ENGINEERING BY TRENCO
A MiTek Affiliate

RE: 4600384
CARDINAL A - LOT 7 - ILA'S WAY

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:

Customer: Project Name: 4600384
Lot/Block: Model:
Address: Subdivision:
City: State:

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

Design Code: IRC2018/TPI2014 Design Program: MiTek 20/20 8.6
Wind Code: ASCE 7 - 16[Low Rise] 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	I70611037	A01	1/8/2025
2	I70611038	A02	1/8/2025
3	I70611039	A03	1/8/2025
4	I70611040	A04	1/8/2025
5	I70611041	A05	1/8/2025
6	I70611042	A06	1/8/2025
7	I70611043	B01	1/8/2025
8	I70611044	B02	1/8/2025
9	I70611045	C01G	1/8/2025
10	I70611046	C02	1/8/2025

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

Truss Design Engineer's Name: Gilbert, Eric

My license renewal date for the state of North Carolina is December 31, 2025.

North Carolina COA: C-0844

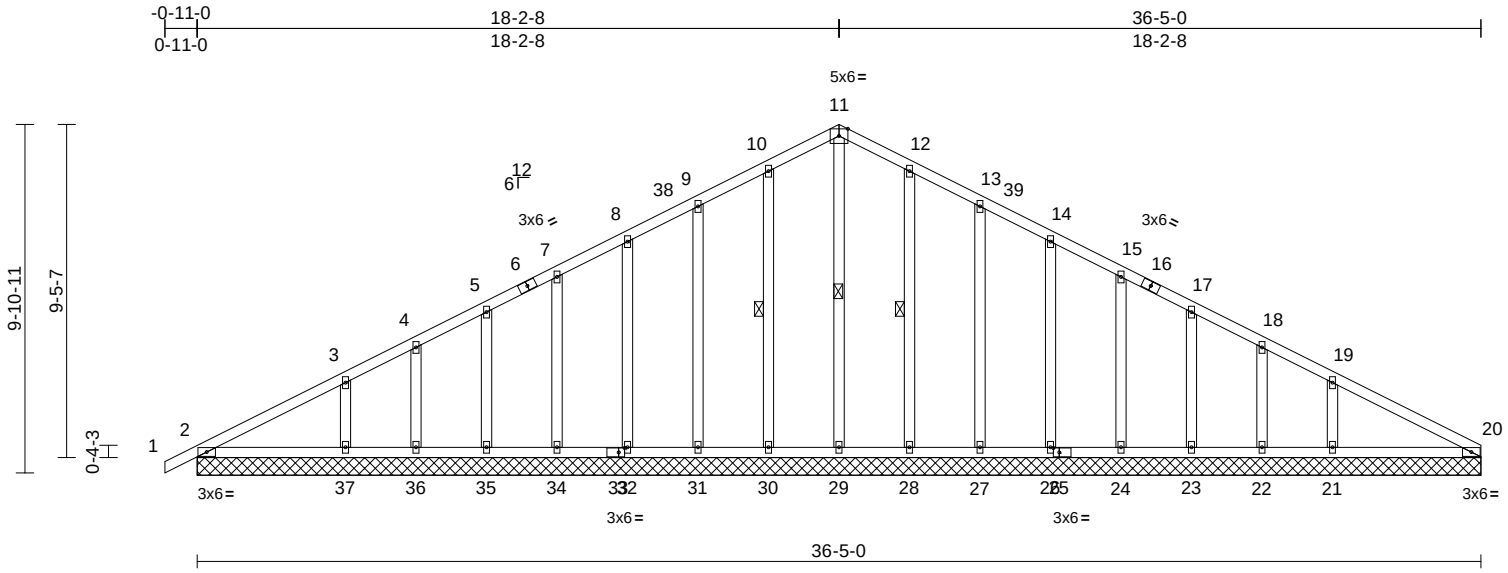
IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which 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.

January 08, 2025

Gilbert, Eric

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	A01	Common Supported Gable	1	1	I70611037 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:31 Page: 1
ID:jE67DYA_kxvlS6eJKugLHwz41Mh-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:65.4

Plate Offsets (X, Y): [25:0-2-0,0-1-8], [33:0-2-0,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.21	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.14	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horz(CT)	0.01	20	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 232 lb	FT = 20%

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

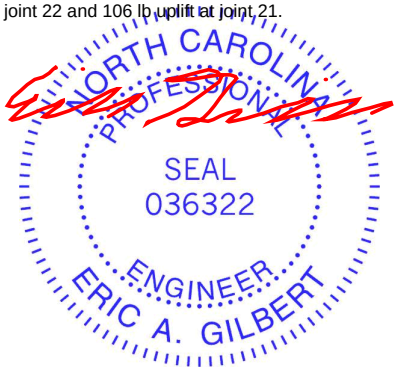
BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 11-29, 10-30, 12-28

REACTIONS (size) 2=36-5-0, 20=36-5-0, 21=36-5-0, 22=36-5-0, 23=36-5-0, 24=36-5-0, 26=36-5-0, 27=36-5-0, 28=36-5-0, 29=36-5-0, 30=36-5-0, 31=36-5-0, 32=36-5-0, 34=36-5-0, 35=36-5-0, 36=36-5-0, 37=36-5-0
Max Horiz 2=167 (LC 12)
Max Uplift 2=-17 (LC 13), 21=-106 (LC 13), 22=-24 (LC 13), 23=-54 (LC 13), 24=-48 (LC 13), 26=-48 (LC 13), 27=-52 (LC 13), 28=-43 (LC 13), 30=-46 (LC 12), 31=-51 (LC 12), 32=-48 (LC 12), 34=-48 (LC 12), 35=-53 (LC 12), 36=-27 (LC 12), 37=-100 (LC 12)
Max Grav 2=205 (LC 2), 20=142 (LC 2), 21=345 (LC 33), 22=78 (LC 33), 23=188 (LC 3), 24=199 (LC 35), 26=193 (LC 3), 27=220 (LC 6), 28=239 (LC 6), 29=253 (LC 29), 30=239 (LC 5), 31=220 (LC 5), 32=193 (LC 3), 34=200 (LC 34), 35=186 (LC 3), 36=85 (LC 32), 37=332 (LC 32)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/31, 2-3=-190/91, 3-4=-116/87, 4-5=-84/106, 5-7=-65/132, 7-8=-53/156, 8-9=-43/181, 9-10=-45/206, 10-11=-50/227, 11-12=-50/220, 12-13=-45/179, 13-14=-38/134, 14-15=-38/92, 15-17=-39/67, 17-18=-32/41, 18-19=-68/22, 19-20=-127/58
BOT CHORD 2-37=-14/141, 36-37=-14/141, 35-36=-14/141, 34-35=-14/141, 32-34=-14/141, 31-32=-14/141, 30-31=-14/141, 29-30=-14/141, 28-29=-14/141, 27-28=-14/141, 26-27=-14/141, 24-26=-14/141, 23-24=-14/141, 22-23=-14/141, 21-22=-14/141, 20-21=-14/141
WEBS 11-29=-153/0, 10-30=-172/70, 9-31=-145/75, 8-32=-121/72, 7-34=-118/71, 5-35=-131/79, 4-36=-71/46, 3-37=-236/139, 12-28=-172/67, 13-27=-145/76, 14-26=-121/72, 15-24=-117/71, 17-23=-133/80, 18-22=-65/42, 19-21=-248/146

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
12) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 17 lb uplift at joint 2, 46 lb uplift at joint 30, 51 lb uplift at joint 31, 48 lb uplift at joint 32, 48 lb uplift at joint 34, 53 lb uplift at joint 35, 27 lb uplift at joint 36, 100 lb uplift at joint 37, 43 lb uplift at joint 28, 52 lb uplift at joint 27, 48 lb uplift at joint 26, 48 lb uplift at joint 24, 54 lb uplift at joint 23, 24 lb uplift at joint 22 and 106 lb uplift at joint 21.



January 8,2025

Continued on page 2

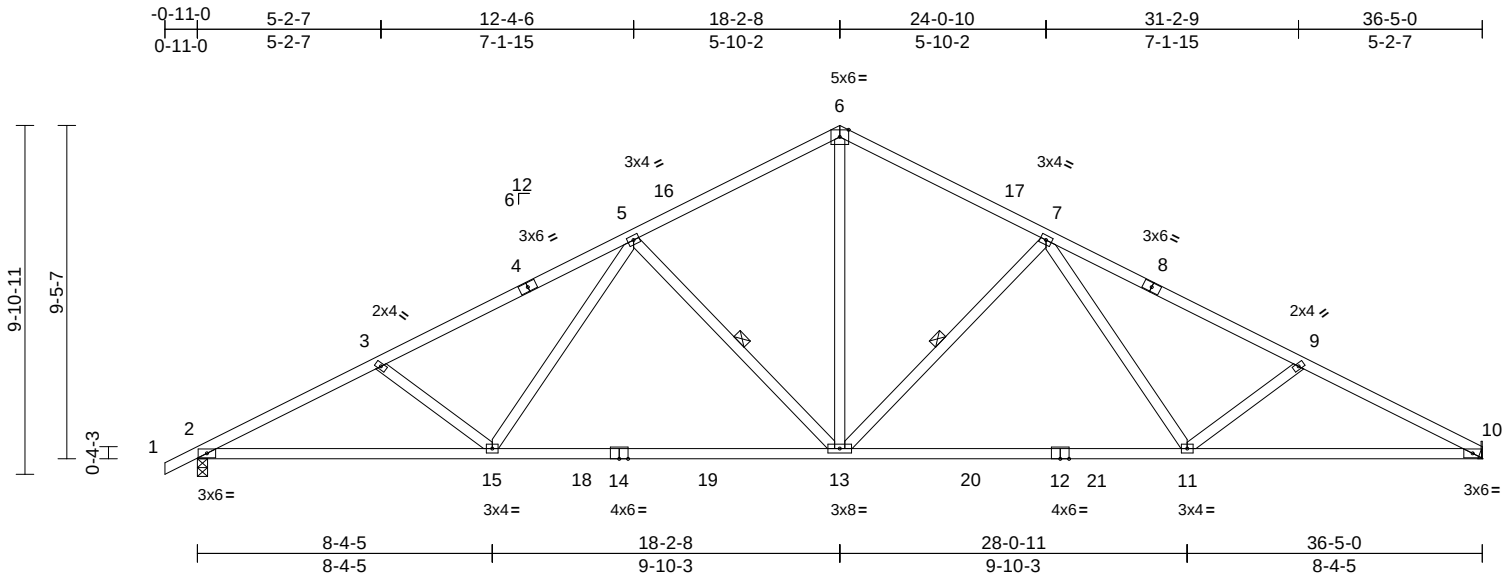
ENGINEERING BY TRENCO A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

14) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2.
15) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY I70611038
4600384	A02	Common	4	1	Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:32 Page: 1
ID:8Lr6_BdB0JZVOozQ_9q1Hkz41M6-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:65.3

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.69	Vert(LL)	-0.28	11-13	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.82	Vert(CT)	-0.52	13-15	>830	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.29	Horz(CT)	0.11	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 187 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-6-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 9-7-8 oc bracing.
WEBS 1 Row at midpt 5-13, 7-13

REACTIONS (size) 2=0-3-8, 10= Mechanical
Max Horiz 2=167 (LC 16)
Max Uplift 2=-193 (LC 12), 10=-171 (LC 13)
Max Grav 2=1513 (LC 2), 10=1447 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-2785/358, 3-5=-2518/302, 5-6=-1723/255, 6-7=-1723/254, 7-9=-2542/308, 9-10=-2823/368
BOT CHORD 2-15=-415/2436, 13-15=-222/1908, 11-13=-86/1916, 10-11=-274/2480
WEBS 6-13=-120/1199, 3-15=-349/226, 5-15=-28/536, 5-13=-665/262, 7-13=-675/264, 7-11=-34/552, 9-11=-375/234

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Bearings are assumed to be: Joint 2 SP No.1 crushing capacity of 565 psi.
9) Refer to girder(s) for truss to truss connections.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 193 lb uplift at joint 2 and 171 lb uplift at joint 10.
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.

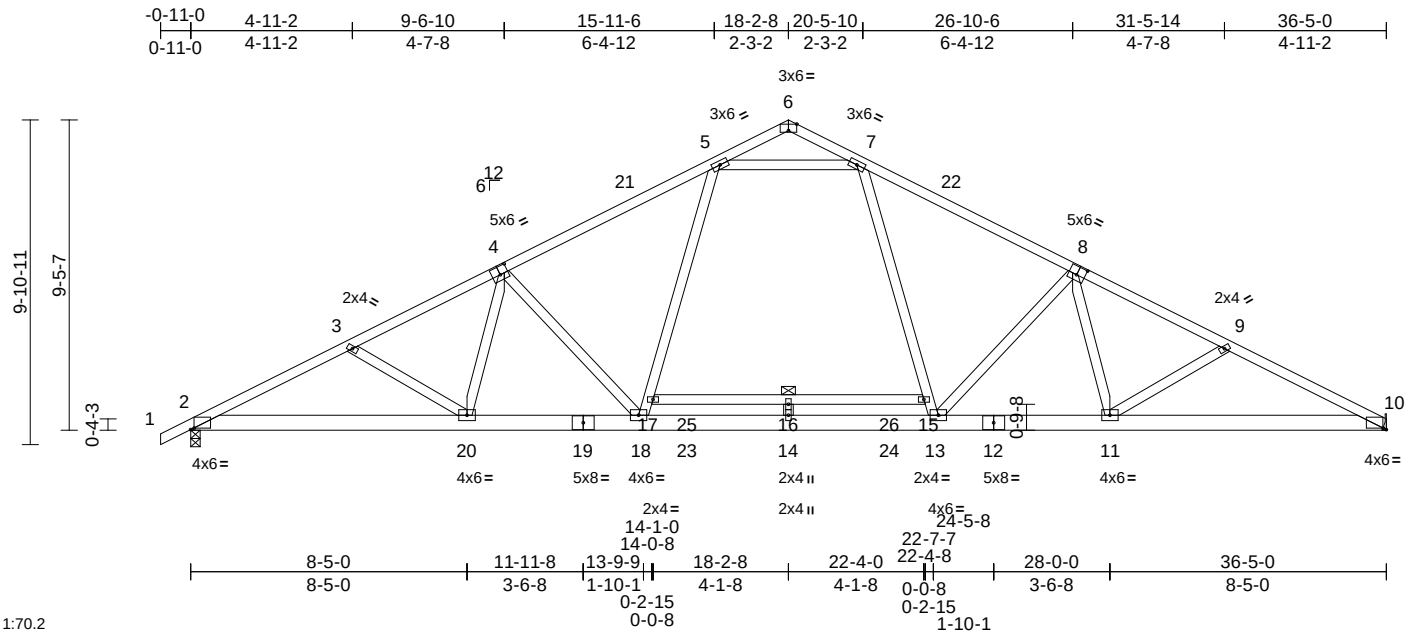
LOAD CASE(S) Standard

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	A03	Common	5	1	I70611039 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:32 Page: 1
ID:qX3KkwTf70dNYgGXdxXbAnz41H8-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:70.2

Plate Offsets (X, Y): [2:0-1-4,0-0-9], [4:0-3-0,0-3-0], [6:0-3-0,Edge], [8:0-3-0,0-3-0], [10:0-1-4,0-0-9]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.40	Vert(LL)	-0.28	11-13	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.92	Vert(CT)	-0.43	15-16	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.09	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 234 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP 2400F 2.0E or 2x4 SP DSS or 2x4 SP SS
BOT CHORD 2x6 SP No.2 *Except* 17-15:2x4 SP No.2
WEBS 2x4 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-7-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
2-2-0 oc bracing: 18-20.
6-0-0 oc bracing: 15-17

REACTIONS (size) 2=0-3-8, 10= Mechanical
Max Horiz 2=168 (LC 12)
Max Uplift 2=-142 (LC 12), 10=-120 (LC 13)
Max Grav 2=1599 (LC 2), 10=1536 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/37, 2-3=-3030/248, 3-5=-2815/200, 5-6=-75/50, 6-7=-73/52, 7-9=-2841/206, 9-10=-3063/261
BOT CHORD 2-20=-313/2660, 18-20=-179/2435, 14-18=0/1925, 13-14=0/1925, 11-13=-31/2452, 10-11=-178/2710, 16-17=-7/13, 15-16=-7/13
WEBS 17-18=-9/760, 5-17=0/837, 7-15=0/845, 13-15=-9/769, 5-7=-1940/221, 14-16=-231/0, 3-20=-262/145, 9-11=-298/159, 4-20=-53/341, 8-11=-57/365, 4-18=-664/276, 8-13=-683/277

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Bearings are assumed to be: Joint 2 SP No.2 crushing capacity of 565 psi.
9) Refer to girder(s) for truss to truss connections.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 142 lb uplift at joint 2 and 120 lb uplift at joint 10.
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.

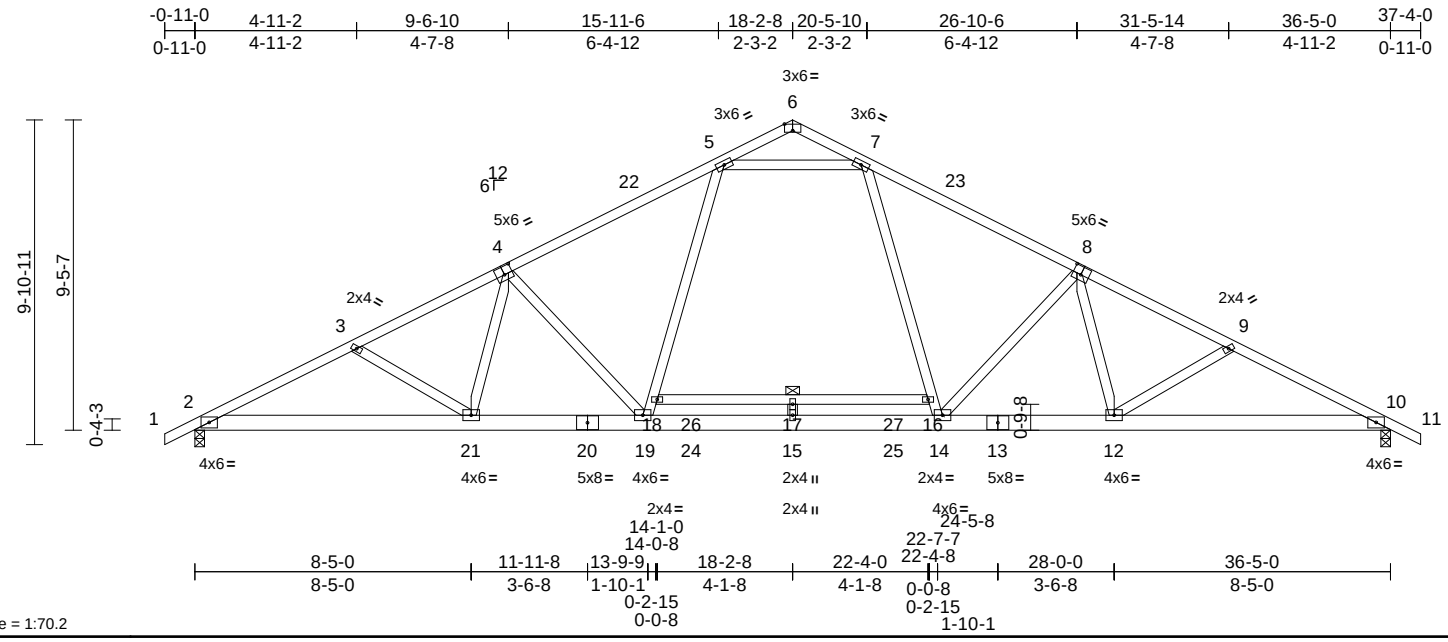
LOAD CASE(S) Standard

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	A04	Common	2	1	I70611040 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:32 Page: 1
ID:8w_Oo0AYuwIvOf2pWayH4Pz418V-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:70.2

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

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	0.39	Vert(LL)	-0.27	19-21	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.91	Vert(CT)	-0.42	17-18	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.68	Horz(CT)	0.09	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 235 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP 2400F 2.0E or 2x4 SP DSS or 2x4 SP SS
BOT CHORD 2x6 SP No.2 *Except* 18-16:2x4 SP No.2
WEBS 2x4 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-8-11 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing. Except:
6-0-0 oc bracing: 16-18

REACTIONS (size) 2=0-3-8, 10=0-3-8
Max Horiz 2=-160 (LC 17)
Max Uplift 2=-142 (LC 12), 10=-142 (LC 13)
Max Grav 2=1594 (LC 2), 10=1594 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/37, 2-3=-3021/248, 3-5=-2806/200, 5-6=-74/51, 6-7=-74/51, 7-9=-2806/201, 9-10=-3021/249, 10-11=0/37
BOT CHORD 2-21=-305/2651, 19-21=-171/2427, 15-19=0/1915, 14-15=0/1915, 12-14=-11/2427, 10-12=-146/2651, 17-18=-7/13, 16-17=-7/13
WEBS 18-19=-9/759, 5-18=0/835, 5-7=-1930/219, 7-16=0/835, 14-16=-8/759, 15-17=-232/0, 3-21=-262/145, 4-21=-53/342, 4-19=-666/276, 8-14=-666/276, 8-12=-54/342, 9-12=-262/146

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
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 142 lb uplift at joint 2 and 142 lb uplift at joint 10.
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

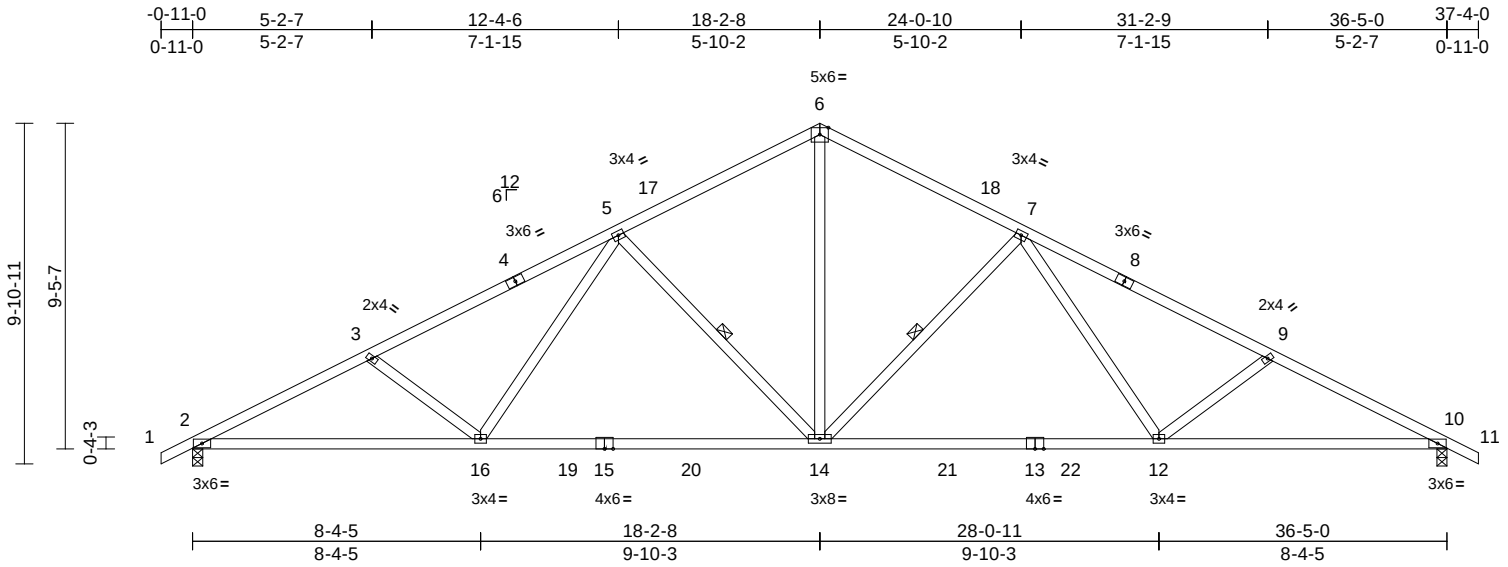
January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	A05	Common	7	1	I70611041
					Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001,

Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:32 Page: 1
ID:H7XZCbNKo8MyrnX_kWkB??z415e-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:66.9

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.68	Vert(LL)	-0.28	12-14	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.95	Vert(CT)	-0.54	12-14	>806	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.29	Horz(CT)	0.12	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 189 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2 *Except* 15-13:2x4 SP No.1
WEBS 2x4 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-7-4 oc purlins.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 5-14, 7-14

REACTIONS (size) 2=0-3-8, 10=0-3-8
Max Horiz 2=160 (LC 12)
Max Uplift 2=-193 (LC 12), 10=-193 (LC 13)
Max Grav 2=1509 (LC 2), 10=1509 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-2775/358, 3-5=-2508/302, 5-6=-1714/253, 6-7=-1714/253, 7-9=-2508/302, 9-10=-2775/358, 10-11=0/32
BOT CHORD 2-16=-408/2427, 14-16=-214/1900, 12-14=-79/1900, 10-12=-249/2427
WEBS 6-14=-118/1192, 3-16=-350/226, 5-16=-29/534, 5-14=-664/262, 7-14=-664/262, 7-12=-29/534, 9-12=-350/226

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
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 193 lb uplift at joint 2 and 193 lb uplift at joint 10.
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.

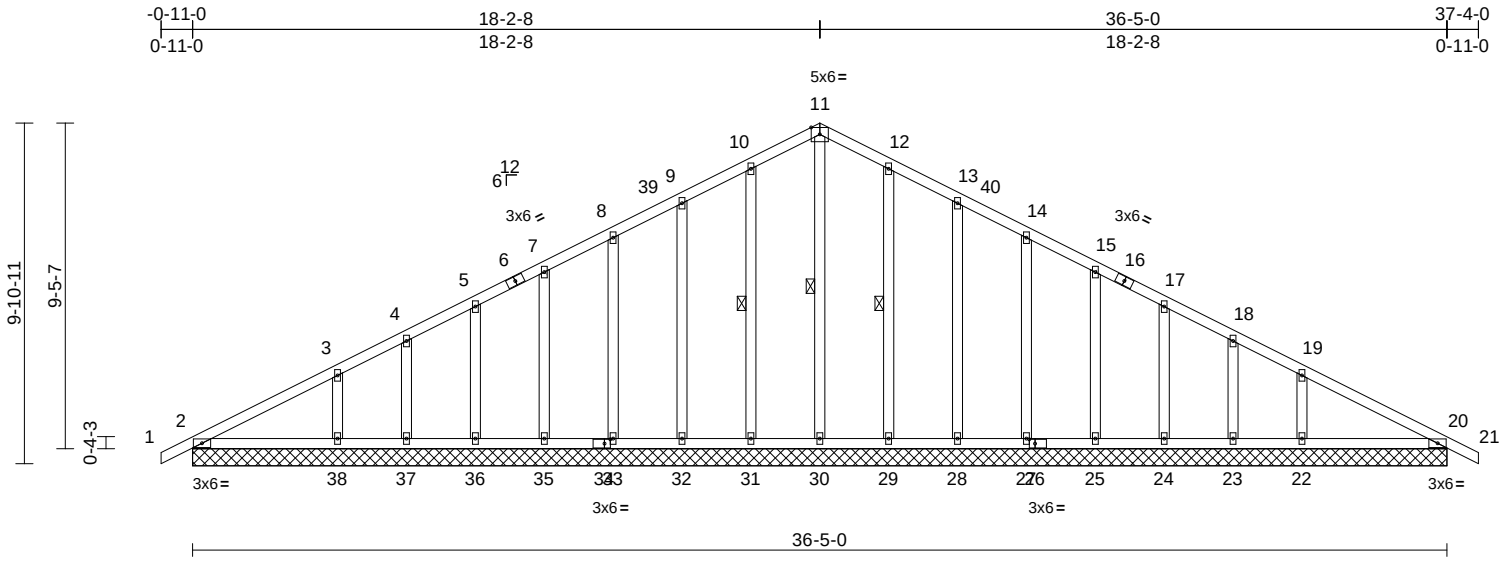
LOAD CASE(S) Standard

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY I70611042
4600384	A06	Common Supported Gable	1	1	Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:33 Page: 1
ID:3NIsZSX_trnhC78C9uxxDXz412s-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:66.9

Plate Offsets (X, Y): [26:0-2-0,0-1-8], [34:0-2-0,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.18	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.13	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.13	Horz(CT)	0.01	20	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 233 lb	FT = 20%

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

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 11-30, 10-31, 12-29

REACTIONS (size) 2=36-5-0, 20=36-5-0, 22=36-5-0, 23=36-5-0, 24=36-5-0, 25=36-5-0, 27=36-5-0, 28=36-5-0, 29=36-5-0, 30=36-5-0, 31=36-5-0, 32=36-5-0, 33=36-5-0, 35=36-5-0, 36=36-5-0, 37=36-5-0, 38=36-5-0
Max Horiz 2=160 (LC 12)
Max Uplift 2=-20 (LC 13), 22=-100 (LC 13), 23=-27 (LC 13), 24=-53 (LC 13), 25=-48 (LC 13), 27=-48 (LC 13), 28=-52 (LC 13), 29=-43 (LC 13), 31=-46 (LC 12), 32=-51 (LC 12), 33=-48 (LC 12), 35=-48 (LC 12), 36=-53 (LC 12), 37=-27 (LC 12), 38=-100 (LC 12)
Max Grav 2=205 (LC 2), 20=205 (LC 2), 22=332 (LC 33), 23=85 (LC 33), 24=186 (LC 3), 25=200 (LC 35), 27=193 (LC 3), 28=220 (LC 6), 29=239 (LC 6), 30=257 (LC 29), 31=239 (LC 5), 32=220 (LC 5), 33=193 (LC 3), 35=200 (LC 34), 36=186 (LC 3), 37=85 (LC 32), 38=332 (LC 32)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/31, 2-3=-187/96, 3-4=-114/93, 4-5=-81/112, 5-7=-64/138, 7-8=-52/162, 8-9=-42/186, 9-10=-45/212, 10-11=-50/233, 11-12=-50/225, 12-13=-45/185, 13-14=-38/140, 14-15=-38/97, 15-17=-39/70, 17-18=-34/44, 18-19=-63/25, 19-20=-119/56, 20-21=0/31
BOT CHORD 2-38=-14/150, 37-38=-14/150, 36-37=-14/150, 35-36=-14/150, 33-35=-14/150, 32-33=-14/150, 31-32=-14/150, 30-31=-14/150, 29-30=-14/150, 28-29=-14/150, 27-28=-14/150, 25-27=-14/150, 24-25=-14/150, 23-24=-14/150, 22-23=-14/150, 20-22=-14/150
WEBS 11-30=-157/0, 10-31=-172/70, 9-32=-145/75, 8-33=-121/72, 7-35=-118/71, 5-36=-131/79, 4-37=-71/46, 3-38=-236/139, 12-29=-172/67, 13-28=-145/76, 14-27=-121/72, 15-25=-118/71, 17-24=-131/79, 18-23=-71/46, 19-22=-236/138

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
12) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.

January 8,2025

Continued on page 2

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

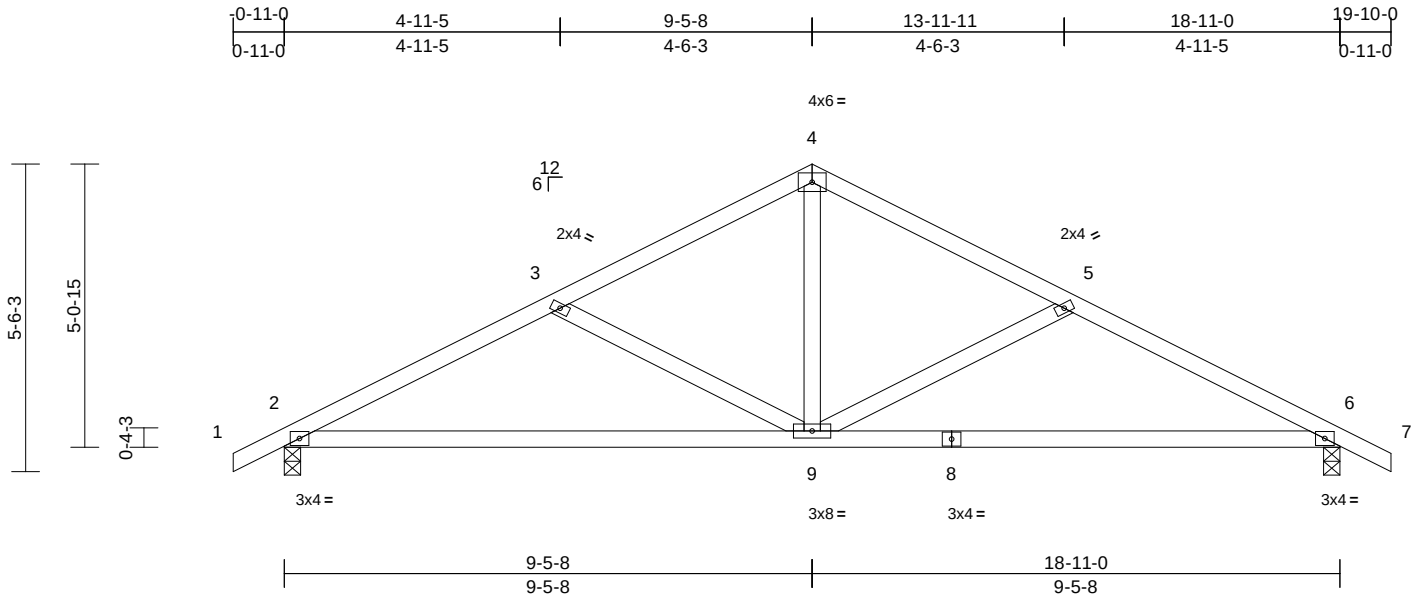
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 20 lb uplift at joint 2, 46 lb uplift at joint 31, 51 lb uplift at joint 32, 48 lb uplift at joint 33, 48 lb uplift at joint 35, 53 lb uplift at joint 36, 27 lb uplift at joint 37, 100 lb uplift at joint 38, 43 lb uplift at joint 29, 52 lb uplift at joint 28, 48 lb uplift at joint 27, 48 lb uplift at joint 25, 53 lb uplift at joint 24, 27 lb uplift at joint 23 and 100 lb uplift at joint 22.
14) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2.
15) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	B01	Common	4	1	I70611043 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001,

Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:33 ID:MFGM9T1iDRytcQn43?AYNAz412D-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:41.3

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.33	Vert(LL)	-0.16	2-9	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.93	Vert(CT)	-0.34	2-9	>661	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.03	6	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 85 lb	FT = 20%

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

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-11-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.

REACTIONS (size) 2=0-3-8, 6=0-3-8
Max Horiz 2=87 (LC 12)
Max Uplift 2=-110 (LC 12), 6=-110 (LC 13)
Max Grav 2=809 (LC 2), 6=809 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-1241/180, 3-4=-933/107, 4-5=-933/107, 5-6=-1241/181, 6-7=0/32
BOT CHORD 2-9=-175/1065, 6-9=-89/1065
WEBS 4-9=0/552, 3-9=-371/199, 5-9=-371/200

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 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 110 lb uplift at joint 2 and 110 lb uplift at joint 6.
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.

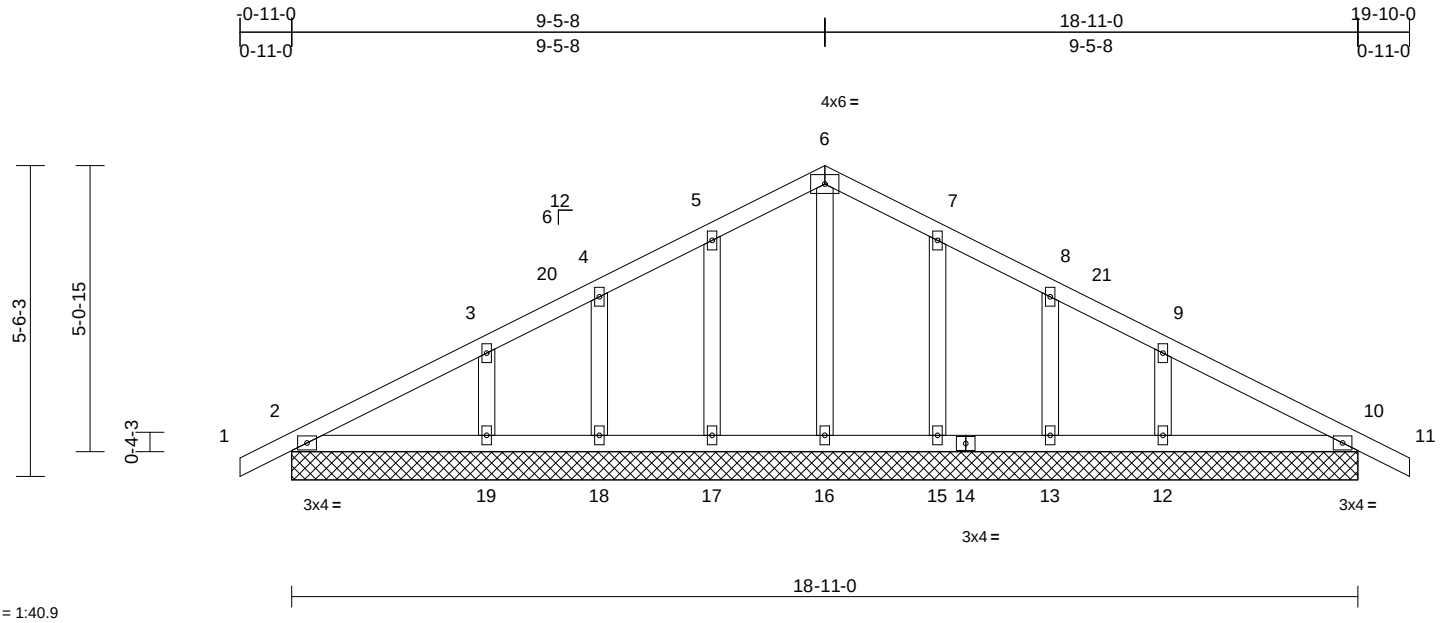
LOAD CASE(S) Standard

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	B02	Common Supported Gable	1	1	I70611044 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:33 Page: 1
ID:YNRWTE9bepKJR77BCps7KVz4122-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:40.9

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.12	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.08	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	10	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 92 lb	FT = 20%

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

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

REACTIONS (size) 2=18-11-0, 10=18-11-0, 12=18-11-0, 13=18-11-0, 15=18-11-0, 16=18-11-0, 17=18-11-0, 18=18-11-0, 19=18-11-0
Max Horiz 2=87 (LC 16)
Max Uplift 2=-17 (LC 13), 10=-25 (LC 13), 12=-79 (LC 13), 13=-38 (LC 13), 15=-53 (LC 13), 17=-54 (LC 12), 18=-37 (LC 12), 19=-80 (LC 12)
Max Grav 2=183 (LC 2), 10=183 (LC 2), 12=267 (LC 33), 13=148 (LC 20), 15=223 (LC 20), 16=215 (LC 29), 17=223 (LC 19), 18=148 (LC 19), 19=267 (LC 32)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/31, 2-3=-94/67, 3-4=-55/77, 4-5=-42/100, 5-6=-51/124, 6-7=-51/116, 7-8=-42/70, 8-9=-47/41, 9-10=-67/43, 10-11=0/31
BOT CHORD 2-19=-6/81, 18-19=-6/81, 17-18=-6/81, 16-17=-6/81, 15-16=-6/81, 13-15=-6/81, 12-13=-6/81, 10-12=-6/81
WEBS 6-16=-109/0, 5-17=-179/79, 4-18=-122/58, 3-19=-191/113, 7-15=-179/78, 8-13=-122/58, 9-12=-191/112

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=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
12) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 17 lb uplift at joint 2, 25 lb uplift at joint 10, 54 lb uplift at joint 17, 37 lb uplift at joint 18, 80 lb uplift at joint 19, 53 lb uplift at joint 15, 38 lb uplift at joint 13 and 79 lb uplift at joint 12.
14) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 2.
15) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.

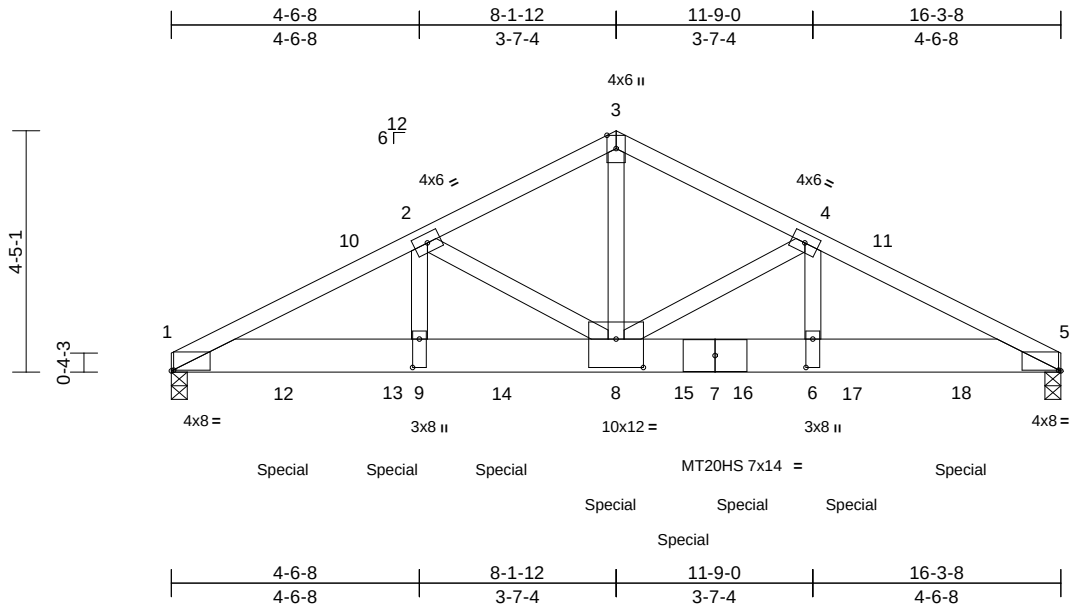
LOAD CASE(S) Standard

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY
4600384	C01G	Common Girder	1	**2**	I70611045 Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:33 Page: 1
ID:cXMcBAYg5eMmG1ZL4XRedFz411Y-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:42.2

Plate Offsets (X, Y): [1:0-0-8,0-0-3], [5:0-0-8,0-0-3], [6:0-6-4,0-1-8], [8:0-6-0,0-6-4], [9:0-6-4,0-1-8]

Loading	(psf)	**Spacing**	2-0-0	**CSI**		**DEFL**	in	(loc)	l/defl	L/d	**PLATES**	**GRIP**
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.94	Vert(LL)	-0.13	6-8	>999	240	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.59	Vert(CT)	-0.26	6-8	>746	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	NO	WB	0.93	Horz(CT)	0.05	5	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 199 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x8 SP 2400F 2.0E or 2x8 SP DSS
WEBS 2x4 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-4-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 5=0-3-8
Max Horiz 1=66 (LC 12)
Max Uplift 1=-727 (LC 12), 5=-682 (LC 13)
Max Grav 1=6386 (LC 25), 5=7042 (LC 26)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-11710/1304, 2-3=-9076/978, 3-4=-9075/978, 4-5=-12730/1249
BOT CHORD 1-9=-1187/10516, 8-9=-1187/10516, 6-8=-1071/11395, 5-6=-1071/11395
WEBS 2-9=-265/2356, 2-8=-2793/451, 3-8=-801/7865, 4-8=-3843/394, 4-6=-209/3355

NOTES
1) 2-ply truss to be connected together with 10d (0.131"x3") nails as follows:
Top chords connected as follows: 2x4 - 1 row at 0-9-0 oc.
Bottom chords connected as follows: 2x8 - 3 rows staggered at 0-5-0 oc.
Web connected as follows: 2x4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; Lumber DOL=1.60 plate grip DOL=1.60
5) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
6) Unbalanced snow loads have been considered for this design.
7) All plates are MT20 plates unless otherwise indicated.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 1-00-00 wide will fit between the bottom chord and any other members.
10) WARNING: Required bearing size at joint(s) 5 greater than input bearing size.
11) All bearings are assumed to be SP 2400F 2.0E or DSS crushing capacity of 660 psi.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 727 lb uplift at joint 1 and 682 lb uplift at joint 5.
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.
14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 1463 lb down and 183 lb up at 2-0-12, 1463 lb down and 183 lb up at 4-0-12, 1463 lb down and 183 lb up at 6-0-12, 1463 lb down and 183 lb up at 8-0-12, 1626 lb down and 132 lb up at 9-4-12, 1626 lb down and 132 lb up at 10-5-12, and 1626 lb down and 132 lb up at 12-5-12, and 1626 lb down and 132 lb up at 14-5-12 on bottom chord. The design/selection of such connection device (s) is the responsibility of others.

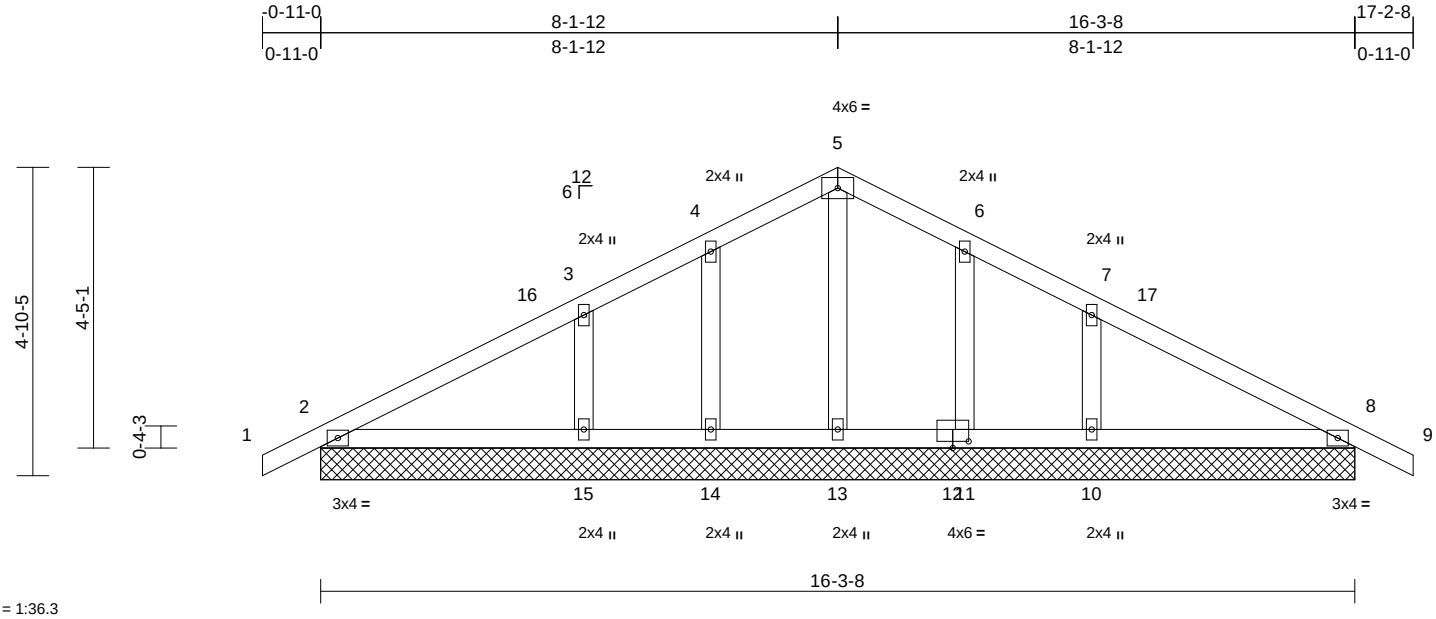
LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (lb/ft)
Vert: 1-3=-51, 3-5=-51, 1-5=-20
Concentrated Loads (lb)
Vert: 8=-1261 (F), 12=-1261 (F), 13=-1261 (F), 14=-1261 (F), 15=-1346 (F), 16=-1346 (F), 17=-1346 (F), 18=-1346 (F)

January 8,2025

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

Job	Truss	Truss Type	Qty	Ply	CARDINAL A - LOT 7 - ILA'S WAY I70611046
4600384	C02	Common Supported Gable	1	1	Job Reference (optional)

Builders FirstSource (Albermarle), Albemarle, NC - 28001, Run: 8.9 S 8.63 Sep 26 2024 Print: 8.630 S Sep 26 2024 MiTek Industries, Inc. Wed Jan 08 10:07:33 Page: 1
ID:VwmhRQq98Djk_KgjIoLUwbz41?u-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:36.3

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.19	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.13	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	8	n/a	n/a		
BCLL	0.0*	Code	IRC2018/TPI2014	Matrix-S								
BCDL	10.0										Weight: 75 lb	FT = 20%

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

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=16-3-8, 8=16-3-8, 10=16-3-8, 11=16-3-8, 13=16-3-8, 14=16-3-8, 15=16-3-8
Max Horiz 2=76 (LC 12)
Max Uplift 2=-22 (LC 12), 8=-36 (LC 13), 10=-97 (LC 13), 11=-32 (LC 13), 14=-33 (LC 12), 15=-97 (LC 12)
Max Grav 2=204 (LC 2), 8=204 (LC 2), 10=333 (LC 20), 11=148 (LC 20), 13=169 (LC 2), 14=148 (LC 19), 15=333 (LC 19)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/31, 2-3=-88/73, 3-4=-60/88, 4-5=-49/107, 5-6=-49/98, 6-7=-60/65, 7-8=-65/52, 8-9=0/31
BOT CHORD 2-15=-4/70, 14-15=-4/70, 13-14=-4/70, 11-13=-4/70, 10-11=-4/70, 8-10=-4/70
WEBS 5-13=-116/0, 4-14=-134/51, 3-15=-241/135, 6-11=-134/50, 7-10=-241/135

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; 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); Pg=20.0 psf; Pf=15.4 psf (Lum DOL=1.15 Plate DOL=1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; 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 2.00 times flat roof load of 15.4 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 1-00-00 wide will fit between the bottom chord and any other members.
12) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 22 lb uplift at joint 2, 33 lb uplift at joint 14, 97 lb uplift at joint 15, 32 lb uplift at joint 11, 97 lb uplift at joint 10 and 36 lb uplift at joint 8.
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.

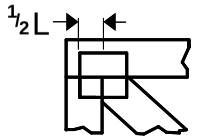
LOAD CASE(S) Standard

January 8,2025

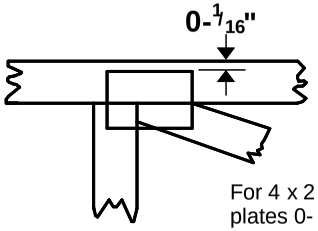
ENGINEERING BY TRENCO A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

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.

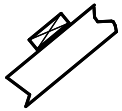
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

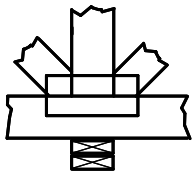
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



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

BEARING

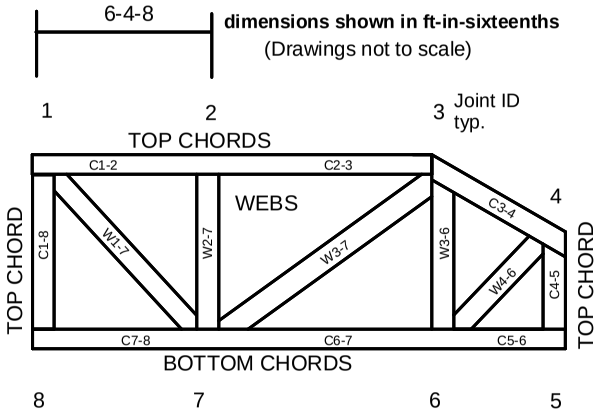


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-22: Design Standard for Bracing.
BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



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

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

Product Code Approvals

ICC-ES Reports:

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

Design General Notes

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

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

MiTek®

ENGINEERING BY TRENCO
A MiTek Affiliate

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

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

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