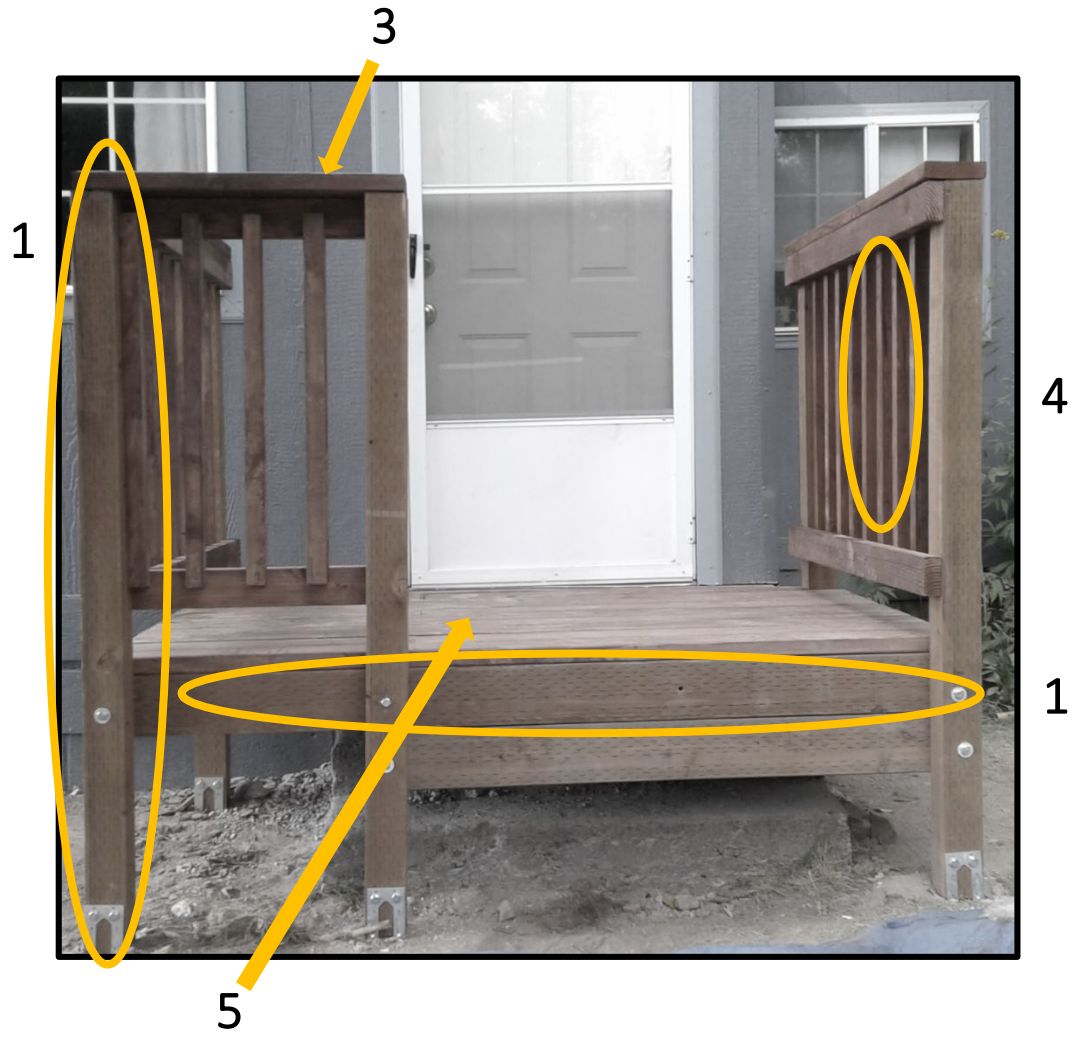
Vocabulary

The main parts of a deck are (see *Chapter 5* for hardware and fasteners):

1) **Post** – 4x4 PT lumber that supports a frame, vertically secured to post bases
2) **Framing member** – 2x6 PT lumber that supports decking and gives rigidity to structure
    - **Joists –** 2x6 PT lumber that traverses framing members (not pictured)
3) **Cap –** 2x6 DF that covers guard and posts
4) **Balusters –** 2x2 DF lumber that spans between guards
5) **Decking –** 2x6 DF lumber that is walked upon

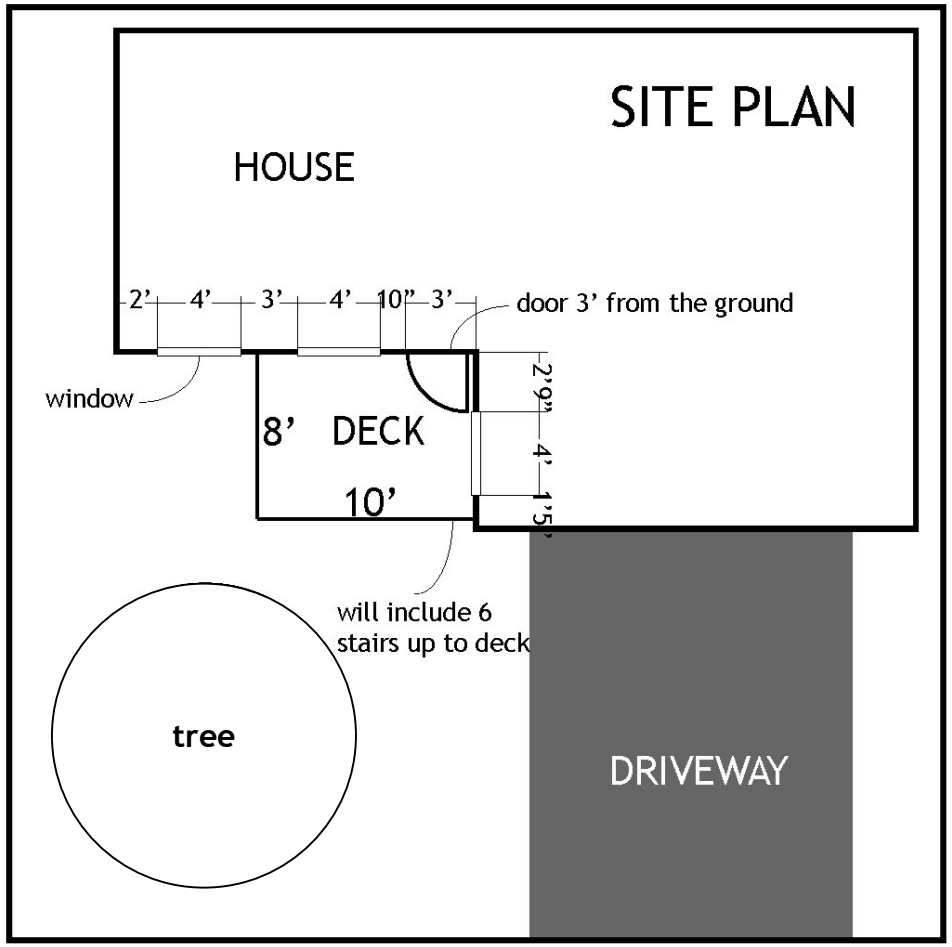


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Plans

The first step of building a deck is to thoroughly plan the project; this includes where trees or other obstructions are and the height of the future deck. Note where windows are located as the guard for the deck should not block them.

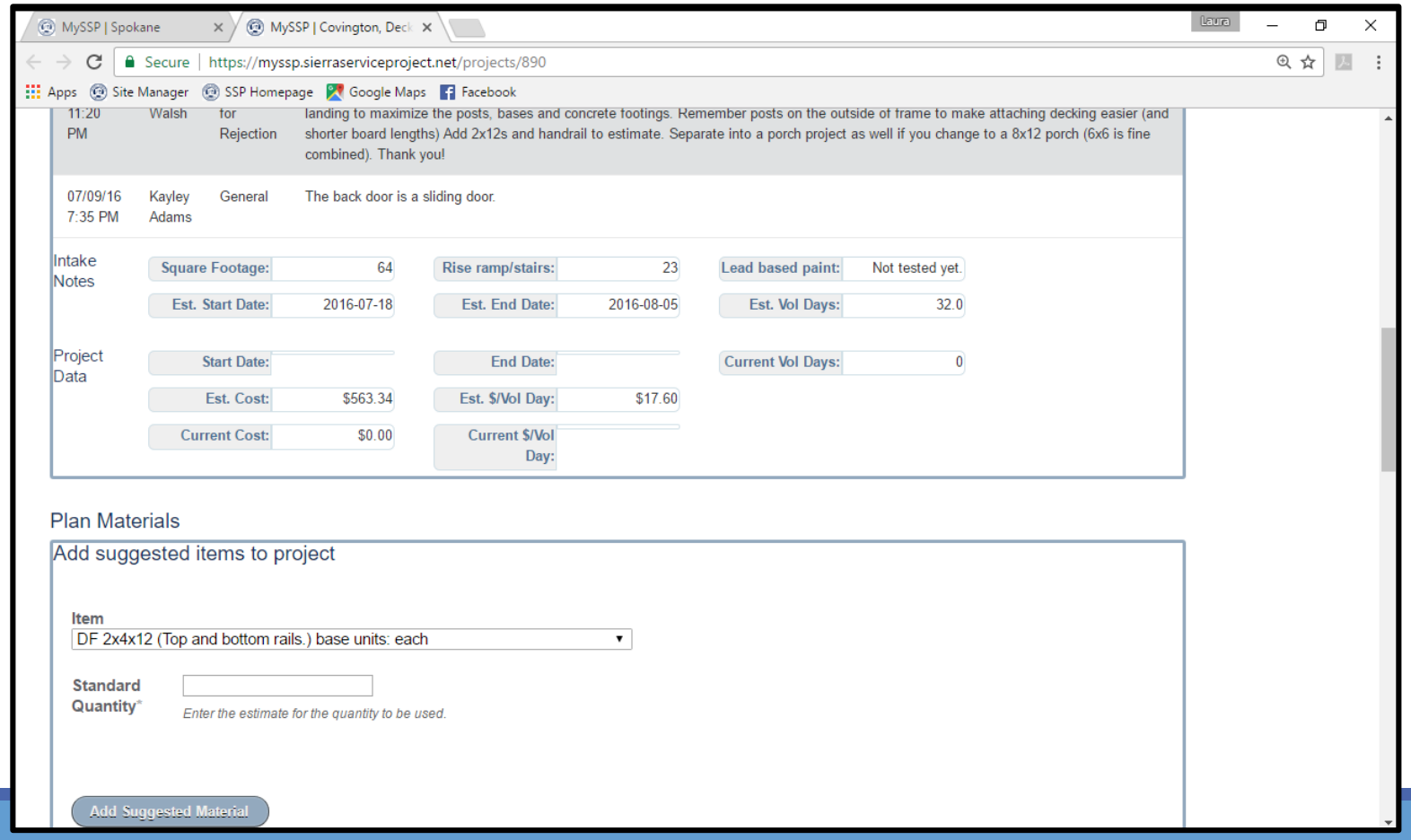
Before any further planning or purchasing of materials, the **site plan** for the project is presented to the homeowner; if they agree to it then the project can move forward.



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Materials Estimate

After drawing a plan, you can determine a materials estimate. There is a guide for each project type in your manual. That list is then entered into SiteManager and reviewed by McKenna or Megan.



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Steps to build an SSP deck:

1. Clear the surrounding area and demo any existing structures
2. Set layout for the deck
3. Dig and pour concrete footings
4. Measure and cut posts closest to the building
5. Install posts into post bases
6. Cut the first length of frame and attach it to posts
7. Repeat for the rest of the frame
8. Cut and attach joists
9. Cut, stain, and attach decking
10. Install handrails
11. Install balusters

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1. Clear the surrounding area and demo any existing structures



Chiloquin 2016

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2. Set layout for the deck

- Use **string** and **stakes** to mark the layout of the deck on the ground. The string marks the **centerline** of the posts.
- Extend the stakes 2’ from the posts so that when the string is removed to dig the holes, the stakes can remain in the same location.

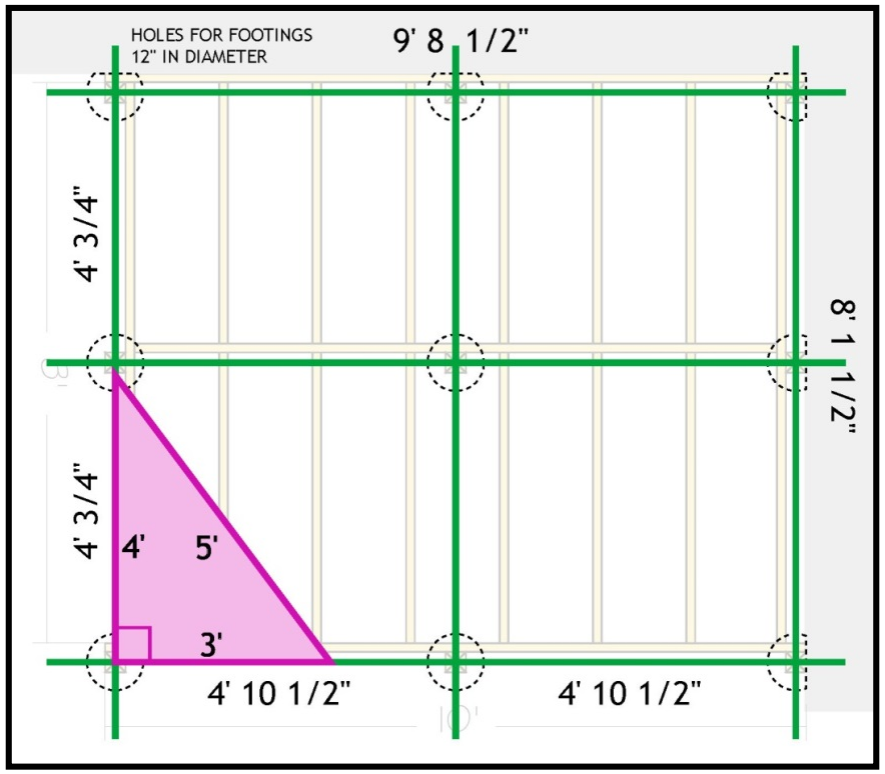


Spokane 2016

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2. Set layout for the deck

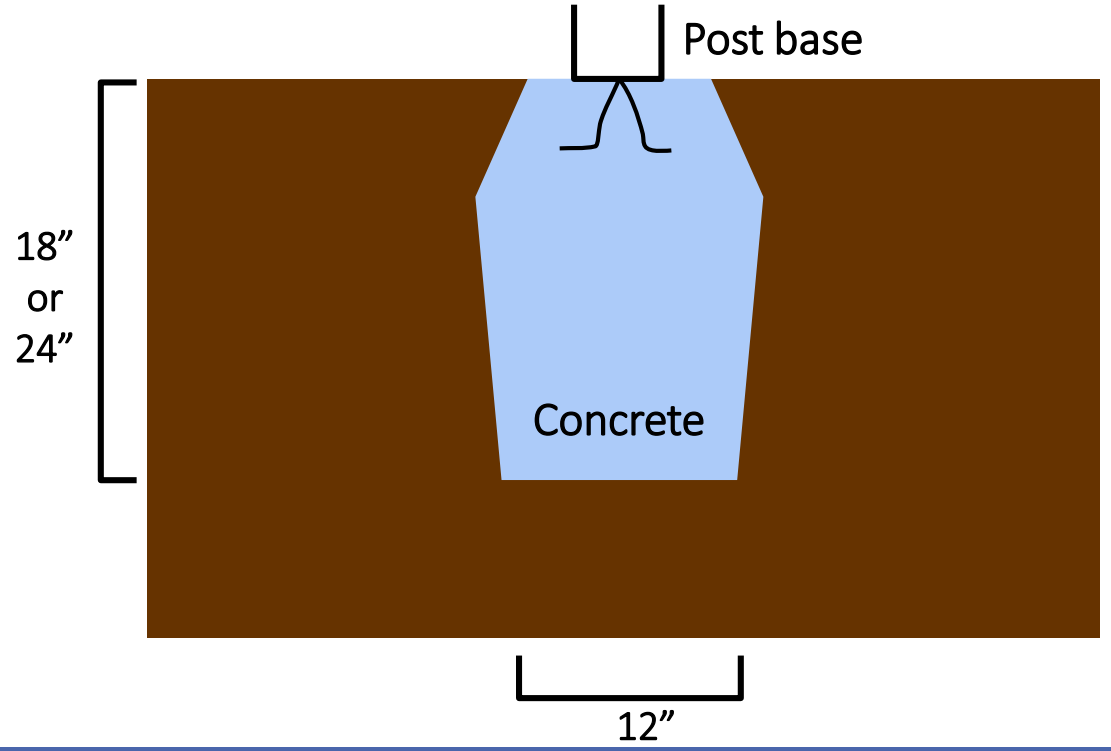
- Use the **Pythagorean Theorem** to verify that two sides are square. Measure 3’ along one edge and 4’ along the other edge, the diagonal between will 5’ if the corner is square. (A 6’, 8’, 10’ triangle can also be used.)
- Adjust as needed to make the layout square.
- This step can be very challenging for some groups. It's best to be on site for this step to guide teams through.



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3. Dig and pour concrete footings

- The footings' dimensions are **12" in diameter and 18" deep (24" in Spokane and Tsaile)**.
- **MAKE SURE TO TWIST AND JIGGLE THE POST BASES IN THE CONCRETE; if you don't, air pockets will form and loosen the post base.**



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4. Measure and cut posts closest to the building

- Posts run from the post base (raised up from the concrete one inch to avoid water damage) and continue past the level of the deck to support the guard.
- Post bases are attached to the 4x4 posts with ½” bolts and nuts.
- While attaching the 4x4 with bolts, use a level and check on both sides of the 4x4 to make sure that the post is **plumb**, or perpendicularly level.



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5. Install posts into post bases

- Don’t set the posts all the way on the ground; use something to keep them off the concrete so that water doesn’t collect underneath.
- Make sure that post bases are all in line with each other: you can temporarily attach post bases to horizontal pieces of lumber to ensure that they stay aligned.
- Allow the concrete to cure overnight.



San Diego 2016

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6. Cut the first length of frame and attach to posts

- The **frame** is made of **pressure-treated 2x6s** and is connected to **posts with ½" by 6" bolts**.
- The framing members must be leveled before they are fastened.

7. Repeat for the rest of the frame.



Chiloquin 2017

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8. Cut and attach joists

- Joist hangers are attached to the frame so that the top of the joist is flush with the top of the frame, one on each end of a joist.
- Joists are then nailed into the joist hangers with common 16d and joist hanger nails.



Nailing joist handers onto a frame



Cutting posts to be flush with the top of joists

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9. Cut, stain, and attach decking

- All sides of the decking and guard lumber must be stained **before** it is screwed into place.
- Cover the sawhorses with tarps or garbage bags.



Spokane 2017

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9. Cut, stain, and attach decking

- If there are seams in the decking, make sure that the **seams are staggered** so you don't end up with a weak spot. All seams must be placed over a joist.
- Decking is screwed into joists with **two 2 ½"** or **3"** decking screws on every joist. **Pilot holes** can be drilled with a 1/8" drill bit to make it easier to drive the screws. This is especially important for junior high youth.



Staggering deck boards
Smith River 2016

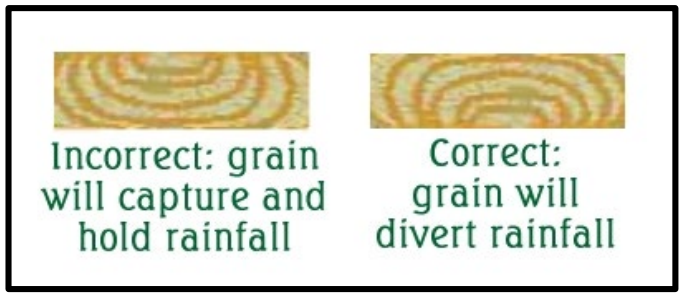


Screwing decking onto fame and joists

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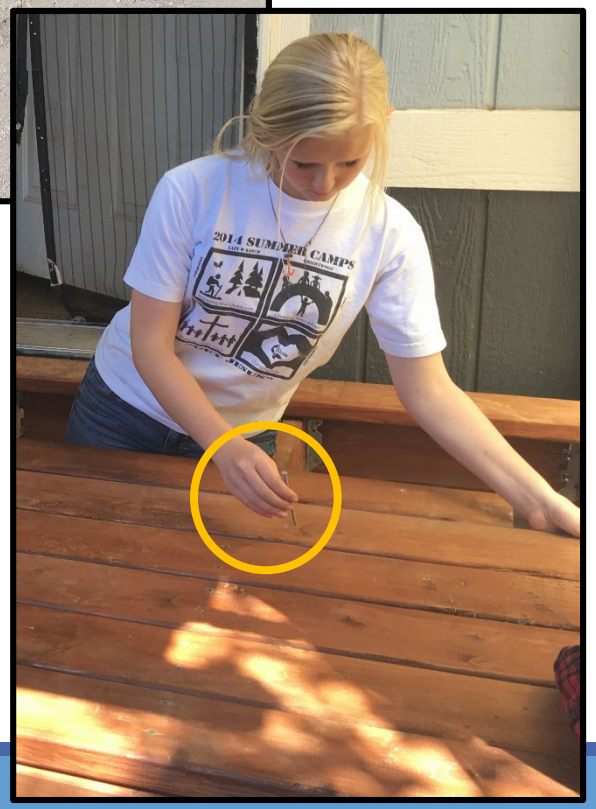
9. Cut, stain, and attach decking

- Once joists are in place, the **decking is** ready to be **laid perpendicular to the joists**.
- An **1/8" gap** should be left between each piece of decking to allow for water to drain. Use 16d nails as spacers.
- Place the decking so that the grain is oriented like the diagram below to allow water to drain, not collect. Look for rainbow shapes!





Measuring and cutting stained DF 2x6 decking Chiloquin 2016



Using a 16d nail to space decking Smith River 2016

©2018 Sierra Service Project

10. Install the handrail

- All lumber for the guard is made of stained DF.
- The top of the 2x6 cap is 42” from the top of the decking.
- Install the DF 2x6 cap which rests on top of the posts, flush with the top DF 2x4 rail.
- Install the bottom DF 2x4 rail 4” from the top of the decking.
- All pieces of the railing are attached with decking screws (use pilot holes!).



Chiloquin 2016

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11. Install balusters

- Stained DF 2x2 **balusters** screwed to the guard, **3 ½”** apart. Use a scrap piece of 2x4 to space them correctly.
- This year, we’re going to purchase 2x2s instead of ripping them from DF 2x4s. The bottom of the 2x2s are cut at a 45° angle.



Cutting balusters at an angle
Tsaile 2016



Using a 2x4 to space balusters
Chiloquin 2016

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