BOONE COUNTY BUILDING DEPARTMENT DECK SPECIFICATIONS

DECK DIMENSIONS: 

FOOTING SIZE AND DEPTH: 
HEIGHT OF DECK FROM GROUND LEVEL: FT.
SIZE OF POSTS: SPACING: 
SIZE OF BEAMS: SPAN 
JOIST SIZE: INCHES ON CENTER
JOIST SPAN: FT.
SIZE OF DECKING: 

METHOD OF ATTACHMENT TO HOUSE: 
IF ATTACHED TO I-JOIST SYSTEM, THE ATTACHMENT SHALL BE ENGINEERED
GUARDRAIL HEIGHT: 
WIDTH BETWEEN GUARDS: 
WIDTH OF STAIRWAY TREADS: 
HEIGHT OF STAIRWAY RISERS: 

NOTES:
• COLUMNS AND POSTS SHALL BE AT LEAST 30" BELOW GRADE FOR ALL DECKS ATTACHED TO HOUSE
• FOOTERS ARE NOT REQUIRED FOR FREESTANDING DECKS LESS THAN 30 INCHES OFF THE GROUND WHEN ATTACHED TO CONCRETE PEDESTAL; Deck MUST BE TIED DOWN DIAGONALLY TO PEDESTALS
• A 36" GUARDRAIL SHALL BE INSTALLED AROUND ALL PARTS OF DECK 30" ABOVE GRADE.
• STAIRS SHALL HAVE HANDRAILS AND GUARDS. HANDRAILS SHALL BE GRASPABLE AND SHALL HAVE A MAXIMUM DIAMETER OF 2-5/8". HANDRAILS SHALL RETURN TO WALL OR POST AT BOTH ENDS OF STAIRWAY
• STAIR RISERS SHALL NOT BE MORE THAN 8 ¼ AND TREADS NOT LESS THAN 9" AND MUST BE ENCLOSED WITH NO GREATER THAN 4 INCH SPACING (KRC 311.5.3.1 AND 311.5.3.2)
• ALL GUARDS SHALL BE SPACED NO MORE THAN 4" APART.
• POST-TO-BEAM ATTACHMENT (BEAM MUST BEAR FULLY ON 6 X6 NOTCH, NOTCH POST TO ACCOMMODATE BEAM, THEN (2) 1/2" DIAMETER THRU-BOLTS WITH WASHERS
• ALL MATERIAL IS TO BE TREATED LUMBER.
• SCREWS ARE NOT APPROVED FOR FLOOR JOIST HANGERS.
• ATTACHMENT TO BAY AREAS OR FIREPLACES IS PROHIBITED
• ATTACHMENT TO HOUSE OVERHANG OR CANTILEVER IS PROHIBITED. DECKS CAN NOT CANTILEVER NO MORE THAN 2' OR OVERHANG A 1'
• ATTACHMENT TO BRICK, MASONRY, STONE OR EXTERIOR VENEERS IS PROHIBITED
• SECTION R-104.9.1 KRC: USED MATERIALS EQUIPMENT AND DEVICES SHALL NOT BE REUSED UNLESS APPROVED BY THE BUILDING OFFICIAL
• FUEL BURNING EQUIPMENT AIR INTAKE AND EXHAUST: DUCTS SHALL TERMINATE IN AN UNOBSERVABLE SPACE ALLOWING FREE MOVEMENT OF COMBUSTION AIR TO THE APPLIANCES: COMBUSTION AIR INTAKE OPENINGS LOCATED ON THE EXTERIOR OF A BUILDING SHALL HAVE THE LOWEST SIDE OF SUCH OPENINGS LOCATED NOT LESS THAN 12" VERTICALLY FROM THE ADJOINING FINISHED GROUND LEVEL.
• HEADROOM: THE MINIMUM HEADROOM IN ALL PARTS OF THE STAIRWAY SHALL NOT BE LESS THAN 6'8".
• HAZARDOUS LOCATION SECTION R-308.4 KRC: GLAZING ADJACENT TO STAIRWAY AND LANDINGS AND RAMPS WITHIN 36" HORIZONTALLY OF A WALKING SURFACE WHEN THE EXPOSED SURFACE OF THE GLAZING IS LESS THAN 60" ABOVE THE PLANE OF THE ADJACENT WALKING SURFACE.
• CORROSION RESISTANT FLASHING SHALL BE INSTALLED WHERE EXTERIOR PORCHES, DECKS OR STAIRS ATTACH TO WALL OF FLOOR ASSEMBLY OF WOOD FRAME CONSTRUCTION.

APPLICANT: 

DATE: 

PERMIT #: 
SECTION R506
CONCRETE FLOORS (ON GROUND)

R506.1 General. Concrete slab-on-ground floors shall be designed and constructed in accordance with the provisions of this section or ACI 332. Floors shall be a minimum 3\(\frac{3}{4}\) inches (89 mm) thick for expansive soils, see Section R403.1.8. The specified compressive strength of concrete shall be as set forth in Section R402.2.

R506.2 Site preparation. The area within the foundation walls shall have all vegetation, top soil and foreign material removed.

R506.2.1 Fill. Fill material shall be free of vegetation and foreign material. The fill shall be compacted to ensure uniform support of the slab, and except where approved, the fill depths shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth.

R506.2.2 Base. A 4-inch-thick (102 mm) base course consisting of clean graded sand, gravel, crushed stone, crushed concrete or crushed blast-furnace slag passing a 2-inch (51 mm) sieve shall be placed on the prepared subgrade where the slab is below grade.

Exception: A base course is not required where the concrete slab is installed on well-drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table R405.1.

R506.2.3 Vapor retarder. A 6-mil (0.006 inch; 152 \(\mu\)m) polyethylene or approved vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

Exception: The vapor retarder is not required for the following:
1. Garages, utility buildings and other unheated accessory structures.
2. For unheated storage rooms having an area of less than 70 square feet (6.5 m\(^2\)) and carports.
3. Driveways, walks, patios and other flatwork likely to be enclosed and heated at a later date.
4. Where approved by the building official, based on local site conditions.

R506.2.4 Reinforcement support. Where provided in slabs-on-ground, reinforcement shall be supported to remain in place from the center to upper one-third of the slab for the duration of the concrete placement.

SECTION R507
EXTERIOR DECKS

R507.1 Decks. Wood-framed decks shall be in accordance with this section or Section R301 for materials and conditions not prescribed herein. Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads.

Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members connections to exterior walls or other framing members shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.3 acting on the cantilevered portion of the deck.

R507.2 Deck ledger connection to band joist. Deck ledger connections to band joists shall be in accordance with this section, Tables R507.2 and R507.2.1, and Figures R507.2.1(1) and R507.2.1(2). For other grades, species, connection details and loading conditions, deck ledger connections shall be designed in accordance with Section R301.

R507.2.1 Ledger details. Deck ledgers installed in accordance with Section R507.2 shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, pressure-preservative-treated southern pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers installed in accordance with Section R507.2 shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.

R507.2.2 Band joist details. Band joists attached by a ledger in accordance with Section R507.2 shall be a minimum 2-inch nominal (51 mm), solid-sawn, spruce-pine-fir lumber or a minimum 1-inch by 9\(\frac{1}{4}\)-inch (25 mm x 241 mm) dimensional, Douglas fir, laminated veneer lumber. Band joists attached by a ledger in accordance with Section R507.2 shall be fully supported by a wall or sill plate below.

R507.2.3 Ledger to band joist fastener details. Fasteners used in deck ledger connections in accordance with Table R507.2 shall be hot-dipped galvanized or stainless steel and shall be installed in accordance with Table R507.2.1 and Figures R507.2.1(1) and R507.2.1(2).

R507.2.4 Deck lateral load connection. The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3(1) or R507.2.3(2). Where the lateral load connection is provided in accordance with Figure R507.2.3(1), hold-down tension devices shall be installed in not less than two locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 pounds (6672 N). Where the lateral load connections are provided in accordance with Figure R507.2.3(2), the hold-down tension devices shall be installed in not less than four locations per deck, and each device shall have an allowable stress design capacity of not less than 750 pounds (3365 N).

R507.3 Plastic composite deck boards, stair treads, guards, or handrails. Plastic composite exterior deck boards, stair treads, guards and handrails shall comply with the requirements of ASTM D 7032 and the requirements of Section 807.3.

R507.3.1 Labeling. Plastic composite deck boards and stair treads, or their packaging, shall bear a label that indicates compliance to ASTM D 7032 and includes the allowable load and maximum allowable span determined.
in accordance with ASTM D 7032. Plastic or composite handrails and guards, or their packaging, shall bear a label that indicates compliance to ASTM D 7032 and includes the maximum allowable span determined in accordance with ASTM D 7032.

R507.3.2 Flame spread index. Plastic composite deck boards, stair treads, guards, and handrails shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E 84 or UL 723 with the test specimen remaining in place during the test.

Exception: Plastic composites determined to be non-combustible.

### TABLE R507.2

<table>
<thead>
<tr>
<th>CONNECTION DETAILS</th>
<th>JOIST SPAN</th>
<th>0' and less</th>
<th>0'/4 to 0'/2</th>
<th>0'/4 to 1'</th>
<th>1' to 1'/2</th>
<th>1'/2 to 1'/4</th>
<th>1'/4 to 1'/4</th>
<th>1'/4 to 1'/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4-inch diameter lag screw with 1/2-inch maximum sheathing</td>
<td>30</td>
<td>23</td>
<td>18</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>1/4-inch diameter bolt with 1/2-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>
<td>18</td>
</tr>
<tr>
<td>1/4-inch diameter bolt with 1-inch maximum sheathing</td>
<td>36</td>
<td>36</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>18</td>
<td>16</td>
<td>15</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0449 kPa.

a. Lag screws shall be flashed in accordance with Section R703.6 to prevent water from contacting the house band joist.

b. Snow load shall not be assigned to act concurrently with live load.

c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

d. Sheathing shall be wood structural panel or solid sawn lumber.

e. Sheathing shall be permitted to be wood structural panel, gypsum board, Fiberboard, lumber or foam sheathing. Up to 1/4-inch thickness of stacked washers shall be permitted to substitute for up to 1/4-inch of allowable sheathing thickness when combined with wood structural panel or lumber sheathing.

### TABLE 507.2.1

<table>
<thead>
<tr>
<th>MINIMUM END SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM END SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS</td>
</tr>
<tr>
<td>TOP EDGE</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Ledger*</td>
</tr>
<tr>
<td>Band Joist*</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm.

a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figures R507.2.1(1).

b. Maximum 3 inches.

c. For engineered rim joists, the manufacturer's recommendations shall govern.

d. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.2.1(1).
For SI: 1 inch = 25.4 mm.

**FIGURE R507.2.1(1)**
PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS

**FIGURE R507.2.1(2)**
PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS
FIGURE 507.2.8(a)
DECK ATTACHMENT FOR LATERAL LOADS

NOTE:
THIS DETAIL IS APPLICABLE WHERE FLOOR JOISTS ARE PARALLEL TO DECK JOISTS.

FLOOR SHEATHING NAILING AT 6" MAXIMUM ON CENTER TO JOIST WITH HOLD-DOWN

HOLD-DOWN OR SIMILAR TENSION DEVICE

FLOOR JOIST

DECK JOIST

SHEATHING
SIDING
FLASHING FOR WATER TIGHTNESS
DECKING
APPROVED JOIST HANGERS

2" MIN.

HOLD-DOWN DEVICE MIN 750 LB. CAPACITY AT 4 LOCATIONS, EVENLY DISTRIBUTED ALONG DECK AND ONE WITHIN 2" OF EACH END OF THE LEDGER. HOLD-DOWN DEVICES SHALL FULLY ENGAGE DECK JOIST PER HOLD-DOWN MANUFACTURER.

A FULLY THREADED 3/4" DIAMETER LAG SCREW PREDRILLED W/ MIN. 3" PENETRATION TO CENTER OF TOP PLATE, STUDS, OR HEADER.

FIGURE R507.2.8(2)
DECK ATTACHMENT FOR LATERAL LOADS

For SI: 1 inch = 25.4 mm.

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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R507.4 Decking. Maximum allowable spacing for joists supporting decking shall be in accordance with Table R507.4. Wood decking shall be attached to each supporting member with not less than (2) 8d threaded nails or (2) No. 8 wood screws.

R507.5 Deck Joists. Maximum allowable spans for wood deck joists, as shown in Figure R507.5, shall be in accordance with Table R507.5. Deck joists shall be permitted to cantilever not greater than one-fourth of the actual, adjacent joist span.

R507.5.1 Lateral restraint at supports. Joist ends and bearing locations shall be provided with lateral restraint to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall equal not less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with not less than (3) 10d (3-inch × 0.128-inch) nails or (3) No. 10 × 3-inch (76 mm) long wood screws.

### TABLE R507.4
MAXIMUM JOIST SPACING

<table>
<thead>
<tr>
<th>MATERIAL TYPE AND NOMINAL SIZE</th>
<th>MAXIMUM ON-CENTER JOIST SPACING</th>
<th>PERPENDICULAR TO JOIST</th>
<th>DIAGONAL TO JOIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/8-Inch-thick wood</td>
<td></td>
<td>16 inches</td>
<td>12 inches</td>
</tr>
<tr>
<td>2-inch-thick wood</td>
<td></td>
<td>24 inches</td>
<td>16 inches</td>
</tr>
<tr>
<td>Plastic composite</td>
<td></td>
<td>In accordance with Section R507.3</td>
<td>In accordance with Section R507.3</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.

a. Maximum angle of 45 degrees from perpendicular for wood deck boards

### TABLE R507.5
DECK JOIST SPANS FOR COMMON LUMBER SPECIES (ft. - in.)

<table>
<thead>
<tr>
<th>SPECIES*</th>
<th>SIZE</th>
<th>SPACING OF DECK JOISTS WITH NO CANTILEVER(^{a}) (Inches)</th>
<th>SPACING OF DECK JOISTS WITH CANTILEVERS(^{b}) (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Southern pine</td>
<td>2 × 6</td>
<td>9-11</td>
<td>9-0</td>
</tr>
<tr>
<td></td>
<td>2 × 8</td>
<td>13-1</td>
<td>11-10</td>
</tr>
<tr>
<td></td>
<td>2 × 10</td>
<td>16-2</td>
<td>14-0</td>
</tr>
<tr>
<td></td>
<td>2 × 12</td>
<td>16-0</td>
<td>16-6</td>
</tr>
<tr>
<td>Douglas fir-larch(^{c}), hem-fir(^{d}), spruce-pine-fir(^{e})</td>
<td>2 × 6</td>
<td>9-6</td>
<td>8-8</td>
</tr>
<tr>
<td></td>
<td>2 × 8</td>
<td>12-6</td>
<td>11-1</td>
</tr>
<tr>
<td></td>
<td>2 × 10</td>
<td>15-8</td>
<td>13-7</td>
</tr>
<tr>
<td></td>
<td>2 × 12</td>
<td>18-0</td>
<td>15-9</td>
</tr>
<tr>
<td>Redwood, western cedars, ponderosa pine(^{f}), red pine(^{f})</td>
<td>2 × 6</td>
<td>8-10</td>
<td>8-0</td>
</tr>
<tr>
<td></td>
<td>2 × 8</td>
<td>11-8</td>
<td>10-7</td>
</tr>
<tr>
<td></td>
<td>2 × 10</td>
<td>14-11</td>
<td>13-0</td>
</tr>
<tr>
<td></td>
<td>2 × 12</td>
<td>17-5</td>
<td>15-1</td>
</tr>
</tbody>
</table>

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. No. 2 grade with wet service factor.

b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360.

c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/A = 360 at main span, L/A = 180 at cantilever with a 220-pound point load applied to end.

d. Includes inching factor.

e. Northern species with no inching factor

f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

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**Figure R507.5**

Typical Deck Joist Spans
### TABLE R507.7

**DECK BEAM SPAN LENGTHS**, **(ft. - in.)**

<table>
<thead>
<tr>
<th>SPECIES**</th>
<th>SIZE†</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
<th>18</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern pine</td>
<td>2 - 2 x 6</td>
<td>6-11</td>
<td>5-11</td>
<td>5-4</td>
<td>4-10</td>
<td>4-6</td>
<td>4-3</td>
<td>4-0</td>
</tr>
<tr>
<td></td>
<td>2 - 2 x 8</td>
<td>8-9</td>
<td>7-7</td>
<td>6-9</td>
<td>6-2</td>
<td>5-9</td>
<td>5-4</td>
<td>5-0</td>
</tr>
<tr>
<td></td>
<td>2 - 2 x 10</td>
<td>10-4</td>
<td>9-0</td>
<td>8-0</td>
<td>7-4</td>
<td>6-9</td>
<td>6-4</td>
<td>6-0</td>
</tr>
<tr>
<td></td>
<td>2 - 2 x 12</td>
<td>12-2</td>
<td>10-7</td>
<td>9-5</td>
<td>8-7</td>
<td>8-0</td>
<td>7-6</td>
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<tr>
<td></td>
<td>3 - 2 x 6</td>
<td>8-2</td>
<td>7-5</td>
<td>6-8</td>
<td>6-1</td>
<td>5-8</td>
<td>5-3</td>
<td>5-0</td>
</tr>
<tr>
<td></td>
<td>3 - 2 x 8</td>
<td>10-10</td>
<td>9-6</td>
<td>8-6</td>
<td>7-9</td>
<td>7-2</td>
<td>6-8</td>
<td>6-4</td>
</tr>
<tr>
<td></td>
<td>3 - 2 x 10</td>
<td>13-0</td>
<td>11-3</td>
<td>10-0</td>
<td>9-2</td>
<td>8-6</td>
<td>7-11</td>
<td>7-6</td>
</tr>
<tr>
<td></td>
<td>3 - 2 x 12</td>
<td>15-3</td>
<td>13-3</td>
<td>11-10</td>
<td>10-9</td>
<td>9-4</td>
<td>8-10</td>
<td></td>
</tr>
<tr>
<td>Douglas fir-larch**, hem-fir**, spruce-pine-fir**, redwood, western cedars, ponderosa pine**, red pine**</td>
<td>3 x 6 or 2 - 2 x 6</td>
<td>5-5</td>
<td>4-8</td>
<td>4-2</td>
<td>3-10</td>
<td>3-6</td>
<td>3-1</td>
<td>2-9</td>
</tr>
<tr>
<td></td>
<td>3 x 8 or 2 - 2 x 8</td>
<td>6-10</td>
<td>5-11</td>
<td>5-4</td>
<td>4-10</td>
<td>4-6</td>
<td>4-1</td>
<td>3-8</td>
</tr>
<tr>
<td></td>
<td>3 x 10 or 2 - 2 x 10</td>
<td>8-4</td>
<td>7-3</td>
<td>6-6</td>
<td>5-11</td>
<td>5-6</td>
<td>5-1</td>
<td>4-8</td>
</tr>
<tr>
<td></td>
<td>3 x 12 or 2 - 2 x 12</td>
<td>9-8</td>
<td>8-5</td>
<td>7-6</td>
<td>6-10</td>
<td>6-4</td>
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<td>4 x 6</td>
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<td>4-10</td>
<td>4-2</td>
<td>3-11</td>
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<tr>
<td></td>
<td>4 x 8</td>
<td>8-5</td>
<td>7-3</td>
<td>6-6</td>
<td>5-11</td>
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<td>7-8</td>
<td>7-0</td>
<td>6-6</td>
<td>6-1</td>
<td>5-8</td>
</tr>
<tr>
<td></td>
<td>4 x 12</td>
<td>11-5</td>
<td>9-11</td>
<td>8-10</td>
<td>8-1</td>
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<td>6-7</td>
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<tr>
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<td>3 - 2 x 6</td>
<td>7-4</td>
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<td>5-6</td>
<td>5-1</td>
<td>4-9</td>
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<tr>
<td></td>
<td>3 - 2 x 8</td>
<td>9-8</td>
<td>8-6</td>
<td>7-7</td>
<td>6-11</td>
<td>6-5</td>
<td>6-0</td>
<td>5-8</td>
</tr>
<tr>
<td></td>
<td>3 - 2 x 10</td>
<td>12-0</td>
<td>10-5</td>
<td>9-4</td>
<td>8-6</td>
<td>7-10</td>
<td>7-4</td>
<td>6-11</td>
</tr>
<tr>
<td></td>
<td>3 - 2 x 12</td>
<td>13-3</td>
<td>12-1</td>
<td>10-9</td>
<td>9-10</td>
<td>8-6</td>
<td>8-6</td>
<td>8-1</td>
</tr>
</tbody>
</table>

For Sf: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.

b. Beams supporting deck joists from one side only.

c. No. 2 grade, wet service factor.

d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.

e. Includes inclining factor.

f. Northern species. Inclining factor not included.

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**FIGURE R507.6**

**TYPICAL DECK BEAM SPANS**

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**R507.7 Deck joint and deck beam bearing.** The ends of each joist and beam shall have a minimum vertical clearance of 1 1/2 inches (38 mm) to be supported by approved joist hangers. Joists bearing on a beam shall be connected to the beam to resist lateral displacement.

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**R507.6 Deck Beams.** Maximum allowable spans for wood deck beams, as shown in Figure R507.6, shall be in accordance with Table R507.6. Beam piles shall be fastened with two rows of 10d (3-inch x 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beam piles shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Splices of multi-span beams shall be located at interior post locations.
R507.7.1 Deck post to deck beam. Deck beams shall be attached to deck posts in accordance with Figure R507.7.1 or by other equivalent means capable to resist lateral displacement. Manufactured post-to-beam connectors shall be sized for the post and beam sizes. All bolts shall have washers under the head and nut.

Exception: Where deck beams bear directly on footings in accordance with Section R507.8.1.

R507.8 Deck posts. For single-level wood-framed decks with beams sized in accordance with Table R507.6, deck post size shall be in accordance with Table R507.8.

### TABLE R507.8
**DECK POST HEIGHT**

<table>
<thead>
<tr>
<th>DECK POST SIZE</th>
<th>MAXIMUM HEIGHT*</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 × 4</td>
<td>8 ft</td>
</tr>
<tr>
<td>4 × 6</td>
<td>8 ft</td>
</tr>
<tr>
<td>6 × 6</td>
<td>14 ft</td>
</tr>
</tbody>
</table>

For SI: 1 foot = 304.8 mm.

a. Measured to the underside of the beam.

R507.8.1 Deck post to deck footing. Posts shall bear on footings in accordance with Section R403 and Figure R507.8.1. Posts shall be restrained to prevent lateral displacement at the bottom support. Such lateral restraint shall be provided by manufactured connectors installed in accordance with Section R507 and the manufacturers' instructions or a minimum post embedment of 12 inches (305 mm) in surrounding soils or concrete plies.