NOTE:
DIMENSIONS ARE APPROXIMATE, MAY VERY UPON WHERE YOU OBTAIN PIERS.

PRECAST DECK PIER
Scale: 3" = 1'
1. Outdoor environments are generally more corrosive to steel. If you choose to use ZMAX® or HDG finish or stainless steel material on an outdoor project, you should periodically inspect your connectors and fasteners or have a professional inspection performed. Regular maintenance, including waterproofing of the wood used in your outdoor project is also a good practice.

2. Coatings Available:

   2.1. ZMAX®: Galvanized (G185) 1.85 oz. of zinc per square foot of surface area. (Hot-dip galvanized per ASTM A653 total both sides). These products require hot-dip galvanized fasteners (fasteners which meet the specifications of ASTM A153).

   2.2. HDG - Hot Dip Galvanized: Products are hot-dip galvanized after fabrication (14 ga. and thicker). The coating weight increases with material thickness. The minimum specified coating weight is 2.0 oz. per square foot. (per ASTM A123 total both sides). These products require hot-dip galvanized fasteners (fasteners which meet the specifications of ASTM A153).

   2.3. SS - Stainless Steel: Connectors are manufactured from Type 316L stainless steel, and provide greater durability against corrosion. Stainless-steel nails are required with stainless-steel products, and are available from Simpson Strong-Tie.

3. When using stainless steel connectors, use stainless steel fasteners. When applications allow the use of ZMAX/HDG galvanized connectors, use HDG fasteners that meet the specifications of ASTM A153 or equivalent coating offered on Simpson Strong-Tie fasteners.

4. Due to many variables involved with outdoor construction, Simpson Strong-Tie cannot provide estimates on service life of connectors, anchors or fasteners.

5. To obtain optimal performance from Simpson Strong-Tie products, the products must be installed properly and used in accordance with the installation instructions and design limits provided by Simpson Strong-Tie.

6. All installation notes and guidelines within the Construction Connection blog shall apply for the connectors, anchors, and fasteners shown.

7. Simpson Strong-Tie reserves the right to change the specifications, design and models shown without notice or liability for such changes.

8. Simpson Strong-Tie does not guarantee the performance or safety of products that are modified, improperly installed or not used in accordance with the design.

9. All references to bolts or machine bolts (MB) are structural quality through bolts (not lag screws or carriage bolts) equal to or better than ASTM A397, grade A. Bolt holes shall be at least a minimum of 1/16" larger than the bolt diameter per 2005 NDS Section 11.1.2.

10. Unless noted otherwise, all references to standard cut washers refer to Type A plain washers (W) conforming to the dimensions shown in ASTM B18.22.1 for the appropriate rod sizes.

11. Unless stated otherwise, Simpson Strong-Tie cannot and does not make any representation regarding the suitability of use or load-carrying capacities of connectors installed with improper fasteners.

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**Fastener Notes:**

1. The specified quantity, type and size of fastener must be installed in the correct holes on the connector to achieve published loads.

2. Correct fastener selection or installation can compromise connector performance and could lead to failure.

3. Washers assume no coating. See technical bulletin T#A114 GUIDE for more information.

4. The Simpson Strong-Tie® SDJ structural connector screw is the only screw approved for use with our connectors.

5. NAIL reference in Tables: 6d common, 16d common.
### D03 LUS Joist Hangers

**Installation:**
- The joint may be square cut or beveled cut.
- These hangers will normally accommodate a 45° to 90° skew.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Dimensions (in.)</th>
<th>Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUS28Z</td>
<td>1 9/16 x 4 3/4 x 1 3/4</td>
<td>4-6D, 4-6D</td>
</tr>
<tr>
<td>LUS30Z</td>
<td>1 11/16 x 2 x 3/4</td>
<td>4-6D, 4-6D</td>
</tr>
<tr>
<td>LUS32Z</td>
<td>1 3/8 x 4 3/4 x 1 3/4</td>
<td>4-6D, 4-6D</td>
</tr>
<tr>
<td>LUS34Z</td>
<td>3/4 x 5 1/2 x 2</td>
<td>4-6D, 4-6D</td>
</tr>
</tbody>
</table>

1. Indicate connector is available in stainless steel. Replace "2" in model number with "S" when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.

### D04 LUC, HUC Joist Hangers

**Installation:**
- For LUC installations, models have triangle and round holes. To achieve maximum loads, fit both round and triangle holes (fastener quantity listed for both holes).
- For HUC installations, models have triangle holes. To achieve maximum loads, fit both triangle holes (fastener quantity listed for both holes).

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Dimensions (in.)</th>
<th>Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUC28Z</td>
<td>1 9/16 x 4 3/4 x 1 3/4</td>
<td>4-6D, 4-6D, 4-10D</td>
</tr>
<tr>
<td>LUC30Z</td>
<td>1 11/16 x 2 x 3/4</td>
<td>4-6D, 4-6D, 4-10D</td>
</tr>
<tr>
<td>HUC28Z</td>
<td>3/4 x 5 1/2 x 2</td>
<td>4-6D, 4-6D, 4-10D</td>
</tr>
<tr>
<td>HUC30Z</td>
<td>3/4 x 5 1/2 x 2</td>
<td>4-6D, 4-6D, 4-10D</td>
</tr>
</tbody>
</table>

1. Indicate connector is available in stainless steel. Replace "2" in model number with "S" when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.

### D05 SUR/SUL 45° Skewed Joist Hangers

**Installation:**
- Model SUR/SUL is skewed to the left. SUR/SUL can be installed as skewed left or right.

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Joint Site</th>
<th>Dimensions (in.)</th>
<th>Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x8, 8</td>
<td>1 9/16 x 5 x 2</td>
<td>2</td>
<td>1 1/8</td>
</tr>
<tr>
<td>2x10, 12</td>
<td>1 9/16 x 8 1/2 x 2</td>
<td>2</td>
<td>1 1/8</td>
</tr>
<tr>
<td>2x12, 12</td>
<td>3 1/8 x 8 1/2 x 2 1/2</td>
<td>7/8</td>
<td>3 1/8</td>
</tr>
</tbody>
</table>

1. Indicate connector is available in stainless steel. Replace "2" in model number with "S" when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.

### D06 LS Framing Angles

**LS Framing Angles**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>L (in)</th>
<th>Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSNZ</td>
<td>3 1/8</td>
<td>6-10D</td>
</tr>
<tr>
<td>LSNZ</td>
<td>4 1/4</td>
<td>8-10D</td>
</tr>
<tr>
<td>LSNZ</td>
<td>5 1/2</td>
<td>10-16D</td>
</tr>
</tbody>
</table>

1. Indicate connector is available in stainless steel. Replace "2" in model number with "S" when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.
Installation:
- Follow 3-way Installation sequence for skewed or skewed-r fastest applications.
- Do not substitute "ABA" nails for face nails.
- To see an installation video of this product, visit www.homestratosphere.com

STEP 1
Nail hanger to slope-out carried member. Install joint nails at 45° angle.

STEP 2
Screw flange from 0°-45°. Bend other flange back along centerline of slats until meets the header. Bend one time only.

STEP 3
Attach hanger to the carried member, acute angle side first (see footnotes). Install nails at an angle.

D07 LSU, LSSU Adjustable Joist Hangers

D08 ABA, ABU Post Bases

D09 PBS Post Bases
### CBSQ Post Bases

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Post Size</th>
<th>Dimensions (in.)</th>
<th>Number of SDS Screws</th>
</tr>
</thead>
</table>
| CBSQ4-4S | 4 x 4     | 3 1/2 3 1/2 7 1/8 8 3/8 | 14-SDS 1/8"
| CBSQ6-4S | 4 x 6     | 3 1/2 5 1/2 7 1/8 8 3/8 | 14-SDS 1/8"
| CBSQ8-4S | 4 x 8     | 3 1/2 7 1/2 6 3/8 8 3/8 | 14-SDS 1/8"
| CBSQ4-6S | 6 x 4     | 5 1/2 5 1/2 7 1/8 8 3/8 | 14-SDS 1/8"
| CBSQ6-6S | 6 x 6     | 5 1/2 5 1/2 7 1/8 8 3/8 | 14-SDS 1/8"
| CBSQ8-6S | 6 x 8     | 7 1/2 7 1/2 6 3/8 8 3/8 | 14-SDS 1/8"
| CBSQ4-8S | 8 x 4     | 7 1/2 7 1/2 6 3/8 8 3/8 | 14-SDS 1/8"
| CBSQ6-8S | 8 x 6     | 7 1/2 7 1/2 6 3/8 8 3/8 | 14-SDS 1/8"

1. **L** indicates connector is available in stainless steel. Replace -4S92HDC in model number with SS when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.

### BC, BCS Post Caps

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Dimensions (in.)</th>
<th>Fasteners</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC14Z</td>
<td>3 1/8 3 1/8 3 1/8 3 1/8</td>
<td>10-16 10-16 10-16 10-16</td>
</tr>
<tr>
<td>BC16Z</td>
<td>5 1/2 5 1/2 5 1/2 5 1/2</td>
<td>10-16 10-16 10-16 10-16</td>
</tr>
<tr>
<td>LPC14Z</td>
<td>3 1/8 3 1/8 3 1/8 3 1/8</td>
<td>8-10D 8-10D 8-10D 8-10D</td>
</tr>
<tr>
<td>LPC16Z</td>
<td>5 1/2 5 1/2 5 1/2 5 1/2</td>
<td>8-10D 8-10D 8-10D 8-10D</td>
</tr>
<tr>
<td>LCE14Z</td>
<td>5 3/8 5 3/8 5 3/8 5 3/8</td>
<td>10-16 10-16 10-16 10-16</td>
</tr>
<tr>
<td>LCE16Z</td>
<td>5 3/8 5 3/8 5 3/8 5 3/8</td>
<td>10-16 10-16 10-16 10-16</td>
</tr>
</tbody>
</table>

1. **L** indicates connector is available in stainless steel. Replace -Z in model number with SS when ordering.
2. Refer to current Wood Construction Connectors catalog for additional information.

### AC, LPC, LCE Post Caps

### PC, EPC Post Caps
Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in The Basics Listed Above

Think of a deck as a floor structure. It has joists to support the flooring material (decking) and posts to hold the unit up off the ground—slightly elevated or higher.

The lumber can be redwood, cedar, cypress, or pressure treated fir, hemlock, spruce. The footings should be concrete, and any support posts 6x6-inches square. You can use 4x4-inch posts up to about 6 feet of deck height; the larger size is recommended just to make sure the support is always adequate. Refer to the beam, post, and span tables included.

The deck design can be square, rectangular, and, perhaps, somewhat free-form or two-level. Plan and design the deck before buying any tools and materials. By doing so, you will eliminate many mistakes and save time and money throughout the project.

This booklet is about building basics only. It does not address deck design in any detail.

**NOTE:** You may need a building permit to construct a deck in your community. Check with the Building Department authority in the community. The usual procedure is to submit a drawing of the proposed deck structure to the building inspector in the Building Department. Any changes to meet local codes and requirements will be indicated. If okay, you will be issued a building permit usually for a fee. The permit may be time limited—probably not to exceed 3, 6, 9, or 12 months.

### MINIMUM BEAM SIZES AND SPANS

<table>
<thead>
<tr>
<th>Species Group 1</th>
<th>Spacing Between Beams, Ft.</th>
<th>Species Group 2</th>
<th>Species Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam size</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>4x6'</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>4x8'</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>4x8'</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>3x10'</td>
<td>11</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>3x10'</td>
<td>11</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>4x10'</td>
<td>12</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>3x12'</td>
<td>12</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>3x12'</td>
<td>12</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>4x12'</td>
<td>12</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>4x12'</td>
<td>12</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

Beams are on edge. Spans are center to center. Diameters between posts or supports. Grade is No. 2 or Better; No. 2 - medium grain. Southern pine.

**Species Group 1:** Douglas fir, larch, Southern pine.

**Species Group 2:** Hemlock fir, Douglas fir.

**Species Group 3:** Western pines and cedars, redwood, spuces. Example: If the beams are 9 feet 6 inches apart and the Species is Group 2, use the 10 foot column; 3x60 up to 6 foot spans, 4x60 or 4x60 up to 7 foot spans, 4x60 or 6x60 up to 9 foot spans, 6x62 up to 11 foot spans.

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**CONCRETE FOOTINGS**

The building codes in your community will be very specific about this deck component (usually). However, here are several rules of thumb for fun purposes:

If possible, footings should be placed on undisturbed soil or rock. The footings must extend below frost line in your area, which ranges from 24 inches minimum to 48 inches maximum. You can find out the frost line depth in your area by phoning the National Weather Service. If this agency is not convienently reachable, your local Building Department will know the frost line depth.

Footings usually are placed concrete in rectangular, square, or circular shapes depending on the post connection. Most footings extend 2 to 6
Inches above ground (grade) level, if posts will be embedded into concrete, the posts must be treated for rot resistance (such as termites).

READY THE SITE
Clean away all trees, shrubs, grass, big rocks, and other debris BEFORE you order material.

The ground should slope away from the house slightly for adequate drainage.

If a lot of soil must be moved to provide this slope, it is recommended that you have the soil moved professionally. The cost may not be as prohibitive as you might think. It's worth a check and three bids.

STAKE OUT THE DECK

With wooden stakes and chalk line, square the deck to the house. By doing this, you also have created the shape of the deck with string.

Take your time with this task. Getting it correct at this point can save you plenty down the line. The stake-out will be used to determine all other deck dimensions as you proceed.

STAKE OUT THE FOOTINGS

Using the stakes again, locate the footing positions. Most posts are set back from the leading edge of the deck by 18 to 24 inches.

If the footing location happens to coincide with an underground utility, you may get the utility moved, or you will have to relocate the deck.

The size and number of footings are determined by the size of the deck and its expected load. Generally, for most decks, footings are placed on 5-foot centers, front, middle, and back. If there will be lots and lots of weight on the deck, the footings can be 4 foot on-center for support. Don't skimp. It's better to overdo it slightly than underdo it.

When you have determined position, stake the post holes using the stakes as on-center within the footing area. An auger or clamshell type posthole digger can be used to dig the footing holes.

Joists, at 2 and/or 4 foot intervals. It is recommended that you use 16d hot-dipped galvanized nails to assemble the deck. You also can use metal connectors to attach or support joists at ends. See drawings.

DOWN WITH THE DECKING

Once the joists are in position, the decking goes down. Make sure that the curved end grain of the wood faces downward to eliminate cupping.

Make the nailing pattern uniform. First lay a chalkline along each joist span. Drive two nails at each joist, along the line. The butt joints of the decking should line up with the joist and be centered. After you nail the first deck board, leave 1/8 to 1/4 inch space between each board. Use 16d hot-dipped galvanized casing nails. You can still be used to space between decking boards since they're about 1/8-inch thick."

If you find the deck boards are not exactly parallel, don't try to correct all of the problem by adjusting the next board. Adjust gradually over the next two, three boards. Keep checking dimensions, based on the first board; chances of misalignment will be much less.

When you're about 8 feet from finishing, plan how to make the last piece of decking fit flush with the skirt. Space the remaining boards to coincide with the edge of the skirt.

In doubt, lay out the boards to fit the skirt before nailing it down. You are now ready to trim the deck to final dimensions. See the drawing at bottom far right.

TRIMMING THE DECKING

Check all dimensions TWICE before you start the trimming procedures. Trim from the house out. When you saw, try to keep the saw away from the skirt, unless the deck boards will overlap the skirt. A chalkline will help you see the cut line. To cap the end of the cut decking, as well as to provide an edging strip, you can install a molding piece around the edge of the deck boards. Railings, steps, and benches are usually added after the deck is completed. If a railing is planned, it can be attached to the skirting or joists—and sometimes the beams. It also can be part of the post structure, but plan it his way at the start.

Interior Design and Home Décor Ideas