Tie It Down

Image 1

Figure 1

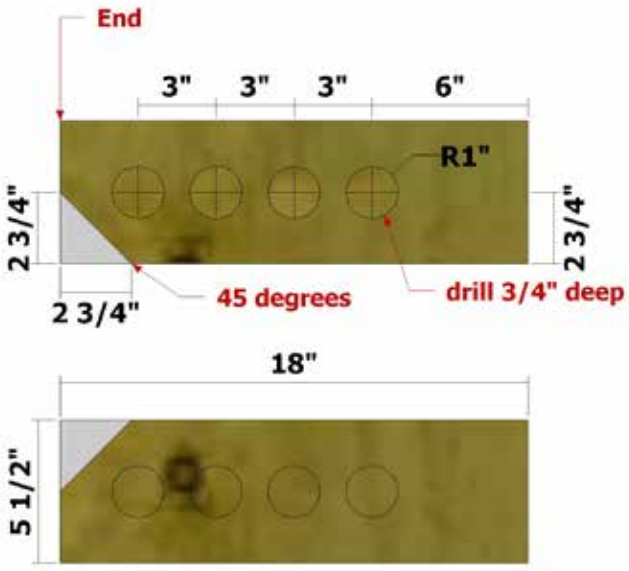

Image 2

Instructions

Cut all parts to fit as you assemble the project and use the Parts List and Cutting Diagram as a guide for dimensions. You may need to make adjustments as you go along. Use 2 1/2-inch deck screws. This is a great scrap project, so use any lumber and materials you may have left over from other projects or construction. You will be drilling stopped holes in two parts for this project, so a drill press is recommended, although not essential.

Create the Ends

Use the layout in Figure 1 as a guide for creating the Ends. Cut the Ends to length and measure and mark the center line as shown in Image 1. Position the ends of the parts flush, and mark the center points for the stopped holes on both parts as shown in Image 2.

Image 3

Figure 1

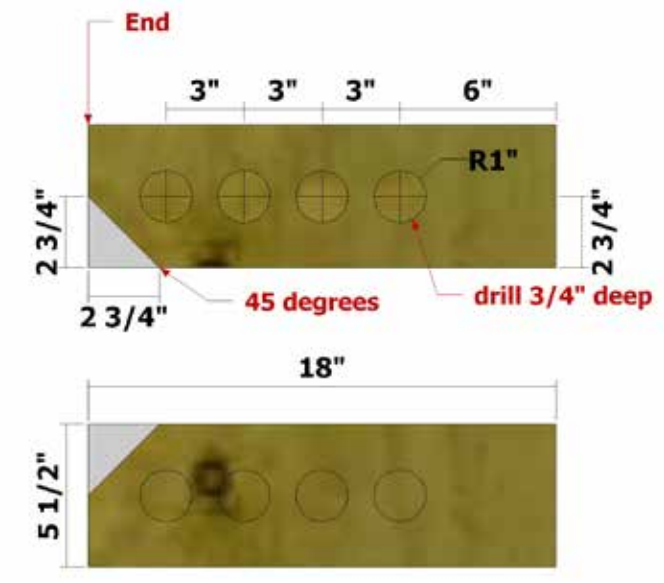

Image 4

Helpful Tip: Since you will need the holes for the pipe to line up, the Ends are two of the key parts to get right. There is, however, a bit of wiggle room, as the holes are 2 inches in diameter and the pipe is 1 7/8 inches in diameter on the outer edge (it's 1 1/2 inches on the inside diameter).

To make sure the Ends match up, make sure you mark the position of the holes on both pieces at the same time. To do this, position the ends flush and use a large square that crosses both parts. This will allow an identical mark to be made across the width of the parts.

Use a drill press or drill/driver fitted with a 2-inch Forstner bit to drill holes (Image 3) that are at least 3/4-inch deep, as shown in Image 4. Drill all four holes in each End.

Figure 2

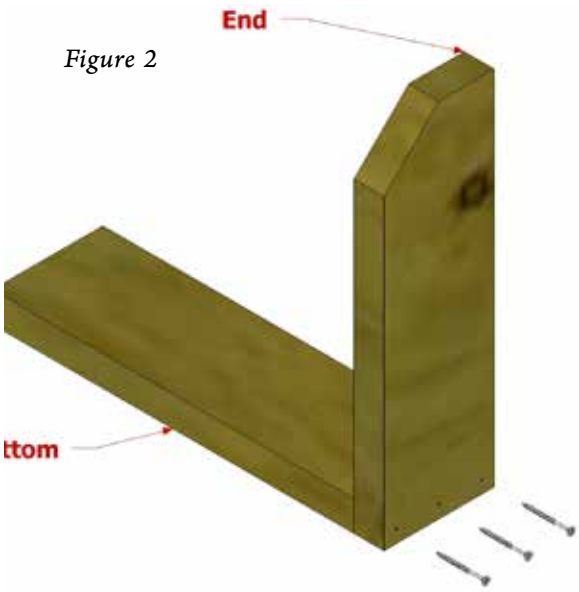

Figure 3

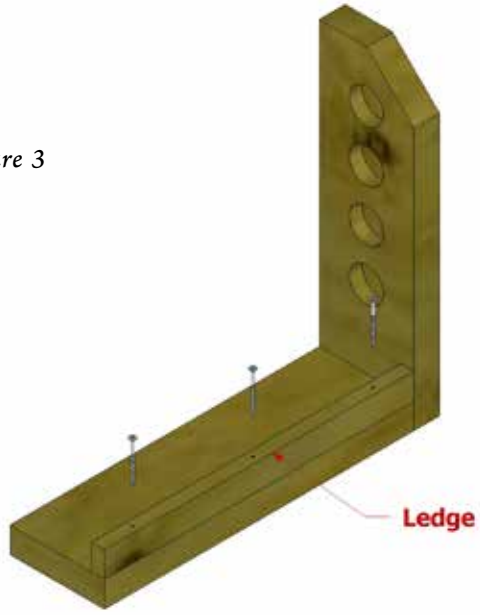

Image 5

Image 6

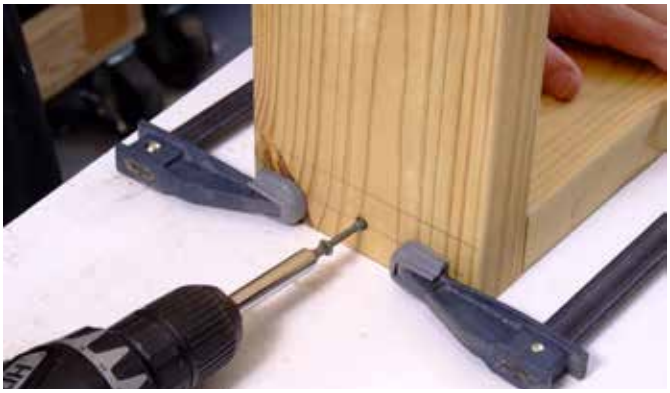

Image 7

Use a circular saw or miter saw to make a 45-degree cut on one end of the Ends as shown in Image 5. Be sure to make one part a mirror image of the other, as shown in Figure 1.

Attach the Bottom & Ledge

Cut the Bottom to length, position it flush with the bottom edge of an End as shown in Figure 2. Drill three pilot holes spaced equidistantly apart for 2 1/2-inch deck screws, 3/4-inch from the bottom of the End, and attach using 2 1/2-inch deck screws as shown in Image 6. It will help to clamp the Bottom during this process.

Cut the Ledge to length, position it flush with the Bottom and End as shown in Figure 3. Drill three pilot holes spaced equidistantly apart for 2 1/2-inch deck screws centered on the edge of the Ledge and attach using 2 1/2-inch deck screws as shown in Image 7. Clamp in place if needed.

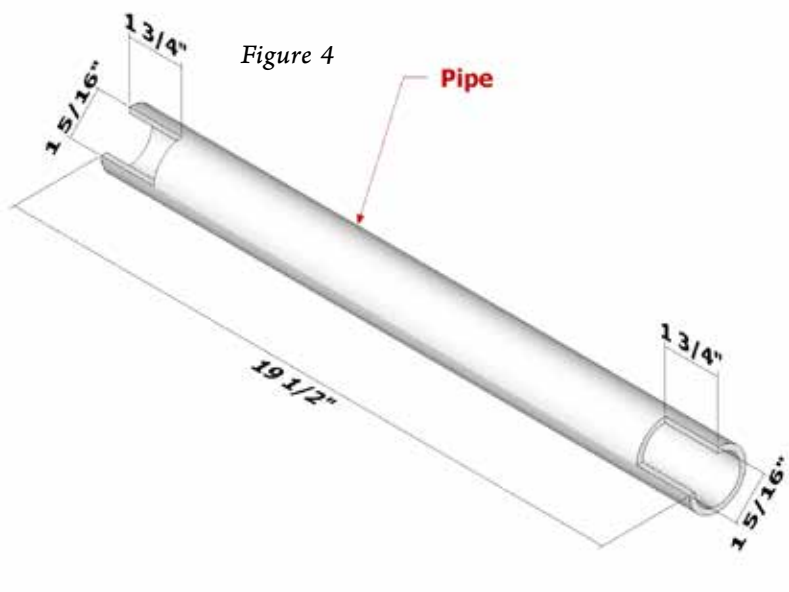

Figure 4

Image 8

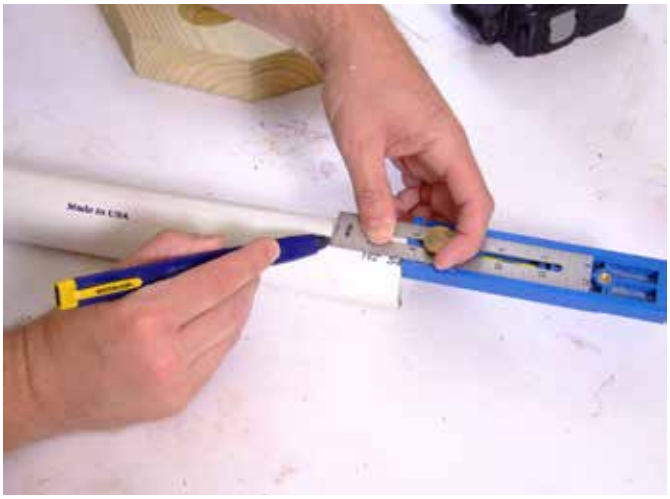

Image 9

Prepare the Pipe

Use a hack saw, miter saw or rotary tool to cut four pieces of 1 1/2-inch PVC pipe to length. Using Figure 4 as a guide, measure and mark 1 3/4-inch deep by 1 5/16-inch wide notches on the ends of the pipe as shown in Image 8 and Image 9. Use any printed marks on the pipe as a guide when making marks. This will help you create notches that line up from end to end.

Helpful Tip: After cutting the notches in the first section of pipe, you can use the notches as a guide for marking the remainder of the pipe sections.

Figure 5

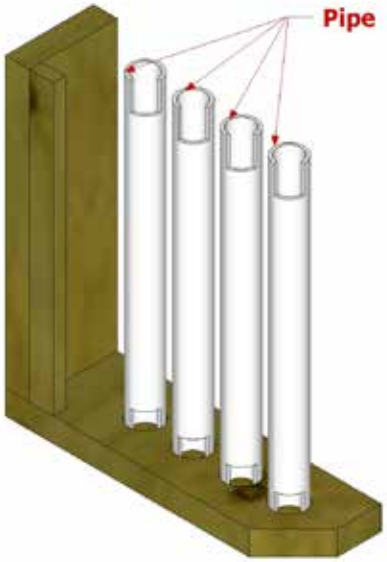

Figure 6

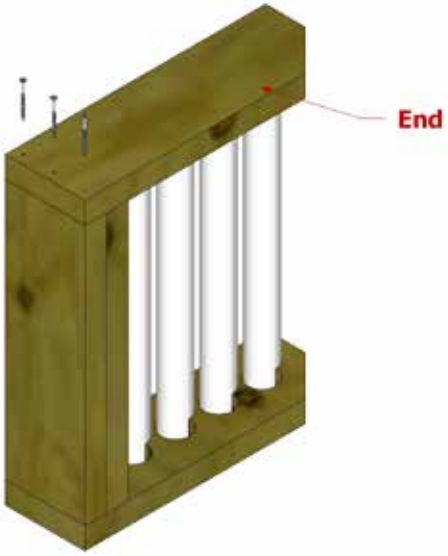

Image 10

Image 11

Image 12

Use a rotary tool to cut the notches in the ends of the pipe, as shown in Image 10.

Helpful Tip: Roll or slide the pipe, and keep the tool stationary when making the cuts.

Insert the Pipe and Attach the End

Position the assembly with the End down and insert the sections of pipe into the holes as shown in Figure 5 and Image 11.

Place the holes of the other End part onto the exposed ends of the pipe sections with the end flush against the edge of the Bottom as shown in Figure 6. Drill three pilot holes spaced equidistantly apart for 2 1/2-inch deck screws, 3/4-inch from the bottom of the End, and attach the End to the Bottom using 2 1/2-inch screws as shown in Image 12.

Figure 7

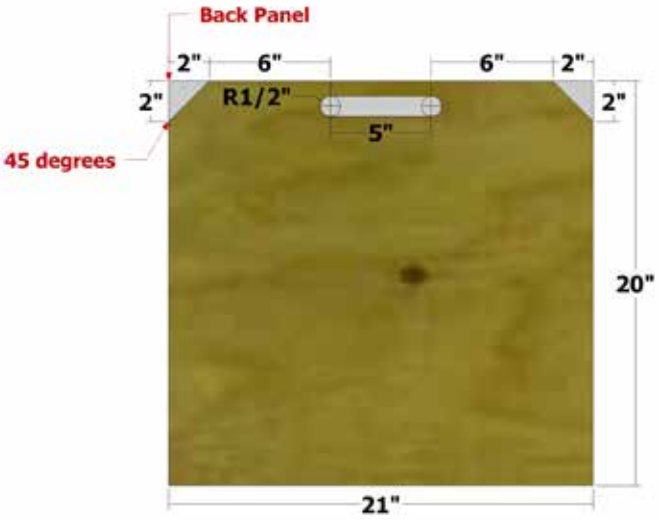

Figure 8

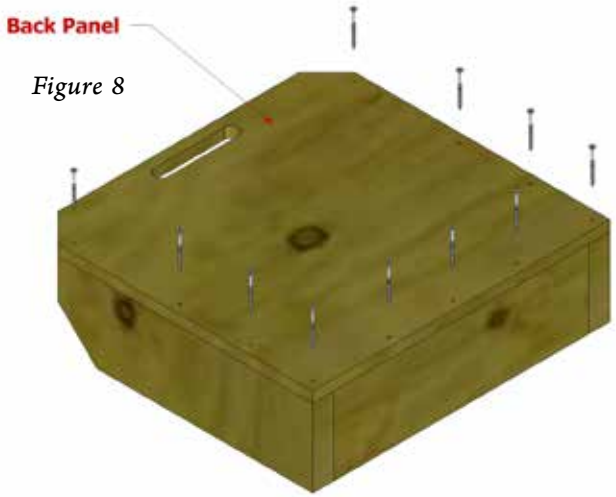

Image 13

Image 14

Image 15

Create and Attach the Back Panel

Use the layout in Figure 7 as a guide for creating the Back Panel. Cut the part to length and width, then mark the position of the handle opening. Using a drill/driver fitted with a 1-inch Forstner or spade bit, drill the starter holes as shown in Image 13. Use a jig saw to finish the cut for the opening as shown in Image 14.

Position the Back Panel as shown in Figure 8. Drill 11 pilot holes for 2 1/2-inch deck screws, 3/4-inch from the edges and bottom of the Back Panel. Space these just a few inches apart, making sure there is one screw attaching the Back Panel near the top end of the Ends. Attach using 2 1/2-inch deck screws as shown in Image 15.

Sand smooth any rough edges, particularly the handle opening.