

Trenco

818 Soundside Rd
Edenton, NC 27932

Re: P-5804-1
23 Lumina v2-Roof

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

Pages or sheets covered by this seal: E12722285 thru E12722289

My license renewal date for the state of North Carolina is December 31, 2019.

North Carolina COA: C-0844



February 21, 2019

Gilbert, Eric

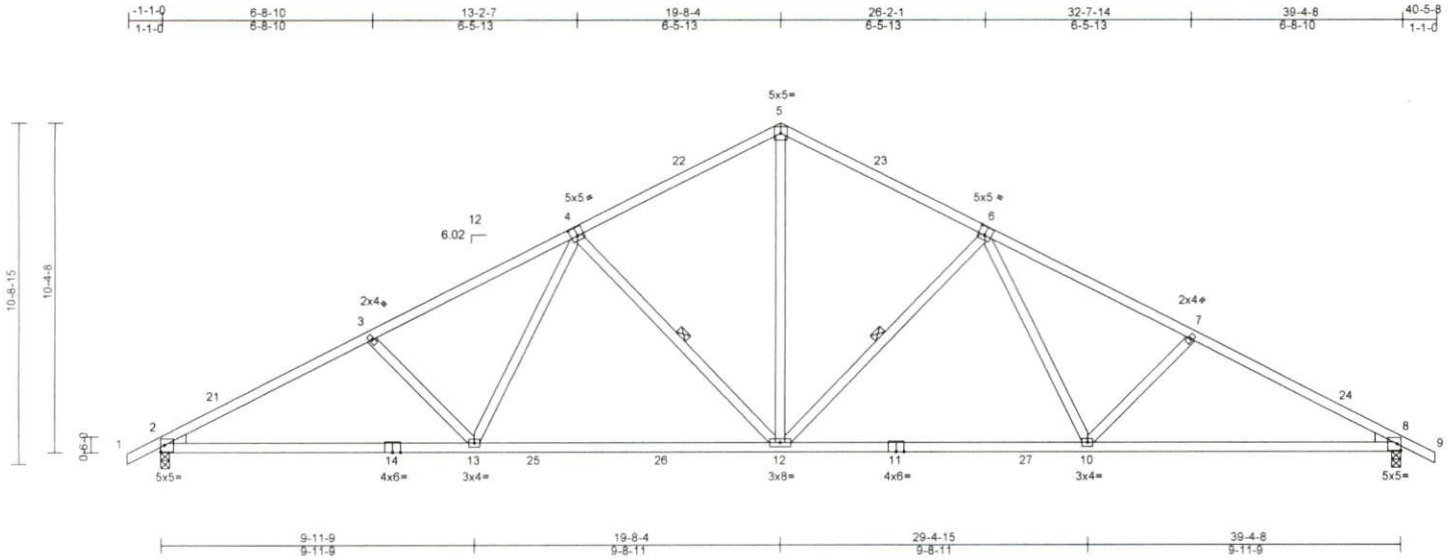
IMPORTANT NOTE: Truss Engineer's responsibility is solely for design of individual trusses based upon design parameters shown on referenced truss drawings. Parameters have not been verified as appropriate for any use. Any location identification specified is for file reference only and has not been used in preparing design. Suitability of truss designs for any particular building is the responsibility of the building designer, not the Truss Engineer, per ANSI/TPI-1, Chapter 2.

Job P-5804-1	Truss T1	Truss Type Common	Qty 11	Ply 1	23 Lumina v2-Roof Job Reference (optional)	E12722285
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Peak Truss Builders, LLC, New Hill, NC - 27562.

Run: 8.24 E Feb 11 2019 Print: 8.240 E Feb 11 2019 MiTek Industries, Inc. Wed Feb 20 10:06:05
ID:CsoTvkSZTFEhcZk0hWP4luznUks-x7exz61yeToDP1LzbfalXFjKnhTk3hJWj1NF7zjH8J

Page: 1



Scale = 1.70

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

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	Vert(LL)	-0.32	10-12	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	Vert(CT)	-0.56	10-12	>846	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	Horz(CT)	0.12	8	n/a	n/a		
BCDL	10.0	Code	IBC2015/TPI2014	Matrix-MS							
											Weight: 207 lb FT = 20%

LUMBER

TOP CHORD 2x4 SP No.1
 BOT CHORD 2x4 SP No.1
 WEBS 2x4 SP No.3
 WEDGE Left: 2x4 SP No.3
 Right: 2x4 SP No.3

BRACING

TOP CHORD Structural wood sheathing directly applied or 3-4-0 oc purlins.

BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

WEBS 1 Row at midpt 6-12, 4-12

REACTIONS (lb/size) 2=1640/0-3-8, 8=1640/0-3-8
 Max Horiz 2=158 (LC 10)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/29, 2-21=-2876/45, 3-21=-2784/76,
 3-4=-2625/82, 4-22=-1850/118,
 5-22=-1771/134, 5-23=-1771/134,
 6-23=-1850/118, 6-7=-2626/82,
 7-24=-2785/76, 8-24=-2876/45, 8-9=0/29

BOT CHORD 2-14=-56/2592, 13-14=0/2592,
 13-25=0/2140, 25-26=0/2140, 12-26=0/2140,
 11-12=0/2052, 11-27=0/2052, 10-27=0/2052,
 8-10=0/2489

WEBS 5-12=-9/1280, 6-12=-739/91, 6-10=0/543,
 7-10=-347/101, 4-12=-738/91, 4-13=0/542,
 3-13=-347/101

NOTES

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

- 2) Wind: ASCE 7-10; Vult=115mph (3-second gust)
 Vasd=91mph; TC DL=6.0psf; BCDL=6.0psf; h=0ft;
 B=45ft; L=39ft; eave=5ft; Cat. II; Exp B; Enclosed;
 MWFRS (directional) and C-C Exterior (2) -1-1-0 to
 1-11-0, Interior (1) 1-11-0 to 19-8-4, Exterior (2) 19-8-4
 to 22-8-4, Interior (1) 22-8-4 to 40-5-8 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) * 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.
- LOAD CASE(S) Standard



February 21, 2019

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSITPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



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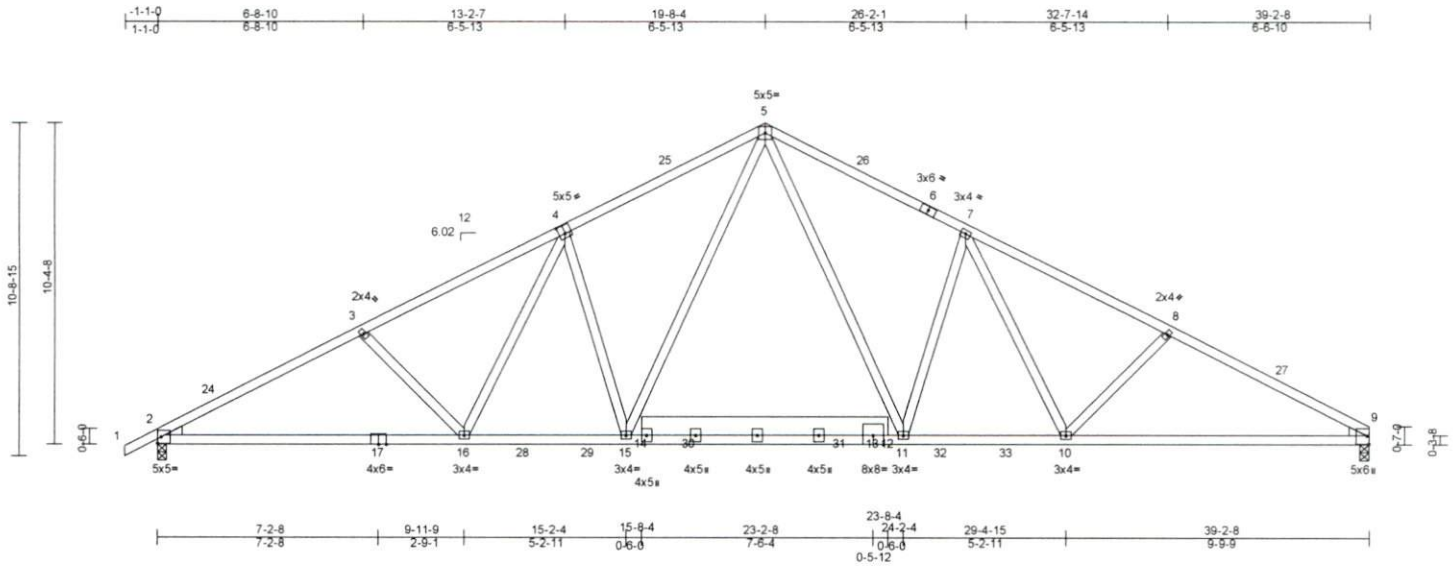
Job P-5804-1	Truss T1A	Truss Type Common	Qty 9	Ply 1	23 Lumina v2-Roof Job Reference (optional)	E12722286
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Peak Truss Builders, LLC, New Hill, NC - 27562,

Run: 8.24 E Feb 11 2019 Print: 8.240 E Feb 11 2019 MiTek Industries, Inc. Wed Feb 20 10:06:07

Page: 1

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Scale = 1:71.5

Plate Offsets (X, Y): [4:0-2-8,0-3-4], [9:Edge,0-0-13]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.46	Vert(LL)	-0.17	11-15	>999	240
TCDL	10.0	Lumber DOL	1.15	BC	0.71	Vert(CT)	-0.33	11-15	>999	180
BCLL	0.0*	Rep Stress Incr	YES	WB	0.66	Horz(CT)	0.11	9	n/a	n/a
BCDL	10.0	Code	IBC2015/TPI2014	Matrix-MS						
										Weight: 240 lb FT = 20%

LUMBER

TOP CHORD 2x4 SP No.1
 BOT CHORD 2x4 SP No.1 *Except* 14-12:2x8 SP No.2
 WEBS 2x4 SP No.3
 WEDGE Left: 2x4 SP No.3
 Right: 2x4 SP No.3

BRACING

TOP CHORD Structural wood sheathing directly applied or 3-4-12 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS

(lb/size) 2=1634/0-3-8, 9=1567/0-3-8
 Max Horiz 2=155 (LC 10)

FORCES

(lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/29, 2-24=-2860/49, 3-24=-2784/80,
 3-4=-2621/86, 4-25=-2236/148,
 5-25=-2155/164, 5-26=-2151/168,
 6-26=-2154/152, 6-7=-2233/137,
 7-8=-2585/99, 8-27=-2731/94, 9-27=-2803/66
 BOT CHORD 2-17=-82/2589, 16-17=-8/2589,
 16-28=0/2171, 28-29=0/2171, 15-29=0/2171,
 14-15=0/1592, 14-30=0/1590, 30-31=0/1593,
 13-31=0/1595, 12-13=0/1481, 11-12=0/1592,
 11-32=0/2059, 32-33=0/2059, 10-33=0/2059,
 9-10=-15/2428
 WEBS 5-11=-27/952, 7-10=0/416, 8-10=-329/103,
 5-15=-27/959, 4-16=0/452, 3-16=-351/99,
 4-15=-672/101, 7-11=-654/104

NOTES

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

- 2) Wind: ASCE 7-10; Vult=115mph (3-second gust)
 Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=0ft;
 B=45ft; L=39ft; eave=5ft; Cat. II; Exp B; Enclosed;
 MWFRS (directional) and C-C Exterior (2) -1-1-0 to
 1-11-0, Interior (1) 1-11-0 to 19-8-4, Exterior (2) 19-8-4
 to 22-8-4, Interior (1) 22-8-4 to 39-2-8 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) * 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.
- LOAD CASE(S) Standard



February 21, 2019

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.

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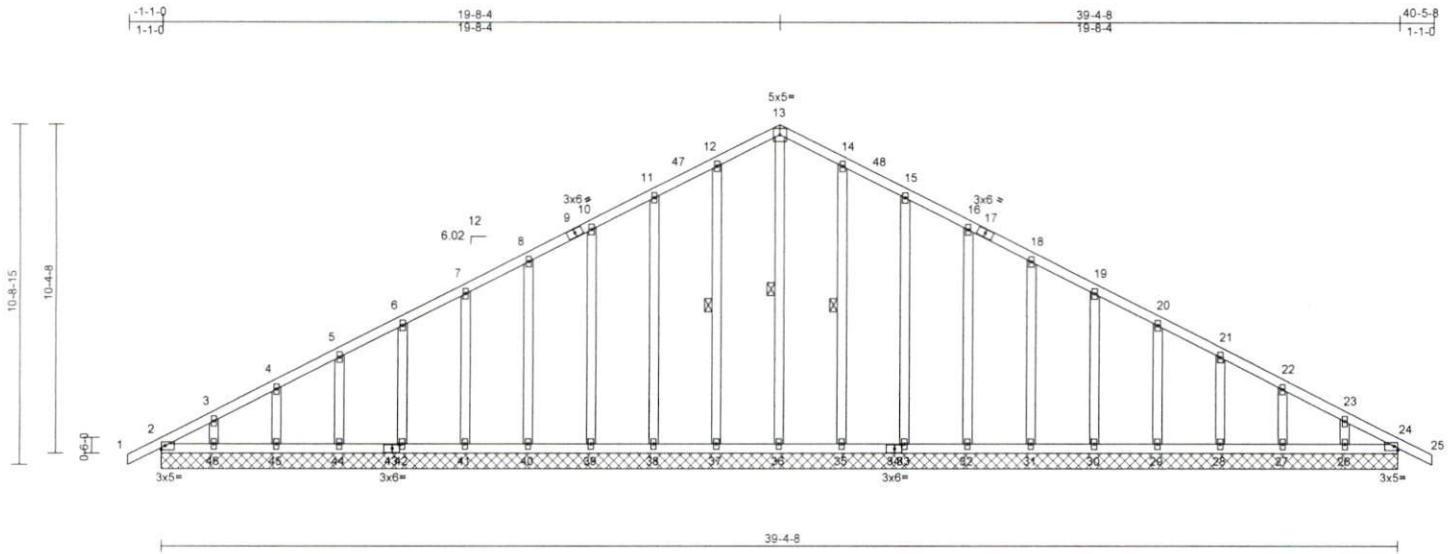
Job P-5804-1	Truss T1GE	Truss Type Common Supported Gable	Qty 1	Ply 1	23 Lumina v2-Roof Job Reference (optional)	E12722287
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Peak Truss Builders, LLC, New Hill, NC - 27562,

Run: 8.24 E Feb 11 2019 Print: 8.240 E Feb 11 2019 MiTek Industries, Inc. Wed Feb 20 10:06:08

Page: 1

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Scale = 1.70 1

Plate Offsets (X, Y): [34:0-2-12,0-1-8], [43:0-2-12,0-1-8]

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	0.06	Vert(LL)	n/a	-	n/a	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.02	Vert(CT)	n/a	-	n/a		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	24	n/a		
BCDL	10.0	Code	IBC2015/TPI2014	Matrix-S							
											Weight: 271 lb FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1
BOT CHORD 2x4 SP No.1
OTHERS 2x4 SP No.3

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

WEBS 1 Row at midpt 13-36, 12-37, 14-35

REACTIONS (lb/size)
2=150/39-4-8, 24=150/39-4-8,
26=132/39-4-8, 27=166/39-4-8,
28=159/39-4-8, 29=160/39-4-8,
30=160/39-4-8, 31=160/39-4-8,
32=160/39-4-8, 33=159/39-4-8,
35=165/39-4-8, 36=138/39-4-8,
37=165/39-4-8, 38=159/39-4-8,
39=160/39-4-8, 40=160/39-4-8,
41=160/39-4-8, 42=160/39-4-8,
44=159/39-4-8, 45=166/39-4-8,
46=132/39-4-8

Max Horiz 2=158 (LC 10)
Max Uplift 2=-5 (LC 7)
Max Grav 2=158 (LC 17), 24=150 (LC 1),
26=135 (LC 17), 27=166 (LC 21),
28=159 (LC 1), 29=160 (LC 21),
30=160 (LC 1), 31=160 (LC 21),
32=160 (LC 1), 33=159 (LC 21),
35=167 (LC 21), 36=139 (LC 16),
37=167 (LC 20), 38=159 (LC 20),
39=160 (LC 1), 40=160 (LC 20),
41=160 (LC 1), 42=160 (LC 20),
44=159 (LC 1), 45=166 (LC 20),
46=140 (LC 16)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD
1-2=0/20, 2-3=-129/126, 3-4=-116/112,
4-5=-109/102, 5-6=-102/92, 6-7=-95/83,
7-8=-89/108, 8-9=-84/140, 9-10=-63/146,
10-11=-78/183, 11-12=-82/217,
12-13=-72/221, 12-13=-94/254,
13-14=-94/255, 14-15=-72/222,
15-16=-82/218, 15-16=-68/183,
16-17=-39/146, 17-18=-55/141,
18-19=-42/109, 19-20=-46/71, 20-21=-51/34,
21-22=-57/37, 22-23=-86/47, 23-24=-128/58,
24-25=0/20

BOT CHORD
2-46=-49/134, 45-46=-49/134,
44-45=-49/134, 43-44=-49/134,
42-43=-49/134, 41-42=-49/134,
40-41=-49/134, 39-40=-49/134,
38-39=-49/134, 37-38=-49/134,
36-37=-49/134, 35-36=-49/134,
34-35=-49/134, 33-34=-49/134,
32-33=-49/134, 31-32=-49/134,
30-31=-49/134, 29-30=-49/134,
28-29=-49/134, 27-28=-49/134,
26-27=-49/134, 24-26=-49/134

WEBS
13-36=-147/13, 12-37=-127/95,
11-38=-119/70, 10-39=-120/59,
8-40=-120/60, 7-41=-120/60, 6-42=-120/60,
5-44=-119/59, 4-45=-124/61, 3-46=-106/76,
14-35=-127/95, 15-33=-119/70,
16-32=-120/59, 18-31=-120/60,
19-30=-120/60, 20-29=-120/60,
21-28=-119/59, 22-27=-124/61,
23-26=-102/76

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

- Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TC DL=6.0psf; BC DL=6.0psf; h=0ft; B=45ft; L=39ft; eave=2ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Corner (3) -1-1-0 to 1-8-4, Exterior (2) 1-8-4 to 19-8-4, Corner (3) 19-8-4 to 22-8-4, Exterior (2) 22-8-4 to 40-5-8 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
- 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.
- All plates are 2x4 MT20 unless otherwise indicated.
- Gable requires continuous bottom chord bearing.
- Gable studs spaced at 2-0-0 oc.
- * 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.



February 21, 2019

Continued on page 2

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/03/2015 BEFORE USE.

Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see **ANSI/TPI 1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

TRENCO
ENGINEERING BY
A MITEK AFFILIATE

818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	23 Lumina v2-Roof	E12722287
P-5804-1	T1GE	Common Supported Gable	1	1	Job Reference (optional)	

Peak Truss Builders, LLC, New Hill, NC - 27562.

Run: 8.24 E Feb 11 2019 Print: 8.240 E Feb 11 2019 MiTek Industries, Inc. Wed Feb 20 10:06:08
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Page: 2

- 8) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 5 lb uplift at joint 2.

LOAD CASE(S) Standard

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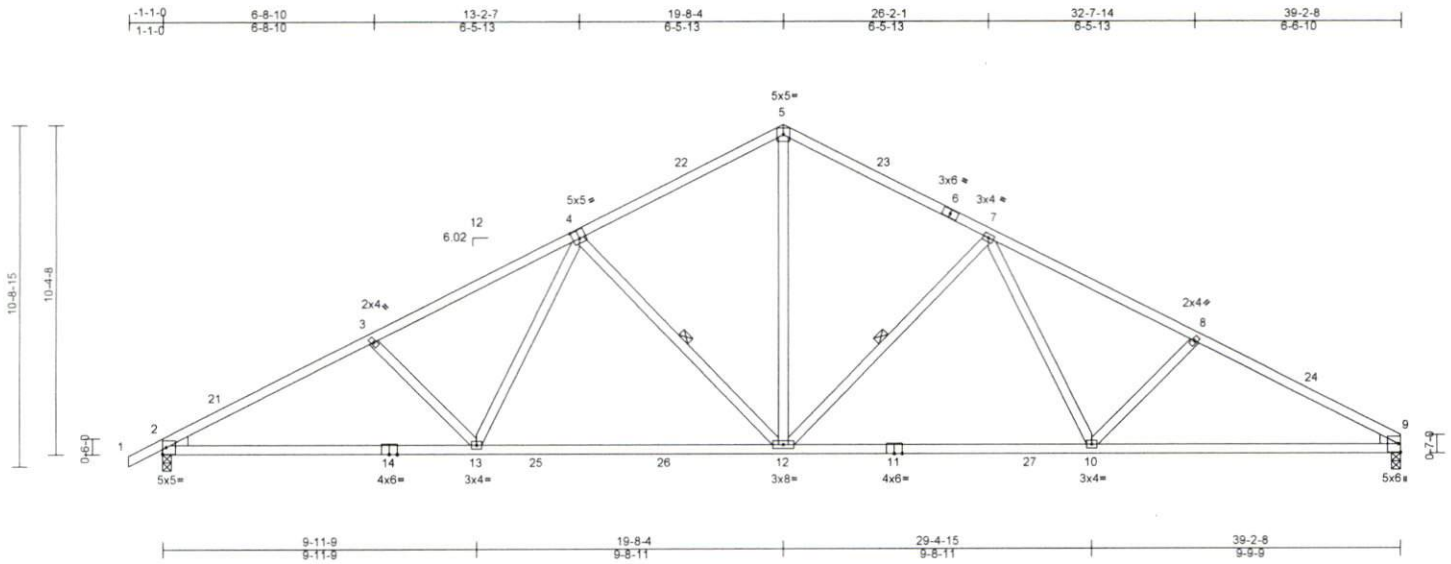
818 Soundside Road
 Edenton, NC 27932

Job P-5804-1	Truss T2	Truss Type Common	Qty 1	Ply 1	23 Lumina v2-Roof Job Reference (optional)	E12722288
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Peak Truss Builders, LLC, New Hill, NC - 27562.

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Page: 1



Scale = 1:69.7

Plate Offsets (X, Y): [4:0-2-8,0-3-4], [9:Edge,0-0-13]

Loading	(psf)	Spacing	2-0-0	CSI	DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP	
TCLL (roof)	20.0	Plate Grip DOL	1.15	TC	0.48	Vert(LL)	-0.33	10-12	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.87	Vert(CT)	-0.58	10-12	>809	180		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.52	Horz(CT)	0.12	9	n/a	n/a		
BCDL	10.0	Code	IBC2015/TPI2014	Matrix-MS							Weight: 204 lb	FT = 20%

LUMBER

TOP CHORD 2x4 SP No.1
 BOT CHORD 2x4 SP No.1
 WEBS 2x4 SP No.3
 WEDGE Left: 2x4 SP No.3
 Right: 2x4 SP No.3

BRACING

TOP CHORD Structural wood sheathing directly applied or 3-3-12 oc purlins.
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

WEBS 1 Row at midpt 7-12, 4-12

REACTIONS (lb/size) 2=1634/0-3-8, 9=1567/0-3-8
 Max Horiz 2=155 (LC 10)

FORCES (lb) - Maximum Compression/Maximum Tension

TOP CHORD 1-2=0/29, 2-21=-2863/45, 3-21=-2775/76,
 3-4=-2617/82, 4-22=-1843/118,
 5-22=-1764/134, 5-23=-1764/137,
 6-23=-1765/121, 6-7=-1843/106,
 7-8=-2587/94, 8-24=-2726/90, 9-24=-2806/71
 BOT CHORD 2-14=-75/2581, 13-14=-5/2581,
 13-25=0/2129, 25-26=0/2129, 12-26=0/2129,
 11-12=0/2026, 11-27=0/2026, 10-27=0/2026,
 9-10=-12/2430

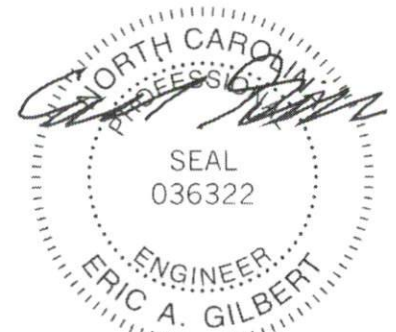
WEBS 5-12=-12/1277, 7-12=-722/93, 7-10=0/510,
 8-10=-324/106, 4-12=-738/92, 4-13=0/540,
 3-13=-347/101

NOTES

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

- 2) Wind: ASCE 7-10; Vult=115mph (3-second gust)
 Vasd=91mph; TCDL=6.0psf, BCDL=6.0psf, h=0ft;
 B=45ft; L=39ft, eave=5ft, Cat. II; Exp B; Enclosed;
 MWFRS (directional) and C-C Exterior (2) 1-1-0 to 1-11-0, Interior (1) 1-11-0 to 19-8-4, Exterior (2) 19-8-4 to 22-8-4, Interior (1) 22-8-4 to 39-2-8 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) * 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.

LOAD CASE(S) Standard



February 21, 2019

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ENGINEERING BY
TRENCO
 A MITEK AFFILIATE

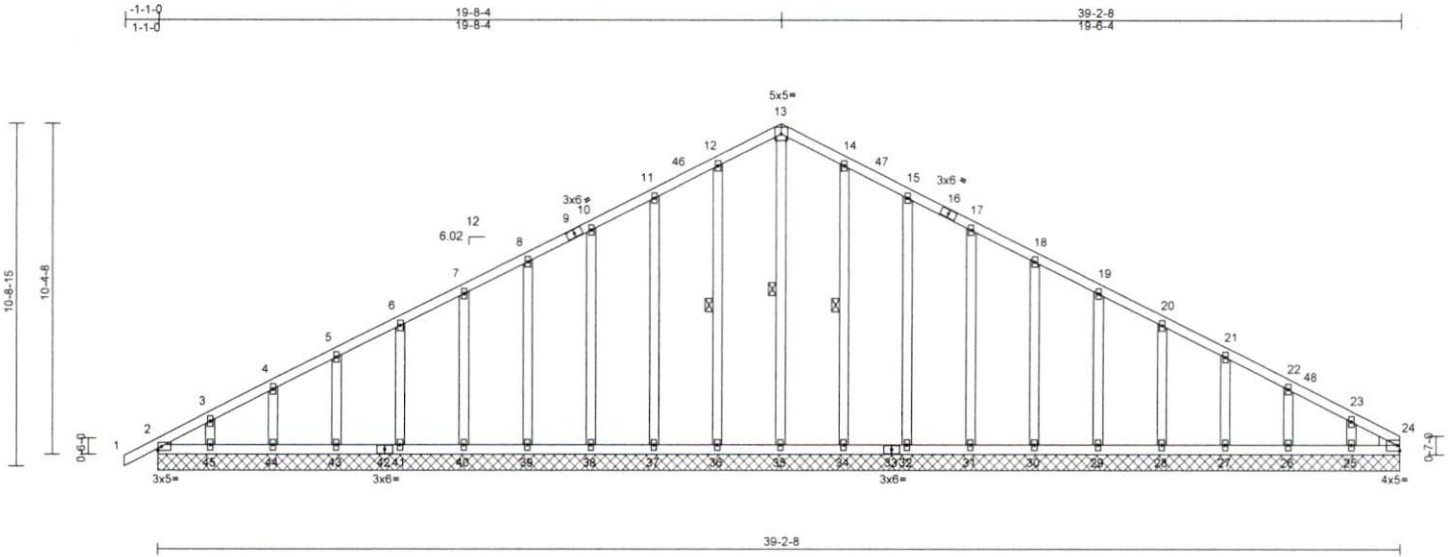
818 Soundside Road
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Job P-5804-1	Truss T5GE	Truss Type Common Supported Gable	Qty 1	Ply 1	23 Lumina v2-Roof Job Reference (optional)	E12722289
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Peak Truss Builders, LLC, New Hill, NC - 27562.

Run: 8:23 S Nov 4 2018 Print: 8:240 S Jan 22 2019 MiTek Industries, Inc. Wed Feb 20 17:26:13
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Page: 1



Scale = 1:69.7

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	0.06	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.02	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0*	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.01	24	n/a	n/a		
BCDL	10.0	Code	IBC2015/TPI2014	Matrix-S							Weight: 270 lb	FT = 20%

LUMBER
TOP CHORD 2x4 SP No.1
BOT CHORD 2x4 SP No.1
OTHERS 2x4 SP No.3
WEDGE Right: 2x4 SP No.3

BRACING
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS 1 Row at midpt 13-35, 12-36, 14-34

REACTIONS (lb/size)
2=150/39-2-8, 24=53/39-2-8,
25=154/39-2-8, 26=161/39-2-8,
27=160/39-2-8, 28=160/39-2-8,
29=160/39-2-8, 30=160/39-2-8,
31=160/39-2-8, 32=159/39-2-8,
34=165/39-2-8, 35=137/39-2-8,
36=165/39-2-8, 37=159/39-2-8,
38=160/39-2-8, 39=160/39-2-8,
40=160/39-2-8, 41=160/39-2-8,
43=159/39-2-8, 44=166/39-2-8,
45=132/39-2-8

Max Horiz 2=156 (LC 10)
Max Uplift 2=-4 (LC 7), 24=-3 (LC 10)
Max Grav 2=158 (LC 17), 24=65 (LC 16),
25=157 (LC 17), 26=161 (LC 21),
27=160 (LC 1), 28=160 (LC 21),
29=160 (LC 1), 30=160 (LC 21),
31=160 (LC 1), 32=159 (LC 21),
34=167 (LC 21), 35=138 (LC 16),
36=167 (LC 20), 37=159 (LC 20),
38=160 (LC 1), 39=160 (LC 20),
40=160 (LC 1), 41=160 (LC 20),
43=159 (LC 1), 44=166 (LC 20),
45=140 (LC 16)

TOP CHORD
1-2=0/20, 2-3=-129/124, 3-4=-115/111,
4-5=-108/100, 5-6=-101/91, 6-7=-94/81,
7-8=-89/104, 8-10=-83/141, 10-11=-78/178,
11-12=-81/218, 12-13=-93/250,
13-14=-93/253, 14-15=-81/220,
15-17=-67/181, 17-18=-54/144,
18-19=-42/107, 19-20=-47/69, 20-21=-53/32,
21-22=-58/37, 22-23=-90/47, 23-24=-140/64

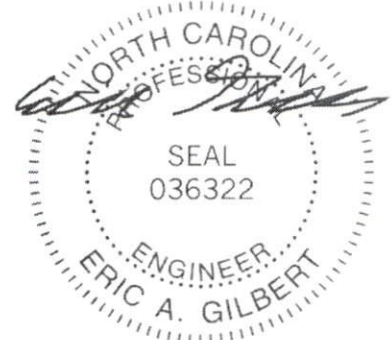
BOT CHORD
2-45=-47/129, 44-45=-47/129,
43-44=-47/129, 41-43=-47/129,
40-41=-47/129, 39-40=-47/129,
38-39=-47/129, 37-38=-47/129,
36-37=-47/129, 35-36=-47/129,
34-35=-47/129, 32-34=-47/129,
31-32=-47/129, 30-31=-47/129,
29-30=-47/129, 28-29=-47/129,
27-28=-47/129, 26-27=-47/129,
25-26=-47/129, 24-25=-47/129

WEBS
13-35=-146/12, 12-36=-127/95,
11-37=-119/70, 10-38=-120/59,
8-39=-120/60, 7-40=-120/60, 6-41=-120/60,
5-43=-119/59, 4-44=-124/61, 3-45=-106/76,
14-34=-127/95, 15-32=-119/70,
17-31=-120/59, 18-30=-120/60,
19-29=-120/60, 20-28=-120/60,
21-27=-120/59, 22-26=-121/73,
23-25=-116/126

- 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.
 - All plates are 2x4 MT20 unless otherwise indicated.
 - Gable requires continuous bottom chord bearing.
 - Gable studs spaced at 2-0-0 oc.
 - * 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.
 - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 4 lb uplift at joint 2 and 3 lb uplift at joint 24.
- LOAD CASE(S)** Standard

FORCES (lb) - Maximum Compression/Maximum Tension

- NOTES**
- Unbalanced roof live loads have been considered for this design.
 - Wind: ASCE 7-10; Vult=115mph (3-second gust) Vasd=91mph; TC DL=6.0psf; BCDL=6.0psf; h=0ft; B=45ft; L=39ft; eave=2ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Corner (3) 1-1-0 to 1-8-4, Exterior (2) 1-8-4 to 19-8-4, Corner (3) 19-8-4 to 22-8-4, Exterior (2) 22-8-4 to 39-2-8 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



February 21, 2019

WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MI-7473 rev. 10/03/2015 BEFORE USE.

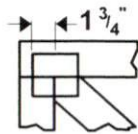
Design valid for use only with MiTek® connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the building designer must verify the applicability of design parameters and properly incorporate this design into the overall building design. Bracing indicated is to prevent buckling of individual truss web and/or chord members only. Additional temporary and permanent bracing is always required for stability and to prevent collapse with possible personal injury and property damage. For general guidance regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see ANSITPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



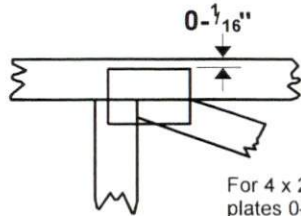
818 Soundside Road
Edenton, NC 27932

Symbols

PLATE LOCATION AND ORIENTATION



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



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



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

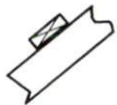
* Plate location details available in MiTek 20/20 software or upon request.

PLATE SIZE

4 x 4

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

LATERAL BRACING LOCATION



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

BEARING

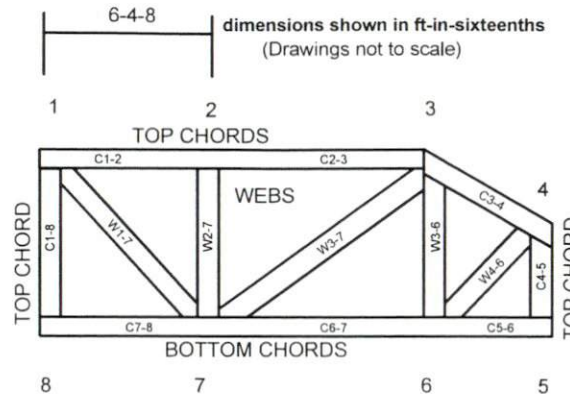


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

Industry Standards:

- ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
 DSB-89: Design Standard for Bracing.
 BCSI: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

Numbering System



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

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

PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ESR1988
 ER-3907, ESR-2362, ESR-1397, ESR-3282

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

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

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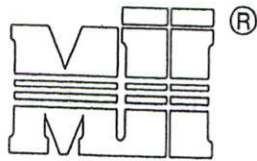
MiTek Engineering Reference Sheet MII-7473 rev. 10/03/2015



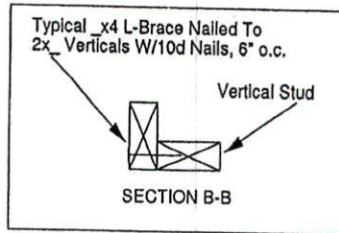
General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

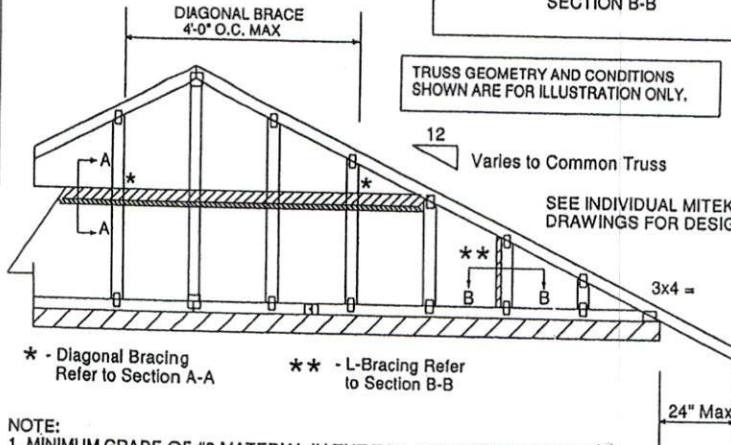
1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Tor I bracing should be considered.
3. Never exceed 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.



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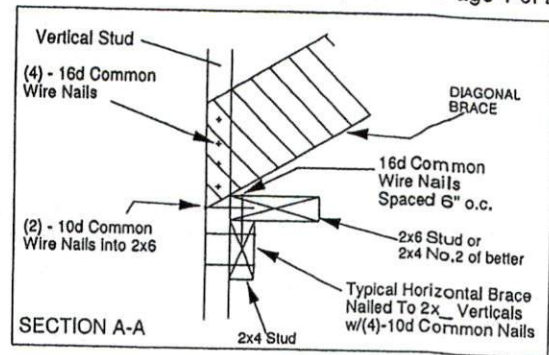


TRUSS GEOMETRY AND CONDITIONS SHOWN ARE FOR ILLUSTRATION ONLY.

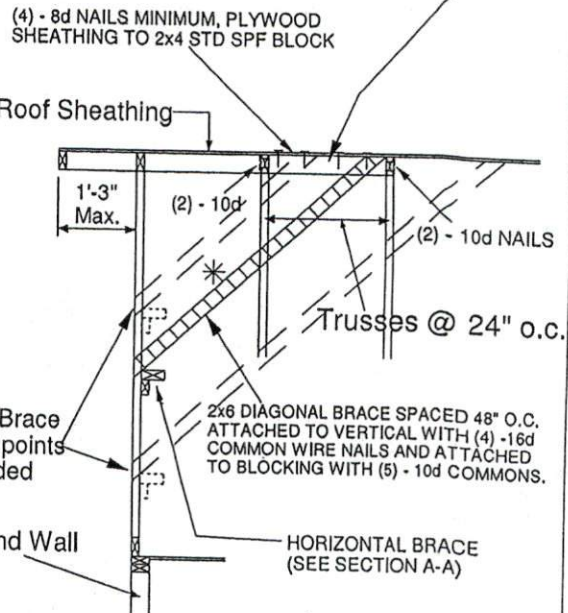


NOTE:

1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 1x4 SRB OR 2x4 STUD OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.



PROVIDE 2x4 BLOCKING BETWEEN THE FIRST TWO TRUSSES AS NOTED. TOENAIL BLOCKING TO TRUSSES WITH (2) - 10d NAILS AT EACH END. ATTACH DIAGONAL BRACE TO BLOCKING WITH (5) - 10d COMMON WIRE NAILS.

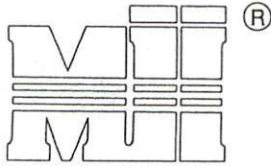


Minimum Stud Size Species and Grade	Stud Spacing	Maximum Stud Length				
		Without Brace	1x4 L-Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
2x4 SPF Std/Stud	12" O.C.	4-9-12	5-6-7	7-10-0	9-7-7	14-5-3
2x4 SPF Std/Stud	16" O.C.	4-4-7	4-9-8	6-9-6	8-8-14	13-1-5
2x4 SPF Std/Stud	24" O.C.	3-9-10	3-11-0	5-6-7	7-7-4	11-4-14

* Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 l-braces attached to both edges. Fasten T and l braces to narrow edge of web with 10d common wire nails 8in o.c., with 3in minimum end distance. Brace must cover 90% of diagonal length.

MAX MEAN ROOF HEIGHT = 30 FEET
 CATEGORY II BUILDING
 EXPOSURE B or C
 ASCE 7-98, ASCE 7-02, ASCE 7-05 100 MPH
 ASCE7-10 125 MPH
 DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
 CONNECTION OF BRACING IS BASED ON MWFRS.



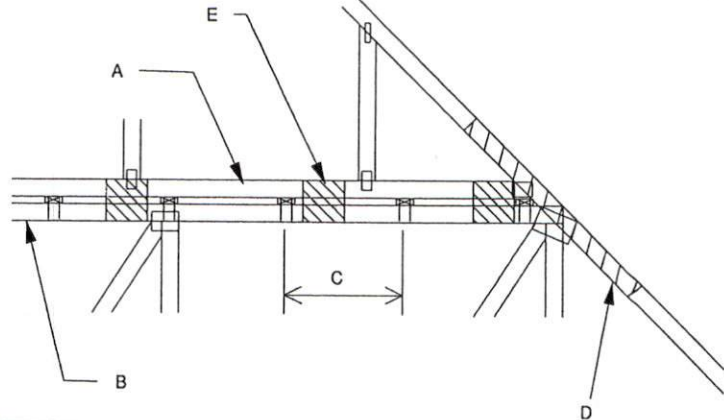
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MAXIMUM WIND SPEED = REFER TO NOTES D AND OR E
 MAX MEAN ROOF HEIGHT = 30 FEET
 MAX TRUSS SPACING = 24" O.C.
 CATEGORY II BUILDING
 EXPOSURE B or C
 ASCE 7-10
 DURATION OF LOAD INCREASE : 1.60

DETAIL IS NOT APPLICABLE FOR TRUSSES TRANSFERRING DRAG LOADS (SHEAR TRUSSES). ADDITIONAL CONSIDERATIONS BY BUILDING ENGINEER/DESIGNER ARE REQUIRED.

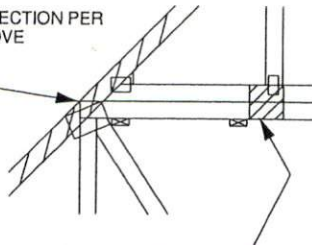
- A - PIGGYBACK TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING. SHALL BE CONNECTED TO EACH PURLIN WITH (2) 0.131" X 3.5" TOE NAILED.
- B - BASE TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING.
- C - PURLINS AT EACH BASE TRUSS JOINT AND A MAXIMUM 24" O.C. UNLESS SPECIFIED CLOSER ON MITEK TRUSS DESIGN DRAWING. CONNECT TO BASE TRUSS WITH (2) 0.131" X 3.5" NAILS EACH.
- D - 2 X $\frac{1}{2}$ " X 4'-0" SCAB, SIZE AND GRADE TO MATCH TOP CHORD OF PIGGYBACK TRUSS, ATTACHED TO ONE FACE, CENTERED ON INTERSECTION, WITH (2) ROWS OF 0.131" X 3" NAILS @ 4" O.C. SCAB MAY BE OMITTED PROVIDED THE TOP CHORD SHEATHING IS CONTINUOUS OVER INTERSECTION AT LEAST 1 FT. IN BOTH DIRECTIONS AND:
 - 1. WIND SPEED OF 115 MPH OR LESS FOR ANY PIGGYBACK SPAN, OR
 - 2. WIND SPEED OF 116 MPH TO 160 MPH WITH A MAXIMUM PIGGYBACK SPAN OF 12 ft.
- E - FOR WIND SPEED IN THE RANGE 126 MPH - 160 MPH ADD 9" x 9" x 1/2" PLYWOOD (or 7/16" OSB) GUSSET EACH SIDE AT 48" O.C. OR LESS. ATTACH WITH 3 - 6d (0.113" X 2") NAILS INTO EACH CHORD FROM EACH SIDE (TOTAL - 12 NAILS)



WHEN NO GAP BETWEEN PIGGYBACK AND BASE TRUSS EXISTS:

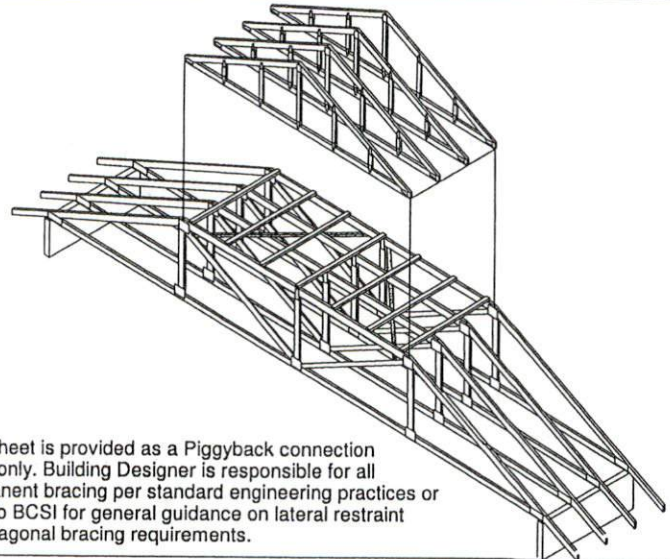
REPLACE TOE NAILING OF PIGGYBACK TRUSS TO PURLINS WITH Nail-On PLATES AS SHOWN, AND INSTALL PURLINS TO BOTTOM EDGE OF BASE TRUSS TOP CHORD AT SPECIFIED SPACING SHOWN ON BASE TRUSS MITEK DESIGN DRAWING.

SCAB CONNECTION PER NOTE D ABOVE

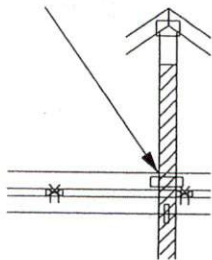


7" x 7" x 1/2" PLYWOOD (or 7/16" OSB) GUSSET EACH SIDE AT 24" O.C. AT EACH BASE TRUSS JOINT. ATTACH WITH 3 - 6d (0.113" X 2") NAILS INTO EACH CHORD FROM EACH SIDE (TOTAL - 12 NAILS)

This sheet is provided as a Piggyback connection detail only. Building Designer is responsible for all permanent bracing per standard engineering practices or refer to BCSI for general guidance on lateral restraint and diagonal bracing requirements.



VERTICAL WEB TO EXTEND THROUGH BOTTOM CHORD OF PIGGYBACK



FOR LARGE CONCENTRATED LOADS APPLIED TO CAP TRUSS REQUIRING A VERTICAL WEB:

- 1) VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS MUST MATCH IN SIZE, GRADE, AND MUST LINE UP AS SHOWN IN DETAIL.
- 2) ATTACH 2 x $\frac{1}{2}$ " x 4'-0" SCAB TO EACH FACE OF TRUSS ASSEMBLY WITH 2 ROWS OF 10d (0.131" X 3") NAILS SPACED 4" O.C. FROM EACH FACE. (SIZE AND GRADE TO MATCH VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS.) (MINIMUM 2X4)
- 3) THIS CONNECTION IS ONLY VALID FOR A MAXIMUM CONCENTRATED LOAD OF 4000 LBS (@1.15). REVIEW BY A QUALIFIED ENGINEER IS REQUIRED FOR LOADS GREATER THAN 4000 LBS.
- 4) FOR PIGGYBACK TRUSSES CARRYING GIRDER LOADS, NUMBER OF PLYS OF PIGGYBACK TRUSS TO MATCH BASE TRUSS.
- 5) CONCENTRATED LOAD MUST BE APPLIED TO BOTH THE PIGGYBACK AND THE BASE TRUSS DESIGN.