

I-JOIST AND RIM BOARD CONNECTIONS FOR CONVENTIONAL CONSTRUCTION

The fastener spacings shown below are based on the code-required connections for conventional construction (most one- and two-family dwellings). For some custom homes, commercial, and multiple family applications, the recommendations given below may not be adequate. When this is the case, please refer to APA Data File, *Shear Transfer at Engineered Wood Floors*, (EWS Y250). All nails are common unless otherwise noted. 10d-box nails may be substituted for the 8d common nails indicated below.

General Framing Connections

Floor sheathing to I-joists (Face-nails)

Face-nail through floor sheathing in accordance with the code. For lumber flanges, 8d-box, 10d-box, 12d-box, 8d-common, 10d-common, and 12d-common nails may be spaced at a minimum of 3 inches on center for engineered solutions. For LVL flanges, 8d-box, 10d-box, and 12d-box nails may be spaced at a minimum of 3 inches on center, while 10d-common and 12d-common nails may be spaced at a minimum of 6 inches on center. 8d-common nails may be spaced at a minimum of 3 inches on center providing the LVL flange dimension is at least 1-3/4 x 1-5/16 inches.

Floor sheathing to rim board (edge nails)

Face-nail through floor sheathing in accordance with the code. 8d- and 10d-box or common nails may be spaced at a minimum of 6 inches on center.

Wall sheathing to rim board (Face-nails)

Face-nail into wide face of rim in accordance with the code. 8d-, 10d-, 12d-, 16d-box or common nails may be spaced at a minimum of 2 inches on center (stagger nails for spacing 3 inches on center or less by at least 1/2 inch).

I-joist to top or sill plate Details ①, ② and ③

Face-nail one 8d on each side of web through I-joist flange at all bearing points.

Rim board to I-joist Detail ①

Face-nail one 8dbox nail into top and bottom flange through rim board.

Rim board to top or sill plate Detail ①

Toenail 8d nails at 6 inches on center to top or sill plate through rim board.

Rim joist (I-joist) to floor joist (I-joist) Detail ②

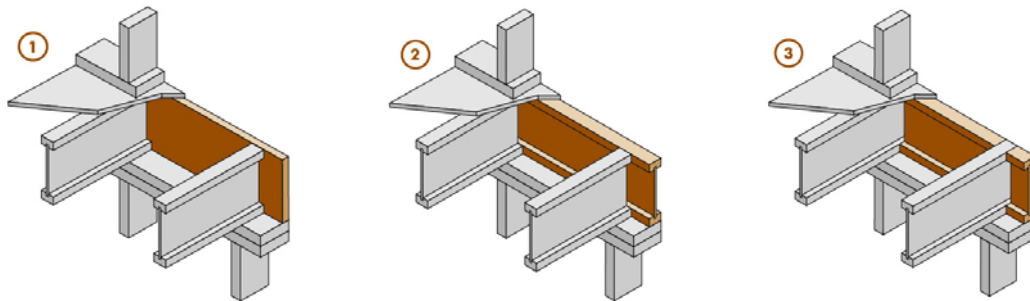
Face-nail one 8d nail each at top and bottom flange of floor I-joist through rim joist flange, or toenail if necessary to achieve 1 inch penetration into each floor joist (I-joist) flange.

Rim joist (I-joist) to top of sill plate Detail ②

Face-nail 8d nails through rim joist flange. Space 6 inches on center, or less when required for lateral shear transfer.

I-joist blocking panels (at rim) to top or sill plate Detail ③

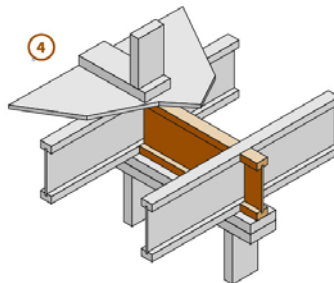
Face-nail 8d nails through I-joist blocking panel flange. Space 6 inches on center, or less when required for lateral shear transfer.

I-joist to interior support (top or sill plate) Detail ④

Face-nail one 8d nail on each side of web through I-joist flange at the bearing.

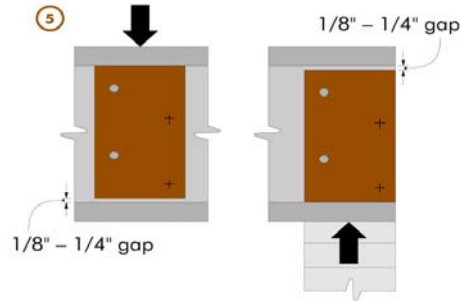
Interior I-joist blocking panel to interior support (top sill plate) Detail ④

Face-nail 8d nails at 6 inches on center through I-joist blocking panel flange.

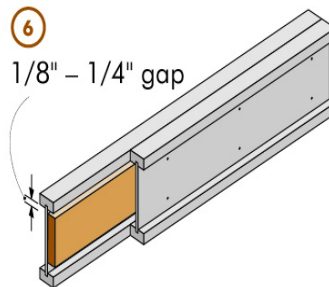


Web stiffener to I-joist (when required) at bearing or concentrating load Detail ⑤

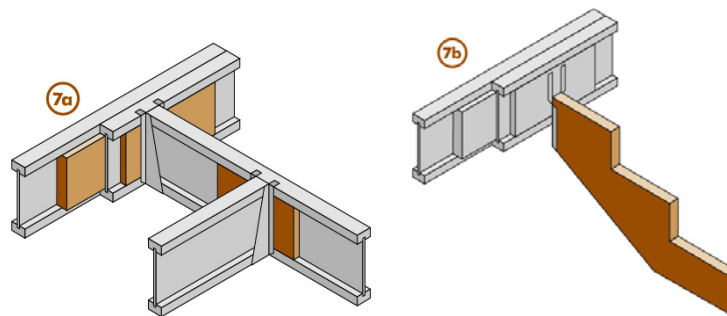
Face-nail four 8d nails through web stiffener (two from each side), except 10d-box nails for I-joists with 3-1/2 inch flange width. Offset nails from each side of I-joist, clinch nails when possible.

Filler block for double I-joist Detail ⑥

Face-nail two rows of 10d nails at 12 inches on center each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite face by 6 inches. Clinch if possible (four nails per foot required, except two nails per foot required if clinched).

Backer block at header or stair stringer Detail ⑦

Face-nail through backer block. Use twelve 10d nails, clinched where possible. If double joist, first drive three additional 10d nails through webs and filler block.



Cantilever Connections

I-joist to interior support (top or sill plate) Detail ④

Face-nail one 8d nail on each side of web through I-joist flange at the bearing.

I-joist blocking panels to top or sill plate Detail ④

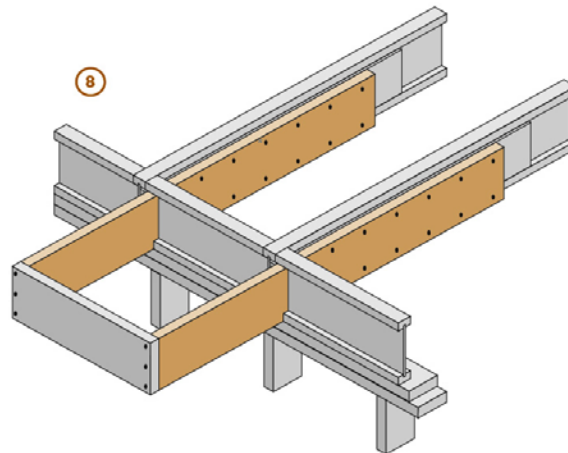
Face-nail 8d nails at 6 inches on center through I-joist blocking panel flange.

Backer block to I-joist for lumber cantilever (non-load bearing) Detail ⑧

Face-nail two rows 10d nails at 6 inches on center through backer block. Clinch.
(These nails are not required if lumber cantilever nails illustrated below are of sufficient length to permit clinching.)

Lumber cantilever (non-load bearing) to I-joist and backer block Detail ⑧

Face-nail two rows 10d nails at 6 inches on center through lumber cantilever. Clinch.
(These nails may count as backer-block nailing if length is sufficient for clinching.)

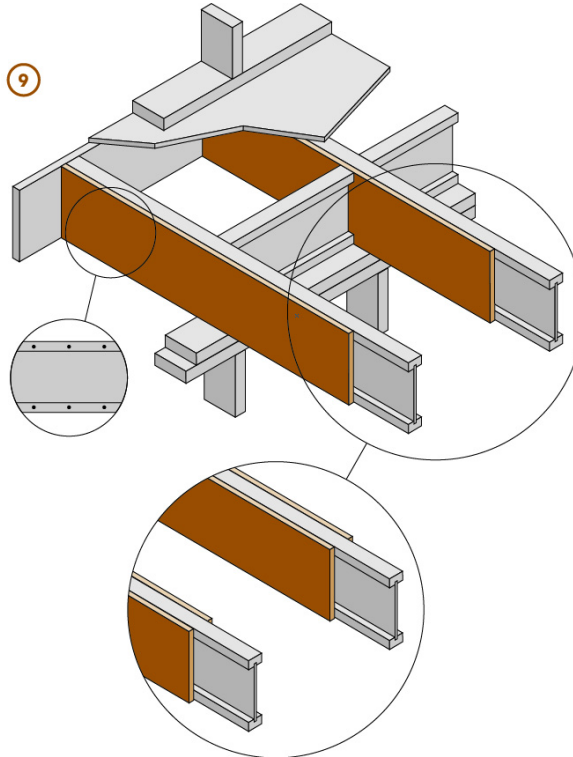


Sheathing cantilever reinforcement (load bearing) on side to I-joist Detail ⑨

Face-nail 8d nails at 6 inches on center through sheathing reinforcement to top and bottom flange.

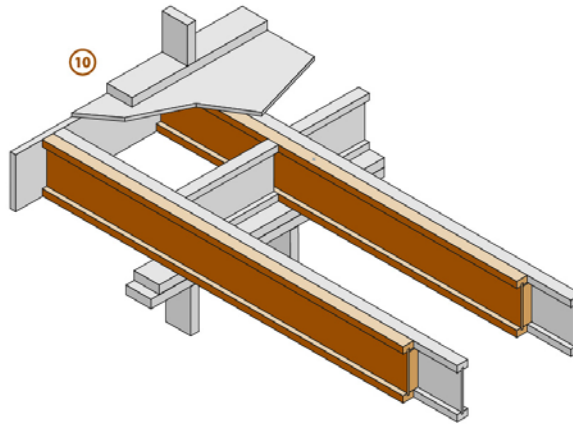
Sheathing cantilever reinforcement (load bearing) two sides to I-joist Detail ⑨

Face-nail 8d nails at 6 inches on center through sheathing reinforcement to top and bottom flange. Offset nails from opposite sides by 3 inches.
(Not permitted with LVL I-joist flanges.)



Filler block for I-joist cantilever reinforcement (load bearing) Detail ⑩

Face-nail two rows 10d nails at 12 inches on center each side through one I-joist web and filler block to other I-joist web. If double panel reinforcing is used, offset nails from opposite face by 6 inches. Clinch if possible (four nails per foot required, except two nails per foot required if clichéd). If double I-joists are used and flange widths are greater than 3 inches, add one additional row of 10d nails at 6 inches on center along centerline of reinforcing I-joist from each side, clinch if possible.

**Rim Board or wood structural panel closure to cantilevered I-joist** Details ⑨ and ⑩

Face-nail one 8d nail each through closure panel to top and bottom flange of each I-joist.

Technical Services Division

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