IRISH-AMERICAN

Irish armchairs are one of my favorite stick chair forms. For this chair, I took the basic structure of an Irish chair and pushed it forward in terms of comfort, curvature and detailing. This is a luxury the original makers never had.

CURVED-BACK ARMCHAIR

After making several armchairs by following historical Irish examples, I decided to design an armchair without worrying about what was Irish, Welsh, Scottish, Scandinavian or German. The result, shown here, is a bit of a stylistic mutt. But I take comfort that modifying styles from the mother country is a traditional American trait.

This design began with an Irish skeleton – an armchair with a rectangular seat. But some of its details have been pushed in different directions.

The legs are straight octagons – untapered. These legs offer a stoutness that gives the chair some visual weight below the seat. They have the rake and splay of some Irish Gibson chairs I have measured, so they don't look too foreign. The joints that join the legs and seat are tapered cones, which is uncommon in vernacular stick chairs.

The seat is saddled, which is rare among Irish chairs. This saddle has no pommel, which gives it a contemporary look. Removing the pommel also allows the sitter to shift left or right in the seat without interference.

The arms are quite curved and have tiny hands. I wanted the chair to look like it was reaching out to you. I'm not sure why I drew baby hands for this chair, but I like the effect. I also curved the backrest and gave it a dramatic sweep with angled ends.

Finally, I built the chair out of American black walnut, which is one of my favorite domestic hardwoods. In the Ohio River Valley where I live, it was once so common that people built frame houses with it (then painted them).

Most of all, this chair is compact, low and comfortable. It's a perfect chair for the fireplace. It's also easy to build. All the curved parts are cut from solid material, so there's no wood to bend. And the simple saddle is a good shape for beginners.

For reference, I split the sticks out of kiln-dried walnut. The other

A LITTLE METAL

After cutting the seat to size, I noticed a little bit of honeycombing at one back corner. Nothing structural. Yet I had blacksmith Mark Gilsdorf make two iron brackets – just in case.

components were sawn out of walnut boards from the lumberyard. You should, of course, use whatever wood you have on hand. And if you have to mix wood species, paint will unify the chair's form.

CUTTING LIST & NOTES

Here are the parts required to build this armchair, along with notes on how the parts are shaped and joined.

4 Legs: 1-5/8" x 1-5/8" x 19" (over-long and cut to length after assembly)

• Legs are straight octagons (no taper).
• Tenons are tapered cones (12.8° included angle). Tenons are 1-1/4" diameter at their base. Where the tenons enter the underside of the seat, they are a smidge more than 1" in diameter.
• The transition between the octagon and tapered tenon is a 5/16"-high cove.

1 Seat: 1-3/4" x 16" x 20"
• Grain runs from left to right in seat.
• Seat shape consists of a 13-1/2" x 20" rectangle with a 21-1/4"-radius arc added to the back of the rectangle.
• Seat is saddled. The spindle deck is 2-1/2" wide. Saddle is 3/8" deep with no pommel.
• As built, the front edge of the seat (at the saddle) is 14-3/4" from the floor. Rear edge of seat is 14" from the floor (measured from the top of the spindle deck). So the seat tilts 3/4" from front to back.

4 Short sticks: 1-1/8" diameter x 12-1/2"
• The front posts are shaved with entasis to blend into 1"-diameter tenons on both ends. See the illustrations for lengths.
• Top tenons, which pass through the arms, are wedged and trimmed after assembly.
• Bottom tenons, which pass through the seat, are sawn flush to the underside of the seat. Wedges are optional as there is a lot of surface area in these joints for glue.

2 Arms: 1" x 5" x 20" (curved arms cut from solid)
• Top edges of arms are rounded over with rasps; it's an 1/8" x 1/8" roundover.
• Back sticks that pass through an arm are pinned with barbecue skewers (5/32" x 2").

5 Back sticks: 1-1/8" diameter x 17-1/2"
• Back sticks are shaved and tapered: 1" diameter at seat and 3/4" diameter at the shoulder of the top tenon.
• Tenons on the bottom of the back sticks are 1" diameter x 2-1/4" long. These tenons pass through the seat and are sawn flush. No

wedges – though some old chairs are wedged from below.
• Tenons on the top of the back sticks are 5/8" diameter x 2" long.
• Shoulders at the tops of the sticks are shaved to blend into the tenons.
• All back sticks tilt 25° back and are vertical in elevation.
• The back sticks that pass through the arms are tapered to 1" at the location of the arm to pass through a 1" hole in each arm.

1 Backrest: 1-1/4" x 3-5/8" x 24" (backrest sawn from solid)
• Interior radius of curve is 21-1/4"; exterior radius is 22-1/2".
• Ends of backrest are cut at 20°.
• The tenon of two exterior back sticks is pinned with a barbecue skewer (5/32" x 1"). The hole is 3/8" up from the bottom edge of the backrest.

MAKE THE SEAT

You likely will have to glue up the seat from at least two boards. I recommend you add three loose tenons to the edge joint and peg them on the underside of the seat. This traditional Roman construction will outlast the glue.

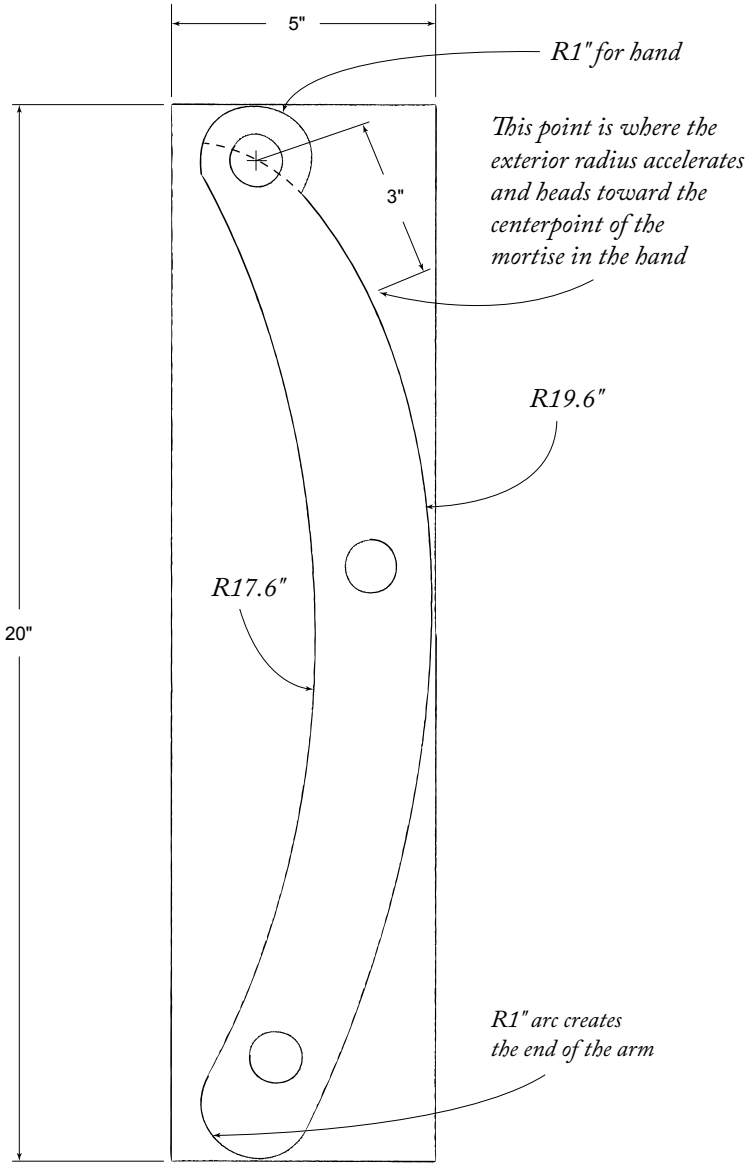
Cut the seat to size and lay out the locations of the leg mortises and the sightlines. Because this chair uses tapered tenons, you will first drill a 5/8" pilot hole for each mortise then ream it to a cone shape. The resultant angle for the front legs is 25°. The resultant for the rear legs is 28°.

After drilling the pilot holes, ream the four leg mortises using a tapered reamer. Check the angle of your joint with a dummy leg. Make adjustments if needed. Try to ream the mortises all to the same depth so that the tenon shoulders on the legs will be at the same height.

MAKE THE LEGS

The legs are straight octagons. The tapered tenon on the top of each leg was turned rough on the lathe – about 3-1/8" long. Then I turned a 5/16"-tall cove at the shoulder. I don't use the lathe much when making stick chairs, but I wanted the transition between the tenon and octagon to be crisp. For a more traditional look, skip the lathe and blend the octagonal facets into the tenon with handplanes.

CURVED-BACK ARMCHAIR



ARM PATTERN

Then finish shaping the tenons on the legs with a tapered tenon cutter. Test the fit of the legs in the seat. Assign a leg to each mortise, then saw a kerf in each tenon for a wedge.

MAKE & DRILL THE ARMS

The arms are sawn from solid stock. Because of the curve, you will have some short grain. If you take care during assembly time, the arms will survive just fine. If you prefer, you can bend the arms to eliminate any potential for short grain, or you can hunt up a curved branch from the woods instead.

Cut the arms to rough shape, but don't refine them any further until you have drilled the mortises through them and into the seat. There's still a 20-percent chance of firewood in the forecast. Lay out the locations of the mortises on the arms and the seat.

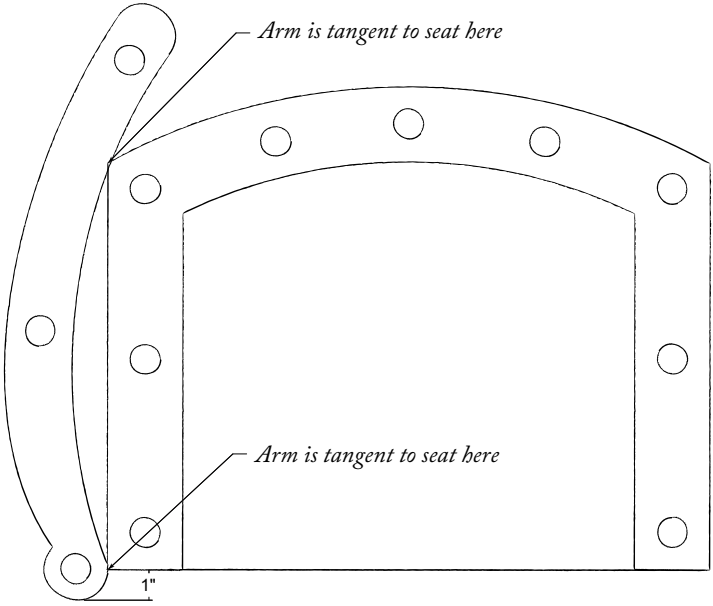
Position the arms over the seat using the 8"-wide drilling jig plus a scrap to hold them in place (see the photo on the facing page). Looking down directly from above, the front of the arms should be tangent to the front corner of the seat with 1" of the arm forward of the seat. The back corner of the seat is tangent to the arm somewhere along the inner curve of the arm. Shift the arms around until both are in position. Then clamp the arms in place so they won't move during drilling.

Drill the mortises through the arms and through the seat. All these mortises are 1" in diameter. Use a backing block to reduce spelching on the exit side of your holes. Don't, however, drill the three center mortises for the back yet. Those require a simple drilling jig to make sure you drill them dead-on. That drilling jig needs to attach to the back sticks, so it's time to make sticks.

MAKE THE STICKS

Make the sticks from octagonal pieces. After sawing or planing your sticks octagonal, cut the 1"-diameter tenons on both ends of the short sticks and on the bottom of the back sticks. Then cut the 5/8"-diameter tenons on the tops of back sticks. If you are unsure how high your backrest should be, you might want to wait to try out the dry-fit chair before deciding the final length of the back sticks.

With all the tenons cut, shave the octagonal sticks round and taper them toward their tenons. I use a jack plane and block plane. The back



READY FOR DRILLING

The arms are in position over the seat. After a few more clamps It'll be ready for drilling. The photo shows how the drilling jig and a scrap hold the arms 8" off the seat. The illustration shows where the arms are positioned in relation to the seat below. You can confirm the arm's position by placing a combination square on each corner of the seat.

sticks that pass through the arm need to be shaved more near the top so they will pass through the 1" hole in the arm and have 8" of stick (plus the tenon) sticking out below the arm. Sometimes lightly reaming the hole from the underside of the arm helps to fit the back sticks.

Once you have finished planing and fitting all the sticks, cut a kerf in the tops of the tenons of the short sticks. Then dry-fit the chair's legs seat, sticks and arms. Be sure to seat the sticks fully into the seat.

DRILL FOR THE BACK STICKS

Make a plywood template for the backrest. This template will both lay out the shape of the backrest and serve as a drilling jig for the three remaining mortises in the seat.

The template has a 21-1/4" radius for the interior curve and a 22-1/2" radius for the exterior curve. And the template is 24" long.

Find the centerpoint on the tenons of the two back sticks in the dry-fit chair. The centerpoints should be 17-1/2" apart from one another. Confirm that number. The idea is to attach this template to the back sticks with screws. Then use holes in the template to guide your drilling, much like using a doweling jig.

First drill clearance holes in the template for screws that are 17-1/2" apart and centered on the template. Then use the construction drawings to lay out the locations of the three mortises in the template. At these three locations, drill a hole that is slightly larger than your drill bit's extension shaft. The idea is to thread the extension through the template and use these holes to guide your drilling.

Drill pilot holes into the back sticks in the dry-fit chair. Then screw the template to the back sticks.

Attach a 1"-diameter drill bit to your extension shaft. Thread the extension shaft through the template from underneath and chuck it in your drill. Clamp a backing block to the underside of the seat. Now drill the three through-mortises in the seat. Thanks to the template, the holes will be at the correct angle.

MAKE THE BACKREST

The backrest is cut from solid stock. I first glue two layers of 8/4 stock face-to-face to make a block that is thick enough to make a backrest that is 3-5/8" high. Use the template/drilling jig to lay out the

CAN'T MISS

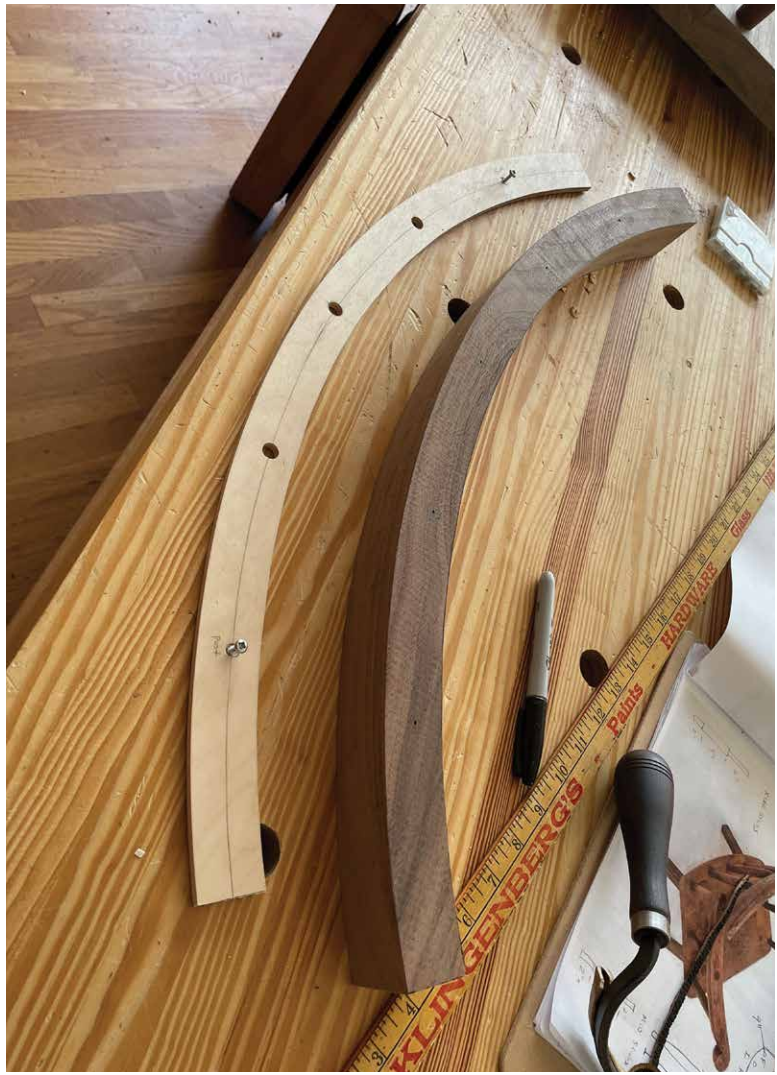
By screwing the template for the backrest to the back sticks, you create a jig that makes it easy to drill the mortises in the seat at the correct angle.

shape of the backrest. The holes already in the template allow you to easily lay out the location of the five mortises.

Saw out the shape. Then drill the five 5/8" mortises in the backrest. These holes are vertical. Cut the 20° angle on the ends of the backrest and clean up the part with spokeshaves, scrapers and sanding. Then fit the backrest onto the back sticks. If everything looks good and fits, disassemble the chair.

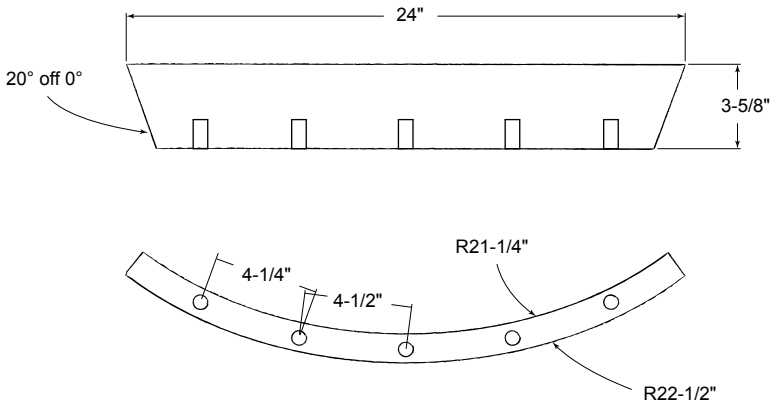
SADDLE THE SEAT

Lay out the 2-1/2"-wide spindle deck on the seat. Use a scorp or adze to remove as much waste as possible, making the saddle about 1/4" to 5/16" deep. There is no pommel to this seat, so you are trying to create a flat saddle that curves up to the spindle deck.



CUT FROM SOLID

By matching the grain and color, you can make a laminated backrest that looks like one solid chunk of wood. I do this by cutting the curved pieces right next to each other in a board.



BACKREST PATTERN

Then finish up the saddle with a travisher, scraper and sandpaper. The finished saddle is about 3/8" deep.

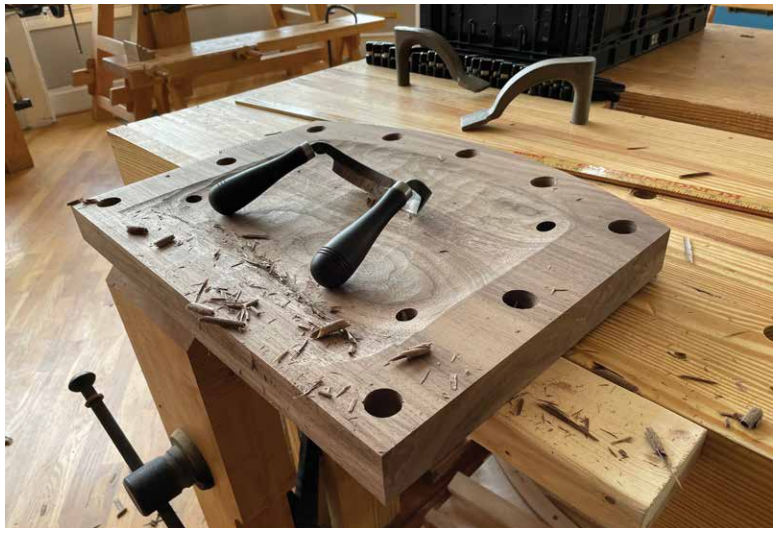
Once the seat is saddled, you can glue and wedge the legs in place. After the glue has dried, saw the tenons flush to the saddle and clean up any errant tool marks.

MAKE PRETTY & ASSEMBLY

Shape the arms with a rasp, scraper and sanding. Ease all the top edges of the arms. I left the bottom edges of the arms square. Clean up all the sticks. Look for tear-out using a low, raking light and remove it with a scraper or sanding.

Assembly is in three stages. I glue and wedge one arm and its sticks in place. Then I glue and wedge the other arm and sticks in place, making sure the arms end up parallel to each other. Then I glue the backrest onto the back sticks and peg the tenons with bamboo skewers. I don't recommend gluing everything in one go (this is the voice of wounded experience talking).

Finally, level the legs. These armchairs don't need a lot of tilt to the seat to make them comfortable. A tilt of 3/4" or a little more is plenty.



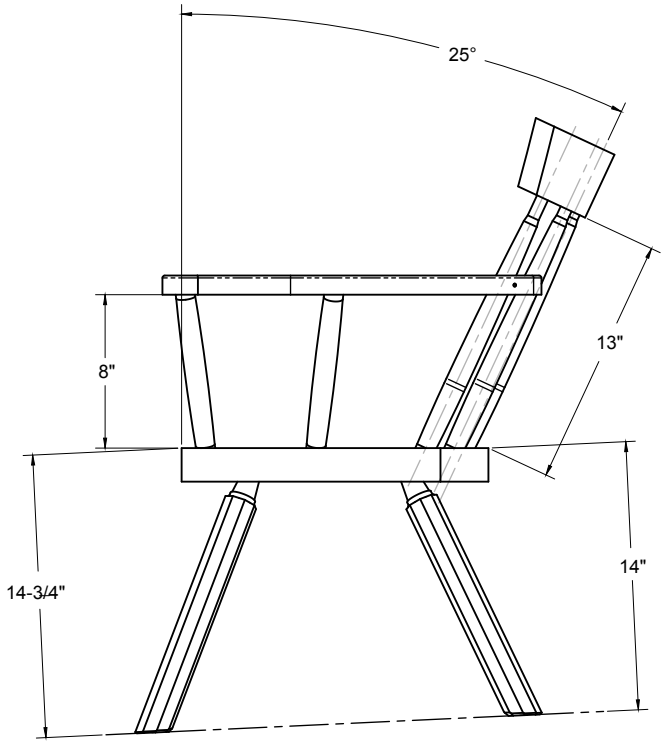
SIMPLE SADDLE

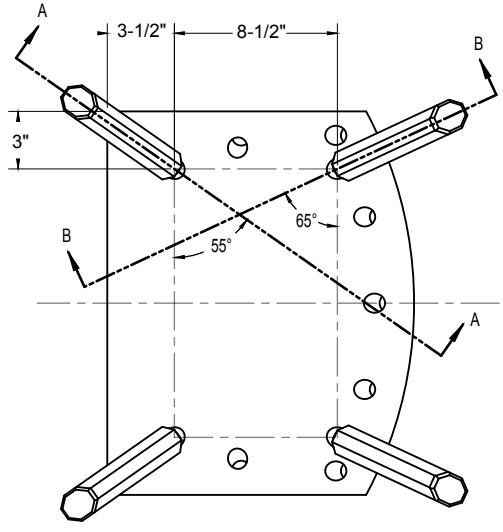
Without a pommel to deal with, the saddle is simply an exercise in leveling the wood with a scorp and travisher. This is great practice before tackling more complex saddle shapes.

CURVED FOR COMFORT

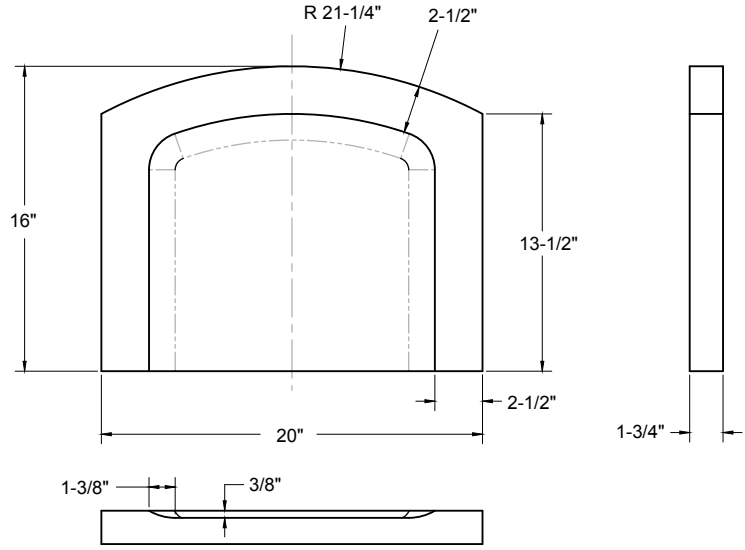
Ease all the sharp corners of the arms with a cabinet rasp. Follow up with scraping and sanding to make the arms as comfortable as possible.

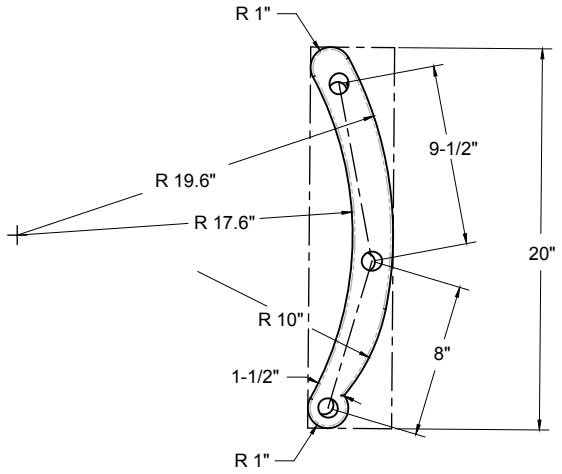
After the glue is dry, cut all the tenons, wedges and pegs flush (including the tenons on the underside of the seat). Clean up any tool marks and finish the chair. I used a linseed oil/wax finish. I apply the goop with a 3M woven gray pad then buff the chair dry with a huck towel. Three weeks later I add a second coat and buff it off. This finish will last a good two years with heavy use. If the chair gets scuffed in the meantime, you can erase the scuff by applying a little more finish and buffing it off.

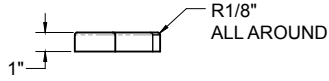

25°
13"
8"
14-3/4"
14"

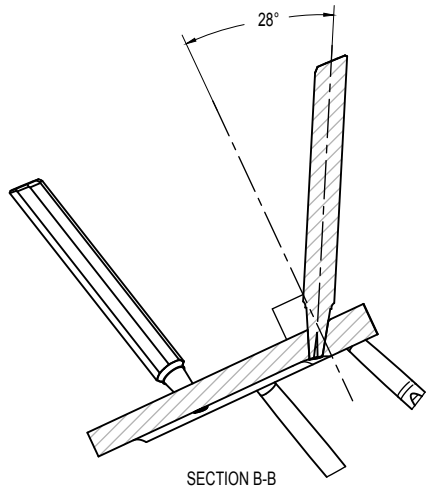

A
3-1/2"
8-1/2"
B
3"
65°
B
55°
A

CURVED-BACK ARMCHAIR

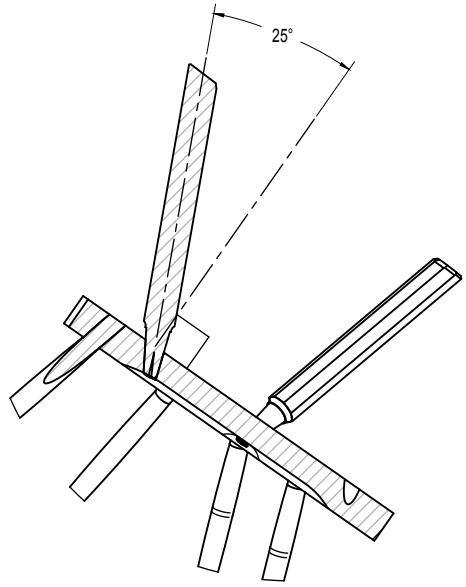






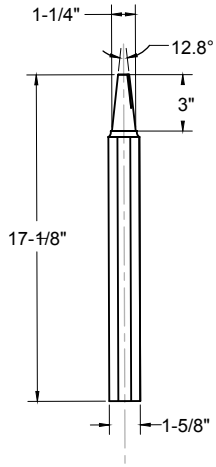


SECTION B-B
(RESULTANT ANGLE)

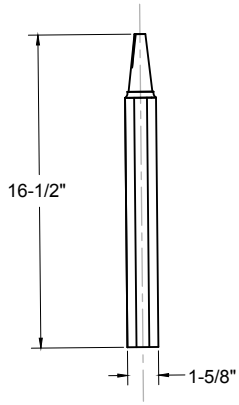


SECTION A-A
(RESULTANT ANGLE)

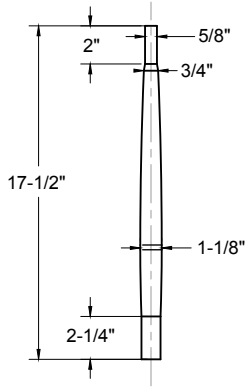
CURVED-BACK ARMCHAIR



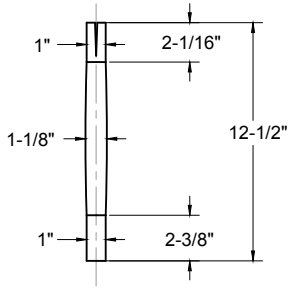
FRONT LEG
(PRE-TRIM)



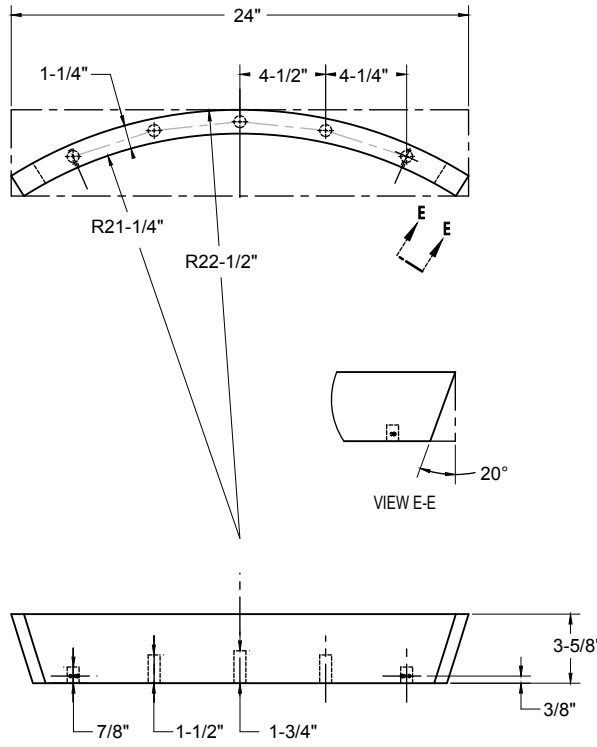
REAR LEG
(PRE-TRIM)

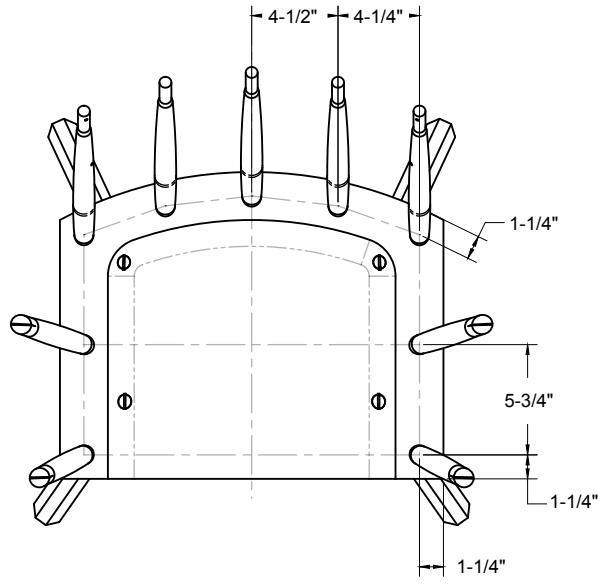


BACK STICK
(PRE-TRIM)



SHORT STICK
(PRE-TRIM)


24"
1-1/4"
4-1/2"
4-1/4"
R21-1/4"
R22-1/2"
E
E
20°
VIEW E-E
3-5/8"
3/8"
7/8"
1-1/2"
1-3/4"


4-1/2"
4-1/4"
1-1/4"
5-3/4"
1-1/4"
1-1/4"

CURVED-BACK ARMCHAIR