ENGINEERING BY
TRENCO
A MiTek Affiliate

RE: 2501-0734-A - The Farm at Neills Creek Lot 00.0064 Roof

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:
Project Customer: DRB Raleigh   Project Name: The Farm at Neills Creek Lot 00.0064
Lot/Block: 00.0064   Subdivision: The Farm at Neills Creek
Model: Millhaven
Address: 401 Winding Creek Dr
City: Lillington   State: NC

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

Design Code: IRC2021/TPI2014
Wind Code: ASCE 7-16
Wind Speed: 120 mph
Roof Load: 40.0 psf
Mean Roof Height (feet): 25

Design Program: MiTek 20/20 8.8
Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-16
Floor Load: N/A psf

Exposure Category: B

No.	Seal#	Truss Name	Date
1	I70930944	P2	1/23/25
2	I70930945	P2A	1/23/25
3	I70930946	P1G	1/23/25
4	I70930947	P1	1/23/25
5	I70930948	C1G	1/23/25
6	I70930949	C1	1/23/25
7	I70930950	B1G	1/23/25
8	I70930951	B1	1/23/25
9	I70930952	A1	1/23/25
10	I70930953	A1P	1/23/25
11	I70930954	A1G	1/23/25
12	I70930955	A1SG	1/23/25

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

Truss Design Engineer's Name: Gilbert, Eric
My license renewal date for the state of North Carolina is December 31, 2025.

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.
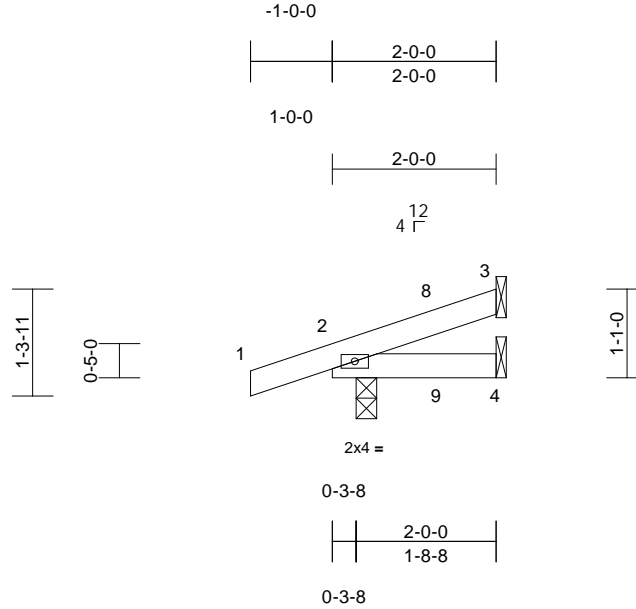
NORTH CAROLINA
PROFESSIONAL
SEAL
046322
ENGINEER
ERIC A. GILBERT

January 23,2025

1 of 1   Gilbert, Eric

Scale = 1:18.5

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.19	Vert(LL)	0.00	4-7	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.20	Vert(CT)	-0.01	4-7	>999	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-MP		Wind(LL)	0.00	4-7	>999	240		
BCDL	10.0										Weight: 8 lb	FT = 20%

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

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

REACTIONS (size)   2=0-3-0, 3= Mechanical, 4= Mechanical
Max Horiz   2=25 (LC 12)
Max Uplift   2=-35 (LC 12), 3=-8 (LC 12), 4=-4 (LC 13)
Max Grav   2=318 (LC 40), 3=270 (LC 44), 4=270 (LC 49)

FORCES   (lb) - Maximum Compression/Maximum Tension
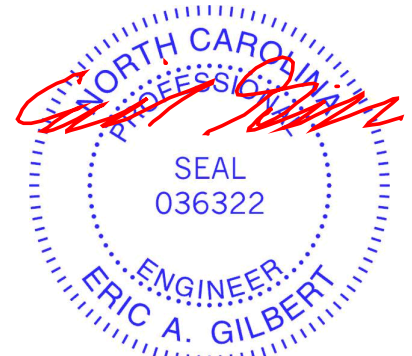TOP CHORD   1-2=0/26, 2-3=-98/47
BOT CHORD   2-4=-46/88

NOTES
1) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
5) Plates checked for a plus or minus 5 degree rotation about its center.
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 2 SP No.2 .
9) Refer to girder(s) for truss to truss connections.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 4 lb uplift at joint 4 and 8 lb uplift at joint 3.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
12) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.

LOAD CASE(S)   Standard

January 23,2025

ENGINEERING BY
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A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Structural, LLC, Thurmont, MD - 21788,

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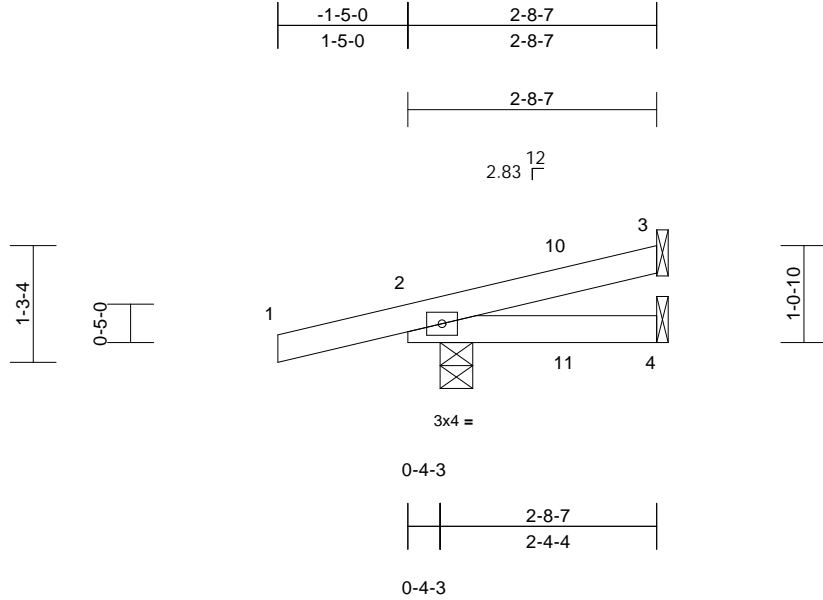
Scale = 1:17.2

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.24	Vert(LL)	-0.01	4-9	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.25	Vert(CT)	-0.01	4-9	>999	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.00	Horz(CT)	0.00	3	n/a	n/a		
BCLL	0.0*	Code	IRC2021/TPI2014	Matrix-MP		Wind(LL)	0.00	5	>999	240		
BCDL	10.0										Weight: 10 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied or 2-8-7 oc purlins.
BOT CHORD   Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS   (size)   2=0-4-4, 3= Mechanical, 4= Mechanical
Max Horiz   2=24 (LC 12)
Max Uplift   2=-58 (LC 12), 3=-7 (LC 16), 4=-5 (LC 22)
Max Grav   2=394 (LC 41), 3=269 (LC 47), 4=269 (LC 54)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/26, 2-3=-235/304
BOT CHORD   2-4=-309/268

NOTES
1) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Corner (3) zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10

3) Unbalanced snow loads have been considered for this design.

4) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.

5) Plates checked for a plus or minus 5 degree rotation about its center.

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 2 SP No.2 .

9) Refer to girder(s) for truss to truss connections.

10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 7 lb uplift at joint 3 and 5 lb uplift at joint 4.

11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.

12) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.

LOAD CASE(S)   Standard

January 23,2025

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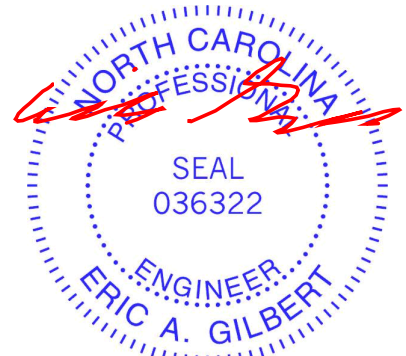818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	P1G	Half Hip Girder	1	1		I70930946
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

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Special

Scale = 1:22

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.31	Vert(LL)	-0.05	8-11	>903	360	MT20	244/190
Snow (Pf/Pg)	20.4/20.0	Lumber DOL	1.15	BC	0.65	Vert(CT)	-0.06	8-11	>688	240		
TCDL	10.0	Rep Stress Incr	NO	WB	0.06	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-MP		Wind(LL)	0.01	8-11	>999	240		
BCDL	10.0										Weight: 15 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied or 3-11-8 oc purlins, except 2-0-0 oc purlins: 3-5.
BOT CHORD   Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS   (size)   2=0-3-0, 7= Mechanical
           Max Horiz   2=25 (LC 71)
           Max Uplift   2=-45 (LC 8), 7=-21 (LC 9)
           Max Grav   2=349 (LC 51), 7=336 (LC 57)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/26, 2-3=-145/35, 3-4=0/0, 4-5=0/0
BOT CHORD   2-8=-39/113, 7-8=0/0, 6-7=0/0
WEBS   3-8=-336/20, 4-7=-276/10

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope); cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=20.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10, Lu=50-0-0
4) Unbalanced snow loads have been considered for this design.
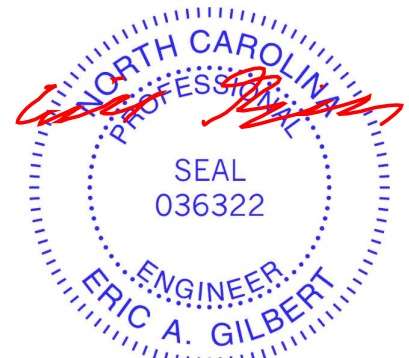5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
6) Provide adequate drainage to prevent water ponding.

7) Plates checked for a plus or minus 5 degree rotation about its center.
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 .
11) Refer to girder(s) for truss to truss connections.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 21 lb uplift at joint 7.
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
14) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
15) Graphical purlin representation does not depict the size or the orientation of the purlin along the top and/or bottom chord.
16) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 25 lb down and 29 lb up at 2-0-0 on top chord, and 31 lb down and 28 lb up at 2-0-0 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=1.15
   Uniform Loads (lb/ft)
     Vert: 1-3=-51, 3-5=-61, 6-9=-20
   Concentrated Loads (lb)
     Vert: 8=-3 (F)

SEAL 036322
ERIC A. GILBERT
NORTH CAROLINA PROFESSIONAL ENGINEER

January 23,2025

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	P1	Monopitch	4	1	Job Reference (optional)	I70930947

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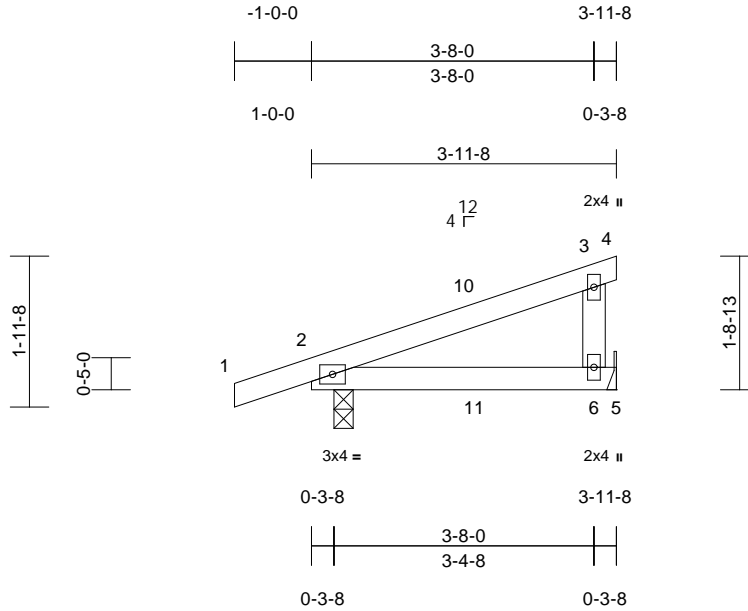
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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.46	Vert(LL)	-0.04	6-9	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.48	Vert(CT)	-0.05	6-9	>928	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	2	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-MP		Wind(LL)	0.01	6-9	>999	240		
BCDL	10.0										Weight: 15 lb	FT = 20%

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

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

REACTIONS (size)   2=0-3-0, 6= Mechanical
Max Horiz 2=39 (LC 12)
Max Uplift 2=-40 (LC 12), 6=-24 (LC 12)
Max Grav   2=349 (LC 40), 6=336 (LC 44)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/26, 2-3=-130/45, 3-4=-7/0
BOT CHORD   2-6=-36/116, 5-6=0/0
WEBS   3-6=-294/89

NOTES
1) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 3-11-8 zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
5) Plates checked for a plus or minus 5 degree rotation about its center.
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 2 SP No.2 .
9) Refer to girder(s) for truss to truss connections.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 24 lb uplift at joint 6.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2. This connection is for uplift only and does not consider lateral forces.
12) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.

LOAD CASE(S)   Standard

SEAL
036322
NORTH CAROLINA PROFESSIONAL ENGINEER
ERIC A. GILBERT

January 23,2025

ENGINEERING BY
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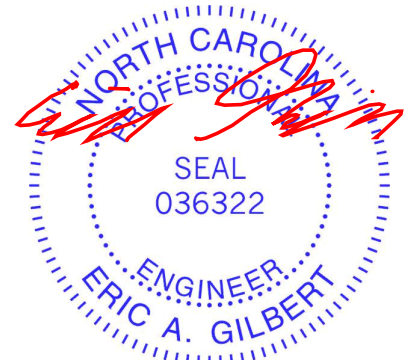
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	C1G	Monopitch Supported Gable	2	1		I70930948
					Job Reference (optional)	

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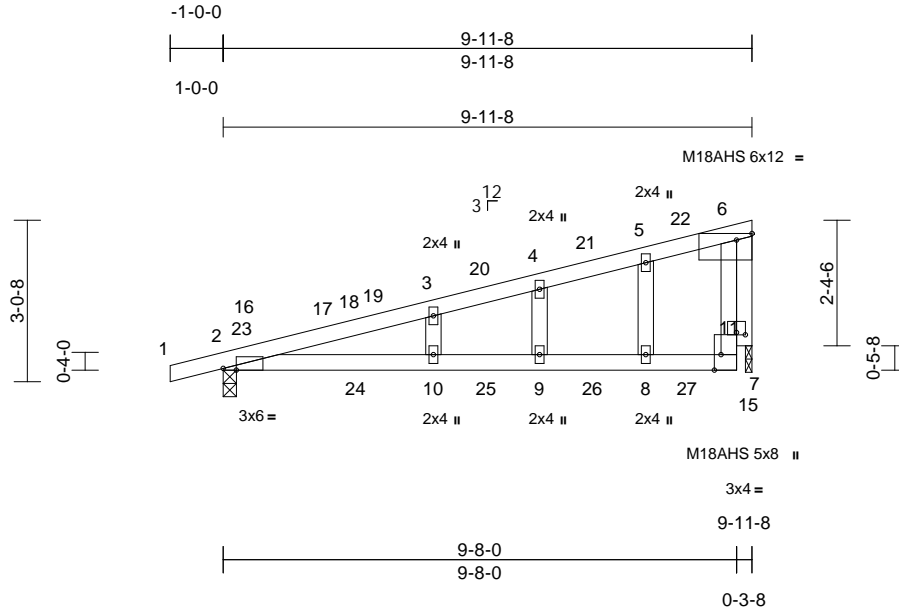
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Plate Offsets (X, Y): [2:0-2-15,Edge], [6:Edge,0-1-8], [7:0-3-8,Edge], [11:0-2-0,0-0-8]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.89	Vert(LL)	-0.25	9-10	>483	360	M18AHS	186/179
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.47	Vert(CT)	-0.46	9-10	>257	240	MT20	244/190
TCDL	10.0	Rep Stress Incr	YES	WB	0.06	Horz(CT)	0.01	2	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.26	9-10	>465	240		
BCDL	10.0										Weight: 43 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied,
               except end verticals.
BOT CHORD   Rigid ceiling directly applied.

REACTIONS (size)   2=0-3-0, 15=0-1-8
          Max Horiz 2=56 (LC 12)
          Max Uplift 2=-77 (LC 12), 15=-63 (LC 12)
          Max Grav 2=472 (LC 57), 15=426 (LC 46)

FORCES   (lb) - Maximum Compression/Maximum
          Tension
TOP CHORD   1-2=0/20, 2-3=-434/138, 3-4=-409/152,
               4-5=-396/166, 5-6=-360/171, 7-11=-110/359,
               6-11=-110/359
BOT CHORD   2-10=-206/393, 9-10=-206/393,
               8-9=-206/393, 7-8=-206/393
WEBS   5-8=-103/146, 4-9=-157/93, 3-10=-143/108,
               6-15=-438/212

NOTES
1) Wind: ASCE 7-16; Vult=120mph (3-second gust)
Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat.
II; Exp B; Enclosed; MWFRS (envelope) and C-C
Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 9-6-4
zone; cantilever left and right exposed ; end vertical left
and right exposed; porch left and right exposed;C-C for
members and forces & MWFRS for reactions shown;
Lumber DOL=1.60 plate grip DOL=1.60
2) Truss designed for wind loads in the plane of the truss
only. For studs exposed to wind (normal to the face),
see Standard Industry Gable End Details as applicable,
or consult qualified building designer as per ANSI/TPI 1.

3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15
Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL =
1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially
Exp.; Ce=1.0; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this
design.
5) This truss has been designed for greater of min roof live
load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on
overhangs non-concurrent with other live loads.
6) All plates are MT20 plates unless otherwise indicated.
7) Plates checked for a plus or minus 5 degree rotation
about its center.
8) Gable studs spaced at 2-0-0 oc.
9) This truss has been designed for a 10.0 psf bottom
chord live load nonconcurrent with any other live loads.
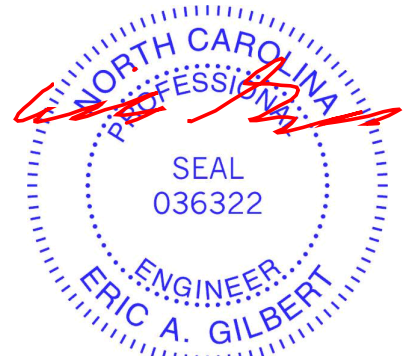10) * This truss has been designed for a live load of 20.0psf
on the bottom chord in all areas where a rectangle
3-06-00 tall by 2-00-00 wide will fit between the bottom
chord and any other members.
11) Bearings are assumed to be: Joint 2 SP SS , Joint 15 SP
No.3 .
12) Bearing at joint(s) 15 considers parallel to grain value
using ANSI/TPI 1 angle to grain formula. Building
designer should verify capacity of bearing surface.
13) Provide mechanical connection (by others) of truss to
bearing plate at joint(s) 15.
14) One H2.5A Simpson Strong-Tie connectors
recommended to connect truss to bearing walls due to
UPLIFT at jt(s) 2 and 15. This connection is for uplift only
and does not consider lateral forces.
15) This truss has been designed for a moving concentrated
load of 250.0lb live and 3.0lb dead located at all mid
panels and at all panel points along the Top Chord and
Bottom Chord, nonconcurrent with any other live loads.
16) This truss design requires that a minimum of 7/16"
structural wood sheathing be applied directly to the top
chord and 1/2" gypsum sheetrock be applied directly to
the bottom chord.

LOAD CASE(S) Standard

[Engineer's seal: NORTH CAROLINA PROFESSIONAL, SEAL 036322, ENGINEER, ERIC A. GILBERT]

January 23,2025

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

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	C1	Monopitch	5	1		I70930949
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

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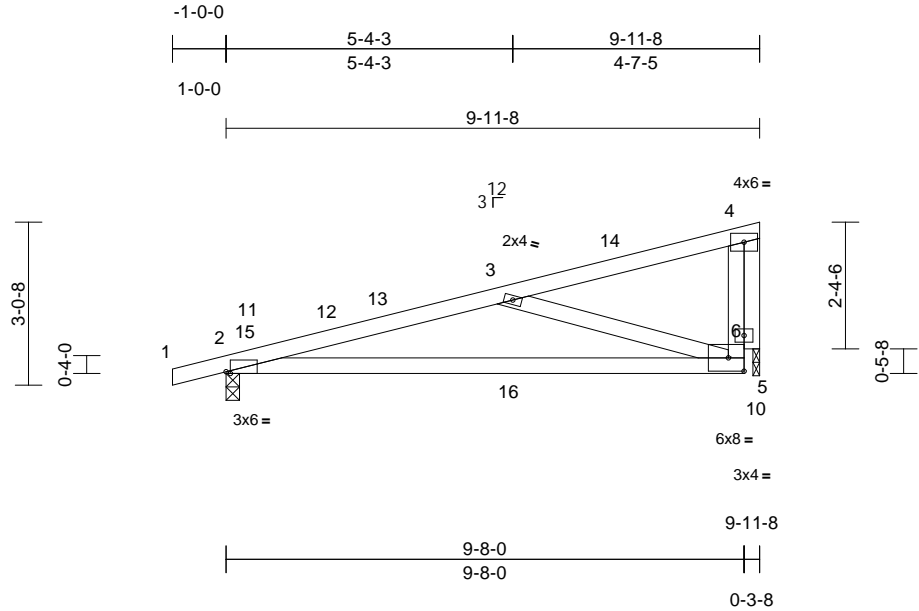
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Plate Offsets (X, Y): [2:0-0-15,Edge]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.77	Vert(LL)	-0.29	5-9	>405	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.62	Vert(CT)	-0.44	5-9	>272	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.30	Horz(CT)	-0.01	10	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.12	5-9	>951	240		
BCDL	10.0										Weight: 44 lb	FT = 20%

LUMBER
TOP CHORD   2x4 SP No.2
BOT CHORD   2x4 SP SS
WEBS   2x4 SP No.2 *Except* 5-3:2x4 SP No.3
OTHERS   2x4 SP No.3

BRACING
TOP CHORD   Structural wood sheathing directly applied, except end verticals.
BOT CHORD   Rigid ceiling directly applied.

REACTIONS (size)   2=0-3-0, 10=0-1-8
Max Horiz 2=56 (LC 12)
Max Uplift 2=-77 (LC 12), 10=-63 (LC 12)
Max Grav 2=472 (LC 45), 10=426 (LC 44)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/20, 2-3=-873/363, 3-4=-197/56, 5-6=-157/422, 4-6=-157/422
BOT CHORD   2-5=-432/842
WEBS   3-5=-739/371, 4-10=-432/206

NOTES
1) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 9-6-4 zone; cantilever left and right exposed ; end vertical left and right exposed; porch left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
2) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.

5) Plates checked for a plus or minus 5 degree rotation about its center.
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 2 SP SS , Joint 10 SP No.3 .
9) Bearing at joint(s) 10 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
10) Provide mechanical connection (by others) of truss to bearing plate at joint(s) 10.
11) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 2 and 10. This connection is for uplift only and does not consider lateral forces.
12) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
13) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S)   Standard

January 23,2025

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	B1G	Common Supported Gable	1	1	Job Reference (optional)	I70930950

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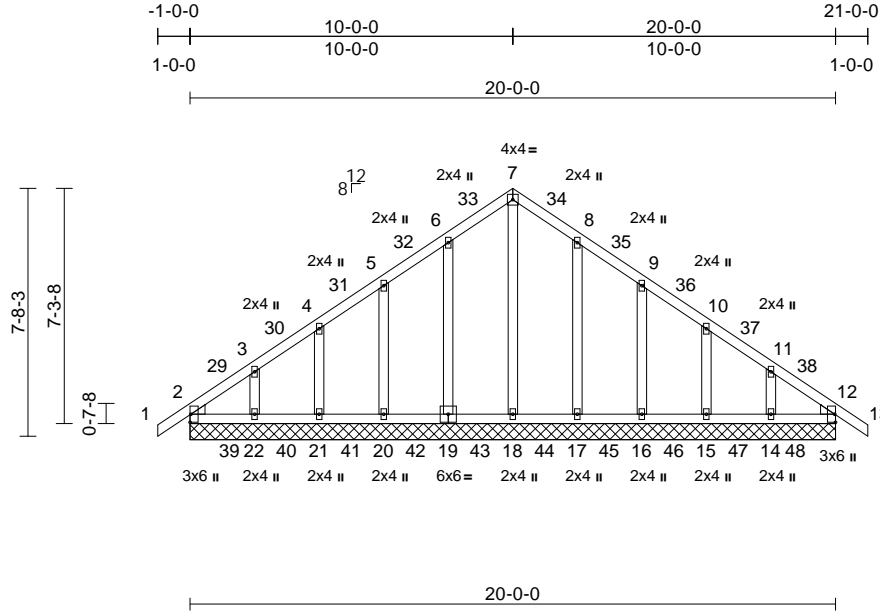
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Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.20	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.19	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS								
BCDL	10.0										Weight: 121 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.

REACTIONS (size)   2=20-0-0, 12=20-0-0, 14=20-0-0,
                        15=20-0-0, 16=20-0-0, 17=20-0-0,
                        18=20-0-0, 19=20-0-0, 20=20-0-0,
                        21=20-0-0, 22=20-0-0
Max Horiz   2=-117 (LC 14)
Max Uplift   2=-18 (LC 12), 14=-29 (LC 17),
             15=-11 (LC 17), 16=-17 (LC 17),
             17=-12 (LC 17), 19=-13 (LC 16),
             20=-17 (LC 16), 21=-10 (LC 16),
             22=-33 (LC 16)
Max Grav   2=317 (LC 69), 12=317 (LC 93),
             14=334 (LC 91), 15=333 (LC 90),
             16=333 (LC 89), 17=334 (LC 88),
             18=321 (LC 87), 19=334 (LC 86),
             20=333 (LC 85), 21=333 (LC 84),
             22=334 (LC 83)

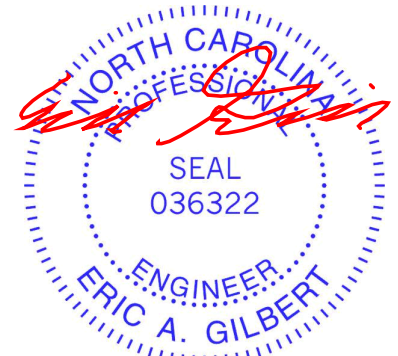**FORCES**   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/45, 2-3=-101/86, 3-4=-93/75,
             4-5=-93/70, 5-6=-87/107, 6-7=-118/156,
             7-8=-118/156, 8-9=-87/107, 9-10=-93/70,
             10-11=-88/75, 11-12=-92/65, 12-13=0/45
BOT CHORD   2-22=-65/115, 21-22=-41/115, 20-21=-41/115,
             18-20=-41/115, 17-18=-41/115,
             16-17=-41/115, 15-16=-41/115,
             14-15=-41/115, 12-14=-41/115
WEBS   7-18=-224/31, 6-19=-280/65, 5-20=-281/74,
             4-21=-285/70, 3-22=-287/78, 8-17=-280/65,
             9-16=-281/74, 10-15=-285/70, 11-14=-287/77

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Corner (3E) -1-0-0 to 2-0-0, Exterior(2N) 2-0-0 to 10-0-0, Corner (3R) 10-0-0 to 13-0-0, Exterior(2N) 13-0-0 to 21-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
7) Plates checked for a plus or minus 5 degree rotation about its center.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
12) All bearings are assumed to be SP No.2 .

13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 18 lb uplift at joint 2, 13 lb uplift at joint 19, 17 lb uplift at joint 20, 10 lb uplift at joint 21, 33 lb uplift at joint 22, 12 lb uplift at joint 17, 17 lb uplift at joint 16, 11 lb uplift at joint 15, 29 lb uplift at joint 14 and 18 lb uplift at joint 2.
14) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
15) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S) Standard

January 23,2025

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

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	B1	Common	1	1		I70930951
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

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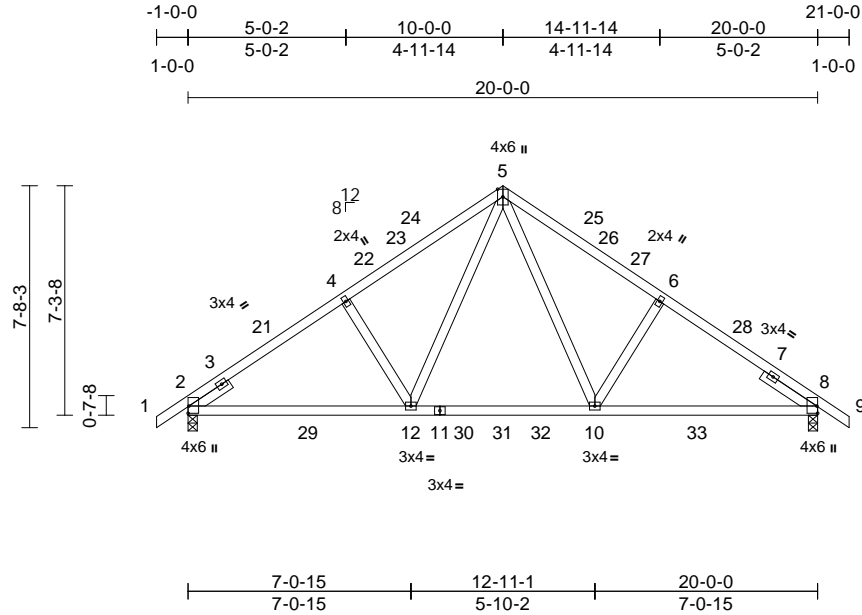
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Plate Offsets (X, Y): [2:Edge,0-0-5], [8:Edge,0-0-5]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.61	Vert(LL)	-0.16	12-15	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.90	Vert(CT)	-0.21	12-15	>999	240		
TCDL	10.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.02	8	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.01	10-12	>999	240		
BCDL	10.0										Weight: 108 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.

REACTIONS (size)   2=0-3-8, 8=0-3-8
                   Max Horiz 2=117 (LC 15)
                   Max Grav   2=946 (LC 34), 8=946 (LC 35)

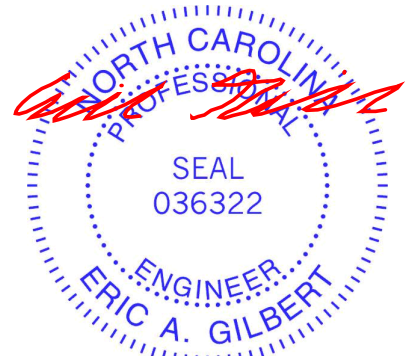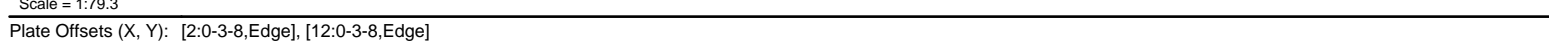**FORCES**   (lb) - Maximum Compression/Maximum
                   Tension
TOP CHORD   1-2=0/52, 2-4=-1266/61, 4-5=-1172/99,
                   5-6=-1173/99, 6-8=-1256/61, 8-9=0/52
BOT CHORD   2-12=0/991, 10-12=0/675, 8-10=0/993
WEBS   4-12=-263/102, 5-12=-14/488, 5-10=-15/490,
                   6-10=-262/102

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 10-0-0, Exterior(2R) 10-0-0 to 13-0-0, Interior (1) 13-0-0 to 21-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.

5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
6) Plates checked for a plus or minus 5 degree rotation about its center.
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 No.2 .
10) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
11) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S) Standard

TRENCO
ENGINEERING BY
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

SEAL 036322
ERIC A. GILBERT
NORTH CAROLINA PROFESSIONAL ENGINEER
January 23,2025

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	A1	Common	15	1	Job Reference (optional)	I70930952

Scale = 1:79.3

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.70	Vert(LL)	-0.26	14-15	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.56	Vert(CT)	-0.38	14-15	>947	240	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.48	Horz(CT)	0.06	12	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.03	14-15	>999	240		
BCDL	10.0										Weight: 183 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.
WEBS   1 Row at midpt   6-15, 8-15

REACTIONS (size)   2=0-3-8, 12=0-3-8
Max Horiz   2=171 (LC 15)
Max Grav   2=1421 (LC 34), 12=1421 (LC 35)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/52, 2-4=-2111/64, 4-6=-2035/107, 6-7=-1492/145, 7-8=-1492/145, 8-10=-2032/107, 10-12=-2130/64, 12-13=0/52
BOT CHORD   2-17=0/1687, 15-17=0/1365, 14-15=0/1365, 12-14=0/1691
WEBS   7-15=-89/1357, 4-17=-246/102, 6-17=0/491, 6-15=-575/112, 8-15=-574/112, 8-14=0/486, 10-14=-251/102

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 15-0-0, Exterior(2R) 15-0-0 to 18-0-0, Interior (1) 18-0-0 to 31-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
6) All plates are MT20 plates unless otherwise indicated.
7) Plates checked for a plus or minus 5 degree rotation about its center.
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) All bearings are assumed to be SP SS .
11) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
12) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S)   Standard

North Carolina Professional Engineer
SEAL
036322
Eric A. Gilbert

January 23,2025

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

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	A1P	Attic	7	1	I70930953	
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.74	Vert(LL)	-0.18	14-15	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.55	Vert(CT)	-0.32	18-20	>999	240	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.69	Horz(CT)	0.09	12	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.09	21-22	>999	240		
BCDL	10.0										Weight: 202 lb	FT = 20%

LUMBER
TOP CHORD   2x4 SP No.2
BOT CHORD   2x4 SP SS *Except* 20-17:2x4 SP No.2
WEBS   2x4 SP No.3 *Except* 8-15,6-21:2x4 SP No.2
SLIDER   Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3
            -- 1-6-0

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.
JOINTS   1 Brace at Jt(s): 23

REACTIONS (size)   2=0-3-8, 12=0-3-8
            Max Horiz   2=-171 (LC 14)
            Max Grav   2=1618 (LC 35), 12=1618 (LC 36)

FORCES (lb) - Maximum Compression/Maximum
            Tension
TOP CHORD   1-2=0/52, 2-4=-2477/0, 4-6=-2292/0,
            6-7=-347/59, 7-8=-347/60, 8-10=-2292/0,
            10-12=-2477/0, 12-13=0/52
BOT CHORD   2-22=0/1962, 21-22=0/1962, 19-21=0/2821,
            15-19=0/2821, 14-15=0/1965, 12-14=0/1965,
            18-20=-103/323, 17-18=-103/323
WEBS   15-17=0/650, 17-26=0/800, 8-26=0/835,
            10-15=-268/118, 10-14=-27/268,
            20-21=0/650, 20-24=0/800, 6-24=0/835,
            4-21=-268/117, 4-22=-26/268, 6-25=-1646/0,
            23-25=-1692/0, 23-27=-1692/0,
            8-27=-1646/0, 7-23=0/68, 18-19=0/307,
            18-21=-1427/0, 15-18=-1427/0,
            24-25=-255/174, 26-27=-255/174

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

2) Wind: ASCE 7-16; Vult=120mph (3-second gust)
   Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat.
   II; Exp B; Enclosed; MWFRS (envelope) and C-C
   Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 15-0-0,
   Exterior(2R) 15-0-0 to 18-0-0, Interior (1) 18-0-0 to
   31-0-0 zone; cantilever left and right exposed ; end
   vertical left and right exposed;C-C for members and
   forces & MWFRS for reactions shown; Lumber
   DOL=1.60 plate grip DOL=1.60
3) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15
   Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL
   = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially
   Exp.; Ce=1.0; Cs=1.00; Ct=1.10
4) Unbalanced snow loads have been considered for this
   design.
5) This truss has been designed for greater of min roof live
   load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on
   overhangs non-concurrent with other live loads.
6) 200.0lb AC unit load placed on the bottom chord, 15-0-0
   from left end, supported at two points, 5-0-0 apart.
7) All plates are MT20 plates unless otherwise indicated.
8) Plates checked for a plus or minus 5 degree rotation
   about its center.
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) Bottom chord live load (20.0 psf) and additional bottom
   chord dead load (20.0 psf) applied only to room. 18-20,
   17-18
12) All bearings are assumed to be SP SS .
13) This truss has been designed for a moving concentrated
   load of 250.0lb live and 3.0lb dead located at all mid
   panels and at all panel points along the Top Chord and
   Bottom Chord, nonconcurrent with any other live loads.

14) This truss design requires that a minimum of 7/16"
   structural wood sheathing be applied directly to the top
   chord and 1/2" gypsum sheetrock be applied directly to
   the bottom chord.
15) Attic room checked for L/360 deflection.

LOAD CASE(S) Standard

January 23,2025

ENGINEERING BY
TRENCO
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof
2501-0734-A	A1G	Common Supported Gable	1	1	I70930954
					Job Reference (optional)

Structural, LLC, Thurmont, MD - 21788,

Run: 8.83 S Dec 4 2024 Print: 8.830 S Dec 4 2024 MiTek Industries, Inc. Wed Jan 22 08:39:44   Page: 1
ID:4LnIwCvCqmcV2p8nBFbKv2yAe1h-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

Scale = 1:77.1

Plate Offsets (X, Y): [7:0-2-0,0-2-4], [16:0-2-0,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.21	Vert(LL)	n/a	-	n/a	999	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.19	Vert(CT)	n/a	-	n/a	999		
TCDL	10.0	Rep Stress Incr	YES	WB	0.31	Horz(CT)	0.01	20	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS								
BCDL	10.0										Weight: 217 lb	FT = 20%

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

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.
WEBS   1 Row at midpt   11-29, 10-31, 12-28

REACTIONS (size) 2=30-0-0, 20=30-0-0, 22=30-0-0,
23=30-0-0, 24=30-0-0, 25=30-0-0,
26=30-0-0, 27=30-0-0, 28=30-0-0,
29=30-0-0, 31=30-0-0, 32=30-0-0,
33=30-0-0, 34=30-0-0, 35=30-0-0,
36=30-0-0, 37=30-0-0

Max Horiz   2=171 (LC 15)
Max Uplift 2=-64 (LC 12), 20=-17 (LC 13),
22=-44 (LC 17), 23=-13 (LC 17),
24=-15 (LC 17), 25=-15 (LC 17),
26=-14 (LC 17), 27=-18 (LC 17),
28=-7 (LC 17), 31=-9 (LC 16),
32=-18 (LC 16), 33=-14 (LC 16),
34=-15 (LC 16), 35=-15 (LC 16),
36=-13 (LC 16), 37=-53 (LC 16)
Max Grav   2=299 (LC 81), 20=299 (LC 117),
22=308 (LC 97), 23=336 (LC 114),
24=332 (LC 113), 25=333 (LC 112),
26=333 (LC 111), 27=333 (LC 110),
28=334 (LC 109), 29=324 (LC
108), 31=334 (LC 107), 32=333
(LC 106), 33=333 (LC 105),
34=333 (LC 104), 35=332 (LC
103), 36=336 (LC 102), 37=308
(LC 101)

FORCES   (lb) - Maximum Compression/Maximum Tension

TOP CHORD   1-2=0/45, 2-3=-167/139, 3-4=-143/125,
4-5=-119/109, 5-7=-109/127, 7-8=-101/90,
8-9=-94/107, 9-10=-108/157,
10-11=-127/197, 11-12=-127/197,
12-13=-108/157, 13-14=-89/107,
14-15=-88/74, 15-17=-88/74, 17-18=-89/74,
18-19=-100/71, 19-20=-139/85, 20-21=0/45

BOT CHORD   2-37=-97/143, 36-37=-70/143,
35-36=-70/143, 34-35=-70/143,
33-34=-70/143, 32-33=-70/143,
31-32=-70/143, 29-31=-70/143,
28-29=-70/143, 27-28=-70/143,
26-27=-70/143, 25-26=-70/143,
24-25=-70/143, 23-24=-70/143,
22-23=-70/143

WEBS   11-29=-223/60, 10-31=-273/48,
9-32=-274/67, 8-33=-277/60, 7-34=-273/61,
5-35=-283/61, 4-36=-288/63, 3-37=-258/63,
12-28=-273/48, 13-27=-274/67,
14-26=-277/60, 15-25=-280/61,
17-24=-283/61, 18-23=-288/63,
19-22=-258/63

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Corner (3E) -1-0-0 to 2-0-0, Exterior(2N) 2-0-0 to 15-0-0, Corner (3R) 15-0-0 to 18-0-0, Exterior(2N) 18-0-0 to 31-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
7) Plates checked for a plus or minus 5 degree rotation about its center.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
12) All bearings are assumed to be SP No.2 .

January 23,2025

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

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	A1G	Common Supported Gable	1	1		I70930954
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

Run: 8.83 S Dec 4 2024 Print: 8.830 S Dec 4 2024 MiTek Industries, Inc. Wed Jan 22 08:39:44   Page: 2
ID:4LnIwCvCqmcV2p8nBFbKv2yAe1h-RfC?PsB70Hq3NSgPqnL8w3uITXbGKWrCDoi7J4zJC?f

13) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 64 lb uplift at joint 2, 17 lb uplift at joint 20, 9 lb uplift at joint 31, 18 lb uplift at joint 32, 14 lb uplift at joint 33, 15 lb uplift at joint 34, 15 lb uplift at joint 35, 13 lb uplift at joint 36, 53 lb uplift at joint 37, 7 lb uplift at joint 28, 18 lb uplift at joint 27, 14 lb uplift at joint 26, 15 lb uplift at joint 25, 15 lb uplift at joint 24, 13 lb uplift at joint 23, 44 lb uplift at joint 22, 64 lb uplift at joint 2 and 17 lb uplift at joint 20.

14) Beveled plate or shim required to provide full bearing surface with truss chord at joint(s) 20, 41.

15) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.

16) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S) Standard

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

Job	Truss	Truss Type	Qty	Ply	The Farm at Neills Creek Lot 00.0064 Roof	
2501-0734-A	A1SG	Common Structural Gable	1	1		I70930955
					Job Reference (optional)	

Structural, LLC, Thurmont, MD - 21788,

Run: 8.83 S Dec 4 2024 Print: 8.830 S Dec 4 2024 MiTek Industries, Inc. Wed Jan 22 08:39:46   Page: 1
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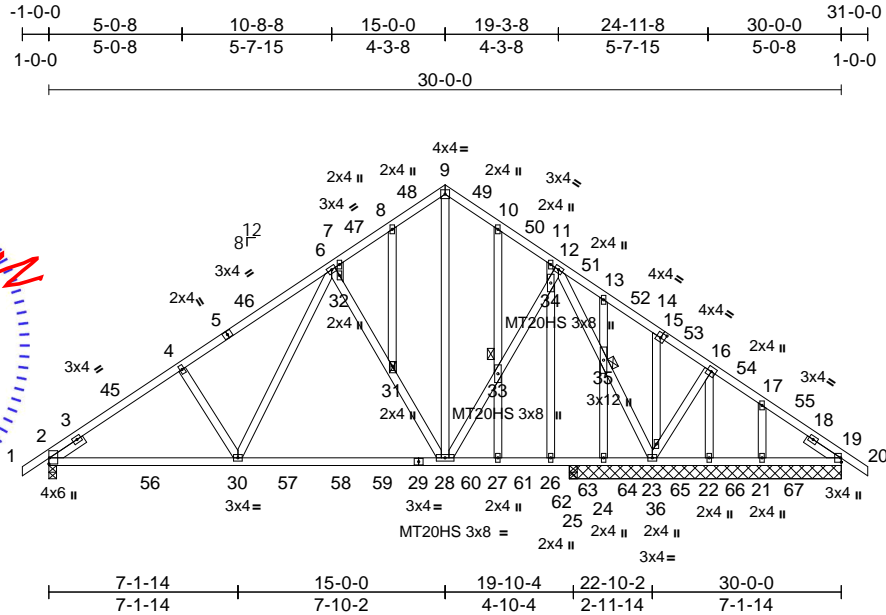
Scale = 1:79.3

Plate Offsets (X, Y): [2:Edge,0-0-5], [15:0-2-0,0-2-4]

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.61	Vert(LL)	-0.23	28-30	>999	360	MT20	244/190
Snow (Pf/Pg)	15.4/20.0	Lumber DOL	1.15	BC	0.83	Vert(CT)	-0.31	28-30	>760	240	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	YES	WB	0.32	Horz(CT)	0.02	23	n/a	n/a		
BCLL	0.0 *	Code	IRC2021/TPI2014	Matrix-AS		Wind(LL)	0.01	28-30	>999	240		
BCDL	10.0										Weight: 238 lb	FT = 20%

LUMBER
TOP CHORD   2x4 SP No.2
BOT CHORD   2x4 SP SS *Except* 29-19:2x4 SP No.2
WEBS   2x4 SP No.3
OTHERS   2x4 SP No.3
SLIDER   Left 2x4 SP No.3 -- 1-6-0, Right 2x4 SP No.3 -- 1-6-0

BRACING
TOP CHORD   Structural wood sheathing directly applied.
BOT CHORD   Rigid ceiling directly applied.
JOINTS   1 Brace at Jt(s): 31, 33, 35

REACTIONS (size)   2=0-3-8, 19=10-3-8, 21=10-3-8, 22=10-3-8, 23=10-3-8, 24=10-3-8, 25=0-3-8
    Max Horiz   2=171 (LC 15)
    Max Uplift   19=-3 (LC 46), 21=-27 (LC 17), 22=-116 (LC 57), 24=-94 (LC 51)
    Max Grav   2=985 (LC 34), 19=297 (LC 99), 21=374 (LC 97), 22=239 (LC 96), 23=933 (LC 35), 24=278 (LC 94), 25=502 (LC 34)

FORCES   (lb) - Maximum Compression/Maximum Tension
TOP CHORD   1-2=0/52, 2-4=-1331/41, 4-6=-1234/83, 6-7=-768/131, 7-8=-606/107, 8-9=-556/125, 9-10=-561/127, 10-11=-590/104, 11-12=-383/91, 12-13=-9/218, 13-14=0/270, 14-16=-5/261, 16-17=-51/139, 17-19=-195/190, 19-20=0/45
BOT CHORD   2-30=0/1063, 28-30=0/713, 27-28=-18/159, 26-27=-18/159, 25-26=-18/159, 24-25=-18/159, 23-24=-18/159, 22-23=-132/78, 21-22=-134/78, 19-21=-134/78

WEBS   9-28=-72/396, 4-30=-267/103, 6-30=0/565, 6-32=-839/165, 31-32=-590/100, 28-31=-605/111, 28-33=0/541, 33-34=0/564, 12-34=0/664, 12-35=-772/0, 23-35=-747/0, 23-36=-336/116, 16-36=-222/72, 8-31=-69/12, 7-32=-72/298, 10-33=-155/85, 27-33=-103/139, 11-34=-390/0, 26-34=-288/18, 13-35=-309/32, 24-35=-317/32, 14-36=-256/49, 16-22=-105/134, 17-21=-307/59

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) and C-C Exterior(2E) -1-0-0 to 2-0-0, Interior (1) 2-0-0 to 15-0-0, Exterior(2R) 15-0-0 to 18-0-0, Interior (1) 18-0-0 to 31-0-0 zone; cantilever left and right exposed ; end vertical left and right exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-16; Pr=20.0 psf (roof LL: Lum DOL=1.15 Plate DOL=1.15); Pg=20.0 psf; Pf=15.4 psf (Lum DOL = 1.15 Plate DOL = 1.15); Is=1.0; Rough Cat B; Partially Exp.; Ce=1.0; Cs=1.00; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.4 psf on overhangs non-concurrent with other live loads.
7) All plates are MT20 plates unless otherwise indicated.
8) Plates checked for a plus or minus 5 degree rotation about its center.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
12) Bearings are assumed to be: Joint 2 SP SS , Joint 19 SP No.2 , Joint 25 SP No.2 .
13) One H2.5A Simpson Strong-Tie connectors recommended to connect truss to bearing walls due to UPLIFT at jt(s) 19, 24, 22, and 21. This connection is for uplift only and does not consider lateral forces.
14) This truss has been designed for a moving concentrated load of 250.0lb live and 3.0lb dead located at all mid panels and at all panel points along the Top Chord and Bottom Chord, nonconcurrent with any other live loads.
15) This truss design requires that a minimum of 7/16" structural wood sheathing be applied directly to the top chord and 1/2" gypsum sheetrock be applied directly to the bottom chord.

LOAD CASE(S) Standard

January 23,2025

TRENCO
ENGINEERING BY
A MiTek Affiliate

818 Soundside Road
Edenton, NC 27932

Symbols

PLATE LOCATION AND ORIENTATION

½L

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.

0-¹⁄₁₆"

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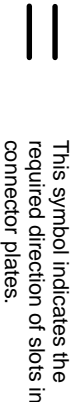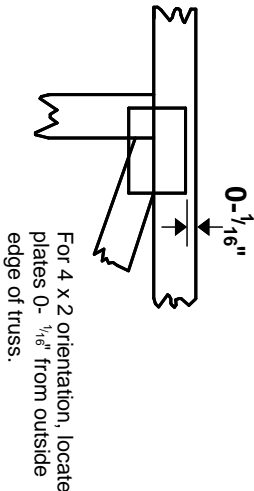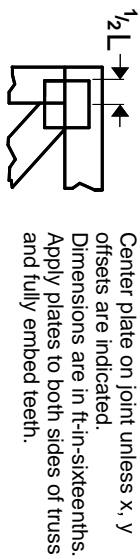
* Plate location details available in MiTek software or upon request.
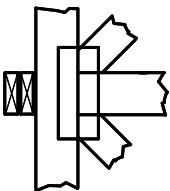
PLATE SIZE

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.
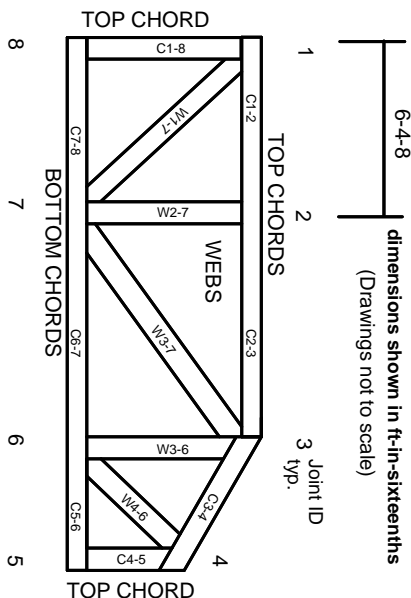
BEARING

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.

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

Numbering System

6-4-8 **dimensions shown in ft-in-sixteenths**
(Drawings not to scale)

3 Joint ID typ.

TOP CHORD
C1-8
C7-8
C1-2
W1-7
W2-7
WEBS
C2-3
W3-7
C6-7
BOTTOM CHORDS
W3-6
C2-4
W4-6
C5-6
C4-5
TOP CHORD

1 2 TOP CHORDS
8 7 6 5

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.

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⚠ 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 T or 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.