Introduction

As a member of a Construction Team, you are responsible for compiling project plans and teaching volunteers how to read them. While you may have no experience with this, following our step-by-step instructions will turn you into an efficient planner!

During these slides, we will focus on drawing a deck because it's a common SSP project and exemplifies pieces that apply to other projects. There will be a chance for you to practice these skills at Training in June.



Thinking hard at Training 2016!

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Vocabulary

1. Doug fir lumber – abbreviated “DF” on plans to indicate that volunteers will use Doug fir, not pressure treated, lumber.
2. Elevation plan – the perspective of a plan that faces a project head-on.
3. Framing member – create the perimeter of a project, supports the decking. Attach perpendicularly to posts using three ThruLOK bolts in a triangular pattern. Drawn as a thin rectangle, half the length of a 4x4” scale graph paper plan.
4. Joist – lumber that is attached perpendicularly to the frame with joist hangers. Supports the decking. Also drawn as a thin rectangle, half the length of a 4x4” scale graph paper plan.
5. On center (o.c.) – a measurement that spans from the middle of one board (or post) to the middle of the next. Instead of measuring from the middle of materials however, it’s easier and more accurate to choose one side of a board and measure to its corresponding side (see Slide 4).
6. Post – vertical (usually) pressure treated lumber that support the frame and guard of decks, stairs, ramps, awnings, etc. Drawn as a square with an “x” through it.
7. Pressure treated lumber – abbreviated “PT” on plans to indicate that volunteers will use pressure treated, not Doug fir, lumber.
8. Scale – way to relate real life measurements to the measurements in your plans. It’s usually good to set each square of graph paper as 4 square inches.

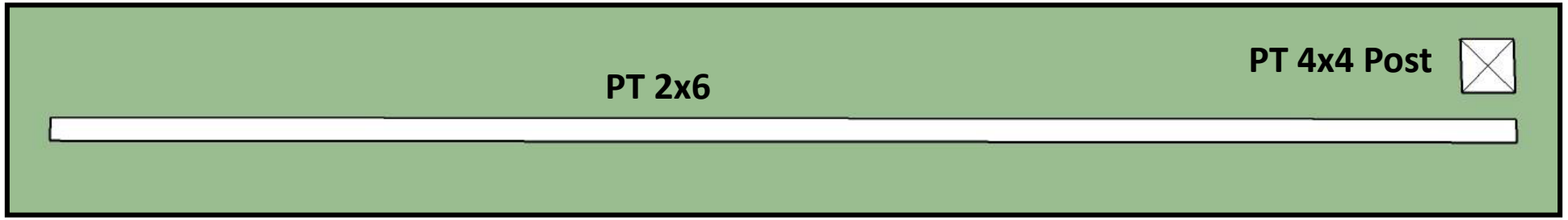
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Top-Down Plans for a Deck

For all of the information needed to build a deck, two different types of images are needed. The first drawing shows the project from a **bird's eye view**. The following slides will show you how to draw this. The **elevation** or **plan view** is relatively standard, and should be mostly photo-copied for volunteers to follow.

Posts are drawn as squares with an "x" through them.

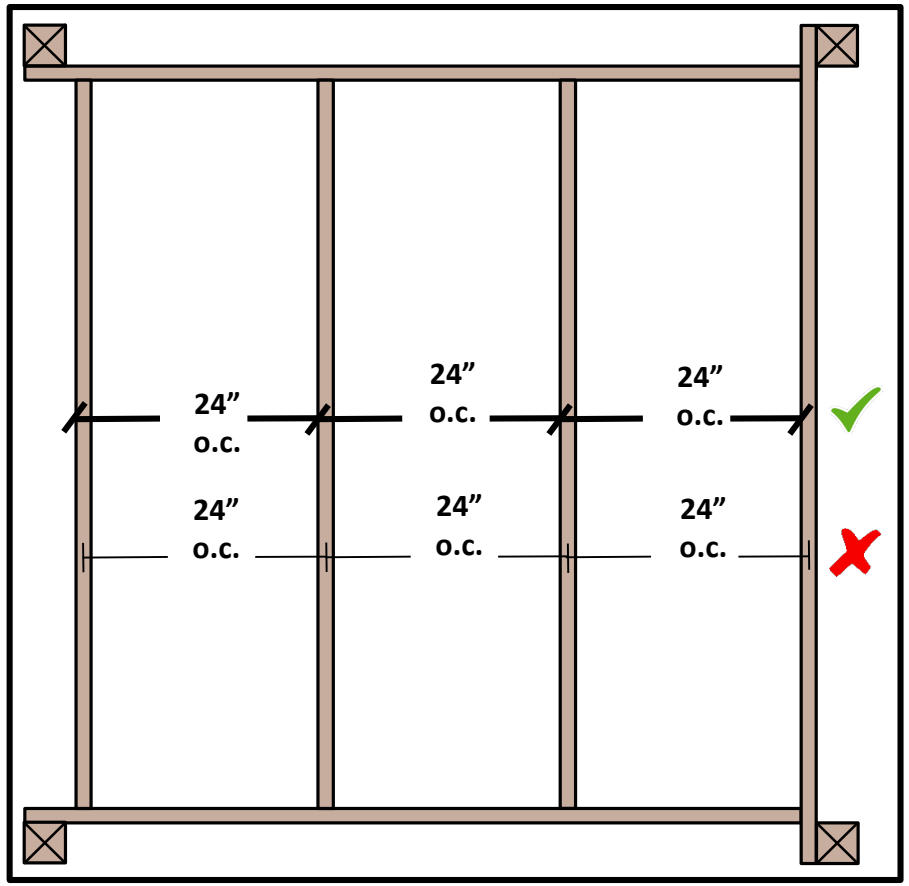
Framing members are 1½" thick and should be drawn as long, skinny rectangles and not as a single line. Looking down on the plan means that you will see the 1½" dimension.



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Drawing plans: on-center (o.c.) tip

Measure from the far end of each board or post, instead of from the middle of each (however, sometimes this isn't possible and you'll have to measure from middle to middle).

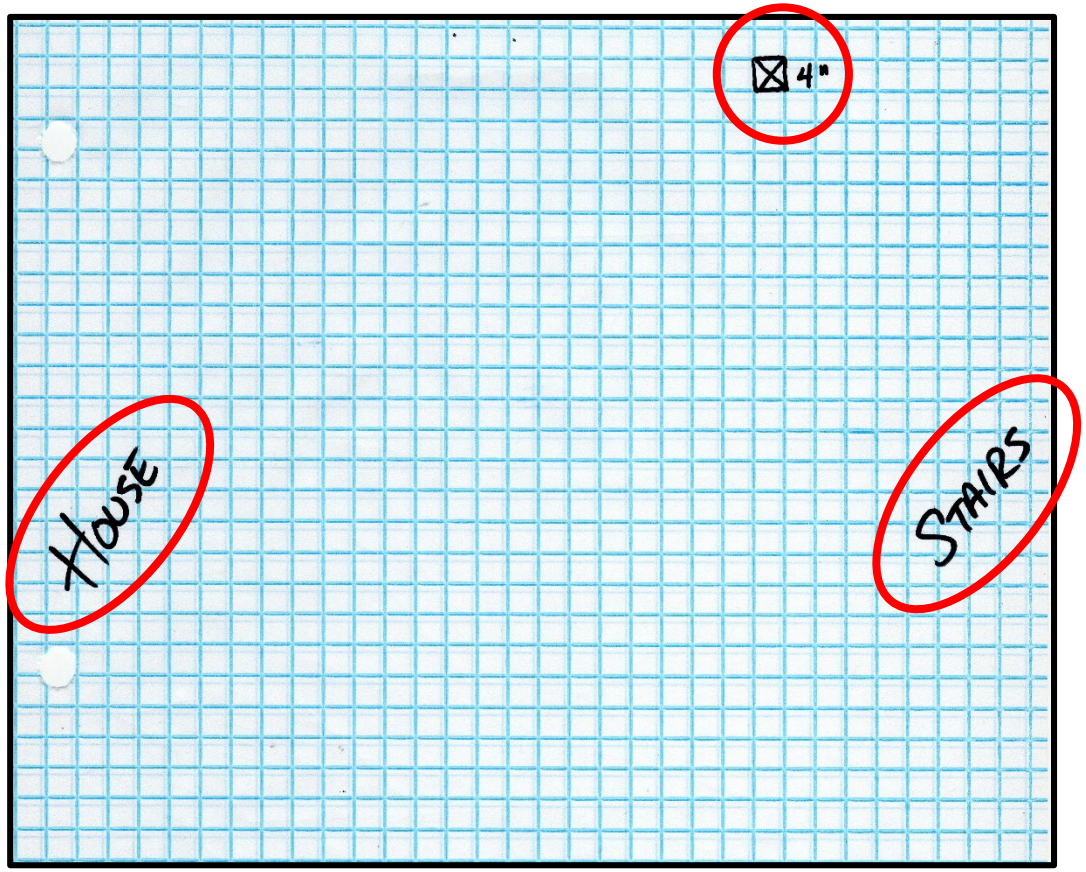


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1. Draw house (and note where stairs or ramp will attach)

a) Determine your scale (it's easiest if one square of graph paper = 4", then 3 squares = 1'. Use one square to show a 4x4 (even though it's actually 3- ½" by 3- ½"). If you need to tape multiple pieces of paper together, that's okay!).

b) Reference your intake notes and sketches to mark obstacles that might interfere with the structure (doors, windows, trees, etc.).



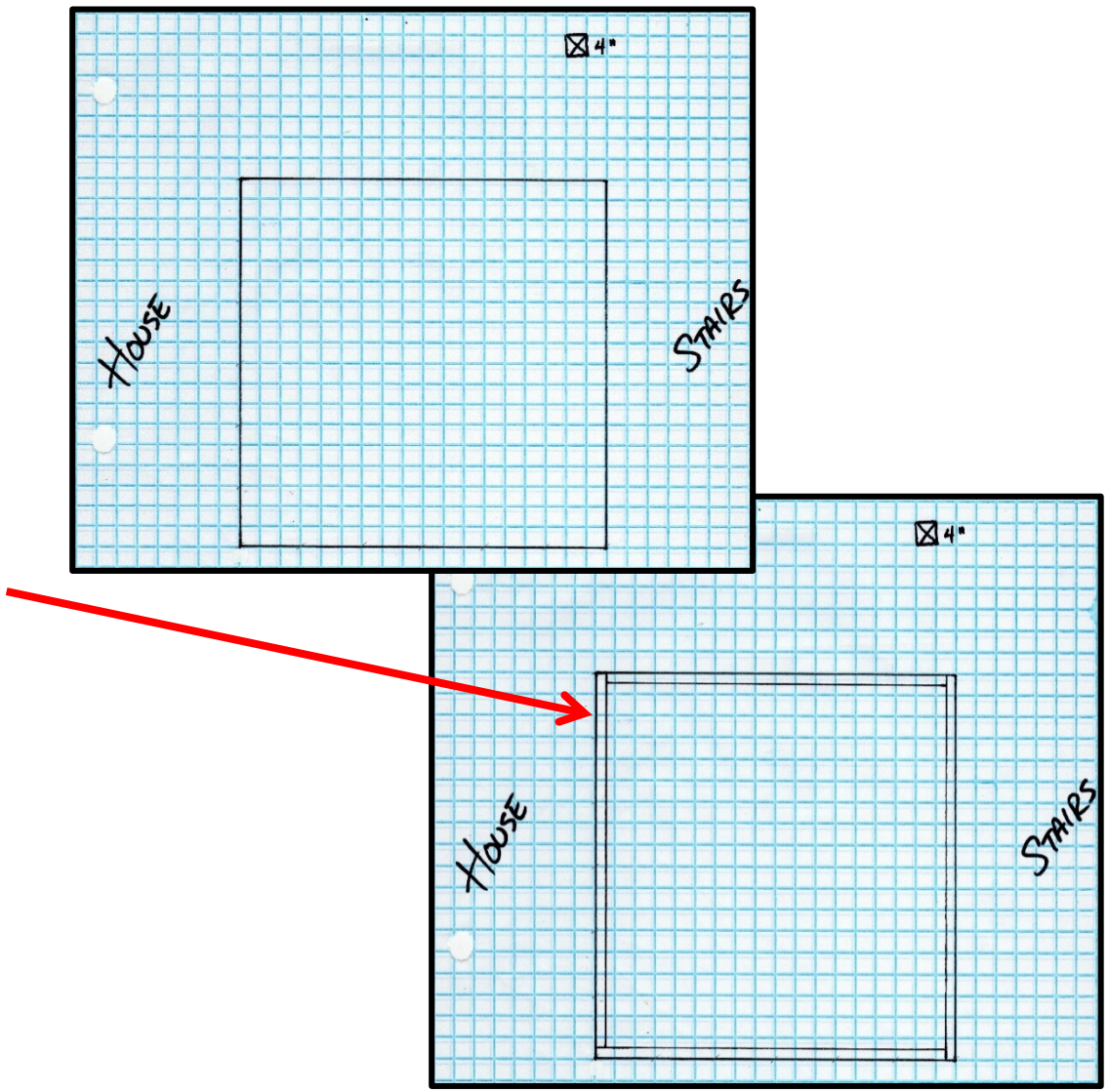
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2. Draw the outline of the deck

a) Draw the total perimeter of the desired deck with single lines (in this example, it's a 6x6 deck); this will become the outside of the frame.

b) Create framing members by drawing parallel lines against this perimeter, making their width 1/2 of a graph paper square. These represent the actual width (1 ½") of lumber that build the frame.

c) At this point, don't worry about how these will attach to posts. You'll have to do some erasing before you get to that point ☺



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3. Determine the location of the posts

Posts are set on the outside of the frame so they can extend past the decking to support the guard.

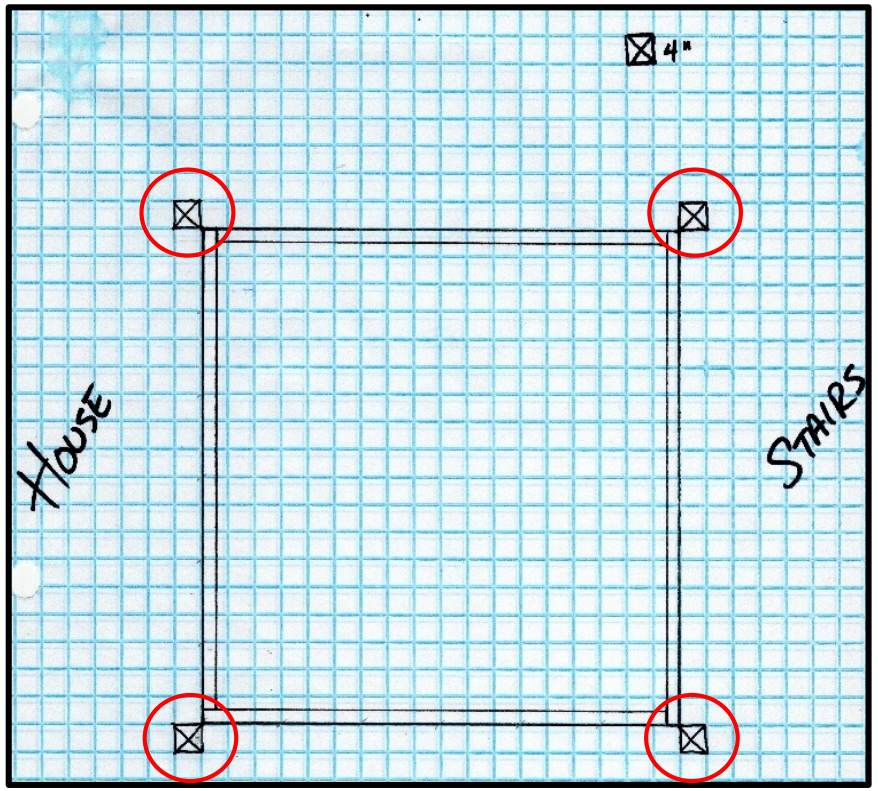
a) Posts are drawn as squares with an “x” through them.

b) Begin with the posts closet to the building; you want to build the deck as close as possible to the wall.

c) Make sure the subsequent posts will align with each other.

d) Posts need to be at each corner, and every 6’ o.c.

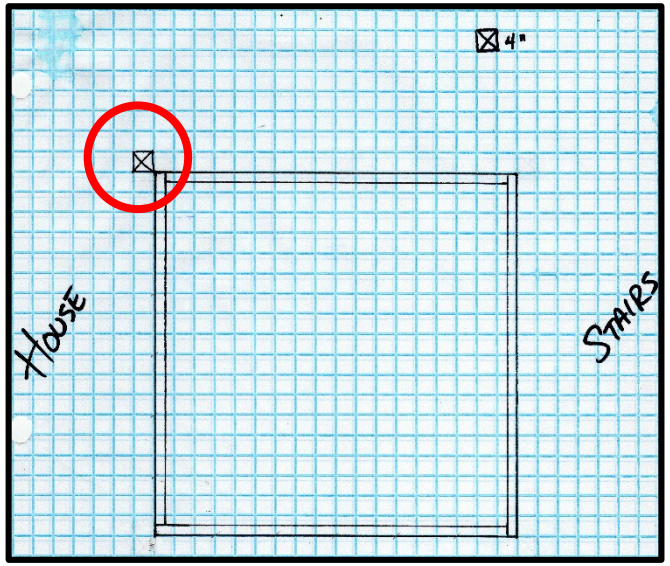
e) Note: if drawing plans for stairs or a ramp, posts need to be at minimum 3’ 9” apart to meet code (4’ is ideal to minimize waste from cutting 3” off of decking). Don’t draw these posts until the corner posts are placed.



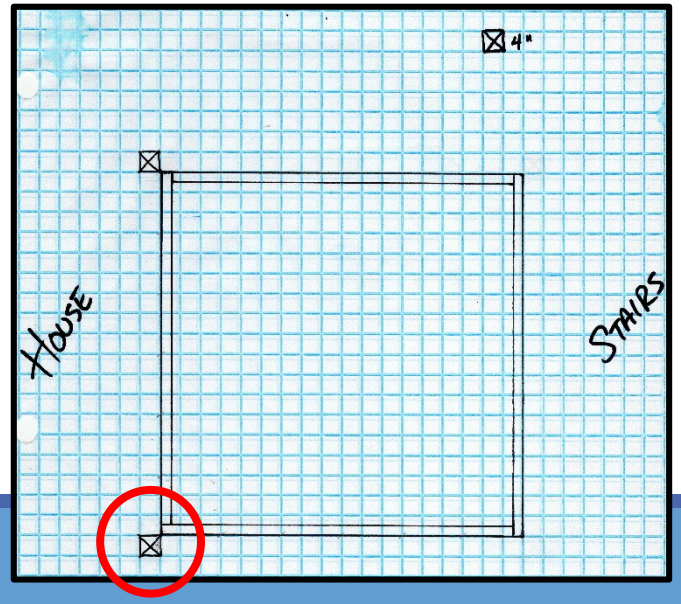
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3. Determine the location of the posts

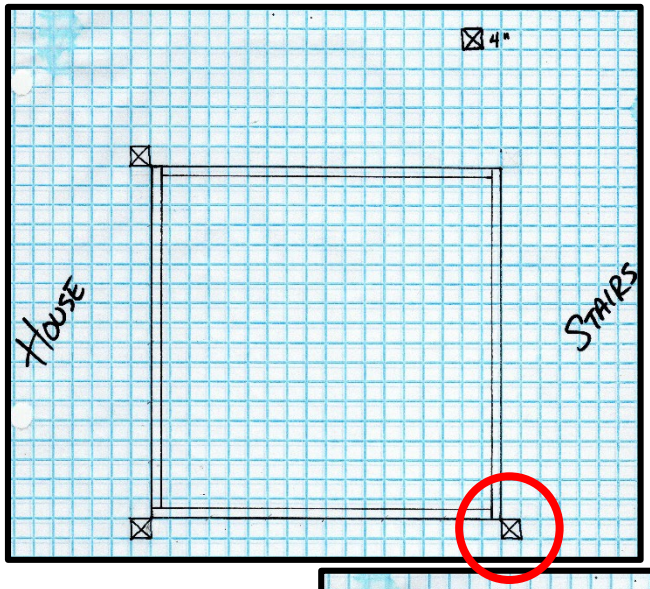
a)



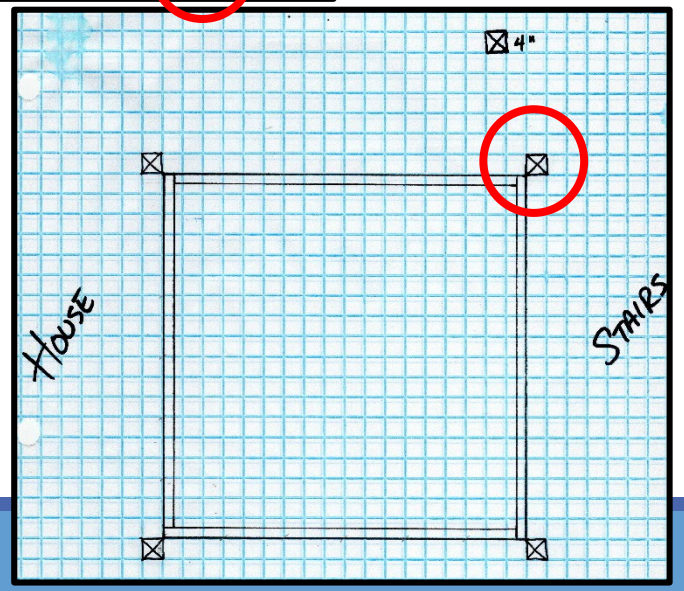
b)



c)



d)



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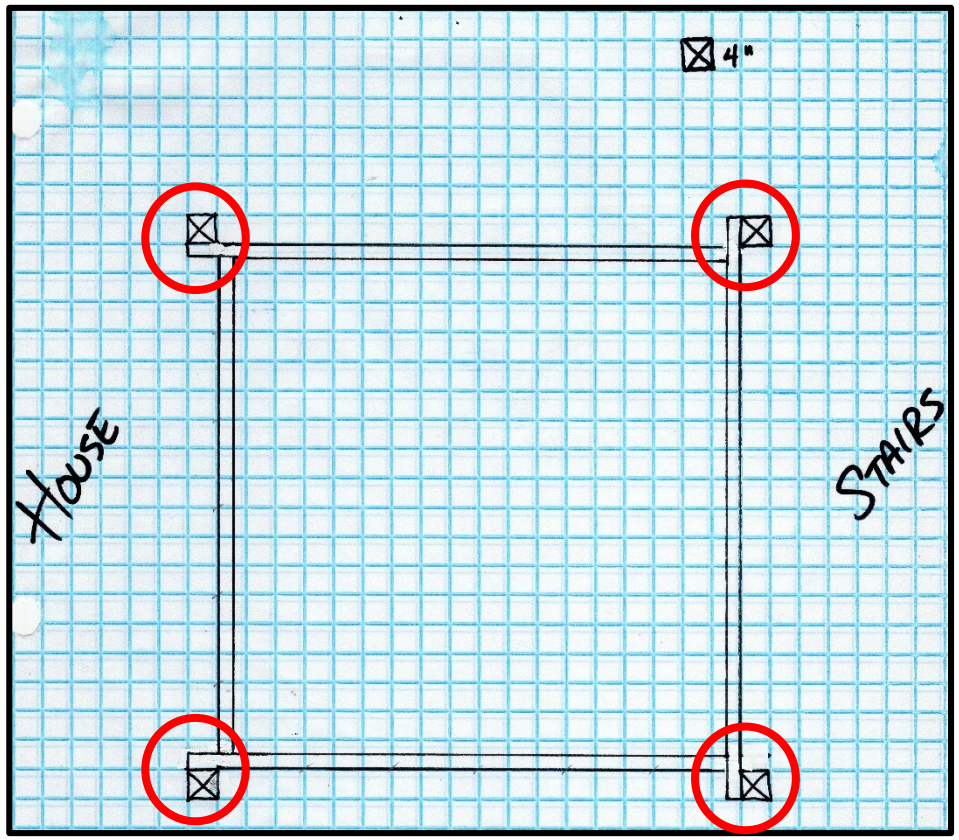
4. Finalize the attachment of framing members

a) Extend the lines of the framing members so that they can attach directly to the posts. Remember: the strongest connection is when a framing member can be screwed directly into a post!

b) Keep in mind that the parallel framing member closest to the house will be attached with joist hangers (acting like a joist) to other framing members.

c) First, look at the side that stairs or a ramp will be attached; framing members cannot extend between posts on that side because that is where stair stringers will attach. See bottom right post; make sure that the framing member is attached on the inside of the deck.

d) After you've identified any limitations in placement, erase the ends of joists and extend them to meet the ends of posts.



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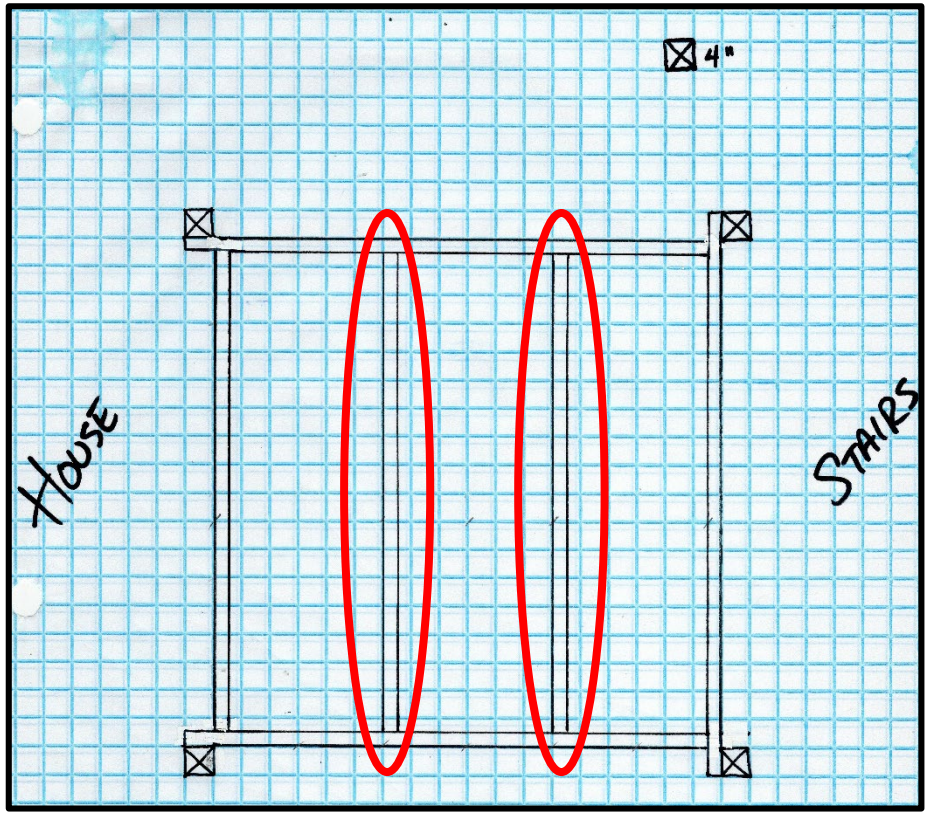
5. Draw joists perpendicularly to the way decking will lay

Joists attach on the inside of the frame and support the decking.

a) To prevent a gap between the deck and the wall, orient the decking so that it can cantilever to the wall, running perpendicular to the building (notice red lines that represent 2x6 decking). **This is new!** We are no longer matching the decking on a deck with the decking direction of any included stairs or ramps.

b) Starting on the side farthest from the house, draw joists between framing members 24" o.c. apart (tip: it's easiest to set the majority of joists 24" o.c. apart and have one that is the remainder at less than 24" o.c. than it is to set them all evenly between framing members).

c) The maximum span of a 2x6 joist is 6'; if needed, add another framing member in the middle of the deck which will be supported by an additional post(s) (see example of 8x12 deck).



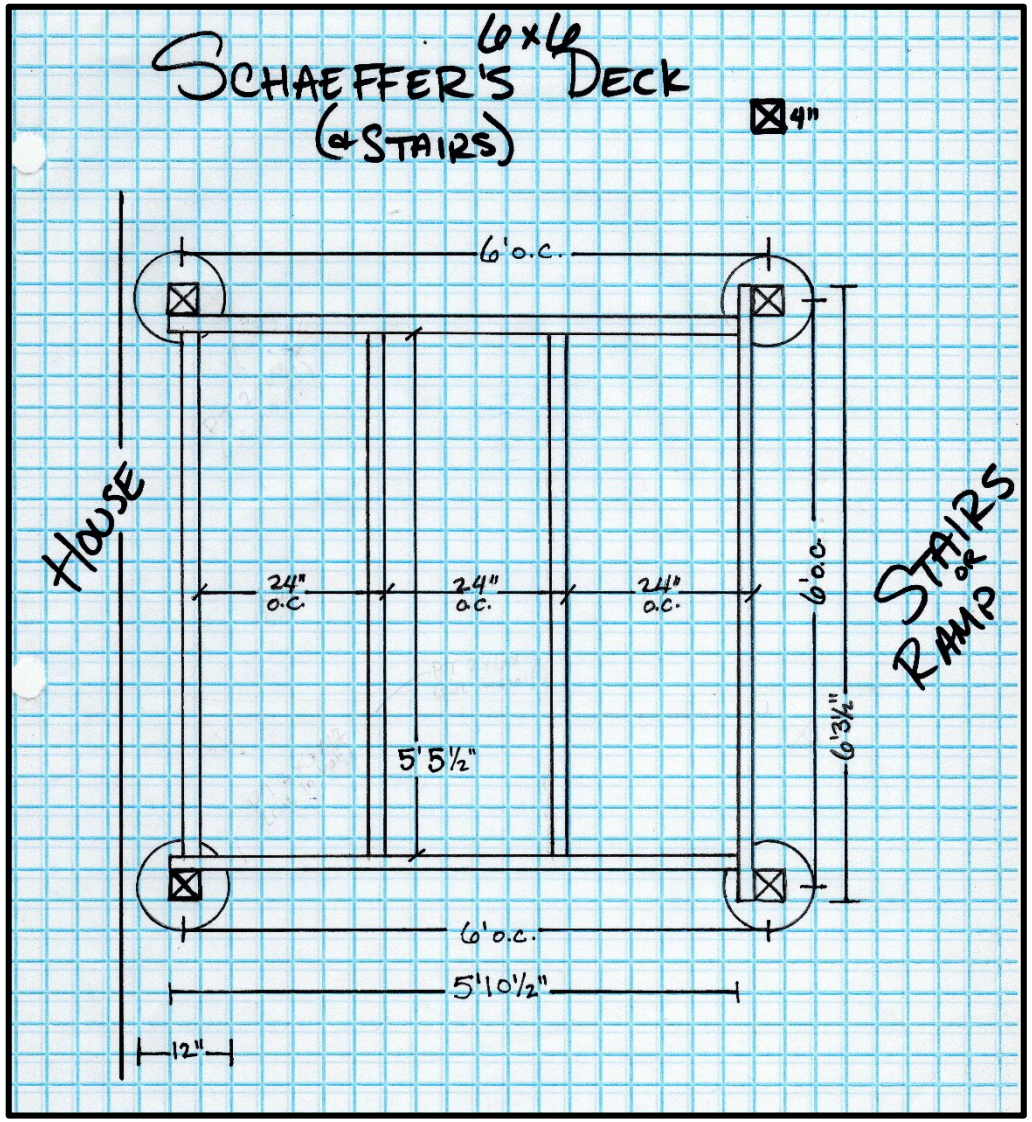
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6. Label missing measurements and draw post holes

a) Go back and note all of the measurements. Everything that the team will need to cut should have a precise measurement written on the plan. Make sure that these measurements are legible and that it's clear what measurement relates to what part – volunteers sometimes follow your plans unquestioningly, so give them the clearest instructions possible!

b) You can also note what kind of wood will be used for each part; if you do this, make sure to include a note explaining that "pressure treated" is abbreviated as "PT" and Douglas fir is abbreviated "DF."

c) Bonus points: you can also color code the length of each piece of lumber with a highlighter (color all 2x6x12s—even if they're to be cut in half—purple, all of the 2x6x8s orange, etc.).



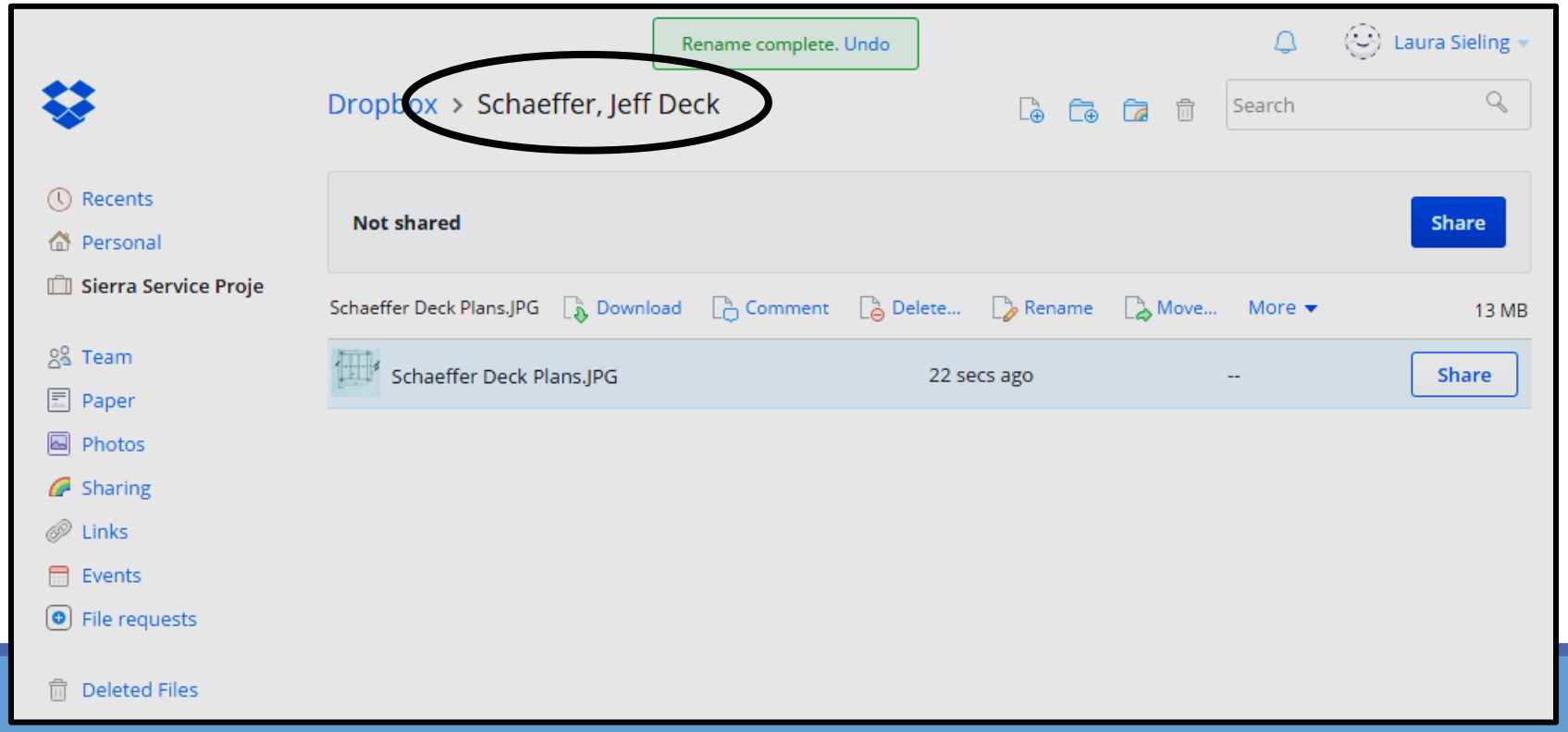
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7. Submit plan on Dropbox and enter the project into SiteManager

a) Your plan should be stored in the folder with the intake photos, labeled [Last name of applicant], [First name of applicant] [Project Type].

b) McKenna or Megan will review it and get back to you about any notes or suggestions.

c) Photocopy of your final plan to include in the Construction Journal.



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Practice

Since this process can be difficult to pick up by simply reading it, we'd like every Construction Team member to complete a top-down plan for a deck. Use graph paper (found in the back of your manual) to plan a deck with the following requirements. Bring it to Training so that you can ask any questions that you have about the process:

- 5'x5' deck
- 28" from grade
- Stairs coming off of the deck



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