NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel, typical.

Table R507.8 Deck Post Height
<table>
<thead>
<tr>
<th>Deck Post Size</th>
<th>Maximum height</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 or 4 x 6</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>6 x 6</td>
<td>14'-0&quot;</td>
</tr>
</tbody>
</table>

Notes:
1. 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.
2. R507.5 Deck joists shall not be permitted to cantilever not greater than \( \frac{1}{4} \) of the actual, adjacent joist span.
3. R507.5.1 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% 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 nails or (3) No. 10 x 3" long wood screws.
4. R507.6 Beam plies shall be fastened with two rows of 10d nails minimum at 16" o.c. along each edge. Beams shall be permitted to cantilever at each end up to \( \frac{1}{4} \) of the actual beam span. Splices of multispans beams shall be located at interior post locations.
5. R507.7 The ends of each joist and beam shall have not less than \( \frac{1}{2} \) " of bearing on wood or metal and not less 3" on concrete or masonry for the entire width of the beam. Joist framing into the side of a ledger board or beam shall be supported by approved joist hangers. Joists bearing on a beam shall be connected to the beam to resist lateral displacement.
6. R507.7.1 Deck post to Deck beams shall be capable of resisting lateral displacement. All bolts shall have washers under the head and nut.
7. R507.8.1 Post shall bear on footings and be restrained to prevent lateral displacement at the bottom support with a manufactured connector or post embedment of 12" in concrete piers.

**DECK FLOOR PLAN - Elevated Deck**

Table R507.5 Deck Joist spans
Table R507.6 Deck Beam spans for beams supporting deck joists from one side only.
Table WAC R301.5 Balconies (exterior) and decks live load 60 psf (see section R507.1 for decks attached to exterior walls. Dead load 10 psf.

*No hot tubs or integrated patio cover*
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

- Simpson H2.5T or equal each joist
- Beam spans Table See sheet 11

**Table R507.5 Deck joist span**

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>spacing of deck joists with/out cantilever</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>pressure treated Hem- Fir #2</td>
<td>10'-10&quot;</td>
<td>8'-6&quot;</td>
</tr>
<tr>
<td>2 x 8</td>
<td>10'-10&quot;</td>
<td>8'-6&quot;</td>
</tr>
<tr>
<td>2 x 10</td>
<td>11'-6&quot;</td>
<td>9'-4&quot;</td>
</tr>
<tr>
<td>2 x 12</td>
<td>10'-10&quot;</td>
<td>9'-4&quot;</td>
</tr>
</tbody>
</table>

**Table R507.8 Deck Post Height Hem Fir #2 P.T.**

<table>
<thead>
<tr>
<th>Deck Post Size</th>
<th>Maximum height</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 or 4 x 6</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>6 x 6</td>
<td>14'-0&quot;</td>
</tr>
</tbody>
</table>

- Simpson PC4Z/PC6Z or equal- beam to post connection
- Concrete to be contained only within undisturbed native soil
- 18" dia. x 12" deep concrete footing for the outer post
- 21" dia. x 12" deep concrete footing for the middle post

- 2500 psi concrete

**Residential Decks**

MSC-41

page 2 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galvanize or stainless steel.

Table R507.5 Deck joist span

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>spacing of deck joists with/without cantilever</th>
</tr>
</thead>
<tbody>
<tr>
<td>pressure treated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hem-Fir #2</td>
<td>2 x 8</td>
<td>12' - 10'</td>
</tr>
<tr>
<td></td>
<td>2 x 10</td>
<td>11' - 6'</td>
</tr>
<tr>
<td></td>
<td>2 x 12</td>
<td>10' - 10'</td>
</tr>
<tr>
<td>pressure treated</td>
<td>2 x 8</td>
<td>10' - 10'</td>
</tr>
<tr>
<td></td>
<td>2 x 10</td>
<td>9' - 5'</td>
</tr>
<tr>
<td></td>
<td>2 x 12</td>
<td>7' - 8'</td>
</tr>
</tbody>
</table>

2x continuous rim joist either solid sawn lumber or min. 1-1/4" engineered rim material with 3/8" Ø lag screws @ 9" o.c staggered.

26 ga. flashing or other approved material per R703.4

2x P.T. or decay resistant decking

Simpson LU2x or equivalent hanger, based on joist load

1/2" Ø x 4" lag screw, 1/4" Ø x 4" Simpson SDS screw or equivalent through ledger into solid member 12" o.c., staggered. Table R507.2 and AF&PA DCA6.

2x PT ledger- same dimension as joists

Existing header max. opening 8' or verify existing header size
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

Approved weather resistant decking (shown) per manufacturer's specs over min. 3/4" exterior grade plywood or 2x6 decking.

Provide minimum slope or other approved means to prevent ponding or water damage to residence.

26 ga. flashing or other approved material per R703.4

2x continuous rim joist either solid sawn lumber or min. 1-1/4" engineered rim material with 3/8"Ø lag screws @ 9" o.c. staggered

1/2" Ø x 4" lag screw, 1/4" Ø x 4" Simpson SDS screw or equivalent through ledger into solid member 12" o.c., staggered. Table R507.2 and AF&PA DCA6.

Existing header max. opening 8' or verify existing header size.

2x P.T. ledger w/ 1/2"Ø x 4" long (min.) screws @ 12" o.c. staggered

Residential Decks

drawn by mlm
8-11-17
MSC-43
page 4 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

Table R507.5 Deck joist span

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>spacing of deck joists with/without cantilever</th>
</tr>
</thead>
<tbody>
<tr>
<td>pressure treated Hem-Fir #2</td>
<td>2 x 8</td>
<td>10'-10&quot;</td>
</tr>
<tr>
<td></td>
<td>2 x 10</td>
<td>11'-6&quot;</td>
</tr>
<tr>
<td></td>
<td>2 x 12</td>
<td>10'-10&quot;</td>
</tr>
</tbody>
</table>

Table R507.8 Deck Post Height

<table>
<thead>
<tr>
<th>Hem-Fir #2 P.T.</th>
<th>Deck Post Size</th>
<th>Maximum height</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 or 4 x 6</td>
<td>8'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>6 x 6</td>
<td>14'-0&quot;</td>
<td></td>
</tr>
</tbody>
</table>

Simpson CBS 44/CBS 46/CBS 66 or equal concrete to be contained only within native undisturbed soil
18" dia. x 12" deep concrete footing for the outer post
21" dia. x 12" deep concrete footing for the middle post

Residential Decks

drawn by mlm
8-11-17

MSC-44
page 5 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

2x continuous rim joist either solid sawn lumber or min. 1-1/4" engineered rim material w/ 3/8"Ø lag screws @ 9" o.c. staggered.

If using "I-joists" Type floor framing, solid engineer 1 1/4" rim material min. req.

Existing header max. opening 8' or verify existing header size.

26 ga. flashing or other approved material per R703.4.

DTT2Z or equal with 1/2" diameter HDG threaded rod with nuts and washers, within 24" of each end. R507.2.4.

2x P.T. ledger w/ 1/2" Ø x 4" long (min.) screws @ 12" o.c. staggered.
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

26 ga. flashing or other approved material per R703.4

2x P.T. ledger w/ 1/2"Ø x 4" long (min.) screws @ 1 2" o.c. staggered

(2) Simpson DTT12 or equal with (6) SD # 9x 1 1/2" screws (shown) Or (8) 10d x 1 1/2" nails within 24" of each end of deck, install in not less than four locations. R507.2.4.

2x continuous rim joist either solid sawn lumber or min. 1-1/4" engineered rim material with 3/8"Ø lag screws @ 9" o.c. staggered

If using "I-joists" Type floor framing, solid engineer 1 1/4" rim material min. req.

Existing header max. opening 8' or verify existing header size.

Residential Decks

MSC-45b drawn by mlm
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

**Section-Guardrail post perpendicular to joists**

Plan Layout

2x top cap

36" min. IRC

minimum guard height

2x facia w/ (3)-16d galvinate nails to post

beam

2x4 P.T. or cedar rail

4x4 P.T. or cedar post @ 6'-0" o.c.

2x2 P.T. or cedar verts @ 5-1/2" o.c. attach w/2 decking screws top and bottom and w/(3) 16d nails- joists to blocking-each side

4x4 P.T. or cedar vertical blocking w/(3)3/8" diam.x 5-1/2" lag bolts into post- (3) 16d galvinate nails-through joists to blocking-each side

2x6 P.T. or cedar decking

2x joist each side of post w/ (3) 16d galvinate nails-joist to post- and block-each side

Section-Guardrail post perpendicular to joists

**SECTION THROUGH GUARDRAIL**

7 Non-Cantilever

NOTE: See Sheets 1 through 5 for items not noted. See page 5 for cantilever deck

Residential Decks
drawn by mlm
8-11-17
MSC-46 page 8 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

**Plan Layout**

- 2x4 P.T. or cedar rail
- 4x4 P.T. or cedar post @ 6'-0" o.c.
- 2x2 P.T. or cedar verts @ 5-1/2" o.c.
  attach w/2 decking screws top and bottom and w/(3) 16d galvanize nails-joists to blocking-each side
- 4x4 P.T. or cedar vert. blocking w/(3) 3/8" diam.x 5-1/2" lag bolts into 4x4 post- (3) 16d galvanize nails-through joists to blocking-each side

**Section- Guardrail post parallel to joists**

- 2x6 P.T. or cedar decking
- 2x joist each side of 4x4 post w/ (3) 16d galvanize nails-joist to post- and block-each side
- where 4x4 guardrail posts are perpendicular to joists, use 2x solid blocking each side of 4x4 vert. block and 4x4 guardrail post and nail to joists and 4x4's w/ (3) 16d

**SECTION THROUGH GUARDRAIL**

Non-Cantilever

NOTE: See Sheets 1 through 5 for items not noted. See page 5 for cantilever deck

Residential Decks

drawn by mlm

MSC-47

8-11-17

page 9 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

Plan Layout

Section-Guardrail post parallel to joists

NOTE: See page 5 for items not noted.
2x2 P.T. or cedar verts @ 5-1/2" o.c. attach w/2 decking screws top and bottom
4x4 P.T. or cedar post @ 6'-0" o.c.
2x2 P.T. or cedar rail
2x4 top cap
2x4 P.T. or cedar rail
2x facia w/ (3) 16d nails to post
DTT2Z or equal w/ 5/8" dia. machine bolts to 4x4 post and joist
5/8" Ø machine bolts w/ washers
NOTE: See page 5 for items not noted.

Section- Guardrail post perpendicular to joists

Plan Layout

Residential Decks

drawn by mlm
8-11-17
MSC-49
page 11 of 12
NOTE: All exposed lumber to be pressure treated (P.T.) or decay resistant. Fasteners for P.T. wood shall be hot-dipped galv. or stainless steel.

Shaded area meets beam span.

### Beams

#### Deck Beam Span Lengths @ 8'-0"

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>Joist Deck Span Less than or equal</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. F. #1</td>
<td>4 x 8</td>
<td>8 10 12</td>
</tr>
<tr>
<td>H. F. #1</td>
<td>4 x 10</td>
<td>8 10 12</td>
</tr>
<tr>
<td>H. F. #2</td>
<td>4 x 12</td>
<td>8 10 12</td>
</tr>
<tr>
<td>H. F. #1</td>
<td>6 x 8</td>
<td>8 10 12</td>
</tr>
<tr>
<td>H. F. #2</td>
<td>6 x 10</td>
<td>8 10 12</td>
</tr>
</tbody>
</table>

#### Joist Deck Span Less than or equal

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>6+2 cant</th>
<th>8+2 cant</th>
<th>10+2 cant</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. F. #1</td>
<td>4 x 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. F. #2</td>
<td>4 x 12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. F. #1</td>
<td>6 x 8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. F. #1</td>
<td>6 x 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. F. #2</td>
<td>6 x 12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Joist

#### Table R507.5 Deck joist span

<table>
<thead>
<tr>
<th>Species</th>
<th>size</th>
<th>spacing of deck joists with/without cantilever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hem-Fir #2</td>
<td>2 x 8</td>
<td>10'-10&quot; 9'-5&quot; 7'-8&quot;</td>
</tr>
<tr>
<td></td>
<td>2 x 10</td>
<td>11'-6&quot; 9'-4&quot;</td>
</tr>
<tr>
<td></td>
<td>2 x 12</td>
<td>10'-10&quot;</td>
</tr>
</tbody>
</table>

### Post

#### Table R507.8 Deck Post Height

<table>
<thead>
<tr>
<th>Deck Post Size</th>
<th>Maximum height</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 x 4 or 4 x 6</td>
<td>8'-0&quot;</td>
</tr>
<tr>
<td>6 x 6</td>
<td>14'-0&quot;</td>
</tr>
</tbody>
</table>

Residential Decks

8-11-17

drawn by mlm

MSC-50 page 12 of 12