ENGINEERING BY TRENCO
A MiTek Affiliate

Lumber design values are in accordance with ANSI/TPI 1-2007 section 6.3
These truss designs rely on lumber values established by others.

RE: 4111083 - 5011 Ray Rd Spring Lake, NC

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:

Project Customer: Carolina Construction Project Name:
Lot/Block: 5011 Subdivision: RAY ROAD
Address: 5011 RAY ROAD
City: SPRING LAKE State: NC

Name Address and License # of Structural Engineer of Record, If there is one, for the building.

Name: License #:
Address:
City, County: State:

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

Design Code: IRC2018/TPI2014 Design Program: MiTek 20/20 8.6
Wind Code: ASCE 7-16 Design Method: MWFRS (Envelope)/C-C hybrid Wind ASCE 7-16
Wind Speed: 130 mph
Roof Load: 40.0 psf Floor Load: N/A psf

This package includes 8 individual, dated Truss Design Drawings and 0 Additional Drawings.

No.	Seal#	Job ID#	Truss Name	Date
1	I66879413	4111083	A01	7/16/24
2	I66879414	4111083	A02	7/16/24
3	I66879415	4111083	A03	7/16/24
4	I66879416	4111083	A04	7/16/24
5	I66879417	4111083		7/16/24
6	I66879418	4111083	A06	7/16/24
7	I66879419	4111083	A07	7/16/24
8	I66879420	4111083	B01	7/16/24

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

Truss Design Engineer's Name: Tony Miller
My license renewal date for the state of North Carolina is December 31, 2024.

July 16,2024
Tony Miller

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	5011 Ray Rd Spring Lake, NC
4111083	A01	Common	1	1	I66879413
					Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:56 Page: 1
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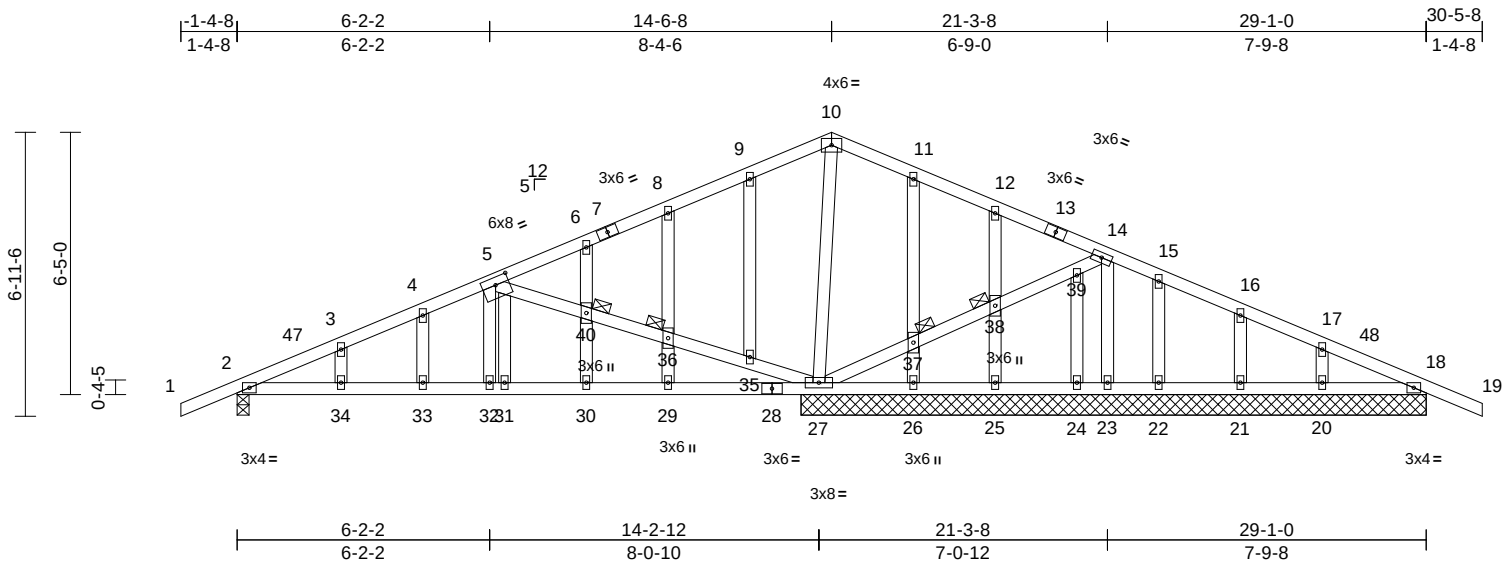

Scale = 1:56.4

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

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	0.51	Vert(LL)	-0.08	29-30	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.58	Vert(CT)	-0.15	29-30	>999	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.56	Horz(CT)	0.01	27	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.12	29-30	>999	240	Weight: 184 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

BRACING
TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.
JOINTS 1 Brace at Jt(s): 36, 37, 38, 40

REACTIONS (size) 2=0-3-8, 18=15-3-8, 20=15-3-8, 21=15-3-8, 22=15-3-8, 23=15-3-8, 24=15-3-8, 25=15-3-8, 26=15-3-8, 27=15-3-8, 44=15-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-172 (LC 12), 18=-83 (LC 9), 20=-76 (LC 13), 21=-80 (LC 13), 22=-38 (LC 13), 23=-95 (LC 25), 25=-102 (LC 13), 26=-117 (LC 25), 27=-418 (LC 12), 44=-83 (LC 9)
Max Grav 2=512 (LC 25), 18=178 (LC 26), 20=177 (LC 1), 21=164 (LC 1), 22=111 (LC 26), 23=53 (LC 26), 24=56 (LC 3), 25=234 (LC 1), 26=79 (LC 12), 27=1165 (LC 1), 44=178 (LC 26)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-606/249, 3-4=-580/287, 4-5=-547/316, 5-6=-148/300, 6-8=-123/343, 8-9=-75/352, 9-10=-47/378, 10-11=-25/344, 11-12=-33/308, 12-14=-70/328, 14-15=0/140, 15-16=0/124, 16-17=-27/114, 17-18=-101/116, 18-19=0/32
BOT CHORD 2-34=-196/530, 33-34=-196/530, 32-33=-196/530, 31-32=-199/532, 30-31=-207/552, 29-30=-207/552, 27-29=-207/552, 26-27=-98/150, 25-26=-98/150, 24-25=-98/150, 23-24=-98/150, 22-23=-98/150, 21-22=-98/150, 20-21=-98/150, 18-20=-98/150
WEBS 9-35=-67/54, 29-36=-48/101, 30-40=-81/83, 5-31=-168/327, 4-33=-23/53, 3-34=-47/76, 26-37=-83/76, 25-38=-158/145, 24-39=-10/8, 15-22=-75/65, 16-21=-126/120, 17-20=-127/111, 5-32=-36/60, 5-40=-910/499, 36-40=-884/485, 35-36=-898/489, 27-35=-920/507, 10-27=-500/156, 27-37=-211/206, 37-38=-209/204, 38-39=-208/203, 14-39=-212/207, 14-23=-43/112, 6-40=0/50, 8-36=-96/114, 11-37=-84/78, 12-38=-160/147

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -1-4-8 to 1-7-8, Exterior(2N) 1-7-8 to 14-6-8, Corner(3R) 14-6-8 to 17-6-8, Exterior (2N) 17-6-8 to 30-5-8 zone; 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) All plates are 2x4 MT20 unless otherwise indicated.
5) Gable studs spaced at 2-0-0 oc.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 172 lb uplift at joint 2, 83 lb uplift at joint 18, 117 lb uplift at joint 26, 102 lb uplift at joint 25, 38 lb uplift at joint 22, 80 lb uplift at joint 21, 76 lb uplift at joint 20, 418 lb uplift at joint 27, 95 lb uplift at joint 23 and 83 lb uplift at joint 18.
9) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
10) 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

July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	A02	Common	3	1	I66879414 Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

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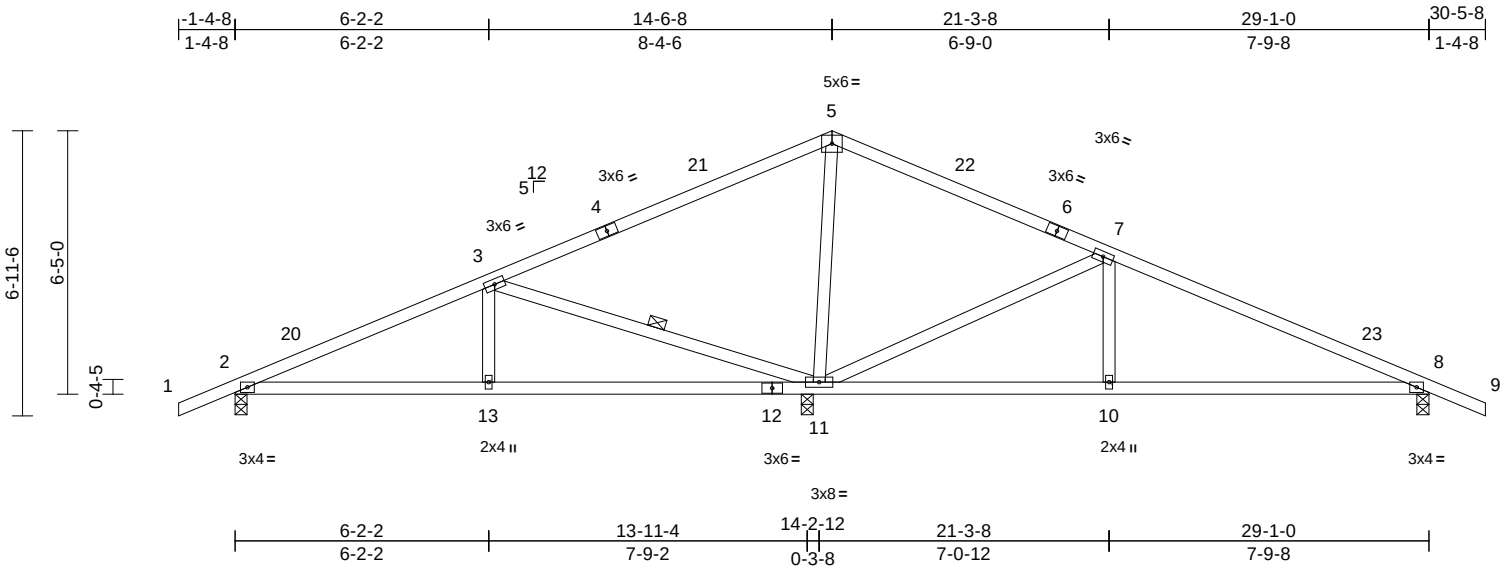
Page: 1



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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	0.69	Vert(LL)	-0.08	10-19	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.47	Vert(CT)	-0.19	10-19	>959	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.97	Horz(CT)	0.01	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.11	10-19	>999	240	Weight: 135 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.
BOT CHORD Rigid ceiling directly applied.
WEBS 1 Row at midpt 3-11

REACTIONS (size) 2=0-3-8, 8=0-3-8, 11=0-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-180 (LC 12), 8=-220 (LC 13), 11=-350 (LC 12)
Max Grav 2=495 (LC 25), 8=533 (LC 26), 11=1562 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-605/202, 3-5=-106/586, 5-7=-43/522, 7-8=-537/246, 8-9=0/32
BOT CHORD 2-13=-240/533, 11-13=-240/533, 10-11=-102/450, 8-10=-102/450
WEBS 3-13=0/305, 3-11=-929/450, 5-11=-785/264, 7-11=-839/397, 7-10=0/310

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -1-4-8 to 1-7-8, Interior (1) 1-7-8 to 14-6-8, Exterior(2R) 14-6-8 to 17-6-8, Interior (1) 17-6-8 to 30-5-8 zone; 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) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
4) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 180 lb uplift at joint 2, 220 lb uplift at joint 8 and 350 lb uplift at joint 11.
6) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
7) 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

July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	A03	Roof Special	6	1	I66879415 Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153, Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:58 Page: 1
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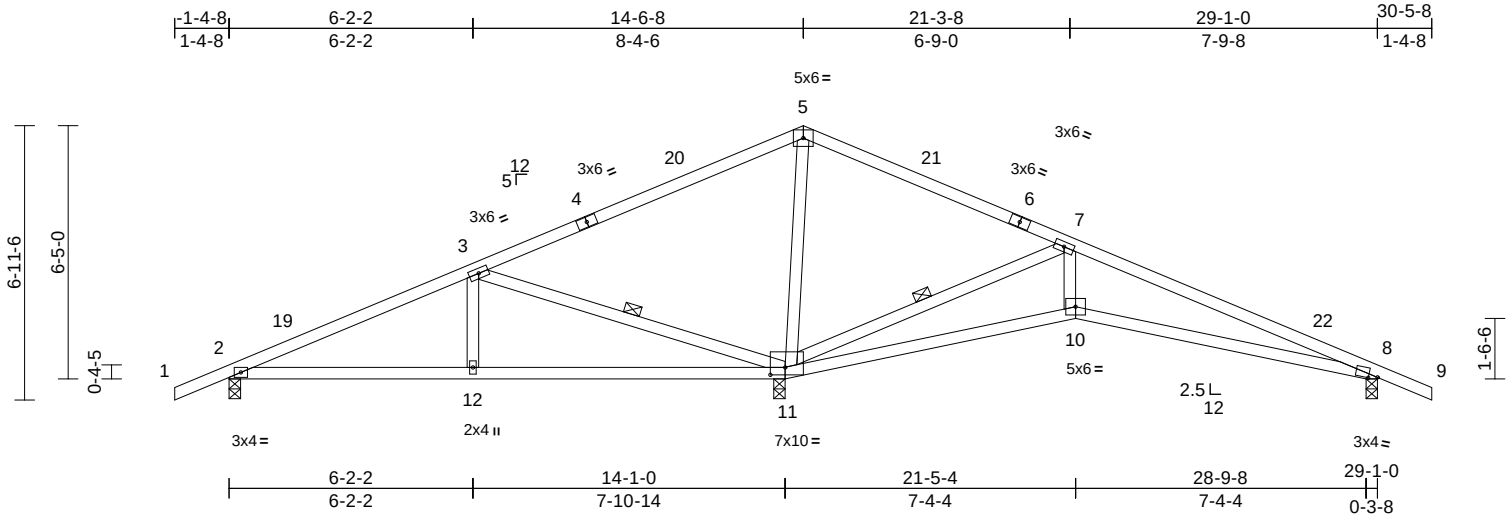

Scale = 1:58.3

Plate Offsets (X, Y): [8:0-2-12,0-0-11], [11:0-4-8,0-2-4]

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	0.72	Vert(LL)	-0.08	10-18	>999	360	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.48	Vert(CT)	-0.20	10-18	>907	240		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.02	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.13	10-18	>999	240	Weight: 133 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.
BOT CHORD Rigid ceiling directly applied.
WEBS 1 Row at midpt 3-11, 7-11

REACTIONS (size) 2=0-3-8, 8=0-3-8, 11=0-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-195 (LC 12), 8=-198 (LC 13), 11=-332 (LC 13)
Max Grav 2=484 (LC 25), 8=448 (LC 26), 11=1696 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-579/241, 3-5=-62/777, 5-7=-54/684, 7-8=-537/234, 8-9=0/32
BOT CHORD 2-12=-276/509, 11-12=-276/509, 10-11=-104/450, 8-10=-103/484
WEBS 3-12=0/309, 3-11=-927/445, 5-11=-923/275, 7-11=-1045/443, 7-10=0/404

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -1-4-8 to 1-7-8, Interior (1) 1-7-8 to 14-6-8, Exterior(2R) 14-6-8 to 17-6-8, Interior (1) 17-6-8 to 30-5-8 zone; 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) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
4) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
5) Bearing at joint(s) 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 195 lb uplift at joint 2, 332 lb uplift at joint 11 and 198 lb uplift at joint 8.
7) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
8) 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

July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	A04	Roof Special	6	1	I66879416 Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153, Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:58 Page: 1
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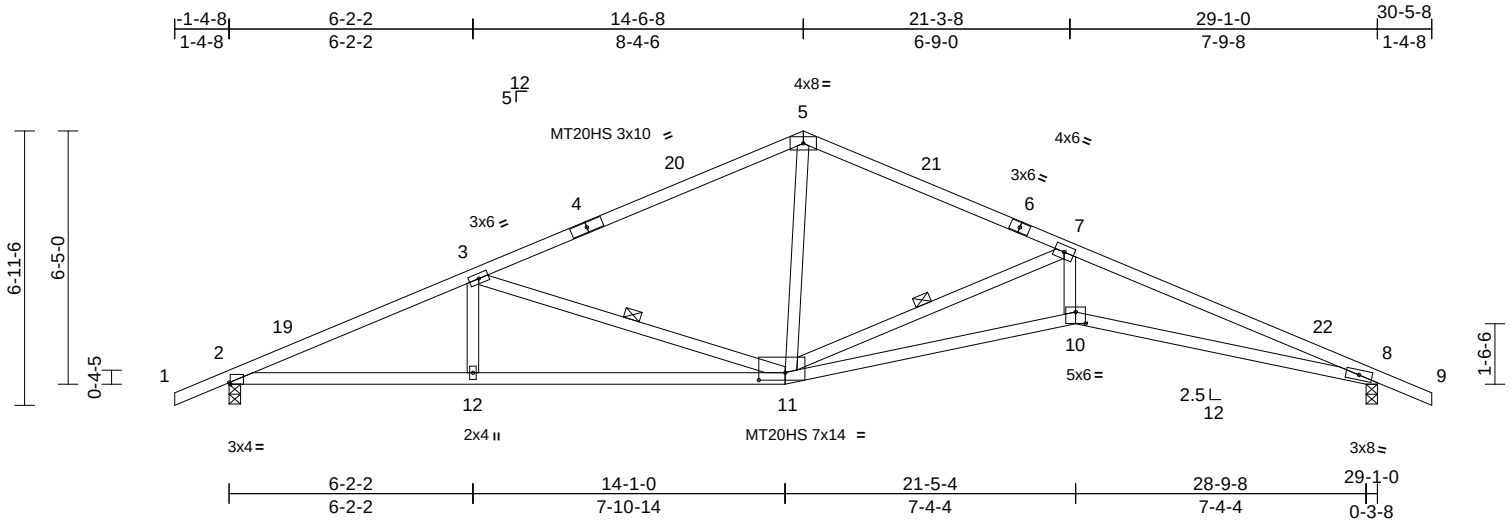

Scale = 1:58.3

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

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	0.94	Vert(LL)	-0.32	10-11	>999	360	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.67	10-11	>524	240	MT20	244/190
BCLL	0.0*	Rep Stress Incr	YES	WB	0.88	Horz(CT)	0.28	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.32	10	>999	240	Weight: 133 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1 *Except* 2-11:2x4 SP No.2
WEBS 2x4 SP No.3

BRACING
TOP CHORD Structural wood sheathing directly applied.
BOT CHORD Rigid ceiling directly applied.
WEBS 1 Row at midpt 3-11, 7-11

REACTIONS (size) 2=0-3-8, 8=0-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-359 (LC 12), 8=-359 (LC 13)
Max Grav 2=1246 (LC 1), 8=1246 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-2499/650, 3-5=-1676/487, 5-7=-1590/489, 7-8=-4277/991, 8-9=0/32
BOT CHORD 2-12=-653/2263, 11-12=-653/2263, 10-11=-813/3822, 8-10=-834/3967
WEBS 3-12=0/292, 3-11=-876/431, 5-11=-102/736, 7-11=-2564/754, 7-10=-251/1714

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -1-4-8 to 1-7-8, Interior (1) 1-7-8 to 14-6-8, Exterior(2R) 14-6-8 to 17-6-8, Interior (1) 17-6-8 to 30-5-8 zone; 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) All plates are MT20 plates unless otherwise indicated.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
6) Bearing at joint(s) 8 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 359 lb uplift at joint 2 and 359 lb uplift at joint 8.
8) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
9) 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

July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	A05	Common	11	1	I66879417
					Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

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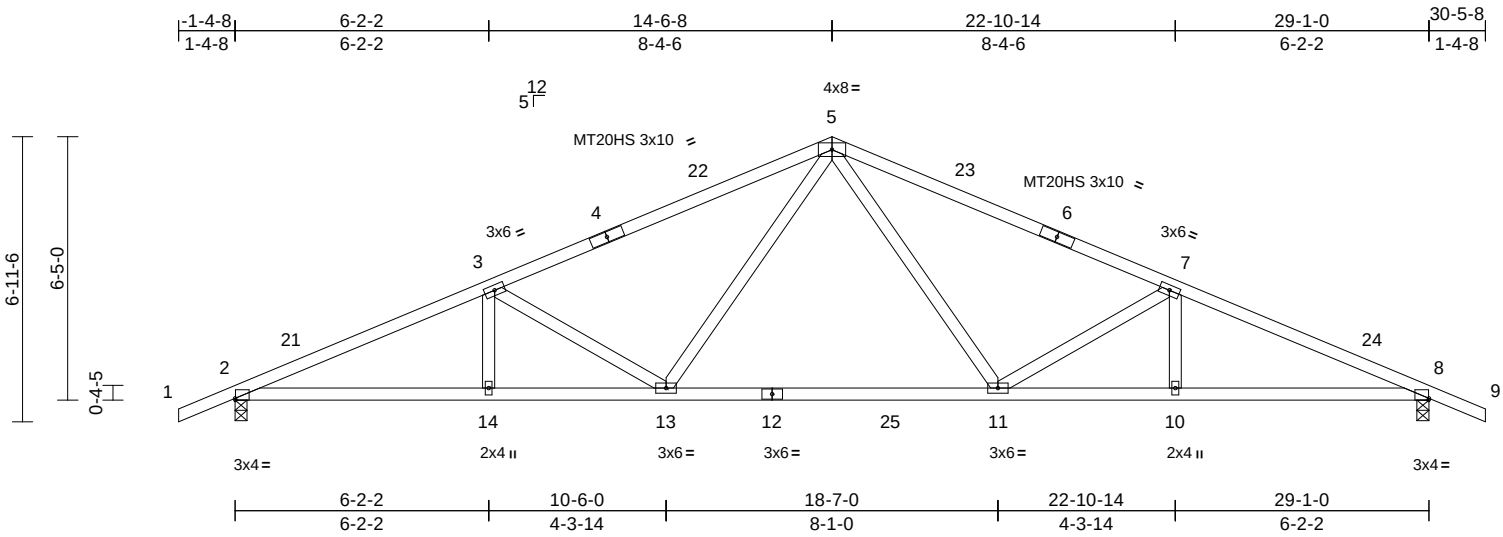


Scale = 1:56.1

Plate Offsets (X, Y): [2:0-0-2,Edge], [8:0-0-2,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	0.83	Vert(LL)	-0.26	11-13	>999	360	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.15	BC	0.88	Vert(CT)	-0.47	11-13	>740	240	MT20	244/190
BCLL	0.0*	Rep Stress Incr	YES	WB	0.34	Horz(CT)	0.10	8	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.13	13	>999	240	Weight: 137 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.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 2=0-3-8, 8=0-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-359 (LC 12), 8=-359 (LC 13)
Max Grav 2=1326 (LC 2), 8=1326 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-2649/665, 3-5=-2147/538, 5-7=-2147/538, 7-8=-2649/666, 8-9=0/32
BOT CHORD 2-14=-665/2422, 13-14=-665/2422, 11-13=-253/1518, 10-11=-517/2422, 8-10=-517/2422
WEBS 3-14=0/168, 3-13=-649/388, 5-13=-145/717, 5-11=-146/717, 7-11=-649/389, 7-10=0/168

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -1-4-8 to 1-7-8, Interior (1) 1-7-8 to 14-6-8, Exterior(2R) 14-6-8 to 17-6-8, Interior (1) 17-6-8 to 30-5-8 zone; 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) All plates are MT20 plates unless otherwise indicated.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 359 lb uplift at joint 2 and 359 lb uplift at joint 8.
7) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
8) 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

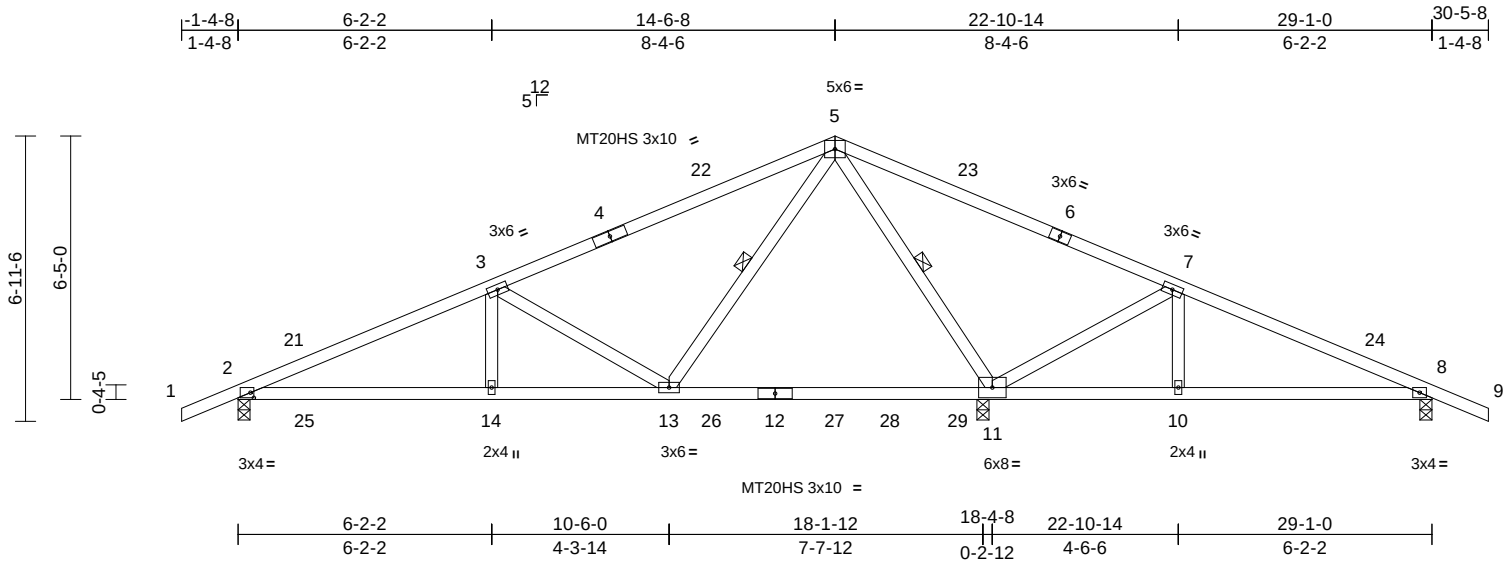
July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC	
4111083	A06	Common	2	1	Job Reference (optional)	I66879418

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:58
ID:hHdeZdo4A2Rgt9V9dcjTb1z_AXt-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:56.1

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

Loading	(psf)	Spacing	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.70	Vert(LL)	-0.14	11-13	>999	360	MT20HS	187/143
TCDL	10.0	Lumber DOL	1.15	BC	0.58	Vert(CT)	-0.24	11-13	>927	240	MT20	244/190
BCLL	0.0*	Rep Stress Incr	YES	WB	0.39	Horz(CT)	0.02	11	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS		Wind(LL)	0.29	11-13	>766	240	Weight: 137 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.
BOT CHORD Rigid ceiling directly applied.
WEBS 1 Row at midpt 5-13, 5-11

REACTIONS (size) 2=0-3-8, 8=0-3-8, 11=0-3-8
Max Horiz 2=-149 (LC 13)
Max Uplift 2=-366 (LC 8), 8=-163 (LC 13), 11=-516 (LC 8)
Max Grav 2=735 (LC 27), 8=372 (LC 26), 11=1618 (LC 2)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-1170/1362, 3-5=-627/882, 5-7=-362/656, 7-8=-337/174, 8-9=0/32
BOT CHORD 2-14=-1175/1061, 13-14=-1175/1061, 11-13=-31/193, 10-11=-126/400, 8-10=-126/400
WEBS 3-14=-279/185, 3-13=-677/699, 5-13=-998/720, 5-11=-1192/1068, 7-11=-708/404, 7-10=0/195

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Exterior(2E) -1-4-8 to 1-7-8, Interior (1) 1-7-8 to 14-6-8, Exterior(2R) 14-6-8 to 17-6-8, Interior (1) 17-6-8 to 30-5-8 zone; end vertical left and right exposed; porch left exposed;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) All plates are MT20 plates unless otherwise indicated.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 366 lb uplift at joint 2, 163 lb uplift at joint 8 and 516 lb uplift at joint 11.
7) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
8) 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

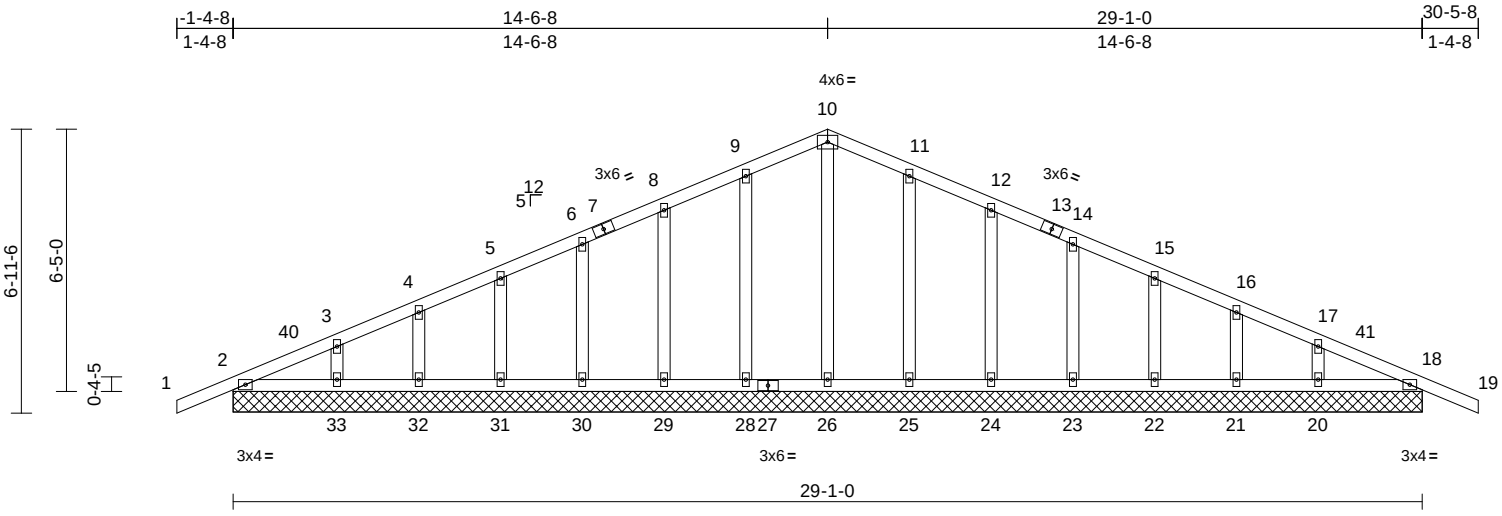
July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	A07	Common Supported Gable	1	1	I66879419 Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:58 Page: 1
ID:PA_Fve5W5cx8GW5lC9r1tuz_AAF-RfC?PsB70Hq3NSgPqnL8w3ulTXbGKWrCDoi7J4zJC?f



Scale = 1:56.4

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	0.14	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.04	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.09	Horz(CT)	0.01	37	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 156 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.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 2=29-1-0, 18=29-1-0, 20=29-1-0, 21=29-1-0, 22=29-1-0, 23=29-1-0, 24=29-1-0, 25=29-1-0, 26=29-1-0, 28=29-1-0, 29=29-1-0, 30=29-1-0, 31=29-1-0, 32=29-1-0, 33=29-1-0, 34=29-1-0, 37=29-1-0
Max Horiz 2=-149 (LC 13), 34=-149 (LC 13)
Max Uplift 2=-71 (LC 8), 18=-77 (LC 9), 20=-79 (LC 13), 21=-73 (LC 13), 22=-75 (LC 13), 23=-74 (LC 13), 24=-77 (LC 13), 25=-72 (LC 13), 28=-74 (LC 12), 29=-76 (LC 12), 30=-74 (LC 12), 31=-75 (LC 12), 32=-73 (LC 12), 33=-81 (LC 12), 34=-71 (LC 8), 37=-77 (LC 9)
Max Grav 2=198 (LC 1), 18=198 (LC 1), 20=176 (LC 26), 21=155 (LC 1), 22=161 (LC 1), 23=160 (LC 26), 24=159 (LC 1), 25=167 (LC 26), 26=172 (LC 22), 28=167 (LC 25), 29=159 (LC 1), 30=160 (LC 25), 31=161 (LC 1), 32=155 (LC 1), 33=176 (LC 25), 34=198 (LC 1), 37=198 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-150/81, 3-4=-103/90, 4-5=-71/112, 5-6=-46/138, 6-8=-62/169, 8-9=-81/222, 9-10=-98/272, 10-11=-98/272, 11-12=-81/222, 12-14=-62/169, 14-15=-44/117, 15-16=-34/65, 16-17=-47/25, 17-18=-100/37, 18-19=0/32
BOT CHORD 2-33=-37/149, 32-33=-36/149, 31-32=-36/149, 30-31=-36/149, 29-30=-36/149, 28-29=-36/149, 26-28=-36/149, 25-26=-36/149, 24-25=-36/149, 23-24=-36/149, 22-23=-36/149, 21-22=-36/149, 20-21=-36/149, 18-20=-37/149
WEBS 10-26=-132/0, 9-28=-127/105, 8-29=-119/114, 6-30=-120/110, 5-31=-121/111, 4-32=-118/112, 3-33=-128/112, 11-25=-127/105, 12-24=-119/114, 14-23=-120/110, 15-22=-121/111, 16-21=-118/112, 17-20=-128/113

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -1-4-8 to 1-7-8, Exterior(2N) 1-7-8 to 14-6-8, Corner(3R) 14-6-8 to 17-6-8, Exterior (2N) 17-6-8 to 30-5-8 zone; 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) All plates are 2x4 MT20 unless otherwise indicated.
5) Gable requires continuous bottom chord bearing.
6) Gable studs spaced at 2-0-0 oc.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 71 lb uplift at joint 2, 77 lb uplift at joint 18, 74 lb uplift at joint 28, 76 lb uplift at joint 29, 74 lb uplift at joint 30, 75 lb uplift at joint 31, 73 lb uplift at joint 32, 81 lb uplift at joint 33, 72 lb uplift at joint 25, 77 lb uplift at joint 24, 74 lb uplift at joint 23, 75 lb uplift at joint 22, 73 lb uplift at joint 21, 79 lb uplift at joint 20, 71 lb uplift at joint 2 and 77 lb uplift at joint 18.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
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

July 16,2024

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

Job	Truss	Truss Type	Qty	Ply	5011 Ray Rd Spring Lake, NC
4111083	B01	Common Supported Gable	1	1	I66879420
					Job Reference (optional)

Builders FirstSource (Sumter, SC), Sumter, SC - 29153,

Run: 8.63 S Jul 12 2024 Print: 8.630 S Jul 12 2024 MiTek Industries, Inc. Mon Jul 15 18:00:58
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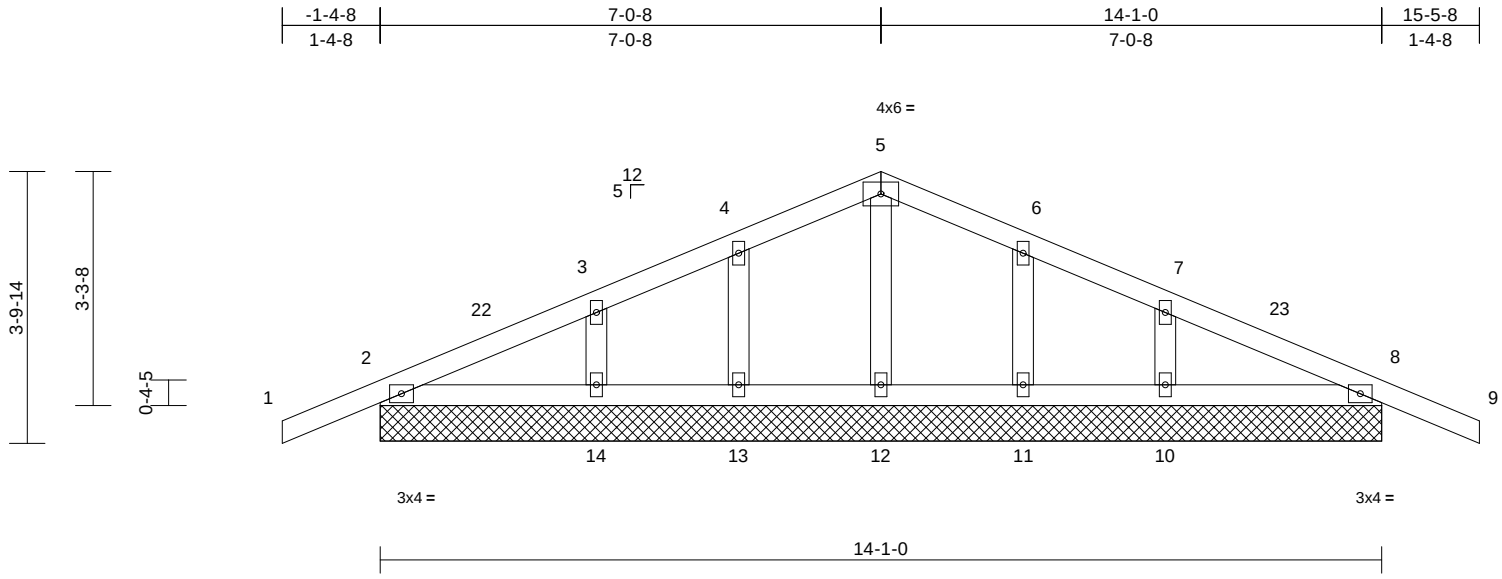


Scale = 1:32.4

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	0.14	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.06	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.05	Horz(CT)	0.00	19	n/a	n/a		
BCDL	10.0	Code	IRC2018/TPI2014	Matrix-AS							Weight: 61 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.
BOT CHORD Rigid ceiling directly applied.

REACTIONS (size) 2=14-1-0, 8=14-1-0, 10=14-1-0, 11=14-1-0, 12=14-1-0, 13=14-1-0, 14=14-1-0, 15=14-1-0, 19=14-1-0
Max Horiz 2=79 (LC 12), 15=79 (LC 12)
Max Uplift 2=-91 (LC 8), 8=-95 (LC 9), 10=-94 (LC 13), 11=-71 (LC 13), 13=-71 (LC 12), 14=-95 (LC 12), 15=-91 (LC 8), 19=-95 (LC 9)
Max Grav 2=213 (LC 1), 8=213 (LC 1), 10=214 (LC 1), 11=148 (LC 26), 12=149 (LC 1), 13=148 (LC 25), 14=214 (LC 1), 15=213 (LC 1), 19=213 (LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/32, 2-3=-85/57, 3-4=-49/106, 4-5=-65/170, 5-6=-65/170, 6-7=-48/105, 7-8=-81/30, 8-9=0/32
BOT CHORD 2-14=-29/108, 13-14=-14/94, 12-13=-14/94, 11-12=-14/94, 10-11=-14/94, 8-10=-29/116
WEBS 5-12=-104/7, 4-13=-117/144, 3-14=-151/177, 6-11=-117/144, 7-10=-151/177

NOTES
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp C; Enclosed; MWFRS (envelope) exterior zone and C-C Corner(3E) -1-4-8 to 1-7-8, Exterior(2N) 1-7-8 to 7-0-8, Corner(3R) 7-0-8 to 10-0-8, Exterior(2N) 10-0-8 to 15-5-8 zone; 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) All plates are 2x4 MT20 unless otherwise indicated.
5) Gable requires continuous bottom chord bearing.
6) Gable studs spaced at 2-0-0 oc.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-06-00 tall by 2-00-00 wide will fit between the bottom chord and any other members.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 91 lb uplift at joint 2, 95 lb uplift at joint 8, 71 lb uplift at joint 13, 95 lb uplift at joint 14, 71 lb uplift at joint 11, 94 lb uplift at joint 10, 91 lb uplift at joint 2 and 95 lb uplift at joint 8.
10) This truss is designed in accordance with the 2018 International Residential Code sections R502.11.1 and R802.10.2 and referenced standard ANSI/TPI 1.
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.

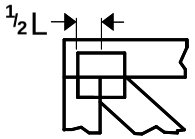
LOAD CASE(S) Standard

July 16,2024

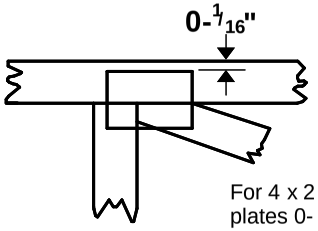
ENGINEERING BY TRENCO
A MiTek Affiliate
818 Soundside Road
Edenton, NC 27932

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.

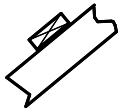
* Plate location details available in MiTek software or upon request.

PLATE SIZE

4 x 4

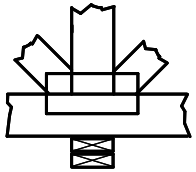
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

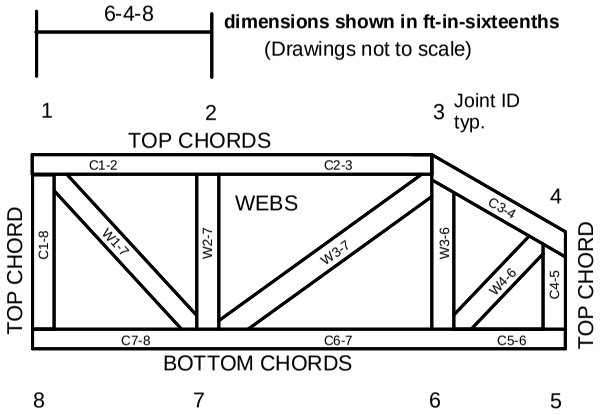


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number/letter where bearings occur. Min size shown is for crushing only.

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.