Columbia County Remodel or Addition Permit Application

For Office Use Only Application # 59458 Date Received _____ By _____ Permit # 46799

Zoning Official _____ Date _____ Flood Zone _____ Land Use _____ Zoning _____

FEMA Map # _____ Elevation _____ MFE _____ River _____ Plans Examiner _____ Date _____

Comments _____

□ NOC □ Deed or PA □ Dev Permit # _____ □ In Floodway □ Letter of Auth. from Contractor

□ F W Comp. letter □ Owner Builder Disclosure Statement □ Land Owner Affidavit □ Ellisville Water □ App Fee Paid

□ Site Plan □ Env. Health Approval _____ □ Sub VF Form

*This page not required if Online submission.

Fax _____

Applicant (Person authorized to submit forms) James Mack Lipscomb Phone (386) 623-9141

Address 331 SE Woods Ter, Lake City, FL 32025

Owners Name Main Blvd Rental, LLC Phone (386) 961-1086

911 Address 894 SW MAIN BLVD, Lake City, FL 32025

Contractors Name James Mack Lipscomb Phone (386) 623-9141

Address 1096 SW Main Blvd, Lake City, FL 32025

Applicants Email Lipscomb04@gmail.com ***Include to get updates on this job.

Fee Simple Owner Name & Address _____

Bonding Co. Name & Address _____

Architect/Engineer Name & Address Carol Chadwick, P.E., 1208 SW Fairfax Gln, Lake City, FL 32025

Mortgage Lenders Name & Address _____

Circle the correct power company ☑ FL Power & Light ☐ Clay Elec. ☐ Suwannee Valley Elec. ☐ Duke Energy

Property ID Number 05-4S-17-14244-001 Estimated Construction Cost _____

Subdivision Name _____ Lot ____ Block ____ Unit ____ Phase ____

Special Driving Instructions - Only - _____

Construction of _____ X Commercial OR _____ Residential

Typeof Structure(House; Mobile Home; Garage; Exxon) _____

Use/Occupancy of the building now _____ Is this changing _____

IfYes, Explain, Proposed Use/Occupancy _____

Is the building Fire Sprinkled? No If Yes, blueprints included _____ Or Explain _____

EntranceChanges (Ingress/Egress) No If Yes, Explain _____

Zoning Applications applied for (Site & Development Plan, Special Exception, etc.) _____

Columbia County Building Permit Application – "Owner and Contractor Signature Page"

CODES: 2020 Florida Building Code 7th Edition and the 2017 National Electrical Code.

Application is hereby made to obtain a permit to do work and installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work be performed to meet the standards of all laws regulating construction in this jurisdiction.

TIME LIMITATIONS OF APPLICATION : An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing, unless pursued in good faith or a permit has been issued.

TIME LIMITATIONS OF PERMITS: Every permit issued shall become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time work is commenced. A valid permit receives an approved inspection every 180 days. Work shall be considered not suspended, abandoned or invalid when the permit has received an approved inspection within 180 days of the previous approved inspection.

FLORIDA'S CONSTRUCTION LIEN LAW: Protect Yourself and Your Investment: According to Florida Law, those who work on your property or provide materials, and are not paid-in-full, have a right to enforce their claim for payment against your property. This claim is known as a construction lien. If your contractor fails to pay subcontractors or material suppliers or neglects to make other legally required payments, the people who are owed money may look to your property for payment, even if you have paid your contractor in full. This means if a lien is filed against your property, it could be sold against your will to pay for labor, materials or other services which your contractor may have failed to pay.

NOTICE OF RESPONSIBILITY TO CONTRACTOR AND AGENT: ***YOU ARE HEREBY NOTIFIED*** as the recipient of a building permit from Columbia County, Florida, you will be held responsible to the County for any damage to sidewalks and/or road curbs and gutters, concrete features and structures, together with damage to drainage facilities, removal of sod, major changes to lot grades that result in ponding of water, or other damage to roadway and other public infrastructure facilities caused by you or your contractor, subcontractors, agents or representatives in the construction and/or improvement of the building and lot for which this permit is issued. No certificate of occupancy will be issued until all corrective work to these public infrastructures and facilities has been corrected.

WARNING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOU PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

OWNERS CERTIFICATION: I CERTIFY THAT ALL THE FOREGOING INFORMATION IS ACCURATE AND THAT ALL WORK WILL BE DONE IN COMPLIANCE WITH ALL APPLICABLE LAWS REGULATING CONSTRUCTION AND ZONING.

NOTICE TO OWNER: There are some properties that may have deed restrictions recorded upon them. These restrictions may limit or prohibit the work applied for in your building permit. You must verify if your property is encumbered by any restrictions or face possible litigation and or fines.

Timothy Russell
Main Blvd Rental, LLC
Printed Owners Name

Owners Signature

****Property owners must sign here before any permit will be issued.**

CONTRACTORS AFFIDAVIT: By my signature, I understand and agree that I have informed and provided this written statement to the owner of all the above written responsibilities in Columbia County for obtaining this Building Permit including all application and permit time limitations.

James M. Lipscomb
Contractor's Signature

Contractor's License Number CBC1253543
Columbia County Competency Card Number 496

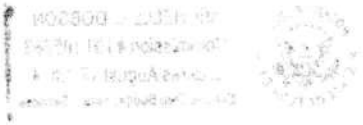
Affirmed and subscribed before me the Contractor by means of ✓ physical presence or ___ online notarization, this 14 **day of** March **20**23**, who was personally known** X **or produced ID** ___

State of Florida Notary Signature (For the Contractor)

SEAL:

MICHELLE L. DOBSON
Commission # HH 105783
Expires August 17, 2024
Bonded Thru Budget Notary Services

(Electronic Signatures Are Accepted.)



Detail by Entity Name

Florida Limited Liability Company
MAIN BLVD RENTAL, LLC

Filing Information

Document Number	L12000141489
FEI/EIN Number	46-1641897
Date Filed	11/07/2012
Effective Date	01/01/2013
State	FL
Status	ACTIVE

Principal Address

1096 SW MAIN BLVD
LAKE CITY, FL 32025

Changed: 09/29/2022

Mailing Address

1096 SW MAIN BLVD
LAKE CITY, FL 32025

Changed: 09/29/2022

Registered Agent Name & Address

RUSSELL, TIMOTHY L
1096 SW MAIN BLVD
LAKE CITY, FL 32025

Address Changed: 01/21/2023

Authorized Person(s) Detail

Name & Address

Title MGRM

RUSSELL, TIMOTHY L
1817 SW PALOMA CT
LAKE CITY, FL 32025

Title MGRM

EAGLE, THOMAS
258 NW BERT AVE
LAKE CITY, FL 32055

Title MGRM

RUSSELL, ELIZABETH M
1817 SW PALOMA CT
LAKE CITY, FL 32025

Annual Reports

Report Year	Filed Date
2021	04/13/2021
2022	04/06/2022
2023	01/21/2023

Document Images

01/21/2023 -- ANNUAL REPORT	View image in PDF format
04/06/2022 -- ANNUAL REPORT	View image in PDF format
04/13/2021 -- ANNUAL REPORT	View image in PDF format
01/16/2020 -- ANNUAL REPORT	View image in PDF format
01/18/2019 -- ANNUAL REPORT	View image in PDF format
01/15/2018 -- ANNUAL REPORT	View image in PDF format
01/12/2017 -- ANNUAL REPORT	View image in PDF format
01/18/2016 -- ANNUAL REPORT	View image in PDF format
01/23/2015 -- ANNUAL REPORT	View image in PDF format
01/09/2014 -- ANNUAL REPORT	View image in PDF format
11/07/2012 -- Florida Limited Liability	View image in PDF format

NOTICE OF COMMENCEMENT

Tax Parcel Identification Number:

05-4S-17-14244-001

Clerk's Office Stamp

Inst: 202312004323 Date: 03/14/2023 Time: 10:11AM
Page 1 of 1 B: 1486 P: 926, James M Swisher Jr, Clerk of Court
Columbia, County, By: VC
Deputy Clerk

THE UNDERSIGNED hereby gives notice that improvements will be made to certain real property, and in accordance with Section 713.13 of the Florida Statutes, the following information is provided in this **NOTICE OF COMMENCEMENT.**

1. Description of property *(legal description):* COMM NW COR OF SEC, RUN E 1299 FT TO W R/W US-41, RUN S 62.16 FT ALONG R/W FOR POB, CONT S 150.34 FT, W 469.42 FT, N 149.74 FT, E 474.26 FT TO POB. 398-
   a) Street *(job)* Address: 894SW Main Blvd, Lake City, FL 32025
2. General description of improvements: Installing trusses
3. Owner Information or Lessee information if the Lessee contracted for the improvements:
   a) Name and address: Main Blvd Rental, LLC
   b) Name and address of fee simple titleholder (if other than owner) 1096 SW Main Blvd, Lake City, FL 32025
   c) Interest in property Owner
4. Contractor Information
   a) Name and address: Lipscomb & Eagle Development, Inc. 1096 SW Main Blvd, Lake City, FL 32025
   b) Telephone No.: (386) 623-9141
5. Surety Information (if applicable, a copy of the payment bond is attached):
   a) Name and address:
   b) Amount of Bond:
   c) Telephone No.:
6. Lender
   a) Name and address:
   b) Phone No.
7. Person within the State of Florida designated by Owner upon whom notices or other documents may be served as provided by Section 713.13(1)(a)7., Florida Statutes:
   a) Name and address: James M Lipscomb 1096 SW Main Blvd, Lake City, FL 32025
   b) Telephone No.: (386) 623-9141
8. In addition to himself or herself, Owner designates the following person to receive a copy of the Lienor's Notice as provided in Section 713.13(l)(b), Florida Statutes:
   a) Name: James M Lipscomb OF Lipscomb & Eagle Development, Inc.
   b) Telephone No.: (386) 623-9141
9. Expiration date of Notice of Commencement **(the expiration date will be 1 year from the date of recording unless a different date is specified)**:

WARNING TO OWNER: ANY PAYMENTS MADE BY THE OWNER AFTER THE EXPIRATION OF THE NOTICE OF COMMENCEMENT ARE CONSIDERED IMPROPER PAYMENTS UNDER CHAPTER 713, PART I, SECTION 713.13, FLORIDA STATUTES, AND CAN RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY; A NOTICE OF COMMENCEMENT MUST BE RECORDED AND POSTED ON THE JOB SITE BEFORE THE FIRST INSPECTION. IF YOU INTEND TO OBTAIN FINANCING, CONSULT YOUR LENDER OR AN ATTORNEY BEFORE COMMENCING WORK OR RECORDING YOUR NOTICE OF COMMENCEMENT.

STATE OF FLORIDA
COUNTY OF COLUMBIA

10. _____
Signature of Owner or Lessee, or Owner's or Lessee's Authorized Office/Director/Partner/Manager

Timothy L Russell, MGR
Printed Name **and** Signatory's Title/Office

The foregoing instrument was acknowledged before me, by means of X physical presence or ____ online notarization, a Florida Notary, this 14 day of March, 2023, by: Timothy L Russell (Name of Person) as MGR (Type of Authority)

for Main Blvd Rental, LLC (name of party on behalf of whom instrument was executed) who is personally known X OR produced identification ____

Type _____

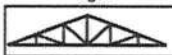
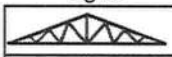
Notary Signature _____ Notary Stamp or Seal:

NOTARY PUBLIC STATE OF FLORIDA

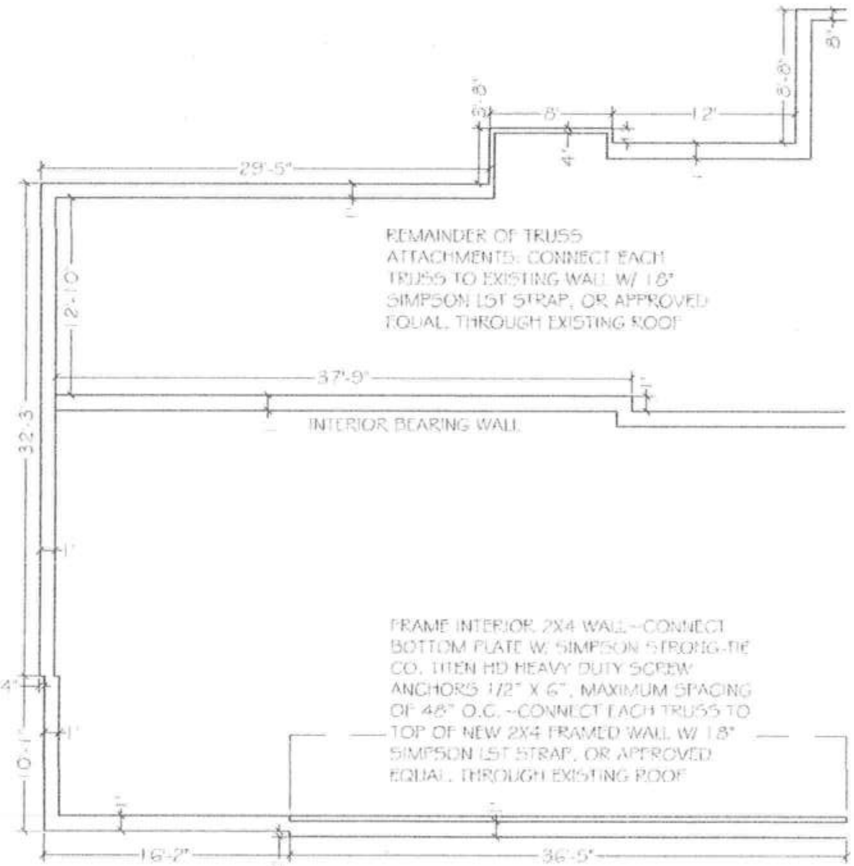
MICHELLE L. DOBSON
Commission # HH 105783
Expires August 17, 2024
Bonded Thru Budget Notary Services

Delivery

Builders FirstSource	**Sold To:** Lipscomb Eagle Construction LLC 872 SW Jaguar Drive Lake City, Fl 386-623-9141	**AppWrt Job No.** 3397173 **OnLine Job No.** **P.T.** **Sales No**	**Ship Date** **Quote** **Account** **PO** CUSTOM
Plant: Jacksonville Truss 6550 Roosevelt Blvd. Jacksonville, FL 904-772-6100	**SubDvsn:** PORTER HSE ROOFOVER, FL **Lot:** N/A **Model/Elev:** CUSTOM **Options** **Shipment** Roof	**Req'rd Engineering**	**Req'rd Layouts**
Sales Rep KIMBER HOLLOWAY **Mfg Sales Rep** Kim Holloway **Sales Area** **Dist Center** BFS Lake City **Estimator** Kim.Holloway **Designer** Holloway, Kim	**Directions**	**Job Contacts** / **Site** / **Office** **Name** Mac Lipscomb / Mac Lipscomb **Phone** n/a / 386-623-9141 **Fax**	

	Truss ID / Span	Quantity	Type	Slope (Depth)	Left	Right	Stub	Heel	Height / Weight/Ply	Total Weight
Jig01										
	T01 45-7-0	15	ROOF	TC: 5				L: 0-6-8 R: 0-6-8	10-0-8 ht	
	T01G 45-7-0	1	ROOF	TC: 5				L: 0-6-8 R: 0-6-8	10-0-8 ht	
	Jig Totals	**16**							**10-0-8 maxht**	
Jig02										
	T02 48-5-0	11	ROOF	TC: 5				L: 0-6-8 R: 0-6-8	10-7-9 ht	
	T04 56-9-0	3	ROOF	TC: 5				L: 0-6-8 R: 0-6-8	12-4-6 ht	
	Jig Totals	**14**							**12-4-6 maxht**	
	Total Trusses:	**30**							**12-4-6 maxht**	

Delivery Person	On Site Receiver
Delivered By: _____	Received By: _____
Date: _____	Date: _____
Remarks:	Remarks:



SCALE: 1/8" = 1'

DESIGN SPECIFICATIONS

- DESIGN CODES:
  2020 FLORIDA BUILDING CODE (FBC) - RESIDENTIAL
- OCCUPANCY: RESIDENTIAL GROUP R-3 (ONE- AND TWO-FAMILY DWELLINGS)
- NUMBER OF STORIES: 1

Digitally signed by Carol Chadwick

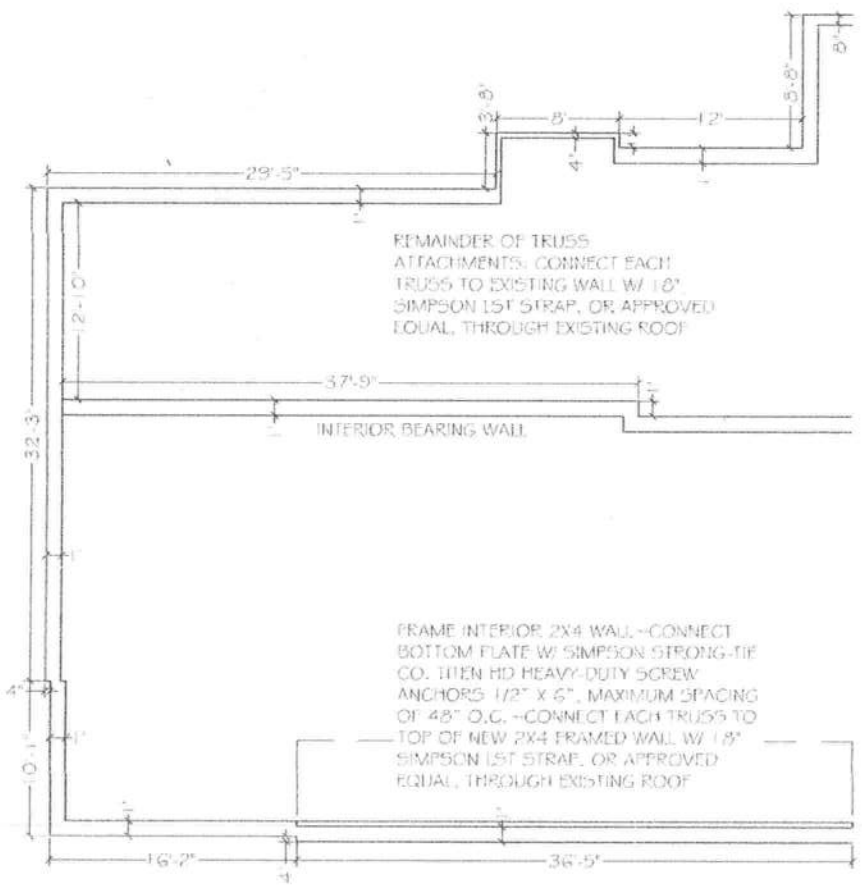
FL22402

MAR. 10, 2023

S-1

TRUSS ATTACHMENT DETAIL
894 SW MAIN BLVD., LAKE CITY, FL

CAROL CHADWICK, P.E.



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CAROLINA ENGINEERING

TRUSS ATTACHMENT DETAIL
894 SW MAIN BLVD., LAKE CITY, FL

R22402
MAR. 10, 2023

TS-1

Columbia County Property Appraiser

Jeff Hampton

2023 Working Values
updated: 3/9/2023

Parcel: << 05-4S-17-14244-001 (42803) >>

Owner & Property Info

Result: 4 of 7

Owner	MAIN BLVD RENTAL LLC 1817 SW PALOMA CT LAKE CITY, FL 32025		
Site	894 SW MAIN BLVD, LAKE CITY		
Description*	COMM NW COR OF SEC, RUN E 1299 FT TO W R/W US-41, RUN S 62.10 FT ALONG R/W FOR POB, CONT S 150.34 FT, W 469.42 FT, N 149.74 FT, E 474.35 FT TO POB. 398-79, 517-413, 768-1579, 865-1056, WD 1247-589.		
Area	1.624 AC	S/T/R	05-4S-17
Use Code**	RESTAURANT/CAFE (2100)	Tax District	1

*The Description above is not to be used as the Legal Description for this parcel in any legal transaction.
**The Use Code is a FL Dept. of Revenue (DOR) code and is not maintained by the Property Appraiser's office. Please contact your city or county Planning & Zoning office for specific zoning information.

Aerial Viewer | Pictometery | Google Maps

Property & Assessment Values

2022 Certified Values		2023 Working Values	
Mkt Land	$202,050	Mkt Land	$202,050
Ag Land	$0	Ag Land	$0
Building	$153,741	Building	$153,741
XFOB	$10,365	XFOB	$10,365
Just	$366,156	Just	$366,156
Class	$0	Class	$0
Appraised	$366,156	Appraised	$366,156
SOH Cap [?]	$0	SOH Cap [?]	$0
Assessed	$366,156	Assessed	$366,156
Exempt	$0	Exempt	$0
Total Taxable	county:$366,156 city:$366,156 other:$0 school:$366,156	Total Taxable	county:$366,156 city:$366,156 other:$0 school:$366,156

Sales History

Sale Date	Sale Price	Book/Page	Deed	V/I	Qualification (Codes)	RCode
12/31/2012	$100	1247/0589	WD	I	U	11
6/4/1998	$50,000	0865/1056	QC	I	U	01
12/14/1992	$190,000	0768/1579	WD	I	Q	
8/1/1983	$1,000	0517/0413	WD	I	U	01
3/1/1978	$35,454	0398/0079	WD	V	Q	01

Building Characteristics

Bldg Sketch	Description*	Year Blt	Base SF	Actual SF	Bldg Value
Sketch	RESTAURANT (5600)	1982	4842	5294	$153,741

*Bldg Desc determinations are used by the Property Appraisers office solely for the purpose of determining a property's Just Value for ad valorem tax purposes and should not be used for any other purpose.

Extra Features & Out Buildings (Codes)

Code	Desc	Year Blt	Value	Units	Dims
0166	CONC,PAVMT	0	$600.00	240.00	8 x 30
0260	PAVEMENT-ASPHALT	0	$9,000.00	1.00	0 x 0
0166	CONC,PAVMT	0	$765.00	510.00	0 x 0

Land Breakdown

Code	Desc	Units	Adjustments	Eff Rate	Land Value
2100	RESTAURANT (MKT)	37,500.000 SF (0.860 AC)	1.0000/1.0000 1.0000/ /	$5 /SF	$168,750
2100	RESTAURANT (MKT)	33,300.000 SF (0.764 AC)	1.0000/1.0000 1.0000/ /	$1 /SF	$33,300

Search Result: 4 of 7

by Grizzly Logic.com

Gmail Michelle Lipscomb <lipscomb04@gmail.com>

894 SW Main Blvd

ccpewyo@gmail.com <ccpewyo@gmail.com>
To: Michelle Lipscomb <lipscomb04@gmail.com>

Thu, Mar 9, 2023 at 10:35 PM

Please submit to the bldg official and let me know if they have any questions or comments.

Thanks,

Carol Chadwick, P.E.

307.680.1772

> **From:** Michelle Lipscomb <lipscomb04@gmail.com>
> **Sent:** Tuesday, November 8, 2022 11:04 AM
> **To:** Carol Chadwick, P.E. <ccpewyo@gmail.com>
> **Subject:** Re: 894 SW Main Blvd
>
> RE: **894 SW Main Blvd.**

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TRUSS ATTACHMENT 03-09-23.pdf
953K

Columbia County Property Appraiser

Jeff Hampton

2023 Working Values
updated: 3/9/2023

Parcel: << 05-4S-17-14244-001 (42803) >>

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Just	$366,156	Just	$366,156
Class	$0	Class	$0
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8/1/1983	$1,000	0517/0413	WD	I	U	01
3/1/1978	$35,454	0398/0079	WD	V	Q	01

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Search Result: 4 of 7

by: GrizzlyLogic.com

Lumber design values are in accordance with ANSI/TPI 1 section 6.3
These truss designs rely on lumber values established by others.

RE: 3397173 - LIPSCOMB EAGLE - ROOF OVER

MiTek USA, Inc.
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Site Information:
Customer Info: LIPSCOMB EAGLE Project Name: Roof Over Model: Custom
Lot/Block: N/A Subdivision: N/A
Address: 894 SW Main Blvd., N/A
City: Columbia Cty State: FL

Name Address and License # of Structural Engineer of Record, If there is one, for the building.
Name: License #:
Address:
City: State:

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):
Design Code: FBC2020/TPI2014 Design Program: MiTek 20/20 8.5
Wind Code: ASCE 7-16 Wind Speed: 130 mph
Roof Load: 37.0 psf Floor Load: N/A psf

This package includes 4 individual, Truss Design Drawings and 0 Additional Drawings.
With my seal affixed to this sheet, I hereby certify that I am the Truss Design Engineer and this index sheet conforms to 61G15-31.003, section 5 of the Florida Board of Professional Engineers Rules.

No.	Seal#	Truss Name	Date
1	T29643813	T01	1/23/23
2	T29643814	T01G	1/23/23
3	T29643815	T02	1/23/23
4	T29643816	T04	1/23/23

This item has been electronically signed and sealed by Magid, Michael, PE using a Digital Signature.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

The truss drawing(s) referenced above have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Builders FirstSource-Lake City, FL.

Truss Design Engineer's Name: Magid, Michael
My license renewal date for the state of Florida is February 28, 2025.

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.

Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

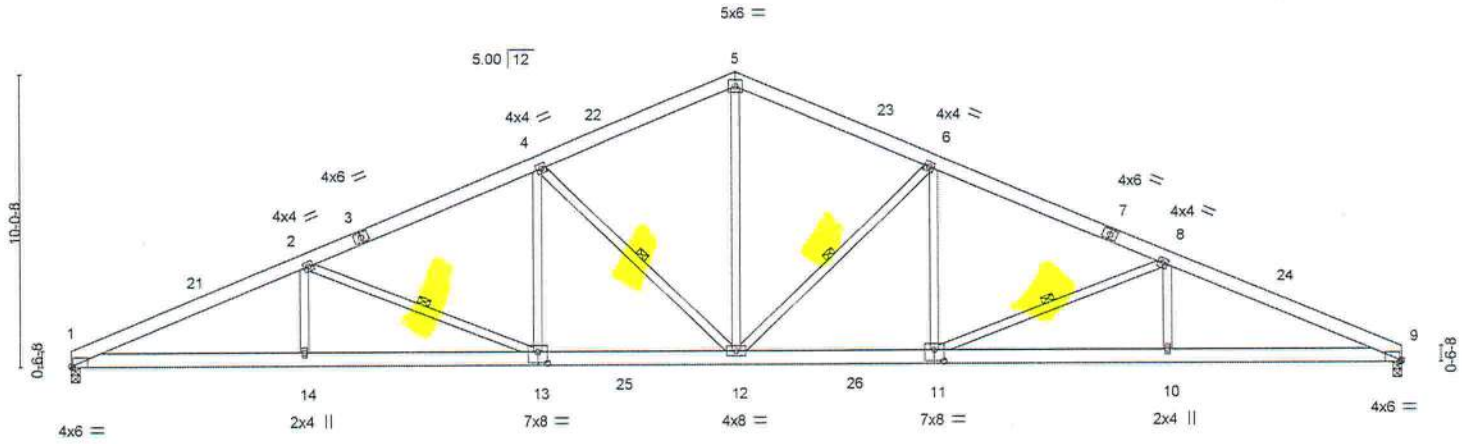
January 23,2023

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643813
3397173	T01	Common	15	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:38 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-pm2O7QSzxNiR5I2lonkxwESKpjjt2QPWEe?seKzsWtx

8-0-0	16-0-0	22-9-8	29-7-0	37-7-0	45-7-0
8-0-0	8-0-0	6-9-8	6-9-8	8-0-0	8-0-0

Scale = 1:75.6



8-0-0	16-0-0	22-9-8	29-7-0	37-7-0	45-7-0
8-0-0	8-0-0	6-9-8	6-9-8	8-0-0	8-0-0

Plate Offsets (X,Y)-- [1:0-0-11,Edge], [9:0-0-11,Edge], [11:0-4-0,0-4-8], [13:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.31	Vert(LL)	-0.25	12-13	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.73	Vert(CT)	-0.43	12-13	>999	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.61	Horz(CT)	0.16	9	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 315 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-4-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 8-4-3 oc bracing.
WEBS 1 Row at midpt 6-12, 8-11, 4-12, 2-13

REACTIONS. (size) 1=0-3-8, 9=0-3-8
Max Horz 1=-141(LC 17)
Max Uplift 1=-357(LC 12), 9=-357(LC 13)
Max Grav 1=1843(LC 2), 9=1843(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-4024/759, 2-4=-3242/630, 4-5=-2500/560, 5-6=-2500/560, 6-8=-3242/630, 8-9=-4024/760
BOT CHORD 1-14=-772/3679, 13-14=-772/3679, 12-13=-513/2931, 11-12=-428/2931, 10-11=-632/3679, 9-10=-632/3679
WEBS 5-12=-273/1604, 6-12=-968/317, 6-11=-63/619, 8-11=-822/283, 8-10=0/318, 4-12=-968/317, 4-13=-63/619, 2-13=-822/282, 2-14=0/318

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 4-6-11, Interior(1) 4-6-11 to 22-9-8, Exterior(2R) 22-9-8 to 27-4-3, Interior(1) 27-4-3 to 45-7-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=357, 9=357.

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Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

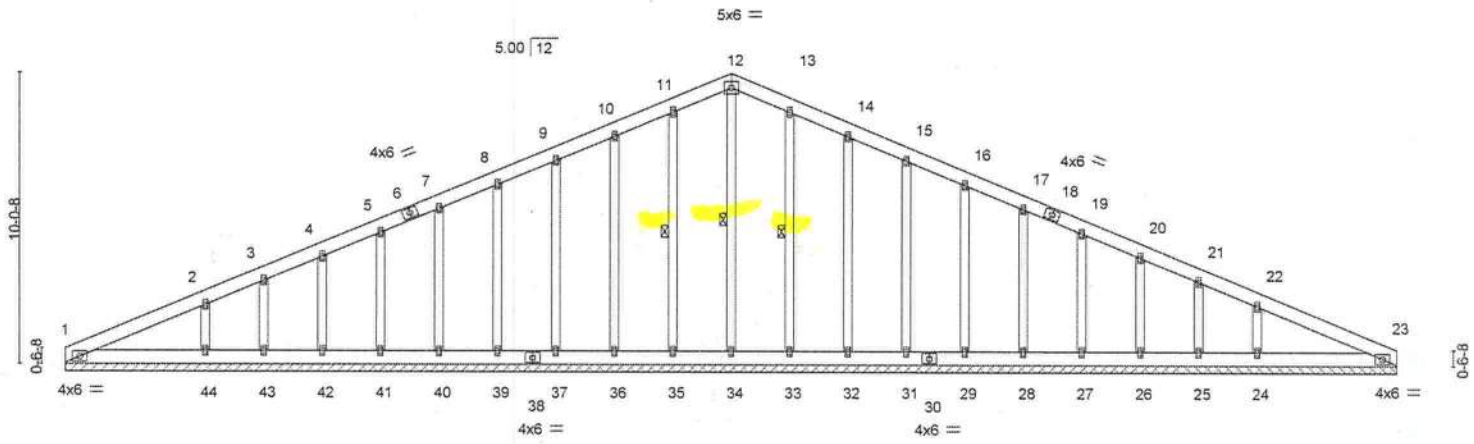
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643814
3397173	T01G	GABLE	1	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:41 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-DLkXmSVrEl40ylnKTvHeYt3tRxvsFvjyxcEWFezsWtu

22-9-8 / 22-9-8 | 45-7-0 / 22-9-8

Scale = 1:76.2



45-7-0 / 45-7-0

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.07	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.13	Horz(CT)	0.01	23	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-S							Weight: 370 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 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.
WEBS 1 Row at midpt 12-34, 11-35, 13-33

REACTIONS. All bearings 45-7-0.
(lb) - Max Horz 1=142(LC 16)
Max Uplift All uplift 100 lb or less at joint(s) 1, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25 except 44=-129(LC 12), 24=-129(LC 13)
Max Grav All reactions 250 lb or less at joint(s) 1, 34, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25, 23 except 44=364(LC 23), 24=364(LC 24)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 11-12=-95/264, 12-13=-95/264
WEBS 2-44=-252/237, 22-24=-252/237

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Corner(3E) 0-0-0 to 4-9-8, Exterior(2N) 4-9-8 to 22-9-8, Corner(3R) 22-9-8 to 27-4-3, Exterior(2N) 27-4-3 to 45-7-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
5) All plates are 2x4 MT20 unless otherwise indicated.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25 except (jt=lb) 44=129, 24=129.

This item has been electronically signed and sealed by Magid, Michael, PE using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

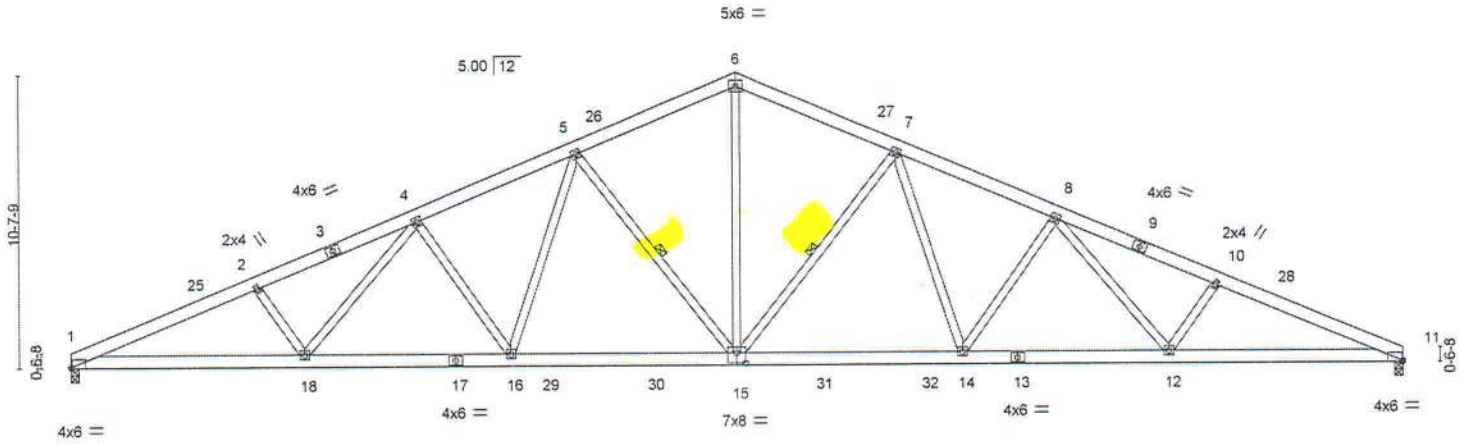
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643815
3397173	T02	Common	11	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:44 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-ewPgOTXkXDSbpDVv82qL9VhLv8ILS7yOdaSAszzsWtr

6-9-8	12-7-3	18-4-13	24-2-8	30-0-3	35-9-13	41-7-8	48-5-0
6-9-8	5-9-11	5-9-11	5-9-11	5-9-11	5-9-11	5-9-11	6-9-8

Scale = 1:80.2



8-5-15	16-0-0	24-2-8	32-5-0	39-11-1	48-5-0
8-5-15	7-6-1	8-2-8	8-2-8	7-6-1	8-5-15

Plate Offsets (X,Y)-- [1:0-0-7,Edge], [11:0-0-7,Edge], [15:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.27	Vert(LL)	-0.30	15-16	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.79	Vert(CT)	-0.52	15-16	>999	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.17	11	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 346 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-3-14 oc purlins.
BOT CHORD Rigid ceiling directly applied or 7-11-11 oc bracing.
WEBS 1 Row at midpt 7-15, 5-15

REACTIONS. (size) 1=0-3-8, 11=0-3-8
Max Horz 1=-150(LC 13)
Max Uplift 1=-379(LC 12), 11=-379(LC 13)
Max Grav 1=1970(LC 2), 11=1970(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-4351/834, 2-4=-4221/821, 4-5=-3511/697, 5-6=-2676/595, 6-7=-2676/595, 7-8=-3511/696, 8-10=-4221/822, 10-11=-4351/835
BOT CHORD 1-18=-860/3986, 16-18=-677/3492, 15-16=-495/2954, 14-15=-422/2954, 12-14=-543/3492, 11-12=-710/3986
WEBS 6-15=-312/1759, 7-15=-888/319, 7-14=-167/812, 8-14=-565/245, 8-12=-140/604, 10-12=-307/181, 5-15=-888/319, 5-16=-166/811, 4-16=-565/245, 4-18=-139/604, 2-18=-307/181

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 4-10-2, Interior(1) 4-10-2 to 24-2-8, Exterior(2R) 24-2-8 to 29-0-10, Interior(1) 29-0-10 to 48-5-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) All plates are 4x4 MT20 unless otherwise indicated.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * 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.
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=379, 11=379.

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Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

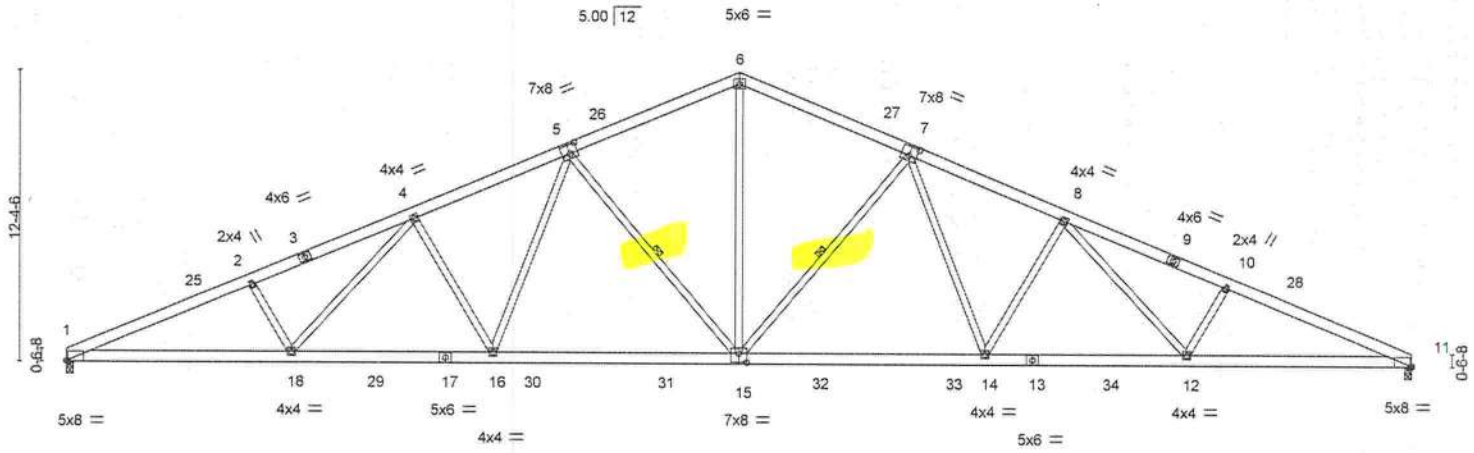
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643816
3397173	T04	Common	3	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:47 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-2V5o0VZcp8r9ggEUpAO3n8JqELkHfPSrJYhqTlzsWto

7-10-0	14-8-3	21-2-8	28-4-8	35-6-8	42-0-13	48-11-0	56-9-0
7-10-0	6-10-3	6-6-5	7-2-0	7-2-0	6-6-5	6-10-3	7-10-0

Scale = 1:93.8



9-5-15	18-0-0	28-4-8	38-9-0	47-3-1	56-9-0
9-5-15	8-6-1	10-4-8	10-4-8	8-6-1	9-5-15

Plate Offsets (X,Y)-- [1:0-0-11,Edge], [5:0-4-0,0-4-8], [7:0-4-0,0-4-8], [9:0-0-0,0-0-0], [11:0-0-11,Edge], [15:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.39	Vert(LL)	-0.47	15-16	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.97	Vert(CT)	-0.79	15-16	>866	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.94	Horz(CT)	0.24	11	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 406 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-10-9 oc purlins.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 7-15, 5-15

REACTIONS. (size) 1=0-3-8, 11=0-3-8
Max Horz 1=-176(LC 13)
Max Uplift 1=-444(LC 12), 11=-444(LC 13)
Max Grav 1=2373(LC 2), 11=2373(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-5317/986, 2-4=-5185/987, 4-5=-4348/830, 5-6=-3246/696, 6-7=-3246/696, 7-8=-4348/830, 8-10=-5185/988, 10-11=-5317/987
BOT CHORD 1-18=-1017/4873, 16-18=-795/4256, 15-16=-596/3622, 14-15=-507/3623, 12-14=-638/4256, 11-12=-842/4873
WEBS 6-15=-354/2131, 7-15=-1091/381, 7-14=-200/1021, 8-14=-630/279, 8-12=-188/757, 10-12=-367/215, 5-15=-1091/380, 5-16=-200/1021, 4-16=-630/279, 4-18=-187/757, 2-18=-367/215

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 5-8-2, Interior(1) 5-8-2 to 28-4-8, Exterior(2R) 28-4-8 to 34-0-10, Interior(1) 34-0-10 to 56-9-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=444, 11=444.

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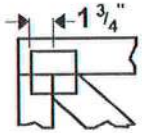
Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

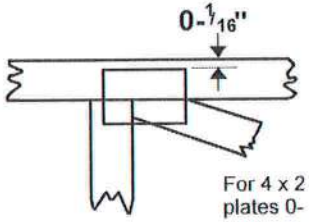
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

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

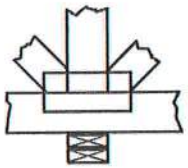
4 x 4

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

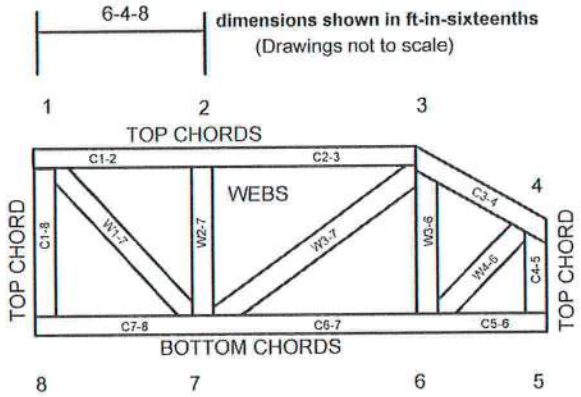


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

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 Engineering Reference Sheet: MII-7473 rev. 5/19/2020

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

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

Lumber design values are in accordance with ANSI/TPI 1 section 6.3
These truss designs rely on lumber values established by others.

RE: 3397173 - LIPSCOMB EAGLE - ROOF OVER

MiTek USA, Inc.
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Site Information:
Customer Info: LIPSCOMB EAGLE Project Name: Roof Over Model: Custom
Lot/Block: N/A Subdivision: N/A
Address: 894 SW Main Blvd., N/A
City: Columbia Cty State: FL

Name Address and License # of Structural Engineer of Record, If there is one, for the building.
Name: License #:
Address:
City: State:

General Truss Engineering Criteria & Design Loads (Individual Truss Design Drawings Show Special Loading Conditions):
Design Code: FBC2020/TPI2014 Design Program: MiTek 20/20 8.5
Wind Code: ASCE 7-16 Wind Speed: 130 mph
Roof Load: 37.0 psf Floor Load: N/A psf

This package includes 4 individual, Truss Design Drawings and 0 Additional Drawings.
With my seal affixed to this sheet, I hereby certify that I am the Truss Design Engineer and this index sheet conforms to 61G15-31.003, section 5 of the Florida Board of Professional Engineers Rules.

No.	Seal#	Truss Name	Date
1	T29643813	T01	1/23/23
2	T29643814	T01G	1/23/23
3	T29643815	T02	1/23/23
4	T29643816	T04	1/23/23

This item has been electronically signed and sealed by Magid, Michael, PE using a Digital Signature.
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The truss drawing(s) referenced above have been prepared by MiTek USA, Inc. under my direct supervision based on the parameters provided by Builders FirstSource-Lake City, FL.

Truss Design Engineer's Name: Magid, Michael
My license renewal date for the state of Florida is February 28, 2025.

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.

Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

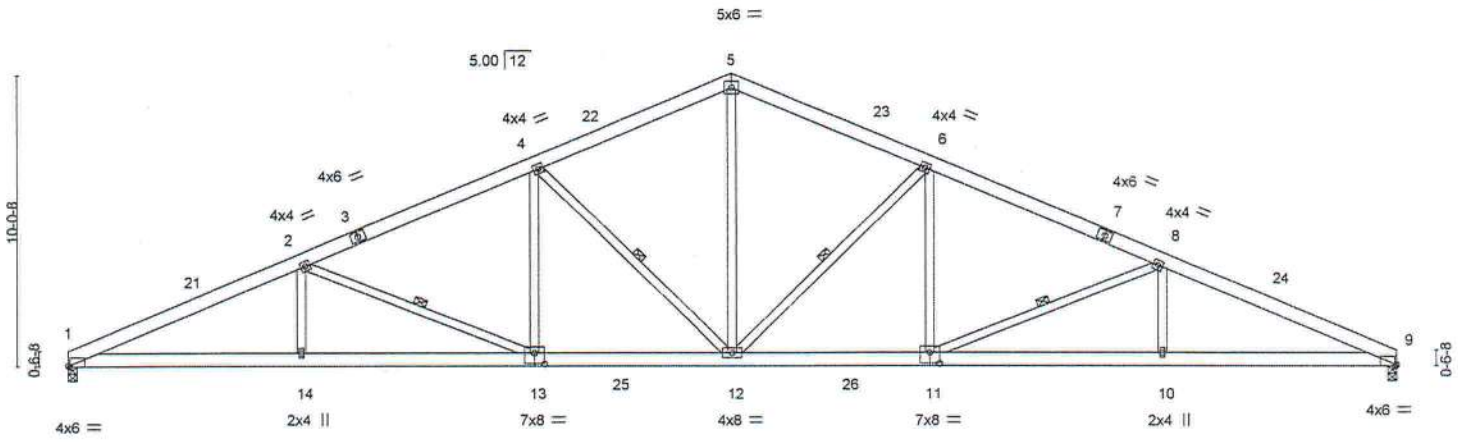
January 23,2023

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643813
3397173	T01	Common	15	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:38 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-pm2O7QSzxNiR5I2lonkxwESKpjjt2QPWEe?seKzsWtx

8-0-0	16-0-0	22-9-8	29-7-0	37-7-0	45-7-0
8-0-0	8-0-0	6-9-8	6-9-8	8-0-0	8-0-0

Scale = 1:75.6



8-0-0	16-0-0	22-9-8	29-7-0	37-7-0	45-7-0
8-0-0	8-0-0	6-9-8	6-9-8	8-0-0	8-0-0

Plate Offsets (X,Y)-- [1:0-0-11,Edge], [9:0-0-11,Edge], [11:0-4-0,0-4-8], [13:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.31	Vert(LL)	-0.25	12-13	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.73	Vert(CT)	-0.43	12-13	>999	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.61	Horz(CT)	0.16	9	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 315 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-4-13 oc purlins.
BOT CHORD Rigid ceiling directly applied or 8-4-3 oc bracing.
WEBS 1 Row at midpt 6-12, 8-11, 4-12, 2-13

REACTIONS. (size) 1=0-3-8, 9=0-3-8
Max Horz 1=-141(LC 17)
Max Uplift 1=-357(LC 12), 9=-357(LC 13)
Max Grav 1=1843(LC 2), 9=1843(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-4024/759, 2-4=-3242/630, 4-5=-2500/560, 5-6=-2500/560, 6-8=-3242/630, 8-9=-4024/760
BOT CHORD 1-14=-772/3679, 13-14=-772/3679, 12-13=-513/2931, 11-12=-428/2931, 10-11=-632/3679, 9-10=-632/3679
WEBS 5-12=-273/1604, 6-12=-968/317, 6-11=-63/619, 8-11=-822/283, 8-10=0/318, 4-12=-968/317, 4-13=-63/619, 2-13=-822/282, 2-14=0/318

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 4-6-11, Interior(1) 4-6-11 to 22-9-8, Exterior(2R) 22-9-8 to 27-4-3, Interior(1) 27-4-3 to 45-7-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=357, 9=357.

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16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

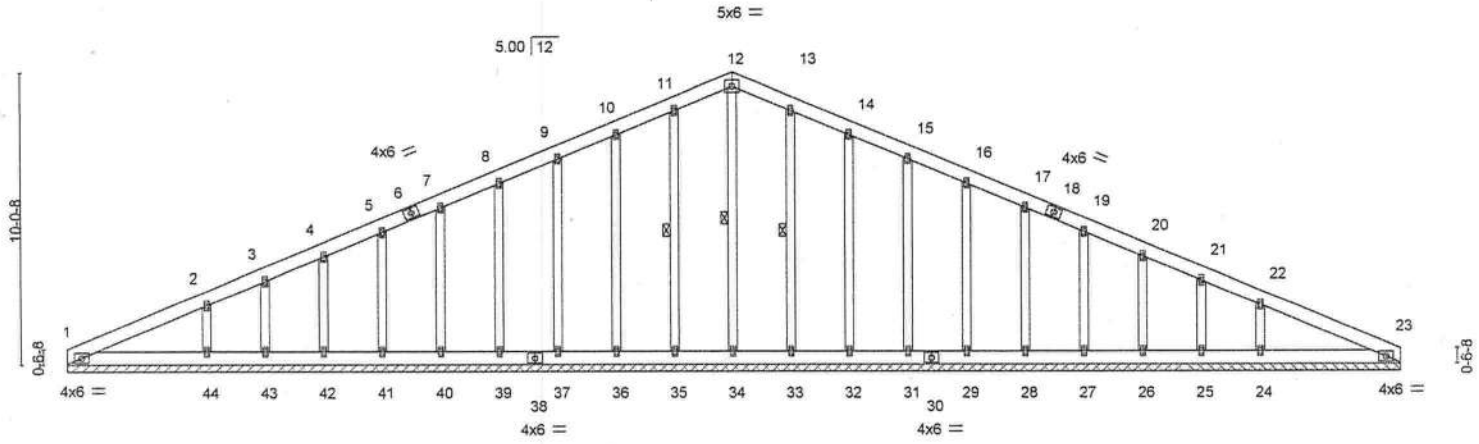
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643814
3397173	T01G	GABLE	1	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:41 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-DLkXmSVrEl40ylnKTvHeYt3tRxvsFvjyxcEWFezsWtu

22-9-8 / 22-9-8 — 45-7-0 / 22-9-8

Scale = 1:76.2



45-7-0 / 45-7-0

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.09	Vert(LL)	n/a	-	n/a	999	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.07	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.13	Horz(CT)	0.01	23	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-S							Weight: 370 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 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.
WEBS 1 Row at midpt 12-34, 11-35, 13-33

REACTIONS. All bearings 45-7-0.
(lb) - Max Horz 1=142(LC 16)
Max Uplift All uplift 100 lb or less at joint(s) 1, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25 except 44=-129(LC 12), 24=-129(LC 13)
Max Grav All reactions 250 lb or less at joint(s) 1, 34, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25, 23 except 44=364(LC 23), 24=364(LC 24)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 11-12=-95/264, 12-13=-95/264
WEBS 2-44=-252/237, 22-24=-252/237

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Corner(3E) 0-0-0 to 4-9-8, Exterior(2N) 4-9-8 to 22-9-8, Corner(3R) 22-9-8 to 27-4-3, Exterior(2N) 27-4-3 to 45-7-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1.
4) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
5) All plates are 2x4 MT20 unless otherwise indicated.
6) Gable requires continuous bottom chord bearing.
7) Gable studs spaced at 2-0-0 oc.
8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
9) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
10) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 1, 35, 36, 37, 39, 40, 41, 42, 43, 33, 32, 31, 29, 28, 27, 26, 25 except (jt=lb) 44=129, 24=129.

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Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA. FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

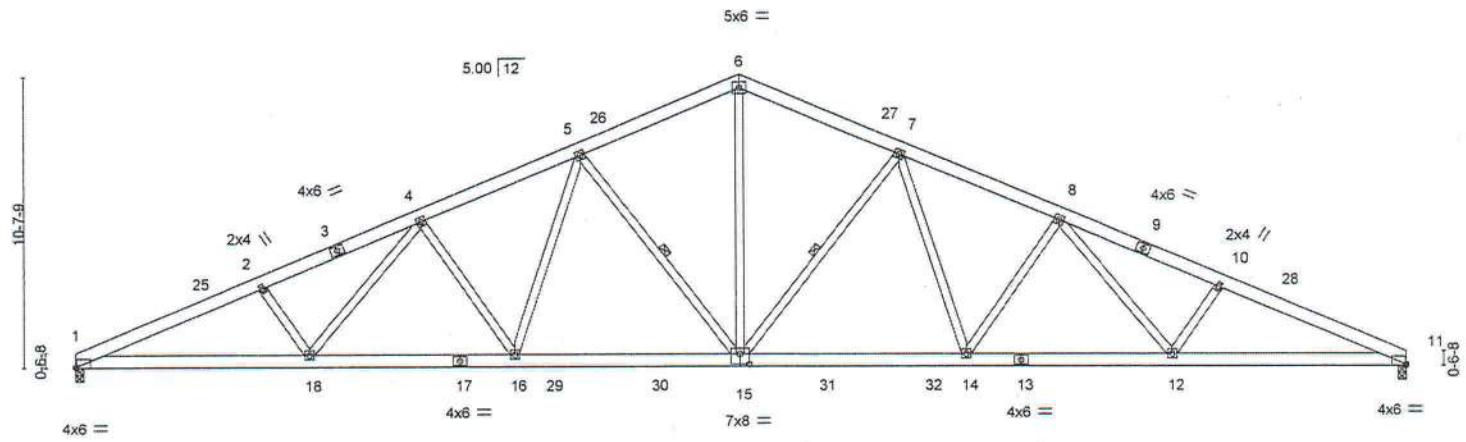
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643815
3397173	T02	Common	11	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:44 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-ewPgOTXkXDSbpDVv82qL9VhLv8ILS7yOdaSAszzsWtr

6-9-8	12-7-3	18-4-13	24-2-8	30-0-3	35-9-13	41-7-8	48-5-0
6-9-8	5-9-11	5-9-11	5-9-11	5-9-11	5-9-11	5-9-11	6-9-8

Scale = 1:80.2



8-5-15	16-0-0	24-2-8	32-5-0	39-11-1	48-5-0
8-5-15	7-6-1	8-2-8	8-2-8	7-6-1	8-5-15

Plate Offsets (X,Y)-- [1:0-0-7,Edge], [11:0-0-7,Edge], [15:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.27	Vert(LL)	-0.30	15-16	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.79	Vert(CT)	-0.52	15-16	>999	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.67	Horz(CT)	0.17	11	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 346 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 3-3-14 oc purlins.
BOT CHORD Rigid ceiling directly applied or 7-11-11 oc bracing.
WEBS 1 Row at midpt 7-15, 5-15

REACTIONS. (size) 1=0-3-8, 11=0-3-8
Max Horz 1=-150(LC 13)
Max Uplift 1=-379(LC 12), 11=-379(LC 13)
Max Grav 1=1970(LC 2), 11=1970(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-4351/834, 2-4=-4221/821, 4-5=-3511/697, 5-6=-2676/595, 6-7=-2676/595, 7-8=-3511/696, 8-10=-4221/822, 10-11=-4351/835
BOT CHORD 1-18=-860/3986, 16-18=-677/3492, 15-16=-495/2954, 14-15=-422/2954, 12-14=-543/3492, 11-12=-710/3986
WEBS 6-15=-312/1759, 7-15=-888/319, 7-14=-167/812, 8-14=-565/245, 8-12=-140/604, 10-12=-307/181, 5-15=-888/319, 5-16=-166/811, 4-16=-565/245, 4-18=-139/604, 2-18=-307/181

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 4-10-2, Interior(1) 4-10-2 to 24-2-8, Exterior(2R) 24-2-8 to 29-0-10, Interior(1) 29-0-10 to 48-5-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) All plates are 4x4 MT20 unless otherwise indicated.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) * 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.
7) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=379, 11=379.

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Michael S. Magid PE No.53681
MiTek Inc. DBA MiTek USA FL Cert 6634
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

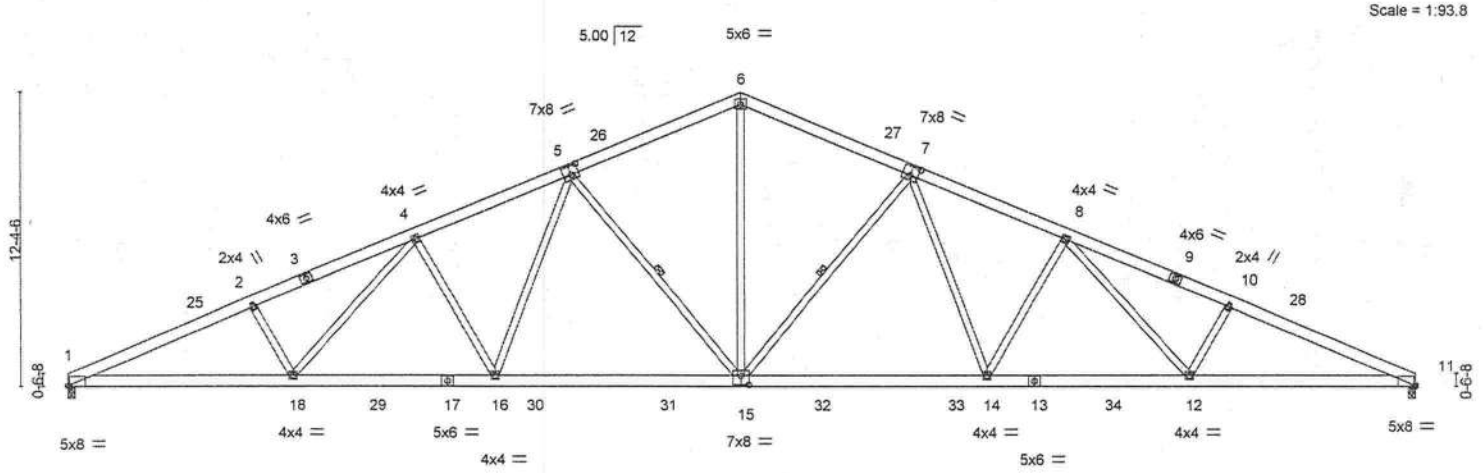
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

Job	Truss	Truss Type	Qty	Ply	LIPSCOMB EAGLE - ROOF OVER	T29643816
3397173	T04	Common	3	1	Job Reference (optional)	

Builders FirstSource (Lake City,FL), Lake City, FL - 32055, 8.530 s Aug 11 2022 MiTek Industries, Inc. Mon Jan 23 08:49:47 2023 Page 1
ID:pnK41ouu8UWl9fwSjM18Zhzt9u8-2V5o0VZcp8r9ggEUpAO3n8JqELkHfPSrJYhqTlzsWto

7-10-0	14-8-3	21-2-8	28-4-8	35-6-8	42-0-13	48-11-0	56-9-0
7-10-0	6-10-3	6-6-5	7-2-0	7-2-0	6-6-5	6-10-3	7-10-0

Scale = 1:93.8



9-5-15	18-0-0	28-4-8	38-9-0	47-3-1	56-9-0
9-5-15	8-6-1	10-4-8	10-4-8	8-6-1	9-5-15

Plate Offsets (X,Y)-- [1:0-0-11,Edge], [5:0-4-0,0-4-8], [7:0-4-0,0-4-8], [9:0-0-0,0-0-0], [11:0-0-11,Edge], [15:0-4-0,0-4-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	20.0	Plate Grip DOL	1.25	TC	0.39	Vert(LL)	-0.47	15-16	>999	240	MT20	244/190
TCDL	7.0	Lumber DOL	1.25	BC	0.97	Vert(CT)	-0.79	15-16	>866	180		
BCLL	0.0 *	Rep Stress Incr	YES	WB	0.94	Horz(CT)	0.24	11	n/a	n/a		
BCDL	10.0	Code FBC2020/TPI2014		Matrix-MS							Weight: 406 lb	FT = 20%

LUMBER-
TOP CHORD 2x6 SP No.2
BOT CHORD 2x6 SP No.2
WEBS 2x4 SP No.3

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-10-9 oc purlins.
BOT CHORD Rigid ceiling directly applied or 2-2-0 oc bracing.
WEBS 1 Row at midpt 7-15, 5-15

REACTIONS. (size) 1=0-3-8, 11=0-3-8
Max Horz 1=-176(LC 13)
Max Uplift 1=-444(LC 12), 11=-444(LC 13)
Max Grav 1=2373(LC 2), 11=2373(LC 2)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-5317/986, 2-4=-5185/987, 4-5=-4348/830, 5-6=-3246/696, 6-7=-3246/696, 7-8=-4348/830, 8-10=-5185/988, 10-11=-5317/987
BOT CHORD 1-18=-1017/4873, 16-18=-795/4256, 15-16=-596/3622, 14-15=-507/3623, 12-14=-638/4256, 11-12=-842/4873
WEBS 6-15=-354/2131, 7-15=-1091/381, 7-14=-200/1021, 8-14=-630/279, 8-12=-188/757, 10-12=-367/215, 5-15=-1091/380, 5-16=-200/1021, 4-16=-630/279, 4-18=-187/757, 2-18=-367/215

NOTES-
1) Unbalanced roof live loads have been considered for this design.
2) Wind: ASCE 7-16; Vult=130mph (3-second gust) Vasd=101mph; TCDL=4.2psf; BCDL=3.0psf; h=20ft; Cat. II; Exp B; Encl., GCpi=0.18; MWFRS (envelope) gable end zone and C-C Exterior(2E) 0-0-0 to 5-8-2, Interior(1) 5-8-2 to 28-4-8, Exterior(2R) 28-4-8 to 34-0-10, Interior(1) 34-0-10 to 56-9-0 zone;C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60
3) Building Designer / Project engineer responsible for verifying applied roof live load shown covers rain loading requirements specific to the use of this truss component.
4) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
5) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members, with BCDL = 10.0psf.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) except (jt=lb) 1=444, 11=444.

This item has been electronically signed and sealed by Magid, Michael, PE using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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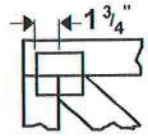
16023 Swingley Ridge Rd. Chesterfield, MO 63017
Date:

January 23,2023

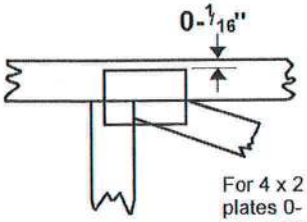
MiTek
16023 Swingley Ridge Rd
Chesterfield, MO 63017

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

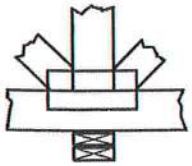
4 x 4

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

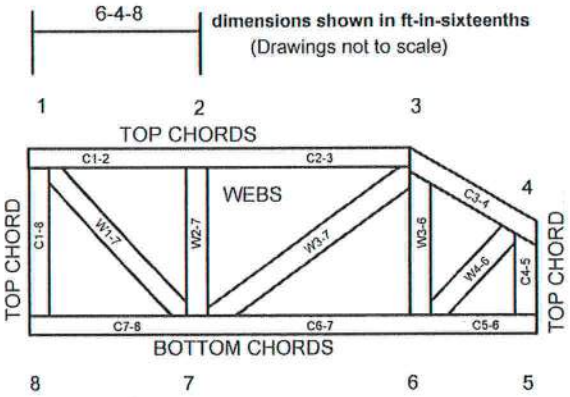


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur. Min size shown is for crushing only.

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 Engineering Reference Sheet: MII-7473 rev. 5/19/2020

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

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

AUGUST 1, 2016	T-BRACE / I-BRACE DETAIL WITH 2X BRACE ONLY	MII-T-BRACE 2

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Note: T-Bracing / I-Bracing to be used when continuous lateral bracing is impractical. T-Brace / I-Brace must cover 90% of web length.

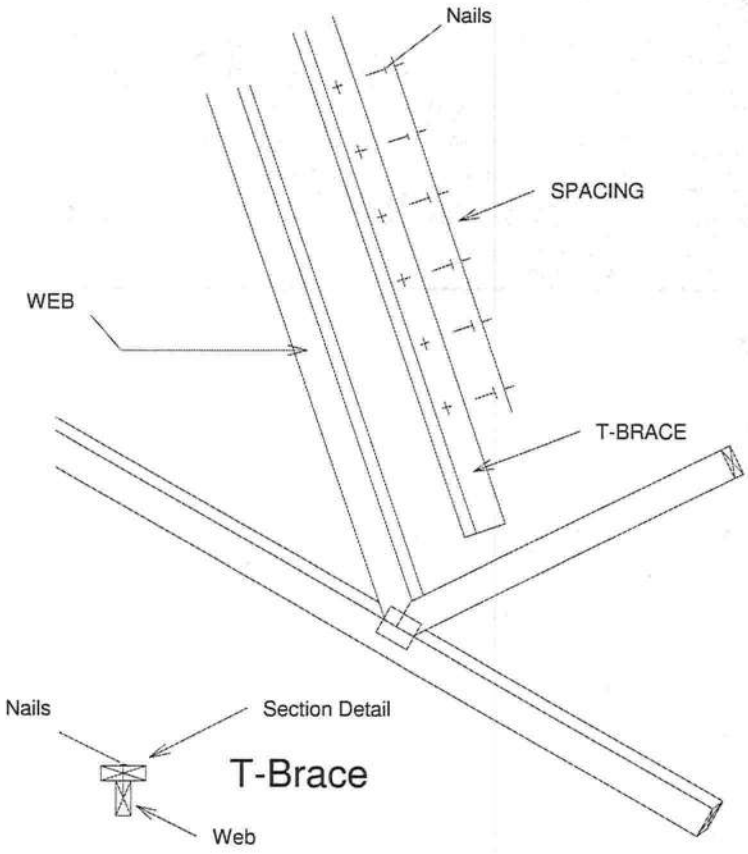
Note: This detail NOT to be used to convert T-Brace / I-Brace webs to continuous lateral braced webs.

Nailing Pattern		
T-Brace size	Nail Size	Nail Spacing
2x4 or 2x6 or 2x8	10d (0.131" X 3")	6" o.c.
Note: Nail along entire length of T-Brace / I-Brace (On Two-Ply's Nail to Both Plies)		

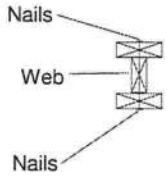
	Brace Size for One-Ply Truss	
	Specified Continuous Rows of Lateral Bracing	
Web Size	1	2
2x3 or 2x4	2x4 T-Brace	2x4 I-Brace
2x6	2x6 T-Brace	2x6 I-Brace
2x8	2x8 T-Brace	2x8 I-Brace

	Brace Size for Two-Ply Truss	
	Specified Continuous Rows of Lateral Bracing	
Web Size	1	2
2x3 or 2x4	2x4 T-Brace	2x4 I-Brace
2x6	2x6 T-Brace	2x6 I-Brace
2x8	2x8 T-Brace	2x8 I-Brace

T-Brace / I-Brace must be same species and grade (or better) as web member.



T-Brace



I-Brace

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BRACE BAY SIZE*	MAXIMUM TRUSS WEB FORCE (lbs.) (See note 7)									
	24"O.C.				48"O.C.				72" O.C.	
	BRACING MATERIAL TYPE				BRACING MATERIAL TYPE				BRACING MATERIAL TYPE	
	A	B	C	D	A	B	C	D	C	D
10'-0"	1610	1886	1886	2829						
12'-0"	1342	1572	1572	2358		3143	3143	4715	4715	7074
14'-0"	1150	1347	1347	2021						
16'-0"	1006	1179	1179	1768		2358	2358	3536		
18'-0"	894	1048	1048	1572					3143	4715
20'-0"	805	943	943	1414		1886	1886	2829		

*Bay size shall be measured in between the centers of pairs of diagonals.

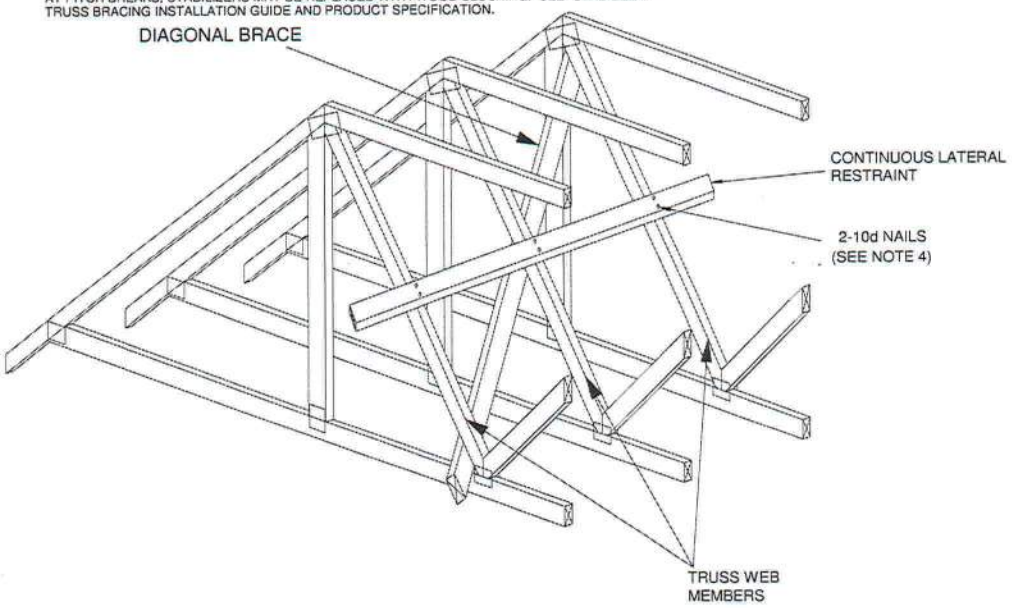
TYPE	BRACING MATERIALS
A	1 X 4 IND. 45 SP -OR- 1 X 4 #2 SRB (DF, HF, SPF)
B	2 X 3 #3, STD, CONST (SPF, DF, HF, OR SP)
C	2 X 4 #3, STD, CONST (SPF, DF, HF, OR SP)
D	2 X 6 #3 OR BETTER (SPF, DF, HF, OR SP)

GENERAL NOTES

1. DIAGONAL BRACING IS REQUIRED TO TRANSFER THE CUMULATIVE LATERAL BRACE FORCE INTO THE ROOF AND/OR CEILING DIAPHRAGM. THE DIAPHRAGM IS TO BE DESIGNED BY A QUALIFIED PROFESSIONAL.
2. THESE CALCULATIONS ARE BASED ON LATERAL BRACE CARRYING 2% OF THE WEB FORCE.
3. DIAGONAL BRACING MATERIAL MUST BE SAME SIZE AND GRADE OR BETTER, AS THE LATERAL BRACE MATERIAL, AND SHALL BE INSTALLED IN SUCH A MANNER THAT IT INTERSECTS WEB MEMBERS AT APPROX. 45 DEGREES AND SHALL BE NAILED AT EACH END AND EACH INTERMEDIATE TRUSS WITH 2-8d (0.131"x2.5") FOR 1x4 BRACES, 2-10d (0.131"x 3") FOR 2x3 and 2x4 BRACES, AND 3-10d (0.131"x3") FOR 2x6 BRACES.
4. CONNECT LATERAL BRACE TO EACH TRUSS WITH 2-8d (0.131"X2.5") NAILS FOR 1x4 LATERAL BRACES, 2-10d (0.131"x3") NAILS FOR 2x3 and 2x4 LATERAL BRACES, AND 3-10d (0.131"x3") FOR 2x6 LATERAL BRACES.
5. LATERAL BRACE SHOULD BE CONTINUOUS AND SHOULD OVERLAP AT LEAST ONE TRUSS SPACE FOR CONTINUITY.
6. FOR ADDITIONAL GUIDANCE REGARDING DESIGN AND INSTALLATION OF BRACING, CONSULT DSB-89 TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES AND BCSI 1 GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES, JOINTLY PRODUCED BY WOOD TRUSS COUNCIL OF AMERICA and TRUSS PLATE INSTITUTE. www.sbcindustry.com and www.tpinst.org
7. REFER TO SPECIFIC TRUSS DESIGN DRAWING FOR WEB MEMBER FORCE.
8. TABULATED VALUES ARE BASED ON A DOL. = 1.15

FOR STABILIZERS:

FOR A SPACING OF 24" O.C. ONLY, MITEK "STABILIZER" TRUSS BRACING SYSTEMS CAN BE SUBSTITUTED FOR TYPE A, B, C AND D BRACING MATERIAL. DIAGONAL BRACING FOR STABILIZERS ARE TO BE PROVIDED AT BAY SIZE INDICATED ABOVE. WHERE DIAPHRAGM BRACING IS REQUIRED AT PITCH BREAKS, STABILIZERS MAY BE REPLACED WITH WOOD BLOCKING. SEE "STABILIZER" TRUSS BRACING INSTALLATION GUIDE AND PRODUCT SPECIFICATION.



This information is provided as a recommendation to assist in the requirement for permanent bracing of the individual truss web members. Additional bracing may still be required for the stability of the overall roof system. The method shown here is just one method that can be used to provide stability against web buckling.

AUGUST 1, 2016	SCAB-BRACE DETAIL	MII-SCAB-BRACE

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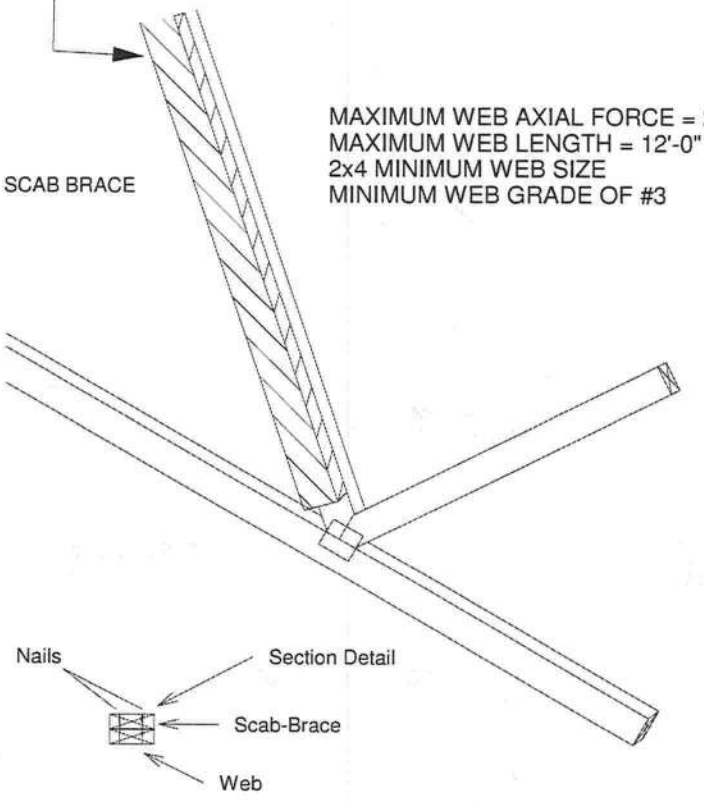
Note: Scab-Bracing to be used when continuous lateral bracing at midpoint (or T-Brace) is impractical.
Scab must cover full length of web +/- 6".

*** THIS DETAIL IS NOT APLICABLE WHEN BRACING IS *** REQUIRED AT 1/3 POINTS OR I-BRACE IS SPECIFIED.

APPLY 2x___ SCAB TO ONE FACE OF WEB WITH
2 ROWS OF 10d (0.131" X 3") NAILS SPACED 6" O.C.
SCAB MUST BE THE SAME GRADE, SIZE AND
SPECIES (OR BETTER) AS THE WEB.

SCAB BRACE

MAXIMUM WEB AXIAL FORCE = 2500 lbs
MAXIMUM WEB LENGTH = 12'-0"
2x4 MINIMUM WEB SIZE
MINIMUM WEB GRADE OF #3



Scab-Brace must be same species grade (or better) as web member.

AUGUST 1, 2016	STANDARD REPAIR TO REMOVE END VERTICAL (RIBBON NOTCH VERTICAL)	MII-REP05

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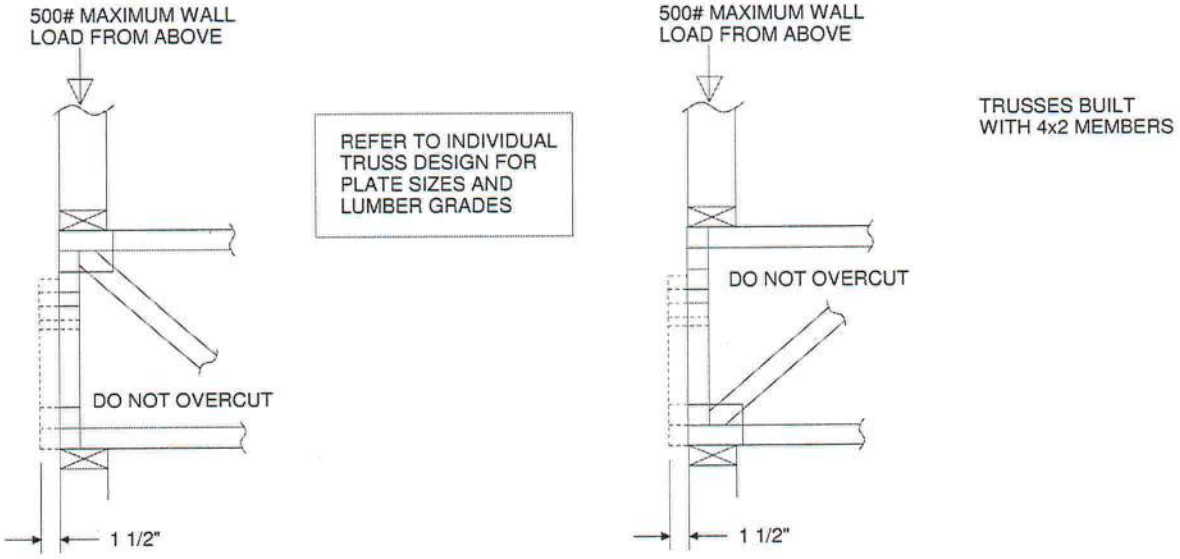
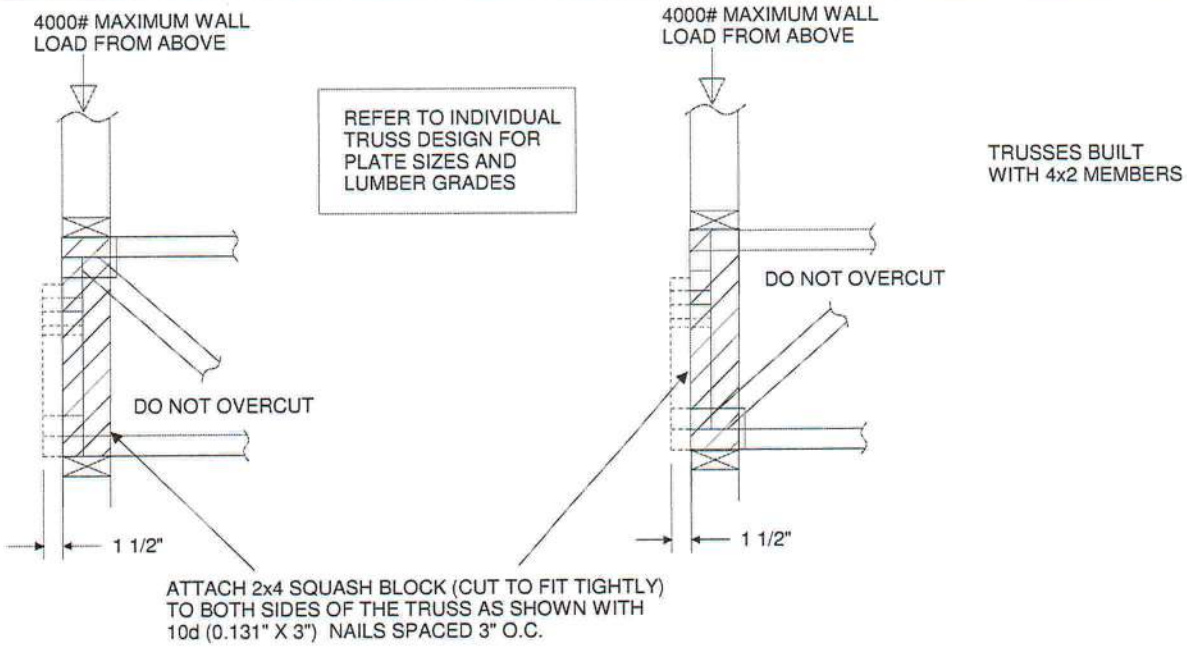
1. THIS IS A SPECIFIC REPAIR DETAIL TO BE USED ONLY FOR ITS ORIGINAL INTENTION. THIS REPAIR DOES NOT IMPLY THAT THE REMAINING PORTION OF THE TRUSS IS UNDAMAGED. THE ENTIRE TRUSS SHALL BE INSPECTED TO VERIFY THAT NO FURTHER REPAIRS ARE REQUIRED. WHEN THE REQUIRED REPAIRS ARE PROPERLY APPLIED, THE TRUSS WILL BE CAPABLE OF SUPPORTING THE LOADS INDICATED.
2. ALL MEMBERS MUST BE RETURNED TO THEIR ORIGINAL POSITIONS BEFORE APPLYING REPAIR AND HELD IN PLACE DURING APPLICATION OF REPAIR.
3. THE END DISTANCE, EDGE DISTANCE, AND SPACING OF NAILS SHALL BE SUCH AS TO AVOID SPLITTING OF THE WOOD.
4. LUMBER MUST BE CUT CLEANLY AND ACCURATELY AND THE REMAINING WOOD MUST BE UNDAMAGED.
5. THIS REPAIR IS TO BE USED FOR SINGLE PLY TRUSSES IN THE 4X_ ORIENTATION ONLY.
6. CONNECTOR PLATES MUST BE FULLY IMBEDDED AND UNDISTURBED.





AUGUST 1, 2016	Standard Gable End Detail	MII-GE130-D-SP

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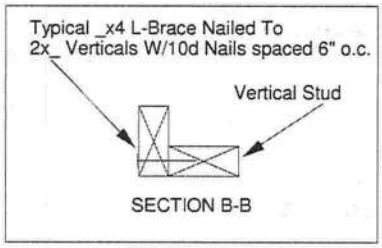
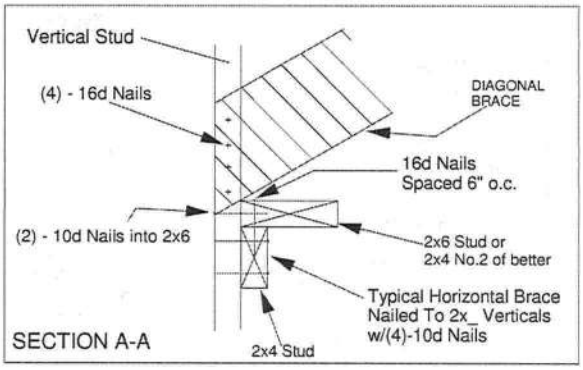
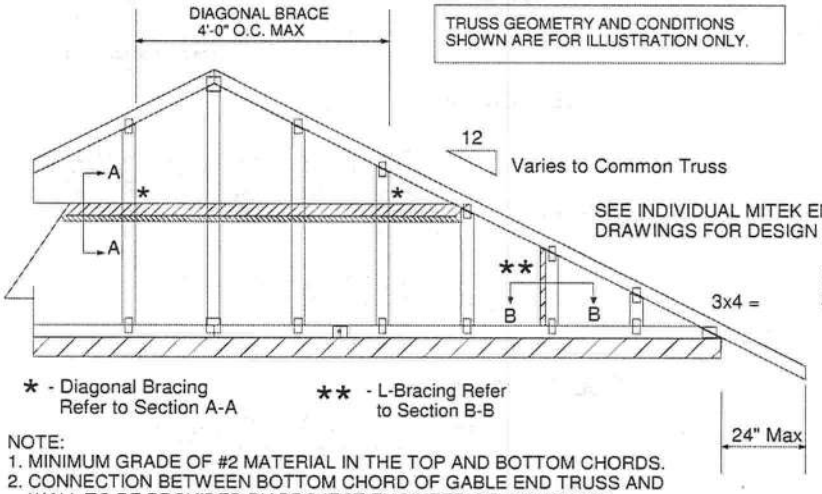




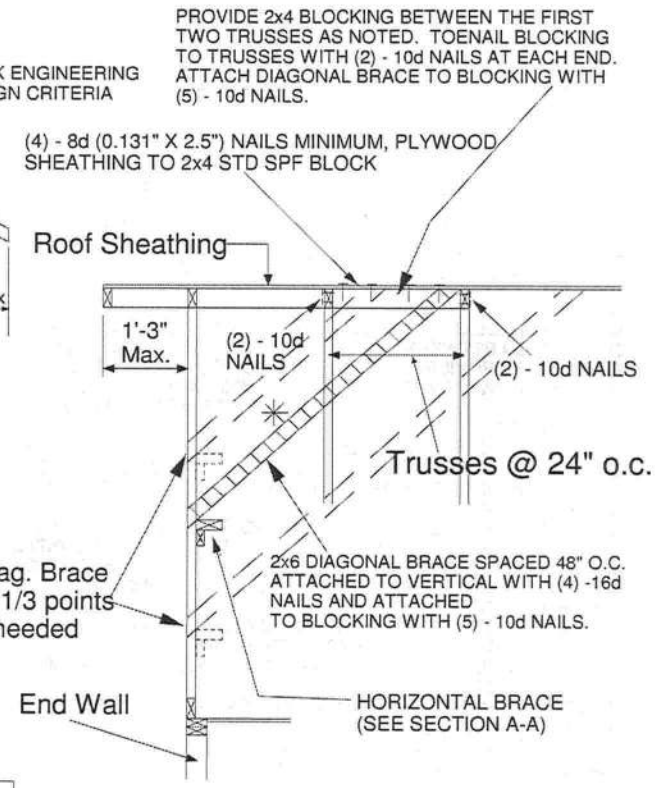


TRUSS GEOMETRY AND CONDITIONS SHOWN ARE FOR ILLUSTRATION ONLY.

SEE INDIVIDUAL MITEK ENGINEERING DRAWINGS FOR DESIGN CRITERIA

* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B



NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 1x4 SRB OR 2x4 STUD OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. SOUTHERN PINE LUMBER DESIGN VALUES ARE THOSE EFFECTIVE 06-01-13 BY SPIB/ALSC.
11. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	1x4 L-Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length				
2x4 SP No. 3 / Stud	12" O.C.	3-9-13	4-1-1	5-9-6	7-1-3	11-5-7
2x4 SP No. 3 / Stud	16" O.C.	3-5-4	3-6-8	5-0-2	6-10-8	10-3-13
2x4 SP No. 3 / Stud	24" O.C.	2-9-11	2-10-11	4-1-1	5-7-6	8-5-1

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of diagonal brace with 10d nails 8" o.c., with 3" minimum end distance. Brace must cover 90% of diagonal length.

MAX MEAN ROOF HEIGHT = 30 FEET
CATEGORY II BUILDING
EXPOSURE D
ASCE 7-98, ASCE 7-02, ASCE 7-05 130 MPH
ASCE 7-10 160 MPH
DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
CONNECTION OF BRACING IS BASED ON MWFRS.

AUGUST 1, 2016	Standard Gable End Detail	MII-GE130-SP

MiTek USA, Inc. Page 1 of 2

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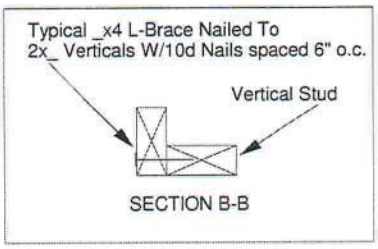
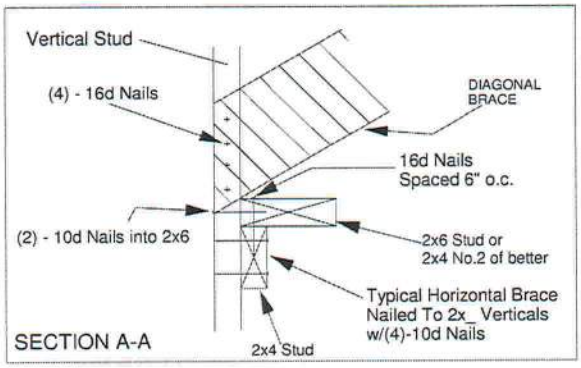
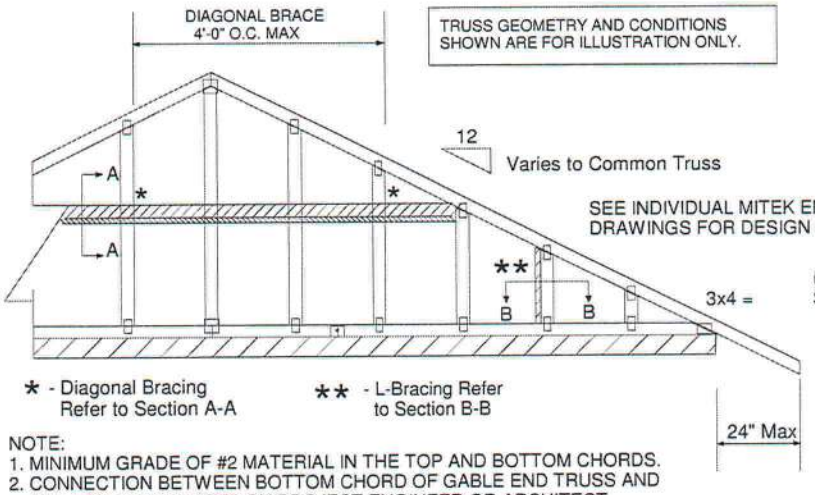






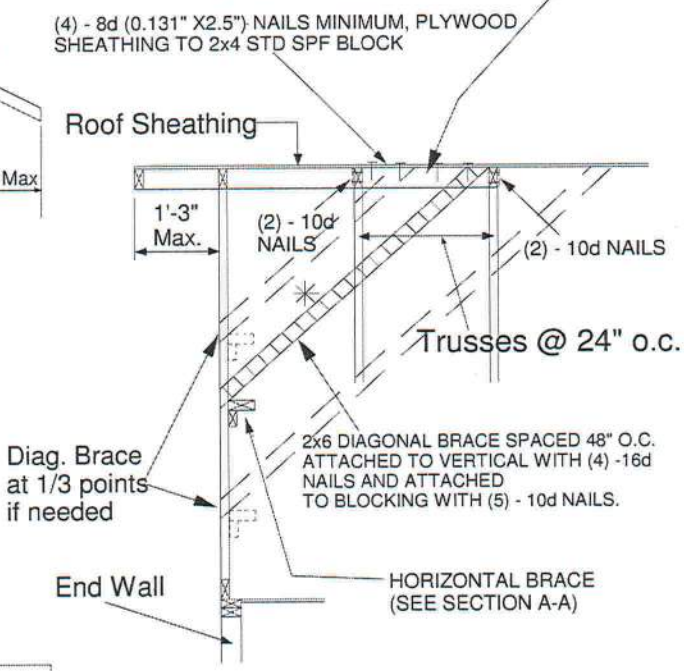
TRUSS GEOMETRY AND CONDITIONS SHOWN ARE FOR ILLUSTRATION ONLY.

SEE INDIVIDUAL MITEK ENGINEERING DRAWINGS FOR DESIGN CRITERIA

* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B

PROVIDE 2x4 BLOCKING BETWEEN THE FIRST TWO TRUSSES AS NOTED. TOENAIL BLOCKING TO TRUSSES WITH (2) - 10d NAILS AT EACH END. ATTACH DIAGONAL BRACE TO BLOCKING WITH (5) - 10d NAILS.



NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 1x4 SRB OR 2x4 STUD OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. SOUTHERN PINE LUMBER DESIGN VALUES ARE THOSE EFFECTIVE 06-01-13 BY SPIB/ALSC.
11. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	1x4 L-Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length				
2x4 SP No. 3 / Stud	12" O.C.	4-0-7	4-5-6	6-3-8	8-0-15	12-1-6
2x4 SP No. 3 / Stud	16" O.C.	3-8-0	3-10-4	5-5-6	7-4-1	11-0-1
2x4 SP No. 3 / Stud	24" O.C.	3-0-10	3-1-12	4-5-6	6-1-5	9-1-15

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of diagonal brace with 10d nails 8" o.c., with 3" minimum end distance. Brace must cover 90% of diagonal length.

MAX MEAN ROOF HEIGHT = 30 FEET
CATEGORY II BUILDING
EXPOSURE B or C
ASCE 7-98, ASCE 7-02, ASCE 7-05 130 MPH
ASCE 7-10 160 MPH
DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
CONNECTION OF BRACING IS BASED ON MWFRS.

JANUARY 6, 2017	Standard Gable End Detail	MII-GE140-001

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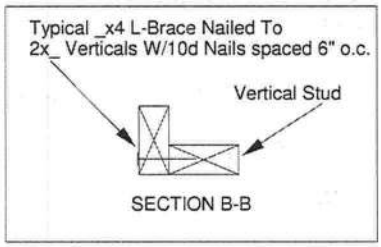
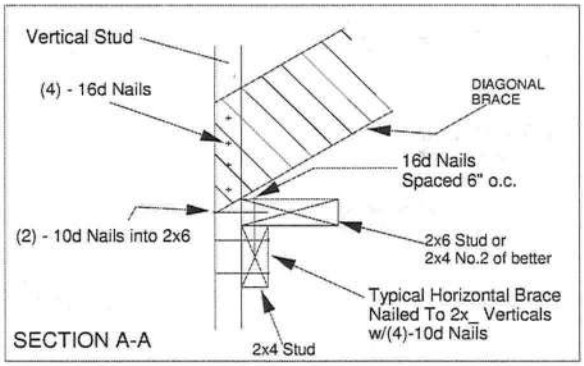
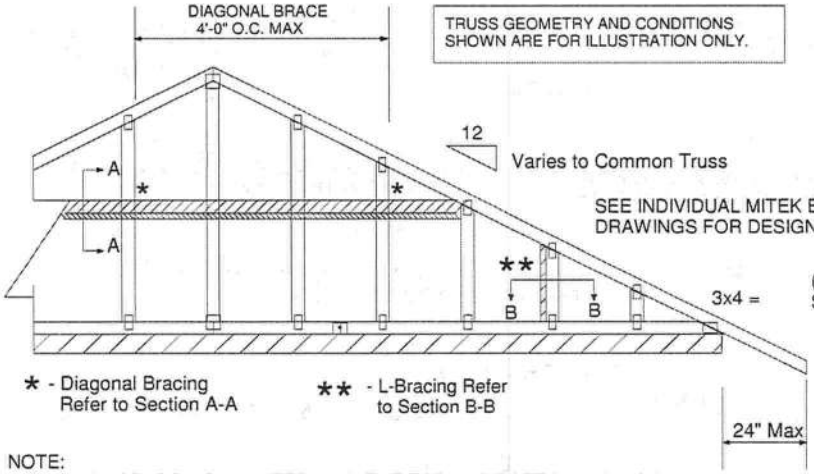
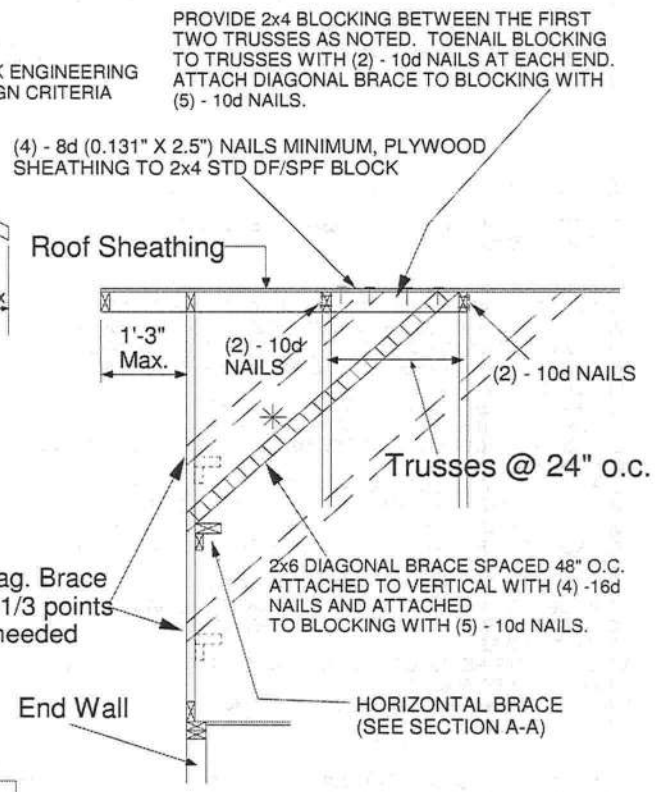






* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B



NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 1x4 SRB OR 2x4 STUD OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	1x4 L-Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length				
2x4 DF/SPF Std/Stud	12" O.C.	3-10-1	3-11-7	5-7-2	7-8-2	11-6-4
2x4 DF/SPF Std/Stud	16" O.C.	3-3-14	3-5-1	4-10-2	6-7-13	9-11-11
2x4 DF/SPF Std/Stud	24" O.C.	2-8-9	2-9-8	3-11-7	5-5-2	8-1-12

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of web with 10d nails 8" o.c., with 3" minimum end distance. Brace must cover 90% of diagonal length.

MAXIMUM WIND SPEED = 140 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
CATEGORY II BUILDING
EXPOSURE B or C
ASCE 7-98, ASCE 7-02, ASCE 7-05
DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
CONNECTION OF BRACING IS BASED ON MWFRS.

AUGUST 1, 2016	Standard Gable End Detail	MII-GE170-D-SP

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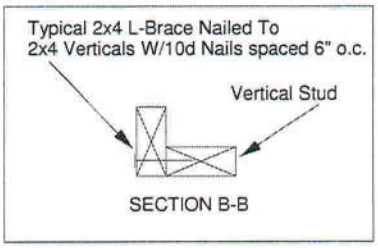
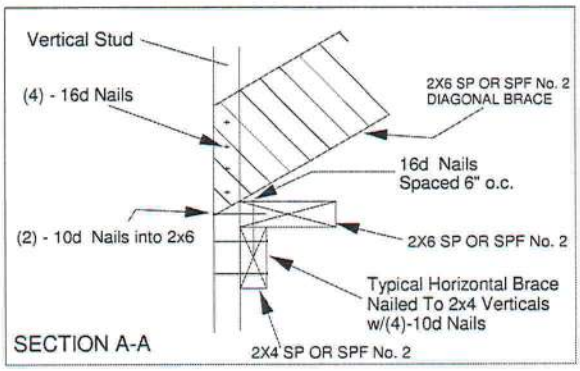
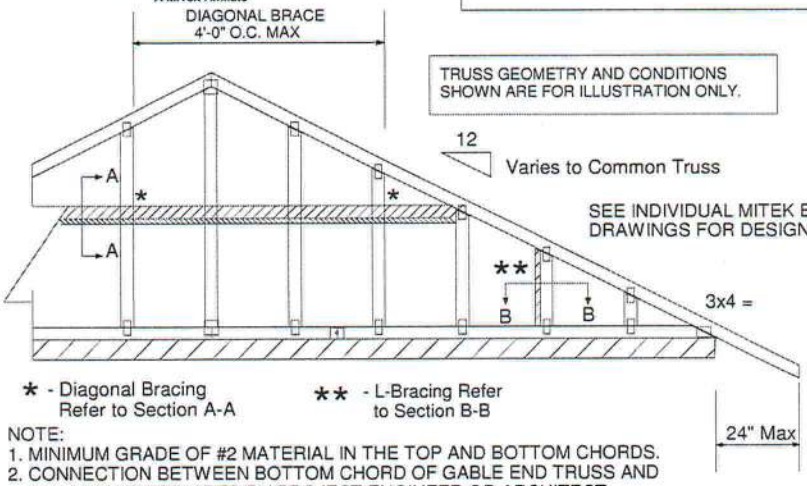






* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B

NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH, SPF or SP No.3 OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 AND A 2x4 AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST GABLE STUD. ATTACH TO VERTICAL GABLE STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. SOUTHERN PINE LUMBER DESIGN VALUES ARE THOSE EFFECTIVE 06-01-13 BY SPIB/ALSC.
11. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

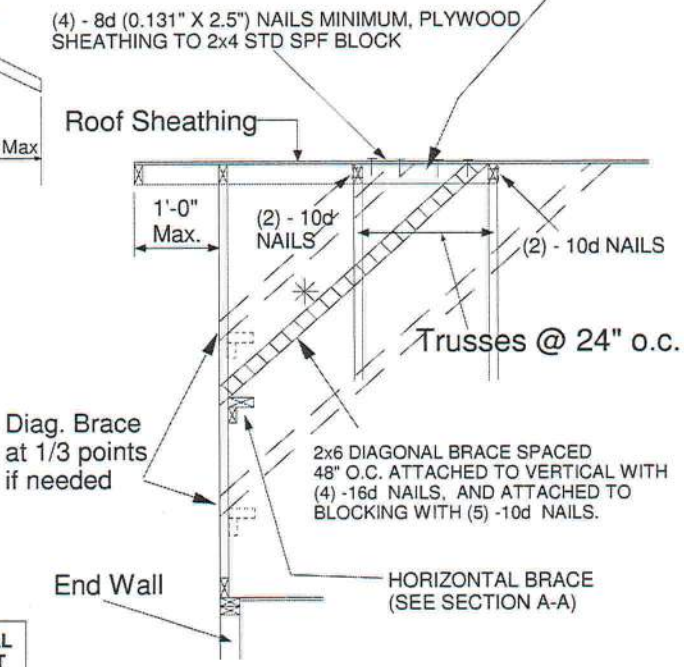
Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length			
2x4 SP No. 3 / Stud	12" O.C.	3-9-7	5-8-8	6-11-1	11-4-4
2x4 SP No. 3 / Stud	16" O.C.	3-4-12	4-11-15	6-9-8	10-2-3
2x4 SP No. 3 / Stud	24" O.C.	2-9-4	4-0-7	5-6-8	8-3-13
2x4 SP No. 2	12" O.C.	3-11-13	5-8-8	6-11-1	11-11-7
2x4 SP No. 2	16" O.C.	3-7-7	4-11-5	6-11-1	10-10-5
2x4 SP No. 2	24" O.C.	3-1-15	4-0-7	6-3-14	9-5-14

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of diagonal brace with 10d nails 6" o.c., with 3" minimum end distance. Brace must cover 90% of diagonal length. T or I braces must be 2x4 SPF No. 2 or SP No. 2.

MAX MEAN ROOF HEIGHT = 30 FEET
EXPOSURE D
ASCE 7-10 170 MPH
DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
CONNECTION OF BRACING IS BASED ON MWFRS.

PROVIDE 2x4 BLOCKING BETWEEN THE FIRST TWO TRUSSES AS NOTED. TOENAIL BLOCKING TO TRUSSES WITH (2) - 10d NAILS AT EACH END. ATTACH DIAGONAL BRACE TO BLOCKING WITH (5) - 10d NAILS.



AUGUST 1, 2016	Standard Gable End Detail	MII-GE180-D-SP

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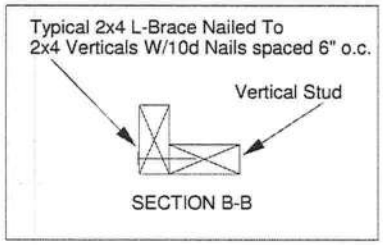
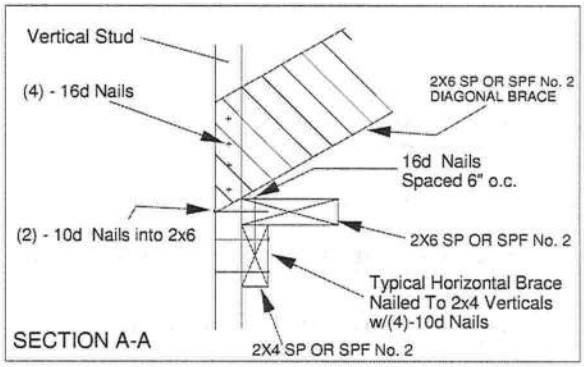
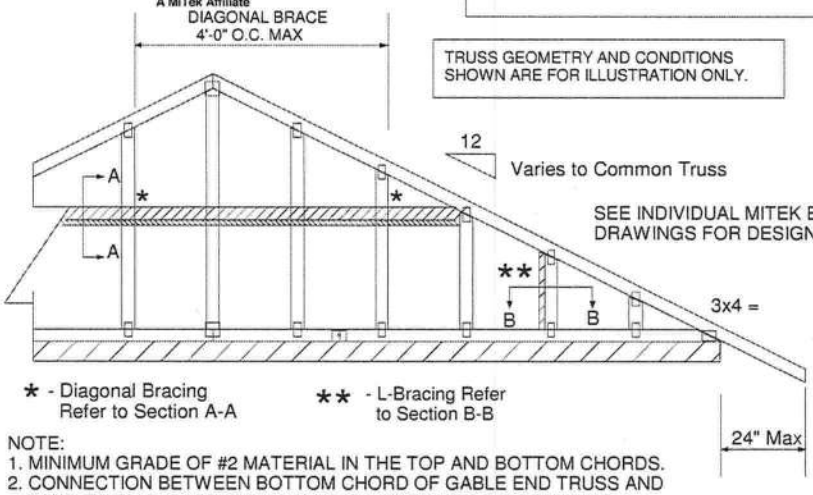






TRUSS GEOMETRY AND CONDITIONS SHOWN ARE FOR ILLUSTRATION ONLY.

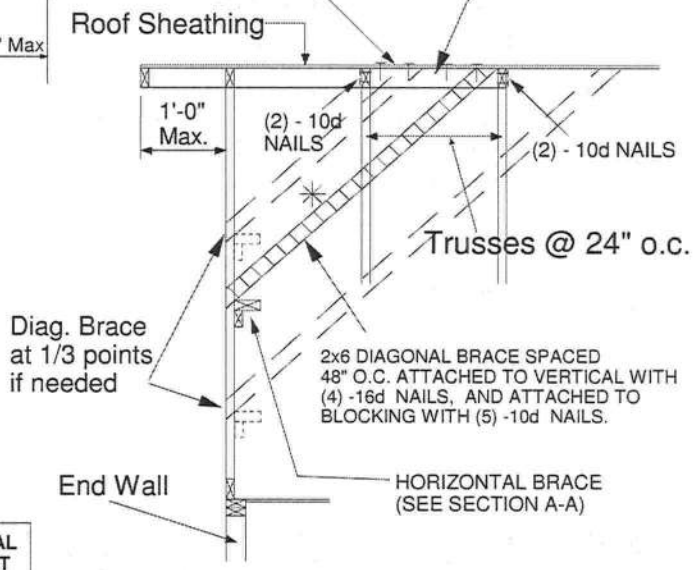
SEE INDIVIDUAL MITEK ENGINEERING DRAWINGS FOR DESIGN CRITERIA

* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B

PROVIDE 2x4 BLOCKING BETWEEN THE FIRST TWO TRUSSES AS NOTED. TOENAIL BLOCKING TO TRUSSES WITH (2) - 10d NAILS AT EACH END. ATTACH DIAGONAL BRACE TO BLOCKING WITH (5) - 10d NAILS.

(4) - 8d (0.131" X 2.5") NAILS MINIMUM, PLYWOOD SHEATHING TO 2x4 STD SPF BLOCK



NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH, SPF or SP No.3 OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 AND A 2x4 AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST GABLE STUD. ATTACH TO VERTICAL GABLE STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. SOUTHERN PINE LUMBER DESIGN VALUES ARE THOSE EFFECTIVE 06-01-13 BY SPIB/ALSC.
11. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length			
2x4 SP No. 3 / Stud	12" O.C.	3-7-12	5-4-11	6-2-1	10-11-3
2x4 SP No. 3 / Stud	16" O.C.	3-2-8	4-8-1	6-2-1	9-7-7
2x4 SP No. 3 / Stud	24" O.C.	2-7-7	3-9-12	5-2-13	7-10-4
2x4 SP No. 2	12" O.C.	3-10-0	5-4-11	6-2-1	11-6-1
2x4 SP No. 2	16" O.C.	3-5-13	4-8-1	6-2-1	10-5-7
2x4 SP No. 2	24" O.C.	3-0-8	3-9-12	6-1-1	9-1-9

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of diagonal brace with 10d nails 6in o.c., with 3in minimum end distance. Brace must cover 90% of diagonal length. T or I braces must be 2x4 SPF No. 2 or SP No. 2.

MAX MEAN ROOF HEIGHT = 30 FEET
EXPOSURE D
ASCE 7-10 180 MPH
DURATION OF LOAD INCREASE : 1.60

STUD DESIGN IS BASED ON COMPONENTS AND CLADDING. CONNECTION OF BRACING IS BASED ON MWFRS.

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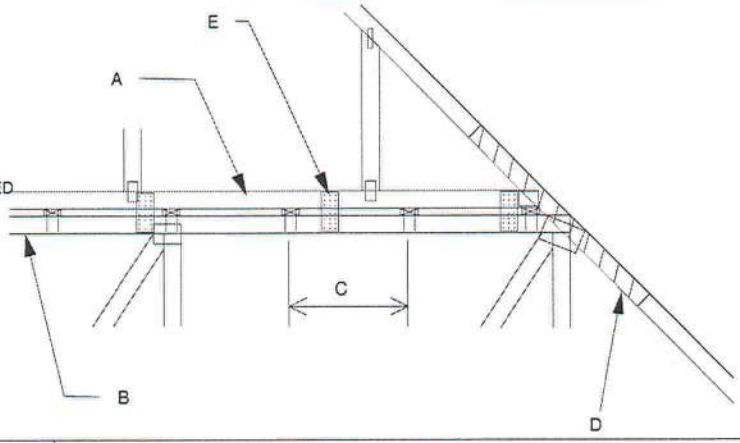
MAXIMUM WIND SPEED = REFER TO NOTES D AND OR E MAX MEAN ROOF HEIGHT = 30 FEET MAX TRUSS SPACING = 24 " O.C. CATEGORY II BUILDING EXPOSURE B or C ASCE 7-10 DURATION OF LOAD INCREASE : 1.60
DETAIL IS NOT APPLICABLE FOR TRUSSES TRANSFERING DRAG LOADS (SHEAR TRUSSES). ADDITIONAL CONSIDERATIONS BY BUILDING ENGINEER/DESIGNER ARE REQUIRED.

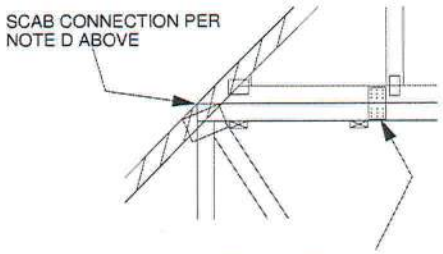
A - PIGGBACK TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING. SHALL BE CONNECTED TO EACH PURLIN WITH (2) (0.131" X 3.5") TOE-NAILED.
B - BASE TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING.
C - PURLINS AT EACH BASE TRUSS JOINT AND A MAXIMUM 24" O.C. UNLESS SPECIFIED CLOSER ON MITEK TRUSS DESIGN DRAWING. CONNECT TO BASE TRUSS WITH (2) (0.131" X 3.5") NAILS EACH.
D - 2 X __ X 4'-0" SCAB, SIZE TO MATCH TOP CHORD OF PIGGYBACK TRUSS, MIN GRADE #2, ATTACHED TO ONE FACE, CENTERED ON INTERSECTION, WITH (2) ROWS OF (0.131" X 3") NAILS @ 4" O.C. SCAB MAY BE OMITTED PROVIDED THE TOP CHORD SHEATHING IS CONTINUOUS OVER INTERSECTION AT LEAST 1 FT. IN BOTH DIRECTIONS AND:
1. WIND SPEED OF 115 MPH OR LESS FOR ANY PIGGYBACK SPAN, OR
2. WIND SPEED OF 116 MPH TO 160 MPH WITH A MAXIMUM PIGGYBACK SPAN OF 12 ft.

E - FOR WIND SPEEDS BETWEEN 126 AND 160 MPH, ATTACH MITEK 3X8 20 GA Nail-On PLATES TO EACH FACE OF TRUSSES AT 72" O.C. W/ (4) (0.131" X 1.5") NAILS PER MEMBER. STAGGER NAILS FROM OPPOSING FACES. ENSURE 0.5" EDGE DISTANCE. (MIN. 2 PAIRS OF PLATES REQ. REGARDLESS OF SPAN)

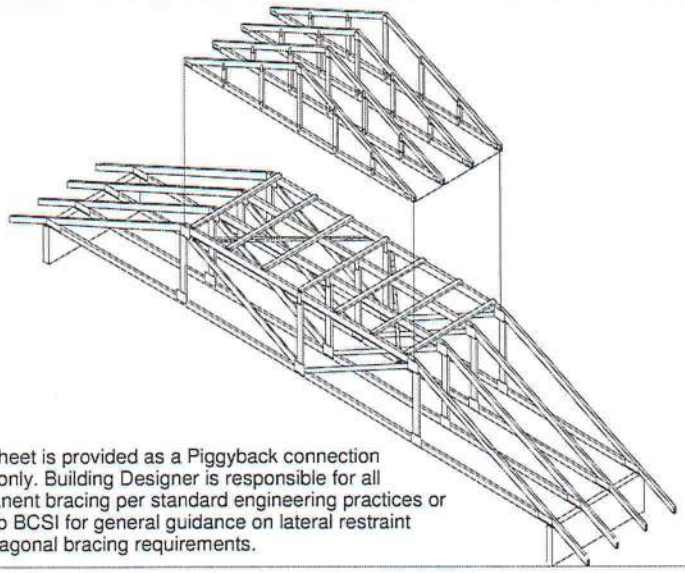


WHEN NO GAP BETWEEN PIGGYBACK AND BASE TRUSS EXISTS:

REPLACE TOE NAILING OF PIGGYBACK TRUSS TO PURLINS WITH Nail-On PLATES AS SHOWN, AND INSTALL PURLINS TO BOTTOM EDGE OF BASE TRUSS TOP CHORD AT SPECIFIED SPACING SHOWN ON BASE TRUSS MITEK DESIGN DRAWING.

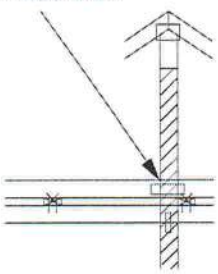


FOR ALL WIND SPEEDS, ATTACH MITEK 3X6 20 GA Nail-On PLATES TO EACH FACE OF TRUSSES AT 48" O.C. W/ (4) (0.131" X 1.5") PER MEMBER. STAGGER NAILS FROM OPPOSING FACES ENSURE 0.5" EDGE DISTANCE.



This sheet is provided as a Piggyback connection detail only. Building Designer is responsible for all permanent bracing per standard engineering practices or refer to BCSI for general guidance on lateral restraint and diagonal bracing requirements.

VERTICAL WEB TO EXTEND THROUGH BOTTOM CHORD OF PIGGYBACK



FOR LARGE CONCENTRATED LOADS APPLIED TO CAP TRUSS REQUIRING A VERTICAL WEB:

1) VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS MUST MATCH IN SIZE, GRADE, AND MUST LINE UP AS SHOWN IN DETAIL.
2) ATTACH 2 x ___ x 4'-0" SCAB TO EACH FACE OF TRUSS ASSEMBLY WITH 2 ROWS OF 10d (0.131" X 3") NAILS SPACED 4" O.C. FROM EACH FACE. (SIZE AND GRADE TO MATCH VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS.) (MINIMUM 2X4)
3) THIS CONNECTION IS ONLY VALID FOR A MAXIMUM CONCENTRATED LOAD OF 4000 LBS (@1.15). REVIEW BY A QUALIFIED ENGINEER IS REQUIRED FOR LOADS GREATER THAN 4000 LBS.
4) FOR PIGGYBACK TRUSSES CARRYING GIRDER LOADS, NUMBER OF PLYS OF PIGGYBACK TRUSS TO MATCH BASE TRUSS.
5) CONCENTRATED LOAD MUST BE APPLIED TO BOTH THE PIGGYBACK AND THE BASE TRUSS DESIGN.

AUGUST 1, 2016	STANDARD PIGGYBACK TRUSS CONNECTION DETAIL	MII-PIGGY-ALT 7-10

MiTek USA, Inc. Page 1 of 1

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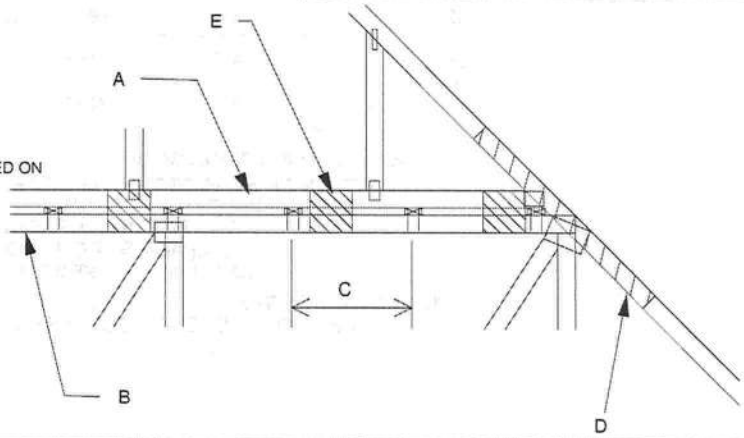
MAXIMUM WIND SPEED = REFER TO NOTES D AND OR E
MAX MEAN ROOF HEIGHT = 30 FEET
MAX TRUSS SPACING = 24 " O.C.
CATEGORY II BUILDING
EXPOSURE B or C
ASCE 7-10
DURATION OF LOAD INCREASE : 1.60

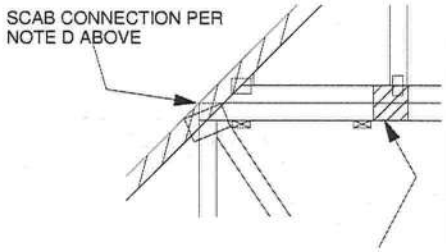
DETAIL IS NOT APPLICABLE FOR TRUSSES TRANSFERING DRAG LOADS (SHEAR TRUSSES). ADDITIONAL CONSIDERATIONS BY BUILDING ENGINEER/DESIGNER ARE REQUIRED.

A - PIGGBACK TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING. SHALL BE CONNECTED TO EACH PURLIN WITH (2) 0(0.131" X 3.5") TOE-NAILED.
B - BASE TRUSS, REFER TO MITEK TRUSS DESIGN DRAWING.
C - PURLINS AT EACH BASE TRUSS JOINT AND A MAXIMUM 24" O.C. UNLESS SPECIFIED CLOSER ON MITEK TRUSS DESIGN DRAWING. CONNECT TO BASE TRUSS WITH (2) (0.131" X 3.5") NAILS EACH.
D - 2 X__ X 4'-0" SCAB, SIZE TO MATCH TOP CHORD OF PIGGYBACK TRUSS, MIN GRADE #2, ATTACHED TO ONE FACE, CENTERED ON INTERSECTION, WITH (2) ROWS OF (0.131" X 3") NAILS @ 4" O.C. SCAB MAY BE OMITTED PROVIDED THE TOP CHORD SHEATHING IS CONTINUOUS OVER INTERSECTION AT LEAST 1 FT. IN BOTH DIRECTIONS AND:
  1. WIND SPEED OF 115 MPH OR LESS FOR ANY PIGGYBACK SPAN, OR
  2. WIND SPEED OF 116 MPH TO 160 MPH WITH A MAXIMUM PIGGYBACK SPAN OF 12 ft.
E - FOR WIND SPEED IN THE RANGE 126 MPH - 160 MPH ADD 9" x 9" x 1/2" PLYWOOD (or 7/16" OSB) GUSSET EACH SIDE AT 48" O.C. OR LESS. ATTACH WITH 3 - 6d (0.113" X 2") NAILS INTO EACH CHORD FROM EACH SIDE (TOTAL - 12 NAILS)

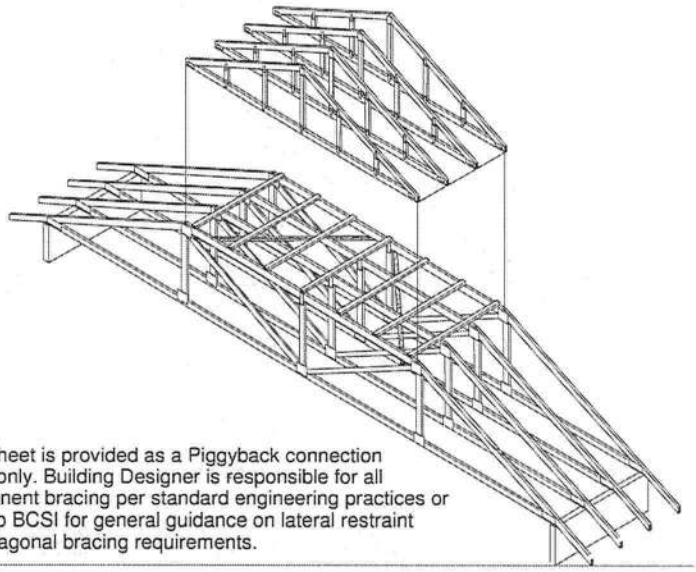


WHEN NO GAP BETWEEN PIGGYBACK AND BASE TRUSS EXISTS:

REPLACE TOE NAILING OF PIGGYBACK TRUSS TO PURLINS WITH PLYWOOD GUSSETS AS SHOWN, AND INSTALL PURLINS TO BOTTOM EDGE OF BASE TRUSS TOP CHORD AT SPECIFIED SPACING SHOWN ON BASE TRUSS MITEK DESIGN DRAWING.

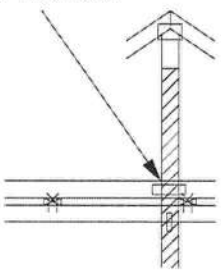


7" x 7" x 1/2" PLYWOOD (or 7/16" OSB) GUSSET EACH SIDE AT 24" O.C. ATTACH WITH 3 - 6d (0.113" X 2") NAILS INTO EACH CHORD FROM EACH SIDE (TOTAL - 12 NAILS)



This sheet is provided as a Piggyback connection detail only. Building Designer is responsible for all permanent bracing per standard engineering practices or refer to BCSI for general guidance on lateral restraint and diagonal bracing requirements.

VERTICAL WEB TO EXTEND THROUGH BOTTOM CHORD OF PIGGYBACK



FOR LARGE CONCENTRATED LOADS APPLIED TO CAP TRUSS REQUIRING A VERTICAL WEB:

1) VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS MUST MATCH IN SIZE, GRADE, AND MUST LINE UP AS SHOWN IN DETAIL.
2) ATTACH 2 x ___ x 4'-0" SCAB TO EACH FACE OF TRUSS ASSEMBLY WITH 2 ROWS OF 10d (0.131" X 3") NAILS SPACED 4" O.C. FROM EACH FACE. (SIZE AND GRADE TO MATCH VERTICAL WEBS OF PIGGYBACK AND BASE TRUSS.) (MINIMUM 2X4)
3) THIS CONNECTION IS ONLY VALID FOR A MAXIMUM CONCENTRATED LOAD OF 4000 LBS (@1.15). REVIEW BY A QUALIFIED ENGINEER IS REQUIRED FOR LOADS GREATER THAN 4000 LBS.
4) FOR PIGGYBACK TRUSSES CARRYING GIRDER LOADS, NUMBER OF PLYS OF PIGGYBACK TRUSS TO MATCH BASE TRUSS.
5) CONCENTRATED LOAD MUST BE APPLIED TO BOTH THE PIGGYBACK AND THE BASE TRUSS DESIGN.

AUGUST 1, 2016	STANDARD REPAIR DETAIL FOR BROKEN CHORDS, WEBS AND DAMAGED OR MISSING CHORD SPLICE PLATES	MII-REP01A1

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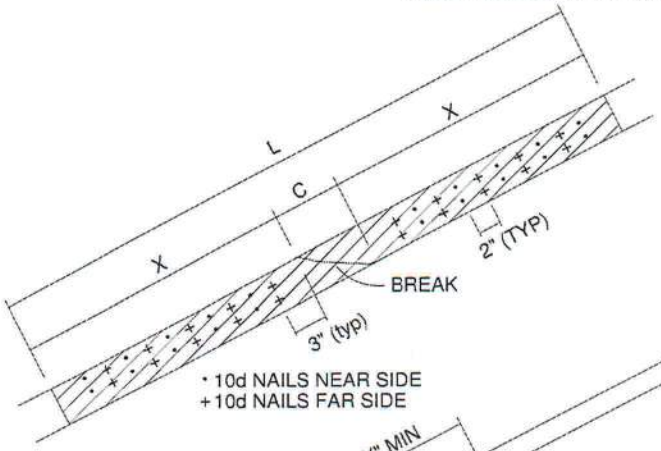
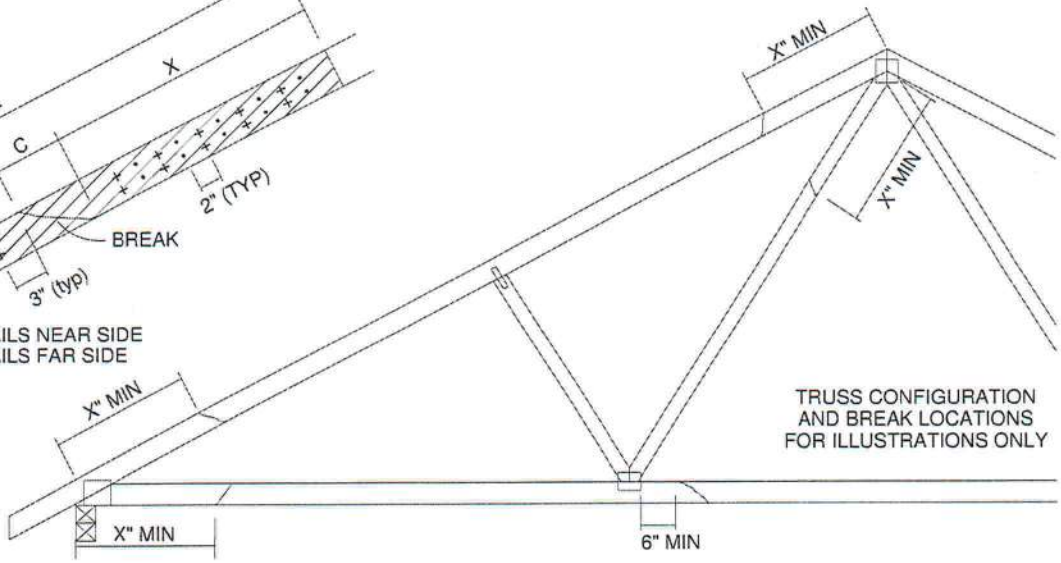
TOTAL NUMBER OF NAILS EACH SIDE OF BREAK *		X INCHES	MAXIMUM FORCE (lbs) 15% LOAD DURATION							
			SP		DF		SPF		HF	
2x4	2x6		2x4	2x6	2x4	2x6	2x4	2x6	2x4	2x6
20	30	24"	1706	2559	1561	2342	1320	1980	1352	2028
26	39	30"	2194	3291	2007	3011	1697	2546	1738	2608
32	48	36"	2681	4022	2454	3681	2074	3111	2125	3187
38	57	42"	3169	4754	2900	4350	2451	3677	2511	3767
44	66	48"	3657	5485	3346	5019	2829	4243	2898	4347

* DIVIDE EQUALLY FRONT AND BACK

ATTACH 2x_ SCAB OF THE SAME SIZE AND GRADE AS THE BROKEN MEMBER TO EACH FACE OF THE TRUSS (CENTER ON BREAK OR SPLICE) WITH 10d (0.131" X 3") NAILS (TWO ROWS FOR 2x4, THREE ROWS FOR 2x6) SPACED 4" O.C. AS SHOWN. STAGGER NAIL SPACING FROM FRONT FACE AND BACK FACE FOR A NET 0-2-0 O.C. SPACING IN THE MAIN MEMBER. USE A MIN. 0-3-0 MEMBER END DISTANCE.

THE LENGTH OF THE BREAK (C) SHALL NOT EXCEED 12". (C=PLATE LENGTH FOR SPLICE REPAIRS)
THE MINIMUM OVERALL SCAB LENGTH REQUIRED (L) IS CALCULATED AS FOLLOWS:
L = (2) X + C





THE LOCATION OF THE BREAK MUST BE GREATER THAN OR EQUAL TO THE REQUIRED X DIMENSION FROM ANY PERIMETER BREAK OR HEEL JOINT AND A MINIMUM OF 6" FROM ANY INTERIOR JOINT (SEE SKETCH ABOVE)

DO NOT USE REPAIR FOR JOINT SPLICES

NOTES:
1. THIS REPAIR DETAIL IS TO BE USED ONLY FOR THE APPLICATION SHOWN. THIS REPAIR DOES NOT IMPLY THAT THE REMAINING PORTION OF THE TRUSS IS UNDAMAGED. THE ENTIRE TRUSS SHALL BE INSPECTED TO VERIFY THAT NO FURTHER REPAIRS ARE REQUIRED. WHEN THE REQUIRED REPAIRS ARE PROPERLY APPLIED, THE TRUSS WILL BE CAPABLE OF SUPPORTING THE LOADS INDICATED.
2. ALL MEMBERS MUST BE RETURNED TO THEIR ORIGINAL POSITIONS BEFORE APPLING REPAIR AND HELD IN PLACE DURING APPLICATION OF REPAIR.
3. THE END DISTANCE, EDGE DISTANCE AND SPACING OF NAILS SHALL BE SUCH AS TO AVOID UNUSUAL SPLITTING OF THE WOOD.
4. WHEN NAILING THE SCABS, THE USE OF A BACKUP WEIGHT IS RECOMMENDED TO AVOID LOOSENING OF THE CONNECTOR PLATES AT THE JOINTS OR SPLICES.
5. THIS REPAIR IS TO BE USED FOR SINGLE PLY TRUSSES IN THE 2x_ ORIENTATION ONLY.
6. THIS REPAIR IS LIMITED TO TRUSSES WITH NO MORE THAN THREE BROKEN MEMBERS.

AUGUST 1, 2016	LATERAL TOE-NAIL DETAIL	MII-TOENAIL_SP

MiTek USA, Inc.

ENGINEERED BY TRENCO
A MiTek Affiliate

NOTES:
1. TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 45 DEGREES WITH THE MEMBER AND MUST HAVE FULL WOOD SUPPORT. (NAIL MUST BE DRIVEN THROUGH AND EXIT AT THE BACK CORNER OF THE MEMBER END AS SHOWN.
2. THE END DISTANCE, EDGE DISTANCE, AND SPACING OF NAILS SHALL BE SUCH AS TO AVOID UNUSUAL SPLITTING OF THE WOOD.
3. ALLOWABLE VALUE SHALL BE THE LESSER VALUE OF THE TWO SPECIES FOR MEMBERS OF DIFFERENT SPECIES.

THIS DETAIL APPLICABLE TO THE THREE END DETAILS SHOWN BELOW

VIEWS SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY

TOE-NAIL SINGLE SHEAR VALUES PER NDS 2001 (lb/nail)

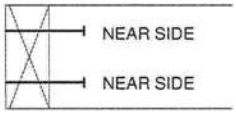
	DIAM.	SP	DF	HF	SPF	SPF-S
3.5" LONG	.131	88.0	80.6	69.9	68.4	59.7
	.135	93.5	85.6	74.2	72.6	63.4
	.162	108.8	99.6	86.4	84.5	73.8
3.25" LONG	.128	74.2	67.9	58.9	57.6	50.3
	.131	75.9	69.5	60.3	59.0	51.1
	.148	81.4	74.5	64.6	63.2	52.5

VALUES SHOWN ARE CAPACITY PER TOE-NAIL.
APPLICABLE DURATION OF LOAD INCREASES MAY BE APPLIED.

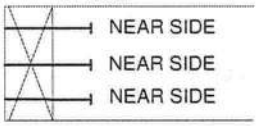
EXAMPLE:
(3) - 16d (0.162" X 3.5") NAILS WITH SPF SPECIES BOTTOM CHORD

For load duration increase of 1.15:
3 (nails) X 84.5 (lb/nail) X 1.15 (DOL) = 291.5 lb Maximum Capacity

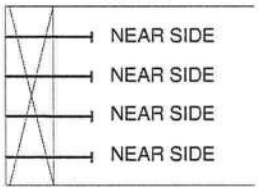
SIDE VIEW
(2x3)
2 NAILS

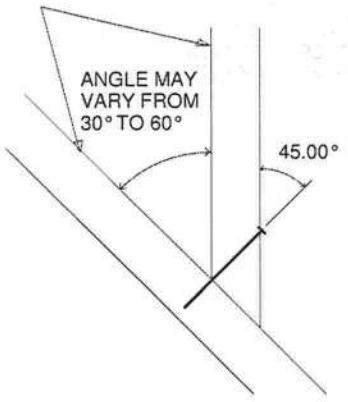


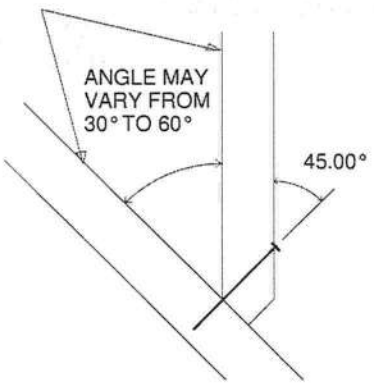
SIDE VIEW
(2x4)
3 NAILS

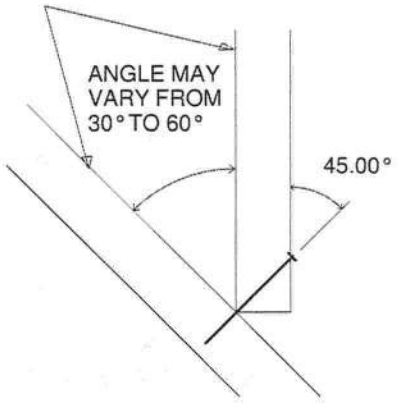


SIDE VIEW
(2x6)
4 NAILS









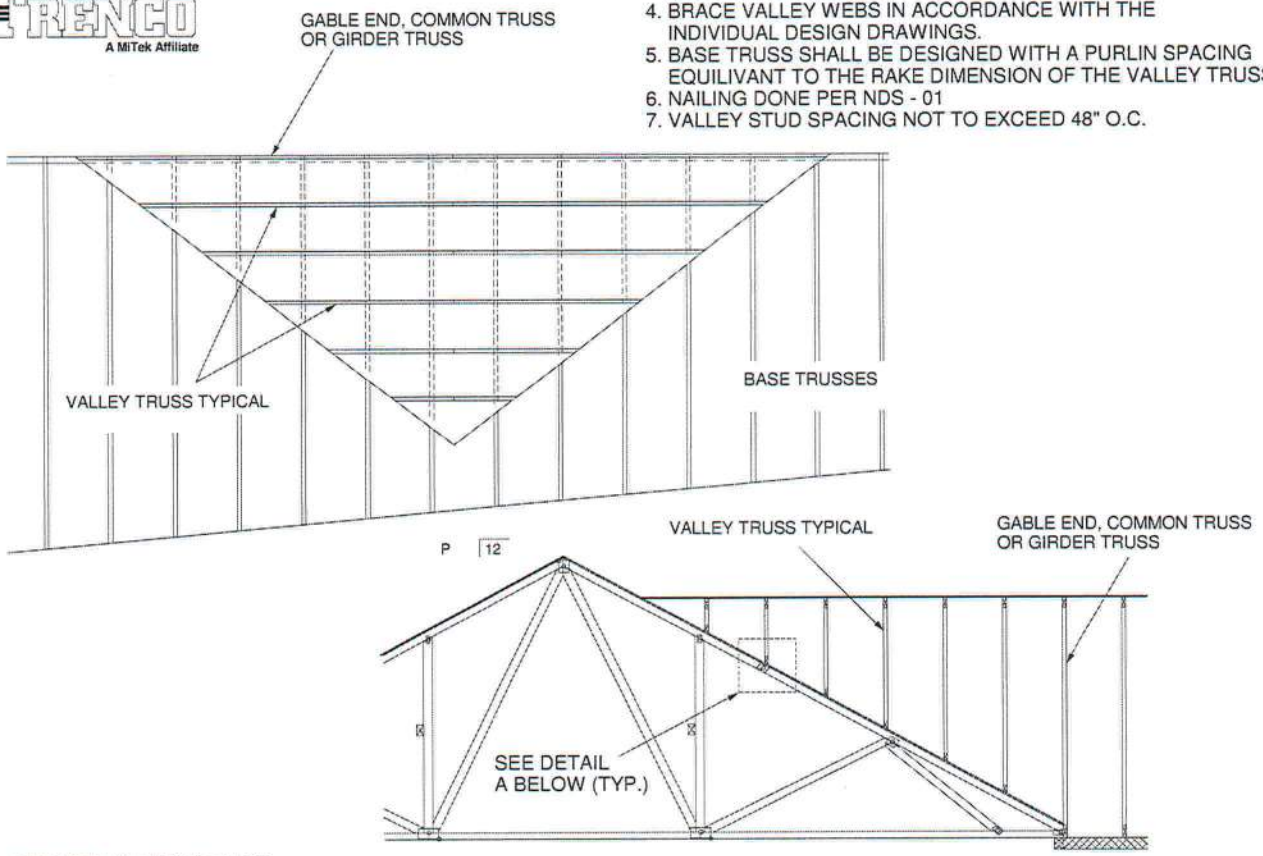
AUGUST 1, 2016	TRUSSED VALLEY SET DETAIL	MII-VALLEY HIGH WIND1

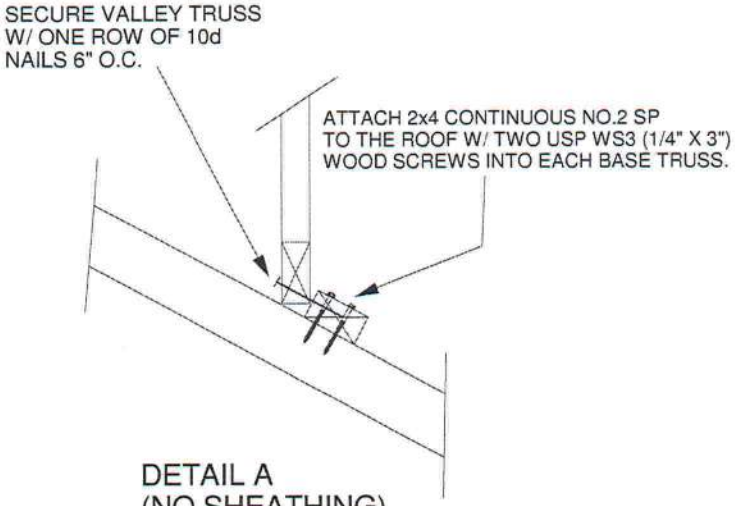
MiTek USA, Inc.

ENGINEERED BY TRENCO
A MiTek Affiliate

GENERAL SPECIFICATIONS

1. NAIL SIZE 10d (0.131" X 3")
2. WOOD SCREW = 3" WS3 USP OR EQUIVALENT
   DO NOT USE DRYWALL OR DECKING TYPE SCREW
3. INSTALL VALLEY TRUSSES (24" O.C. MAXIMUM) AND
   SECURE PER DETAIL A
4. BRACE VALLEY WEBS IN ACCORDANCE WITH THE
   INDIVIDUAL DESIGN DRAWINGS.
5. BASE TRUSS SHALL BE DESIGNED WITH A PURLIN SPACING
   EQUILIVANT TO THE RAKE DIMENSION OF THE VALLEY TRUSS SPACING.
6. NAILING DONE PER NDS - 01
7. VALLEY STUD SPACING NOT TO EXCEED 48" O.C.





DETAIL A
(NO SHEATHING)
N.T.S.

WIND DESIGN PER ASCE 7-98, ASCE 7-02, ASCE 7-05 146 MPH
WIND DESIGN PER ASCE 7-10 160 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
ROOF PITCH = MINIMUM 3/12 MAXIMUM 6/12
CATEGORY II BUILDING
EXPOSURE C
WIND DURATION OF LOAD INCREASE : 1.60
MAX TOP CHORD TOTAL LOAD = 50 PSF
MAX SPACING = 24" O.C. (BASE AND VALLEY)
MINIMUM REDUCED DEAD LOAD OF 6 PSF
ON THE TRUSSES

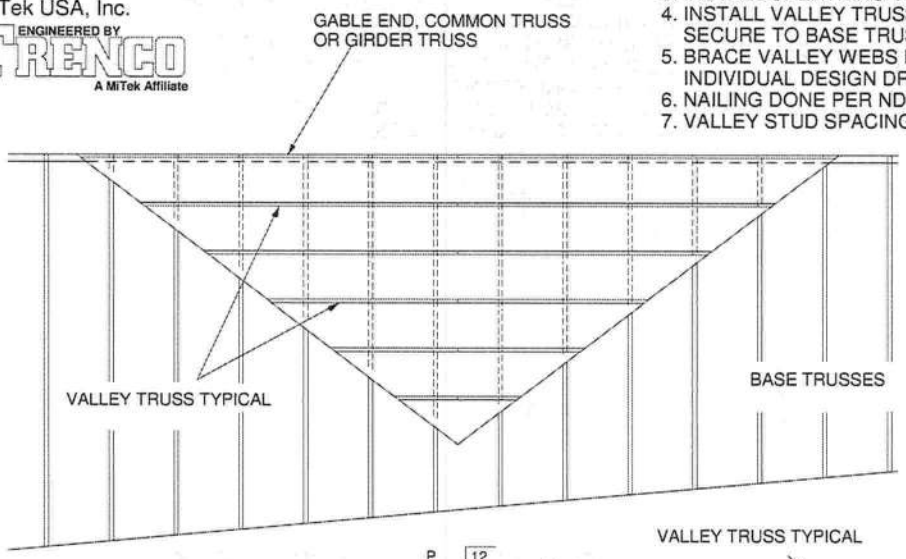
AUGUST 1, 2016	TRUSSED VALLEY SET DETAIL	MII-VALLEY HIGH WIND2

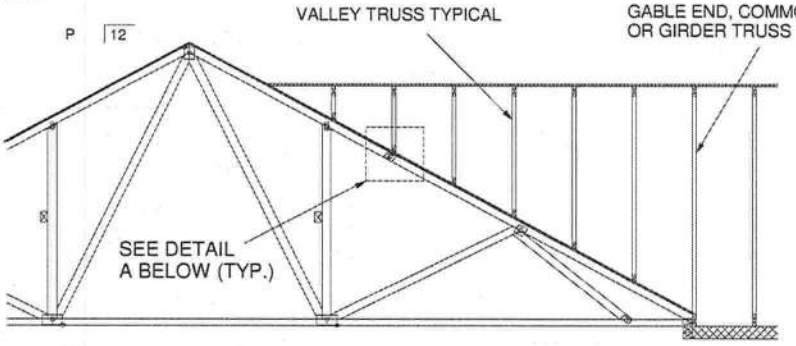
MiTek USA, Inc.

ENGINEERED BY TRENCO A MiTek Affiliate

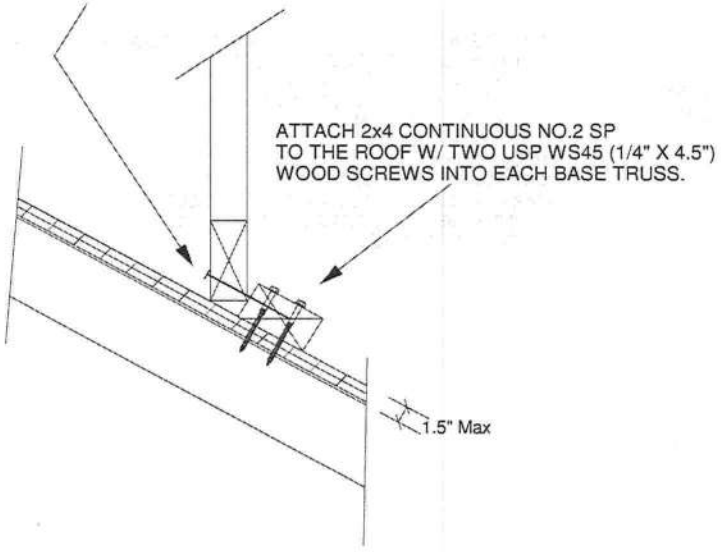
GENERAL SPECIFICATIONS

1. NAIL SIZE 10d (0.131" X 3")
2. WOOD SCREW = 4.5" WS45 USP OR EQUILIVANT
3. INSTALL SHEATHING TO TOP CHORD OF BASE TRUSSES.
4. INSTALL VALLEY TRUSSES (24" O.C. MAXIMUM) AND SECURE TO BASE TRUSSES AS PER DETAIL A
5. BRACE VALLEY WEBS IN ACCORDANCE WITH THE INDIVIDUAL DESIGN DRAWINGS.
6. NAILING DONE PER NDS-01
7. VALLEY STUD SPACING NOT TO EXCEED 48" O.C.





SECURE VALLEY TRUSS W/ ONE ROW OF 10d NAILS 6" O.C.



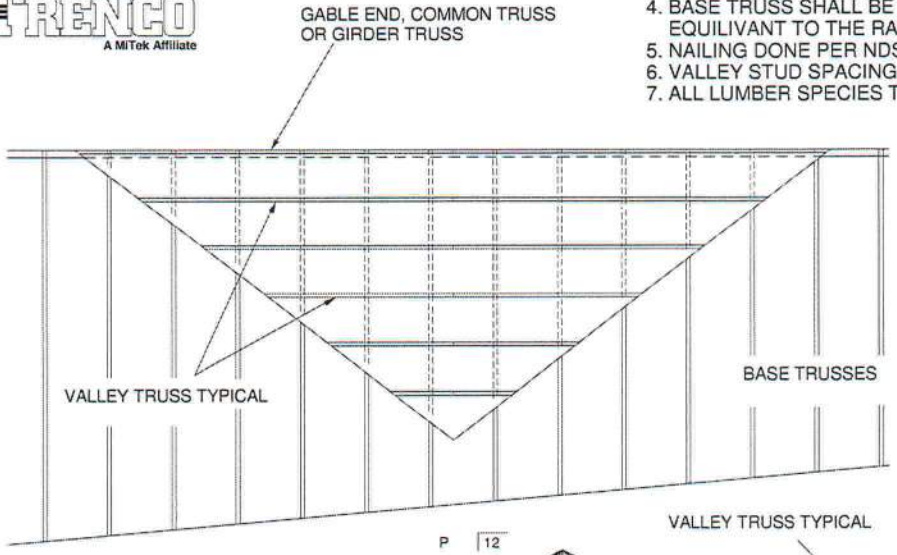
WIND DESIGN PER ASCE 7-98, ASCE 7-02, ASCE 7-05 146 MPH
WIND DESIGN PER ASCE 7-10 160 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
ROOF PITCH = MINIMUM 3/12 MAXIMUM 6/12
CATEGORY II BUILDING
EXPOSURE C
WIND DURATION OF LOAD INCREASE : 1.60
MAX TOP CHORD TOTAL LOAD = 50 PSF
MAX SPACING = 24" O.C. (BASE AND VALLEY)
MINIMUM REDUCED DEAD LOAD OF 6 PSF ON THE TRUSSES

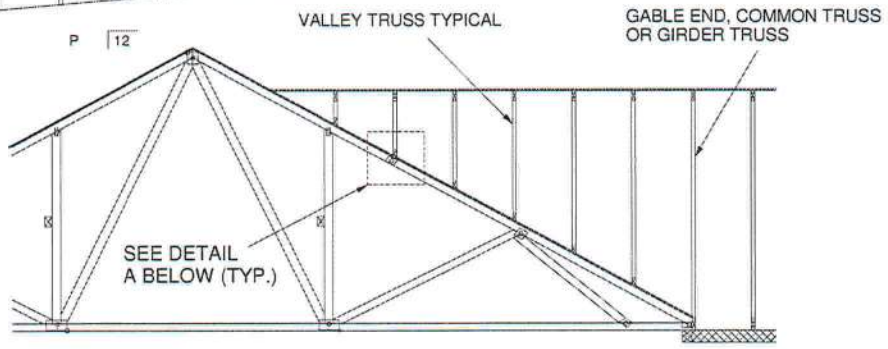
MiTek USA, Inc.

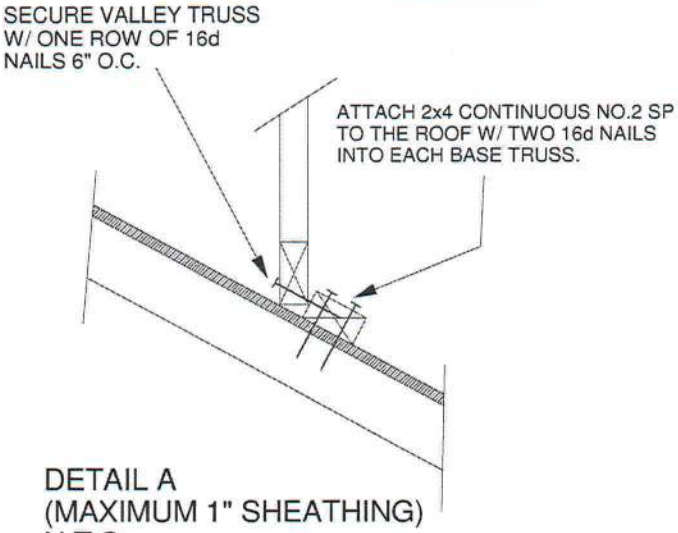
ENGINEERED BY TRENCO A MiTek Affiliate

GENERAL SPECIFICATIONS

1. NAIL SIZE 16d (0.131" X 3.5")
2. INSTALL VALLEY TRUSSES (24" O.C. MAXIMUM) AND SECURE PER DETAIL A
3. BRACE VALLEY WEBS IN ACCORDANCE WITH THE INDIVIDUAL DESIGN DRAWINGS.
4. BASE TRUSS SHALL BE DESIGNED WITH A PURLIN SPACING EQUILIVANT TO THE RAKE DIMENSION OF THE VALLEY TRUSS SPACING.
5. NAILING DONE PER NDS - 01
6. VALLEY STUD SPACING NOT TO EXCEED 48" O.C.
7. ALL LUMBER SPECIES TO BE SP.







DETAIL A
(MAXIMUM 1" SHEATHING)
N.T.S.

WIND DESIGN PER ASCE 7-98, ASCE 7-02, ASCE 7-05 120 MPH
WIND DESIGN PER ASCE 7-10 150 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
ROOF PITCH = MINIMUM 3/12 MAXIMUM 10/12
CATEGORY II BUILDING
EXPOSURE C OR B
WIND DURATION OF LOAD INCREASE : 1.60
MAX TOP CHORD TOTAL LOAD = 60 PSF
MAX SPACING = 24" O.C. (BASE AND VALLEY)
MINIMUM REDUCED DEAD LOAD OF 4.2 PSF ON THE TRUSSES

AUGUST 1, 2016	TRUSSED VALLEY SET DETAIL (HIGH WIND VELOCITY)	MII-VALLEY

MiTek USA, Inc.
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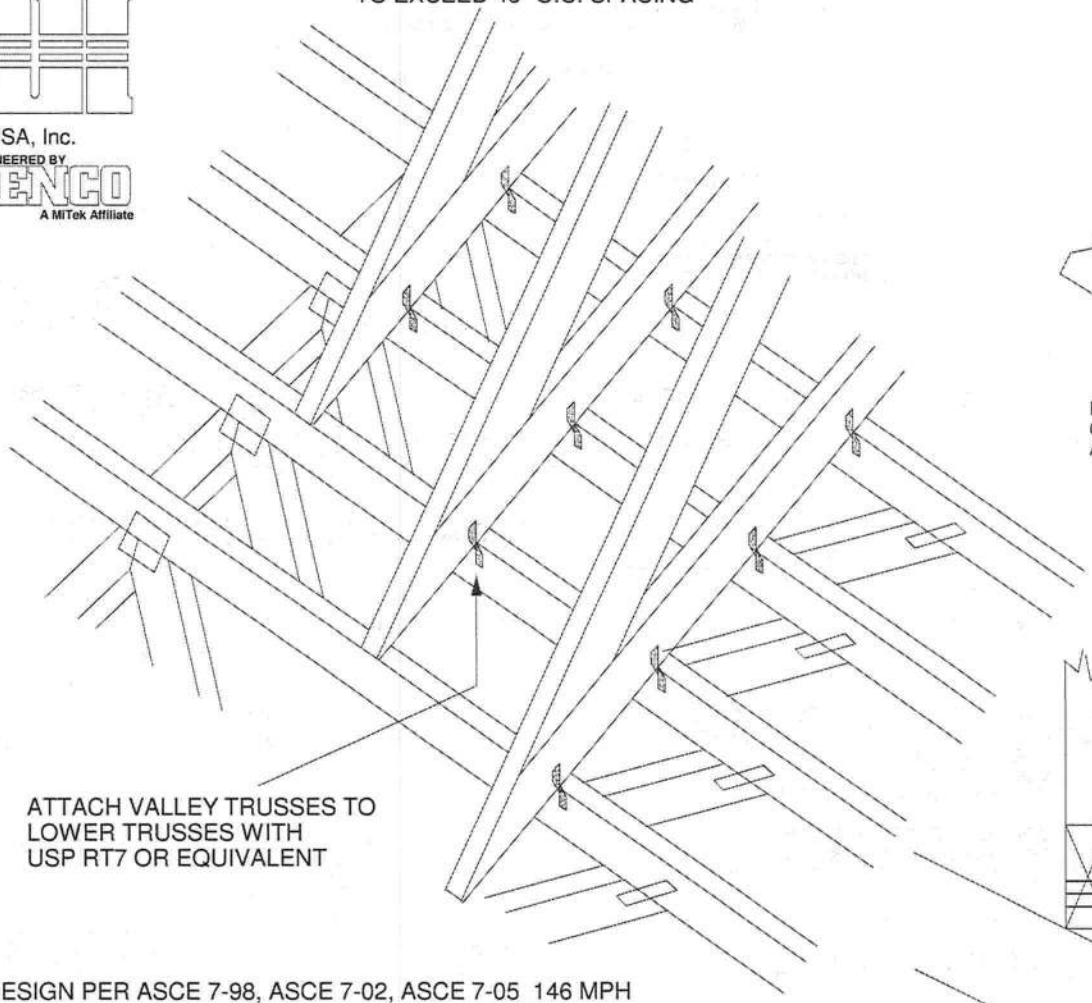
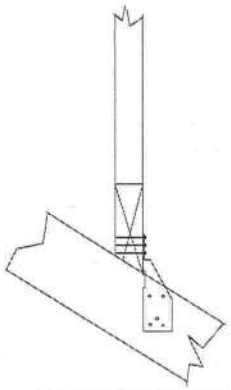
A MiTek Affiliate

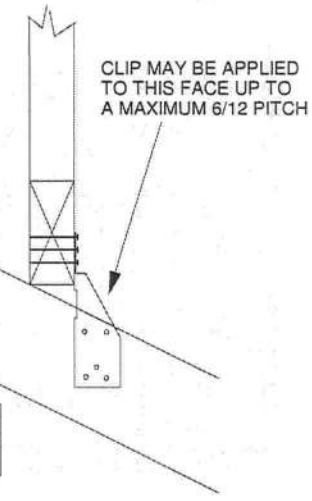
NOTE: VALLEY STUD SPACING NOT TO EXCEED 48" O.C. SPACING



ATTACH VALLEY TRUSSES TO LOWER TRUSSES WITH USP RT7 OR EQUIVALENT

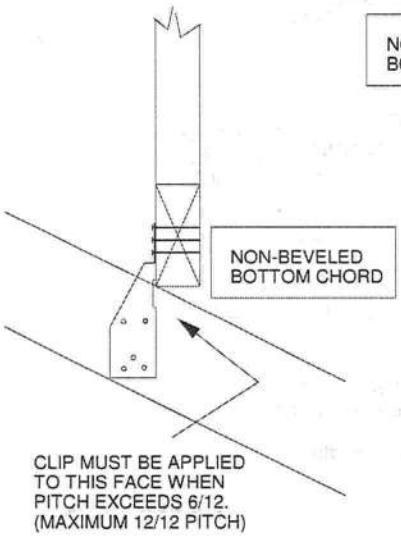


FOR BEVELED BOTTOM CHORD, CLIP MAY BE APPLIED TO EITHER FACE



CLIP MAY BE APPLIED TO THIS FACE UP TO A MAXIMUM 6/12 PITCH

NON-BEVELED BOTTOM CHORD



NON-BEVELED BOTTOM CHORD

CLIP MUST BE APPLIED TO THIS FACE WHEN PITCH EXCEEDS 6/12. (MAXIMUM 12/12 PITCH)

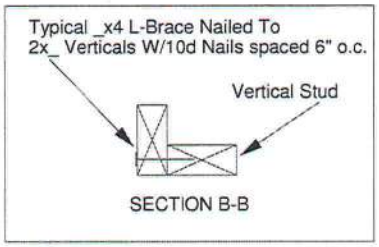
WIND DESIGN PER ASCE 7-98, ASCE 7-02, ASCE 7-05 146 MPH
WIND DESIGN PER ASCE 7-10 160 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
CATEGORY II BUILDING
EXPOSURE B or C
WIND DURATION OF LOAD INCREASE : 1.6
MAX TOP CHORD TOTAL LOAD = 50 PSF
MAX SPACING = 24" O.C. (BASE AND VALLEY)

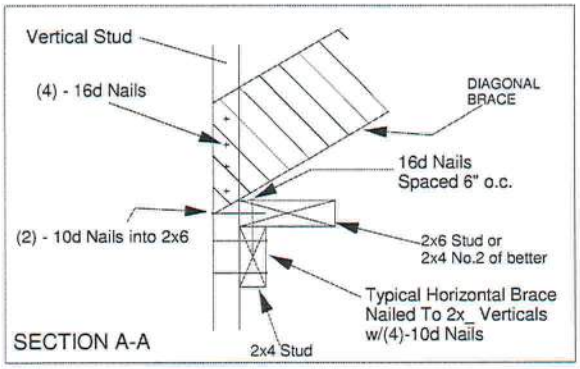
SUPPORTING TRUSSES DIRECTLY UNDER VALLEY TRUSSES MUST BE DESIGNED WITH A MAXIMUM UNBRACED LENGTH OF 2'-10" ON AFFECTED TOP CHORDS.

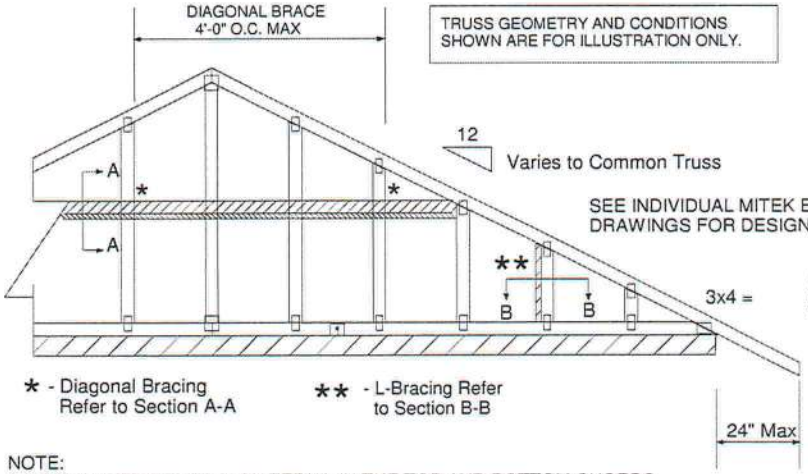
NOTES:
- SHEATHING APPLIED AFTER INSTALLATION OF VALLEY TRUSSES
- THIS DETAIL IS NOT APPLICABLE FOR SPF-S SPECIES LUMBER.

AUGUST 1, 2016	Standard Gable End Detail	MII-GE146-001

MiTek USA, Inc.
ENGINEERED BY TRENCO
A MiTek Affiliate





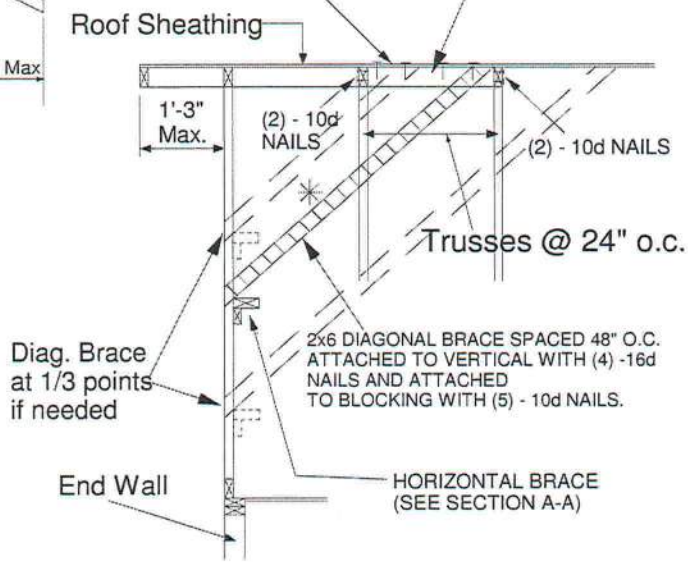


TRUSS GEOMETRY AND CONDITIONS SHOWN ARE FOR ILLUSTRATION ONLY.

SEE INDIVIDUAL MITEK ENGINEERING DRAWINGS FOR DESIGN CRITERIA

PROVIDE 2x4 BLOCKING BETWEEN THE FIRST TWO TRUSSES AS NOTED. TOENAIL BLOCKING TO TRUSSES WITH (2) - 10d NAILS AT EACH END. ATTACH DIAGONAL BRACE TO BLOCKING WITH (5) - 10d NAILS.

(4) - 8d (0.131" X 2.5") NAILS MINIMUM, PLYWOOD SHEATHING TO 2x4 STD SP BLOCK



* - Diagonal Bracing Refer to Section A-A

** - L-Bracing Refer to Section B-B

NOTE:
1. MINIMUM GRADE OF #2 MATERIAL IN THE TOP AND BOTTOM CHORDS.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL TO BE PROVIDED BY PROJECT ENGINEER OR ARCHITECT.
3. BRACING SHOWN IS FOR INDIVIDUAL TRUSS ONLY. CONSULT BLDG. ARCHITECT OR ENGINEER FOR TEMPORARY AND PERMANENT BRACING OF ROOF SYSTEM.
4. "L" BRACES SPECIFIED ARE TO BE FULL LENGTH. GRADES: 2x4 No 3/STUD SP OR BETTER WITH ONE ROW OF 10d NAILS SPACED 6" O.C.
5. DIAGONAL BRACE TO BE APPROXIMATELY 45 DEGREES TO ROOF DIAPHRAM AT 4'-0" O.C.
6. CONSTRUCT HORIZONTAL BRACE CONNECTING A 2x6 STUD AND A 2x4 STUD AS SHOWN WITH 16d NAILS SPACED 6" O.C. HORIZONTAL BRACE TO BE LOCATED AT THE MIDSPAN OF THE LONGEST STUD. ATTACH TO VERTICAL STUDS WITH (4) 10d NAILS THROUGH 2x4. (REFER TO SECTION A-A)
7. GABLE STUD DEFLECTION MEETS OR EXCEEDS L/240.
8. THIS DETAIL DOES NOT APPLY TO STRUCTURAL GABLES.
9. DO NOT USE FLAT BOTTOM CHORD GABLES NEXT TO SCISSOR TYPE TRUSSES.
10. NAILS DESIGNATED 10d ARE (0.131" X 3") AND NAILS DESIGNATED 16d ARE (0.131" X 3.5")

Minimum Stud Size Species and Grade	Stud Spacing	Without Brace	2x4 L-Brace	DIAGONAL BRACE	2 DIAGONAL BRACES AT 1/3 POINTS
		Maximum Stud Length			
2x4 SP No 3/Stud	12" O.C.	3-11-3	6-8-0	7-2-14	11-9-10
2x4 SP No 3/Stud	16" O.C.	3-6-14	5-9-5	7-1-13	10-8-11
2x4 SP No 3/Stud	24" O.C.	3-1-8	4-8-9	6-2-15	9-4-7

✳ Diagonal braces over 6'-3" require a 2x4 T-Brace attached to one edge. Diagonal braces over 12'-6" require 2x4 I-braces attached to both edges. Fasten T and I braces to narrow edge of web with 10d nails 8" o.c., with 3" minimum end distance. Brace must cover 90% of diagonal length.

MAXIMUM WIND SPEED = 146 MPH
MAX MEAN ROOF HEIGHT = 30 FEET
CATEGORY II BUILDING
EXPOSURE B or C
ASCE 7-98, ASCE 7-02, ASCE 7-05
DURATION OF LOAD INCREASE : 1.60

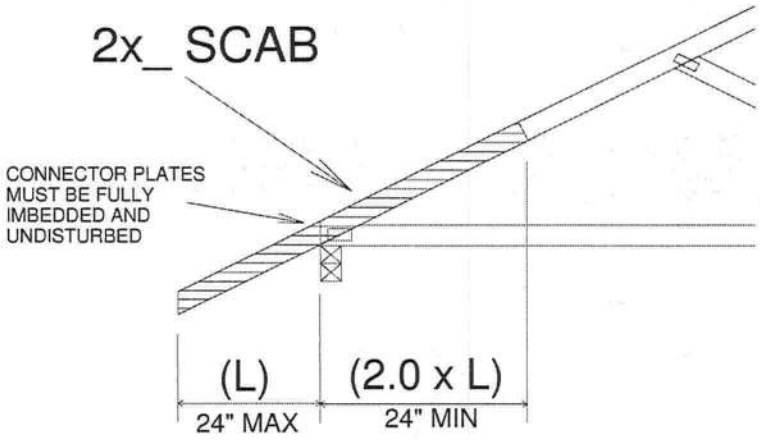
STUD DESIGN IS BASED ON COMPONENTS AND CLADDING.
CONNECTION OF BRACING IS BASED ON MWFRS.

OCTOBER 5, 2016	REPLACE BROKEN OVERHANG	MII-REP13B

MiTek USA, Inc.
ENGINEERED BY TRENCO A MiTek Affiliate

TRUSS CRITERIA:
LOADING: 40-10-0-10
DURATION FACTOR: 1.15
SPACING: 24" O.C.
TOP CHORD: 2x4 OR 2x6
PITCH: 4/12 - 12/12
HEEL HEIGHT: STANDARD HEEL UP TO 12" ENERGY HEEL
END BEARING CONDITION

NOTES:
1. ATTACH 2x_ SCAB (MINIMUM NO.2 GRADE SPF, HF, SP, DF) TO ONE FACE OF TRUSS WITH TWO ROWS OF 10d (0.131" X 3") SPACED 6" O.C.
2. THE END DISTANCE, EDGE DISTANCE, AND SPACING OF NAILS SHALL BE SUCH AS TO AVOID UNUSUAL SPLITTING OF THE WOOD.
3. WHEN NAILING THE SCABS, THE USE OF A BACKUP WEIGHT IS RECOMMENDED TO AVOID LOOSENING OF THE CONNECTOR PLATES AT THE JOINTS OR SPLICES.



IMPORTANT
This detail to be used only with trusses (spans less than 40') spaced 24" o.c. maximum and having pitches between 4/12 and 12/12 and total top chord loads not exceeding 50 psf.
Trusses not fitting these criteria should be examined individually.

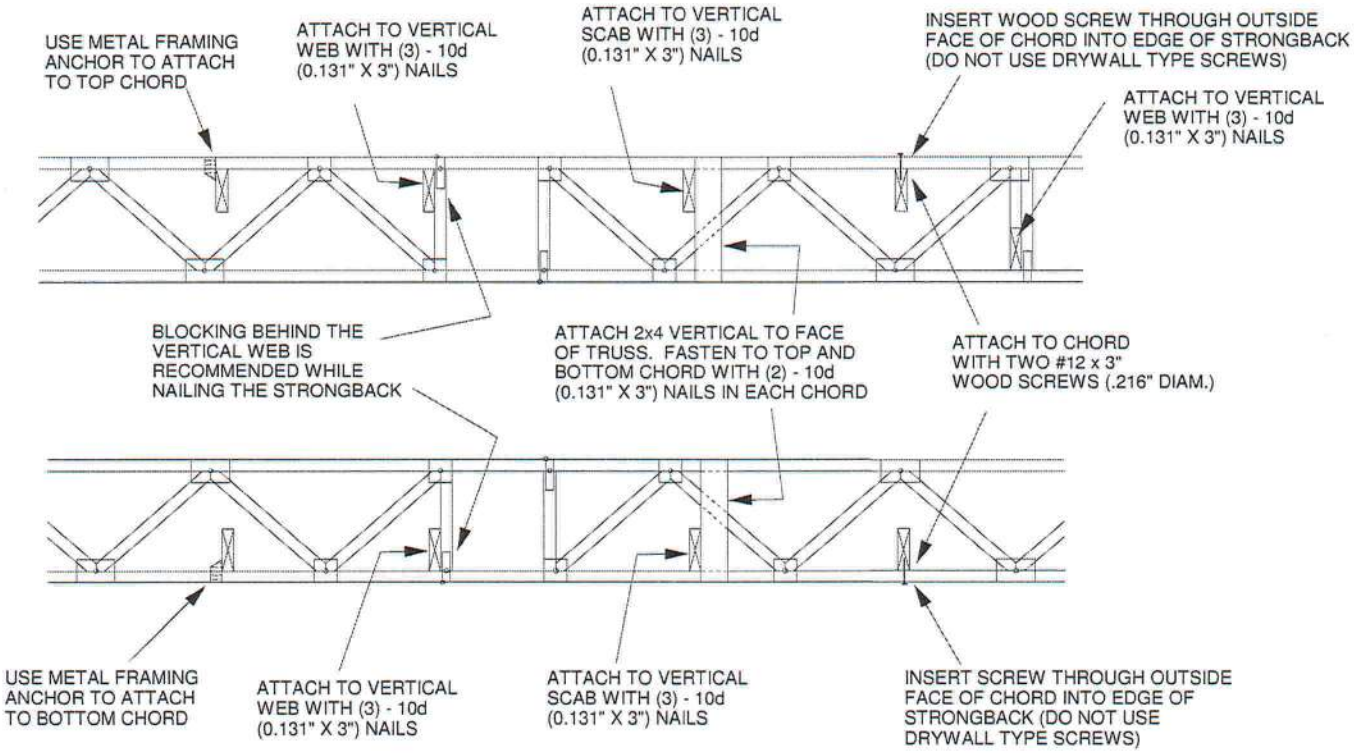
REFER TO INDIVIDUAL TRUSS DESIGN
FOR PLATE SIZES AND LUMBER GRADES

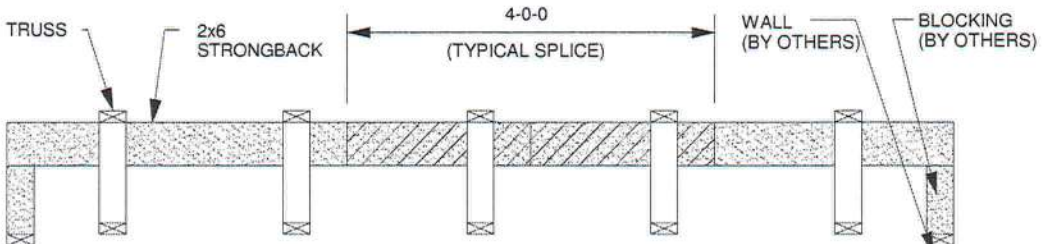
MiTek USA, Inc.
ENGINEERED BY TRENCO
A MiTek Affiliate

TO MINIMIZE VIBRATION COMMON TO ALL SHALLOW FRAMING SYSTEMS, 2x6 "STRONGBACK" IS RECOMMENDED, LOCATED EVERY 8 TO 10 FEET ALONG A FLOOR TRUSS.

NOTE 1: 2X6 STRONGBACK ORIENTED VERTICALLY MAY BE POSITIONED DIRECTLY UNDER THE TOP CHORD OR DIRECTLY ABOVE THE BOTTOM CHORD. SECURELY FASTENED TO THE TRUSS USING ANY OF THE METHODS ILLUSTRATED BELOW.

NOTE 2: STRONGBACK BRACING ALSO SATISFIES THE LATERAL BRACING REQUIREMENTS FOR THE BOTTOM CHORD OF THE TRUSS WHEN IT IS PLACED ON TOP OF THE BOTTOM CHORD, IS CONTINUOUS FROM END TO END, CONNECTED WITH A METHOD OTHER THAN METAL FRAMING ANCHOR, AND PROPERLY CONNECTED, BY OTHERS, AT THE ENDS.





THE STRONGBACKS SHALL BE SECURED AT THEIR ENDS TO ADEQUATE SUPPORT, DESIGNED BY OTHERS. IF SPLICING IS NECESSARY, USE A 4'-0" LONG SCAB CENTERED ON THE SPLICE AND JOINED WITH (12) - 10d (0.131" X 3") NAILS EQUALLY SPACED.

ALTERNATE METHOD OF SPLICING:
OVERLAP STRONGBACK MEMBERS A MINIMUM OF 4'-0" AND FASTEN WITH (12) - 10d (0.131" X 3") NAILS STAGGERED AND EQUALLY SPACED.
(TO BE USED ONLY WHEN STRONGBACK IS NOT ALIGNED WITH A VERTICAL)

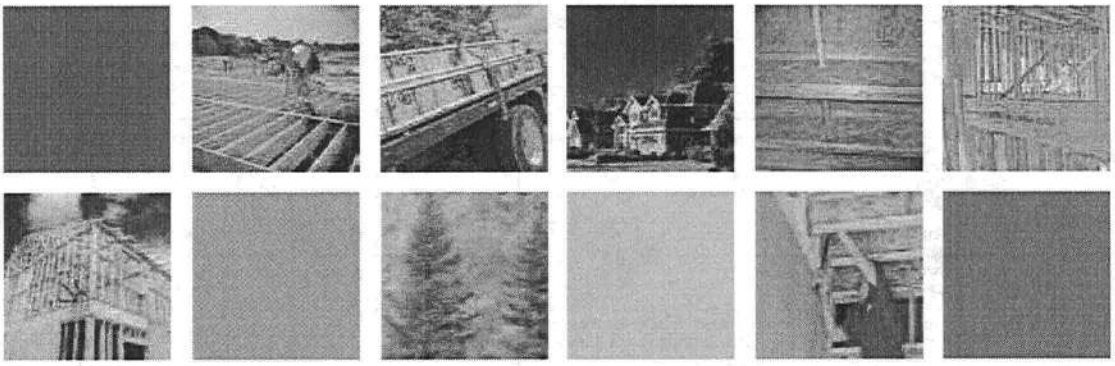
Boise Cascade
Engineered Wood Products

The information in this document pertains to use in the UNITED STATES ONLY, Allowable Stress Design. Refer to the ALLJOIST Specifier Guide Canada for use in Canada, Limit States Design.

ALLJoist®

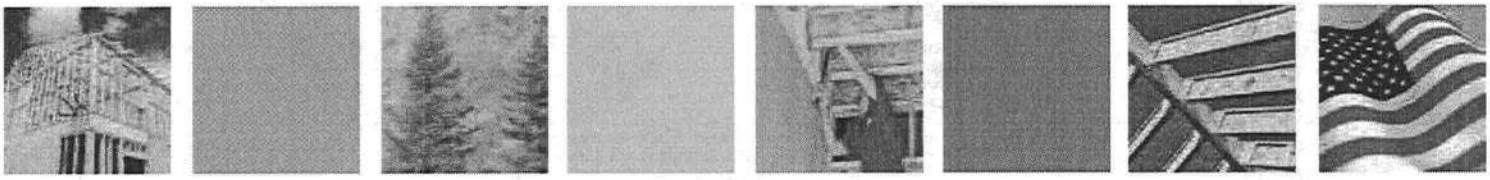
INSTALLATION GUIDE

Includes AJS® 140 / 150 / 20 / 190 / 25 and VERSA-LAM® BEAMS



US Version

product manufactured in
St. Jacques, New Brunswick
CANADA



Lifetime Guaranteed Quality and Performance

Boise Cascade warrants its BCI® Joist, VERSA-LAM®, and ALLJOIST® products to comply with our specifications, to be free from defects in material and workmanship, and to meet or exceed our performance specifications for the normal and expected life of the structure when correctly stored, installed, and used according to our Installation Guide.

For information about Boise Cascade's engineered wood products, including sales terms and conditions, warranties and disclaimers,

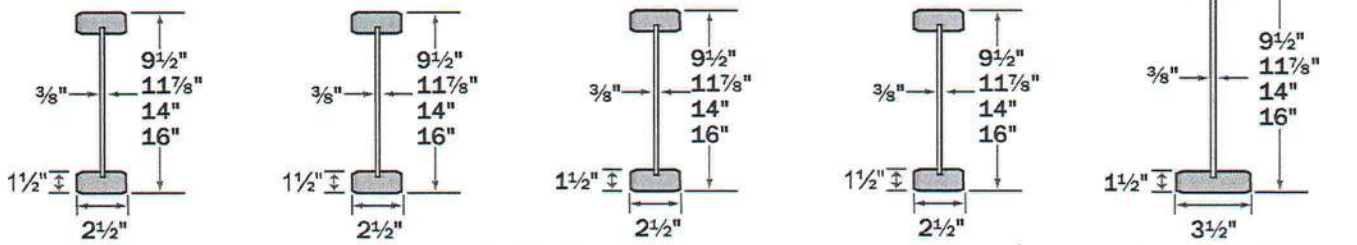
visit our website at www.BCewp.com

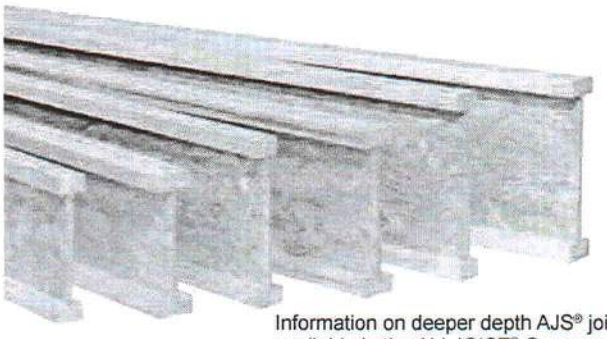
To locate your nearest Boise Cascade Engineered Wood Products distributor, call **1-800-232-0788**

AIG US 08/29/2013

ALLJOIST® Product Profiles

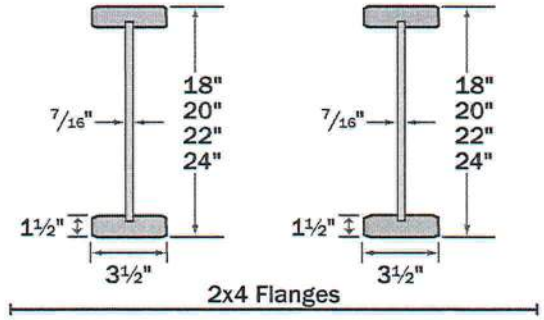
AJS® 140 — AJS® 150 — AJS® 20 — AJS® 190 — AJS® 25





Information on deeper depth AJS® joists is available in the ALLJOIST® Commercial Guide

AJS® 25 Deeper Depths — AJS® 30 Deeper Depths



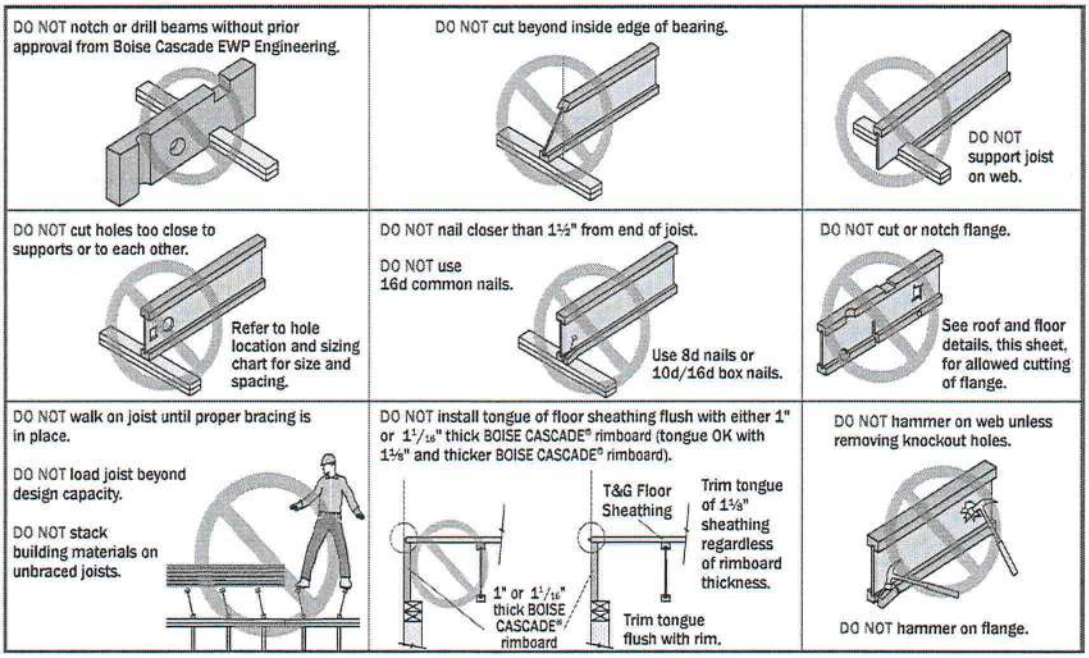
WARNING

THE FOLLOWING USES ARE NOT ALLOWED

SAFETY WARNING

DO NOT ALLOW WORKERS ON AJS® JOISTS UNTIL ALL HANGERS, AJS® RIM JOISTS, RIM BOARDS, AJS® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW. SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of AJS® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of AJS® Joists at the end of the bay.



- All hangers, AJS® rim joists, rim boards, AJS® blocking panels, and x-bracing must be completely installed and properly nailed as each AJS® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional AJS® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each AJS® Joist with two 8d nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the AJS® Joists to within ½ inch of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.
- DO NOT stack construction materials (sheathing, drywall, etc) in the middle of AJS® Joist spans, contact Boise Cascade EWP Engineering for proper storage and shoring information.

ALLJOIST® Residential Floor Span Tables

About Floor Performance

Homeowner's expectations and opinions vary greatly due to the subjective nature of rating a new floor. Communication with the ultimate end user to determine their expectation is critical. ***Vibration*** is usually the cause of most complaints. Installing lateral bridging may help; however, squeaks may occur if not installed properly. Spacing the joists closer together does little to affect the perception of the floor's performance. The most common methods used to increase the performance and reduce vibration of wood floor systems is to *increase the joist depth, limit joist deflections, glue and screw a thicker, tongue-and-groove subfloor, install the joists vertically plumb with level-bearing supports, and install a direct-attached ceiling to the bottom flanges of the joists.*

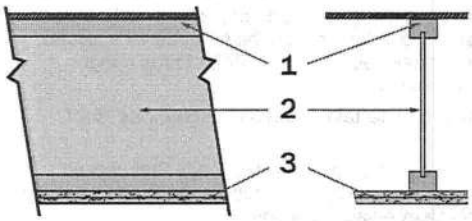
The floor span tables listed below offer three very different performance options, based on performance requirements of the homeowner.

		★★★THREE STAR★★★				★★★★FOUR STAR★★★★				CAUTION ★MINIMUM STIFFNESS ALLOWED BY CODE★ CAUTION			
		Live Load deflection limited to L/480: The common industry and design community standard for residential floor joists, **33% stiffer than L/360 code minimum.** However, floor performance may still be an issue in certain applications, especially with 9½" and 11⅞" deep joists without a direct-attached ceiling.				Live Load deflection limited to L/960+: A floor that is 100% stiffer than the three star floor. A premium floor that 100% stiffer than the 3-star floor for the discriminating homeowner.				Live Load deflection limited to L/360: Floors that **meet the minimum building code** L/360 criteria are structurally sound to carry the specified loads; however, there is a much higher risk of floor performance issues. This table should only be used for applications where floor performance is not a concern.			
Joist Depth	ALLJOIST® Series	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9½"	140	17'–9"	16'–3"	15'–4"	13'–11"	13'–11"	12'–8"	11'–11"	11'–1"	19'–8"	17'–0"	15'–6"	13'–11"
	150	18'–1"	16'–7"	15'–8"	14'–7"	14'–2"	12'–11"	12'–2"	11'–3"	20'–0"	18'–3"	16'–8"	14'–11"
	20	19'–1"	17'–5"	16'–5"	15'–4"	14'–10"	13'–6"	12'–9"	11'–10"	21'–1"	19'–3"	18'–2"	16'–4"
	190	19'–4"	17'–8"	16'–8"	15'–6"	15'–1"	13'–9"	12'–11"	12'–0"	21'–4"	19'–7"	18'–6"	17'–3"
	25	21'–0"	19'–1"	18'–0"	16'–9"	16'–4"	14'–10"	14'–0"	12'–11"	23'–2"	21'–1"	19'–3"	17'–2"
11⅞"	140	21'–2"	19'–4"	17'–8"	15'–10"	16'–7"	15'–1"	14'–3"	13'–3"	22'–5"	19'–5"	17'–8"	15'–10"
	150	21'–7"	19'–8"	18'–7"	17'–0"	16'–10"	15'–4"	14'–6"	13'–5"	23'–10"	20'–10"	19'–0"	17'–0"
	20	22'–8"	20'–9"	19'–7"	18'–3"	17'–9"	16'–2"	15'–2"	14'–1"	25'–1"	22'–10"	20'–10"	18'–8"
	190	23'–0"	21'–0"	19'–10"	18'–6"	18'–0"	16'–4"	15'–5"	14'–4"	25'–5"	23'–3"	21'–11"	19'–0"
	25	24'–11"	22'–9"	21'–5"	18'–3"	19'–6"	17'–8"	16'–8"	15'–5"	27'–7"	24'–0"	21'–11"	18'–3"
14"	140	24'–0"	21'–4"	19'–5"	17'–4"	18'–10"	17'–2"	16'–2"	15'–0"	24'–7"	21'–4"	19'–5"	17'–4"
	150	24'–6"	22'–4"	20'–11"	18'–9"	19'–2"	17'–6"	16'–5"	15'–3"	26'–6"	22'–11"	20'–11"	18'–9"
	20	25'–9"	23'–6"	22'–2"	19'–1"	20'–2"	18'–4"	17'–3"	16'–0"	28'–5"	25'–1"	22'–11"	19'–1"
	190	26'–1"	23'–10"	22'–6"	19'–1"	20'–5"	18'–7"	17'–6"	16'–3"	28'–10"	26'–4"	23'–11"	19'–1"
	25	28'–4"	25'–10"	22'–11"	18'–4"	22'–1"	20'–1"	18'–11"	17'–6"	30'–5"	26'–4"	22'–11"	18'–4"
16"	140	26'–6"	22'–11"	20'–11"	18'–9"	20'–10"	19'–0"	17'–11"	16'–8"	26'–6"	22'–11"	20'–11"	18'–9"
	150	27'–1"	24'–7"	22'–5"	19'–3"	21'–3"	19'–4"	18'–3"	16'–11"	28'–5"	24'–7"	22'–5"	19'–3"
	20	28'–6"	26'–0"	24'–2"	19'–3"	22'–4"	20'–4"	19'–1"	17'–9"	31'–3"	27'–0"	24'–2"	19'–3"
	190	28'–11"	26'–5"	24'–2"	19'–3"	22'–8"	20'–7"	19'–5"	18'–0"	31'–11"	28'–11"	24'–2"	19'–3"
	25	31'–4"	27'–10"	23'–2"	18'–6"	24'–6"	22'–3"	20'–11"	18'–6"	32'–9"	27'–10"	23'–2"	18'–6"

- Table values based on residential floor loads of 40 psf live load and 10 psf dead load (12 psf dead load for AJS® 25 joists).
- Table values assume that $^{23}/_{32}$" min. plywood/OSB rated sheathing is glued and nailed to joists.
- Table values represent the most restrictive of simple or multiple span applications.
- Table values are the maximum allowable clear distance between supports. Analyze multiple span joists with BC CALC® sizing software if the length of any span is less than half the length of an adjacent span.
- Table values assume minimum bearing lengths without web stiffeners for joist depths of 16" inches and less.
- Floor tile will increase dead load and may require specific deflection limits, contact Boise Cascade EWP Engineering for further information.
- This table was designed to apply to a broad range of applications. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® sizing software.

Shaded values do not satisfy the requirements of the North Carolina State Building Code. Refer to the THREE STAR table when spans exceed 20 feet.

One-Hour Floor/Ceiling Assembly



See the US version of the Boise Cascade Fire Design & Installation Guide for specific assembly information and other fire resistive options or contact your local Boise Cascade representative.

FIRE ASSEMBLY COMPONENTS

1. Min. $^{23}/_{32}$-inch T&G Wood Structural Panels. A construction adhesive must be applied to the top of the joists prior to placing sheathing. The sheets shall be installed with their long edge perpendicular to the joists with end joists centered over the top flange of joists and staggered one joist spacing with adjacent sheets.
2. AJS® Joists at 24" o.c. or less.
3. Two layers ½" Type C or two layers ⅝" Type X gypsum board

SOUND ASSEMBLY COMPONENTS

When constructed with resilient channels

- Add carpet & pad to fire assembly: STC=54 IIC=68 or
- Add 3½" glass fiber insulation to fire assembly: STC=55 IIC=46 or
- Add an additional layer of minimum ⅝" sheathing and 9½" glass fiber insulation to fire assembly: STC=61 IIC=50

Floor Framing

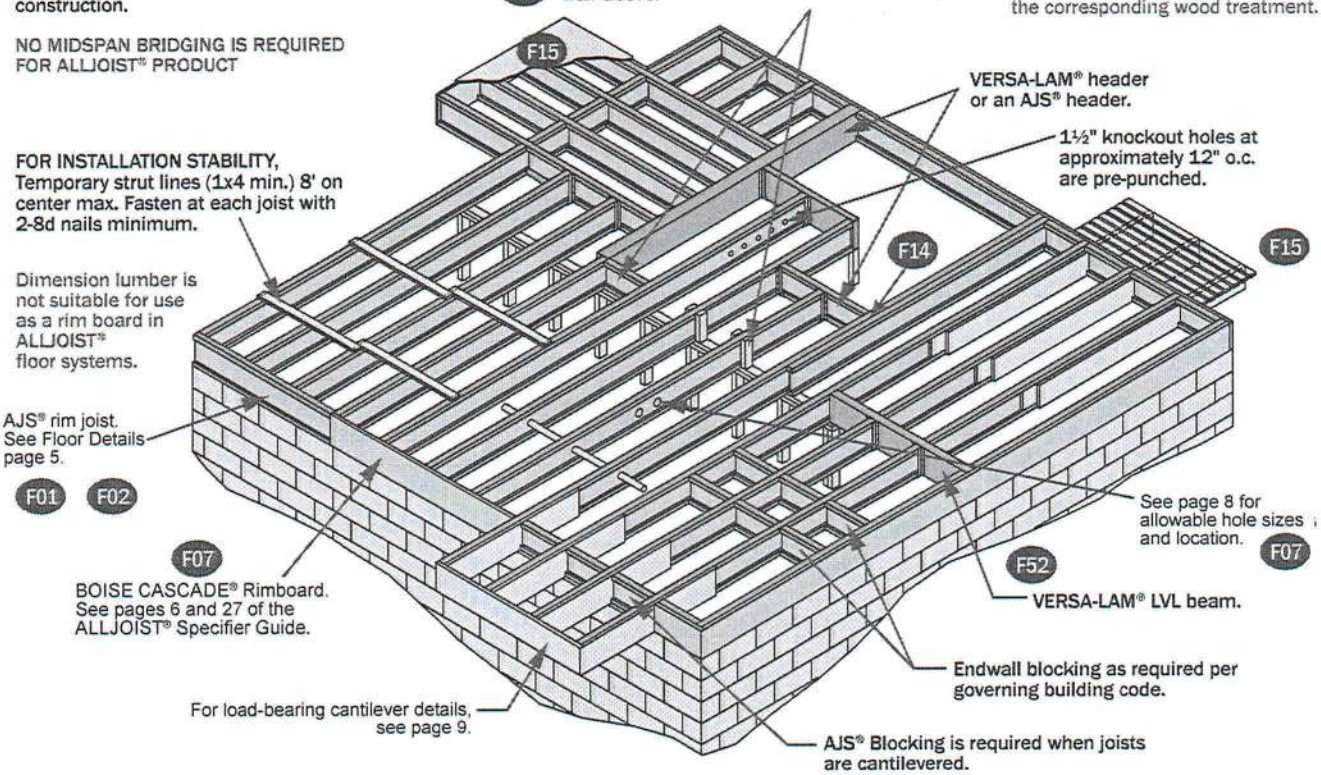
Additional roof framing details available with BC FRAMER® software

NOTE
The illustration below is showing several suggested applications for the Boise Cascade EWP products. It is not intended to show an actual house under construction.

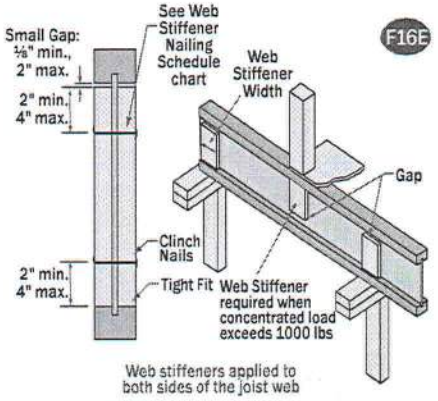
NO MIDSPAN BRIDGING IS REQUIRED FOR ALLJOIST™ PRODUCT

F06 F09 **AJS® blocking or 2x4 "squash" block on each side required when supporting a load-bearing wall above.**

When installing Boise Cascade EWP products with treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.



Web Stiffener Requirements



Web stiffeners applied to both sides of the joist web

Structural Panel Web Stiffener			
	Minimum Thickness		
AJS® Series	In Hanger	No Hanger	Minimum Width
140 / 150 / 20 / 190	1"	1½"	$2^{5}/_{16}$"
25	2x4 lumber (vertical)		

Web Stiffener Nailing Schedule		
AJS® Series	Joist Depth	Nailing
140 150 20 190 25	9½" – 11⅞"	3-10d
	14" – 16"	5-10d

NOTES

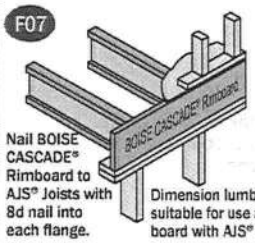
- Web stiffeners are optional except as noted below.
- Web stiffeners are always required for 18" and deeper AJS® joists at all bearing locations.
- Web stiffeners are always required in hangers that do not extend up to support the top flange of the AJS® Joist. Web stiffeners may be required with certain sloped or skewed hangers or to achieve uplift values. Refer to the hanger manufacturer's installation requirements.
- Web stiffeners are always required in certain roof applications. *See Roof Framing Details* on page 7.
- Web stiffeners are always required under concentrated loads that exceed 1000 pounds. Install the web stiffeners snug to the top flange in this situation. Follow the nailing schedule for intermediate bearings.
- Web stiffeners may be used to increase allowable reaction values. See *AJS® Design Properties* on page 26 of the ASG or the BC CALC® software.

Floor Framing Details

Additional floor framing details available with BC FRAMER® software

END BEARING DETAILS

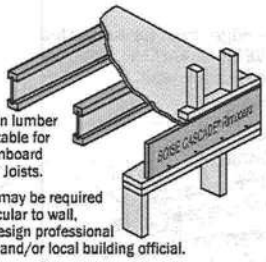
F07



Nail BOISE CASCADE® Rimboard to AJS® Joists with 8d nail into each flange.

Dimension lumber is not suitable for use as rim board with AJS® Joists.

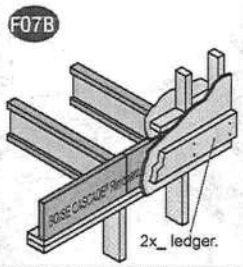
F07A



Dimension lumber is not suitable for use as rimboard with AJS® Joists.

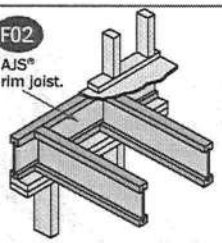
Blocking may be required perpendicular to wall, consult design professional of record and/or local building official.

F07B



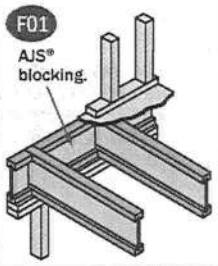
2x_ ledger.

F02

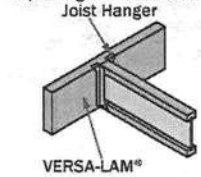


Use of AJS® rimjoist requires 2x6 wall for minimum joist bearing.

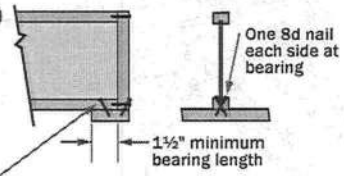
F01



F27A

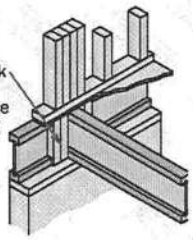


F52

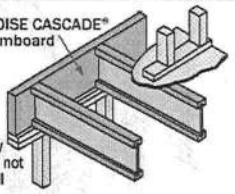


To limit splitting flange, start nails at least 1½" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.

F08



F03

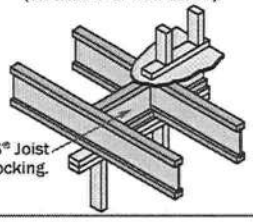


Note: AJS® floor joist must be designed to carry wall above when not stacked over wall below.

Blocking required underneath braced wall panels and shear walls, consult design professional of record.

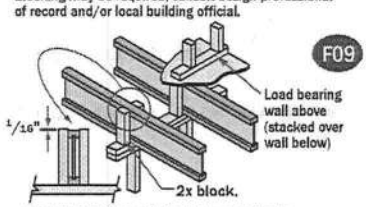
INTERMEDIATE BEARING DETAILS

F06 For load bearing wall above (stacked over wall below).



Blocking may be required, consult design professional of record and/or local building official.

F09



Nail block with one 10d nail into each flange.

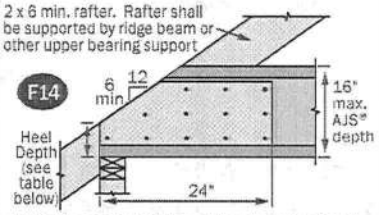
Size	Double Squash Block Vertical Load [lb/ft] Joist Spacing [in]			
	12	16	19.2	24
2x4	4463	3347	2789	2231
2x6	7013	5259	4383	3506

1. Squash blocks are to be in full contact with upper floor and lower wall plate.
2. Capacities shown are for a double squash blocks at each joist, SPF or better.

AJS® Joist Slope Cut Reinforcement

Detail below restores original allowable shear/reaction value to cut end of AJS® joist. AJS® Joist shall not be used as a collar or rafter tension tie.

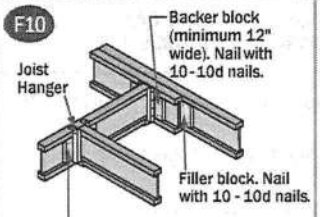
F14



2x blocking required at bearing (not shown for clarity). 3/32" min. plywood/OSB rated sheathing as reinforcement. Install reinforcement with face grain horizontal. Install on both sides of the joist, tight to bottom flange. ¼" gap between reinforcement and bottom of top flange. Apply construction adhesive to contact surfaces and fasten with 3 rows of min. 10d box nails at 6" o.c. Alternate nailing from each side and clinch.

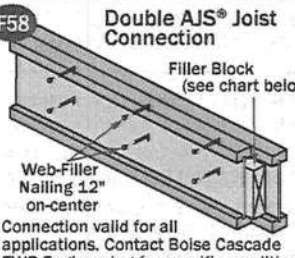
End Wall Bearing	Minimum Heel Depth Roof Pitch					
	6/12	7/12	8/12	9/12	10/12	12/12
2x4	4⅜"	4⅝"	4¼"	4¼"	4¼"	4¼"
2x6	3⅜"	3⅝"	2⅝"	2¾"	2⅝"	2¼"

F10



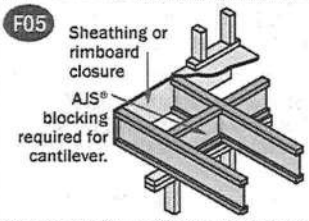
Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.

F58 Double AJS® Joist Connection



Connection valid for all applications. Contact Boise Cascade EWP Engineering for specific conditions.

F05



For load bearing cantilever, see pages 9 and 10. Uplift on backspan shall be considered in all cantilever designs.

LATERAL SUPPORT

- AJS® Joists must be laterally supported at the ends with hangers, AJS® rim joists, rim boards, AJS® blocking panels or x-bracing. AJS® blocking panels or x-bracing are required at cantilever supports.
- Blocking may be required at intermediate bearings for floor diaphragm per IRC in high seismic areas, consult local building official.

MINIMUM BEARING LENGTH FOR AJS® JOISTS

- 1½ inches is required at end supports. 3½ inches is required at cantilever and intermediate supports.
- Longer bearing lengths allow higher reaction values. Refer to the building code evaluation report or the BC CALC® software.

NAILING REQUIREMENTS

- AJS® rim joist, rim board or closure panel to AJS® Joist:
  - Rims or closure panel 1¼ inches thick and less: 2-8d nails, one each in the top and bottom flange.
  - AJS® 140/150/20/190 rim joist: 2-16d box nails, one each in the top and bottom flange.
  - AJS® 25 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- AJS® rim joist, rim board or AJS® blocking panel to support:
  - 8d nails at 6 inches on center.
  - When used for shear transfer, follow the building designer's specification.
- AJS® Joist to support:
  - 2-8d nails, one on each side of the web, placed 1½ inches minimum from the end of the AJS® Joist to limit splitting.
- Sheathing to AJS® joist, rim joist, blocking:
  - Prescriptive residential floor sheathing nailing requires 8d common nails @ 6" o.c. on edges and @ 12" o.c. in the field IRC Table R602.3(1). Closer nail spacing may be required per design professional of record.
  - 14 gauge staples may be substituted for 8d nails if the staples penetrate at least 1 inch into the joist.
  - Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

BACKER AND FILLER BLOCK DIMENSIONS

AJS® Series	Backer Block Thickness	Filler Block Thickness
140 150 20 190	1⅛" or two ½" wood panels	2x_ + ⅝" wood panel
25	2x_ lumber	Double 2x_ lumber

- Cut backer and filler blocks to a maximum depth equal to the web depth minus ¼" to avoid a forced fit.
- For deeper AJS® Joists, stack 2x lumber or use multiple pieces of ¾" wood panels.

WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* on page 4.

PROTECT AJS® JOISTS FROM THE WEATHER

- AJS® Joists is intended only for applications that provide permanent protection from the weather. Bundles of product should be covered and stored off of the ground on stickers.

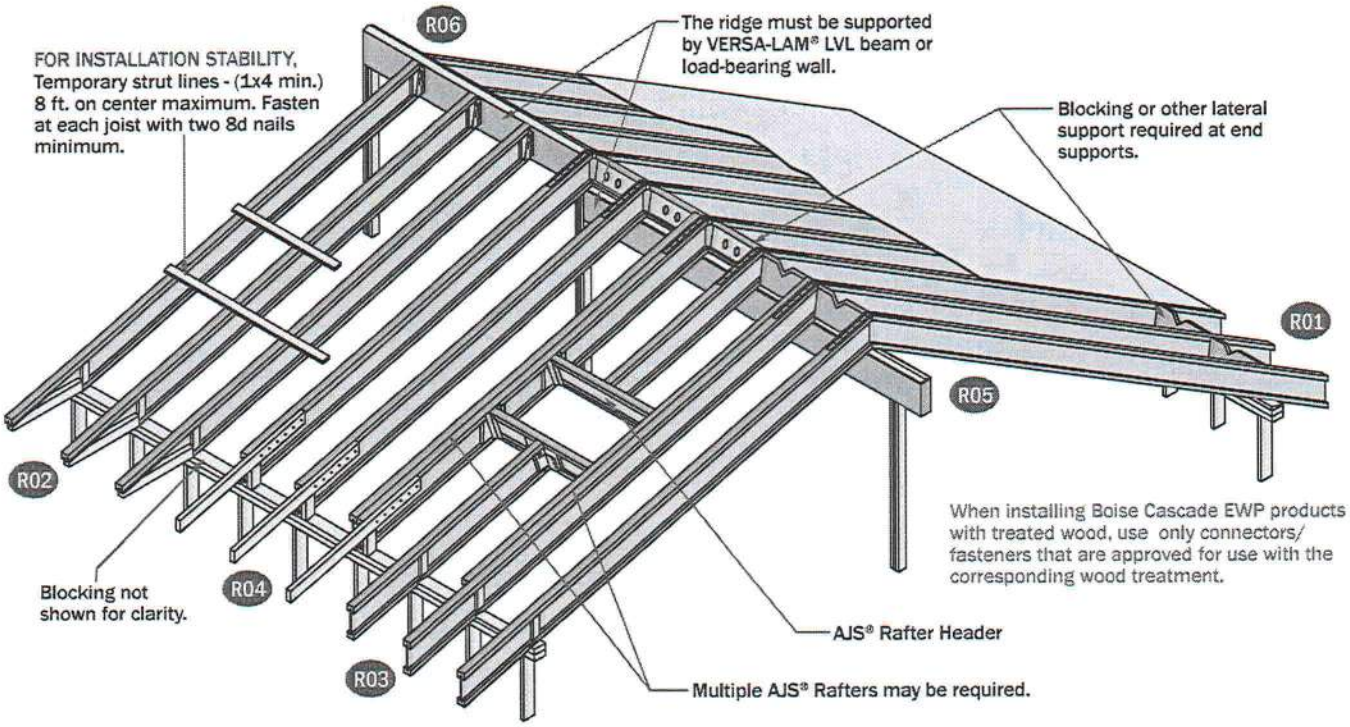
AJS® RIM JOISTS AND BLOCKING

Joist Depth	Vertical Load Transfer Capacity (plf)
9½"	1875
11⅞"	1680
14"	1500
16"	1340

1) Web stiffeners required at each end of blocking panel. Distance between stiffeners must be less than 24".

AJS® Rafters

Additional roof framing details available with BC FRAMER® software



SAFETY WARNING

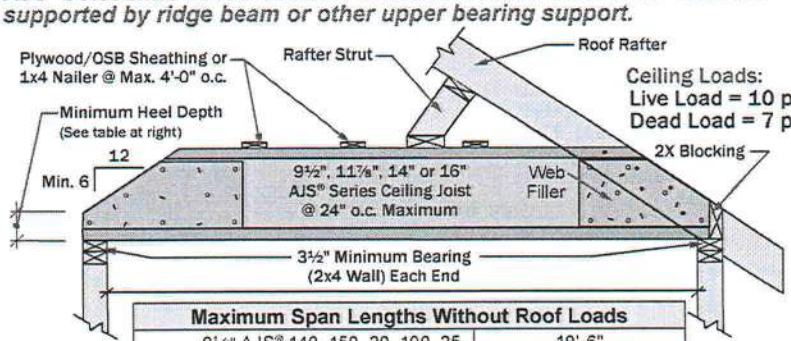
DO NOT ALLOW WORKERS ON AJS® JOISTS UNTIL ALL HANGERS, AJS® RIM JOISTS, RIM BOARDS, AJS® BLOCKING PANELS, X-BRACING AND TEMPORARY 1x4 STRUT LINES ARE INSTALLED AS SPECIFIED BELOW.

SERIOUS ACCIDENTS CAN RESULT FROM INSUFFICIENT ATTENTION TO PROPER BRACING DURING CONSTRUCTION. ACCIDENTS CAN BE AVOIDED UNDER NORMAL CONDITIONS BY FOLLOWING THESE GUIDELINES:

- Build a braced end wall at the end of the bay, or permanently install the first eight feet of AJS® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of AJS® Joists at the end of the bay.
- All hangers, AJS® rim joists, rim boards, AJS® blocking panels, and x-bracing must be completely installed and properly nailed as each AJS® Joist is set.
- Install temporary 1x4 strut lines at no more than eight feet on center as additional AJS® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each AJS® Joist with two 8d nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the AJS® Joist to within ½ inch of true alignment before attaching strut lines and sheathing.
- Remove the temporary strut lines only as required to install the permanent sheathing.
- Failure to install temporary bracing may result in sideways buckling or roll-over under light construction loads.

AJS® Ceiling Joist with Bevel End Cut *(For Limited-Access Attics Only)*

AJS® Joist shall not be used as collar/tension tie. Roof rafter shall be supported by ridge beam or other upper bearing support.



Maximum Span Lengths Without Roof Loads	
9½" AJS® 140, 150, 20, 190, 25	19'-6"
11⅞" AJS® 140, 150, 20, 190, 25	22'-0"
14" AJS® 140, 150, 20, 190, 25	24'-6"

If roof loads transfer to ceiling joists through struts, analyze with BC CALC® software, not exceeding end reaction limit stated in Note 3 (see right).

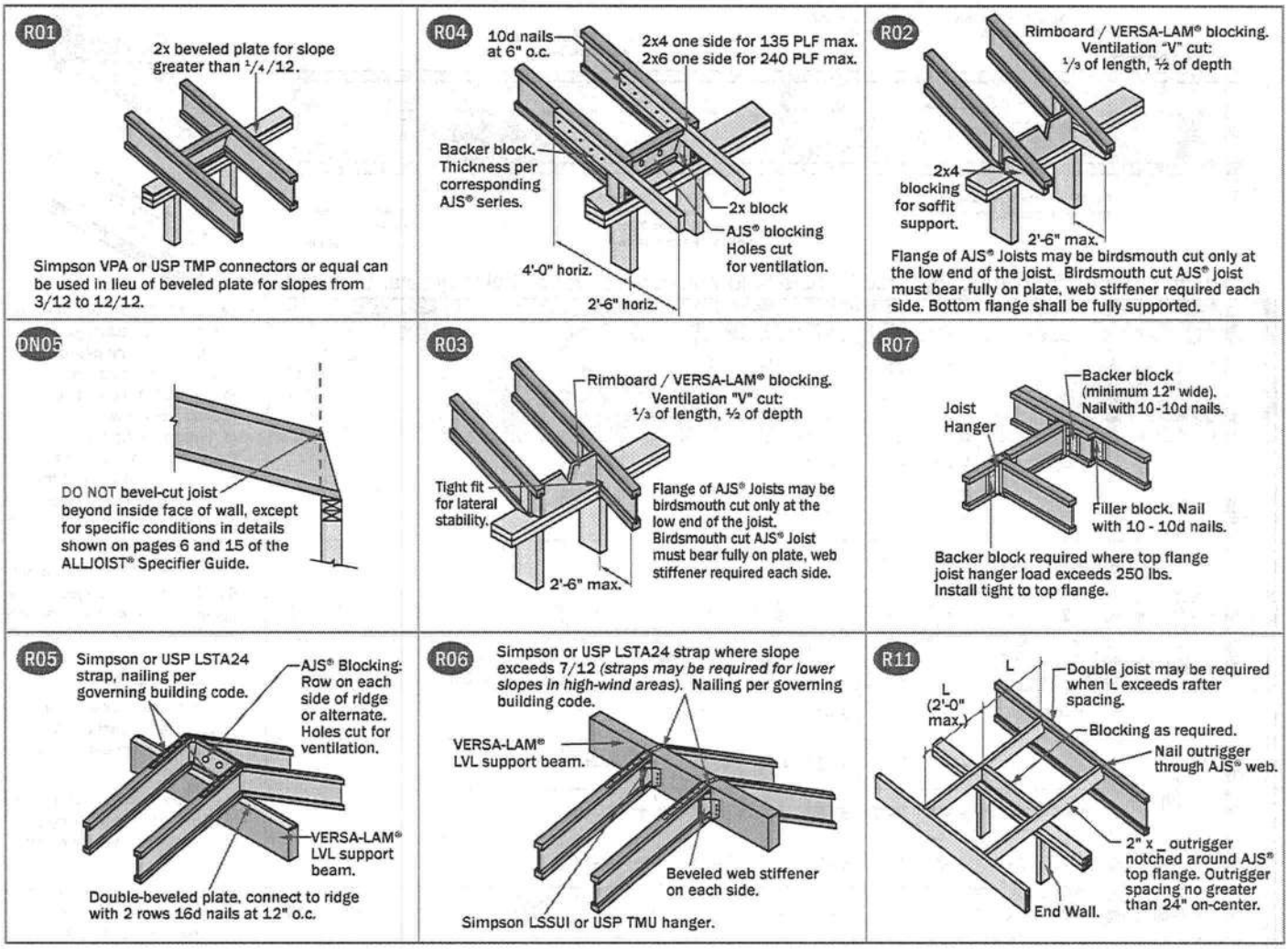
Minimum Heel Depths	Joist Depth	End Wall	
		2 x 4	2 x 6
	9½"	2½"	1½"
	11⅞"	3½"	2½"
	14"	4½"	3½"

Notes:

1) Detail is to be used only for ceiling joists with no access to attic space.
2) Ceiling joist must be designed to carry all roof load transferred through rafter struts as shown.
3) AJS® ceiling joist end reaction may not exceed 550 pounds.
4) Minimum roof slope is 6/12.
5) Nail roof rafter to AJS® top flange with 1-16d sinker or box nail.
6) 1x4 nails shall be continuous and nailed to an end wall braced to the roof diaphragm.
7) Install a 24" long web stiffener on each side of AJS® Joist at beveled ends. Nail roof rafter to AJS® Joist per building code requirements for ceiling joist to roof rafter connection.

Roof Framing Details

Additional roof framing details available with BC FRAMER® software



LATERAL SUPPORT

- AJS® Joists must be laterally supported at the ends with hangers, AJS® rim joists, rim boards, AJS® blocking panels or x-bracing. AJS® blocking panels or x-bracing are required at cantilever supports.
- Blocking may be required at intermediate bearings for floor diaphragm per IRC in high seismic areas, consult local building official.

MINIMUM BEARING LENGTH FOR AJS® JOISTS

- 1½ inches is required at end supports. 3½ inches is required at cantilever and intermediate supports.
- Longer bearing lengths allow higher reaction values. Refer to the building code evaluation report or the BC CALC® software.

NAILING REQUIREMENTS

- AJS® rim joist, rim board or closure panel to AJS® Joist:
  - Rims or closure panel 1¼ inches thick and less: 2-8d nails, one each in the top and bottom flange.
  - AJS® 140/150/20/190 rim joist: 2-16d box nails, one each in the top and bottom flange.
  - AJS® 25 rim joist: Toe-nail top flange to rim joist with 2-10d box nails, one each side of flange.
- AJS® rim joist, rim board or AJS® blocking panel to support:
  - 8d nails at 6 inches on center.
  - When used for shear transfer, follow the building designer's specification.
- AJS® Joist to support:
  - 2-8d nails, one on each side of the web, placed 1½ inches minimum from the end of the AJS® Joist to limit splitting.
- Sheathing to AJS® joist, rim joist, blocking:
  - Prescriptive residential roof sheathing nailing requires 8d common nails @ 6" o.c. on edges and @ 12" o.c. in the field IRC Table R602.3(1). Closer nail spacing may be required per design professional of record.
  - 14 gauge staples may be substituted for 8d nails if the staples penetrate at least 1 inch into the joist.
  - Wood screws may be acceptable, contact local building official and/or Boise Cascade EWP Engineering for further information.

BACKER AND FILLER BLOCK DIMENSIONS

AJS® Series	Backer Block Thickness	Filler Block Thickness
140 150 20 190	1⅛" or two ½" wood panels	2x_ + ⅝" wood panel
25	2 x _ lumber	Double 2 x _ lumber

- Cut backer and filler blocks to a maximum depth equal to the web depth minus ¼" to avoid a forced fit.
- For deeper AJS® Joists, stack 2x lumber or use multiple pieces of ¾" wood panels.

WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* on page 4.

PROTECT AJS® JOISTS FROM THE WEATHER

- AJS® Joists are intended only for applications that provide permanent protection from the weather. Bundles of AJS® Joists should be covered and stored off of the ground on stickers.

MAXIMUM SLOPE

- Unless otherwise noted, all roof details are valid for slopes of 12 in 12 or less.

VENTILATION

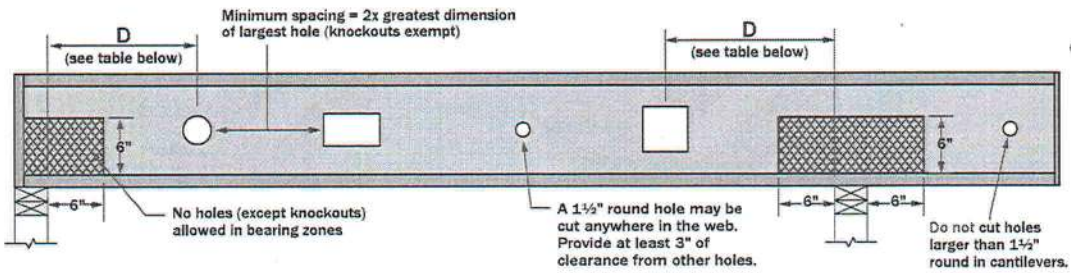
- The 1½ inch, pre-stamped knock-out holes spaced at 12 inches on center along the AJS® Joist may all be knocked out and used for cross ventilation. Deeper joists than what is structurally needed may be advantageous in ventilation design. Consult local building official and/or ventilation specialist for specific ventilation requirements.

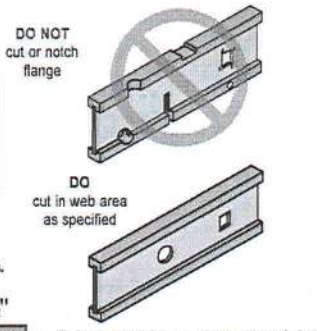
BIRDSMOUTH CUTS

- AJS® Joists may be birdsmouth cut only at the low end support. AJS® Joists with birdsmouth cuts may cantilever up to 2'-6" past the low end support. The bottom flange must sit fully on the support and may not overhang the inside face of the support. High end supports and intermediate supports may not be birdsmouth cut.

AJS® Joist Hole Location & Sizing

AJS® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center





Minimum distance from support, listed in table below, is required for all holes greater than 1½"

MINIMUM DISTANCE (D) FROM ANY SUPPORT TO THE CENTERLINE OF THE HOLE															
Round Hole Diameter [in]			2	3	4	5	6	6½	7	8	8⅞	9	10	11	12	13
Rectangular Hole Side [in]			-	-	2	4	6	6	-	-	-	-	-	-	-	-
Any 9½" Joist	Span [ft]	8	2'–0"	2'–5"	2'–11"	3'–5"	3'–10"	4'–0"								
		12	3'–0"	3'–8"	4'–5"	5'–1"	5'–10"	6'–0"								
		16	4'–0"	4'–11"	5'–11"	6'–10"	7'–9"	8'–0"								
Round Hole Diameter [in]			2	3	4	5	6	6½	7	8	8⅞	9	10	11	12	13
Rectangular Hole Side [in]			-	-	-	2	3	4	5	7	8	-	-	-	-	-
Any 11⅞" Joist	Span [ft]	8	1'–0"	1'–5"	1'–10"	2'–3"	2'–8"	2'–11"	3'–1"	3'–6"	3'–11"					
		12	1'–5"	2'–1"	2'–9"	3'–5"	4'–0"	4'–4"	4'–8"	5'–4"	5'–11"					
		16	1'–11"	2'–10"	3'–8"	4'–6"	5'–5"	5'–10"	6'–3"	7'–1"	7'–10"					
		20	2'–5"	3'–6"	4'–7"	5'–8"	6'–9"	7'–3"	7'–10"	8'–11"	9'–10"					
Round Hole Diameter [in]			2	3	4	5	6	6½	7	8	8⅞	9	10	11	12	13
Rectangular Hole Side [in]			-	-	-	-	2	3	3	5	6	6	8	9	-	-
Any 14" Joist	Span [ft]	8	1'–0"	1'–1"	1'–2"	1'–4"	1'–8"	1'–11"	2'–1"	2'–6"	2'–10"	2'–11"	3'–4"	3'–9"		
		12	1'–0"	1'–1"	1'–4"	2'–0"	2'–7"	2'–11"	3'–2"	3'–10"	4'–4"	4'–5"	5'–0"	5'–7"		
		16	1'–0"	1'–1"	1'–10"	2'–8"	3'–5"	3'–10"	4'–3"	5'–1"	5'–9"	5'–11"	6'–8"	7'–6"		
		20	1'–0"	1'–3"	2'–4"	3'–4"	4'–4"	4'–10"	5'–4"	6'–4"	7'–3"	7'–4"	8'–5"	9'–5"		
		24	1'–0"	1'–7"	2'–9"	4'–0"	5'–2"	5'–10"	6'–5"	7'–8"	8'–8"	8'–10"	10'–1"	11'–3"		
Round Hole Diameter [in]			2	3	4	5	6	6½	7	8	8⅞	9	10	11	12	13
Rectangular Hole Side [in]			-	-	-	-	-	-	2	3	5	5	6	8	9	10
Any 16" Joist	Span [ft]	8	1'–0"	1'–1"	1'–2"	1'–2"	1'–3"	1'–3"	1'–3"	1'–8"	2'–0"	2'–1"	2'–5"	2'–10"	3'–2"	3'–7"
		12	1'–0"	1'–1"	1'–2"	1'–2"	1'–4"	1'–8"	1'–11"	2'–6"	3'–0"	3'–1"	3'–8"	4'–3"	4'–10"	5'–5"
		16	1'–0"	1'–1"	1'–2"	1'–2"	1'–10"	2'–2"	2'–7"	3'–4"	4'–0"	4'–2"	4'–11"	5'–8"	6'–5"	7'–2"
		20	1'–0"	1'–1"	1'–2"	1'–4"	2'–3"	2'–9"	3'–3"	4'–3"	5'–1"	5'–2"	6'–2"	7'–1"	8'–1"	9'–0"
		24	1'–0"	1'–1"	1'–2"	1'–7"	2'–9"	3'–4"	3'–11"	5'–1"	6'–1"	6'–3"	7'–4"	8'–6"	9'–8"	10'–10"

- Select a table row based on joist depth and the actual joist span rounded up to the nearest table span. Scan across the row to the column headed by the appropriate round hole diameter or rectangular hole side. Use the longest side of a rectangular hole. The table value is the closest that the centerline of the hole may be to the centerline of the nearest support.
- The entire web may be cut out. **DO NOT** cut the flanges. Holes apply to either single or multiple joists in repetitive member conditions.
- For multiple holes, the amount of uncut web between holes must equal at least twice the diameter (or longest side) of the largest hole.
- 1½" round knockouts in the web may be removed by using a short piece of metal pipe and hammer.
- Holes may be positioned vertically anywhere in the web. The joist may be set with the 1½" knockout holes turned either up or down.
- This table was designed to apply to the design conditions covered by tables elsewhere in this publication. Use the BC CALC® software to check other hole sizes or holes under other design conditions. It may be possible to exceed the limitations of this table by analyzing a specific application with the BC CALC® software.

Reinforced Load Bearing Cantilever Tables

AJS® Joists

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Roof Total Load [psf] 35 Joist Spacing [in] 16	19.2	24	45 16	19.2	24	55 16	19.2	24
AJS® 140	9½"	24	0	0	1	0	0	X	0	X	X
		26	0	0	1	0	1	X	1	X	X
		28	0	0	X	0	1	X	1	X	X
		30	0	0	X	0	X	X	X	X	X
		32	0	0	X	1	X	X	X	X	X
		34	0	1	X	1	X	X	X	X	X
		36	0	1	X	1	X	X	X	X	X
		38	0	X	X	X	X	X	X	X	X
		40	0	X	X	X	X	X	X	X	X
	11⅞"	24	0	0	0	0	0	0	0	0	X
		26	0	0	0	0	0	1	0	0	X
		28	0	0	0	0	0	1	0	1	X
		30	0	0	0	0	0	X	0	1	X
		32	0	0	0	0	0	X	0	1	X
		34	0	0	1	0	0	X	0	X	X
		36	0	0	1	0	1	X	1	X	X
		38	0	0	1	0	1	X	1	X	X
		40	0	0	X	0	1	X	1	X	X
	14"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	1
		30	0	0	0	0	0	WS	0	0	1
		32	0	0	0	0	0	WS	0	WS	X
		34	0	0	0	0	0	1	0	WS	X
		36	0	0	WS	0	0	1	0	1	X
		38	0	0	WS	0	0	1	0	1	X
		40	0	0	WS	0	WS	X	0	1	X
	16"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	WS
		30	0	0	0	0	0	WS	0	0	WS
		32	0	0	0	0	0	WS	0	WS	1
		34	0	0	WS	0	0	WS	0	WS	1
		36	0	0	WS	0	0	WS	0	WS	1
		38	0	0	WS	0	WS	WS	0	WS	X
		40	0	0	WS	0	WS	1	0	WS	X

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Roof Total Load [psf] 35 Joist Spacing [in] 16	19.2	24	45 16	19.2	24	55 16	19.2	24
AJS® 150	9½"	24	0	0	1	0	0	2	0	1	X
		26	0	0	1	0	1	X	1	2	X
		28	0	0	1	0	1	X	1	X	X
		30	0	0	2	0	1	X	1	X	X
		32	0	0	2	1	2	X	2	X	X
		34	0	1	X	1	2	X	2	X	X
		36	0	1	X	1	X	X	X	X	X
		38	0	1	X	1	X	X	X	X	X
		40	0	1	X	2	X	X	X	X	X
	11⅞"	24	0	0	0	0	0	0	0	0	1
		26	0	0	0	0	0	1	0	0	1
		28	0	0	0	0	0	1	0	1	X
		30	0	0	0	0	0	1	0	1	X
		32	0	0	0	0	0	1	0	1	X
		34	0	0	1	0	0	2	0	1	X
		36	0	0	1	0	1	X	1	2	X
		38	0	0	1	0	1	X	1	2	X
		40	0	0	1	0	1	X	1	X	X
	14"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	1
		30	0	0	0	0	0	WS	0	WS	1
		32	0	0	0	0	0	WS	0	WS	1
		34	0	0	WS	0	0	1	0	WS	X
		36	0	0	WS	0	0	1	0	1	X
		38	0	0	WS	0	WS	1	0	1	X
		40	0	0	WS	0	WS	1	WS	1	X
	16"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	0	WS	0	WS
		28	0	0	0	0	0	0	WS	0	WS
		30	0	0	0	0	0	0	WS	0	WS
		32	0	0	0	0	0	0	WS	0	WS
		34	0	0	WS	0	0	WS	0	WS	1
		36	0	0	WS	0	0	WS	0	WS	1
		38	0	0	WS	0	WS	WS	0	WS	1
		40	0	0	WS	0	WS	1	WS	WS	X

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Roof Total Load [psf] 35 Joist Spacing [in] 16	19.2	24	45 16	19.2	24	55 16	19.2	24
AJS® 20	9½"	24	0	0	1	0	0	2	0	2	X
		26	0	0	1	0	1	X	1	2	X
		28	0	0	1	0	1	X	1	2	X
		30	0	0	2	0	2	X	1	X	X
		32	0	0	2	1	2	X	2	X	X
		34	0	1	2	1	2	X	2	X	X
		36	0	1	X	1	X	X	2	X	X
		38	0	1	X	1	X	X	X	X	X
		40	0	2	X	2	X	X	X	X	X
	11⅞"	24	0	0	0	0	0	WS	0	0	1
		26	0	0	0	0	0	1	0	0	2
		28	0	0	0	0	0	1	0	1	X
		30	0	0	0	0	0	1	0	1	X
		32	0	0	WS	0	0	2	0	1	X
		34	0	0	1	0	0	X	0	1	X
		36	0	0	1	0	1	X	1	2	X
		38	0	0	1	0	1	X	1	2	X
		40	0	0	1	0	1	X	1	X	X
	14"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	WS
		30	0	0	0	0	0	WS	0	WS	1
		32	0	0	0	0	0	WS	0	WS	1
		34	0	0	WS	0	0	1	0	WS	X
		36	0	0	WS	0	WS	1	0	1	X
		38	0	0	WS	0	WS	1	0	1	X
		40	0	0	WS	0	WS	1	WS	1	X
	16"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	0	WS	0	WS
		28	0	0	0	0	0	0	WS	0	WS
		30	0	0	0	0	0	0	WS	WS	WS
		32	0	0	0	0	0	0	WS	WS	1
		34	0	0	0	0	0	0	WS	WS	1
		36	0	0	0	0	0	WS	WS	0	WS
		38	0	0	WS	0	WS	WS	WS	WS	1
		40	0	0	WS	0	WS	1	WS	WS	X

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Roof Total Load [psf] 35 Joist Spacing [in] 16	19.2	24	45 16	19.2	24	55 16	19.2	24
AJS® 190	9½"	24	0	0	1	0	0	2	0	2	X
		26	0	0	1	0	1	X	1	2	X
		28	0	0	1	0	1	X	1	X	X
		30	0	0	2	0	2	X	1	X	X
		32	0	0	2	1	2	X	2	X	X
		34	0	1	X	1	2	X	2	X	X
		36	0	1	X	1	X	X	X	X	X
		38	0	1	X	2	X	X	X	X	X
		40	0	2	X	2	X	X	X	X	X
	11⅞"	24	0	0	0	0	0	WS	0	0	1
		26	0	0	0	0	0	1	0	0	2
		28	0	0	0	0	0	1	0	1	X
		30	0	0	0	0	0	1	0	1	X
		32	0	0	WS	0	0	2	0	1	X
		34	0	0	1	0	0	X	0	1	X
		36	0	0	1	0	1	X	1	2	X
		38	0	0	1	0	1	X	1	X	X
		40	0	0	1	0	1	X	1	X	X
	14"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	WS	1
		30	0	0	0	0	0	WS	0	WS	1
		32	0	0	0	0	0	WS	0	WS	1
		34	0	0	WS	0	0	1	0	WS	X
		36	0	0	WS	0	WS	1	0	1	X
		38	0	0	WS	0	WS	1	WS	1	X
		40	0	0	WS	0	WS	1	WS	WS	X
	16"	24	0	0	0	0	0	0	0	0	WS
		26	0	0	0	0	0	WS	0	0	WS
		28	0	0	0	0	0	WS	0	0	WS
		30	0	0	0	0	0	WS	0	WS	WS
		32	0	0	0	0	0	WS	0	WS	1
		34	0	0	WS	0	0	WS	0	WS	1
		36	0	0	WS	0	WS	WS	0	WS	1
		38	0	0	WS	0	WS	WS	WS	WS	1
		40	0	0	WS	0	WS	1	WS	WS	X

Joist Depth [in]	Joist Series	Roof Truss Span [ft]	Roof Total Load [psf] 35 Joist Spacing [in] 16	19.2	24	45 16	19.2	24	55 16	19.2	24
AJS® 25	9½"	24	0	0	1	0	0	X	0	2	X
		26	0	0	1	0	1	X	1	X	X
		28	0	0	2	0	1	X	1	X	X
		30	0	0	2	0	2	X	2	X	X
		32	0	0	X	1	2	X	2	X	X
		34	0	1	X	1	X	X	X	X	X
		36	0	1	X	1	X	X	X	X	X
		38	0	2	X	2	X	X	X	X	X
		40	0	2	X	2	X	X	X	X	X
	11⅞"	24	0	0	0	0	0	0	0	0	2
		26	0	0	0	0	0	1	0	0	2
		28	0	0	0	0	0	1	0	1	X
		30	0	0	0	0	0	2	0	1	X
		32	0	0	0	0	0	2	0	1	X
		34	0	0	1	0	0	2	0	2	X
		36	0	0	1	0	1	X	1	2	X
		38	0	0	1	0	1	X	1	X	X
		40	0	0	2	0	1	X	1	X	X
	14"	24	0	0	0	0	0	0	0	0	0
		26	0	0	0	0	0	0	0	0	0
		28	0	0	0	0	0	0	0	0	1
		30	0	0	0	0	0	0	0	0	1
		32	0	0	0	0	0	0	0	0	2
		34	0	0	0	0	0	1	0	0	2
		36	0	0	0	0	0	1	0	1	2
		38	0	0	0	0	0	1	0	1	X
		40	0	0	0	0	0	2	0	1	X
	16"	24	0	0	0	0	0	0	0	0	0
		26	0	0	0	0	0	0	0	0	0
		28	0	0	0	0	0	0	0	0	WS
		30	0	0	0	0	0	0	0	0	WS
		32	0	0	0	0	0	0	0	0	1
		34	0	0	0	0	0	0	0	0	1
		36	0	0	0	0	0	WS	0	0	1
		38	0	0	0	0	0	WS	0	0	1
		40	0	0	0	0	0	1	0	WS	2

KEY TO TABLE

0 . . . . No Reinforcement Required

WS . . . . Web Stiffeners at Support

1 . . . . Web Stiffeners Plus One Reinforcer

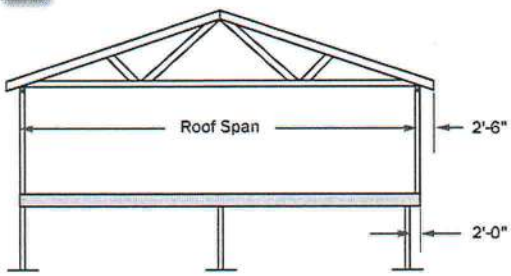
2 . . . . Web Stiffeners Plus Two Reinforcers

X . . . . Use Deeper Joists or Closer Spacing

Notes:

1. Cut 48" long reinforcers to match the joist depth. Use $^{23}/_{32}$" APA Rated Sheathing, Exposure 1, 48/24 Span Rating panels. The face grain must be horizontal (measure the 48" dimension along the long edge of the panel).
2. Fasten the reinforcer to the joist flanges with 8d nails at 6" o. c. When reinforcing both sides, stagger the nails to avoid splitting the joist flanges.
3. Attach web stiffeners per intermediate Web Stiffener Nailing Schedule on page 4.
4. Use the BC CALC® software to analyze conditions that are not covered by this table.

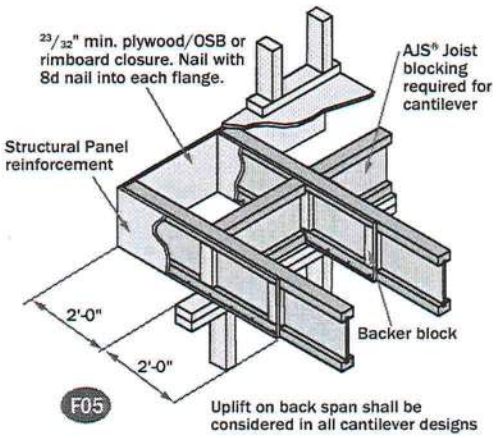
Reinforced Load Bearing Cantilever Detail



- The tables and details on pages 9 and 10 indicate the type of reinforcements, if any, that are required for load-bearing cantilevers up to a maximum length of 2'-0". Cantilevers longer than 2'-0" cannot be reinforced. However, longer cantilevers with lower loads may be allowable without reinforcement. Analyze specific applications with the BC CALC® software.

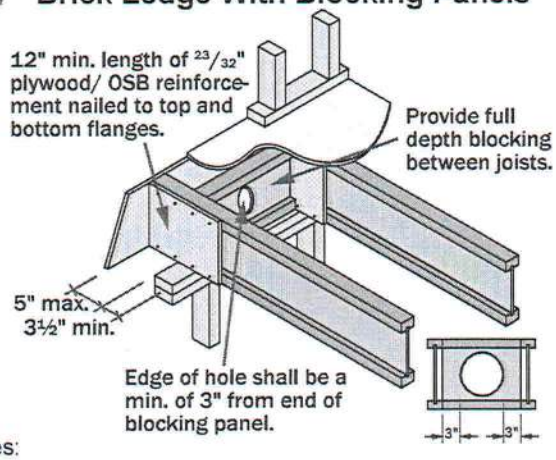
PLYWOOD / OSB REINFORCEMENT (If Required per Table on page 9)

- $^{23}/_{32}$" Min. x 48" long plywood / OSB rated sheathing must match the full depth of the AJS® Joist. Nail to the AJS® Joist with 8d nails at 6" o.c. and nail with 4-8d nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal face grain.
- These requirements assume a 100 PLF wall load and apply to AJS® Joists. Additional support may be required for other loadings. See BC CALC® software.
- Contact Boise Cascade EWP Engineering for reinforcement requirements on AJS® Joist depths greater than 16".



Brick Ledge Load Bearing Cantilever

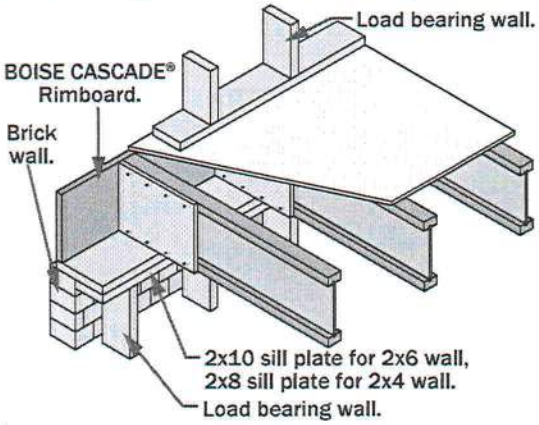
F20A Brick Ledge With Blocking Panels



Notes:

1. Use $^{23}/_{32}$" min plywood/OSB rated sheathing. Install full depth of joist with face grain parallel to joist. Plywood reinforcement to bear fully on wall plate. Nail plywood to top and bottom joist flanges with 2½" (8d) nails at 3" on center except 9½" joists, install nails at 2½" on center.
2. Provide full depth blocking between joists.
3. Edge of hole shall be at a minimum of 3" from end of blocking panel.

F20B Brick Ledge Without Blocking Panels



Notes:

1. Use $^{23}/_{32}$" min plywood/OSB rated sheathing. Install full depth of joist with face grain parallel to joist. Plywood reinforcement to bear fully on wall plate. Nail plywood to top and bottom joist flanges with 2½" (8d) nails at 3" on center except 9½" joists, install nails at 2½" on center.
2. See page 5 for joist and rimboard connection details.

Joist Depth (inches)	Roof Truss Span (ft)	Roof Live Load (psf)											
		20 psf			30 psf			40 psf			50 psf		
		Joist Spacing o.c.											
		12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"	12"	16"	19.2"
9½"	24'	0	0	0	0	0	1	0	1	1	0	1	1
	26'	0	0	0	0	0	1	0	1	1	0	1	2
	28'	0	0	0	0	0	1	0	1	1	0	1	2
	30'	0	0	0	0	0	1	0	1	1	1	1	2
	32'	0	0	1	0	1	1	0	1	2	1	2	2
	34'	0	0	X	0	X	X	0	1	X	1	2	X
	36'	0	X	X	0	X	X	1	X	X	1	X	X
11⅞"	24'	0	0	0	0	0	0	0	0	0	0	0	1
	26'	0	0	0	0	0	0	0	0	0	0	0	1
	28'	0	0	0	0	0	0	0	0	1	0	1	1
	30'	0	0	0	0	0	0	0	0	1	0	1	1
	32'	0	0	0	0	0	0	0	0	1	0	1	1
	34'	0	0	0	0	1	1	0	1	1	0	1	1
	36'	0	0	0	0	1	1	0	1	1	0	1	X
14"	24'	0	0	0	0	0	0	0	0	0	0	0	0
	26'	0	0	0	0	0	0	0	0	0	0	0	0
	28'	0	0	0	0	0	0	0	0	0	0	0	1
	30'	0	0	0	0	0	0	0	0	0	0	0	1
	32'	0	0	0	0	0	0	0	0	0	0	0	1
	34'	0	0	0	0	0	0	0	0	1	0	0	1
	36'	0	0	0	0	0	0	0	0	1	0	1	X

Brick Ledge Reinforcement Table

Table Design Assumptions

Roof Loading: 15 psf dead load plus a 100 PLF wall self-weight, in addition to roof live load shown. Maximum 2'-6" overhangs assumed on roof trusses.

Floor Loading: 40 psf live load plus 10 psf dead load, backspans not to exceed maximum floor spans shown on page 3.

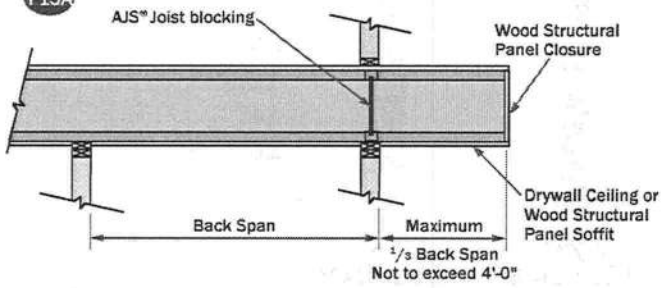
KEY TO TABLE:

0 = No Reinforcement Required
1 = Reinforcement Required One Side of Joist
2 = Reinforcement Required Both Sides of Joist
x = Use Deeper Joists or Closer Spacing

Non-Load Bearing Wall Cantilever Details

AJS® Joists are intended only for applications that provide permanent protection from the weather.

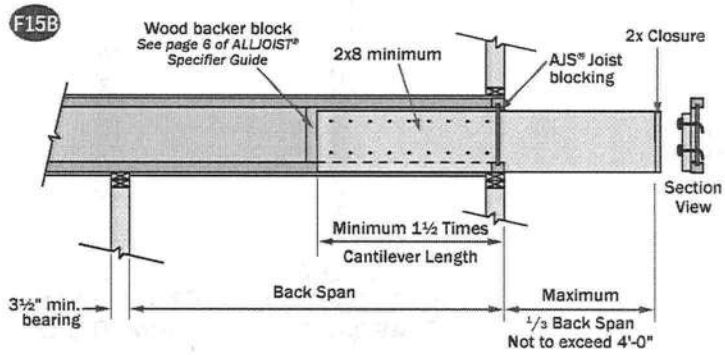
F15A



- These details apply to cantilevers with uniform loads only.
- It may be possible to exceed the limitations of these details by analyzing a specific application with the BC CALC® software.

Fasten the 2x8 minimum to the AJS® Joist by nailing through the backer block and joist web with 2 rows of 10d nails at 6" on center. Clinch all nails.

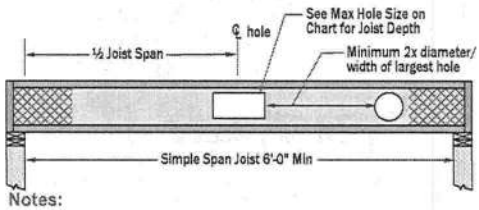
F15B



Large Rectangular Holes in AJS® Joists

Hole size table based on maximum uniform load of 40 psf live load and 15 psf dead load, at maximum spacing of 24" on-center.

Single Span Joist

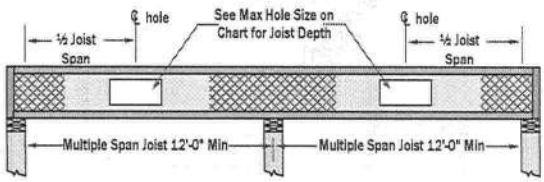


Notes:

Additional holes may be cut in the web provided they meet the specifications as shown in the hole distance chart shown above or as allowed using BC CALC® sizing software.

Joist Depth	Maximum Hole Size	
	Simple Span	Multiple Span
9½"	6" x 12"	6" x 7"
11⅞"	8" x 13"	8" x 8"
14"	9" x 16"	8" x 13"
	10" x 14"	9" x 11"
16"	11" x 16"	10" x 14"
	12" x 15"	11" x 12"

Multiple Span Joist

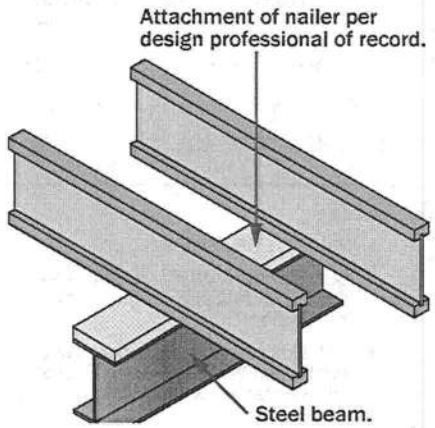


Larger holes may be possible for either Single or Multiple span joists; use BC CALC® sizing software for specific analysis.

AJS® Joists — Connection Details

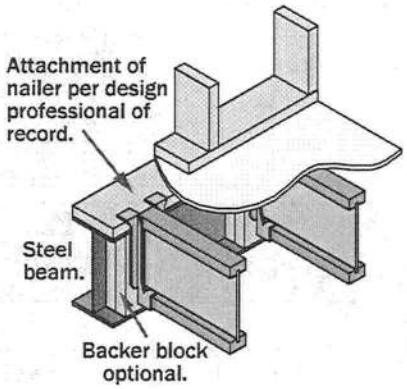
Connection on Steel Beam

F15D



Connection with Hanger on Steel Beam

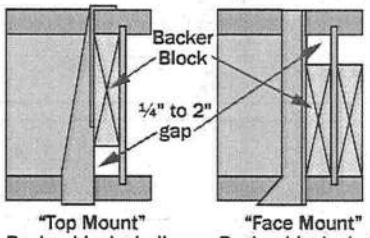
F15E



Hanger Connections to AJS Headers

F16D

- Backer blocks shall be at least 12" long per hanger.
- Nails shall be clinched when possible.
- Verify capacity and fastening requirements of hangers and connectors.



"Top Mount" Backer block shall be tight to bottom of top flange with ¼" to 2" gap at top of bottom flange.

"Face Mount" Backer block shall be tight to bottom of top flange with ¼" to 2" gap at top of bottom flange.

BOISE CASCADE® Rimboard

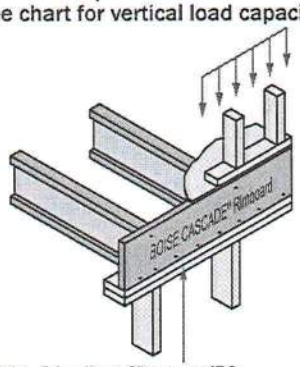
BOISE CASCADE® Rimboard Product Profiles

1", 1⅛" BOISE CASCADE® RIMBOARD OSB	1" BOISE CASCADE® RIMBOARD*	1 5/16" VERSA-LAM® 1.4 1800*	1¾" VERSA-LAM® 2.0 3100*

*18 – 24 inch deep rimboard are special order products, contact local supplier or Boise Cascade representative for product availability.

F07 Perpendicular

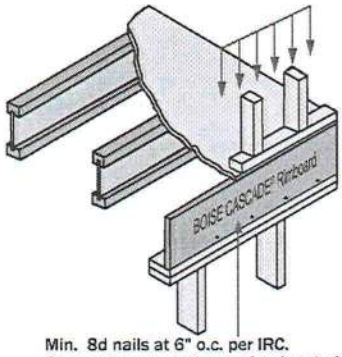
See chart for vertical load capacity.



Min. 8d nails at 6" o.c. per IRC. Connection per design professional of record's specification for shear transfer.

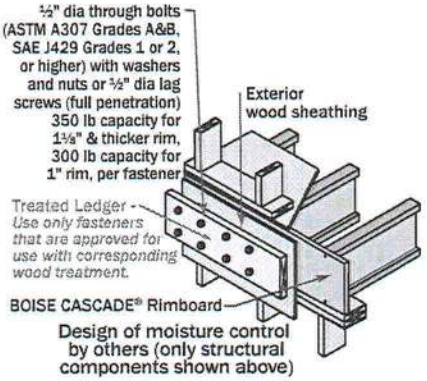
F07A Parallel

See chart for vertical load capacity.



Min. 8d nails at 6" o.c. per IRC. Connection per design professional of record's specification for shear transfer.

F56



For information regarding connection of exterior decks to interior floor systems per the 2009 IRC, section 502.2.2.3, contact Boise Cascade EWP Engineering.

BOISE CASCADE® Rimboard Properties

Product	Vertical Load Capacity						Maximum Floor Diaphragm Lateral Capacity [lb/ft]	Specific Gravity for Lateral Nail Design	Allowable Design Values			
	Uniform [plf]			Point [lb]								
	16" Depth & Less	18" & 20" Depth & Less	22" & 24" Depth & Less	16" Depth & Less	18" & 20" Depth & Less	22" & 24" Depth & Less			Flexural Stress [lb/in²]	Modulus of Elasticity [lb/in²]	Horizontal Shear [lb/in²]	Compression Perpendicular to Grain [lb/in²]
1" BOISE CASCADE® RIMBOARD (2) & 1" BOISE CASCADE® RIMBOARD OSB (2)	3300	1650	1650	3500	3500	3500	180	0.5	Limited span capabilities, see note 2			
1¼" BOISE CASCADE® RIMBOARD OSB (2)	4400	3000	3000	3500	3500	3500	180	0.5	Limited span capabilities, see note 2			
1 5/16" VERSA-LAM® 1.4 1800 (1)	6000	5450	—	4450	4450	—	Permitted per building code for all nominal 2" thick framing blocked and unblocked diaphragms (4" nail spacing & greater)	0.5	1800	1,400,000	225	525
1¾" VERSA-LAM® 2.0 3100 (1)	5700	4300	—	4300	3900	—	Permitted per building code for all nominal 2" thick framing blocked and unblocked diaphragms (4" nail spacing & greater)	0.5	2800	2,000,000	285	750

Product	Closest Allowable Nail Spacing - Narrow Face [in]					
	8d Box	8d Common	10d & 12d Box	16d Box	10d, 12d Common & 16d Sinker	16d Common
1" BOISE CASCADE® RIMBOARD (2)	3	3	-	-	-	-
1" or 1⅛" BOISE CASCADE® RIMBOARD OSB (2)	3	3	See note 2 for nailing information			
1 5/16" VERSA-LAM® 1.4 1800 (1)	3	3	3	3	4	6
1¾" VERSA-LAM® 2.0 3100 (1)	2	3	3	3	4	6

Notes

1. Per ICC ESR-1040.
2. See *Performance Rated Rim Boards, APA EWS #W345K* for further product information.
3. Not all products and depths may be available, check with Boise Cascade representative for product availability.

AJS® Design Properties

AJS® Joist Series	Depth [inches]	Weight [plf]	Moment M_r [ft-lbs]	EI x 10^6 [lb-in^2]	K x 10^6 [lbs]	Shear V_r [lbs]	End Reaction [lbs]				Intermediate Reaction [lbs]			
							1½" Bearing		3½" Bearing		3½" Bearing		5¼" Bearing	
							No WS(1)	WS(2)	No WS(1)	WS(2)	No WS(1)	WS(2)	No WS(1)	WS(2)
AJS® 140	9½	2.2	2450	182	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.5	3175	310	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	2.8	3825	457	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130
	16	3.1	4435	623	9.0	2065	970	1500	1285	1800	2465	3435	2465	3435
AJS® 150	9½	2.2	2820	194	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.5	3650	331	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	2.8	4390	487	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130
	16	3.1	5090	664	9.0	2065	970	1500	1285	1800	2465	3435	2465	3435
AJS® 20	9½	2.5	3395	232	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.8	4400	394	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	3.0	5295	578	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130
	16	3.3	6140	786	9.0	2065	970	1500	1285	1800	2465	3435	2465	3435
AJS® 190	9½	2.5	3895	244	5.2	1160	950	1240	1175	1480	2350	2450	2350	2450
	11⅞	2.8	5045	414	6.6	1490	955	1335	1215	1595	2390	2800	2390	2800
	14	3.0	6070	608	7.8	1790	960	1420	1250	1700	2430	3130	2430	3130
	16	3.3	7040	827	9.0	2065	970	1500	1285	1800	2465	3435	2465	3435
AJS® 25	9½	3.1	5370	322	5.3	1160	950	1240	1175	1480	2600	2850	2600	2850
	11⅞	3.4	6960	545	6.7	1490	955	1335	1215	1595	2690	3190	2690	3190
	14	3.7	8380	798	7.9	1790	960	1420	1250	1700	2770	3500	2770	3500
	16	3.9	9720	1082	9.1	2065	970	1500	1285	1800	2850	3800	2850	3800

NOTES:

(1) No web stiffeners required.
(2) Web stiffeners required.
(3) Not applicable, web stiffeners required.

- Moment, shear and reaction values based upon a load duration of 100% and may be adjusted for other load durations.
- Design values listed are applicable for Allowable Stress Design (ASD).
- No additional repetitive member increase allowed.

BUILDING CODE EVALUATION REPORT

- ICC ESR 1144 (IBC, IRC)

$$\Delta = \frac{5wl^4}{384\,EI} + \frac{wl^2}{K}$$

Δ = deflection [in]
w = uniform load [lb/in]
l = clear span [in]
EI = bending stiffness [lb-in^2]
K = shear deformation coefficient [lb]

VERSA-LAM® Design Values

Grade	Width [in]	Depth [in]	Weight [lb/ft]	Allowable Shear [lb]	Allowable Moment [ft-lb]	Moment of Inertia [in^4]
VERSA-STUD® 1.7 2650	1½	3½	1.5	998	776	5.4
		5½	2.4	1568	1821	20.8
		7¼	3.2	2066	3069	47.6
VERSA-LAM® 2.0 3100	1¾	3½	1.8	1164	1058	6.3
		5½	2.8	1829	2486	24.3
		7¼	3.7	2411	4189	55.6
		9¼	4.7	3076	6636	115.4
		9½	4.8	3159	6979	125.0
		11¼	5.7	3741	9605	207.6
		11⅞	6.0	3948	10638	244.2
		14	7.1	4655	14517	400.2
		16	8.1	5320	18682	597.3
		18	9.1	5985	23337	850.5
		24	12.2	7980	40183	2016.0
	3½	5½	5.6	3658	4971	48.5
		7¼	7.4	4821	8377	111.1
		9¼	9.4	6151	13272	230.8
		9½	9.6	6318	13958	250.1
		11¼	11.4	7481	19210	415.3
		11⅞	12.1	7897	21275	488.4
		14	14.2	9310	29035	800.3
		16	16.2	10640	37364	1194.7
		18	18.3	11970	46674	1701.0
		20	20.3	13300	56952	2333.3

Grade	Width [in]	Depth [in]	Weight [lb/ft]	Allowable Shear [lb]	Allowable Moment [ft-lb]	Moment of Inertia [in^4]
VERSA-LAM® 2.0 3100	5¼	5¼	8.0	5237	6830	63.3
		5½	8.4	5486	7457	72.8
		7¼	11.0	7232	12566	166.7
		9¼	14.1	9227	19908	346.3
		9½	14.5	9476	20937	375.1
		11¼	17.1	11222	28814	622.9
		11⅞	18.1	11845	31913	732.6
		14	21.3	13965	43552	1200.5
		16	24.4	15960	56046	1792.0
		18	27.4	17955	70011	2551.5
		20	30.4	19950	85428	3500.0
		24	36.5	23940	120549	6048.0
	7	9¼	16.6	12303	26544	461.7
		9½	17.1	12635	27916	500.1
		11¼	20.2	14963	38419	830.6
		11⅞	21.4	15794	42550	976.8
		14	25.2	18620	58069	1600.7
		16	28.8	21280	74728	2389.3
		18	32.4	23940	93348	3402.0
		20	36.0	26600	113904	4666.7
		24	43.2	31920	160732	8064.0

VERSA-LAM® Design Properties

Design Property	Grade	Modulus of Elasticity E(x 10^6 psi)[1]	Bending F_b (psi)[2][3]	Horizontal Shear F_v (psi)[2][4]	Tension Parallel to Grain F_t (psi)[2][5]	Compression Parallel to Grain $F_{c\|\|}$ (psi)[2]	Compression Perpendicular to Grain $F_{c\perp}$ (psi)[1][6]	Equivalent Specific Gravity for Fastener Design (SG)
VERSA-LAM® Beams	2.0 3100	2.0	3100	285	2150	3000	750	0.5
VERSA-LAM® Studs	1.7 2650	1.7	2650	285	1650	3000	750	0.5
VERSA-LAM® Columns	1.8 2750	1.8	2750	285	1825	3000	750	0.5

1. This value cannot be adjusted for load duration.
2. This value is based upon a load duration of 100% and may be adjusted for other load durations.
3. Fiber stress bending value shall be multiplied by the depth factor, $(12/d)^{1/9}$ where d = member depth [in].
4. Stress applied perpendicular to the gluelines.
5. Tension value shall be multiplied by a length factor, $(4/L)^{1/8}$ where L = member length [ft]. Use L = 4 for members less than four feet long.
6. Stress applied parallel to the gluelines.

* Design properties are limited to dry conditions of use where the maximum moisture content of the material will not exceed 16%.

Multiple Member Connectors

Side-Loaded Applications

Number of Members	Maximum Uniform Side Load [plf]							
	Nailed		½" Dia. Through Bolt[1]			⅝" Dia. Through Bolt[1]		
	2 rows 16d Sinkers @ 12" o.c.	3 rows 16d Sinkers @ 12" o.c.	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 6" o.c. staggered	2 rows @ 24" o.c. staggered	2 rows @ 12" o.c. staggered	2 rows @ 6" o.c. staggered
1¾" VERSA-LAM® (Depths of 18" and less)								
2	470	705	505	1010	2020	560	1120	2245
3[2]	350	525	375	755	1515	420	840	1685
4[3]	use bolt schedule		335	670	1345	370	745	1495
3½" VERSA-LAM®								
2[3]	use bolt schedule		855	1715	N/A	1125	2250	N/A
1¾" VERSA-LAM® (Depths of 24")								
Number of Members	Nailed		½" Dia. Through Bolt[1]			⅝" Dia. Through Bolt[1]		
	3 rows 16d Sinkers @ 12" o.c.	4 rows 16d Sinkers @ 12" o.c.	3 rows @ 24" o.c. 8" staggered	3 rows @ 18" o.c. 6" staggered	3 rows @ 12" o.c. 4" staggered	3 rows @ 24" o.c. 8" staggered	3 rows @ 18" o.c. 6" staggered	3 rows @ 12" o.c. 4" staggered
2	705	940	755	1010	1515	840	1120	1685
3[2]	525	705	565	755	1135	630	840	1260
4[3]	use bolt schedule		505	670	1010	560	745	1120

1. Design values apply to common bolts that conform to ANSI/ASME standard B18.21-1981 (ASTM A307 Grades A&B, SAE J429 Grades 1 or 2, or higher). A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The distance from the edge of the beam to the bolt holes must be at least 2" for ½" bolts and 2½" for ⅝" bolts. Bolt holes shall be the same diameter as the bolt.
2. The nail schedules shown apply to both sides of a 3-member beam.
3. 7" wide beams must be top-loaded or loaded from both sides (lesser side shall be no less than 25% of opposite side).

Top-Loaded Applications

For top-loaded beams and beams with side loads with less than those shown:

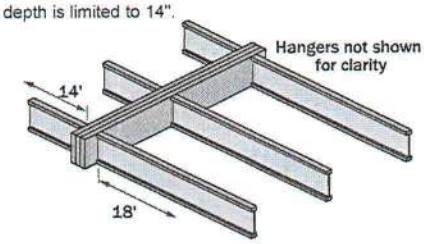
Plies	Depth	Nailing	Maximum Uniform Load From One Side
(2) 1¾" plies	Depths 11⅞" & less	2 rows 16d box/sinker nails @ 12" o.c.	400 plf
	Depths 14" - 18"	3 rows 16d box/sinker nails @ 12" o.c.	600 plf
	Depth = 24"	4 rows 16d box/sinker nails @ 12" o.c.	800 plf
(3) 1¾" plies [2]	Depths 11⅞" & less	2 rows 16d box/sinker nails @ 12" o.c.	300 plf
	Depths 14" - 18"	3 rows 16d box/sinker nails @ 12" o.c.	450 plf
	Depth = 24"	4 rows 16d box/sinker nails @ 12" o.c.	600 plf
(4) 1¾" plies	Depths 18" & less	2 rows 1/2" bolts @ 24" o.c., staggered	335 plf
	Depth = 24"	3 rows 1/2" bolts @ 24" o.c., staggered every 8"	505 plf
(2) 3½" plies	Depths 18" & less	2 rows 1/2" bolts @ 24" o.c., staggered	855 plf
	Depth 20" - 24"	3 rows 1/2" bolts @ 24" o.c., staggered every 8"	1285 plf

1. Beams wider than 7" must be designed by the engineer of record.
2. All values in these tables may be increased by 15% for snow-load roofs and by 25% for non-snow load roofs where the building code allows.
3. Use allowable load tables or BC CALC® software to size beams.
4. An equivalent specific gravity of 0.5 may be used when designing specific connections with VERSA-LAM®.
5. Connection values are based upon the 2005 NDS.
6. ***FastenMaster TrussLok, Simpson Strong-Tie SDS, and USP WS screws may also be used to connect multiple member VERSA-LAM® beams, contact Boise Cascade EWP Engineering for further information.***

Designing Connections for Multiple VERSA-LAM® Members

When using multiple ply VERSA-LAM® beams to create a wider member, the connection of the plies is as critical as determining the beam size. When side loaded beams are not connected properly, the inside plies do not support their share of the load and thus the load-carrying capacity of the full member decreases significantly. The following is an example of how to size and connect a multiple-ply VERSA-LAM® floor beam.

Given: Beam shown below is supporting residential floor load (40 psf live load, 10 psf dead load) and is spanning 16'-0". Beam depth is limited to 14".

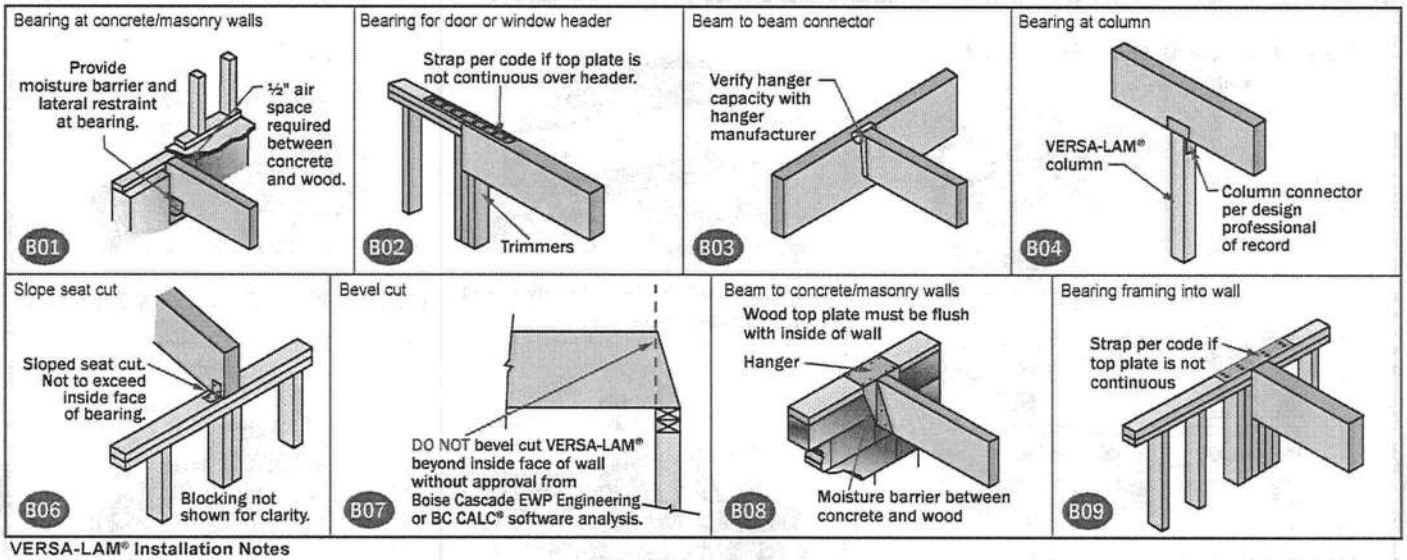


Find: A multiple 1¾" ply VERSA-LAM® that is adequate to support the design loads and the member's proper connection schedule.

1. Calculate the tributary width that beam is supporting:
   14' / 2 + 18' / 2 = 16'
2. Use PLF tables on pages 30-32 of ASG or BC CALC® to size beam.
   A Triple VERSA-LAM® 2.0 3100 1¾" x 14" is found to adequately support the design loads
3. Calculate the maximum plf load from one side (the right side in this case).
   Max. Side Load = (18' / 2) x (40 + 10 psf) = 450 plf
4. Go to the Multiple Member Connection Table, Side-Loaded Applications, 1¾" VERSA-LAM®, 3 members
5. The proper connection schedule must have a capacity greater than the max. side load:
   Nailed: 3 rows 16d sinkers @ 12" o.c:
   525 plf is greater than 450 plf OK
   Bolts: ½" diameter 2 rows @ 12" staggered:
   755 plf is greater than 450 plf OK

VERSA-LAM® Beam Details/Allowable Nailing/Holes

VERSA-LAM® Beam Details



VERSA-LAM® Installation Notes

- Minimum of ½" air space between beam and wall pocket or adequate barrier must be provided between beam and concrete/masonry.
- Adequate bearing shall be provided. If not shown on plans, please refer to load tables in your region's Specifier Guide.
- VERSA-LAM® beams are intended for interior applications only and should be kept as dry as possible during construction.
- Continuous lateral support of top of beam shall be provided (side or top bearing framing).

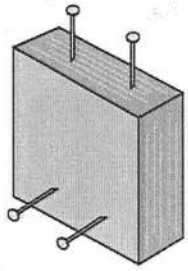
Closest Allowable Nail Spacing

VERSA-LAM® & VERSA-RIM® Products

Nail Size	Nailing Parallel to Glue Lines (Narrow Face)[1]						Nailing Perpendicular to Glue Lines (Wide Face)	
	VERSA-LAM® 1.4 1800 Rimboard 1⅝"		VERSA-LAM® 1¾"		VERSA-LAM® 3½" & Wider		All Products	
	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]
8d Box	3	1½	2	1	2	½	2	½
8d Common	3	2	3	2	2	1	2	1
10d & 12d Box	3	2	3	2	2	1	2	1
16d Box	3	2	3	2	2	1	2	1
10d & 12d Common	4	3	4	3	2	2	2	2
16d Sinker	4	3	4	3	2	2	2	2
16d Common	6	4	6	3	2	2	2	2

- Offset and stagger nail rows from floor sheathing and wall sole plate.
- Simpson Strong-Tie A35 and LPT4 connectors may be attached to the side VERSA-LAM®/VERSA-RIM®. Use nails as specified by Simpson Strong-Tie.

Nailing Parallel to Glue Lines (Narrow Face)



Nailing Perpendicular to Glue Lines (Wide Face)

Nailing Notes

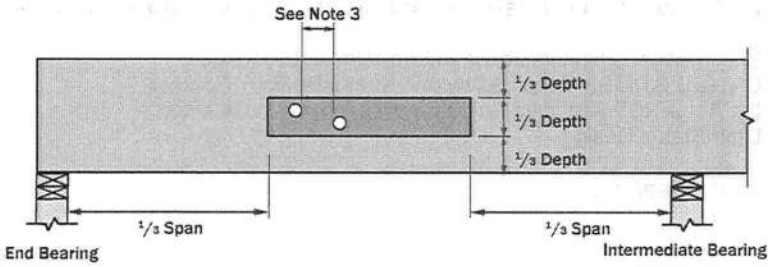
1) For 1¾" thickness and greater, 2 rows of nails (such as for a metal strap) are allowed (use ½" minimum offset between rows and stagger nails).

Allowable Holes in VERSA-LAM® Beams

Notes

1. Square and rectangular holes are not permitted.
2. Round holes may be drilled or cut with a hole saw anywhere within the shaded area of the beam.
3. The horizontal distance between adjacent holes must be at least two times the size of the larger hole.
4. Do not drill more than three access holes in any four foot long section of beam.
5. The maximum round hole diameter permitted is:

Beam Depth	Max. Hole Diameter
5½"	¾"
7¼"	1"
9¼" and greater	2"

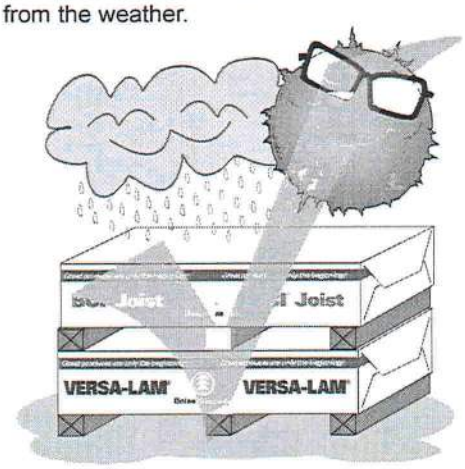


6. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are governed by the provisions of the *National Design Specification® for Wood Construction.*
7. Beams deflect under load. Size holes to provide clearance where required.
8. This hole chart is valid for beams supporting uniform load only. For beams supporting concentrated loads or for beams with larger holes, contact Boise Cascade EWP Engineering.

Handling and Storage of Engineered Wood Products

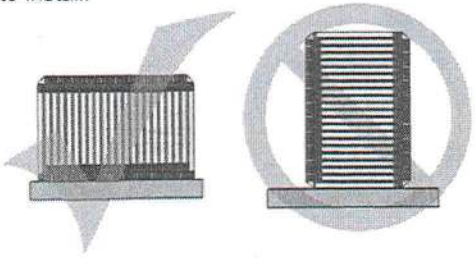
Site Storage

Protect AJS® Joists and VERSA-LAM® from the weather.

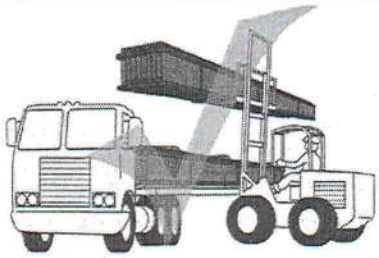


Keep at least 3½" off the ground, more in wetter areas. Align stickers one above another and space a maximum of 15 feet apart.

Leave AJS® Joists banded together until ready to install.

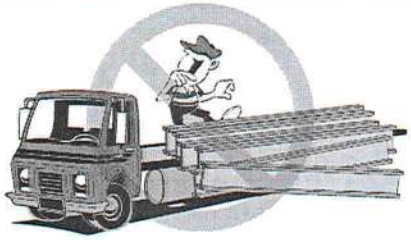


Site Handling



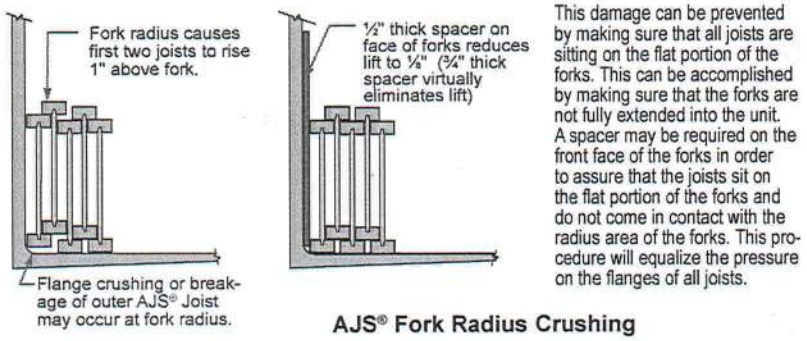
Unload from truck carefully using appropriate equipment.

DO NOT lift AJS® Joists by top flange.



Do not drop AJS® Joists from height.

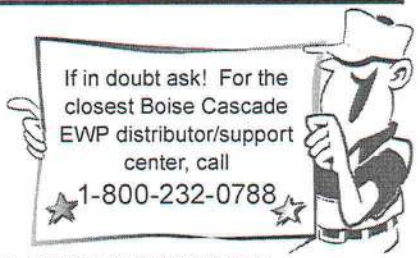
Avoid lifting AJS® Joists horizontally.



This damage can be prevented by making sure that all joists are sitting on the flat portion of the forks. This can be accomplished by making sure that the forks are not fully extended into the unit. A spacer may be required on the front face of the forks in order to assure that the joists sit on the flat portion of the forks and do not come in contact with the radius area of the forks. This procedure will equalize the pressure on the flanges of all joists.

AJS® Fork Radius Crushing

BCI® Joists, VERSA-LAM® and ALLJOIST® must be stored, installed and used in accordance with the Boise Cascade EWP Installation Guide, building codes, and to the extent not inconsistent with the Boise Cascade EWP Installation Guide, usual and customary building practices and standards. VERSA-LAM®, ALLJOIST®, and BCI® Joists must be wrapped, covered, and stored off of the ground on stickers at all times prior to installation. VERSA-LAM®, ALLJOIST® and BCI® Joists are intended only for applications that assure no exposure to weather or the elements and an environment that is free from moisture from any source, or any pest, organism or substance which degrades or damages wood or glue bonds. Failure to correctly store, use or install VERSA-LAM®, ALLJOIST®, and BCI® Joist in accordance with the Boise Cascade EWP Installation Guide will void the limited warranty.



The information in this document pertains to use in the UNITED STATES ONLY, Allowable Stress Design. Refer to the ALLJOIST Specifier Guide Canada for use in Canada, Limit States Design.

Your Dealer is:

If no dealer is listed, call 1-800-232-0788

For information about
Boise Cascade Engineered Wood Products,
including sales terms and conditions,
warranties and disclaimers,
visit our website at www.BCewp.com

Boise Cascade
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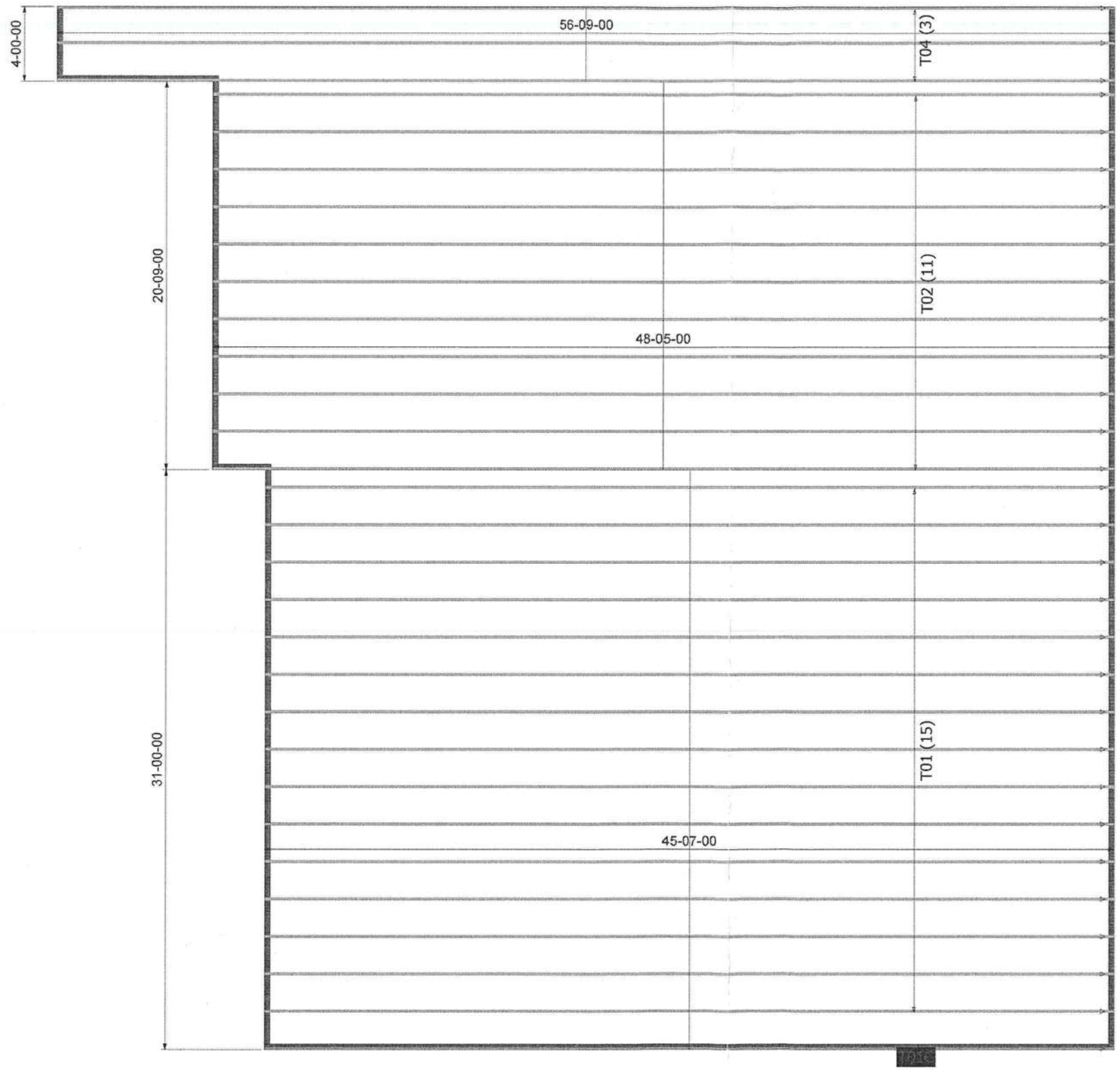
Great products are only the beginning.®

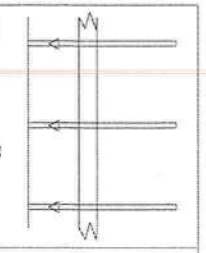
AIG US 08/29/2013

5/12 PITCH



M TEK PLATE APPROVAL # S 2 97 2 2 97 4 BO SE EWP PRODUCT # S LVL FL 644 R2 BC JO STS FL 392 R2

THE ARROW HEAD AT THE END OF THE TRUSS ON THE TRUSS PLACEMENT PLAN (LAYOUT) CORRESPONDS WITH THE LEFT SIDE OF THE INDIVIDUAL TRUSS DRAWING. USE THIS AS AN ORIENTATION GUIDE WHEN SETTING THE TRUSSES ON THE STRUCTURE.



General Notes:

- Per ANSI/TPI 1-2002 all " Truss to Wall" connections are the responsibility of the Building Designer, not the Truss Manufacturer.
- Use Manufacturer's specifications for all hanger connections unless noted otherwise.
- Trusses are to be 24" o.c. U.N.O.
- All hangers are to be Simpson or equivalent U.N.O.- Use 10d x 1 1/2" Nails in hanger connections to single ply girder trusses.
- Trusses are not designed to support brick U.N.O.
- Dimensions are Feet-Inches- Sixteenths

No back charges will be accepted by Builders FirstSource unless approved in writing first. 850-825-4541

ACQ lumber is corrisive to truss plates. Any ACQ lumber that comes in contact with truss plates (i.e. scabbed on tails) must have an approved barrier applied first.

Refer to BCSI-B1 Summary Sheet-Guide for handling, Installing and Bracing of Metal Plate Connected Wood Truss prior to and during truss installation.

It is the responsibility of the Contractor to ensure of the proper orientation of the truss placement plans as to the construction documents and field conditions of the structure orientation. If a reversed or flipped layout is required, it will be supplied at no extra cost by Builders FirstSource.

It is the responsibility of the Contractor to make sure the placement of trusses are adjusted for plumbing drops, can lights, ect..., so the trusses do not interfere with these type of items.

All common framed roof or floor systems must be designed as to NOT impose any loads on the floor trusses below. The floor trusses have not been designed to carry any additional loads from above.

This truss placement plan was not created by an engineer, but rather by the Builders FirstSource staff and is solely to be used as an installation guide and does not require a seal. Complete truss engineering and analysis can be found on the truss design drawings which may be sealed by the truss design engineer.

Gable end trusses require continuous bottom chord bearing. Refer to local codes for wall framing requirements.

Although all attempts have been made to do so, trusses may not be designed symmetrically. Please refer to the individual truss drawings and truss placement plans for proper orientation and placement.

Builders FIRSTSOURCE

C
PHONE: 386-755-6894
FAX: 386-755-7973

PHONE: 904-772-6100
FAX: 904-772-1973

PHONE: 850-576-5177

Builder: LIPSCOMB EAGLE

Legal Address: ROOF OVER

Model: Custom

Date:	Drawn By:	Original Ref #:
1-21-23	KLH	3397173
Floor 1 Job#:	Floor 2 Job#:	Roof Job #:
N/A	N/A	3397173