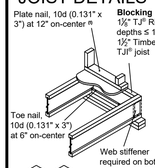
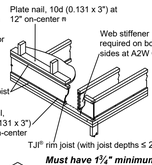
JOIST DETAILS



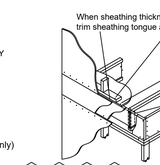
A1 A1W*

Blocking panel: 1½" TJI® Rim Board (with depths ≤ 16"), 1¼" or 1½" TimberStrand® LSL or TJI® joist



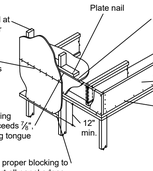
A2 A2W*

Must have 1¾" minimum joist bearing at ends. Attach rim joist per A3 detail.



A3 A3.1 A3.2 A3.3*
A3W A3.1W A3.2W A3.3W

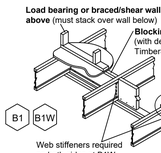
* For additional installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing*, TJ-9001.
(1) Per code, increase nailing to 4" on-center for braced frames.



A3.4 A3.4W*

* For A3.1-A3.4 installation specifications see Rim Board Details and Installation in *Weyerhaeuser Installation Guide for Floor and Roof Framing*, TJ-9001.
(1) Per code, increase nailing to 4" on-center for braced frames.

Load bearing or braced/shear wall above (must stack over wall below)

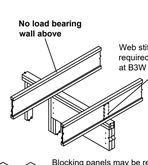


B1 B1W

B2 B2W

Blocking panels may be required with braced/shear walls above or below — see detail B1

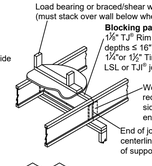
No load bearing wall above



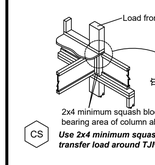
B3 B3W

Blocking panels may be required with braced/shear walls above or below — see detail B1

Load bearing or braced/shear wall above (must stack over wall below when present)

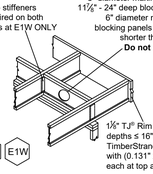


B4 B4W

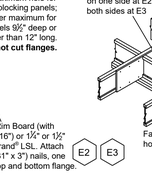


CS

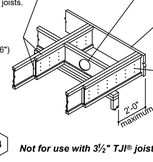
Use 2x4 minimum squash blocks to transfer load around TJI® joist



E1 E1W

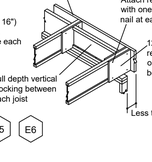


E2 E3

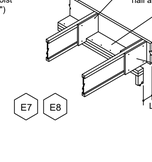


E4

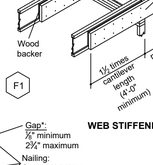
Not for use with 3½" TJI® joist flange widths



E5 E6

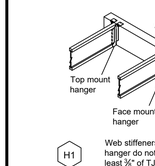


E7 E8



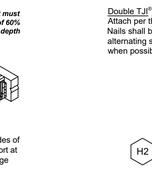
F1

F1 applies to uniformly loaded joists only.



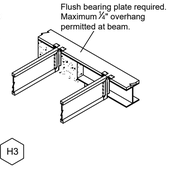
H1

Web stiffeners required if sides of hanger do not laterally support at least ⅓" of TJI® joist top flange



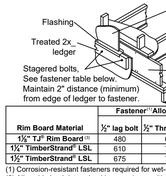
H2

With top mount hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions. For nailing requirements see Filler and Backer Blocks in *Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.*



H3

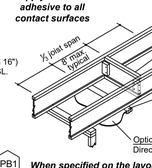
EXTERIOR DECK ATTACHMENT



LA

Rim Board Material	Fastener[1] Allowable Load[2] (lbs/bolt)		
	½" lag bolt	½" Through bolt	½" Through bolt with Air Space
⅛" TJI® Rim Board[3]	480	695	615[4]
1¼" TimberStrand® LSL	610	725	
1½" TimberStrand® LSL	675	725	

(1) Corrosion-resistant fasteners required for wet-service applications.
(2) Allowable load determined in accordance with ASTM D7672.
(3) 1¼" TJI® Rim Board is allowed with joist depths ≤.16" only.
(4) Maximum ½" shimmed air space.



PB1

When specified on the layout, one of the bracing options above is required

W

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

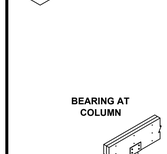
WEB STIFFENER ATTACHMENT

TJI® Joist Series	Depth (in.)	Minimum Web Stiffener Size	Nailing Requirements	
			Type	Number Nails: End / Intermediate
110 210 230 & 360	All All All	⅞" x 2⅝"[(1)] ¾" x 2⅝"[(1)] ⅞" x 2⅜"[(1)]	8d (0.113" x 2½")	3 / 3
560	All	2x4[(2)]	16d (0.135" x 3½")	3 / 3
560D	18" 20" 22"[(3)] 24"[(3)]	2x4[(2)]	16d (0.135" x 3½")	4 / 4 5 / 5 6 / 11 6 / 13

(1) PS1 or PS2 sheathing, practice gap certain vertical
(2) Construction grade or better
(3) Web stiffeners are always required for 22" and 24" TJI® 560D Joists

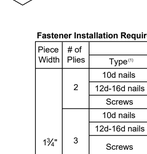
BEAM DETAILS

BEARING AT WALL



L1

BEARING FOR DOOR OR WINDOW HEADER



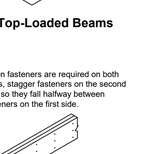
L2

BEAM TO BEAM CONNECTION

L3

See current Weyerhaeuser literature for framing connectors

BEARING AT CONCRETE WALL



L4

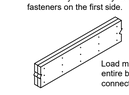
Multiple-Member Connections for Top-Loaded Beams

Fastener Installation Requirements

Piece Width	# of Plies	Fastener				
		Type[(1)]	Min. Length	# Rows	O.C. Spacing	Placement
1¾"	2	10d nails	3"	3[(2)]	12"	One face
		12d-16d nails	3¼"	2[(2)]		
		Screws	3½" or 3½"	2	24"	
	3	10d nails	3"	3[(2)]	12"	Both faces
		12d-16d nails	3¼"	2[(2)]		
		Screws	3½" or 3½"	2	24"	Both faces
			5"			One face
		½" bolts[(4)]	6"	2	24"	-
	4	10d nails[(3)]	3"	3[(2)]	12"	One face (per ply)
		12d-16d nails[(3)]	3¼"	2[(2)]		
		Screws	5" or 6"	2	24"	Both faces
			6¾"			One face
		½" bolts[(4)]	8"	2	24"	-
3½"	2	Screws	5" or 6"	2	24"	Both faces
			6¾"			One face
		½" bolts[(4)]	8"	2	24"	-

(1) 10d nails are (0.128" - 0.131") diameter; 12d-16d nails are 0.148" - 0.162" diameter; screws are SDS, WS, SDW22, or WSWH
(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.
(4) Washers required. Bolt holes to be 9/16" maximum. 9½" minimum beam depth. Bolted connection values are not applicable to bolts installed in counter-bored holes.

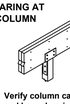
When fasteners are required on both sides, stagger fasteners on the second side so they fall halfway between fasteners on the first side.



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

L6 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"

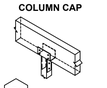
BEARING AT COLUMN



L5 **Verify column capacity and beam bearing length. See current Weyerhaeuser literature.**

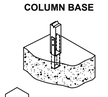
COLUMN DETAILS

BEAM ON COLUMN CAP



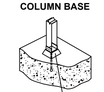
P1

COLUMN BASE



P2

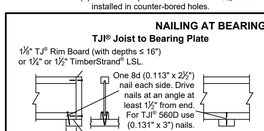
ELEVATED COLUMN BASE



P3

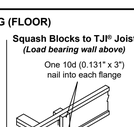
NAILING AT BEARING (FLOOR)

TJI® Joist to Bearing Plate



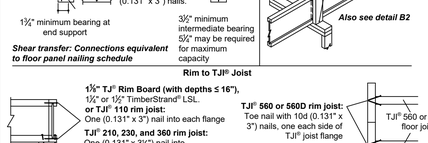
Shear transfer: Connections equivalent to floor panel nailing schedule

Squash Blocks to TJI® Joist
(Load bearing wall above)



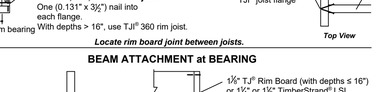
Also see detail B2

Rim to TJI® Joist

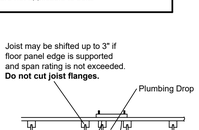


Locate rim board joint between joists.

BEAM ATTACHMENT at BEARING



Joist may be shifted up to 3" if floor panel edge is supported and span rating is not exceeded. **Do not cut joist flanges.**



INSTALLATION TIPS

- Subfloor adhesive will improve floor performance, but may not be required.
- Squash blocks and blocking panels carry stacked vertical loads (details B1 and B2). Packing out the web of a TJI® joist (with web stiffeners) is not a substitute for squash blocks or blocking panels.
- When joists are doubled at non-load bearing parallel partitions, space joists apart the width of the wall for plumbing or HVAC.
- Additional joist at plumbing drop (see detail).

FASTENING of FLOOR PANELS

Guidelines for Closest On-Center Spacing per Row

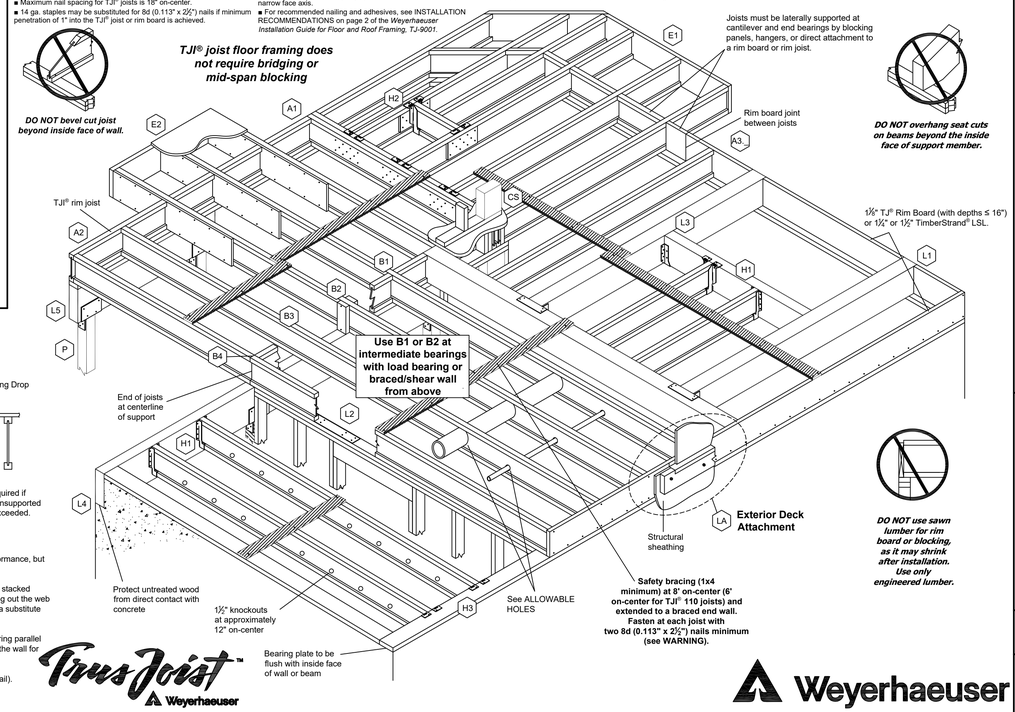
Nail Size	TJI®[(1)(2)]		Rim Board				
	110, 210, and 230	360 and 560	⅛" TJI®	1¼" TimberStrand® LSL	1½" TimberStrand® LSL or wider	Microllam® LVL	Parallam® PSL
8d (0.113" x 2½"), 8d (0.131" x 2½")	4"	3"	6"	4"	3"	4"	4"
10d (0.148"x 3")	4"[(3)]	4"[(3)]	6"	4"	3"	5"	4"
12d (0.148" x 3½")	4"[(3)]	4"[(3)]	12"[(4)]	4"	3"	5"	4"
16d (0.162" x 3½")	6"	6"	16"[(5)]	6"[(5)]	6"[(5)]	8"[(4)]	6"
(0.131"x 3"-3½")	4"	3"	12"[(6)]	4"	3"	4"	4"

(1) Stagger nails when using 4" on-center spacing and maintain ¾" 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 ½" and staggered.
(3) With 10d (0.148" x 1½") nails, spacing can be reduced to 3" on-center for light gauge steel straps.
(4) Can be reduced to 5" on-center if nail penetration into the narrow edge is no more than 1⅛" (to minimize splitting).
(5) Can be reduced to 8" on-center if nail penetration into the narrow edge is no more than 1⅛" (to minimize splitting).
(6) Can be reduced to 4" on-center if nail penetration into the narrow edge is no more than 1½" (to minimize splitting).
■ Recommended nailing is 12" on-center in field and 6" on-center along panel edge. Fastening requirements on engineered drawings supersede recommendations listed above.
■ Maximum nail spacing for TJI® joists is 18" on-center.
■ 14 ga. staples may be substituted for 8d (0.113" x 2½") nails if minimum penetration of 1" into the TJI® joist or rim board is achieved.
■ To minimize splitting, maintain edge distance and row spacing of 2½ x nail diameter or 3", whichever is greater. Multiple rows must be staggered and equally spaced from the centerline of the narrow face axis.
■ For recommended nailing and adhesives, see INSTALLATION RECOMMENDATIONS on page 2 of the *Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.*

FILLER and BACKER BLOCK SIZES

TJI® Joists		110	210	230 or 360	360	560	560D
Depth		9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	9½"-11⅞"	14"-16"	18"-20"	11⅞"	14"-16"	18"-20"	22"-24"
Filler Block[(1)] (Detail H2)		2x6	2x8	2x6 + ⅜" sheathing	2x8 + ⅜" sheathing	2x6 + ½" sheathing	2x8 + ½" sheathing	2x12 + ½" sheathing	Two 2x6	Two 2x8	Two 2x12	Four ¾" x 15" sheathing
Cantilever Filler (Detail E4)		2x6 4'-0" long	2x10 6'-0" long	2x6 + ¾" sheathing 4'-0" long	2x10 + ¾" sheathing 6'-0" long	2x6 + ½" sheathing 4'-0" long	2x10 + ½" sheathing 6'-0" long	Not applicable	Not applicable			
Backer Block[(1)] (Detail F1or H2)		⅜" or ½"		½" or ⅝"		⅝" or 1" Net			2x6	2x8	2x12	Two ¾" x 15" sheathing
Nail Size	Filler	(0.131" x 3")							(0.131" x 3½")			
	Backer								(0.131" x 3")			
Nail Quantity[(2)]	Filler[(3)]	15							32		50	
	Backer								15		15	

(1) If necessary, increase filler and backer block height for face mount hangers and maintain ¼" gap at top of joist; see detail W. Filler and backer block dimensions should accommodate required nailing without splitting (12" minimum for backer blocks and 24" minimum for filler blocks).
(2) Clinch nails when possible.
(3) For filler block connection, drive nails from alternating sides.



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- Additional joist at plumbing drop (see detail).

TrusJoist™ Weyerhaeuser

Weyerhaeuser

ALLOWABLE HOLES - TJI® Joists

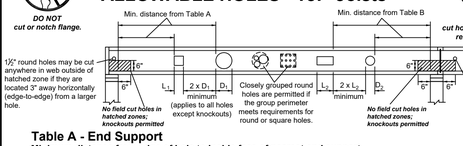

Table A - End Support

Minimum distance from edge of hole to inside face of nearest end support

JOIST DEPTH	TJI®	ROUND HOLE SIZE								SQUARE OR RECTANGULAR HOLE SIZE							
		2"	3"	4"	5"	6½"	7"	8½"	11"	13"	2"	3"	4"	5"	6½"	7"	8½"	11"	13"
9½"	110	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"					1'-0"	1'-6"	2'-0"	3'-6"	4'-8"				
	210	1'-0"	1'-6"	2'-0"	3'-0"	5'-6"					1'-0"	1'-6"	2'-0"	4'-0"	5'-0"				
	230	1'-6"	2'-0"	2'-6"	3'-6"	5'-6"					1'-0"	2'-0"	3'-0"	4'-6"	5'-0"				
	360	1'-6"	2'-0"	3'-0"	4'-0"	6'-0"					1'-6"	2'-6"	3'-6"	5'-0"	5'-8"				
	560	1'-6"	2'-6"	3'-6"	5'-0"	7'-0"					1'-6"	2'-6"	3'-6"	5'-6"	6'-6"	7'-0"			
11¼"	110	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	5'-6"			1'-0"	1'-6"	2'-0"	2'-6"	4'-8"	5'-0"	6'-0"		
	210	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	6'-0"			1'-0"	1'-6"	2'-0"	2'-6"	5'-0"	5'-6"	6'-6"		
	230	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	6'-6"			1'-0"	1'-6"	2'-0"	3'-0"	5'-6"	6'-0"	7'-0"		
	360	1'-6"	2'-0"	2'-6"	3'-6"	4'-6"	5'-0"	7'-0"			1'-6"	2'-6"	3'-6"	4'-6"	6'-6"	6'-6"	7'-6"		
	560	1'-6"	2'-6"	3'-6"	4'-6"	5'-6"	6'-0"	8'-0"			1'-6"	2'-6"	3'-6"	4'-6"	6'-6"	7'-0"	8'-0"		
14"	110	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-6"	6'-0"		1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	5'-0"	8'-0"	
	210	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	4'-0"	7'-0"		1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	5'-0"	9'-0"	
	230	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	4'-0"	7'-0"		1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	5'-0"	9'-0"	
	360	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	3'-6"	4'-0"	8'-0"		1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	6'-0"	6'-6"	9'-6"	
	560	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"	4'-0"	8'-0"	10'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	4'-0"	6'-0"	9'-6"	10'-0"
16"	110	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	5'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	3'-0"	5'-6"	7'-6"	10'-0"
	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	6'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	3'-6"	6'-6"	8'-0"	11'-0"
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	7'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	4'-0"	7'-0"	9'-0"	12'-0"
	360	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	4'-6"	8'-6"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	5'-0"	5'-6"	9'-0"	10'-0"	11'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	3'-6"	8'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	5'-0"	6'-0"	9'-6"	10'-0"	12'-0"
		4"	6"	7"	8"	10"	12"	14½"	16½"	18½"	20"	4"	6"	7"	8"	10"	12"	14½"	16½"	18½"	20"
18"	360	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-0"	11'-0"	13'-6"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-0"	11'-0"	12'-0"	14'-0"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"		1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	11'-0"	12'-0"	14'-0"
	560D	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-0"	11'-6"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-0"	10'-6"	11'-6"	13'-6"
20"	360	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-0"	10'-0"	12'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-0"	10'-0"	12'-0"	14'-0"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	12'-6"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	12'-6"	14'-6"
	560D	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	12'-6"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	12'-6"	14'-6"
22"	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	13'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	13'-0"	14'-6"
	560D	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	13'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	13'-0"	15'-0"
24"	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	13'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	13'-0"	15'-0"
	560D	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	7'-0"	10'-6"	13'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-0"	4'-0"	6'-6"	10'-6"	13'-0"	15'-0"

Table B - Intermediate or Cantilever Support

Minimum distance from edge of hole to inside face of nearest intermediate or cantilever support

JOIST DEPTH	TJI®	ROUND HOLE SIZE								SQUARE OR RECTANGULAR HOLE SIZE							
		2"	3"	4"	5"	6½"	7"	8½"	11"	13"	2"	3"	4"	5"	6½"	7"	8½"	11"	13"
9½"	110	2'-0"	2'-6"	3'-6"	4'-6"	7'-6"					1'-6"	2'-6"	3'-6"	4'-6"	6'-6"				
	210	2'-0"	2'-6"	3'-6"	5'-0"	8'-0"					2'-0"	3'-0"	4'-0"	6'-6"	7'-8"				
	230	2'-6"	3'-0"	4'-0"	5'-6"	8'-6"					2'-0"	3'-6"	4'-6"	6'-6"	7'-8"				
	360	3'-0"	4'-0"	5'-0"	6'-6"	9'-0"					2'-6"	3'-6"	4'-6"	7'-0"	8'-0"	10'-0"			
	560	3'-6"	5'-0"	6'-6"	7'-6"	10'-0"					4'-0"	5'-6"	6'-6"	8'-0"	9'-0"				
11¼"	110	1'-6"	2'-0"	2'-6"	3'-6"	5'-6"	6'-6"	8'-6"			1'-6"	2'-0"	2'-6"	3'-6"	4'-6"	5'-0"	7'-0"	9'-6"	
	210	1'-6"	2'-0"	2'-6"	3'-6"	4'-6"	5'-6"	8'-6"			1'-6"	2'-0"	2'-6"	3'-6"	4'-6"	5'-6"	7'-6"	10'-0"	
	230	1'-6"	2'-0"	2'-6"	3'-6"	5'-0"	5'-6"	8'-6"	10'-0"		1'-6"	2'-0"	2'-6"	3'-6"	5'-0"	5'-6"	8'-0"	10'-0"	
	360	2'-0"	3'-0"	4'-0"	5'-0"	7'-0"	7'-6"	11