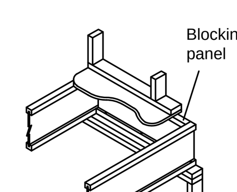
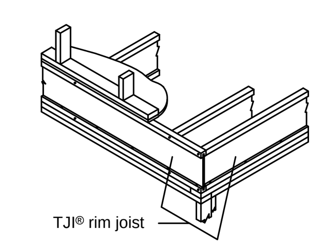
TJI FRAMING DETAILS HAVE BEEN PROVIDED BY WEYERHAEUSER 1.888.453.8358

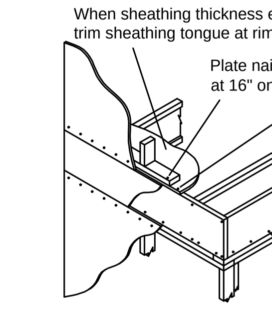
THINK SAFETY-READ INSTALLATION INFORMATION BEFORE PROCEEDING

JOIST DETAILS

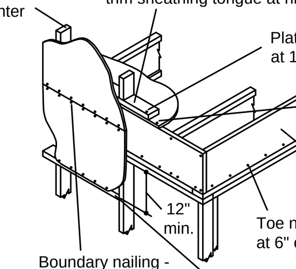




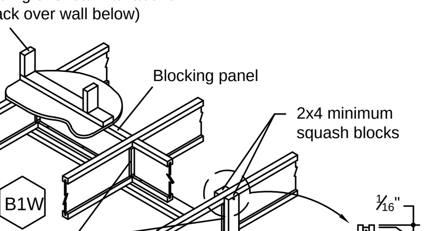
Must have 1¾" minimum joist bearing at ends



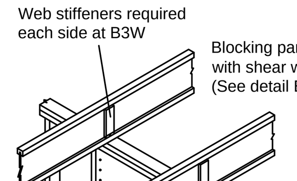
**Conventional construction code minimum for use with A3 only. See iLevel Framer's Pocket Guide for A3.1-A3.3 installation specifications.*

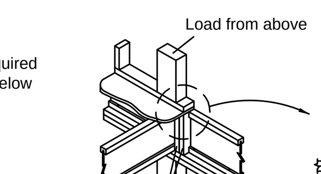


**See iLevel Framer's Pocket Guide for additional installation specifications.*

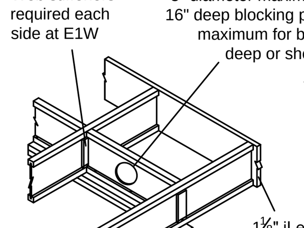


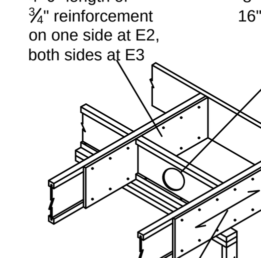
INTERMEDIATE BEARING NO LOAD BEARING WALL ABOVE

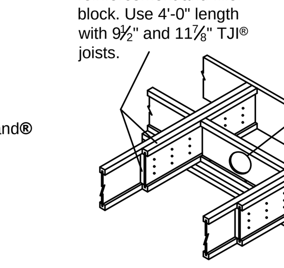




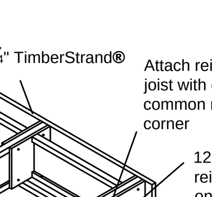
Use 2x4 minimum squash blocks to transfer load around TJI® joist

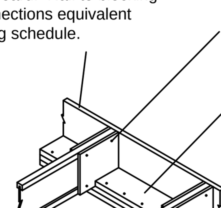


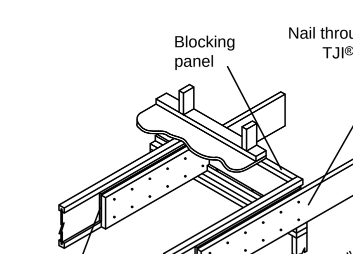


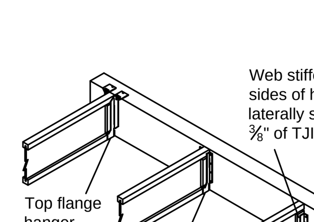


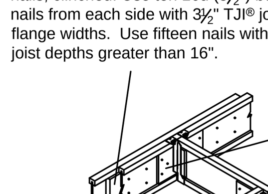
Not for use with 3½" TJI® joist flange widths



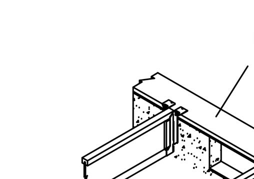




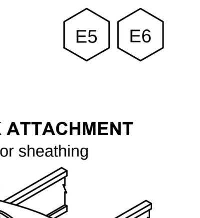




With top flange hangers, backer block required only for downward loads exceeding 250 lbs or for uplift conditions.



EXTERIOR DECK ATTACHMENT

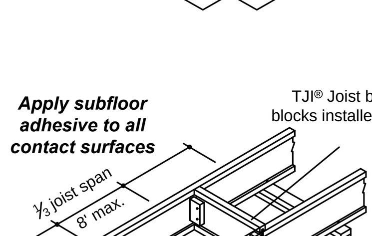


Fastener	Allowable Load / Factored Resistance (lbs) 1¼" TimberStrand® LSL rim board	1⅛" iLevel™ rim board
⅜" lag bolt	400 / 630	N.A. / N.A.
½" lag bolt	475 / 750	400 / 575*

*This factored resistance is with a ⅜" gap between the rim board and deck ledger

- Allowable load determined in accordance with AC 124.
- Corrosion-resistant fasteners required for wet-service applications.

LA



When specified on the layout, one of the three bracing options shown must be installed

WEB STIFFENER ATTACHMENT

W	Web Stiffener Size	W	Web Stiffener Size
1½"	½" x 2 5⁄16" minimum	2 5⁄16"	⅞" x 2 5⁄16" minimum
1¾"	⅝" x 2 5⁄16" minimum	2½"	1" x 2 5⁄16" minimum
2 1⁄16"	¾" x 2 5⁄16" minimum	3½"	2x4

W

ALLOWABLE HOLES - TJI® Joists

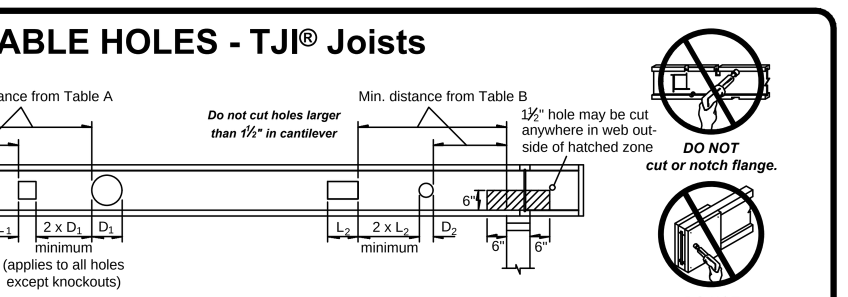


Table A - End Support

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

DEPTH	TJI®	ROUND HOLE SIZE 2"	3"	4"	5"	6½"	7"	8⅞"	11"	13"	SQUARE OR RECTANGULAR HOLE SIZE 2"	3"	4"	5"	6½"	7"	8⅞"	11"	13"
9½"	110	1'-0"	1'-6"	2'-0"	2'-6"	5'-0"					1'-0"	1'-6"	2'-6"	3'-6"	4'-6"				
	210	1'-0"	1'-6"	2'-0"	3'-0"	5'-0"					1'-0"	2'-0"	2'-6"	4'-0"	5'-0"				
	230	1'-0"	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'-6"				
11⅞"	110	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	2'-6"	5'-0"			1'-0"	1'-0"	1'-6"	2'-6"	4'-6"	4'-6"	6'-0"		
	210	1'-0"	1'-0"	1'-0"	1'-6"	2'-6"	3'-0"	5'-6"			1'-0"	1'-0"	2'-0"	3'-0"	5'-0"	5'-6"	6'-6"		
	230	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	3'-6"	6'-0"			1'-0"	1'-0"	2'-0"	3'-0"	5'-6"	5'-6"	7'-0"		
	360	1'-0"	1'-0"	1'-6"	2'-6"	4'-6"	5'-0"	7'-0"			1'-0"	1'-0"	2'-6"	4'-0"	6'-6"	6'-6"	7'-6"		
	560	1'-0"	1'-0"	1'-6"	3'-0"	5'-0"	5'-6"	8'-0"			1'-0"	2'-0"	3'-6"	5'-0"	7'-0"	7'-6"	8'-0"		
14"	110	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	5'-0"		1'-0"	1'-0"	1'-0"	1'-6"	3'-6"	4'-0"	6'-0"	8'-0"	
	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	6'-0"		1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	4'-6"	6'-6"	8'-6"	
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	3'-6"	6'-6"		1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	5'-0"	7'-0"	9'-0"	
	360	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-0"	5'-6"	8'-0"		1'-0"	1'-0"	1'-0"	2'-6"	5'-6"	6'-6"	8'-0"	9'-6"	
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-0"	6'-0"	9'-0"		1'-0"	1'-0"	1'-6"	3'-6"	6'-6"	7'-0"	9'-0"	10'-0"	
16"	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	3'-6"	6'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-6"	6'-6"	8'-0"	10'-6"
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	4'-0"	6'-6"	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	3'-6"	7'-0"	9'-0"	11'-0"
	360	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	6'-0"	9'-0"	1'-0"	1'-0"	1'-0"	1'-0"	4'-0"	5'-0"	9'-0"	10'-0"	11'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	6'-6"	10'-0"	1'-0"	1'-0"	1'-0"	1'-6"	5'-0"	6'-0"	10'-0"	11'-0"	12'-0"

DEPTH	TJI®	4"	5"	6"	7"	8"	10"	12"	15"	17"	4"	5"	6"	7"	8"	10"	12"	15"	17"
18"	360	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	5'-0"	10'-0"		1'-0"	1'-0"	1'-0"	3'-0"	5'-0"	10'-0"	11'-0"	13'-6"	
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	5'-0"	11'-0"		1'-0"	1'-0"	1'-6"	4'-0"	6'-6"	11'-0"	12'-0"	14'-6"	
20"	360	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	7'-0"	10'-6"	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	8'-0"	11'-6"	14'-0"	15'-6"
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	7'-0"	11'-0"	1'-0"	1'-0"	1'-0"	1'-0"	4'-0"	9'-6"	12'-6'	14'-6"	15'-6"

Table B - Intermediate or Cantilever Support

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

DEPTH	TJI®	ROUND HOLE SIZE 2"	3"	4"	5"	6½"	7"	8⅞"	11"	13"	SQUARE OR RECTANGULAR HOLE SIZE 2"	3"	4"	5"	6½"	7"	8⅞"	11"	13"
9½"	110	1'-6"	2'-6"	3'-0"	4'-0"	7'-6"					1'-6"	2'-6"	3'-6"	5'-6"	6'-6"				
	210	2'-0"	2'-6"	3'-6"	4'-6"	7'-6"					2'-0"	3'-0"	4'-0"	6'-0"	7'-0"				
	230	2'-6"	3'-0"	4'-0"	5'-0"	8'-0"					2'-6"	3'-0"	4'-6"	6'-6"	7'-6"				
	360	3'-0"	4'-0"	5'-6"	6'-6"	9'-0"					3'-0"	4'-6"	5'-6"	7'-6"	8'-0"				
11⅞"	110	1'-0"	1'-0"	1'-6"	2'-6"	4'-0"	4'-0"	8'-0"			1'-0"	1'-6"	2'-6"	4'-0"	6'-6"	7'-0"	9'-0"		
	210	1'-0"	1'-0"	2'-0"	3'-0"	4'-6"	5'-0"	9'-0"			1'-0"	2'-0"	3'-0"	4'-6"	7'-6"	8'-0"	10'-0"		
	230	1'-0"	2'-0"	2'-6"	3'-6"	5'-0"	5'-6"	9'-6"			1'-0"	2'-6"	3'-6"	5'-0"	8'-0"	8'-6"	10'-0"		
	360	2'-0"	3'-0"	4'-0"	5'-6"	7'-0"	7'-6"	11'-0"			2'-0"	3'-6"	5'-0"	7'-0"	9'-6"	9'-6"	11'-0"		
	560	1'-6"	3'-0"	4'-6"	5'-6"	8'-0"	8'-6"	12'-0"			3'-0"	4'-6"	6'-0"	8'-0"	10'-6"	11'-0"	12'-0"		
14"	110	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	2'-6"	4'-6"	8'-0"		1'-0"	1'-0"	1'-0"	2'-6"	5'-0"	6'-0"	9'-0"	12'-0"	
	210	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-0"	5'-0"	9'-0"		1'-0"	1'-0"	2'-0"	3'-6"	6'-0"	7'-0"	10'-0"	12'-6"	
	230	1'-0"	1'-0"	1'-0"	2'-0"	3'-0"	3'-6"	5'-6"	10'-0"		1'-0"	1'-0"	2'-6"	4'-0"	6'-0"	7'-6"	10'-6"	13'-0"	
	360	1'-0"	1'-0"	2'-0"	3'-6"	5'-6"	6'-0"	8'-6"	12'-6"		1'-0"	2'-0"	4'-0"	5'-6"	9'-0"	10'-0"	12'-0"	14'-0"	
	560	1'-0"	1'-0"	1'-6"	3'-6"	5'-6"	6'-6"	9'-6"	13'-6"		1'-0"	3'-0"	5'-0"	7'-0"	10'-0"	11'-0"	13'-6"	15'-0"	
16"	210	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	5'-6"	9'-6"	1'-0"	1'-0"	1'-0"	2'-0"	4'-6"	5'-6"	9'-6"	12'-6"	15'-6"
	230	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	4'-0"	6'-6"	10'-6"	1'-0"	1'-0"	1'-0"	2'-6"	5'-0"	6'-0"	10'-6"	13'-0"	16'-0"
	360	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	4'-0"	6'-6"	10'-0"	13'-6"	1'-0"	1'-0"	2'-0"	4'-0"	7'-6"	8'-6"	13'-0"	14'-6"	17'-0"
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-6"	3'-6"	7'-0"	11'-0"	15'-0"	1'-0"	1'-0"	3'-6"	5'-6"	9'-0"	10'-0"	14'-6"	16'-0"	18'-0"

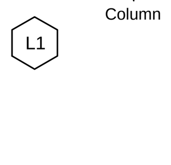
DEPTH	TJI®	4"	5"	6"	7"	8"	10"	12"	15"	17"	4"	5"	6"	7"	8"	10"	12"	15"	17"
18"	360	1'-0"	1'-0"	1'-0"	1'-6"	3'-0"	6'-0"	9'-0"	15'-0"		1'-0"	1'-6"	4'-0"	6'-6"	9'-0"	14'-6"	16'-6"	19'-6"	
	560	1'-0"	1'-0"	1'-0"	1'-0"	2'-0"	6'-0"	10'-0"	16'-6"		1'-0"	3'-6"	6'-0"	8'-6"	11'-6"	16'-6"	18'-0"	20'-0"	
20"	360	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	3'-0"	6'-0"	11'-0"	15'-6"	1'-0"	1'-0"	1'-6"	4'-0"	7'-0"	12'-6"	16'-6"	19'-0"	21'-0"
	560	1'-0"	1'-0"	1'-0"	1'-0"	1'-0"	1'-6"	5'-6"	12'-0"	16'-0"	1'-0"	1'-0"	3'-0"	6'-0"	8'-6"	14'-0"	17'-6'	19'-6"	20'-6"

Rectangular holes based on measurement of longest side.

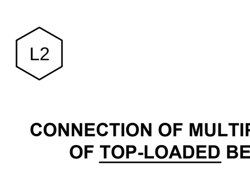
- Holes may be located vertically anywhere within the web. Leave ⅛" of web (minimum) at top and bottom of hole.
- Knockouts are located in web at approximately 12" on-center; they do not affect hole placement.
- For simple span (5' minimum), uniformly loaded joists used in residential applications, one maximum size round hole may be located at the center of the joist span **provided no other holes occur in the joist.**
- Distances are based on the maximum uniform loads shown in current iLevel product guides. For other load conditions or hole configurations contact your iLevel representative.

BEAM and COLUMN DETAILS

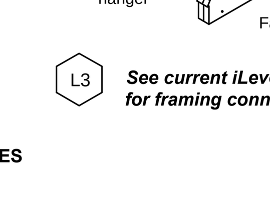
BEARING AT WALL



BEARING FOR DOOR OR WINDOW HEADER

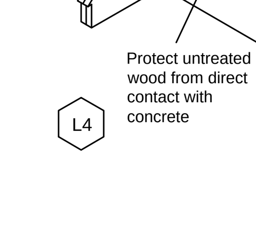


BEAM TO BEAM CONNECTION



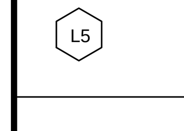
See current iLevel literature for framing connectors

BEARING AT CONCRETE WALL



BEARING AT COLUMN

Verify column capacity and beam bearing length. See current iLevel literature.



CONNECTION OF MULTIPLE PIECES OF TOP-LOADED BEAMS (1)

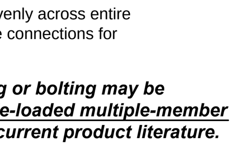
1¾" Width Pieces:

- Minimum of 3 rows 10d (3" x 0.128") nails at 12" o.c.
- Minimum of 4 rows 10d (3" x 0.128") nails at 12" o.c. for 14" and deeper beams
- If using 12d (3¼") or larger nails, the number of nailing rows may be reduced by one.

3½" Width Pieces:

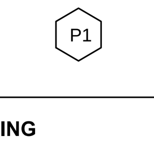
- Minimum of 2 rows ½" bolts at 24" o.c. staggered

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

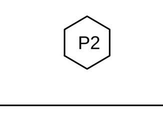


Additional nailing or bolting may be required with side-loaded multiple-member beams. Refer to current product literature.

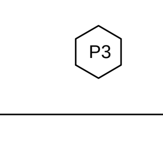
BEAM ON COLUMN CAP



COLUMN BASE

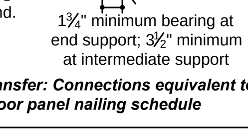


ELEVATED COLUMN BASE



TJI® JOIST NAILING REQUIREMENTS at BEARING

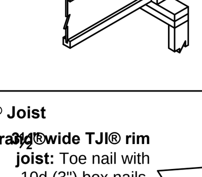
TJI® Joist to Bearing Plate



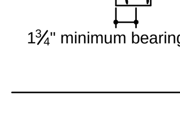
Shear transfer: Connections equivalent to floor panel nailing schedule

Squash Blocks to TJI® Joist

(Load bearing wall above)



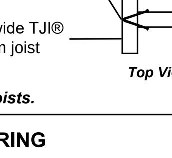
Rim to TJI® Joist



1⅛" iLevel™ or 1¼" TimberStrand® LSL rim board or 1¾" wide TJI® rim joist: One 10d (3") box nail into each flange

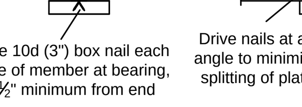
2 1⁄16" - 2 5⁄16" wide TJI® rim joist: One 16d (3½") box nail into each flange

3½" wide TJI® rim joist: Toe nail with 10d (3") box nails, one each side of TJI® joist flange



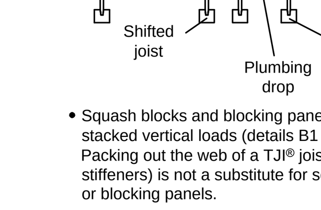
Locate rim board joint between joists.

BEAM ATTACHMENT at BEARING



INSTALLATION TIPS

- Subfloor adhesive will improve floor performance, but may not be required.
- 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).



- 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.

FASTENING of FLOOR PANELS

Nail Size	Closest On-Center Spacing per Row: TJI® 110 & 210	TJI® 230, 360, 560	Rim Board 1⅛"	Rim Board 1¼"	TimberStrand® LSL 1½" or wider	Microllam® LVL	Parallam® PSL
8d (2½") box	2½"	2"	6"	4"			
8d (2½") common	3½"	2"	6"	4"	3"	3"	3"
10d (3"), 12d (3¼") box	3"	2"	6"	4"			
10d (3"), 12d (3¼") common	4½"	3"	6"	4"	4"	4"	4"
16d (3½") common	N.A.	4"	16"	6"(1)	6"(1)	8"	6"

(1) Can be reduced to 4" on-center with maximum nail penetration of 1⅜" into the narrow edge.

- Recommended nailing is 12" on-center in field and 6" on-center along panel edge. Nailing requirements on engineered drawings supersede recommendations listed above.
- Nailing rows must be offset at least ½" and staggered.
- 14 ga. staples may be substituted for 8d (2½") nails if minimum penetration of 1" into the TJI® joist or rim board is achieved.

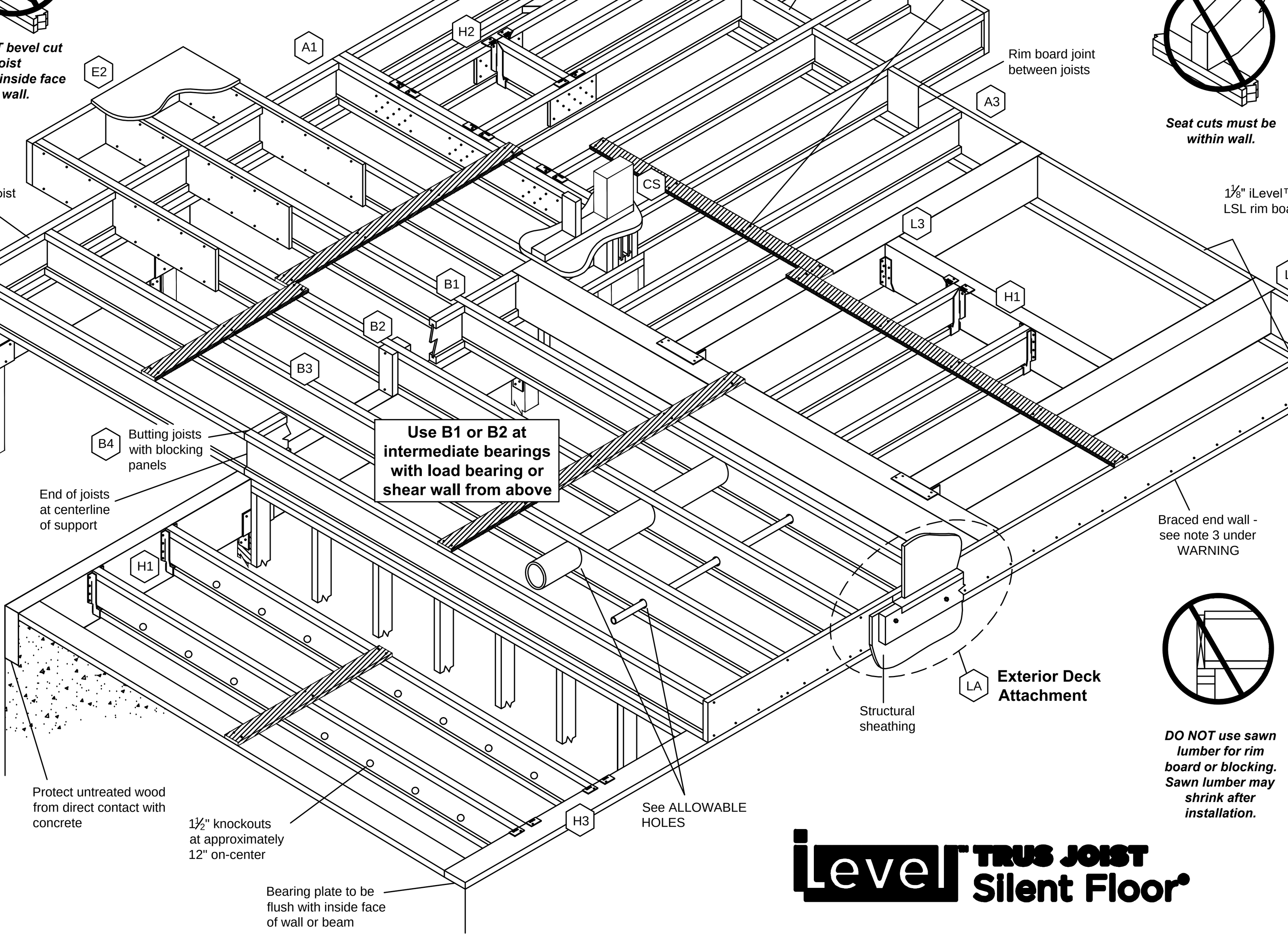
Farthest On-Center Spacing per Row

Maximum spacing of nails is:
- For joist widths 1¾" or less: 18" on-center
- For joist widths greater than 1¾": 24" on-center

FILLER and BACKER BLOCK SIZES

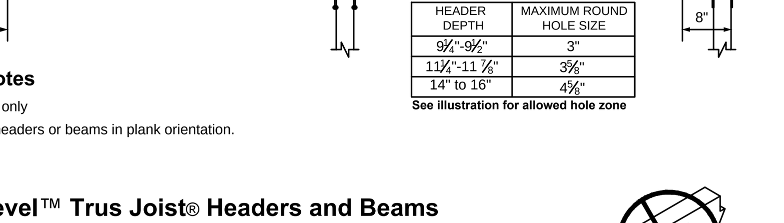
TJI® Joists	110		210		230 or 360			560			100C or 300C		400C	
Depth	9½" or 11⅞"	14"	9½" or 11⅞"	14" or 16"	9½" or 11⅞"	14" or 16"	18" or 20"	11⅞"	14" or 16"	18" or 20"	9½" or 11⅞"	14" or 16"	9½" or 11⅞"	14" or 16"
Filler Block* (Detail H2)	2x6	2x8	2x6 + ⅜" sheathing	2x8 + ⅜" sheathing	2x6 + ½" sheathing	2x8 + ½" sheathing	2x12 + ½" sheathing	Two 2x6	Two 2x8	Two 2x12	2x6 + ⅝" sheathing	2x8 + ⅝" sheathing	(2)2x6	(2) 2x8
Cantilever Filler (Detail E4)	2x6 4'-0" long	2x10 6'-0" long	2x6 + ⅜" sheathing 4'-0" long	2x10 + ⅜" sheathing 6'-0" long	2x6 + ½" sheathing 4'-0" long	2x10 + ½" sheathing 6'-0" long	Not applicable	Not applicable			2x6 + ⅝" sheathing 4'-0" long	2x10 + ⅝" sheathing 6'-0" long	N.A.	N.A.
Backer Block* (Detail F1 or H2)	⅝" or ¾"		¾" or ⅞"		1" Net			2x6	2x8	2x12	1" Net		2x6	2x8

** If necessary, increase filler and backer block height for face mount hangers. Maintain ⅛" gap at top of joist; see detail W. Filler and backer block lengths should accommodate required nailing without splitting (12" minimum for backer blocks and 24" minimum for filler blocks).*



ALLOWABLE HOLES - Headers and Beams

1.55E TimberStrand® LSL Headers and Beams



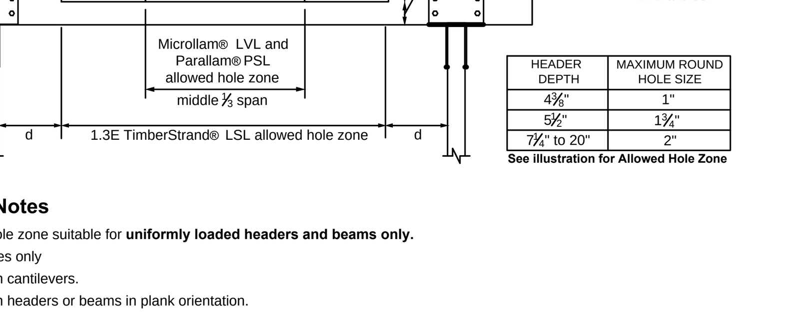
HEADER DEPTH	MAXIMUM ROUND HOLE SIZE
9¼"-9½"	3"
11¼"-11 ⅞"	3⅝"
14" to 16"	4⅝"

See illustration for allowed hole zone

General Notes

- Round holes only
- No holes in headers or beams in plank orientation.

Other iLevel™ Trus Joist® Headers and Beams



HEADER DEPTH	MAXIMUM ROUND HOLE SIZE
4⅜"	1"
5½"	1¾"
7¼" to 20"	2"

See illustration for Allowed Hole Zone

General Notes

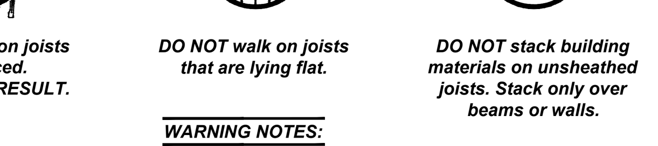
- Allowed hole zone suitable for **uniformly loaded headers and beams only.**
- Round holes only
- No holes in cantilevers.
- No holes in headers or beams in plank orientation.

WARNING

Joists are unstable until braced laterally

Bracing Includes:

- Blocking
- Hangers
- Sheathing
- Rim Board
- Strut Lines
- Rim Joist



WARNING NOTES:

Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

1. All blocking, hangers, rim boards and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
2. Establish a permanent deck (sheathing), nailed to the first 4 feet of joists at the end of the bay or braced end wall.
3. Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area and to each joist.
4. Sheathing must be properly nailed to each TJI® joist before additional loads can be placed on the system.
5. Ends of cantilevers require safety bracing on both the top and bottom flanges.
6. TJI® joist flanges must remain straight within 1/2" from true alignment.

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December 2006 Reorder TJ-4015

This sheet is intended as a supplement to the iLevel™ Framer's Pocket Guide, which should be referenced for additional information.

BUILDING DEPARTMENT INFO

	EXISTING	PROPOSED ADDITIONS
USE GROUP	R-5	R-5
CONSTRUCTION CLASS	5B	5B
SQUARE FOOTAGE	SEE COVER SHEET	
VOLUME	SEE COVER SHEET	
OCCUPANCY LOAD		
AREA OF LARGEST FLOOR (SF).	SEE COVER SHEET	

DESIGN LOAD TABLE:

FIRST FLOOR:	50 PSF LIVE	10 PSF DEAD
SECOND FLOOR:	40 PSF LIVE	10 PSF DEAD
ROOF:	30 PSF LIVE	10 PSF DEAD
WIND:	100 MPH (ASSUMED)	

ZONING DATA:

MUNICIPALITY	MARLBORO, NEW JERSEY
LOT NO	78.01
BLOCK NO.	153
ZONE	R-80

SCOPE OF WORK:

ARCHITECTURAL PROPOSAL FOR:

NEW 2 STORY SINGLE FAMILY HOME.

ROBERT A. HERNANDEZ ARCHITECT LLC
267 AMBOY AVENUE SUITE 30 METUCHEN, NJ 08840
TEL. (732)372-7955 FAX. (208)730-6888
EMAIL: NJARCHITECTNJ@GMAIL.COM

CLIENT NAME:
ESK BUILDER INC.
CLIENT ADDRESS:
136 BEACON HILL ROAD MARLBORO, NEW JERSEY LOT: 78.01 BLOCK: 153
CLIENT CONTACT INFORMATION:
TELEPHONE: (732) 275-7789 MICHAEL KONTOS

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	REVISION #	REVISION DATE
REV-2	REVISION 2	MARCH 13, 2018
	REVISION 1	FEBRUARY 2, 2018

DWGS ON THIS SHEET:

ROBERT A. HERNANDEZ ARCHITECT

DATE: JANUARY 9, 2018

SCALE: AS SHOWN

DRAWN BY R.A.H.

CHECKED BY R.A.H.

PROJECT NUMBER 16-049

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PAGE: D-1