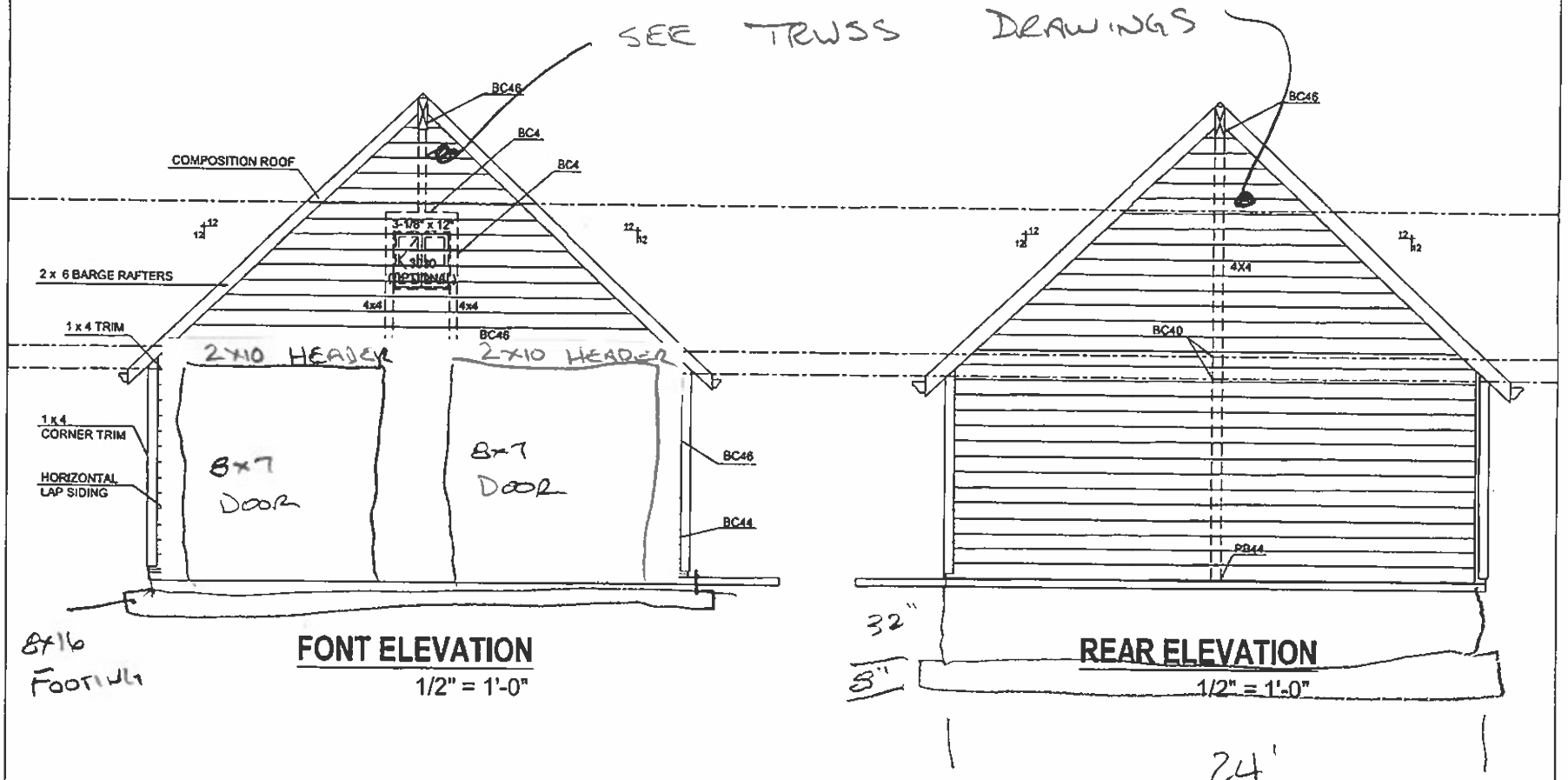


24' x 24' TWO CAR GARAGE WITH LOFT

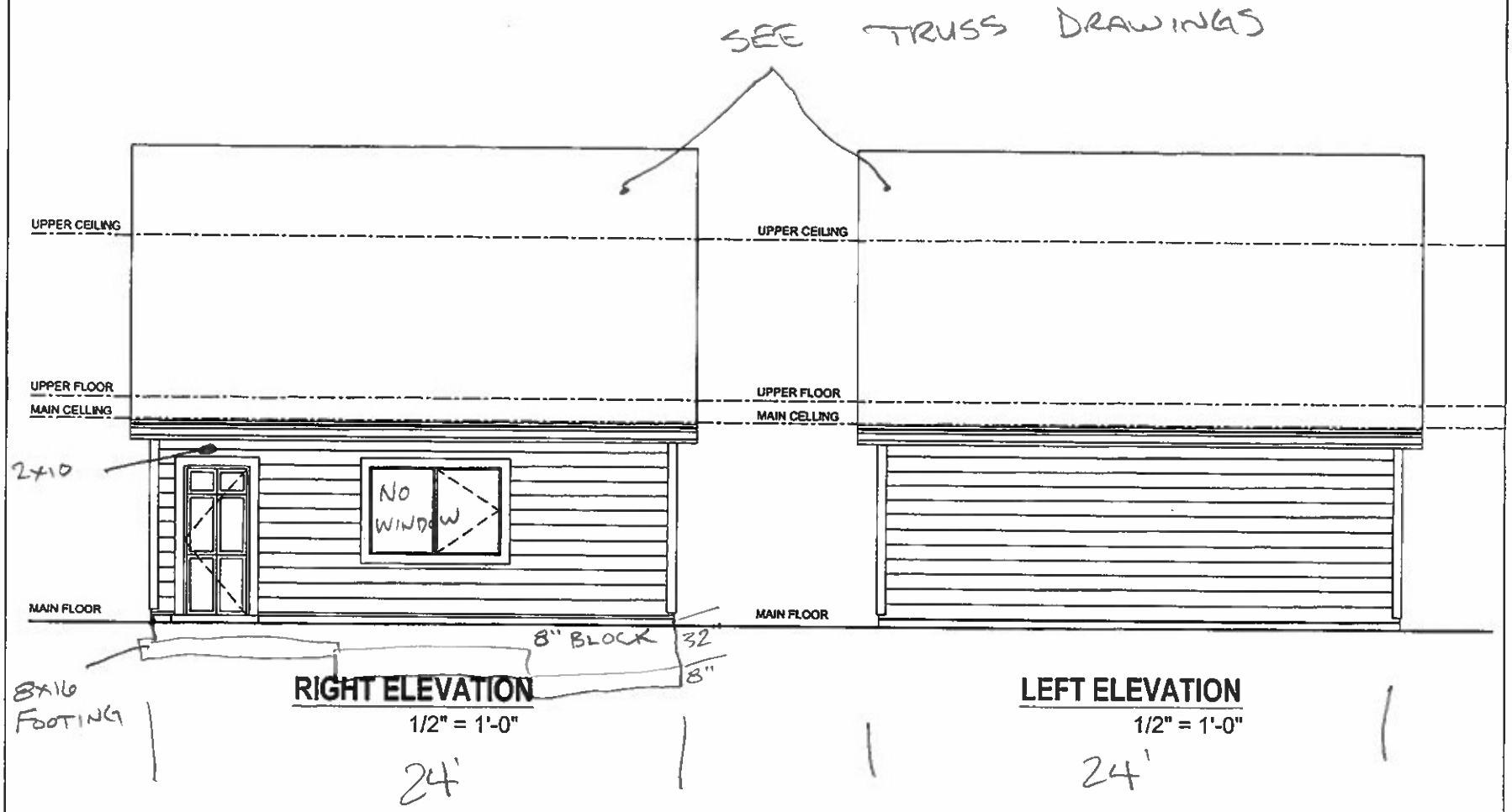
NO.	REVISION				APP	DATE	DWG NO.	REFERENCE
3								
2								
1	REVISION OVERALL DESIGN	BS	BS	BS				
0	ISSUED FOR CONSTRUCTION	BS	BS	BS				
	ISSUED FOR REVIEW	BS	BS	BS				

SECTIONS		
SCALE: AS NOTE		DATE
DESIGN BY:	B. STONE	JAN 31
DRAW BY:	B. STONE	JAN 31
CHECKED BY:		
APPROVED BY:		

24'X24 2 CAR GARAGE WITH LOFT

TILTTOWER.COM

REVISION NO.



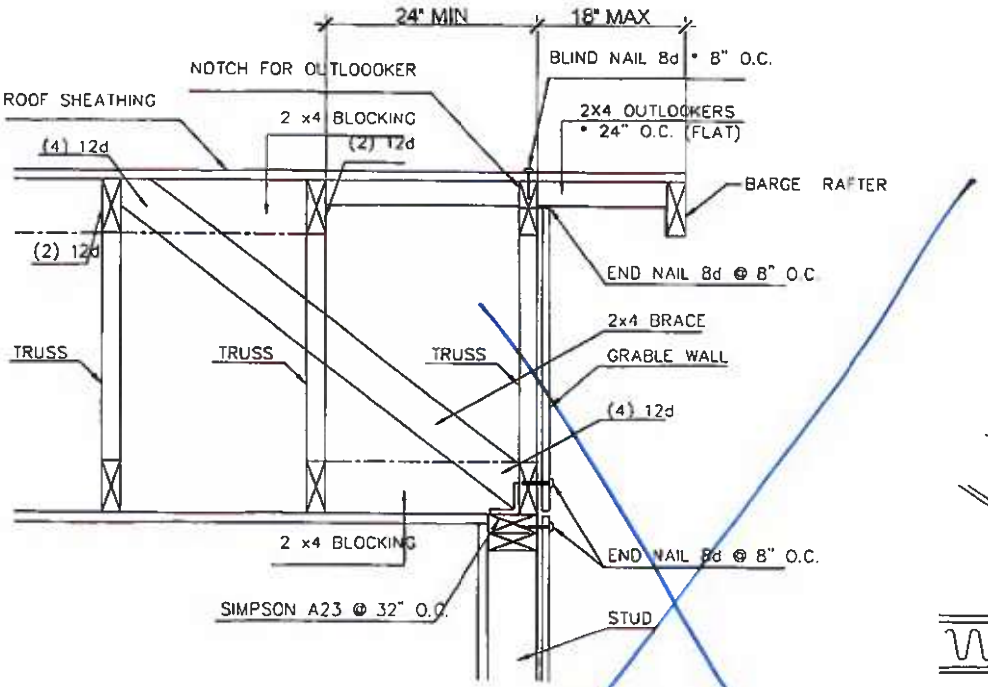
NO.	REVISION				APP	DATE	DWG NO.	REFERENCE
	REVISION OVERALL DESIGN	BS	BS	BS				
	ISSUED FOR CONSTRUCTION	BS	BS	BS				
	ISSUED FOR REVIEW	BS	BS	BS				

SECTIONS	
SCALE: AS NOTE	DATE
DESIGN BY: B. STONE	JAN 31
DRAW BY: B. STONE	JAN 31
CHECKED BY:	
APPROVED BY:	

24'X24 2 CAR GARAGE WITH LOFT

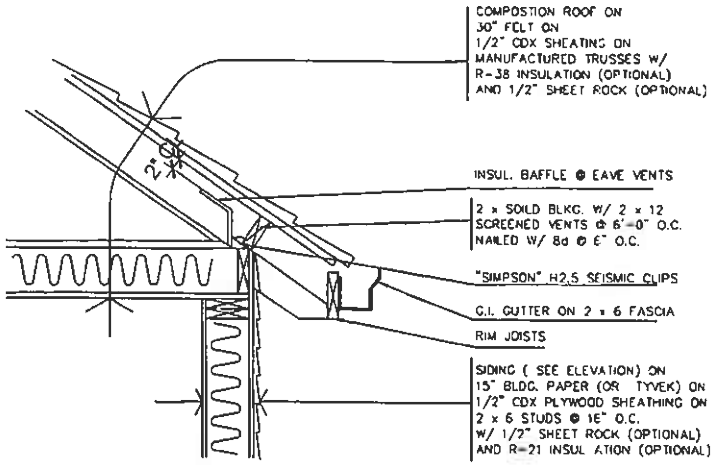
TILTTOWER.COM

DRAIN LINES
24 x 24
GARAGE
10'
9'
EXISTING
HOUSE
10'
8'
621 NATCHEZ TRACE



GABLE END DETAIL

(TRUSS ROOF) AT 6' - 0" O.C.



ALTERNATE FOUNDATION SECTION

NOT TO SCALE

NO.	REVISION				APP	DATE	DWG NO.	REFERENCE
	REVISION OVERALL DESIGN	BS	BS	BS				
	ISSUED FOR CONSTRUCTION	BS	BS	BS				
	ISSUED FOR REVIEW	BS	BS	BS				

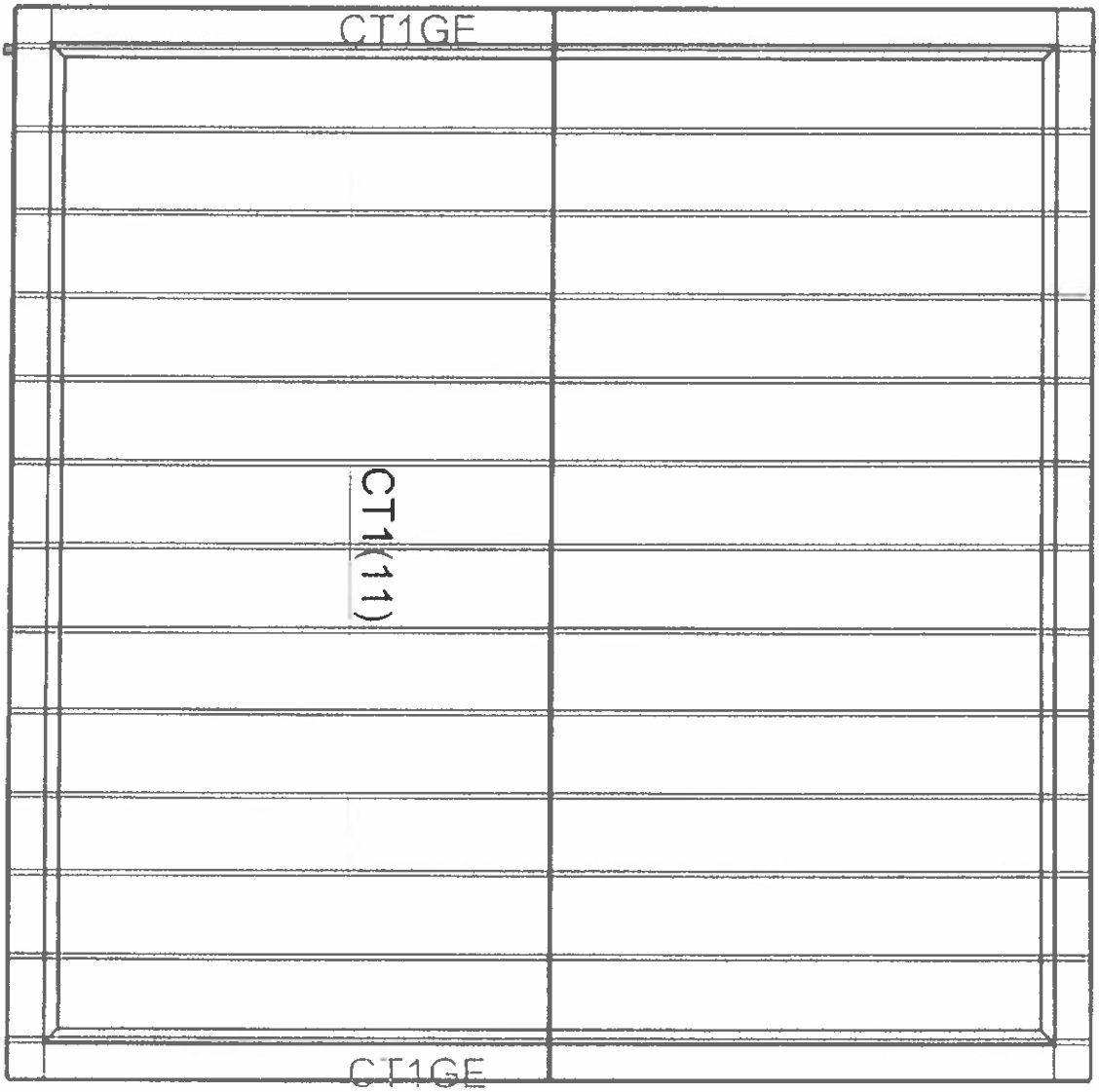
SECTIONS

		DATE
SCALE: AS NOTE		
DESIGN BY:	B. STOHR	JAN 31
DRAW BY:	B. STOHR	JAN 31
CHECKED BY:		
APPROVED BY:		

24'X24 2 CAR GARAGE WITH LOFT

TILTTOWER.COM

24-00-00



24-00-00

24-00-00

24-00-00

TRUSS BUILDERS INC.

10401 Chapel Hill Rd
Morrisville, NC 27560
Ph. 919-467-9988
Fax. 919-481-3255

DO200830
JAMES MORSE
621 NATCHEZ TRACE
FUQUAY-VARINA, NC

ENGINEERING BY
TRENCO
A MiTek Affiliate

Trenco
818 Soundside Rd
Edenton, NC 27932

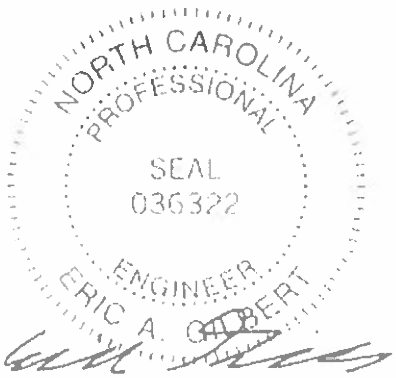
Re: DO200830
JAMES MORSE

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

Pages or sheets covered by this seal: E14799040 thru E14799041

My license renewal date for the state of North Carolina is December 31, 2020.

North Carolina COA: C-0844



August 28,2020

Gilbert, Eric

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	JAMES MORSE
J4Q200520	C11	Common	11	1	E14799040
					Job Reference (optional)

Truss Builders, Inc., Morrisville, NC

8.240 s Mar 9 2020 MiTek Industries, Inc. Fri Aug 28 13:27:26 2020 Page 1
ID:IaOPncSpbYhUHOgLHoNXJkyM_H-6JrLl2I51BJo7Nl-ahJ5qHbNgWK_iAVxPoCZIcyl8

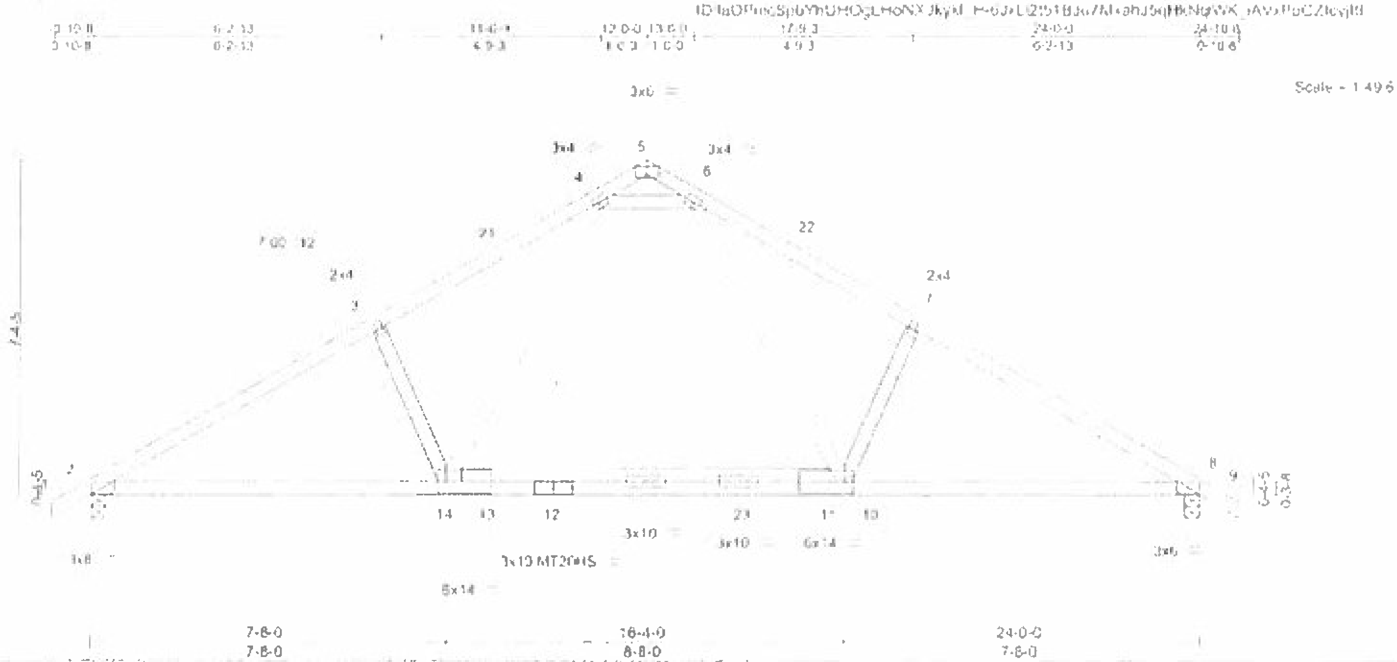


Plate Offsets (X,Y)-- [2:0-3-3,0-1-8], [5:0-3-0,Edge], [8:0-3-3,0-1-8], [10:0-2-4,0-3-0], [14:0-2-4,0-3-0]

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	0.50	Vert(LL)	-0.15	10-14	>999	240	MT20	244/190
Snow (Pf)	15.0	Lumber DOL	1.15	BC	0.72	Vert(CT)	-0.30	10-14	>972	180	MT20HS	187/143
TCDL	10.0	Rep Stress Incr	NO	WB	0.32	Horz(CT)	0.04	8	n/a	n/a		
BCLL	0.0 *	Code IBC2015/TPI2014		Matrix-MR								
BCDL	10.0										Weight: 127 lb	FT = 6%

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

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-9-1 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (size) 2=0-4-0, 8=0-4-0
Max Horz 2=-145(LC 10)
Max Uplift 2=-49(LC 12), 8=-49(LC 13)
Max Grav 2=1195(LC 2), 8=1195(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-1906/78, 3-4=-1776/126, 6-7=-1774/125, 7-8=-1904/77
BOT CHORD 2-14=-81/1650, 10-14=0/1143, 8-10=0/1576
WEBS 7-10=-342/156, 3-14=-342/156, 4-6=-1173/155, 4-14=-70/838, 6-10=-70/836

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=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33
3) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.15); Pf=15.0 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; Ct=1.10
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.0 psf on overhangs non-concurrent with other live loads.
6) All plates are MT20 plates unless otherwise indicated.
7) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 1-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 8.
10) In the LOAD CASE(S) section, loads applied to the face of the truss are noted as front (F) or back (B).

LOAD CASE(S) Standard
1) Dead + Snow (balanced): Lumber Increase=1.15, Plate Increase=1.15
Uniform Loads (plf)
Vert: 1-5=-50, 5-9=-50, 13-15=-20, 11-13=-60(F=-40), 11-18=-20

August 28,2020

TRENCO
818 Soundside Road
Edenton, NC 27932

Job	Truss	Truss Type	Qty	Ply	JAMES MORSE
DO200830	CT1GE	Common Supported Gable	2	1	E14799047
					Job Reference (optional)

Truss Builders, Inc., Morrisville, NC

8.240 s Mar 9 2020 MiTek Industries, Inc. Fri Aug 28 13:27:28 2020 Page 1

ID:IaGPrrcSoiYbOHOgHbNXJkykI_H-2357kuMZoZsMg5zp47M9SFXKAwA76F1fHNVjlq

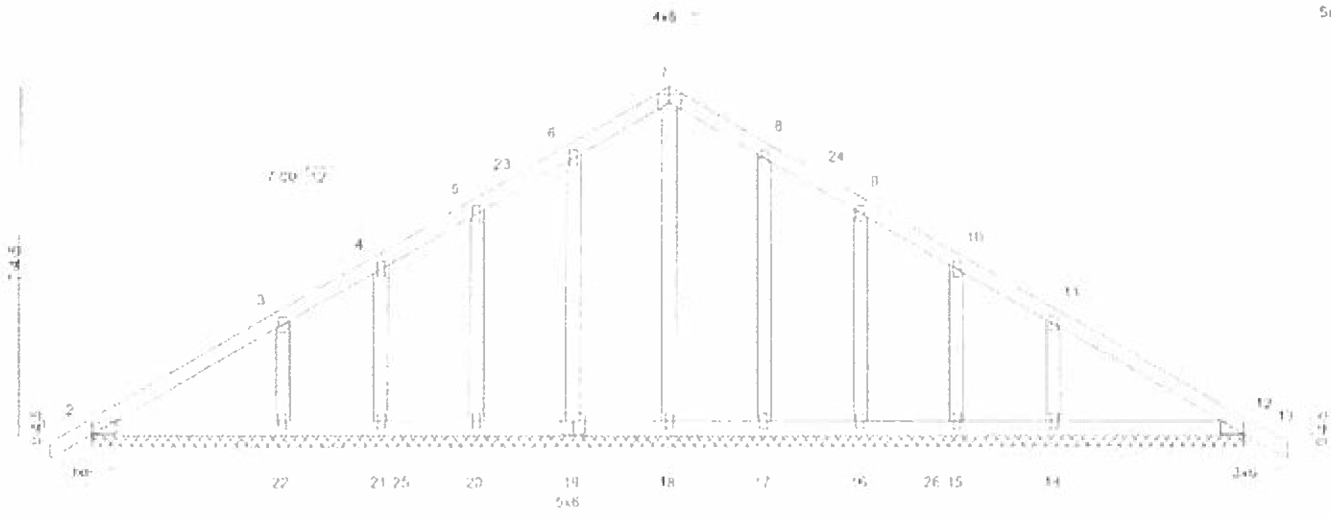


Plate Offsets (X,Y)-- [2:0-3-3,0-1-8], [12:0-3-3,0-1-8], [19:0-3-0,0-3-0]

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	0.16	Vert(LL)	0.00	13	n/r	120	MT20	244/190
Snow (Pf)	15.0	Lumber DOL	1.15	BC	0.11	Vert(CT)	0.01	13	n/r	120		
TCDL	10.0	Rep Stress Incr	YES	WB	0.12	Horz(CT)	0.00	12	n/a	n/a		
BCLL	0.0 *	Code IBC2015/TPI2014		Matrix-R								
BCDL	10.0										Weight: 137 lb	FT = 6%

LUMBER-

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

BRACING-

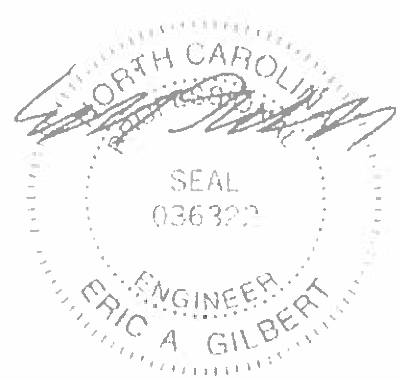
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. All bearings 24-0-0.
(lb) - Max Horz 2=-145(LC 10)
Max Uplift All uplift 100 lb or less at joint(s) 2, 19, 20, 21, 22, 17, 16, 15, 14
Max Grav All reactions 250 lb or less at joint(s) 2, 18, 19, 20, 21, 17, 16, 15, 12 except 22=317(LC 26), 14=317(LC 27)

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=115mph (3-second gust) Vasd=91mph; TCDL=6.0psf; BCDL=6.0psf; h=25ft; Cat. II; Exp B; Enclosed; MWFRS (envelope) gable end zone; cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) TCLL: ASCE 7-10; Pr=20.0 psf (roof live load: Lumber DOL=1.15 Plate DOL=1.15); Pf=15.0 psf (flat roof snow: Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; Ct=1.10
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for greater of min roof live load of 12.0 psf or 2.00 times flat roof load of 15.0 psf on overhangs non-concurrent with other live loads.
7) All plates are 2x4 MT20 unless otherwise indicated.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
11) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 1-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
12) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 2, 19, 20, 21, 22, 17, 16, 15, 14.



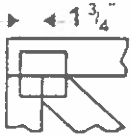
August 28,2020

TRENCO

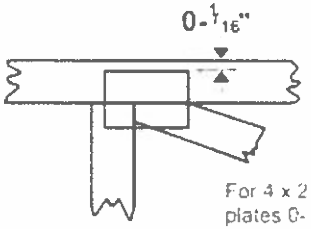
818 Soundside Road
Edenton, NC 27932

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

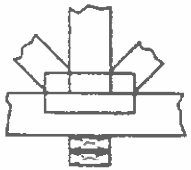
4 x 4

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

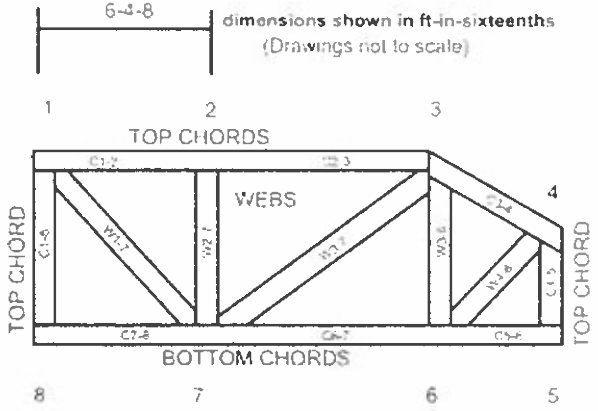


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

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.

MiTek

TRENCO

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative T, I or L 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 adequately 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.