The illustrations and information in this tip sheet may be used for decks whether or not they require a permit. See Tip Sheet 0 for permit requirements.

All wood must be pressure treated or naturally resistant to decay. Treat all cut ends with end-cut solution. Use ground-contact treated wood.

Fasteners, hangers, nails, etc., must be stainless steel, hot-dipped galvanized, or as specifically required for the specified wood preservative used. The coating weights for zinc-coated fasteners to be in accordance with ASTM A 153. Provide documentation in the field showing the required fastener protection considering the wood chosen for your deck.

You may modify any components of this tip sheet with justification by analysis or calculation. Any modifications must be reviewed prior to permit issuance.

See Tip Sheet 1 for stairs, 2 for handrails, and 3 for guards.

This tip sheet is intended to represent good construction practices for deck construction and related IRC requirements.

All wood assumed to be Hem-Fir #2 or better.

Attachments must be per manufactured specifications.

As an alternate to this tip sheet, the following may be used when designing your deck.

- Engineered design
- DCA-6 - Prescriptive Residential Deck Construction Guide - 2009 Version; see the following link: http://www.awc.org./codes/dcaindex.html

GENERAL INFORMATION:

- Consult with your local land use or planning department regarding setbacks and other zoning regulations
- Obtain a building permit before starting construction
- The intent of this tip sheet is to address basic code information related to residential deck construction only. Additional information can be found at your local building department.
Submittal Requirements:

1. Two Site Plans, drawn to scale, showing dimensions of your deck and its relationship to existing buildings or structures on the property and the distance to existing property lines. Include the project address on the drawings.
2. Two plans showing the framing layout of your deck.
3. Fill out a building permit application for the appropriate jurisdiction.
4. If your deck will occur on a steep slope, please contact your local building department for additional requirements.
Knee braces are required if distance from grade to top of post exceeds 48".

See detail this page
4x4 posts min. w/ 8'-0" max. height and 6x6 for 8'-0" to 10'-0" max. height

Manufactured post base cast in footing
3,000 psi concrete (no special inspection required)

(2) #4 ea. way, 3" clear to bottom of footing. Footing to bear on undisturbed earth.

Pier blocks may be substituted for Type A footings. See page 5.

If an exit or egress from the existing building passes under the proposed deck, or if there is an existing patio under the proposed deck, 6'-8" minimum clearance must be maintained. Please indicate openings in existing wall in elevation view.

Note:
Contractor to field verify adequacy of solid lumber for ledger connection.

Note:
Or 1/3 the height of the post, whichever is greater

Corrosion resistant, metal column cap. Follow manufacturer's installation instructions.

Beam splices must occur over posts with 1-1/2" min. bearing

Note:
Knee braces are required if distance from grade to top of post exceeds 4 feet.

Alternate Knee Brace Detail:
2x4 knee brace face nailed ea. side of post and beam with 4-16d nails at each face and connection

Post to Beam Connection w/ Knee Brace

Basic Decks
Page 3 of 5
**Option # 1**
(Required for New Construction)

- Hold-down or tension device with 1500 # capacity
- Floor sheathing nailing at 6" o.c. (max) to joist with hold-down.

**Option # 2**
(Existing Construction Only)

- Hold-down device min 750# capacity at 4 locations, evenly distributed along deck & 1 within 2' of each end of the ledger. Holdown devices shall fully engage deck joist per holdown manufacturer (slight offset allowed).

**1 Ledger Attachment for Lateral Loads Per IRC 502.2.2.3**

- 5/8" O.D galvanized m.b. or threaded rod w/ nuts & washers
- 4x4 min. post @ 6'0" o.c. max., Typ
- Min. 1800# tension straps
- 2x8 min. blocking

**Note:**
These details are applicable where floor joists are parallel to deck joists.

**Note:**
Holdown devices are not required for decks less than 3'-0" high or free standing decks.

---

**Guardrail Connection**
(Guardrails are required when the deck is more than 30" above grade.)
### Span Table and Footing Schedule For Decks

#### FOOTING TYPES

<table>
<thead>
<tr>
<th>FOOTING TYPES</th>
<th>TYPE</th>
<th>SIZE</th>
<th>NOTE:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>12&quot; X 12&quot; X 12&quot;</td>
<td>Pier block may be substituted for Type A footings</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>16&quot; X 16&quot; X 16&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>18&quot; X 18&quot; X 12&quot;</td>
<td></td>
</tr>
</tbody>
</table>

*Foot sizes based on assumed soil bearing pressure of 2000 p.s.f. Contact your jurisdiction for additional restrictions.*

#### Table R502.2.2.1

**Fastener spacing for a Southern Pine or Hem-Fir deck ledger and a 2 inch nominal solid-sawn Spruce-Pine-Fir band joist. See notes C,F,G.**

*(Deck live load = 40 psf, deck dead load = 10 psf)*

<table>
<thead>
<tr>
<th>Joist Span</th>
<th>6&quot; and less</th>
<th>6'-1&quot; to 8'</th>
<th>8'-1&quot; to 10'</th>
<th>10'-1&quot; to 12'</th>
<th>12'-1&quot; to 14'</th>
<th>14'-1&quot; to 16'</th>
<th>16'-1&quot; to 18'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Details</td>
<td>On-center spacing of fasteners. Note d and e.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 inch diameter lag screw with 15/32 inch maximum sheathing. Note (a)</td>
<td>30</td>
<td>23</td>
<td>18</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>1/2 inch diameter bolt with 15/32 inch maximum sheathing.</td>
<td>36</td>
<td>36</td>
<td>34</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>1/2 inch diameter lag screw with 15/32 inch maximum sheathing and stacked washers. Note (b&amp;h)</td>
<td>36</td>
<td>36</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>18</td>
<td>16</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4mm, 1 foot = 304.8mm, 1 pound per square foot = 0.04479kPa.

- a. The tip of the lag screw shall fully extend beyond the inside face of band joist.
- b. The maximum gap between face of the ledger board and face of wall sheathing shall be 1/2".
- c. Ledgers shall be flashed to prevent water from contacting the house band joist.
- d. Lag screws and bolts shall be staggered in accordance with Section R502.2.2.1.1.
- e. Deck ledger shall be minimum 2x8 pressure-preservative-treated No.2 grade lumber or other approved materials as established by standard engineering practice.
- f. When solid-sawn pressure-preservative-treated-deck ledgers are attached to a minimum 1inch thick engineered wood product (structural composite lumber - laminated veneer lumber or wood structural panel band joist) the ledger attachment shall be designed in accordance of engineering practice.
- g. A minimum 1x 9 1/2 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.
- h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and face of the band joist shall be 1 inch.

### Deck Connections

- All fasteners, nails, bolts, screws, etc. must be corrosion resistant. See Deck
- Construction Note 3, page 2.
- Follow manufacturer's instructions for timber connectors.

<table>
<thead>
<tr>
<th>Connections</th>
<th>Nailing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Joist on deck beam; toenail each end</td>
<td>(3) 8d</td>
</tr>
<tr>
<td>2 Bridging or blocking to joist; toenail ea. ea. end</td>
<td>(3) 8d</td>
</tr>
<tr>
<td>3 2x decking to joist or deck beam; blind and face nail</td>
<td>(2) 16d</td>
</tr>
<tr>
<td>4 Joist hangers - See detail 1 on page 5</td>
<td></td>
</tr>
</tbody>
</table>