ENGINEERING BY
TRENCO
A MiTek Affiliate

Trenco
818 Soundside Rd
Edenton, NC 27932

Re: ELV D Roof
Roof D

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

Pages or sheets covered by this seal: I63425184 thru I63425211

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

North Carolina COA: C-0844

February 6,2024

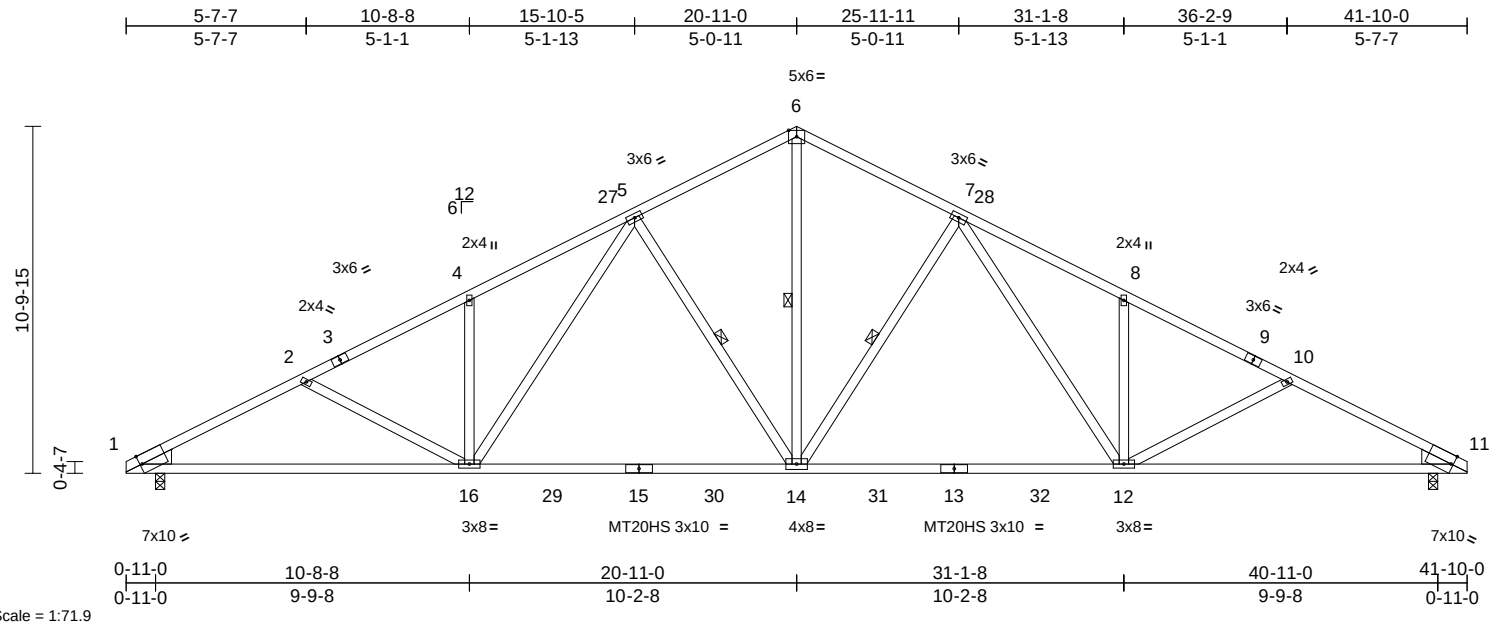
Gilbert, Eric

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	Roof D
ELV D Roof	A01	Common	11	1	I63425184
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:27 ID:JkzNl6jLXIrZbTYHkPA?VbyhjJ5-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:71.9

Plate Offsets (X, Y): [1:0-0-13,Edge], [11:0-0-13,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.81	Vert(LL)	-0.41	12-14	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.66	Vert(CT)	-0.71	12-14	>704	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.57	Horz(CT)	0.11	11	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 238 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-3,9-11:2x4 SP SS
BOT CHORD	2x4 SP SS
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2 Right: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 2-7-13 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 6-11-1 oc bracing.
WEBS	1 Row at midpt 6-14, 5-14, 7-14

REACTIONS (size) 1=0-3-8, 11=0-3-8
Max Horiz 1=-232 (LC 17)
Max Uplift 1=-433 (LC 16), 11=-433 (LC 17)
Max Grav 1=1673 (LC 2), 11=1673 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-2678/1168, 2-4=-2526/1091, 4-5=-2564/1270, 5-6=-1840/967, 6-7=-1840/967, 7-8=-2564/1270, 8-10=-2526/1091, 10-11=-2678/1168
BOT CHORD	1-16=-905/2277, 14-16=-565/1889, 12-14=-565/1889, 11-12=-905/2277
WEBS	6-14=-645/1351, 2-16=-108/197, 4-16=-371/337, 5-16=-331/671, 5-14=-628/447, 7-14=-628/447, 7-12=-331/671, 8-12=-371/337, 10-12=-108/198

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) All plates are MT20 plates 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, with BCDL = 10.0psf.
9) All bearings are assumed to be SP SS crushing capacity of 565 psi.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 433 lb uplift at joint 1 and 433 lb uplift at joint 11.
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

February 6,2024

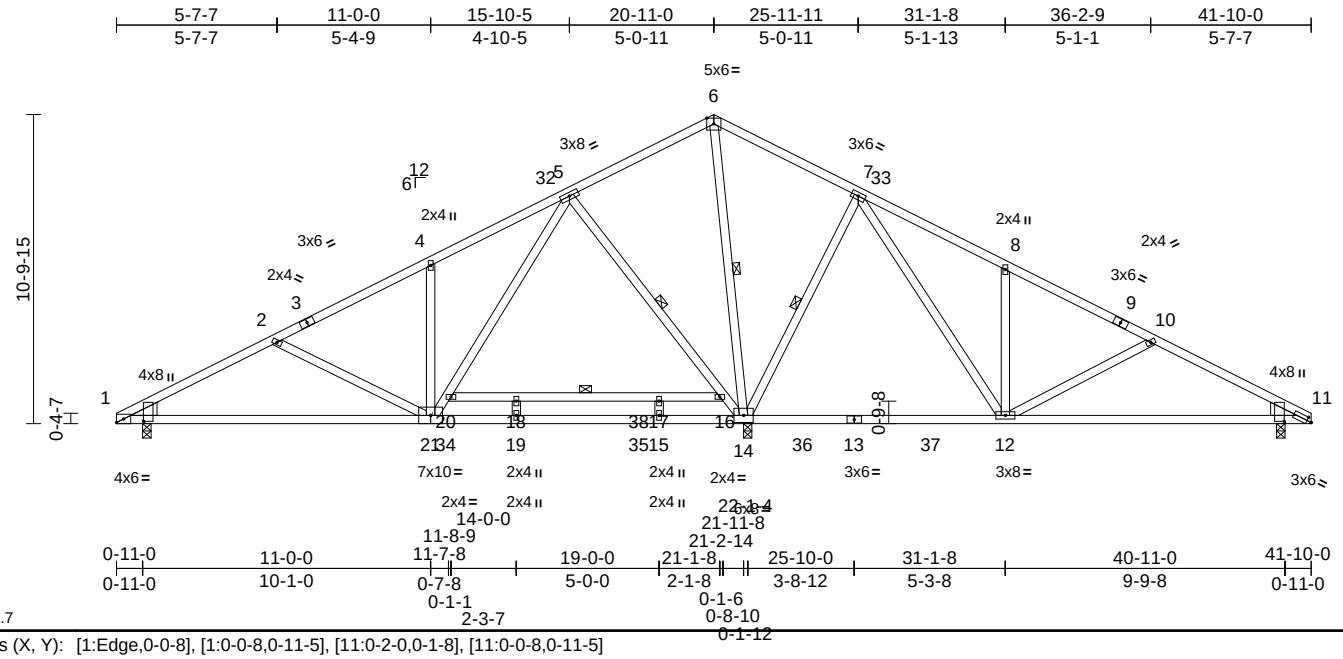
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A01H	Common	5	1	I63425185

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:29 Page: 1

ID:COutZADVa4L6sNRwRlur_XyhjHA-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:80.7

Plate Offsets (X, Y): [1:Edge,0-0-8], [1:0-0-8,0-11-5], [11:0-2-0,0-1-8], [11:0-0-8,0-11-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.56	Vert(LL)	-0.40	17-18	>660	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.70	17-18	>377	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.70	Horz(CT)	0.01	11	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 255 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-3,9-11:2x4 SP SS
BOT CHORD	2x4 SP SS
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2 Right: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing. Except: 6-0-0 oc bracing: 16-20
WEBS	1 Row at midpt 6-14, 5-14, 7-14

REACTIONS (size) 1=0-3-8, 11=0-3-8, 14=0-3-8
Max Horiz 1=-232 (LC 17)
Max Uplift 1=-148 (LC 16), 11=-177 (LC 17), 14=-449 (LC 16)
Max Grav 1=754 (LC 33), 11=605 (LC 34), 14=2473 (LC 3)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-979/250, 2-4=-695/85, 4-5=-688/249, 5-6=-88/632, 6-7=-119/717, 7-8=-392/282, 8-10=-395/131, 10-11=-689/251
BOT CHORD	1-19=-314/820, 15-19=-75/422, 14-15=-75/422, 12-14=-327/403, 11-12=-124/573, 18-20=-96/0, 17-18=-96/0, 16-17=-96/0
WEBS	6-14=-823/286, 2-21=-310/325, 4-21=-317/308, 20-21=-343/823, 5-20=-302/966, 5-16=-771/441, 14-16=-878/392, 7-14=-678/492, 7-12=-407/754, 8-12=-308/309, 10-12=-341/300, 15-17=-88/0, 18-19=-39/0

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) All bearings are assumed to be SP SS crushing capacity of 565 psi.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 449 lb uplift at joint 14, 148 lb uplift at joint 1 and 177 lb uplift at joint 11.
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

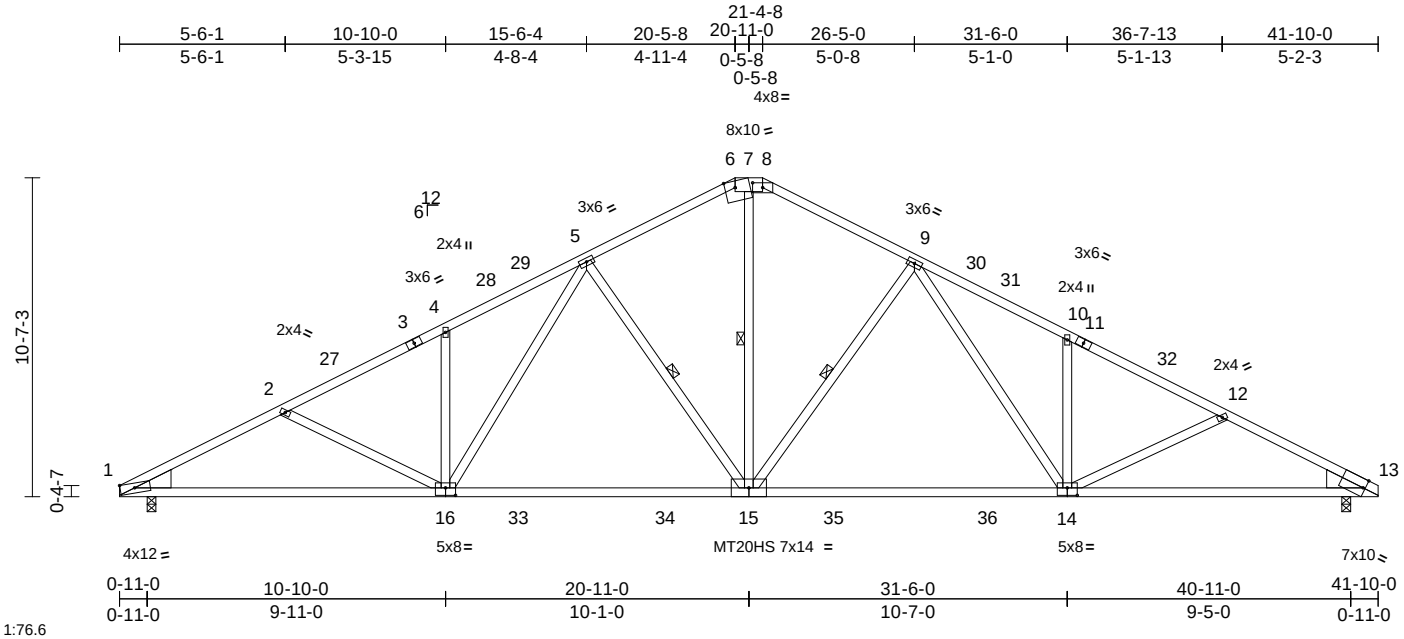
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A03	Hip	1	1	I63425186
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:30 Page: 1

ID:Gf?mt2WzQDCECA7LQfubUEyhiCM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:76.6

Plate Offsets (X, Y): [1:Edge,0-1-14], [6:0-4-2,Edge], [8:0-4-0,0-1-15], [13:0-0-13,Edge], [14:0-4-0,0-3-0], [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	1.00	TC	0.94	Vert(LL)	-0.50	14-15	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.96	Vert(CT)	-0.83	14-15	>608	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.65	Horz(CT)	0.14	13	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 241 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2 *Except* 6-8:2x6 SP No.2, 1-3,11-13:2x4 SP SS
BOT CHORD 2x4 SP SS *Except* 14-13:2x4 SP No.1
WEBS 2x4 SP No.3
WEDGE Left: 2x8 SP DSS
Right: 2x8 SP DSS

BRACING

TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except
2-0-0 oc purlins (4-9-15 max.): 6-8.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 5-15, 9-15, 7-15

REACTIONS (size) 1=0-3-8, 13=0-3-8
Max Horiz 1=-226 (LC 17)
Max Uplift 1=-434 (LC 16), 13=-434 (LC 17)
Max Grav 1=2005 (LC 38), 13=2005 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-3345/1166, 2-4=-3276/1085, 4-5=-3340/1257, 5-6=-2391/955, 6-7=-1910/855, 7-8=-1910/855, 8-9=-2395/955, 9-10=-3383/1268, 10-12=-3303/1090, 12-13=-3313/1153
BOT CHORD 1-13=-901/2861
WEBS 2-16=-115/200, 4-16=-535/329, 5-16=-318/760, 5-15=-810/431, 9-15=-815/438, 9-14=-316/757, 10-14=-543/337, 12-14=-58/253, 7-15=-597/1577

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
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 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Bearings are assumed to be: Joint 1 SP SS crushing capacity of 565 psi, Joint 13 SP No.1 crushing capacity of 565 psi.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 434 lb uplift at joint 1 and 434 lb uplift at joint 13.
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

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-6=-49, 6-8=-60, 8-13=-49, 17-22=-20

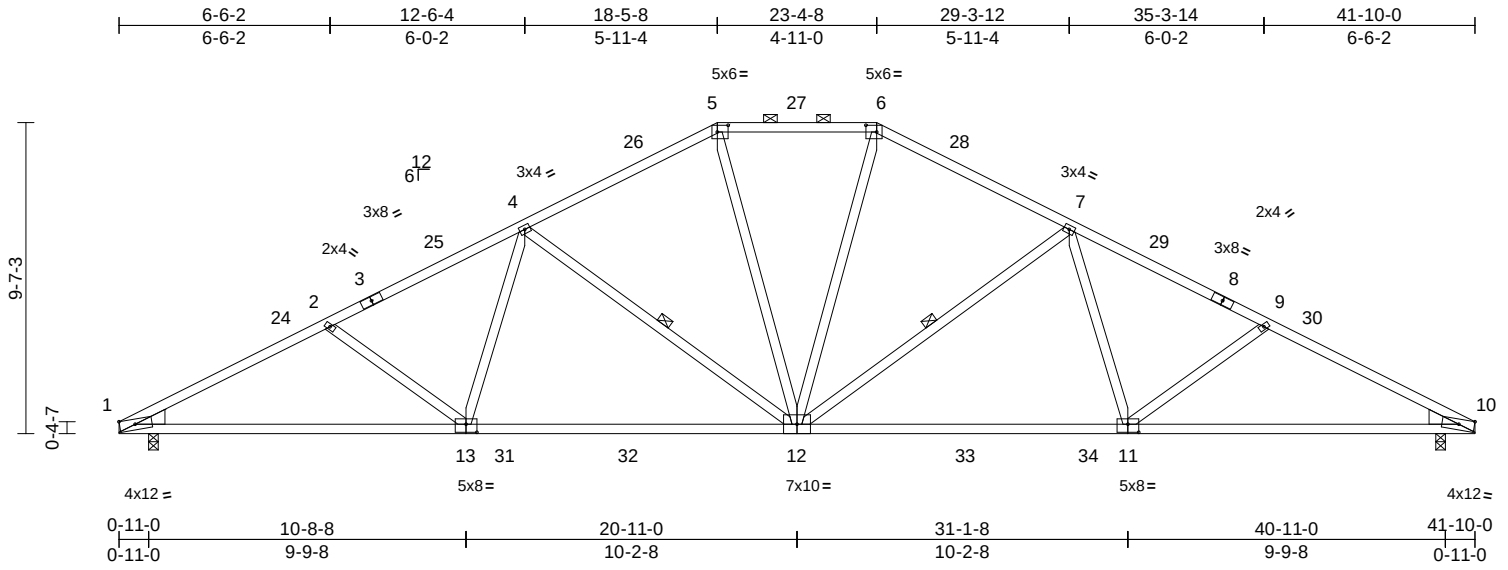
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A04	Hip	1	1	I63425187
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:30 ID:jmSRp8iyCdlkgtVT?5BuG6yhiDP-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:71.1

Plate Offsets (X, Y): [1:Edge,0-1-14], [5:0-4-0,0-2-8], [6:0-4-0,0-2-8], [10:0-5-12,Edge], [11:0-4-0,0-3-0], [13:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.82	Vert(LL)	-0.46	12-13	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.99	Vert(CT)	-0.78	12-13	>644	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.52	Horz(CT)	0.15	10	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 228 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.1 *Except* 5-6:2x4 SP No.2, 1-3,8-10:2x4 SP SS
BOT CHORD	2x4 SP No.1 *Except* 11-10,13-1:2x4 SP SS
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2 Right: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 2-2-0 oc purlins, except 2-0-0 oc purlins (3-4-9 max.): 5-6.
BOT CHORD	Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS	1 Row at midpt 7-12, 4-12

REACTIONS (size) 1=0-3-8, 10=0-3-8
Max Horiz 1=-206 (LC 17)
Max Uplift 1=-439 (LC 16), 10=-439 (LC 17)
Max Grav 1=1971 (LC 38), 10=1971 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-3341/1153, 2-4=-3095/1075, 4-5=-2295/919, 5-6=-2094/932, 6-7=-2295/919, 7-9=-3095/1075, 9-10=-3341/1153
BOT CHORD	1-10=-887/2871
WEBS	5-12=-201/688, 6-12=-201/688, 7-12=-898/416, 7-11=-13/384, 9-11=-207/247, 2-13=-207/247, 4-13=-13/384, 4-12=-898/416

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) All bearings are assumed to be SP SS crushing capacity of 565 psi.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 439 lb uplift at joint 1 and 439 lb uplift at joint 10.
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.
12) 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

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00

Uniform Loads (lb/ft)
Vert: 1-5=-49, 5-6=-60, 6-10=-49, 14-19=-20

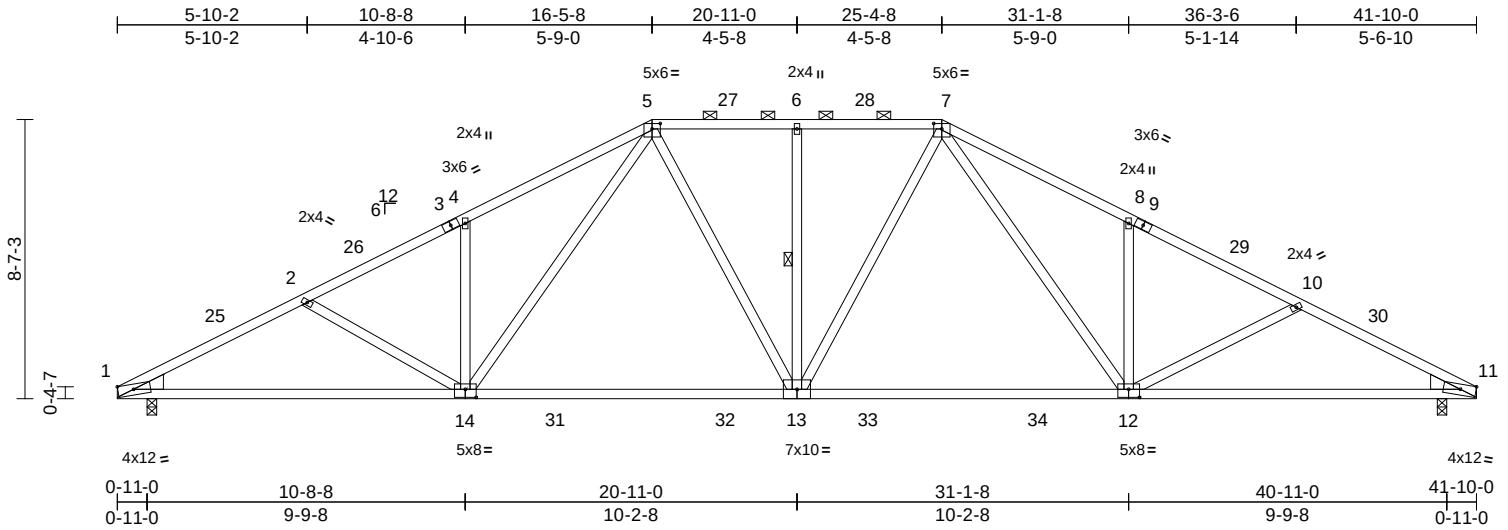
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A05	Hip	1	1	I63425188
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:31 ID:yhwZ_nBc5jThdQHOYGR1ZFyhiE3-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:70.9

Plate Offsets (X, Y): [1:Edge,0-1-14], [5:0-3-0,0-2-0], [7:0-3-0,0-2-0], [11:0-5-12,Edge], [12:0-4-0,0-3-0], [14:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.84	Vert(LL)	-0.46	13-14	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.70	Vert(CT)	-0.76	13-14	>662	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.77	Horz(CT)	0.12	11	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 235 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2 *Except* 1-3,9-11:2x4 SP SS
BOT CHORD	2x4 SP SS
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2 Right: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied, except 2-0-0 oc purlins (3-9-9 max.): 5-7.
BOT CHORD	Rigid ceiling directly applied or 7-1-0 oc bracing.
WEBS	1 Row at midpt 6-13

REACTIONS (size) 1=0-3-8, 11=0-3-8
Max Horiz 1=-183 (LC 17)
Max Uplift 1=-444 (LC 16), 11=-444 (LC 17)
Max Grav 1=1938 (LC 38), 11=1938 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-3203/1122, 2-4=-2975/1060, 4-5=-3071/1261, 5-6=-2172/982, 6-7=-2172/982, 7-8=-3075/1263, 8-10=-2985/1058, 10-11=-3201/1125
BOT CHORD	1-11=-868/2729
WEBS	5-14=-391/1004, 5-13=-129/520, 7-13=-129/520, 7-12=-394/1009, 8-12=-643/389, 10-12=-115/211, 2-14=-124/198, 4-14=-630/380, 6-13=-529/199

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) All bearings are assumed to be SP SS crushing capacity of 565 psi.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 444 lb uplift at joint 1 and 444 lb uplift at joint 11.
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.
12) 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

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00

Uniform Loads (lb/ft)
Vert: 1-5=-49, 5-7=-60, 7-11=-49, 15-20=-20

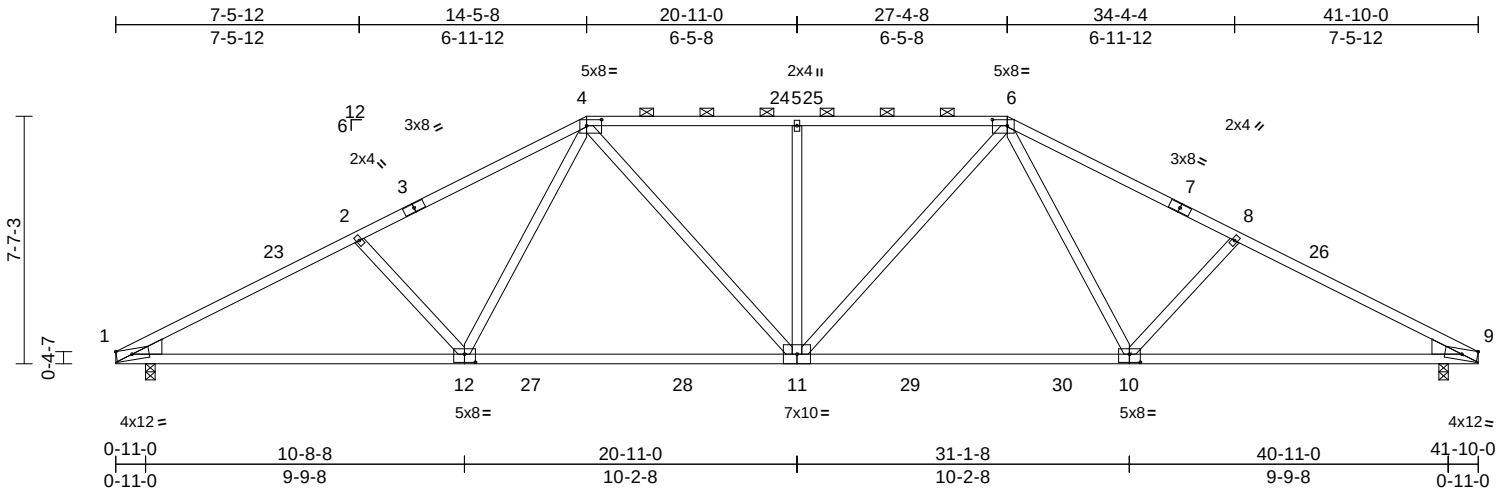
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A06	Hip	1	1	I63425189
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:31 Page: 1
ID:uX_THqoXduREoVrEgYsXGVyhiEZ-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:70.7

Plate Offsets (X, Y): [1:Edge,0-1-14], [4:0-5-8,0-2-4], [6:0-5-8,0-2-4], [9:0-5-12,Edge], [10:0-4-0,0-3-0], [12:0-4-0,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	1.00	Vert(LL)	-0.44	11-12	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.72	Vert(CT)	-0.75	11-12	>666	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.79	Horz(CT)	0.12	9	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 210 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP SS *Except* 4-6:2x4 SP No.1
BOT CHORD 2x4 SP SS
WEBS 2x4 SP No.3
WEDGE Left: 2x6 SP No.2
Right: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied, except
2-0-0 oc purlins (2-9-12 max.): 4-6.
BOT CHORD Rigid ceiling directly applied or 7-1-0 oc bracing.

REACTIONS (size) 1=0-3-8, 9=0-3-8
Max Horiz 1=-161 (LC 17)
Max Uplift 1=-448 (LC 16), 9=-448 (LC 17)
Max Grav 1=1901 (LC 38), 9=1901 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-3098/1125, 2-4=-2720/1073, 4-5=-2534/1051, 5-6=-2534/1051, 6-8=-2720/1073, 8-9=-3098/1125
BOT CHORD 1-9=-858/2631
WEBS 4-12=-129/591, 2-12=-505/347, 4-11=-181/669, 5-11=-761/289, 6-11=-181/669, 6-10=-129/591, 8-10=-505/347

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) All bearings are assumed to be SP SS crushing capacity of 565 psi.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 448 lb uplift at joint 1 and 448 lb uplift at joint 9.
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.
12) 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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-4=-49, 4-6=-60, 6-9=-49, 13-18=-20

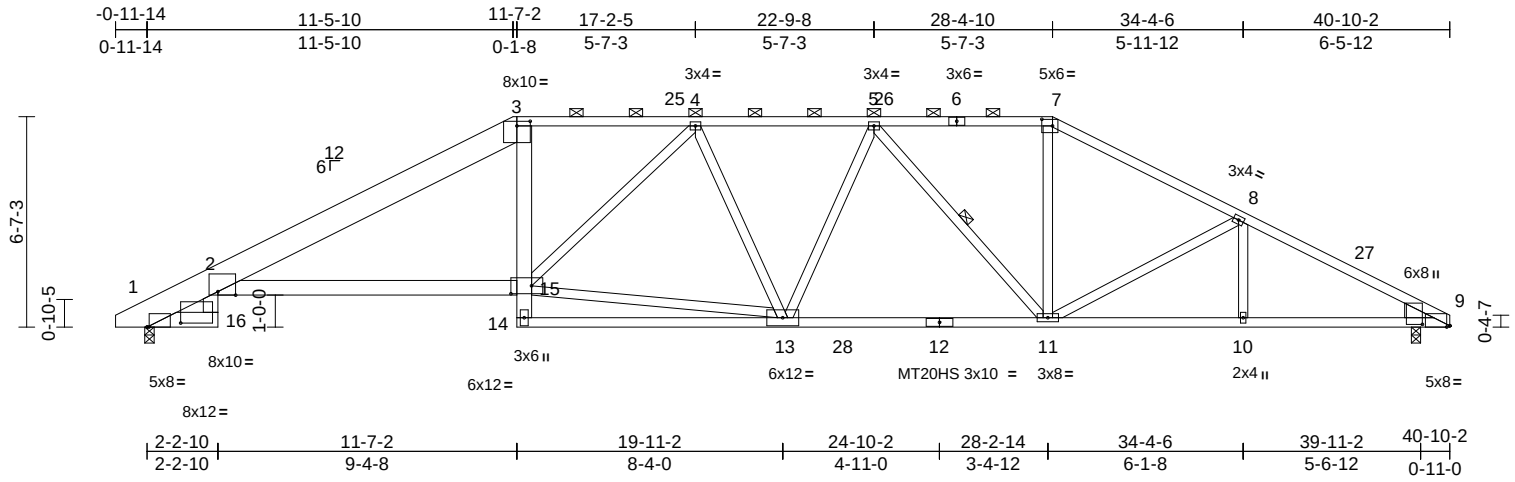
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A07	Hip	1	1	I63425190
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 E Feb 9 2023 Print: 8.630 E Feb 9 2023 MiTek Industries, Inc. Tue Feb 06 14:23:59 Page: 1
ID:S5keLgYAxXrNpIzwWY5qy_yhiNx-WGoxvWZYyXrIpKwfdWGw9ION4NkwPTU?Fe_lEWzo05m



Scale = 1:72.2

Plate Offsets (X, Y): [1:0-0-12,Edge], [2:0-6-11,Edge], [3:0-5-0,0-1-12], [7:0-4-0,0-2-8], [9:0-1-3,Edge], [9:0-0-8,0-10-5], [15:0-7-12,0-3-0], [16:1-0-10,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.88	Vert(LL)	-0.31	11-13	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.98	Vert(CT)	-0.59	2-15	>827	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.80	Horz(CT)	0.29	9	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 267 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2 *Except* 1-3:2x10 SP DSS, 7-9:2x4 SP No.1
BOT CHORD 2x6 SP No.2 *Except* 2-15:2x6 SP DSS, 14-12:2x4 SP No.2, 12-9:2x4 SP SS
WEBS 2x4 SP No.3 *Except* 13-15:2x4 SP No.2
WEDGE Right: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied, except 2-0-0 oc purlins (2-6-0 max.): 3-7.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 5-11

REACTIONS (lb/size) 1=1469/0-3-8, 9=1533/0-3-8
Max Horiz 1=-145 (LC 17)
Max Uplift 1=-314 (LC 16), 9=-338 (LC 17)
Max Grav 1=1738 (LC 39), 9=1842 (LC 39)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-1015/409, 2-3=-3387/1131, 3-25=-2995/1111, 4-25=-2984/1112, 4-5=-3106/1106, 5-26=-2474/976, 6-26=-2474/976, 6-7=-2474/976, 7-8=-2762/1012, 8-27=-2747/1054, 9-27=-2812/1029
BOT CHORD 1-16=-122/358, 2-16=-157/479, 2-15=-813/3090, 3-15=-100/784, 13-14=-107/402, 13-28=-775/3072, 12-28=-775/3072, 11-12=-775/3072, 10-11=-812/2392, 9-10=-812/2392
WEBS 13-15=-718/2860, 7-11=-210/853, 8-11=-423/255, 4-13=-321/174, 4-15=-369/208, 5-11=-913/286

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
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 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
10) Bearing at joint(s) 1 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 314 lb uplift at joint 1 and 338 lb uplift at joint 9.
12) 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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-49, 3-7=-60, 7-9=-49, 16-17=-20, 2-15=-20, 14-20=-20

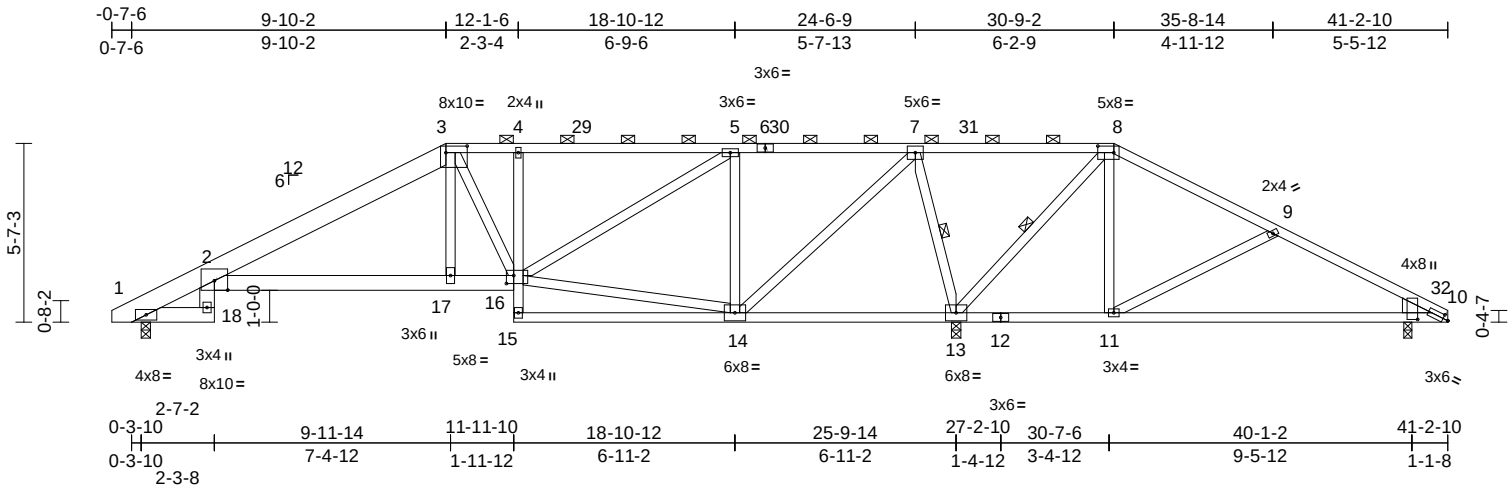
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A08	Hip	1	1	I63425191
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 E Aug 30 2023 Print: 8.630 E Aug 30 2023 MiTek Industries, Inc. Tue Feb 06 17:37:37 Page: 1
ID:5WmBu5F27fMYTsIMlZhk6PyhiPc-alvPdvw7SyPV7dvaq_6beTfAjTg1?rcNGUnd4?znzGC



Scale = 1:72.1

Plate Offsets (X, Y): [3:0-8-0,0-2-8], [8:0-6-0,0-2-8], [10:0-2-0,0-1-8], [10:0-0-8,0-11-5], [16:0-2-12,0-3-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.81	Vert(LL)	0.20	2-17	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.32	2-17	>969	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.71	Horz(CT)	0.14	13	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 254 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2 *Except* 1-3:2x8 SP DSS, 6-8:2x4 SP No.1
BOT CHORD 2x6 SP No.2 *Except* 4-15:2x4 SP No.3, 15-12,12-10:2x4 SP No.2
WEBS 2x4 SP No.3
WEDGE Right: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except 2-0-0 oc purlins (3-4-11 max.): 3-8.
BOT CHORD Rigid ceiling directly applied or 5-9-8 oc bracing.
WEBS 1 Row at midpt 8-13, 7-13

REACTIONS (lb/size) 1=744/0-3-8, 10=203/0-3-0, 13=2126/0-3-8
Max Horiz 1=-120 (LC 17)
Max Uplift 1=-246 (LC 16), 10=-148 (LC 17), 13=-576 (LC 13)
Max Grav 1=908 (LC 39), 10=474 (LC 43), 13=2738 (LC 38)

FORCES (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-517/212, 2-3=-1424/362, 3-4=-1320/391, 4-29=-1344/402, 5-29=-1344/402, 5-6=-573/211, 6-30=-573/211, 7-30=-573/211, 7-31=-394/1234, 8-31=-394/1234, 8-9=-254/535, 9-10=-341/322, 10-32=-279/37
BOT CHORD 1-18=-130/281, 2-18=-87/270, 2-17=-243/1278, 16-17=-243/1289, 4-16=-554/228, 13-14=-986/546, 12-13=-383/364, 11-12=-383/364, 10-11=-203/272
WEBS 3-17=-14/406, 3-16=-528/106, 14-16=-211/460, 8-13=-1249/481, 8-11=-57/413, 9-11=-574/324, 5-14=-1103/424, 5-16=-336/881, 7-14=-511/1705, 7-13=-1895/621

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 576 lb uplift at joint 13, 148 lb uplift at joint 10 and 246 lb uplift at joint 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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-49, 3-8=-60, 8-10=-49, 18-24=-20, 2-16=-20, 15-19=-20

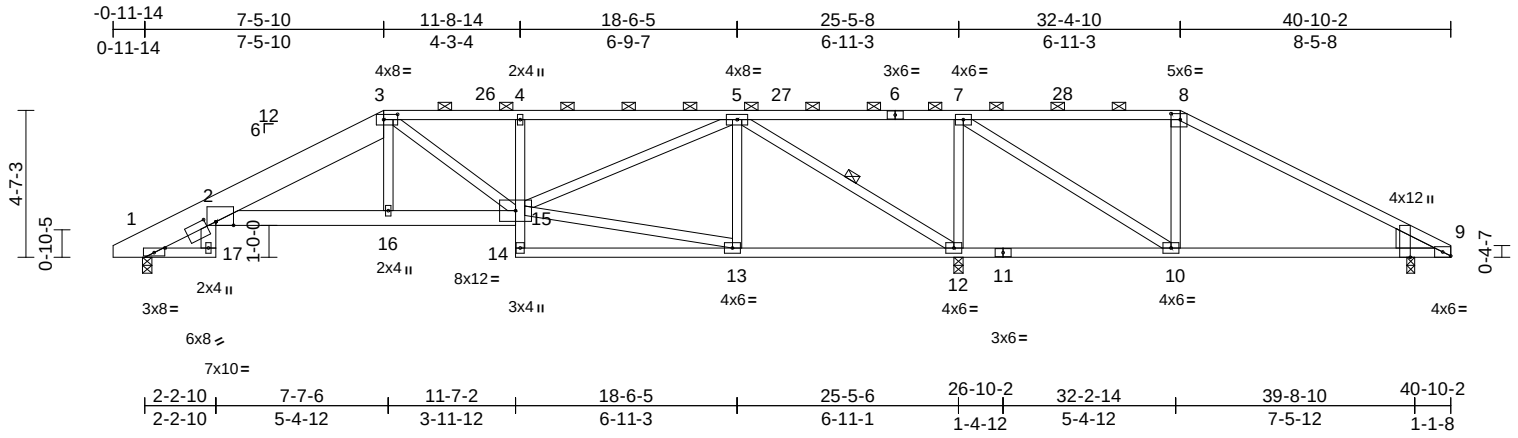
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A09	Hip	1	1	I63425192
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:33 Page: 1
ID:R7xy5kHtz4HvtZA_3mF_tYyhiQs-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:72.1

Plate Offsets (X, Y): [1:0-4-0,Edge], [2:0-6-11,Edge], [2:0-3-12,0-2-13], [3:0-5-4,0-2-0], [8:0-3-8,0-2-4], [9:Edge,0-0-8], [9:0-0-8,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.96	Vert(LL)	-0.13	4	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.58	Vert(CT)	-0.23	13-14	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.86	Horz(CT)	0.12	12	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 242 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1 *Except* 1-3:2x10 SP DSS, 8-9:2x4 SP No.2
BOT CHORD 2x4 SP No.2 *Except* 17-2,2-15:2x6 SP No.2, 4-14:2x4 SP No.3
WEBS 2x4 SP No.3
WEDGE Right: 2x8 SP DSS

BRACING
TOP CHORD Structural wood sheathing directly applied, except
2-0-0 oc purlins (2-2-0 max.): 3-8.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except:
5-10-4 oc bracing: 10-12
6-0-0 oc bracing: 9-10.
WEBS 1 Row at midpt 5-12

REACTIONS (size) 1=0-3-8, 9=0-3-0, 12=0-3-8
Max Horiz 1=-101 (LC 17)
Max Uplift 1=-303 (LC 16), 9=-265 (LC 17), 12=-583 (LC 13)
Max Grav 1=987 (LC 39), 9=725 (LC 39), 12=2736 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-453/218, 2-3=-1908/666, 3-4=-2118/796, 4-5=-2129/804, 5-7=-192/940, 7-8=-390/353, 8-9=-574/323
BOT CHORD 1-17=-85/139, 2-17=-20/85, 2-16=-460/1757, 15-16=-458/1764, 14-15=0/122, 4-15=-604/237, 13-14=-26/172, 12-13=-295/1033, 10-12=-937/256, 9-10=-138/396
WEBS 3-16=0/252, 3-15=-216/443, 13-15=-273/872, 5-15=-352/1213, 5-13=0/220, 5-12=-2323/528, 7-12=-1372/420, 7-10=-242/1097, 8-10=-427/179

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
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) Bearing at joint(s) 1 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 303 lb uplift at joint 1, 583 lb uplift at joint 12 and 265 lb uplift at joint 9.
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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-49, 3-8=-60, 8-9=-49, 17-18=-20, 2-15=-20, 14-21=-20

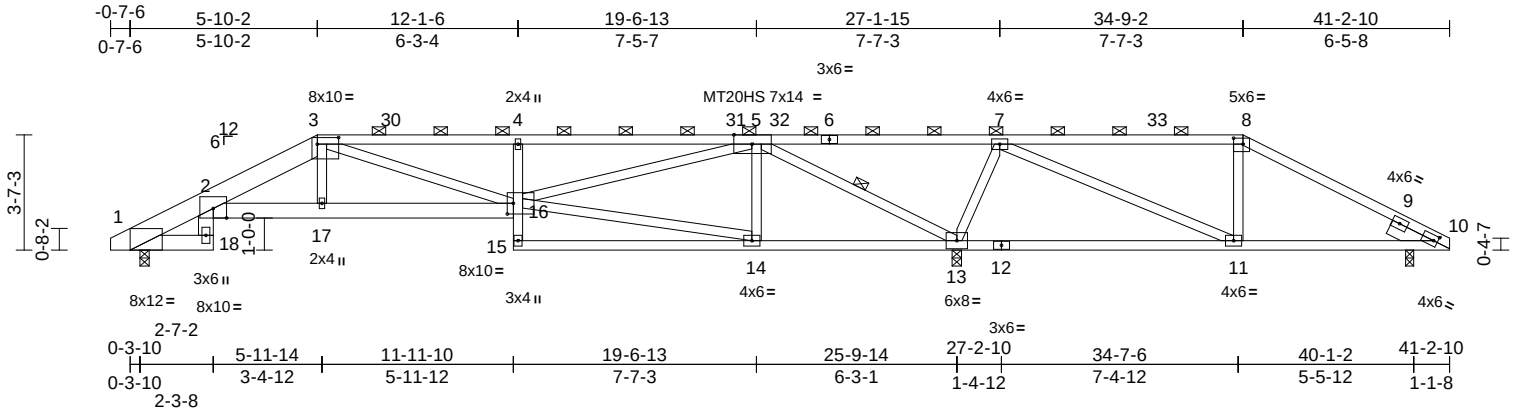
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A10	Hip	1	1	I63425193
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:34 Page: 1
ID:McMjYjsUW8YVLakVjheYdtyhiSh-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:72

Plate Offsets (X, Y): [3:0-8-0,0-2-8], [5:0-6-12,Edge], [8:0-3-8,0-2-4], [10:0-1-8,0-2-0], [16:0-2-4,0-4-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.99	Vert(LL)	-0.24	4	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.38	14-15	>815	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.94	Horz(CT)	0.15	13	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 227 lb	FT = 20%

LUMBER
TOP CHORD 2x8 SP DSS *Except* 3-6:2x4 SP No.1, 8-10:2x4 SP No.2, 6-8:2x4 SP SS
BOT CHORD 2x6 SP No.2 *Except* 4-15:2x4 SP No.3, 15-12,12-10:2x4 SP No.2
WEBS 2x4 SP No.3
SLIDER Right 2x6 SP No.2 -- 1-5-2

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-8-8 oc purlins, except 2-0-0 oc purlins (2-2-0 max.): 3-8.
BOT CHORD Rigid ceiling directly applied or 4-7-1 oc bracing.
WEBS 1 Row at midpt 5-13

REACTIONS (size) 1=0-3-8, 10=0-3-0, 13=0-3-8
Max Horiz 1=-76 (LC 17)
Max Uplift 1=-293 (LC 16), 10=-205 (LC 17), 13=-672 (LC 13)
Max Grav 1=917 (LC 38), 10=515 (LC 39), 13=3011 (LC 38)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-565/239, 2-3=-2178/653, 3-4=-2732/842, 4-5=-2708/843, 5-7=-444/2055, 7-8=-180/237, 8-10=-311/218
BOT CHORD 1-18=-124/301, 2-18=-90/290, 2-17=-531/2056, 16-17=-529/2071, 15-16=0/141, 4-16=-746/292, 14-15=-37/236, 13-14=-153/543, 11-13=-1458/357, 10-11=-103/219
WEBS 3-17=0/264, 3-16=-291/701, 14-16=-126/311, 5-16=-580/2259, 5-14=0/253, 5-13=-2939/771, 7-13=-1589/508, 7-11=-342/1521, 8-11=-462/215

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
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 2-00-00 wide will fit between the bottom chord and any other members.
10) WARNING: Required bearing size at joint(s) 13 greater than input bearing size.
11) Bearings are assumed to be: Joint 1 SP No.2 crushing capacity of 565 psi, Joint 13 SP No.2 crushing capacity of 565 psi, Joint 10 SP No.2 crushing capacity of 565 psi.
12) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 10.
13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 205 lb uplift at joint 10, 672 lb uplift at joint 13 and 293 lb uplift at joint 1.
14) 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.
15) 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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-49, 3-8=-60, 8-10=-49, 18-25=-20, 2-16=-20, 15-19=-20

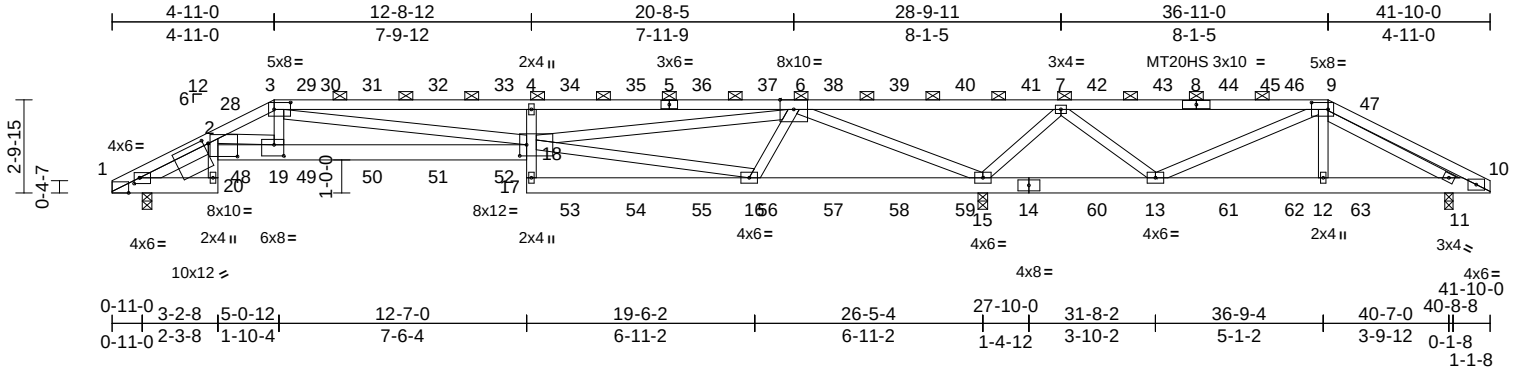
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A11GR	Hip Girder	1	2	I63425194
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:39 Page: 1

ID:E77hqeoTG6Dx0VCGwoq7oqyhinR-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:70

Plate Offsets (X, Y): [1:0-2-0,0-2-1], [1:0-4-0,Edge], [2:0-10-11,0-4-12], [2:0-1-12,0-2-0], [3:0-6-0,0-2-8], [9:0-6-0,0-2-8], [18:0-2-8,0-4-0], [19:0-3-8,0-4-0]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.90	Vert(LL)	0.29	4	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.67	Vert(CT)	-0.43	4	>744	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	NO	WB	0.89	Horz(CT)	0.15	15	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 495 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2 *Except* 3-5:2x4 SP No.1, 5-8:2x4 SP SS

BOT CHORD 2x6 SP No.2 *Except* 20-2:2x4 SP No.1, 2-18:2x6 SP DSS, 4-17:2x4 SP No.2

WEBS 2x4 SP No.3

SLIDER Left 2x4 SP No.2 -- 2-3-15

BRACING

TOP CHORD Structural wood sheathing directly applied or 5-10-6 oc purlins, except 2-0-0 oc purlins (5-1-8 max.): 3-9.

BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 11=0-3-0, 15=0-3-8
Max Horiz 1=-55 (LC 13)
Max Uplift 1=-529 (LC 12), 11=-190 (LC 56), 15=-1630 (LC 9)
Max Grav 1=1231 (LC 33), 11=336 (LC 34), 15=3924 (LC 33)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=-565/260, 2-3=-3517/1457, 3-4=-4178/1811, 4-6=-3890/1742, 6-7=-1973/4643, 7-9=-928/1778, 9-10=-212/163

BOT CHORD 1-20=-53/36, 2-20=-140/341, 2-19=-1225/3036, 18-19=-1304/3229, 17-18=0/157, 4-18=-909/479, 16-17=-245/603, 15-16=-555/165, 13-15=-2840/1295, 12-13=-178/234, 11-12=-187/232, 10-11=-48/128

WEBS 3-19=-338/908, 3-18=-543/965, 16-18=-957/397, 6-18=-1851/4301, 6-16=-26/523, 6-15=-4471/2068, 7-15=-2595/1140, 7-13=-388/1396, 9-13=-1839/845, 9-12=0/264, 9-11=-192/168

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: 2x6 - 2 rows staggered at 0-9-0 oc, 2x4 - 1 row at 0-9-0 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 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
5) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
6) Roof design snow load has been reduced to account for slope.
7) Unbalanced snow loads have been considered for this design.
8) Provide adequate drainage to prevent water ponding.
9) All plates are MT20 plates unless otherwise indicated.
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) 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 1630 lb uplift at joint 15, 529 lb uplift at joint 1 and 190 lb uplift at joint 11.
14) 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.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.

February 6,2024

Continued on page 2

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

16) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 82 lb down and 51 lb up at 3-11-0, 44 lb down and 53 lb up at 5-11-0, 44 lb down and 53 lb up at 7-11-0, 44 lb down and 53 lb up at 9-11-0, 44 lb down and 53 lb up at 11-11-0, 58 lb down and 76 lb up at 13-11-0, 58 lb down and 76 lb up at 15-11-0, 58 lb down and 76 lb up at 17-11-0, 58 lb down and 76 lb up at 19-11-0, 58 lb down and 76 lb up at 21-11-0, 58 lb down and 76 lb up at 23-11-0, 58 lb down and 76 lb up at 25-11-0, 62 lb down and 82 lb up at 27-11-0, 62 lb down and 82 lb up at 29-11-0, 62 lb down and 82 lb up at 31-11-0, 62 lb down and 82 lb up at 33-11-0, and 62 lb down and 82 lb up at 35-11-0, and 70 lb down and 54 lb up at 37-11-0 on top chord, and 95 lb down and 54 lb up at 3-11-0, 46 lb down and 40 lb up at 5-11-0, 46 lb down and 40 lb up at 7-11-0, 46 lb down and 40 lb up at 9-11-0, 46 lb down and 40 lb up at 11-11-0, 30 lb down and 16 lb up at 13-11-0, 30 lb down and 16 lb up at 15-11-0, 30 lb down and 16 lb up at 17-11-0, 30 lb down and 16 lb up at 19-11-0, 30 lb down and 16 lb up at 21-11-0, 30 lb down and 16 lb up at 23-11-0, 30 lb down and 16 lb up at 25-11-0, 37 lb down at 27-11-0, 37 lb down at 29-11-0, 37 lb down at 31-11-0, 37 lb down at 33-11-0, and 37 lb down at 35-11-0, and 72 lb down and 42 lb up at 37-11-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

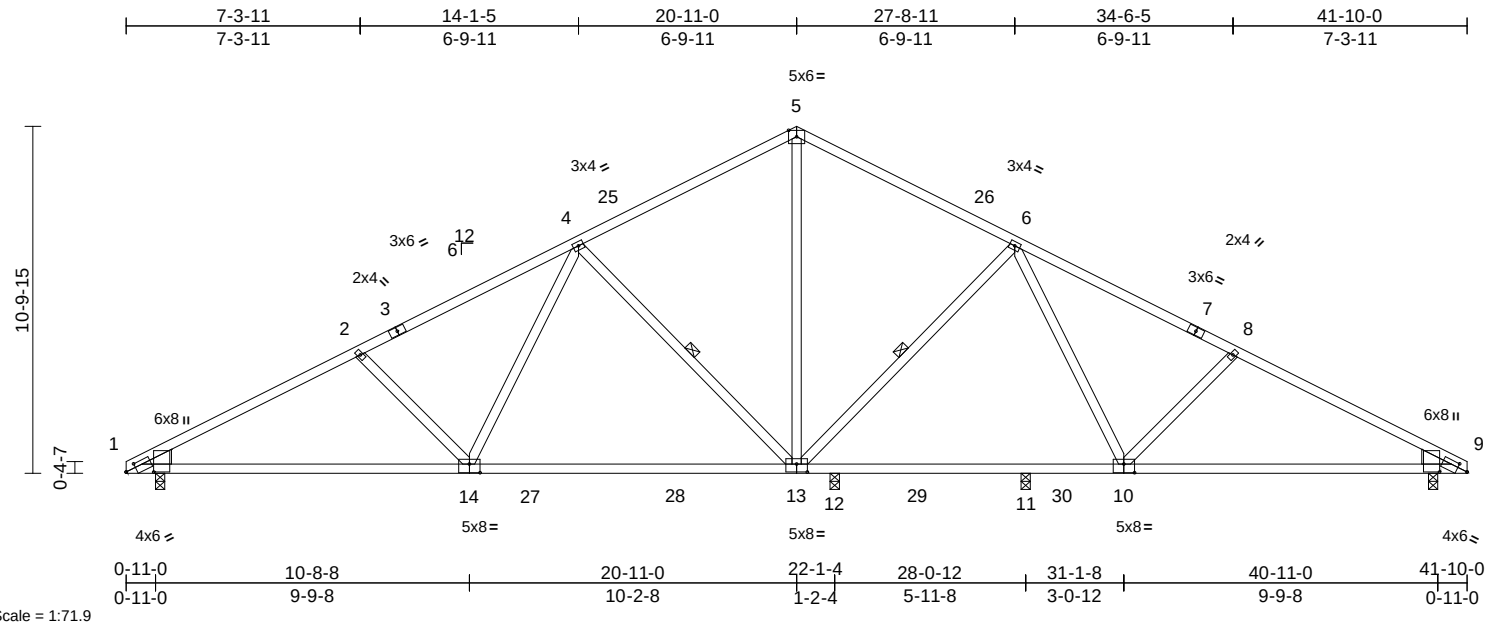
LOAD CASE(S) Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
   Uniform Loads (lb/ft)
   Vert: 1-2=-49, 2-3=-49, 3-9=-60, 9-10=-49, 1-20=-20, 2-18=-20, 10-17=-20
   Concentrated Loads (lb)
   Vert: 14=-19 (F), 13=-19 (F), 28=-62 (F), 29=-16 (F), 31=-16 (F), 32=-16 (F), 33=-16 (F), 34=-30 (F), 35=-30 (F), 36=-30 (F), 37=-30 (F), 38=-30 (F), 39=-30 (F), 40=-30 (F), 41=-34 (F), 42=-34 (F), 43=-34 (F), 44=-34 (F), 46=-34 (F), 47=-50 (F), 48=-95 (F), 49=-40 (F), 50=-40 (F), 51=-40 (F), 52=-40 (F), 53=-27 (F), 54=-27 (F), 55=-27 (F), 56=-27 (F), 57=-27 (F), 58=-27 (F), 59=-27 (F), 60=-19 (F), 61=-19 (F), 62=-19 (F), 63=-72 (F)

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A12	Common	4	1	I63425195
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:40 Page: 1
ID:rnWSRywFN07iqFo51TNFjGyhfA9-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:71.9

Plate Offsets (X, Y): [1:0-3-14,0-1-8], [1:Edge,0-10-5], [9:0-3-14,0-1-8], [9:Edge,0-10-5], [10:0-4-0,0-3-4], [13:0-4-0,0-3-0], [14:0-4-0,0-3-4]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.95	Vert(LL)	-0.53	13-14	>504	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.78	Vert(CT)	-0.95	13-14	>279	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.38	Horz(CT)	0.08	9	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 217 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1 *Except* 14-13,10-13:2x4 SP SS
WEBS 2x4 SP No.3
WEDGE Left: 2x6 SP No.2
Right: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 1-11-14 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 4-13, 6-13

REACTIONS (size) 1=0-3-8, 9=0-3-8, 11=0-3-8, 12=0-3-8
Max Horiz 1=137 (LC 16)
Max Uplift 1=-40 (LC 16), 9=-56 (LC 17), 12=-41 (LC 16)
Max Grav 1=1284 (LC 2), 9=1223 (LC 2), 11=199 (LC 24), 12=803 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1970/273, 2-4=-1733/262, 4-5=-965/235, 5-6=-964/235, 6-8=-1561/270, 8-9=-1808/282
BOT CHORD 1-12=-165/1669, 11-12=-46/1196, 9-11=-164/1536
WEBS 4-14=-1/526, 2-14=-287/164, 4-13=-740/210, 5-13=-67/511, 6-13=-637/216, 6-10=-10/353, 8-10=-316/164

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
8) Bearings are assumed to be: Joint 1 SP No.1 crushing capacity of 565 psi, Joint 12 SP SS crushing capacity of 565 psi, Joint 11 SP SS crushing capacity of 565 psi, Joint 9 SP No.1 crushing capacity of 565 psi.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 40 lb uplift at joint 1, 41 lb uplift at joint 12 and 56 lb uplift at joint 9.
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

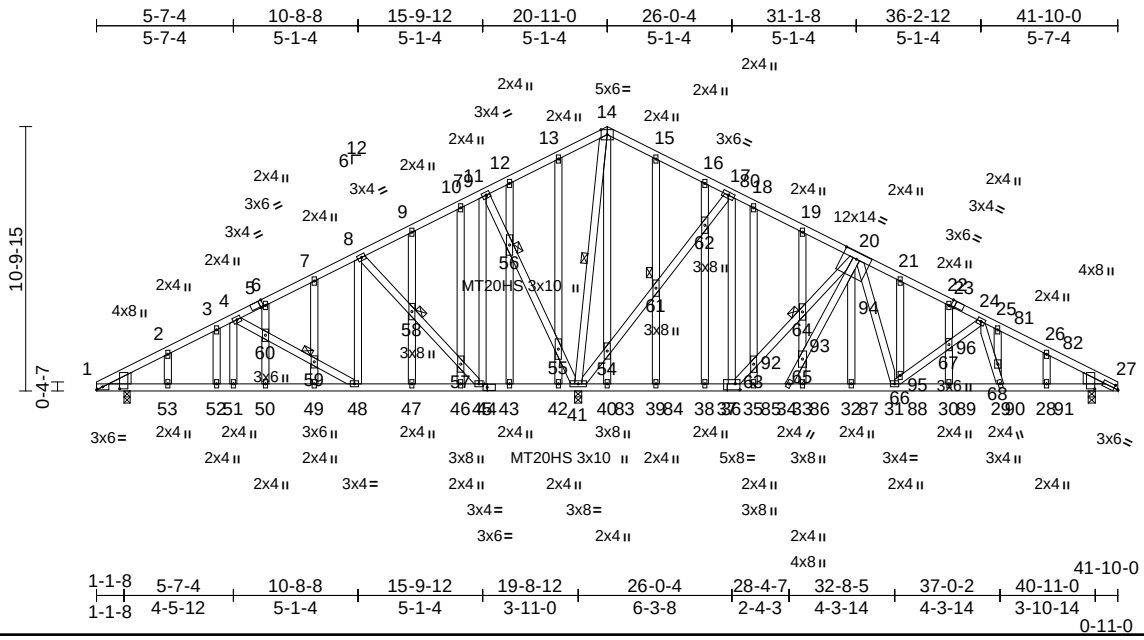
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	A13GR	Common Girder	1	1	I63425196
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:41 Page: 1

ID:Y3bGE9JkI1fQfiK7qqRNcYzoaAM-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:94.4

Plate Offsets (X, Y): [1:0-0-8,0-11-5], [5:0-1-9,Edge], [20:0-7-0,0-3-4], [23:0-1-13,Edge], [27:0-2-0,0-1-8], [27:0-0-8,0-11-5], [36:0-2-4,0-3-0], [44:0-2-0,0-1-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.60	Vert(LL)	-0.06	30	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.80	Vert(CT)	-0.10	30	>999	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	NO	WB	0.76	Horz(CT)	0.02	27	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 415 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
OTHERS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2
	Right: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 4-7-0 oc purlins.
BOT CHORD	Rigid ceiling directly applied or 6-0-0 oc bracing.
WEBS	1 Row at midpt 14-41
JOINTS	1 Brace at Jt(s): 56, 58, 59, 61, 64

REACTIONS (size) 1=0-3-0, 27=0-3-8, 41=0-3-8
Max Horiz 1=137 (LC 12)
Max Uplift 1=-81 (LC 35), 27=-79 (LC 13), 41=-146 (LC 12)
Max Grav 1=486 (LC 29), 27=967 (LC 30), 41=2798 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension

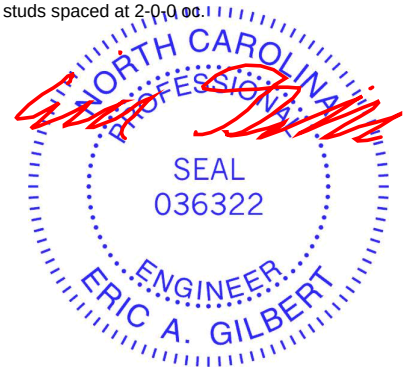
TOP CHORD 1-2=-439/106, 2-3=-419/134, 3-4=-373/150, 4-6=-91/271, 6-7=-73/288, 7-8=-43/304, 8-9=0/542, 9-10=0/563, 10-11=0/614, 11-12=0/846, 12-13=0/913, 13-14=0/899, 14-15=0/791, 15-16=0/752, 16-17=0/672, 17-18=-139/155, 18-19=-250/145, 19-20=-272/111, 20-21=-990/170, 21-22=-976/142, 22-24=-1048/116, 24-25=-1107/154, 25-26=-1259/134, 26-27=-1274/108

BOT CHORD 1-53=-192/351, 52-53=-192/351, 51-52=-192/351, 50-51=-192/351, 49-50=-192/351, 48-49=-192/351, 47-48=-253/188, 46-47=-253/188, 45-46=-253/188, 43-45=-484/178, 42-43=-484/178, 41-42=-484/178, 40-41=-63/203, 39-40=-63/203, 38-39=-63/203, 36-38=-63/203, 35-36=-11/791, 34-35=-11/791, 33-34=-9/755, 32-33=-9/755, 31-32=-10/748, 30-31=-54/1118, 29-30=-54/1118, 28-29=-59/1077, 27-28=-59/1077

WEBS 4-51=-25/141, 4-60=-368/84, 59-60=-379/84, 48-59=-388/86, 8-48=-37/357, 8-58=-565/100, 57-58=-590/106, 45-57=-581/102, 11-45=-70/442, 11-56=-650/123, 55-56=-698/130, 41-55=-663/132, 14-41=-1051/0, 41-54=-1119/135, 54-61=-1195/150, 61-62=-1139/141, 17-62=-1113/137, 17-36=-78/739, 36-63=-827/108, 63-64=-920/117, 20-64=-803/104, 34-65=-11/79, 20-65=-16/90, 20-31=-63/556, 31-66=-464/97, 66-67=-354/64, 24-67=-341/66, 24-68=-182/0, 29-68=0/86, 14-54=-61/228, 40-54=-43/114, 13-55=-208/51, 42-55=-240/54, 12-56=-3/57, 43-56=0/97, 10-57=0/73, 46-57=0/65, 9-58=-70/47, 47-58=-36/40, 7-59=-41/37, 49-59=-25/33, 6-60=-51/37, 50-60=-25/34, 3-52=-20/28, 2-53=-45/37, 15-61=-90/63, 39-61=-9/68, 16-62=0/78, 38-62=0/105, 18-63=0/144, 35-63=0/55, 19-64=-107/63, 64-65=-16/61, 33-65=-74/45, 20-32=0/106, 21-66=-141/43, 22-67=-1/83, 30-67=0/72, 25-68=0/207, 26-28=-66/45

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
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 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
5) Roof design snow load has been reduced to account for slope.
6) Unbalanced snow loads have been considered for this design.
7) All plates are MT20 plates unless otherwise indicated.
8) Gable studs spaced at 2-0-0 oc.



February 6,2024

Continued on page 2

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

9) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
11) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 81 lb uplift at joint 1, 146 lb uplift at joint 41 and 79 lb uplift at joint 27.
13) 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.
14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 51 lb down and 35 lb up at 37-7-12, and 86 lb down and 26 lb up at 39-7-12 on top chord, and 95 lb down and 39 lb up at 21-7-12, 15 lb down at 23-7-12, 15 lb down at 25-7-12, 15 lb down at 27-7-12, 15 lb down at 29-7-12, 15 lb down at 31-7-12, 15 lb down at 33-7-12, 15 lb down at 35-7-12, and 15 lb down at 37-7-12, and 15 lb down at 39-7-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

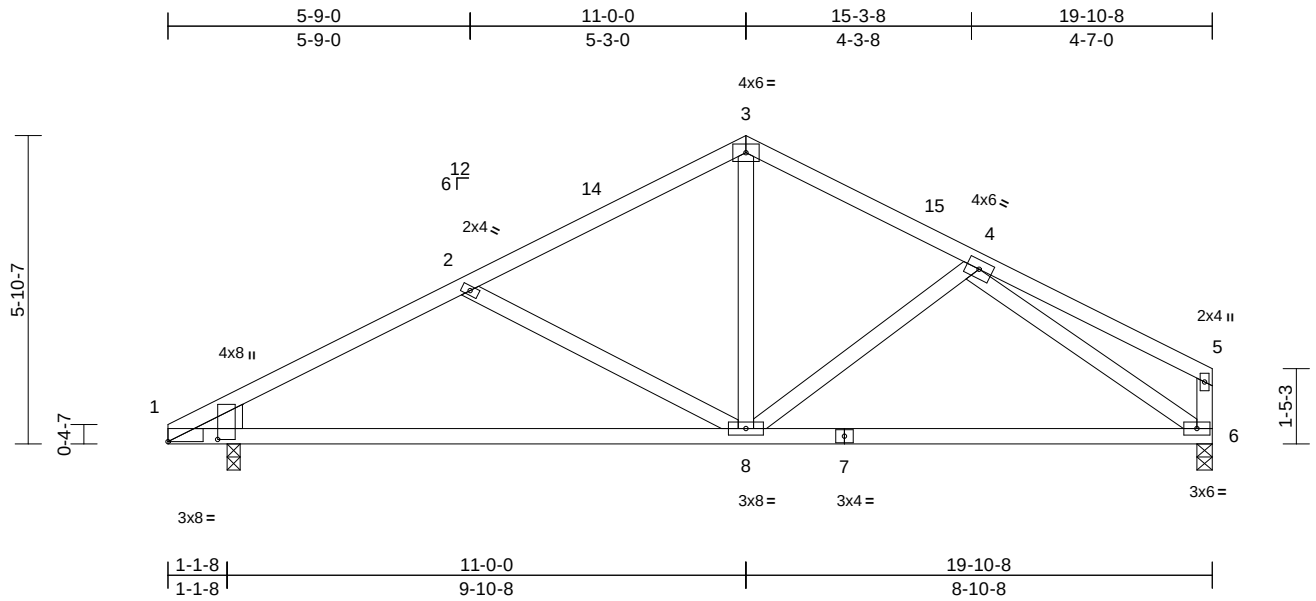
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
   Uniform Loads (lb/ft)
   Vert: 1-14=-49, 14-27=-49, 69-74=-20
   Concentrated Loads (lb)
   Vert: 37=-74 (F), 81=-12 (F), 82=-66 (F), 83=-79 (F), 84=-74 (F), 85=-13 (F), 86=-13 (F), 87=-13 (F), 88=-13 (F), 89=-13 (F), 90=-13 (F), 91=-15 (F), 92=-61 (F), 93=-61 (F), 94=-61 (F), 95=-61 (F), 96=-61 (F)

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	C01	Common	1	1	I63425197
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:43
ID:OKzEhyhdPMJC7MEQcl2UJozoaDl-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:43.9

Plate Offsets (X, Y): [1:0-0-8,0-11-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.58	Vert(LL)	-0.12	8-13	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.76	Vert(CT)	-0.25	6-8	>945	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.47	Horz(CT)	0.02	6	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 99 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-9-6 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-0, 6=0-3-8
Max Horiz 1=78 (LC 15)
Max Uplift 1=-28 (LC 16), 6=-15 (LC 17)
Max Grav 1=837 (LC 2), 6=741 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-1062/187, 2-3=-801/134, 3-4=-790/142, 4-5=-170/56, 5-6=-172/60
BOT CHORD 1-8=-145/880, 6-8=-110/733
WEBS 2-8=-284/140, 3-8=-11/426, 4-8=-150/121, 4-6=-796/138

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
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 28 lb uplift at joint 1 and 15 lb uplift at joint 6.
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

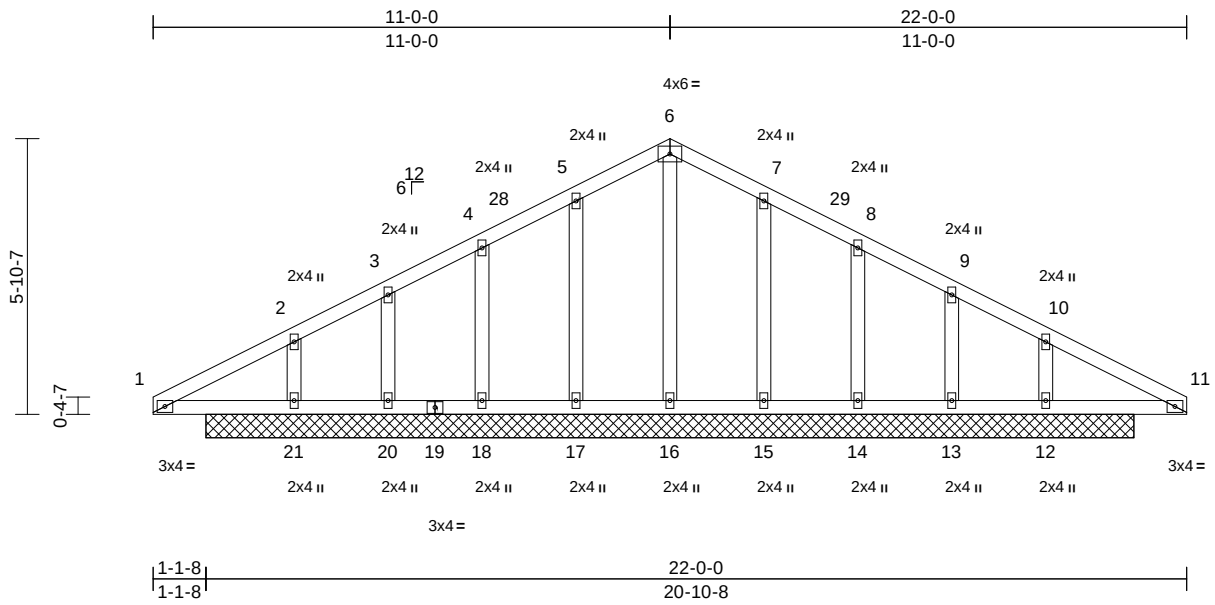
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	C01G	Common Supported Gable	1	1	I63425198
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:44
ID:H5DlXJk8SbpeczYBrb7QTezoaDh-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:49

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.22	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.19	Vert(TL)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.16	Horiz(TL)	0.00	12	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MS								
BCDL	10.0										Weight: 111 lb	FT = 20%

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

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

REACTIONS (size) 12=19-9-0, 13=19-9-0, 14=19-9-0, 15=19-9-0, 16=19-9-0, 17=19-9-0, 18=19-9-0, 20=19-9-0, 21=19-9-0
Max Horiz 21=-72 (LC 17)
Max Uplift 12=-16 (LC 17), 13=-45 (LC 17), 14=-24 (LC 17), 15=-29 (LC 17), 17=-29 (LC 16), 18=-23 (LC 16), 20=-47 (LC 16), 21=-14 (LC 17)
Max Grav 12=342 (LC 34), 13=105 (LC 2), 14=184 (LC 34), 15=192 (LC 23), 16=312 (LC 2), 17=192 (LC 22), 18=184 (LC 33), 20=105 (LC 2), 21=342 (LC 33)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-34/233, 2-3=0/206, 3-4=0/217, 4-5=0/216, 5-6=0/211, 6-7=0/211, 7-8=0/216, 8-9=0/217, 9-10=0/206, 10-11=-32/233
BOT CHORD 1-21=-169/53, 20-21=-169/51, 18-20=-169/51, 17-18=-169/51, 16-17=-169/51, 15-16=-169/51, 14-15=-169/51, 13-14=-169/51, 12-13=-169/51, 11-12=-169/51
WEBS 6-16=-270/0, 5-17=-155/58, 4-18=-128/62, 3-20=-94/59, 2-21=-210/74, 7-15=-155/58, 8-14=-128/62, 9-13=-94/58, 10-12=-210/74

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
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 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
5) Roof design snow load has been reduced to account for slope.
6) Unbalanced snow loads have been considered for this design.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) All bearings are assumed to be SP No.2 crushing capacity of 565 psi.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 29 lb uplift at joint 17, 23 lb uplift at joint 18, 47 lb uplift at joint 20, 14 lb uplift at joint 21, 29 lb uplift at joint 15, 24 lb uplift at joint 14, 45 lb uplift at joint 13 and 16 lb uplift at joint 12.
12) N/A
13) 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.

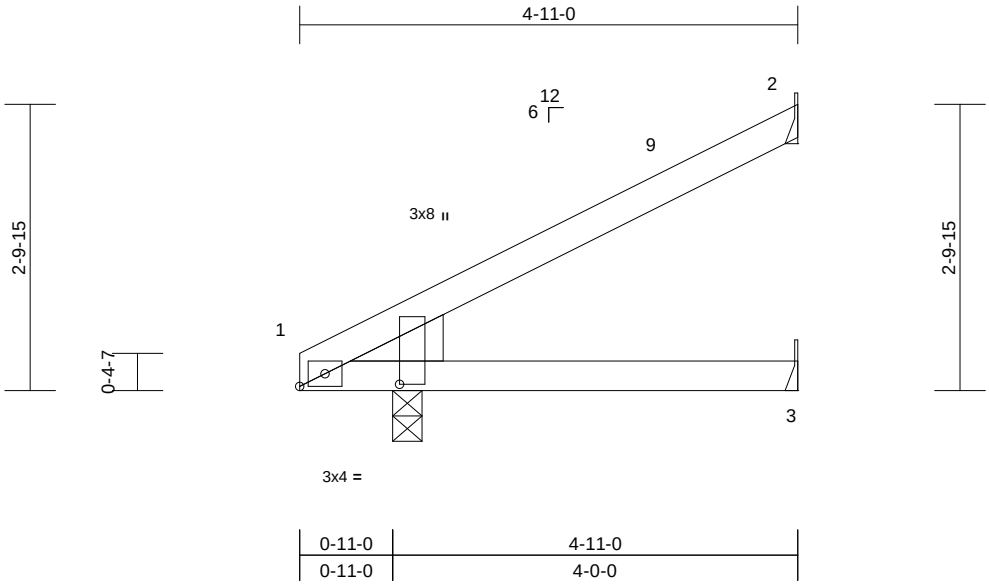
LOAD CASE(S) Standard

February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J01	Jack-Open	7	1	I63425199
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:44 Page: 1
ID:euDXlDDMaMAkG7Y26iyssiyhioB-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:22.7

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.22	Vert(LL)	0.02	3-8	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.24	Vert(CT)	-0.02	3-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.01	2	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 18 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-11-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 2= Mechanical, 3= Mechanical
Max Horiz 1=125 (LC 16)
Max Uplift 1=-42 (LC 16), 2=-87 (LC 16), 3=-4 (LC 16)
Max Grav 1=239 (LC 2), 2=100 (LC 2), 3=70 (LC 7)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-91/40
BOT CHORD 1-3=-170/68

NOTES
1) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: , Joint 1 SP No.2 crushing capacity of 565 psi.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 87 lb uplift at joint 2, 4 lb uplift at joint 3 and 42 lb uplift at joint 1.
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

February 6,2024

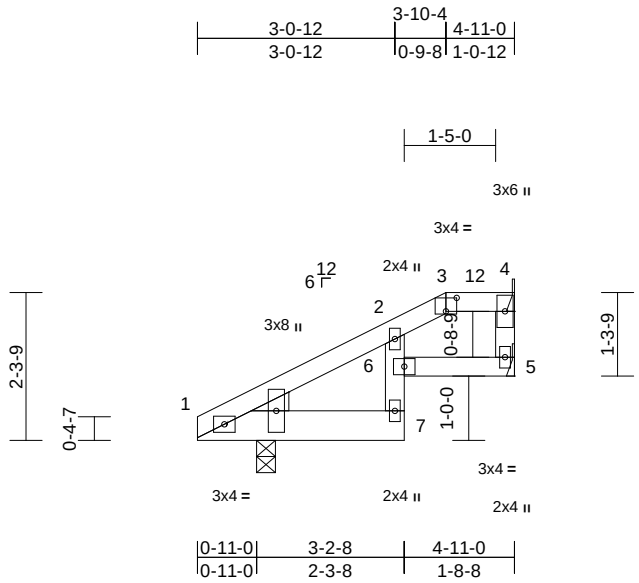
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J01GRT	Half Hip Girder	1	1	I63425200

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:44 Page: 1

ID:m7z0vs9sW7gJnVEHttuwisyhioF-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:35.7

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.28	Vert(LL)	0.01	7	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.47	Vert(CT)	-0.01	7	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.01	5	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 22 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2 *Except* 1-7:2x6 SP No.2
WEBS	2x4 SP No.3
WEDGE	Left: 2x4 SP No.3

BRACING

TOP CHORD	Structural wood sheathing directly applied or 4-11-0 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) 1=0-3-8, 4= Mechanical, 5= Mechanical
Max Horiz 1=82 (LC 49)
Max Uplift 1=-99 (LC 12), 4=-54 (LC 9), 5=-42 (LC 12)
Max Grav 1=388 (LC 31), 4=111 (LC 30), 5=115 (LC 31)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-243/94, 2-3=-124/57, 3-4=-127/77, 4-5=0/0
BOT CHORD	1-7=-89/160, 6-7=-83/133, 2-6=-29/80, 5-6=-68/127

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: , Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 54 lb uplift at joint 4, 42 lb uplift at joint 5 and 99 lb uplift at joint 1.
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.
14) Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.
15) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 106 lb down and 70 lb up at 3-0-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
16) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-3=-49, 3-4=-60, 1-7=-20, 5-6=-20
Concentrated Loads (lb)
Vert: 7=-106 (B)

February 6,2024

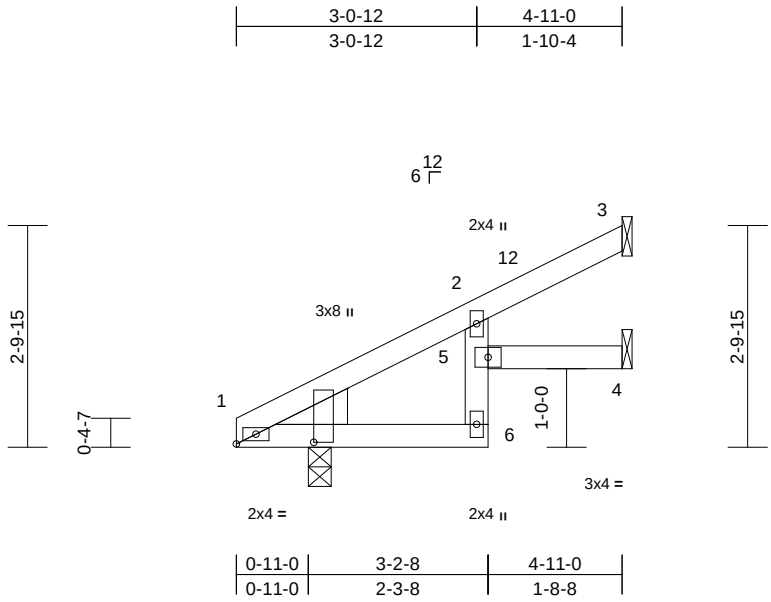
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J01T	Jack-Open	4	1	I63425201

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:45 Page: 1
ID:6pFUOl0KLR90LfJzALg6CKyhioR-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:29.4

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.13	Vert(LL)	0.02	4-5	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.25	Vert(CT)	-0.02	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	-0.01	4	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 20 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2 *Except* 6-2:2x4 SP No.3
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-11-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 3= Mechanical, 4= Mechanical
Max Horiz 1=125 (LC 16)
Max Uplift 1=-42 (LC 16), 3=-63 (LC 16), 4=-28 (LC 16)
Max Grav 1=239 (LC 2), 3=83 (LC 2), 4=68 (LC 7)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-133/51, 2-3=-56/34
BOT CHORD 1-6=-154/98, 5-6=-35/42, 2-5=-10/55, 4-5=0/0

NOTES
1) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: , Joint 1 SP No.2 crushing capacity of 565 psi.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 63 lb uplift at joint 3, 28 lb uplift at joint 4 and 42 lb uplift at joint 1.
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

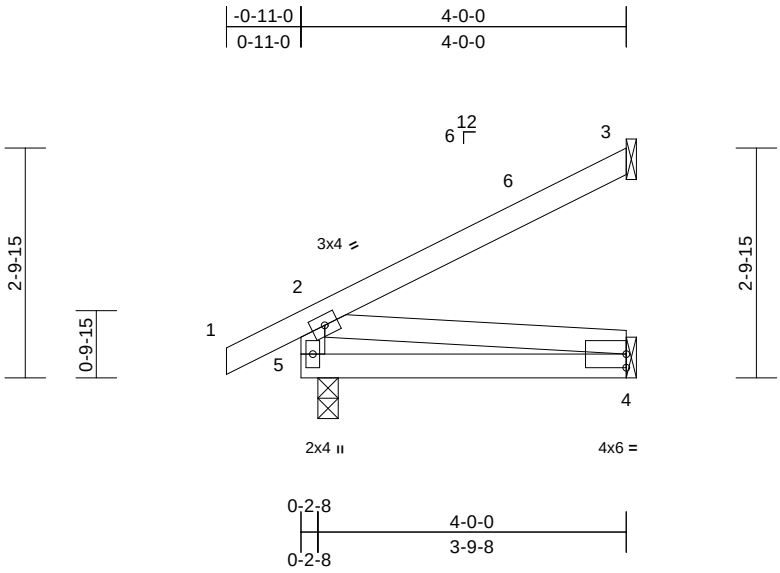
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J02	Jack-Open	5	1	I63425202
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:45 Page: 1
ID:pBoPMYkH?38QSzUMmJFUEGyhiop-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:28.3

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.24	Vert(LL)	-0.01	4-5	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.18	Vert(CT)	-0.03	4-5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 20 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) 3= Mechanical, 4= Mechanical, 5=0-3-0
Max Horiz 5=110 (LC 16)
Max Uplift 3=-93 (LC 16), 5=-50 (LC 16)
Max Grav 3=105 (LC 2), 4=77 (LC 7), 5=225 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 2-5=-186/158, 1-2=0/48, 2-3=-87/44
BOT CHORD 4-5=-199/78
WEBS 2-4=-79/202

NOTES
1) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
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 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) Bearings are assumed to be: , Joint 5 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 50 lb uplift at joint 5 and 93 lb uplift at joint 3.
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

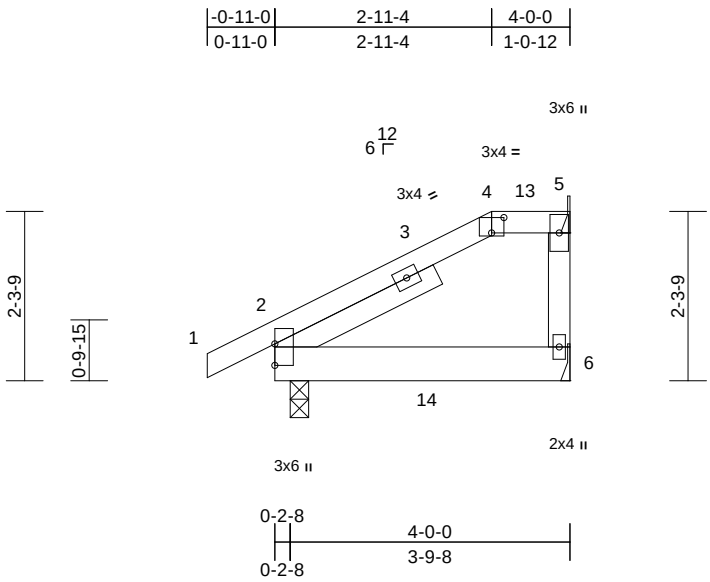
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J02GR	Half Hip Girder	1	1	I63425203
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:45 Page: 1
ID:Au4trRalpNd707Z23o1glkyhip?-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:31.2

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.23	Vert(LL)	0.00	6-11	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.10	Vert(CT)	0.00	6-11	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	5	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 23 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3
SLIDER Left 2x4 SP No.3 -- 2-5-0

BRACING
TOP CHORD Structural wood sheathing directly applied or 4-0-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 4-5.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 2=0-3-0, 5= Mechanical, 6= Mechanical
Max Horiz 2=105 (LC 11)
Max Uplift 2=-114 (LC 12), 5=-57 (LC 9), 6=-30 (LC 9)
Max Grav 2=379 (LC 32), 5=99 (LC 31), 6=92 (LC 32)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/41, 2-4=-75/87, 4-5=-55/55, 5-6=0/0
BOT CHORD 2-6=-81/62

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
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 20.0 psf on overhangs non-concurrent with other live loads.
7) Provide adequate drainage to prevent water ponding.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
10) Bearings are assumed to be: , Joint 2 SP No.2 crushing capacity of 565 psi.
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 57 lb uplift at joint 5, 30 lb uplift at joint 6 and 114 lb uplift at joint 2.
13) 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.
14) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
15) Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.
16) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 89 lb down and 67 lb up at 2-0-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
17) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00

Uniform Loads (lb/ft)
Vert: 1-4=-49, 4-5=-60, 6-7=-20
Concentrated Loads (lb)
Vert: 14=-89 (F)

February 6,2024

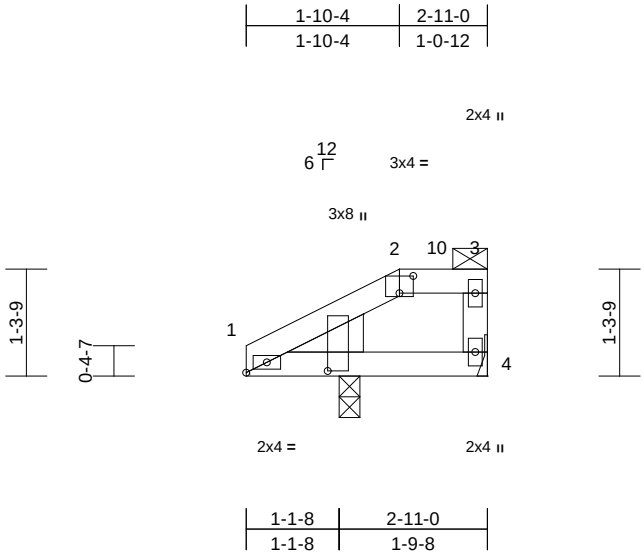
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J03	Half Hip	1	1	I63425204

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:46 Page: 1
ID:aBEavfPz64s6LzVMErnOBnyhipD-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:27.9

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13], [2:0-2-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.06	Vert(LL)	0.00	5	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	0.00	5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 12 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEBS 2x4 SP No.3
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-11-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 2-3.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (size) 1=0-3-0, 4= Mechanical
Max Horiz 1=52 (LC 15)
Max Uplift 1=-55 (LC 16), 4=-32 (LC 13)
Max Grav 1=247 (LC 35), 4=71 (LC 34)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-33/102, 2-3=-19/32, 3-4=-58/52
BOT CHORD 1-4=-66/46

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 32 lb uplift at joint 4 and 55 lb uplift at joint 1.
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
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-60, 4-5=-20

February 6,2024

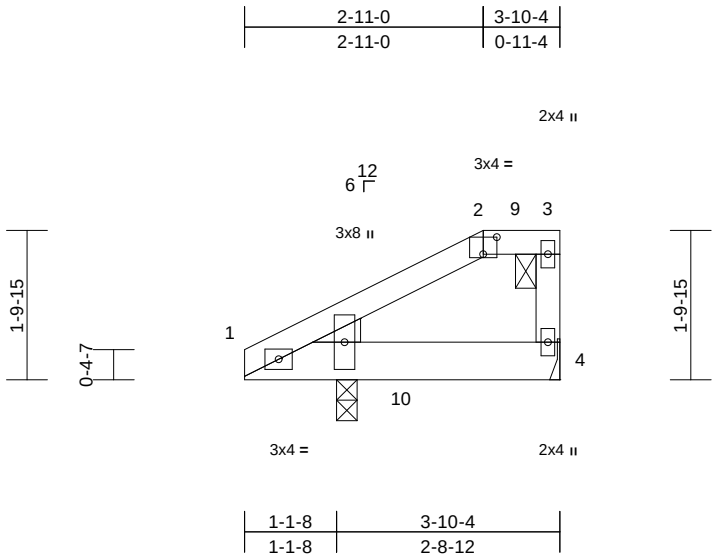
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J03GR	Half Hip Girder	1	1	I63425205

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:46 ID:aBEavfPz64s6LzVMErnOBnyhipD-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:28.2

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.09	Vert(LL)	0.00	1	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	0.00	1	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 18 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3
WEDGE Left: 2x4 SP No.3

BRACING

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

REACTIONS (size) 1=0-3-0, 4= Mechanical
Max Horiz 1=77 (LC 9)
Max Uplift 1=-95 (LC 12), 4=-55 (LC 9)
Max Grav 1=347 (LC 31), 4=109 (LC 30)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-69/100, 2-3=-23/35, 3-4=-76/41
BOT CHORD 1-4=-82/33

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 55 lb uplift at joint 4 and 95 lb uplift at joint 1.
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.
14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 55 lb down and 42 lb up at 1-11-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-60, 1-4=-20
Concentrated Loads (lb)
Vert: 10=-55 (B)

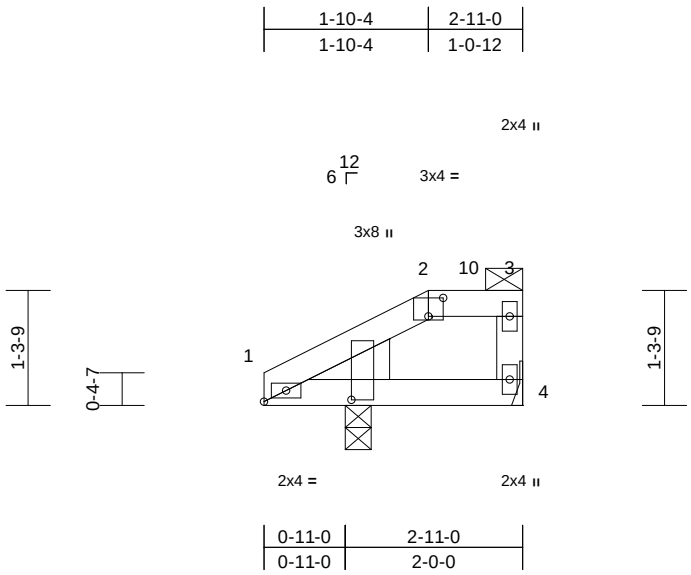
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J04	Half Hip	1	1	I63425206
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:46 ID:6ScMZh_0MKS4ebJdh?fBGPyhipm-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:26

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13], [2:0-2-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.05	Vert(LL)	0.00	5	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	0.00	5	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 12 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 2-11-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 2-3.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 4= Mechanical
Max Horiz 1=52 (LC 15)
Max Uplift 1=-48 (LC 16), 4=-33 (LC 13)
Max Grav 1=219 (LC 35), 4=86 (LC 34)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-36/76, 2-3=-30/40, 3-4=-65/57
BOT CHORD	1-4=-67/38

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 33 lb uplift at joint 4 and 48 lb uplift at joint 1.
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

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
Uniform Loads (lb/ft)
Vert: 1-2=-49, 2-3=-60, 4-5=-20

February 6,2024

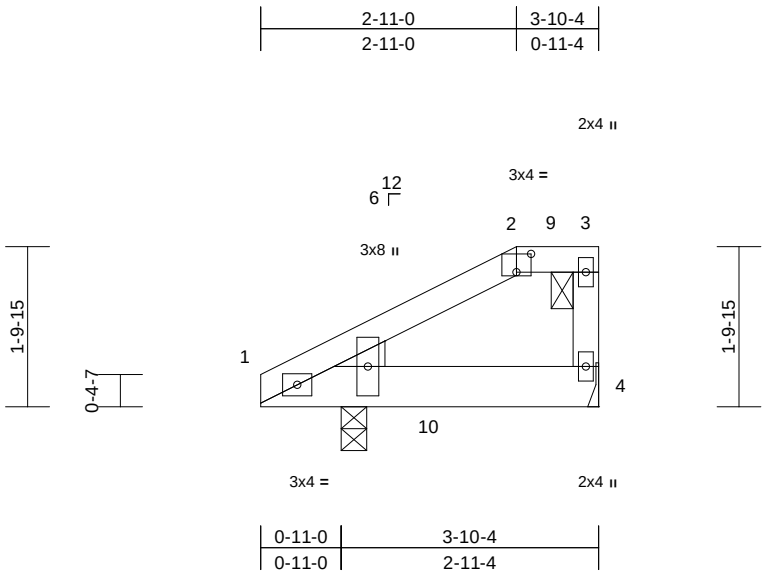
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J04GR	Half Hip Girder	1	1	I63425207

Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:46 ID:afAkm1?e7eaxGluqFiAQpcyhipl-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:26.3

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.10	Vert(LL)	0.00	1	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	0.00	1	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	4	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 18 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x6 SP No.2
WEBS	2x4 SP No.3
WEDGE	Left: 2x4 SP No.3

BRACING

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

REACTIONS (size) 1=0-3-8, 4= Mechanical
Max Horiz 1=77 (LC 49)
Max Uplift 1=-90 (LC 12), 4=-58 (LC 9)
Max Grav 1=331 (LC 31), 4=126 (LC 30)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-80/75, 2-3=-34/39, 3-4=-78/42
BOT CHORD	1-4=-67/34

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=150mph (3-second gust) Vasd=119mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 58 lb uplift at joint 4 and 90 lb uplift at joint 1.
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.
14) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 68 lb down and 44 lb up at 1-11-0 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
15) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

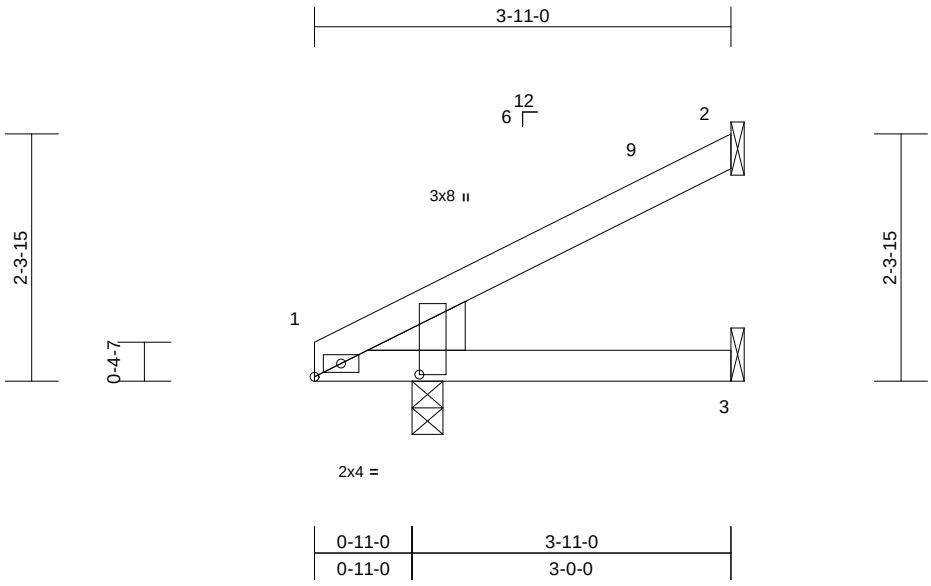
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
   Uniform Loads (lb/ft)
   Vert: 1-2=-49, 2-3=-60, 1-4=-20
   Concentrated Loads (lb)
   Vert: 10=-68 (F)

February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J05	Jack-Open	8	1	I63425208
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523, Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:47 Page: 1
ID:68G?m3FY0?Zv6AbDgLsk2?zoaBk-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:21.7

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.10	Vert(LL)	0.00	4	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.08	Vert(CT)	-0.01	3-8	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 15 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 3-11-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 2= Mechanical, 3= Mechanical
Max Horiz 1=58 (LC 16)
Max Uplift 2=-32 (LC 16)
Max Grav 1=202 (LC 2), 2=71 (LC 2), 3=50 (LC 7)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-39/29
BOT CHORD 1-3=-69/25

NOTES
1) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: , Joint 1 SP No.2 crushing capacity of 565 psi.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 32 lb uplift at joint 2.
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

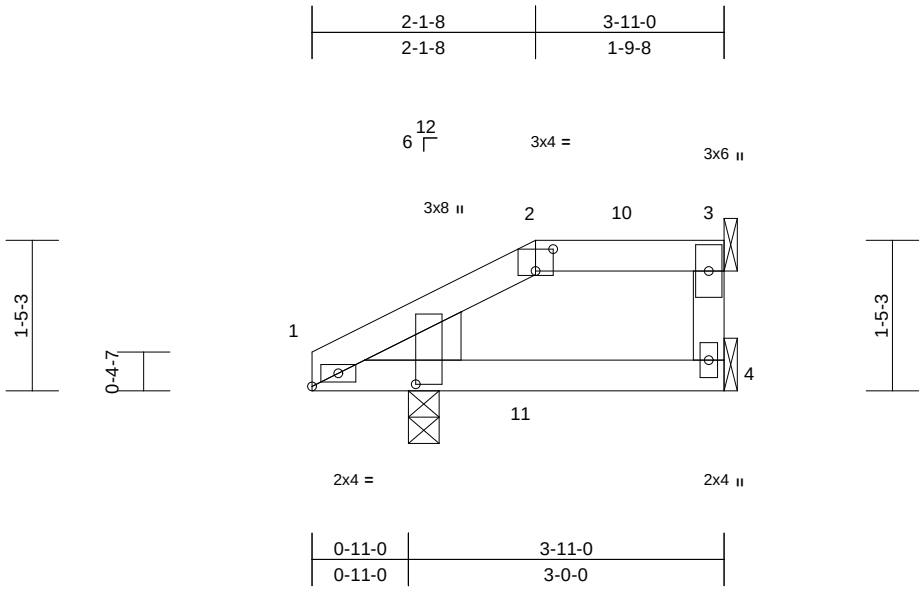
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J05GR	Half Hip Girder	1	1	I63425209
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:47
ID:PDgDge7GNwJKveqI4EhOeuzoaBu-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:21.9

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13], [2:0-2-0,0-2-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.16	Vert(LL)	0.00	4-9	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.07	Vert(CT)	0.00	4-9	>999	180		
TCDL	10.0	Rep Stress Incr	NO	WB	0.00	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 16 lb	FT = 20%

LUMBER

TOP CHORD	2x4 SP No.2
BOT CHORD	2x4 SP No.2
WEBS	2x4 SP No.3
WEDGE	Left: 2x6 SP No.2

BRACING

TOP CHORD	Structural wood sheathing directly applied or 3-11-0 oc purlins, except end verticals, and 2-0-0 oc purlins: 2-3.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 3= Mechanical, 4= Mechanical
Max Horiz 1=35 (LC 11)
Max Uplift 1=-14 (LC 12), 3=-23 (LC 9)
Max Grav 1=251 (LC 31), 3=115 (LC 30), 4=51 (LC 7)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD	1-2=-83/75, 2-3=-54/15, 3-4=0/0
BOT CHORD	1-4=-47/54

NOTES

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.33
3) ** TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps= varies (min. roof snow=14.5 psf Lumber DOL=1.15 Plate DOL=1.00) see load cases; Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
4) Roof design snow load has been reduced to account for slope.
5) Unbalanced snow loads have been considered for this design.
6) Provide adequate drainage to prevent water ponding.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Bearings are assumed to be: , Joint 1 SP No.2 crushing capacity of 565 psi.
10) Refer to girder(s) for truss to truss connections.
11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 23 lb uplift at joint 3 and 14 lb uplift at joint 1.
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.
14) Gap between inside of top chord bearing and first diagonal or vertical web shall not exceed 0.500in.
15) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 7 lb down and 4 lb up at 2-1-8 on top chord, and 6 lb up at 1-11-12 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.
16) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard

1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.00
   Uniform Loads (lb/ft)
   Vert: 1-2=-49, 2-3=-60, 4-5=-20
   Concentrated Loads (lb)
   Vert: 11=0 (F)

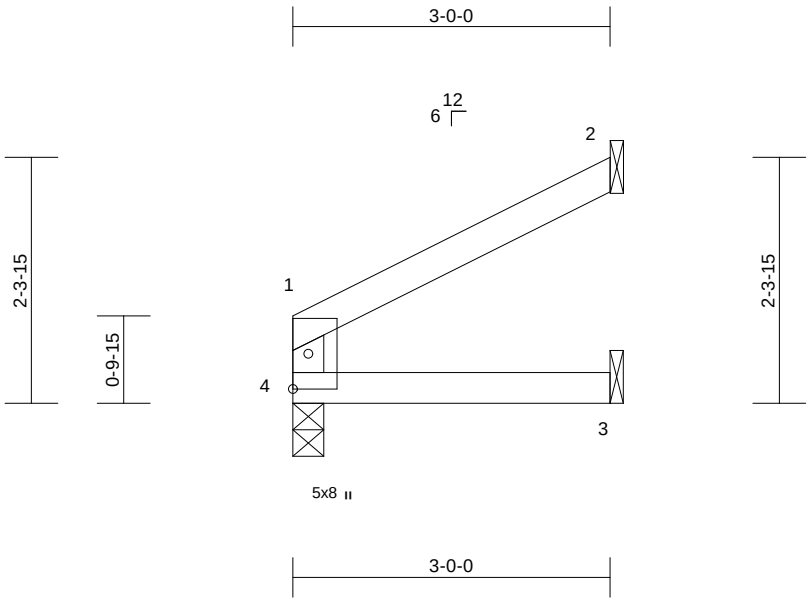
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J06	Jack-Open	1	1	I63425210
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:47 Page: 1
ID:T54upmJgrXCCCyUATuSvl2zoaBf-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:21.8

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.91	Vert(LL)	0.03	3-4	>999	240	MT20	244/190
Snow (Ps/Pf)	0.0/20.0	Lumber DOL	1.15	BC	0.60	Vert(CT)	-0.03	3-4	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	n/a	-	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MR								
BCDL	10.0										Weight: 10 lb	FT = 20%

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

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

REACTIONS (size) 3= Mechanical, 4=0-3-8
Max Horiz 4=50 (LC 13)
Max Uplift 3=-27 (LC 13)
Max Grav 3=115 (LC 2), 4=112 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-4=-171/118, 1-2=-77/0
BOT CHORD 3-4=0/0

NOTES
1) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=0.0 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
7) Bearings are assumed to be: Joint 4 SP No.2 crushing capacity of 565 psi.
8) Refer to girder(s) for truss to truss connections.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 27 lb uplift at joint 3.
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

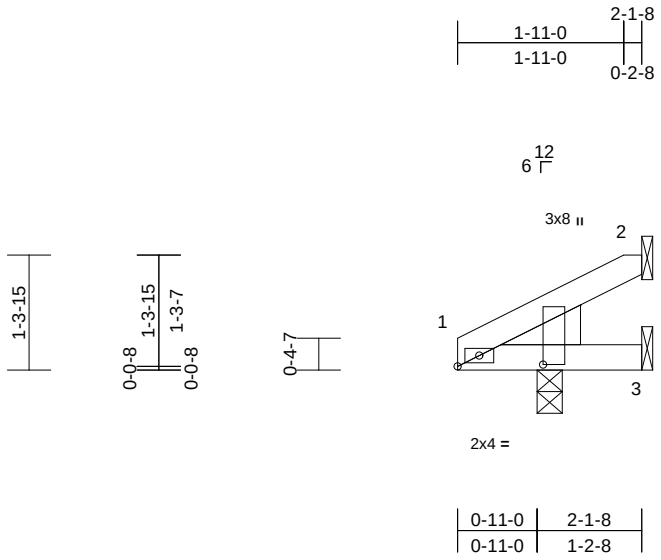
February 6,2024

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

Job	Truss	Truss Type	Qty	Ply	Roof D
ELV D Roof	J07	Half Hip	1	1	I63425211
					Job Reference (optional)

Builders FirstSource (Apex, NC), Apex, NC - 27523,

Run: 8.63 S Nov 1 2023 Print: 8.630 S Nov 1 2023 MiTek Industries, Inc. Sun Feb 04 08:37:48 Page: 1
ID:t8iAJAxE80Ib_BcD9tOe_WzoaC8-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f



Scale = 1:26.6

Plate Offsets (X, Y): [1:0-1-0,Edge], [1:0-0-4,0-11-13]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.00	TC	0.04	Vert(LL)	0.00	4	>999	240	MT20	244/190
Snow (Ps/Pf)	14.5/20.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	0.00	4	>999	180		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	1	n/a	n/a		
BCLL	0.0*	Code	IRC2015/TPI2014	Matrix-MP								
BCDL	10.0										Weight: 9 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2
WEDGE Left: 2x6 SP No.2

BRACING
TOP CHORD Structural wood sheathing directly applied or 2-1-8 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (size) 1=0-3-8, 2= Mechanical, 3= Mechanical
Max Horiz 1=31 (LC 16)
Max Uplift 2=-13 (LC 16), 3=-4 (LC 16)
Max Grav 1=149 (LC 2), 2=13 (LC 2), 3=9 (LC 7)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-13/27
BOT CHORD 1-3=-25/1

NOTES
1) Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior (2) zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.33
2) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.00); Pf=20.0 psf (flat roof snow); Ps=14.5 psf (roof snow: Lumber DOL=1.15 Plate DOL=1.00); Category II; Exp B; Fully Exp.; Ct=1.10; Unobstructed slippery surface
3) Roof design snow load has been reduced to account for slope.
4) Unbalanced snow loads have been considered for this design.
5) Provide adequate drainage to prevent water ponding.
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) Bearings are assumed to be: , Joint 1 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 13 lb uplift at joint 2 and 4 lb uplift at joint 3.
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.

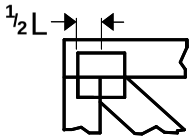
LOAD CASE(S) Standard

February 6,2024

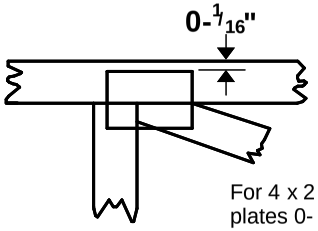
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

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.

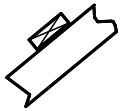
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

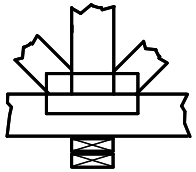
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

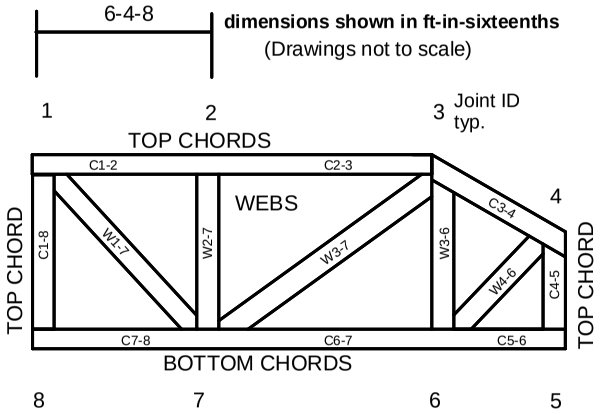


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

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.