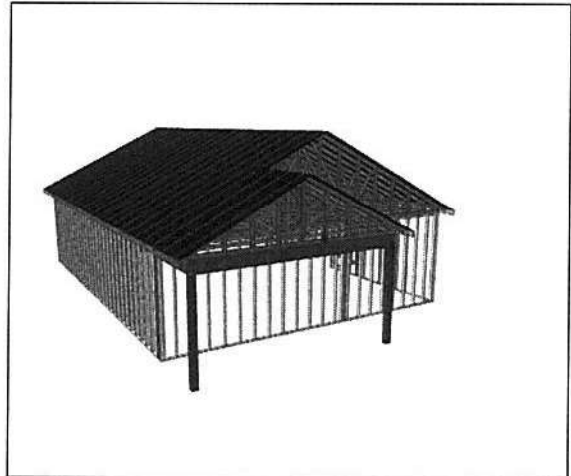


CARTER[®] *Lumber*

Carter Sanford Component Plant
298 Harvey Faulk Rd
Sanford, NC 27332

Phone #:919-775-1450

Builder: BVA Enterprises
Model: Nicolas



THE PLACEMENT PLAN NOTES:

1. The Placement Plan is a diagram for truss installation. It is not an engineered drawing and has not been reviewed by an engineer. The Owner/Building Designer is responsible for obtaining an engineer's review if one is required by the local jurisdiction.
2. The responsibilities of the Owner, Contractor, Building Designer, Component Designer and Component Manufacturer shall be as set forth in ANSI/TPI 1. Capitalized terms shall be as defined in ANSI/TP 1 unless otherwise indicated.
3. Each Component is designed as an individual component utilizing information provided by others. The Owner/Building Designer is responsible for reviewing all Component Submittal Packages and individual Component Design Drawings for compliance with the Construction Documents and compatibility with the overall Building design.
4. Contractor will not proceed with component installation until the Owner/Building Designer has reviewed the Component Submittal Package. Questions on the suitability of any Component will be resolved by the Building Designer.
5. The Building Designer and Contractor are responsible for all temporary and permanent bracing.
6. The Placement Plan assumes the building is dimensionally correct, structurally sound, and in a suitable condition to support each Component during installation and thereafter, including but not limited to installation of all bearing points. Proper design and construction of all structural components, including foundations, headers, beams, walls and columns are the responsibility of the Owner, Building Designer and Contractor.
7. Do not cut, drill, or modify any Component without first consulting the Component Manufacturer or Building Designer. Damaged Components shall not be installed unless directed by the Building Designer or approved by the Component Manufacturer.
8. Components must be handled and installed following all applicable safety standards and best practices, including but not limited to BCSI, OSHA, TPI and local codes. Failure to properly handle, brace or otherwise install Component can result in serious injury or death.

Approved by: _____

Date: _____

RE: 24110078
 0 Rainbow-Roof-Nicolas - GRH

Trenco
 818 Soundside Rd
 Edenton, NC 27932

Site Information:

Customer: BVA Enterprises Project Name: 24110078
 Lot/Block: Model:
 Address: 0 Rainbow Subdivision:
 City: Dunn State: NC

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 10 individual, dated Truss Design Drawings and 0 Additional Drawings.

No.	Seal#	Truss Name	Date
1	163763038	A01	2/22/2024
2	163763039	A02	2/22/2024
3	163763040	B01	2/22/2024
4	163763041	B02	2/22/2024
5	163763042	B03	2/22/2024
6	163763043	B04	2/22/2024
7	163763044	B05	2/22/2024
8	163763045	A03	2/22/2024
9	163763046	C02	2/22/2024
10	163763047	C01	2/22/2024

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.



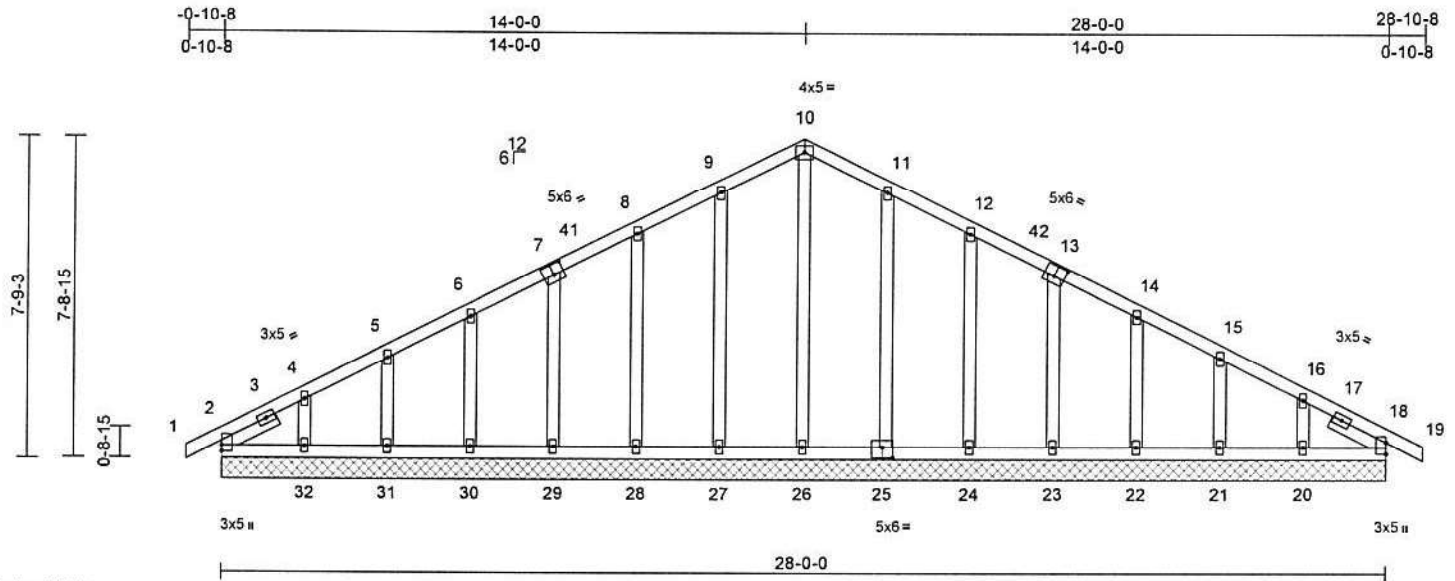
February 22, 2024

Job 24110078	Truss A01	Truss Type Common Supported Gable	Qty 2	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763038
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:23
ID:diy??BgWwMufZFdxIPW?dbziAn1-RIC?PsB70Hq3NSgPqnL8w3uITxBGkWrCDoi7J4zJC7f

Page: 1

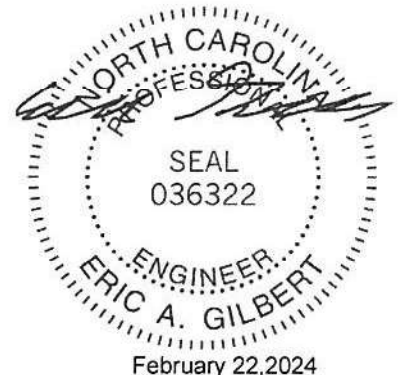


Scale = 1:53.5

Plate Offsets (X, Y): [7'-0-3-0, 0-3-0], [13'-0-3-0, 0-3-0], [25'-0-3-0, 0-3-0]

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.16	Horz(CT)	0.01	18	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 173 lb	FT = 20%

LUMBER	TOP CHORD	BOT CHORD	WEBS	NOTES
TOP CHORD 2x4 SP No.2	1-2=0/23, 2-4=-135/57, 4-5=-92/63, 5-6=-72/80, 6-8=-55/129, 8-9=-69/175, 9-10=-86/216, 10-11=-86/216, 11-12=-69/176, 12-14=-52/130, 14-15=-46/44, 15-16=-59/20, 16-18=-86/33, 18-19=0/23	2-32=-23/110, 31-32=-23/110, 30-31=-23/110, 29-30=-23/110, 28-29=-24/111, 27-28=-24/111, 26-27=-24/111, 24-26=-24/111, 23-24=-23/110, 22-23=-22/109, 21-22=-22/109, 20-21=-22/109, 18-20=-22/109	10-26=-130/19, 9-27=-197/70, 8-28=-186/80, 7-29=-130/74, 6-30=-113/74, 5-31=-119/71, 4-32=-111/107, 11-25=-196/69, 12-24=-186/80, 13-23=-130/74, 14-22=-113/74, 15-21=-119/71, 16-20=-111/107	<p>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</p> <p>5) Unbalanced snow loads have been considered for this design.</p> <p>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.</p> <p>7) All plates are 2x4 MT20 unless otherwise indicated.</p> <p>8) Gable requires continuous bottom chord bearing.</p> <p>9) Gable studs spaced at 2'-0-0 oc.</p> <p>10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.</p> <p>11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3'-0-0 tall by 2'-0-0 wide will fit between the bottom chord and any other members.</p>
BOT CHORD 2x4 SP No.2				<p>1) Unbalanced roof live loads have been considered for this design.</p> <p>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 2-0-0, Exterior(2N) 2-0-0 to 11-0-0, Corner(3R) 11-0-0 to 17-0-0, Exterior (2N) 17-0-0 to 25-10-8, Corner(3E) 25-10-8 to 28-10-8 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</p> <p>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.</p>
OTHERS 2x4 SP No.3				
SLIDER Left 2x4 SP No.3 - 1-6-0, Right 2x4 SP No.3 - 1-6-0				
BRACING				
TOP CHORD Structural wood sheathing directly applied or 6'-0-0 oc purlins.				
BOT CHORD Rigid ceiling directly applied or 10'-0-0 oc bracing.				
REACTIONS (size)	2=28-0-0, 18=28-0-0, 20=28-0-0, 21=28-0-0, 22=28-0-0, 23=28-0-0, 24=28-0-0, 25=28-0-0, 26=28-0-0, 27=28-0-0, 28=28-0-0, 29=28-0-0, 30=28-0-0, 31=28-0-0, 32=28-0-0, 33=28-0-0, 37=28-0-0			
Max Horiz 2=-114 (LC 15), 33=-114 (LC 15)				
Max Uplift 2=-17 (LC 15), 20=-73 (LC 15), 21=-36 (LC 15), 22=-42 (LC 15), 23=-42 (LC 15), 24=-45 (LC 15), 25=-40 (LC 15), 27=-41 (LC 14), 28=-45 (LC 14), 29=-41 (LC 14), 30=-43 (LC 14), 31=-33 (LC 14), 32=-85 (LC 14), 33=-17 (LC 15)				
Max Grav 2=138 (LC 21), 18=139 (LC 22), 20=154 (LC 35), 21=157 (LC 22), 22=152 (LC 35), 23=168 (LC 22), 24=226 (LC 22), 25=235 (LC 22), 26=163 (LC 27), 27=236 (LC 21), 28=225 (LC 21), 29=169 (LC 21), 30=152 (LC 34), 31=156 (LC 21), 32=154 (LC 34), 33=138 (LC 21), 37=139 (LC 22)				
FORCES (lb) - Maximum Compression/Maximum Tension				



Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbccomponents.com)

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	0 Rainbow-Roof-Nicolas - GRH	163763038
24110078	A01	Common Supported Gable	2	1	Job Reference (optional)	

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

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MITek Industries, Inc. Wed Feb 21 08:29:23
 ID:dhy??BgWMufzFdTXIPW?dbzAn1-R/C?PsB70Hq3NSgPqnL8w3ulTXbCKWwCDoi7J4zJC?!

Page: 2

- 12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 17 lb uplift at joint 2, 41 lb uplift at joint 27, 45 lb uplift at joint 28, 41 lb uplift at joint 29, 43 lb uplift at joint 30, 33 lb uplift at joint 31, 85 lb uplift at joint 32, 40 lb uplift at joint 25, 45 lb uplift at joint 24, 42 lb uplift at joint 23, 42 lb uplift at joint 22, 36 lb uplift at joint 21, 73 lb uplift at joint 20 and 17 lb uplift at joint 2.
- 13) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2, 33.
- 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

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE.
 Design valid for use only with MITek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.ipinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbccomponents.com)

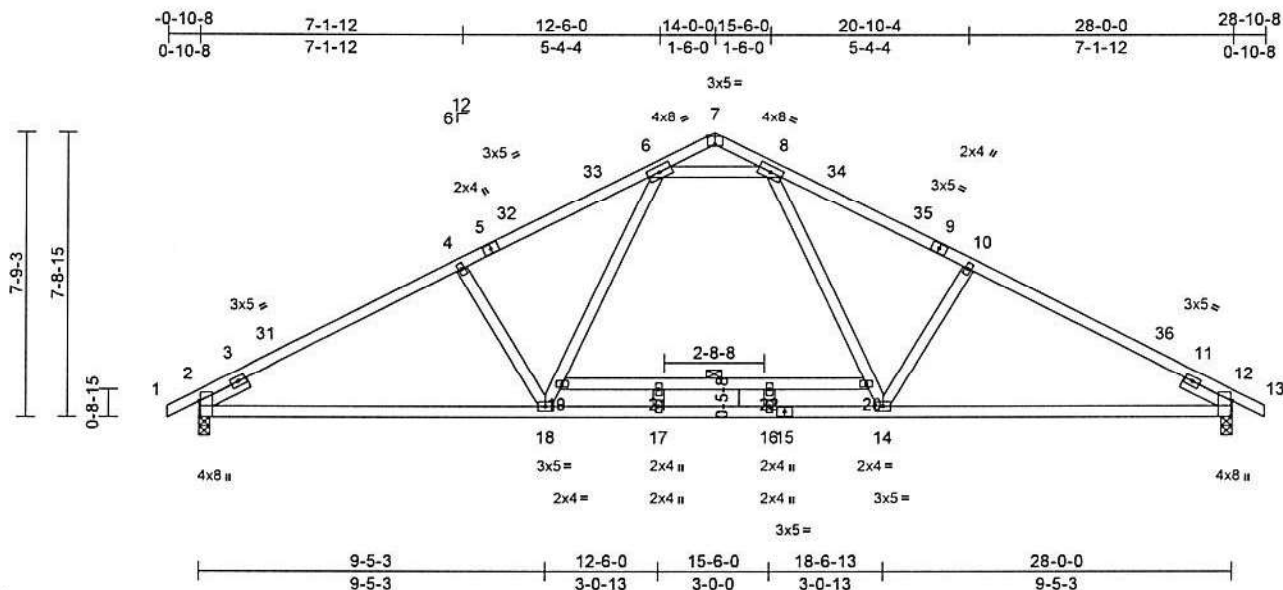
ENGINEERING BY
TRENCO
 A MITek Affiliate
 818 Soundside Road
 Edenton, NC 27932

Job 24110078	Truss A02	Truss Type Common	Qty 6	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763039
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:29
ID:wsSwA1NuijzKCYvh9bZczpJAm7-RIC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDor7J4zJC?7

Page: 1



Scale = 1:60.4

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.84	Ver(LL)	-0.24	14-29	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.85	Ver(CT)	-0.32	14-29	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.07	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 149 lb	FT = 20%

LUMBER

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

BRACING

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

WEBS 1 Row at midpt 19-20

REACTIONS (size) 2=0-3-8, 12=0-3-8
 Max Horiz 2=-118 (LC 15)
 Max Uplift 2=-124 (LC 14), 12=-124 (LC 15)
 Max Grav 2=1188 (LC 21), 12=1188 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/23, 2-4=-1813/242, 4-6=-1623/261, 6-7=-53/127, 7-8=-53/127, 8-10=-1623/261, 10-12=-1813/242, 12-13=0/23
 BOT CHORD 2-18=-236/1552, 17-18=-43/1173, 16-17=-43/1173, 14-16=-43/1173, 12-14=-141/1552
 WEBS 8-20=-83/543, 14-20=-87/521, 10-14=-406/220, 18-19=-88/521, 6-19=-83/543, 4-18=-406/220, 19-21=-19/0, 21-22=-19/0, 20-22=-19/0, 17-21=0/29, 16-22=0/29, 6-8=-1213/301

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 11-0-0, Exterior(2R) 11-0-0 to 17-0-0, Interior (1) 17-0-0 to 25-10-8, Exterior(2E) 25-10-8 to 28-10-8 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) All plates are 2x4 MT20 unless otherwise indicated.
- 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



February 22, 2024

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 1/2/2023 BEFORE USE. Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpiinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcecomponents.com)

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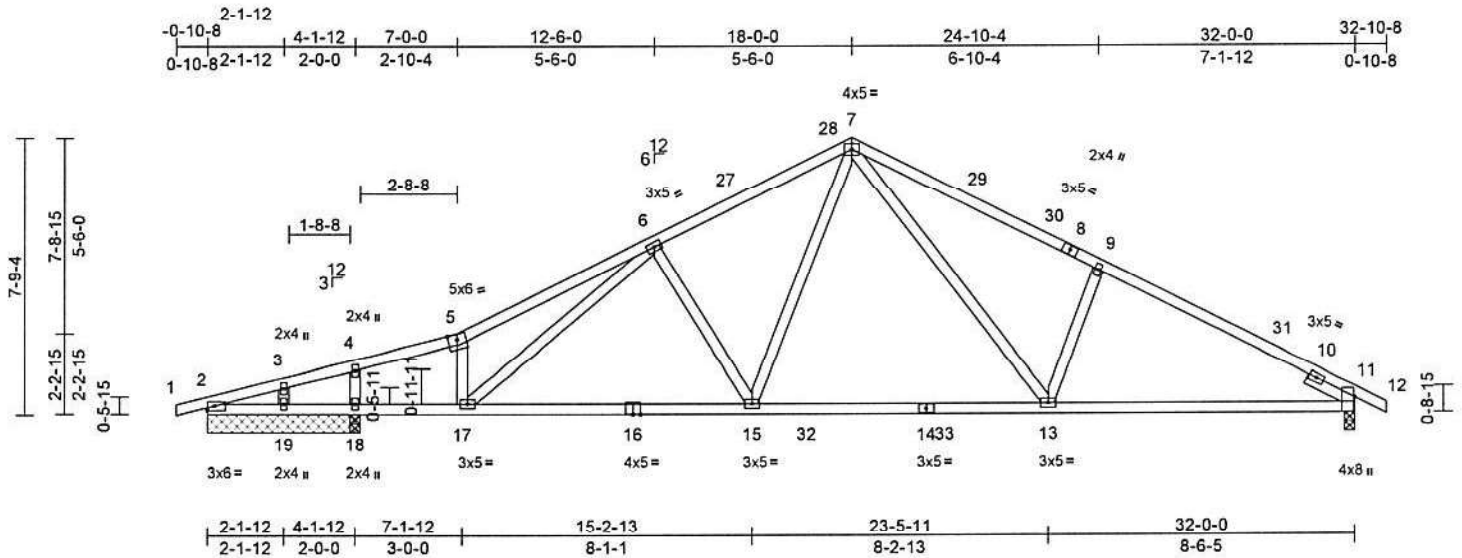
818 Soundside Road
 Edenton, NC 27932

Job 24110078	Truss B01	Truss Type Roof Special	Qty 1	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763040
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.83 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:30
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Page: 1



Scale = 1:62.1

Plate Offsets (X, Y): [11:0-5-0,Edge]

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	-0.27	15-17	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.54	15-17	>623	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.07	11	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0										
										Weight: 159 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1 *Except* 5-7,8-12:2x4 SP No.2
BOT CHORD 2x4 SP 2400F 2.0E *Except* 16-14:2x4 SP No.1
WEBS 2x4 SP No.3
SLIDER Right 2x4 SP No.3 -- 1-6-0

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

REACTIONS (size) 2=4-3-8, 11=0-3-8, 18=4-3-8, 19=4-3-8, 20=4-3-8
Max Horiz 2=116 (LC 14), 20=116 (LC 14)
Max Uplift 2=-77 (LC 14), 11=-121 (LC 15), 18=-135 (LC 14), 19=-842 (LC 36), 20=-77 (LC 14)
Max Grav 2=1081 (LC 5), 11=1291 (LC 6), 18=1230 (LC 5), 19=44 (LC 14), 20=1081 (LC 5)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-2473/292, 3-4=-2371/299, 4-5=-2488/334, 5-6=-2615/411, 6-7=-1832/373, 7-9=-1937/409, 9-11=-2027/349, 11-12=0/23
BOT CHORD 2-19=-234/2354, 18-19=-234/2354, 17-18=-234/2354, 15-17=-181/1823, 13-15=-54/1253, 11-13=-193/1755
WEBS 5-17=-556/158, 6-17=-55/687, 6-15=-613/201, 7-15=-87/921, 7-13=-144/721, 9-13=-428/221, 4-18=-580/111, 3-19=0/364

- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-12, Interior (1) 2-1-12 to 14-9-10, Exterior(2R) 14-9-10 to 21-2-6, Interior (1) 21-2-6 to 29-8-2, Exterior(2E) 29-8-2 to 32-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 842 lb uplift at joint 19.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at joint 11. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



February 22, 2024

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MIL-7473 rev. 1/2/2023 BEFORE USE
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcacompoments.com)

ENGINEERING BY
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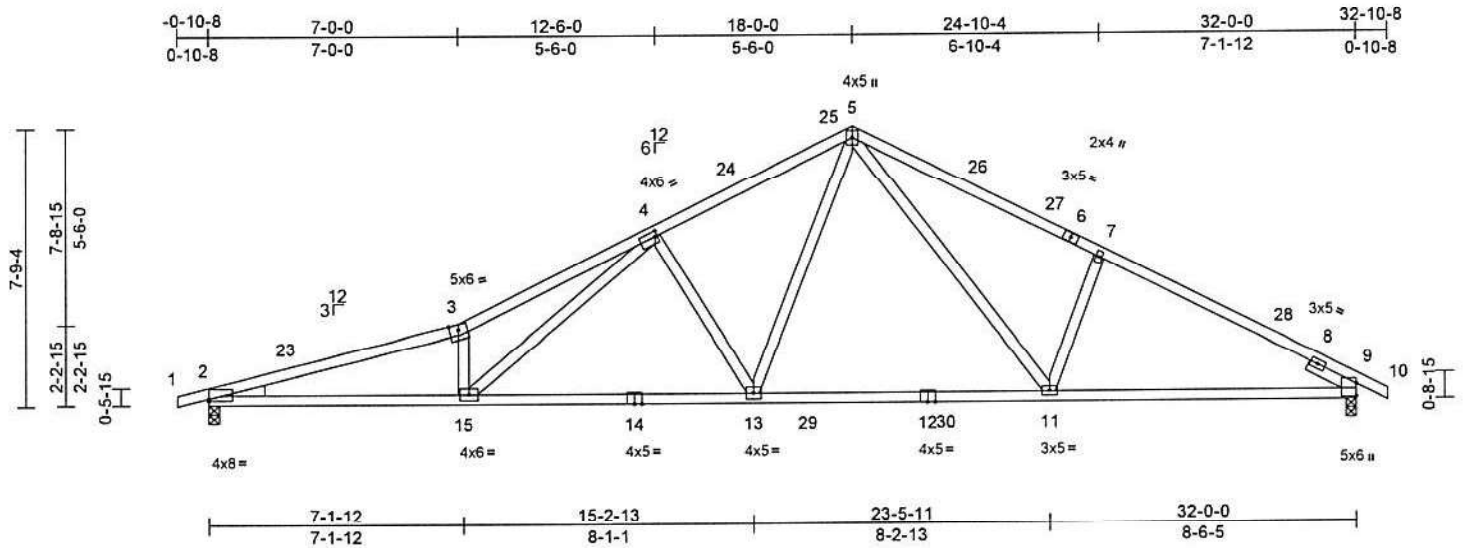
818 Soundside Road
Edenton, NC 27932

Job 24110078	Truss B02	Truss Type Roof Special	Qty 3	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763041
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:31
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Page: 1



Scale = 1:62.1

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.97	Vert(LL)	-0.31	13-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.59	13-15	>647	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.84	Horz(CT)	0.10	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 158 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1 *Except* 5-6:2x4 SP 2400F 2.0E
BOT CHORD 2x4 SP 2400F 2.0E *Except* 14-12:2x4 SP No.1
WEBS 2x4 SP No.3
WEDGE Left: 2x4 SP No.3
SLIDER Right 2x4 SP No.3 -- 1-6-0
BRACING
TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
REACTIONS (size) 2=0-3-8, 9=0-3-8
Max Horiz 2=120 (LC 14)
Max Uplift 2=158 (LC 14), 9=126 (LC 15)
Max Grav 2=1440 (LC 5), 9=1437 (LC 3)
FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=4112/594, 3-4=4335/701,
4-5=2216/441, 5-7=-2187/458,
7-9=-2289/397, 9-10=0/23
BOT CHORD 2-15=-496/3938, 13-15=-262/2335,
11-13=-90/1494, 9-11=-230/1978
WEBS 3-15=-1150/282, 4-15=-282/2022,
4-13=-916/252, 5-13=-131/1205,
5-11=-147/732, 7-11=-429/227

- Wind: ASCE 7-16; Vult=130mph (3-second gust)
Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft;
Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-3-14, Interior (1) 2-3-14 to 14-9-10, Exterior(2R) 14-9-10 to 21-2-6, Interior (1) 21-2-6 to 29-8-2, Exterior(2E) 29-8-2 to 32-10-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 9. This connection is for uplift only and does not consider lateral forces.
- This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

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



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEK REFERENCE PAGE MI-7473 rev. 1/2/2023 BEFORE USE.
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpiinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcacomponents.com)

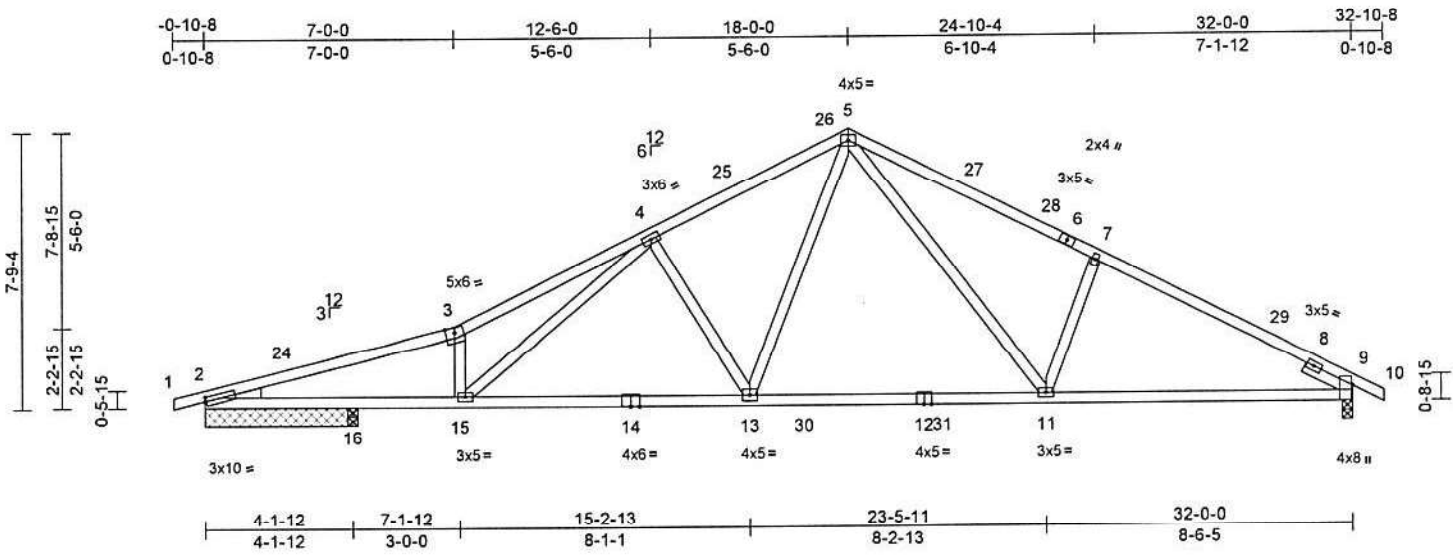
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	0 Rainbow-Roof-Nicolas - GRH	163763042
24110078	B03	Roof Special	1	1	Job Reference (optional)	

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

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:33
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Page: 1



Scale = 1:62.1

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	-0.33	13-15	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.65	13-15	>518	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.09	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 158 lb	FT = 20%

LUMBER
 TOP CHORD 2x4 SP 2400F 2.0E *Except* 3-5,6-10:2x4 SP No.2
 BOT CHORD 2x4 SP 2400F 2.0E *Except* 14-12:2x4 SP No.1
 WEBS 2x4 SP No.3
 WEDGE Left: 2x4 SP No.3
 SLIDER Right 2x4 SP No.3 -- 1-6-0
BRACING
 TOP CHORD Structural wood sheathing directly applied.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
 2-2-0 oc bracing: 13-15.
REACTIONS (size) 2=4-3-8, 9=0-3-8, 16=0-3-8
 Max Horiz 2=120 (LC 14)
 Max Uplift 2=118 (LC 14), 9=127 (LC 15), 16=46 (LC 14)
 Max Grav 2=1036 (LC 5), 9=1378 (LC 3), 16=465 (LC 5)
FORCES (lb) - Maximum Compression/Maximum Tension
 TOP CHORD 1-2=0/17, 2-3=3221/482, 3-4=3380/581, 4-5=2039/419, 5-7=2071/442, 7-9=2166/381, 9-10=0/23
 BOT CHORD 2-16=387/3067, 15-16=387/3067, 13-15=230/2077, 11-13=76/1384, 9-11=216/1874
 WEBS 3-15=916/252, 4-15=183/1236, 4-13=741/229, 5-13=113/1065, 5-11=147/731, 7-11=433/226

- 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 2-3-14, Interior (1) 2-3-14 to 14-9-10, Exterior(2R) 14-9-10 to 21-2-6, Interior (1) 21-2-6 to 29-8-2, Exterior(2E) 29-8-2 to 32-10-8 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
- Unbalanced snow loads have been considered for this design.
- This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
- This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
- One RTBA 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.
- One H2.5A Simpson Strong-Tie 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.
- H10A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 16. This connection is for uplift only and does not consider lateral forces.

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



February 22, 2024

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

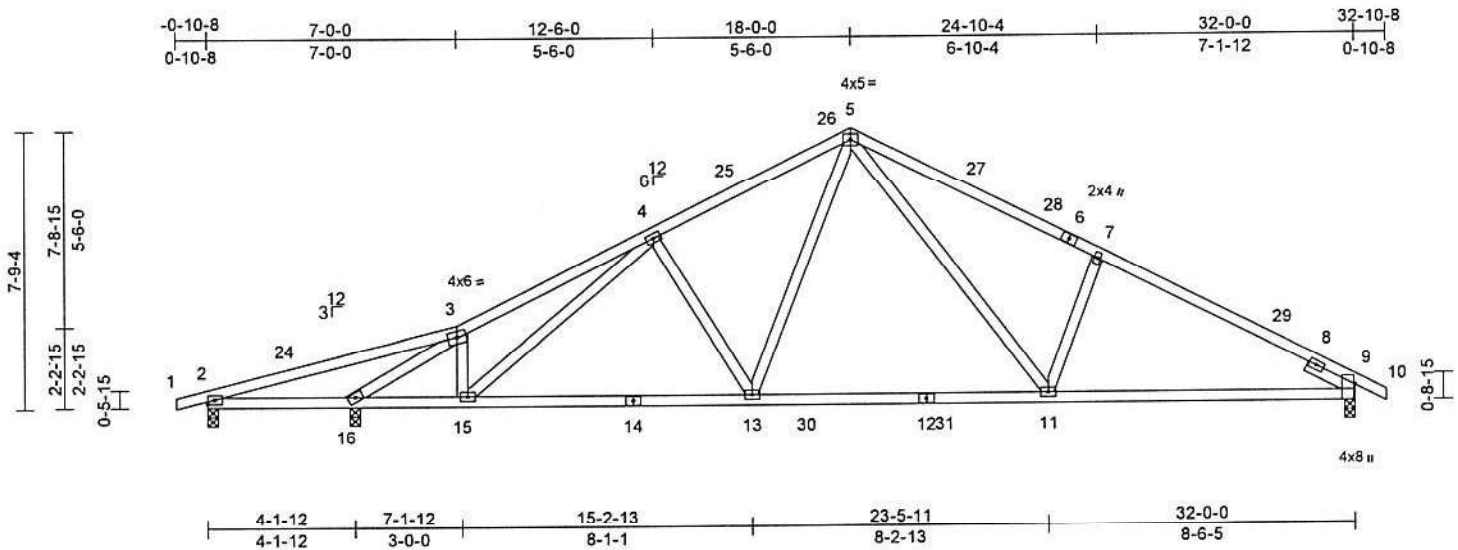
ENGINEERING BY
TRENCO
 A MiTek Affiliate
 818 Soundside Road
 Edenton, NC 27932

Job 24110078	Truss B04	Truss Type Roof Special	Qty 2	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763043
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Carter Components (Sanford, NC), Sanford, NC - 27332.

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:34
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Page: 1



Scale = 1:62.1

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	-0.22	11-13	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	Vert(CT)	-0.36	11-13	>945	180		
TCDL	10.0	Rep Stress Incr	YES	WB	Horz(CT)	0.07	9	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH							
BCDL	10.0									Weight: 162 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2 *Except* 5-6:2x4 SP No.1
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3
SLIDER Right 2x4 SP No.3 -- 1-6-0

BRACING
TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

REACTIONS
(size) 2=0-3-8, 9=0-3-8, 16=0-3-8
Max Horiz 2=120 (LC 14)
Max Uplift 2=-123 (LC 10), 9=-126 (LC 15), 16=-130 (LC 14)
Max Grav 2=259 (LC 39), 9=1256 (LC 6), 16=1571 (LC 5)

FORCES
(lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/17, 2-3=-102/622, 3-4=-1810/381, 4-5=-1617/364, 5-7=-1849/412, 7-9=-1942/350, 9-10=0/23
BOT CHORD 2-16=-577/97, 15-16=-224/1564, 13-15=-160/1536, 11-13=-44/1136, 9-11=-189/1677
WEBS 3-16=-2433/318, 3-15=-134/185, 4-15=-109/291, 4-13=-441/205, 5-13=-84/707, 5-11=-149/766, 7-11=-441/228

- 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 2-3-14, Interior (1) 2-3-14 to 14-9-10, Exterior(2R) 14-9-10 to 21-2-6, Interior (1) 21-2-6 to 29-8-2, Exterior(2E) 29-8-2 to 32-10-8 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
 - TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
 - Unbalanced snow loads have been considered for this design.
 - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
 - All plates are 3x5 MT20 unless otherwise indicated.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
 - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at j(s) 2, 9, and 16. This connection is for uplift only and does not consider lateral forces.
 - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S) Standard

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



WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEK REFERENCE PAGE MI-7473 rev. 1/2/2023 BEFORE USE.
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinstitute.com) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbccomponents.com)

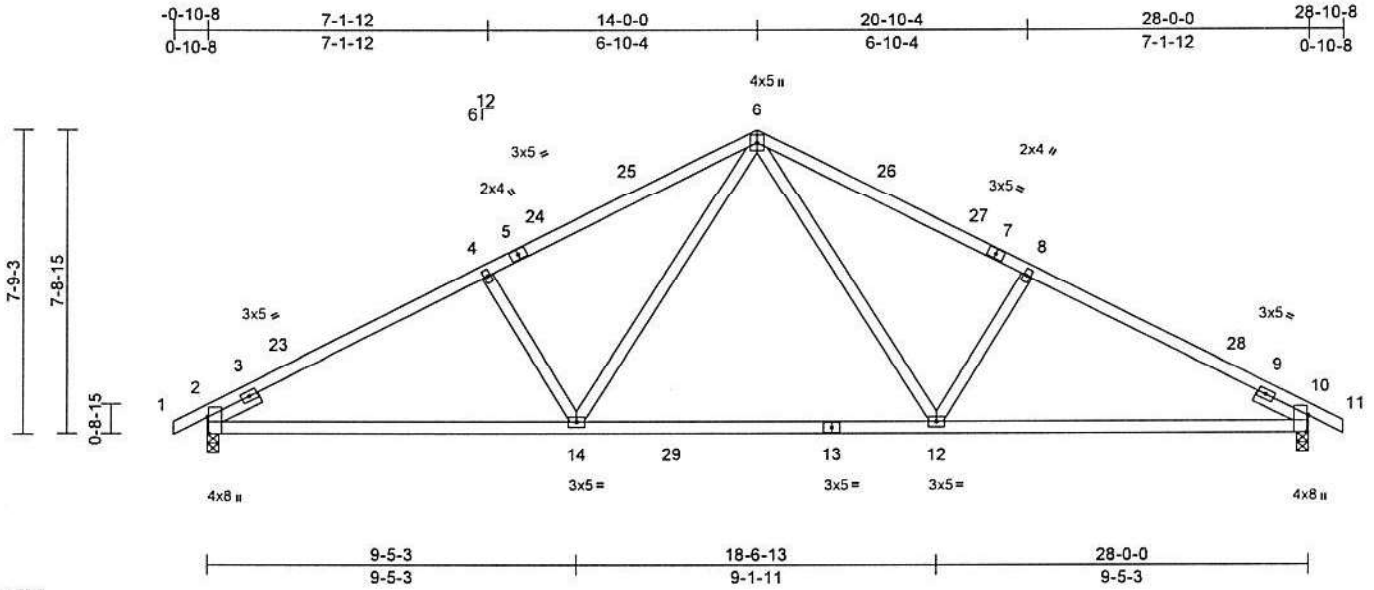
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job 24110078	Truss A03	Truss Type Common	Qty 5	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763045
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8.63 S Nov 1 2023 Print: 8.63 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:30
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Page: 1



Scale = 1:56.6

Plate Offsets (X, Y): [2:0-5-0,Edge], [10:0-5-0,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	0.98	Vert(LL)	-0.29	12-14	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.74	Vert(CT)	-0.45	12-14	>744	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.31	Horz(CT)	0.07	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 134 lb	FT = 20%

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

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

REACTIONS (size) 2=0-3-8, 10=0-3-8
Max Horiz 2=-118 (LC 15)
Max Uplift 2=-124 (LC 14), 10=-124 (LC 15)
Max Grav 2=1276 (LC 5), 10=1275 (LC 6)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/23, 2-4=-1972/248, 4-6=-1813/273, 6-8=-1812/273, 8-10=-1971/248, 10-11=0/23
BOT CHORD 2-14=-236/1705, 12-14=-29/1160, 10-12=-139/1704
WEBS 6-12=-101/753, 8-12=-437/224, 6-14=-101/755, 4-14=-437/224

- TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pf=20.0 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Fully Exp.; Ce=0.9; Cs=1.00; Ct=1.10
 - Unbalanced snow loads have been considered for this design.
 - This truss has been designed for greater of min roof live load of 12.0 psf or 1.00 times flat roof load of 20.0 psf on overhangs non-concurrent with other live loads.
 - This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
 - * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
 - One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. This connection is for uplift only and does not consider lateral forces.
 - This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
- LOAD CASE(S)** Standard

NOTES

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCCL=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 11-0-0, Exterior(2R) 11-0-0 to 17-0-0, Interior (1) 17-0-0 to 25-10-8, Exterior(2E) 25-10-8 to 28-10-8 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



February 22, 2024

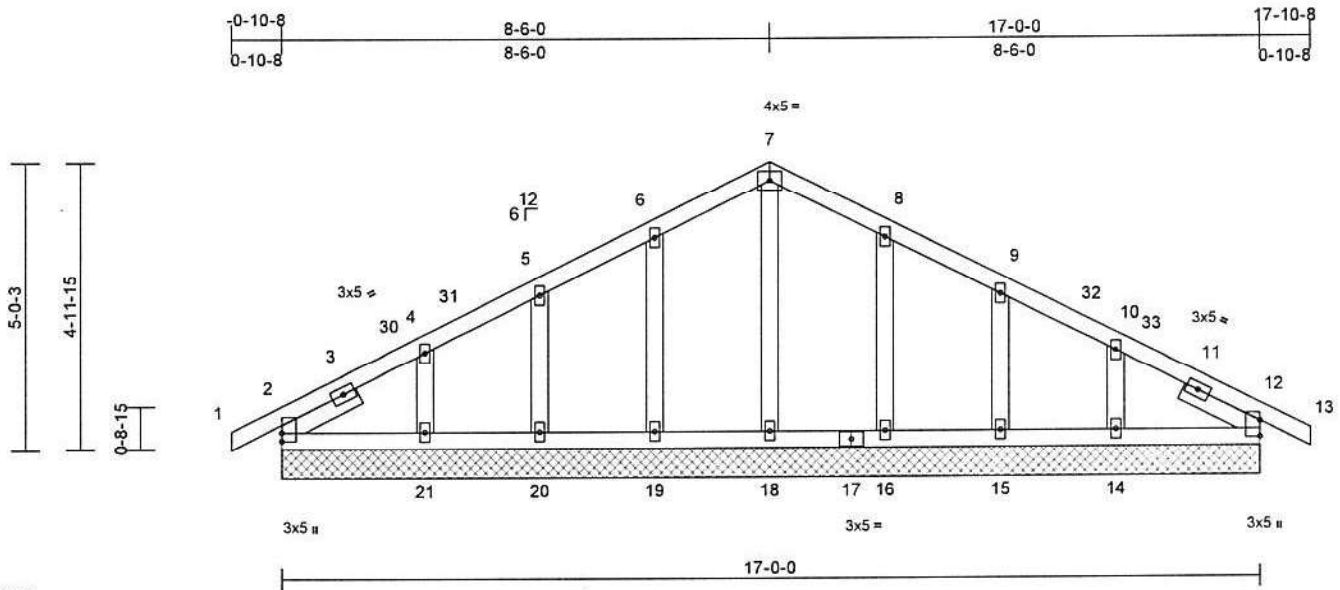
<p>WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MH-7473 rev. 1/2/2023 BEFORE USE. Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcacompnents.com)</p>	<p>ENGINEERING BY TRENCO <small>A MiTek Affiliate</small></p> <p>818 Soundside Road Edenton, NC 27932</p>
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Job 24110078	Truss C02	Truss Type Common Supported Gable	Qty 1	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763046
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Carter Components (Sanford, NC), Sanford, NC - 27332,

Run: 8:63 S Nov 1 2023 Print: 8:63 S Nov 1 2023 MiTek Industries, Inc. Wed Feb 21 08:29:37
ID: www.Wnj490ComjrhUv01XzIagW-RIC?PsB70Hq3NSgPqnL8w3uITxbGKwCDoI7J4zJC?F

Page: 1



Scale = 1:38.7

Loading	(psf)	Spacing	1-11-4	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.07	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0										Weight: 90 lb	FT = 20%

LUMBER

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

BRACING

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

REACTIONS

(size)	2=17-0-0, 12=17-0-0, 14=17-0-0, 15=17-0-0, 16=17-0-0, 18=17-0-0, 19=17-0-0, 20=17-0-0, 21=17-0-0, 22=17-0-0, 26=17-0-0
Max Horiz	2=72 (LC 14), 22=72 (LC 14)
Max Uplift	2=-20 (LC 15), 12=-8 (LC 15), 14=-66 (LC 15), 15=-36 (LC 15), 16=-46 (LC 15), 19=-47 (LC 14), 20=-33 (LC 14), 21=-72 (LC 14), 22=-20 (LC 15), 26=-8 (LC 15)
Max Grav	2=163 (LC 1), 12=163 (LC 1), 14=195 (LC 22), 15=213 (LC 22), 16=239 (LC 22), 18=126 (LC 27), 19=239 (LC 21), 20=213 (LC 21), 21=195 (LC 21), 22=163 (LC 1), 26=163 (LC 1)

FORCES

(lb) - Maximum Compression/Maximum Tension	
TOP CHORD	1-2=0/23, 2-4=-61/46, 4-5=-65/74, 5-6=-70/122, 6-7=-77/173, 7-8=-77/173, 8-9=-70/122, 9-10=-63/74, 10-12=-45/19, 12-13=0/23
BOT CHORD	2-21=0/60, 20-21=0/60, 19-20=0/60, 18-19=0/60, 16-18=0/60, 15-16=0/60, 14-15=0/60, 12-14=0/60
WEBS	7-18=-87/7, 6-19=-200/92, 5-20=-179/84, 4-21=-143/116, 8-16=-200/92, 9-15=-179/84, 10-14=-143/116

NOTES

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -0-10-8 to 2-1-8, Exterior(2N) 2-1-8 to 5-6-0, Corner(3R) 5-6-0 to 11-6-0, Exterior(2N) 11-6-0 to 14-10-8, Corner(3E) 14-10-8 to 17-10-8 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) 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 20 lb uplift at joint 2, 8 lb uplift at joint 12, 47 lb uplift at joint 19, 33 lb uplift at joint 20, 72 lb uplift at joint 21, 46 lb uplift at joint 16, 36 lb uplift at joint 15, 66 lb uplift at joint 14, 20 lb uplift at joint 2 and 8 lb uplift at joint 12.
- 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



February 22, 2024

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

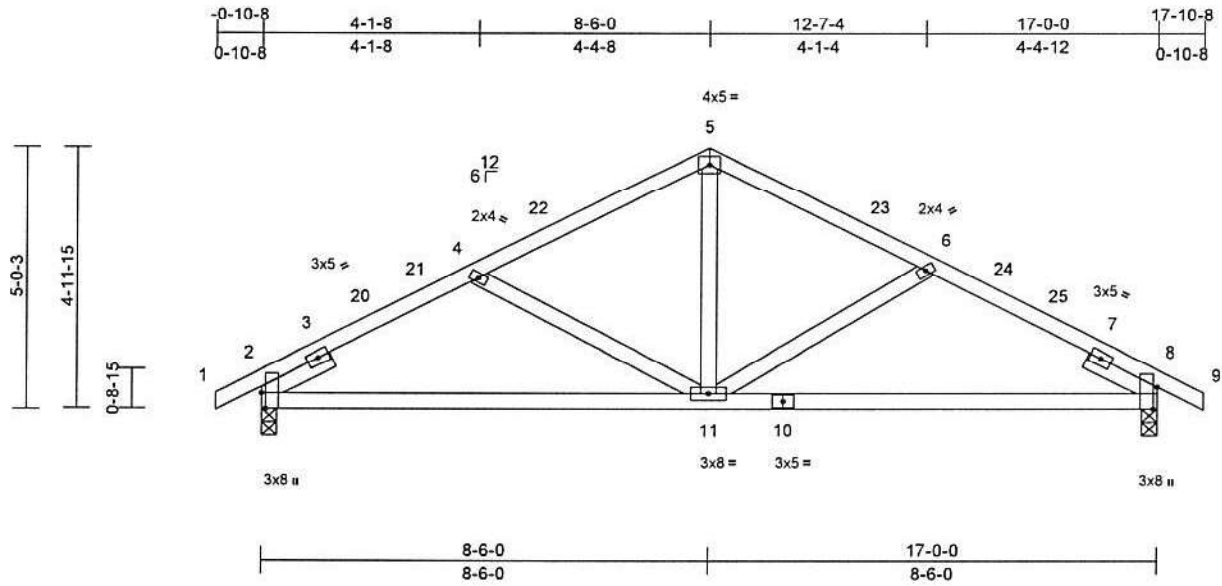
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job 24110078	Truss C01	Truss Type Common	Qty 2	Ply 1	0 Rainbow-Roof-Nicolas - GRH Job Reference (optional)	163763047
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Carter Components (Sanford, NC), Sanford, NC - 27332,

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Page: 1



Scale = 1:42.3

Plate Offsets (X, Y): [2:0-3-8,Edge], [8:0-5-0,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	0.45	Vert(LL)	-0.07	11-18	>999	240	MT20	244/190
Snow (Pf)	20.0	Lumber DOL	1.15	BC	0.58	Vert(CT)	-0.14	11-18	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.03	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-MSH								
BCDL	10.0											
											Weight: 82 lb	FT = 20%

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

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

REACTIONS (size) 2=0-3-8, 8=0-3-8
Max Horiz 2=74 (LC 15)
Max Uplift 2=81 (LC 14), 8=81 (LC 15)
Max Grav 2=798 (LC 21), 8=798 (LC 22)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/23, 2-4=-1128/278, 4-5=-833/218, 5-6=-826/220, 6-8=-1114/274, 8-9=0/23
BOT CHORD 2-11=-161/970, 8-11=-154/954
WEBS 5-11=-33/432, 6-11=-348/143, 4-11=-355/147

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 8. This connection is for uplift only and does not consider lateral forces.

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

LOAD CASE(S) Standard

NOTES

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

2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -0-10-8 to 2-1-8, Interior (1) 2-1-8 to 5-6-0, Exterior(2R) 5-6-0 to 11-6-0, Interior (1) 11-6-0 to 14-10-8, Exterior(2E) 14-10-8 to 17-10-8 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



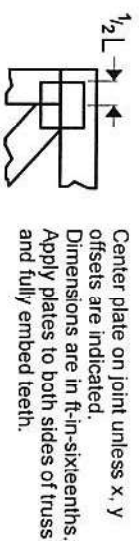
February 22, 2024

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MIL-7473 rev. 1/2/2023 BEFORE USE. Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSI/TPI1 Quality Criteria and DSB-22 available from Truss Plate Institute (www.tpinst.org) and BCSI Building Component Safety Information available from the Structural Building Component Association (www.sbcacomponents.com)

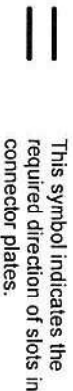
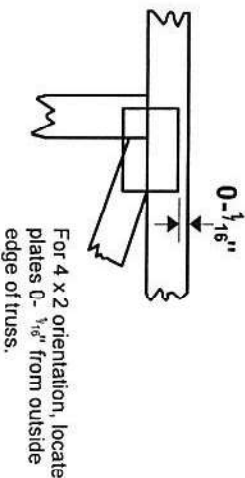
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Symbols

PLATE LOCATION AND ORIENTATION



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



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

PLATE SIZE

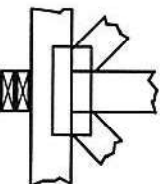
4 X 4
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



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

BEARING



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

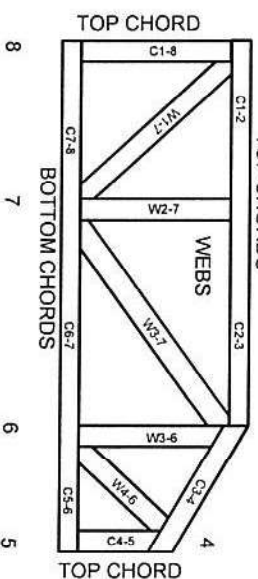
Industry Standards:

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

Numbering System



1 Joint ID
3 b.p.



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

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

Product Code Approvals

ICC-ES Reports:

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

Design General Notes

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

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

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MITek

ENGINEERING BY
TRENGO
A MITek Affiliate

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

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

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