ENGINEERING BY
TRENCO
A MiTek Affiliate

Trenco
818 Soundside Rd
Edenton, NC 27932

Re: Wilmington C Vault
Wilmington C Vault

The truss drawing(s) referenced below have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by 84 Components - #2383.

Pages or sheets covered by this seal: I58614523 thru I58614530

My license renewal date for the state of North Carolina is December 31, 2023.

North Carolina COA: C-0844

May 30,2023

Johnson, Andrew

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

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	A	Common	6	1	I58614523
					Job Reference (optional)

84 Components (Dunn, NC), Dunn, NC - 28334,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Tue May 30 06:03:19

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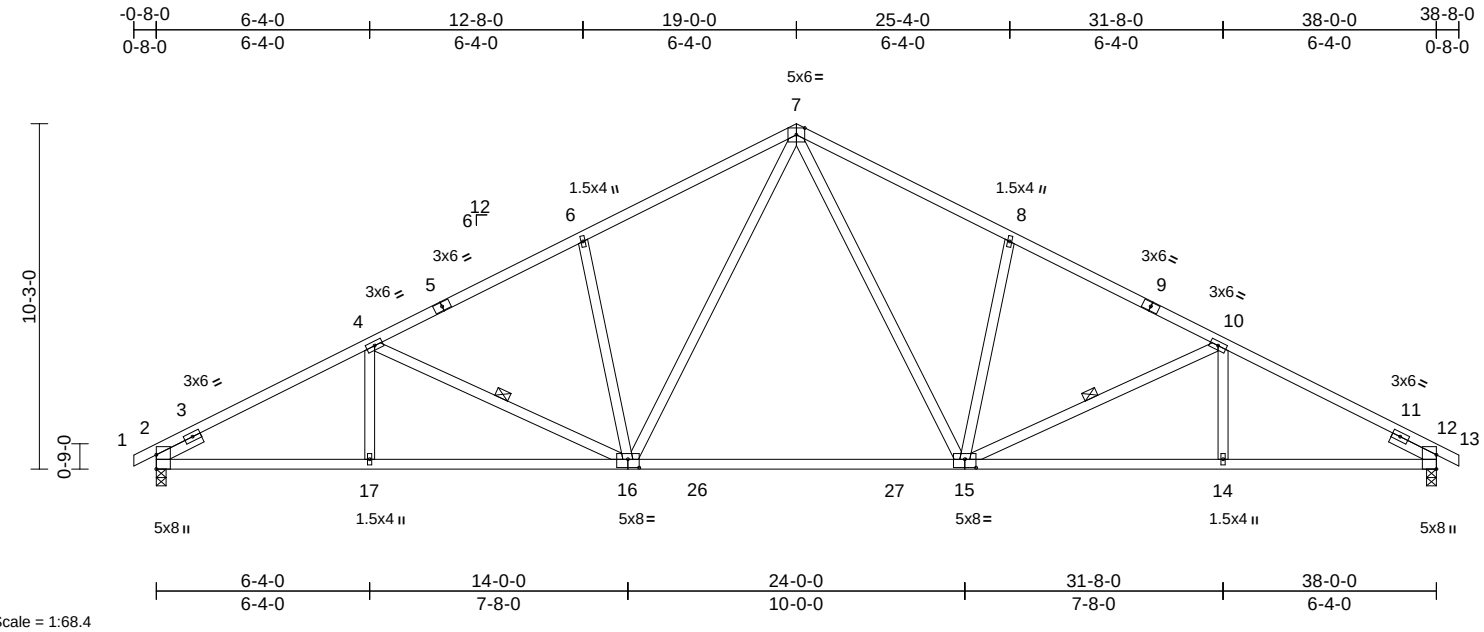
Page: 1



Scale = 1:68.4

Plate Offsets (X, Y): [12:0-0-0,0-0-0], [15:0-4-0,0-3-0], [16:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.96	Vert(LL)	-0.42	15-16	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	1.00	Vert(CT)	-0.71	15-16	>639	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.53	Horz(CT)	0.13	12	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 213 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-5,9-13:2x4 SP No.1
BOT CHORD	2x4 SP No.1
WEBS	2x4 SP No.2 *Except* 4-17,14-10:2x4 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 2-2-0 oc bracing.
WEBS	1 Row at midpt 4-16, 10-15

REACTIONS (size) 2=0-3-8, 12=0-3-8
Max Horiz 2=164 (LC 12)
Max Uplift 2=-191 (LC 12), 12=-191 (LC 13)
Max Grav 2=1560 (LC 1), 12=1560 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/18, 2-4=-2585/630, 4-6=-2203/598, 6-7=-2139/700, 7-8=-2139/700, 8-10=-2203/598, 10-12=-2585/630, 12-13=0/18
BOT CHORD	2-17=-460/2227, 14-17=-461/2227, 12-14=-461/2227
WEBS	7-16=-244/856, 7-15=-244/856, 4-17=0/197, 4-16=-393/170, 6-16=-404/262, 8-15=-404/262, 10-15=-393/170, 10-14=0/196

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
4) * 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.
5) All bearings are assumed to be SP No.1 crushing capacity of 565 psi.
6) 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.
7) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

May 30,2023

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

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Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	A1	Common	6	1	I58614524
					Job Reference (optional)

84 Components (Dunn, NC), Dunn, NC - 28334,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Tue May 30 06:03:22

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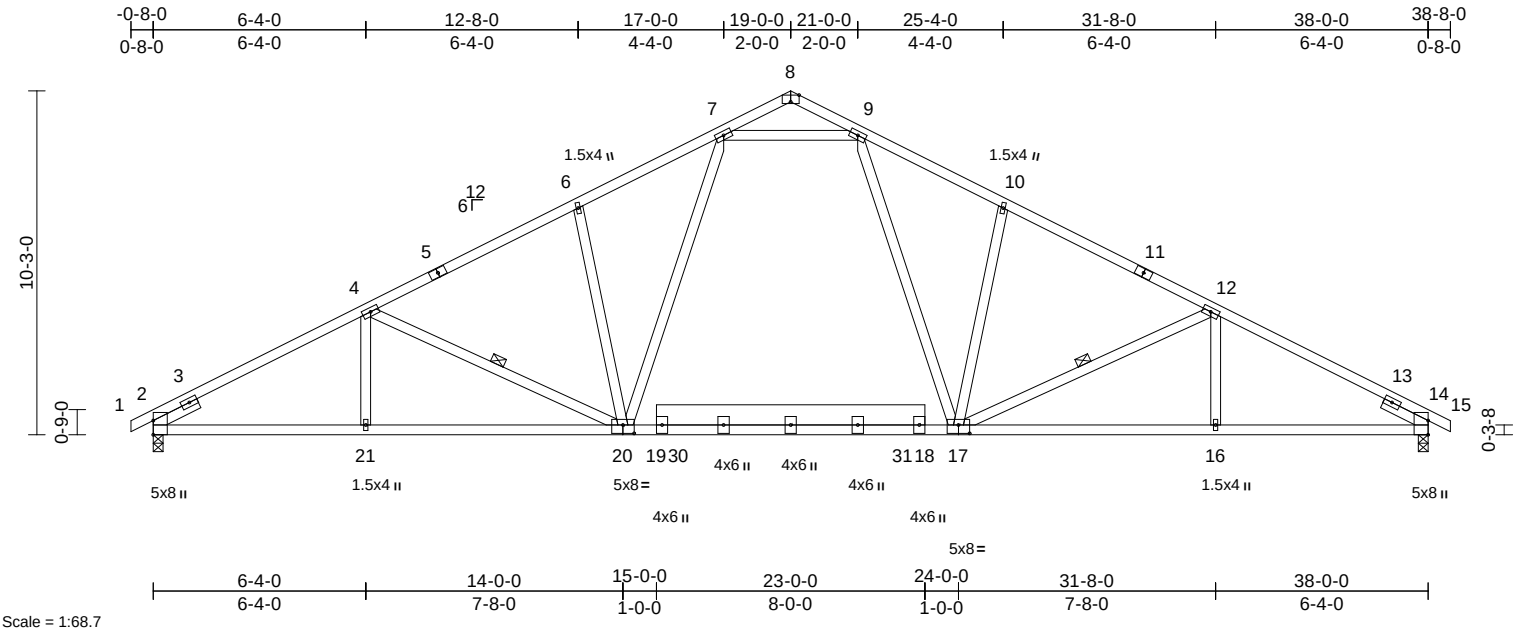


Scale = 1:68.7

Plate Offsets (X, Y): [8:0-3-0,Edge], [17:0-4-0,0-3-0], [20:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.88	Vert(LL)	-0.34	20-21	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.98	Vert(CT)	-0.52	20-21	>872	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.58	Horz(CT)	0.11	14	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 238 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-5,11-15:2x4 SP No.1
BOT CHORD	2x4 SP DSS *Except* 20-17:2x4 SP No.2, 19-18:2x8 SP DSS
WEBS	2x4 SP No.2 *Except* 4-21,16-12,7-9:2x4 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, Except: 2-2-0 oc bracing: 17-20.
WEBS	1 Row at midpt 4-20, 12-17

REACTIONS (size) 2=0-3-8, 14=0-3-8
Max Horiz 2=164 (LC 12)
Max Uplift 2=-191 (LC 12), 14=-191 (LC 13)
Max Grav 2=1560 (LC 1), 14=1560 (LC 1)

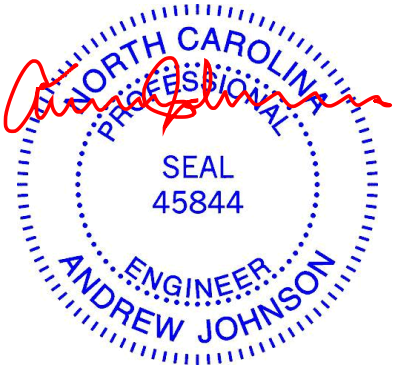
FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=0/18, 2-4=-2589/629, 4-6=-2191/599, 6-7=-2112/680, 7-8=-160/70, 8-9=-160/70, 9-10=-2112/680, 10-12=-2191/599, 12-14=-2589/629, 14-15=0/18
BOT CHORD	2-21=-461/2234, 16-21=-462/2234, 14-16=-462/2234
WEBS	7-20=-196/806, 9-17=-196/806, 4-21=0/214, 4-20=-429/173, 6-20=-434/240, 10-17=-434/240, 12-17=-429/173, 12-16=0/214, 7-9=-1481/558

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) All plates are 3x6 MT20 unless otherwise indicated.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) All bearings are assumed to be SP DSS crushing capacity of 660 psi.
7) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 14. This connection is for uplift only and does not consider lateral forces.
8) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
9) ATTIC SPACE SHOWN IS DESIGNED AS UNINHABITABLE.

LOAD CASE(S) Standard



May 30,2023

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

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Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	A2	Roof Special	8	1	I58614525 Job Reference (optional)

84 Components (Dunn, NC), Dunn, NC - 28334,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Tue May 30 06:03:22 Page: 1
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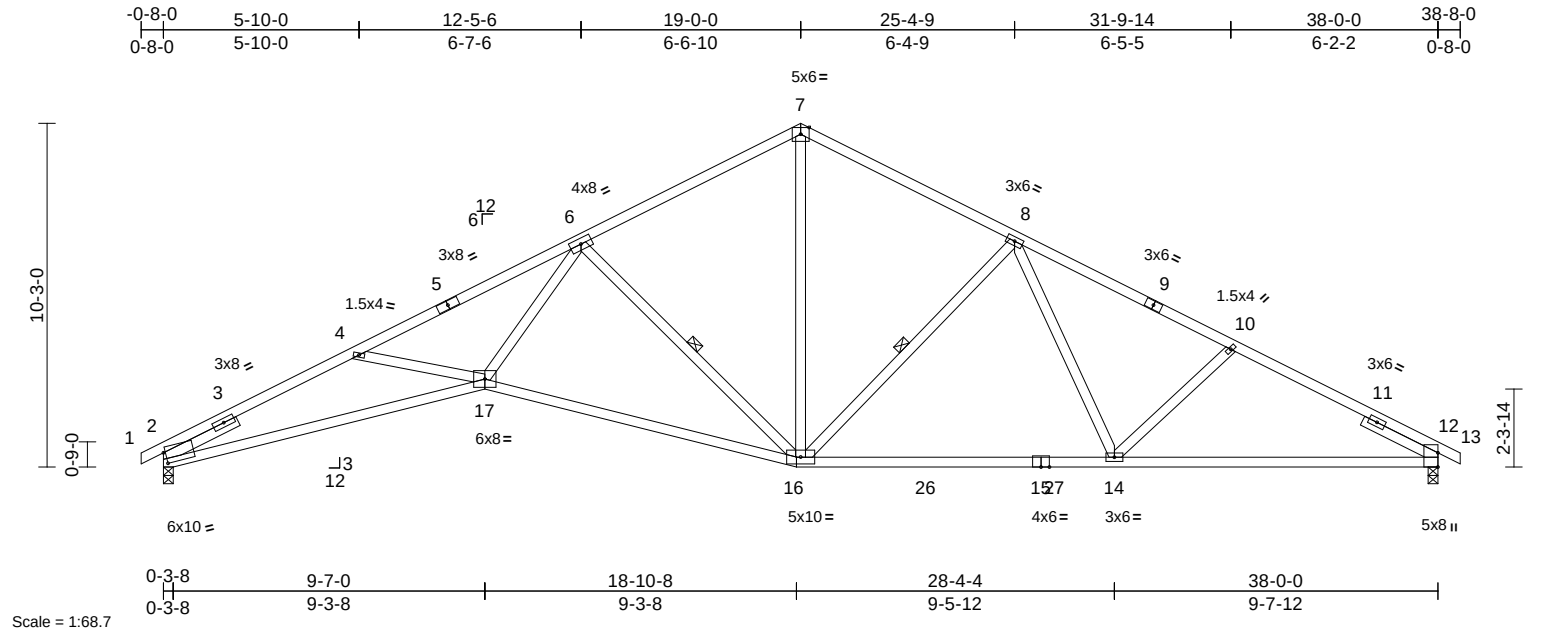

Scale = 1:68.7

Plate Offsets (X, Y): [2:0-0-11,0-4-1]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.98	Vert(LL)	-0.43	14-16	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.86	16-17	>533	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.84	Horz(CT)	0.33	12	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 203 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP DSS
BOT CHORD 2x4 SP No.1 *Except* 2-17:2x4 SP DSS
WEBS 2x4 SP No.2 *Except* 4-17,6-17,10-14:2x4 SP No.3
SLIDER Left 2x4 SP No.3 -- 2-6-0, Right 2x4 SP No.3 -- 2-6-0

BRACING
TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied or 7-2-7 oc bracing.
WEBS 1 Row at midpt 6-16, 8-16

REACTIONS (size) 2=0-3-8, 12=0-3-8
Max Horiz 2=164 (LC 12)
Max Uplift 2=-191 (LC 12), 12=-191 (LC 13)
Max Grav 2=1560 (LC 1), 12=1560 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/18, 2-4=-4281/1058, 4-6=-4144/929, 6-7=-1758/568, 7-8=-1735/563, 8-10=-2367/629, 10-12=-2568/661, 12-13=0/18
BOT CHORD 2-17=-864/3817, 16-17=-482/2645, 14-16=-333/1923, 12-14=-487/2229
WEBS 7-16=-321/1146, 4-17=-110/222, 6-17=-299/2031, 6-16=-1543/459, 8-16=-679/289, 8-14=-18/457, 10-14=-249/204

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
4) * 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.
5) Bearings are assumed to be: Joint 2 SP DSS crushing capacity of 660 psi, Joint 12 SP No.1 crushing capacity of 565 psi.
6) 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.
7) 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.
8) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

May 30,2023

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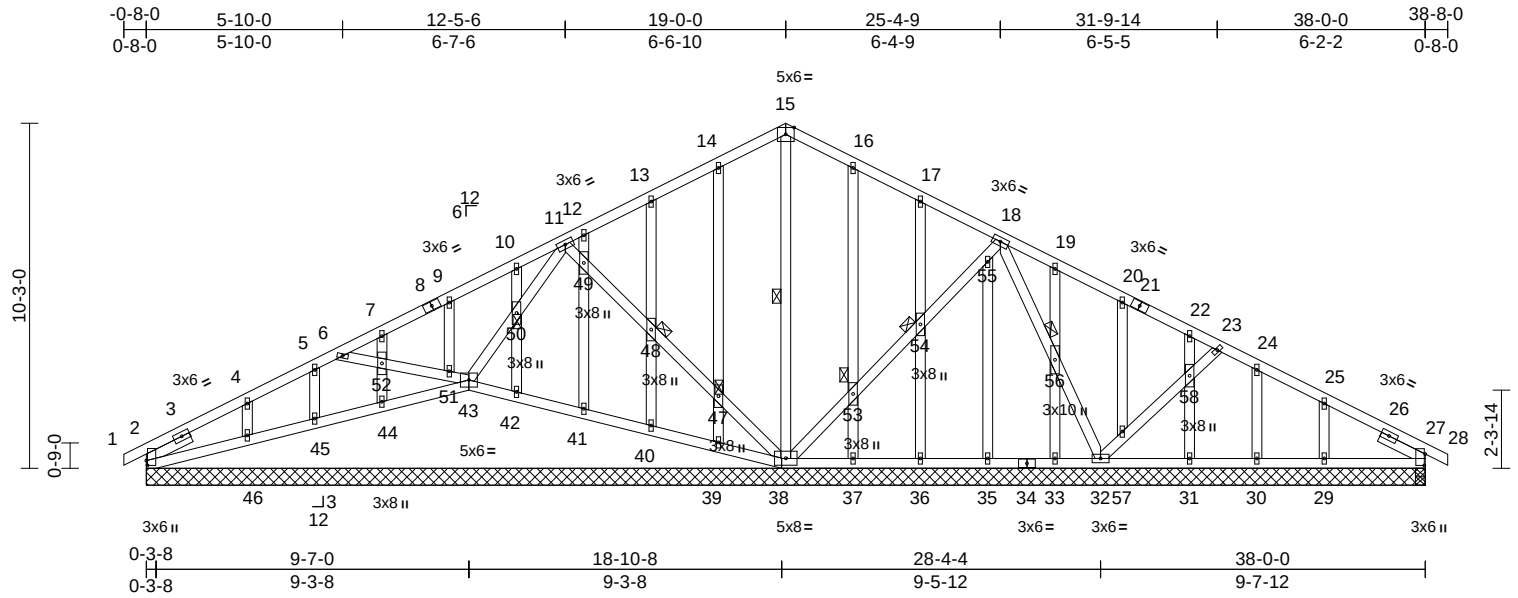
ENGINEERING BY TRENCO A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	A2E	Roof Special Supported Gable	1	1	I58614526
					Job Reference (optional)



Scale = 1:68.5

Plate Offsets (X, Y): [2:0-1-11,0-0-6], [27:0-4-1,0-0-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.08	Vert(LL)	0.00	46-61	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	0.00	29-65	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.19	Horz(CT)	0.01	27	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 304 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.2 *Except* 6-43,11-43,23-32:2x4 SP No.3
OTHERS	2x4 SP No.3 *Except* 47-14,53-16:2x4 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 15-38
JOINTS	1 Brace at Jt(s): 47, 48, 50, 53, 54, 56

REACTIONS (size) 2=38-0-0, 27=38-0-0, 29=38-0-0, 30=38-0-0, 31=38-0-0, 32=38-0-0, 33=38-0-0, 35=38-0-0, 36=38-0-0, 37=38-0-0, 38=38-0-0, 39=38-0-0, 40=38-0-0, 41=38-0-0, 42=38-0-0, 43=38-0-0, 44=38-0-0, 45=38-0-0, 46=38-0-0, 59=38-0-0, 63=38-0-0
Max Horiz 2=164 (LC 12), 59=164 (LC 12)
Max Uplift 2=-72 (LC 13), 27=-7 (LC 13), 29=-96 (LC 13), 31=-34 (LC 13), 32=-14 (LC 13), 33=-50 (LC 13), 36=-61 (LC 13), 37=-46 (LC 13), 38=-11 (LC 13), 39=-43 (LC 12), 40=-57 (LC 12), 41=-16 (LC 12), 42=-44 (LC 12), 43=-16 (LC 12), 44=-45 (LC 12), 46=-104 (LC 12), 59=-72 (LC 13), 63=-7 (LC 13)
Max Grav 2=173 (LC 1), 27=179 (LC 1), 29=233 (LC 24), 30=91 (LC 1), 31=203 (LC 1), 32=195 (LC 1), 33=150 (LC 1), 35=98 (LC 3), 36=166 (LC 24), 37=173 (LC 24), 38=164 (LC 1), 39=167 (LC 23), 40=163 (LC 23), 41=129 (LC 1), 42=155 (LC 1), 43=185 (LC 1), 44=208 (LC 1), 45=85 (LC 1), 46=226 (LC 23), 59=173 (LC 1), 63=179 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension

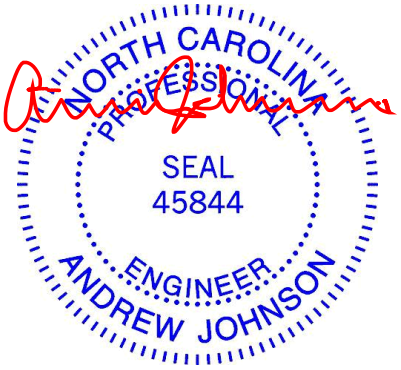
TOP CHORD 1-2=0/18, 2-4=-90/86, 4-5=-106/110, 5-6=-79/113, 6-7=-64/74, 7-9=-47/94, 9-10=-44/119, 10-11=-58/143, 11-12=-38/127, 12-13=-52/133, 13-14=-71/167, 14-15=-87/212, 15-16=-87/210, 16-17=-71/166, 17-18=-54/114, 18-19=-76/167, 19-20=-58/123, 20-22=-53/79, 22-23=-32/48, 23-24=-68/65, 24-25=-93/50, 25-27=-68/0, 27-28=0/18

BOT CHORD 2-46=-89/147, 45-46=-84/141, 44-45=-85/144, 43-44=-86/143, 42-43=-49/184, 41-42=-51/185, 40-41=-50/185, 39-40=-50/185, 38-39=-50/185, 37-38=-29/150, 36-37=-29/150, 35-36=-29/150, 33-35=-29/150, 32-33=-29/150, 31-32=0/74, 30-31=0/74, 29-30=0/74, 27-29=-3/74

WEBS 15-38=-132/2, 6-52=-77/122, 51-52=-73/118, 43-51=-99/146, 43-50=-64/5, 11-50=-64/5, 11-49=-34/82, 48-49=-32/79, 47-48=-32/77, 38-47=-33/80, 38-53=-53/100, 53-54=-55/103, 54-55=-54/105, 18-55=-70/116, 18-56=-77/1, 32-56=-77/0, 32-57=-98/116, 57-58=-36/62, 23-58=-57/81, 14-47=-127/76, 39-47=-127/72, 13-48=-123/93, 40-48=-123/95, 12-49=-88/34, 41-49=-87/41, 10-50=-123/68, 42-50=-122/66, 9-51=-107/82, 7-52=-118/64, 44-52=-154/83, 5-45=-57/1, 4-46=-160/117, 16-53=-124/76, 37-53=-128/81, 17-54=-135/92, 36-54=-128/95, 35-55=-36/15, 19-56=-123/78, 33-56=-122/77, 20-57=-99/74, 22-58=-105/46, 31-58=-151/74, 24-30=-64/19, 25-29=-165/124

NOTES

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



May 30,2023

Continued on page 2

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2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;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) All plates are 1.5x4 MT20 unless otherwise indicated.
5) Gable studs spaced at 2-0-0 oc.
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) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 72 lb uplift at joint 2, 16 lb uplift at joint 43, 7 lb uplift at joint 27, 11 lb uplift at joint 38, 14 lb uplift at joint 32, 43 lb uplift at joint 39, 57 lb uplift at joint 40, 16 lb uplift at joint 41, 44 lb uplift at joint 42, 45 lb uplift at joint 44, 104 lb uplift at joint 46, 46 lb uplift at joint 37, 61 lb uplift at joint 36, 50 lb uplift at joint 33, 34 lb uplift at joint 31, 96 lb uplift at joint 29, 72 lb uplift at joint 2 and 7 lb uplift at joint 27.
10) This truss is designed in accordance with the 2015 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. 5/19/2020 BEFORE USE.
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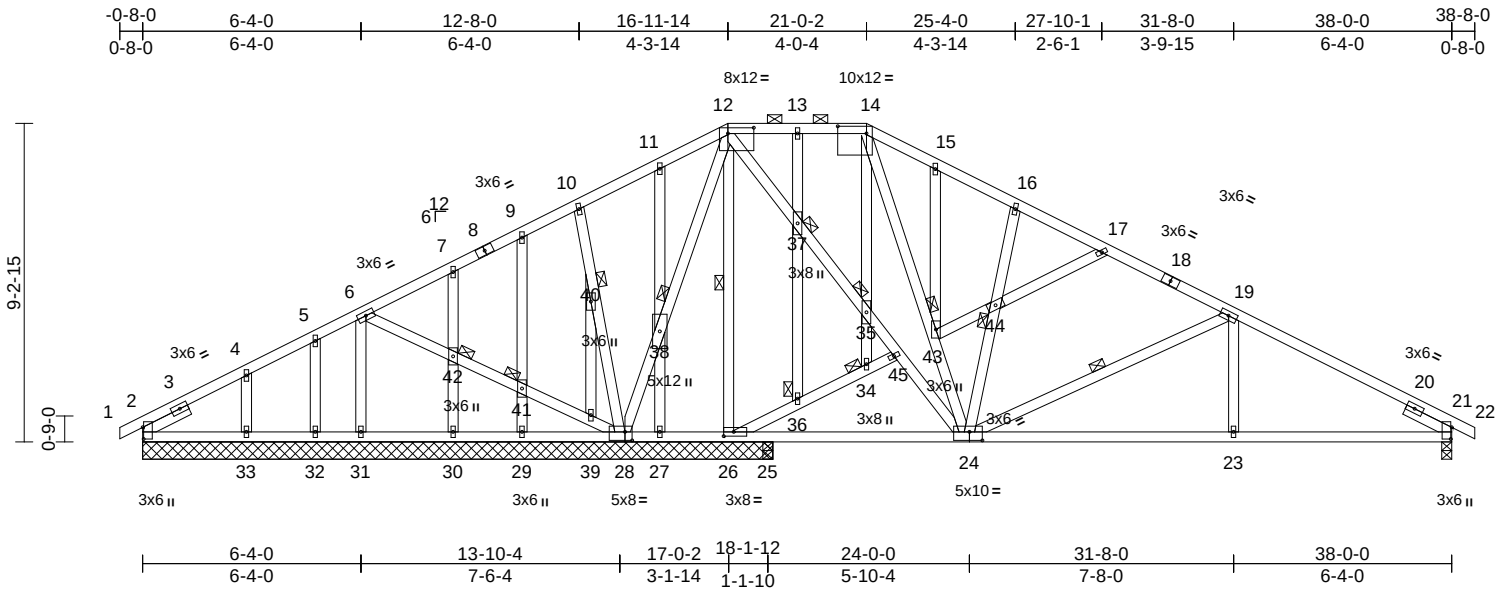
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	AE	Hip Structural Gable	1	1	I58614527
					Job Reference (optional)

84 Components (Dunn, NC), Dunn, NC - 28334, Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Tue May 30 06:03:23 Page: 1
ID:95B4pAp7pceBeNEAj2C0KZzBP38-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:66.9

Plate Offsets (X, Y): [2:0-4-1,0-0-5], [12:0-9-0,0-2-0], [14:0-10-0,0-2-8], [21:0-4-1,0-0-5], [24:0-4-8,0-3-0], [26:0-3-8,0-1-8], [28:0-2-8,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.32	Vert(LL)	-0.08	23-24	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.51	Vert(CT)	-0.17	23-24	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.35	Horz(CT)	0.01	21	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 319 lb	FT = 20%

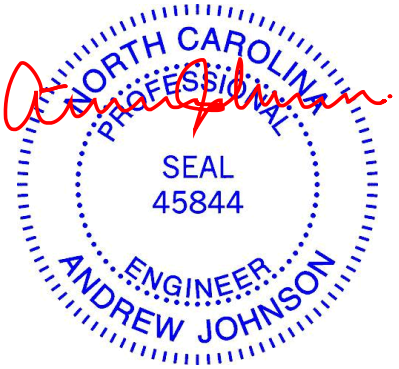
LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.2 *Except* 6-31,23-19,44-17,43-44,26-45:2x4 SP No.3
OTHERS 2x4 SP No.3 *Except* 26-12:2x4 SP No.2
SLIDER Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-2-12 oc purlins, except 2-0-0 oc purlins (6-0-0 max.): 12-14.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing, Except: 10-0-0 oc bracing: 23-24,21-23.
WEBS 1 Row at midpt 19-24, 12-26
JOINTS 1 Brace at Jt(s): 34, 35, 36, 37, 38, 40, 41, 42, 43, 44

REACTIONS (size) 2=18-3-8, 21=0-3-8, 25=0-3-8, 26=18-3-8, 27=18-3-8, 28=18-3-8, 29=18-3-8, 30=18-3-8, 31=18-3-8, 32=18-3-8, 33=18-3-8, 46=18-3-8
Max Horiz 2=148 (LC 12), 46=148 (LC 12)
Max Uplift 2=-32 (LC 13), 21=-154 (LC 13), 26=-49 (LC 13), 27=-64 (LC 12), 28=-77 (LC 13), 29=-28 (LC 12), 30=-62 (LC 12), 31=-117 (LC 24), 32=-11 (LC 12), 33=-101 (LC 12), 46=-32 (LC 13)
Max Grav 2=139 (LC 23), 21=775 (LC 1), 25=201 (LC 3), 26=780 (LC 1), 27=165 (LC 1), 28=563 (LC 1), 29=146 (LC 23), 30=193 (LC 23), 31=67 (LC 13), 32=71 (LC 23), 33=264 (LC 1), 46=139 (LC 23)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/18, 2-4=-72/129, 4-5=-29/111, 5-6=-2/131, 6-7=-33/374, 7-9=0/361, 9-10=0/365, 10-11=0/397, 11-12=0/391, 12-13=-298/304, 13-14=-298/304, 14-15=-368/334, 15-16=-434/318, 16-17=-405/242, 17-19=-549/250, 19-21=-1076/315, 21-22=0/18
BOT CHORD 2-33=-82/117, 32-33=-82/117, 31-32=-82/117, 30-31=-82/117, 29-30=-82/117, 27-29=-230/204, 26-27=-230/204, 25-26=-176/184, 23-25=-184/901, 21-23=-184/901
WEBS 28-38=-301/62, 12-38=-302/61, 12-37=-211/905, 35-37=-201/873, 35-45=-177/779, 24-45=-166/739, 14-43=-94/174, 24-43=-80/172, 6-31=-40/166, 6-42=-276/158, 41-42=-276/159, 39-41=-276/157, 28-39=-277/160, 10-40=-119/83, 28-40=-116/78, 24-44=-316/211, 16-44=-285/192, 19-24=-526/191, 19-23=0/279, 14-35=-151/41, 34-35=-42/13, 13-37=-70/33, 36-37=-32/20, 12-26=-755/116, 11-38=-134/90, 27-38=-135/89, 39-40=-7/6, 9-41=-90/62, 29-41=-94/66, 7-42=-150/102, 30-42=-148/101, 5-32=-59/39, 4-33=-184/120, 15-43=-8/14, 17-44=-71/41, 43-44=-20/10, 26-36=-79/24, 34-36=-71/21, 34-45=-57/18

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;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) Provide adequate drainage to prevent water ponding.
5) All plates are 1.5x4 MT20 unless otherwise indicated.
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) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
10) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2, 31, 21, 26, 27, 29, 30, 32, and 33. This connection is for uplift only and does not consider lateral forces.



May 30,2023

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.
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11) One MTS12 Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 28. This connection is for uplift only and does not consider lateral forces.
12) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
13) 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

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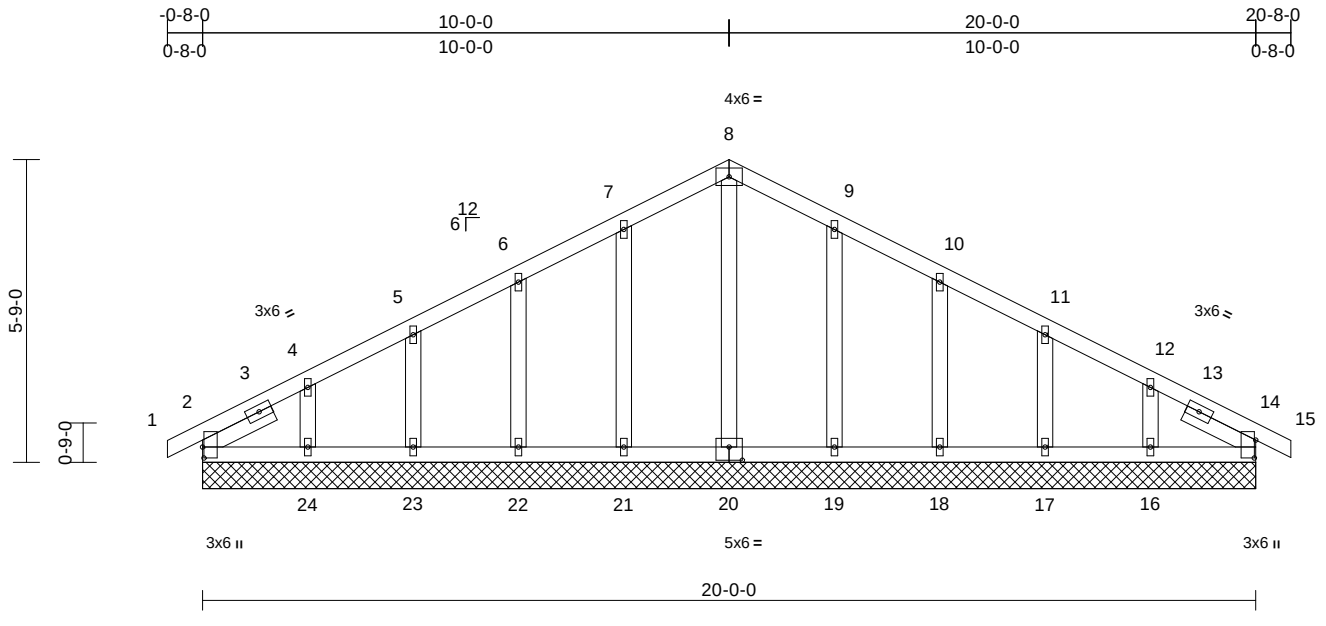
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	BE	Common Supported Gable	1	1	I58614528
					Job Reference (optional)



Scale = 1:43.8

Plate Offsets (X, Y): [2:0-2-8,0-0-5], [14:0-4-1,0-0-5], [20:0-3-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.05	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	14	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 110 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=20-0-0, 14=20-0-0, 16=20-0-0, 17=20-0-0, 18=20-0-0, 19=20-0-0, 20=20-0-0, 21=20-0-0, 22=20-0-0, 23=20-0-0, 24=20-0-0, 25=20-0-0, 29=20-0-0
Max Horiz 2=89 (LC 12), 25=89 (LC 12)
Max Uplift 2=-18 (LC 13), 16=-75 (LC 13), 17=-43 (LC 13), 18=-51 (LC 13), 19=-49 (LC 13), 21=-50 (LC 12), 22=-51 (LC 12), 23=-41 (LC 12), 24=-85 (LC 12), 25=-18 (LC 13)
Max Grav 2=126 (LC 1), 14=126 (LC 1), 16=166 (LC 24), 17=159 (LC 1), 18=159 (LC 1), 19=169 (LC 24), 20=147 (LC 22), 21=169 (LC 23), 22=159 (LC 1), 23=159 (LC 1), 24=166 (LC 23), 25=126 (LC 1), 29=126 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/18, 2-4=-94/50, 4-5=-71/61, 5-6=-55/86, 6-7=-57/116, 7-8=-74/163, 8-9=-74/163, 9-10=-57/116, 10-11=-48/67, 11-12=-48/28, 12-14=-57/16, 14-15=0/18
BOT CHORD 2-24=-12/77, 23-24=-12/77, 22-23=-12/77, 21-22=-12/77, 19-21=-12/77, 18-19=-12/77, 17-18=-12/77, 16-17=-12/77, 14-16=-12/77
WEBS 8-20=-107/0, 7-21=-129/82, 6-22=-119/84, 5-23=-121/81, 4-24=-119/93, 9-19=-129/82, 10-18=-119/84, 11-17=-121/81, 12-16=-119/94

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;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) All plates are 1.5x4 MT20 unless otherwise indicated.
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) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 18 lb uplift at joint 2, 50 lb uplift at joint 21, 51 lb uplift at joint 22, 41 lb uplift at joint 23, 85 lb uplift at joint 24, 49 lb uplift at joint 19, 51 lb uplift at joint 18, 43 lb uplift at joint 17, 75 lb uplift at joint 16 and 18 lb uplift at joint 2.
11) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

May 30,2023

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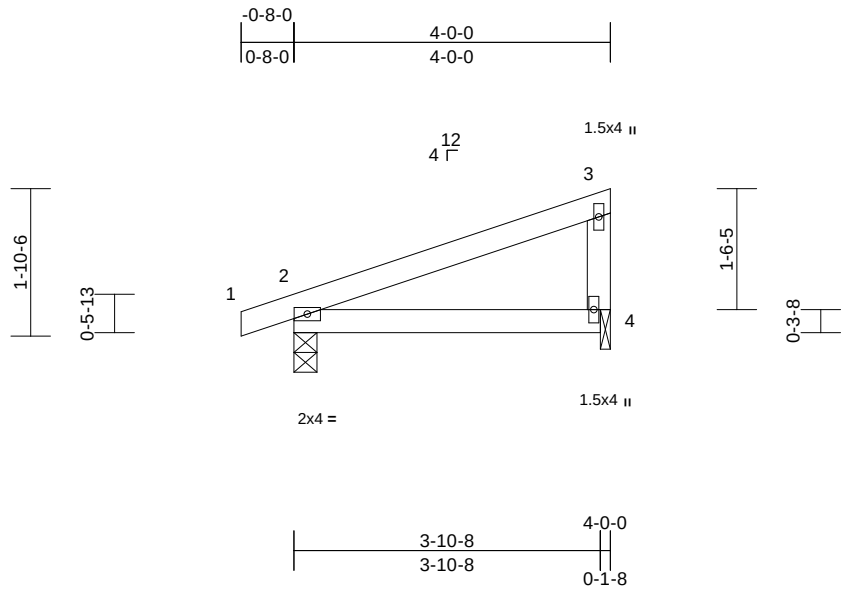
Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	D	Monopitch	8	1	I58614529
					Job Reference (optional)



Scale = 1:29.1

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.21	Vert(LL)	0.01	4-7	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.15	Vert(CT)	-0.02	4-7	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	2	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MP							Weight: 15 lb	FT = 20%

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

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

REACTIONS (size) 2=0-3-8, 4=0-1-8
Max Horiz 2=61 (LC 8)
Max Uplift 2=-46 (LC 8), 4=-38 (LC 12)
Max Grav 2=198 (LC 1), 4=151 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/13, 2-3=-59/25, 3-4=-101/83
BOT CHORD 2-4=-69/51

NOTES
1) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
3) * 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.
4) Bearings are assumed to be: Joint 4 SP No.3 crushing capacity of 565 psi, Joint 2 SP No.2 crushing capacity of 565 psi.
5) 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.
6) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 4.
7) 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.
8) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

May 30,2023

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Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Wilmington C Vault
Wilmington C Vault	D1	Half Hip	1	1	I58614530
					Job Reference (optional)

84 Components (Dunn, NC), Dunn, NC - 28334,

Run: 8.63 S Apr 6 2023 Print: 8.630 S Apr 6 2023 MiTek Industries, Inc. Tue May 30 06:03:24 Page: 1
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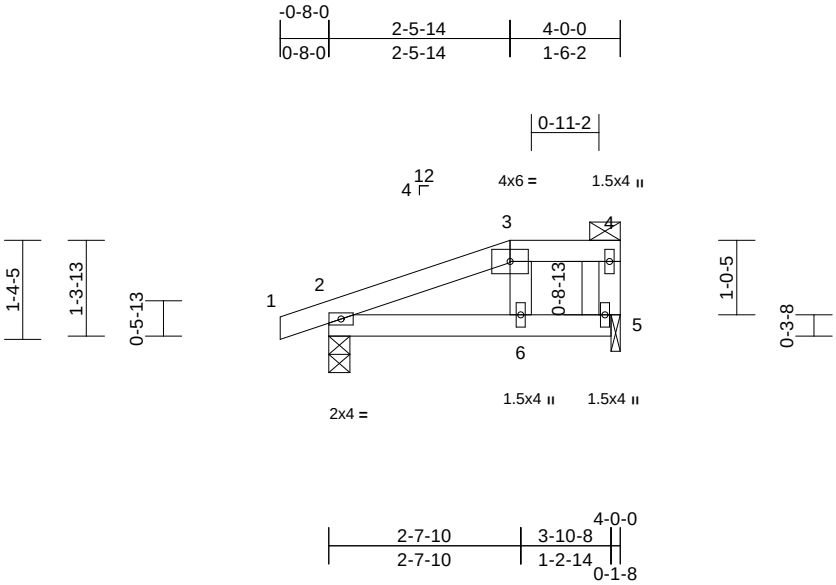


Scale = 1:31.6

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	0.02	6-9	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.29	Vert(CT)	-0.03	6-9	>999	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	2	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MP							Weight: 15 lb	FT = 20%

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

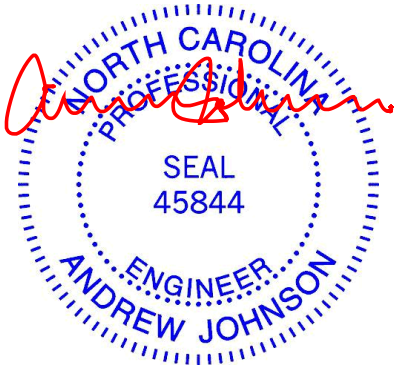
BRACING
TOP CHORD Structural wood sheathing directly applied or 4-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 3-4.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 2=0-3-8, 5=0-1-8
Max Horiz 2=44 (LC 8)
Max Uplift 2=-52 (LC 8), 5=-31 (LC 8)
Max Grav 2=198 (LC 1), 5=151 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/13, 2-3=-52/6, 3-4=0/0, 4-5=-41/34
BOT CHORD 2-6=-36/29, 5-6=0/0
WEBS 3-6=-117/90

NOTES
1) Wind: ASCE 7-10; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) Provide adequate drainage to prevent water ponding.
3) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
4) * 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.
5) Bearings are assumed to be: Joint 5 SP No.3 crushing capacity of 565 psi, Joint 2 SP No.2 crushing capacity of 565 psi.
6) 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.
7) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 5.
8) 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.
9) This truss is designed in accordance with the 2015 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) 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



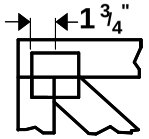
May 30,2023

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 5/19/2020 BEFORE USE.
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

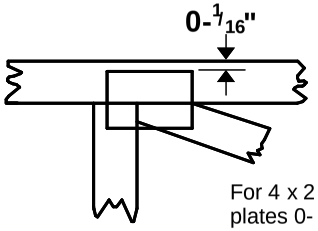
ENGINEERING BY
TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Symbols

PLATE LOCATION AND ORIENTATION



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



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

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

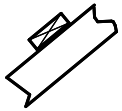
*** Plate location details available in MiTek 20/20 software or upon request.**

PLATE SIZE

4 x 4

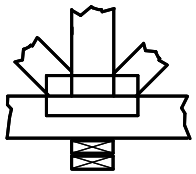
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



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

BEARING

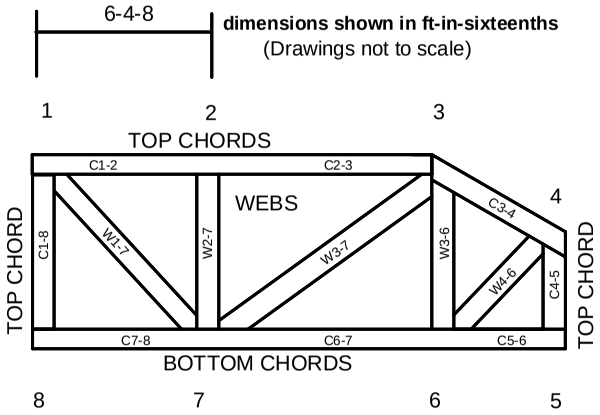


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & 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-1311, ESR-1352, ESR1988
ER-3907, ESR-2362, ESR-1397, ESR-3282

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

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

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

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/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.