WARNING: JOISTS ARE UNSTABLE UNTIL BRACED LATERALLY

BRACING INCLUDES: Blocking, Hangers, Rim Board, Sheathing, Rim Joist, Strut Lines

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

1. Properly install all blocking, hangers, rim boards, and rim joists at TJI® joist end supports.
2. Establish a permanent deck (sheathing), fastened 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 completely attached 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. The flanges must remain straight within ½” from true alignment.

This guide is intended for the products shown in dry-use conditions.

La Sécurité Avant Tout

AVERTISSEMENT
Lire Attentivement

- Les solives non contreventées latéralement sont instables. Voir le guide d’installation avant la pose des solives TJI®.
- Ne pas circuler sur les solives TJI® avant qu’elles ne soient adéquatement contreventées. Risque de blessure.

La Seguridad Ante Todo

ADVERTENCIA
Por Favor Lea Cuidadosamente

- Las viguetas son inestables hasta que sean reforzadas lateralmente. Vea la guía de instalaciones antes de instalar las viguetas TJI®.
- No camine sobre las viguetas hasta que sean apuntaladas.
- No ponga materiales de construcción sobre las viguetas TJI® antes de instalar el triplay. Ponga materials únicamente sobre vigas o muros.
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PRODUCT IDENTIFICATION

TJI® 110 joists
TJI® 210 joists
TJI® 230 joists
TJI® 360 joists
TJI® 560 joists

ALLOWABLE HOLES—TJI® JOISTS

DO NOT cut holes in cantilever reinforcement.

DO NOT cut or notch flange.

Min. distance from Table A

No field cut holes in hatched zone

Min. distance from Table B

Closely grouped round holes are permitted if the group perimeter meets requirements for round or square holes

1½" hole may be cut anywhere in web outside of hatched zone

Do not cut holes larger than 1½" in cantilever

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 (www.osha.gov) in the U.S. or provincial regulations (www.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.
<table>
<thead>
<tr>
<th>Joist Depth</th>
<th>TJI® Round Hole Size</th>
<th>Square or Rectangular Hole Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2&quot; 3&quot; 4&quot; 61/2&quot; 81/4&quot; 11&quot; 13&quot;</td>
<td>2&quot; 3&quot; 4&quot; 61/2&quot; 81/4&quot; 11&quot; 13&quot;</td>
</tr>
<tr>
<td>9½&quot;</td>
<td>110 1'-0&quot; 1'-6&quot; 2'-0&quot; 3'-0&quot; 5'-0&quot;</td>
<td>1'-0&quot; 1'-6&quot; 2'-6&quot; 4'-6&quot;</td>
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<tr>
<td></td>
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<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
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<tr>
<td></td>
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<td>1'-0&quot; 2'-0&quot; 2'-6&quot; 5'-0&quot;</td>
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<tr>
<td></td>
<td>360 1'-6&quot; 2'-0&quot; 3'-0&quot; 6'-0&quot;</td>
<td>1'-6&quot; 2'-6&quot; 3'-6&quot; 5'-6&quot;</td>
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<tr>
<td></td>
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<tr>
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<tr>
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</tr>
<tr>
<td>14&quot;</td>
<td>110 1'-0&quot; 1'-6&quot; 2'-6&quot; 5'-6&quot;</td>
<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
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<tr>
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<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
</tr>
<tr>
<td></td>
<td>230 1'-6&quot; 2'-0&quot; 2'-6&quot; 3'-0&quot; 5'-0&quot;</td>
<td>1'-0&quot; 2'-0&quot; 2'-6&quot; 5'-0&quot;</td>
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<tr>
<td></td>
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<td>1'-6&quot; 2'-6&quot; 3'-6&quot; 5'-6&quot;</td>
</tr>
<tr>
<td></td>
<td>560 1'-6&quot; 2'-6&quot; 3'-0&quot; 7'-0&quot;</td>
<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>110 1'-0&quot; 1'-6&quot; 2'-6&quot; 5'-6&quot;</td>
<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
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<td></td>
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<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
</tr>
<tr>
<td></td>
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<td>1'-0&quot; 2'-0&quot; 2'-6&quot; 5'-0&quot;</td>
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<tr>
<td></td>
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<td>1'-6&quot; 2'-6&quot; 3'-6&quot; 5'-6&quot;</td>
</tr>
<tr>
<td></td>
<td>560 1'-6&quot; 2'-6&quot; 3'-0&quot; 7'-0&quot;</td>
<td>2'-0&quot; 3'-0&quot; 4'-0&quot; 6'-0&quot;</td>
</tr>
</tbody>
</table>

- Leave 1/8" of web (minimum) at top and bottom of hole. **DO NOT cut joist flanges.**
- Tables are based on uniform load tables in current design literature.
- 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 that no other holes occur in the joist.
ALLOWABLE HOLES—BEAMS and STUDS

1.55E TimberStrand® LSL Headers and Beams

2 x diameter of the largest hole (minimum)

Allowed hole zone

½ depth

GENERAL NOTES
- 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.

Other Trus Joist® Headers and Beams

1.3E TimberStrand® LSL hole zone

Microllam® LVL and Parallam® PSL hole zone

2 x diameter of the largest hole (minimum)

½ depth

GENERAL NOTES
- Allowed hole zone suitable for headers and beams with uniform loads only.
- Round holes only.
- No holes in cantilevers.

TimberStrand® LSL Wall Studs

One notch may be cut anywhere except the middle ⅓ of the length of the stud or column. Holes may be drilled anywhere along the length of the stud or column but must be at least ⅜" from the edge.

5/8" minimum edge distance

Maximum diameter: 1⅝" for 3½" thick walls (1⅝" in Canada); 2⅜" for 5½"—11⅞" thick walls (1⅞" in Canada)

Maximum notch:
- ⅛" for 3½" thick walls
- 1⅛" for 5½"—11⅞" thick walls

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

Microllam® LVL and Parallam® PSL allowed hole zone

Allowed hole zone

Page 2

1.55E TimberStrand® LSL

<table>
<thead>
<tr>
<th>Header or Beam Depth</th>
<th>Maximum Round Hole Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>9¼&quot;—9½&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>11¼&quot;—11⅛&quot;</td>
<td>3¾&quot;</td>
</tr>
<tr>
<td>14&quot;—16&quot;</td>
<td>4¾&quot;</td>
</tr>
</tbody>
</table>

- See illustration for allowed hole zone.

Other Trus Joist® Beams

<table>
<thead>
<tr>
<th>Header or Beam Depth</th>
<th>Maximum Round Hole Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>4¾&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>5½&quot;</td>
<td>1¼&quot;</td>
</tr>
<tr>
<td>7¼&quot;—20&quot;</td>
<td>2&quot;</td>
</tr>
</tbody>
</table>

- See illustration for allowed hole zone.

DO NOT cut, notch, or drill holes in headers or beams except as indicated in the illustrations and tables.
**TJI® JOIST NAILING REQUIREMENTS AT BEARING**

**TJI® Joist to Bearing Plate**

- **1 1/8" TJ® Rim Board or 1¼" TimberStrand® LSL**
  - 1 3/4" minimum end bearing for single-family applications

- **1" TJ® Rim Board, 1¼" TimberStrand® LSL, or TJI® 110 rim joist:**
  - One 8d (0.113" x 2½") nail each side. Drive nails at an angle at least 1½" from end.

- **TJI® 210, 230, and 360 rim joist:**
  - One 16d (0.135" x 3½") nail into each flange

- **One 10d (0.128" x 3") nail** into each flange

- **3½" minimum intermediate bearing; 5¼" may be required for maximum capacity**

- Increased bearing capacities may be achieved with increased bearing lengths. See plans for required bearing lengths.

*Shear transfer nailing: Use connections equivalent to floor panel nailing schedule. See page 4.*

**Rim to TJI® Joist**

- **TJI® 560 rim joist:**
  - Toenail with 10d (0.128" x 3") nails, one each side of TJI® joist flange

- **TJI® 560 floor joist**

*Locate rim board joint between joists*

**Squash Blocks to TJI® Joist**

- **(Load bearing wall above)**
  - One 10d (0.128" x 3") nail into each flange

*Also see detail B2, page 5*

**INSTALLATION RECOMMENDATIONS**

**RECOMMENDED COMPONENTS**

- Weyerhaeuser Edge Gold™ floor panels
- TJI® joists
- 1 1/8" TJ® Rim Board or 1¼" TimberStrand® LSL

**RECOMMENDED ADHESIVES**

- 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.

Nail panel to joist at 12" on-center in field and 6" on-center along panel edges. Apply fasteners 3/8" from panel edges.

- For 3/4" panels, use 8d (0.131" x 2½") or 6d (0.120" x 2") deformed-shank nails or other code-approved fasteners.
- For 7/8" panels, use 8d (0.131" x 2½") or 8d (0.120" x 2½") deformed-shank nails or other code-approved fasteners.
- Fully nail floor panel within 10 minutes of applying adhesive (or sooner if required by adhesive manufacturer).
- Screws may be substituted for the nails noted above if the screws have equivalent lateral load capacity.
**TJI® joist floor framing does not require bridging or mid-span blocking**

**DO NOT** use sawn lumber for rim board or blocking as it may shrink after installation. Use only engineered lumber.

**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 at right).

**WARNING**

Joists are unstable until laterally braced. See Warning on cover.

**Additional notes**

- **1½" TJ® Rim Board or 1¼" TimberStrand® LSL**
- **Safety bracing (1x4 minimum) at 8' on-center (6' on-center for TJI® 110 joists) and extended to a braced end wall. Fasten at each joist with two 8d (0.113" x 2½") nails minimum (see Warning on cover).**
- **Bearing plate to be flush with inside face of wall or beam**
- **1½" knockouts at approximately 12" on-center**
- **Structural sheathing**
- **End of joists at centerline of support**
- **Protect untreated wood from direct contact with concrete**
- **Rim board joint between joists**
- **See Filler and Backer Blocks on page 5**
- **See Exterior Deck Attachment on page 4**
- **Plumbing drop**
- **Joist may be shifted up to 3" if floor panel edge is supported and span rating is not exceeded. Do not cut joist flanges.**
- **Additional joist is required if floor panel edge is unsupported or if span rating is exceeded.**
### Guidelines for Closest On-Center Spacing per Row

**Fastening of Floor Panels**

**End Bearings** (see page 4)
- A1 with blocking panels
- A2 with TJI® rim joist
- A3 with rim board

**Intermediate Bearings** (see page 5)
- B1 with blocking panels to support load bearing wall above
- B2 with squash blocks to support load bearing wall above
- B3 without blocking panels or squash blocks (no wall above)

**Cantilever Details** (see page 5)
- E1 no reinforcement
- E2 ¾” reinforcement on one side

**Cantilevers Less Than 5”** (see page 5)
- E3 ¾” reinforcement both sides
- E4 joist reinforcement
- E5 ¾” reinforcement on one side, with vertical blocking
- E6 ¾” reinforcement both sides, with vertical blocking
- E7 ¾” reinforcement on one side, with horizontal blocking
- E8 ¾” reinforcement on both sides, with horizontal blocking
- E9 horizontal blocking, no reinforcement

*Load bearing wall must stack over wall below. Blocking panels may be required at braced/shear walls above or below.

**Javelin® Software Framing Plans**

Web stiffeners required on each side of joist at bearing. Refer to your Javelin® framing plan.

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

---

### Detail Schedule

<table>
<thead>
<tr>
<th>Nail Size</th>
<th>TJI®(1/2)</th>
<th>Rim Board</th>
<th>1 1/2&quot; Timberstrand® LSL</th>
<th>1&quot; Parallam® PSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>8d (0.113&quot; x 2 1/2&quot;), 8d (0.131&quot; x 2 1/2&quot;)</td>
<td>4&quot;</td>
<td>3&quot;</td>
<td>6&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>10d (0.148&quot; x 3&quot;), 12d (0.148&quot; x 3 3/4&quot;)</td>
<td>4&quot;(3)</td>
<td>4&quot;(3)</td>
<td>6&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>16d (0.162&quot; x 3 1/2&quot;)</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>16&quot;(4)</td>
<td>6&quot;(5)</td>
</tr>
</tbody>
</table>

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 1 ½”) 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 1 ½” (to avoid splitting).

5. Can be reduced to 4” on-center if nail penetration into the narrow edge is no more than 1 ¾” (to avoid 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.
- For recommended nailing and adhesives, see INSTALLATION RECOMMENDATIONS on page 2.
- Nailing rows must be offset at least ½” 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.
- Maximum nail spacing for TJI® joists is 18” on-center.
RIM BOARD DETAILS AND INSTALLATION

### Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>A3.1</th>
<th>A3.2</th>
<th>A3.3</th>
<th>A3.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Rim Board Thickness</td>
<td>1½&quot;</td>
<td>1¼&quot;</td>
<td>1¼&quot;</td>
<td>1¼&quot;</td>
</tr>
<tr>
<td>Plate Nail—16d (0.135&quot; x 3½&quot;)</td>
<td>16&quot; o.c.</td>
<td>16&quot; o.c.</td>
<td>16&quot; o.c.</td>
<td>16&quot; o.c.</td>
</tr>
<tr>
<td>Floor Panel Nail—8d (0.131&quot; x 2½&quot;)</td>
<td>6&quot; o.c.</td>
<td>One into each flange</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rim Board to TJI® Joist—10d (0.131&quot; x 3&quot;)</td>
<td>6&quot; o.c.</td>
<td>6&quot; o.c.</td>
<td>4&quot; o.c.</td>
<td>6&quot; o.c.</td>
</tr>
<tr>
<td>TJI® Joist to Plate—8d (0.113&quot; x 2½&quot;)</td>
<td>Two nails driven at an angle into bottom flange, one each side of web at least 1½&quot; from end</td>
<td></td>
<td></td>
<td></td>
</tr>
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### Wall Framing

<table>
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<th>Sheathing</th>
<th>Per code</th>
<th>Per code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot; structural 1</td>
<td>8d (0.131&quot; x 2¼&quot;)</td>
<td>8d (0.131&quot; x 2¼&quot;)</td>
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<tr>
<td>3/8&quot; structural 1 sheathing</td>
<td>at 6&quot; o.c.</td>
<td>at 4&quot; o.c.</td>
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</tbody>
</table>

### Boundary Nailing

| Intermediate Nailing | 8d (0.131" x 2¼") at 12" o.c. |

### Maximum Lateral Load (plf)

<table>
<thead>
<tr>
<th>A3.1</th>
<th>A3.2</th>
<th>A3.3</th>
<th>A3.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>220(5)</td>
<td>300(5)</td>
<td>350(6)</td>
<td>560(6)</td>
</tr>
</tbody>
</table>

(1) All sheathing must be properly blocked and nailed.

(2) Verify the lateral capacity of the wall. Not all types of code-allowed wall construction provide the same lateral resistance. Check with your local building officials or the design professional of record.

(3) Detail A3.3 must be a segmented wall, location of full-height structural sheathing per code.

(4) Sheathing must be continuous over all plate-to-plate and plate-to-rim board interfaces and may butt together at mid-depth of rim board as shown in A3.4. At foundation, fasten the bottom edge of the sheathing to the sill plate.

(5) Maximum lateral load capacities are for seismic design applications. No further increases for duration of load are allowed, except loads may be increased by a factor of 1.4 for wind design applications.

(6) Capacities must not be increased for duration of load.
**FLOOR DETAILS**

**Blocking panel:**
1 1/8" TJ® Rim Board, 1 1/4" TimberStrand LSL, or TJI® joist

Web stiffener required on both sides at A2W ONLY

**A1**
Attach blocking per A3.1 in rim board installation table above

**A2**
Must have 1 3/4" minimum joist bearing at ends. Attach rim joist per A3.1 in rim board installation table above.

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

**Exterior Deck Attachment**
- Structural exterior sheathing
- Flashing
- Treated 2x ledger

**Shimmed Deck Attachment**
- Weather-resistant barrier
- Flashing
- 1 1/2" TJ® Rim Board or 1 1/4" TimberStrand® LSL
- Washers or prefab spacers to allow for drainage. Maximum airspace is 1/2". Add sealant.
- Staggered bolts
- Treated 2x ledger
- Structural exterior sheathing
- Treated sill plate

**LA**
Corrosion-resistant fasteners required for wet-service applications

Maintain 2" distance (minimum) from edge of ledger to edge of fastener. Stagger bolts.
FLOOR DETAILS

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

Blocking panel: 1/4" TIP® Rim Board, 1/4" TimberStrand LSL, or TIP® post

2x4 minimum square blocks

Web stiffener required on both sides at E1W or B2W ONLY.

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

CANTILEVER DETAILS

At PB1, cantilever back span must be permanently braced with either direct-applied ceiling along entire length or permanent bracing at 1/3 points. See detail below for connections.

11/8" TJ® Rim Board or 1/4" TimberStrand® LSL, typical. Nail with 10d (0.131" x 3") nails, one each at top and bottom flange.

12" length of web stiffener required on one side at E5/E7, both sides at E6/E8. Attach to joist flanges with 8d (0.131" x 2½") nail at each corner.

Blocking panel between each joint. Full depth vertical blocking at E5 and E6, horizontal blocking at E7/E8/E9.

Apply subfloor adhesive to all contact surfaces

No load bearing wall above

Nail rim to blocking panel and blocking panel to plate with connections equivalent to floor panel schedule (E7/E8/E9)

E5

PB1

Web stiffener required on both sides at E1W ONLY.

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

FILLER AND BACKER BLOCKS

Filler and Backer Block Sizes

<table>
<thead>
<tr>
<th>Depth</th>
<th>9/16&quot; or 11/16&quot;</th>
<th>3/4&quot; 11/16&quot;</th>
<th>9/16&quot; or 11/16&quot;</th>
<th>3/4&quot; 11/16&quot;</th>
<th>9/16&quot; or 11/16&quot;</th>
<th>3/4&quot; 11/16&quot;</th>
<th>9/16&quot; or 11/16&quot;</th>
<th>3/4&quot; 11/16&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td></td>
<td></td>
<td>2x6</td>
<td>2x8</td>
<td>2x8 + 1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
</tr>
<tr>
<td>210</td>
<td></td>
<td></td>
<td>2x6 + 3/4&quot; sheathing</td>
<td>2x8+1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
<td>2x8+1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
<td>2x8 + 1/2&quot; sheathing</td>
</tr>
<tr>
<td>230 or 360</td>
<td></td>
<td></td>
<td>2x6 + 3/4&quot; 4-0&quot; long</td>
<td>2x8+1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
</tr>
<tr>
<td>560</td>
<td></td>
<td></td>
<td>2x6 + 3/4&quot; 4-0&quot; long</td>
<td>2x8+1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
<td>2x8 + 1/2&quot; 4-0&quot; long</td>
</tr>
</tbody>
</table>

Double TJI® Post Filler Block

- Single-Family Applications: Attach with 10d (0.188" x 3") nails, clinched when possible.
- Multi-Family Applications: Attach with 15d (0.188" x 3") nails, clinched when possible.

B1 SW

B2 SW

B3 SW

B1

B2

B3

B1 SW

B2 SW

B3 SW

B1

B2

B3

B1

B2

B3

Filler block both sides of web with single TIP® post

DOUBLE TJI® POST FILLER BLOCK

- Single-Family Applications: Attach with 10d (0.188" x 3") nails, clinched when possible.
- Multi-Family Applications: Attach with 15d (0.188" x 3") nails, clinched when possible.

HANGER BACKER BLOCK

Install tight to top flange (tight to bottom flange with face mount hangers).

- Single-Family Applications: Attach with 10d (0.188" x 3") nails, clinched when possible.
- Multi-Family Applications: Attach with fifteen 10d (0.188" x 3") nails, clinched when possible.

<table>
<thead>
<tr>
<th>Filler Block</th>
<th>Cantilever Block</th>
<th>Backer Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; or 1/8&quot;</td>
<td>1/4&quot; or 1/8&quot;</td>
<td>1/4&quot; or 1/8&quot;</td>
</tr>
<tr>
<td>3/8&quot; or 1/4&quot;</td>
<td>3/8&quot; or 1/4&quot;</td>
<td>3/8&quot; or 1/4&quot;</td>
</tr>
<tr>
<td>1/2&quot; or 1/4&quot;</td>
<td>1/2&quot; or 1/4&quot;</td>
<td>1/2&quot; or 1/4&quot;</td>
</tr>
<tr>
<td>5/8&quot; or 1/4&quot;</td>
<td>5/8&quot; or 1/4&quot;</td>
<td>5/8&quot; or 1/4&quot;</td>
</tr>
</tbody>
</table>

F 1, F 2, F 3, E 1, E 2, E 3

(1) If necessary, increase filler and backer block height for face mount hangers and maintain 1/8" gap at top of detail. See detail PB1. Filler and backer block dimensions should accommodate required nailing without splitting. The suggested minimum length is 24" for filler and 12" for backer blocks.
WEB STIFFENERS—FLOOR AND ROOF APPLICATIONS

WEB STIFFENER SIZES
- TJI® 110 joists: \( \frac{5}{8} \)" x 2\( \frac{5}{16} \)" minimum\(^{(1)}\)
- TJI® 210 joists: \( \frac{3}{4} \)" x 2\( \frac{5}{16} \)" minimum\(^{(1)}\)
- TJI® 230 and 360 joists: \( \frac{7}{8} \)" x 2\( \frac{5}{16} \)" minimum\(^{(1)}\)
- TJI® 560 joists: 2x4, construction grade or better

\(^{(1)}\) PS1 or PS2 sheathing, face grain vertical

WEB STIFFENER REQUIREMENTS
- Required at all birdsmouth cuts.
- Required at all sloped hangers.
- Required if the sides of the hanger do not extend to laterally support at least \( \frac{3}{8} \)" of the TJI® joist top flange.
- Only required at intermediate bearing locations when noted on framing plan.

WEB STIFFENERS—FLOOR AND ROOF APPLICATIONS

TYPICAL ROOF AND WALL FRAMING

DETAIL SCHEDULE

Roof details (see page 7)
- R1 on bevel plate
- R1 W on bevel plate with web stiffeners
- R3 with variable slope seat connector
- R3 W with seat connector and web stiffeners
- R5 with birdsmouth cut
- R7 intermediate bearing
- RV intermediate bearing with web stiffeners
- R8 2x4 outrigger and filler with birdsmouth cut
- R9 2x4 outrigger without filler
- R10 2x4 outrigger with filler
- R10 W 2x4 outrigger with filler and web stiffeners
- R14 ridge detail
- R14 W ridge detail, with web stiffeners

Other details
- O 2x_ overhang at end wall
- SB shear blocking (see page 8)
- W web stiffeners

Hanger details (see page 8)
- H5 slope adjusted hanger
- H6 header on slope

Joists must be laterally supported at cantilever and end bearings by blocking panels, hangers, or direct attachment to a rim board or rim joist.
**Safety bracing** (1x4 minimum) at 8' on-center (6' on-center for TJI® 110 joists) and extended to a braced end wall. Fasten at each joist with two 8d (0.113" x 2½") nails minimum. (See Warning on cover).

**Blocking panels or shear blocking optional for joist stability at intermediate supports**

**Safety bracing. Lack of proper bracing can result in serious accidents.**

**WARNING**

*Joists are unstable until laterally braced. See Warning on cover.*

**Ceiling Joists**

Ceiling joists must be laterally supported at cantilever and end bearings by shear blocking, hangers, or direct attachment to a rim board or rim joist.

**Notch around TJI® joist top flange**

**Double joist may be required**

**Let-in bracing**

**Install cripples tight to king stud at each end of header**

**TimberStrand® LSL blocking:**
- 1 row at 10'–16' height
- 2 rows at 16'–24' height
- 3 rows at 24'–30' height

**WARNING**

*Joists are unstable until laterally braced. See Warning on cover.*

**Ceiling joist must be braced at 18" on-center**

**Lateral bracing required at end bearings**

**Do not bevel cut joist beyond inside face of wall**

**Studs must be doubled when notched in middle third of length. Refer to hole charts for allowable holes and notches.**

**Blocking panels or shear blocking optional for joist stability at intermediate supports**

See **Filler and Backer Blocks**, page 5
Shear blocking:
1½" TJ® Rim Board, 1¼" TimberStrand® LSL, or TJI® joist

Web stiffener required on both sides at R1W ONLY

Bevelled bearing plate required when slope exceeds ¼:12

½ adjacent span maximum

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

V-cut shear blocking:
1¼" TimberStrand® LSL rim board

Web stiffener required on both sides at R3W ONLY

Variable slope seat connector

½ adjacent span maximum

Bevelled web stiffener required on both sides. Cut to match roof slope.

TJI® joist flange must bear fully on plate

Bevelled bearing plate required when slope exceeds ¼:12

Twist strap and backer block required at R7S with slopes greater than 3:12. See Nailing Requirements, page 8.

2x4 block for soffit support

Birdsmouth cut must not overhang inside face of plate

2'-0" maximum

R5 Birdsmouth cut allowed at low end of joist only
Beveled 2x4 block with beveled web stiffener on opposite side of web

Beveled 2x4 block. Second beveled web stiffener required on opposite side at R10W ONLY

Beveled bearing plate required when slope exceeds ¾:12

LSTA18 (Simpson or USP) strap with twelve 10d (0.148" x 1½") nails

Double beveled bearing plate when slope exceeds ¾:12

Web stiffener required on both sides at R14W ONLY

Additional blocking may be required for shear transfer

R8 Birdsmouth cut allowed at low end of joist only

2 rows
8d (0.113" x 2½") nails at 8" on-center

Beveled 2x4 block with beveled web stiffener on both sides

Beveled web stiffener on both sides

Beveled 2x4 block

2x4 one side. Use 2x6 if joist spacing is greater than 24" on-center.

10d (0.128" x 3") nails at 8" on-center

strap with twelve 10d (0.148" x 1½") nails

2x4 one side. Use 2x4 both sides if joist spacing is greater than 24" on-center.

2 rows
8d (0.113" x 2½") nails at 8" on-center

Filler

2'-0" maximum

4'-0" minimum

2'-0" maximum

4'-0" minimum

2'-0" maximum

4'-0" minimum

4'-0" minimum

2'-0" maximum

1½"

1½"
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.

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:

<table>
<thead>
<tr>
<th>FACE MOUNT</th>
<th>TOP MOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>10d (0.148&quot; x 1½&quot;)</td>
<td>1⅛&quot; minimum</td>
</tr>
<tr>
<td>10d (0.148&quot; x 3&quot;)</td>
<td>1⅛&quot; minimum, clinched</td>
</tr>
<tr>
<td>16d (0.162&quot; x 3½&quot;)</td>
<td>1¾&quot; minimum, clinched</td>
</tr>
</tbody>
</table>
- Top mount hangers should be fastened to TJ® joist headers with 10d (0.148" x 1⅛") nails. Fasten face mount hangers to 3½" or wider TJ® joist headers with 10d (0.148" x 3") or 16d (0.162" x 3½") nails.

CONNECTOR INSTALLATION AND SQUEAK PREVENTION TIPS
- Nails must be completely set.
- Leave ⅛" clearance between the member and the support member or hanger.
- Joist to beam connections require hangers; do not toenail.
- Install the supported member tight to the bottom of the hanger. Reduce squeaks by adding subfloor adhesive to the hanger seat.
- On Simpson Strong-Tie® VPA connectors, bend the bottom flange tabs over and nail to TJ® joist bottom flange.
**Filler block:** Attach with ten 10d (0.128” x 3”) nails, clinched. Use ten 16d (0.135” x 3½”) nails from each side with TJI® 560 joists.

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

**Strap nails:** Leave 2½” minimum end distance

**LSTA18 strap required at H6S with slopes greater than 3:12**

**Variable slope joist hanger. Beveled web stiffeners required on both sides.**

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**SHEAR BLOCKING AND VENTILATION HOLES (Roof Only)**

TJI® Rim Board or TimberStrand® LSL for shear blocking (between joists). Field trim to match joist depth at outer edge of wall or locate on wall to match joist depth.

*For TJI® joists with slopes of 10:12 to 12:12, the vertical depth of shear blocking at bearing will require 1½” TJI® Rim Board or 1¼” TimberStrand® LSL that is one size deeper than the TJI® joist. DO NOT use 1½” TJI® Rim Board in ventilation-hole applications.*

---

**TJI® JOIST NAILING REQUIREMENTS AT BEARING**

**END BEARING**
(1¾” minimum bearing required)

- One 8d (0.113” x 2½”) nail each side, 1½” minimum from end

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)

- Slopes 3:12 or less:
  - One 8d (0.113” x 2½”) nail each side. See detail R7.
- Slopes greater than 3:12:
  - Two 8d (0.113” x 2½”) nails each side, plus a twist strap and backer block. See detail R7S.
  
  When slope exceeds ¼:12 for a 2x4 wall or ½:12, for a 2x6 wall, a beveled bearing plate or variable slope seat connector is required.

**Blocking to Bearing Plate**

- 1¼” TJI® Rim Board or 1¼” TimberStrand® LSL:
  - 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
BEAM AND COLUMN DETAILS

Bearing length is extremely critical and must be considered for each application. See Minimum Bearing Length table below for minimum end and intermediate bearing lengths, and your Javelin® framing plan, if applicable.

This guide is intended for the products shown in dry-use conditions

MULTIPLE-MEMBER CONNECTIONS FOR TOP-LOADED BEAMS
Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.

<table>
<thead>
<tr>
<th>Piece Width</th>
<th># of Plies</th>
<th>Type(1)</th>
<th>Min. Length</th>
<th># Rows</th>
<th>O.C. Spacing</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>10d nails</td>
<td>3&quot;</td>
<td>3(2)</td>
<td>12&quot;</td>
<td>One side</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12d–16d nails</td>
<td>3¼&quot;</td>
<td>2(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Screws</td>
<td>3⁵⁄₈&quot; or 3¹⁄₂&quot;</td>
<td>2</td>
<td>24&quot;</td>
<td>Both sides</td>
</tr>
</tbody>
</table>

1¾"  
| 3           | 10d nails | 3" | 3(2) | 12" | Both sides |
|            | 12d–16d nails | 3¼" | 2(2) | 24" | One side |
|            | Screws    | 3⁵⁄₈" or 3¹⁄₂" | 2 | 24" | One side |
|            |           | 5" | 2    | 24" | One side |

¾"  
| 4         | 10d nails(3) | 3" | 3(2) | 12" | One side (per ply) |
|          | 12d–16d nails(3) | 3¼" | 2(2) | 24" | Both sides |
|          | Screws    | 5" or 6" | 2 | 24" | One side |
|          |           | 6¼" | 2    | 24" | One side |

3½"  
| 2         | Screws    | 5" or 6" | 2 | 24" | Both sides |
|           |           | 6¼" | 2    | 24" | One side |
|           | ½" bolts  | 8" | 2    | 24" | One side |

(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 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.

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.

Multiple pieces can be nailed or bolted together, up to a maximum width of 7"
Minimum Bearing Length for Beams and Headers

<table>
<thead>
<tr>
<th>Beam Depth</th>
<th>Bearing</th>
<th>Span of Header or Beam</th>
</tr>
</thead>
<tbody>
<tr>
<td>5½&quot;</td>
<td>End/Int.</td>
<td>2¼&quot; / 4½&quot; 1½&quot; / 3½&quot; 1⅛&quot; / 3¾&quot; 1⅛&quot; / 3¾&quot; 1⅛&quot; / 3¾&quot;</td>
</tr>
<tr>
<td>7¼&quot;</td>
<td>End/Int.</td>
<td>3⅛&quot; / 6¼&quot; 2¾&quot; / 5½&quot; 1¾&quot; / 4¼&quot; 1¾&quot; / 4¼&quot; 1¾&quot; / 4¼&quot;</td>
</tr>
<tr>
<td>8¾&quot;</td>
<td>End/Int.</td>
<td>3½&quot; / 8½&quot; 2½&quot; / 5½&quot; 1⅛&quot; / 4¼&quot; 1⅛&quot; / 4¼&quot; 1⅛&quot; / 4¼&quot;</td>
</tr>
<tr>
<td>9¼&quot;, 9½&quot;</td>
<td>End/Int.</td>
<td>4¾&quot; / 8&quot; 3¾&quot; / 7½&quot; 2¾&quot; / 6½&quot; 2&quot; / 5½&quot; 1½&quot; / 4&quot;</td>
</tr>
<tr>
<td>11¼&quot;, 11¾&quot;</td>
<td>End/Int.</td>
<td>4&quot; / 9½&quot; 3¼&quot; / 8&quot; 2¾&quot; / 6&quot; 1¾&quot; / 5½&quot; 1½&quot; / 4&quot;</td>
</tr>
<tr>
<td>14&quot;</td>
<td>End/Int.</td>
<td>4½&quot; / 10¼&quot; 3¾&quot; / 8¼&quot; 2½&quot; / 6½&quot; 2&quot; / 5½&quot; 1¼&quot; / 4¼&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>End/Int.</td>
<td>4¼&quot; / 10½&quot; 3¾&quot; / 8½&quot; 2¾&quot; / 7&quot; 2¼&quot; / 6½&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>End/Int.</td>
<td>4¾&quot; / 10½&quot; 3¾&quot; / 8¼&quot; 2¾&quot; / 7½&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>End/Int.</td>
<td>4¾&quot; / 10½&quot; 3½&quot; / 9½&quot;</td>
</tr>
</tbody>
</table>

- **Minimum bearing length**: 1½" at ends, 3½" at intermediate supports.
- **Bearing across full beam width is required.**
- **Bearing lengths shown are based on bearing stress for TimberStrand® LSL, Microllam® LVL, or Parallam® PSL.** If the support member’s allowable bearing stress is lower (e.g., when bearing on a flat wood plate), bearing lengths may need to be increased.
- **Table assumes maximum allowable uniform load.** For other conditions, contact your Weyerhaeuser representative.
- **Beams and headers require lateral support at bearing points and along the top (or compression edge) at 24" on-center or closer.**
- **1¾"-thick members that are 16" or deeper must be used in multiple-ply units only.**

**Beam Attachment at Bearing**

1½" TJ® Rim Board or 1⅛" TimberStrand® LSL

One 10d (0.128" x 3") nail each side of member at bearing, 1½" minimum from end

- Drive nails at an angle to minimize splitting of plate

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

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

1-888-453-8358

CODE EVALUATIONS, See

TJ® 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

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.

PRODUCT STORAGE

Store and handle joists in vertical orientation.

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.

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.

May 2015  •  Reorder TJ-9001
This document supersedes all previous versions. If this is more than one year old, contact your dealer or Weyerhaeuser rep.