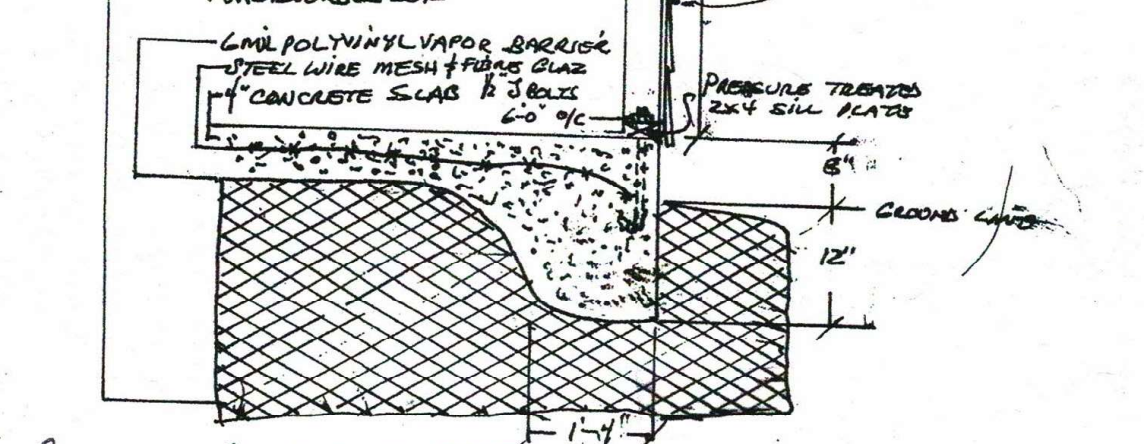


- PRE-ENGINEERED  
2X4 ROOF TRUSS SYSTEM  
24" O.C.**
- GABLE VENTILATION TO BE 6/12 G' BASE LOUVRES @ EACH END
  - SOFFIT VENTILATION TO BE PERFORATED 12" HARDIPLANK FULL LENGTH OF STRUCTURE
  - TRUSSES TO HAVE RAT-RUNNERS & L BRACES
  - HEADERS OVER WINDOWS AND SMALL DOOR TO BE DOUBLE 2X10'S
  - HEADERS OVER GARAGE DOORS TO BE DOUBLE 12" LVL BEAMS
  - SINGLE JACK STUDS ON WINDOWS & PASSAGE DOOR
  - DOUBLE JACK STUDS ON 9x7 GARAGE DOOR TRIM ON 18x7

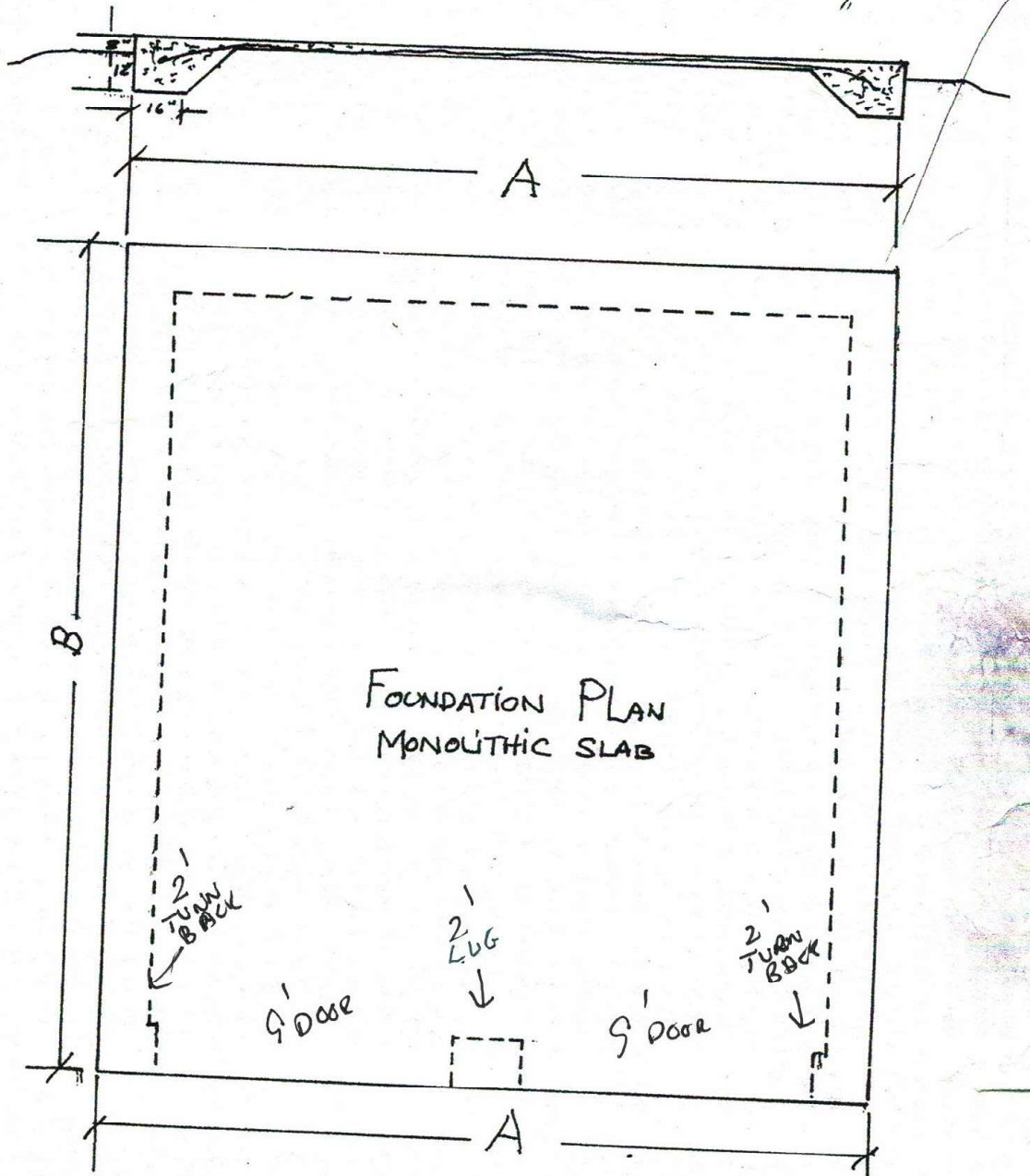


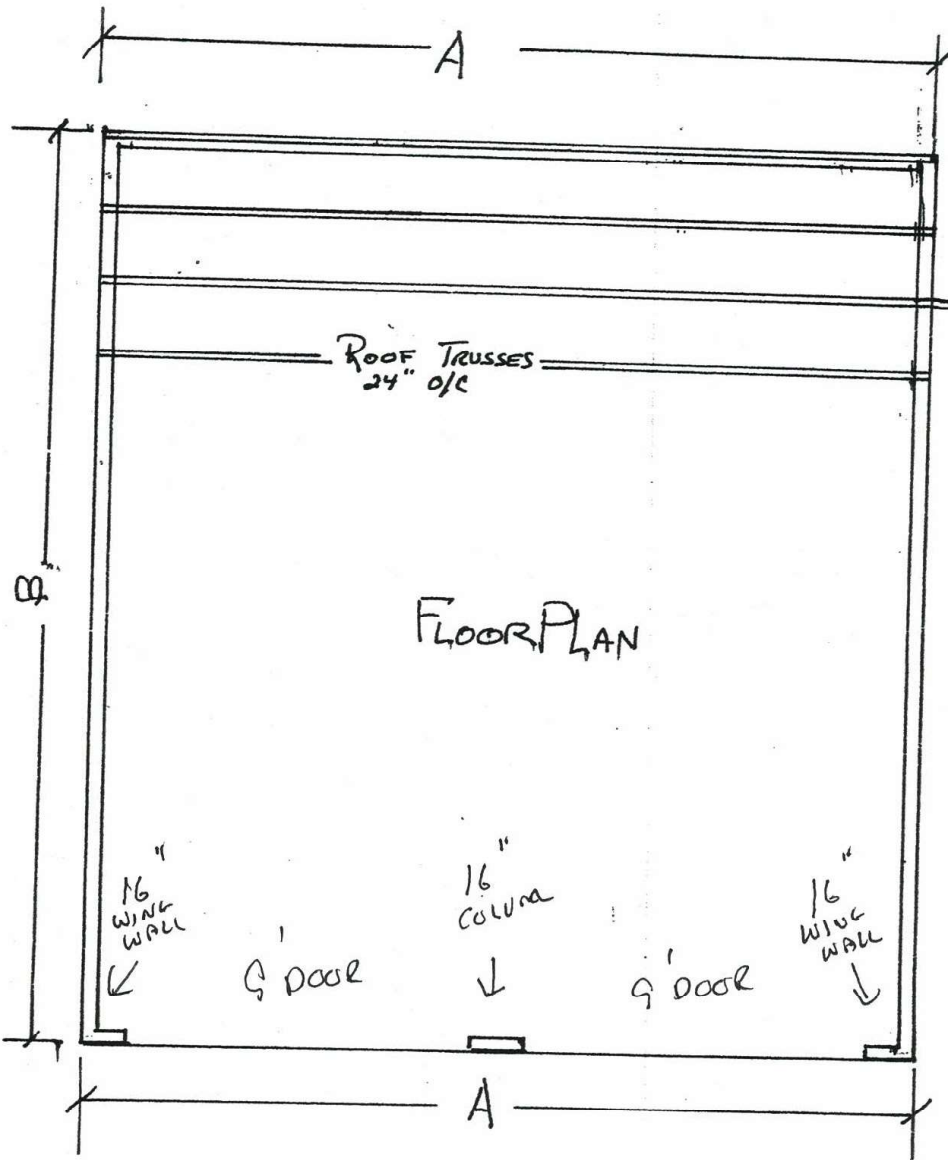
• CONSTRUCTION CONFORMS TO N.C.S. BLDG. CODE DATED ON OR AFTER 03/01/19.

Provide positive and negative wall and roof cladding design values. wall cladding is designed for a 24.1 lb. per sq ft or greater positive or negative pressure for houses with mean roof house of 30 feet or less. Roof values, both positive and negative, shall be designed as follows:  
 45.4 lbs. per sq. ft. for roof pitches of 0/12 to <2.25/12,  
 34.8 lbs. per sq. ft. for roof pitches of 2.25/12 to <7/12 and  
 21 lbs. per sq. ft. for roof pitches of 7/12 to 12/12.  
 Values stated are for roofs with a mean height of 30 feet or less. Roofs with mean roof heights greater than 30 feet must show specific information for cladding.

SCALE: 1/4" = 1'		APPROVED BY:	DRAWN BY: [Signature]
DATE: 2.03.03			REVISED:
1 STORY GARAGE			
			DRAWING NUMBER

GABLE DIMENSION	A	22'	24'	26'	28'	30'			
EAVE DIMENSION	B	22'	24'	26'	28'	30'	32'	34'	
WALL HGHT.	D	8'	9'	10'	12'				
VENTILATION CALCULATION : $\div 300 \rightarrow$									





Job TRUSS BUILDER	TRUSS CT220C	TRUSS TYPE GABLE	City 2	Qty 1	Job Reference (optional) 7.040 s Sep 22 2015 MITK Associates, Inc. West Job 27 18-11-20 2010 Page 1 ID:770cLRDwJuaGGRy3EaDy6TL-2OXkaDc7Jb5VEFD2C_ogpHIBK8y8y5KwzrBU9	ES262718
<p>0-10-5 11-0-0 22-0-0 11-0-0 5-10-5</p> <p>Scale = 1:41.3</p>						

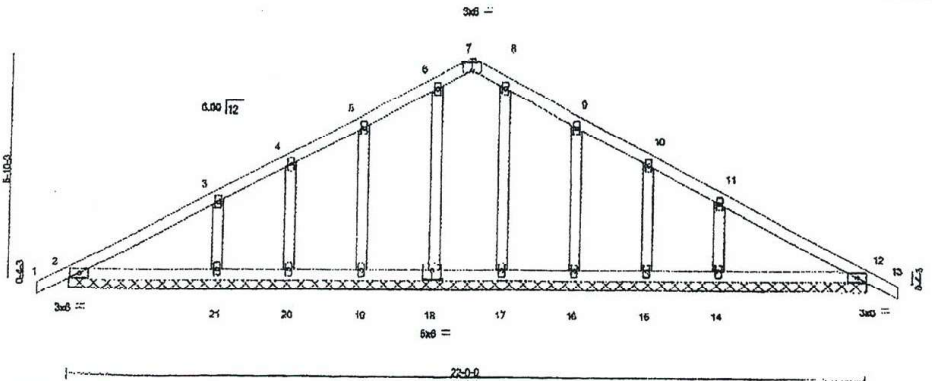


Plate Offsets (X,Y) = 17'-0.0, 0.0, 16'-0.0, 0.0, 0.0, 0.0

LOADING (psf)	SPACING-	CSI	DEFL.	PLATES	GRP
TCLL (roof) 20.0	2'-0-0	TC 0.18	in (loc) 0.00	MT20	244/180
Snow (P) 15.0	Plate Grip DOL 1.15	BC 0.12	Vert(L) 0.01		
TCDL 10.0	Lumber DOL 1.15	WB 0.06	Vert(TL) 0.01		
BCDL 0.0	Rcp Stress Incr YES	(None)	Horz(TL) 0.00		
BCDL 10.0	Code IBC2008/TP12007				Weight: 112 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 Right ceiling directly applied or 10'-0-0 oc bracing.

**REACTIONS:** (lb/line) 2=171/22=0-0, 12=172/22-0-0, 18=126/22-0-0, 19=166/22-0-0, 20=79/22-0-0, 21=280/22-0-0, 17=126/22-0-0, 16=157/22-0-0, 15=79/22-0-0, 14=281/22-0-0  
 Max Horz 2=66(LC 10)  
 Max Uplift 2=31(LC 10), 12=14(LC 11), 19=26(LC 10), 20=13(LC 10), 21=31(LC 10), 16=29(LC 11), 15=12(LC 11), 14=31(LC 11)  
 Max Grav 2=199(LC 2), 12=190(LC 2), 18=198(LC 5), 19=186(LC 18), 20=91(LC 2), 21=320(LC 16), 17=200(LC 5), 16=188(LC 18), 15=81(LC 2), 14=320(LC 17)

**FORCES:** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD  
 1-2=0/26, 2-3=74/50, 3-4=56/45, 4-5=36/51, 5-6=13/83, 6-7=37/75, 7-8=37/74, 8-9=44/72, 9-10=38/39, 10-11=57/20, 11-12=67/48, 12-13=0/28  
 BOT CHORD  
 2-21=0/80, 20-21=0/80, 19-20=0/80, 18-19=0/80, 17-18=0/80, 16-17=0/80, 15-16=0/80, 14-15=0/80, 12-14=0/80  
 WEBS  
 6-18=122/2, 5-18=133/52, 4-20=77/30, 3-21=223/71, 8-17=122/0, 9-18=133/63, 10-16=77/80, 11-14=223/70

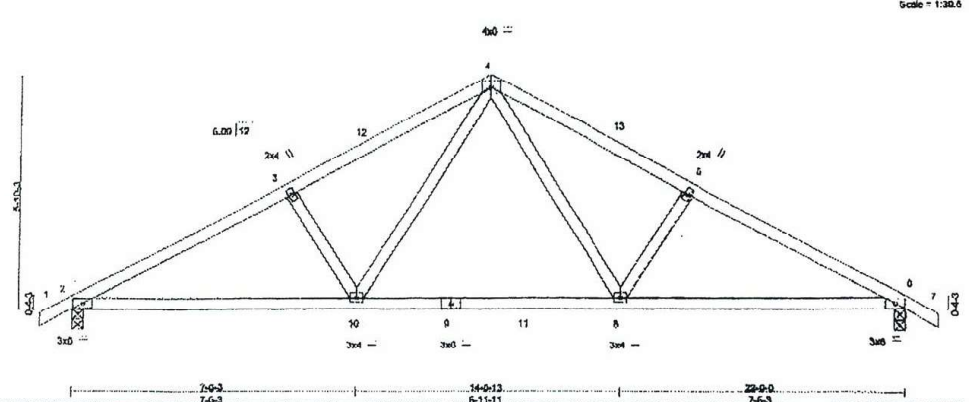
- NOTES-**
- Unbalanced roof live loads have been considered for this design.
  - Wind: ASCE 7-05; 100mph; TCCL=6.0psf; BCDL=8.0psf; h=26ft; Cat. II; Exp B; enclosed; MWFRS (low-rise); cantilever left and right exposed; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33
  - Truss 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 ANS/TP1 1.
  - TCLL: ASCE 7-05; P=20.0 psf (roof live load); Lumber DOL=1.15 Plate DOL=1.15; P=16.0 psf (flat roof snow; Lumber DOL=1.15 Plate DOL=1.15); Category II; Exp B; Fully Exp.; C=1.1
  - Unbalanced snow loads have been considered for this design.
  - 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.
  - This truss has been designed for basic load combinations, which include cases with reductions for multiple concurrent live loads.
  - 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 10.0 psf bottom chord live load nonconcurrent with any other live loads.
  - 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.
  - Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 3 lb uplift at joint 2, 14 lb uplift at joint 12, 26 lb uplift at joint 10, 15 lb uplift at joint 20, 31 lb uplift at joint 21, 28 lb uplift at joint 18, 12 lb uplift at joint 16 and 31 lb uplift at joint 14.



**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITK REFERENCE PAGE #170 rev. 10/06/05 BEFORE USE.**  
 Design notes for use only with full-stud connection. This design is based only upon parameters shown, and is for an individual building component, not a full system. Before use, the building designer must verify the applicability of design parameters and properly incorporate the design into the overall building design. Building codes may require 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 installation, storage, delivery, erection and bracing of truss systems, see: ANSI/TPI Quality Criteria, 953-89 and IBC Building Component Safety Information available from Truss Rtns Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.

**TRENCO**  
 518 Scalesville Road  
 Scalesville, NC 27587

Job	Truss	Truss Type	Qty	Qty	1	EB262716
016CAR	CT22	COMMON	16			



LOADING (psf)	SPACING	CSL	DEFL.	PLATES	GRIP
TCLL (roof) 20.0	2'-0-0	TC 0.39	Vert(LL) -0.08 8-10 >990 240	MT20	244/190
Snow (PI) 15.0	Plate Grip DOL 1.15	BC 0.69	Vert(TL) -0.24 6-8 >899 180		
TCCL 10.0	Lumber DOL 1.15	WB 0.21	Horz(TL) 0.05 0 n/a n/a		
BCLL 0.0 *	Rep Stress Incr YES	(Matrix)			
BCCL 10.0	Code IBC2009/TPI2007				Weight: 101 lb FT = 6%

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

**BRACING-**  
 TOP CHORD Structural wood sheathing directly applied or 4-2-16 on purlins.  
 DOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

**REACTIONS.** (lb/ft²) 7=8110-3-8, 8=8110-3-8  
 Max Horz 2=66(L.C. 10)  
 Max UpRLL 2=26(L.C. 10), 6=26(L.C. 11)  
 Max Grav 2=930(L.C. 2), 6=930(L.C. 2)

**FORCES.** (lb) - Maximum Compression/Maximum Tension  
 TOP CHORD 1-2=0/30, 2-3=1607/7, 3-12=1328/6, 4-12=1262/26, 4-13=1252/26, 5-13=1328/10, 5-6=1607/7, 6-7=0/30  
 BOT CHORD 2-10=3/1278, 9-10=0/864, 9-11=0/864, 8-11=0/864, 6-9=0/1278  
 WEBS 3-10=3/12105, 4-10=2/498, 4-8=2/498, 5-8=3/12105

- NOTES-**
- 1) Unbalanced roof live loads have been considered for this design.
  - 2) Wind: ASCE 7-05; 100mph; TCCL=6.0psf; BCCL=6.0psf; h=25ft; Cal. II; Exp B; enclosed; MWFRS (low-rise); cantilever left and right exposed; and vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33
  - 3) TCLL: ASCE 7-05; P=20.0 psf (roof live load); Lumber DOL=1.15 Plate DOL=1.15; P=15.0 psf (flat roof snow); Lumber DOL=1.15 Plate DOL=1.15; Category II; Exp B; Fully Exp.; C=1.1
  - 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) This truss has been designed for basic load combinations, which include cases with reductions for multiple concurrent live loads.
  - 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 BCCL = 10.0psf.
  - 9) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 25 lb uplift at joint 2 and 25 lb uplift at joint 6.



**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED REFERANCE PAGE MR-7493 rev. 10/2005 BEFORE USE.**  
 Design valid for use only with metal connections. 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 shown required for stability and to prevent collapse with possible personal injury and property damage. For general guidelines regarding the fabrication, storage, delivery, erection and bracing of trusses and truss systems, see AISI/TPI Quality Criteria 558-59 and AISI Building Component Safety Information available from Truss Institute, 210 N. Lee Street, Suite 312, Alexandria, VA 22314.

**TRENCO**  
 818 Beardsdale Road  
 Edenboro, NC 27622



# Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

**PASSED**

## Garage Header 4

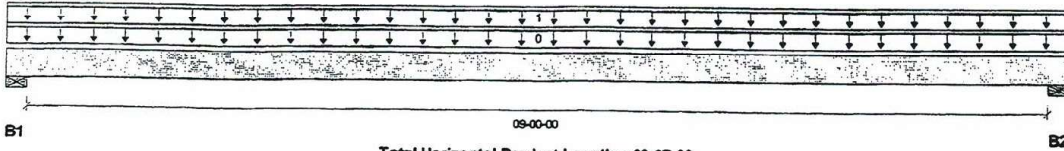
BC CALC® Member Report  
Build 6782

Dry | 1 span | No cant.

February 6, 2019 16:22:12

Job name: Carolina Custom Homes  
Address:  
City, State, Zip:  
Builder: Builders 1st Source  
Code reports: ESR-1040

File name:  
Description:  
Specifier:  
Designer: Andrew Thompson  
Company: Boise Cascade BMD



Total Horizontal Product Length = 09-07-00

### Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 3-1/2"	2108 / 0	1447 / 0	1437 / 0		
B2, 3-1/2"	2108 / 0	1447 / 0	1438 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-07-00	Top		12				00-00-00
1		Unf. Lin. (lb/ft)	L	00-00-00	09-07-00	Top	440	290	306			n/a

### Controls Summary

Value	% Allowable	Duration	Case	Location
Pos. Moment 8920 ft-lbs	36.5 %	115%	3	04-09-08
End Shear 3009 lbs	33.1 %	115%	3	01-03-06
Total Load Deflection L/800 (0.137")	30.0 %	n/a	3	04-09-08
Live Load Deflection L/999 (0.089")	n/a	n/a	6	04-09-08
Max Defl. 0.137"	18.2 %	n/a	3	04-09-08
Span / Depth 9.2				

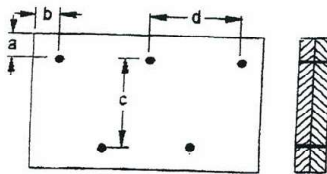
### Bearing Supports

Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1 Wall/Plate 3-1/2" x 3-1/2"	4107 lbs	n/a	44.7 %	Unspecified
B2 Wall/Plate 3-1/2" x 3-1/2"	4107 lbs	n/a	44.7 %	Unspecified

### Notes

- Design meets Code minimum (L/240) Total load deflection criteria.
- Design meets User specified (L/480) Live load deflection criteria.
- Design meets arbitrary (0.75") Maximum Total load deflection criteria.
- Calculations assume member is fully braced.
- BC CALC® analysis is based on IBC 2009.
- Design based on Dry Service Condition.
- Member has no side loads.

### Connection Diagram: Full Length of Member





# Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

**PASSED**

BC CALC® Member Report  
Build 6782

**Garage Header 4**  
Dry | 1 span | No cant.

February 6, 2019 16:22:12

Job name: Carolina Custom Homes  
Address:  
City, State, Zip:  
Builder: Builders 1st Source  
Code reports: ESR-1040

File name:  
Description:  
Specifier:  
Designer: Andrew Thompson  
Company: Boise Cascade BMD

## Connection Diagram: Full Length of Member

a minimum = 2"      c = 7-7/8"  
b minimum = 3"      d = 24"

Member has no side loads.  
Connectors are: 3-1/4 in. Pneumatic Gun Nails

### Disclosure

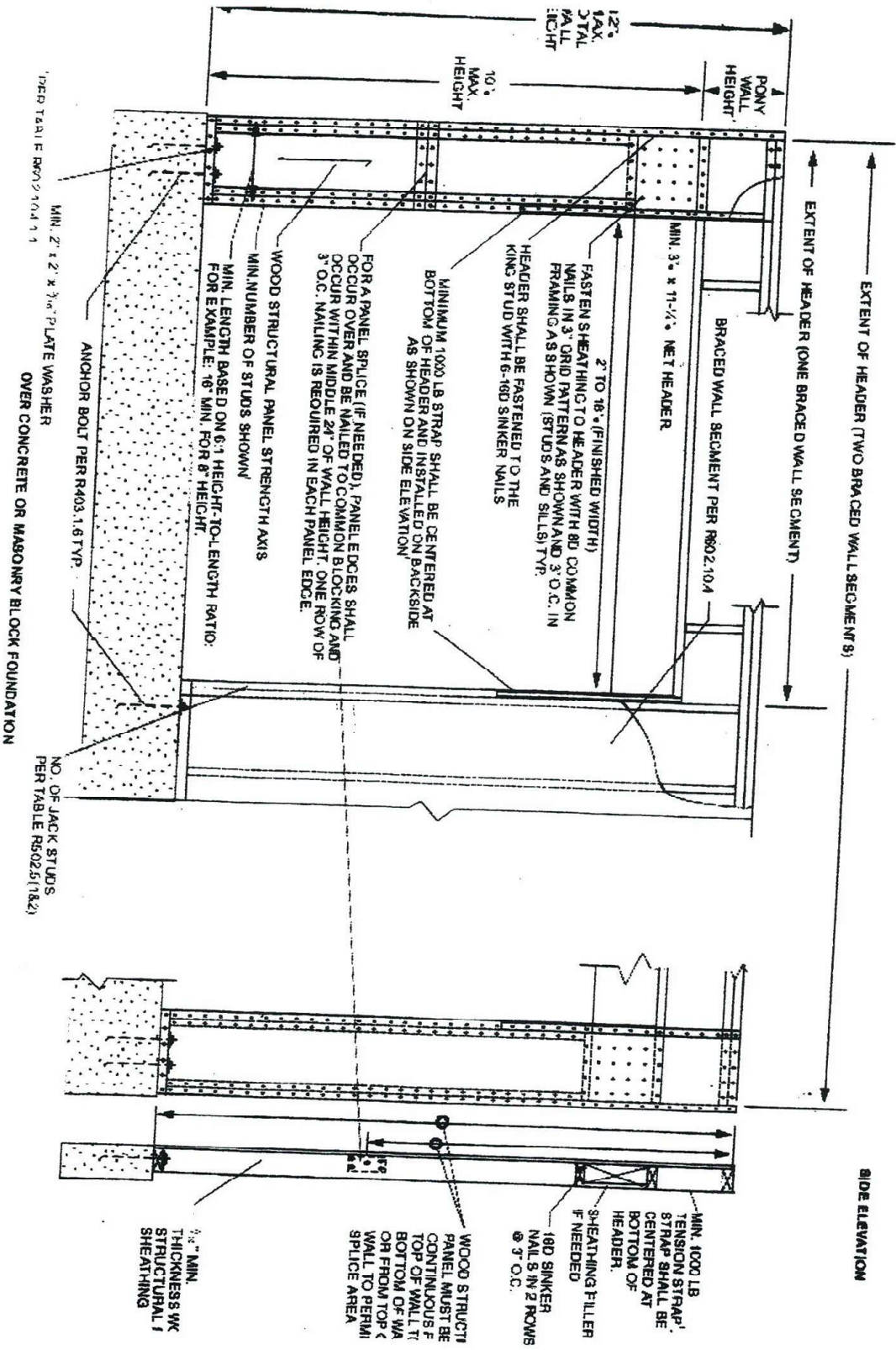
Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.



BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

OUTSIDE ELEVATION

PAGE FROM 2018 NCCRC BOOK



EXTENT OF HEADER (ONE BRACED WALL SEGMENT)

SIDE ELEVATION

12" MAX. TOTAL WALL HEIGHT

MIN. 3/4" x 11-1/2" NET HEADER

BRACED WALL SEGMENT PER R402.10.4

2" TO 18" (FINISHED WIDTH)

FASTEN SHEATHING TO HEADER WITH 6D COMMON NAILS IN 3" GRID PATTERN AS SHOWN AND 3" O.C. IN FRAMING AS SHOWN (STUDS AND SILL) TYP.

HEADER SHALL BE FASTENED TO THE KING STUD WITH 6-18D SINKER NAILS

MINIMUM 1000 LB STRAP SHALL BE CENTERED AT BOTTOM OF HEADER AND INSTALLED ON BACKSIDE AS SHOWN ON SIDE ELEVATION

FOR A PANEL SPLICE (IF NEEDED), PANEL EDGES SHALL OCCUR OVER AND BE NAILED TO COMMON BLOCKING AND 3" O.C. NAILING IS REQUIRED IN EACH PANEL EDGE.

WOOD STRUCTURAL PANEL STRENGTH AXIS

MIN. LENGTH BASED ON 6:1 HEIGHT-TO-LENGTH RATIO. FOR EXAMPLE: 18" MIN. FOR 8' HEIGHT.

ANCHOR BOLT PER R403.1.6 TYP.

MIN. 2" x 2" x 3/8" PLATE WASHER

OVER CONCRETE OR MASONRY BLOCK FOUNDATION

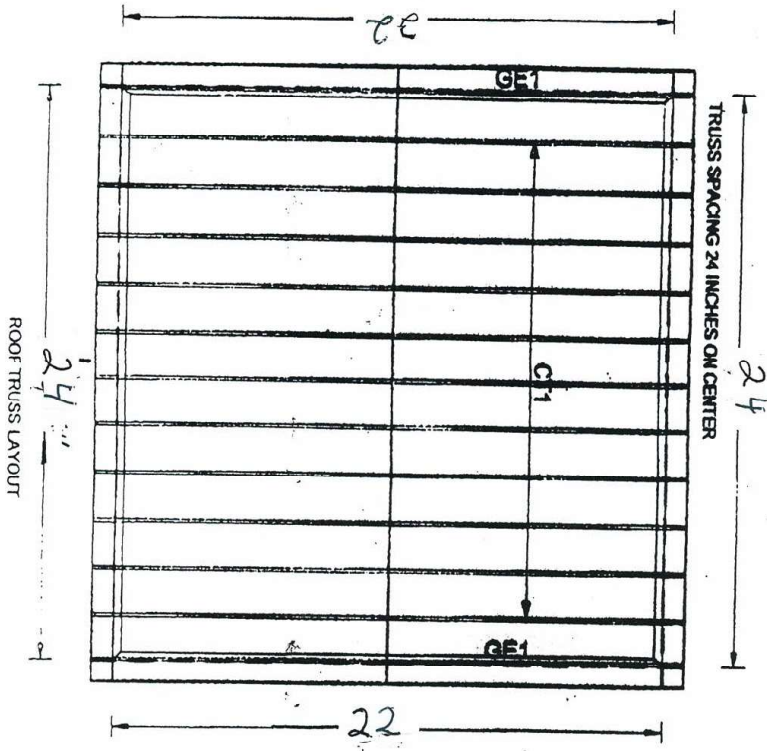
NO. OF JACK STUDS PER TABLE R402.5.1(8.2)

MIN. 1000 LB TENSION STRAP STRAP SHALL BE CENTERED AT BOTTOM OF HEADER.  
SHEATHING FILLER IF NEEDED  
18D SINKER NAIL 5 IN 2 ROWS @ 3" O.C.

WOOD STRUCTURAL PANEL MUST BE CONTINUOUS FROM TOP OF WALL TO BOTTOM OF WALL OR FROM TOP OF WALL TO PERMISSIBLE SPLICE AREA

1/2" MIN. THICKNESS WOOD STRUCTURAL SHEATHING





TRUSS BUILDERS INC.  
 10401 CHAPEL HILL RD.  
 MORRISVILLE N.C. 27560

JOB# 22X24 GARAGE  
 CAROLINA CUSTOM BUILDERS

# Harnett GIS



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