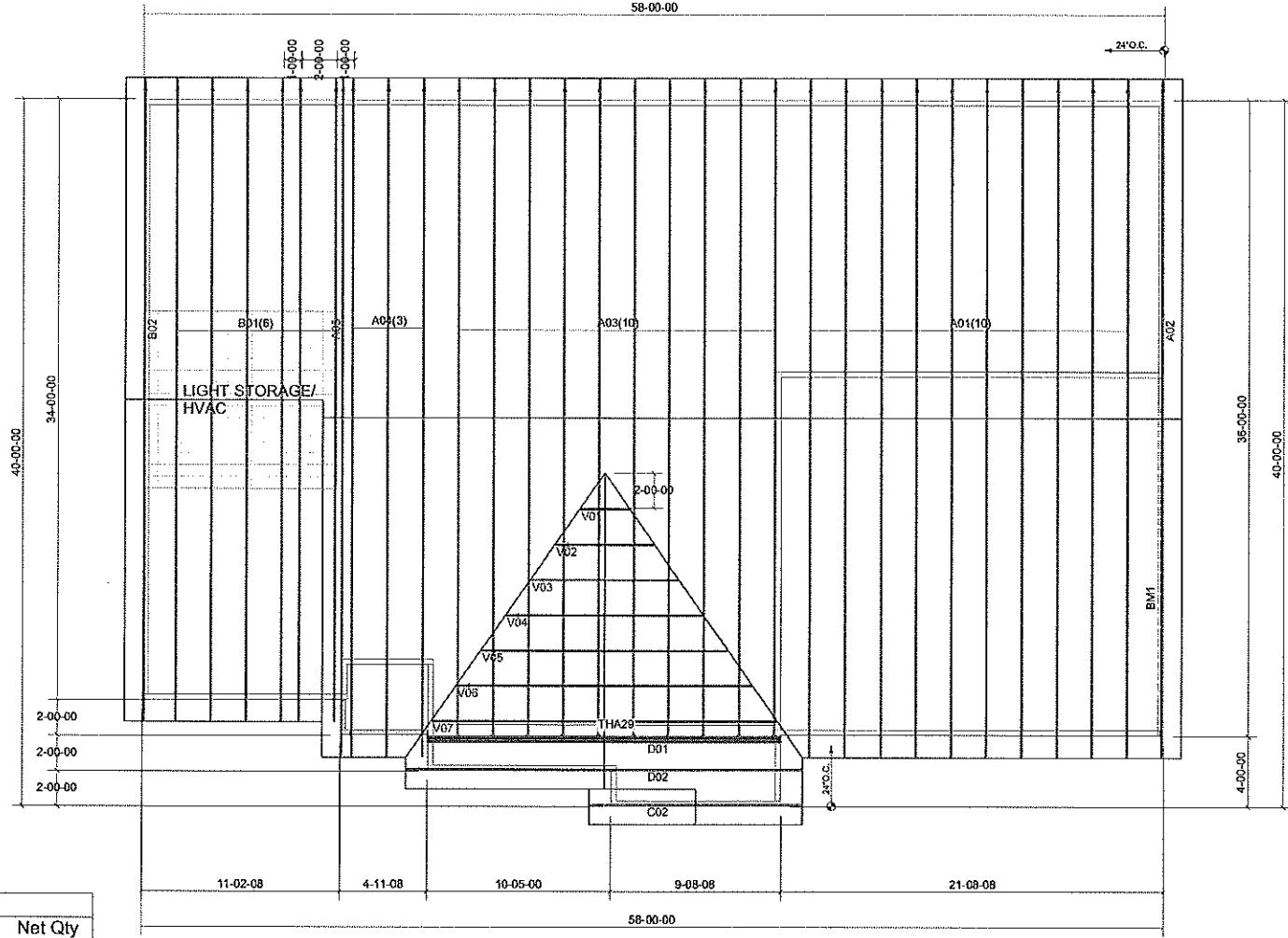


Products				
PlotID	Length	Product	Plies	Net Qty
BM1	22-00-00	1-3/4X14 LP-LVL 2900Fb-2.0E	2	2

Truss Connector Total List		
Manuf	Product	Qty
Simpson	THA29	10



**THIS IS A TRUSS PLACEMENT DIAGRAM ONLY**

These trusses are designed as individual building components to be incorporated into the building design at the specification of the building designer. See individual design sheets for each truss design. Identified on the placement drawing, the building designer is responsible for temporary and permanent bracing and floor system and in the overall structure. The design of the truss support structure including beams, posts, walls, and columns is the responsibility of the building designer. For general guidance regarding bracing, consult "Bracing of Wood Trusses" available from the Truss Plate Institute, 583 D'Onofrio Drive, Madison, WI 53173.

**SHOP DRAWING APPROVAL**

THIS LAYOUT IS THE SOLE SOURCE FOR FABRICATION OF TRUSSES AND VOIDS. ALL PREVIOUS ARCHITECTURAL OR OTHER TRUSS LAYOUTS, REVIEW AND APPROVAL OF THIS LAYOUT MUST BE RECEIVED BEFORE ANY TRUSSES WILL BE BUILT. VERIFY ALL CONDITIONS TO INSURE AGAINST CHANGES THAT WILL RESULT IN EXTRA CHARGES TO YOU.

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Job #: 191155RT1

Plan: FREEDOM FAMILY HMS ROANOKE

Customer: GARRIS EVANS LUMBER CO.

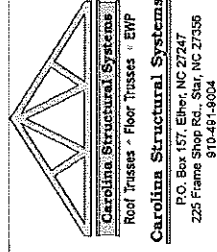
Date: 10/18/2019

Site Address:

Sales Rep: JSL

City, ST, ZIP:

Designer: EFT



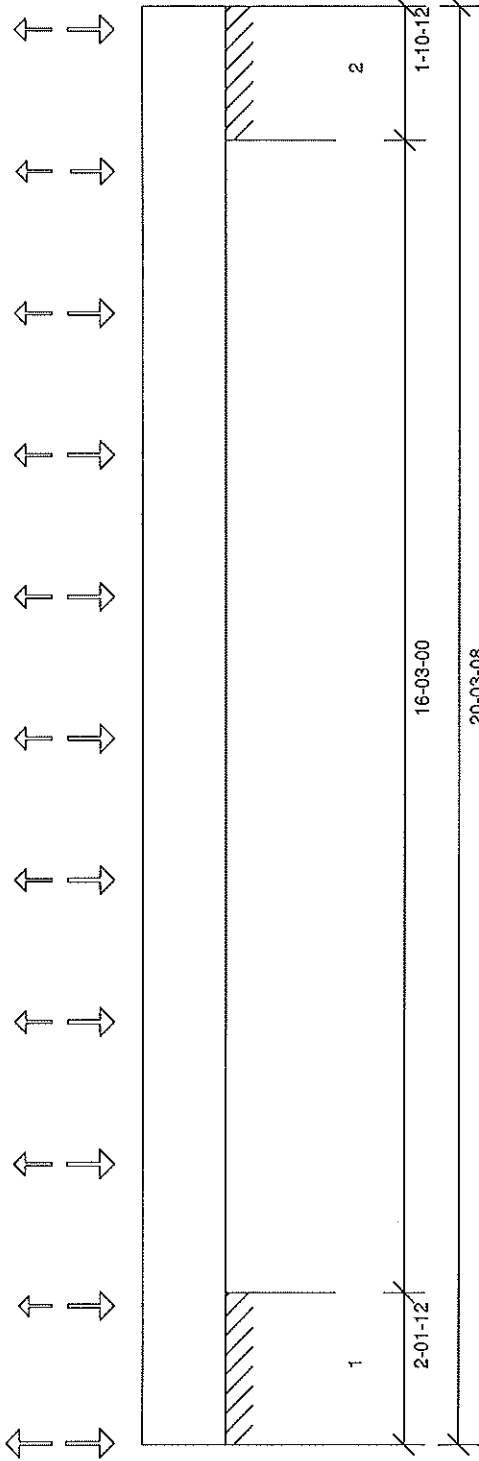


Job: 191155RT1  
 Member Type: Beam | Level: 1st Floor  
 Mitek SAPPHIRE™ Structure Version 8.2.4.272.Update3  
 Designed by Single Member Design Engine

Member: 2 - 1-3/4X14 LP-LVL 2900Fb-2.0E

Label: BM1-i18

Page: 1 of 2  
 Date: 10/12/2019 12:24:31  
 Status: Design Passed



Graphical Illustration - Not To Scale  
 Member Cut Length - 20'-3 1/2"  
 Member Pitch - 0/12

**Design Information:**

Building Code: IRC2015  
 Design Methodology: ASD  
 Floor Dead Load: 10.0 lb/ft²  
 Floor Live Load: 40.0 lb/ft²  
 Roof Dead Load: 10.0 lb/ft²  
 Roof Live Load: 20.0 lb/ft²  
 Unbraced Length Top: 0'  
 Bottom: 16'-3"  
 Ground Snow Load: 0.0 lb/ft²

**Design Results:**

Location	Design	Control	Result	LFDF	Load Combination
9'- 11 1/2"	1386.78 lb ft	31085.03 lb ft	Passed - 4%	1.15	D + Lr
18'- 6 1/4"	-2264.18 lb ft	31085.03 lb ft	Passed - 7%	1.15	D + Lr
3'- 3 3/4"	773.55 lb	10706.50 lb	Passed - 7%	1.15	D + Lr
10'- 2 11/16"	0'	0'- 3/4" (L/360)	Passed - L/999	-	Lr
10'- 2 3/4"	0'	0'- 1" (L/240)	Passed - L/999	-	D + Lr
0'- 1 1/2"	37.14 lb	Supported Mill	Passed - 0%	1.60	0.6D + 0.6W
0'- 1 1/2"	-1059.97 lb	25585.22 lb	Passed - 6%	1.15	D + Lr
2'- 1/4"	2198.06 lb	18375.00 lb	Passed - 12%	1.15	D + Lr
2'- 1/4"	-215.34 lb	25585.22 lb	Passed - 1%	1.60	0.6D + 0.6W
18'- 6 1/4"	2303.80 lb	18375.00 lb	Passed - 13%	1.15	D + Lr
18'- 6 1/4"	-247.66 lb	25585.22 lb	Passed - 1%	1.60	0.6D + 0.6W
20'- 2"	124.34 lb	25585.22 lb	Passed - 0%	1.60	0.6D + 0.6W
20'- 2"	-1284.80 lb	18375.00 lb	Passed - 7%	1.15	D + Lr

**Design Notes:**

\* Member design assumed proper ply to ply connection. Verify connection between plies according to code specification

**Loading:**

Type	Start	End	Source	Maximum Load Magnitudes	
				Floor Live	Roof Live
Self Weight	0'	20'- 3 1/2"	Self Weight	-	-
Point	0'- 1/4"	0'- 1/4"	A02(c01)	14 lb/ft	-
Point	1'- 11 1/2"	1'- 11 1/2"	A02(c01)	79.00 lb	113.00 lb
Point	3'- 11 1/2"	3'- 11 1/2"	A02(c01)	87.00 lb	102.00 lb
Point	5'- 11 1/2"	5'- 11 1/2"	A02(c01)	89.00 lb	102.00 lb
Point	7'- 11 1/2"	7'- 11 1/2"	A02(c01)	89.00 lb	96.00 lb
Point	9'- 11 1/2"	9'- 11 1/2"	A02(c01)	89.00 lb	95.00 lb
Point	11'- 11 1/2"	11'- 11 1/2"	A02(c01)	89.00 lb	95.00 lb
Point	13'- 11 1/2"	13'- 11 1/2"	A02(c01)	89.00 lb	94.00 lb
Point	15'- 11 1/2"	15'- 11 1/2"	A02(c01)	88.00 lb	94.00 lb
Point	17'- 11 1/2"	17'- 11 1/2"	A02(c01)	82.00 lb	81.00 lb
Point	19'- 11 1/2"	19'- 11 1/2"	A02(c01)	88.00 lb	88.00 lb

**Support Information:**

Support	Start	End	Source	Maximum Analysis Reactions	
				Floor Live	Roof Live
1	0'	2'- 1 3/4"	-	1173.00/-540.00 lb	1089.00/-522.00 lb
++>	0'- 1 1/2"	0'- 1 1/2"	E5(11)	-540.00 lb	121.00/-522.00 lb
++>	2'- 1/4"	2'- 1/4"	E4(17)	1173.00 lb	968.00 lb
2	18'- 4 3/4"	20'- 3 1/2"	E3(8)	1269.00/-660.00 lb	1104.00/-614.00 lb
==>	18'- 6 1/4"	18'- 6 1/4"	E3(8)	1268.00 lb	1011.00 lb
==>	20'- 2"	20'- 2"	E3(8)	-660.00 lb	93.00/-614.00 lb

**Errors, Warnings & Notes:**

\* CAUTION: The maximum net analysis reaction exceeds the user-defined maximum uplift value at one or more supports.  
 \* The dead loads used in the design of this member were applied to the structure as sloped dead loads.  
 \* The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.

- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.  
 - This report is based on modeled conditions input by the user. Actual field conditions may differ from those shown. These results should be reviewed by a qualified design professional.



Job: 191155RT1

Member Type: Beam | Level: 1st Floor

MiTek SAPPHIRE™ Structure Version 8.2.4.272.Update3

Designed by Single Member Design Engine

Member: 2 - 1-3/4X14 LP-LVL 2900Fb-2.0E

Label: BM1-i18

Page: 2 of 2

Date: 10/12/2019 12:24:31

Status: Design Passed

\* Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.

- This report is based on modeled conditions input by the user. Actual field conditions may differ from those shown. These results should be reviewed by a qualified design professional.



**Trenco**  
818 Soundside Rd  
Edenton, NC 27932

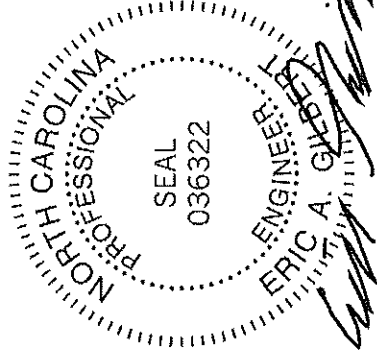
Re: 191155RT1  
FREEDOM FAMILY HOMES

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

Pages or sheets covered by this seal: E13659000 thru E13659016

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

North Carolina COA: C-0844



Gilbert, Eric

October 18, 2019

**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.



**Trenco**  
818 Soundside Rd  
Edenton, NC 27932

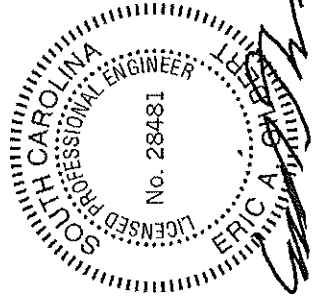
Re: 191155RT1  
FREEDOM FAMILY HOMES

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

Pages or sheets covered by this seal: E13659000 thru E13659016

My license renewal date for the state of South Carolina is June 30, 2020.

South Carolina COA: 923



Gilbert, Eric

October 18, 2019

**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	FREEDOM FAMILY HOMES	E13659000
191165RT1	A01	FINK	10	1		
Carolina Structural Systems, LLC, Ether, NC - 27247, ID:cpv3xtrfGL9uAY?kcM11NAYceFq-y16MvSS2dPPncdPmT?cskx0thQa87Zn0ZCTySCR7						
Job Reference (optional) 8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:42 2019 Page 1						
1-2-8	9-6-2	18-0-0	26-5-14	36-0-0	37-2-8	
1-2-8	9-6-2	8-5-14	8-5-14	9-6-2	1-2-8	

Scale = 1/71.9

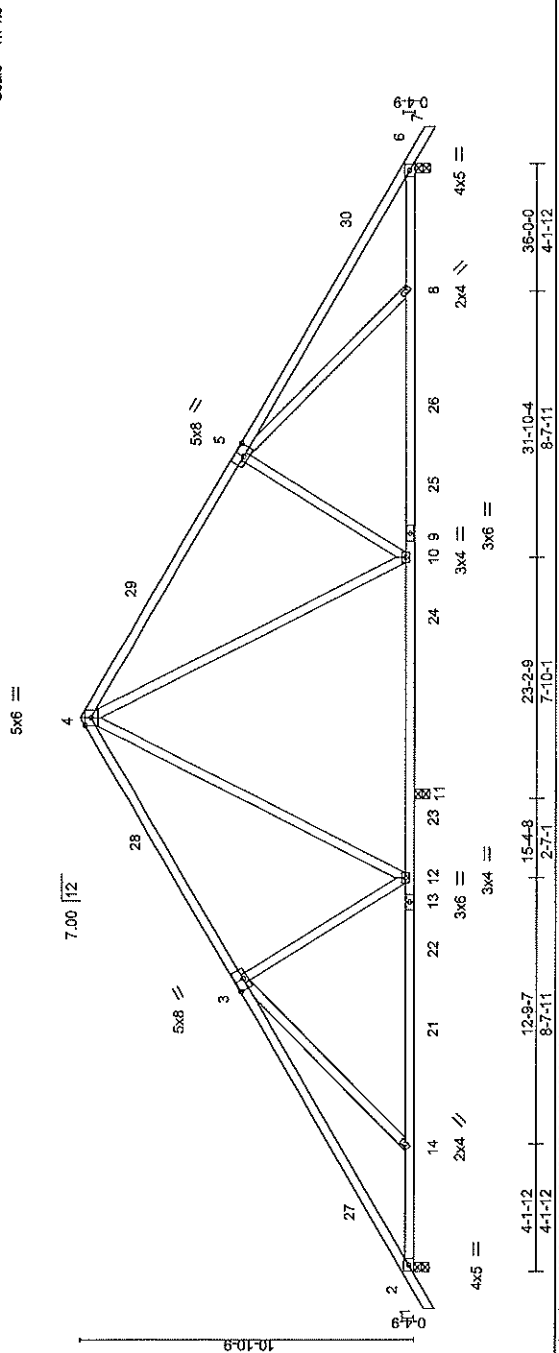


Plate Offsets (X,Y)	13-0-4-0-0-3-4], [5-0-4-0-0-3-4]
---------------------	----------------------------------

LOADING (psf)	SPACING:	CSL:	DEFL.	in (oc)	l/d	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.86	Vert(LL) -0.20	12-14	>951	240
TCDL 10.0	Lumber DOL 1.15	BC 0.70	Vert(CT) -0.42	12-14	>441	180
BCLL 0.0	Rep Stress Incr YES	WB 0.45	Horz(CT) 0.07	6	n/a	n/a
BCDL 10.0	Code IRC2015(TPI2014)	Matrix-MS				

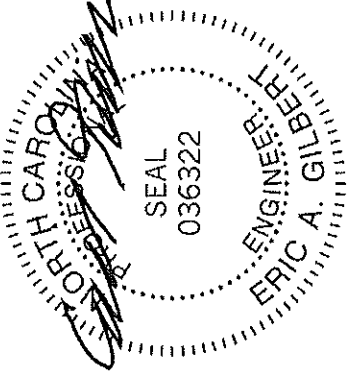
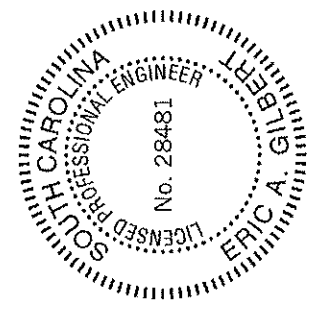
**LUMBER:**  
 2x4 SP No.1  
 2x4 SP No.1  
 2x4 SP No.2

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

**REACTIONS:** (lb/size) 2=1388/0-3-8, 6=1418/0-3-8, 11=219/0-3-8  
 Max Horz 2=-191(LC 9)  
 Max Uplift 2=62(LC 11), 6=57(LC 11)  
 Max Grav 2=1388(LC 1), 6=1418(LC 1), 11=353(LC 16)

**FORCES:** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 2) Wind: ASCE 7-10: Vu1=120mph (3-second gust) Vasd=95mph; TC DL=6.0psf; BC DL=6.0psf; h=25ft; B=45ft; L=36ft; eaves=5ft; Cat II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) -1-2-8 to 2-4-11, Interior(1) 2-4-11 to 18-0-0, Exterior(2) 18-0-0 to 21-7-3, Interior(1) 21-7-3 to 37-2-8 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BC DL = 10.0psf.  
 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 6.

**NOTES:**  
 1) Unbalanced roof live loads have been considered for this design.  
 2) Wind: ASCE 7-10: Vu1=120mph (3-second gust) Vasd=95mph; TC DL=6.0psf; BC DL=6.0psf; h=25ft; B=45ft; L=36ft; eaves=5ft; Cat II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) -1-2-8 to 2-4-11, Interior(1) 2-4-11 to 18-0-0, Exterior(2) 18-0-0 to 21-7-3, Interior(1) 21-7-3 to 37-2-8 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BC DL = 10.0psf.  
 4) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 6.



October 18, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MII-7473 rev. 10/02/2019 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 ANS/PTPI Quality Criteria, DSB-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

**PRENCO**  
 ENGINEERING BY  
 A Milltek Affiliate  
 818 Soundside Road  
 Edenboro, NC 27932



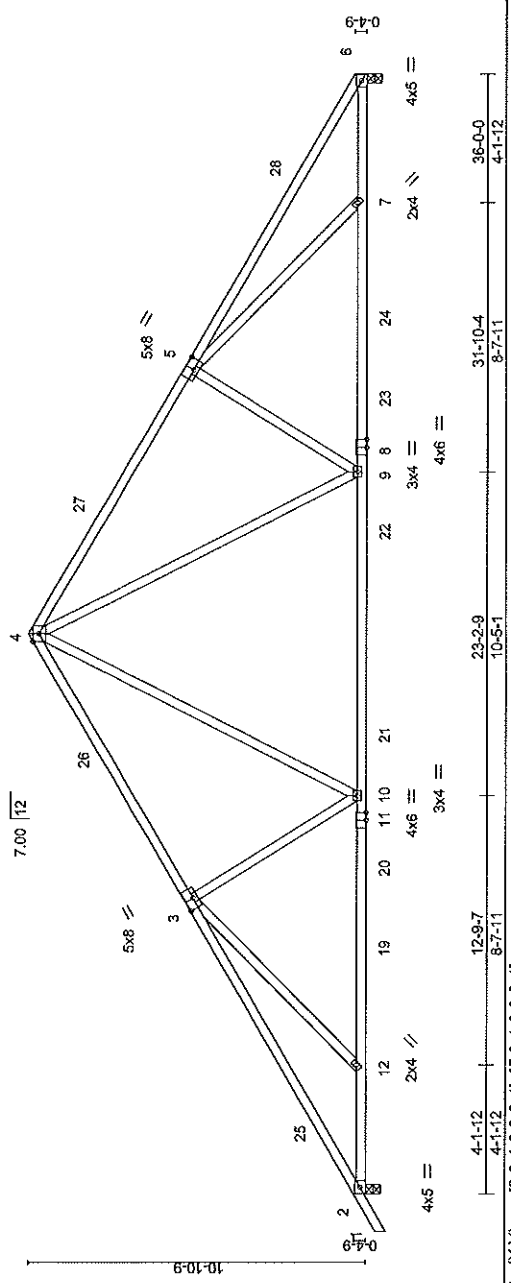
Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659002
191155RT1	A03	FINK	10	1		

Carolina Structural Systems, LLC, Either, NC - 27247.

Job Reference (optional)  
8.240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:45 2018 Page 1  
ID:scpv3xtrfGL9uA?kcM11N4yccFq-470EU0xLPNRCGWNIJqE4KQ3DeAdyZFIEDpoySCR4



Scale = 1:71.1



LOADING (psf)	SPACING*	CSL	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.98	Vert(LL) -0.41	9-10	>999	240	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.88	Vert(CT) -0.87	9-10	>646	180		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.44	Horz(CT) 0.09	6	n/a	n/a		
BCDL 10.0	Code IRC2015/TPI2014	Matrix-MS						

Weight: 193 lb FT = 20%

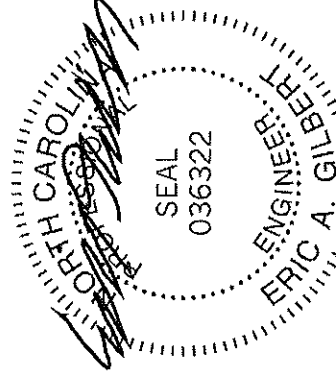
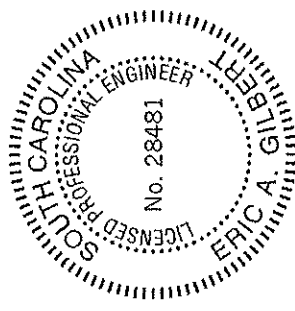
**LUMBER-**  
TOP CHORD 2x4 SP No.1  
BOT CHORD 2x4 SP No.1  
WEBS 2x4 SP No.2

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

**REACTIONS.** (lb/size) 2=1514/0-3-8, 6=1439/0-3-8  
Max Horiz 2=188(LC 10)  
Max Uplift 2=41(LC 11), 6=10(LC 11)  
Max Grav 2=1543(LC 16), 6=1476(LC 17)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
TOP CHORD 2-3=-2602/90, 3-4=-2078/197, 4-5=-2081/203, 5-6=-2617/111  
BOT CHORD 2-12=0/2273, 10-12=-23/2063, 9-10=0/1349, 7-9=-23/1934, 6-7=0/2152  
WEBS 3-10=-584/190, 4-10=-34/949, 4-9=-34/953, 5-9=-589/181, 3-12=0/300, 5-7=0/313

- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-10; Vu||=120mph (3-second gust) Vasd=95mph; TCCL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=36ft; eave=5ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2), -1-2-8 to 2-4-11, Interior(1) 2-4-11 to 18-0-0, Exterior(2) 18-0-0 to 21-7-3, Interior(1) 21-7-3 to 36-0-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
  - \* 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.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 6.



October 18, 2019

**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE Mtk-7473 rev. 10/03/2019 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 ANSIPRP1 Quality Criteria, DSS-89 and BCSI Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

**MITRESCO**  
ENGINEERING BY  
A Mitek Affiliate  
818 Soundside Road  
Eaton, NC 27932







Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659005
191155RT1	B01	FINK	6	1		

Carolina Structural Systems, LLC, Ether, NC - 27247.

Job Reference (optional)  
8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:48 2019 Page 1

ID:cqv3xtrfGL9UA?kcm11N4yoeFq-VI3N6P\_Dhlm7kEyztgXsyovRwKq7xITtQ7YSCR1

1-2-8, 8-6-2 17-0-0 8-5-14 25-5-14 8-5-14 34-0-0 35-2-8 1-2-8

Scale = 1:59.2

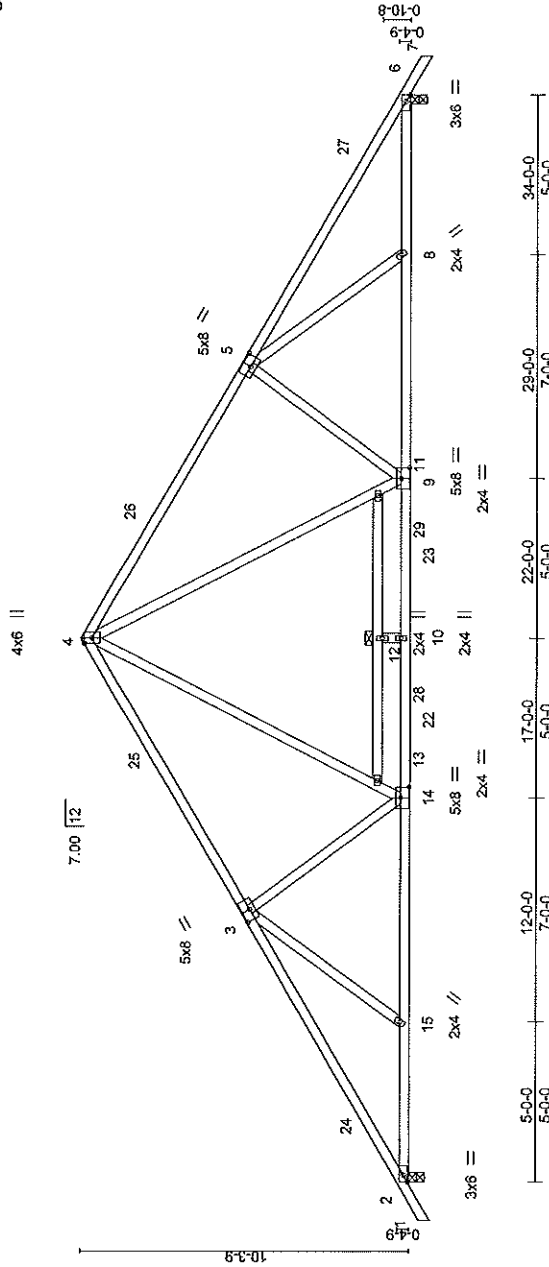


Plate Offsets (X,Y) = [3,0-4,0-3-0], [5,0-4,0-3-0], [6,0-2,9,Edge], [9,0-4,0-3-4], [14,0-4,0-3-4]

LOADING (psf)	SPACING-	CSI.	DEFL.	in (lbc)	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.68	Vert(LL) -0.47	12	>863	MT20	244/190
TCDL 10.0	Lumber DOL 1:15	BC 1.00	Vert(CT) -0.82	12	>496		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.37	Horz(CT) 0.08	6	n/a		
BCDL 10.0	Code IRC2015/TPI2014	Matrix-MS			n/a		

Weight: 195 lb FT = 20%

**LUMBER-**

TOP CHORD 2x4 SP No.1 \*Except\*  
3-4,4-5: 2x4 SP DSS  
BOT CHORD 2x4 SP No.1  
WEBS 2x4 SP No.2

**BRACING-**

TOP CHORD  
BOT CHORD

Structural wood sheathing directly applied or 2-2-0 cc purfins.  
Rigid ceiling directly applied or 2-2-0 cc bracing. Except:  
6-0-0 cc bracing; 11,-13

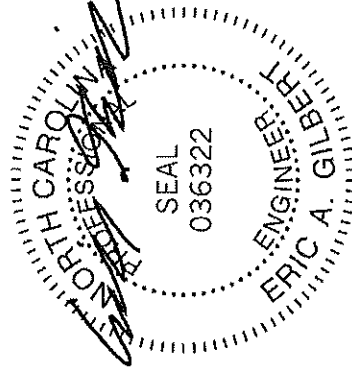
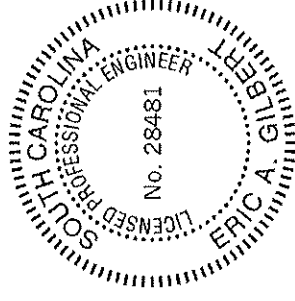
**REACTIONS.** (lb/size) 2=1525/0-3-8, 6=1525/0-3-8  
Max Horz 2=-181(LC 9)  
Max Grav 2=1541(LC 16), 6=1541(LC 17)

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

TOP CHORD 2-3=-2515/0, 3-4=-2163/66, 4-5=-2163/66, 5-6=-2515/0  
BOT CHORD 2-15=0/2214, 14-15=0/2149, 10-14=0/1501, 9-10=0/1501, 8-9=0/2013, 6-8=0/2078  
WEBS 3-14=-656/167, 13-14=-4/830, 4-13=0/993, 9-11=-4/830, 5-9=-656/167

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; VuII=120mph (3-second gust) Vasd=95mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=34ft; eave=4ft; Cat II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) -1-2-8 to 2-2-5, Interior(1) 2-2-5 to 17-0-0, Exterior(2) 17-0-0 to 20-4-13, Interior(1) 20-4-13 to 35-2-8 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
- \* 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.



October 18, 2019

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

Design valid for use only with MITEK® connectors. This design is based 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 erection, storage, delivery, erection and bracing of trusses and truss systems, see AWS77971 Quality Criteria, DSB-89 and BCS Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.





Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659007
191156RT1	C02	GABLE	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247.

ID:cqrV3xfrGL9uA?kcmH1N4ycefq-R5B7X67DV3JmeOK5sv?x81U0EVmJIP0y\_U0ySCR? 8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:50 2019 Page 1  
 9-8-8 4-10-4 10-1-1-0 1-2-8 4-10-4 4-10-4

Scale = 1:31.4

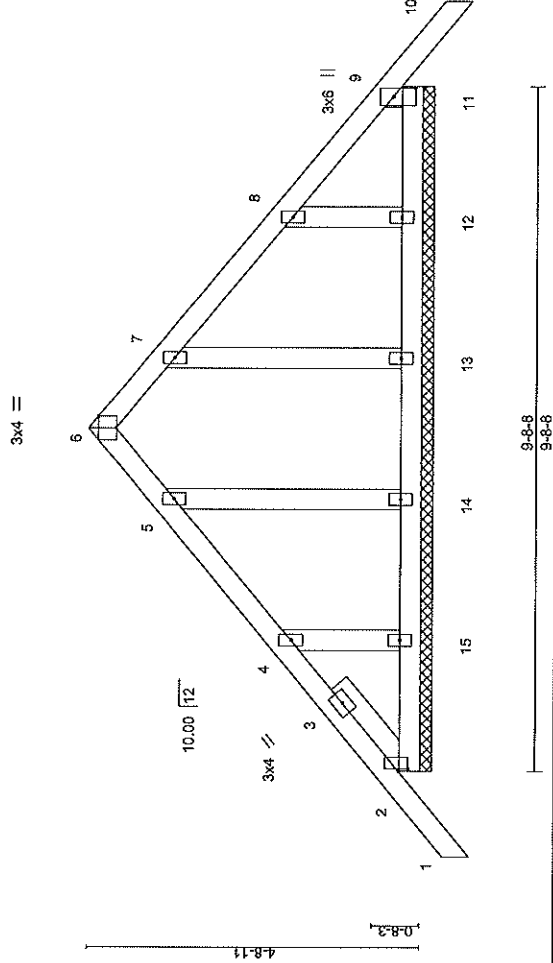


Plate Offsets (X,Y) = [2;0-1-10;0-0-7], [6;0-2-0,Edge], [9;0-3-12;0-1-8]

LOADING (psf)	SPACING-	CSI.	DEFL.	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.13	Vert(LL) -0.01	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.05	Vert(CT) -0.01		
BCLL 0.0 *	Rep Stress Inor YES	WB 0.03	Horz(CT) 0.00		
BCDL 10.0	Code IRC2015/TP12014	Matrix-S			

Weight: 56 lb FT = 20%

**LUMBER-**  
 TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 WEBS 2x4 SP No.2  
 OTHERS 2x4 SP No.2  
 SLIDER Left 2x4 SP No.3 1-6-2

**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 9-8-8.

(lb) - Max Horz 2=99(LC 10)

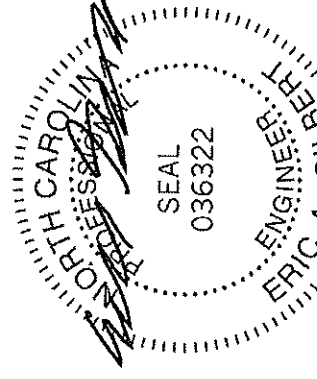
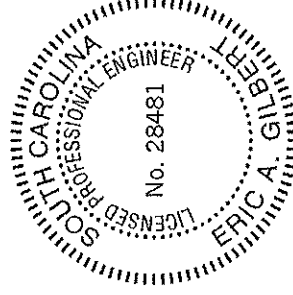
Max Uplift All uplift 100 lb or less at joint(s) 15, 12

Max Grav All reactions 250 lb or less at joint(s) 11, 2, 14, 15, 13, 12

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

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mp; TCCL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=2ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Corner(3) -1-2-8 to 1-10-4, Exterior(2) 1-10-4 to 4-10-4, Corner(3) 4-10-4 to 7-10-4, Exterior(2) 7-10-4 to 10-11-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- 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 ANSITP1.
- 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 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 15, 12.



October 18, 2019

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**TRENCO**  
 ENGINEERING BY  
 A MITEK ALLIANCE  
 818 Soundside Road  
 Eden, NC 27632





Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659009
191158RT1	D02	KINGPOST	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247.

ID:cqrV3xfrGL9uA?cM11NAyeeFq-NTJuyntKX.CoyYCVxT0Z6oh2CQmAbsKR5YySCQz

8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:52 2019 Page 1

Job Reference (optional):  
20-1-8  
10-0-12  
1-2-8  
1-2-8  
4-10-4  
4-10-4  
10-0-12  
5-2-8

Scale = 1:58.4

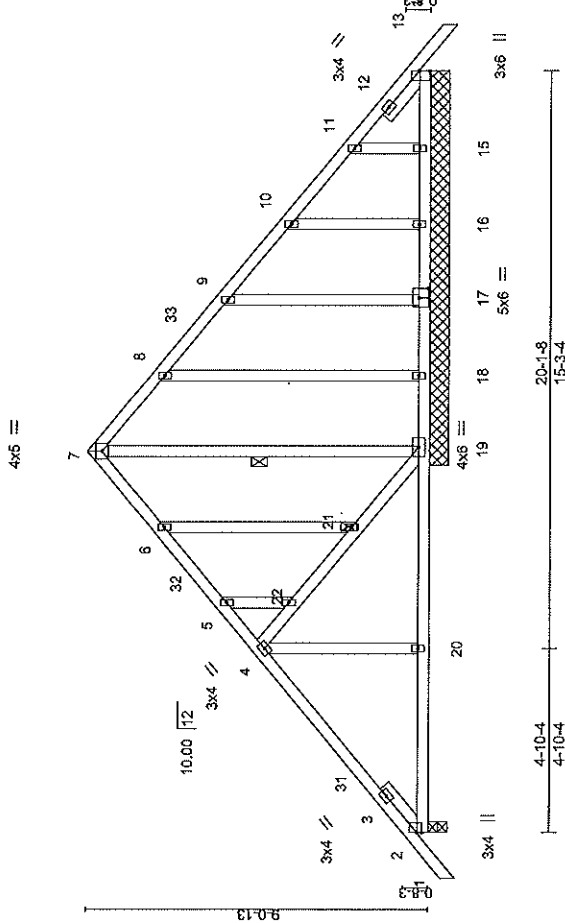


Plate Offsets (X,Y) = [13:0-3-6,0-0-3],[17:0-3-0,0-3-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 1.00	TC 0.27	Vert(LL) -0.01 20-25 >999	>999	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.17	Vert(CT) -0.02 20-25 >999	180		
BCDL 0.0 *	Rep Stress Incr YES	WB 0.18	Horz(CT) 0.01 2 n/a	n/a		
BCDL 10.0	Code IRC2015/TPI2014	Matrix-MS				

Weight: 144 lb FT = 20%

**LUMBER-**

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

WEBS 2x4 SP No.2

SLIDER Left 2x4 SP No.3 1-6-2, Right 2x4 SP No.3 1-6-4

**REACTIONS.** All bearings 10-5-0 except (l=length) 2=0-3-8.

(lb) - Max Horz 2=-469(LC 9)

Max Uplift All uplift 100 lb or less at joint(s) 2, 18, 17, 16, 15

Max Grav All reactions 250 lb or less at joint(s) 18, 17, 16, 15, 13, 13 except 2=473(LC 1), 19=538(LC 16)

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

TOP CHORD 2-4=-361/66

BOT CHORD 2-20=-1/323, 19-20=-1/323

WEBS 4-22=-365/94, 21-22=-354/89, 19-21=-391/111

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vu1=120mph (3-second gust) Vasd=95mph; TCCL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=4ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) -1-2-8 to 1-9-8, Interior(1) 1-9-8 to 10-0-12, Exterior(2) 10-0-12 to 13-0-12, Interior(1) 13-0-12 to 21-4-0 zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- All plates are 2x4 MT20 unless otherwise indicated
- 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 18, 17, 16, 15.

**BRACING-**

TOP CHORD

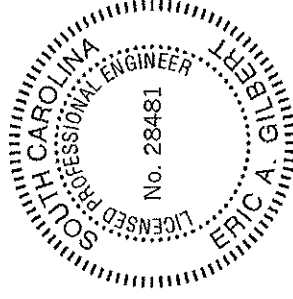
BOT CHORD

WEBS

JOINTS

Structural wood sheathing directly applied or 6-0-0 oc purlins.  
Rigid ceiling directly applied or 6-0-0 oc bracing. Except:  
10-0-0 oc bracing: 2-20,19-20,  
1 Row at midpt 7-19

1 Brace at Jt(s): 21



October 18, 2019

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Design valid for use only with MITek9 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 webs 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 design, storage, delivery, treatment and erection of trusses and truss systems, see the following references: *Quality Criteria, DSB-59 and BCS Building Component Safety Information* available from Truss Plate Institute, 215 N. Lee Street, Suite 812, Alexandria, VA 22314.

ENGINEERING BY

**TRENCO**

A MITek Affiliate

818 Soundside Road

Edenton, NC 27932



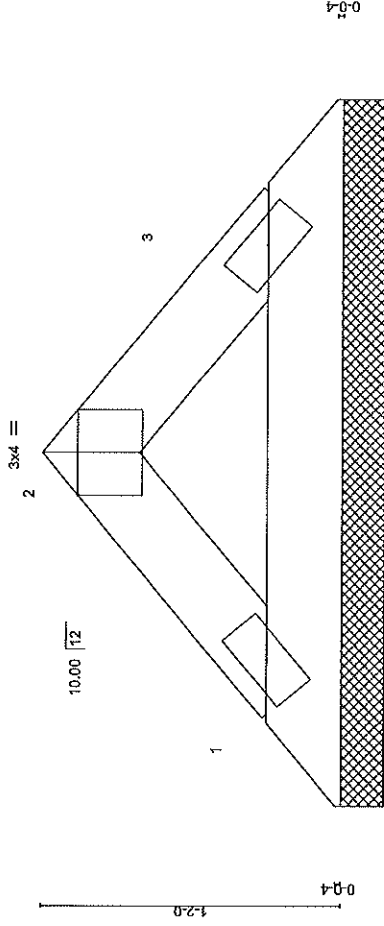
Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659010
191135RT1	V01	Valley	1	1		

Carolina Structural Systems, LLC, Either, NC - 27247.

Job Reference (optional)

8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:53 2019 Page 1  
 ID:cqrV3xfrGL9aA?kcM11N4yceFq-rsG972MWqR3D57vmDTIZmrl4SalVtsk\_Ae4LYSCQy  
 2-9-10 1-4-13

Scale = 1:8.8



2x4 // 2x4 //

2-9-10  
2-8-5

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

LOADING (psf)	SPACING-	CSI.	DEFL.	in (oc)	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.02	Vert(LL) n/a	n/a	999	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.03	Vert(CT) n/a	n/a	999		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.00	Horz(CT) 0.00	3	n/a		
BCDL 10.0	Code IRC2015/TP12014	Matrix-P					FT = 20%

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

BRACING-  
TOP CHORD Structural wood sheathing directly applied or 2-9-10 oc purlins.  
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

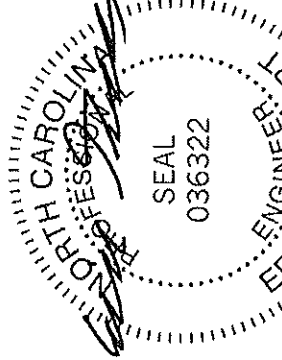
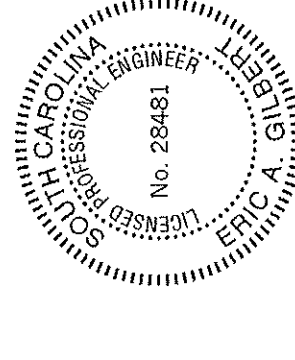
Weight: 8 lb FT = 20%

REACTIONS. (lb/size) 1=80/2-9-0, 3=80/2-9-0  
 Max Horz 1=15(LC 10)  
 Max Uplift 1=-1(LC 11), 3=-1(LC 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=120mph (3-second gust) Vass=95mph; TCDL=6.0psf, BCDL=6.0psf, h=25ft; B=45ft; L=24ft; eave=4ft; Cat. III; Exp B; Endosed; MWFRS (directional) and C-C Exterior(2) zone; cantilever left and right exposed ; and 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) Gable requires continuous bottom chord bearing.
- 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.
- 5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 3.



October 18, 2019

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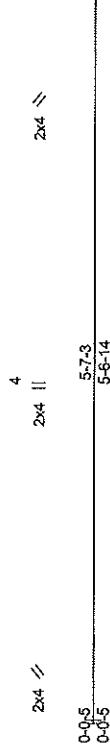
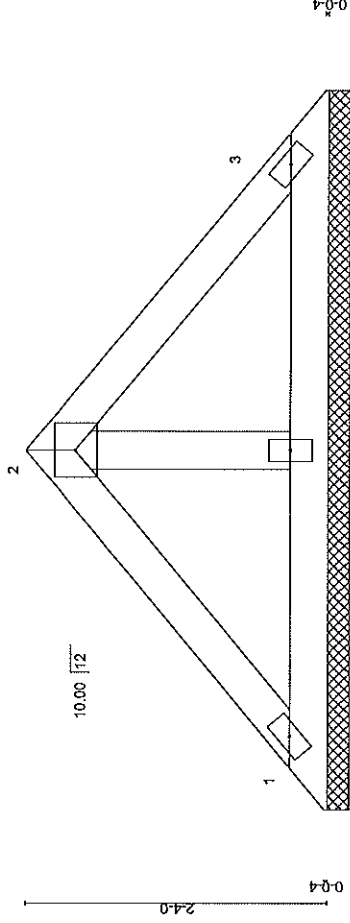
Job	Truss	Truss Type	Ply	Qty	Freedom Family Homes	E13669011
191165RT1	V02	Valley	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247,

Job Reference (optional):  
 8.240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:54 2018 Page 1  
 ID:cpv3xdrfGL9uA?kcm11N4y6Fq-JsQeNT2\_H8ZwrF6Kw\_5\_BBRwrE6vuKewBonySC0x



Scale = 1:17.1



LOADING (psf)	SPACING-	CSI.	DEFL.	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.10	Vert(LL) n/a	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.04	Vert(CT) n/a		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.01	Horz(CT) 0.00		
BCDL 10.0	Code IRC2015/TP12014	Matrix-P			

Weight: 20 lb FT = 20%

**LUMBER-**

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

**BRACING-**

TOP CHORD Structural wood sheathing directly applied or 5-7-3 oc purlins.  
 BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS.** (lb/size) 1=109/5-6-10, 3=109/5-6-10, 4=166/5-6-10

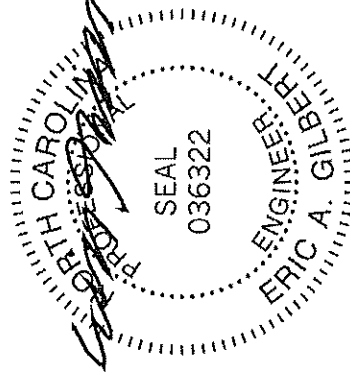
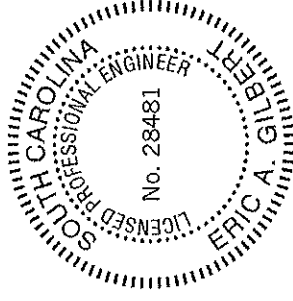
Max Horz 1=-36(LC 9)

Max Uplift 1=-13(LC 11), 3=-13(LC 11)

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

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=4ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) zone; cantilever left and right exposed; end vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Gable requires continuous bottom chord bearing.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 3.



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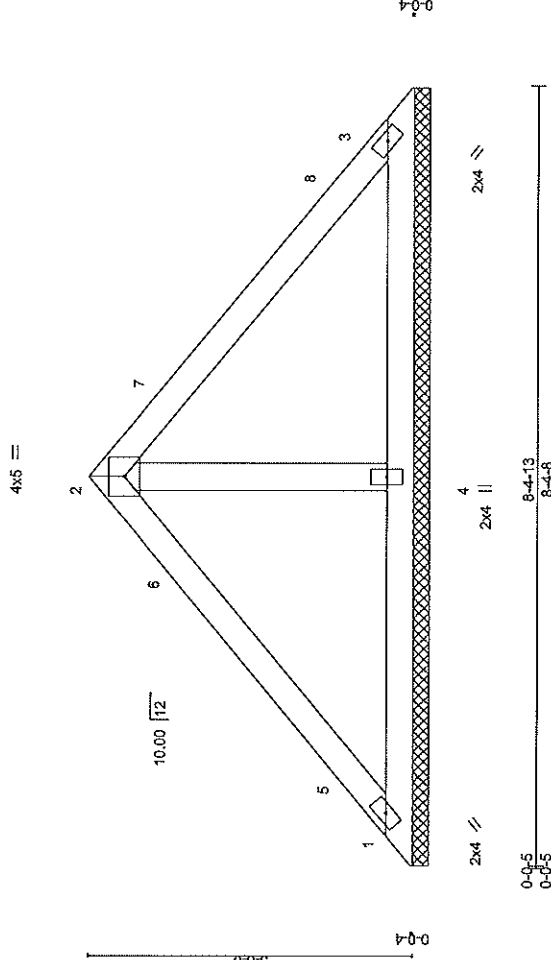
ENGINEERING BY  
**MITEK**  
 A MITEK Alliance  
 818 Soundside Road  
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659012
19116SRT1	V03	Valley	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247.

ID:cqfVaxtrfGL9uA?%kMI1N4yoeFq-JsQeNT2\_H8ZwrF6Kw\_x5\_BhhvIE6cuKewBcnySCQx  
 8-240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:54 2019 Page 1  
 Job Reference (optional)  
 8-4-13  
 4-2-6  
 4-2-6

Scale = 1:23.7



LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.28	Vert(LL) n/a	-	n/a	MT20	244/190
TCOL 10.0	Lumber DOL 1.15	BC 0.10	Vert(CT) n/a	-	n/a		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.03	Horz(CT) 0.00	3	n/a		
BCDL 10.0	Code IRC2015/TP12014	Matrix-P					

Weight: 31 lb FT = 20%

**LUMBER-**

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

**BRACING-**

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

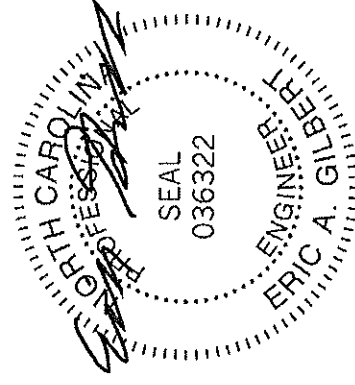
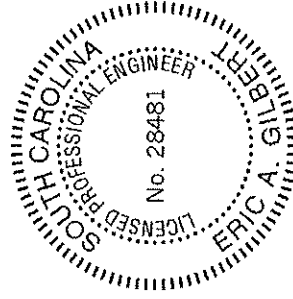
**REACTIONS.** (lb/size) 1=173/8-4-3, 3=173/8-4-3, 4=262/8-4-3

Max Horz 1=57(LC 10)  
 Max Uplift 1=21(LC 11), 3=21(LC 11)

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

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=4ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-4-13 to 3-4-13. Interior(1) 3-4-13 to 4-2-6. Exterior(2) 4-2-6 to 7-2-6, Interior(1) 7-2-6 to 7-11-15 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
- Gable requires continuous bottom chord bearing.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 3.



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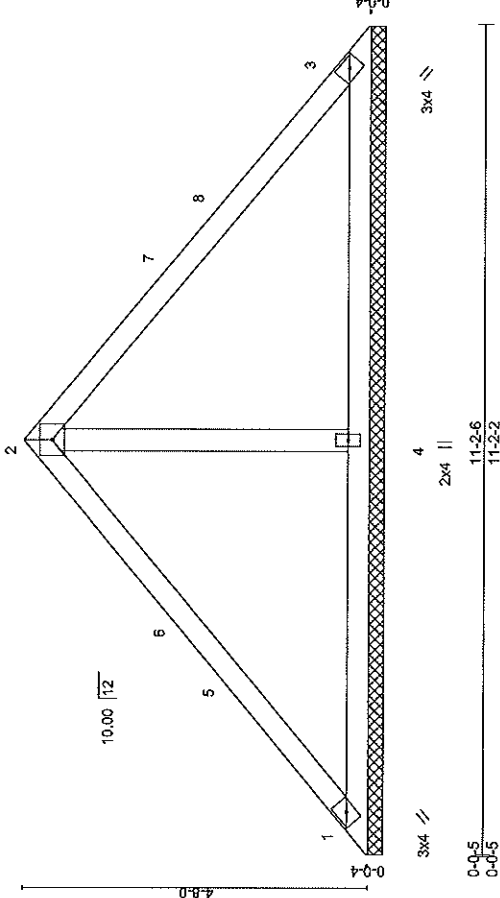
Job	Truss Type	Qty	Ply	Freedom Family Homes	E13659013
191155RT1	V04 Valley	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247.

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8,240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:55 2019 Page 1  
Job Reference (optional)



Scale = 1:29.6



LOADING (psf)	SPACING-	CSI.	DEFL.	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.39	Vert(LL) n/a	MT20	244/190
TCDL 10.0	Lumber DOL 1.00	BC 0.21	Vert(CT) n/a		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.08	Horz(CT) 0.00		
BCDL 10.0	Code IRC2015/TP12014	Matrix-S			

Weight: 43 lb FT = 20%

**LUMBER-**

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

**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.

**REACTIONS.** (b)/size) 1=218/11-1-13, 3=218/11-1-13, 4=396/11-1-13

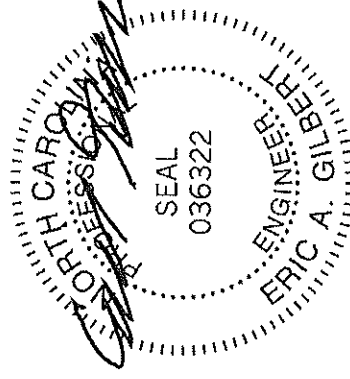
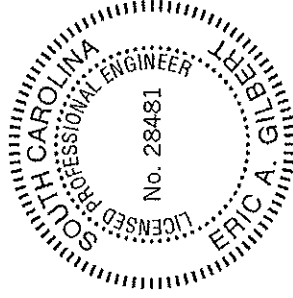
Max Horz 1=78(LC 9)

Max Uplift 1=17(LC 11), 3=17(LC 11)

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

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vu1t=120mph (3-second gust) Vasd=95mph; TCDD=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=4ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-4-13 to 3-4-13, Interior(1) 3-4-13 to 5-7-3, Exterior(2) 5-7-3 to 6-7-3, Interior(1) 6-7-3 to 10-9-9 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
- Gable requires continuous bottom chord bearing.
- \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-0-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 3.



October 18, 2019

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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 piling of trusses and truss systems, see AWS777P1. *Quality Criteria, DSB-89 and BCS Building Component Safety Information* available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

ENGINEERING BY

**TRENCO**  
A MITEK Alliance

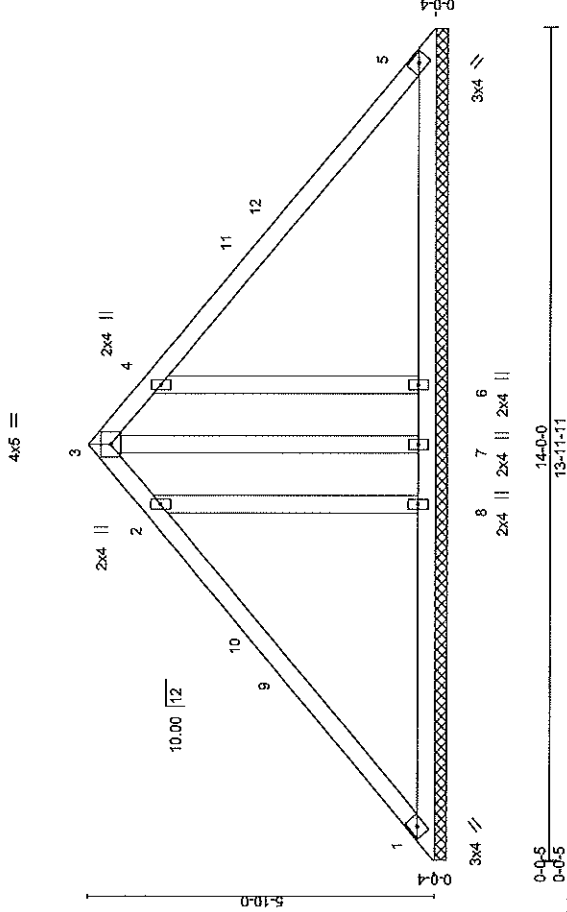
818 Soundside Road  
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	FREEDOM FAMILY HOMES	E13659014
191155RT1	V05	Valley	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247,

Job Reference (optional):  
 8.240 s Jul 14 2019 MITek Industries, Inc. Fri Oct 18 10:41:56 2019 Page 1  
 ID:cqrV3xtrfGL9uA?rcdM1N4yccFq-GFY0o94EpbexZsURL0P8PHRfYsj\_6BnyPInfySCQv  
 14-0-0  
 7-0-0  
 7-0-0

Scale = 1:37.1



LOADING (psf)	SPACING-	CSI.	DEFL.	in (loc)	l/defl	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.44	Vert(LL) n/a	n/a	n/a	999	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.20	Vert(CT) n/a	n/a	n/a	999		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.16	Horz(CT) 0.00	5	n/a	n/a		
BCDL 10.0	Code IRC2015/TP12014	Matrix-S						

Weight: 87 lb FT # 20%

**LUMBER-**

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

**BRACING-**

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

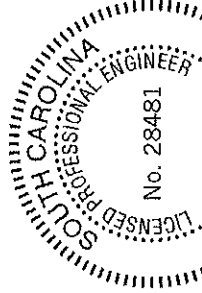
**REACTIONS.** All bearings 13-11-6.

(lb) - Max Horz 1=99(LC 10)  
 Max Uplift All uplift 100 lb or less at joint(s) except 7=468(LC 1), 8=109(LC 11), 8=109(LC 11)  
 Max Grav All reactions 250 lb or less at joint(s) 1, 5, 7 except 6=642(LC 17), 8=644(LC 16)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
**WEBS** 3-7=249/385, 4-6=436/241, 2-8=436/241

**NOTES-**

- 1) Unbalanced roof live loads have been considered for this design.
- 2) Wind: ASCE 7-10; VuI=120mph (3-second gust) Vasd=95mph; TCdL=6.0psf, BCDL=6.0psf, h=25ft; B=45ft, L=24ft; eave=4ft; Cat. II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-4-13 to 3-4-13, Interior(1) 3-4-13 to 7-0-0, Exterior(2) 7-0-0 to 10-0-0, Interior(1) 10-0-0 to 13-7-3 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) Gable requires continuous bottom chord bearing.
- 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.
- 5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 468 lb uplift at joint 7, 109 lb uplift at joint 6 and 109 lb uplift at joint 8.



October 18, 2019

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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 design, storage, delivery, erection, and bearing truss and truss systems, see the Allowable Stress Design and Quality Criteria, DSS-87 and BCS Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 812, Alexandria, VA 22314.

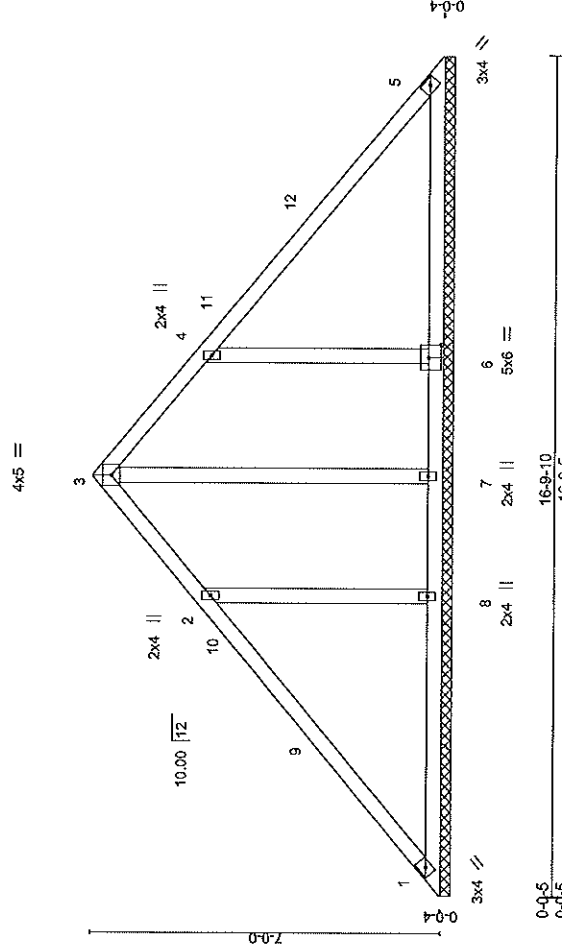


818 Soundside Road  
 Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	Freedom Family Homes	E13659015
191159RT1	V06	Valley	1	1		

Carolina Structural Systems, LLC, Ether, NC - 27247, ID:coqV3:xfRGL9uA?kclMfN4yceFq-GFYC094Epipe+zsURL0P8PHR4FvI\_YBnyPInfySCov  
 8,240 s Jul 14 2019 Mitek Industries, Inc. Fri Oct 18 10:41:56 2019 Page 1  
 Job Reference (optional)  
 16-9-10 8-4-13

Scale = 1/4.2



LOADING (psf)	SPACING-	CSL	DEFL.	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.41	Vert(LL) n/a	999	MT20	244/190
BCDL 10.0	Lumber DOL 1.15	BC 0.20	Horz(CT) n/a	999		
BCLL 0.0	Rep Stress Incr YES	WB 0.13		n/a		
BCDL 10.0	Code IRC2015/TPI2014	Matrix-S		n/a		

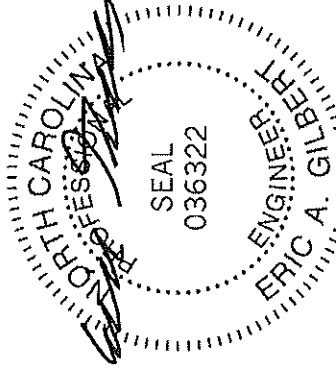
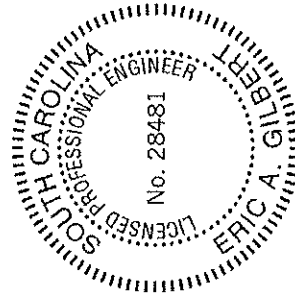
**LUMBER-**  
 TOP CHORD 2x4 SP No.2  
 BOT CHORD 2x4 SP No.2  
 OTHERS 2x4 SP No.2

**REACTIONS.** All bearings 16-9-0.  
 (lb) - Max Horz 1=-120(LC 9)  
 Max Uplift All uplift 100 lb or less at joint(s) 7 except 6=101(LC 11), 8=102(LC 11)  
 Max Grav All reactions 250 lb or less at joint(s) 1, 5, 7 except 6=522(LC 17), 8=523(LC 16)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
**WEBS** 4-6=-357/169, 2-8=-359/190

**NOTES-**  
 1) Unbalanced roof live loads have been considered for this design.  
 2) Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TC DL=6.0psf; BCDL=6.0psf; h=25ft; B=45ft; L=24ft; eave=4ft; Cat II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-4-13 to 3-4-13, interior(1) 3-4-13 to 8-4-13, Exterior(2) 8-4-13 to 11-4-13, interior(1) 11-4-13 to 16-4-12 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) Gable requires continuous bottom chord bearing.  
 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) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 7 except (j=lb) 6=101, 8=102.

**BRACING-**  
 TOP CHORD Structural wood sheathing directly applied or 6-0-0 cc purfins.  
 BOT CHORD Rigid ceiling directly applied or 6-0-0 cc bracing.  
 Weight: 79 lb FT = 20%



October 18, 2019

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Job	Truss	Truss Type	Ply	Freedom Family Homes	E13659016
181155RT1	V07	Valley	1		

Carolina Structural Systems, LLC, Either, NC - 27247.

ID:ccrV3xfrGL9uA?kicM1N4yceFq-kR6n?U5sa3XVjRg?3XeJpcss3u3RRmK0c8ID6ySCQu

8,240 s Jul 14 2019 Mitek Industries, Inc. Fri Oct 18 10:41:57 2019 Page 1

Job Reference (optional)



4x5 =

Scale = 1:51.1

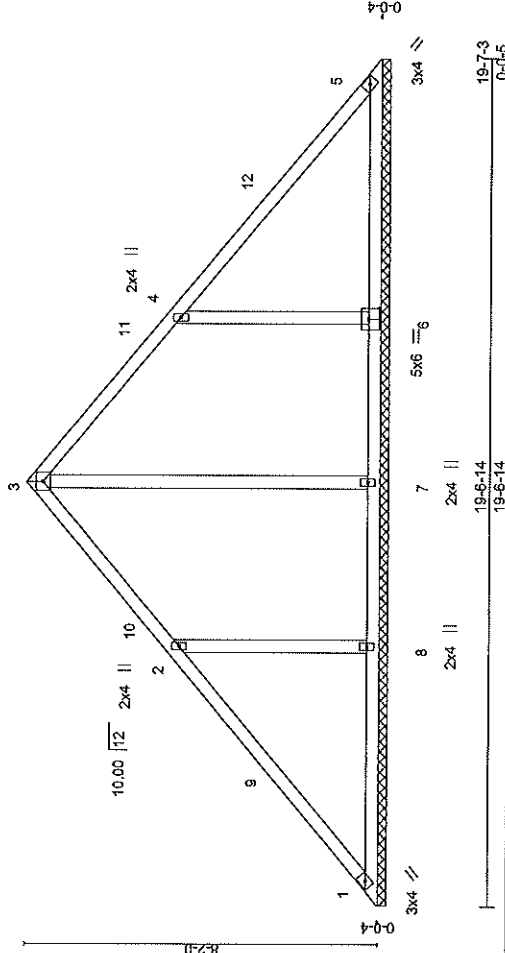


Plate Offsets (X,Y) - [6:0-3-0-0-3-0]

LOADING (psf)	SPACING-	CSI.	DEFL.	DEFL. in (loc)	L/d	PLATES	GRIP
TCLL 20.0	Plate Grip DOL 2-0-0	TC 0.41	Vert(LL) n/a	n/a	999	MT20	244/190
TCDL 10.0	Lumber DOL 1.15	BC 0.20	Vert(CT) n/a	n/a	999		
BCLL 0.0 *	Rep Stress Incr YES	WB 0.13	Horz(CT) 0.00	5	n/a		
BCDL 10.0	Code IRC2015/TPI2014	Matrix-S					

**LUMBER-**

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

Weight: 90 lb FT = 20%

**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.

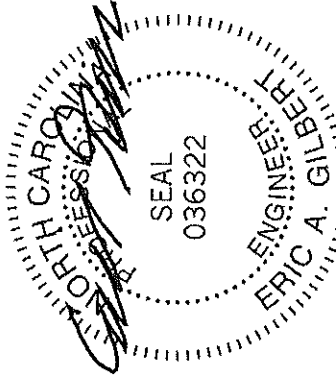
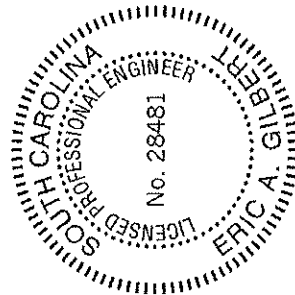
**REACTIONS.**

All bearings 19-6-10.  
 (lb) - Max Horz 1=141(LC 10)  
 Max Uplift All uplift 100 lb or less at joint(s) except 6=105(LC 11), 8=106(LC 11)  
 Max Grav All reactions 250 lb or less at joint(s) 1, 5 except 7=280(LC 16), 6=542(LC 17), 8=544(LC 16)

**FORCES.** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.  
 WEBS 4-6=-364/169, 2-8=-366/169

**NOTES-**

- Unbalanced roof live loads have been considered for this design.
- Wind: ASCE 7-10; Vult=120mph (3-second gust) Vasd=95mph; TCDL=6.0psf, BCDL=6.0psf, h=25ft; B=45ft; L=24ft; eave=4ft; Cat II; Exp B; Enclosed; MWFRS (directional) and C-C Exterior(2) 0-4-13 to 3-4-13, Interior(1) 3-4-13 to 9-9-10, Exterior(2) 9-9-10 to 12-9-10, Interior(1) 12-9-10 to 19-2-6 zone; cantilever left and right exposed, and vertical left and right exposed; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
- Gable requires continuous bottom chord bearing.
- \* 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.
- Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 105 lb uplift at joint 6 and 106 lb uplift at joint 8.



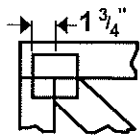
October 18, 2019

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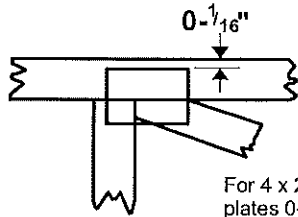
ENGINEERING BY  
**TRENCO**  
 A Mitek Affiliate  
 818 Soundside Road  
 Edenton, NC 27932

# 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-<sup>1</sup>/<sub>16</sub>" 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

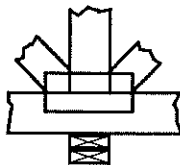
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## 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:

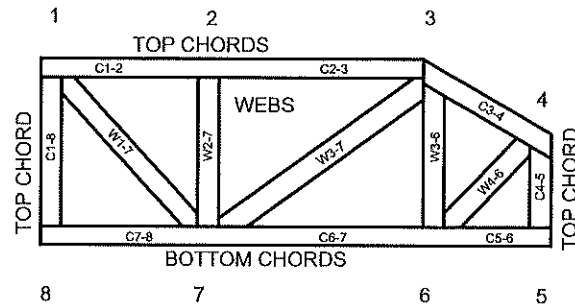
ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.

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

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



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: MI-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.