Ridge Rafter Connection

**Beveled Plate**

For specific strength and span information, please consult specific product brochures.

**Note:**

LP® SolidStart® I-Joists, LP SolidStart LVL & LP SolidStart LSL

**Handling & Installation Recommendations**

- **Remember,** the continuous 1 x 4 bracing is not effective unless attached to the braced area.
- **Verify capacity and fastening of hangers and connections.**
- **Minimum pitch:** 1/4” per foot (1/4:12). **Maximum pitch:** 12” per foot (12:12).
- **Any fastening of member not detailed, such as uplift or seismic anchor, is subject to local approval and may require additional details and connections.**
- **Minimum pitch:** 1/4” per foot (1/4:12). **Maximum pitch:** 12” per foot (12:12).
- **Verify capacity and fastening of hangers and connections.**

**TEMPORARY BRACING**

- Use at least 1 x 4 temporary bracing members nailed to each I-Joist with two 8d nails.
- Keep the main runs parallel and no more than 6” apart.
- Use long pieces, not short blocks, lap the ends to keep a continuous line of bracing.
- Do not use visually damaged product. Call your local LP SolidStart distributor for assistance when damaged products are encountered.

**NOTES FOR ROOF LAYOUT:**

- Use at least 1 x 4 temporary bracing members nailed to each I-Joist with two 8d nails.
- No loads other than the weight of the erectors are to be imposed on the structure before it is permanently sheathed.
- All rim joists, blocking, connections and temporary bracing must be installed before erectors are allowed on the structure.
- **This is not intended as a manual for selecting products and assumes that components and details have been specified correctly.**

**Handling & Storage**

- **Keep LP SolidStart I-Joists, LP SolidStart LVL & LP SolidStart LSL beams dry.**
- **Unbond products careonly by lifting. Support the bundles to reduce excessive bending. Individual products should be handled in a manner which prevents physical damage during measuring, cutting, erection, etc. I-Joists should be handled vertically and not flattened.**
- **Keep stored in wrapped and strapped packages, stacked no more than 10’ high. Support and separate bundles with 2 x 4 (or larger) stickers spaced no more than 15’ apart. Keep stickers in line vertically.**
- **Product must not be stored in contact with the ground, or have prolonged exposure to the weather.**
- **Use forklifts and cranes carefully to avoid damaging product.**
- **Do not use visually damaged product. Call your local LP SolidStart Engineered Wood Products distributor for assistance when damaged products are encountered.**

**WARNING:**

These instructions are offered as a guide to good practice in the handling, storage and installation of LP® SolidStart® I-Joists, LP SolidStart LVL & LP SolidStart LSL beams. They are, however, solely general recommendations and, in some instances, other or additional precautions may be desirable. In all cases, the procedures used should be as specified by the architect/engineer responsible for the entire building.

**WARNING: Failure to follow proper procedures for handling, storage and installation could result in unsatisfactory performance, unsafe structures and possible collapse.**

**Use of Beveled Plate**

- Beveled plate
- Web fillers required both sides
- Beveled plate
- Support beam or wall
- J1 Rafter Connection
- J2 Rafter Connection with Fitted OSB Gusset
- J3 Beveled Plate
- J4 Header Connection
- J5 Beveled Plate
- J6 Overhang
- J7 Overhang
- J8 Outrigger
- J9 Support beam or web
- J10 Support beam or wall
- J11 Overhang details
- J12 Header connection
- J13 Structural beam
- J14 Lateral resistance shall be provided. Other methods of restraint, such as full depth LP SolidStart OSB film Board, LP SolidStart LVL, LP SolidStart LSL or metal L-bracing may be substituted for the LP blocking shown.

**LIGHT GAUGE CONNECTIONS**
Floor Details

**A1W** Rim Board
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**A2W** Rim Board
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**A3W** Rim Board
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**A4W** Rim Board
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**A5** Joist Support Nailing
- For all joists and girders, nail at no more than 24" on center (oc).

**B2** Squash Blocks
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**B3** Brick Ledge Cantilever
- Apply on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**B4** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**B5** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**C1** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**C2** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**C3** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**C4** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**C5** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**D1** I-Joist Header Cross Section
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**D2** I-Joist Header Cross Section
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**D3** I-Joist Header Cross Section
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**D4** I-Joist Header Cross Section
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**D5** I-Joist Header Cross Section
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**E1** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**E2** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**E3** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**E4** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**E5** Cantilever Detail
- Use on all exterior surfaces and for the base of walls and floors.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**F1** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**F2** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**F3** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**F4** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**F5** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**G1** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**G2** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**G3** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**G4** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**G5** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**H1** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**H2** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

**H3** Web Filler/Binder Block
- Use in areas where joist spacing is less than 24" oc.
- Apply on both sides of masonry walls, and for the base of concrete or other base materials.

Floor Layout (typical)

**TEMPORARY BRACING**
- Use at least 4x4 temporary bracing members nailed to each I-Joist with two 8d nails.
- Keep the main nailing parallel and no more than 8" apart.
- Use long pieces, not short blocks, lap the ends to keep a continuous line of bracing.
- To prevent undue movement of the continuous 4 x 4s of bracing, anchor them at the ends and at 25’ intervals into a stable end wall or an area braced by sheathing or diagonal bracing.
- Remember, the continuous 4 x Bracing is not effective unless attached to the brace area.
- Use particular care removing temporary bracing when sheathing. Remove the bracing as the sheathing is attached.

**NOTES FOR FLOOR LAYOUT:**
- I-Joists shall be supported laterally at all bearings and the ends of cantilevers.
- Unless specified, bridging or mid-span blocking is not required; however, it may enhance floor performance if used properly.
- Verify capacity and fastening of hangers and connectors.
- Some wind or seismic loads may require different or additional details and connections.

**NOTES:**
- Backer blocks and filler blocks shall consist of APA Rated wood structural panel (OSB or plywood), or 2x lumber (DF or better).
- LP LVL, LSL or OSB Rim Board may also be used.
- Refer to the Notes for the I-Joist Header Cross Section for the details on the required length and height, and nailing of the backer block and filler blocks.

**WEB STIFFENER REQUIREMENTS**
- Web stiffeners shall be installed in pairs—one to each side of the web. Web stiffeners are always required for the “Dead” (Bottom) post beam detail.
- Web stiffeners shall be cut to fit between the flanges of the “Dead” (Bottom) beam, using a minimum 1/8” gap (minimum). At bearing locations, the stiffeners shall be installed tight to the bottom flange.
- Web stiffeners shall be cut to fit APA Rated OSB or plywood or LP SolidStart LVL, LSL or OSB Rim Board. 2x lumber is permissible. Do NOT use 1x lumber at this detail. Do NOT build-up the required thickness from multiple pieces.
- Web stiffeners shall be the same width as the bearing surface, with a minimum of 5-1/2.
- See Web Stiffener Requirements for minimum stiffness, maximum stiffness height and required nailing.
**Web Hole Details**

**WARNING:** Do NOT cut or notch flanges. Unusual length of web between adjacent holes shall be at least twice the largest dimensions of the two holes or 12” center-to-center, whichever is greater.

**Flange Face Nailing Schedule**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NAIL SIZE AND TYPE</th>
<th>MINIMUM NAIL DISTANCE (3&quot; O.C.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPI 18</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
<td>4&quot;/10d (3&quot;)</td>
</tr>
<tr>
<td>LPI 18FB</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
<td>4&quot;/10d (3&quot;)</td>
</tr>
<tr>
<td>LPI 20FB</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
<td>4&quot;/10d (3&quot;)</td>
</tr>
<tr>
<td>LPI 32FB</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
<td>4&quot;/10d (3&quot;)</td>
</tr>
<tr>
<td>LPI 42FB</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
<td>4&quot;/10d (3&quot;)</td>
</tr>
<tr>
<td>LPI 52FB</td>
<td>Md (2-1/2&quot;) or Cs (2&quot;)</td>
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**NOTES:**

1. These guidelines apply to uniformly loaded beams selected from the Quick Reference Tables or the Uniform Load Tables or designed with LP’s design software. For all other applications, such as beams with concentrated loads, please contact your LP SolidStart Engineered Wood Products distributor for assistance.

2. Round holes can be drilled anywhere in Area A provided that no more than three holes are cut, with the minimum spacing described in the diagram. The maximum hole size is 1-1/2" for depths up to 6-1/4" and 2" for depths greater than 6-1/4".

3. Rectangular holes are NOT allowed.

4. Do NOT drill holes in cantilevers without prior approval from the project engineer/architect.

5. Other hole sizes and configurations MAY be possible with further engineering analysis. Please contact your LP SolidStart Engineered Wood Products distributor for more information.

6. Holes larger than 1-1/2" are not permitted in cantilevers without special engineering.

7. Multiple holes shall have a clear separation along the length of the joist, at least twice the larger diameter of the larger adjacent hole, or a minimum of 12” center-to-center, whichever is greater.

8. These web hole tables are valid for simple and continuous spans. When used with uniform loads only, as used from the tables contained in LP’s current Joist and Lumber product guides. Larger holes, non-uniform loading conditions and/or closer proximity to supports may be possible, but require further analysis using LP’s design software. Please contact your local LP SolidStart Engineered Wood Products distributor for more details.

9. The maximum hole depth is the 1/3 beam depth (except the maximum hole depth is 4"/10d for LPI 32FB and LPI 42FB, 6-1/2" for LPI 52FB and LPI 62FB). When the Maximum Hole Diameter exceeds the hole depth, the dimension refers to hole width and the depth of the holes assumed to be the maximum for that depth. The maximum hole width is 16" regardless of all other applications, such as beams with concentrated loads, please contact your LP SolidStart Engineered Wood Products distributor for assistance.

10. Maximum hole depth is 4"/10d for LPI 36 and 6-1/2" for LPI 450 and LPI 530.

11. Beams must be 1.72" apart. The holes should be located in the middle third of the depth, or at a maximum of 3" from the bottom end of the beam. For beams shallower than 2-1/2" locate holes at mid-depth.

12. Protect pluming holes from moisture.
Stair Stringer Details

G1 Stair Stringer - Top Support - Ledger
G2 Stair Stringer - Top Support - Connector
G3 Stair Stringer - Bottom Support - Concrete
G4 Stair Stringer - Bottom Support - Beam
G5 Stair Stringer - Bottom Support - Ledger

LP SolidStart LVL & LSL Details

P1 Top Loaded Beam - Nailed Connection
P2 Top Loaded Beam - Bolted Connection
P3 Beam Connection
P4 Steel Column & Wood Column
P5 Window/Door Header

E-mail: customer.support@lpcorp.com. Visit our web site at: www.lpcorp.com.

WARNING:
Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.

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NOTE: Protect wood from contact with concrete as required by code.

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Warnings

The following conditions are NOT permitted:

Do not use visually damaged products without first checking with your local LP SolidStart Engineered Wood Products distributor or sales office.

DON'T bore holes on notch unless reviewed by a design professional.

Exception: Small holes may be drilled in accordance with the Beam Hole Details.

DON'T Overcut Stair Stringers
DON'T Partially Support Stringers - Top
DON'T Partially Support Stringers - Bottom

DO NOT use visually damaged products without first checking with your local LP SolidStart Engineered Wood Products distributor or sales office.

Exception: Small holes may be drilled in accordance with the Beam Hole Details.

DON'T Overcut Stair Stringers
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