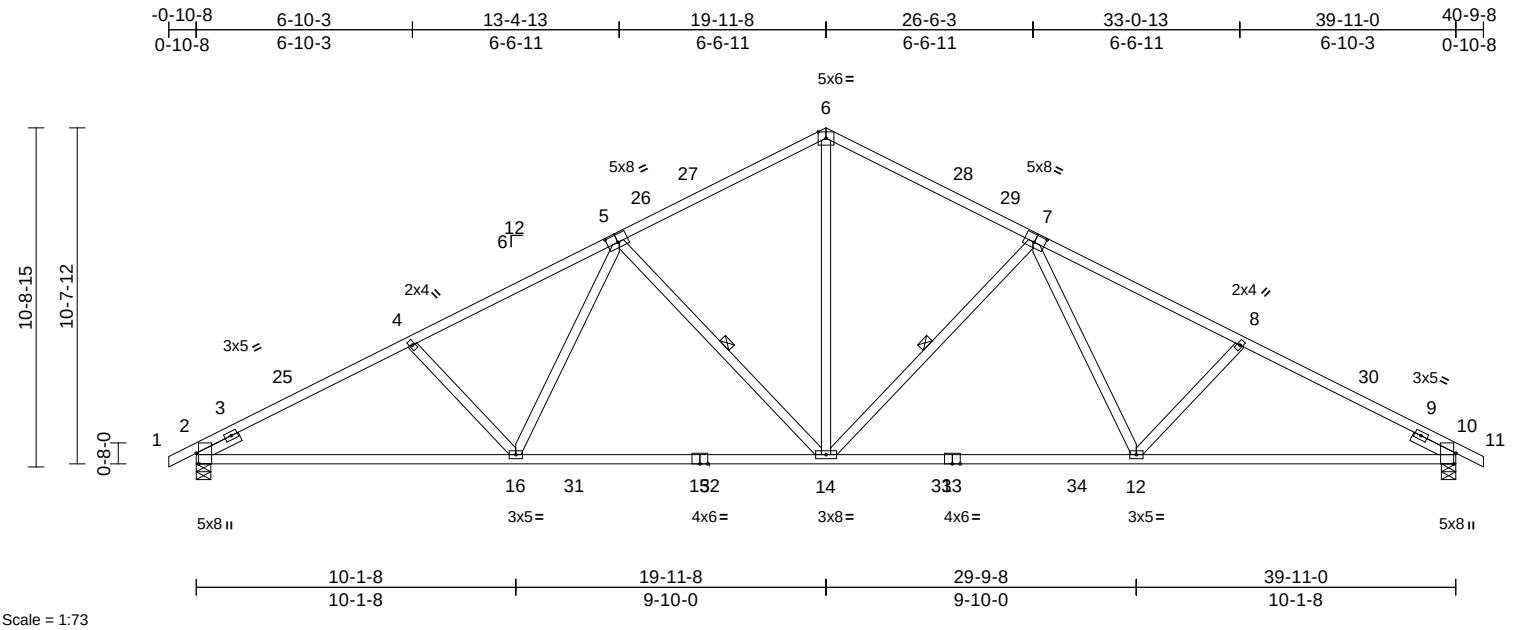
October 16, 2023

Gilbert, Eric

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	A	Common	4	1	Job Reference (optional)	I61412506

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:35 ID:CttcSzQgwNcSj9X9hY?FsHzF_uO-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:73

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.99	Vert(LL)	-0.37	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.64	12-14	>751	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.39	Horz(CT)	0.14	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 213 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-5,7-11:2x4 SP No.1
BOT CHORD	2x4 SP No.1
WEBS	2x4 SP No.3 *Except* 14-6:2x4 SP No.2
SLIDER	Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

BRACING

TOP CHORD	Structural wood sheathing directly applied.
BOT CHORD	Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS	1 Row at midpt 7-14, 5-14

REACTIONS (size) 2=0-5-8, 10=0-5-8
Max Horiz 2=165 (LC 14)
Max Uplift 2=-170 (LC 14), 10=-170 (LC 15)
Max Grav 2=1805 (LC 3), 10=1805 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/23, 2-4=-3052/320, 4-6=-2866/333, 6-8=-2866/333, 8-10=-3052/320, 10-11=0/23
BOT CHORD	2-16=-329/2658, 14-16=-190/2271, 12-14=-108/2271, 10-12=-184/2658
WEBS	6-14=-116/1474, 7-14=-799/247, 7-12=-26/590, 8-12=-301/191, 5-14=-799/247, 5-16=-25/590, 4-16=-301/191

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 3-1-6, Interior (1) 3-1-6 to 15-11-10, Exterior(2R) 15-11-10 to 23-11-6, Interior (1) 23-11-6 to 36-9-10, Exterior(2E) 36-9-10 to 40-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. 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

October 16,2023

ENGINEERING BY TRENCO
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818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	AGE	Common Supported Gable	1	1	Job Reference (optional)	I61412507

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

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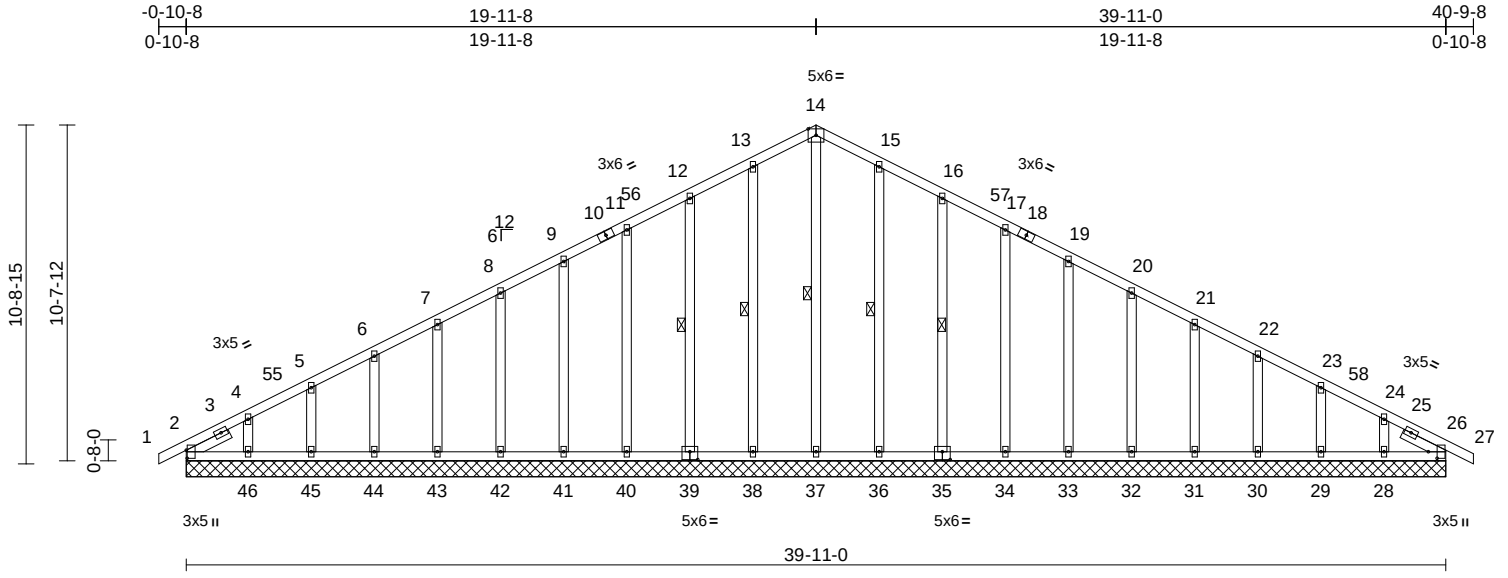


Scale = 1:73

Plate Offsets (X, Y): [2:0-3-1,0-0-5], [26:0-2-8,0-3-5], [35:0-3-0,0-3-0], [39:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	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	0.15	Horz(CT)	0.01	26	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 285 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
OTHERS	2x4 SP No.3 *Except* 37-14:2x4 SP No.2
SLIDER	Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS	1 Row at midpt 14-37, 13-38, 12-39, 15-36, 16-35

REACTIONS (size) 2=39-11-0, 26=39-11-0, 28=39-11-0, 29=39-11-0, 30=39-11-0, 31=39-11-0, 32=39-11-0, 33=39-11-0, 34=39-11-0, 35=39-11-0, 36=39-11-0, 37=39-11-0, 38=39-11-0, 39=39-11-0, 40=39-11-0, 41=39-11-0, 42=39-11-0, 43=39-11-0, 44=39-11-0, 45=39-11-0, 46=39-11-0, 47=39-11-0, 51=39-11-0

Max Horiz 2=-165 (LC 15), 51=-165 (LC 15)

Max Uplift 2=-21 (LC 10), 28=-80 (LC 15), 29=-37 (LC 15), 30=-46 (LC 15), 31=-43 (LC 15), 32=-44 (LC 15), 33=-44 (LC 15), 34=-43 (LC 15), 35=-48 (LC 15), 36=-36 (LC 15), 38=-39 (LC 14), 39=-47 (LC 14), 40=-43 (LC 14), 41=-44 (LC 14), 42=-44 (LC 14), 43=-43 (LC 14), 44=-46 (LC 14), 45=-34 (LC 14), 46=-96 (LC 14), 51=-21 (LC 10)

Max Grav 2=161 (LC 26), 26=138 (LC 22), 28=158 (LC 35), 29=160 (LC 22), 30=160 (LC 35), 31=160 (LC 1), 32=161 (LC 22), 33=160 (LC 35), 34=180 (LC 22), 35=232 (LC 22), 36=245 (LC 22), 37=201 (LC 27), 38=245 (LC 21), 39=232 (LC 21), 40=180 (LC 21), 41=160 (LC 34), 42=161 (LC 21), 43=160 (LC 1), 44=160 (LC 34), 45=160 (LC 21), 46=158 (LC 34), 47=138 (LC 22), 51=161 (LC 26)

FORCES (lb) - Maximum Compression/Maximum Tension

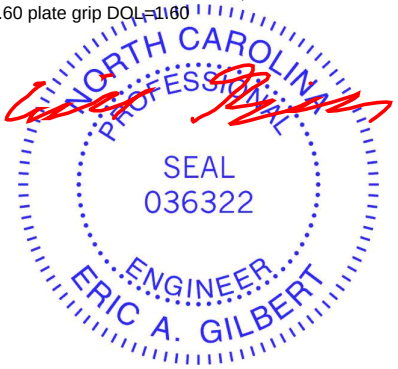
TOP CHORD 1-2=0/23, 2-4=-216/79, 4-5=-168/81, 5-6=-129/94, 6-7=-96/107, 7-8=-74/130, 8-9=-61/154, 9-11=-66/177, 11-12=-84/221, 12-13=-103/269, 13-14=-120/309, 14-15=-120/309, 15-16=-103/269, 16-17=-84/221, 17-19=-66/176, 19-20=-49/131, 20-21=-41/86, 21-22=-44/40, 22-23=-66/27, 23-24=-100/35, 24-26=-144/59, 26-27=0/23

BOT CHORD 2-46=-44/167, 45-46=-44/167, 44-45=-44/167, 43-44=-44/167, 42-43=-44/167, 41-42=-44/167, 40-41=-44/167, 38-40=-44/167, 37-38=-44/167, 36-37=-44/167, 34-36=-44/167, 33-34=-44/167, 32-33=-44/167, 31-32=-44/167, 30-31=-44/167, 29-30=-44/167, 28-29=-44/167, 26-28=-44/167

WEBS 14-37=-204/45, 13-38=-205/66, 12-39=-192/83, 11-40=-140/76, 9-41=-120/77, 8-42=-121/77, 7-43=-120/77, 6-44=-120/77, 5-45=-121/81, 4-46=-114/135, 15-36=-205/66, 16-35=-192/83, 17-34=-140/76, 19-33=-120/77, 20-32=-121/77, 21-31=-120/77, 22-30=-120/77, 23-29=-121/81, 24-28=-114/135

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 3-1-6, Exterior(2N) 3-1-6 to 15-11-8, Corner(3R) 15-11-8 to 23-11-8, Exterior(2N) 23-11-8 to 36-9-10, Corner(3E) 36-9-10 to 40-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60



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Continued on page 2

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Edenton, NC 27932

3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 21 lb uplift at joint 2, 39 lb uplift at joint 38, 47 lb uplift at joint 39, 43 lb uplift at joint 40, 44 lb uplift at joint 41, 44 lb uplift at joint 42, 43 lb uplift at joint 43, 46 lb uplift at joint 44, 34 lb uplift at joint 45, 96 lb uplift at joint 46, 36 lb uplift at joint 36, 48 lb uplift at joint 35, 43 lb uplift at joint 34, 44 lb uplift at joint 33, 44 lb uplift at joint 32, 43 lb uplift at joint 31, 46 lb uplift at joint 30, 37 lb uplift at joint 29, 80 lb uplift at joint 28 and 21 lb uplift at joint 2.
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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	B	Common	5	1	Job Reference (optional)	I61412508

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

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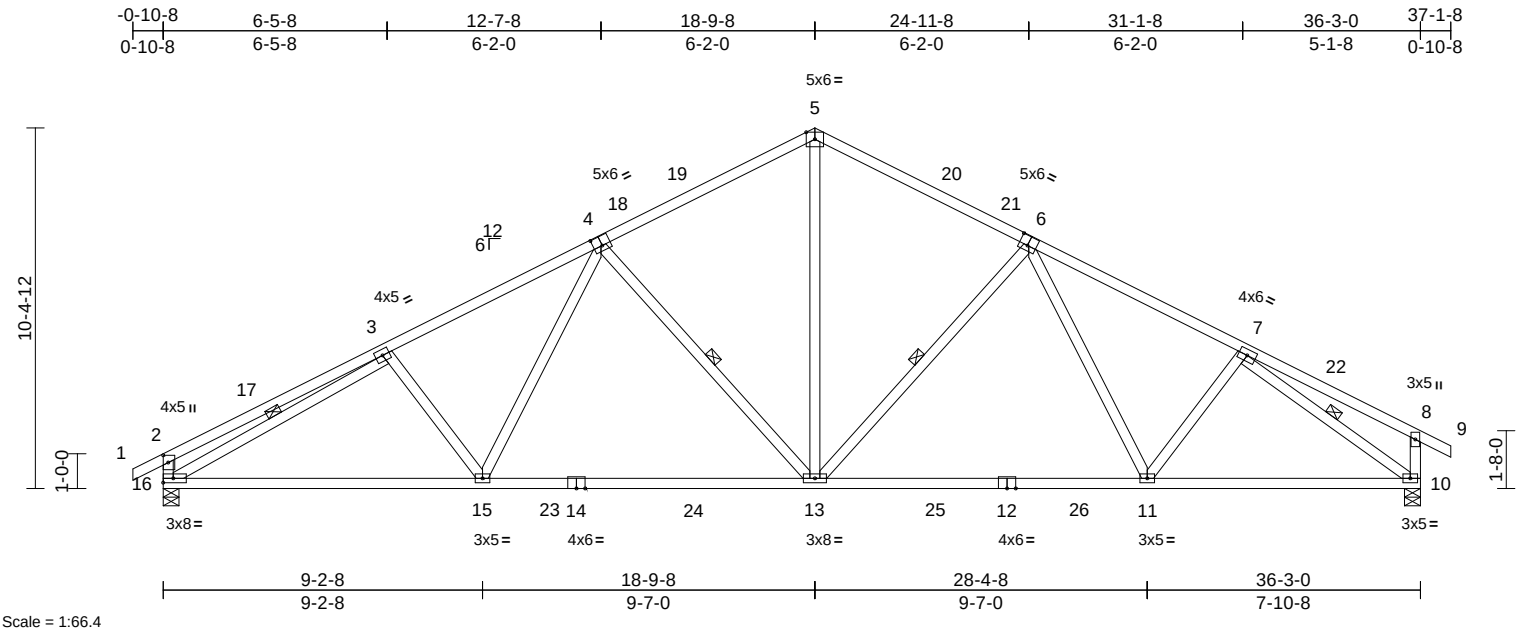

Scale = 1:66.4

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.80	Vert(LL)	-0.26	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.87	Vert(CT)	-0.45	11-13	>952	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.10	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 217 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1
WEBS 2x4 SP No.3

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 4-13, 6-13, 3-16, 7-10

REACTIONS (size) 10=0-5-8, 16=0-5-8
Max Horiz 16=157 (LC 13)
Max Uplift 10=-150 (LC 15), 16=-160 (LC 14)
Max Grav 10=1644 (LC 3), 16=1639 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/27, 2-3=-550/149, 3-5=-2405/299, 5-7=-2158/299, 7-8=-191/109, 8-9=0/27, 2-16=-457/167, 8-10=-261/140
BOT CHORD 15-16=-278/2144, 13-15=-157/1885, 11-13=-51/1777, 10-11=-127/1755
WEBS 3-15=-177/182, 4-15=-29/499, 4-13=-681/229, 5-13=-98/1198, 6-13=-539/217, 6-11=-4/262, 7-11=0/248, 3-16=-2024/134, 7-10=-2098/144

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 2-9-0, Interior (1) 2-9-0 to 15-2-0, Exterior(2R) 15-2-0 to 22-5-0, Interior (1) 22-5-0 to 33-6-0, Exterior(2E) 33-6-0 to 37-1-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 16 and 10. 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

October 16,2023

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818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	138 Serenity	I61412509
24020082	B1	Roof Special	1	1	Job Reference (optional)	

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

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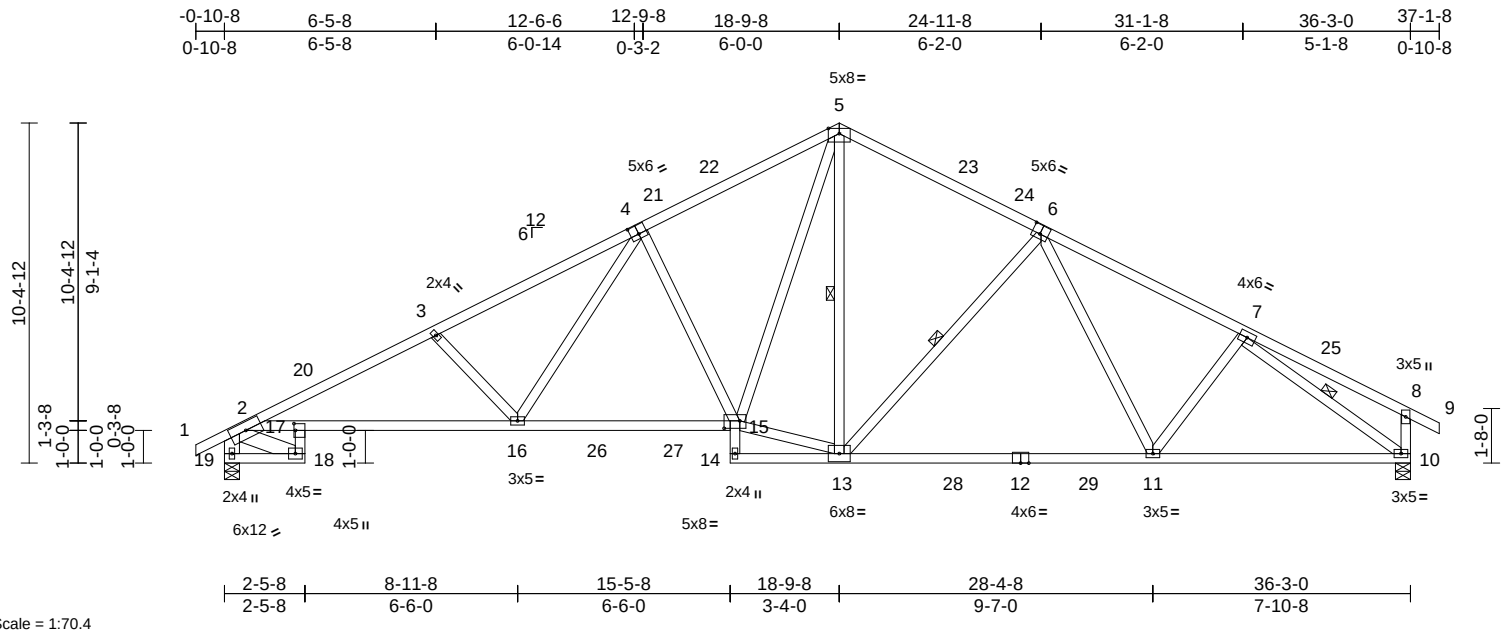

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Plate Offsets (X, Y): [4:0-3-0,0-3-4], [6:0-3-0,0-3-4], [15:0-5-12,0-2-12], [17:0-2-8,0-0-8]

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	0.97	Vert(LL)	-0.31	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.82	Vert(CT)	-0.57	16-17	>760	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.68	Horz(CT)	0.29	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 228 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2

BOT CHORD 2x4 SP No.3 *Except* 19-18:2x4 SP No.2, 2-15:2x4 SP 2400F 2.0E, 14-12,12-10:2x4 SP No.1

WEBS 2x4 SP No.3 *Except* 19-2,18-2:2x6 SP No.2

BRACING

TOP CHORD Structural wood sheathing directly applied, except end verticals.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 14-15,13-14.

WEBS 1 Row at midpt 5-13, 6-13, 7-10

REACTIONS (size) 10=0-5-8, 19=0-5-8
Max Horiz 19=160 (LC 13)
Max Uplift 10=-150 (LC 15), 19=-155 (LC 14)
Max Grav 10=1630 (LC 3), 19=1649 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/38, 2-3=-3160/339, 3-5=-2949/335, 5-7=-2140/300, 7-8=-188/116, 8-9=0/27, 2-19=-1686/230, 8-10=-260/144

BOT CHORD 18-19=-217/498, 17-18=-84/201, 2-17=-309/2577, 16-17=-360/2821, 15-16=-182/2165, 14-15=-42/0, 13-14=-65/25, 11-13=-40/1755, 10-11=-126/1740

WEBS 4-15=-776/250, 13-15=0/1543, 5-15=-191/1244, 5-13=-100/331, 6-13=-541/215, 6-11=-1/278, 7-11=0/246, 2-18=-292/189, 7-10=-2083/142, 3-16=-389/196, 4-16=-89/808

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 2-9-0, Interior (1) 2-9-0 to 15-2-0, Exterior(2R) 15-2-0 to 22-5-0, Interior (1) 22-5-0 to 33-6-0, Exterior(2E) 33-6-0 to 37-1-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 19 and 10. 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	B1GE	Common Supported Gable	1	1	Job Reference (optional)	I61412510

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

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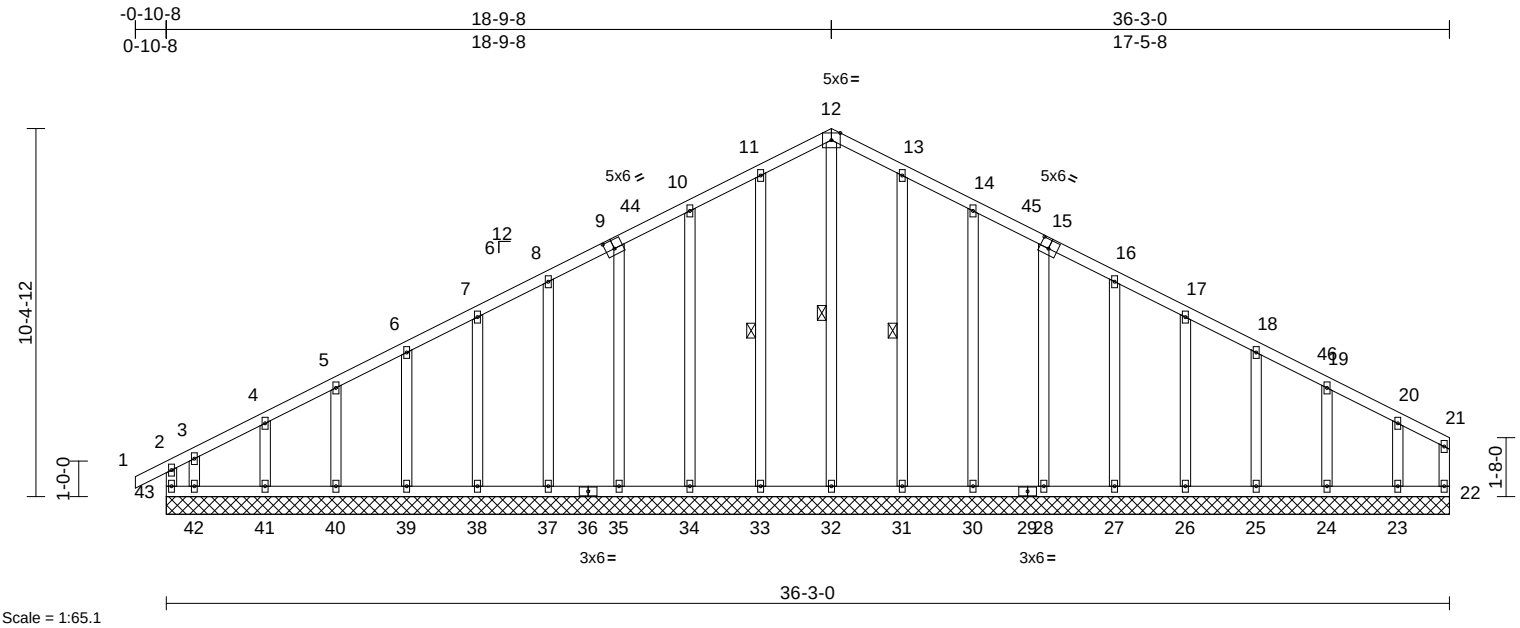


Scale = 1:65.1

Plate Offsets (X, Y): [9:0-3-0,0-3-0], [15:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.17	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.09	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.25	Horz(CT)	0.00	22	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 262 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 12-32, 11-33, 13-31

REACTIONS (size) 22=36-3-0, 23=36-3-0, 24=36-3-0, 25=36-3-0, 26=36-3-0, 27=36-3-0, 28=36-3-0, 30=36-3-0, 31=36-3-0, 32=36-3-0, 33=36-3-0, 34=36-3-0, 35=36-3-0, 37=36-3-0, 38=36-3-0, 39=36-3-0, 40=36-3-0, 41=36-3-0, 42=36-3-0, 43=36-3-0

Max Horiz 43=160 (LC 13)

Max Uplift 22=-8 (LC 14), 23=-105 (LC 15), 24=-35 (LC 15), 25=-46 (LC 15), 26=-45 (LC 15), 27=-37 (LC 15), 28=-45 (LC 15), 30=-52 (LC 15), 31=-33 (LC 15), 33=-37 (LC 14), 34=-51 (LC 14), 35=-44 (LC 14), 37=-37 (LC 14), 38=-45 (LC 14), 39=-43 (LC 14), 40=-46 (LC 14), 41=-37 (LC 14), 42=-225 (LC 14), 43=-149 (LC 10)

Max Grav 22=79 (LC 31), 23=142 (LC 25), 24=165 (LC 22), 25=159 (LC 1), 26=163 (LC 22), 27=151 (LC 35), 28=174 (LC 22), 30=238 (LC 22), 31=242 (LC 22), 32=224 (LC 15), 33=242 (LC 21), 34=238 (LC 21), 35=174 (LC 21), 37=151 (LC 34), 38=162 (LC 21), 39=160 (LC 1), 40=158 (LC 34), 41=167 (LC 21), 42=171 (LC 12), 43=241 (LC 26)

FORCES (lb) - Maximum Compression/Maximum Tension

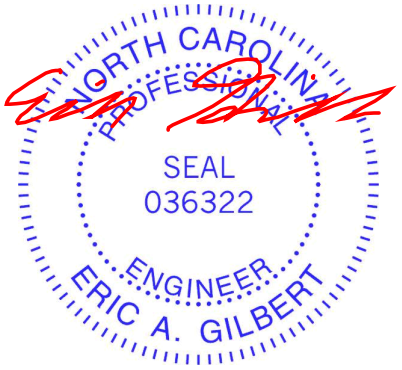
TOP CHORD 2-43=-168/102, 1-2=0/27, 2-3=-203/116, 3-4=-140/104, 4-5=-112/125, 5-6=-94/148, 6-7=-81/174, 7-8=-69/220, 8-10=-92/305, 10-11=-112/355, 11-12=-129/394, 12-13=-129/394, 13-14=-112/355, 14-16=-92/305, 16-17=-59/220, 17-18=-40/174, 18-19=-33/129, 19-20=-42/72, 20-21=-67/39, 21-22=-51/15

BOT CHORD 42-43=-35/75, 41-42=-35/75, 40-41=-35/75, 39-40=-35/75, 38-39=-35/75, 37-38=-35/75, 35-37=-35/75, 34-35=-35/77, 33-34=-35/77, 32-33=-35/77, 31-32=-35/77, 30-31=-35/77, 28-30=-35/77, 27-28=-34/75, 26-27=-34/75, 25-26=-34/75, 24-25=-34/75, 23-24=-34/75, 22-23=-34/75

WEBS 12-32=-275/51, 11-33=-202/61, 10-34=-198/90, 9-35=-134/75, 8-37=-111/72, 7-38=-122/78, 6-39=-120/78, 5-40=-119/74, 4-41=-125/103, 3-42=-90/142, 13-31=-202/61, 14-30=-198/89, 15-28=-134/78, 16-27=-111/70, 17-26=-122/79, 18-25=-119/75, 19-24=-123/105, 20-23=-107/139

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-9-8, Exterior(2N) 2-9-8 to 15-2-0, Corner(3R) 15-2-0 to 22-5-0, Exterior (2N) 22-5-0 to 32-5-12, Corner(3E) 32-5-12 to 36-1-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) 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.



October 16,2023

Continued on page 2

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

6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 8 lb uplift at joint 22, 149 lb uplift at joint 43, 37 lb uplift at joint 33, 51 lb uplift at joint 34, 44 lb uplift at joint 35, 37 lb uplift at joint 37, 45 lb uplift at joint 38, 43 lb uplift at joint 39, 46 lb uplift at joint 40, 37 lb uplift at joint 41, 225 lb uplift at joint 42, 33 lb uplift at joint 31, 52 lb uplift at joint 30, 45 lb uplift at joint 28, 37 lb uplift at joint 27, 45 lb uplift at joint 26, 46 lb uplift at joint 25, 35 lb uplift at joint 24 and 105 lb uplift at joint 23.
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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	B2	Roof Special	5	1	I61412511
					Job Reference (optional)

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

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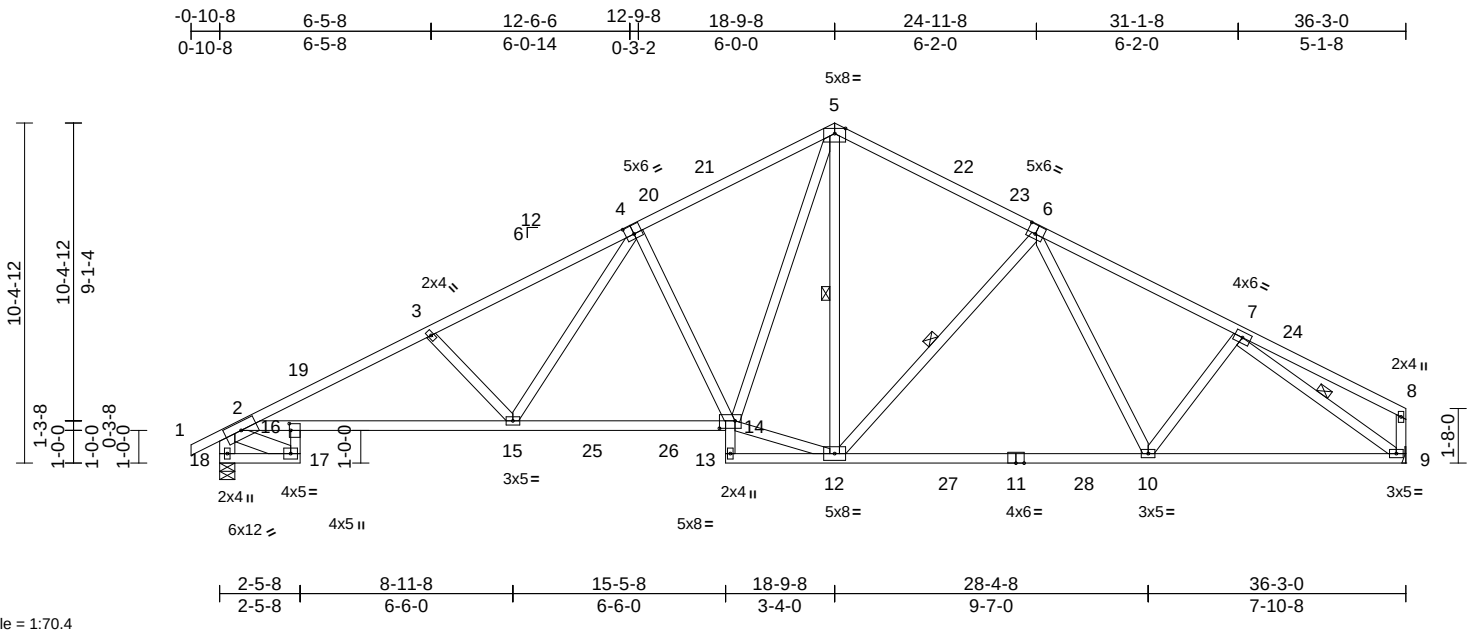

Scale = 1:70.4

Plate Offsets (X, Y): [4:0-3-0,0-3-4], [6:0-3-0,0-3-4], [14:0-5-12,0-2-12], [16:0-2-8,0-0-8]

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	0.97	Vert(LL)	-0.32	10-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.82	Vert(CT)	-0.57	15-16	>759	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.68	Horz(CT)	0.29	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 227 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.3 *Except* 18-17:2x4 SP No.2, 2-14:2x4 SP 2400F 2.0E, 13-11,11-9:2x4 SP No.1
WEBS 2x4 SP No.3 *Except* 18-2,17-2:2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
6-0-0 oc bracing: 13-14,12-13.
WEBS 1 Row at midpt 5-12, 6-12, 7-9

REACTIONS (size) 9= Mechanical, 18=0-5-8
Max Horiz 18=163 (LC 11)
Max Uplift 9=-130 (LC 15), 18=-155 (LC 14)
Max Grav 9=1579 (LC 3), 18=1650 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/38, 2-3=-3162/341, 3-5=-2951/339, 5-7=-2146/300, 7-8=-169/91, 2-18=-1687/230, 8-9=-180/82
BOT CHORD 17-18=-223/493, 16-17=-87/198, 2-16=-317/2579, 15-16=-371/2814, 14-15=-191/2164, 13-14=-50/0, 12-13=-68/24, 10-12=-67/1756, 9-10=-141/1749
WEBS 4-14=-776/251, 12-14=0/1549, 5-14=-196/1251, 5-12=-93/324, 6-12=-544/214, 6-10=-1/284, 7-10=0/242, 2-17=-287/195, 7-9=-2112/167, 3-15=-389/197, 4-15=-91/806

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 2-9-0, Interior (1) 2-9-0 to 15-2-0, Exterior(2R) 15-2-0 to 22-5-0, Interior (1) 22-5-0 to 32-5-12, Exterior(2E) 32-5-12 to 36-1-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 130 lb uplift at joint 9.
10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18. This connection is for uplift only and does not consider lateral forces.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	B3	Common	1	1	Job Reference (optional)	I61412512

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

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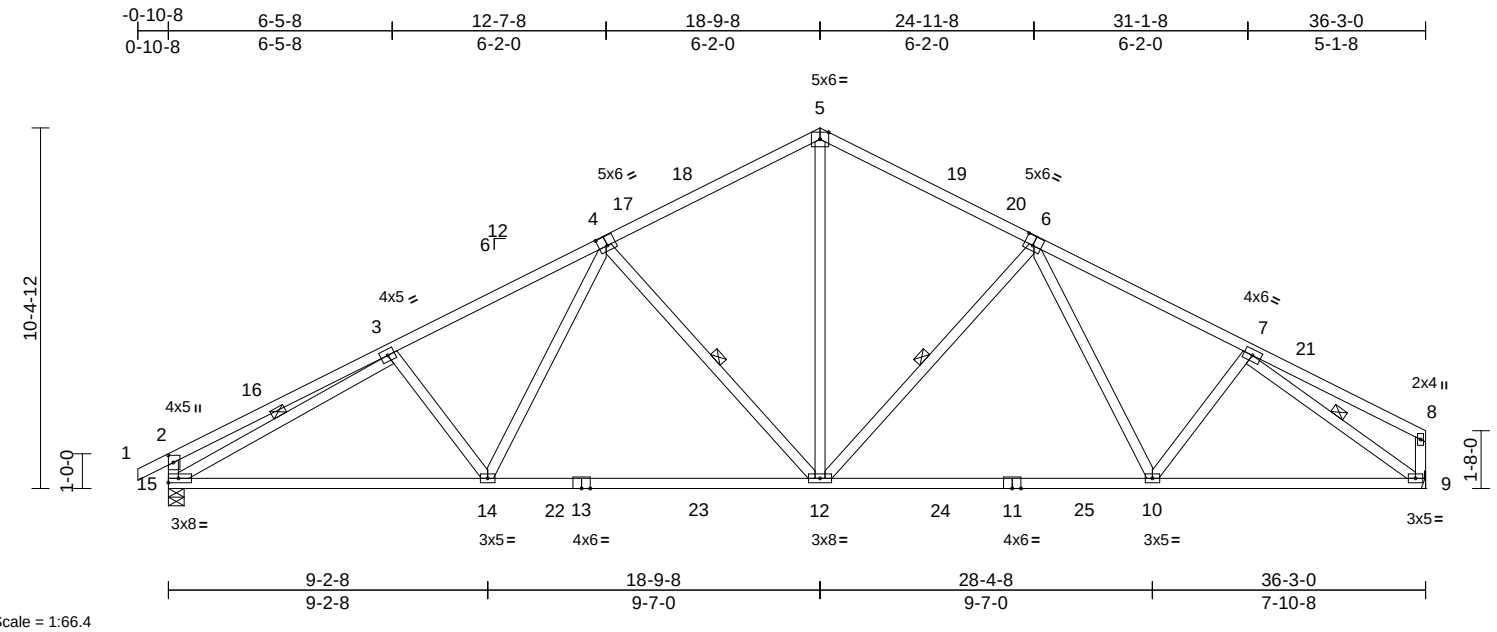

Scale = 1:66.4

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.80	Vert(LL)	-0.26	10-12	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.87	Vert(CT)	-0.45	10-12	>951	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.10	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 215 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1
WEBS 2x4 SP No.3

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 4-12, 6-12, 3-15, 7-9

REACTIONS (size) 9= Mechanical, 15=0-5-8
Max Horiz 15=160 (LC 11)
Max Uplift 9=-130 (LC 15), 15=-160 (LC 14)
Max Grav 9=1592 (LC 3), 15=1640 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/27, 2-3=-550/149, 3-5=-2406/299, 5-7=-2164/299, 7-8=-173/90, 2-15=-457/158, 8-9=-180/81
BOT CHORD 14-15=-285/2138, 12-14=-164/1885, 10-12=-68/1779, 9-10=-142/1763
WEBS 3-14=-177/182, 4-14=-29/499, 4-12=-681/229, 5-12=-98/1198, 6-12=-540/216, 7-10=0/244, 3-15=-2025/152, 7-9=-2125/170, 6-10=-4/267

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 2-9-0, Interior (1) 2-9-0 to 15-2-0, Exterior(2R) 15-2-0 to 22-5-0, Interior (1) 22-5-0 to 32-5-12, Exterior(2E) 32-5-12 to 36-1-4 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 130 lb uplift at joint 9.
10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 15. This connection is for uplift only and does not consider lateral forces.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	BSE	Common Structural Gable	1	1	Job Reference (optional)	I61412513

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

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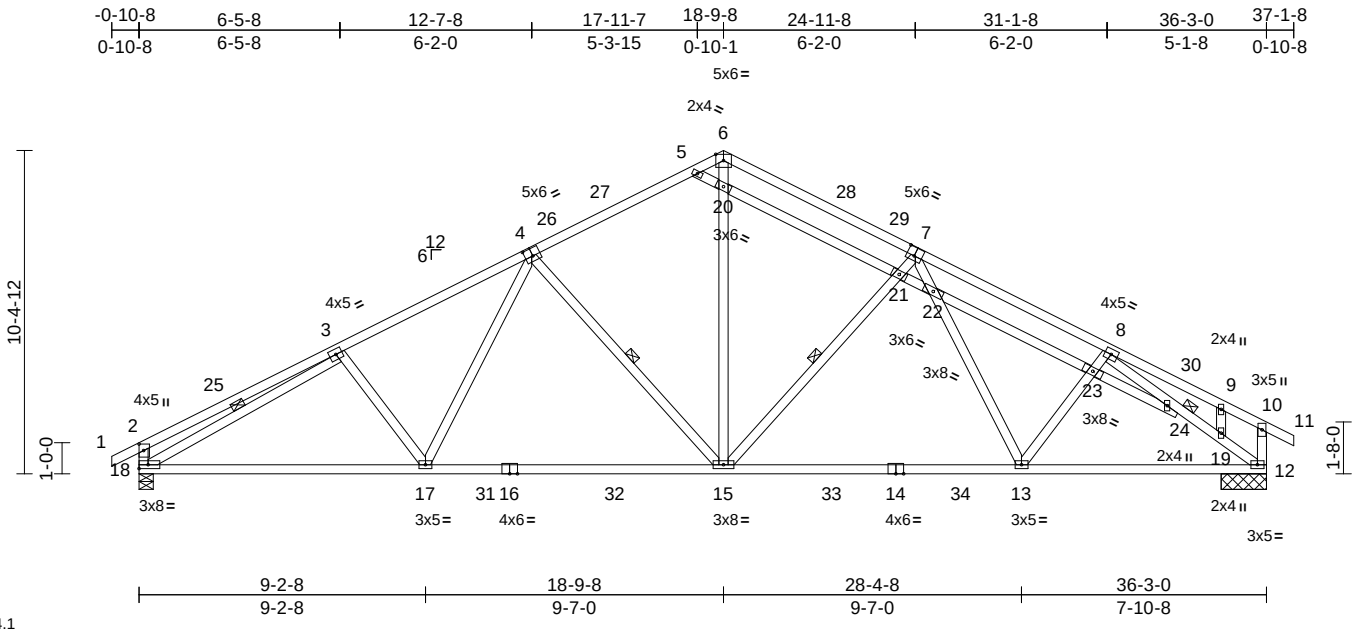


Scale = 1:74.1

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.72	Vert(LL)	-0.26	15-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.87	Vert(CT)	-0.45	13-15	>966	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.68	Horz(CT)	0.10	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 243 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1
WEBS 2x4 SP No.3
OTHERS 2x4 SP No.3

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-3-10 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 4-15, 7-15, 3-18
JOINTS 1 Brace at Jt(s): 24

REACTIONS (size) 12=1-5-8, 18=0-5-8
Max Horiz 18=157 (LC 13)
Max Uplift 12=-150 (LC 15), 18=-160 (LC 14)
Max Grav 12=1644 (LC 3), 18=1639 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/27, 2-3=-537/144, 3-5=-2407/295, 5-6=-1456/228, 6-8=-1828/191, 8-9=-160/104, 9-10=-207/67, 10-11=0/27, 2-18=-445/155, 10-12=-276/107
BOT CHORD 17-18=-279/2147, 15-17=-153/1877, 13-15=-57/1829, 12-13=-141/1867
WEBS 3-17=-190/187, 4-17=-34/509, 4-15=-616/209, 15-20=-90/1185, 6-20=-91/1168, 15-21=-556/221, 7-21=-539/215, 13-23=0/207, 8-23=0/233, 3-18=-2037/157, 8-24=-1720/94, 19-24=-2182/169, 12-19=-2177/191, 7-22=-3/246, 13-22=-9/298, 9-19=-34/37, 5-20=-486/130, 20-21=-488/123, 21-22=-506/129, 22-23=-517/124, 23-24=-522/115

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 2-9-0, Interior (1) 2-9-0 to 15-2-0, Exterior(2R) 15-2-0 to 22-5-0, Interior (1) 22-5-0 to 33-6-0, Exterior(2E) 33-6-0 to 37-1-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 18. This connection is for uplift only and does not consider lateral forces.
12) One RT8A MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 12. This connection is for uplift only and does not consider lateral forces.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

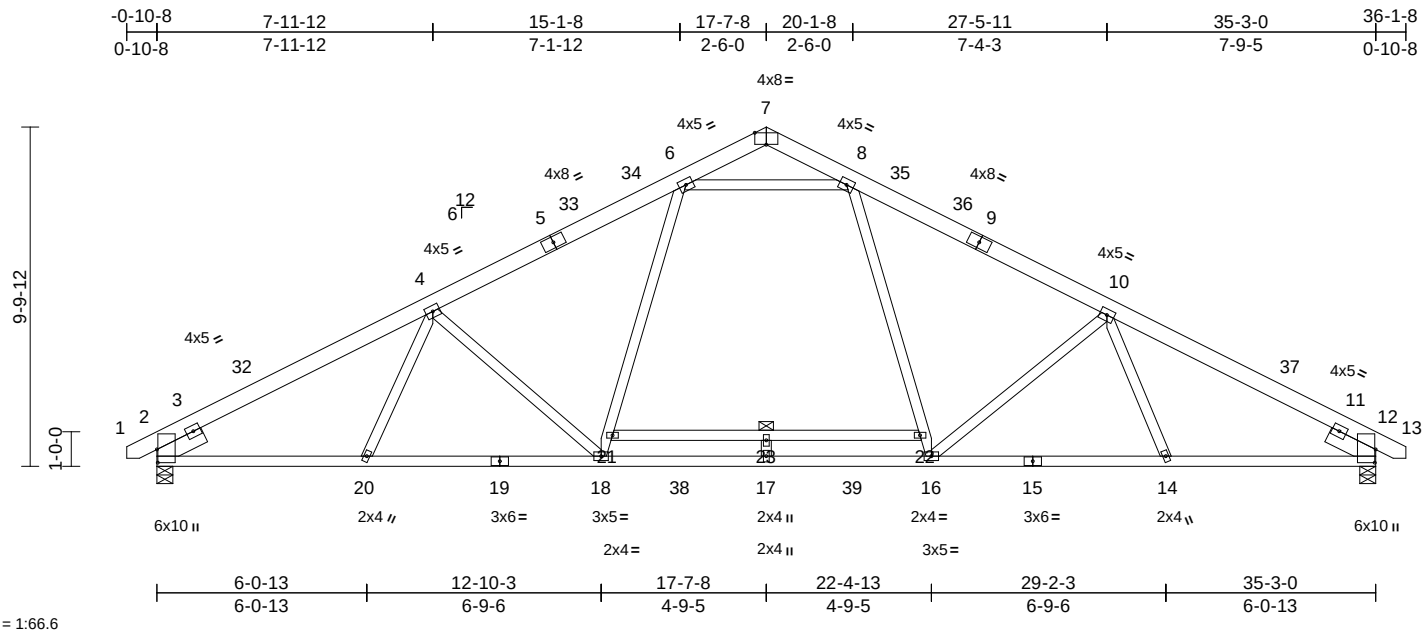
October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	C	Common	5	1	I61412514 Job Reference (optional)

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:41 ID:VP5mnZE7ejtTka?ri?H4b3zEzov-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:66.6

Plate Offsets (X, Y): [2:0-4-10,0-0-5], [7:0-4-0,Edge], [12:0-4-10,0-0-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.71	Vert(LL)	-0.26	14-16	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.57	Vert(CT)	-0.44	17	>970	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.85	Horz(CT)	0.09	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 235 lb	FT = 20%

LUMBER
TOP CHORD 2x6 SP No.2
BOT CHORD 2x4 SP 2400F 2.0E
WEBS 2x4 SP No.3
SLIDER Left 2x6 SP No.2 -- 1-6-0, Right 2x6 SP No.2 -- 1-6-0

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-4-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 21-22

REACTIONS (size) 2=0-5-8, 12=0-5-8
Max Horiz 2=145 (LC 14)
Max Uplift 2=-47 (LC 14), 12=-47 (LC 15)
Max Grav 2=1551 (LC 1), 12=1551 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/19, 2-4=-2444/70, 4-6=-2135/76, 6-7=-95/96, 7-8=-107/101, 8-10=-2136/73, 10-12=-2449/71, 12-13=0/19
BOT CHORD 2-20=-193/2078, 18-20=-98/2070, 17-18=0/1689, 16-17=0/1689, 14-16=0/2077, 12-14=-62/2085
WEBS 8-22=0/603, 16-22=0/575, 4-18=-450/294, 4-20=0/147, 10-16=-451/295, 10-14=0/146, 18-21=0/586, 6-21=0/612, 6-8=-1717/159, 21-23=-22/0, 22-23=-22/0, 17-23=0/66

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-5 to 2-10-0, Interior (1) 2-10-0 to 14-1-3, Exterior(2R) 14-1-3 to 21-1-13, Interior (1) 21-1-13 to 32-5-0, Exterior(2E) 32-5-0 to 35-11-5 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
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, 17-7-8 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.
9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 12. 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.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	C1	Common	4	1	I61412515
					Job Reference (optional)

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:42 Page: 1
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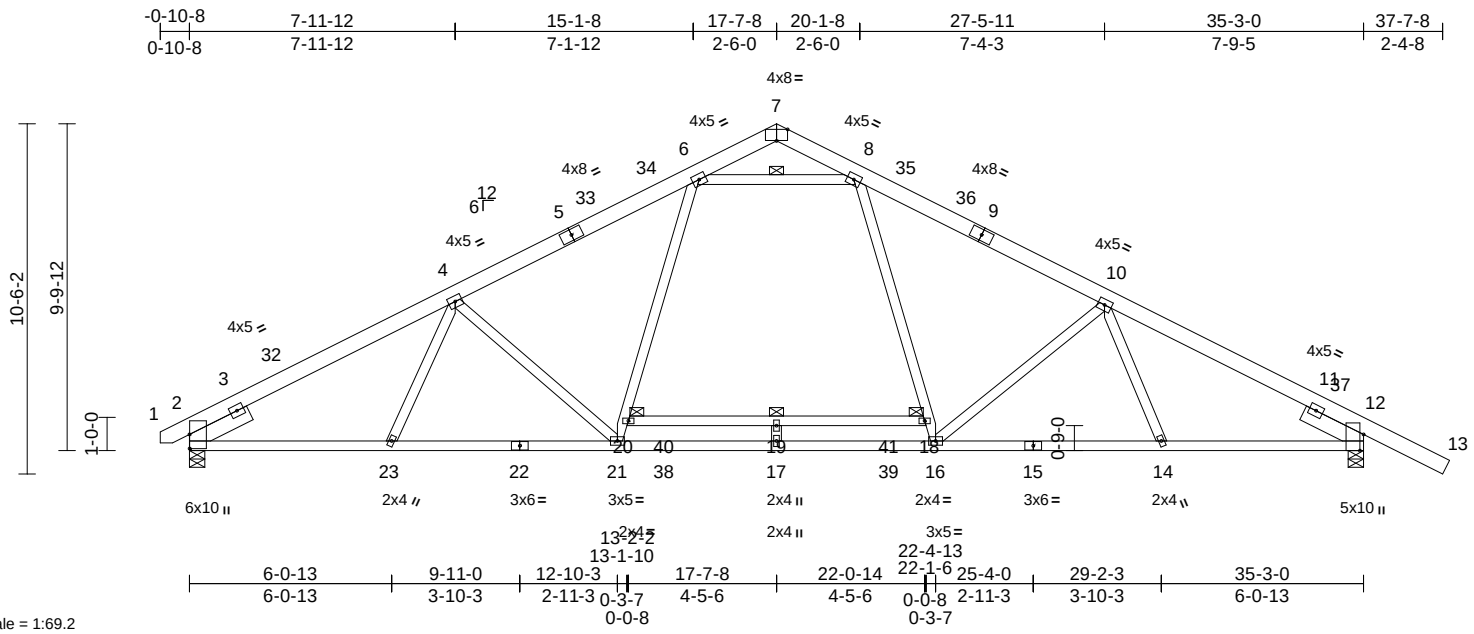

Scale = 1:69.2

Plate Offsets (X, Y): [2:0-5-2,0-0-1], [7:0-4-0,Edge], [12:0-5-14,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	0.89	Vert(LL)	-0.49	19	>867	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.78	Vert(CT)	-0.79	19	>538	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.49	Horz(CT)	0.11	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 242 lb	FT = 20%

LUMBER
TOP CHORD 2x6 SP No.2
BOT CHORD 2x4 SP 2400F 2.0E *Except* 20-18:2x4 SP No.2
WEBS 2x4 SP No.3
SLIDER Left 2x6 SP No.2 -- 2-0-0, Right 2x6 SP No.2 -- 2-0-0

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:
6-0-0 oc bracing: 18-20
WEBS 1 Row at midpt 6-8

REACTIONS (size) 2=0-5-8, 12=0-5-8
Max Horiz 2=-173 (LC 15)
Max Uplift 2=-92 (LC 14), 12=-129 (LC 15)
Max Grav 2=1791 (LC 3), 12=1888 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/19, 2-4=-2867/140, 4-6=-2573/166, 6-7=-87/101, 7-8=-104/101, 8-10=-2566/154, 10-12=-2841/113, 12-13=0/66
BOT CHORD 2-23=-205/2475, 21-23=-161/2451, 17-21=0/2070, 16-17=0/2070, 14-16=0/2420, 12-14=-30/2439, 19-20=-57/0, 18-19=-57/0
WEBS 4-23=0/141, 4-21=-459/276, 10-14=-11/79, 10-16=-427/265, 20-21=-44/731, 6-20=-7/875, 8-18=0/851, 16-18=-31/707, 17-19=-181/0, 6-8=-2059/231

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-8-5 to 2-10-0, Interior (1) 2-10-0 to 14-1-3, Exterior(2R) 14-1-3 to 21-1-13, Interior (1) 21-1-13 to 34-2-7, Exterior(2E) 34-2-7 to 37-8-12 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 12 and 2. 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	CGE	Common Supported Gable	1	1	I61412516
					Job Reference (optional)

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

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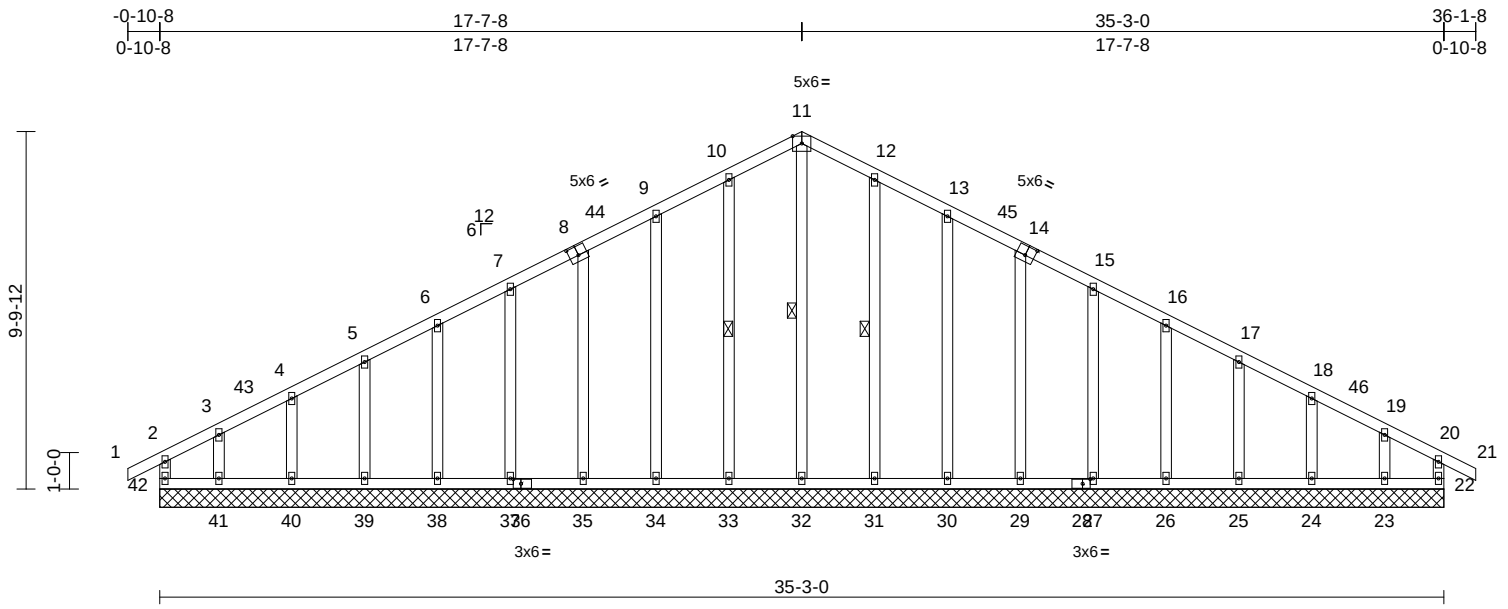

Scale = 1:63.2

Plate Offsets (X, Y): [8:0-3-0,0-3-0], [14:0-3-0,0-3-0], [28:0-2-8,0-1-8], [36:0-2-8,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.15	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.07	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.22	Horz(CT)	0.01	22	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 243 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 11-32, 10-33, 12-31

REACTIONS (size) 22=35-3-0, 23=35-3-0, 24=35-3-0, 25=35-3-0, 26=35-3-0, 27=35-3-0, 29=35-3-0, 30=35-3-0, 31=35-3-0, 32=35-3-0, 33=35-3-0, 34=35-3-0, 35=35-3-0, 37=35-3-0, 38=35-3-0, 39=35-3-0, 40=35-3-0, 41=35-3-0, 42=35-3-0

Max Horiz 42=-133 (LC 12)

Max Uplift 22=-27 (LC 11), 23=-107 (LC 15), 24=-33 (LC 15), 25=-46 (LC 15), 26=-45 (LC 15), 27=-38 (LC 15), 29=-44 (LC 15), 30=-52 (LC 15), 31=-36 (LC 15), 33=-37 (LC 14), 34=-51 (LC 14), 35=-44 (LC 14), 37=-37 (LC 14), 38=-44 (LC 14), 39=-47 (LC 14), 40=-30 (LC 14), 41=-125 (LC 14), 42=-55 (LC 10)

Max Grav 22=134 (LC 27), 23=131 (LC 25), 24=167 (LC 22), 25=158 (LC 1), 26=163 (LC 22), 27=151 (LC 35), 29=173 (LC 22), 30=238 (LC 22), 31=242 (LC 22), 32=203 (LC 27), 33=242 (LC 21), 34=238 (LC 21), 35=173 (LC 21), 37=151 (LC 34), 38=163 (LC 21), 39=158 (LC 1), 40=167 (LC 21), 41=145 (LC 24), 42=154 (LC 26)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 2-42=-121/65, 1-2=0/27, 2-3=-142/78, 3-4=-91/82, 4-5=-65/104, 5-6=-51/127, 6-7=-52/167, 7-9=-85/252, 9-10=-105/303, 10-11=-122/342, 11-12=-122/342, 12-13=-105/303, 13-15=-85/252, 15-16=-52/167, 16-17=-33/121, 17-18=-43/77, 18-19=-65/59, 19-20=-111/47, 20-21=0/27, 20-22=-117/57

BOT CHORD 41-42=-44/119, 40-41=-44/119, 39-40=-44/119, 38-39=-44/119, 37-38=-44/119, 35-37=-44/119, 34-35=-44/122, 33-34=-44/122, 32-33=-44/122, 31-32=-44/122, 30-31=-44/122, 29-30=-44/122, 27-29=-43/119, 26-27=-43/119, 25-26=-43/119, 24-25=-43/119, 23-24=-43/119, 22-23=-43/119

WEBS 11-32=-232/46, 10-33=-202/64, 9-34=-198/88, 8-35=-133/76, 7-37=-111/71, 6-38=-123/79, 5-39=-118/76, 4-40=-126/83, 3-41=-95/113, 12-31=-202/64, 13-30=-198/88, 14-29=-133/77, 15-27=-111/71, 16-26=-123/79, 17-25=-118/76, 18-24=-126/81, 19-23=-91/123

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-7-13, Exterior (2N) 2-7-13 to 14-1-3, Corner(3R) 14-1-3 to 21-1-13, Exterior(2N) 21-1-13 to 32-7-3, Corner(3E) 32-7-3 to 36-1-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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.

October 16,2023

Continued on page 2

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

6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 27 lb uplift at joint 22, 55 lb uplift at joint 42, 37 lb uplift at joint 33, 51 lb uplift at joint 34, 44 lb uplift at joint 35, 37 lb uplift at joint 37, 44 lb uplift at joint 38, 47 lb uplift at joint 39, 30 lb uplift at joint 40, 125 lb uplift at joint 41, 36 lb uplift at joint 31, 52 lb uplift at joint 30, 44 lb uplift at joint 29, 38 lb uplift at joint 27, 45 lb uplift at joint 26, 46 lb uplift at joint 25, 33 lb uplift at joint 24 and 107 lb uplift at joint 23.
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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	D	Common	4	1	I61412517
					Job Reference (optional)

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

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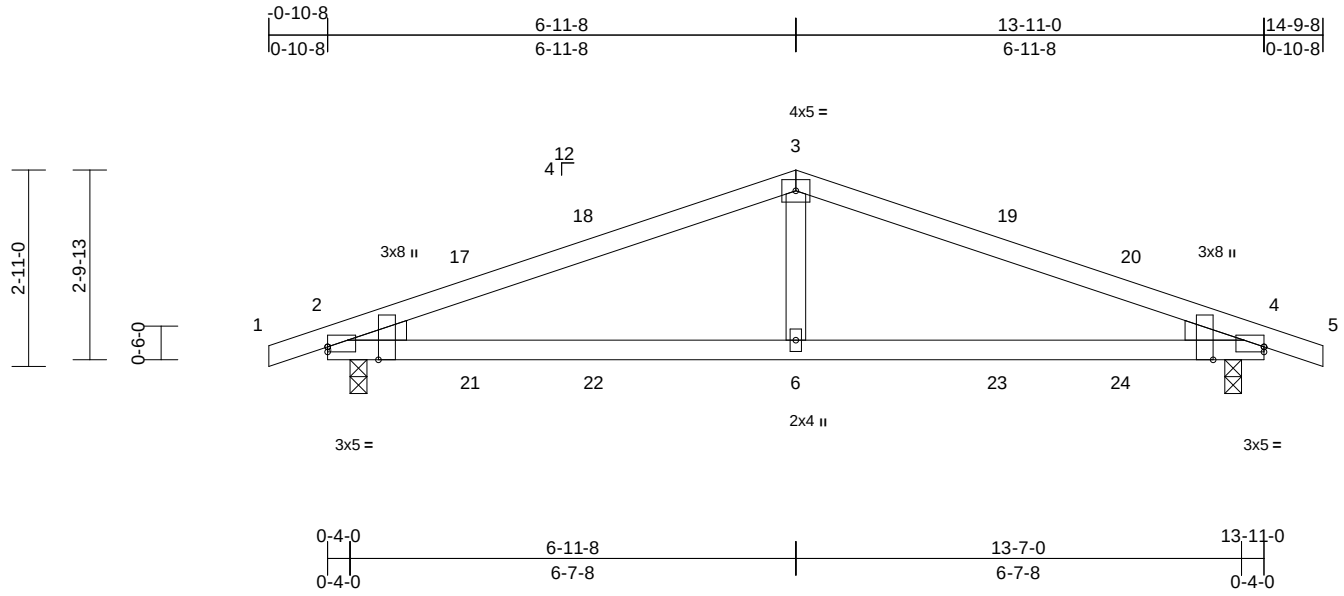

Scale = 1:34.2

Plate Offsets (X, Y): [2:Edge,0-0-14], [2:0-2-5,Edge], [4:Edge,0-0-14], [4:0-2-5,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.72	Vert(LL)	-0.09	6-11	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.56	Vert(CT)	-0.13	6-11	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horz(CT)	0.02	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 51 lb	FT = 20%

LUMBER

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

BRACING

TOP CHORD	Structural wood sheathing directly applied or 4-1-1 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 5-9-4 oc bracing.

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

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/17, 2-3=-901/1104, 3-4=-901/1104, 4-5=0/17
BOT CHORD	2-6=-943/775, 4-6=-943/775
WEBS	3-6=-425/268

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 3-11-8, Exterior(2R) 3-11-8 to 9-11-8, Interior (1) 9-11-8 to 11-9-8, Exterior(2E) 11-9-8 to 14-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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) 2 and 4. 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	DGE	Common Supported Gable	1	1	Job Reference (optional)	I61412518

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:43 Page: 1
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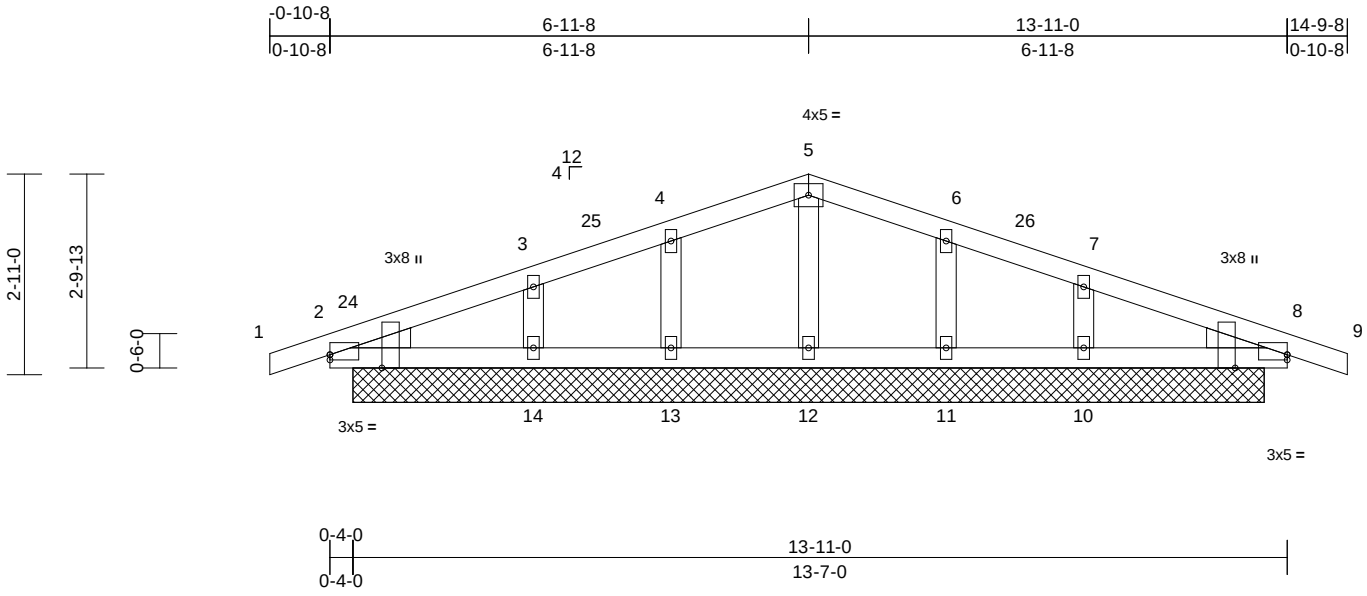

Scale = 1:33.5

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.29	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.19	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.08	Horz(CT)	-0.01	8	n/a	n/a		
BCLL	0.0*	Code	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
WEDGE Left: 2x4 SP No.3
Right: 2x4 SP No.3

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

REACTIONS (size) 2=13-3-0, 8=13-3-0, 10=13-3-0, 11=13-3-0, 12=13-3-0, 13=13-3-0, 14=13-3-0, 18=13-3-0, 21=13-3-0
Max Horiz 2=41 (LC 14), 18=41 (LC 14)
Max Uplift 2=-1 (LC 21), 8=-71 (LC 34), 10=-44 (LC 15), 11=-35 (LC 11), 12=-47 (LC 10), 13=-23 (LC 14), 14=-75 (LC 10), 18=-1 (LC 21), 21=-71 (LC 34)
Max Grav 2=0 (LC 10), 8=128 (LC 22), 10=302 (LC 22), 11=205 (LC 22), 12=420 (LC 21), 13=123 (LC 21), 14=437 (LC 21), 18=0 (LC 10), 21=128 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-220/432, 3-4=-165/401, 4-5=-123/411, 5-6=-122/395, 6-7=-170/392, 7-8=-217/405, 8-9=0/17
BOT CHORD 2-14=-365/260, 13-14=-365/260, 12-13=-365/260, 11-12=-365/260, 10-11=-365/260, 8-10=-365/260
WEBS 5-12=-360/181, 4-13=-146/110, 3-14=-275/153, 6-11=-183/128, 7-10=-212/127

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 3-11-8, Corner(3R) 3-11-8 to 9-11-8, Exterior (2N) 9-11-8 to 11-9-8, Corner(3E) 11-9-8 to 14-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable 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) N/A
12) Non Standard bearing condition. Review required.
13) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	E	Common	3	1	Job Reference (optional)	I61412519

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

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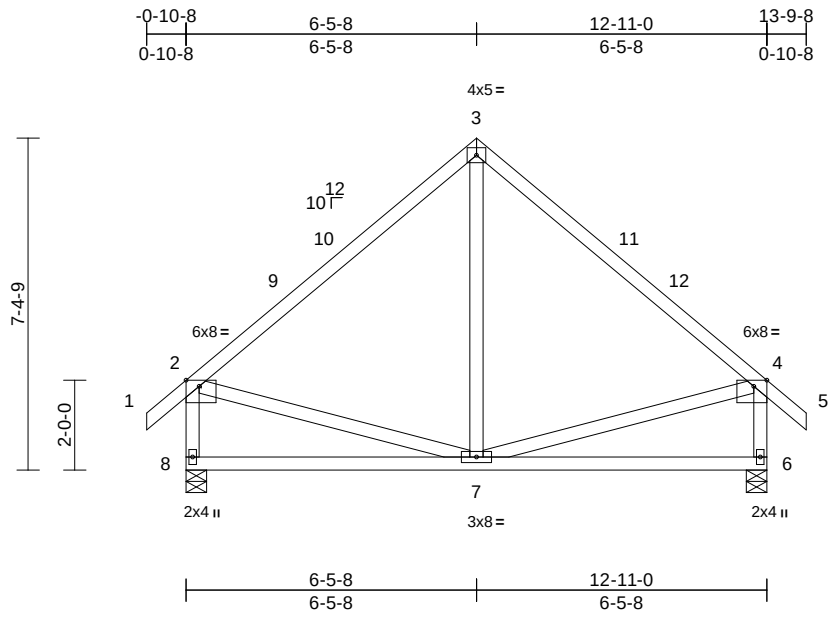

Scale = 1:51.2

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	1.00	Vert(LL)	-0.03	7-8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.35	Vert(CT)	-0.07	7-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.00	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 81 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-1-1 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 6=0-5-8, 8=0-5-8
Max Horiz 8=205 (LC 13)
Max Uplift 6=-49 (LC 15), 8=-49 (LC 14)
Max Grav 6=649 (LC 22), 8=649 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/39, 2-3=-528/142, 3-4=-528/142, 4-5=0/39, 2-8=-591/175, 4-6=-591/160
BOT CHORD 7-8=-205/268, 6-7=-82/168
WEBS 3-7=0/211, 2-7=-50/227, 4-7=-51/227

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 3-5-8, Exterior(2R) 3-5-8 to 9-5-8, Interior (1) 9-5-8 to 10-9-8, Exterior(2E) 10-9-8 to 13-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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) 8 and 6. 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	EGE	Common Supported Gable	1	1	Job Reference (optional)	I61412520

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

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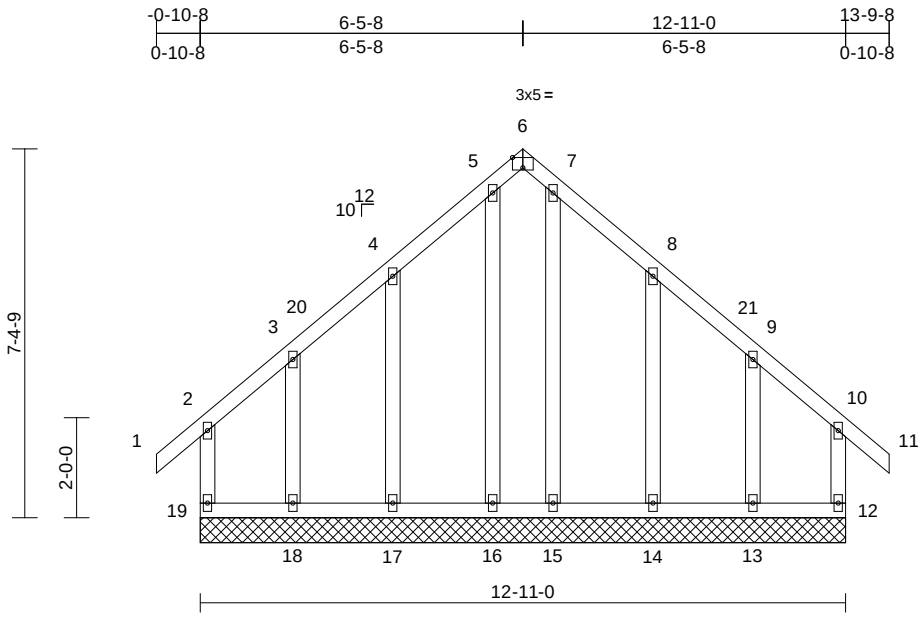

Scale = 1:46.1

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.24	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.14	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 95 lb	FT = 20%

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

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

REACTIONS (size) 12=12-11-0, 13=12-11-0, 14=12-11-0, 15=12-11-0, 16=12-11-0, 17=12-11-0, 18=12-11-0, 19=12-11-0
Max Horiz 19=-205 (LC 12)
Max Uplift 12=-132 (LC 11), 13=-144 (LC 10), 14=-85 (LC 15), 17=-84 (LC 14), 18=-149 (LC 11), 19=-138 (LC 10)
Max Grav 12=206 (LC 24), 13=253 (LC 25), 14=270 (LC 22), 15=191 (LC 22), 16=191 (LC 21), 17=270 (LC 21), 18=257 (LC 24), 19=212 (LC 25)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-19=-157/201, 1-2=0/39, 2-3=-125/137, 3-4=-64/218, 4-5=-117/346, 5-6=-89/237, 6-7=-88/237, 7-8=-118/345, 8-9=-60/222, 9-10=-119/126, 10-11=0/39, 10-12=-153/158
BOT CHORD 18-19=-108/102, 17-18=-108/102, 16-17=-108/102, 15-16=-108/102, 14-15=-108/102, 13-14=-108/102, 12-13=-108/102
WEBS 5-16=-181/10, 7-15=-178/7, 4-17=-228/178, 3-18=-165/120, 8-14=-228/170, 9-13=-163/156

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 1-10-4, Exterior (2N) 1-10-4 to 3-5-8, Corner(3R) 3-5-8 to 9-5-8, Exterior (2N) 9-5-8 to 10-9-8, Corner(3E) 10-9-8 to 13-9-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
10) Gable studs spaced at 2-0-0 oc.
11) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
12) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 138 lb uplift at joint 19, 132 lb uplift at joint 12, 84 lb uplift at joint 17, 149 lb uplift at joint 18, 85 lb uplift at joint 14 and 144 lb uplift at joint 13.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	EGR	Common Girder	1	**2**	Job Reference (optional)	I61412521

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

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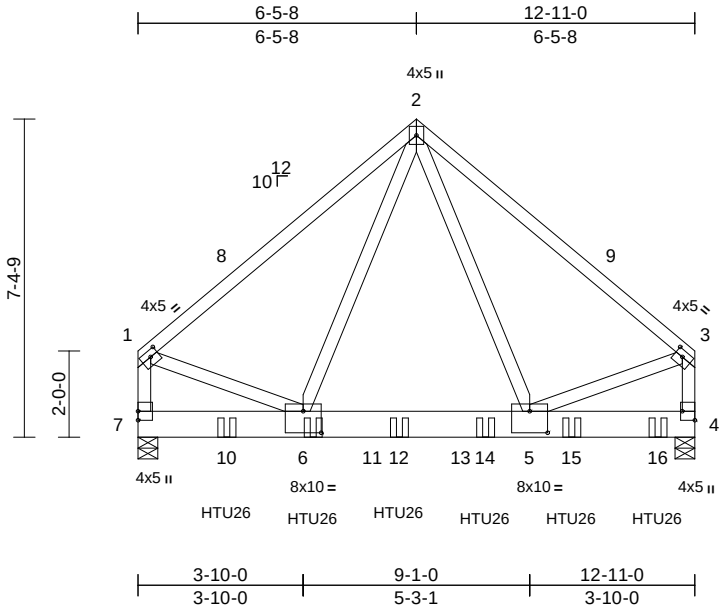

Scale = 1:53.4

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

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	0.77	Vert(LL)	-0.05	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	Vert(CT)	-0.09	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.70	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 202 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1
BOT CHORD 2x8 SP 2400F 2.0E
WEBS 2x4 SP No.3

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-2-11 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 4=0-5-8, 7=0-5-8
Max Horiz 7=174 (LC 9)
Max Uplift 4=-495 (LC 12), 7=-419 (LC 13)
Max Grav 4=5658 (LC 6), 7=4833 (LC 5)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-4324/435, 2-3=-4349/439, 1-7=-4234/385, 3-4=-4252/387
BOT CHORD 6-7=-202/285, 5-6=-213/2268, 4-5=-90/215
WEBS 2-5=-255/2742, 2-6=-248/2687, 1-6=-309/3396, 3-5=-312/3403

NOTES
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.
Bottom chords connected as follows: 2x8 - 2 rows staggered at 0-6-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) interior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
5) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) This truss has been designed for 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) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 7 and 4. 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) Use Simpson Strong-Tie HTU26 (20-10d Girder, 11-10dx1 1/2 Truss, Single Ply Girder) or equivalent spaced at 2-0-0 oc max. starting at 2-0-12 from the left end to 12-0-12 to connect truss(es) to back face of bottom chord.
12) Fill all nail holes where hanger is in contact with lumber.

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (lb/ft)
Vert: 1-2=-60, 2-3=-60, 4-7=-20
Concentrated Loads (lb)
Vert: 6=-1414 (B), 10=-1417 (B), 12=-1414 (B), 14=-1414 (B), 15=-1414 (B), 16=-1417 (B)

NORTH CAROLINA PROFESSIONAL SEAL 036322 ENGINEER ERIC A. GILBERT

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	F	Monopitch	2	1	Job Reference (optional)	I61412522

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

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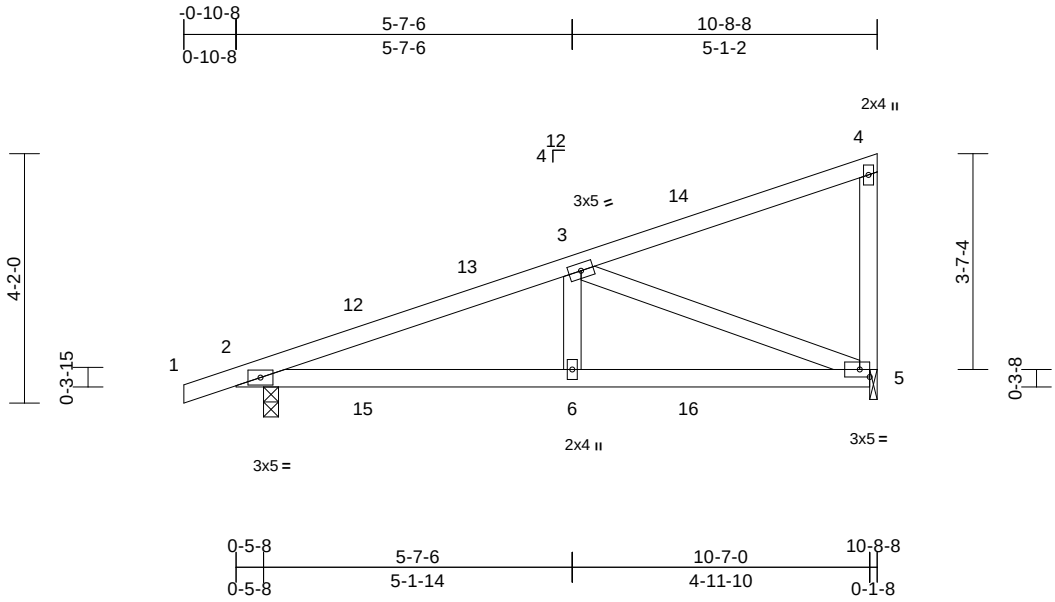

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.40	Vert(LL)	0.06	5-6	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	Vert(CT)	0.05	5-6	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.44	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 49 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-5-13 oc bracing.

REACTIONS (size) 2=0-3-0, 5=0-1-8
Max Horiz 2=147 (LC 13)
Max Uplift 2=-191 (LC 10), 5=-160 (LC 10)
Max Grav 2=560 (LC 21), 5=527 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-862/778, 3-4=-104/63, 4-5=-188/103
BOT CHORD 2-6=-737/778, 5-6=-737/778
WEBS 3-6=-309/217, 3-5=-806/832

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 7-6-12, Exterior(2E) 7-6-12 to 10-6-12 zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: , Joint 5 SP No.3 crushing capacity of 565 psi.
8) Bearing at joint(s) 5 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 5. This connection is for uplift only and does not consider lateral forces.
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

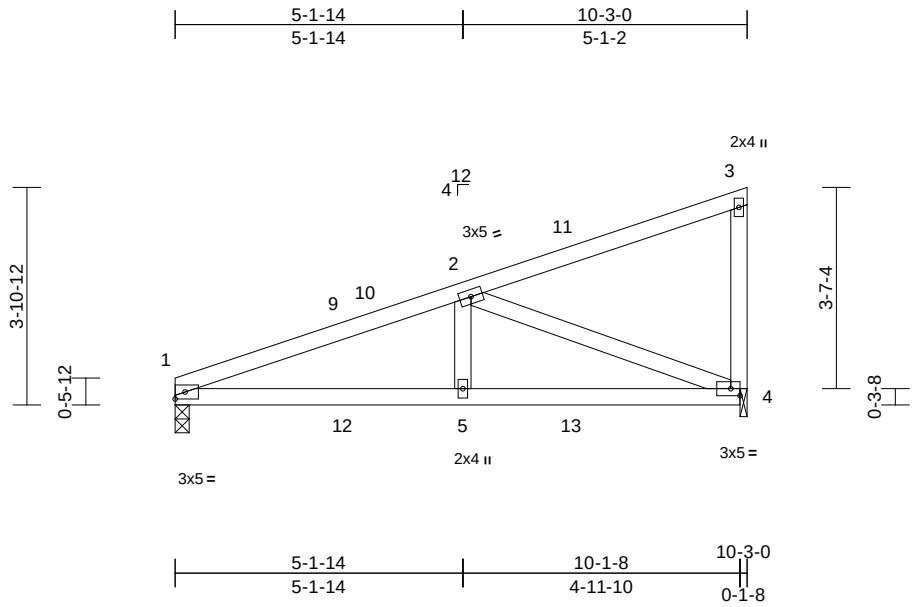
October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	F1	Monopitch	4	1	Job Reference (optional)	I61412523

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:45 ID:GvbiD6mwqAIkl5J6aNwunUzF_nU-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:41.3

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	0.41	Vert(LL)	0.05	4-5	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.28	Vert(CT)	0.04	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.45	Horz(CT)	0.01	4	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
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 6-2-4 oc bracing.

REACTIONS (size) 1=0-3-0, 4=0-1-8
Max Horiz 1=139 (LC 13)
Max Uplift 1=-142 (LC 10), 4=-163 (LC 10)
Max Grav 1=465 (LC 21), 4=532 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-883/851, 2-3=-104/50, 3-4=-187/103
BOT CHORD 1-5=-826/799, 4-5=-826/799
WEBS 2-5=-337/220, 2-4=-830/924

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 7-1-4, Exterior(2E) 7-1-4 to 10-1-4 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) Bearings are assumed to be: , Joint 4 SP No.3 crushing capacity of 565 psi.
7) Bearing at joint(s) 4 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
8) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
9) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 1 and 4. This connection is for uplift only and does not consider lateral forces.
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

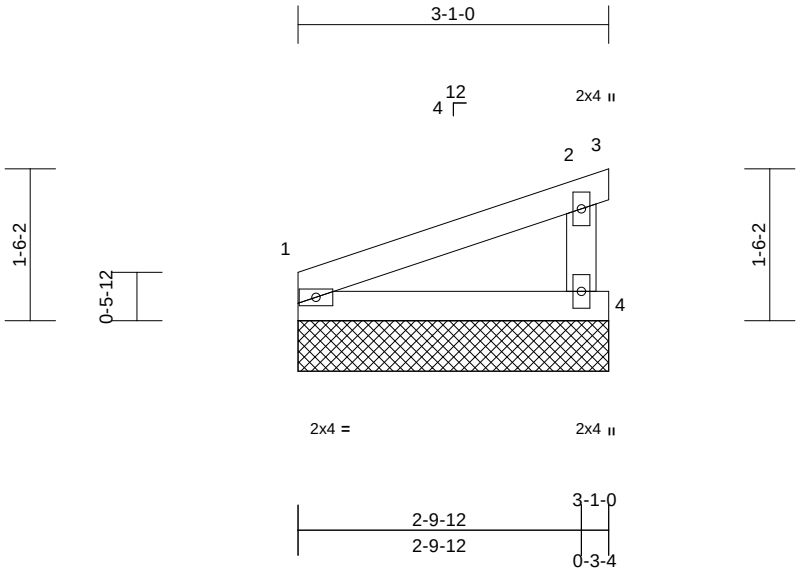
October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity
24020082	F1GE	Monopitch Supported Gable	1	1	I61412524 Job Reference (optional)

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:45 ID:05Rb2nqdzWbg0FxJai2r9FzF_oh-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.08	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	1	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 11 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-1-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

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

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-31/49, 2-3=-65/56, 2-4=-332/326
BOT CHORD 1-4=-52/55

NOTES
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) Gable requires continuous bottom chord bearing.
6) Gable studs spaced at 2-0-0 oc.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 8 lb uplift at joint 1, 183 lb uplift at joint 3, 80 lb uplift at joint 4 and 8 lb uplift at joint 1.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	FGE	Monopitch Supported Gable	1	1	Job Reference (optional)	I61412525

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

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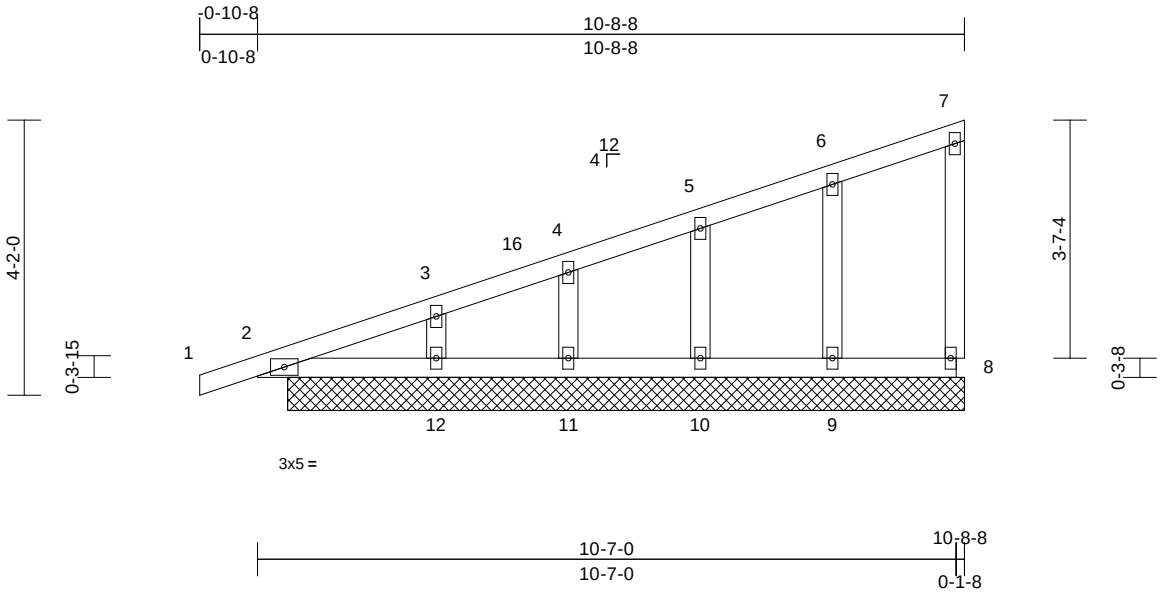

Scale = 1:34.9

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	0.17	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	0.05	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 49 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
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) 2=10-3-0, 8=10-3-0, 9=10-3-0, 10=10-3-0, 11=10-3-0, 12=10-3-0, 15=10-3-0
Max Horiz 2=147 (LC 13), 15=147 (LC 13)
Max Uplift 2=-40 (LC 10), 8=-13 (LC 11), 9=-35 (LC 10), 10=-34 (LC 14), 11=-37 (LC 10), 12=-38 (LC 14), 15=-40 (LC 10)
Max Grav 2=239 (LC 21), 8=83 (LC 21), 9=230 (LC 21), 10=214 (LC 21), 11=223 (LC 21), 12=99 (LC 1), 15=239 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/17, 2-3=-125/133, 3-4=-91/117, 4-5=-79/104, 5-6=-69/92, 6-7=-56/70, 7-8=-67/38
BOT CHORD	2-12=-75/115, 11-12=-45/81, 10-11=-45/81, 9-10=-45/81, 8-9=-45/81
WEBS	6-9=-187/116, 5-10=-177/131, 4-11=-174/133, 3-12=-92/111

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 7-6-12, Corner(3E) 7-6-12 to 10-6-12 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) All plates are 2x4 MT20 unless otherwise indicated.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) N/A
11) One RT8A MiTek 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.
12) One RT8A MiTek 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.
13) Non Standard bearing condition. Review required.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	G	Monopitch	9	1	Job Reference (optional)	I61412526

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

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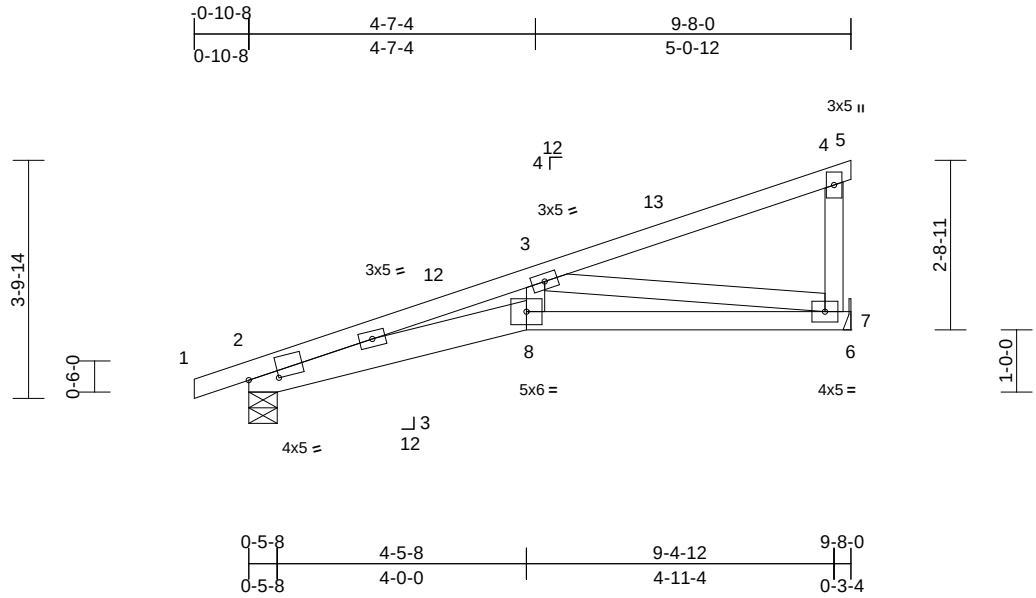

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Plate Offsets (X, Y): [2:0-5-12,0-1-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.60	Vert(LL)	-0.08	8	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.52	Vert(CT)	-0.13	7-8	>872	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.05	7	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 2x6 SP No.2 *Except* 8-6:2x4 SP No.2
WEBS 2x4 SP No.3

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-5-5 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 7-11-15 oc bracing.

REACTIONS (size) 2=0-5-8, 7= Mechanical
Max Horiz 2=121 (LC 11)
Max Uplift 2=-81 (LC 10), 7=-74 (LC 14)
Max Grav 2=491 (LC 21), 7=524 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-1714/550, 3-4=-154/35, 4-5=-8/0, 4-7=-224/119
BOT CHORD 2-8=-574/1652, 7-8=-544/1531, 6-7=0/0
WEBS 3-8=-70/407, 3-7=-1460/561

NOTES
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 1-11-13, Interior (1) 1-11-13 to 6-8-0, Exterior(2E) 6-8-0 to 9-8-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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) Bearing at joint(s) 2 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 74 lb uplift at joint 7.
10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	GSE	Monopitch	1	1	Job Reference (optional)	I61412527

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

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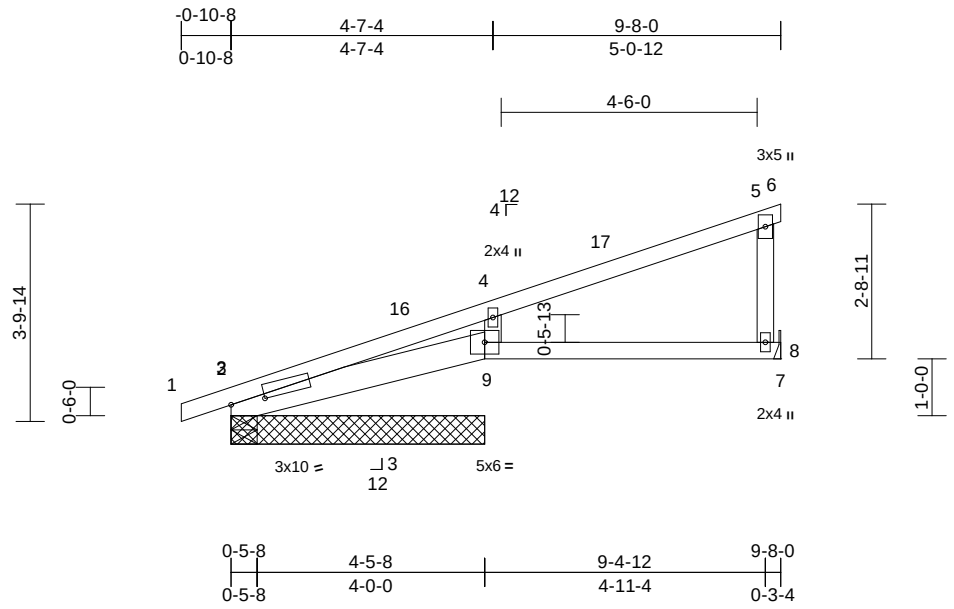

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Plate Offsets (X, Y): [3:0-7-4,0-0-7]

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	0.42	Vert(LL)	-0.02	8-9	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.21	Vert(CT)	-0.03	8-9	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 39 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x6 SP No.2 *Except* 9-7:2x4 SP No.2
WEBS 2x4 SP No.3

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) 2=0-5-8, 3=4-5-8, 8= Mechanical, 9=4-5-8, 10=4-5-8
Max Horiz 3=164 (LC 11), 10=164 (LC 11)
Max Uplift 2=-37 (LC 10), 3=-117 (LC 10), 8=-24 (LC 14), 9=-151 (LC 14), 10=-117 (LC 10)
Max Grav 2=87 (LC 21), 3=332 (LC 1), 8=256 (LC 21), 9=628 (LC 21), 10=332 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-149/123, 3-4=-405/448, 4-5=-130/29, 5-6=-8/0, 5-8=-202/109
BOT CHORD 3-9=-634/472, 8-9=-17/62, 7-8=0/0
WEBS 4-9=-475/292

NOTES
1) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 1-11-13, Interior (1) 1-11-13 to 6-8-0, Exterior(2E) 6-8-0 to 9-8-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
6) Gable studs spaced at 2-0-0 oc.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: Joint 3 SP No.2 crushing capacity of 565 psi, Joint 2 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Bearing at joint(s) 3, 9, 2, 3 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 24 lb uplift at joint 8 and 37 lb uplift at joint 2.
13) N/A
14) One RT8A MiTek connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 9. This connection is for uplift only and does not consider lateral forces.
15) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
16) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V1	Valley	1	1	Job Reference (optional)	I61412528

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

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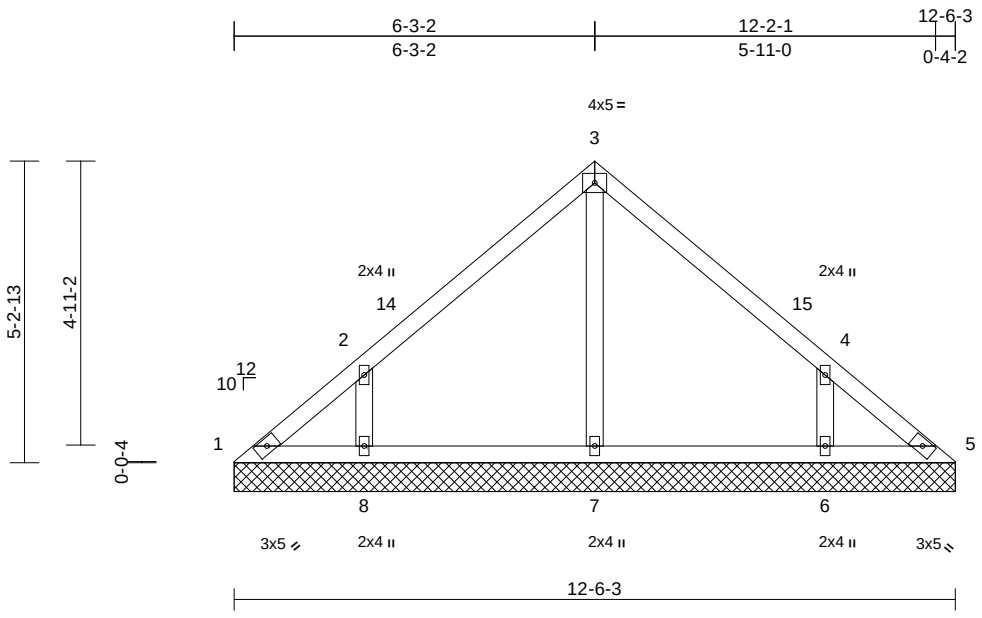

Scale = 1:40

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	0.15	Horiz(TL)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 52 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
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=12-6-3, 5=12-6-3, 6=12-6-3, 7=12-6-3, 8=12-6-3, 13=12-6-3
Max Horiz 1=-118 (LC 12)
Max Uplift 1=-66 (LC 10), 5=-1 (LC 23), 6=-137 (LC 15), 8=-143 (LC 14), 13=-1 (LC 23)
Max Grav 1=75 (LC 13), 6=438 (LC 21), 7=401 (LC 20), 8=421 (LC 20)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-116/212, 2-3=-103/197, 3-4=-125/175, 4-5=-24/137
BOT CHORD 1-8=-61/33, 7-8=-61/32, 6-7=-61/32, 5-6=-61/32
WEBS 3-7=-317/0, 2-8=-382/212, 4-6=-385/208

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 9-6-8, Exterior(2E) 9-6-8 to 12-6-8 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 66 lb uplift at joint 1, 1 lb uplift at joint 5, 143 lb uplift at joint 8, 137 lb uplift at joint 6 and 1 lb uplift at joint 5.
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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V2	Valley	1	1	Job Reference (optional)	I61412529

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

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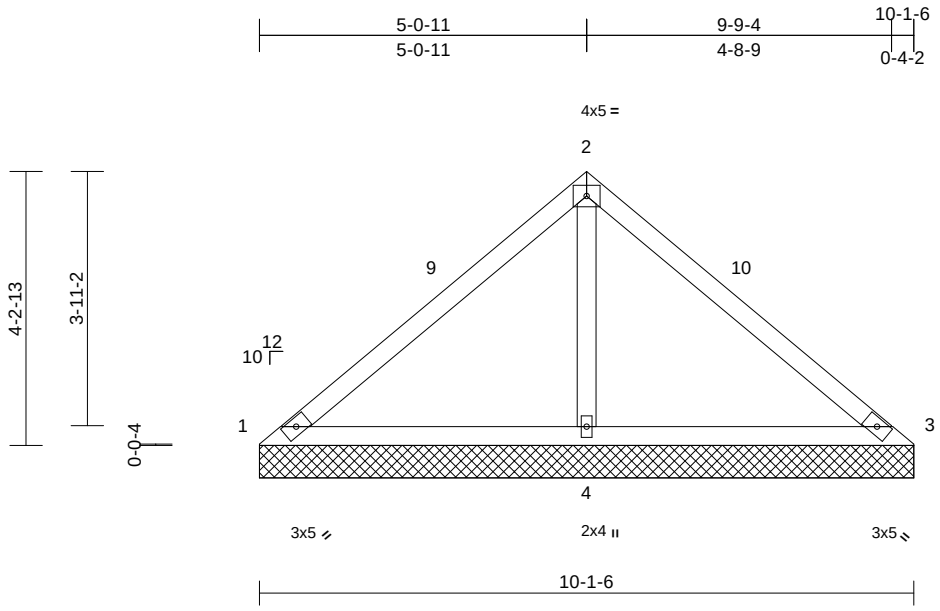

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.50	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.47	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horiz(TL)	0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 39 lb	FT = 20%

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

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

REACTIONS (size) 1=10-1-6, 3=10-1-6, 4=10-1-6
Max Horiz 1=-95 (LC 12)
Max Uplift 1=-62 (LC 21), 3=-62 (LC 20), 4=-119 (LC 14)
Max Grav 1=92 (LC 20), 3=92 (LC 21), 4=833 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-126/409, 2-3=-126/409
BOT CHORD 1-4=-233/182, 3-4=-233/182
WEBS 2-4=-648/288

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 7-1-11, Exterior(2E) 7-1-11 to 10-1-11 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 62 lb uplift at joint 1, 62 lb uplift at joint 3 and 119 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V3	Valley	1	1	Job Reference (optional)	I61412530

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

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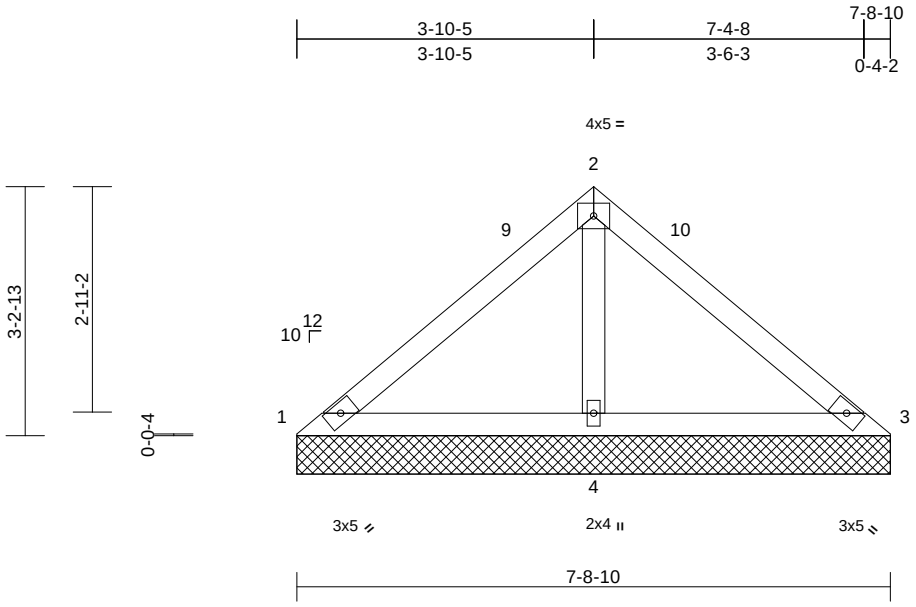

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.30	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.30	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.10	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 29 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 7-8-10 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 1=7-8-10, 3=7-8-10, 4=7-8-10
Max Horiz 1=72 (LC 11)
Max Uplift 1=-27 (LC 21), 3=-27 (LC 20), 4=-84 (LC 14)
Max Grav 1=105 (LC 20), 3=105 (LC 21), 4=588 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-102/260, 2-3=-102/260
BOT CHORD 1-4=-179/164, 3-4=-179/164
WEBS 2-4=-427/220

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) 0-0-5 to 3-0-5, Exterior(2R) 3-0-5 to 4-8-14, Exterior(2E) 4-8-14 to 7-8-14 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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 27 lb uplift at joint 1, 27 lb uplift at joint 3 and 84 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

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V4	Valley	1	1	Job Reference (optional)	I61412531

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

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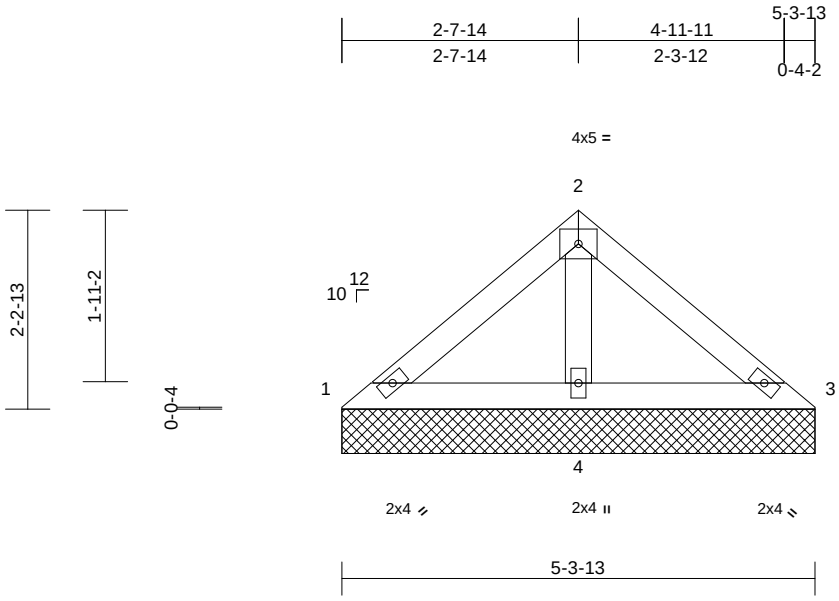

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.11	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.13	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.04	Horiz(TL)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 19 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-3-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 1=5-3-13, 3=5-3-13, 4=5-3-13
Max Horiz 1=-48 (LC 12)
Max Uplift 3=-6 (LC 15), 4=-40 (LC 14)
Max Grav 1=93 (LC 20), 3=93 (LC 21), 4=336 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-85/124, 2-3=-85/124
BOT CHORD 1-4=-94/101, 3-4=-94/101
WEBS 2-4=-216/117

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 4-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 6 lb uplift at joint 3 and 40 lb uplift at joint 4.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V5	Valley	1	1	Job Reference (optional)	I61412532

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

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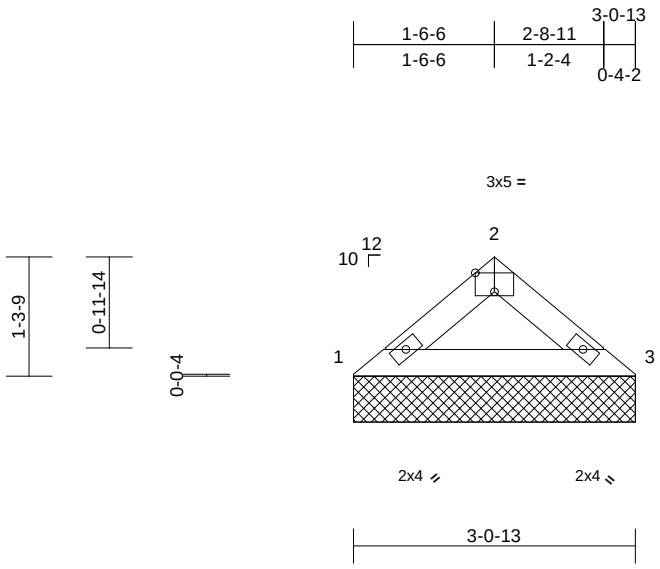

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Plate Offsets (X, Y): [2:0-2-8,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.07	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horiz(TL)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 9 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-0-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=3-0-13, 3=3-0-13
Max Horiz 1=-26 (LC 12)
Max Uplift 1=-10 (LC 14), 3=-10 (LC 15)
Max Grav 1=141 (LC 20), 3=141 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-178/73, 2-3=-178/73
BOT CHORD 1-3=-42/129

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 10 lb uplift at joint 1 and 10 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V11	Valley	1	1	Job Reference (optional)	I61412533

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

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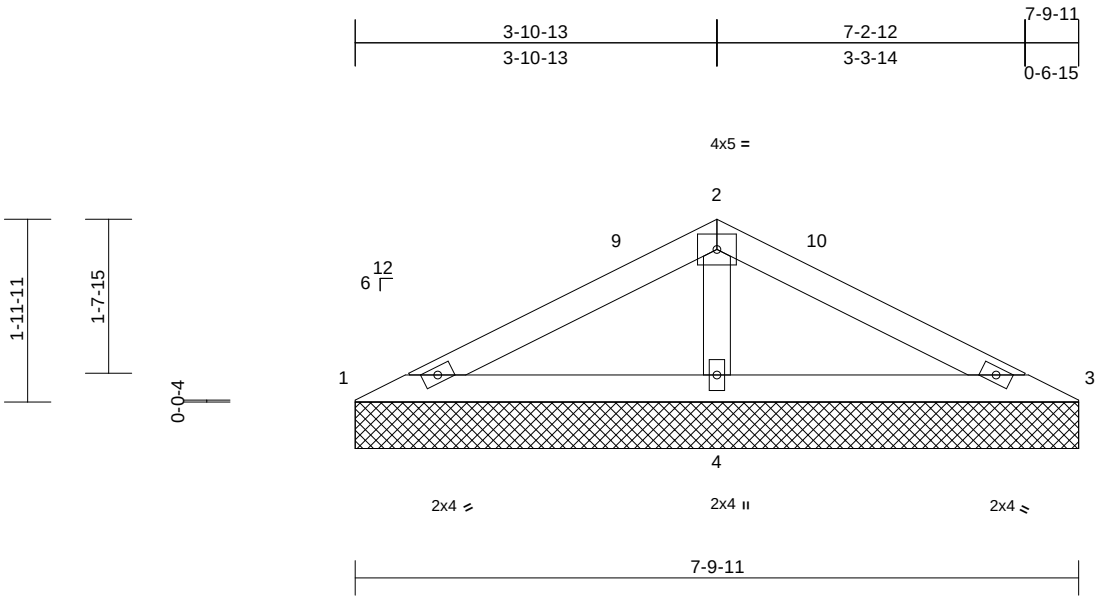

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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.26	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.27	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.07	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 7-9-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 1=7-9-11, 3=7-9-11, 4=7-9-11
Max Horiz 1=29 (LC 14)
Max Uplift 1=-9 (LC 14), 3=-16 (LC 15), 4=-43 (LC 14)
Max Grav 1=113 (LC 20), 3=113 (LC 21), 4=528 (LC 20)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-127/270, 2-3=-127/270
BOT CHORD 1-4=-201/154, 3-4=-201/154
WEBS 2-4=-366/213

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) 0-0-8 to 3-0-8, Exterior(2R) 3-0-8 to 4-10-3, Exterior(2E) 4-10-3 to 7-10-3 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
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 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 9 lb uplift at joint 1, 16 lb uplift at joint 3 and 43 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

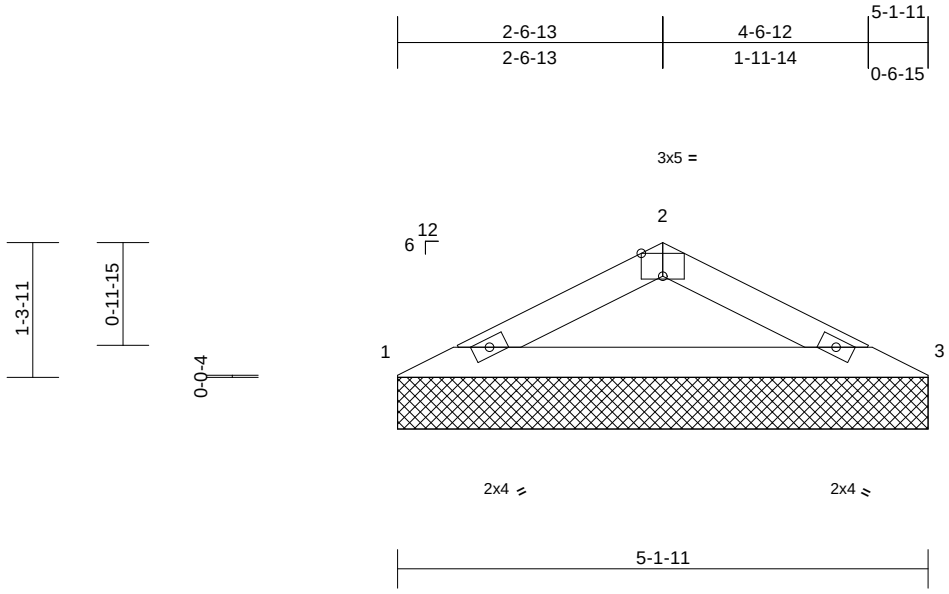
October 16,2023

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

Job	Truss	Truss Type	Qty	Ply	138 Serenity	
24020082	V12	Valley	1	1	Job Reference (optional)	I61412534

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

Run: 8.63 S Aug 30 2023 Print: 8.630 S Aug 30 2023 MiTek Industries, Inc. Fri Oct 13 15:36:48 ID:OFXJJBg5e0puLYiHs6bBoUzF_ZP-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:22.3

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.22	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	0.00	Horiz(TL)	0.01	3	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

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-1-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=5-1-11, 3=5-1-11
Max Horiz 1=18 (LC 14)
Max Uplift 1=-20 (LC 14), 3=-20 (LC 15)
Max Grav 1=237 (LC 20), 3=237 (LC 21)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-419/183, 2-3=-419/183
BOT CHORD 1-3=-150/364

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 20 lb uplift at joint 1 and 20 lb uplift at joint 3.
11) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

October 16,2023

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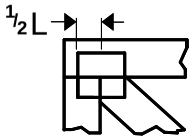
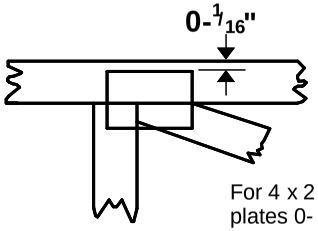
Symbols

PLATE LOCATION AND ORIENTATION



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



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

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

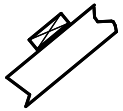
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

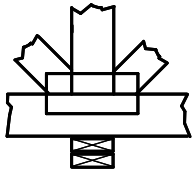
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



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

BEARING

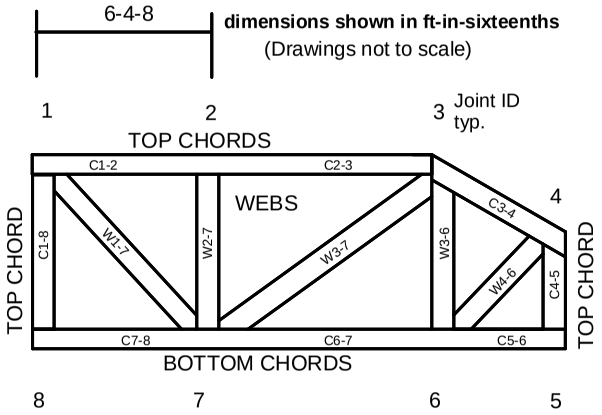


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: 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/TPI 1 section 6.3 These truss designs rely on lumber values established by others.

MiTek®

ENGINEERING BY TRENCO
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MiTek Engineering Reference Sheet: MII-7473 rev. 1/2/2023

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 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/TPI 1 Quality Criteria.
21. The design does not take into account any dynamic or other loads other than those expressly stated.