



WELDON BARRIER GATE BUILD INSTRUCTIONS

Straight or Curved Support Design

INTRODUCTION

The Weldon Barrier Gate was inspired by a simple and efficient gate we saw while visiting a State Park. Using our knowledge of gate construction in combination with our Central Eye Double Strap hinges, we created a gate that is easy to construct, functions effectively and is both attractive and durable.

We partnered with a local municipality to design, build and install a trailhead at Douglas, B. Weldon Park, combining the Weldon Barrier Gate with a wheelchair accessible trail gate. We've received an overwhelming positive response from municipal staff, hikers, dog walkers and cyclists. The Weldon Barrier Gate provides a clear delineation between the public parking and pedestrian trails while easily allowing park maintenance vehicles access to the trails as needed.



PRIOR TO STARTING YOUR PROJECT

1. Carefully read to better understand all the available information for your gate build. This will include these written instructions, the three-page gate plan layout (two-page gate plan and component sheet showing hardware and required materials), and the "Tips and Pointers for Installing Gates and Posts" information sheet.
2. Ensure all purchased lumber is a maximum of 3" thick when all 3 layers are stacked together. If your materials measure more than 3" thick, pass all boards from the middle layer through a thickness planer to achieve your desired 3" thickness. 3" is the ideal thickness to fit the recommended hardware later.
3. If an excellent, clean finished product is part of your plans, take the time now to remove any pre-rounded factory corners from the lumber you have purchased. By removing the rounded edges, it will allow for a tighter, cleaner fit later during assembly. We accomplished this by running all boards through the table saw and again through the jointer.

ASSEMBLY

STEP 1

Lay out one vertical riser (stile) and one top rail. The intersection of the top rail is to be 3-1/2" **below** the top of the stile. Ensure that all cuts are square for tight fitting joints.



STEP 2

Place the 1" x 1" full length piece of the top rail (piece "F" in the gate plan) across the top of the top rail and overlapping the stile. Install with 1-3/4" wood screws across the top rail and not on the stile. The use of this narrow piece allows for the top rail to have fewer visible seams.

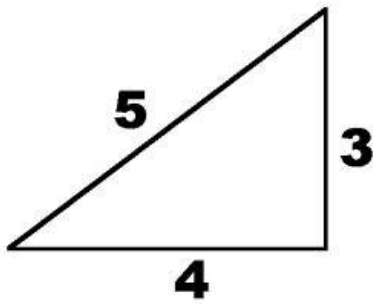


STEP 3

Ensure that the intersection of the top rail and stile are square. You can do this in a couple of ways; One, using a framing square. Or two, using the 3:4:5 method. Install two more 1-3/4" wood screws through the 1" x 1" into the stile to secure the joint square.



TIP: To get a perfectly square corner, you want to aim for a measurement ratio of 3:4:5. In other words, you want a **3'** length on your vertical line, a **4'** length on your horizontal line, and a **5'** length hypotenuse. If all three measurements are correct, you'll have a square corner.



STEP 4

Mark across the top rail measuring from the back of the stile, **4' 6"** for an **8' design** or **5'** for a **10' design**. Mark **5-1/2"** up from the bottom of the stile. These marks will be the outside points of the intersections of the diagonal brace, as shown in the plan.

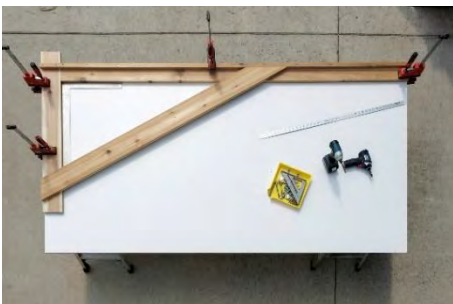
STEP 5

Lay the diagonal brace across the gate, aligning the outside edge to the marks made in step 3. Scribe the cut for the bottom of the diagonal brace to the backside of the stile. Using a straight edge mark a pencil line on the top of the diagonal brace even with the underside of the **1" x 1"** full length piece.



STEP 6

Cut the diagonal brace to your lines and fasten at each end with one **1-3/4"** wood screw. At this point you should ensure that the gate has remained square. If the gate has remained square you can install more screws to secure the diagonal, leaving the center of the intersections free for a carriage bolt later.



TIP: When installing screws remember to keep them to the outside edges to avoid placing them where you may need to install hardware or carriage bolts later. As a visual cue we like to use **painters'** tape where hinges and latches will be installed. We keep screws out of the center of any board intersections as this is typically where the carriage bolts go.

STEP 7

Using pieces "G" and "H" in the gate plan fill in the remainder of the top rail. These two pieces are vital to the structural integrity of this gate as piece "G" is the main structural connection point between the rail and the stile, and piece "H" prevents the diagonal brace from slipping under external downward pressure. We recommend not pre-cutting the angles on the plan for these pieces but rather scribing them to fit tightly against the diagonal brace. Once happy with the fit, you can install with 1-3/4" wood screws along the top rail and not in the stile. These pieces can be left long and cut later at each end.



STEP 8

Scribe and cut the vertical stile filler piece between the rail and the diagonal brace. And install it using 1-3/4" wood screws.



STEP 9

Add the remaining top filler block to the stile. We recommend gluing this piece in addition to installing it with 1-3/4" wood screws to provide more support because it is small.

STEP 10

Cut the angle onto the bottom stile filler block and dry fit it. We recommend cutting a piece of this block out to make room for the bottom hinge hardware (the adjustable bottom fitting is 3/4" in diameter). Cutting it out now will eliminate the need to drill a hole for it later. Please refer to the photos below.



STEP 11

Align the last stile with the first, once aligned clamp into position to make holding and drilling easier. Drill and install 3/8" x 3-1/2" carriage bolts through the center of the stile, in a pattern similar to that shown in the photo below. Do not install a carriage bolt into the intersection of the top rail and the stile.



TIP: Hold or clamp a scrap piece of lumber on the backside of the gate when drilling your holes to minimize the tear out the drill will cause on the backside.

STEP 12

Lay the final piece of the top rail into position before laying out and installing any carriage bolts in the top rail. Consider the placement of the hinge and any latch you have selected. We like to lay these out on the gate and divide up to remaining space to equally space out the carriage bolts on the top rail. This process will vary depending on your gate size, with shorter gates requiring less carriage bolts than longer gates. We typically use 12" – 24" carriage bolt spacing along the top rail. Drill holes through the center of the top rail and install 3/8" x 3-1/2" carriage bolts.



STEP 13

Pull the top rail and stile together tightly using clamps or a ratchet strap as shown below.



STEP 14

While under tension drill through the intersection of the stile and top rail (piece "G") to install wooden pegs. Use pegs and outdoor rated wood glue here to hold the intersection tightly where you will put a carriage bolt through the hinge in later steps. Allow the glue to fully dry before proceeding.



TIP: Hold or clamp a scrap piece of lumber on the backside of the gate when drilling your holes to minimize the tear out the drill will cause on the backside.

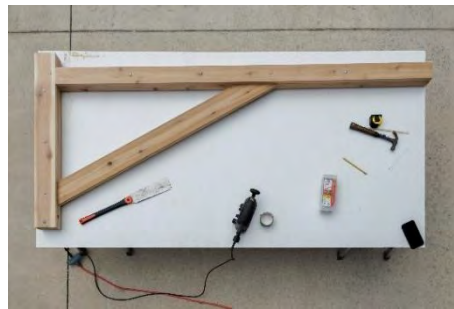
STEP 15

Using a hand saw, remove the protruding sections of the pegs to make them flush to the rest of the gate. You can also do the same to the protruding pieces of "G" and "H" if you chose to keep them long in step 7. Once cut, use a sander to smooth all cut areas.



STEP 16

Using a handsaw or chop saw cut the end of the top rail to finish length and sand the cut smooth. This step will clean up the end of the gate.



STEP 17 (OPTIONAL)

Now that the basic construction of the gate is complete you may choose to finish sand the whole gate or chamfer and/or ease any edges. We specifically recommend chamfering the top of the stile and the top and latch end of the top rail as these are the areas that are seen and interacted with every time the gate is used.



STEP 18

Position and secure all hardware on the gate using supplied fasteners, following the hardware instructions and best common practices.



CURVED SUPPORT CONSTRUCTION (OPTIONAL)

The curved support design for this gate creates a nice esthetic but is structurally the same as the straight support version. It takes extra time to produce but provides a softened look to the overall finished product. If you are choosing to use the curved support design, produce the curve and insert it where these instructions talk about the diagonal brace (starting with Step 5).

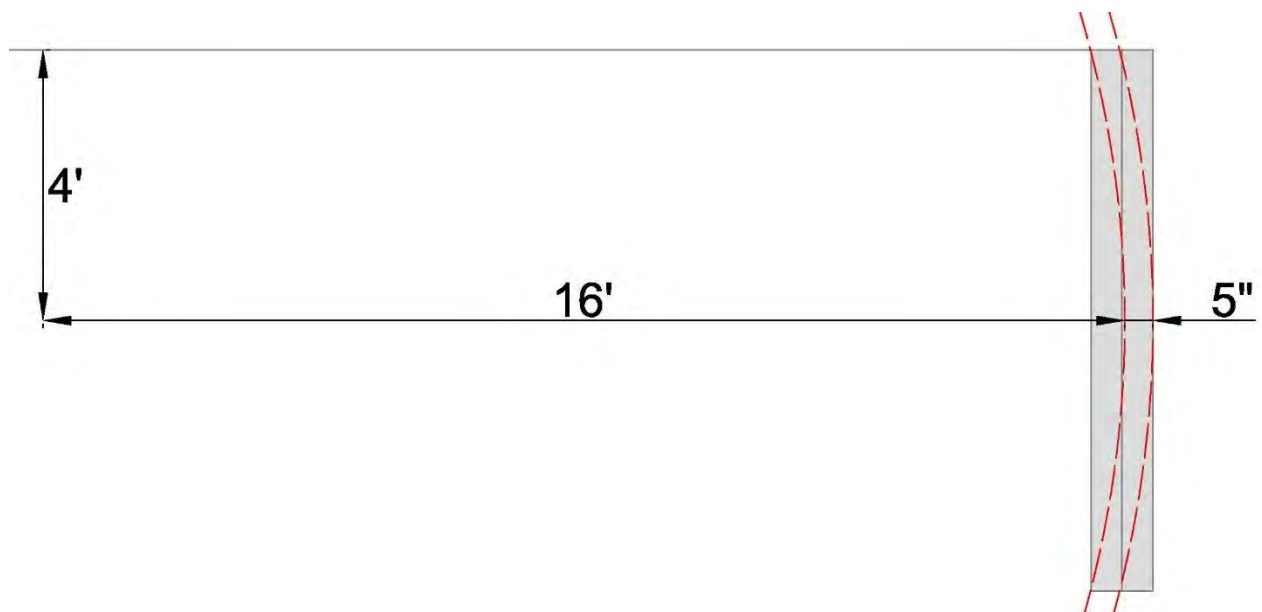
STEP 1

To produce the curved support, you must first glue together two 5-1/2" wide boards to create a 10-1/2 – 11" wide board section. To glue these boards together you need the glue edges to be clean and squared and free of any rounded lumber factory edges. We recommend taping off the outside of each board prior to gluing to keep any oozing glue from the joint from staining the visible sides of your finished product. Let the glue dry completely, remove the tape and clean and sand the finished board so that it is ready for use.



STEP 2

Lay out the board so you can mark the 16' inner radius and the 16' 5" outer radius on the board. We accomplished this by using a piece of melamine on our driveway to hold the board square and used a tape measure stretched out and a pencil to mark the radii on the board. Note, there are many ways to do this marking process, but we found this the simplest and easiest given the long 16' length.



STEP 3

Cut out the marked curve on your band saw or using a jig saw following the radius marked lines. Once cut, smooth all the edges with a belt sander to ensure a clean and finished appearance



To order hardware required to complete this gate, please contact...

Snug Cottage Hardware
Phone (800) 637-5427 or Email info@snugcottagehardware.com

We would love to see what you build! Please send us photos when your project is complete.

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