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48" Wooden Wheelbarrow

Plans & Instructions



This durable wheelbarrow planter makes a beautiful addition to any landscape. It's easy to build and when constructed from cedar, cypress, redwood, or other decay resistant wood, will last for decades.

The handles and legs are made from 1½" thick stock for strength and durability. The tub is made of ¾" stock. The wheel requires 1½" stock for the rim and hub. Spokes may be made from either ¾" or 1½" stock. Full size templates are included for all non-straight cuts.

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Introduction

Thank you for purchasing our 48” Wheelbarrow Plans. Please read these instructions before starting.

This wheelbarrow is not a working wheelbarrow. It is designed for use as a flower planter only. Please read and follow all tool manufacturers safety instructions before operating equipment. Always wear safety glasses and hearing protection.

This project is comprised of four separate assemblies:

- Leg Assembly
- Frame Assembly
- Tub Assembly
- Wheel

Each section includes instructions, drawings, and three dimensional (isometric) views for the completion of that assembly.

Note:

- Coated/rust resistant deck screws should be used for assembly. I recommend using a good quality exterior glue in addition to the wood screws.
- Because of the variation in accuracy from different printers, your printed pages will probably not be the exact scale. The patterns for scroll cuts are overlaid on a grid. Each line on the grid represents ½”. The scroll cuts for this projects are not critical and most printers should reproduce the patterns close enough to scale that you can trace directly from the patterns with no problem.

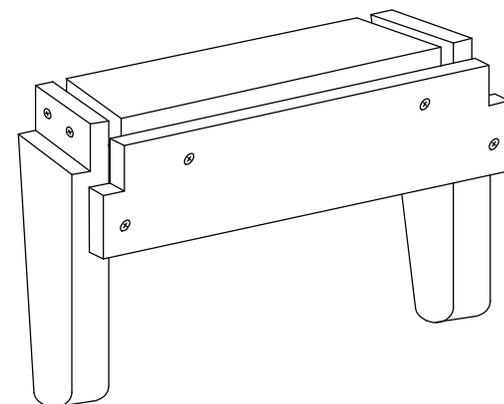
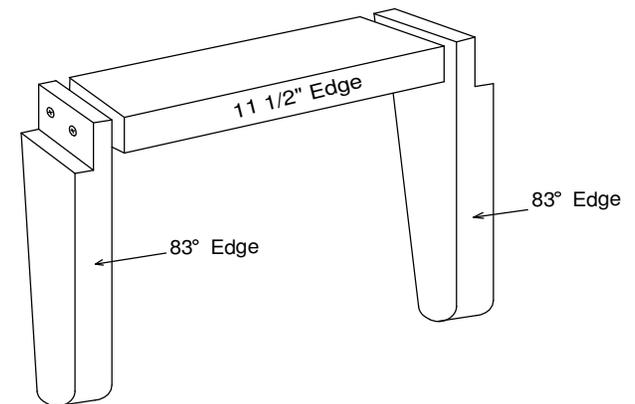
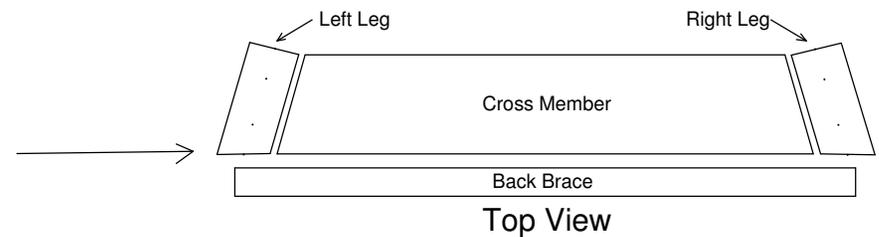
Isometric Views

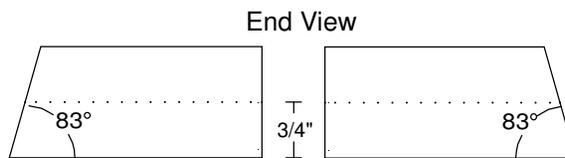
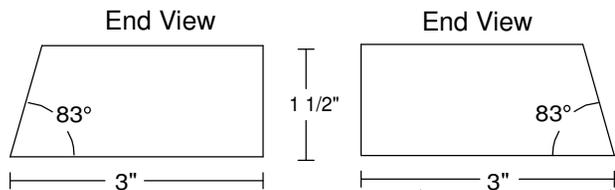
Leg Assembly Instructions

The Leg Assembly consists of four pieces. Two legs, a cross member and a back brace. Make the legs and cross member from two by four stock. The back brace is from 3/4" thick stock. Pay close attention to the 83 degree angle on the back side of the legs. This is necessary so the back brace will fit flush with the back surface of the legs.

Round over the exposed edges of the legs and back brace using a 1/4" radius router bit. Fasten the legs to the cross member using 1 5/8" coated deck screws as shown in the isometric. Make sure the 11 1/2" edge of the cross member is flush with the side of the legs that have the 83 degree angle edge as shown in the isometric Views. The 11" side of the cross member does not need to be flush with the legs.

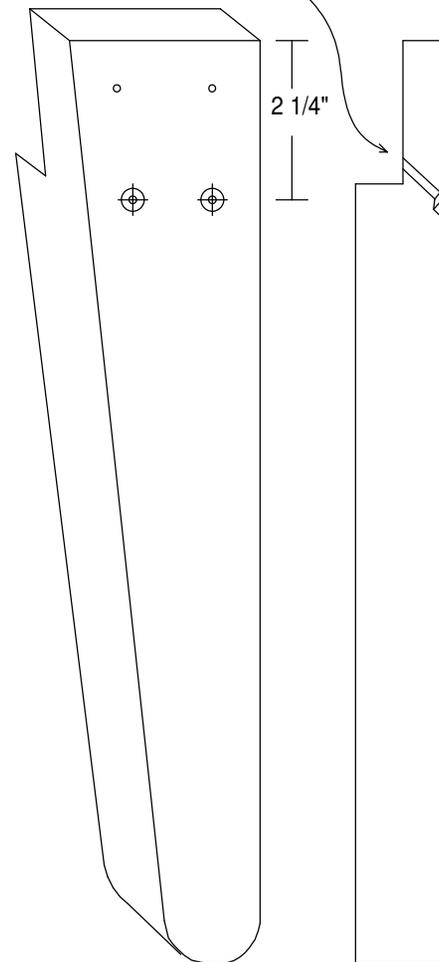
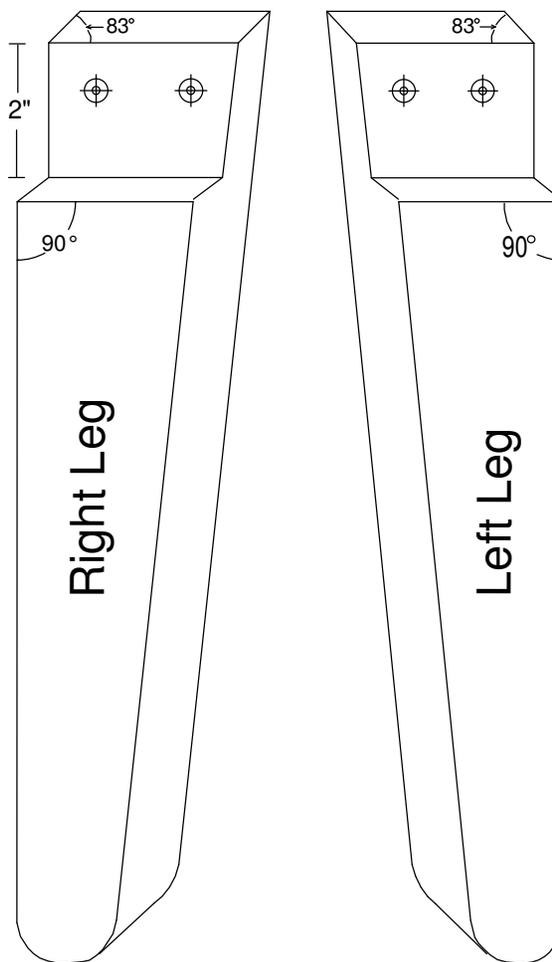
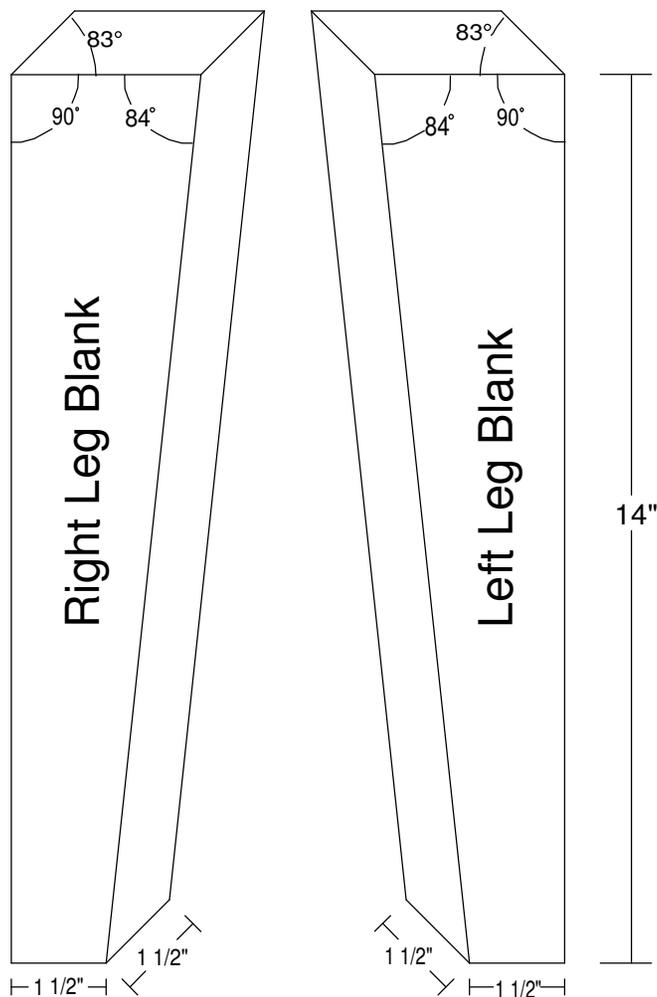
Next, fasten the back brace to the legs and crossmember using 1 5/8" deck screws. The cross member does not extend completely to the edge of the legs to allow room for the rounded edges of the legs.



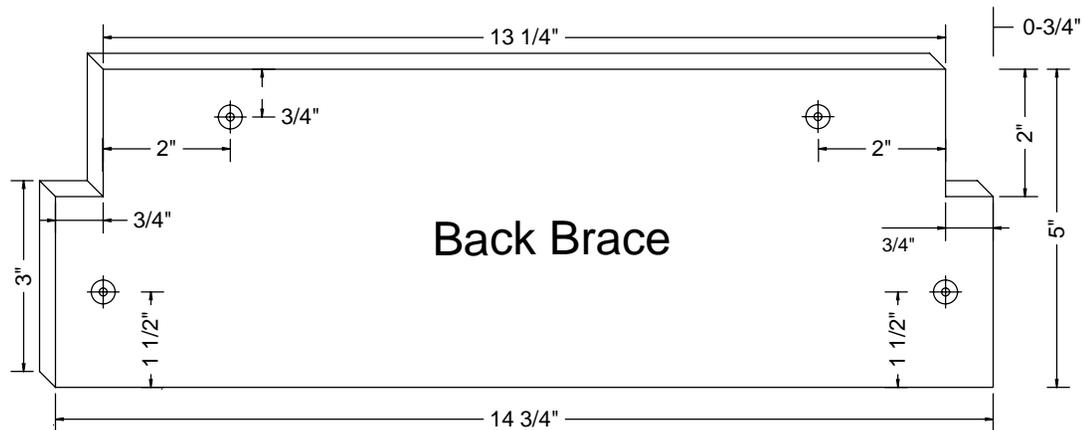
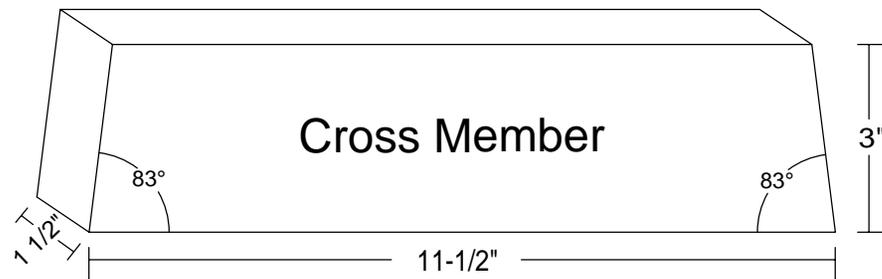


The Rear View shows screw holes for attaching the completed leg assembly to the frame. These holes should be drilled at 45 degrees as shown in the Side View.

The Front View shows screw holes for attaching the legs to the Cross Member.



48" Wheelbarrow - Leg Assembly Drawing (A)



Frame Assembly Instructions

The handles are listed as 48 inches long, but this length is not critical. If the two by four stock is a little rough on the ends, it won't hurt to have the handles an inch shorter. Cut two 48" by 2" by 1 1/2" pieces from the two by four. Cut the profiles of the handle grips and the front ends using a scroll saw.

Except for the grip section, round over the exposed edges of the handles with a 1/4" radius router bit. The handle grip sections should be rounded over with a 1/2" router bit as shown on the drawing.

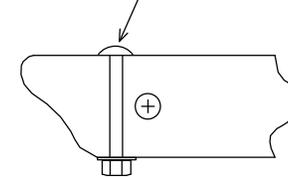
NOTE: The 1/2" holes for the axle must be drilled at 83 degrees. See the drill guide illustration and notes on the right for details.

To ensure the wood doesn't split from stresses of the axle, a 1/4" by 2 1/2" re-enforcement bolt is required for each handle. You need to drill a 1/4" hole 1 7/8" from the front end of the handles for this bolt as shown to the right.

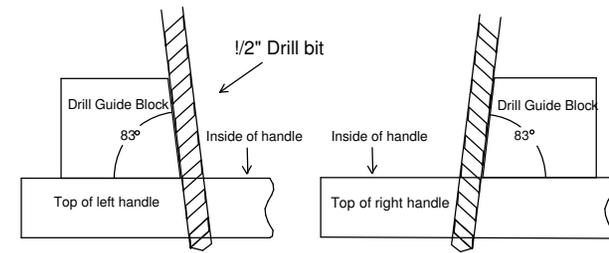
The Cross Member is attached to the frame with 1 5/8" screws on the under side. If you have a pocket hole jig, that would be ideal. If not, you can simply drill 1/8" pilot holes and 3/8" holes for the screwheads at about a 15 or 20 degree angle by freehand. The angle isn't critical, it just needs to provide a strong joint. The holes should be about 1/2" from each side and 1" from the ends of the Cross Member.

See the drawing illustration for a visual view. After attaching the cross member to the handles, attach the leg assembly with 2" deck screws from the under side. See the back view and side view of the legs on Sheet 1 for illustration of where the screw holes are drilled at a 45 degree angle.

Re-enforcement bolt

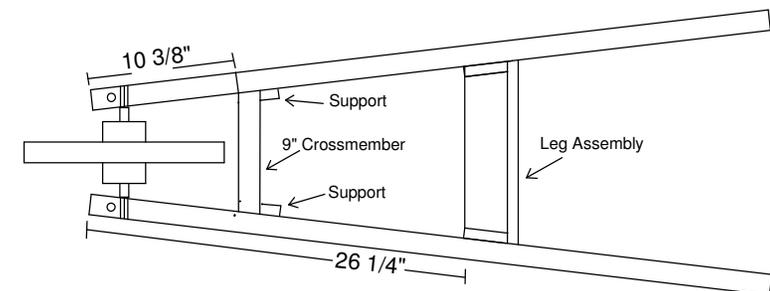


(Front end of handles)

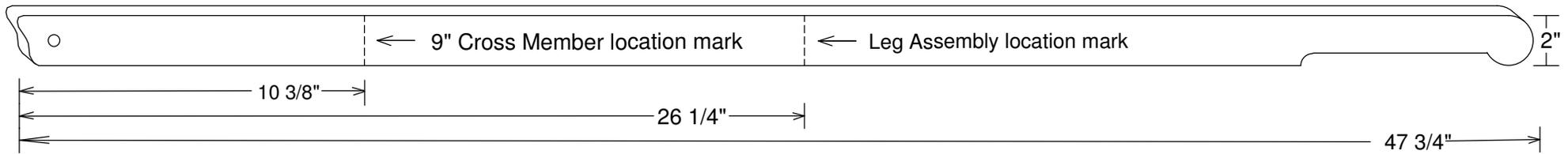


Drilling 1/2" axle holes with a hand drill.

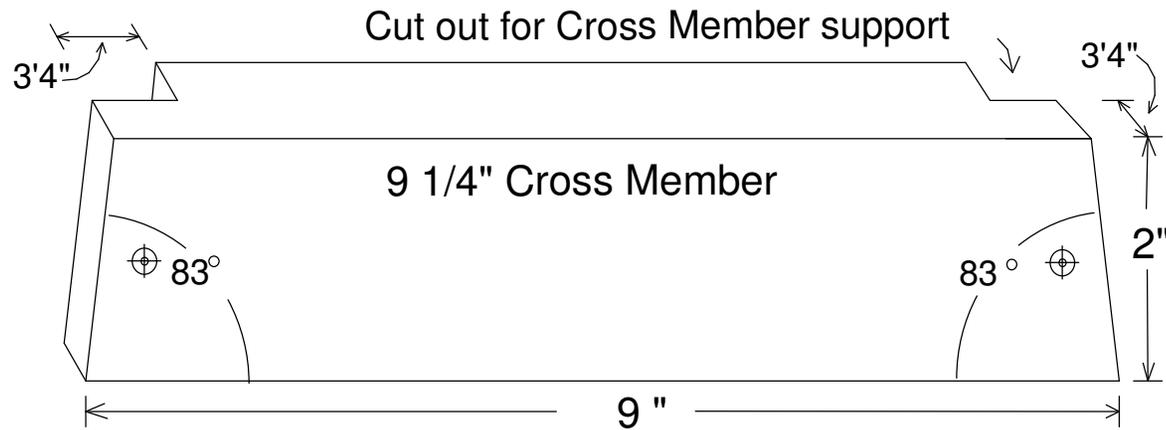
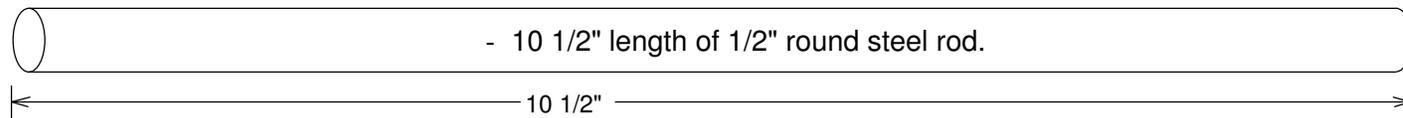
This view shows how to drill the axle holes by hand. You can make a simple guide block with one side cut to an 83° angle to help ensure the drill is held at the correct angle. The 1/2" diameter axle must be able to pass through the holes, therefore the correct angle and alignment is important. You may want to practice on some scrap wood to get a feel for drilling the angled holes. If you don't get it perfect, you can use a slightly larger drill bit to open the hole enough for the axle to slide through when the frame is assembled.



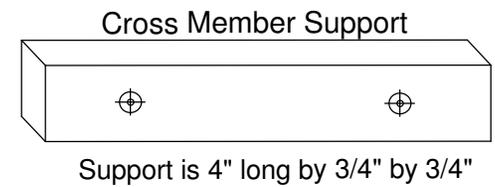
Handle

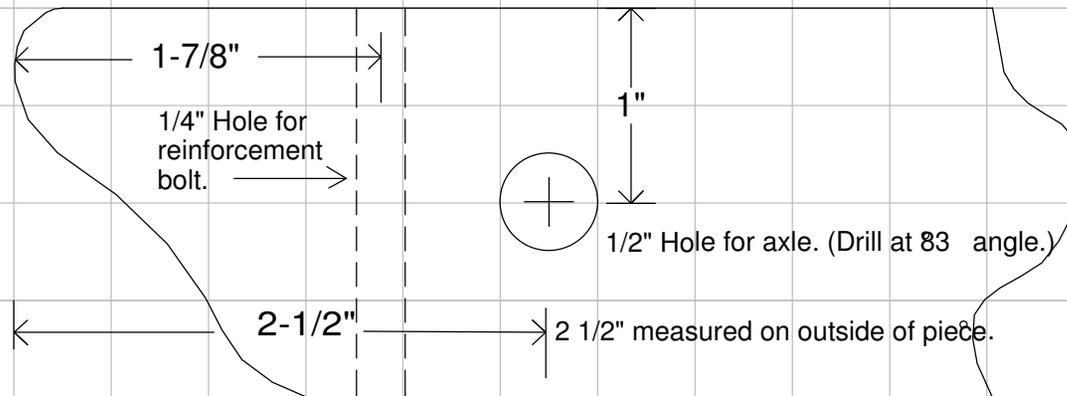


Axle



This Cross Member is 9 1/4" long x 2" wide x 1 1/2" thick.





Front end of handles



Grid lines are 1/2" apart

48" Wheelbarrow - Handle Patterns

The Tub Assembly (Sheet 4)

For your convenience, full size patterns of the curves and braces are provided on sheet 5. After cutting all the pieces as shown, you need to round over the exposed edges (top and fronts of the sides, top of the top front piece, top of the back piece, and the rear of the three bottom pieces). Please refer to the isometric drawings on this page to see how they all go together. Each of the bottom pieces require screw holes as shown for attaching the completed tub to the frame assembly.

First, assemble the side panels as shown in Figure 1. Use $1\frac{1}{4}$ " coated exterior screws to attach the braces to the side panels. Note that the bottoms of the braces must be $\frac{3}{4}$ " above the bottom of the side panels. The corner braces provide strong corner joints and the side braces secure the rear of the top side pieces to the bottom side pieces. If you have a biscuit joiner or dowel jig, you can make the sides even stronger by joining them with dowels or biscuits in addition to the corner and side braces.

Next, attach the top and bottom front pieces and the back piece to one side panel as shown in Figure 2. Note the bottom front piece must be flush with the bottom of the side panels and the back piece must be $\frac{3}{4}$ " above the bottom of the side panels. Next, assemble the bottom as shown in Figure 3 using $1\frac{1}{4}$ " coated exterior screws to attach the bottom braces to the bottom pieces. Position the bottom as shown in Figure 4 and use finishing nails to attach the side panels to the bottom from the outer sides of the side panels. Position the finished tub assembly on the frame with the front of the tub flush with the front frame cross member and secure with six $1\frac{5}{8}$ " exterior screws. If the wheelbarrow is to be used as a flower planter, you need to drill a couple of $\frac{3}{8}$ " drain holes in the lowest part of the tub.

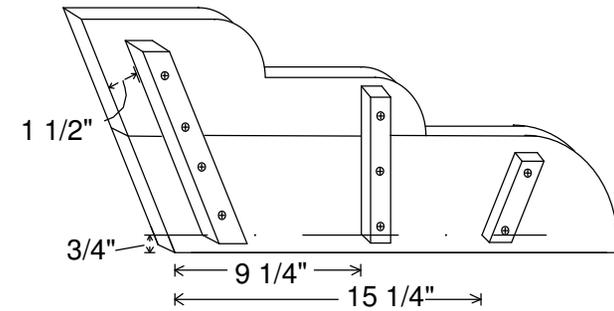


Figure 1

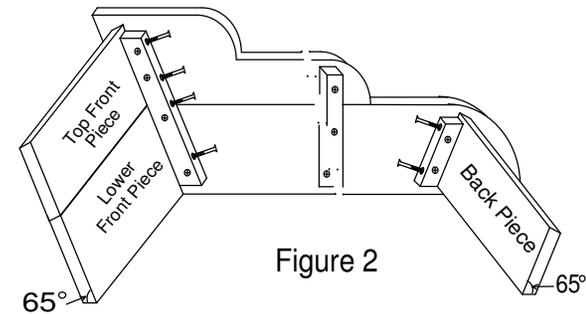


Figure 2

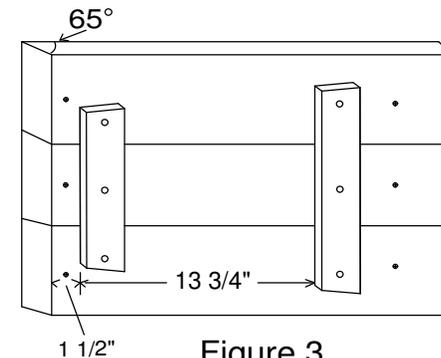


Figure 3

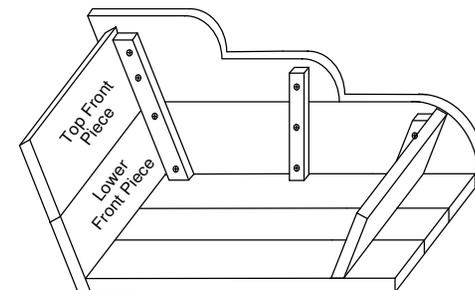
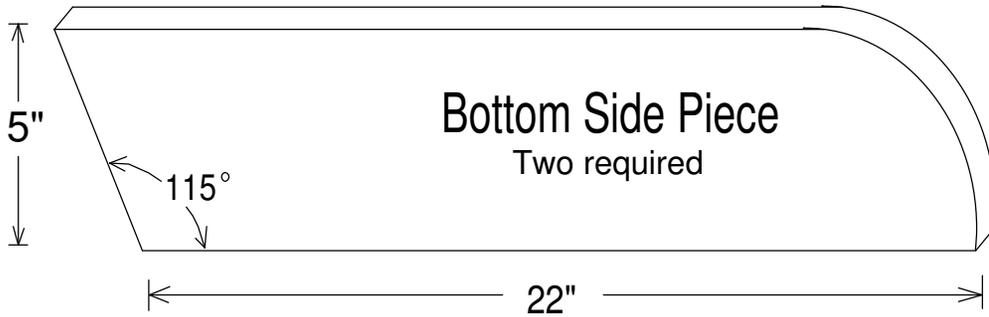
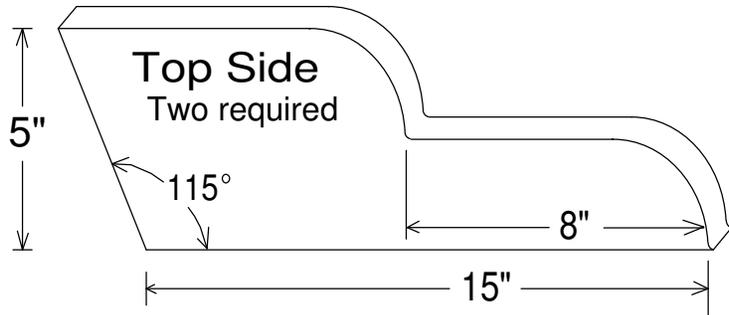
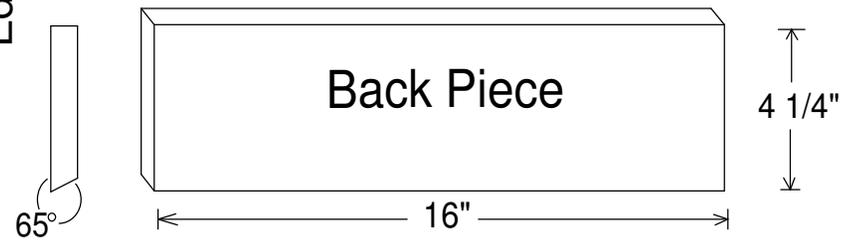
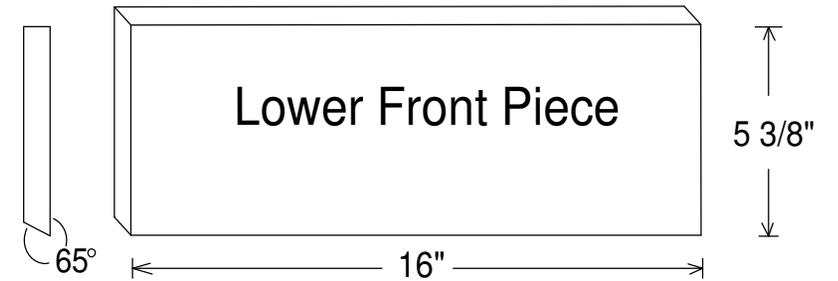
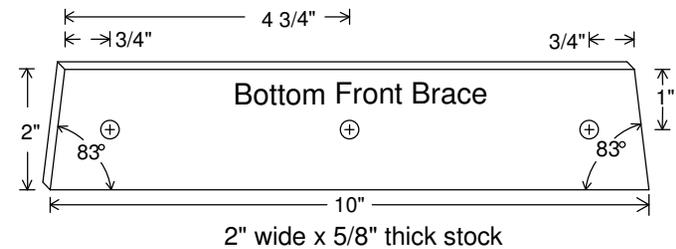
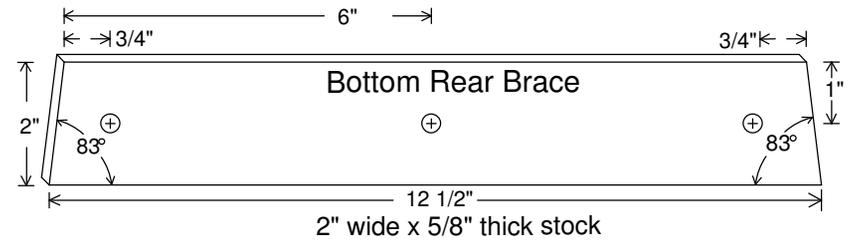
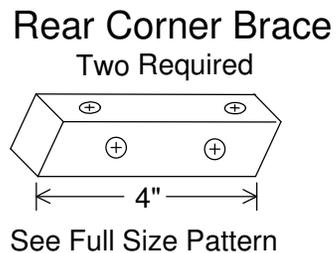
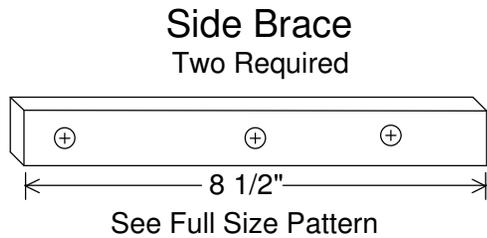
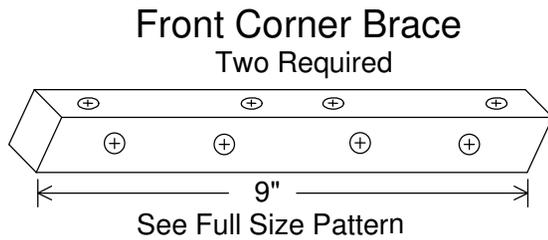
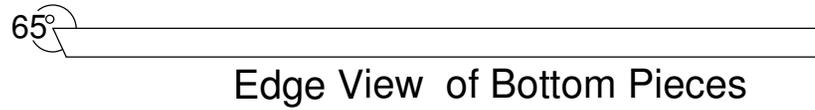


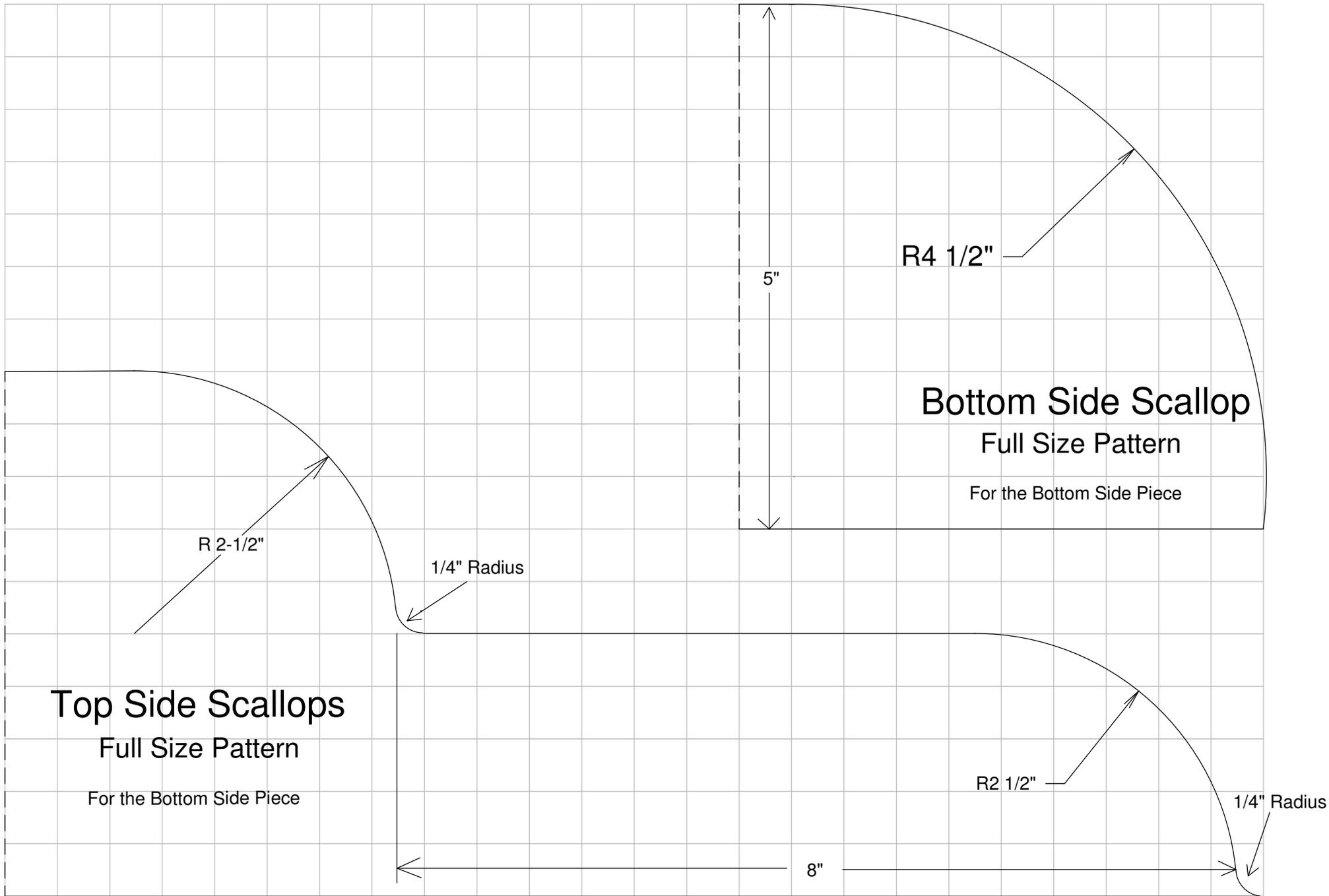
Figure 4



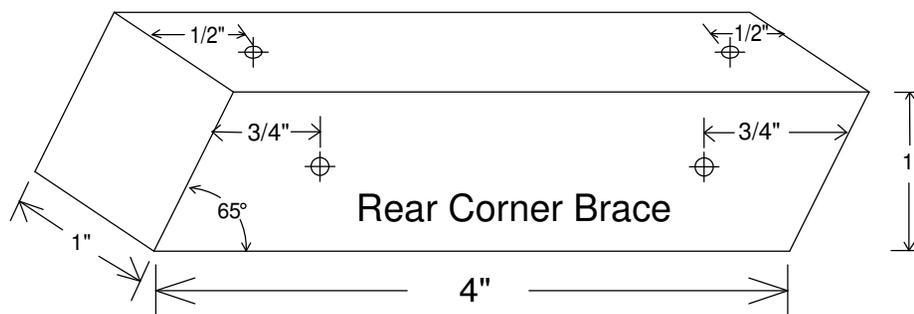
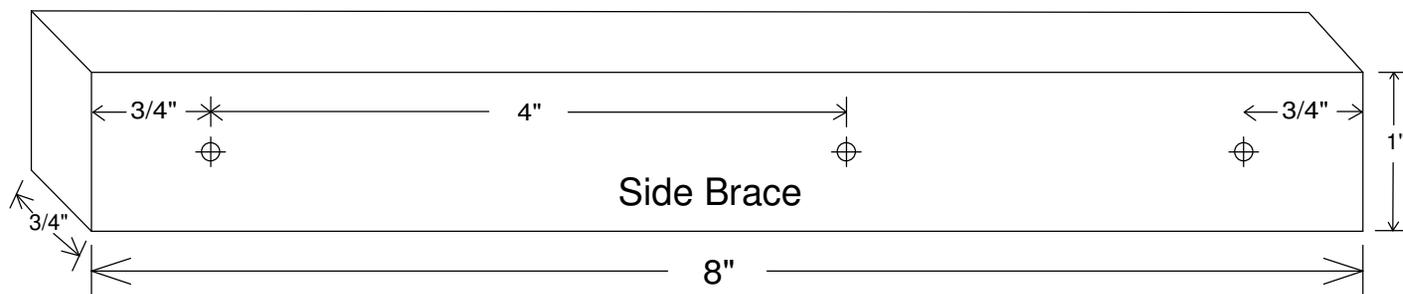
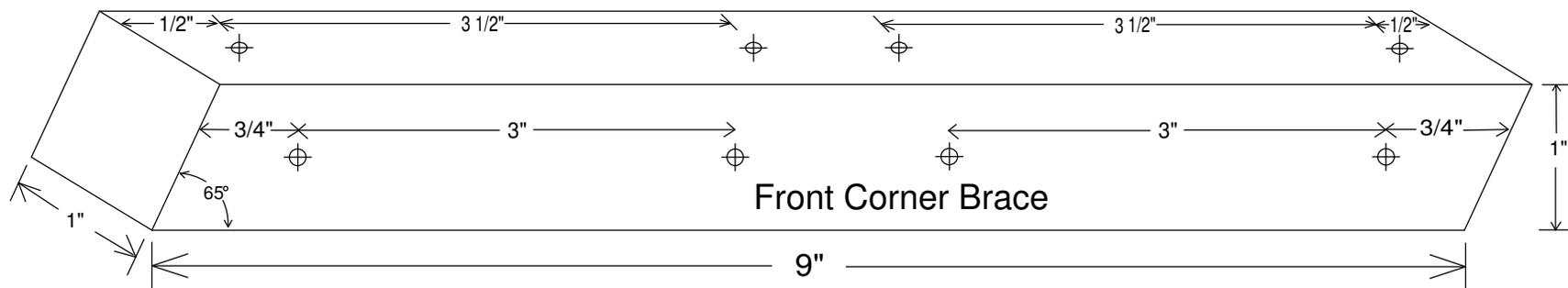
Edge View Front & Back Pieces







Grid lines are 1/2" apart



48" Wheelbarrow - Tub Assembly Braces

14 Inch Spoke Wheel

Instructions



Note: There are detailed instructions and tips (with pictures) for making this wheel at: www.BobsPlans.com/WagonWheelTips.htm

This project requires you to make four felloes (rim sections), eight spokes, eight keystone spacers, and two hub halves.

After cutting out all the parts, it is recommended you assemble them without glue to ensure they fit properly. It takes a lot of skill to have all the spokes fit together properly and have an exact 1 1/2" cavity in the center for the hub halves to fit into. But it is quite easy to change the size of the keystone spacers with a sander, hand plane, or sharp chisel. Be sure to clamp the spacers in a vice if trimming with a hand plane or chisel.

Keep in mind that the ends of the hub spacers and sides of the spoke points will be covered by the hub halves. I recommend using polyurethane glue like Titebond Quickset or Gorilla Glue. These glues expand and will fill small gaps. Since the hub halves will cover the area, the glue filled small gaps won't be visible. Polyurethane glues are very strong and are rated for exterior use.

Making the Spokes

For your convenience, drawings of the spokes as each cut is performed are provided on the drawing. Please refer to these drawings while reading.

1. Cut eight 1 1/2" wide by 5 1/2" long pieces from 3/4" stock.
2. Cut the hub tenons. A tenon jig is recommended for this cut. Free plans for a great tenon jig are available at:
www.BobsPlans.com
3. Cut the round tenons with a 5/8" round plug cutter. A tenon jig and drill press is recommended.
4. Cut the tapers on the sides. This step is easily done with the taper jig from www.BobsPlans.com.
5. Trim the spoke's exposed edges with your router using a 1/4" or 3/8" rounding over bit.

Making the Felloes

Note: While minor imperfections in the center of the wheel will be covered up by the hub halves, any imperfections in the felloes will show. Be sure each felloe is cut accurately.

1. This wheel uses four felloes (sections of the rim). You can minimize waste by cutting them from a 50" length of 1 1/2" by 3 1/2" stock at a 45° angle as shown in Step 1. The bottom (shorter length) of each section is 7 25/32" long. This will be the same as the distance between the inside corners of the felloes. Please refer to the felloes full size pattern on the drawing.

2. Trace the felloes outline onto each piece. and cut with a scroll saw or band saw.
3. Drill the tenon holes and dowel holes in each piece. There are detailed tips for this step at: www.BobsPlans.com/WagonWheelTips.
4. Glue and assemble the felloes to form the rim with 5/8" by 2" dowels and clamp with a band clamp. (Use exterior glue).

Making the Hub

The design of this wheel allows you to be as creative as you like when making the hub. A full size pattern for a simple hub is provided on the drawing. This one will produce an attractive finished wheel and will enable the wheel to be easily mounted on the project.

For those who have a wood lathe, making the hub from the included pattern involves gluing up a couple of 5" long pieces of two by four stock and turning the hub on your lathe. When finished, you need to saw the hub in half through the middle so it can be inserted through the hub cavity in the center of the wheel.

The 5/8" hole through the center of the hub will allow you to insert a piece of 1'2" ID copper tubing in the hub as an axle bushing when the wheel is completed. Remember, this wheel is NOT designed to be a working wheel nor to carry heavy loads. But it is fine for wooden wheelbarrow flower planter.

If do not have a lathe, you can make a simple hub by cutting round disks with your scroll saw and assembling them as shown in the following Optional Hub section.

Optional Hub

For the optional hub, you need to cut five round disks with 5/8" center holes using your scroll saw. See Figure 1.

The 1 1/2" by 1 1/2" disk is used to fill the hub cavity in the center of the wheel. Make the two hub halves by attaching a 1 1/2" by 1 1/2" disk to one of the 3" by 1 1/2" disks. You can attach them with a couple of nails from the back side of the 3" disk. Be sure to predrill the screw holes to prevent splitting.

1. Apply exterior glue to the mating surfaces.
2. Insert the 1 1/2" by 1 1/2" disk into the hub cavity.
3. Attach the hub halves to the wheel with four 1 1/2" Number 6 wood screws on each hub half.

Note: Be sure to position the second hub half so the screws don't interfere with the screws for the first hub half.

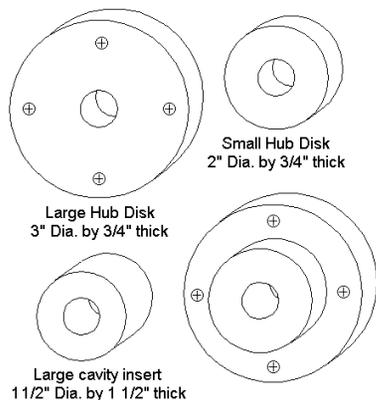


Figure 1



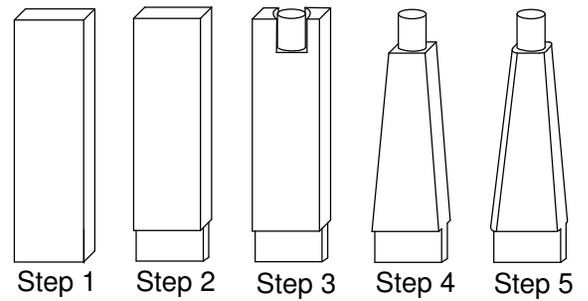
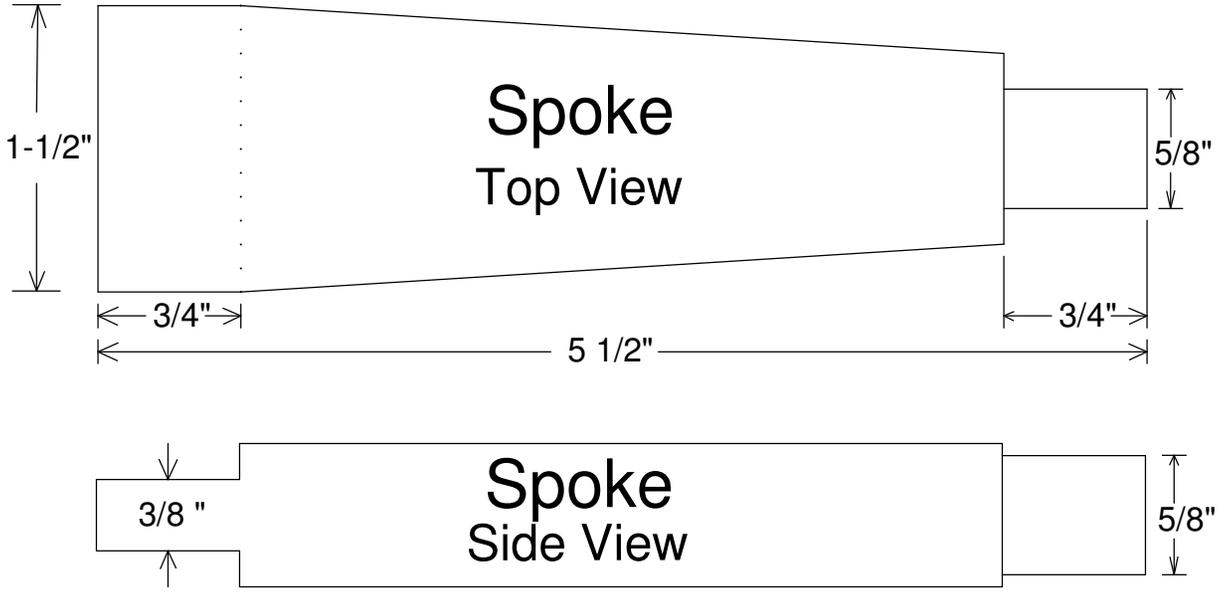
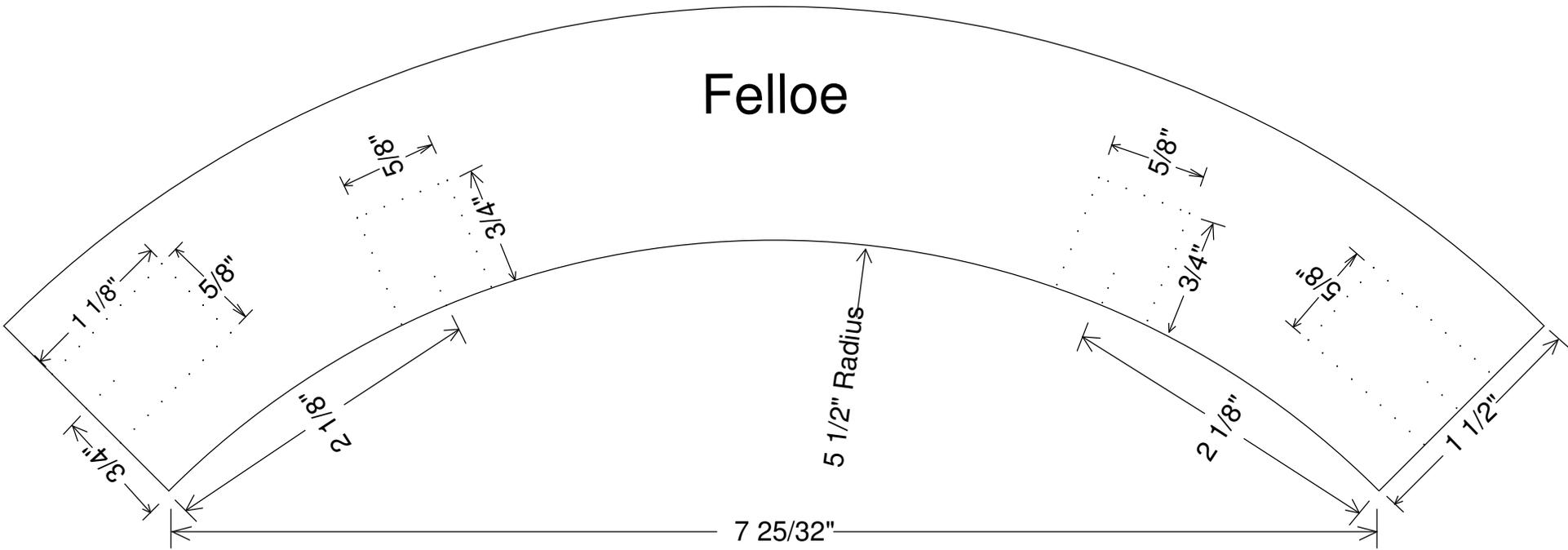
14 Inch Wheel with optional hub.

Assembling the Wheel

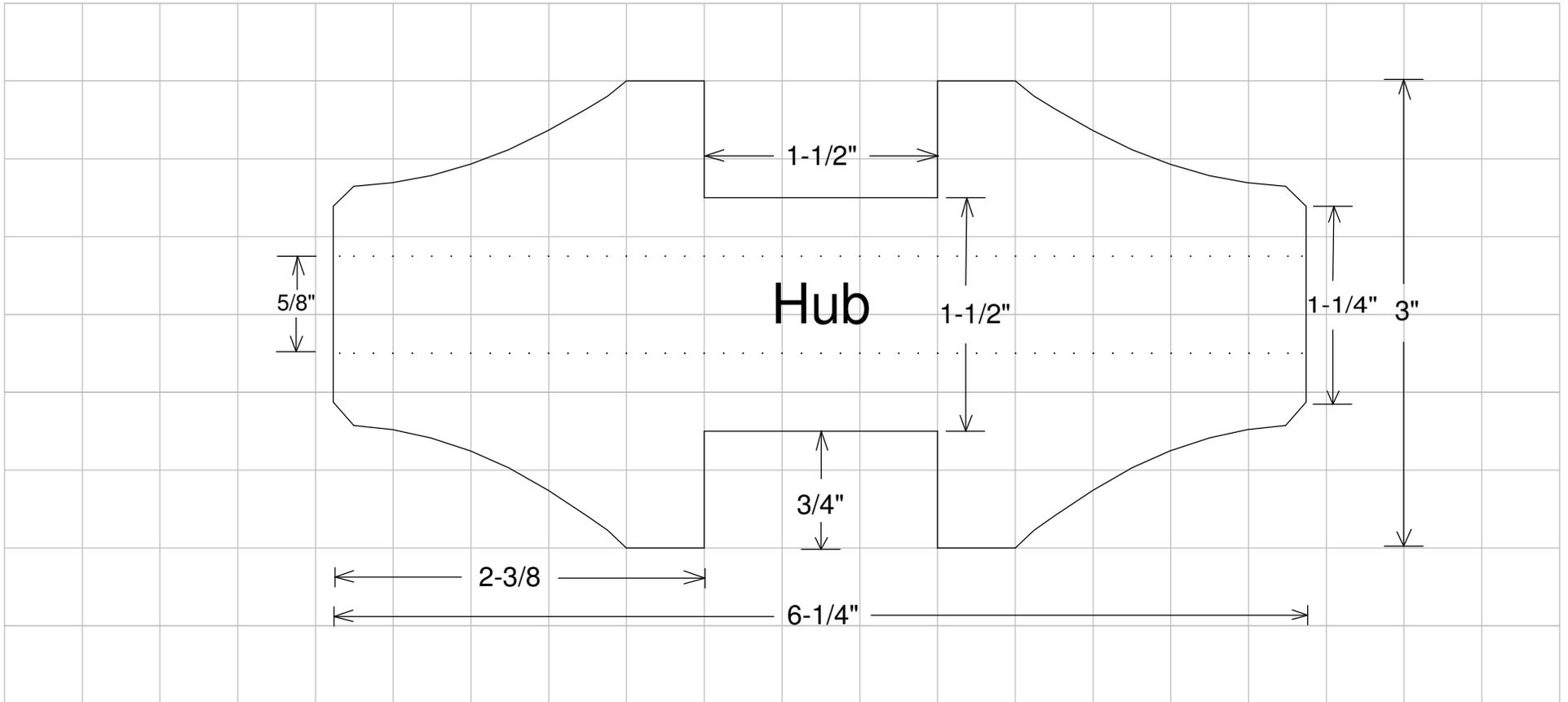
Drawings for assembling the wheel are provided on the page 17. Please refer to these drawings while reading.

Note: Be sure you have a 5" or 5 1/2" (1/4" or 5/16" diameter) long bolt with nut and two washers before starting the assembly. The washers must be larger than 5/8" diameter. This bolt is used to clamp the hub halves together.

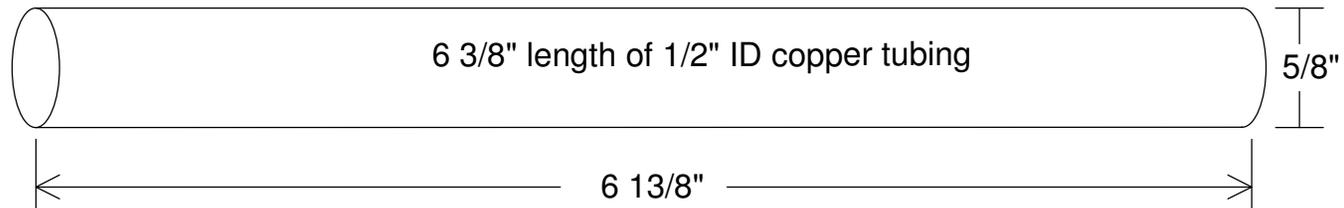
1. Assemble the rim as shown in Step 4 by attaching the felloes with 5/8" dowels and glue. You can clamp the rim with a band clamp.
2. Make sure the spokes, keystone spacers, and hub halves fit properly. When all fits well, apply glue to the felloe tenons and insert all the spokes in the rim.
3. Apply glue and insert the keystone spacers between each spoke as shown in Step 6 of the isometric views. Make sure the spacers are flush with the spoke sides.
4. Apply glue and insert the hub halves into the hub cavity as shown. Use the long bolt with large washers and a nut mentioned above to clamp the hub halves together. Run the bolt through the hub axle hole and tighten snugly so the hub halves fit flat against the spoke sides. If using polyurethane glue, moisten one side of each surface with a damp cloth. Please read the instructions on the polyurethane glue container.



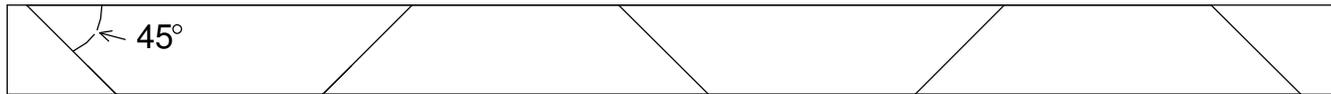
Making the spokes



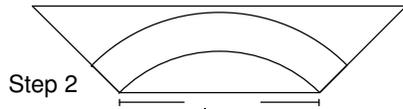
Grid lines are 1/2" apart



Cutting the felloes and assembling the wheel

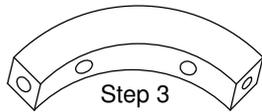


Step 1



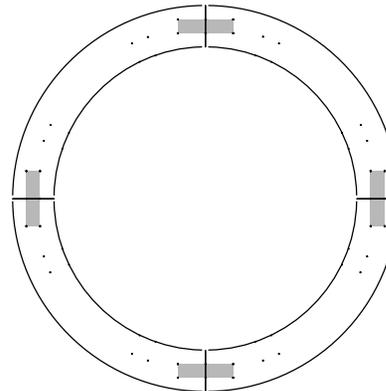
Step 2

7-25/32"

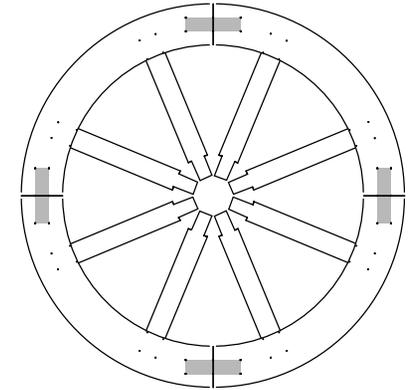


Step 3

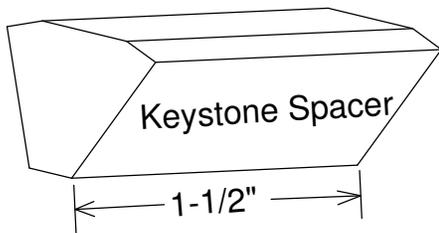
Making the felloes



Step 4

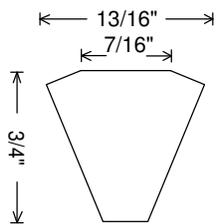


Step 5



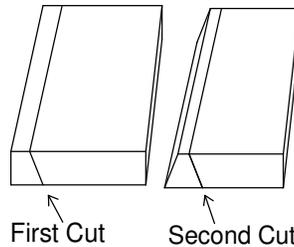
Keystone Spacer

1-1/2"



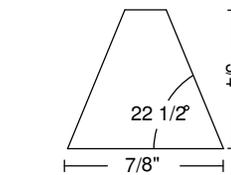
Final End View

Cutting the keystone spacers

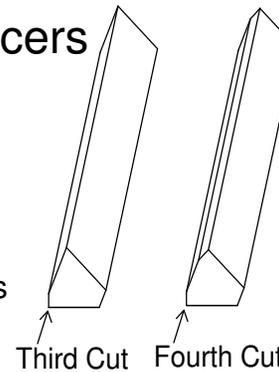


First Cut

Second Cut

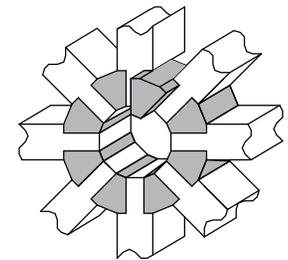


End View Dimensions
(After Second Cut)

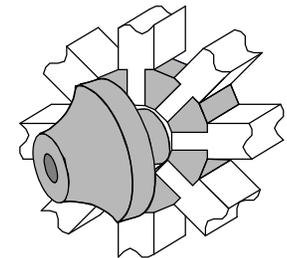


Third Cut

Fourth Cut



Step 6



Step 7

Materials List

Qty	Item
2	8 ft 1 x 6 Cedar or other decay resistant wood
3	8 ft 2 x 4 Cedar or other decay resistant wood
1	½" Diameter by 10 ½" long steel rod (axle)
2	½" ID Axle push nuts (these go on ends of axle)
2	¼" by 2 ½" Carriage Bolt, flat washer, and nut
1	Box of coated exterior 1 ¼" #8 wood screws
1	Box of coated exterior 1 5/8" #8 wood screws

Suggested cutout diagram is shown on the right.
Cutout diagram for wheel felloes is shown on sheet 3. The wheel spokes and hub can be cut from the remainder of the wood.

