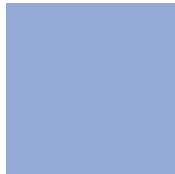
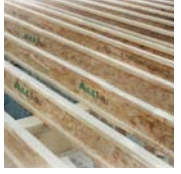
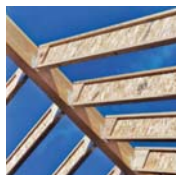
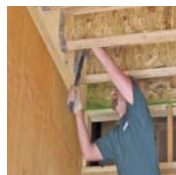


# INSTALLATION GUIDE

# ALLJoist® VERSA-LAM® BCI®



LIMIT STATES DESIGN  
CANADA



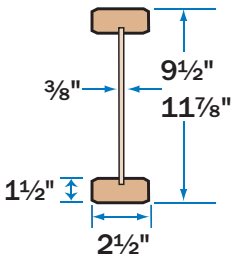
**Boise Cascade**  
*Engineered Wood Products*



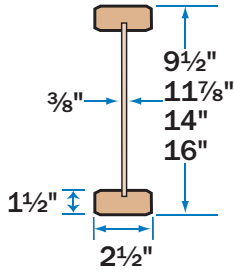
The information in this document pertains to use in the CANADA ONLY, Limit States Design. Refer to the appropriate Specifier Guide US for use in the United States.

# ALLJOIST® Product Profiles

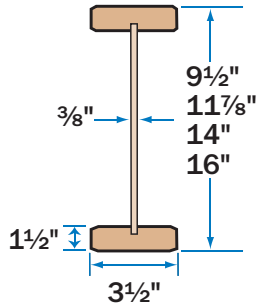
AJS® 140



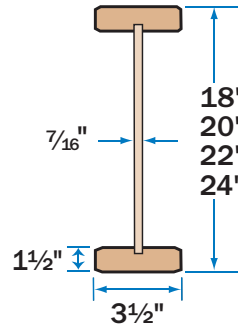
AJS® 20



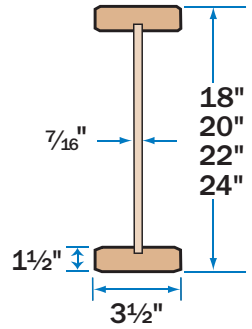
AJS® 25



AJS® 25  
Deeper Depths

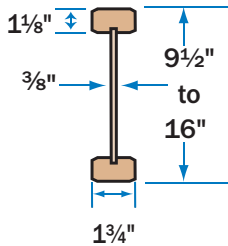


AJS® 30

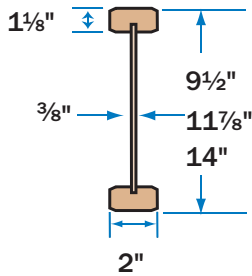


# BCI® Product Profiles

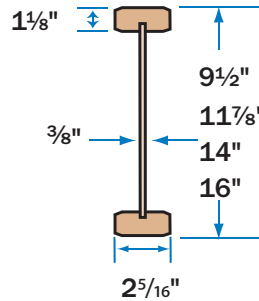
BCI® 4500s



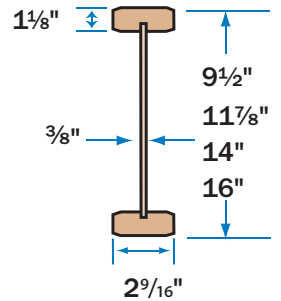
BCI® 5000  
BCI® 5000s



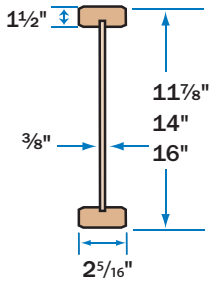
BCI® 6000  
BCI® 6000s



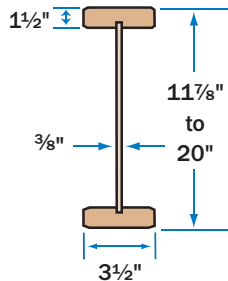
BCI® 6500  
BCI® 6500s



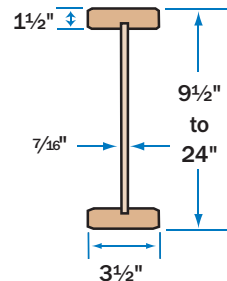
BCI® 60  
BCI® 60s



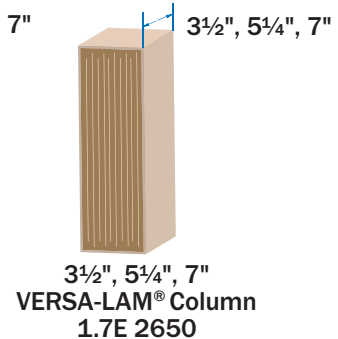
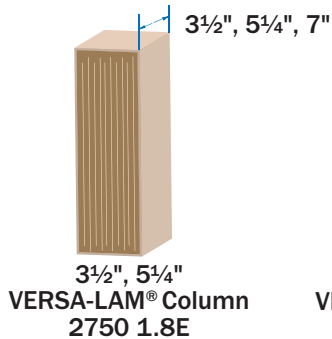
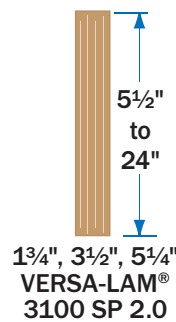
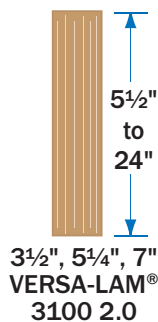
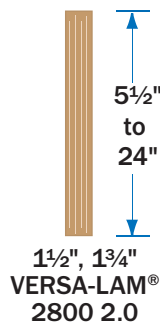
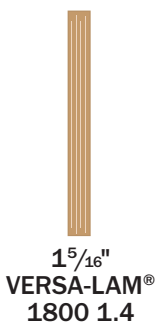
BCI® 90  
BCI® 90s



BCI® 90e



# VERSA-LAM® and Boise Cascade Rimboard Product Profiles



# Multiple Member Connectors

Rows	Depth Range	Spacing				Rows	Depth Range	Spacing				
Maximum Factored <b>Uniform Load (PLF)</b> Applied to Either Outside Member					Maximum Factored <b>Uniform Load (PLF)</b> Applied to Either Outside Member							
<b>3.5" Common Wire Nails (16d)</b>					<b>SDW22338    SDW22500    SDW22634    SDW22634</b>							
2	7 1/4" to 12"	24"	434	325	325	289	24"	680	623	1140	553	
	11 1/8"	6"	867	650	650	578	12"	1360	1245	2280	1107	
		6"	1734	1301	1301	1156	6"	2720	2490	4560	2213	
3	11 1/8" to 12"	24"	650	488	488	434	11 1/8" to 12"	24"	1020	934	1710	830
	14"	6"	1301	976	976	867	12"	2040	1868	3420	1660	
		6"	2602	1951	1951	1734	6"	4080	3735	6840	3320	
4	14" to 12"	24"	867	650	650	578	14" to 12"	24"	1360	1245	2280	1107
	24"	12"	1734	1301	1301	1156	12"	2720	2490	4560	2213	
		6"	3469	2602	2602	2312	6"	5440	4980	9120	4427	

Rows	Depth Range	Spacing				Rows	Depth Range	Spacing					
Maximum Factored <b>Uniform Load (PLF)</b> Applied to Either Outside Member					Maximum Factored <b>Uniform Load (PLF)</b> Applied to Either Outside Member								
<b>SDS 1/4"x3.5"</b> <b>SDS 1/4"x3.5"</b> <b>SDS 1/4"x6"</b> <b>SDS 1/4"x6"</b>					<b>3/8" TrussLok    5" TrussLok    6 1/4" TrussLok    6 1/4" TrussLok</b>								
2	7 1/4" to 12"	24"	610	458	610	520	24"	864	675	849	600		
	11 1/8"	6"	1220	915	1220	1040	7 1/4" to 11 1/8"	16"	1 296	1 013	1 274	900	
		6"	2440	1830	2440	2080	12"	1 728	1 350	1 698	1 200		
3	11 1/8" to 12"	24"	915	686	915	780	11 1/8" to 14"	24"	1 296	1 013	1 274	900	
	14"	6"	1830	1373	1830	1560		16"	1 944	1 519	1 910	1 350	
		6"	3660	2745	3660	3120		12"	2 592	2 025	2 547	2 025	
4	14" to 12"	24"	1220	915	1220	1040	3	11 1/8" to 14"	24"	1 296	1 013	1 274	900
	24"	12"	2440	1830	2440	2080		16"	1 944	1 519	1 910	1 350	
		6"	4880	3660	4880	4160		12"	2 592	2 025	2 547	2 025	

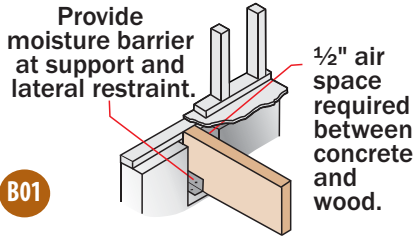
Rows	Depth Range	Spacing					
Maximum Factored <b>Uniform Load (PLF)</b> Applied to Either Outside Member							
<b>1/2" Bolts</b>							
2	7 1/4" to 11 1/8"	12"	1560	1170	1755	1560	1040
	6"	3120	2340	3510	3120	2080	
3	11 1/8" to 12"	12"	2340	1755	2632	2340	1560
	6"	4680	3510	5265	4680	3120	

## NOTES

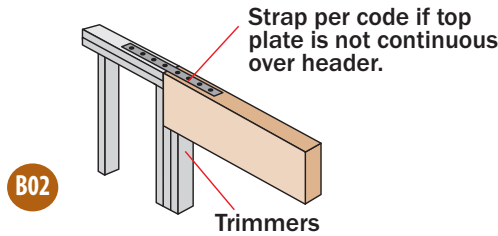
- Design values apply to common bolts that conform to ASTM A307 Grades A&B, SAE J429 Grades 2 or higher. A washer not less than a standard cut washer shall be between the wood and the bolt head and between the wood and the nut. The minimum edge distance for SDS/TrussLok screws and bolts shall be 2". The minimum end distance for SDS/TrussLok screws and bolts shall be 4", except for SDW screws where the end distance should not be less than 6". Bolt holes shall not be greater than 1/16" of the bolt diameter.
- When 3 1/4" sinker nails (16d) are used, multiply the maximum factored uniform load for the 3.5" common wire nails by 0.87 factor.
- When 3 1/4" pneumatic gun nails 0.122" diameter (10d) are used, multiply the maximum factored uniform load for the 3.5" 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 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.
- Refer to current technical literature from FastenMaster TrussLok and Simpson Strong-Tie to confirm information herein has not been superseded.
- Other fasteners may also be used to connect multiple VERSA-LAM® BEAMS. Contact Boise Cascade EWP Engineering for further information.

# VERSA-LAM® Details

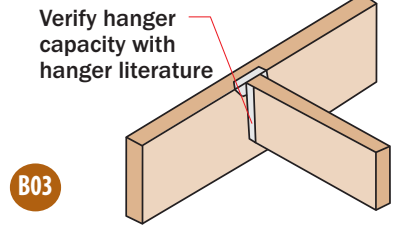
## Bearing at concrete/masonry walls



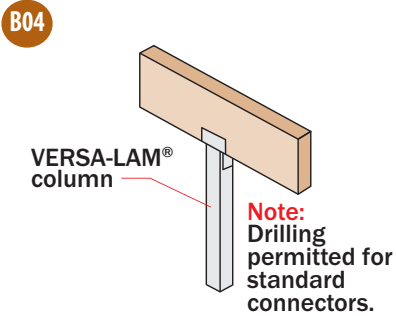
## Bearing for door or window header



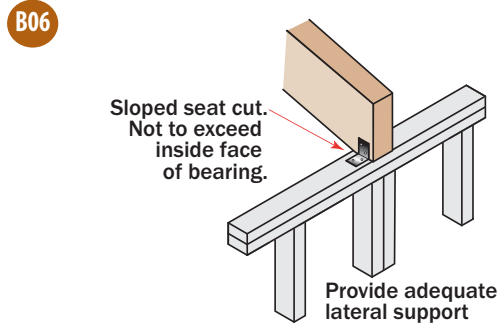
## Beam to beam connector



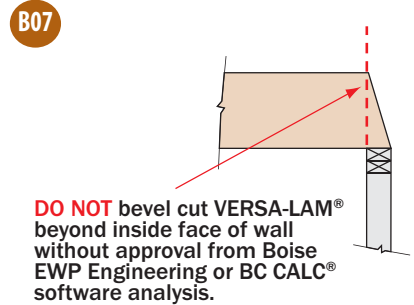
## Bearing at column



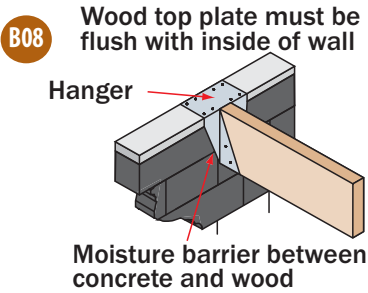
## Slope seat cut



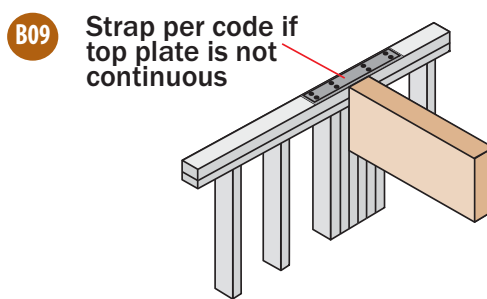
## Bevel cut



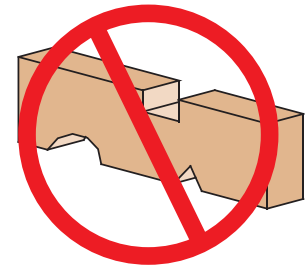
## Beam to concrete/masonry walls



## Bearing framing into wall



## DO NOT drill, notch, cut or alter Versa-Lam® beams



## VERSA-LAM® INSTALLATION NOTES:

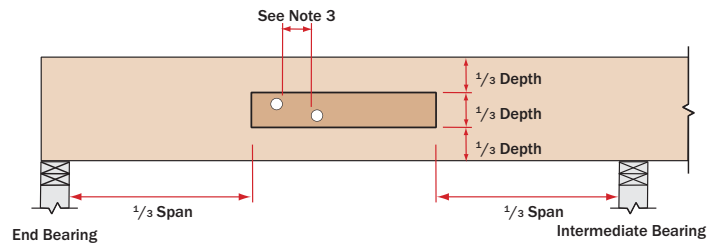
- Minimum of 1/2" air space between beam and wall pocket or adequate barrier must be provided between beam and concrete/masonry.
- Adequate bearing shall be provided. If not shown on plans, please refer to load tables in your region's Specifier Guide.
- VERSA-LAM® beams are intended for interior applications 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).

# 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
5 1/2"	3/4"
7 1/4"	1"
Greater than 7 1/4"	2"

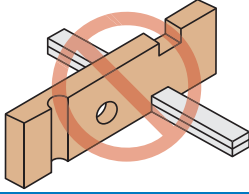


6. These limitations apply to holes drilled for plumbing or wiring access only. The size and location of holes drilled for fasteners are under the regulations of the CSA O86-09 Engineering Design in Wood.
7. Beams deflect under load. Size holes to provide clearance where required.
8. This hole chart is valid for beams supporting uniform load only. For beams supporting concentrated loads or for beams with larger holes, contact Boise Cascade EWP Engineering.

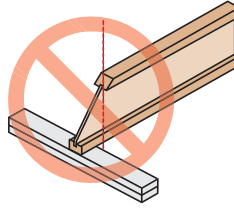
# WARNING

## THE FOLLOWING USES ARE NOT ALLOWED

**DO NOT** notch or drill beams without prior approval from Boise Cascade EWP Engineering.

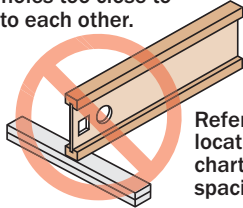


**DO NOT** cut beyond inside edge of bearing.



**DO NOT** support joist on web.

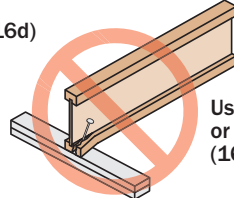
**DO NOT** cut holes too close to supports or to each other.



Refer to hole location and sizing chart for size and spacing.

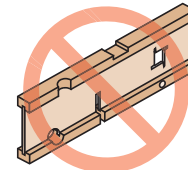
**DO NOT** nail closer than 1½" from end of joist.

**DO NOT** use 3½" (16d) common nails.



Use 2½" (8d) nails or 3" (10d)/3½" (16d) box nails.

**DO NOT** cut or notch flange.

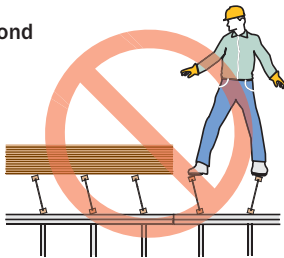


See roof and floor details, this sheet, for allowed cutting of flange.

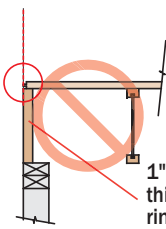
**DO NOT** walk on joist until proper bracing is in place.

**DO NOT** load joist beyond design capacity.

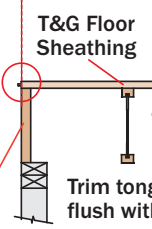
**DO NOT** stack building materials on unbraced joists.



**DO NOT** install tongue of floor sheathing flush with either 1" or 1¼" thick Boise rimboard (tongue OK with 1½" and thicker Boise rimboard).



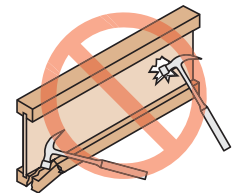
1" or 1¼" thick Boise rimboard



Trim tongue flush with rim.

T&G Floor Sheathing  
Trim tongue of 1/8" sheathing regardless of rimboard thickness.

**DO NOT** hammer on web unless removing knockout holes.



**DO NOT** hammer on flange.

### SAFETY WARNING

**DO NOT ALLOW WORKERS ON AJS®/BCI® JOISTS UNTIL ALL HANGERS, AJS®/BCI® RIM JOISTS, RIM BOARDS, AJS®/BCI® 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®/BCI® Joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first four feet of AJS®/BCI® Joists at the end of the bay.
- All hangers, AJS®/BCI® rim joists, rim boards, AJS®/BCI® blocking panels, and x-bracing must be completely installed and properly nailed as each AJS®/BCI® Joist is set.

- Install temporary 1x4 strut lines at no more than eight feet on center as additional AJS®/BCI® Joists are set. Nail the strut lines to the sheathed area, or braced end wall, and to each AJS®/BCI® Joist with two 2½" (8d) nails.
- The ends of cantilevers must be temporarily secured by strut lines on both the top and bottom flanges.
- Straighten the AJS®/BCI® 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®/BCI® Joist spans, contact Boise Cascade EWP Engineering for proper storage and shoring information.

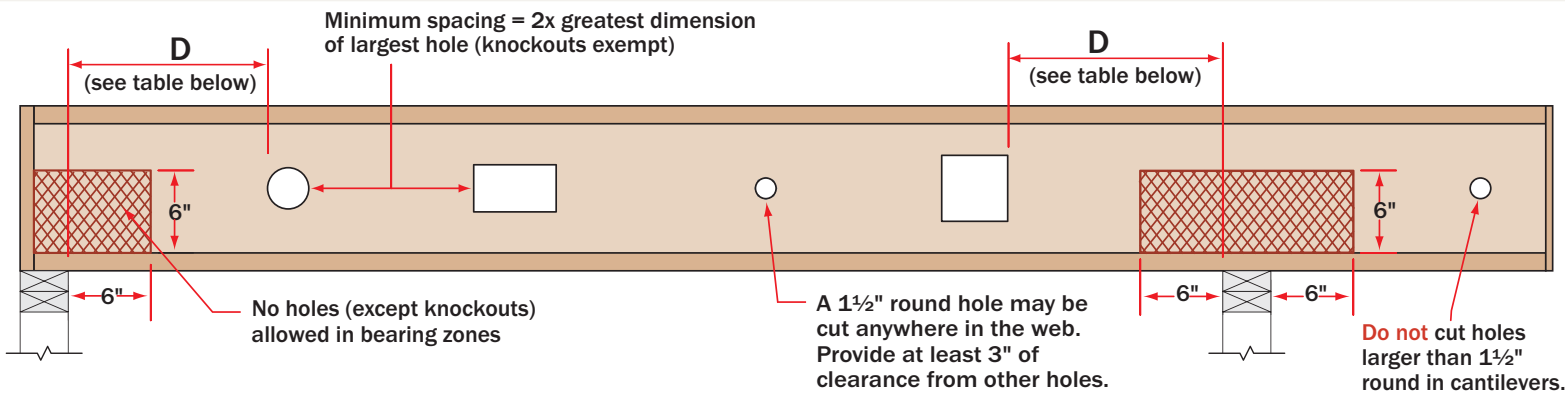
### Lifetime Guaranteed Quality and Performance

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](http://www.BCewp.com)**

To locate your nearest Boise Cascade Engineered Wood Products distributor, call **1-800-964-6999**

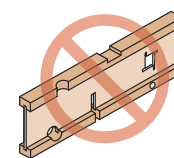
# AJS® & BCI® Joist Round Hole Location & Sizing (40/15 PSF)



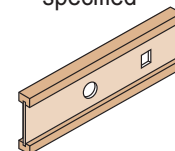
Minimum distance from support, listed in table below, is required for all holes greater than 1½"

TABLE 1		AJS® ROUND HOLES															
Minimum distance from inside face of any support to nearest edge of hole		JOIST DEPTH • HOLE DIAMETER [IN]															
Span [ft]	9½"				11⅞"				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'-0"	
14'	1'-0"	5'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-6"	-	1'-0"	1'-0"	1'-0"	1'-6"	
16'	2'-0"	6'-6"	-	-	1'-0"	2'-0"	-	-	1'-0"	1'-0"	2'-6"	-	1'-0"	1'-0"	1'-0"	3'-0"	
18'	3'-0"	7'-6"	-	-	1'-0"	3'-6"	-	-	1'-0"	1'-0"	4'-0"	-	1'-0"	1'-0"	1'-0"	4'-0"	
20'	4'-0"	9'-0"	-	-	1'-0"	4'-6"	-	-	1'-0"	1'-0"	5'-0"	-	1'-0"	1'-0"	1'-0"	5'-0"	
22'	5'-0"	10'-0"	-	-	1'-6"	5'-6"	-	-	1'-0"	2'-6"	6'-0"	-	1'-0"	1'-0"	2'-0"	6'-0"	
24'	6'-6"	11'-6"	-	-	2'-6"	6'-6"	-	-	1'-0"	3'-6"	7'-6"	-	1'-0"	1'-0"	3'-0"	7'-6"	
26'	-	-	-	-	4'-0"	8'-0"	-	-	1'-0"	4'-6"	8'-6"	-	1'-0"	1'-0"	4'-0"	8'-6"	
28'	-	-	-	-	5'-0"	9'-0"	-	-	2'-0"	5'-6"	10'-0"	-	1'-0"	1'-0"	5'-0"	10'-0"	
30'	-	-	-	-	-	-	-	-	3'-0"	6'-6"	11'-0"	-	1'-0"	2'-6"	6'-6"	11'-0"	
32'	-	-	-	-	-	-	-	-	4'-0"	8'-0"	12'-6"	-	1'-0"	3'-6"	7'-6"	12'-6"	
34'	-	-	-	-	-	-	-	-	-	-	-	-	1'-0"	4'-6"	8'-6"	13'-6"	
Span [ft]	18"				20"				22"				24"				
	3"	6"	9"	12"	6"	9"	12"	15"	6"	9"	12"	15"	9"	12"	15"	18"	
8'	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
10'	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	
12'	1'-0"	1'-0"	1'-0"	2'-6"	1'-0"	1'-0"	1'-0"	4'-6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	
14'	1'-0"	1'-0"	1'-0"	3'-6"	1'-0"	1'-0"	1'-0"	6'-0"	1'-0"	1'-0"	1'-0"	1'-6"	1'-0"	1'-0"	1'-0"	3'-6"	
16'	1'-0"	1'-0"	1'-0"	4'-6"	1'-0"	1'-0"	1'-0"	7'-0"	1'-0"	1'-0"	1'-0"	2'-6"	1'-0"	1'-0"	1'-0"	4'-6"	
18'	1'-0"	1'-0"	1'-0"	6'-0"	1'-0"	1'-0"	1'-6"	8'-6"	1'-0"	1'-0"	1'-0"	3'-6"	1'-0"	1'-0"	1'-0"	5'-6"	
20'	1'-0"	1'-0"	1'-0"	7'-0"	1'-0"	1'-0"	2'-6"	9'-6"	1'-0"	1'-0"	1'-0"	5'-0"	1'-0"	1'-0"	1'-0"	7'-0"	
22'	1'-0"	1'-0"	1'-0"	8'-6"	1'-0"	1'-0"	3'-6"	*	1'-0"	1'-0"	1'-0"	6'-0"	1'-0"	1'-0"	2'-0"	8'-0"	
24'	1'-0"	1'-0"	2'-6"	9'-6"	1'-0"	1'-0"	5'-0"	*	1'-0"	1'-0"	1'-0"	7'-0"	1'-0"	1'-0"	3'-6"	9'-6"	
26'	1'-0"	1'-0"	3'-6"	11'-0"	1'-0"	1'-0"	6'-0"	*	1'-0"	1'-0"	1'-0"	8'-6"	1'-0"	1'-0"	4'-6"	10'-6"	
28'	1'-0"	1'-0"	4'-6"	12'-0"	1'-0"	1'-0"	7'-0"	*	1'-0"	1'-0"	3'-6"	9'-6"	1'-0"	1'-0"	5'-6"	12'-0"	
30'	1'-0"	1'-0"	5'-6"	13'-6"	1'-0"	2'-0"	8'-6"	*	1'-0"	1'-0"	4'-6"	11'-0"	1'-0"	1'-0"	6'-6"	13'-0"	
32'	1'-0"	1'-0"	7'-6"	14'-6"	1'-0"	3'-0"	9'-6"	*	1'-0"	1'-0"	5'-6"	12'-0"	1'-0"	2'-6"	8'-0"	14'-6"	
34'	1'-0"	1'-6"	8'-0"	16'-0"	1'-0"	4'-6"	11'-0"	*	1'-0"	1'-0"	6'-6"	13'-6"	1'-0"	3'-6"	9'-0"	15'-6"	

**DO NOT** cut or notch flange



**DO** cut in web area as specified

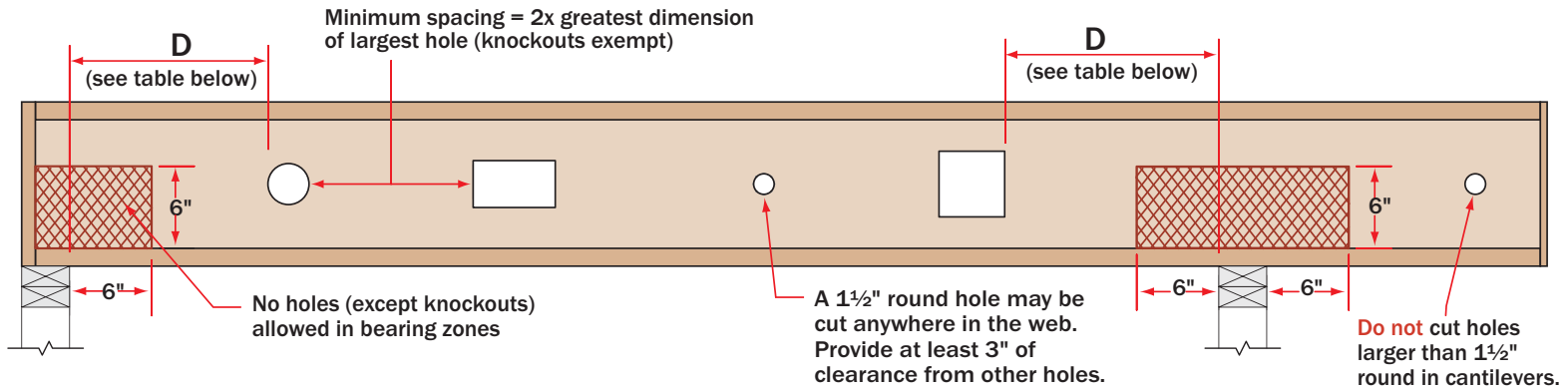


**NOTES:**

- Hole may be positioned vertically anywhere in the web.
- Tables are for uniformly loaded maximum loads of 40 psf live loads and 15 psf dead loads on simple span application.
- AJS®/BCI® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center.
- For other load conditions or hole sizes, contact your local distributor.
- It may be possible to exceed the limitations of those tables by analysing a specific situation with the BC CALC® Software.
- \* = Holes may be acceptable, contact your local distributor.

TABLE 1		BCI® ROUND HOLES															
Minimum distance from inside face of any support to nearest edge of hole		JOIST DEPTH • HOLE DIAMETER [IN]															
Span [ft]	9½"				11⅞"				14"				16"				
	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"	3"	6"	9"	12"	
8'	1'-0"	1'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-0"	
10'	1'-0"	1'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-0"	
12'	1'-0"	1'-6"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-0"	
14'	1'-0"	3'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-0"	-	1'-0"	1'-0"	1'-0"	1'-6"	
16'	1'-0"	4'-0"	-	-	1'-0"	1'-0"	-	-	1'-0"	1'-0"	1'-6"	-	1'-0"	1'-0"	1'-0"	3'-0"	
18'	1'-0"	5'-0"	-	-	1'-0"	1'-6"	-	-	1'-0"	1'-0"	2'-6"	-	1'-0"	1'-0"	1'-0"	4'-0"	
20'	1'-6"	6'-6"	-	-	1'-0"	2'-6"	-	-	1'-0"	1'-0"	3'-6"	-	1'-0"	1'-0"	1'-6"	5'-0"	
22'	2'-6"	7'-6"	-	-	1'-0"	3'-6"	-	-	1'-0"	1'-0"	4'-6"	-	1'-0"	1'-0"	2'-6"	6'-0"	
24'	3'-6"	8'-6"	-	-	1'-0"	5'-0"	-	-	1'-0"	2'-0"	6'-0"	-	1'-0"	1'-0"	3'-6"	7'-6"	
26'	-	-	-	-	2'-0"	6'-0"	-	-	1'-0"	3'-0"	7'-0"	-	1'-0"	1'-6"	5'-0"	8'-6"	
28'	-	-	-	-	3'-0"	7'-0"	-	-	1'-0"	4'-0"	8'-0"	-	1'-0"	2'-6"	6'-0"	10'-0"	
30'	-	-	-	-	-	-	-	-	1'-6"	5'-0"	9'-6"	-	1'-0"	3'-6"	7'-0"	11'-0"	
32'	-	-	-	-	-	-	-	-	2'-6"	6'-6"	10'-6"	-	1'-6"	4'-6"	8'-6"	12'-6"	
34"	-	-	-	-	-	-	-	-	-	-	-	-	2'-6"	6'-0"	9'-6"	13'-6"	

# AJS® & BCI® Joist Rectangular Hole Location & Sizing (40/15 PSF)



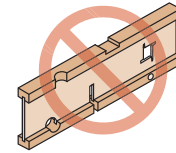
Minimum distance from support, listed in table below, is required for all holes greater than 1½"

TABLE 3		AJS® RECTANGULAR HOLES															
Minimum distance from inside face of any support to nearest edge of hole		JOIST DEPTH • HOLE DIAMETER [IN]															
Span [ft]	9½"				11⅞"				14"				16"				
	5"x8"	5"x10"	5"x12"	5"x14"	7"x10"	7"x12"	7"x14"	7"x16"	10"x12"	10"x14"	10"x16"	10"x18"	12"x14"	12"x16"	12"x18"	12"x20"	
8'	1'-6"	2'-0"	2'-0"	2'-6"	1'-0"	1'-6"	2'-0"	2'-6"	1'-6"	2'-6"	3'-0"	*	1'-6"	2'-6"	3'-6"	*	
10'	2'-6"	3'-0"	3'-6"	4'-0"	2'-0"	2'-6"	3'-6"	4'-0"	3'-0"	3'-6"	4'-6"	*	3'-0"	4'-0"	*	*	
12'	3'-6"	4'-0"	4'-6"	5'-0"	3'-6"	4'-0"	4'-6"	5'-0"	4'-0"	4'-6"	5'-6"	*	4'-0"	5'-0"	*	*	
14'	5'-0"	5'-6"	6'-0"	6'-6"	4'-6"	5'-0"	6'-0"	6'-6"	5'-0"	6'-0"	*	*	5'-0"	6'-6"	*	*	
16'	6'-0"	6'-6"	7'-0"	7'-6"	5'-6"	6'-6"	7'-0"	*	6'-6"	7'-6"	*	*	6'-6"	7'-6"	*	*	
18'	7'-6"	8'-0"	8'-6"	*	7'-0"	7'-6"	8'-6"	*	7'-6"	8'-6"	*	*	7'-6"	*	*	*	
20'	8'-6"	9'-0"	9'-6"	*	8'-0"	9'-0"	9'-6"	*	8'-0"	*	*	*	9'-0"	*	*	*	
22'	10'-0"	10'-6"	*	*	9'-6"	10'-0"	*	*	10'-6"	*	*	*	10'-6"	*	*	*	
24'	11'-0"	*	*	*	10'-6"	11'-6"	*	*	11'-6"	*	*	*	11'-6"	*	*	*	
26'	-	-	-	-	12'-0"	*	*	*	*	*	*	*	*	*	*	*	
28'	-	-	-	-	13'-6"	*	*	*	*	*	*	*	*	*	*	*	
30'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*	
32'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*	
34'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

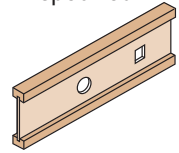
  

Span [ft]	18"				20"				22"				24"			
	10"x18"	12"x14"	12"x16"	12"x18"	12"x16"	12"x18"	14"x16"	14"x18"	12"x18"	14"x16"	14"x18"	16"x18"	14"x18"	14"x20"	16"x18"	16"x20"
8'	1'-6"	1'-0"	1'-6"	3'-0"	1'-0"	1'-6"	1'-6"	3'-0"	1'-0"	1'-0"	2'-0"	3'-0"	1'-0"	2'-0"	2'-0"	3'-6"
10'	2'-6"	1'-6"	3'-0"	4'-0"	1'-6"	3'-0"	3'-0"	4'-6"	2'-0"	1'-6"	3'-0"	4'-6"	2'-0"	3'-6"	3'-0"	*
12'	4'-0"	3'-0"	4'-0"	5'-6"	2'-6"	4'-0"	4'-0"	5'-6"	3'-0"	3'-0"	4'-0"	5'-6"	3'-0"	4'-6"	4'-6"	*
14'	5'-0"	4'-0"	5'-6"	6'-6"	4'-0"	5'-6"	5'-6"	*	4'-0"	4'-0"	5'-6"	*	4'-0"	6'-0"	5'-6"	*
16'	6'-6"	5'-0"	6'-6"	*	5'-0"	6'-6"	6'-6"	*	5'-6"	5'-0"	6'-6"	*	5'-6"	7'-0"	7'-0"	*
18'	7'-6"	6'-6"	8'-0"	*	6'-6"	8'-0"	8'-0"	*	6'-6"	6'-6"	8'-0"	*	6'-6"	8'-6"	8'-0"	*
20'	9'-0"	7'-6"	9'-0"	*	7'-6"	9'-0"	9'-0"	*	7'-6"	7'-6"	9'-0"	*	8'-0"	9'-6"	9'-6"	*
22'	10'-0"	9'-0"	10'-6"	*	9'-0"	10'-6"	10'-6"	*	9'-0"	9'-0"	10'-6"	*	9'-0"	*	10'-6"	*
24'	11'-6"	10'-0"	11'-6"	*	10'-0"	11'-6"	11'-6"	*	10'-6"	10'-0"	*	*	10'-6"	*	*	*
26'	12'-6"	11'-6"	*	*	11'-6"	*	*	*	11'-6"	11'-6"	*	*	11'-6"	*	*	*
28'	*	12'-6"	*	*	12'-6"	*	*	*	13'-0"	12'-6"	*	*	13'-0"	*	*	*
30'	*	14'-0"	*	*	14'-0"	*	*	*	14'-0"	14'-0"	*	*	14'-6"	*	*	*
32'	*	15'-6"	*	*	15'-0"	*	*	*	15'-6"	15'-6"	*	*	15'-6"	*	*	*
34'	*	16'-6"	*	*	16'-6"	*	*	*	16'-6"	16'-6"	*	*	*	*	*	*

**DO NOT** cut or notch flange



**DO** cut in web area as specified



**NOTES:**

- Hole may be positioned vertically anywhere in the web.
- Tables are for uniformly loaded maximum loads of 40 psf live loads and 15 psf dead loads on simple span application.
- AJS®/BCI® Joists are manufactured with 1½" round perforated knockouts in the web at approximately 12" on center.
- For other load conditions or hole sizes, contact your local distributor.
- It may be possible to exceed the limitations of those tables by analysing a specific situation with the BC CALC® Software.
- \* = Holes may be acceptable, contact your local distributor.

TABLE 3		BCI® RECTANGULAR HOLES															
Minimum distance from inside face of any support to nearest edge of hole		JOIST DEPTH • HOLE DIAMETER [IN]															
Span [ft]	9½"				11⅞"				14"				16"				
	5"x8"	5"x10"	5"x12"	5"x14"	7"x10"	7"x12"	7"x14"	7"x16"	10"x12"	10"x14"	10"x16"	10"x18"	12"x14"	12"x16"	12"x18"	12"x20"	
8'	1'-0"	1'-0"	1'-6"	2'-0"	1'-0"	1'-0"	1'-6"	2'-6"	1'-6"	2'-0"	3'-0"	3'-6"	2'-0"	3'-0"	*	*	
10'	1'-6"	2'-0"	2'-6"	3'-0"	1'-6"	2'-0"	3'-0"	3'-6"	2'-6"	3'-0"	4'-0"	*	3'-0"	4'-0"	*	*	
12'	2'-6"	3'-0"	3'-6"	4'-6"	2'-6"	3'-6"	4'-0"	5'-0"	3'-6"	4'-6"	5'-6"	*	4'-6"	5'-6"	*	*	
14'	3'-6"	4'-6"	5'-0"	5'-6"	4'-0"	4'-6"	5'-6"	6'-0"	5'-0"	5'-6"	6'-6"	*	5'-6"	6'-6"	*	*	
16'	5'-0"	5'-6"	6'-0"	7'-0"	5'-0"	6'-0"	6'-6"	7'-6"	6'-0"	7'-0"	*	*	7'-0"	*	*	*	
18'	6'-0"	7'-0"	7'-6"	8'-0"	6'-0"	7'-0"	8'-0"	8'-6"	7'-6"	8'-0"	*	*	8'-0"	*	*	*	
20'	7'-6"	8'-0"	8'-6"	9'-6"	7'-6"	8'-6"	9'-0"	*	8'-6"	9'-6"	*	*	9'-6"	*	*	*	
22'	8'-6"	9'-6"	10'-0"	*	8'-6"	9'-6"	10'-6"	*	10'-0"	*	*	*	*	*	*	*	
24'	10'-0"	10'-6"	11'-6"	*	10'-0"	11'-0"	11'-6"	*	11'-0"	*	*	*	*	*	*	*	
26'	-	-	-	-	11'-6"	12'-0"	*	*	12'-6"	*	*	*	*	*	*	*	
28'	-	-	-	-	12'-6"	13'-6"	*	*	13'-6"	*	*	*	*	*	*	*	
30'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*	
32'	-	-	-	-	-	-	-	-	*	*	*	*	*	*	*	*	
34'	-	-	-	-	-	-	-	-	-	-	-	-	*	*	*	*	

# Closest Allowable Nail Spacing

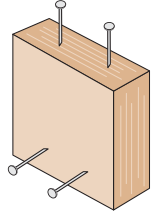
## VERSA-LAM® & VERSA-RIM® Products

Nail Size	Nailing Parallel to Glue Lines (Narrow Face) <sup>(1)</sup>								Nailing Perpendicular to Glue Lines (Wide Face)	
	VERSA-RIM® 1 1/8"		VERSA-LAM® 1800 1.4 1 1/8"		VERSA-LAM® 1 3/4"		VERSA-LAM® 3 1/2" & Wider		All Products	
	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]	O.C. [inches]	End [inches]
2 1/2" (8d) Box	3	1 1/2	3	1 1/2	2	1	2	1/2	2	1/2
2 1/2" (8d) Common	4	3	3	2	3	2	2	1	2	1
3" (10d) & 3 1/4" (12d) Box	4	3	3	2	3	2	2	1	2	1
3 1/2" (16d) Box	4	3	3	2	3	2	2	1	2	1
3" (10d) & 3 1/4" (12d) common	6	4	4	3	4	3	2	2	2	2
3 1/2" (16d) Sinkers	6	4	4	3	4	3	2	2	2	2
3 1/2" (16d) Common	6	4	6	4	6	3	2	2	2	2

### Nailing Notes

- 1) For 1 3/4" thickness and greater, 2 rows of nails (such as for a metal strap) are allowed (use 1/2" minimum offset between rows and stagger nails).
- 2) Offset and stagger nail rows from floor sheathing and wall sole plate.

Nailing Parallel to Glue Lines (Narrow Face)



Nailing Perpendicular to Glue Lines (Wide Face)

## VERSA-STUD® & VERSA-LAM® Column Details

### Multiple Ply Stud Connections

Stagger rows

**2-Ply of 1 1/2"**  
2 rows of:  
- 3" (10d) min. nails  
- SDS 1/4" x 3" wood screws

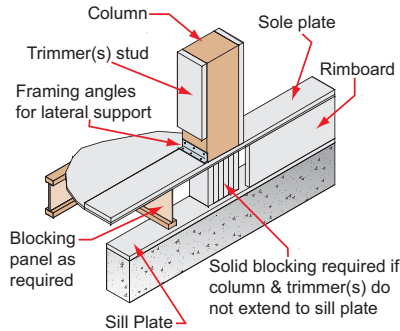
**3-Ply of 1 1/2"**  
2 rows of:  
- 4 1/2" (30d) min. nails  
- SDS 1/4" x 4 1/2" wood screws  
- 1/2" dia. bolts

9"

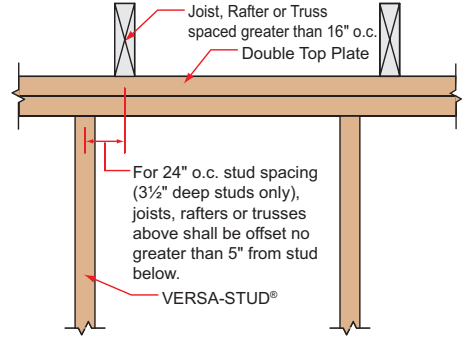
**4-Ply of 1 1/2"**  
2 rows of:  
- 6" (60d) min. nails  
- SDS 1/4" x 6" wood screws  
- 1/2" dia. bolts

**General:**  
- Maximum spacing @ 9" o.c. in all cases  
- 3 rows of connectors are required for 9 1/4" and greater studs

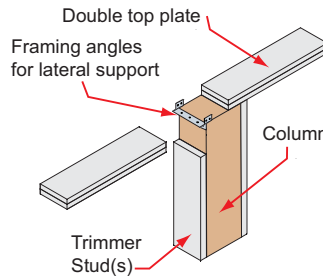
### Column to Bottom Plate



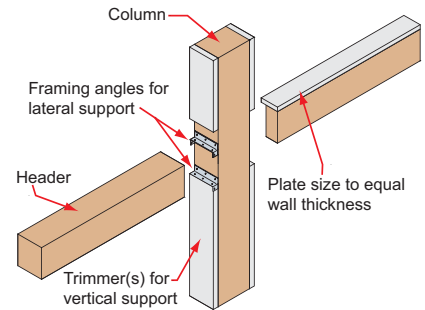
### 3 1/2" Studs - 24" o.c.



### Column to Top Plate



### Header to Column



## VERSA-STUD® Allowable Holes and Notches

### Prescriptive Provisions

Hole Edge Distance  
Min. of 5/8"

**Max. Hole Diameter**  
1 1/2" x 3 1/2" = 1 3/8"  
1 1/2" x 5 1/2" = 2 1/8"  
1 1/2" x 7 1/4" & deeper = 2 7/8"  
(1) max. dia hole allowed per stud, located at any location along stud length. DO NOT cut hole and notch at same location.

**Max. Notch Depth**  
1 1/2" x 3 1/2" = 7/8"  
1 1/2" x 5 1/2" = 1 3/8"  
1 1/2" x 7 1/4" & deeper = 1 3/4"

**Max. Notch Height**  
= 3"

(1) notch allowed per stud. DO NOT cut notch and hole at same location.

### Notes:

- 1) Provisions valid only for studs within prescriptive design.
- 2) Shield plates or nail stops to prevent nailing into wiring or piping shall be installed per the governing building code.

### Engineered Design Provisions

**Allowable Hole Zone**

- Middle 1/3<sup>rd</sup> of stud
- No holes within 8" of top or bottom

**Max. Hole Diameter**  
1 1/2" x 3 1/2" = 3/4"  
1 1/2" x 5 1/2" = 1"  
1 1/2" x 7 1/4" & deeper = 1 1/4"

1/3<sup>rd</sup> stud width

Middle 1/3<sup>rd</sup> stud width

8"

### Notes:

- 1) DO NOT drill more than 3 holes in any 4-foot-long section of stud.
- 2) The vertical distance between adjacent holes must be at least 2 times the size of the larger hole
- 3) Holes no greater than 3/4" dia may be cut in the hole zone shown in VERSA-LAM® columns.
- 4) For notches and larger holes, contact Boise Cascade EWP Engineering.

# AJS®/BCI® Joists — Floor Framing

**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.

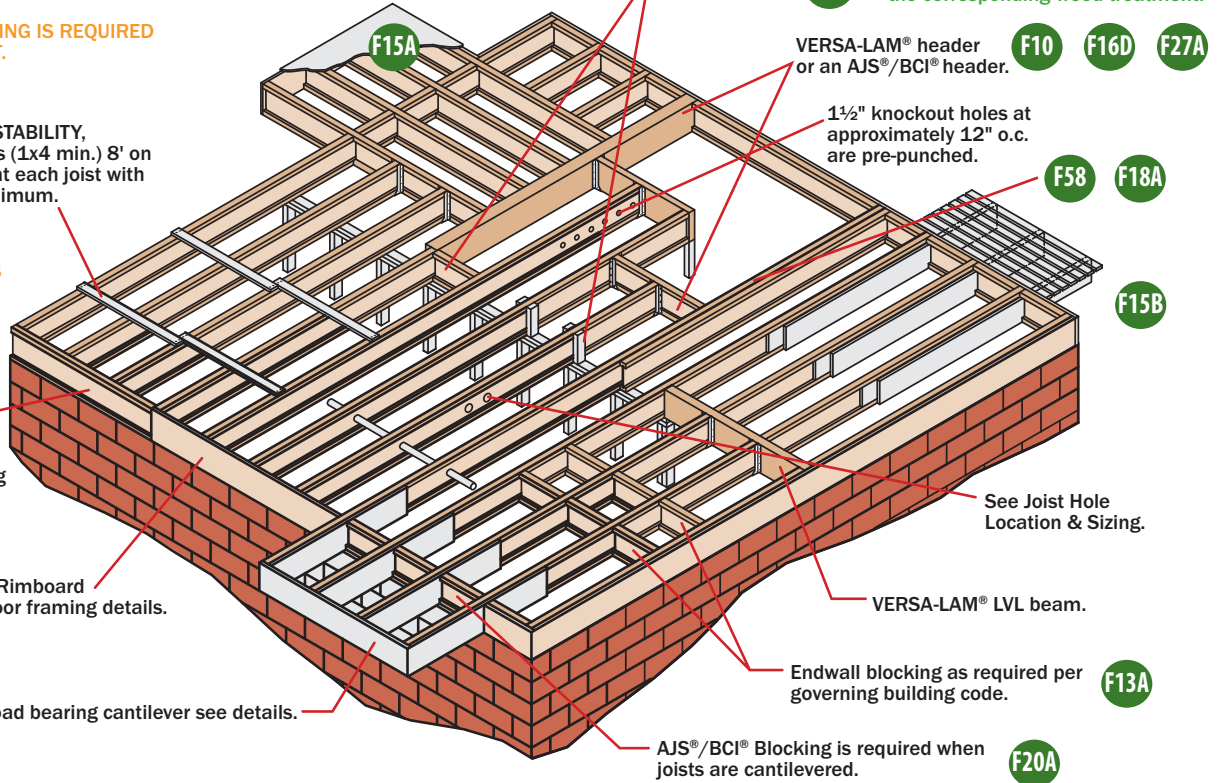
**NO MIDSPAN BRIDGING IS REQUIRED FOR AJS®/BCI® JOIST.**

**FOR INSTALLATION STABILITY,** Temporary strut lines (1x4 min.) 8' on center max. Fasten at each joist with 2-2½" (8d) nails minimum.

Dimension lumber is not suitable for use as a rim board in AJS®/BCI® floor systems.

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

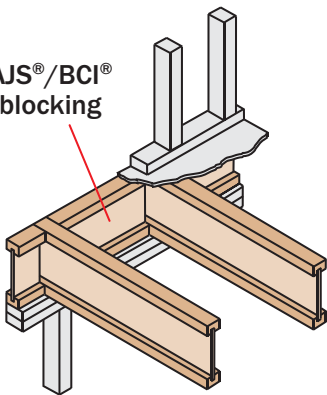
When installing Boise Cascade EWP products with treated wood, use only connectors/fasteners that are approved for use with the corresponding wood treatment.



## AJS®/BCI® Joists — Floor Framing Details

F01

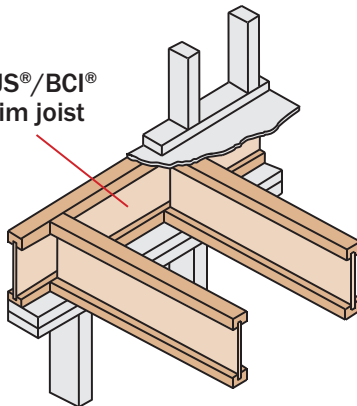
AJS®/BCI® blocking



F02

AJS®/BCI® rim joist

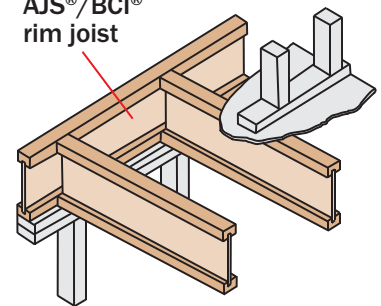
2x6 wall for minimum bearing, joist with flange of 3½" width only.



F03

AJS®/BCI® rim joist

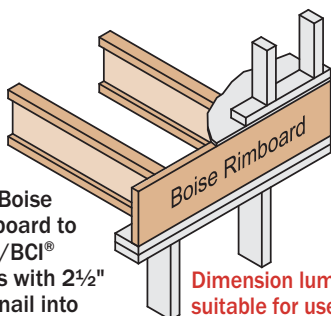
2x6 wall for minimum bearing, joist with flange of 3½" width only.



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

F07

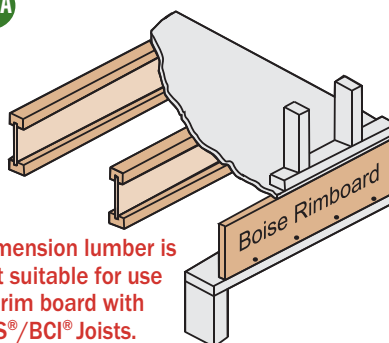
Nail Boise Rimboard to AJS®/BCI® Joists with 2½" (8d) nail into each flange.



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

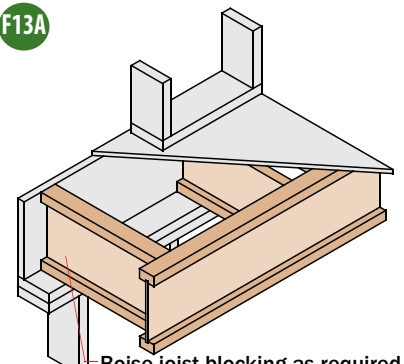
F07A

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



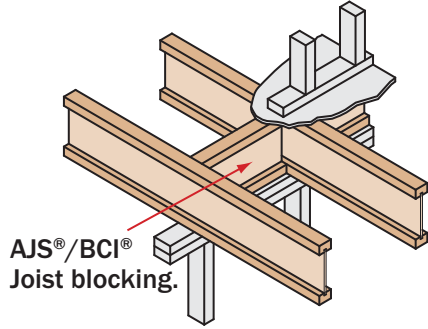
F13A

Boise joist blocking as required by governing building code.

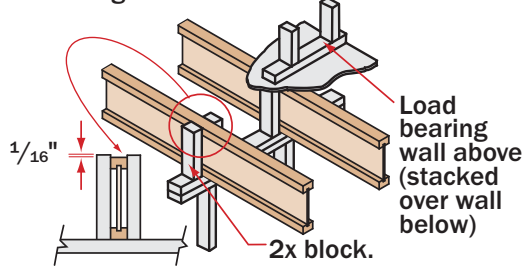


# AJS®/BCI® Joists — Floor Framing Details

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



**F09** Blocking may be required, consult design professional of record and/or local building official.



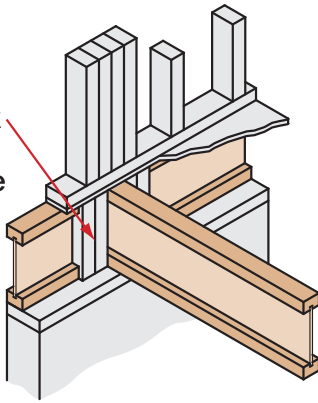
Nail block with one 3" (10d) nail into each flange.

Double Squash Block Vertical Load [lb/ft]				
Size	Joist Spacing [in]			
	12	16	19.2	24
2x4	8160	6120	5100	4080
2x6	10140	7600	6330	5070

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.

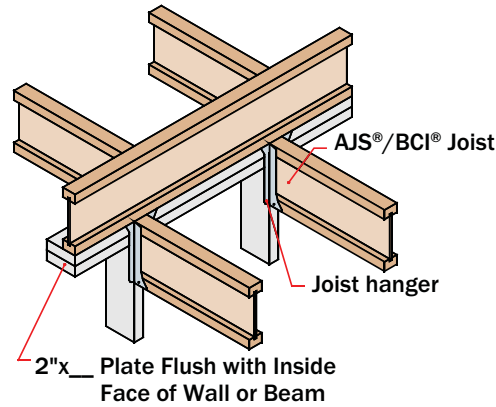
**F08**

Solid block all posts from above to bearing below.

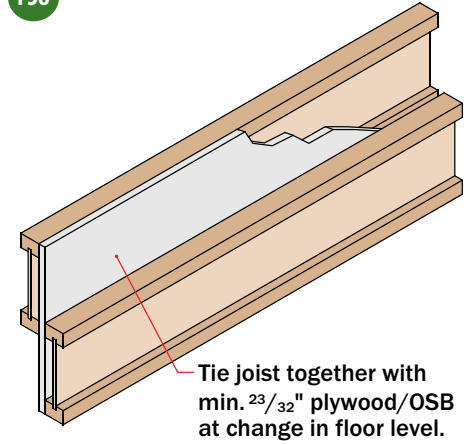


**F31**

Ledger for sheathing nailing may be required per governing code

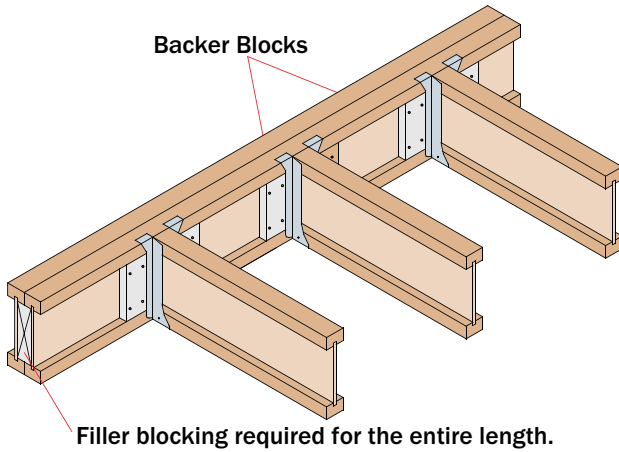


**F38**



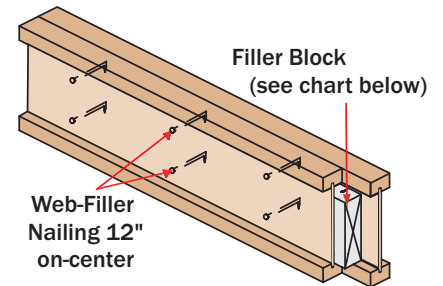
**F18A**

Backer Blocks



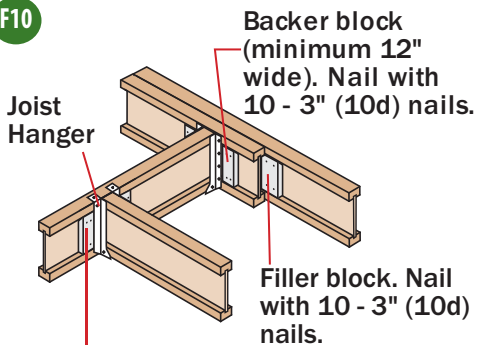
**F58**

Double AJS®/BCI® Joist Connection



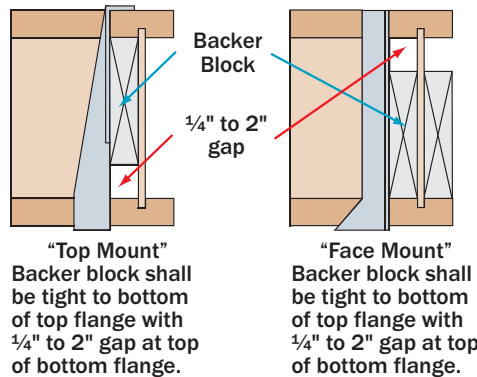
Connection valid for all applications. Contact Boise Cascade EWP Engineering for specific conditions.

**F10**



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

**F16D**

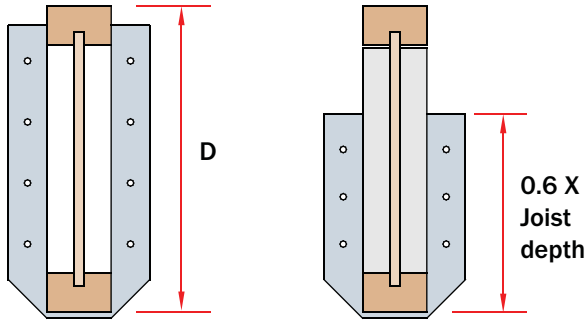


Hanger Connections to AJS®/BCI® Headers

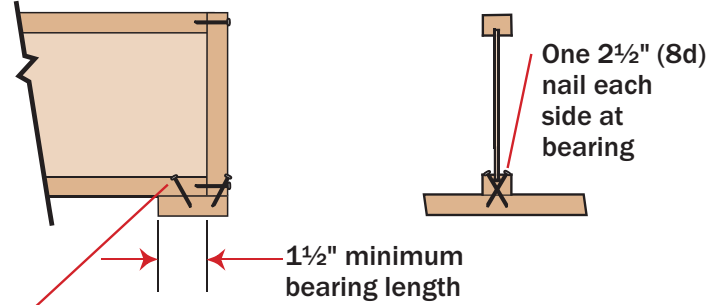
- Backer blocks shall be at least 12" long per hanger.
- Nails shall be clinched when possible.
- Verify capacity and fastening requirements of hangers and connectors.

# AJS® - BCI® Joists — Floor Framing Details

**F16C** Web stiffeners are not required when top flange is laterally supported by joist hanger.



**F52**

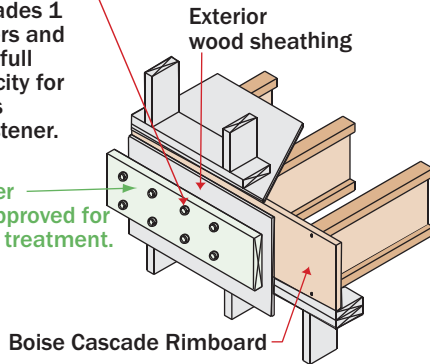


To limit splitting flange, start nails at least 1½" from end. Nails may need to be driven at an angle to limit splitting of bearing plate.

**F56**

½" dia through bolts (ASTM A307 Grades A&B, SAE J429 Grades 1 or 2, or higher) with washers and nuts or ½" dia lag screws (full penetration) 585 lbs capacity for 1½" & thicker rim, 500 lbs capacity for 1" rim, per fastener.

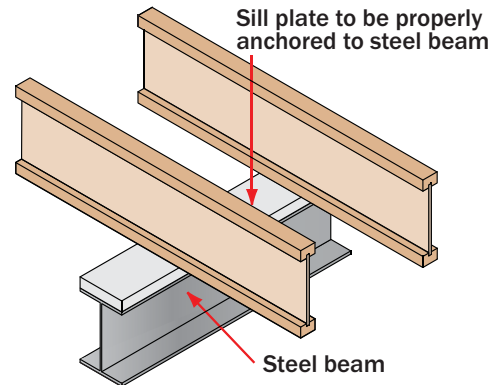
Treated Ledger  
Use only fasteners that are approved for use with corresponding wood treatment.



Design of moisture control by others (only structural components shown above)

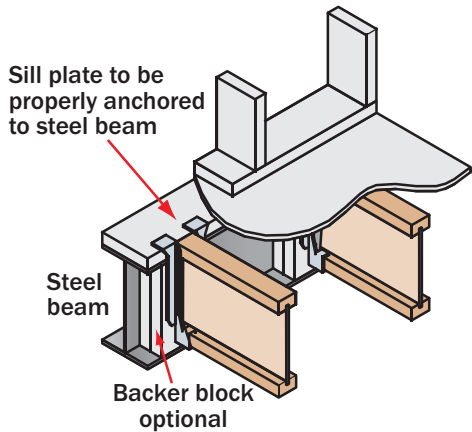
**F15D**

## Connection on Steel Beam

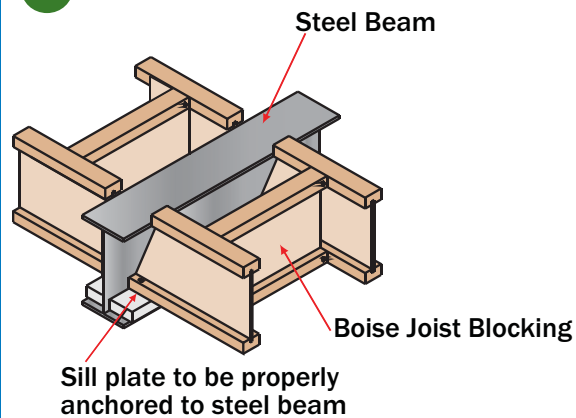


**F15E**

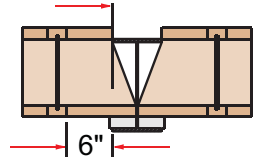
## Connection with Hanger on Steel Beam



**F15C**

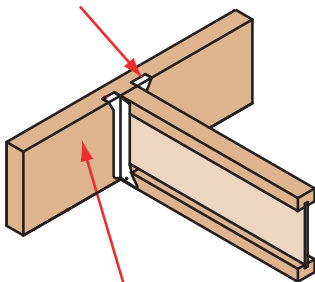


Do not bevel cut joist beyond face of support



**F27A**

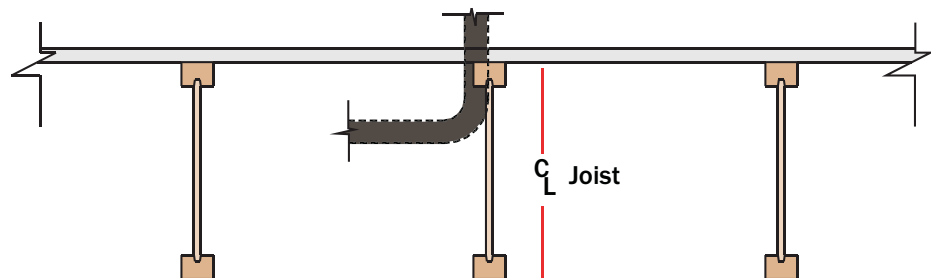
Top Flange or Face Mount Joist Hanger



VERSA-LAM®

**0J**

## Offset Joist for Plumbing



Boise I-Joist can be offset up to 3" to avoid vertical plumbing

# NOTES FOR FLOOR FRAMING DETAILS

## LATERAL SUPPORT

- Joists must be laterally supported at the ends with hangers, rim joists, rim boards, blocking panels or x-bracing. 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®/BCI® JOISTS

- AJS® Joist: 1½ inches is required at end supports (1¾ inches for 18" to 24" deep). 3½ inches is required at cantilever and intermediate supports.
- BCI® Joist: Minimum bearing length at end support is 1½ inches for BCI® 4500s, 5000, 5000s, 6000, 6000s, 6500 and 6500s, and 1¾ inches for BCI® 60, 60s, 90 and 90s. 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®/BCI® rim joist, rim board or closure panel to AJS®/BCI® Joist:
  - Rims or closure panel 1¼ inches thick and less: 2-2½" (8d) nails, one each in the top and bottom flange.
  - AJS® 140/20 rim joist: 2-3½" (16d) box nails, one each in the top and bottom flange.
  - AJS® 25 rim joist: Toe-nail top flange to rim joist with 2-3" (10d) box nails, one each side of flange
  - BCI® 4500s, 5000, 5000s rim joist: 2-3" (10d) box nails, one each in the top and bottom flange.
  - BCI® 6000, 6000s, 60, 60s rim joist: 2-3½" (16d) box nails, one each in the top and bottom flange.
  - BCI® 6500, 6500s, 90, 90s rim joist: Toe-nail top flange to rim joist with 2-3" (10d) box nails, one each side of flange.
- AJS®/BCI® rim joist, rim board or AJS®/BCI® blocking panel to support:
  - 2½" (8d) nails at 6 inches on center.
  - When used for shear transfer, follow the building designer's specification.
- AJS®/BCI® Joist to support:
  - 2-2½" (8d) nails, one on each side of the web, placed 1½ inches minimum from the end of the AJS®/BCI® Joist to limit splitting.
- Sheathing to AJS®/BCI® Joist:
  - Prescriptive residential roof sheathing nailing requires 2½" (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".
  - BCI® 4500s, 5000, 5000s joist: Maximum nail spacing is 18 inches on center.
  - 14 gauge staples may be substituted for 2½" (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.

## WEB STIFFENER REQUIREMENTS

- See *Web Stiffener details*.

## AJS® RIM JOISTS AND BLOCKING

AJS® Joist Depth	Vertical Load Transfer Capacity (plf)
9½"	1875
11⅞"	1680
14"	1500
16"	1340
18" - 20"	3200 <sup>(1)</sup>
22" - 24"	2700 <sup>(1)</sup>

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

## BCI® RIM JOISTS AND BLOCKING

Depth [in]	BCI® Joist Series	Vertical Load Resistance	
		No W.S. <sup>(1)</sup>	W.S. <sup>(2)</sup>
9½"	5000 1.7, 6000 1.8, 6500 1.8 4500s 1.8, 5000s 1.8, 6000s 1.8, 6500s 1.8	2900	N/A
11⅞"	5000 1.7, 6000 1.8, 6500 1.8 4500s 1.8, 5000s 1.8, 6000s 1.8, 6500s 1.8	2700	N/A
	60 2.0, 90 2.0 60s 2.0, 90s 2.0	3150	N/A
14"	5000 1.7, 6000 1.8, 6500 1.8 4500s 1.8, 5000s 1.8, 6000s 1.8, 6500s 1.8	2500	N/A
	60 2.0, 90 2.0 60s 2.0, 90s 2.0	3050	N/A
16"	6000 1.8, 6500 1.8 6000s 1.8, 6500s 1.8	2400	3150
	60 2.0, 90 2.0 60s 2.0, 90s 2.0	2900	3400
18"	60 2.0, 90 2.0 60s 2.0, 90s 2.0	N/A	3400
20"	90 2.0 90s 2.0	N/A	3400

(1) No web stiffeners required

(2) Web stiffeners required at each end of blocking, values not applicable for rim joists

N/A: Not applicable

## BACKER AND FILLER BLOCK DIMENSIONS

Series	Backer Block Thickness	Filler Block Thickness
AJS® 140	1⅝" or two ½" wood panels	2 x ___ + ⅝" wood panel
AJS® 20	1⅝" or two ½" wood panels	2 x ___ + ⅝" wood panel
AJS® 25	2 x _ lumber	Double 2 x ___ lumber
4500s 1.8	⅝" wood panel	One ⅝" or ¾" wood panel
5000s 1.8 5000 1.7	¾" or ⅞" wood panels	Two ¾" wood panels or 2 x _
6000s 1.8 6000 1.8	1⅝" or two ½" wood panels	2 x _ + ⅝" or ¾" wood panel
6500s 1.8 6500 1.8	1⅝" or two ½" wood panels	2 x _ + ⅝" or ¾" wood panel
60s 2.0 60 2.0	1⅝" or two ½" wood panels	2 x _ + ⅝" or ¾" wood panel
90s 2.0 90 2.0	2 x _ lumber	Double 2 x _ lumber

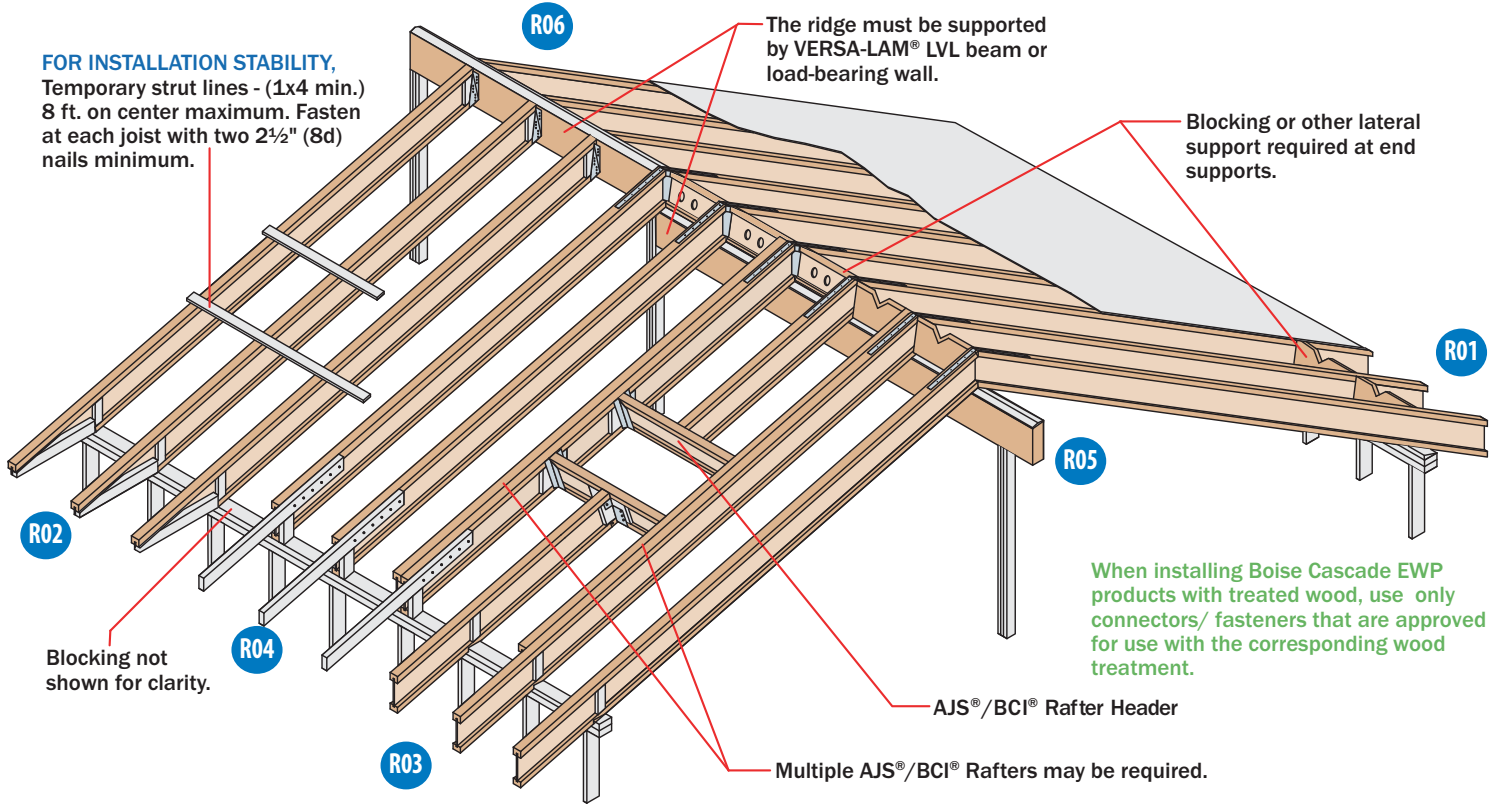
- Cut backer and filler blocks to a maximum depth equal to the web depth minus ¼" to avoid a forced fit.

- For 18" and deeper Joists, stack 2x lumber or use multiple pieces of ¾" wood panels.

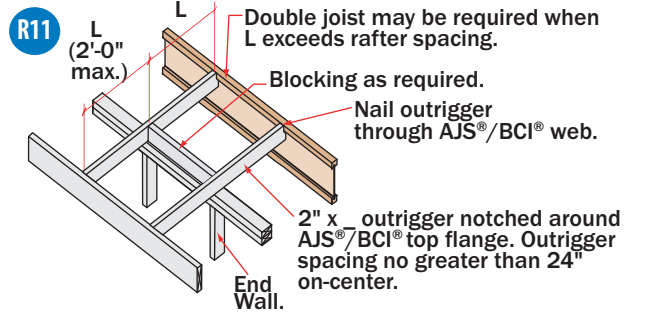
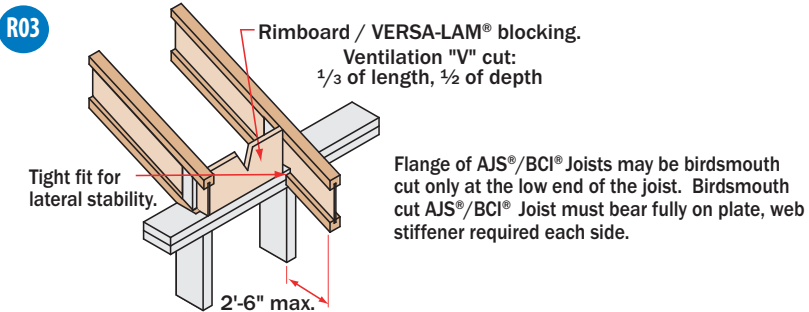
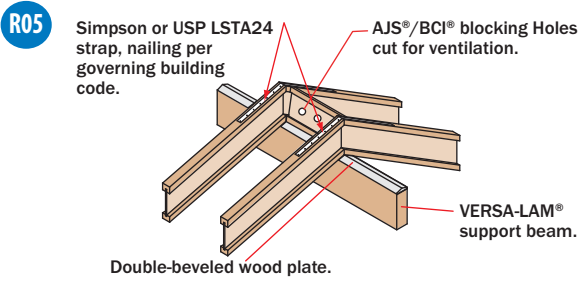
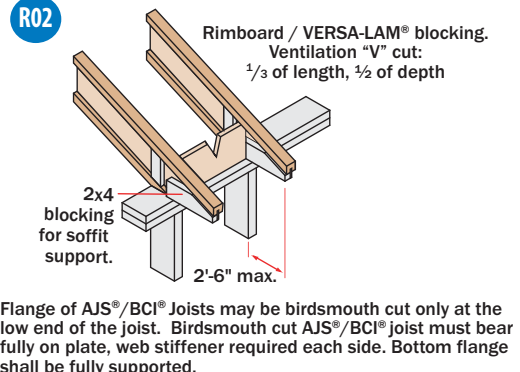
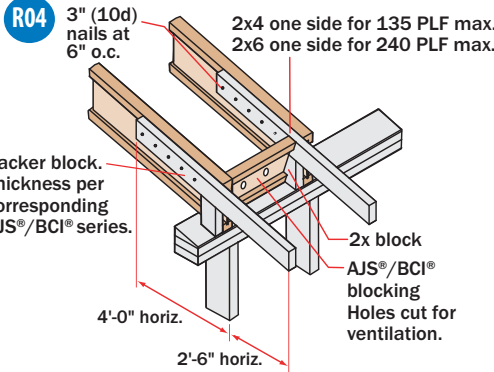
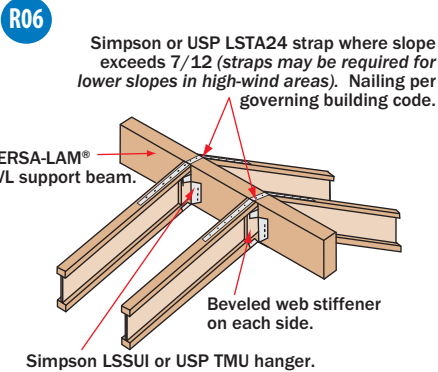
## PROTECT AJS®/BCI® JOISTS FROM THE WEATHER

- AJS®/BCI® 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®/BCI® Joists — Roof Framing

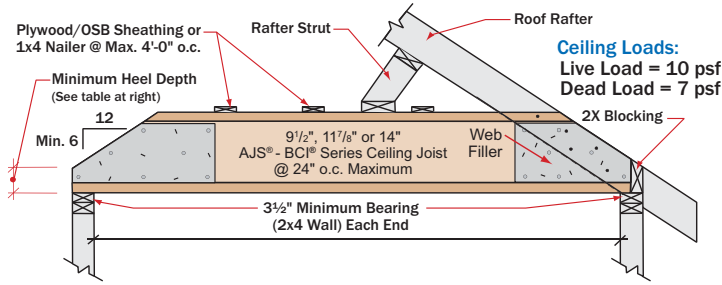


## AJS®/BCI® Joists — Roof Framing Details



# AJS®/BCI® Ceiling Joist with Bevel Ending Cut (For Limited-Access Attics Only)

**AJS®/BCI® 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		
9 1/2"	AJS® 140, 20, 25 BCI® 5000 1.7, 6000 1.8, 6500 1.8 BCI® 5000s, 6000s, 6500s	19'-6"
11 7/8"	AJS® 140, 20, 25 BCI® 5000 1.7, 6000 1.8, 6500 1.8 BCI® 5000s 1.8, 6000s 1.8, 6500s 1.8	22'-0"
14"	AJS® 140, 20, 25 BCI® 6000 1.8, 6500 1.8 BCI® 6000s 1.8, 6500s 1.8	25'-0"

## 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) Ceiling joist end reaction may not exceed 550 pounds.
- 4) Minimum roof slope is 6/12.
- 5) Nail roof rafter to Joist top flange with 1-3 1/2" (16d) sinker or box nail.
- 6) 1x4 nailers must be continuous and nailed to a braced end wall.
- 7) Install a web stiffener on each side of Joist at beveled ends. Nail roof rafter to Joist per building code requirements for ceiling joist to roof rafter connection.

(If roof loads present, see Notes 2 & 3 below)

Minimum Heel Depths	Joist Depth	End Wall	
		2 x 4	2 x 6
9 1/2"	9 1/2"	2 1/2"	1 1/2"
11 7/8"	11 7/8"	3 1/2"	2 1/2"
14"	14"	4 1/2"	3 1/2"

## NOTES FOR ROOF FRAMING DETAILS

### LATERAL SUPPORT

- Joists must be laterally supported at the ends with hangers, rim joists, rim boards, blocking panels or x-bracing. Blocking panels or x-bracing are required at cantilever supports. Metal cross bracing or other x-bracing provides adequate lateral support for BCI® Joists, consult governing building code for roof diaphragm connection provisions.

### MINIMUM BEARING LENGTH FOR AJS®/BCI® JOISTS

- AJS® Joist: 1 1/2 inches is required at end supports (1 3/4 inches for 18" to 24" deep). 3 1/2 inches is required at cantilever and intermediate supports.
- BCI® Joist: Minimum bearing length at end support is 1 1/2 inches and 1 3/4 inches for BCI® 60, 60s, 90 and 90s. 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®/BCI® rim joist, rim board or closure panel to AJS®/BCI® 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 2-3" (10d) box nails, one each side of flange.
  - BCI® 4500s, 5000, 5000s rim joist: 2-3" (10d) box nails, one each in the top and bottom flange.
  - BCI® 6000, 6000s, 60, 60s rim joist: 2-3 1/2" (16d) box nails, one each in the top and bottom flange.
  - BCI® 6500, 6500s, 90, 90s rim joist: Toe-nail top flange to rim joist with 2-3" (10d) box nails, one each side of flange.
- AJS®/BCI® rim joist, rim board or AJS®/BCI® 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®/BCI® 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®/BCI® Joist to limit splitting.
- Sheathing to AJS®/BCI® Joist:
  - Prescriptive residential roof 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".
  - BCI® 4500s, 5000, 5000s joist: Maximum nail spacing is 18 inches on center.
  - 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 1/8" or two 1/2" wood panels	2 x ___ + 5/8" wood panel
AJS® 20	1 1/8" or two 1/2" wood panels	2 x ___ + 5/8" wood panel
AJS® 25	2 x _ lumber	Double 2 x ___ lumber
4500s 1.8	5/8" wood panel	One 5/8" or 3/4" wood panel
5000 1.7 5000s 1.8	3/4" or 7/8" wood panels	Two 3/4" wood panels or 2 x _
6000 1.8 6000s 1.8	1 1/8" or two 1/2" wood panels	2 x _ + 5/8" or 3/4" wood panel
6500 1.8 6500s 1.8	1 1/8" or two 1/2" wood panels	2 x _ + 5/8" or 3/4" wood panel
60 2.0 60s 2.0	1 1/8" or two 1/2" wood panels	2 x _ + 5/8" or 3/4" wood panel
90 2.0 90s 2.0	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 18" and deeper Joist, stack 2x lumber or use multiple pieces of 3/4" wood panels.

### WEB STIFFENER REQUIREMENTS

- See *Web Stiffener Requirements* see details.

### MAXIMUM SLOPE

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

### VENTILATION

- The 1 1/2 inch, pre-stamped knock-out holes spaced at 12 inches on center along the AJS®/BCI® 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.

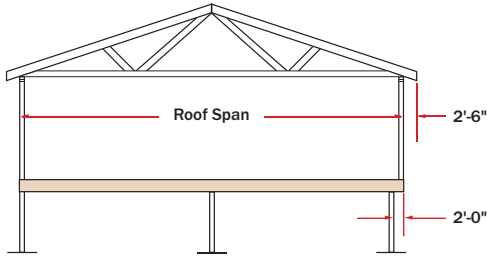
### BIRDSMOUTH CUTS

- AJS®/BCI® Joists may be birdsmouth cut only at the low end support. AJS®/BCI® 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.

### PROTECT AJS®/BCI® JOISTS FROM THE WEATHER

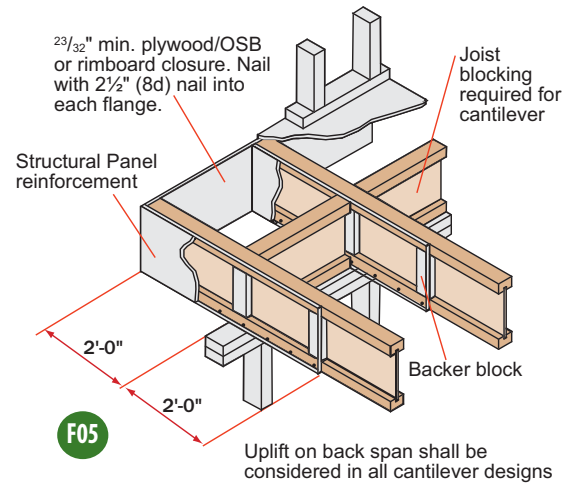
- AJS®/BCI® Joists are intended only for applications that provide permanent protection from the weather. Bundles of AJS®/BCI® Joists should be covered and stored off of the ground on stickers.

# Reinforced Load Bearing Cantilever Details



## PLYWOOD / OSB REINFORCEMENT (If Required per Load Bearing Cantilever Tables in Product Specifiers Guides)

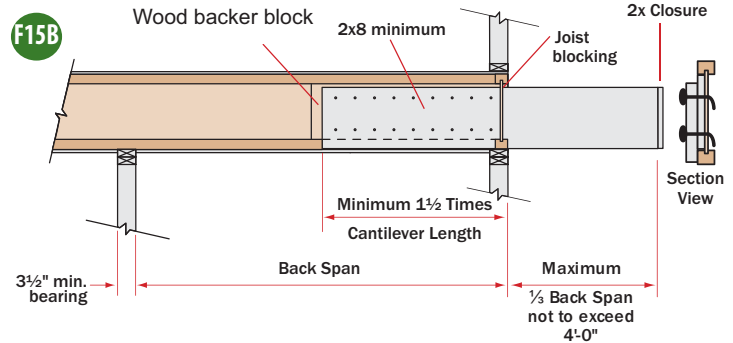
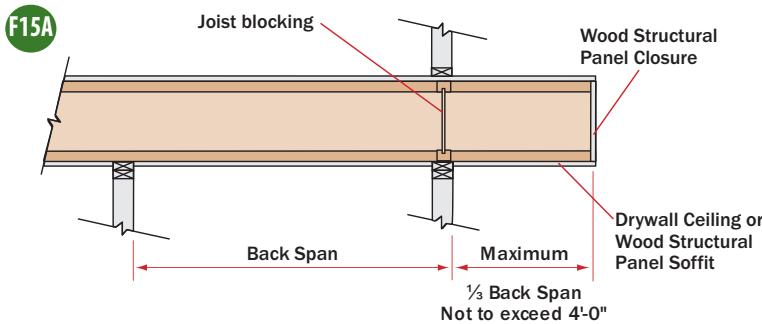
- $2\frac{3}{32}$ " Min. x 48" long plywood / OSB rated sheathing must match the full depth of the Joist. Nail to the Joist with  $2\frac{1}{2}$ " (8d) nails at 6" o.c. and nail with 4- $2\frac{1}{2}$ " (8d) nails into backer block. When reinforcing both sides, stagger nails to limit splitting. Install with horizontal face grain.
- These requirements assume a 100 PLF wall load and apply to Joists. Additional support may be required for other loadings. See BC CALC<sup>®</sup> software.
- Contact Boise Cascade EWP Engineering for reinforcement requirements on Joist depths greater than 16".



- The tables and details shown in the product Specifiers Guides 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<sup>®</sup> software.**

# Non-Load Bearing Wall Cantilever Details

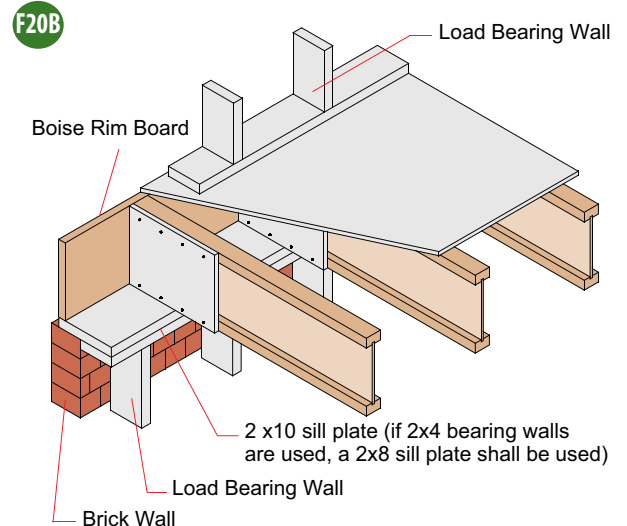
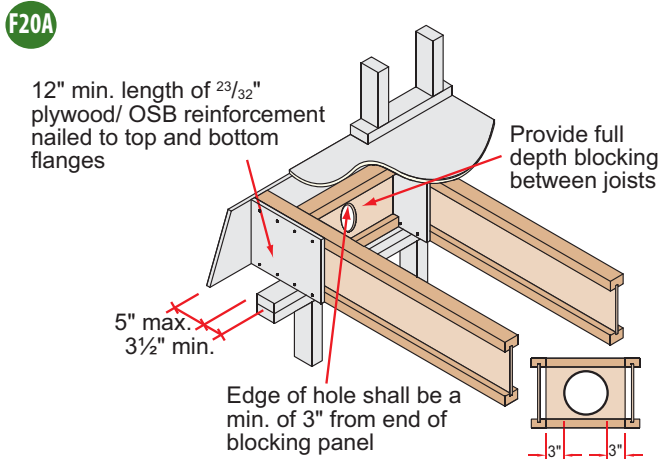
AJS<sup>®</sup>/BCI<sup>®</sup> Joists are intended only for applications that provide permanent protection from the weather.



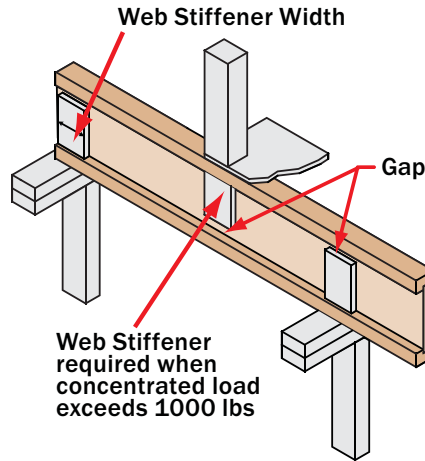
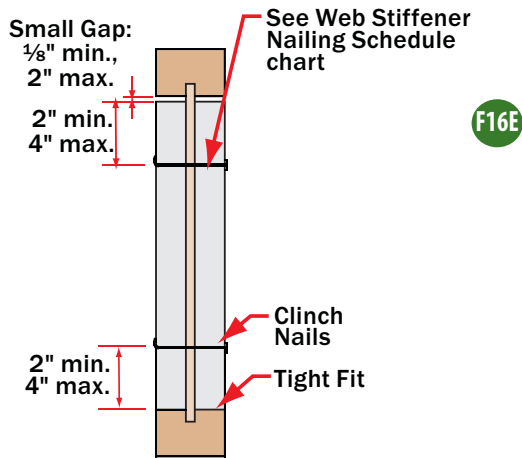
- These details apply to cantilevers with uniform loads only.
- It may be possible to exceed the limitations of these details by analyzing a specific application with the BC CALC<sup>®</sup> software.

Fasten the 2x8 minimum to the Joist by nailing through the backer block and joist web with 2 rows of 3" (10d) nails at 6" on center. Clinch all nails.

# Brick Ledge Load Bearing Cantilever Details



# Web Stiffener Requirements



## Web stiffeners applied to both sides of the joist web

Structural Panel Web Stiffener			
Series	For Structural Capacity (Min. Thick)	Lateral Restraint in Hanger	Minimum Width
AJS® 140/20	1½"	1"	2 <sup>5</sup> / <sub>16</sub> "
AJS® 25	2x4 lumber (vertical)		
BCI® 4500s 1.8	5⁄8"	5⁄8"	2 <sup>5</sup> / <sub>16</sub> "
BCI® 5000 1.8 BCI® 5000s 1.8	5⁄8"	¾"	2 <sup>5</sup> / <sub>16</sub> "
BCI® 6000 1.8 BCI® 6000s 1.8	¾"	7⁄8"	2 <sup>5</sup> / <sub>16</sub> "
BCI® 6500 1.8 BCI® 6500s 1.8	¾"	1" or 1½"	2 <sup>5</sup> / <sub>16</sub> "
BCI® 60 2.0 BCI® 60s 2.0	¾"	7⁄8"	2 <sup>5</sup> / <sub>16</sub> "
BCI® 90 2.0 BCI® 90s 2.0	2x4 lumber (vertical)		

Web Stiffener Nailing Schedule			
ALLJOIST® Series	Joist Depth	Nailing	
AJS® 140 / 20 / 25	9½" – 11⅞"	3-3" (10d)	
	14" – 24"	5-3" (10d)	
BCI® Joist Series	Joist Depth	Bearing Location	
		End	Intermediate
4500s 1.8 5000 1.7 5000s 1.8	9½"	2-2½" (8d)	2-2½" (8d)
	11⅞"	2-2½" (8d)	3-2½" (8d)
	14"	2-2½" (8d)	5-2½" (8d)
6000 1.8 6000s 1.8	9½"	2-2½" (8d)	2-2½" (8d)
	11⅞"	2-2½" (8d)	3-2½" (8d)
	14"	2-2½" (8d)	5-2½" (8d)
	16"	2-2½" (8d)	6-2½" (8d)
6500 1.8 6500s 1.8	9½"	2-2½" (8d)	2-2½" (8d)
	11⅞"	2-2½" (8d)	3-2½" (8d)
	14"	2-2½" (8d)	5-2½" (8d)
60 2.0 60s 2.0	16"	2-2½" (8d)	6-2½" (8d)
	11⅞"	2-2½" (8d)	3-2½" (8d)
	14"	2-2½" (8d)	5-2½" (8d)
90 2.0 90s 2.0	16"	2-2½" (8d)	6-2½" (8d)
	11⅞"	3-3½" (16d)	3-3½" (16d)
	14"	5-3½" (16d)	5-3½" (16d)
	16"	6-3½" (16d)	6-3½" (16d)
	18"	7-3½" (16d)	7-3½" (16d)
20"	8-3½" (16d)	8-3½" (16d)	

### NOTES:

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 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 (Joist with flange of 3½" width only).
- For Structural Capacity: Web stiffeners needed to increase the Joist's reaction capacity at a specific bearing location.
- Web stiffeners are always required in certain roof applications. See Roof Framing Details.
- 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 the related specifier guide or the BC CALC® software.