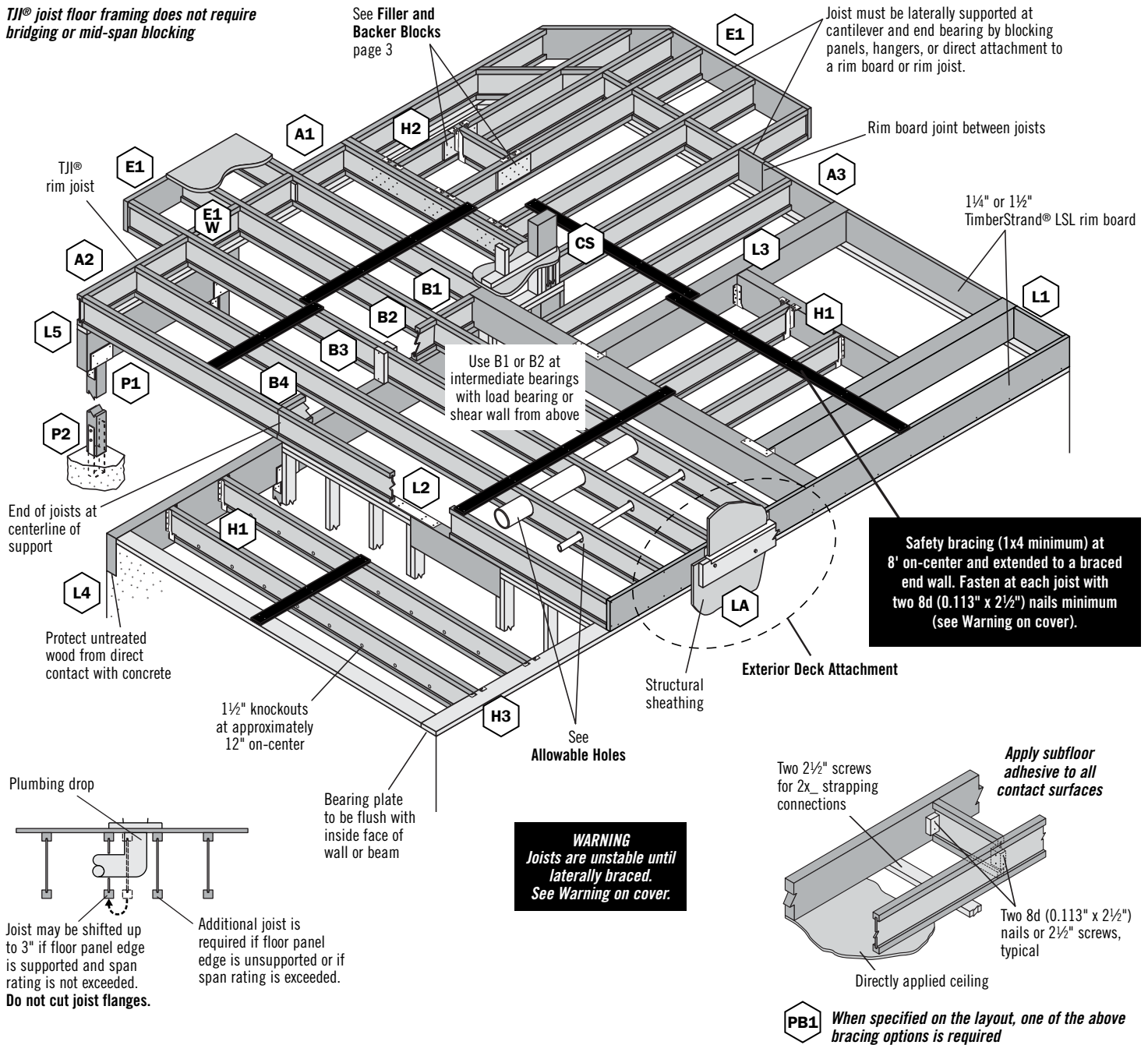




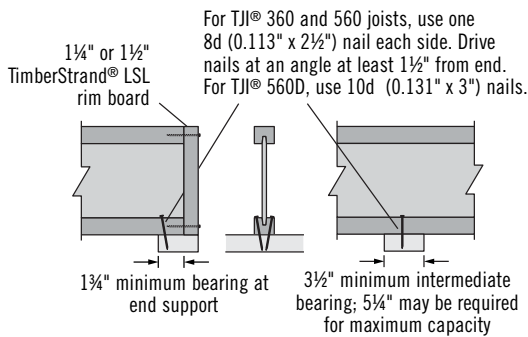
# TJI® JOIST FLOOR FRAMING

TJI® joist floor framing does not require bridging or mid-span blocking



## TJI® JOIST NAILING REQUIREMENTS AT BEARING

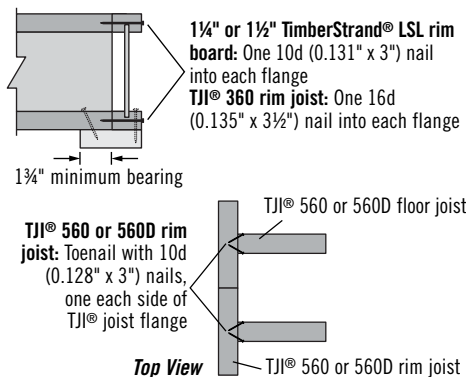
### TJI® Joist to Bearing Plate



Shear transfer nailing: At minimum, use connections equivalent to floor panel nailing schedule

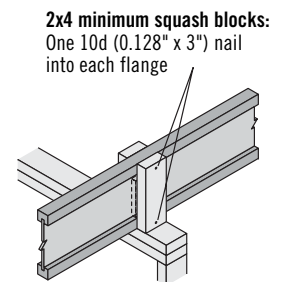
### Rim to TJI® Joist

Locate rim board joint between joists

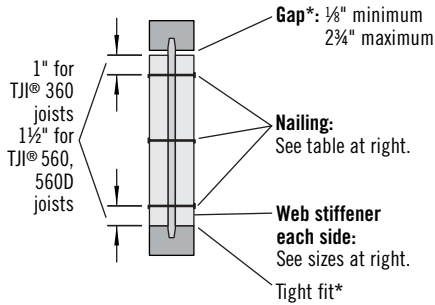


### Squash Blocks to TJI® Joist

Load bearing wall above



# WEB STIFFENERS

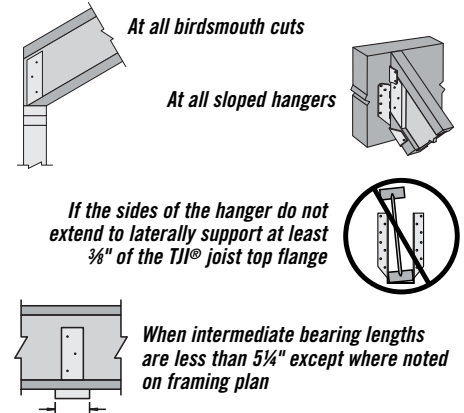


## Web Stiffener Requirements

TJI®	Depth (in.)	Min. Web Stiffener Size	Nailing Requirements		
			Type	# of Nails	
360	All	7/8" x 2 5/16" <sup>(1)</sup>	8d (0.113" x 2 1/2")	End	Int.
				3	3
560D	All	2x4 <sup>(2)</sup>	16d (0.135" x 3 1/2")	4	4
				5	5
				6	11
				6	13

- (1) PS1 or PS2 sheathing, face grain vertical
- (2) Construction grade or better
- (3) Web stiffeners are always required for 22" and 24" TJI® 560D joists

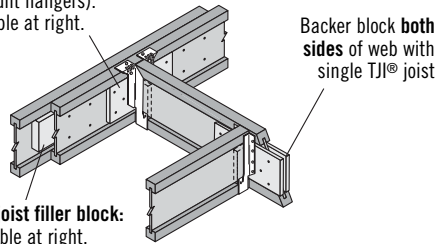
Web stiffeners are always required for 22" and 24" TJI® 560D joists, AND when the following conditions occur:



**W** \* With a point load from above and no support below, install web stiffener tight to top flange (gap at bottom flange)

# FILLER AND BACKER BLOCKS

**Hanger backer block:** Install tight to top flange (tight to bottom flange with face mount hangers). Attach per table at right.



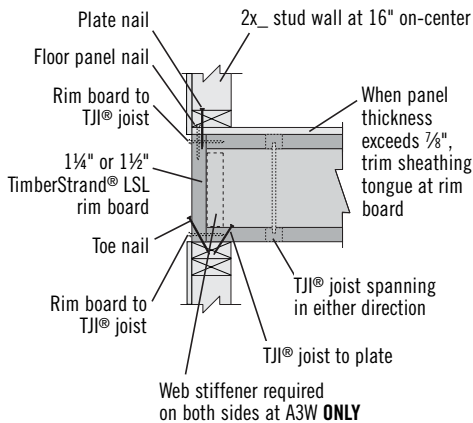
## Filler and Backer Block Sizes

TJI®	Depth	Type	Filler/Backer Size	Nail	
				Size	Quantity
360	18"-20"	Filler	2x12 + 1/2" sheathing	10d (0.128" x 3")	15 one side
		Backer	7/8" or 1" net	10d (0.128" x 3")	15
560, 560D	18"-20"	Filler	Two 2x12	16d (0.135" x 3 1/2")	15 each side
		Backer	2x12	10d (0.128" x 3")	15
560D	22"-24"	Filler	Four 3/4" x 15" sheathing	16d (0.135" x 3 1/2")	25 each side
		Backer	Two 3/4" x 15" sheathing	10d (0.128" x 3")	15

- If necessary, increase filler and backer block height for face mount hangers and maintain 1/8" gap at top of joist. See detail W. Filler and backer block dimensions should accommodate required nailing without splitting. The suggested minimum length is 24" for filler and 12" for backer blocks.

**H2** With top mount hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions

# RIM BOARD



**A3** At a minimum, attach TimberStrand® LSL rim board to bearing plate with connections equivalent to decking schedule.

## Javelin® Software Framing Plans

**A** At A1, joists require full bearing width. At A2 and A3, joists require full bearing width minus rim board or rim joist thickness.

**W** Web stiffeners required on each side of joist at intermediate bearings. Refer to your Javelin® framing plan.

Bearing requirements as shown on the Javelin® framing plan are job specific and supersede minimum bearing requirements listed.

# FASTENING OF FLOOR PANELS

## Fastening Floor Panels to TJI® Joist Flanges and TimberStrand® LSL Rim Board

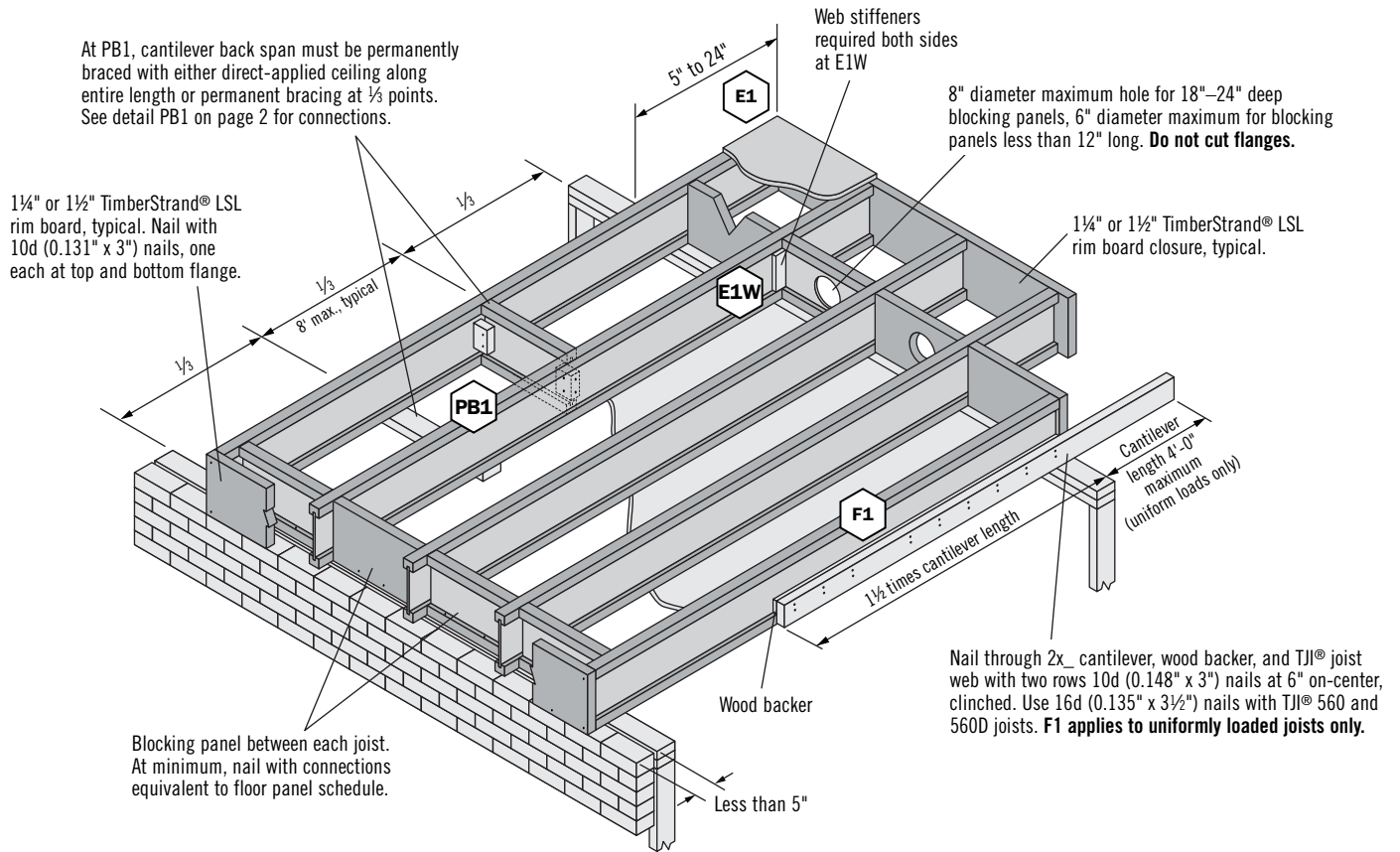
Nail Size	Closest On-Center Spacing per Row		
	TJI® 360, 560 and 560D <sup>(1)(2)</sup>	TimberStrand® LSL Rim Board	
8d (0.113" x 2 1/2"), 8d (0.131" x 2 1/2") 10d (0.128" x 3"), 12d (0.128" x 3 1/4")	3"	1 1/4"	1 1/2"
10d (0.148" x 3"), 12d (0.148" x 3 1/4"), 16d (0.135" x 3 1/2")	4" <sup>(3)</sup>	4"	4"
16d (0.162" x 3 1/2")	6"	6" <sup>(4)</sup>	6" <sup>(4)</sup>

- (1) Stagger nails when using 4" on-center spacing and maintain 3/8" joist and panel edge distance. One row of fasteners is permitted (two at abutting panel edges) for diaphragms. Fastener spacing for TJI® joists in diaphragm applications cannot be less than shown in table. When fastener spacing for blocking is less than spacing shown above, rectangular blocking must be used in lieu of TJI® joists.
- (2) For non-diaphragm applications, multiple rows of fasteners are permitted if the rows are offset at least 1/2" and staggered.
- (3) Can be reduced to 3" on-center for light gauge steel straps with 10d (0.148" x 1 1/2") nails.
- (4) Can be reduced to 4" on-center if nail penetration into the narrow edge is no more than 1 3/8" (to avoid splitting).

## General Notes

- Maximum spacing of nails is 24" on-center for TJI® joists.
- Nailing rows must be offset at least 1/2" and staggered.
- 14 ga. staples may be substituted for 8d (0.113" x 2 1/2") nails if minimum penetration of 1" into the TJI® joist or rim board is achieved.
- Table also applies for the attachment of TJI® rim joists and blocking panels to the wall plate.
- Weyerhaeuser recommends using solvent-based subfloor adhesives that meet ASTM D3498 (AFG-01) performance standards. When latex subfloor adhesive is required, careful selection is necessary due to a wide range of performance between brands.

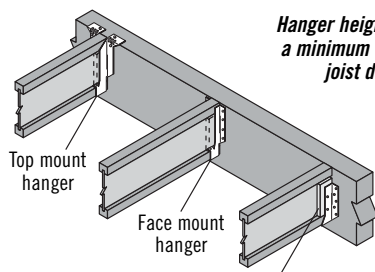
# CANTILEVERS



# FRAMING CONNECTORS

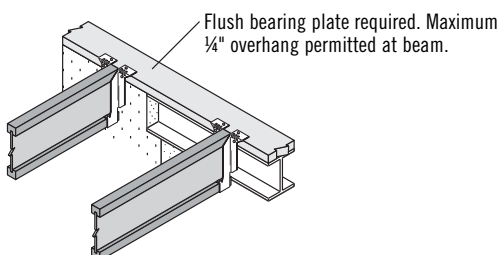
## Approved Hangers

- The following manufacturers are approved to supply hangers for Trus Joist® products:
  - Simpson Strong-Tie Co. Inc. 1-800-999-5099
  - USP Structural Connectors® 1-800-328-5934
- Hanger design loads differ by support type and may exceed the capacity of the support and/or supported member. Contact your Weyerhaeuser representative or refer to Weyerhaeuser software.



**Hanger height must be a minimum of 60% of joist depth**

Web stiffeners required if the sides of the hanger do not laterally support at least  $\frac{3}{8}$ " of the TJI® joist top flange



## Nailing Requirements

- Fill all round, dimple, and positive angle holes with the proper nails. Hanger nails are usually a heavier gauge because of the higher loads they need to carry.
- Unless specified otherwise, full capacity of straps or connectors can only be achieved if the following nail penetration is provided:

	Face Mount	Top Mount
10d (0.148" x 1 1/2")	1 1/2" minimum	1 1/2" minimum
10d (0.148" x 3")	1 1/2" minimum, clinched	3" minimum
16d (0.162" x 3 1/2")	1 3/4" minimum, clinched	3 1/2" minimum

- Top mount hangers should be fastened to TJI® joist headers with 10d (0.148" x 1 1/2") nails. Fasten face mount hangers to 3 1/2" or wider TJI® joist headers with 10d (0.148" x 3") or 16d (0.162" x 3 1/2") nails.

## Connector Installation and Squeak Prevention Tips

- Nails must be completely set.
- Leave 1/16" clearance between the end of the supported joist and the header or hanger.
- Joist-to-beam connections require hangers; do not toenail.
- Seat the supported member tight to the bottom of the hanger. On Simpson Strong-Tie® VPA connectors, bend the bottom flange tabs over and nail to TJI® joist bottom flange.
- Reduce squeaks by adding subfloor adhesive to the hanger seat. See Weyerhaeuser's glue recommendation in **General Notes** under **Fastening of Floor Panels** table, page 3.

H1

H3

# MULTIPLE-MEMBER BEAMS

## Multiple-Member Connections for Top-Loaded Beams

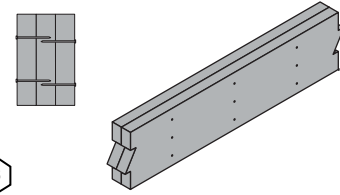
Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.

Piece Width	# of Plies	Fastener				
		Type <sup>(1)</sup>	Min. Length	# Rows	O.C. Spacing	Location
1¾"	2	10d nails	3"	3 <sup>(2)</sup>	12"	One side
		12d-16d nails	3¾"	2 <sup>(2)</sup>		
		Screws	3¾" or 3½"	2		
	3	10d nails	3"	3 <sup>(2)</sup>	12"	Both sides
		12d-16d nails	3¾"	2 <sup>(2)</sup>		
		Screws	3¾" or 3½"	2		
5"	One side					
4	10d nails <sup>(3)</sup>	3"	3 <sup>(2)</sup>	12"	One side (per ply)	
		12d-16d nails <sup>(3)</sup>	3¾"			2 <sup>(2)</sup>
	Screws	5" or 6"	2	24"	Both sides	
		6¾"			One side	
3½"	Screws	5" or 6"	2	24"	Both sides	
		6¾"			One side	
	½" bolts	8"	2	24"	—	

- (1) 10d nails are 0.128" diameter; 12d-16d nails are 0.148"-0.162" diameter; screws are SDS, SDW, USP WS, or TrussLOK-EWP™.
- (2) An additional row of nails is required with depths of 14" or greater.
- (3) When connecting 4-ply members, nail each ply to the other and offset nail rows by 2" from the rows in the ply below.

When fasteners are required on both sides, stagger fasteners on the second side so they fall halfway between fasteners on the first side.

Bearing length is extremely critical and must be considered for each application. See your Javelin® framing plan.



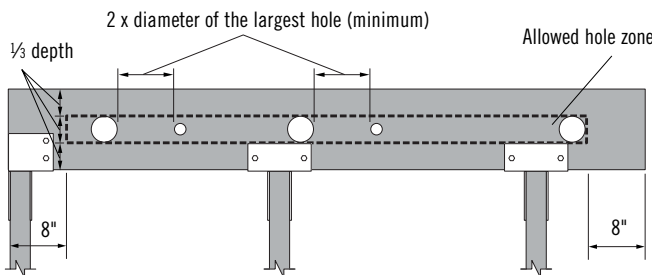
Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

## Multiple-Member Connections for Side-Loaded Beams

- Additional nailing or bolting may be required with side-loaded multiple-member beams. Refer to current product literature.

# ALLOWABLE HOLES—BEAMS, HEADERS, AND WALL STUDS

## 1.55E TimberStrand® LSL Headers and Beams



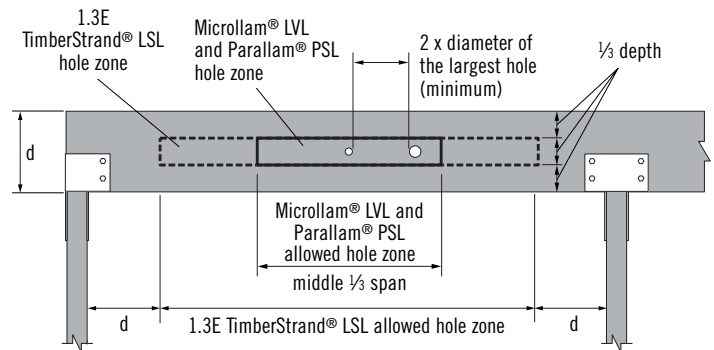
- Allowed hole zone suitable for headers and beams with **uniform and/or concentrated loads** anywhere along the member.
- Round holes only.
- No holes in headers or beams in plank orientation.

### 1.55E TimberStrand® LSL

Header or Beam Depth	Max. Round Hole Size
9¼"-9½"	3"
11¼"-11⅞"	3⅝"
14"-16"	4⅝"

- See allowed hole zone above.

## Other Trus Joist® Headers and Beams

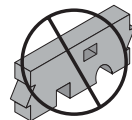


- Allowed hole zone suitable for headers and beams with **uniform loads only**.
- No holes in cantilevers.
- Round holes only.
- No holes in headers or beams in plank orientation.

### Other Trus Joist® Beams

Header or Beam Depth	Max. Round Hole Size
4¾"	1"
5½"	1¾"
7¼"-20"	2"

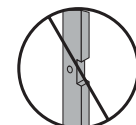
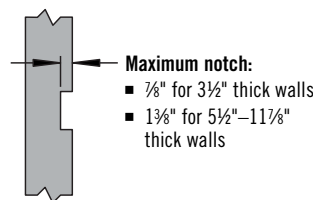
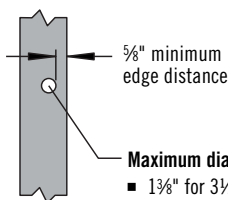
- See allowed hole zone above.



**DO NOT cut, notch, or drill holes in headers or beams except as indicated in the illustrations and tables.**

## TimberStrand® LSL Wall Studs

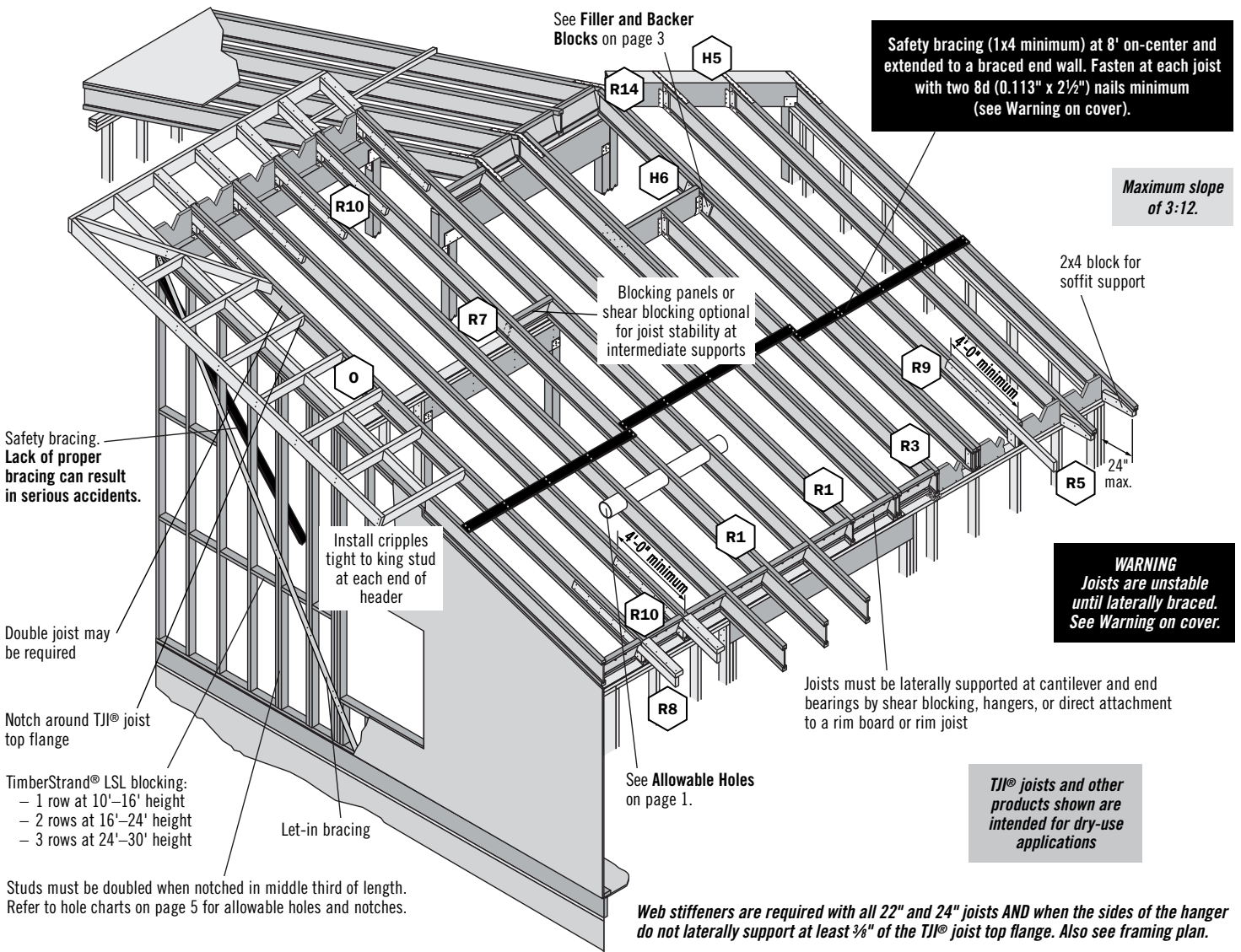
One notch may be cut anywhere except the middle 1/3 of the length of the stud or column. Holes may be drilled along the length of the stud or column but must be at least 5/8" from the edge.



**DO NOT cut a notch and a hole in the same cross section.**



# ROOF FRAMING *(Maximum slope: 3:12)*



## TJI® JOIST NAILING REQUIREMENTS AT BEARING

### TJI® Joist to Bearing Plate

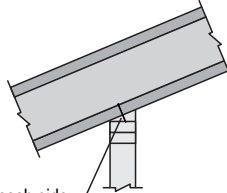
**End Bearing (1¼" minimum bearing required)**



One nail each side, 1½" minimum from end.  
**For TJI® 360 and 560 joists:**  
 Use 8d (0.113" x 2½") nails  
**For TJI® 560D joists:**  
 Use 10d (0.131" x 3") nails

*When slope exceeds ¼:12, a beveled bearing plate, variable slope seat connector, or birdsmouth cut (at low end of joist only) is required.*

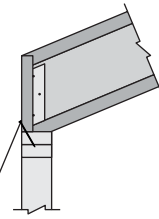
**Intermediate Bearing (3½" minimum bearing required)**



One nail each side.  
**For TJI® 360 and 560 joists:** Use 8d (0.113" x 2½") nails  
**For TJI® 560D joists:** Use 10d (0.131" x 3") nails

*When slope exceeds ¼:12 for a 2x4 wall or ⅓:12 for a 2x6 wall, a beveled bearing plate or variable slope seat connector is required.*

### Blocking to Bearing Plate

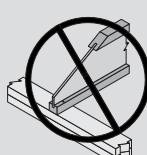


1¼" or 1½" TimberStrand® LSL rim board: Toenail with 10d (0.131" x 3") nails at 6" on-center or 16d (0.135" x 3½") nails at 12" on-center  
**TJI® joist blocking:** 10d (0.128" x 3") nails at 6" on-center  
**Shear transfer nailing:** Minimum, use connections equivalent to sheathing nail schedule

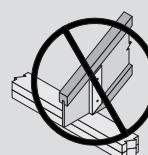
### These Conditions Are NOT Permitted:



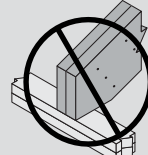
**DO NOT** cut holes too close to support. Refer to Allowable Holes on page 1 for minimum distance from support.



**DO NOT** bevel cut joist beyond inside face of wall.



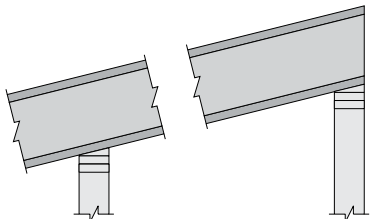
**DO NOT** overhang birdsmouth cut from inside face of plate. TJI® joist flange must bear fully on the plate.



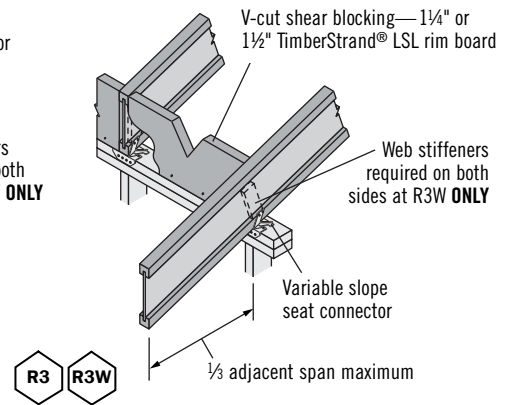
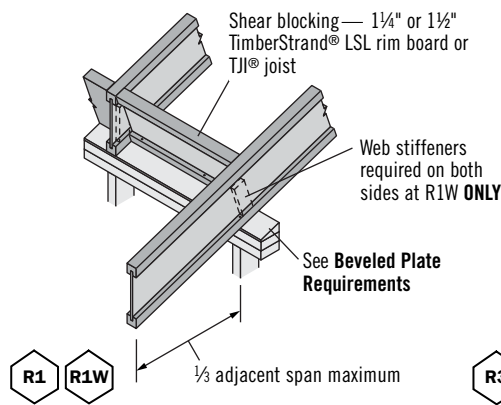
**DO NOT** overhang seat cuts on beams beyond inside face of support member

# ROOF FRAMING *(Maximum slope: 3:12)*

## Beveled Plate Requirements

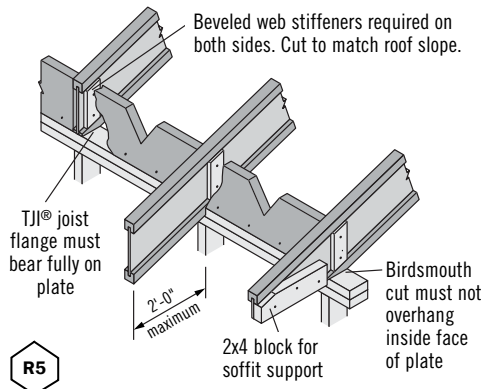


Required Bearing Length	Maximum Slope Without Beveled Plate
1 3/4"	1/2:12
3 1/2"	3/4:12
5 1/2"	1 1/8:12



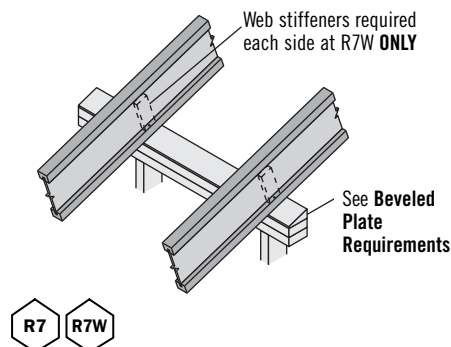
## Birdsmouth Cut

*Allowed at low end of joist only*

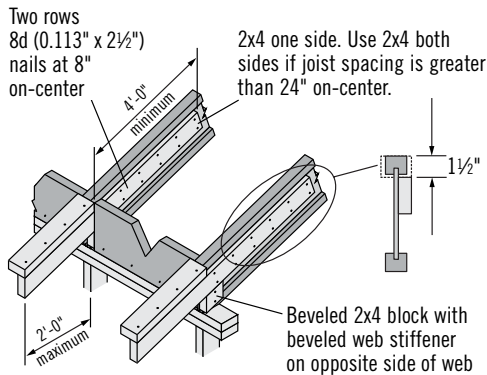
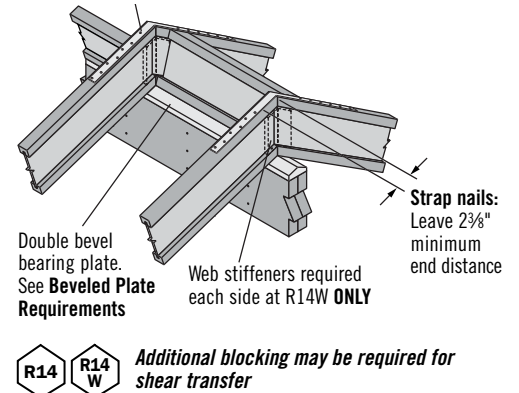


## Intermediate Bearing

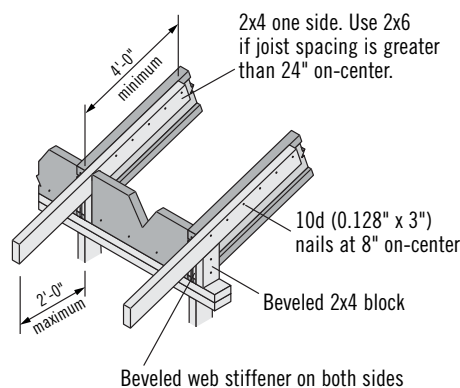
*Blocking panels or shear blocking may be specified for joist stability at intermediate supports*



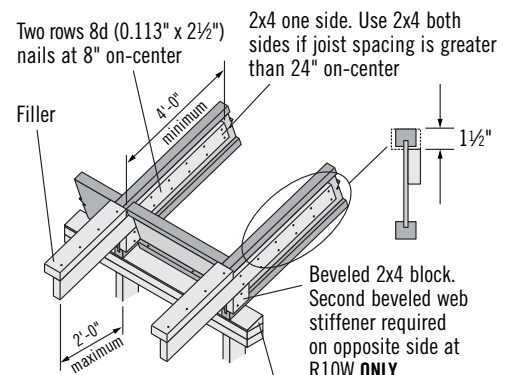
LSTA18 (Simpson or USP) strap with twelve 10d (0.148" x 1 1/2") nails



**R8** Birdsmouth cut allowed at low end of joist only



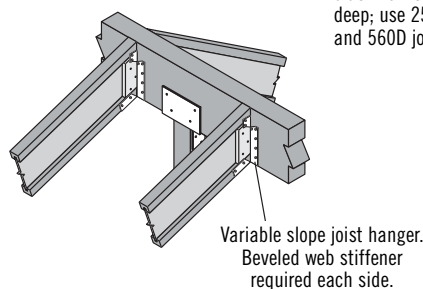
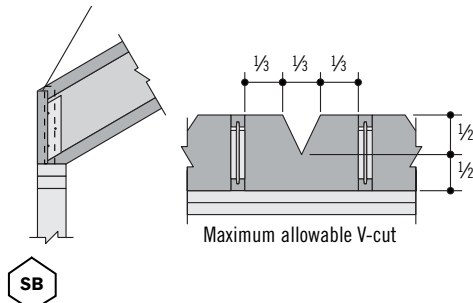
**R9** Birdsmouth cut allowed at low end of joist only



See Beveled Plate Requirements above

## Shear Blocking and Ventilation Holes *(Roof Only)*

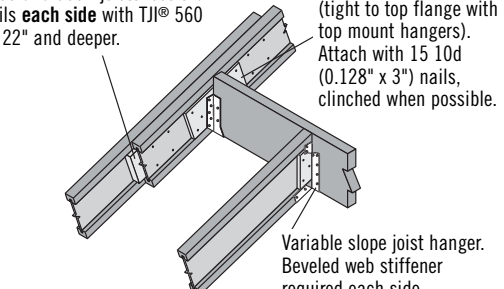
1/4" or 1/2" TimberStrand® LSL rim board for shear blocking (between joists). Field trim to match joist depth at outer edge of wall or locate on wall to match joist depth.



**H5** Additional blocking may be required for shear transfer

**Filler block:** Attach with 15 nails, 10d (0.128" x 3"), clinched. Use 15 nails, 16d (0.135" x 3 1/2"), each side with TJI® 560 and 560D joists less than 22" deep; use 25 nails each side with TJI® 560 and 560D joists 22" and deeper.

**Backer block:** Install tight to bottom flange (tight to top flange with top mount hangers). Attach with 15 10d (0.128" x 3") nails, clinched when possible.



**H6** For filler and backer block sizes, see table in floor section of guide.

# PRODUCT STORAGE

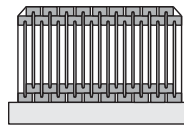
Protect products from sun and water.



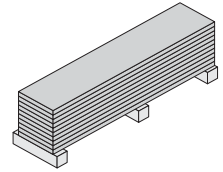
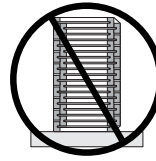
**CAUTION:**  
Wrap is slippery when wet or icy.

Align stickers (2x3 or larger)  
directly over support blocks.

Use support blocks (6x6 or larger)  
at 10' on-centre to keep products  
out of mud and water.



Store and handle TJI® joists in vertical  
orientation (wrapped)



Store and handle Parallam® PSL,  
Microllam® LVL, and TimberStrand® LSL  
in flat orientation (wrapped)

**WARNING:** Drilling, sawing, sanding or machining wood products generates wood dust. The paint and/or coatings on this product may contain titanium dioxide. Wood dust and titanium dioxide are substances known to the State of California to cause cancer. For more information on Proposition 65, visit [wy.com/inform](http://wy.com/inform).

# OUR GUARANTEE



Visit [woodbywy.com/warranty](http://woodbywy.com/warranty) for copies of this and other Trus Joist® Engineered Wood Product warranties.

For conditions not shown in this guide, or other assistance,  
contact your Weyerhaeuser representative or call  
1.888.453.8358

## CODE EVALUATIONS

- TJI® Joists**
- ICC ES ESR-1153
  - CCMC 13132-R (pending)
- TimberStrand® LSL**
- ICC ES ESR-1387
  - CCMC 12627-R
- Parallam® PSL**
- ICC ES ESR-1387
  - CCMC 11161-R
- Microllam® LVL**
- ICC ES ESR-1387
  - CCMC 08675-R
- TJ® Rim Board**
- ICC ES ESR-1387
  - CCMC 13261-R

## BUILD SAFELY

We at Weyerhaeuser are committed to working safely and want to remind you to do the same. We encourage you to follow the recommendations of OSHA ([osha.gov](http://osha.gov)) in the U.S. or provincial regulations ([canoshweb.org/en/](http://canoshweb.org/en/)) in Canada regarding:

- Personal protective equipment (PPE) for hands, feet, head, and eyes
- Fall protection
- Use of pneumatic nailers and other hand tools
- Forklift safety

Please adhere to the Weyerhaeuser product installation details, including the installation of safety bracing on unsheathed floors and roofs.



Have a damaged joist or beam?

File a damage report online for prompt service from your regional technical office. Scan the QR code with your smartphone or go to [woodbywy.com/support](http://woodbywy.com/support).

## CONTACT US

1.888.453.8358 • [woodbywy.com/contact](http://woodbywy.com/contact)

February 2015 • Reorder TJ-9006

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