Engineered Wood Products
CONSTRUCTION DETAILS
NORDIC JOIST
Nordic Structures is the leading innovator in engineered wood products. Its resource comes from responsibly managed lands within the regional boreal forest. Vertical integration, from forest to structure, bolstered by Nordic’s experienced design and development team, ensures consistent quality and unparalleled level of service.
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TYPICAL ROOF FRAMING AND CONSTRUCTION DETAILS
1.0 General

1.1 This document supersedes all previous versions. For the latest version, consult nordic.ca or contact Nordic Structures.

1.2 While this guide emphasizes residential construction, much of the basic design information can be used for other construction applications. Review by a design professional is required for applications beyond the scope of this document.

1.3 Refer to the Nordic Joist Technical Guide (NS-GT3) for the maximum spans, or to the floor or roof layout provided by your distributor.

1.4 For more information, consult nordic.ca or contact Nordic Structures.

2.0 Fire Resistance

2.1 Numerous fire-rated assemblies incorporate I-joists and wood structural panels. These floor-ceiling and roof-ceiling assemblies, recognized as fire-rated constructions by building codes, are illustrated in the APA Product Report PR-S274, Fire-Rated Assemblies.

2.2 A rim board can also serve as a fire barrier when it is installed in a continuous assembly on top of a wall, parallel or perpendicular to the joists. Fire-resistant rim board assemblies are shown in the APA Data File: APA Rim Board in Fire-Rated Assemblies, Form D350.

2.3 In some designs, sprinkler systems are used with I-joists. There are a variety of sprinkler attachments that incorporate fasteners permitted by the National Fire Protection Association (NFPA), design load assumptions published by the NFPA, and published design fastener capacities. These sprinkler attachments are illustrated in details 9.

2.4 The 2018 and 2015 International Residential Codes (Section R302.13) require fire protection of floor assemblies. APA System Report SR-405, Fire Protection of Floors Constructed with Prefabricated Wood I-Joists for Compliance with the International Residential Code, offers options for fire protection of floors constructed with Nordic I-joists.
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Nordic Structures
nordic.ca
### 4 Sprinkler Pipe Installation

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**NORDIC I-JOISTS**

Nordic I-joists are composed of sawn lumber flanges connected by a structural oriented strand board and bonded together with exterior-grade adhesives.

### RESIDENTIAL SERIES

**NI-40x**

- 2x3 1950f MSR, 3/8 in. web
- Depths
  - 9-1/2, 11-7/8 and 14 in.

**NI-60**

- 2x3 2100f MSR, 3/8 in. web
- Depths
  - 9-1/2, 11-7/8, 14 and 16 in.

**NI-80**

- 2x4 2100f MSR, 3/8 in. web
- Depths
  - 9-1/2, 11-7/8, 14 and 16 in.

**NI-90**

- 2x4 2400f MSR, 7/16 in. web
- Depths
  - 11-7/8, 14 and 16 in.

### COMMERCIAL SERIES

**NI-60**

- 2x3 2100f MSR, 3/8 in. web
- Depth
  - 18 in.

**NI-80x**

- 2x4 2100f MSR, 7/16 in. web
- Depths
  - 18, 20, 22 and 24 in.

**NI-90**

- 2x4 2400f MSR, 7/16 in. web
- Depths
  - 11-7/8, 14 and 16 in.

**RIM BOARDS**

- 1-1/8 in. width
- I-joist compatible depths

Check availability of products with your local distributor.
I-JOIST MARKING

Notes:
2. For APA Rim Board Plus specifications, see ANSI/APA PRR 410, Standard for Performance-rated Engineered Wood Rim Boards.
Nailed to Only One Flange Edge (Top View)

Nailed to Both Flange Edges (Top View)

Recommended Closest Nail Spacing for Fastening Sheathing to I-joist Flanges to Minimize Splitting

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<td>Nail spacing (in.)</td>
<td>End distance (in.)</td>
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<td>0.128&quot; or smaller in diameter, and 3-1/4&quot; or shorter in length (8d box or sinker, 10d box or sinker, or 12d box)</td>
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<td>Greater than 0.128&quot; up to 0.148&quot; in diameter, and 3-1/4&quot; or shorter in length (8d common, 10d common, 12d sinker or common, or 16d sinker)</td>
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(a) If more than one row is required, offset rows a minimum of 1/2 inch and stagger.
(b) Closest nail spacing measured from one flange edge. Nails on opposite flange edge must be offset one-half the minimum spacing.
TYPICAL FLOOR FRAMING AND CONSTRUCTION DETAILS
Installation of Nordic I-joists shall be as shown in details 1.

2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.

3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.

4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.

5. I-joists must be protected from the weather prior to installation.

6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 16 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.

7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.

8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.

9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (criple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.

10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum allowable vertical load using a single I-joist is 2,000 plf, and 4,000 plf if double I-joists are used.

11. Continuous lateral support of the I-joist’s compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist’s bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.

12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page viii.

13. Details 1 on the following pages show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.

14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see APA Technical Note: Temporary Construction Loads over 1-Joist Roofs and Floors, Form J735.
Holes may be cut in web for plumbing, wiring and duct work. See details and tables 6. Note: Never cut or notch flanges.

Nordic Lam or SCL

Use hangers recognized in current code evaluation reports

Note:
1. Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.
The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

8d nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for floor sheathing)

Attach I-joist to top plate per detail 1b

---

Blocking panel and/or rim joist
Uniform vertical load transfer capacity (plf) (a)

<table>
<thead>
<tr>
<th>Component</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordic I-joists</td>
<td>2,000</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

Note:
1. To avoid splitting flange, start nails at least 1-1/2 inch from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8” APA Rim Board Plus</td>
<td>4,850</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.
Nordic I-joists
1-1/8" APA Rim Board Plus 4,850
2,000
One 8d common or box nail at top and bottom flange

Attach rim board to top plate using 8d common or box toe-nails at 6" o.c.

One 8d face nail at each side at bearing

Attach rim joist to top plate per detail 1a

Note:
1. To avoid splitting flange, start nails at least 1-1/2 inch from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8&quot; APA Rim Board Plus</td>
<td>4,850</td>
</tr>
<tr>
<td>Nordic I-joists</td>
<td>2,000</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Minimum 1-3/4" bearing required
Nordic rim joist per detail 1a
Attach rim joist to top plate per detail 1a
Attach I-joist per detail 1b

Blocking panel and/or rim joist

<table>
<thead>
<tr>
<th>Uniform vertical load transfer capacity (plf) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordic I-joists</td>
</tr>
<tr>
<td>2,000</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Squash block, 1/16” longer than the I-joist depth

Attach squash block to top and bottom flange with one 8d nail at each location

Nordic I-joist or rim board blocking panel per detail 1a

1/16” for squash blocks

<table>
<thead>
<tr>
<th>Pair of squash blocks (a)</th>
<th>Vertical load transfer capacity (lbf)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-1/2” wide</td>
</tr>
<tr>
<td>2x lumber</td>
<td>3,800</td>
</tr>
<tr>
<td>1-1/8” APA Rim Board Plus</td>
<td>2,600</td>
</tr>
</tbody>
</table>

(a) The squash blocks are assumed to be in full bearing on the plate below.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above.

Stagger nails to avoid splitting.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Rim board may be used in lieu of I-joists. Backer is not required when rim board is used.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) ((a))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nordic I-joists</td>
<td>2,000</td>
</tr>
</tbody>
</table>

\(a\) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.
Blocking panels may be required per detail 1s-1

Attach I-joists to top plate using 8d nails at 6" o.c.

Provide backer for siding attachment unless nailable sheathing is used

Wall sheathing, as required

Note:
1. Rim board may be used in lieu of I-joists. Backer is not required when rim board is used.

The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Blocking panels may be required per detail 1s-1

Rim board

One 8d nail at 12" o.c. at top and bottom flange

Attach rim board to top plate using 8d common or box toe-nails at 6" o.c.

Nordic I-joist

8d nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for decking)

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8&quot; APA Rim Board Plus</td>
<td>4,850</td>
</tr>
<tr>
<td>Nordic I-joists</td>
<td>2,000</td>
</tr>
<tr>
<td>Both products</td>
<td>6,850</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.

Blocking panels may be required per detail 1s-1

Rim board, braced with blocking panel at 24” o.c. minimum

Attach rim board to top plate using 8d common or box toe-nails at 6” o.c.

---

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1/8” APA Rim Board Plus</td>
<td>4,850</td>
</tr>
</tbody>
</table>

(a) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.
Blocking panels may be required per detail 1s-1

Double rim board, braced with blocking panel at 24" o.c. minimum

Attach rim boards to top plate using 8d common or box toe-nails at 6" o.c.

---

<table>
<thead>
<tr>
<th>Blocking panel and/or rim joist</th>
<th>Uniform vertical load transfer capacity (plf) (^{(a)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 1-1/8&quot; APA Rim Board Plus</td>
<td>9,700</td>
</tr>
</tbody>
</table>

\(^{(a)}\) The uniform vertical load transfer capacity is limited to a depth of 16 inches or less and shall not be increased for any load duration shorter than the normal (10-year) load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see detail 1d.
Blocking panels may be required per detail 1s-1

2x4 pony wall by others. Attach pony wall to top plate using 16d nails at 6" o.c.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Blocking panel required over all interior supports under load-bearing walls or when floor joists are not continuous over support. In high seismic areas (SDC D0, D1, and D2), the IRC requires blocking at all intermediate supports. The IBC requires blocking at all supports for all seismic design categories.

Notes:
1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.
2. For other options, see details 1g-1 to 1g-4.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. This detail only applies to continuous I-joists without load-bearing wall above.
2. In high seismic areas (SDC, D0, D1 and D2), the IRC requires blocking per detail 1g at all intermediate supports. The IBC requires blocking per detail 1g at all supports for all seismic design categories.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Load-bearing wall above shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking panel

8d nails at 6" o.c. to top plate

Joist attachment per detail 1b

Note:
1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Load-bearing wall above, if any, shall align vertically with the wall below. Other conditions, such as offset bearing walls, are not covered by this detail.

Notes:
1. An occasional blocking panel (one per line of blocking) may be left out for the passage of plumbing or ventilation ducts. For other applications, contact Nordic Structures.
2. Joist spacing may vary from one side to the other. If the space between the joists is less than 3 inches, the blocking panel may be omitted.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
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Use backer block if hanger load exceeds 250 lbf. Before installing a backer block to a double I-joist, drive three additional 10d nails through the webs and filler block where the backer block will fit. Clinch. Install backer block tight to top flange. Use twelve 10d nails, clinched when possible. Maximum capacity for hanger for this detail = 1,280 lbf.

Notes:
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For hanger capacity, see manufacturer’s recommendations.
3. Verify double I-joist capacity to support concentrated loads.
4. Backer blocks must be long enough to permit required nailing without splitting.

---

### Backer Block

<table>
<thead>
<tr>
<th>Flange width (in.)</th>
<th>Material thickness required (in.)</th>
<th>Minimum depth (in.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2</td>
<td>1</td>
<td>5-1/2</td>
</tr>
<tr>
<td>3-1/2</td>
<td>1-1/2</td>
<td>7-1/4</td>
</tr>
</tbody>
</table>

(a) Minimum grade for backer block material shall be Utility grade S-P-F (south) or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.
(b) For face-mount hangers use net joist depth minus 3-1/4 inches for joists with 1-1/2-inch-thick flanges.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8-inch- to 1/4-inch-gap between top of filler block and bottom of top I-joist flange.
3. Nail joists together according to the pattern shown in the table above, and clinch nails when possible.
4. Filler blocks and backer blocks must be Grade S-P-F No. 3/Stud or better for sawn lumber and conforming to Rated Sheathing grade for wood for structural panels.
5. For face-mount hangers, use joist depth minus 3-1/4 inches.
6. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used. For hanger capacity, see manufacturer's recommendations.
7. Verify double I-joist capacity to support concentrated load.

Notes:
1. Minimal distances: Spacing parallel to grain of 3 inches; end distance parallel to grain of 2 inches; spacing between rows of nails of 1-1/2 inch; and distance from top and bottom of the member of 3/4 inch.
2. For the filler block, alternate nails on opposite side.
3. The number of rows and the spacings may vary, as long as the total number of nails and the minimum distances are respected.
Notes:
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.
2. For nailing schedules for multiple Nordic Lam or SCL beams, see the manufacturer's recommendations.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. For nailing schedules for multiple beams, see the manufacturer's recommendations.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Top-mount hanger installed per manufacturer's recommendations

2x plate flush with inside face of wall or beam.
1/8" overhang allowed past inside face of wall or beam.

Note:
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
2x plate flush with inside face of wall or beam.
1/8” overhang allowed past inside face of wall or beam.

Face-mount hanger installed per manufacturer's recommendations

Wood support attached to steel beam

Note:
1. Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. End of floor joists shall be restrained using blocking panels installed at a maximum of 6 inches from end of I-joists. Attach with one 8d toe-nail on each side of top and bottom flanges.
2x plate flush with the top flange of the joists to allow nailing of the sheathing

Do not bevel-cut I-joist beyond 1/4" of steel beam

Continuous 1x4 strapping attached with two 6d nails to each joist, and fastened at each end to a sill or header

Minimum 1-3/4" bearing. The joists shall be securely fastened to steel beam.

Note:
1. End of floor joists shall be restrained using blocking panels installed at a maximum of 6 inches from end of I-joists. Attach with one 8d toe-nail on each side of top and bottom flanges.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify header capacity to support concentrated loads.

Install hanger per manufacturer’s recommendations

Backer block per detail 1h

Filler block per detail 1p

Note:
1. See detail 1h for maximum support capacity.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Blocking required at bearing for lateral support, not shown for clarity.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. End of floor joists shall be restrained using blocking panels installed at a maximum of 6 inches from end of I-joists. Attach with one 8d toe-nail on each side of top and bottom flanges.
Notes:
1. Blocking required at bearing for lateral support, not shown for clarity.
2. This detail applies to roofs with a slope of 6:12 or greater. For a roof slope less than 6:12, contact your local distributor.
3. This detail is intended to reinforce the I-joist end and not to transfer thrust loads at the rafter heel. The applicability of this detail is based on the joist reaction at the support.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8-inch to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. For flange width of 2-1/2 inches, nail joists together with two rows of 10d nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist (total of four nails per foot). For flange width of 3-1/2 inches, use two rows of 10d nails at 6 inches o.c. on each side of the double I-joist (total of eight nails per foot).
5. The maximum load that may be applied to one side of the double I-joist using this detail is 620 lbf/ft.

Note:
1. The height of the filler block may be different from that specified in the table, as long as it allows nailing and respects the required gap.
Notes:
1. This detail only applies to double I-joists uniformly loaded on top and equally on both joists, and when the top flanges of both I-joists are continuously laterally supported by connection to the sheathing. For other conditions, such as side-loaded I-joists, refer to detail 1p.
2. Attach floor sheathing to each joist. No filler block is required.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. This detail may be used to reduce floor vibration.
2. Blocking panels may be of any I-joist series. Box nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.
3. One occasional blocking panel may be left out for the passage of ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking depth or length may be drilled in the blocking panel.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Continuous 1x4 strapping under blocking panels, attach with two 6d nails to each blocking panel and each I-joist, and fasten at each end to the rim joist or sill plate.

Notes:
1. This detail may be used to reduce floor vibration.
2. Blocking panels may be of any I-joist series. Box nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.
3. One occasional blocking panel may be left out for the passage of ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking’s depth or length may be drilled in the blocking panel.
4. For better performance, glue strapping to blocking panels and I-joists with construction adhesive.
Notes:
1. This detail may be used to reduce floor vibration.
2. Blocking panels may be of any joist series. Box nails attaching lumber piece to joist web should be driven from the web side and clinched on the lumber side.
3. One occasional blocking panel may be left out for the passage of ventilation ducts. Otherwise, a hole of not more than 2/3 of the lesser dimension of the blocking’s depth or length may be drilled in the blocking panel.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Continuous 1x4 strapping under blocking panels, attach with two 6d nails to each blocking panel and each I-joist, and fasten at each end to the rim joist or sill plate.

Notes:
1. This detail may be used to reduce floor vibration. Blocking panels must be installed at joist mid-span.
2. Blocking panels may be of any I-joist series. Box nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.
3. For better performance, glue strappings to blocking panels and I-joists with construction adhesive.
4. A gypsum ceiling directly attached to I-joists can replace strappings.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. In some local codes, blocking panels are prescriptively required in the first joist space (or first and second joist spaces) next to the starter joist. Where required, see local code requirements for spacing of the blocking panels. As a minimum, it is recommended to use blocking panels spaced at 4 feet on center.
2. Details shown are for minimum blocking attachment. Transfer of lateral loads may require additional fasteners. In such cases, nail size, spacing and specific design detailing shall be provided by the building designer.
3. Common nails of the same pennyweight may be substituted for the box nails shown above.
4. Where blocking panels are required between adjacent joists, the blocking panels may be staggered by approximatively 3 inches, and end-nailed as shown.
5. Box nails attaching lumber piece to I-joist web should be driven from the web side and clinched on the lumber side.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Non-load-bearing partitions may be parallel or perpendicular to joists and positioned anywhere on the structural panel floor. Check the validity of this detail with the applicable building code.
2. The effect of the additional load on joist spans must be checked. Unless joists are already over-designed, additional joists may be required.
3. The sheathing panel shall be oriented so that its strength axis runs perpendicular to the joists.
4. For best performance, glue the bottom plate to wood structural panel with construction adhesive.
Notes:
1. Non-load-bearing partitions may be parallel or perpendicular to joists and positioned anywhere on the structural panel floor.
2. The effect of the additional load on joist spans must be checked. Unless joists are already over-designed, additional joists may be required.
3. The sheathing panel shall be oriented so that its strength axis runs perpendicular to the joists.
4. For best performance, glue the bottom plate to wood structural panel with construction adhesive.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
WEB STIFFENERS AND CANTILEVERS
Flange width (in.) | Web stiffener size each side of web (in.)
--- | ---
2-1/2 | 1 x 2-5/16 Minimum width
3-1/2 | 1-1/2 x 2-5/16 Minimum width

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Cantilever extension supporting uniform floor loads only

Attach I-joists to plate at all supports per detail 1b

Nordic I-joist or rim board

Rim board or wood structural panel

3-1/2” minimum bearing required

L/4, 4'-0” maximum where L is joist span

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
L, 4'-0" maximum, where L is length of cantilever

2x8 minimum. Nail to backer block and joist with two rows of 10d nails at 6" o.c. and clinch. (Cantilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

Full-depth backer block with 1/8" gap between block and top flange of I-joist. See detail 1h. Nail with two rows of 10d nails at 6" o.c. and clinch.

Notes:
1. The balcony shall be constructed in accordance with 2018 IBC Sections 2304.12.2.5 and 2304.12.2.6
2. Impervious moisture barrier systems, if required, shall be detailed, installed, and inspected in accordance with 2018 IBC Sections 107.2.5 and 110.3.6

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Nordic I-joist blocking panel or rim board blocking, attach per detail 1g

Nordic I-joist blocking panel or rim board blocking, attach per detail 1g

Notes:
1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on one side of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b.
2. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking is required along the cantilever support.
4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on both sides of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flange, offset on opposite side. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b.
2. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking is required along the cantilever support.
4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. The above detail is applicable only to single family residential construction, and when the cantilever is loaded by uniform floor loads only (i.e. wall is not load-bearing).
2. Cantilevered joists must be properly sized to support design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking over bearing wall must be provided at all areas of wall bracing (at end of walls and at least every 25'-0" of wall length). See IRC Table R602.10.1 Wall Bracing.
4. This detail is adequate for I-joist lateral stability. Additional lateral resistance may be required in high wind and/or seismic load areas. In such cases, specific design detailing shall be provided by the building designer.
5. During erection, provide temporary blocking over bearing wall in order to prevent rollover of floor joists.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 5.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on one side of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flange. Install with face grain horizontal. Attach i-joist to plate at all supports per detail 1b.
2. Cantilevered joists must be properly sized to support all design loads. Refer to table 5.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking is required along the cantilever support.
4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
**Notes:**

1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on both sides of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flanges, offset on opposite side. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b.

2. Cantilevered joists must be properly sized to support all design loads. Refer to table 5.1 of the Nordic Joist Technical Guide (NS-GT3).

3. Blocking is required along the cantilever support.

4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

---

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
**Notes:**
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 5.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

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**All nails shown in the details are assumed to be common nails unless otherwise noted.** 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Joist attached to supporting wall:
- two 8d box face nails - I-joist framing (fastening not shown for clarity)

Three 16d box nails at 16" o.c. at braced wall panels or one 16d nail at 16" o.c. for other wall panels

2x8 blocking between each joist. Fasten to top plate with 10d box nails at 6" o.c. Stagger nails. Install as joists are set.

8d box nails at 6" o.c. from floor sheathing into rim board

Rim board fastening to joists: one 8d box face nail top and bottom flanges each floor joist. Install as joists are set.

Rim board fastening to blocking: 10d box face nails at 6" o.c. Install as joists are set.

Joist attached to supporting wall:
- two 8d box face nails - I-joist framing (fastening not shown for clarity)

Notes:
1. The above detail is appropriate for one- and two-family residential structures constructed in accordance with the 2018 International Residential Code Sections R301.2.2.6 and R602.10, and Table R602.3(1).
2. Cantilevered joists must be properly sized and spaced, and may require reinforcements to support vertical wall loads. Note that this detail can only be used when no I-joist reinforcement is required.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
2x6 vertical block on each side, attach using four 8d nails (two on each side)

Two 8d nails from each web to lumber piece

Girder joist; for double joist, use filler block per detail 1p

Attach end of joist using one 8d toe-nail at top and bottom flanges

Hangers may be used in lieu of solid sawn blocks

Rim board or wood structural panel closure (minimum 23/32 Performance Category), attach per detail 1b

Attach I-joist to plate per detail 1b, 3-1/2" minimum bearing required

Notes:
1. Verify girder joist capacity if the back span exceeds the joist spacing. Limit the differential deflection between adjacent I-joists.
2. Cantilevered joists must be properly sized to support all design loads.
3. Blocking is required along the cantilever support.
4. Maximum capacity for pair of 2x6 blocks for this detail is 370 lbf (total of four nails). For higher capacities, use hangers in lieu of solid sawn blocks.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clary.
Notes:
1. Verify girder joist capacity if the back span exceeds the joist spacing. Limit the differential deflection between adjacent I-joists.
2. Cantilevered joists must be properly sized to support all design loads.
3. Blocking is required along the cantilever support.
4. Maximum capacity for pair of 2x4 blocks for this detail is 370 lbf (total of four nails). For higher capacities, use hangers in lieu of solid sawn blocks.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Back span

Girder joist, or Nordic Lam or SCL beam; for double joist, use filler block per detail 1p

Backer block per detail 1h

Hanger

Rim board or wood structural panel closure (minimum 23/32 Performance Category), attach per detail 1b

Attach I-joist to plate per detail 1b, 3-1/2" minimum bearing required

Notes:
1. Verify girder joist capacity if the back span exceeds the joist spacing. Limit the differential deflection between adjacent I-joists.
2. Cantilevered joists must be properly sized to support all design loads.
3. Blocking is required along the cantilever support.
4. For hanger capacity, see manufacturer's recommendations.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:

1. This detail is limited to a 5-1/2-inch brick cantilever on two adjacent sides of the building. Use in conjunction with the short cantilever details for vertical building offset.
2. Verify girder joist capacity if the back span exceeds the joist spacing. Limit the differential deflection between adjacent I-joists.
3. Cantilevered joists must be properly sized to support all design loads.
4. Blocking is required along the cantilever support.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
OPENINGS AND RIM BOARDS
Web Hole Specifications

Rules for Cutting Holes in I-joists

1. The distance between the inside edge of the support and the centerline of any hole shall be in compliance with the requirements of Table 6.1.

2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.

3. Whenever possible, field-cut holes should be centered on the middle of the web.

4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.

5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.

6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole -., and each hole must be sized and located in compliance with the requirements of Table 6.1.

7. Holes measuring 1-1/2 inch or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

8. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above. For more than three holes per span, space holes at minimum 15 inches on center.

9. All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.

10. Limit three maximum-size holes per span.

11. A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed around them.

Notes:
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.
### Table 6.1 – Location of Web Holes

**Design Criteria**
- **Span:** Simple or multiple
- **Joist spacing:** Up to 24 inches
- **Loads:** Live load = 40 psf and dead load = 10 psf
- **Deflection limits:** L/480 under live load and L/240 under total load

<table>
<thead>
<tr>
<th>Joist depth</th>
<th>Joist series</th>
<th>Round hole diameter (in.)</th>
<th>L_{ref}</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1/2&quot;</td>
<td>NI-40x</td>
<td>0'-7&quot; 1'-4&quot; 2'-8&quot; 4'-2&quot; 5'-8&quot; 6'-2&quot;</td>
<td>- - - - - - - 15'-0&quot;</td>
</tr>
<tr>
<td></td>
<td>NI-60</td>
<td>1'-0&quot; 2'-4&quot; 3'-9&quot; 5'-3&quot; 6'-10&quot; 7'-3&quot;</td>
<td>- - - - - - - 15'-3&quot;</td>
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<td>- - - - - - - 16'-9&quot;</td>
</tr>
<tr>
<td>11-7/8&quot;</td>
<td>NI-40x</td>
<td>0'-7&quot; 0'-8&quot; 1'-0&quot; 2'-4&quot; 3'-8&quot; 4'-0&quot;</td>
<td>5'-2&quot; 6'-8&quot; 8'-0&quot; - - - - 17'-2&quot;</td>
</tr>
<tr>
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<td>NI-60</td>
<td>0'-7&quot; 1'-4&quot; 2'-8&quot; 4'-0&quot; 5'-5&quot; 5'-10&quot;</td>
<td>7'-0&quot; 8'-8&quot; 9'-9&quot; - - - - 18'-2&quot;</td>
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<td>8'-5&quot; 10'-2&quot; 11'-3&quot; - - - - 19'-11&quot;</td>
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<td>4'-9&quot; 5'-9&quot; 6'-3&quot; 8'-0&quot; 9'-9&quot; - - - 18'-11&quot;</td>
</tr>
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<td>5'-3&quot; 6'-9&quot; 7'-9&quot; 8'-3&quot; 10'-2&quot; 11'-1c</td>
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<td>NI-80</td>
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<td>4'-6&quot; 6'-3&quot; 7'-3&quot; 7'-7&quot; 9'-8&quot; 11'-0&quot; 11'-6&quot; 13'-6&quot; 15'-3&quot; 25'-7&quot;</td>
</tr>
</tbody>
</table>

**Notes:**
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
2. If the actual measured span is less than the reference span, L_{ref}, the minimum distance from inside face of any support to center of hole may be reduced as follows:
   \[ D_{\text{reduced}} = (L_{\text{actual}} / L_{\text{ref}}) \times D \]

where:
- \( D_{\text{reduced}} \) = Reduced distance from inside face of any support to center of hole (ft). The reduced distance shall not be less than 6 inches from the face of the support to edge of the hole.
- \( L_{\text{actual}} \) = Actual measured span distance between the inside face of supports (ft).
- \( L_{\text{ref}} \) = Reference span given in this table (ft).
- \( D \) = Minimum distance from the inside face of any support to center of hole from this table (ft).
Duct Chase Opening Specifications

One of the benefits of using I-joists in residential floor construction is that openings may be cut in the joist webs to accommodate a duct chase (supply duct for heating, ventilation or air-conditioning), therefore minimizing the depth of the floor system.

Rules for Cutting Duct Chase Openings in I-joists

1. The distance between the inside edge of the support and the centerline of a duct chase opening shall be in compliance with the requirements of Table 6.2.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
5. Limit one maximum-size duct chase opening per span.

Notes:
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

<table>
<thead>
<tr>
<th>I-joist depth (in.)</th>
<th>Maximum depth of the opening (in.)</th>
</tr>
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<tbody>
<tr>
<td>9-1/2</td>
<td>6-1/4</td>
</tr>
<tr>
<td>11-7/8</td>
<td>8-5/8</td>
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<td>10-3/4</td>
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<tr>
<td>16</td>
<td>12-3/4</td>
</tr>
</tbody>
</table>

Notes:
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.
### Table 6.2 – Location of Duct Chase Openings

#### Design Criteria
- **Span:** Simple
- **Joist spacing:** Up to 24 inches
- **Loads:** Live load = 40 psf and dead load = 10 psf
- **Deflection limits:** L/480 under live load and L/240 under total load

#### Minimum distance from inside face of any support to center of opening (ft-in.)

<table>
<thead>
<tr>
<th>Joist depth</th>
<th>Joist series</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
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<td>7'-7&quot;</td>
<td>8'-0&quot;</td>
<td>8'-4&quot;</td>
<td>8'-10&quot;</td>
<td>9'-3&quot;</td>
<td>9'-9&quot;</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NI-80</td>
<td>7'-1&quot;</td>
<td>7'-5&quot;</td>
<td>8'-0&quot;</td>
<td>8'-4&quot;</td>
<td>8'-10&quot;</td>
<td>9'-2&quot;</td>
<td>9'-8&quot;</td>
<td>10'-2&quot;</td>
<td>10'-8&quot;</td>
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<tr>
<td></td>
<td>NI-90</td>
<td>4'-3&quot;</td>
<td>4'-10&quot;</td>
<td>5'-4&quot;</td>
<td>5'-11&quot;</td>
<td>6'-6&quot;</td>
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<tr>
<td>14&quot;</td>
<td>NI-40x</td>
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<tr>
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<td>10'-1&quot;</td>
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<td>11'-1&quot;</td>
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<tr>
<td></td>
<td>NI-90</td>
<td>5'-10&quot;</td>
<td>6'-5&quot;</td>
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<td>8'-2&quot;</td>
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<td>12'-1&quot;</td>
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<td>13'-4&quot;</td>
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</tr>
<tr>
<td></td>
<td>NI-80</td>
<td>10'-3&quot;</td>
<td>10'-9&quot;</td>
<td>11'-2&quot;</td>
<td>11'-7&quot;</td>
<td>12'-1&quot;</td>
<td>12'-7&quot;</td>
<td>13'-2&quot;</td>
<td>13'-9&quot;</td>
<td>14'-6&quot;</td>
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<tr>
<td></td>
<td>NI-90</td>
<td>7'-4&quot;</td>
<td>7'-11&quot;</td>
<td>8'-6&quot;</td>
<td>9'-1&quot;</td>
<td>9'-8&quot;</td>
<td>10'-3&quot;</td>
<td>13'-0&quot;</td>
<td>11'-7&quot;</td>
<td>12'-3&quot;</td>
</tr>
</tbody>
</table>

**Note:**
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.
Holes in Lateral-restraint-only Blocking Panels

This detail concerns the placement of holes in the web of I-joists or rim board used as blocking for lateral restraint of floor and roof joists. Blocking for lateral restraint are those members used between floor joists, ceiling joists or rafters to prevent them from rolling over. As a rule of thumb, any blocking that is not supporting a load-bearing wall (vertical or lateral load) or part of an engineered diaphragm perimeter load path can be considered a lateral-restraint-only blocking panel.

Maximum Allowable Hole Size

1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking's depth or length. Assuming the blocking panel is longer than its height (or depth), the table aside applies. For other applications, contact Nordic Structures.

2. Holes cut into the blocking panels are subject to the following limitations:
   - The top and bottom flanges of an I-joist blocking panel must never be cut, notched or otherwise modified.
   - Field-cut holes must be centered in the blocking horizontally.
   - While round holes are preferred, rectangle holes may be used provided the corners are not over cut. Slightly rounding corners or pre-drilling corners with a 1-inch-diameter bit is recommended.
   - All holes must be cut in a workman-like manner in accordance with the limitations listed above.

<table>
<thead>
<tr>
<th>I-joist or rim board blocking depth (in.)</th>
<th>Maximum allowable hole diameter (in.) (a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1/2</td>
<td>6-1/4</td>
</tr>
<tr>
<td>11-7/8</td>
<td>7-3/4</td>
</tr>
<tr>
<td>14</td>
<td>9-1/4</td>
</tr>
<tr>
<td>16</td>
<td>10-1/2</td>
</tr>
</tbody>
</table>

(a) Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

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<table>
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<th>DATE</th>
<th>PAGE</th>
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<tbody>
<tr>
<td>Openings for Vertical Elements</td>
<td>-</td>
<td>2020-10-01</td>
<td>3.6</td>
</tr>
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</table>
All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

**Trimmer**

- Cut I-joists at interior support
- Header (Nordic I-joist, Nordic Lam or SCL)
Notes:
1. The above detail represents a basement window framing. Verify rim board capacity to support loads. If needed, use multiple pieces or a Nordic Lam or SCL beam.
2. Verify double I-joist capacity to support concentrated loads.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. The above detail represents a basement window framing. Verify rim board capacity to support loads. If needed, use multiple pieces or a Nordic Lam or SCL beam.
2. Verify double I-joist capacity to support concentrated loads.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

---

**Double I-joist per detail 1p**

Rim board

2x6 blocking on flat fastened to sheathing with 6d ring- or screw-shank nails at 6" o.c. and at each end to I-joist blocking with two 8d toe-nails

Double I-joist per detail 1p

I-joist blocking at 16" o.c. per detail 1s-1

---

**Title**: Floor Openings for Mechanics - Parallel to Joists

**Drawing**: 7b-2

**Category**: Openings for Vertical Elements

---

**Scale**: -

**Date**: 2020-10-01

**Page**: 3.9
Notes:
1. To prevent interference with plumbing, a joist may be shifted up to 3 inches if the edge of the floor panel is supported and the span rating is not exceeded.
2. In all other cases, an additional joist is required.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Blocking required at bearing for lateral support, not shown for clarity.
2. The maximum dimensions for a notch on the side of the top flange are 4-inch length by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch length by 1-inch depth for flange width of 3-1/2 inches.
3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
4. For other applications, contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
**Rim Board Joint Between Floor Joists**

- 8d nails at 6" o.c. (typical)
- One 8d nail top and bottom (typical)

**Rim Board Joint at Corner**

- 8d at 6" o.c. (typical)

---

**Notes:**

1. Floor sheathing to rim board - Use 8d nails (box or common) at 6 inches o.c. **Caution:** The horizontal load capacity is not necessarily increased with a decreased nail spacing. Under no circumstances should the nail spacing be less than 3 inches. The 16d nails (box or common) used to connect the bottom plate of a wall to the rim board through the sheathing do not reduce the horizontal load capacity of the rim board provided that the 8d nail spacing (sheathing-rim board) is 6 inches o.c. and the 16d nail spacing (bottom plate-sheathing-rim board) is in accordance with the prescriptive requirements of the applicable code. APA recommends a minimum 3/8-inch panel edge distance be maintained when nailing. Calculations show that the tongue does not need to be removed for floor sheathing 7/8-inch thick or less when used in conjunction with rim boards of 1-1/8 inch. Some local code jurisdictions, however, may require removal of the tongue at the edge of floor framing when nailing it to rim board.

2. Rim board to I-joist - Use two 8d nails (box or common), one each into the top and bottom flanges.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Rim board to sill plate - Toe-nail using 8d nails (box or common) at 6 inches o.c.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:

1. Attachment of 2x lumber ledgers to rim board - Use 1/2-inch-diameter lag screws (minimum nominal length of 4 inches) or 1/2-inch-diameter through-bolts with washers and nuts. In both cases, use a design value of 350 lbf per fastener. **Caution:** The lag screw should be inserted in a lead hole by turning with a wrench, not by driving with a hammer. Over-torquing can significantly reduce the lateral capacity of the lag screw and should therefore be avoided. See the National Design Specification (NDS) for Wood Construction published by the American Forest & Paper Association for the appropriate size of clearance and lead holes.

2. Decks shall be positively anchored to the primary structure. The lateral connection required shall be permitted to be in accordance with detail 8e-1 or 8e-2, as appropriate.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Attachment of 2x lumber ledgers to rim board - Use 1/2-inch-diameter lag screws (minimum nominal length of 4 inches) or 1/2-inch-diameter through-bolts with washers and nuts. In both cases, use a design value of 350 lbf per fastener. Caution: The lag screw should be inserted in a lead hole by turning with a wrench, not by driving with a hammer. Over-torquing can significantly reduce the lateral capacity of the lag screw and should therefore be avoided. See the National Design Specification (NDS) for Wood Construction published by the American Forest & Paper Association for the appropriate size of clearance and lead holes.
2. Decks shall be positively anchored to the primary structure. The lateral connection required shall be permitted to be in accordance with detail 8e-1 or 8e-2, as appropriate.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

Fastener Spacing for Deck Ledger and Rim Boards using 1/2-inch-diameter Lag Screws or Thru-bolts with 15/32-inch Maximum Sheathing (a)

Deck live load of 40 psf, deck dead load of 10 psf

<table>
<thead>
<tr>
<th>Joist span (L)</th>
<th>Rim boards</th>
</tr>
</thead>
<tbody>
<tr>
<td>10' &lt; L ≤ 12'</td>
<td>On-center spacing of fasteners (b)</td>
</tr>
<tr>
<td>12' &lt; L ≤ 14'</td>
<td>14&quot;</td>
</tr>
<tr>
<td>14' &lt; L ≤ 16'</td>
<td>12&quot;</td>
</tr>
<tr>
<td>16' &lt; L ≤ 18'</td>
<td>10&quot;</td>
</tr>
</tbody>
</table>

(a) See detail 8c for attachment details. Ledger shall be S-P-F or other wood species with a specific gravity of 0.42 or greater.
(b) Lag screws and thru-bolts shall be staggered in accordance with the detail on the left.
Notes:
1. Decks shall be positively anchored to the primary structure, as per 2018 IRC Section R507.1.
2. Hold-down tension devices shall be provided in not less than two locations within two feet of the edge of the deck, and shall have an allowable stress design capacity of not less than 1,500 lbf, as per 2018 IRC Section R507.2.4.
3. For more details, refer to the AWC Prescriptive Residential Wood Deck Construction Guide.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Decks shall be positively anchored to the primary structure, as per 2018 IRC Section R507.1.
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3. For more details, refer to the AWC Prescriptive Residential Wood Deck Construction Guide.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Rim Board Hole Specifications

The maximum allowable hole size for a rim board shall be 2/3 of the rim board depth, as shown in the table aside. The length of the rim board segment containing a hole shall be at least eight times the hole size.

Application Notes

1. Do not cut holes in rim board installed over openings, such as doors or windows, where the rim board is not fully supported, except that holes of 1-1/2 inch or less in size are permitted provided they are positioned at the mid-depth and in the middle one-third of the span (see note 5 for minimum hole spacing).

2. Field-cut holes should be vertically centered in the rim board and at least one hole diameter or 6 inches, whichever is less, clear distance away from the end of the wall line. Holes should never be placed such that they interfere with the attachment of the rim board to the ends of the floor joist, or any other code-required nailing.

3. While round holes are preferred, rectangle holes may be used providing the corners are not over-cut. Slightly rounding corners by pre-drilling with a 1-inch-diameter bit is recommended.

4. When concentrated loads are present on the rim board (loads not supported by any other vertical-load-carrying members such as squash blocks), holes should not be placed in the rim board within a distance equal to the depth of the rim board from the area of loading.

5. For multiple holes, the clear spacing between holes shall be at least two times the diameter of the larger hole, or twice the length of the longest side of the longest rectangular hole. This minimum hole spacing does not apply to holes of 1-1/2 inch or less in diameter, which can be placed anywhere in the rim board (see note 1 for holes over opening) except that the clear distance to the adjacent hole shall be 3 inches minimum.

6. All holes shall be cut in accordance with the limitations listed above. See the information for cutting holes under details 6a and 6b.

<table>
<thead>
<tr>
<th>Rim board depth (in.)</th>
<th>Maximum allowable hole size (in.) (b)</th>
<th>Minimum length of rim board segment for the maximum allowable hole size (in.) (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-1/2</td>
<td>6-1/4</td>
<td>50</td>
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<tr>
<td>11-7/8</td>
<td>7-3/4</td>
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<tr>
<td>14</td>
<td>9-1/4</td>
<td>74</td>
</tr>
<tr>
<td>16</td>
<td>10-1/2</td>
<td>84</td>
</tr>
</tbody>
</table>

(a) These hole provisions do not apply to rim board installed over openings, such as doors or windows.
(b) The diameter of a round hole or the longer dimension of a rectangular hole.
(c) The length of rim board segment per wall line. For multiple holes, the minimum length of rim board segment shall be eight times the sum of all hole sizes.

Rim Board Hole Specifications

Details for Rim Boards

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Do not cut holes in rim board over opening except for holes of 1-1/2" or less in size (see application note 1).

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

Holes in Rim Boards and Concentrated Loads

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<th>TITLE</th>
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<td>Details for Rim Boards</td>
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<td>3.20</td>
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All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

Multiple Holes in Rim Board

Details for Rim Boards

<table>
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<tbody>
<tr>
<td>Multiple Holes in Rim Board</td>
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</table>

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<tbody>
<tr>
<td>Details for Rim Boards</td>
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<td>3.21</td>
</tr>
</tbody>
</table>
Install per NFPA 13 and manufacturer's instructions. Steel sprinkler system pipe 4" maximum diameter or 500 lb maximum point load.

Ceiling flange, minimum 2 screws

1/2" maximum, fastener centerline from web face

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Joist clamp hanger per manufacturer's specifications (dimension and capacity)

Install per NFPA 13 and manufacturer's instructions. Steel sprinkler system pipe 4" maximum diameter or 500 lb maximum point load.

Eye rod

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
S-P-F No. 2 or better backer block bearing on flange required when supporting steel pipe. 2x4, minimum 6" long, horizontal or vertical.

Install per NFPA 13 and manufacturer's instructions. Steel sprinkler system pipe 4" maximum diameter or 500 lb maximum point load.

Two sheet metal screws #10 x 1-1/2"
Option: Two clinched 8d nails (0.113" x 2-1/2")

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Option 1
Install per NFPA 13. CPVC sprinkler system pipe 2-1/2" maximum diameter = 290 lb maximum point load (145 lb per joist)

Option 2
Install per NFPA 13. Steel sprinkler system pipe 4" maximum diameter = 500 lb maximum point load (250 lb per joist)

Install 48" maximum length NFPA 13 angle iron

Centering hanger location not required

3/4" maximum, centerline from web face
One 1/4" x 3" lag screw
Option: One #14 x 3" sheet metal screw

3/4" maximum, centerline from web face
One #14 x 3" sheet metal screw

Option 1
S-P-F No. 2 or better backer block. 2x4, minimum 12" long, horizontal. Attach with two #14 x 2" sheet metal screws.

Option 2
S-P-F No. 2 or better backer block. 2x4, minimum 12" long, horizontal. Attach with two #14 x 3" sheet metal screws.
Install per NFPA 13 and manufacturer's instructions. CPVC sprinkler system pipe 3" maximum diameter or 310 lb maximum point load.

Four sheet metal screws #10 x 1-1/2"
Option: Four clinched 8d nails (0.113" x 2-1/2")

S-P-F No. 2 or better backer block bearing on flange (optional). 2x4, minimum 6" long, horizontal or vertical.
S-P-F No. 2 or better backer block bearing on flange (optional). 2x4, minimum 6" long, horizontal or vertical.

Install per NFPA 13 and manufacturer's instructions. CPVC sprinkler system pipe 3" maximum diameter or 310 lb maximum point load.

Sheet metal screws #10 x 1-1/2" Option: Four clinched 8d nails (0.113" x 2-1/2")

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Roof Systems

1. Installation of Nordic I-joists shall be as shown in details 10.

2. Except for cutting to length, or for providing birdsmouth bearings, I-joist flanges should never be cut, drilled, or notched.

3. I-joists are permitted to be birdsmouth cut at the lower end of the joist only. The birdsmouth cut must have full bearing and not overhang the inside face of the plate. Bearing stiffeners are required at the birdsmouth cut on both sides of the web.

4. When beveled bearing plates are used at I-joists supports, I-joist attachment to the bevel plate must be designed to transfer lateral thrust.

5. End bearing length must be at least 1-3/4 inch. For continuous framing and roof framing with cantilevers, the intermediate support and end bearing adjacent to the cantilever must be at least 3-1/2 inches.

6. Ends of roof joists must be restrained at the bearing to prevent rollover. Rim board or I-joist blocking panels are preferred. Cantilever-end blocking must be placed at the support adjacent to the cantilever, and ends of all cantilever extensions must be laterally braced by a fascia board or other similar methods.

7. Continuous lateral support of the I-joist’s compression flange is required to prevent rotation and buckling. In simple span roof applications, lateral support of the top flange is normally supplied by the roof sheathing. Bracing of the I-joist’s bottom flange is also required at interior supports of multiple-span joists and at the end support next to an overhang. Lateral support of the entire bottom flange may be required in cases of load reversal such as those caused by high wind.

8. Details 10 show only I-joist specific fastener requirements. For other fastener requirements, such as wind uplift requirements or other member attachment details, see the applicable building code.

9. All roof details are valid up to a 12:12 slope unless otherwise noted.

10. Provide adequate ventilation at each joist bay as per detail 10v. Verify roof ventilation and insulation requirements with applicable building code.

11. Refer to typical floor framing installation notes for additional information.
Rated sheathing

Blocking panels not shown for clarity

Nail according to applicable building code

Temporary construction bracing

See details

Rated sheathing

Nail according to applicable building code

Typical Roof Framing

Typical Roof Framing and Construction Details
Beveled plate for slopes greater than 1/4:12. Attach to framing with one 16d nail at 16" o.c. Code-recognized connectors may be substituted. For slopes greater than 4:12, connectors are required to resist lateral thrust.

Beaming stiffener required when end reaction exceeds 1,550 lbf.

Blocking panel or 23/32" APA Rated Sheathing 48/24 as continuous closure.

8d nails at 6" o.c. - minimum three 8d nails per blocking panel. When used for lateral shear transfer, match nail type and sheathing edge nailing ("boundary nailing" for engineered diaphragm applications).

Minimum attachment: For slope ≤ 1/4:12, one 10d box nail, face nail at each side of bearing. For slope > 1/4:12 design joist attachment to beveled plate to transfer lateral thrust.

Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
For roof slopes between 1/4:12 and 12:12, provide a tie strap nailed at a minimum of 3” spacing or in accordance with the manufacturer's recommendations.

Ridge beam (Nordic Lam or SCL)

Adjustable slope hanger with a minimum unadjusted uplift capacity of 300 lbf

Beveled bearing stiffener required each side

Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

Typical Roof Framing and Construction Details

Peak Connection

10b
Adjustable slope hanger with a minimum unadjusted uplift capacity of 300 lbf
Beveled bearing stiffener required each side

For roof slopes between 1/4:12 and 12:12, provide a tie strap nailed at a minimum of 3” spacing on each side of roof slope or in accordance with the manufacturer’s recommendations.

Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
23/32 Performance Category 48/24 x 2'-0" wood structural panel (front and back sides) with twelve 8d nails into each joist. When roof live load exceeds 40 psf, horizontal orientation of gusset strong axis is required. Gap 1/8" at top.

Support beam or wall

Attach double-beveled plate to framing with one 16d nail at 16" o.c.

Attach I-joist per detail 10a

Blocking panel per detail 10a

Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Tie strap nailed at a minimum of 3" spacing or in accordance with the manufacturer's recommendations.

Blocking panel attached per detail 10a.

Strap nails: Leave 2-3/8" minimum end distance.

Attach I-joist per detail 10a.

Double-beveled bearing plate. Attach to framing with one 16d nail at 16" o.c.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Backer block per detail 1h. If top-mount hanger is fully supported by top flange, backer block only required on hanger side. If face nailing is required, then backer block on both sides (and filler block if multiple I-joists) is required. Use twelve 10d nails.

Top-mount hanger per manufacturer's recommendations

Filler block per detail 1p

Bearing stiffeners required when hanger does not support I-joist top flange

Note:
1. Application limited to 4:12 roof slope or less.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Bearing stiffeners required when hanger does not support I-joist top flange

Header may be I-joist, Nordic Lam or SCL

Face-mount hanger per manufacturer’s recommendations

Backer block on both sides of web (or backer block and filler block, if multiple I-joists), nail with twelve 10d nails, clinch when possible

Filler block per detail 1p

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Additional connection may be required for wind uplift.
2. Permitted on low end of I-joist only.
Notes:
1. Additional connector is required for wind uplift.
2. Outside corner of blocking panel may be trimmed if it interferes with roof sheathing. In such cases, position blocking panel on top plate to minimize trimming and still allow required nailing into top plate.
3. Permitted on low end of I-joist only.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

**Title:**
I-joist Overhang for Fascia Support with Birdsmouth Cut

**Category:**
Typical Roof Framing and Construction Details

**Drawing:**
10k
Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Additional connection may be required for wind uplift.
2. Blocking panel required at bearing for lateral support.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

Note:
1. Additional connection may be required for wind uplift.
Beveled plate attached per detail 10a.

Blocking panel attached per detail 10a. See detail 10v for vent holes.

Attach I-joist to beveled plate per detail 10h.

2'-0" maximum

Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Additional connection may be required for wind uplift.
2. Lumber overhang shall be 2x4 S-P-F No. 2 or better.
3. Blocking panels not shown for clarity.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. Additional connection may be required for wind uplift.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Allowed at low end of I-joist only.
2. Corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material shall cover the ventilation holes per code.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Notes:
1. Corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material shall cover the ventilation holes per code.
2. The maximum allowable round hole diameter for a lateral restraint-only blocking panel shall be 2/3 of the lesser dimension of blocking panel depth or length.
3. Whenever possible, field-cut holes should be centered in the blocking panel both vertically and horizontally.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.
Note:
1. A minimum of 1/8 inch should always be maintained between the top of the hole and the I-joist flange.

All nails shown in the details are assumed to be common nails unless otherwise noted. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.