ENGINEERING BY TRENCO
A MiTek Affiliate

RE: Penwell BFK
Penwell BFK

Trenco
818 Soundside Rd
Edenton, NC 27932

Site Information:

Customer: D.R. HORTON - RAL - 055 Project Name: Penwell BFK
Lot/Block: Model: PENWELL BFK
Address: Subdivision:
City: FUQUAY-VARINA State: NC

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

Design Code: IRC2015/TPI2014 Design Program: MiTek 20/20 8.5
Wind Code: ASCE 7-10 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.

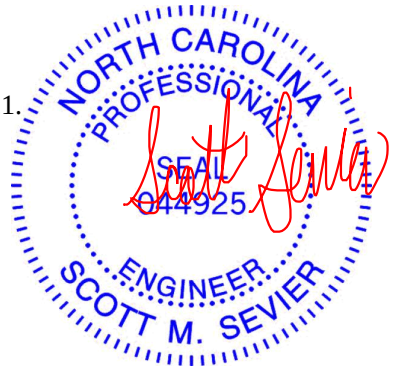
No.	Seal#	Truss Name	Date
1	I47712039	A	9/1/2021
2	I47712040	A1	9/1/2021
3	I47712041	A1E	9/1/2021
4	I47712042	A2	9/1/2021
5	I47712043	AE	9/1/2021
6	I47712044	BE	9/1/2021
7	I47712045	BGR	9/1/2021
8	I47712046	CE	9/1/2021

The truss drawing(s) referenced above have been prepared by Truss Engineering Co. under my direct supervision based on the parameters provided by 84 Components - #2383.

Truss Design Engineer's Name: Sevier, Scott

My license renewal date for the state of North Carolina is December 31, 2021.

North Carolina COA: C-0844



IMPORTANT NOTE: The seal on these truss component designs is a certification that the engineer named is licensed in the jurisdiction(s) identified and that the designs comply with ANSI/TPI 1. These designs are based upon parameters shown (e.g., loads, supports, dimensions, shapes and design codes), which were given to TRENCO. Any project specific information included is for TRENCO customers file reference purpose only, and was not taken into account in the preparation of these designs. TRENCO has not independently verified the applicability of the design parameters or the designs for any particular building. Before use, the building designer should verify applicability of design parameters and properly incorporate these designs into the overall building design per ANSI/TPI 1, Chapter 2.

September 01, 2021

Sevier, Scott

Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	A	Common	8	1	I47712039
					Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:49 2021 Page 1
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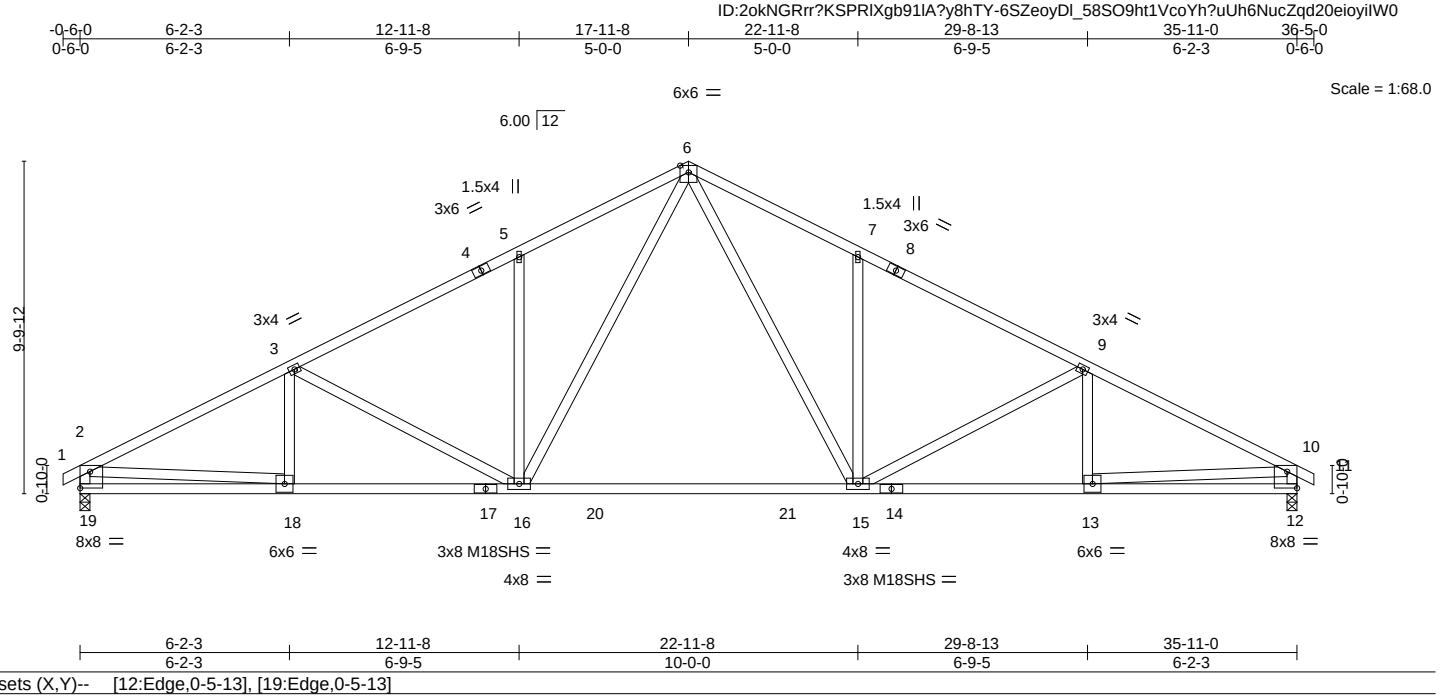


Plate Offsets (X,Y)-- [12:Edge,0-5-13], [19:Edge,0-5-13]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.71	Vert(LL)	-0.39	15-16	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.67	15-16	>638	180	M18SHS	244/190
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.07	12	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-MS							Weight: 216 lb	FT = 20%

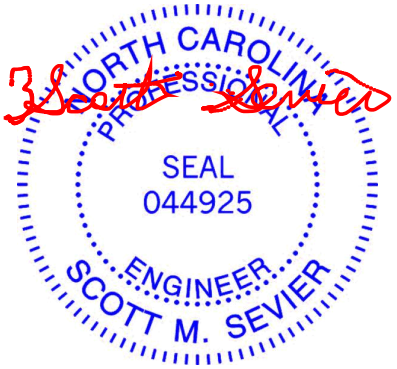
LUMBER-
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-5-2 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 9-5-12 oc bracing.

REACTIONS. (size) 19=0-3-8, 12=0-3-8
Max Horz 19=135(LC 12)
Max Uplift 19=-179(LC 12), 12=-179(LC 13)
Max Grav 19=1464(LC 1), 12=1464(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-2355/574, 3-5=-2009/548, 5-6=-1998/691, 6-7=-1998/691, 7-9=-2009/548, 9-10=-2355/574, 2-19=-1395/400, 10-12=-1395/400
BOT CHORD 18-19=-233/473, 16-18=-426/2034, 15-16=-132/1329, 13-15=-424/2034, 12-13=-136/421
WEBS 6-15=-274/854, 7-15=-386/261, 9-15=-395/188, 6-16=-274/854, 5-16=-386/261, 3-16=-395/189, 2-18=-288/1621, 10-13=-290/1621

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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 3-6-0 tall by 2-0-0 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 179 lb uplift at joint 19 and 179 lb uplift at joint 12.



September 1,2021

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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/TPI1 Quality Criteria, DSB-89 and BCSI Building Component Safety Information** available from Truss Plate Institute, 2670 Crain Highway, Suite 203 Waldorf, MD 20601

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Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	A1	Common	3	1	I47712040
					Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:51 2021 Page 1
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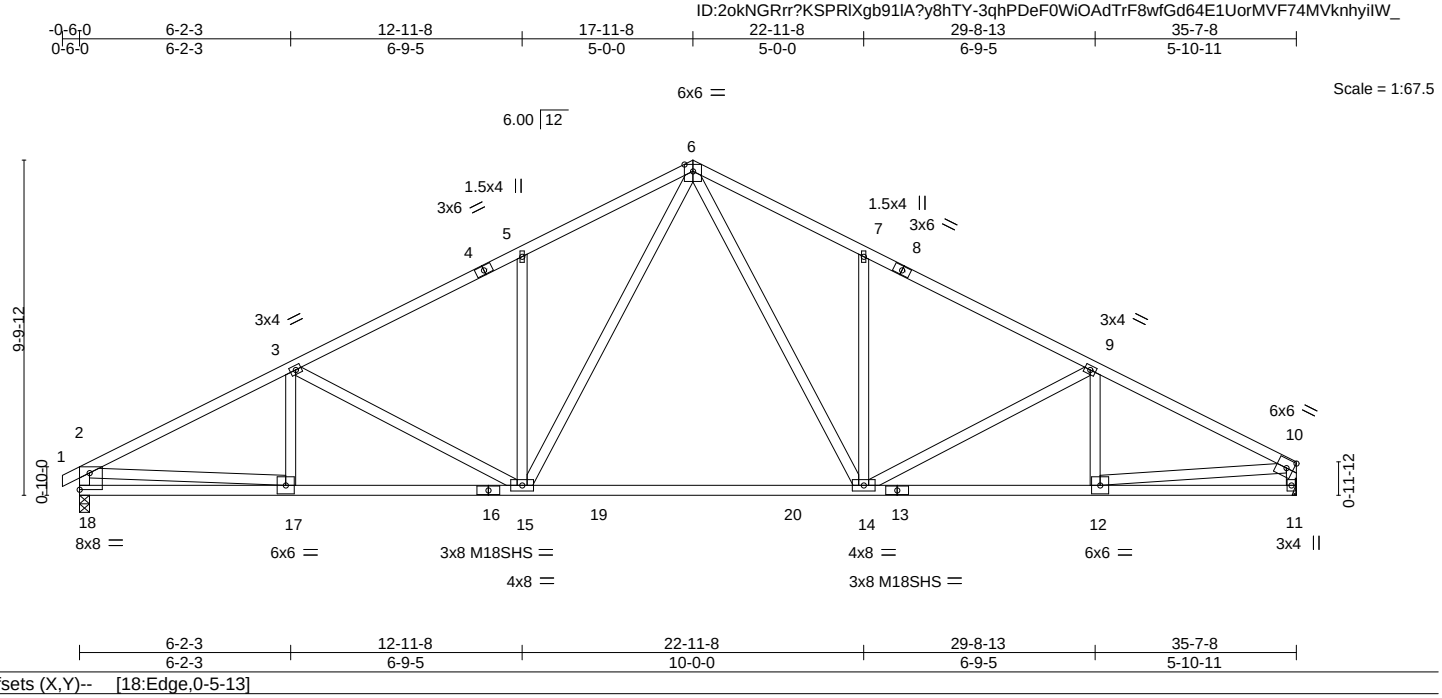

Plate Offsets (X,Y)-- [18:Edge,0-5-13]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.71	Vert(LL)	-0.39	14-15	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.81	Vert(CT)	-0.67	14-15	>631	180	M18SHS	244/190
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.72	Horz(CT)	0.06	11	n/a	n/a		
BCDL	10.0	Code IRC2015/TPI2014		Matrix-S							Weight: 214 lb	FT = 20%

LUMBER-
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.1 *Except*
11-13: 2x4 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-5-7 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 8-10-1 oc bracing.

REACTIONS. (size) 18=0-3-8, 11=Mechanical
Max Horz 18=141(LC 12)
Max Uplift 18=-179(LC 12), 11=-163(LC 13)
Max Grav 18=1452(LC 1), 11=1413(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-2334/569, 3-5=-1986/542, 5-6=-1975/686, 6-7=-1956/681, 7-9=-1968/538, 9-10=-2243/550, 2-18=-1384/397, 10-11=-1349/359
BOT CHORD 17-18=-238/467, 15-17=-452/2016, 14-15=-158/1308, 12-14=-433/1945
WEBS 3-15=-397/189, 5-15=-386/261, 6-15=-274/854, 6-14=-265/823, 7-14=-383/260, 9-14=-344/175, 2-17=-285/1604, 10-12=-372/1748

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Refer to girder(s) for truss to truss connections.
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 179 lb uplift at joint 18 and 163 lb uplift at joint 11.

September 1,2021

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818 Soundside Road
Edenton, NC 27932

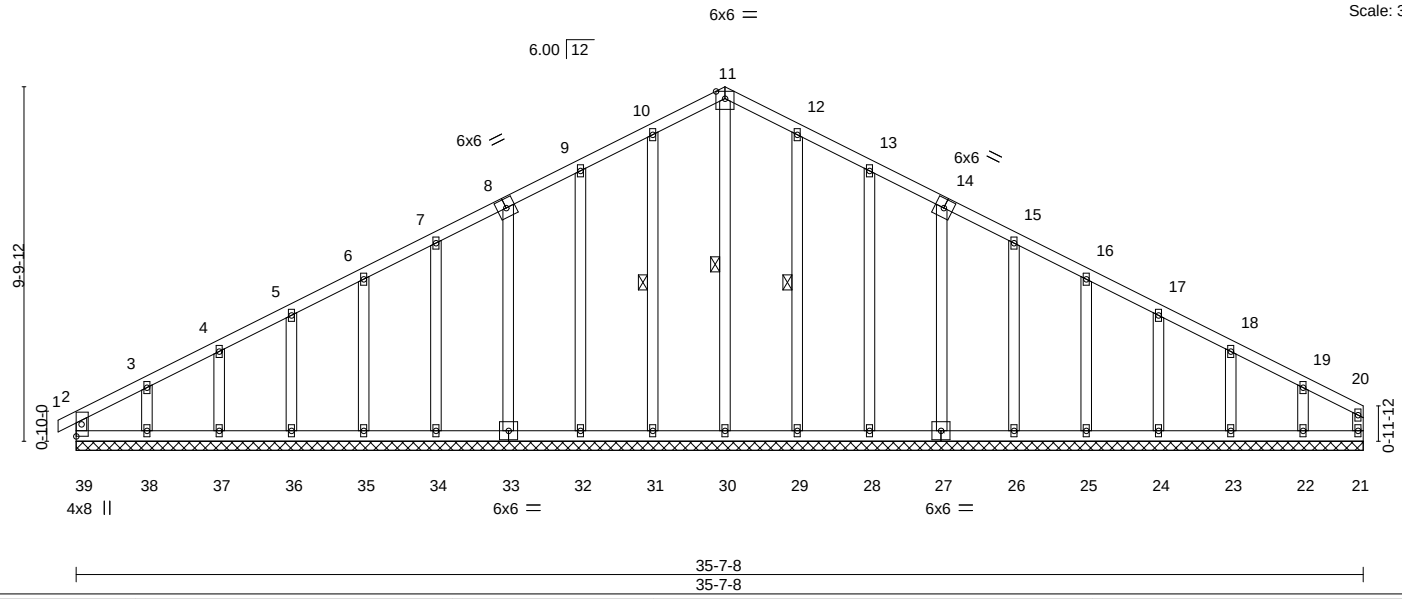
Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	A1E	GABLE	1	1	I47712041

Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:53 2021 Page 1
ID:2okNGRrr?KSPRlXgb91lA?y8hTY-?Dp9eKHG2Jeusn?eGLhkiX9jUIfsqYwQYf_rrayiIVy

-0-6-0 17-11-8 35-7-8
0-6-0 17-11-8 17-8-0

Scale: 3/16"=1'



LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.13	Vert(LL)	-0.00	1	n/r	120	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.07	Vert(CT)	-0.00	1	n/r	90		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.14	Horz(CT)	0.01	21	n/a	n/a		
BCDL	10.0	Code IRC2015/TPI2014		Matrix-R							Weight: 242 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 or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS	1 Row at midpt 11-30, 10-31, 12-29

REACTIONS. All bearings 35-7-8.
(lb) - Max Horz 39=141(LC 12)
Max Uplift All uplift 100 lb or less at joint(s) 39, 21, 31, 32, 33, 34, 35, 36, 37, 29, 28, 27, 26, 25, 24, 23 except 38=-123(LC 12), 22=-113(LC 13)
Max Grav All reactions 250 lb or less at joint(s) 39, 21, 30, 31, 32, 33, 34, 35, 36, 37, 38, 29, 28, 27, 26, 25, 24, 23, 22

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 9-10=-115/286, 10-11=-131/328, 11-12=-131/328, 12-13=-115/286

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 39, 21, 31, 32, 33, 34, 35, 36, 37, 29, 28, 27, 26, 25, 24, 23 except (jt=lb) 38=123, 22=113.

September 1,2021

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Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	A2	ROOF TRUSS	7	1	I47712042
					Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:54 2021 Page 1
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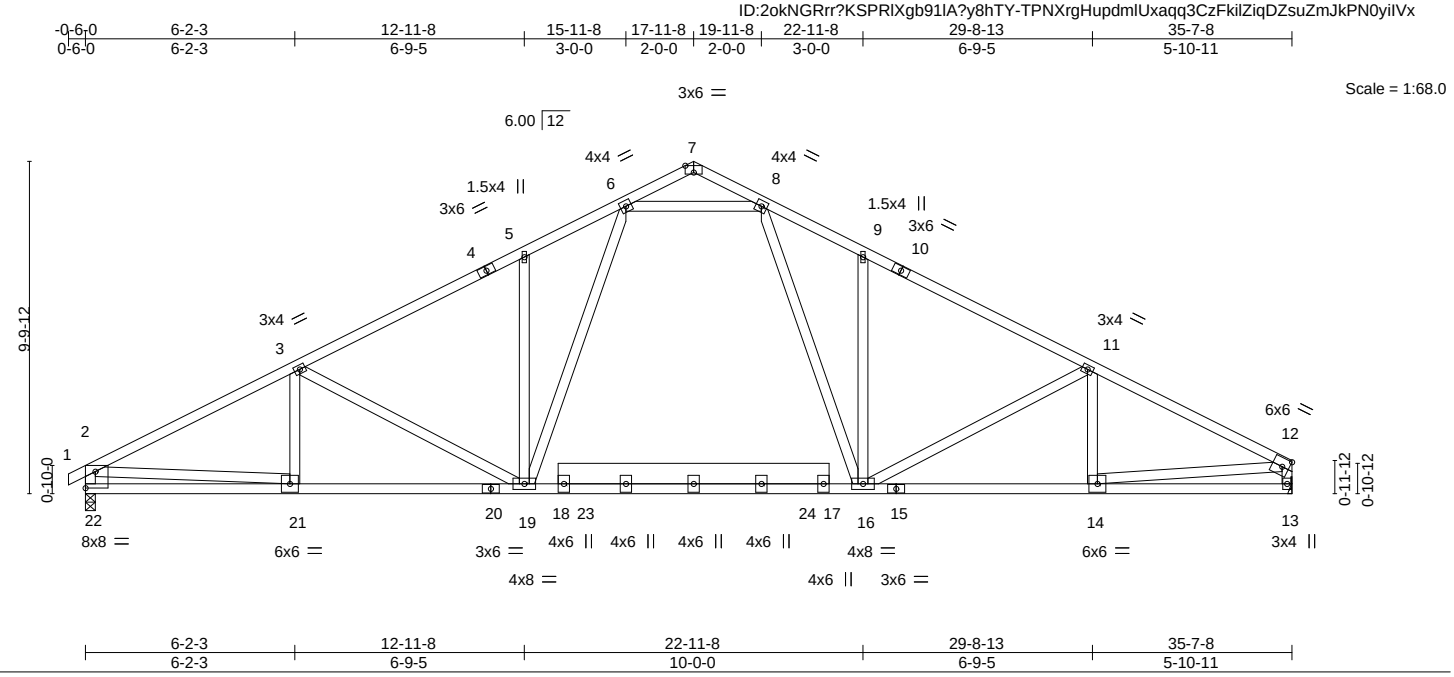

Plate Offsets (X,Y)-- [7:0-3-0,Edge], [22:Edge,0-5-13]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.75	Vert(LL)	-0.25	19-21	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.77	Vert(CT)	-0.38	19-21	>999	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.73	Horz(CT)	0.06	13	n/a	n/a		
BCDL	10.0	Code IRC2015/TPI2014		Matrix-S							Weight: 240 lb	FT = 20%

LUMBER-
TOP CHORD 2x4 SP No.2
BOT CHORD 2x4 SP No.2 *Except*
17-18: 2x8 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-0-1 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 8-9-0 oc bracing.

REACTIONS. (size) 22=0-3-8, 13=Mechanical
Max Horz 22=141(LC 12)
Max Uplift 22=-179(LC 12), 13=-163(LC 13)
Max Grav 22=1452(LC 1), 13=1413(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-2342/567, 3-5=-1974/547, 5-6=-1951/669, 8-9=-1926/664, 9-11=-1957/543, 11-12=-2250/547, 2-22=-1389/395, 12-13=-1353/357
BOT CHORD 21-22=-237/440, 19-21=-450/2023, 16-19=-209/1433, 14-16=-431/1952
WEBS 3-19=-427/184, 5-19=-472/272, 6-19=-254/863, 8-16=-248/823, 9-16=-456/270, 11-16=-373/170, 2-21=-285/1631, 12-14=-368/1761, 6-8=-1281/471

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
5) Refer to girder(s) for truss to truss connections.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 22=179, 13=163.
7) ATTIC SPACE SHOWN IS DESIGNED AS UNINHABITABLE.

September 1,2021

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Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	AE	GABLE	1	1	I47712043
					Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:56 2021 Page 1
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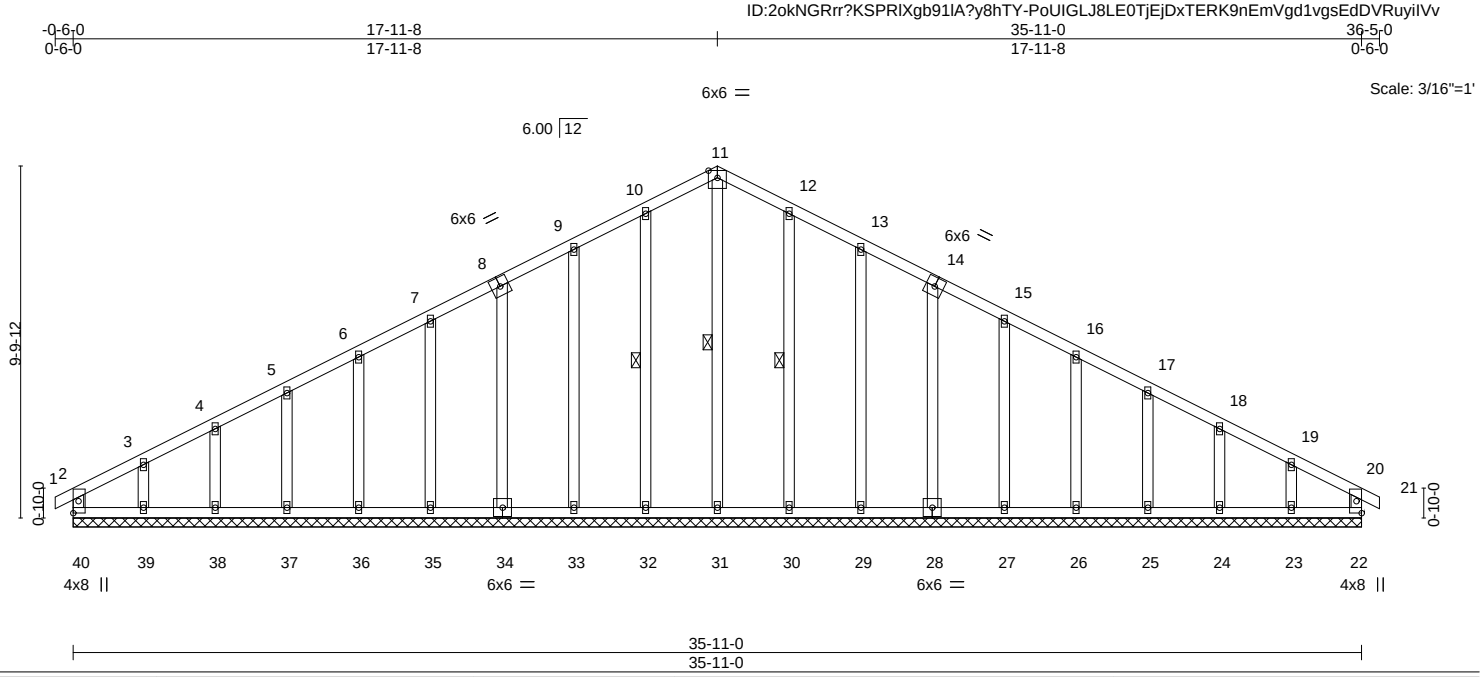

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.13	Vert(LL)	-0.00	20	n/r	120	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.07	Vert(CT)	-0.00	20	n/r	90		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.14	Horz(CT)	0.01	22	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-R							Weight: 243 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 or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.
WEBS	1 Row at midpt 11-31, 10-32, 12-30

REACTIONS. All bearings 35-11-0.
(lb) - Max Horz 40=135(LC 12)
Max Uplift All uplift 100 lb or less at joint(s) 40, 22, 32, 33, 34, 35, 36, 37, 38, 30, 29, 28, 27, 26, 25, 24 except 39=-122(LC 12), 23=-106(LC 13)
Max Grav All reactions 250 lb or less at joint(s) 40, 22, 31, 32, 33, 34, 35, 36, 37, 38, 39, 30, 29, 28, 27, 26, 25, 24, 23

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 9-10=-112/281, 10-11=-128/324, 11-12=-128/324, 12-13=-112/281

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 40, 22, 32, 33, 34, 35, 36, 37, 38, 30, 29, 28, 27, 26, 25, 24 except (jt=lb) 39=122, 23=106.

September 1,2021

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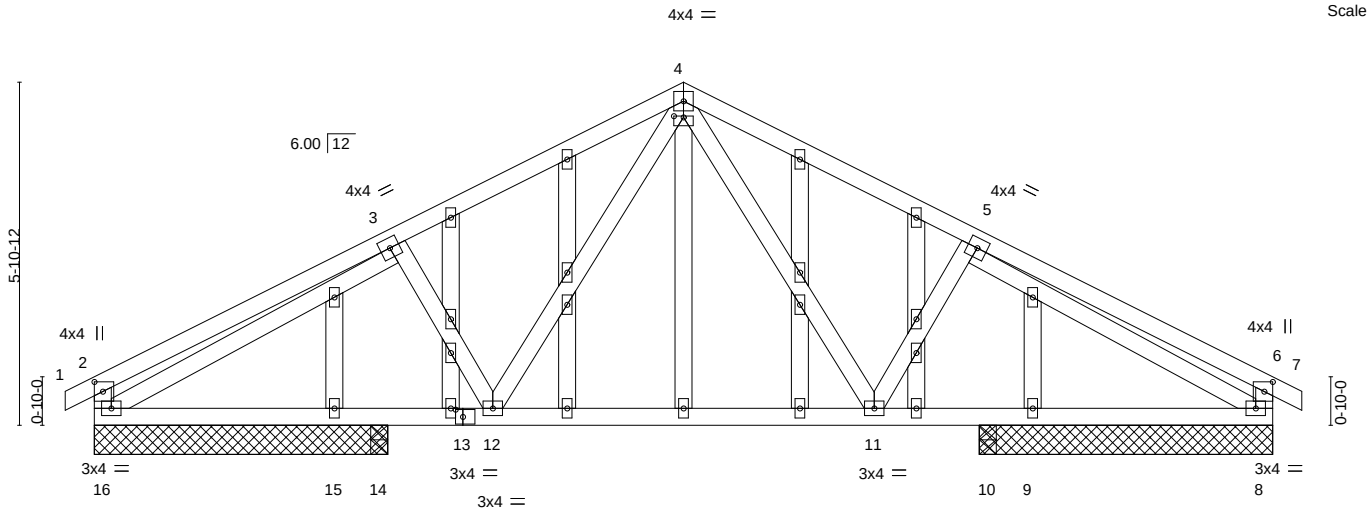
Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	BE	Common Structural Gable	1	1	I47712044

Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:41:58 2021 Page 1
ID:2okNGRrr?KSPRlXgb91lA?y8hTY-MBc2h1KPtsGAzYtb3uHvPasWsJG3Vjs9hxicWnyiIVt

-0-6-0	5-2-8	10-1-8	15-0-8	20-3-0	20-9-0
0-6-0	5-2-8	4-11-0	4-11-0	5-2-8	0-6-0

Scale = 1:39.6



4-9-0	6-10-3	13-4-13	15-6-0	20-3-0
4-9-0	2-1-3	6-6-11	2-1-3	4-9-0

Plate Offsets (X,Y)-- [2:0-2-0,0-1-12], [4:0-2-0,0-0-4], [6:0-2-0,0-1-12], [13:0-1-8,0-1-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.41	Vert(LL)	-0.06	11-12	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.46	Vert(CT)	-0.14	11-12	>914	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.48	Horz(CT)	0.02	8	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-S							Weight: 147 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 or 5-11-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. All bearings 5-0-8 except (jt=length) 14=0-3-8, 10=0-3-8.
(lb) - Max Horz 16=-86(LC 10)
Max Uplift All uplift 100 lb or less at joint(s) 15, 9, 14, 10 except 16=-117(LC 12), 8=-119(LC 13)
Max Grav All reactions 250 lb or less at joint(s) 15, 9, 14, 10 except 16=716(LC 1), 8=716(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD	2-3=-316/185, 3-4=-883/316, 4-5=-883/318, 5-6=-316/186, 2-16=-299/178, 6-8=-299/178
BOT CHORD	15-16=-188/829, 14-15=-188/829, 12-14=-188/829, 11-12=-57/594, 10-11=-186/829, 9-10=-186/829, 8-9=-186/829
WEBS	4-11=-81/297, 4-12=-79/297, 3-16=-712/127, 5-8=-712/126

NOTES-

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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 3-6-0 tall by 2-0-0 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 100 lb uplift at joint(s) 15, 9, 14, 10 except (jt=lb) 16=117, 8=119.

September 1,2021

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Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	BGR	Common Girder	1	3	I47712045

Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:42:01 2021 Page 1
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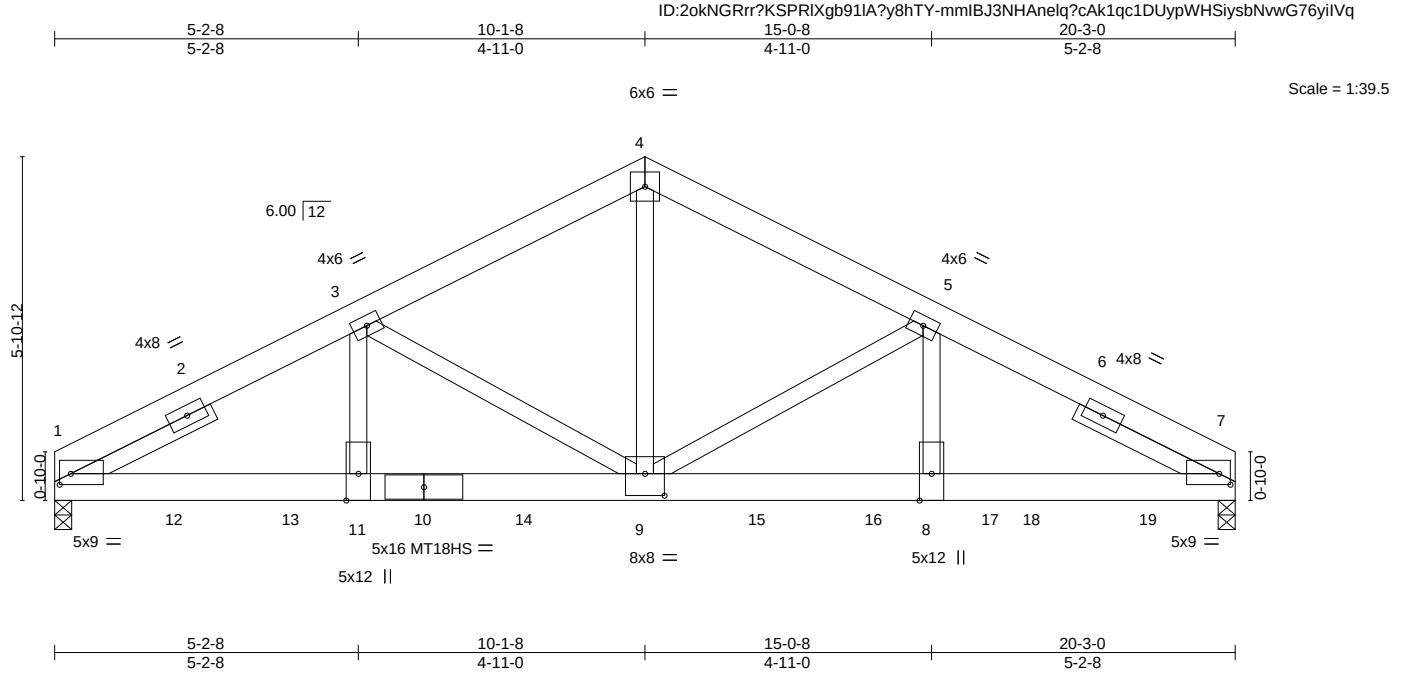

Plate Offsets (X,Y)-- [1:0-2-5,0-2-4], [7:0-2-5,0-2-4], [9:0-4-0,0-4-8]

LOADING (psf)		SPACING- 2-0-0		CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.69	Vert(LL)	-0.08	9-11	>999	240	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.54	Vert(CT)	-0.17	9-11	>999	180	MT18HS	244/190
BCLL	0.0 *	Rep Stress Incr	NO	WB	0.97	Horz(CT)	0.05	7	n/a	n/a		
BCDL	10.0	Code IRC2015/TPI2014		Matrix-S							Weight: 419 lb	FT = 20%

LUMBER-

TOP CHORD	2x6 SP No.2
BOT CHORD	2x6 SP DSS
WEBS	2x4 SP No.3
SLIDER	Left 2x4 SP No.3 2-8-2, Right 2x4 SP No.3 2-8-2

REACTIONS. (size) 1=0-3-8 (req. 0-3-13), 7=0-3-8 (req. 0-4-5)
Max Horz 1=90(LC 31)
Max Uplift 1=-904(LC 8), 7=-1029(LC 9)
Max Grav 1=7266(LC 1), 7=8261(LC 1)

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.

SUPPLEMENTARY BEARING PLATES, SPECIAL ANCHORAGE, OR OTHER MEANS TO ALLOW FOR THE MINIMUM REQUIRED SUPPORT WIDTH (SUCH AS COLUMN CAPS, BEARING BLOCKS, ETC.) ARE THE RESPONSIBILITY OF THE TRUSS MANUFACTURER OR THE BUILDING DESIGNER.

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD	1-3=-11903/1480, 3-4=-8712/1120, 4-5=-8709/1119, 5-7=-12757/1589
BOT CHORD	1-11=-1301/10236, 9-11=-1301/10236, 8-9=-1307/10998, 7-8=-1307/10998
WEBS	4-9=-853/7034, 5-9=-3726/569, 5-8=-470/4302, 3-9=-2836/456, 3-11=-361/3440

NOTES-

1) 3-ply truss to be connected together with 10d (0.120"x3") nails as follows:
   Top chords connected as follows: 2x6 - 2 rows staggered at 0-9-0 oc.
   Bottom chords connected as follows: 2x6 - 3 rows staggered at 0-4-0 oc.
   Webs connected as follows: 2x4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Unbalanced roof live loads have been considered for this design.
4) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone; end vertical left and right exposed; Lumber DOL=1.60 plate grip DOL=1.60
5) All plates are MT20 plates unless otherwise indicated.
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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
8) WARNING: Required bearing size at joint(s) 1, 7 greater than input bearing size.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=904, 7=1029.

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Continued on page 2

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NOTES-

10) Hanger(s) or other connection device(s) shall be provided sufficient to support concentrated load(s) 1393 lb down and 183 lb up at 2-0-12, 1393 lb down and 183 lb up at 4-0-12, 1393 lb down and 183 lb up at 6-0-12, 1393 lb down and 183 lb up at 8-0-12, 1393 lb down and 183 lb up at 10-0-12, 1393 lb down and 183 lb up at 12-0-12, 1393 lb down and 183 lb up at 14-0-12, 1393 lb down and 183 lb up at 16-0-12, and 1393 lb down and 183 lb up at 16-9-4, and 1393 lb down and 183 lb up at 18-9-4 on bottom chord. The design/selection of such connection device(s) is the responsibility of others.

LOAD CASE(S) Standard

1) Dead + Roof Live (balanced): Lumber Increase=1.15, Plate Increase=1.15
   Uniform Loads (plf)
   Vert: 1-4=-60, 4-7=-60, 1-7=-20
   Concentrated Loads (lb)
   Vert: 10=-1393(B) 9=-1393(B) 12=-1393(B) 13=-1393(B) 14=-1393(B) 15=-1393(B) 16=-1393(B) 17=-1393(B) 18=-1393(B) 19=-1393(B)

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Job	Truss	Truss Type	Qty	Ply	Penwell BFK
Penwell BFK	CE	Common Supported Gable	1	1	I47712046
					Job Reference (optional)

84 Components (Dunn), Dunn, NC - 28334, 8.520 s Aug 27 2021 MiTek Industries, Inc. Tue Aug 31 14:42:02 2021 Page 1
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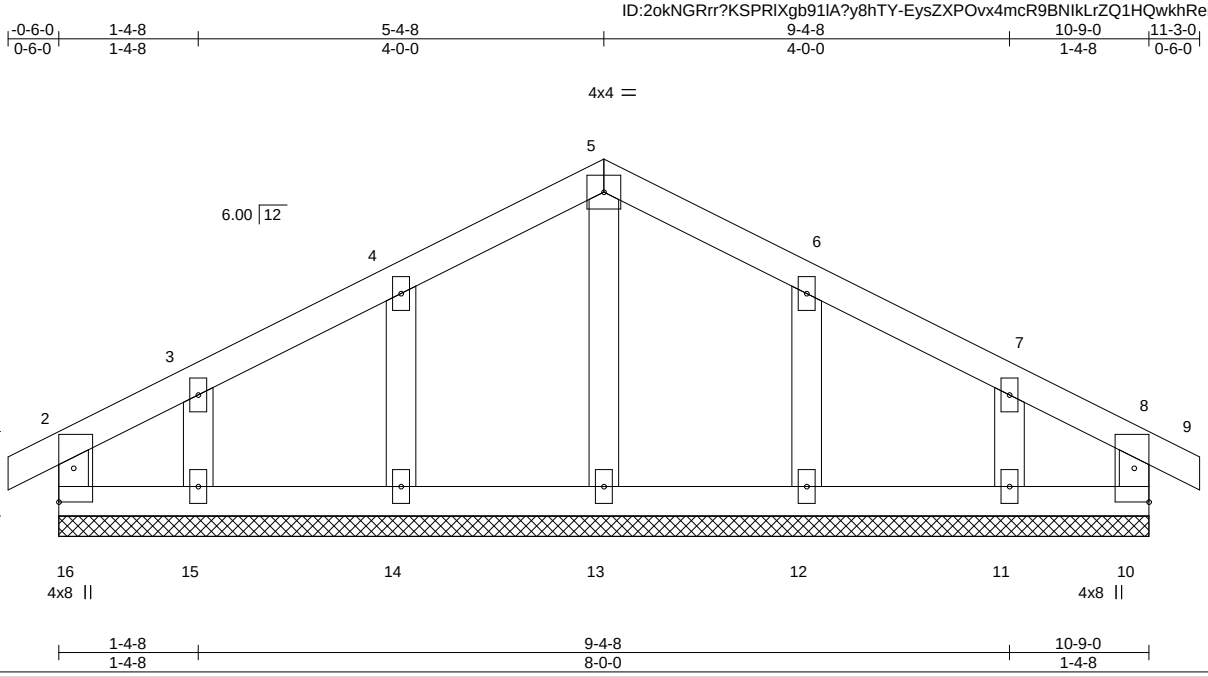

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.15	TC	0.06	Vert(LL)	-0.00	8	n/r	120	MT20	244/190
TCDL	10.0	Lumber DOL	1.15	BC	0.03	Vert(CT)	-0.00	8	n/r	90		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.03	Horz(CT)	0.00	10	n/a	n/a		
BCDL	10.0	Code	IRC2015/TPI2014	Matrix-R							Weight: 50 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 or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. All bearings 10-9-0.
(lb) - Max Horz 16=57(LC 11)
Max Uplift All uplift 100 lb or less at joint(s) 16, 10, 14, 12, 15, 11
Max Grav All reactions 250 lb or less at joint(s) 16, 10, 13, 14, 12, 15, 11

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

NOTES-

1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-10; Vult=130mph Vasd=103mph; TCDL=6.0psf; BCDL=6.0psf; h=30ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone and C-C Exterior(2) 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) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web).
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 16, 10, 14, 12, 15, 11.

September 1,2021

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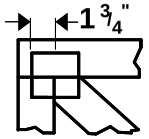
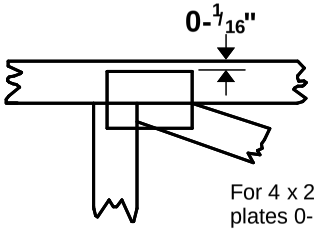
Symbols

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.

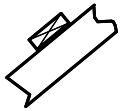
*** Plate location details available in MiTek 20/20 software or upon request.**

PLATE SIZE

4 x 4

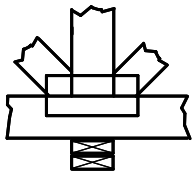
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

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

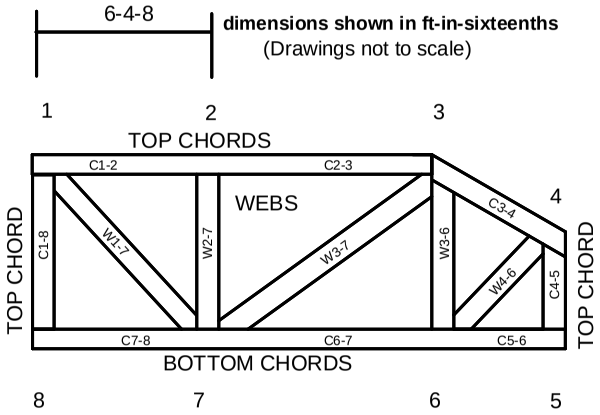


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

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. 5/19/2020

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.