

A quick and dirty deck planter

By Mark Boyd

I wanted a planter to go on the porch on the southern side of my house – something that I could use to grow vegetables like carrots or spinach or broccoli.

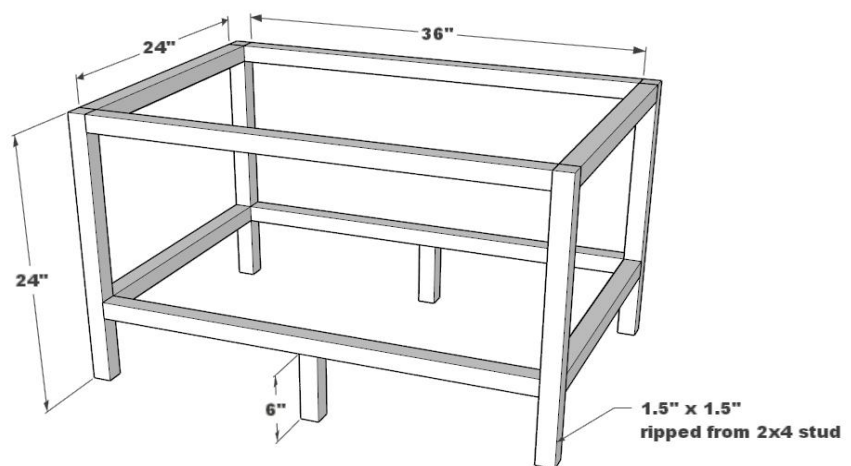
I wanted something I could put together quickly, out of cheap materials. I also wanted something that would last 3 or 4 seasons before I replaced it with something more permanent. This is what I came up with.

This deck planter holds just about 9 cubic feet of material. Moist garden soil with lots of loam and compost weighs about 80 ~ 90 pounds per cubic foot. So it is possible that this box will be holding about 800 pounds (363 Kg) of material. So it needs to be fairly strong.

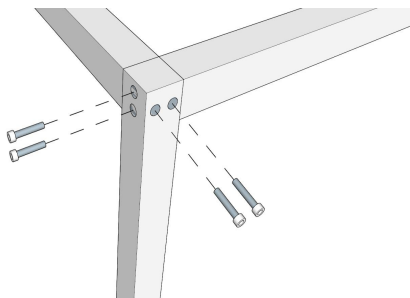


The box is constructed out of 2x4 studs that I ripped on my table saw to get beams that are 1.5 inches by 1.5 inches, at various lengths. The panels are standard 6-foot tall by 5.5 inch wide cedar fence posts from Lowe's. The studs cost about \$3 each – and I got all the square beams I needed from two studs. The fence posts cost less than \$3 each, and it took maybe four of those.

The bottom of the box is braced with three 2x4 studs cut to fit (which cost another \$3), and a 1x12 plank resting on top of those studs. I got the plank for free, and cut it to fit.



You can see the basics of the frame here. I used simple butt joints held together with Grip-Rite polymer-coated star-drive deck screws. I used 2.5" long #9 screws. Each joint got two screws.



To make the joints, I clamped the beams into position, and then pre-drilled and countersunk them.

The orientation of the screws is important here. On one face of the joint I put the screws on a vertical axis, and on the opposing face of the joint I put the screws on a horizontal axis. This ensures that the screws do not interfere with each other when you are installing them.

Pre-drilling is important! 2X4 studs will split apart if too much internal pressure

is applied near the ends. Check for knots too – this will also result in splitting and reduced strength.

Next up is adding the siding to the interior of the frame.

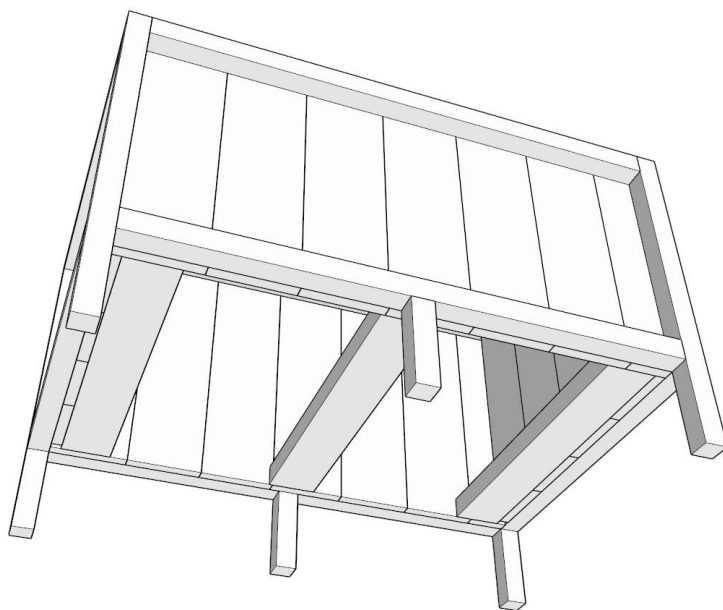
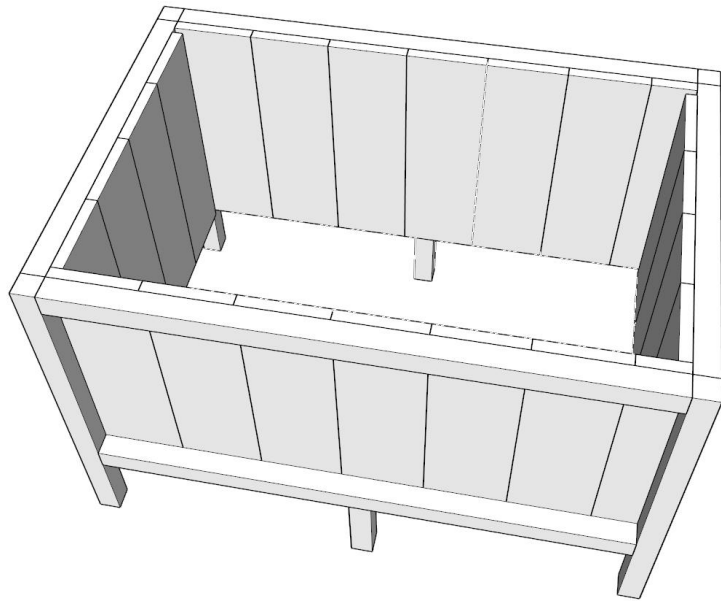
As mentioned earlier, this siding is standard 6-foot tall, 5.5-inch Cedar fencing. I crosscut the fence boards to 18 inches, to fit the top and bottom of the frame.

Since the width of the fencing will not exactly match the interior dimensions of the box, I had to rip the fence boards to a width that fit. I don't show that measurement here – I just marked the width in my shop and ripped to fit on my table saw.

I used 18 gauge, 1.25 inch long brads in my nail gun to attach these boards to the inside of the frame.

Next I attached crossbeams made of standard 2x4 studs inside the bottom of the box.

I cross cut these 2x4s to 22.5 inches in length, and then tried to install them. I ran into immediate problems because of the uneven thicknesses of the fence boards.



But will it support 800 pounds of wet dirt?

Each leg of the planter will be supporting about 130 pounds of weight, which is well within the axial loading limit of columns of this size.

The longest span of unsupported area is a maximum of 24 inches – there are two of these spans. Let us assume that each span supports half the total weight – or 400 pounds of uniform load. (This is overkill, since there are six support points, not 4.) Also assume that the 2x4s are white fir. We can calculate a 24 inch long “shelf” that is 1.5 inches wide and 1.5 inches thick. Using the calculators from woodbin.com, we can find that in the worst case this span will sag by 0.02 inches total – which is very acceptable.

When we add to this the cross bracing of the 2x4 studs in the bottom, and the 1x12 plank bottom, we get a floor that will easily support the weight without sagging.

I could have run the fence boards through my planer to make them all the same thickness, but that wouldn't be in the spirit of “quick and dirty”. Since the box frame lines up one side of the boards, from the outside they look even, and you can't tell that they are of different thicknesses. But this caused a little bit of a problem when I installed the 2x4 crossbeams. The crossbeams were too long.

My solution was to cut the crossbeams a little shorter, which allowed them to mostly fit. I had to add a shim to half of one side of one of these crossbeams, and I had to “encourage” another beam with my dead-blow hammer.

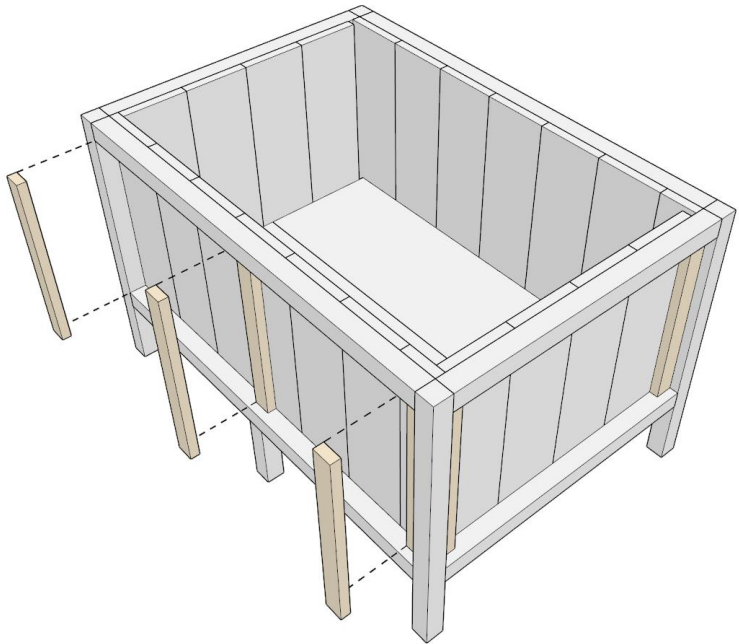
I then pre-drilled two holes per crossbeam, countersunk the holes, and used 3-inch long, #9 Grip-Rite polymer-coated star drive screws to hold them in place. I did make a mistake when doing this, and drilled too many holes. I've filled in the mistaken holes with wood filler. Again – quick and dirty, right?

My last step was to put in a board floor. I happened to have a 1x12 board sitting around my shop. I crosscut the board to get two boards that fit the length of the box (about 34.5 inches long).

Since the interior width of the box is 22.5 inches wide, I ripped one of these two boards to 10.5 inches wide. This almost worked, but not quite – since the fence boards are of uneven thicknesses. So I knocked off another quarter inch of width, and used a dead-blow hammer to seat the board firmly.

I attached the 1x12s to the 2x4 crossbeams using 1.25-inch #9 Grip-Rite screws.

The next thing I did was purely cosmetic. Since the fence boards sheath the box from the INSIDE of the frame, there was a noticeable gap on the outside corners of the box.



To cover this gap, and to make everything look prettier, I ripped a fence board into 1.5-inch wide strips, and then crosscut them to 15 inches in length to fit inside the frame. I then attached them as shown over the corners of the box, and one additional on the front, and on the back of the box – dead center.

Last, I want this box to last more than one season. Although the walls are made of cedar and should last a couple of seasons, the beams and floor are simply pine. I needed to protect them at least somewhat. I also wanted to allow water to trickle out slowly, and not rush out through gaps, taking soil with it.

My solution was to line the inside of the box with a plastic waterproof tarp. I folded it into place, and stapled along the top rim to hold it there.

I next used a drill with a ½ inch bit to drill 4 holes in the bottom of the planter, right through the tarp. This will cause some rot to happen around these holes, but probably not at a rate to cause failure in the next 3 or 4 growing seasons.

But this will allow water to escape, which will prevent root rot in the plants.

I've filled the planter with "Mel's Mix" used in the Square Foot Gardening method. I haven't put rocks in the bottom of the planter because the latest research I've read suggests that this common gardening practice may lead to root rot.

And finally, yes this is "Quick and Dirty" - I wanted something ready for this planting season, and made this in about an hour.

But the plan itself is solid, and I can't believe how good this piece of junk looks!

In its next incarnation, I'll use Redwood 2x4s for the beams, I'll run the cedar fencing through my planer to assure uniform thicknesses, and I'll use a Redwood 2x12 as the bottom floor, and leave the 2x4 crossbeams out of it entirely. I'll then waterproof the interior with marine paint, gasket the drain holes, and then use a waterseal on the exterior of the box. I'll also add a top rail around the top to hide and protect the fence board tops.

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