

Plans/Assembly instructions for the wall mounted double bicycle rack

I apologize in advance for my poorly drawn specs. The rack that we built is 8 feet tall. It could easily be built to a 6 foot height instead, to accommodate lower ceilings. This can be accomplished by cutting both of the 2x4s to 6' long. The rack will still hold 2 bikes, no problem. It will just limit the height of the items that can be placed on the lower shelf. Full specs are on [Figure D](#). When referencing 2x4, 1x6, and 1x12 below, these are references to the common names for those pieces of lumber, and are not referring to actual measurements.

Tools

- Circular Saw
- Jig Saw
- Drill (screw gun)
- 100 grit sandpaper (a couple of sheets)
- Putty Knife
- Paint Brushes/Small Roller
- Rotary Cutter or Utility Knife
- Drop Cloth
- Rags
- Painter's tape
- Marking Pencil

Hardware

- 8' 2x4 Lumber (2 pieces)
- 8' 1x6 Lumber
- 6' 1x12 Lumber
- 2" grabber screws (1 lb. box)
- Wood Filler Putty
- Paint
- Stain
- Carpenter's glue
- Crazy Glue (for leather/wood)
- 12" x 12" Sheet of Raw Leather
- 3" Grabber Screws (4 of them), or four 4" bolts with butterfly hollow wall mounts (depending on whether you mount to studs or hollow wall)

Construction Steps:

Deploy drop cloths (very important if you are building in your living room, like we did).

Circular Saw Cuts:

1. Cut two- 16 7/8" long sections of 1x12 ("Shelf Tops")
2. Cut two- 14" long sections of 1x6 ("Shelf Rear Supports")
3. Cut four- 11" long sections of 1x6 ("Rack Arms")
4. If there is a baseboard on the wall where the rack is going to be mounted: measure the height and depth of the baseboard, and cut notches in the bottom of the 2x4s ("Vertical Supports") to fit flush against the wall over the baseboard.

Jig Saw Cuts:

5. Cut bike frame notches in the Rack Arms. See [Figure A](#) for template. This should print out to scale. If you print it, cut it out, and trace it onto the wood for the first cut, you can use your first cutout to trace the rest (so that they all match).
6. Cut lower Shelf Top to fit between Side Supports. See [Figure B](#) for dimensions.

Assemble upper shelf:

7. Apply carpenter's glue to the rear butt of left Rack Arm
8. Place rear butt of the left Rack Arm against the front left edge of the Shelf Rear Support (See [Figure C](#) for a visual) and fasten with 2 or 3 evenly spaced screws (with the screws entering through the back of the Shelf Rear supports). Note: it is not important to counter sink these screws, as they will be facing the wall.
9. Apply carpenter's glue to the rear butt of right Rack Arm
10. Place rear butt of the right Rack Arm against the front right edge of the Shelf Rear Support and fasten with 2 or 3 evenly spaced screws (with the screws entering through the back of the Shelf Rear supports). Note: it is not important to counter sink these screws, as they will be facing the wall. At this point you should have something that looks like [Figure C](#)
11. Mark the center point of the Rear Rack Support, on the back part that will face the wall
12. Apply carpenter's glue to the top edges of the assembled Rack Arms and Shelf Rear Support
13. Mark the center point of back edge of the upper Shelf Top
14. Place the upper Shelf Top onto the assembled Rack Arms and Shelf Rear Support, lining up the center points, and making sure that the rear edge of the Shelf Top is flush with the back of the Shelf Rear Support. Fasten in place with screws—3 along the back edge, 3 along each side. The screws should be counter sunk.

Assemble lower shelf:

15. Repeat steps 7-14 above using the remaining Rack Arms and Shelf Rear Support, using the lower Shelf Top in lieu of the upper Shelf Top.

Attach racks to Vertical Supports (the 2x4s):

16. Place the Vertical Supports on the ground parallel to each other, resting on their back edges.
17. Place the upper rack/shelf assembly between the Vertical Supports at the top, so that the tops of the Vertical Supports are flush with the bottom side of the Shelf Top. The Shelf Rear Support should be flush with the back edges of the Vertical Supports. Fasten into place with 3 screws on both sides. The screws should be inserted from the inside surface of the Rack Arms horizontally into the Vertical Supports. Make sure to countersink the screws.
18. Mark both of the Vertical Supports on the inside surface 3' from the bottom (for the 6' version, mark it at 2'3" from the bottom)
19. Place the assembled lower rack/shelf assembly between the Vertical Supports, so that the bottom edge of the Rack Arms are lined up with your 3' mark. The Shelf Rear Support should be flush with the back edges of the Vertical Supports. Fasten into place with 3 screws on both sides. The screws should be inserted from the inside surface of the Rack Arms horizontally into the Vertical Supports. Make sure to countersink the screws.

Finishing:

20. Fill all of the screw holes with wood filler putty and smooth with a putty knife. Let it dry.
21. Sand all of the rough edges and excess wood putty smooth with 100 grit sandpaper.
22. Paint/Stain as you see fit.
23. After the paint is dry, cut the raw leather into strips to cover the leading edge of your Rack Arms. Glue them into place with the crazy glue. Use thumb tacks or staples to hold the leather in place while the glue sets.

Mounting to the wall:

24. If you can find a stud in the wall, you could just mount the rack with a few 3" grabber screws through both of the Shelf Rear Supports. If you are not lucky enough to find studs in the wall. Use four 4" bolts with butterfly hollow wall mounts. Drill holes for them in the Shelf Rear Supports. Mark the holes before hand to make them centered and pretty. Hold the rack up to the wall and use the holes in the Shelf Rear Supports to mark the wall. Drill the holes in the wall for the hollow wall mounts. Put the bolts through the holes, fasten the butterfly nuts on the ends, and push them through the holes in the wall. Tighten them up and voilà!

Figure A

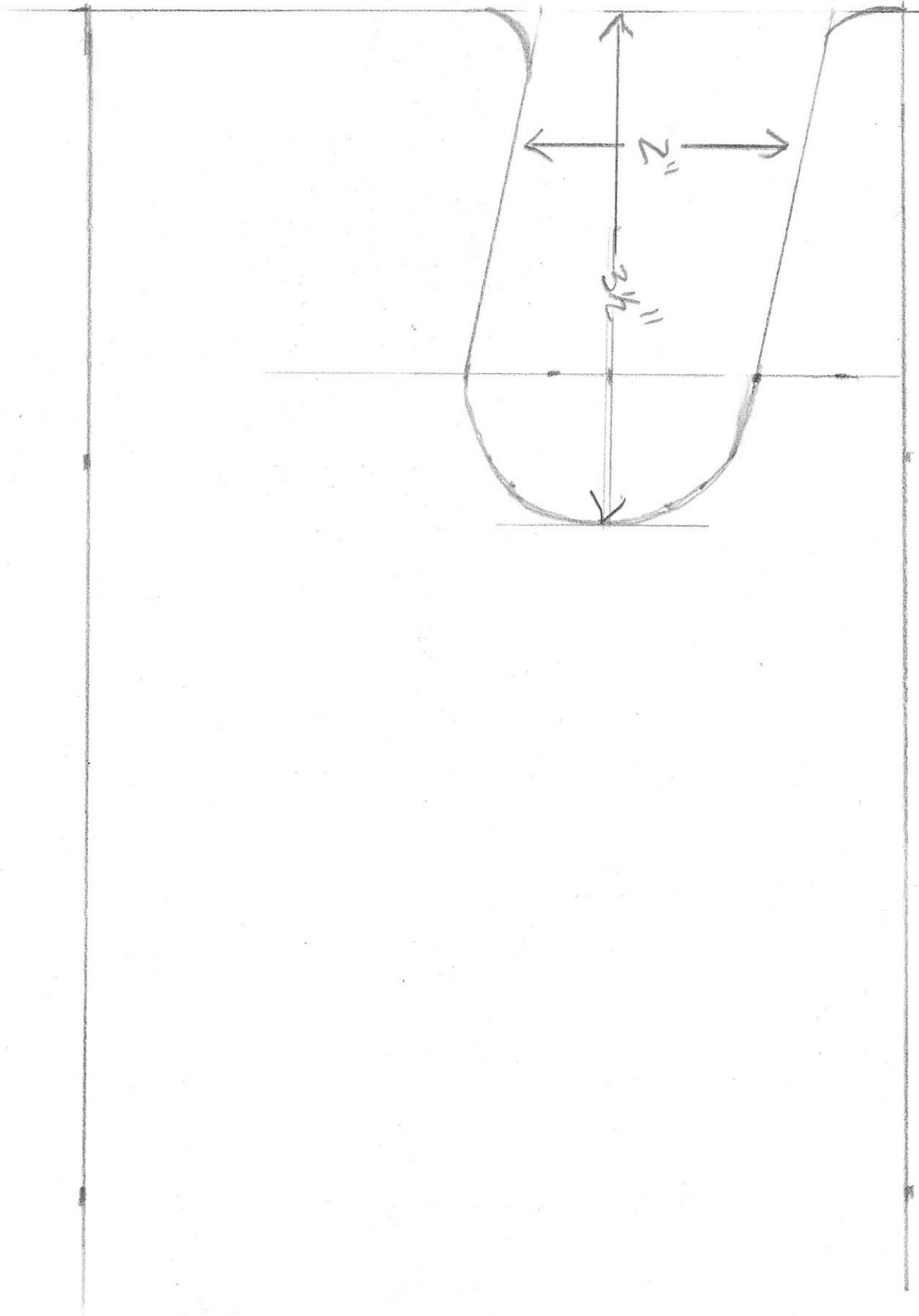


Figure B (Not to Scale)

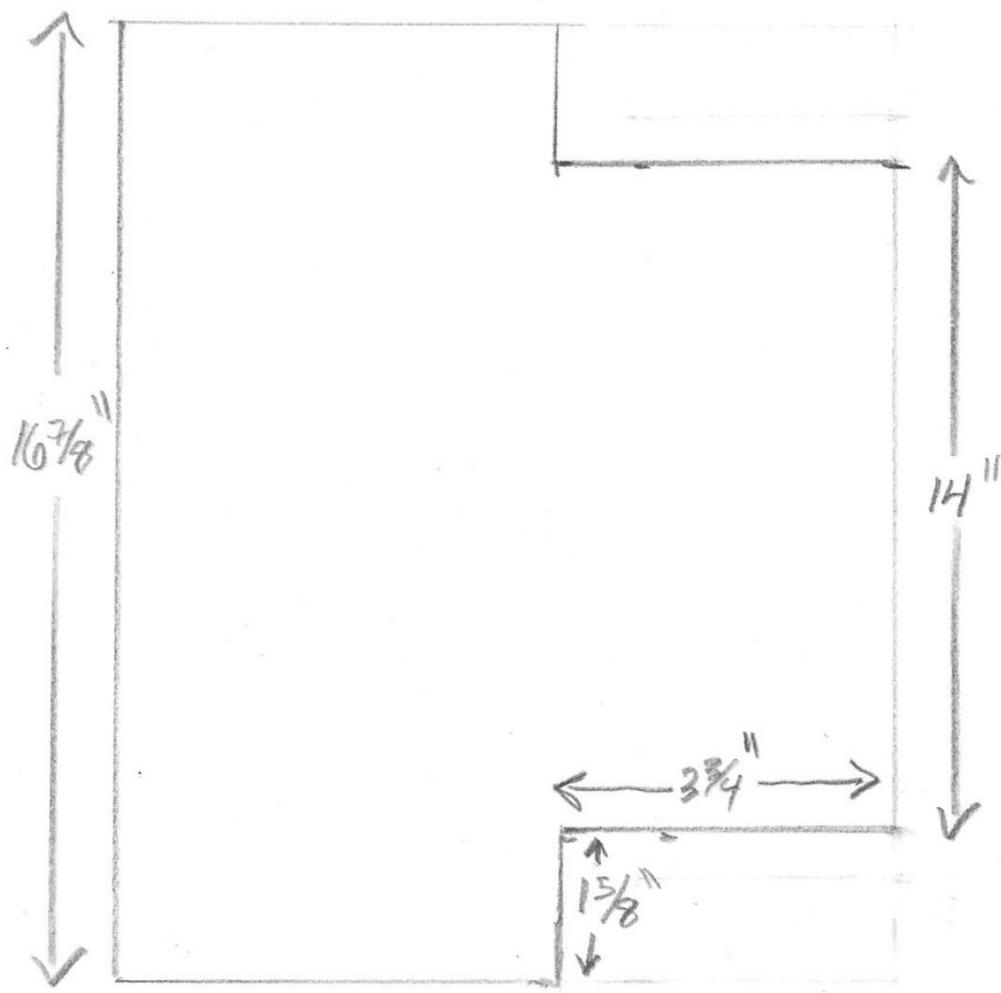
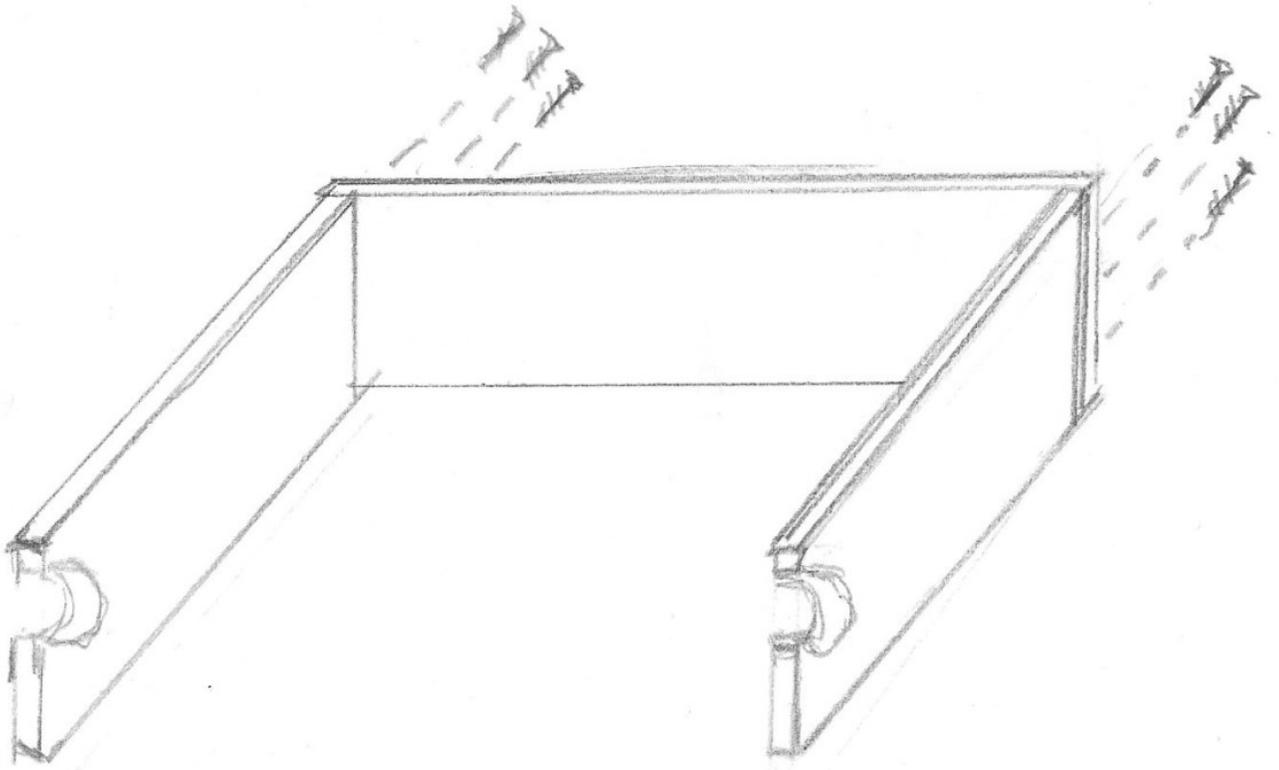


Figure C (Not to Scale)



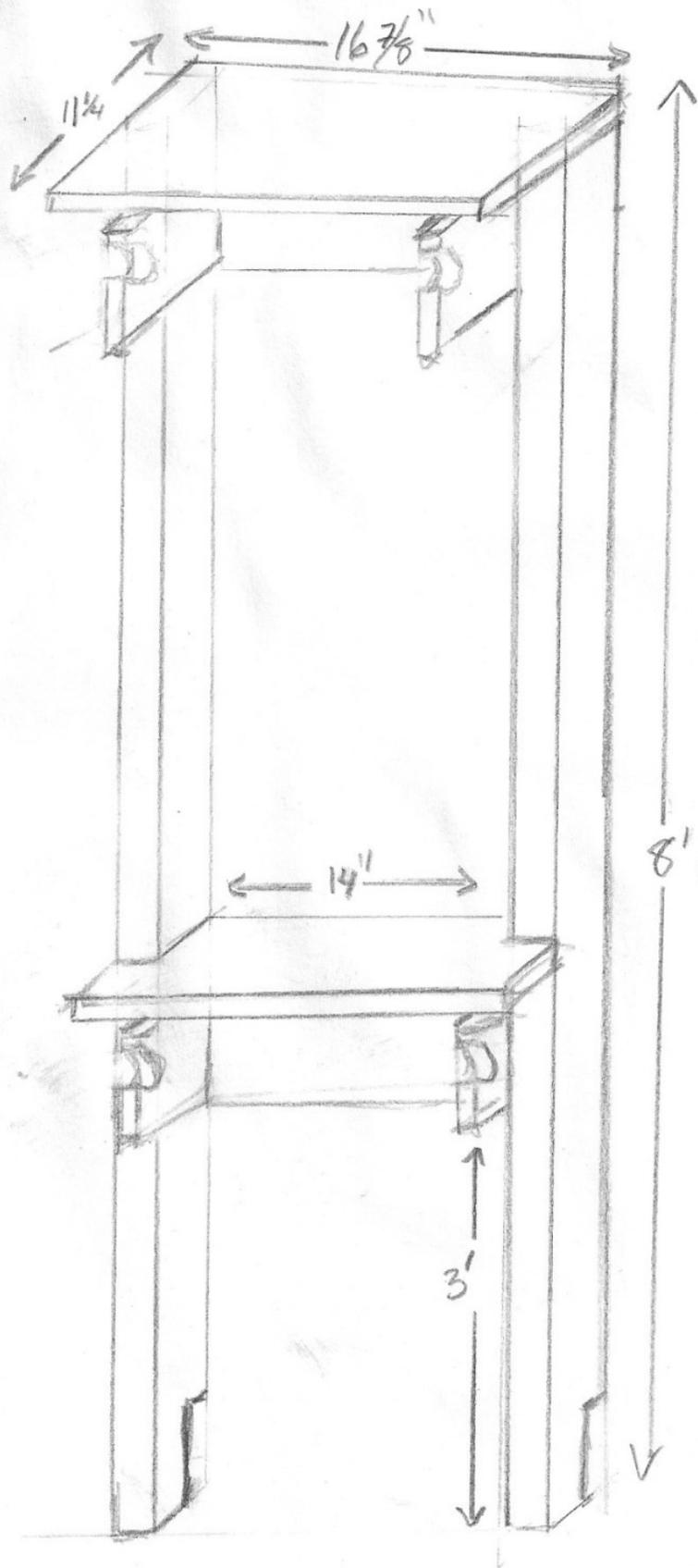


Figure D (Not to Scale)