

- GABLE VENTILATION TO BE 12/12 G' BASE LOUVER @ EACH END OF STRUCTURE
- SOFT VENTILATION TO BE 8" x 16" VENTS EACH SIDE AS APPROPRIATE FOR LENGTH OF STRUCTURE

• RAFTER TIES TO FLOOR TRUSS VAILED TO RAFTER & KNEE WALL PLATE

3/4" TYP PLYWOOD SUBFLOOR

• HEADERS OVER WINDOWS AND SMALL DOOR TO BE DOUBLE 2X10'S

• HEADERS OVER GARAGE DOORS TO BE DOUBLE 2X12'S OR LVL'S AS APPROPRIATE

• CONSTRUCTION CONFORMS TO N.C.S. BLDG. CODE

DATES ON OR AFTER 01-01-18

• SINGE JACK STUDS FOR WINDOWS AND PASSAGE DOOR

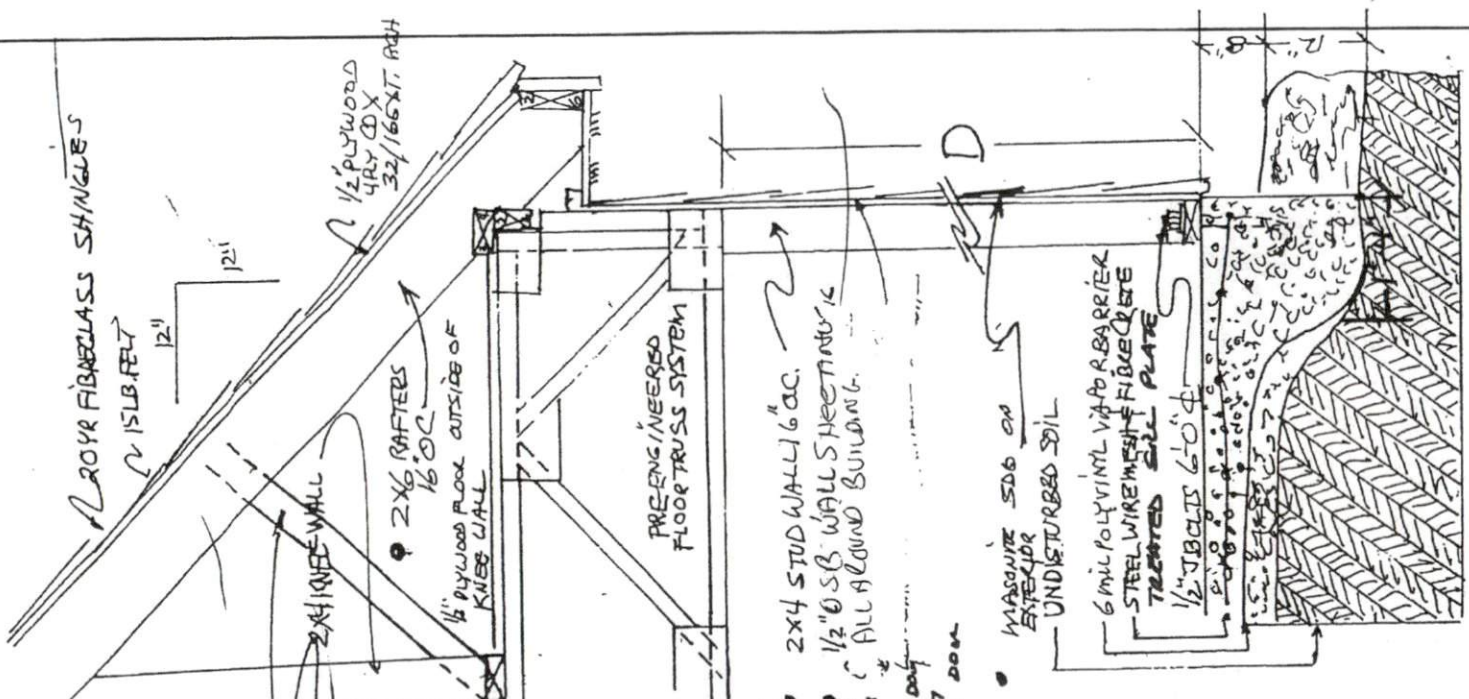
• DOUBLE JACK STUDS FOR GARAGE DOOR

• SETTING JACK STUDS BY 18" X 7" GARAGE DOOR

Provide positive and negative wall and roof cladding design values. For walls cladding is designed for a 24.1 lb. per sq ft or greater positive or negative pressure for houses with mean roof pitch of 30 feet or less. Roof values, both positive and negative, shall be designed as follows:

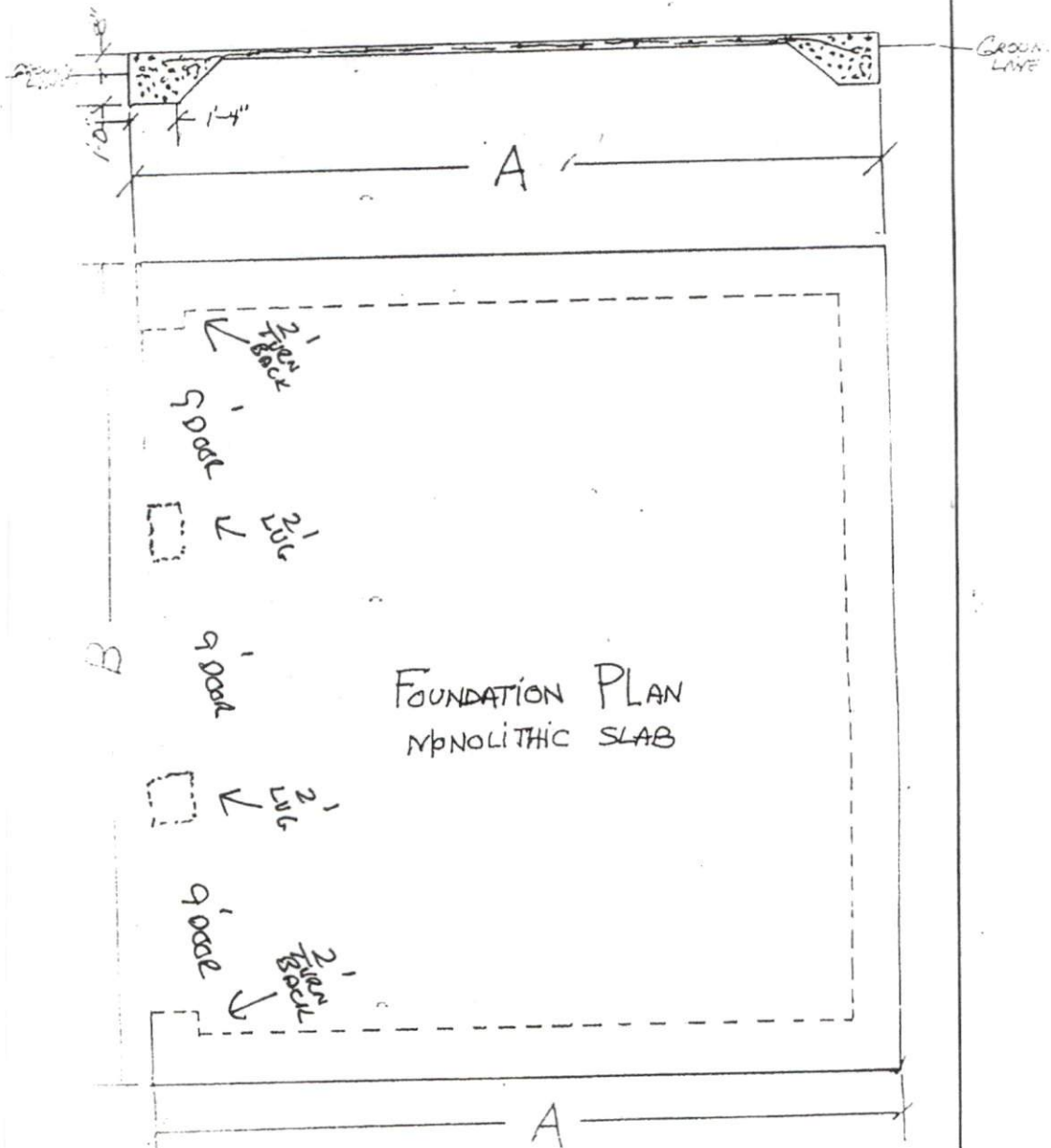
15.4 lbs. per sq. ft. for roof pitches of 0/12 to < 2.25/12,
 34.8 lbs. per sq. ft. for roof pitches of 2.25/12 to < 7/12 and
 21 lbs. per sq. ft. for roof pitches of 7/12 to 12/12.

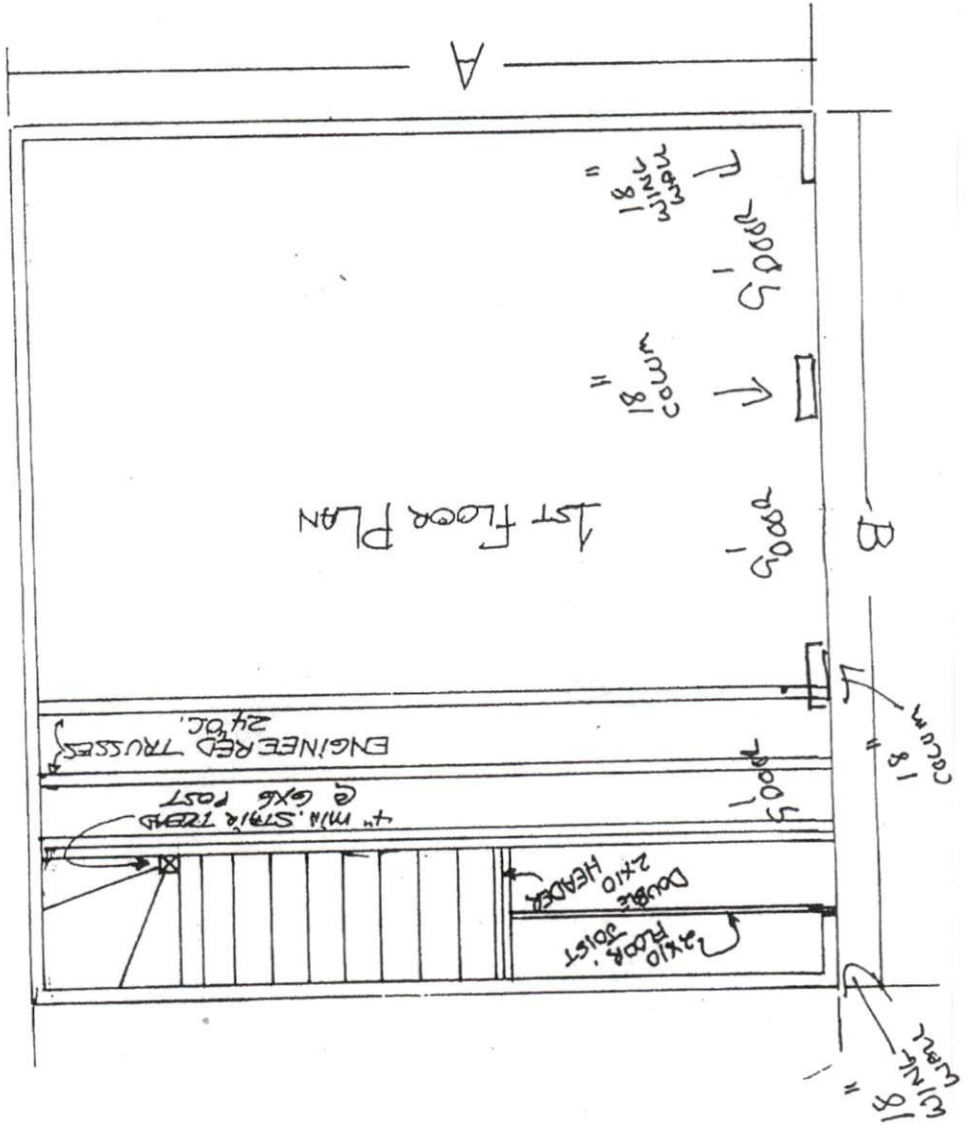
Values stated are for roofs with a mean height of 30 feet or less. Roofs with mean roof heights greater than 30 feet must show specific information for cladding.



| | |
|---------------------------------------|---------------|
| SCALE: 1/4" = 1' | APPROVED BY: |
| DATE: | DRAWN BY: DCH |
| REVISID | |
| 1 1/2 STORY GARAGE WITH DOORS ON SIDE | |
| DRAWING NUMBER | |

| | | | | | | | | | |
|---------------------------------------------------------------------|---|-----|-----|-----|-----|-----|-----|-----|-----|
| GABLE DIMENSION | A | 22' | 24' | | | | | | |
| EAVE DIMENSION | B | 22' | 24' | 26' | 28' | 30' | 33' | 34' | 36' |
| LOFT WIDTH | C | 14' | 16' | 18' | | | | | |
| 1ST FLOOR WALL HGHT. | D | 8' | 9' | 10' | | | | | |
| VENTILATION CALCULATION: $\frac{\text{Roof}}{\div 300} \rightarrow$ | | | | | | | | | |





1st Floor Plan

ENGINEERED TRUSSES
24" OC.
4" MIN. STRIP TRUSS
@ 6x6 POST

DOUBLE
2x10 HEADERS

2x10 FLOOR JOIST

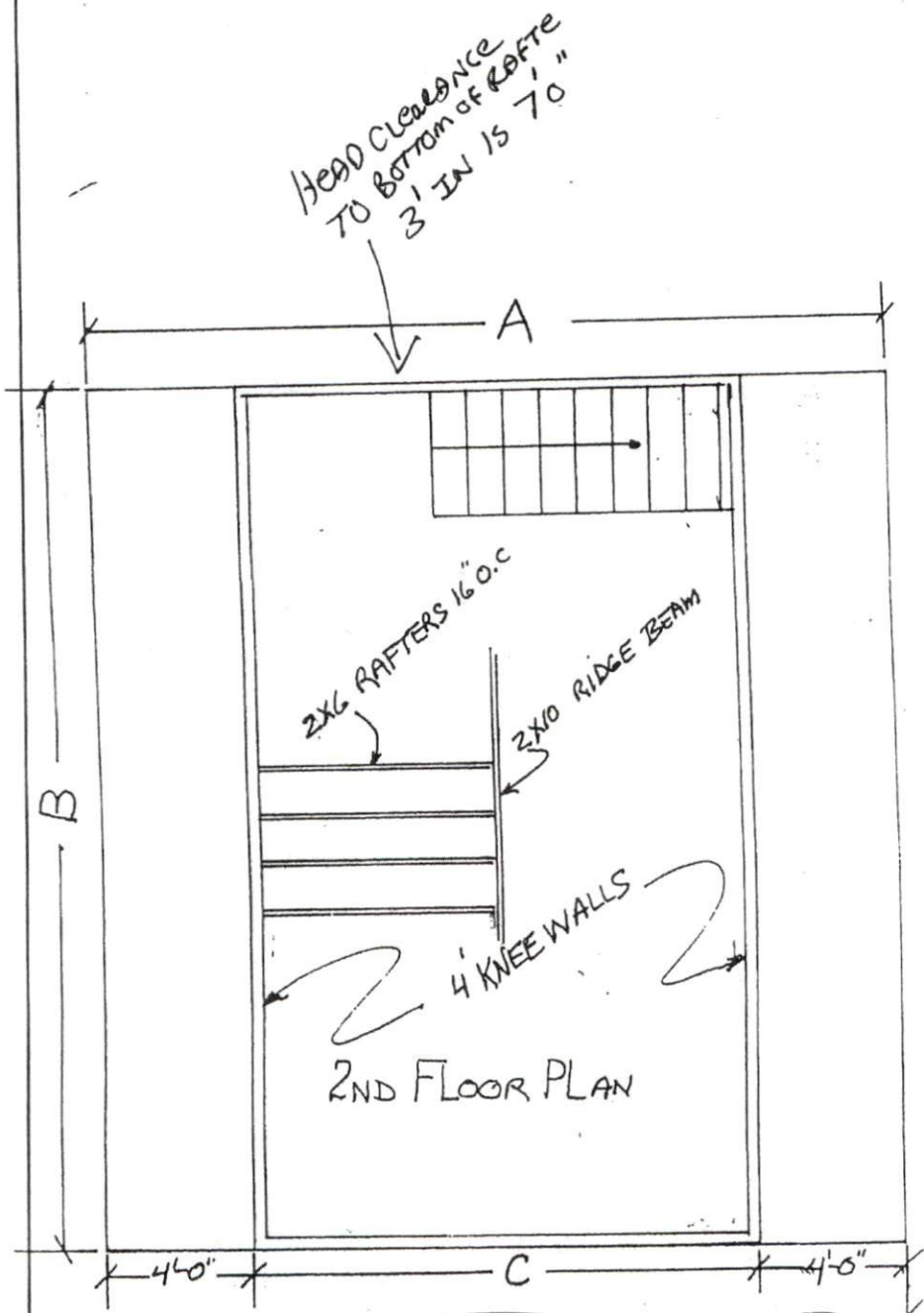
18" MIN. WALL
18" MIN. COLUMN

B

A

18" MIN. COLUMN

18" MIN. WALL



UPSTAIRS IS UNFINISHED
ATTIC STORAGE.



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

PASSED

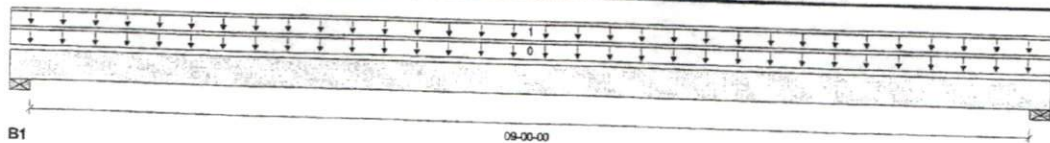
BC CALC® Member Report
Build 6782

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



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 | Dead | Snow | Wind | Roof Live | Tributary |
|-----|-------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|-----------|
| 0 | Self-Weight | Unf. Lin. (lb/ft) | L | 00-00-00 | 09-07-00 | Top | 100% | 90% | 115% | 160% | 125% | |
| 1 | | Unf. Lin. (lb/ft) | L | 00-00-00 | 09-07-00 | Top | 440 | 290 | 300 | | | 00-00-00 |

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 | | | | |

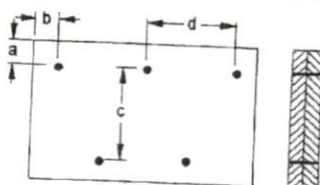
Bearing Supports

| | 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

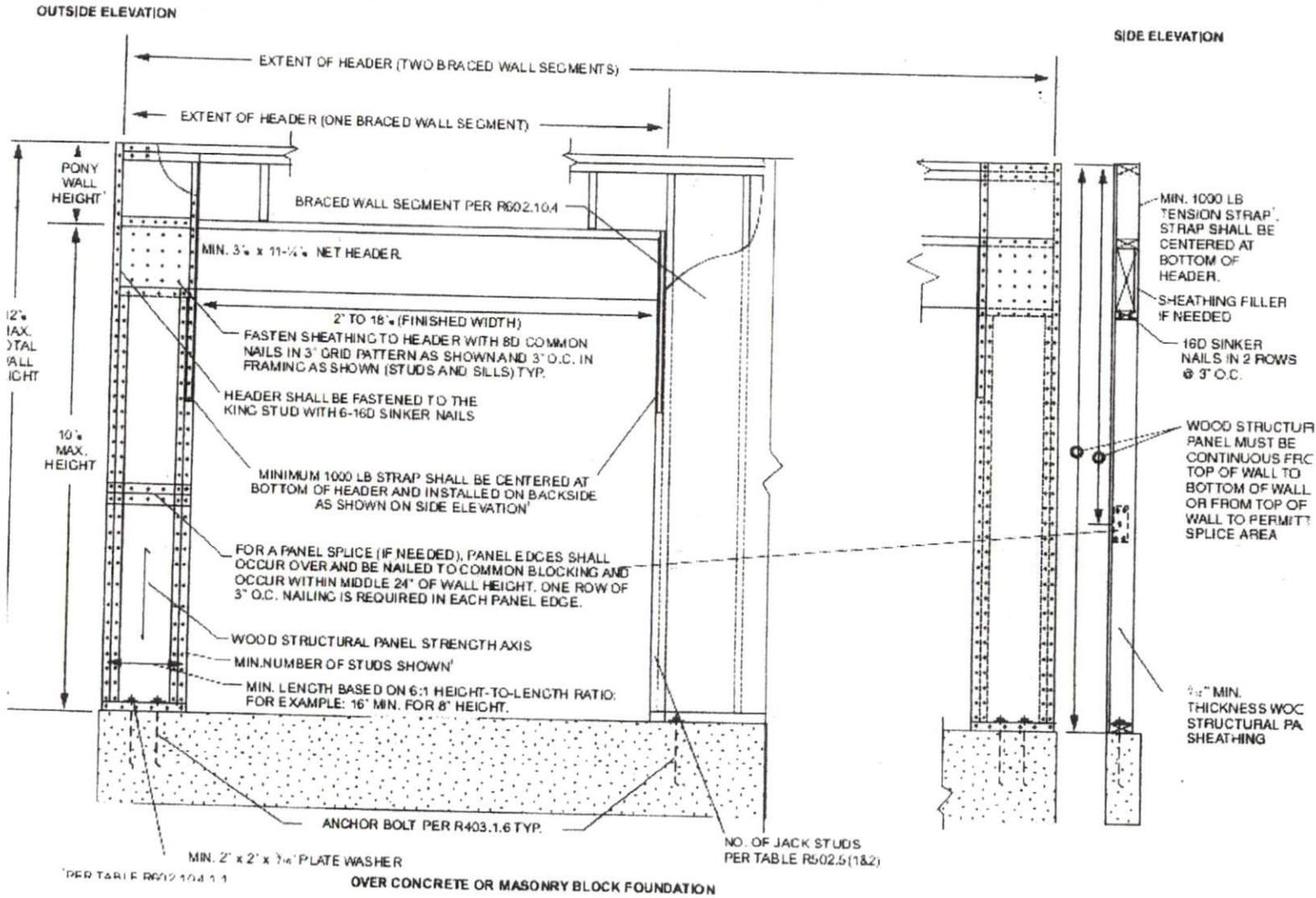
Disclosure

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.

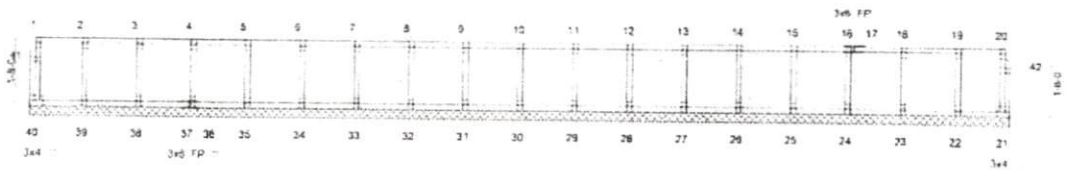


BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

PAGE FROM 2018 NCRC BOOK



| | | | | | |
|---------------------------------------------------------------------------|---------|----------------|--------------------------|-----|--------------|
| JOB | Truss | Truss Type | Qty | Ply | E.I. 1000029 |
| J1604 | F2311KW | GABLE | 2 | 1 | |
| Truss Builders Inc | | Morrisville NC | JOB Reference (optional) | | |
| 8 270 S Nov 16 2018 MTEK Industries, Inc. Mon Feb 11 07 23 09 2019 Page 1 | | | | | |
| ID 1766LRDwUJLkRta3EzDy6TIL RUX67aX5oQV4R4OK1hUqE8Naxd6P10AWWzJyzmHNO | | | | | |
| 0-1/8 | | | | | |
| 0-1/8 | | | | | |
| Scale = 1/32 | | | | | |



| | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1-4-0 | 2-8-0 | 4-0-0 | 5-4-0 | 6-8-0 | 8-0-0 | 9-4-0 | 10-8-0 | 12-0-0 | 13-4-0 | 14-8-0 | 16-0-0 | 17-4-0 | 18-8-0 | 20-0-0 | 21-4-0 | 22-8-0 | 23-11-0 |
| 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-4-0 | 1-3-0 |

| | | | | | |
|---------------|----------------------|----------|--------------------------|---------------|--------------|
| LOADING (psf) | SPACING | CSJ | DEFL | PLATES | GRIP |
| ICLL 40.0 | Plate Grip DOL 1.00 | TC 0.08 | in (loc) Vdef L/d | MT20 | 244/190 |
| TCDL 10.0 | Lumber DOL 1.00 | BC 0.01 | Vdef(LL) n/a - n/a 999 | | |
| BCLL 0.0 | Rep Stress Incr YES | WB 0.03 | Vdef(CT) n/a - n/a 999 | | |
| BCDL 5.0 | Code IBC2015/TPI2014 | Matrix-R | Horz(CT) 0.00 21 n/a n/a | | |
| | | | | Weight 114 lb | FT = 0%F 8%E |

LUMBER-
TOP CHORD 2x4 SP No 2(flat)
BOT CHORD 2x4 SP No 2(flat)
WEBS 2x4 SP No 3(flat)
OTHERS 2x4 SP No 3(flat)

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 23-11-0.
(lb) - Max Grav All reactions 250 lb or less at joint(s) 40, 21, 39, 38, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22

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

- NOTES.**
- 1) All plates are 1.5x3 MT20 unless otherwise indicated.
 - 2) Gable requires continuous bottom chord bearing.
 - 3) Truss to be fully sheathed from one face or securely braced against lateral movement (i.e. diagonal web)
 - 4) Gable studs spaced at 1-4-0 oc
 - 5) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.



February 11, 2019

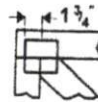
WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MTEK REFERENCE PAGE M9-7473 rev. 10/3/2015 BEFORE USE.
Design valid to use only with MTEK connectors. This design is based only upon parameters shown, and is for an individual building component, not a truss system. Before use, the 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, transport, delivery, erection and tracing of trusses and truss systems, see ANSUYTH Quality Criteria, D58-89 and DCS Building Component Safety Information available from Truss Plate Institute, 218 N. Lee Street, Suite 312, Alexandria, VA 22314.



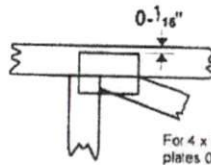
818 Southside Road
Edenton, NC 27932

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- $\frac{1}{16}$ " 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

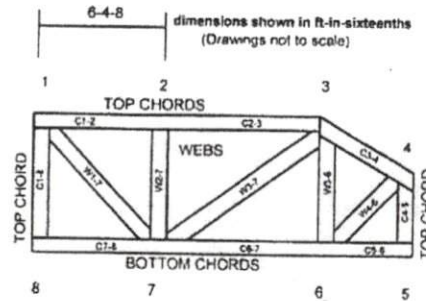


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

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, ESR-1988
ER-3907, ESR-2352, 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: MIT-7473 rev. 10/03/2015

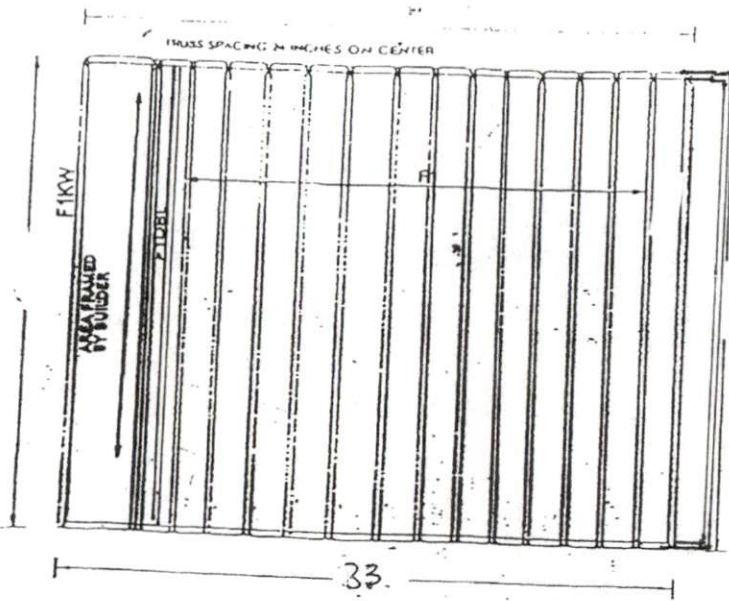


General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

- Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI.
- Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative Top I bracing should be considered.
- Never exceed the design loading shown and never stack materials on inadequately braced trusses.
- Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
- Cut members to bear tightly against each other.
- 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.
- Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
- Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
- Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
- Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
- Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
- Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
- Top chords must be sheathed or purlins provided at spacing indicated on design.
- Bottom chords require lateral bracing at 10 ft spacing, or less, if no ceiling is installed, unless otherwise noted.
- Connections not shown are the responsibility of others.
- Do not cut or alter truss member or plate without prior approval of an engineer.
- Install and load vertically unless indicated otherwise.
- Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
- Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
- Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.

TRUSS BUILDERS INC.



TRUSS BUILDERS INC.
10401 CHAPEL HILL RD.
MORRISVILLE N.C. 27560
JOB# 33x24 GARAGE
CAROLINA CUSTOM BUILDERS

FLOOR TRUSS LAYOUT

TRUSS SPACING 24" ON CENTER.
17 F211 TRUSS FLOOR
2 EA F2311 KW KNEEWALL TRUSS.

2001002