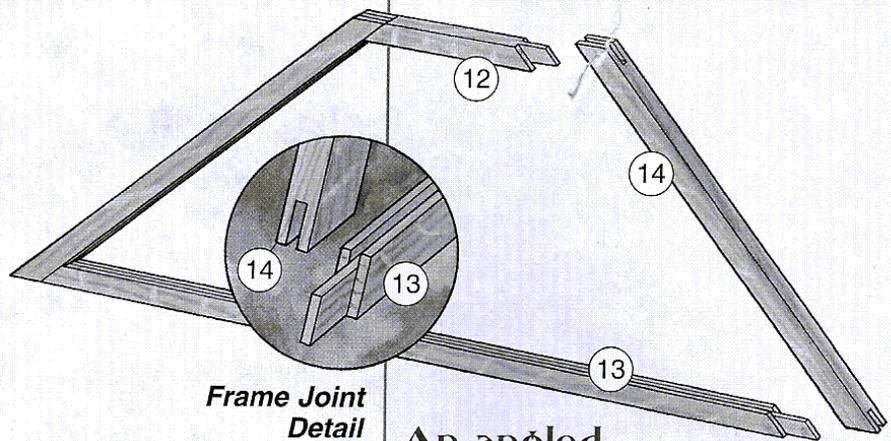


11/2006

Misson
LAMP

Bottom Vertical
Support (copy 4)

Do not try to Pattern Rock
this end



Frame Joint Detail

An angled mortise and tenon jig

It took me a while to work out the angled shoulders for the frames' mortise and tenon joints. On the **Pinup Shop Drawings**, you will find elevations for the jig (pictured below) that will make this step easy for you. Its design allows you to cut both the mortise and the tenon. Test the open mortise and tenon joints on appropriately dimensioned scrap lumber.

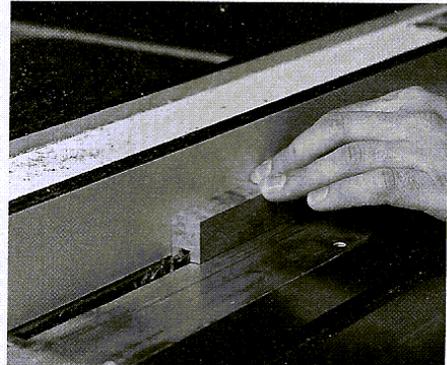


Figure 2: Before cutting the rails and stiles to length, use a dado blade to plow a groove. This will make it easier to create the rabbets for the glass after you assemble the frames.

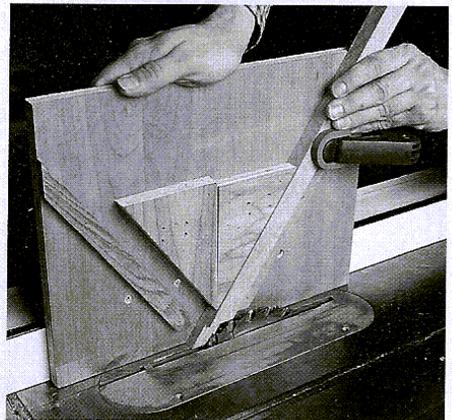


Figure 3: With the same dado blade in your table saw, use our jig to help chop the mortises and slice the tenons on the ends of the frame's stiles and rails.

Move Up to the Column

The dimensions of the column sides and inserts (pieces 6 and 7) are provided on the **Pinup Shop Drawings**. Start this step by cutting the sides and insets to length and forming the angles on their tops and bottoms. Now dig up your tapering jig to form the taper on each edge of these pieces. I used up a few scrap pieces of plywood to ensure that these taper cuts were right on the money.

When the four pieces fit together nicely, glue and clamp them together and sand the joints smooth. Trim the column veneer (pieces 8) roughly to size, then glue and clamp them over the insert pieces. Once again, take your time trimming this veneer, keeping the corners nice and square.

Now turn to the **Pinup Shop Drawings** and mill the column top and feet (pieces 9 and 10) to size. Keep an eye on grain orientation, particularly for the feet. The **Exploded View** at left will help you decide. Now bore a 1" diameter stopped hole in the base's center, followed by a through hole to accommodate the lamp hardware (see **Pinup Shop Drawings**). Drill another through hole in the column top and glue it in place. Now you're ready to attach the column to the base, using two screws (pieces 11) to hold the subassemblies together. Leave the feet to the side for now.

Making the Shade

The elegant simplicity of the shade's appearance is produced by some sophisticated woodworking. The

shade is four frames which are joined by modified mortise and tenon joints, mitered at the corners and capped with a slotted top piece. Begin by cutting the shade frame top and bottom rails as well as the shade frame stiles (pieces 12 through 14) to size. To achieve the best appearance, slice these pieces from the same piece of well-figured (nice quartersawn flake) white oak. While the pieces are still in sticked-up form, put a dado head in your table saw and plow a groove down their inside edges, as shown in **Figure 2**. Move to your miter saw and cut the stiles and rails to their appropriate lengths while chopping the correct angles on their ends. (see the **Pinup Shop Drawings**).

Build the jig shown in the photo at right (bottom) to help form the angled mortise and tenon joints. You can find **Elevations** of the jig on **Pinup Shop Drawings** as well as details for the three other jigs you'll need to complete this project. Once the jig is ready, use it to plow out the mortises and slice the cheeks of the tenons. Simply adjust the dado head (the same one used earlier to plow the grooves) to the proper height. Then it's a matter of clamping the stiles and rails in place and removing stock from the center of the stiles and the outside faces of the rails, as shown in **Figure 3**. (As always, testing the set-up with scrap lumber is a good idea.) Dry fit the stile and rail subassemblies and, once you are happy with the fit, glue and clamp them together.

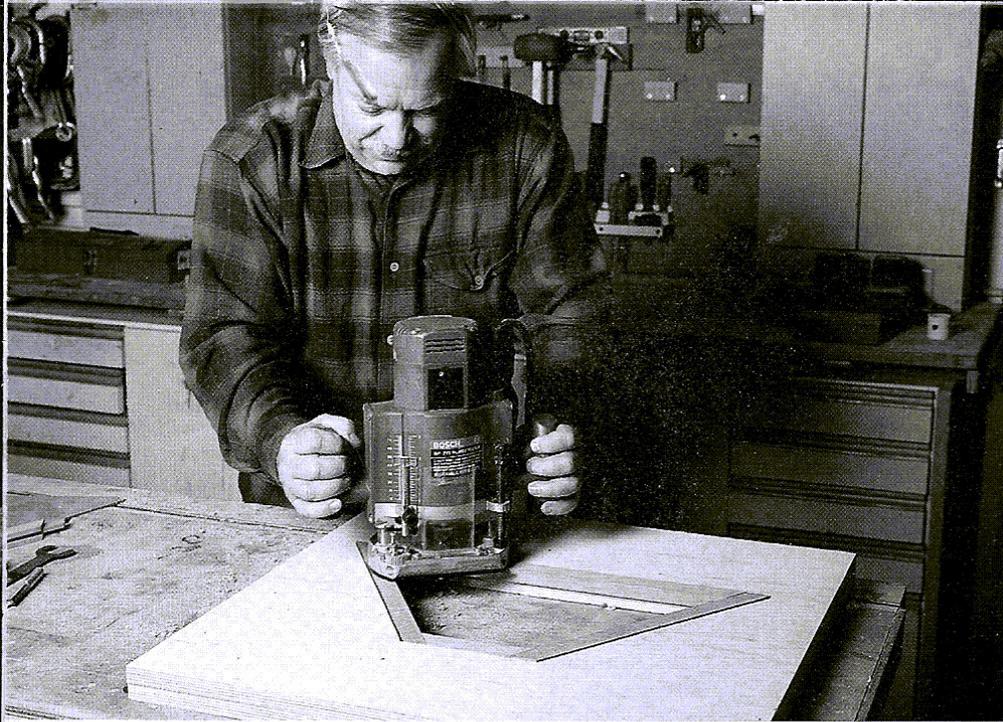


Figure 4: Use a rabbeting bit and a shop-made jig to safely and accurately rabbet the back of the shade frames. Homemade jigs are the key to success with this Prairie project.

With that task complete, create a routing jig like the one shown above, using the details provided in the **Pinup Shop Drawings**. This is a two-level jig which holds the frames securely as you rout the rabbet for the glass into their back faces (see **Figure 4**). When you have routed all of the rabbets, use a sharp chisel to extend the rebate into the corners of the frames.

Bevel Away

Two new jigs are required to miter the joining edges of the shade frames. These jigs allow you to make essentially the same cut, but on opposite sides of the frame. It's a simple operation to do with these

jigs, but nearly impossible without them. The jigs hold the frame's stiles exactly parallel to the saw blade while you slice 31° chamfers on their edges. See the sidebar below for more details.

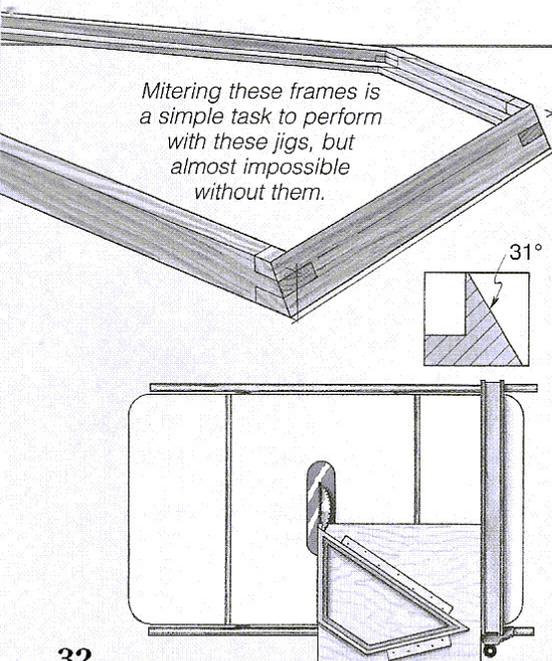
Assembly

Now for the fun part. Once the miters are cut, it's time to assemble the shade frames. I hinged three of the four joints with clear packing tape. Next, apply yellow glue, fold the frame together, and tape the fourth joint. Then use whatever combination of web, squeeze, hand and any other of clamps you can think of to complete the clamp-up. (Just be absolutely sure the glue-up

is square!) Cut the shade cap (piece 15) to size and test fit it to the shade frame subassembly. When it fits well, lay out the ventilation slots and the location of the two-step boring at the cap's center. Step over to your drill press and remove most of the waste from the ventilation slots with a drill bit. Then bore the stopped and through hole to accommodate the lamp harp's mounting bolt. Move to a scroll saw and clean up the ventilation slots. Glue the shade cap in place. After the glue cures, sand the shade carefully through the grits.

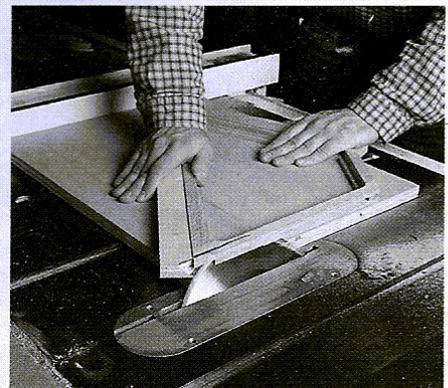
Details

A few more steps and you are on the home stretch. Rip a length of shade frame retaining stripping (piece 16) to use for securing the shade glass (pieces 17) into the rabbet you routed earlier. Read through *Hardware Hints* (see page 10) to learn the finer points about the lamp hardware kit (piece 18). To enhance the appearance of the kit, create a pyramid shaped hardware cap cover (piece 19) and epoxy it to the

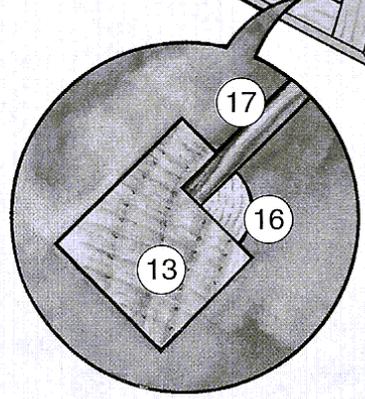
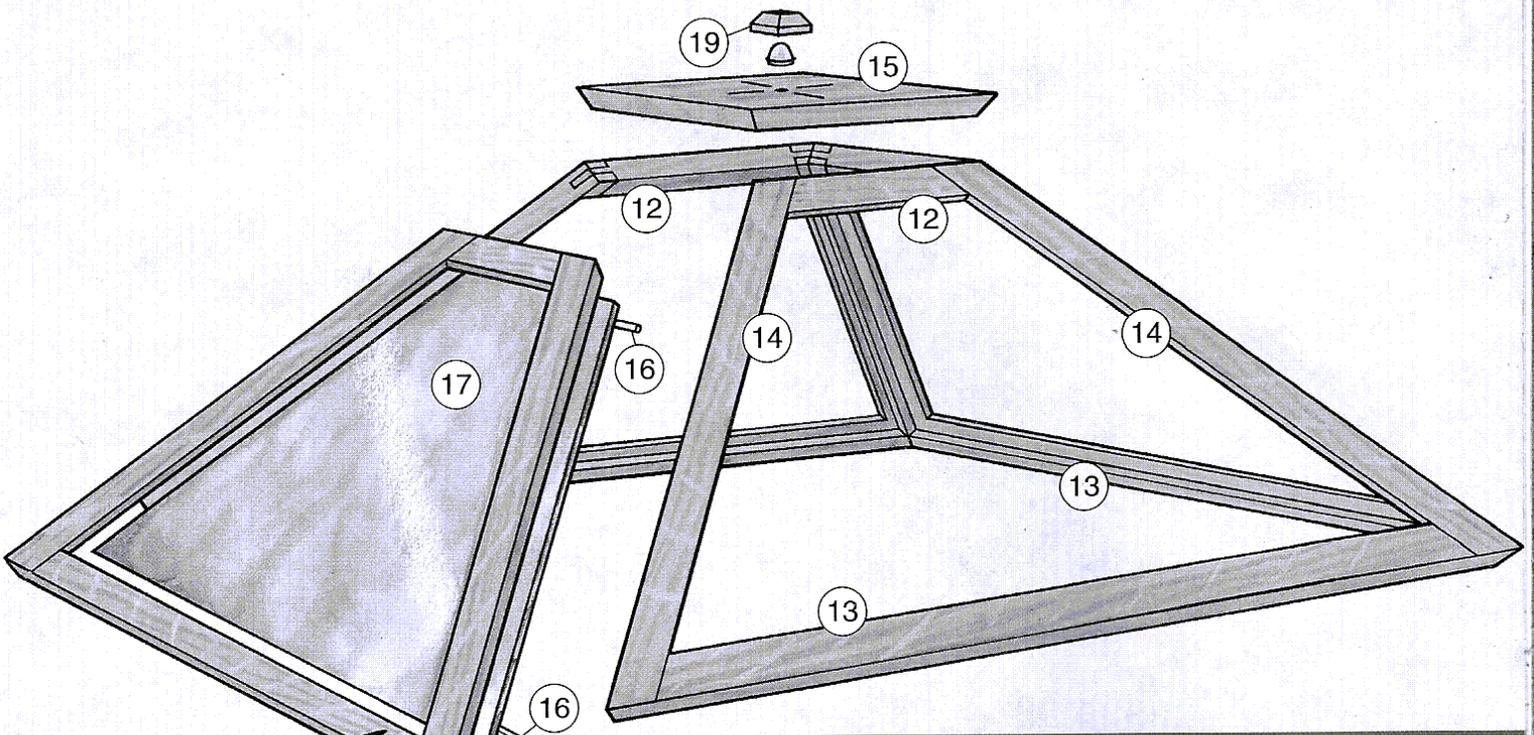


How to cut perfect compound miters

I made the two jigs shown at right to miter the frames accurately (see the Pinup Shop Drawings). They hold the stiles parallel to the saw blade during the cuts. The geometry of the shade frame requires that a jig be made for both the left and right cuts. Use some scrap sheet stock to test the fit of the miters. Your saw's angle scale may be a bit off, and if you multiply that variance by the four joints, it will never fit ... no matter how many times you cut it!



The first jig miters the left side of the frames.



Retaining Strip Detail

MATERIAL LIST (Shade Frames)

	T x W x L
12 Shade Frame Top Rails (4)	3/4" x 7/8" x 67/8"
13 Shade Frame Bottom Rails (4)	3/4" x 7/8" x 20 1/8"
14 Shade Frame Stiles (8)	3/4" x 7/8" x 13 1/4"
15 Shade Cap (1)	1/2" x 5 3/4" x 5 3/4"
16 Shade Frame Retainer Stripping (1)	1/4" x 44" Quarter round
17 Shade Glass (2)	Cut to fit. Kokomo brand
18 Lamp Hardware Kit (1)	Brass kit with 7 1/2" harp
19 Hardware Cap Cover (1)	5/8" x 1" x 1"
20 Cork Feet (8)	1/16" x 5/8" Dia.

metal retaining nut. Mount the lamp hardware in the lamp. You may have to cut the center brass rod down in length a bit. When it all fits correctly, take it back out until you are done finishing.

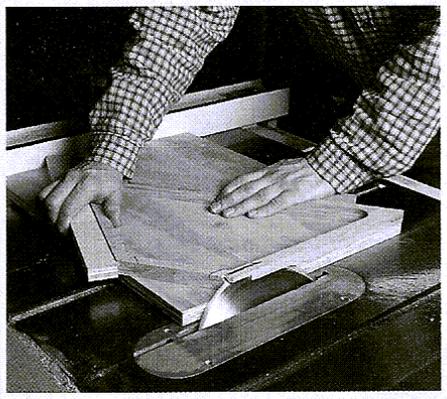
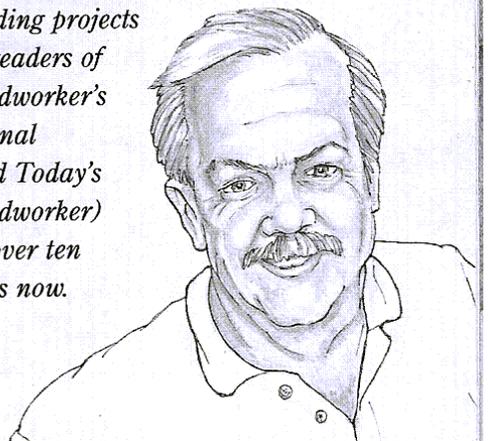
Just a note of caution: do not order your glass until you have completed making the shade. Make a template for your glass from heavy card stock, and use it to have your art glass cut.

Finishing

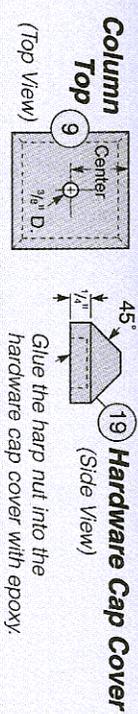
Use the advice provided by Michael Dresdner to choose an appropriate finish. I chose to fume my lamp and loved the results. I did, however, forget to remove the metal lamp hardware and discolored the brass.

After the finish is complete, install the glass with the retaining strips and apply the self sticking cork feet (pieces 20). Re-install the hardware, attach the electric wires and screw in a light bulb. (I chose a clear glass bulb.) Then sit back and bask in the glow of a well-made project.

Rick White, our long-time contributing editor, has been building projects for readers of Woodworker's Journal (and Today's Woodworker) for over ten years now.

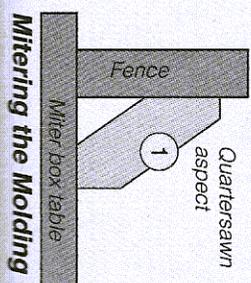
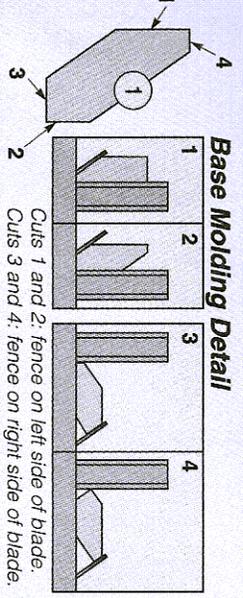
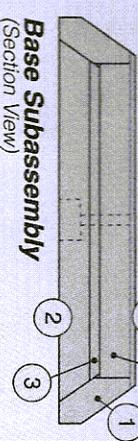
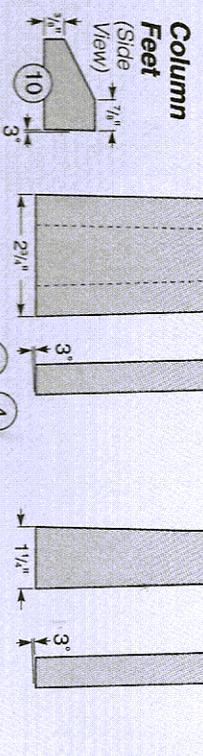
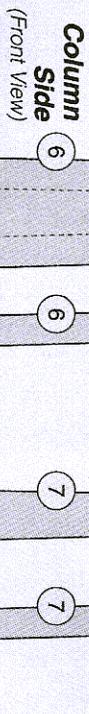


The second jig miters the right sides.

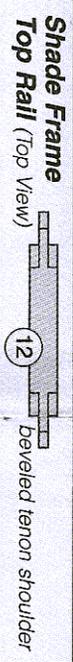


Glue the harp nut into the hardware cap cover with epoxy.

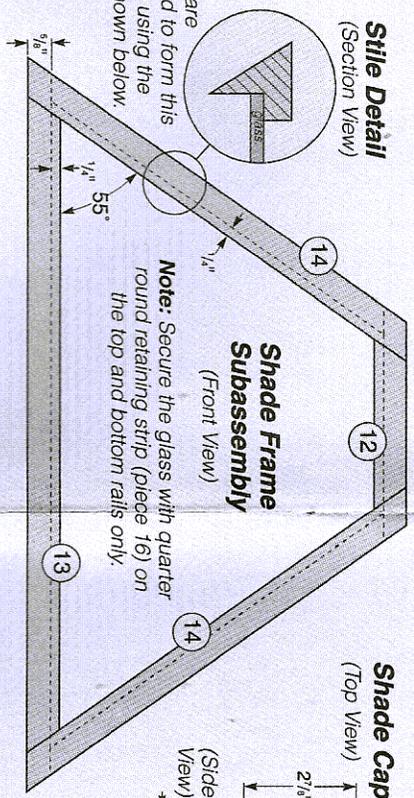
NOTE: Angle the top and bottom edges of the column pieces before you taper their sides.



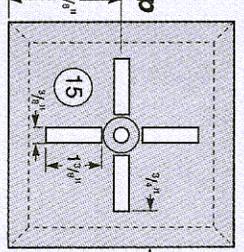
NOTE: Mitering the base molding around the base panel subassembly is best done with a miter box saw (power or not... your choice). Set the shaped stock against the fence as shown here, and miter away!



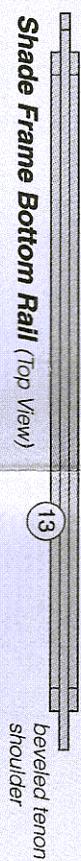
Shade Frame Top Rail (12)
(Top View)



Note: Secure the glass with quarter round retaining strip (piece 16) on the top and bottom rails only.



Shade Cap (15)
(Top View)

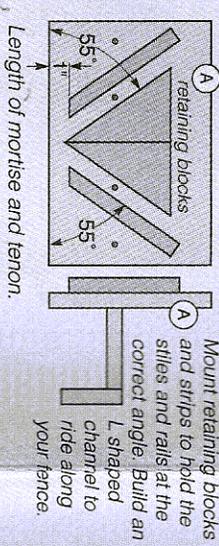


Shade Frame Bottom Rail (13)
(Top View)

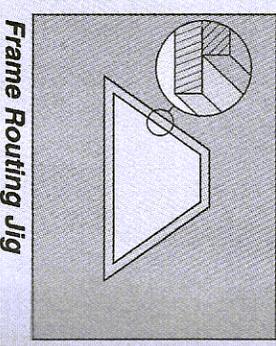


Shade Frame Retainer Strip (16)
(End View)

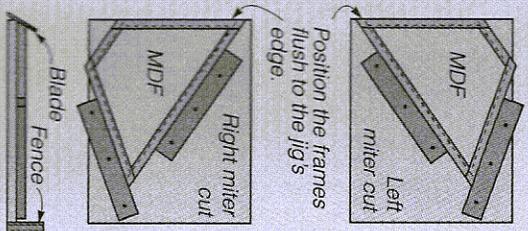
Table Saw Mortise and Tenon Jig



Mount retaining blocks and strips to hold the stiles and rails at the correct angle. Build an L shaped channel to ride along your fence.



To build the frame routing jig, trace your shade frame onto two pieces of 3/4\"/>



Frame Mitering Jigs
(See sidebar on page 32)
To miter the shade frame stiles, build two jigs, one for the left side cut and one for the right. Use 3/4\"/>

MATERIAL LIST

	T x W x L	T x W x L
1 Base Molding (1)	3/4" x 2 1/8" x 45"	11 Column Screws (4)
2 Base Bottom Panel (1)	3/4" x 9" x 9"	12 Shade Frame Top Rails (4)
3 Base Spacer (1)	1/4" x 8" x 8"	13 Shade Frame Bottom Rails (4)
4 Base Top Panel (1)	3/4" x 7 1/8" x 7 1/8"	14 Shade Frame Stiles (8)
5 Base Veneer (1)	1/8" x 8 1/2" x 8 1/2"	15 Shade Cap (1)
6 Column Sides (2)	3/4" x 2 3/4" x 15"	16 Shade Frame Retainer Stripping (1)
7 Column Inserts (2)	3/4" x 1 1/4" x 15"	17 Shade Glass (2)
8 Column Veneer (2)	1/8" x 3" x 15"	18 Lamp Hardware Kit (1)

