



Cathedral Doors

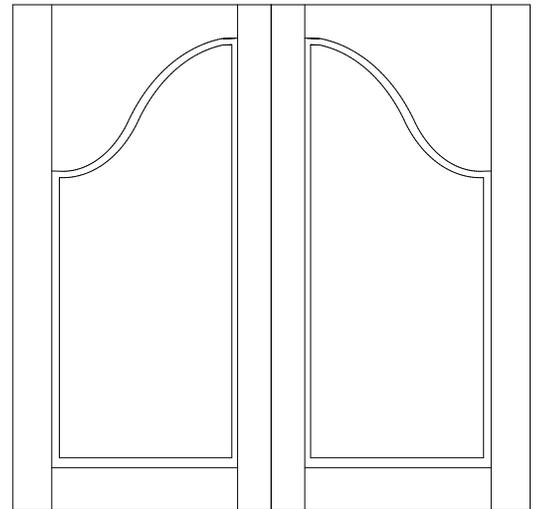
Sets #9377, 9378

It is easy to make your own elegantly curved cabinet doors using **MLCS** router bits and **Cathedral Door Template Guides**. Our set of templates includes seven sizes of curves, allowing you to make doors from about 10" wide to over 22" wide.

Please familiarize yourself with the techniques and procedures for making straight rail and stile doors before trying the cathedral type. Review the **MLCS** instruction sheets for Rail & Stile Router Bits (*See Pages 4-8*).

MAKING TEMPLATES FROM PATTERNS. It is possible to transfer the curve shapes from the patterns to plywood or hardboard in several different ways. Use carbon paper to trace the curve onto the template material, and square off as shown on the sheet entitled "Create the Patterns" (*See next page*). Cut out the shape and sand smooth. A small notch at the centerline of the template will help with alignment. Another way to transfer the curves is with a "ponce wheel." This is a wheel with sharp points around its edge and a handle. You roll it around the pattern. Then rub chalk over the holes made in the pattern by the wheel and onto the wood. You can buy a ponce wheel at a sewing supply store. **NOTE:** Even though the curve for the rail and corresponding panel look the same, remember that the panel fits into a groove in the rail, so the two curves are *slightly* different.

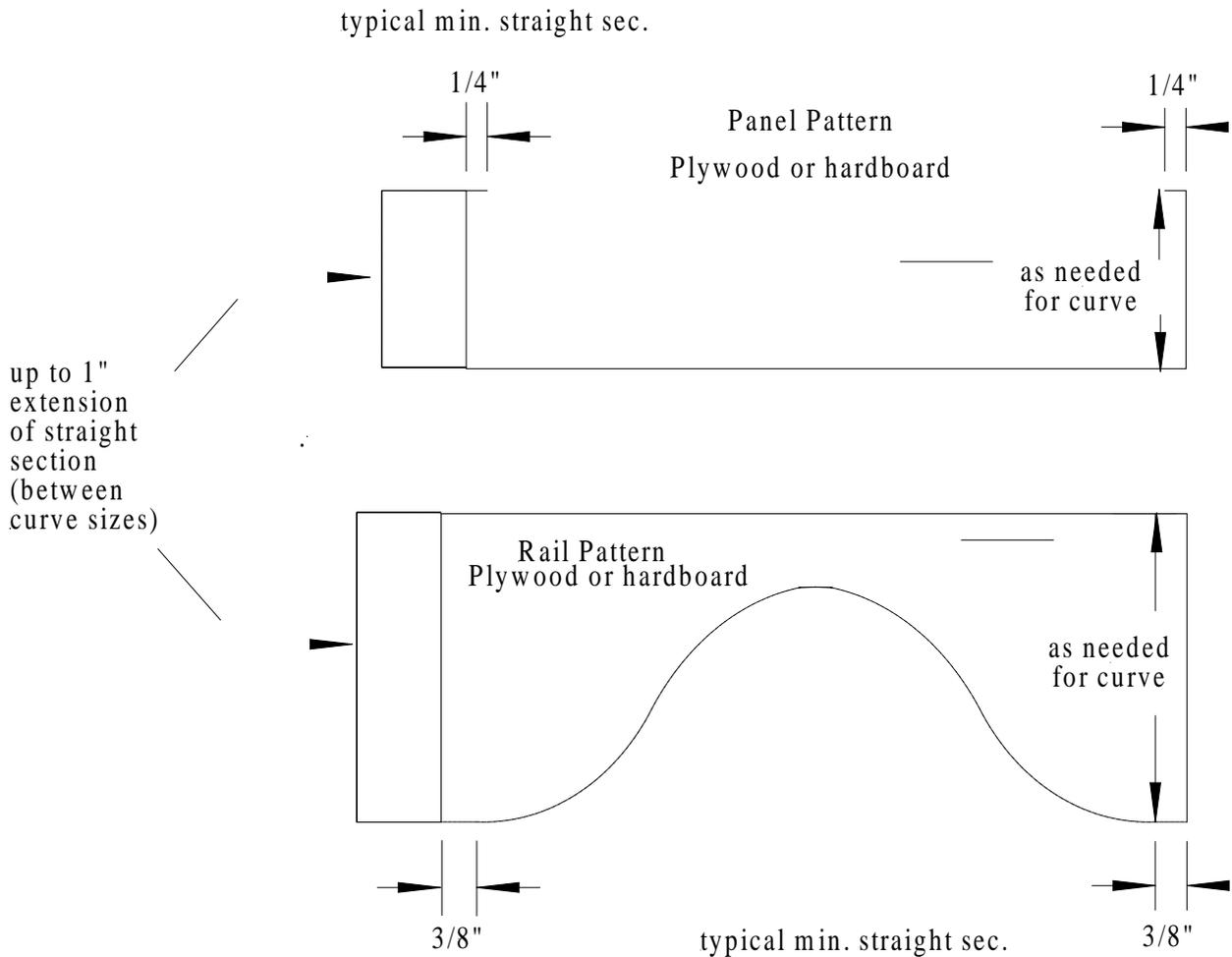
DESIGN. When designing a kitchen or series of cabinets with cathedral top doors, try to keep all the doors about the same width if possible. To make doors in sizes between the two-inch increments of the templates, simply add to the length of the straight sections at the ends of the curves or adjust the width of the stiles. Another technique for using the cathedral patterns is to use half of the curve to make one door and the other half for a second door. This layout looks great in an entertainment center or china cabinet.



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CREATE THE PATTERNS:

- 1) Select a panel and rail curve for the door size.
- 2) Transfer curve to 1/4" plywood.
- 3) Square the piece to about 3" to 4" long.
- 4) Cut out and sand smooth to lines.
- 5) The 1/4" for the panel and 3/8" for the rail are the panel tongue and the joint overlap. These can be extended to widen the door to a dimension between the curve sizes.



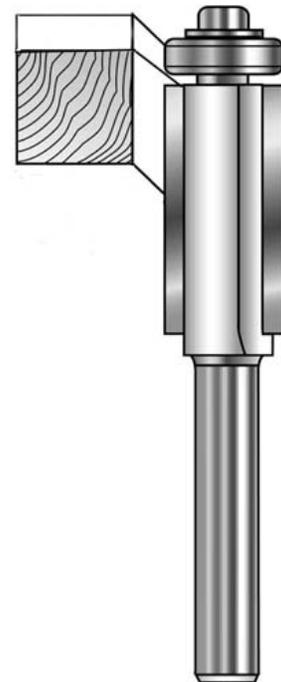
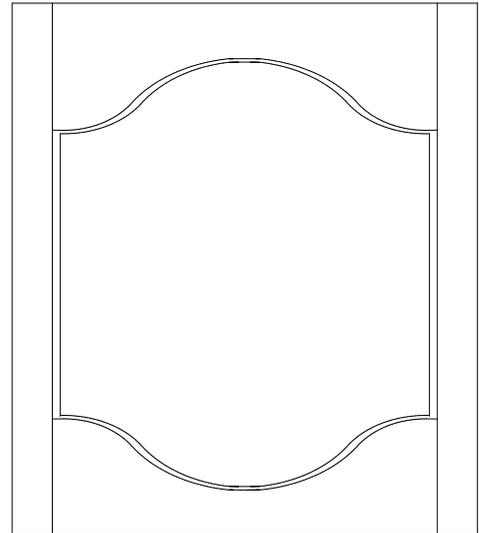
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Prepare your stock as you would for straight doors. Be sure that edges and ends are square to each other and to the face, and that all of the rail and stile material is of uniform thickness. Have a few extra pieces for test cuts. For the curved rails, the stock needs to be wide enough to accommodate the curve. This means you may need 4-5 inch width for your rails. Stile material is usually around 2 inches wide. Rails need to be cut to the exact length at this time. This length is determined by the required width of the door. Stiles can be left a little long for now. For more help with the setup and sizing see the **MLCS** video “**Making Your Own Raised Panel Rail and Stile Doors**” (MLCS Item #9063 VHS or #9068 DVD).

When making curved rails, the end or “cope” cut must be done first. Set up your bit in the router table, and cope the ends of all your rail stock, including the wide ones for the curved pieces. Also make a few extras for test cuts. Select a curve pattern template from the “Rails” set that is closest to your rail length without being longer. Remember that you can lengthen the 3/8” straight part of the curve to get to the width that you need. Use double-faced tape to attach the template to the rail blank, using the center mark to help you align it. If everything is right, the template ends should be parallel to the coped ends of the rail.

Cut along the curve with a bandsaw, coping saw or jigsaw to within 1/8” or so of the template. Be careful not to cut into the template. If you are afraid you may damage the template, you can trace the line of the curve and cut it out before taping the template down. Trim the rail to the template being careful of the grain direction of the wood.

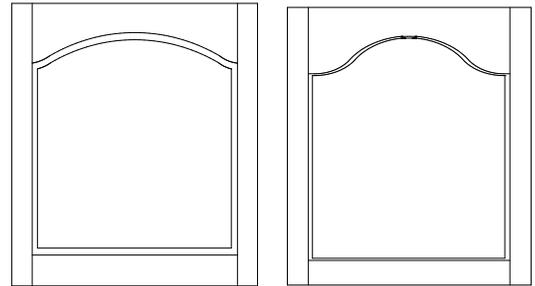
Set up a flush trim router bit (**MLCS #5503 or #7804 or KATANA #15503 or #17803**) in the router table. This is used to cut the curved shape of the rail to the exact shape of the template. It is best to have a minimum of material to remove with the bit; that’s why you cut to within 1/8” or so in the previous step. This is also a good time to practice with a *starter pin* in your router table. A starter pin is a short pin that is set into the baseplate near the bit opening, which acts as a fulcrum to help you pivot the workpiece into the spinning router bit safely and easily. You will be using the starter pin again later when cutting the profile and groove into the curved rail.



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Try to always cut with the grain, even if you need to *climb cut*, that is, cut with the rotation of the bit instead of the usual against the rotation. Feed lightly and *use your push blocks!* The **MLCS** video (**#9063 VHS or #9068 DVD**) shows this technique. **REMINDER:** Be aware that climb cutting tends to pull the work into the bit.

Next, change your router bit setup to cut the profile on the rails and stiles. This is the detail and groove that is around the inside of the doorframe. Make the cuts on the straight pieces of the frame, then set up the starter pin again as you did when shaping the curved rail. Cut the profile and groove on the curve, again using the pin to guide the workpiece into the cut.

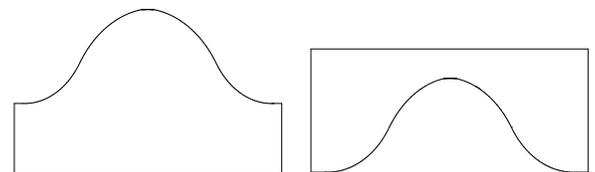


At this point you should have four doorframe pieces, including the curved top, which fit together to form the door. Dry-fit the pieces and check your width measurement again. Mark the stiles to locate the rails for the required door height. Measure the inside of the frame at this time to determine the size of the raised panel blank. Make it about 1/4" bigger than the frame inside dimension on all sides (e.g. a 10" wide frame needs a 10-1/2" wide panel). First, cut the panel blank square, then choose the matching template or prepare a pattern for the panel curve as you did for the curved rail.

Follow the same procedure that you did for the curved rail, first cutting to shape and flush trimming. Next you will set up your raised panel bit in the router table with the starting pin. Refer to the Video for helpful hints. Start with the bit just above the work surface and take light cuts around the four sides of the panel. All panel bits should also be run at a reduced speed, using either a variable speed router or the **MLCS (#9400 or #9410) Router Speed Control**.

Continue raising the bit and taking light passes until the panel has a 1/4" tongue. **WARNING: Do NOT attempt this if you are using a bit with an undercutter!**

Test fit the panel in your doorframe and, if everything fits, proceed to assembly and finishing. Remember not to glue the panel into the frame groove; it must float freely. Use the rest of the patterns to create the size of doors you will need.



Panel template

Rail template