

# INSTALLATION GUIDE

ENGINEERED WOOD PRODUCTS

PWT FOCUSED ON EWP



# Handling & Installation Instructions

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

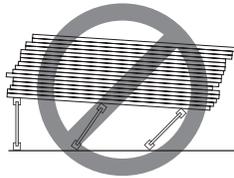
For applications with I-joist depths over 16", please consult the Light-Frame Commercial and Multifamily Construction Tech Guide.

## Important Notes

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

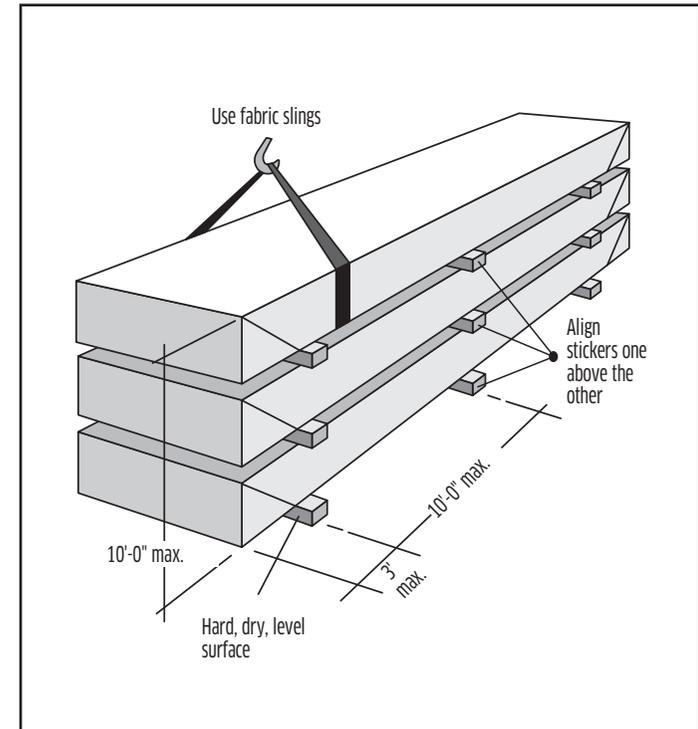
These instructions are offered as a guide to good practice in the handling, storage and installation of PWT I-joists and PWT LVL. They are, however, solely general recommendations and, in some instances, other or additional precautions may be desirable. In all cases, the procedures used should be as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

- This guide is not intended for product selection, and assumes that all components and details have been correctly specified.
- Consult the PWT I-joist & PWT LVL brochures, technical guides, installation guide, or contact your PWT products distributor for assistance.
- All rim joists, blocking, connections, and temporary bracing must be installed before workers are allowed on the structure.
- No loads other than the weight of the workers are to be imposed on the structure before it is permanently sheathed.
- After sheathing, do not overload joists with construction materials exceeding design loads.
- PWT untreated products (PWT I-joists and PWT LVL) must be used under dry, covered and well-ventilated interior conditions in which the equilibrated moisture content in lumber is less than 16% (US) or the average equilibrium moisture content (MC) of lumber is 15% or less over a year and does not exceed 19% at any time (CN).



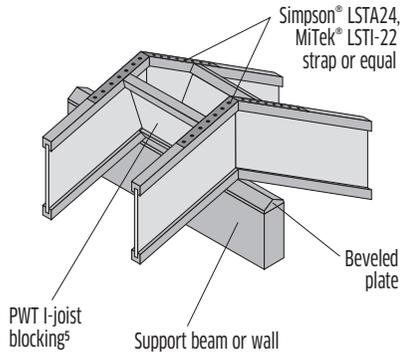
## Handling & Storage

- **KEEP PWT I-JOISTS AND LVL DRY.**
- Unload products carefully by lifting. Support the bundles to reduce excessive bowing. 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 flatwise.
- Keep stored in wrapped and strapped bundles, stacked no more than 10' high. Support and separate bundles with 2 x 4 (or larger) stickers spaced no more than 10' 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 PWT distributor, or call (800) 515-7570 for assistance when damaged products are encountered.

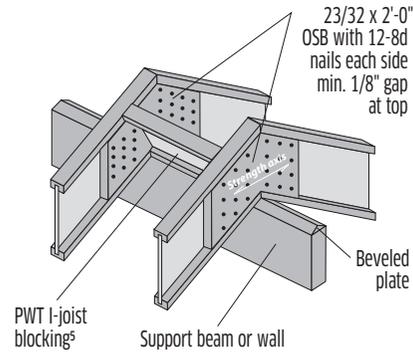


# Roof Details

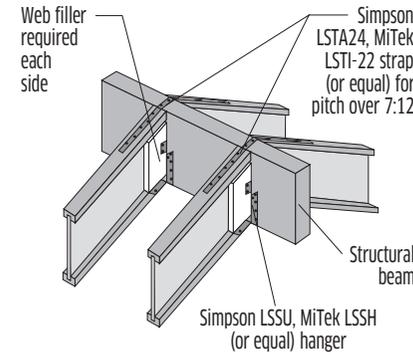
## J1 RAFTER CONNECTION



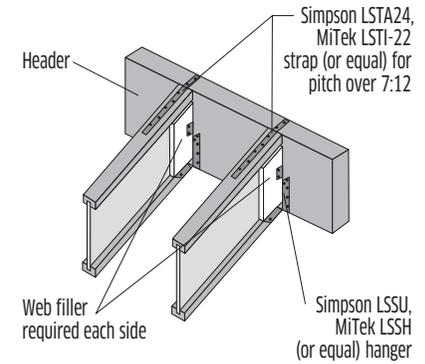
## J2 RAFTER CONNECTION WITH FITTED OSB GUSSET



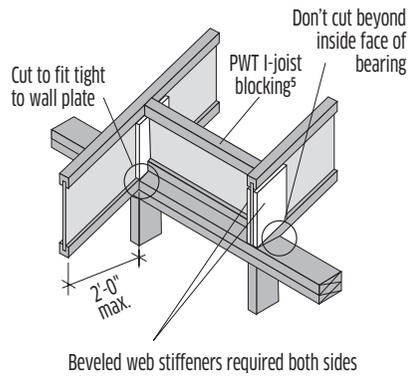
## J3 RIDGE RAFTER CONNECTION



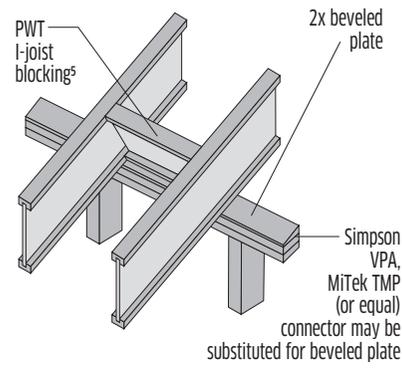
## J4 HEADER CONNECTION



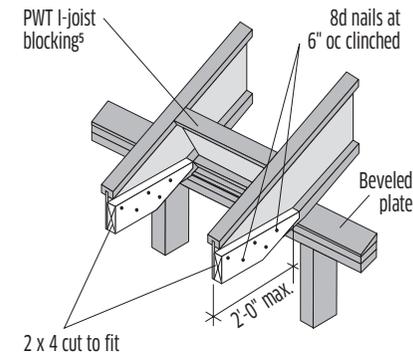
## H1 BIRD'S MOUTH (LOWER BEARING ONLY)



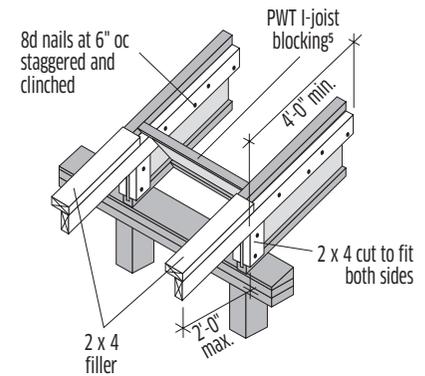
## H2 BEVELED PLATE



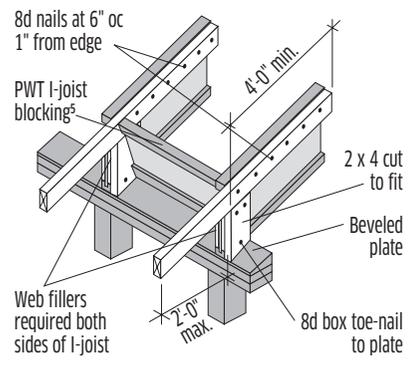
## H3 FLAT SOFFIT (FASCIA SUPPORT)



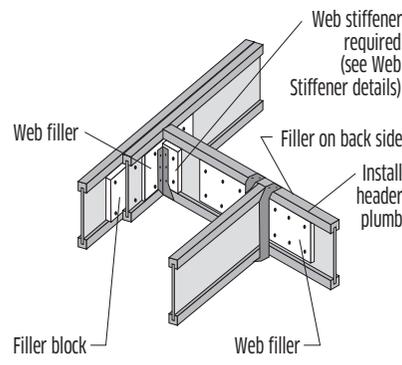
## H4 OVERHANG



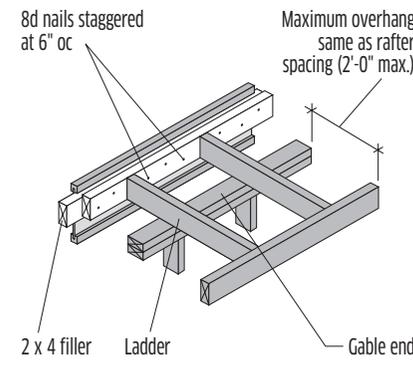
## H5 OVERHANG



## K1 ROOF OPENING HANGER CONNECTIONS



## K2 OUTRIGGER



### Notes

1. Minimum pitch: 1/4" per foot (1/4:12). Maximum pitch: 12" per foot (12:12).
2. Verify capacity and fastening requirements of hangers and connectors.
3. Some wind or seismic loads may require different or additional details and connections. Uplift anchors may be required.
4. 4" diameter hole(s) may be cut in blocking for ventilation.
5. Lateral resistance shall be provided. Other methods of restraint, such as full depth OSB Rim Board, PWT LVL or metal X-bracing may be substituted for the PWT I-joint blocking shown.

### NAIL NAMES AND SIZES

Callout	Common Name	Min. Length (In)	Diameter (In)
8d	box	2-1/2	0.113
8d	common	2-1/2	0.131
10d	box	3	0.128
10d	common	3	0.148
16d	box	3-1/2	0.135
16d	common	3-1/2	0.162

Use only 10d box or 8d nails when securing PWT I-joint floor or roof joist to its supports.

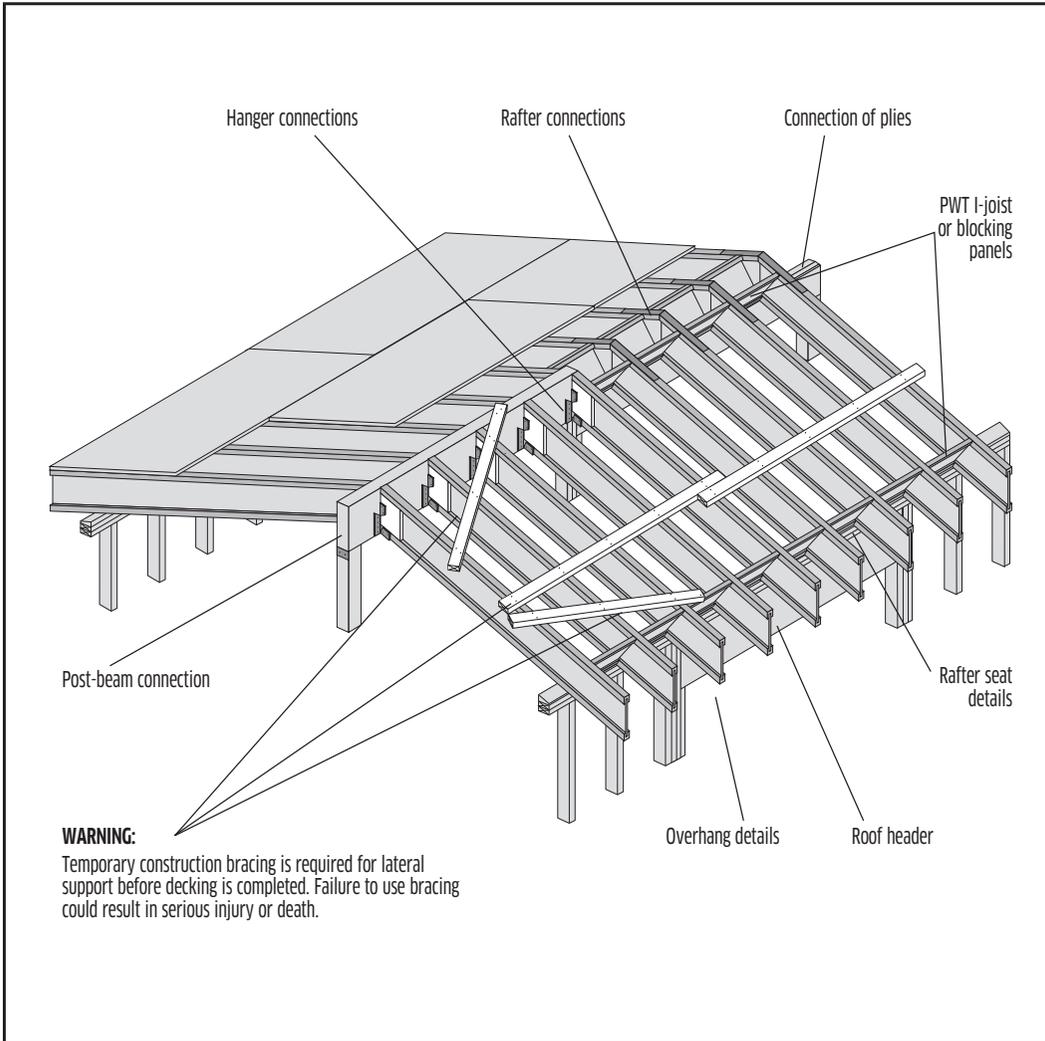
# Roof Layout (typical)

## Temporary Bracing

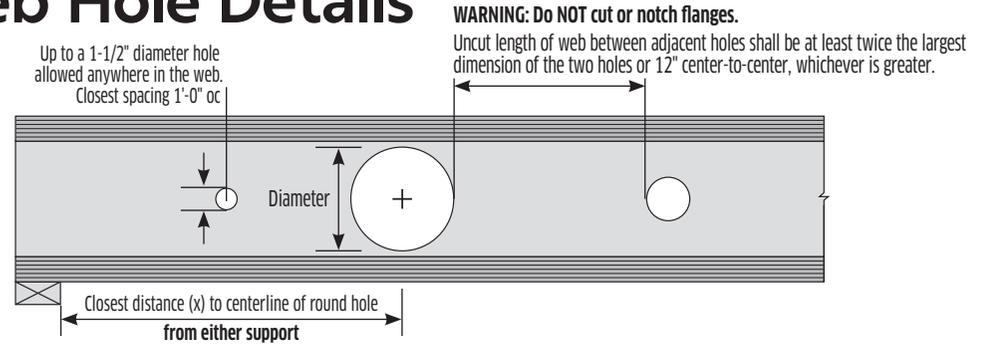
- Use at least 1x4 temporary bracing members nailed to each I-joist with two 8d nails.
- Keep the main runs parallel and no more than 8'-0" apart.
- Use long pieces, not short blocks; lap the ends to keep a continuous line of bracing.
- To prevent endwise movement of the continuous 1 x 4 lines of bracing, anchor them at the ends and at 25'-0" intervals into a stable end wall or an area braced by sheathing or diagonal bracing.
- Remember, the continuous 1 x 4 bracing is not effective unless attached to the braced area.
- Use particular care removing temporary bracing when applying sheathing. Remove the bracing as the sheathing is attached.

## Notes For Roof Layout:

- I-joists used as rafters must be supported laterally at all bearings and the ends of cantilevers.
- 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.
- All PWT products are to be installed straight (1/2 inch max. deviation), and with the depth of the product plumb.
- All loads that are suspended below I-joists are to be attached to the web(s) of I-joists. Filler blocks or bridging between I-joists should be used. Light loads such as gypsum ceilings may be attached directly to the bottom flange of I-joists. Care must be used to ensure the flange is not split or damaged when doing this.



# Web Hole Details



## CLOSEST DISTANCE (X)

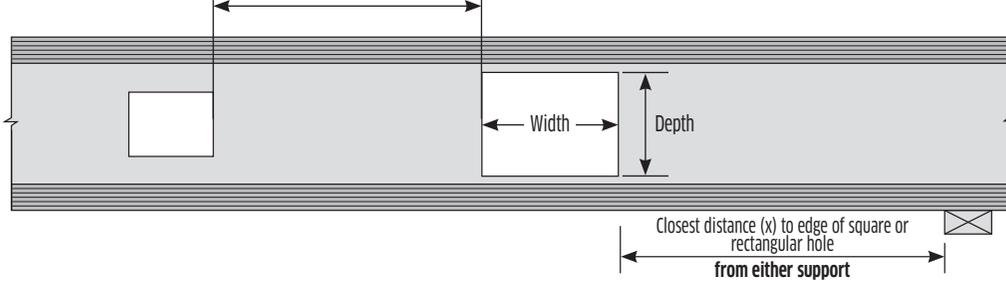
Series	Depth	Circular Hole Diameter											
		2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	
PWI 18S, LPI 18	9-1/2"	1'-2"	1'-10"	2'-7"	3'-3"	4'-3"	-	-	-	-	-	-	-
	11-7/8"	1'-0"	1'-5"	2'-1"	2'-9"	3'-6"	4'-3"	5'-5"	-	-	-	-	-
	14"	1'-0"	1'-0"	1'-5"	2'-0"	2'-8"	-	-	-	-	-	-	-
PWI 20S, LPI 20Plus	9-1/2"	1'-0"	1'-4"	1'-11"	2'-5"	2'-11"	3'-6"	4'-0"	-	-	-	-	-
	11-7/8"	1'-0"	1'-4"	1'-11"	2'-5"	2'-11"	3'-6"	4'-0"	4'-6"	5'-1"	-	-	-
	14"	1'-3"	1'-8"	2'-2"	2'-7"	3'-1"	3'-6"	4'-0"	4'-6"	5'-1"	-	-	-
PWI 32S, LPI 32Plus	9-1/2"	1'-0"	1'-2"	1'-11"	2'-9"	3'-6"	-	-	-	-	-	-	-
	11-7/8"	1'-1"	1'-9"	2'-5"	3'-0"	3'-8"	4'-4"	5'-0"	-	-	-	-	-
	14"	1'-8"	2'-3"	2'-10"	3'-5"	4'-0"	4'-8"	5'-3"	5'-11"	6'-7"	-	-	-
PWI 42S, LPI 42Plus	9-1/2"	1'-3"	2'-3"	3'-4"	4'-4"	5'-5"	-	-	-	-	-	-	-
	11-7/8"	3'-2"	3'-10"	4'-7"	5'-3"	6'-0"	6'-9"	7'-8"	-	-	-	-	-
	14"	4'-5"	5'-0"	5'-7"	6'-1"	6'-8"	7'-3"	8'-0"	8'-10"	9'-11"	-	-	-
PWI 36L, LPI 36	9-1/2"	1'-0"	2'-0"	3'-0"	4'-0"	5'-1"	6'-2"	7'-6"	-	-	-	-	-
	11-7/8"	1'-10"	2'-8"	3'-7"	4'-5"	5'-4"	6'-3"	7'-3"	8'-6"	9'-11"	-	-	-
	14"	2'-2"	3'-1"	3'-11"	4'-9"	5'-7"	6'-5"	7'-4"	8'-4"	9'-7"	10'-11"	12'-5"	-
PWI 56L, LPI 56	9-1/2"	3'-9"	4'-9"	5'-9"	6'-9"	7'-9"	8'-10"	9'-11"	-	-	-	-	-
	11-7/8"	4'-10"	5'-9"	6'-8"	7'-7"	8'-7"	9'-7"	10'-7"	11'-7"	12'-10"	-	-	-
	14"	6'-0"	6'-11"	7'-9"	8'-8"	9'-7"	10'-5"	11'-4"	12'-2"	13'-3"	14'-4"	15'-11"	-
PWI 53L, LPI 530	9-1/2"	1'-3"	2'-5"	3'-7"	4'-9"	6'-0"	-	-	-	-	-	-	-
	11-7/8"	1'-0"	1'-7"	2'-6"	3'-8"	4'-11"	6'-2"	7'-9"	-	-	-	-	-
	14"	1'-0"	1'-3"	1'-11"	2'-8"	3'-9"	4'-11"	6'-1"	7'-6"	9'-4"	-	-	-
	16"	1'-0"	1'-2"	1'-8"	2'-2"	2'-11"	4'-0"	5'-1"	6'-2"	7'-4"	8'-10"	11'-2"	-

## Notes

1. **CUT HOLES CAREFULLY! DO NOT OVERCUT HOLES! DO NOT CUT JOIST FLANGES!**
2. Holes may be placed anywhere within the depth of the web. A minimum 1/4" clear distance from the flanges is recommended so as not to cut a flange.
3. Round holes up to 1-1/2" diameter may be placed anywhere in the web.
4. Holes larger than 1-1/2" are not permitted in cantilevers without special engineering.
5. Multiple holes shall have a clear separation along the length of the joist of at least twice the larger dimension of the larger adjacent hole, or a minimum of 12" center-to-center, whichever is greater.
6. Multiple holes may be spaced closer provided they fit within the boundary of an acceptable larger hole. Example: two 3" round holes aligned parallel to the joist length may be spaced 2" apart (clear distance) provided that a 3" high by 8" long rectangle or an 8" diameter round hole are acceptable for the joist depth at that location and completely encompass the holes.
7. These web hole tables are valid for simple and continuous span I-joists with uniform loads only, as sized from the tables contained in PWT's current I-joist product guides. Larger holes, non-uniform loading conditions and/or closer proximity to supports may be possible, but require further analysis using PWT's design software. Please contact your local PWT distributor for more details.
8. The maximum hole depth is the I-joist depth less 4," except the maximum hole depth is 6" for 9-1/2" PWT I-joists, and 8" for 11-7/8" PWT I-joists. Where the Maximum Hole Dimension exceeds the hole depth, the dimension refers to hole width and the depth of the hole is assumed to be the maximum for that joist depth. The maximum hole width is 18," regardless of I-joist depth.

**WARNING: Do NOT cut or notch flanges.**

Uncut length of web between adjacent holes shall be at least twice the largest dimension of the two holes or 12" center-to-center, whichever is greater.



**CLOSEST DISTANCE (X)**

Series	Depth	Rectangular Hole Maximum Dimension: Depth or Width										
		2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"
PWI 18S, LPI 18	9-1/2"	2'-7"	3'-0"	3'-7"	4'-3"	5'-4"	5'-9"	6'-1"	6'-7"	7'-1"	7'-7"	8'-1"
	11-7/8"	3'-5"	3'-10"	4'-4"	4'-11"	5'-10"	7'-0"	8'-11"	9'-6"	10'-2"	10'-10"	-
PWI 20S, LPI 20Plus	9-1/2"	2'-10"	3'-4"	3'-10"	4'-7"	5'-9"	6'-2"	6'-8"	7'-2"	7'-8"	8'-3"	8'-9"
	11-7/8"	3'-9"	4'-2"	4'-9"	5'-5"	6'-5"	7'-9"	9'-8"	10'-4"	11'-0"	11'-8"	12'-6"
	14"	1'-2"	1'-10"	2'-6"	3'-2"	3'-11"	4'-8"	5'-7"	6'-10"	9'-0"	9'-11"	11'-1"
PWI 32S, LPI 32Plus	9-1/2"	1'-7"	2'-3"	2'-11"	3'-7"	4'-3"	4'-11"	5'-8"	6'-8"	8'-2"	10'-6"	14'-5"
	11-7/8"	3'-8"	4'-4"	5'-0"	6'-0"	7'-5"	7'-9"	8'-2"	8'-7"	9'-1"	9'-6"	10'-0"
	14"	4'-8"	5'-3"	6'-0"	6'-11"	8'-1"	9'-8"	11'-5"	12'-0"	12'-6"	13'-3"	14'-0"
PWI 42S, LPI 42Plus	9-1/2"	1'-7"	2'-5"	3'-4"	4'-2"	5'-1"	6'-0"	7'-2"	8'-11"	11'-8"	12'-7"	13'-7"
	11-7/8"	2'-2"	3'-0"	3'-10"	4'-8"	5'-6"	6'-5"	7'-5"	8'-9"	10'-8"	13'-9"	17'-2"
	14"	4'-4"	5'-2"	6'-0"	6'-11"	7'-10"	8'-11"	10'-3"	11'-8"	13'-3"	15'-1"	17'-10"
PWI 36L, LPI 36	9-1/2"	5'-8"	6'-6"	7'-4"	8'-2"	9'-3"	9'-7"	9'-11"	10'-4"	10'-9"	11'-3"	11'-9"
	11-7/8"	7'-2"	8'-0"	9'-0"	10'-0"	10'-11"	12'-1"	13'-8"	14'-3"	14'-11"	15'-7"	16'-6"
	14"	4'-4"	5'-2"	6'-0"	6'-11"	7'-10"	8'-11"	10'-3"	11'-8"	13'-3"	15'-1"	17'-10"
PWI 56L, LPI 56	9-1/2"	6'-7"	7'-4"	8'-1"	8'-10"	9'-8"	10'-9"	12'-1"	12'-7"	13'-2"	13'-10"	14'-7"
	11-7/8"	3'-8"	4'-6"	5'-5"	6'-3"	7'-2"	8'-5"	9'-9"	11'-2"	12'-11"	13'-7"	14'-4"
	14"	4'-4"	5'-2"	6'-0"	6'-11"	7'-10"	8'-11"	10'-3"	11'-8"	13'-3"	15'-1"	17'-10"
PWI 53L, LPI 530	9-1/2"	9'-2"	9'-9"	10'-5"	11'-3"	12'-3"	13'-6"	15'-2"	15'-10"	16'-7"	17'-3"	18'-2"
	11-7/8"	6'-10"	7'-8"	8'-7"	9'-7"	10'-6"	11'-5"	12'-8"	14'-2"	16'-3"	17'-0"	18'-0"
	14"	8'-3"	9'-2"	10'-0"	10'-11"	11'-9"	12'-9"	13'-9"	15'-1"	16'-9"	19'-0"	22'-5"

See hole notes on previous page.

**FLANGE FACE NAILING SCHEDULE**

Series	Nail Size And Type	Minimum Nail Distance	
		OC Spacing	End
PWI 18S, LPI 18	8d (2-1/2") Box or Common	2"	1"
	10d (3") or 12d (3-1/4") Box	2"	1"
PWI 20S, LPI 20Plus	10d (3") or 12d (3-1/4") Common	3"	1-1/2"
	16d Sinker (3-1/4")	3"	1-1/2"
PWI 32S, LPI 32Plus	16d (3-1/2") Box or Common	4"	1-1/2"
	16d Sinker (3-1/4")	3"	1-1/2"
PWI 42S, LPI 42Plus	16d (3-1/2") Box or Common	4"	1-1/2"
	16d Sinker (3-1/4")	3"	1-1/2"
PWI 36L, LPI 36	10d (3") or 12d (3-1/4") Box	3"	1-1/2"
	10d (3") or 12d (3-1/4") Common	3"	1-1/2"
PWI 56L, LPI 56	16d Sinker (3-1/4")	3"	1-1/2"
	16d (3-1/2") Box or Common	5"	1-1/2"

**Notes**

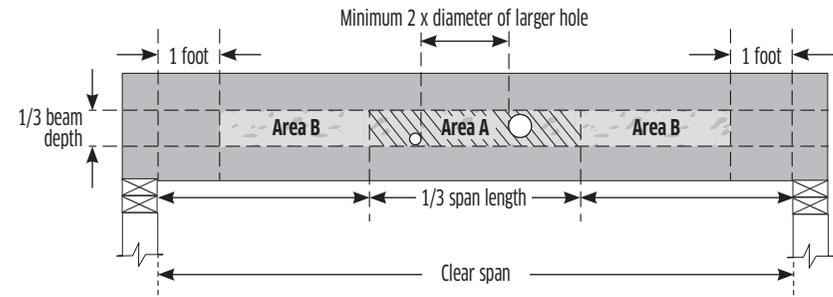
- Some wind or seismic loads may require different or additional details and connections.
- Verify building code requirements for suitability of details shown.
- Refer to PWT I-joist Product Guides for bearing length requirements.
- Refer to Flange Nailing Schedule for rim joist and blocking panel nailing.
- Lateral support shall be considered for bottom flange when there is no sheathing on underside.
- Verify capacity and fastening requirements of hangers and connectors.
- Squash block capacity designed by others.
- Do not use rim joists with flanges wider than 2-1/2".

**NAIL NAMES AND SIZES**

Callout	Common Name	Min. Length (in)	Diameter (in)
8d	box	2-1/2	0.113
8d	common	2-1/2	0.131
10d	box	3	0.128
10d	common	3	0.148
16d	box	3-1/2	0.135
16d	common	3-1/2	0.162

Common nails are assumed unless otherwise indicated. 10d box may be substituted for 8d common nails.

# LVL Beam Hole Details



**Notes**

- These guidelines apply to uniformly loaded beams selected from the Quick Reference Tables or the Uniform Load Tables within the LVL Beam and Header Technical Guide. For all other applications, such as beams with concentrated loads, please use the PWT's design software or contact your PWT distributor for assistance.
- Round holes can be drilled anywhere in "Area A" provided that: no more than four holes are cut, with the minimum spacing described in the diagram. The maximum hole size is 1-1/2" for depths up to 9-1/4," and 2" for depths greater than 9-1/4."
- Rectangular holes are NOT allowed.
- DO NOT drill holes in cantilevers without prior approval from the project engineer/architect.
- Other hole sizes and configurations MAY be possible with further engineering analysis. For more information, contact your PWT distributor.
- Up to three 3/4" holes may be drilled in "Area B" to accommodate wiring and/or water lines. These holes must be at least 12" apart. The holes should be located in the middle third of the depth, or a minimum of 3" from the bottom and top of the beam. For beams shallower than 9-1/4," locate holes at mid-depth.
- Protect plumbing holes from moisture.

## Warnings The following conditions are NOT permitted!

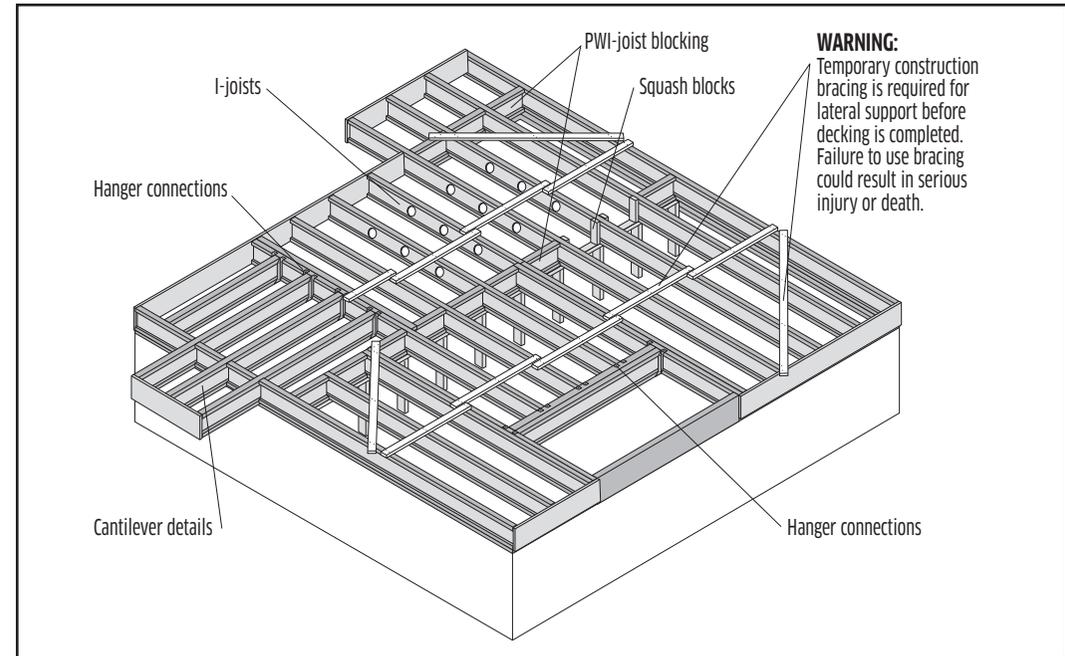
Do not use visually damaged products without first checking with your local PWT distributor or call (800) 515-7570.

<p><b>R1</b> DON'T put holes too close to supports.</p> <p>Refer to hole chart for correct location.</p>	<p><b>R2</b> DON'T overcut hole and damage flange.</p>	<p><b>R3</b> DON'T make hole with hammer unless knock-out is provided.</p> <p>DON'T hammer on flange and damage joist</p>	<p><b>R4</b> DON'T cut or notch flange.</p> <p>DON'T drill flange</p>
<p><b>R5</b> DON'T cut flange for pipes.</p>	<p><b>R6</b> DON'T use 16d nails.</p> <p>Refer to detail A5: Joist End Nailing for correct sizes and locations.</p>	<p><b>R7</b> DON'T cut beyond inside edge of bearing.</p>	<p><b>R8</b> DON'T Support I-joist on web.</p>

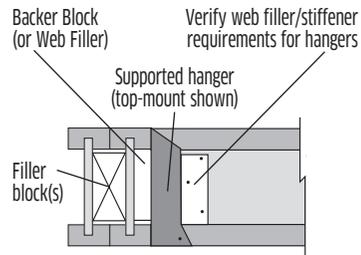
# Floor Details

<p><b>A1 RIM BOARD</b></p> <p>Fasten rim board to each floor I-joint using one 8d nail per flange</p> <p>Same depth as I-joint</p> <p>8d nails at 6" oc toe-nailed from outside of building</p>	<p><b>A2 RIM JOIST</b></p> <p>Rim joists with flanges wider than 1-3/4" require a minimum 2 x 6 plate</p> <p>Fasten rim joist to each floor I-joint with one 10d nail into the end of each flange. Use 16d box nails for rim joists with flanges wider than 1-3/4."</p> <p>8d nails at 6" oc (when used for shear transfer, nail to bearing plate with same nailing schedule for decking)</p>	<p><b>A3 BLOCKING AT EXTERIOR WALL</b></p> <p>8d nails at 6" oc (when used for shear transfer, nail to bearing plate with same nailing schedule for decking)</p>	<p><b>A4 SOLID BLOCKING AT EXTERIOR WALL</b></p> <p>Rim Board or PWT LVL as blocking</p> <p>Same depth as PWT I-joint</p> <p>8d nails at 6" oc toe-nailed from outside of building</p>	
<p><b>A5 JOIST SUPPORT NAILING</b></p> <p>Secure I-joint to plate with two 8d nails. Drive one nail from each side of I-joint, angled inward.</p> <p>Place nail 1-1/2" min. from end of I-joint. If nails are close to edge of plate, drive at an angle to reduce splitting.</p>	<p><b>B2 SQUASH BLOCKS</b></p> <p>Use double squash blocks as specified. Squash blocks shall be cut 1/16" taller than I-joint, 2 x 4 min.</p> <p>Blocking panels may be required with shear wall</p> <p>Stagger 8d nails to avoid splitting</p> <p>Bearing wall aligned under wall above</p> <p>Toe-nail 8d nail to plate</p>	<p><b>B3 BLOCKING AT INTERIOR SUPPORT</b></p> <p>Blocking is not required if no wall above unless I-joists end at support. Blocking may be required at interior supports by project designer or by code for seismic design.</p> <p>Bearing wall aligned under wall above</p> <p>Rim Board or PWT LVL may be substituted for the PWT I-joint blocking</p>	<p><b>C1 CANTILEVER DETAIL (NO REINFORCEMENT)</b></p> <p>APA Rated 23/32" OSB (or equal) closure, or as required by code.</p> <p>PWT I-joint Blocking*</p> <p>AS Designed</p> <p>*Rim Board or PWT LVL may be substituted for the PWT I-joint blocking</p>	
<p><b>C2 CANTILEVER DETAIL (REINFORCEMENT SIDE ONLY)</b></p> <p>APA Rated 23/32" OSB (or equal) closure, or as required by code</p> <p>PWT I-joint blocking (Rim Board or PWT LVL may be substituted for the I-joint blocking)</p> <p>2'-0" max.</p> <p>2'-0" min.</p> <p>Attach reinforcement to top and bottom flanges with 8d nails at 6" oc. Stagger nails from both sides in C3 to avoid splitting.</p>	<p><b>C3 CANTILEVER DETAIL (REINFORCEMENT BOTH SIDES)</b></p> <p>APA Rated 23/32" OSB (or equal) reinforcement 4'-0" long min.</p> <p>PWT I-joint blocking (Rim Board or PWT LVL may be substituted for the I-joint blocking)</p> <p>2'-0" max.</p> <p>2'-0" min.</p> <p>Attach reinforcement to top and bottom flanges with 8d nails at 6" oc. Stagger nails from both sides in C3 to avoid splitting.</p>	<p><b>Q5 SOLID RIM BOARD &amp; BLOCKING – HOLES</b></p> <p>Maximum allowable hole size and location per APA Performance Rated I-joint Design/Construction Guide (Z725)</p> <p>Continuous Support</p> <p>Max. <math>\phi = 2/3h</math></p> <p>Continuous Support</p> <p>If a hole larger than the max. is required, the two adjacent blocking panels must be solid, contain no holes.</p>	<p><b>D2 POST LOADS</b></p> <p>Squash blocks (cripples) required under all post loads</p>	<p><b>E5 DOUBLE I-JOIST CONNECTION</b></p> <p>Filler blocks must be:</p> <ul style="list-style-type: none"> <li>• Long enough not to split when nailed (12" min.)</li> <li>• Located at each support</li> <li>• Under all concentrated loads that are not equally applied to each ply</li> <li>• Centered behind each hanger</li> <li>• At 24" oc max. under all uniform loads that are not equally applied to each ply</li> <li>• Installed tight to top flange at top-mount hangers and top concentrated loads.</li> <li>• Installed tight to bottom flange at supports and face-mount hangers.</li> </ul> <p>Floor sheathing to be glued and nailed to flanges of both plies</p> <p>Attach using ten (10) 0.131" x 3-1/4" nails (min.):</p> <ul style="list-style-type: none"> <li>• Joists <math>\leq</math> 2-1/2" thick: from either side, total of 10 nails</li> <li>• Joists <math>&gt;</math> 2-1/2" thick: from each side, total of 20 nails</li> </ul> <p>Stagger rows, clinch where possible, and spaced to avoid splitting.</p> <p>Refer to I-joint Filler Thickness table for filler block sizes</p>

# Floor Layout (typical)



## E4 I-JOIST HEADER CROSS SECTION



conditions are not met.

**Filler Blocks:** Fasten I-joists together with filler blocks between the PWT I-joist webs:

- Filler blocks must be installed at any load that is not applied to the top of the member and equally to all plies. See Detail E5 for installation instructions.
- For joists supporting only top loads that are equally applied to both plies, filler blocks can be omitted.

**Backer Blocks:** Minimum 12" long backer blocks must be installed at all hangers and all concentrated loads that are not equally applied to each ply, center backer block on load.

- For a single I-joist header install backer blocks to both sides of the web.
- Backer blocks may be omitted for top-mount hangers supporting only downward loads not exceeding 250 lbs.
- Install backer blocks tight to top flange for top-mount hangers or top concentrated loads. Install tight to bottom flange for face-mount hangers.
- Attach using 10 nails (0.131"x3-1/4" (min.), clinch where possible) spaced to avoid splitting, with half the nails to each side of the center of the supported hanger.
- Face mount hanger nails must be min. 3" long per manufacturer's specifications.

### Filler Block Depth Example:

Multiple filler blocks may be stacked vertically to achieve the filler depth for a 14" deep I-joist (min. req. is 14" - 3" - 1" = 10"). One row of nails must be in each filler.

### Backer Block Length Example:

Two pieces, example 2 x 8 (min.) lumber, that are cut to the proper height may be set vertically side-by-side to achieve the required minimum 12" length.

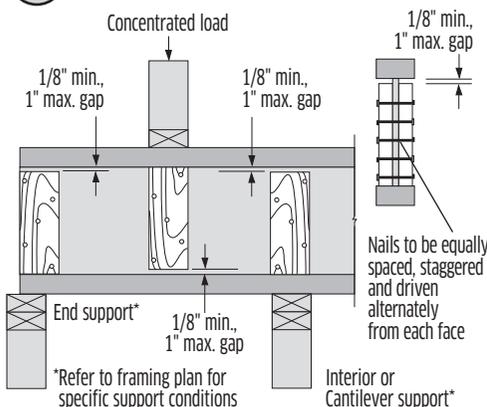
### Filler and Backer Blocks:

- Refer to the I-joist Filler Thickness table for the correct filler and backer block thickness.
- Filler and backer blocks shall consist of APA Rated wood structural panel (OSB or plywood), 2 x lumber (SPF or better), or PWT LVL or OSB Rim Board.
- Filler and backer blocks for members that are top-loaded only, or at hangers that do not require nailing into the web, shall be: at least 5-1/2" deep for I-joists up to 11-7/8" deep and at least 7-1/4" deep for I-joists deeper than 11-7/8". Otherwise, filler blocks shall fit the clear distance between flanges with a gap of at least 1/8", but not more than 1".
- For double PWT I-joists that are not top loaded or have loads that are not applied equally to both plies, the max unfactored loads for standard duration:

Concentrated Load = 1200 lbs., Uniform Load = 520 plf. Loads may be increased with more nails and adjusted for other load durations.

Contact the project's design professional or PWT distributor if these

## W1 WEB STIFFENER DETAIL



### WEB STIFFENER REQUIREMENTS

Series	Min. Thickness	Nail Size	Nail Qty., Max. Stiffener Height for Joist Depths			
			9-1/2"	11-7/8"	14"	16"
PWI 18S, PWI 20S, PWI 32S, PWI 53L, LPI 18, LPI 20Plus, LPI 32Plus, LPI 530	23/32"	8d (2-1/2")	3, 6-3/8"	3, 8-3/4"	3, 10-7/8"	3, 12-7/8"
PWI 36L, LPI 36	23/32"	8d (2-1/2")	-	4, 8-3/4"	5, 10-7/8"	6, 12-7/8"
PWI 42S, LPI 42Plus	1-1/2" (2 x)	10d (3")	3, 6-3/8"	3, 8-3/4"	3, 10-7/8"	3, 12-7/8"
PWI 56L, LPI 56	1-1/2" (2 x)	10d (3")	-	4, 8-3/4"	5, 10-7/8"	6, 12-7/8"

### Notes

1. Web stiffeners shall be installed in pairs—one to each side of the web. Web stiffeners are always required for the "Bird's Mouth" roof joist bearing detail.
2. Web stiffeners shall be cut to fit between the flanges of the PWT I-joist, leaving a minimum 1/8" gap (1" maximum). At bearing locations, the stiffeners shall be installed tight to the bottom flange. At locations of concentrated loads, the stiffeners shall be installed tight to the top flange.
3. Web stiffeners shall be cut from APA Rated OSB (or equal) or from PWT LVL or OSB Rim Board. 2x lumber is permissible. Do NOT use 1x lumber as it tends to split. Do NOT build up the required stiffener thickness from multiple pieces.
4. Web stiffeners shall be the same width as the bearing surface, with a minimum of 3-1/2".
5. See Web Stiffener Requirements for minimum stiffener thickness, maximum stiffener height and required nailing.

### Temporary Bracing

- Use at least 1x4 temporary bracing members nailed to each I-joist with two 8d nails.
- Keep the main runs parallel and no more than 8'-0" apart.
- Use long pieces, not short blocks; lap the ends to keep a continuous line of bracing.
- To prevent endwise movement of the continuous 1 x 4 lines of bracing, anchor them at the ends and at 25'-0" intervals into a stable end wall or an area braced by sheathing or diagonal bracing.
- Remember, the continuous 1 x 4 bracing is not effective unless attached to the braced area.
- Use particular care removing temporary bracing when applying sheathing. Remove the bracing as the sheathing is attached.

### I-JOIST FILLER THICKNESS

Series	Filler Block	Web Filler/Backer Block
PWI 18S, PWI 20S, PWI 32S, LPI 18, LPI 20Plus, LPI 32Plus	2-1/8"	1"
PWI 36L, LPI 36	1-7/8"	7/8"
PWI 42S, PWI 56L, LPI 42Plus, LPI 56	3"	1-1/2"
PWI 53L, LPI 530	1-3/4"	7/8"

### Notes

1. Backer blocks and filler blocks shall consist of APA Rated wood structural panel (OSB or plywood), or 2x lumber (SPF or better).
2. PWT LVL or OSB Rim Board may also be used.
3. Refer to the Notes for the I-joist Header Cross-Section to the left for details on the required height and length, and nailing of the backer blocks and filler blocks.

### Floor Layout Notes

- I-joists must 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.
- All PWT products are to be installed straight (1/2 inch max. deviation), and with the depth of the product plumb.
- All loads that are suspended below I-joists are to be attached to the web(s) of I-joists. Filler blocks or bridging between I-joists should be used. Light loads such as gypsum ceilings may be attached directly to the bottom flange of I-joists. Care must be used to ensure the flange is not split or damaged when doing this.

### NAIL NAMES AND SIZES

Callout	Common Name	Min. Length (in)	Diameter (in)
8d	box	2-1/2	0.113
8d	common	2-1/2	0.131
10d	box	3	0.128
10d	common	3	0.148
16d	box	3-1/2	0.135
16d	common	3-1/2	0.162

Common nails are assumed unless otherwise indicated. 10d box may be substituted for 8d common nails.

# PWT LVL Details

<p><b>P1 TOP LOADED BEAM – NAILED CONNECTION</b> (SEE CONNECTION ASSEMBLIES FOR MORE DETAILS)</p> <p>Minimum nail sizes: 1-3/4" &amp; 2" plies - 16d box (3.25" x 0.131"Ø) 1-1/2" plies - 10d box (3" x 0.128"Ø)</p> <p>Three rows for depths up to 12" Four rows for depths up to 18" Min. 5 rows for depths greater than 18"</p> <p>Framing is applied to top of the beam so that each ply carries an equal load</p>	<p><b>P2 TOP LOADED BEAM – BOLTED CONNECTION</b> (SEE CONNECTION ASSEMBLIES FOR MORE DETAILS)</p> <p>Framing is applied to top of the beam so that each ply carries an equal load</p> <p>Nails are permissible but NOT required. See notes for Connection Assemblies.</p> <p>1/2" - diameter ASTM grade A-307 (or better) bolts. Use washers on both faces.</p>	<p><b>P3 BEAM CONNECTION</b></p> <p>Structurally adequate hanger</p> <p>Hanger must apply load equally to each ply or special design is required</p>	<p><b>P4 STEEL COLUMN &amp; WOOD COLUMN</b> <b>P5</b></p> <p>Framing details such as joists and sheathing must be provided to prevent beam from twisting or rotating at support</p> <p>Simpson® PC or CC, MiTek® KCC or KECC or equal post or column cap</p> <p>Provide specified bearing length</p> <p>Simpson® CCO, MiTek® KLCC or equal column cap</p> <p>Provide specified bearing length</p>
<p><b>P6 SIDE-LOADED BEAM</b></p> <p>Verify hanger, stiffener, and filler requirements.</p> <p>Prevent the beam from rotating by using rim or blocking.</p> <p>Refer to Connection Assemblies for Multi-Ply connection information. Side loads are not recommended for beams over 5-1/2" wide unless loads are equally applied to both faces.</p>	<p><b>P7 CONCRETE WALL</b></p> <p>NOTE: Protect wood from contact with concrete as required by code</p> <p>Simpson® GLB, MiTek® KGLB or equal seat</p>	<p><b>Q1 WINDOW/DOOR HEADER</b></p> <p>Continuous plate</p> <p>Rim Board</p> <p>Provide specified or prescriptive bearing length</p>	<p><b>Q4 MASONRY HANGER</b></p> <p>Simpson® WM, MiTek® MPH or equal hanger</p> <p>NOTE: Protect wood from contact with concrete as required by code</p>

## Connection Assemblies

<p><b>DETAIL A</b> maximum 3-1/2" wide 2-ply beams</p> <p>1-3/4" max. ply thickness</p>	<p><b>DETAIL B</b> maximum 5-1/4" wide 3-ply beams</p> <p>1-3/4" max. ply thickness</p>	<p><b>DETAIL C/E</b> maximum 7" wide 2-ply beams</p> <p>1-3/4" maximum side member 3-1/2" main member for C 5-1/4" main member for E</p>	<p><b>DETAIL D</b> maximum 7" wide 3-ply beams</p> <p>1-3/4" maximum side members 3-1/2" maximum main member</p>	<p><b>DETAIL F</b> maximum 7" wide 3- or 4-ply beams</p> <p>3"</p> <p>3"</p>	<p><b>DETAIL G</b> maximum 7" wide 2-ply beams</p> <p>3"</p> <p>3"</p>	<p><b>DETAIL H</b> maximum 7" wide 2-, 3- or 4-ply beams</p> <p>2 9/16"</p> <p>2 9/16"</p> <p>Simpson® SDS -1/4" x 6" Simpson® SDW 6-3/4" or equal Simpson SDW may be driven from one side</p>
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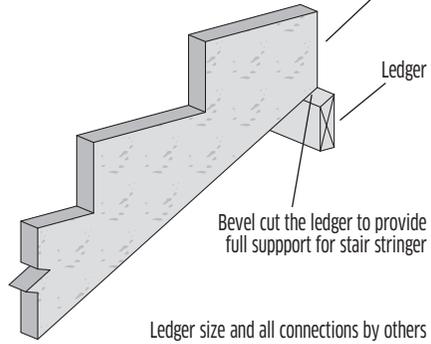
### Notes

- Use 3 rows of nails for depths to 12." Use 4 rows of nails for depths greater than 12," up to 18." Use 5 rows of nails for depths greater than 18," up to 24."
- 16d box (3-1/4" x 0.131"Ø) or common (3-1/2" x 0.162"Ø) nails shall be used for 1-3/4" thick plies. 10d box (3" x 0.128"Ø) or common (3" x 0.148"Ø) nails shall be used for 1-1/2" thick plies. 16d sinkers (3-1/4" x 0.148"Ø) may be used for 1-3/4" plies provided the nails are driven alternating from each face (see note 3).
- For detail **A** or when attaching the first two plies for details **B** and **F** (optional), the nails may be driven all from one face or alternating from both faces. If the nails do not fully penetrate the second ply, then the nails shall be driven from both faces.
- When driving nails from each face, alternate every other nail in each row.
- For detail **C/E**, when side-loaded, the larger side-load shall be applied to the thicker ply (main member).
- For details **F** and **H**, it is permissible to nail the plies together before bolting or driving Simpson SDS or SDW (or equal) screws. Nail two plies together then nail one additional ply to each side.
- Beams wider than 5-1/2" shall be top-loaded or side-loaded from both sides to prevent rotation. Consult a professional engineer for other options.
- Other nail, screw or bolt configurations are possible. Contact your PWT distributor.
- Minimum of 2" or the screw manufacturer's edge distance.

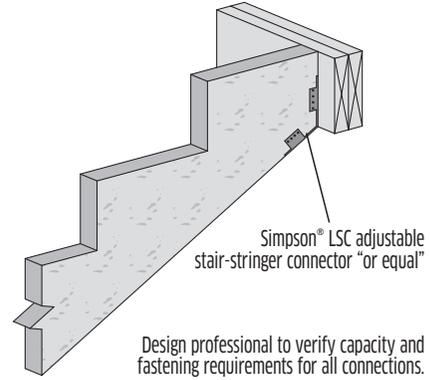
# Stair Stringer Details

## G1 TOP SUPPORT – LEDGER

Provide restraint to ensure stringer lateral stability

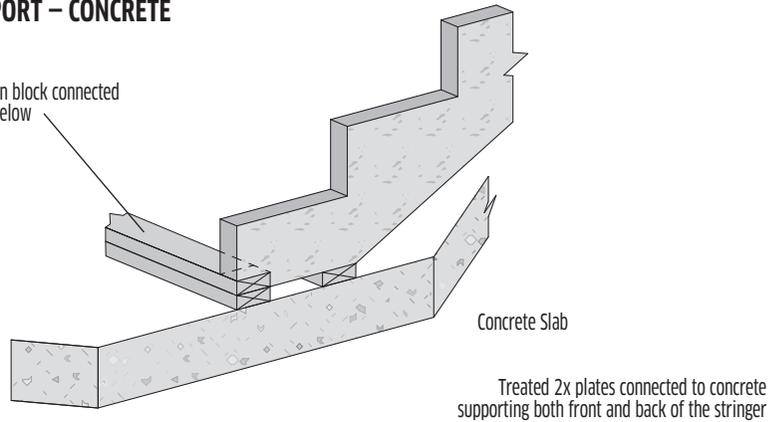


## G2 TOP SUPPORT – CONNECTOR



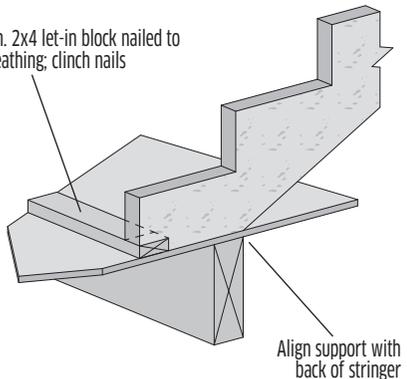
## G3 BOTTOM SUPPORT – CONCRETE

Min. 2x4 let-in block connected to the plate below



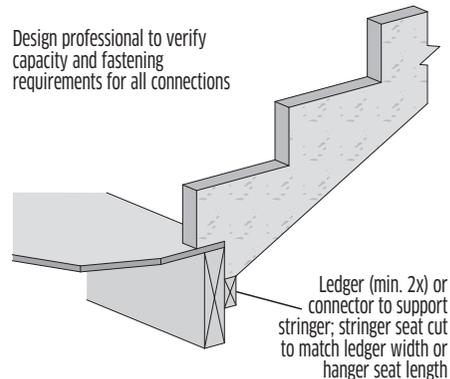
## G4 BOTTOM SUPPORT – BEAM

Min. 2x4 let-in block nailed to sheathing; clinch nails



## G5 BOTTOM SUPPORT – LEDGER

Design professional to verify capacity and fastening requirements for all connections

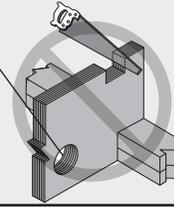


# Warnings The following conditions are NOT permitted!

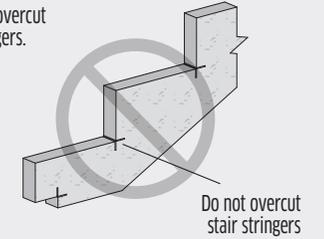
Do not use visually damaged products without first checking with your local PWT distributor or call (800) 515-7570.

## R9 DON'T bore holes or notch unless reviewed by a design professional.

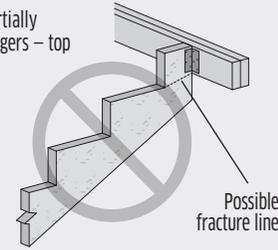
Exception: small holes may be drilled in accordance with the Beam Hole Details.



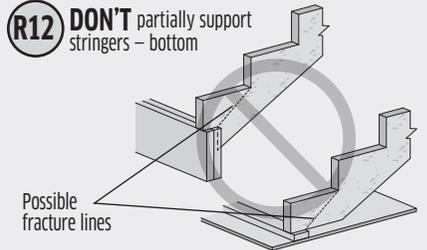
## R10 DON'T overcut stair stringers.



## R11 DON'T partially support stringers – top



## R12 DON'T partially support stringers – bottom



ENGINEERED WOOD PRODUCTS

# PWT

1850 Park Lane Burlington, WA 98233

TECH SUPPORT 800.515.7570

TF 888.707.2285

[pwtewp.com](http://pwtewp.com)

For product catalog and complete warranty details or for more information on the full line of PWT products or the nearest distributor, visit [pwtewp.com](http://pwtewp.com).

PWT products are manufactured at different locations in the United States.

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