

Floor Framing Details

F07

Nail Boise Rimboard to AJS® Joists with 2 1/2" (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 rim board with AJS® Joists.

F01

AJS® blocking.

F02

AJS® rim joist.
AJS® 25 requires 2x6 wall for minimum bearing.

F27A

Top Flange or Face Mount Joist Hanger
VERSA-LAM®

F52

One 2 1/2" (8d) nail each side at bearing.
1 1/2" minimum bearing length, (1 1/4" for 18" to 24" deep)
To limit splitting flange, start nails at least 1 1/2" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.

F08

Solid block all posts from above to bearing below.

F03

AJS® rim joist
AJS® 25 requires 2x6 wall for minimum bearing.
Note: AJS® floor joist must be designed to carry wall above when not stacked over wall below.

INTERMEDIATE BEARING DETAILS

F06

For load bearing wall above (stacked over wall below).
AJS® Joist blocking.

F09

Blocking may be required, consult design professional of record and/or local building official.
Load bearing wall above (stacked over wall below).
Nail block with one 3" (10d) nail into each flange.

F05A

Joist blocking may be required in seismic areas for floor diaphragm strength.
Intermediate Bearing.
Cross bracing OK as blocking only if support below is not a braced wall panel or shear wall and no wall exists above.

Size	Double Squash Block Vertical Load [lb/ft]			
	Joist Spacing [in]			
	12	16	19.2	24
2x4	6460	4840	4030	3230
2x6	10140	7600	6330	5070

- Squash blocks are to be in full contact with upper floor and lower wall plate.
- Capacities shown are for a double squash blocks at each joist, for single squash block divide the vertical load by 2.

F10

Backer block (minimum 12" wide). Nail with 10-3" (10d) nails.
Joist Hanger.
Filler block. Nail with 10-3" (10d) nails.
Backer block required where top flange joist hanger load exceeds 250 lbs. Install tight to top flange.

F58

Double AJS® Joist Connection
Filler Block (see chart below)
Web-Filler Nailing 12" on-center
Connection valid for all applications. Contact Boise Cascade EWP Engineering for specific conditions.

PLYWOOD / OSB REINFORCEMENT
(see specifier guide on page 12)

- 2 3/32" Min. x 48" long plywood / OSB rated sheathing must match the full depth of the AJS® Joist. Nail to the AJS® Joist with 2 1/2" (8d) nails at 6" o.c. and nail with 4-2 1/2" (8d) nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal facing grain.
- Contact Boise Cascade EWP Engineering for reinforcement requirements on AJS® Joist depths greater than 16".

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 as per Code, consult local building official.

MINIMUM BEARING LENGTH FOR AJS® JOISTS

- 1 1/2 inches is required at end supports (1 1/4 inches for 18" to 24" deep). 3 1/2 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 1 1/4 inches thick and less: 2-2 1/2" (8d) nails, one each in the top and bottom flange.
 - AJS® 140/20 rim joist: 2-3 1/2" (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
 - 2 1/2" (8d) nails at 6 inches on center.
 - When used for shear transfer, follow the building designer's specification.

- AJS® Joist to support:

- 2-2 1/2" (8d) nails, one on each side of the web, placed 1 1/2 inches minimum from the end of the AJS® Joist to limit splitting.

- Sheathing to AJS® Joist:

- Prescriptive residential floor sheathing nailing requires 2 1/2" (8d) common nails @ 6" o.c. on edges and @ 12" o.c. in the field as per Code.
- Maximum nail spacing for minimum lateral stability = 24".
- 14 gauge staples may be substituted for 2 1/2" (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

Series	Backer Block Thickness	Filler Block Thickness
AJS® 140	1 1/2" or two 1/2" wood panels	2 x ___ + 5/8" wood panel
AJS® 20	1 1/2" or two 1/2" wood panels	2 x ___ + 5/8" wood panel
AJS® 25	2 x ___ lumber	Double 2 x ___ lumber

- Cut backer and filler blocks to a maximum depth equal to the web depth minus 1/4" to avoid a forced fit.
- For deeper AJS® 25 Joists, stack 2x lumber or use multiple pieces of 3/4" wood panels.

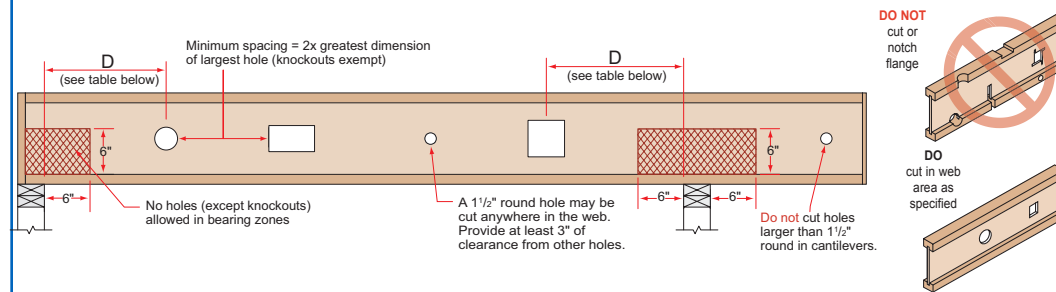
WEB STIFFENER REQUIREMENTS

- See Web Stiffener Requirements on page 9.

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.

Hole Cutting Charts for Residential Applications (40/15 PSF)



AJS® Joists are manufactured with 1 1/2" 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 1 1/2"

TABLE 1 ROUND HOLES

Span [ft]	Minimum distance from inside face of any support to the centerline of hole															
	9 1/2"				11 1/4"				14"				16"			
	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"
8'	1'-0"	1'-6"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-0"
10'	1'-0"	2'-6"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-0"
12'	1'-0"	4'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-6"
14'	1'-0"	5'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-6"	-	1'-0"	1'-0"	1'-0"	2'-6"
16'	2'-0"	6'-6"	-	-	1'-0"	2'-0"	-	-	1'-0"	1'-0"	2'-6"	-	1'-0"	1'-0"	1'-0"	3'-6"
18'	3'-0"	7'-6"	-	-	1'-0"	3'-6"	-	-	1'-0"	1'-0"	4'-0"	-	1'-0"	1'-0"	1'-0"	4'-6"
20'	4'-0"	9'-0"	-	-	1'-0"	4'-6"	-	-	1'-0"	1'-0"	5'-0"	-	1'-0"	1'-0"	2'-0"	6'-0"
22'	5'-0"	10'-0"	-	-	1'-6"	5'-6"	-	-	1'-0"	2'-6"	6'-0"	-	1'-0"	1'-0"	3'-0"	7'-0"
24'	6'-6"	11'-6"	-	-	2'-6"	7'-0"	-	-	1'-0"	3'-6"	6'-0"	-	1'-0"	1'-0"	4'-0"	8'-0"
26'	-	-	-	-	4'-0"	8'-0"	-	-	1'-0"	4'-6"	8'-6"	-	1'-0"	1'-6"	5'-6"	9'-6"
28'	-	-	-	-	5'-0"	9'-0"	-	-	2'-0"	5'-6"	10'-0"	-	1'-0"	2'-6"	6'-6"	10'-6"
30'	-	-	-	-	-	-	-	-	3'-0"	7'-0"	11'-0"	-	1'-0"	4'-0"	7'-6"	12'-0"
32'	-	-	-	-	-	-	-	-	4'-0"	8'-0"	12'-6"	-	1'-6"	5'-0"	9'-0"	13'-0"
34'	-	-	-	-	-	-	-	-	-	-	-	-	2'-6"	6'-0"	10'-0"	14'-6"

NOTES:

- Hole may be positioned vertically anywhere in the web.
- Table 1 for uniformly loaded maximum loads of 40 psf live loads and 15 psf dead loads on simple span application.
- For other load conditions or hole sizes, refer to our Alljoist specifier guide.

F15E Connection with Hanger on Steel Beam

Connection with Hanger on Steel Beam
Sill plate to be properly anchored to steel beam.
Backer block optional.

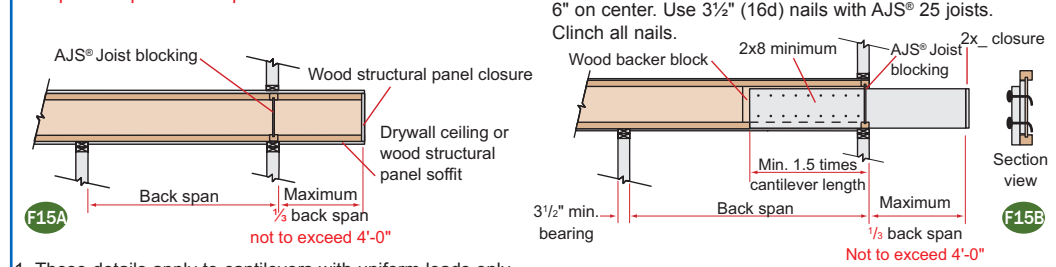
F16D Hanger Connections to AJS® Headers

Hanger Connections to AJS® Headers
Backer Block
1/4" to 2" gap
"Top Mount"
Backer block shall be tight to bottom of top flange with 1/4" to 2" gap at top of bottom flange.
"Face Mount"
Backer block shall be tight to bottom of top flange with 1/4" to 2" gap at top of bottom flange.

Web stiffeners are optional except as noted below:

- Stiffeners required at ALL bearing locations for all 18" to 24" deep joists.
- 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 may be cut from structural rated wood panels, engineered rimboard or 2x lumber (AJS® 25 only).
- For Structural Capacity: Web stiffeners needed to increase the AJS® Joist's reaction capacity at a specific bearing location.
- Web stiffeners are always required in certain roof applications. See *Roof Framing Details* on pages 15 & 16.
- 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 *Factored Resistances Limit States Design (CANADA)* on page 4 of this guide or the BC CALC® software.

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



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

Multiple Member Connectors

Rows	Depth	Spacing	Maximum Factored Uniform Load (PLF) Applied to Either Outside Member			
			3 1/2" (2 plies)	5 1/4" (3 plies)	5 1/4" (2 plies)	7" (3 plies)
3 1/2" Common Wire Nails (16d)						
2	7 1/4" to 12"	24"	434	325	325	289
	18"	6"	1734	1301	1301	1156
3	11 1/4" to 12"	24"	650	488	488	434
	24"	6"	2602	1951	1951	1734
4	14" to 24"	24"	867	650	650	578
	24"	6"	3469	2602	2602	2312

Rows	Depth	Spacing	Maximum Factored Uniform Load (PLF) Applied to Either Outside Member		
			3 1/2" (2 plies)	5 1/4" (3 plies)	7" (4 plies)
SDS 1/4"x3.5" SDS 1/4"x3.5" SDS 1/4"x6"					
2	7 1/4" to 18"	12"	1220	915	1040
	6"	6"	2440	1830	2080
3	11 1/4" to 24"	12"	1830	1373	1560
	6"	6"	3660	2745	3120

Rows	Depth	Spacing	Maximum Factored Uniform Load (PLF) Applied to Either Outside Member		
			3 1/2" (2 plies)	5 1/4" (3 plies)	7" (4 plies)
1/2" Bolts A307					
2	7 1/4" to 18"	12"	1560	1170	1040
	6"	6"	3120	2340	2080
3	11 1/4" to 24"	12"	2340	1755	1560
	6"	6"	4680	3510	3120

NOTES:

- Design values apply to common bolts that conform to ASTM A307 Grades A&B, SAE J429 Grades 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 minimum edge distance for bolts shall be 2". The minimum end distance for bolts shall be 4". Bolt holes shall not be greater than 1/16" of the bolt diameter.
- When 3/4" pneumatic gun nails 0.122" diameter (10d) are used, multiply the maximum factored uniform load for the 3 1/2" common wire nails by 0.61 factor.
- The nail schedules shown apply to both sides of a 3-member beam.
- 4-ply beams must be top-loaded or loaded from both sides. Lesser side shall be no less than 25% of the opposite side.
- Beams wider than 7" must be designed by the professional engineer of record.
- An equivalent specific gravity of 0.5 may be used when designing specific connections with VERSA-LAM®. Connection design is based on CSA O86-09.
- Simpson Strong-Drive, FastenMaster TrussLoc, and USP WS screws may also be used to connect multiple member VERSA-LAM® beams, contact Boise Cascade EWP Engineering for further information.