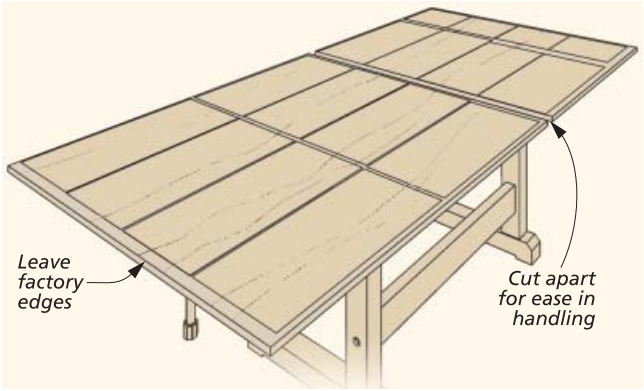
Easy-to-Build

CHERRY BOOKCASE

When you think of a plywood bookcase, one of the first things that comes to mind is something cheaply built, not very sturdy, and barely functional.

This design changes all that. Using just one sheet of $^{3}/_{4}$" plywood, some cherry facing, and a few basic joinery techniques, you can build this *expensive-looking* bookcase in just one weekend and not spend a lot of money doing it.

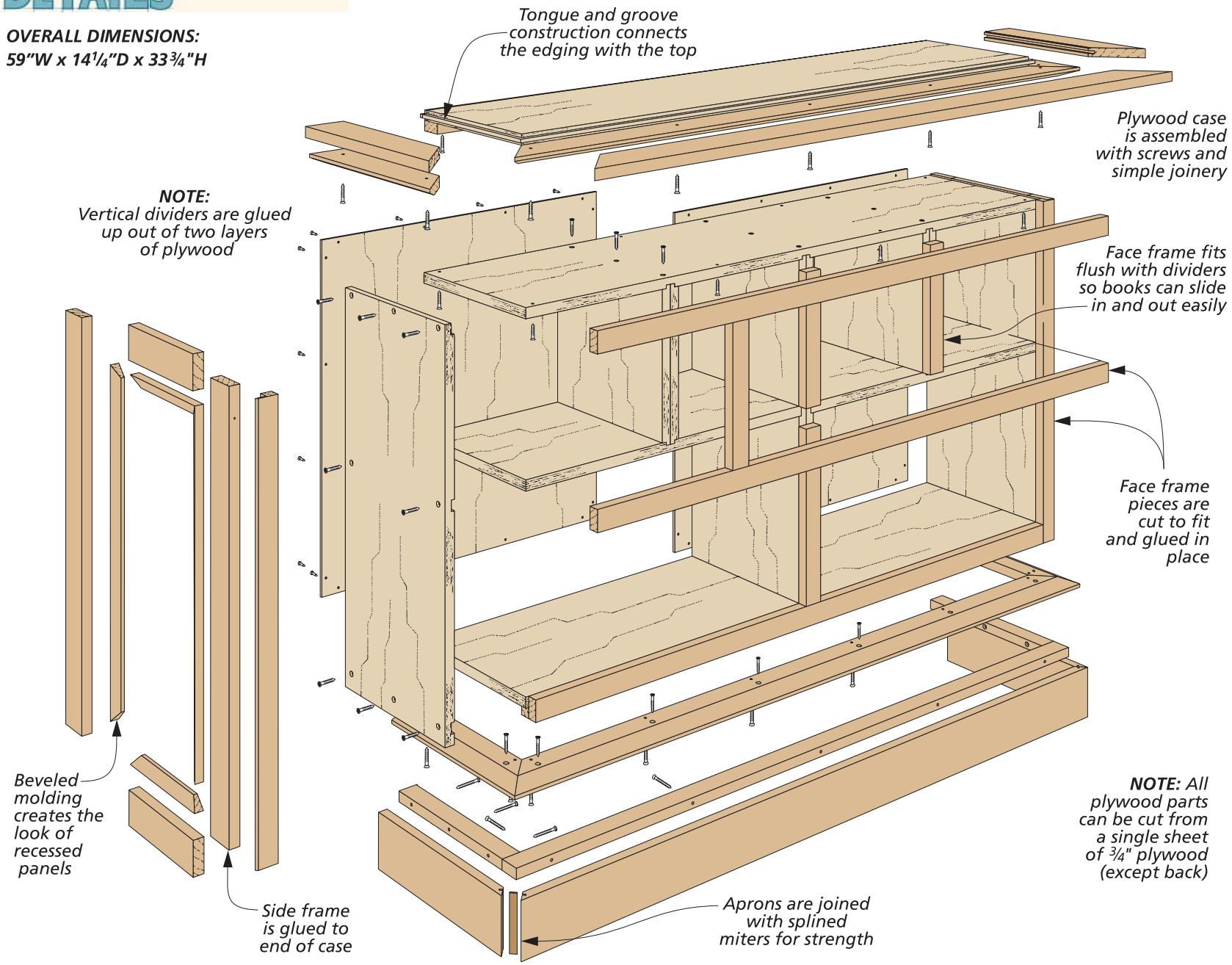
To keep the project to only one sheet, you'll want to spend some time laying out all of the plywood parts before you start (see drawing below). It's easier to lay out each piece a bit larger than is called for and make your final cuts as needed.

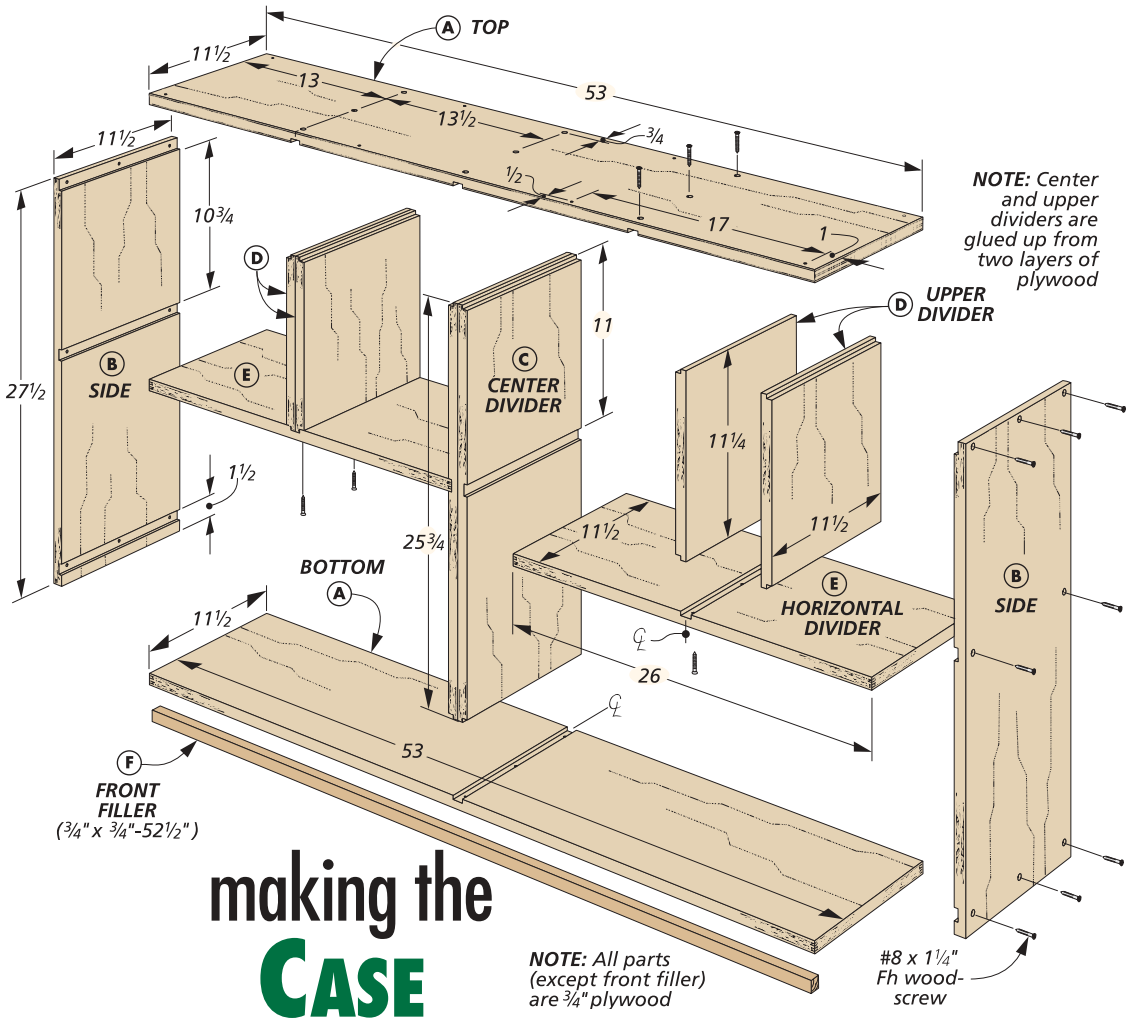


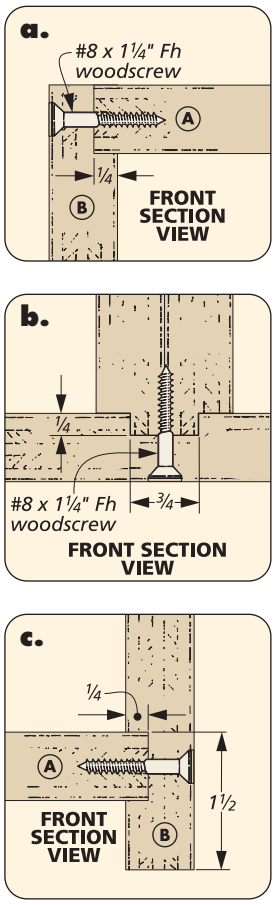
Plywood Layout. *All you'll need for this project is a single sheet of plywood. Careful attention during layout will help you accurately size the pieces and maintain the grain orientation.*

CONSTRUCTION DETAILS

OVERALL DIMENSIONS:
59"W x 14¼"D x 33¾"H







making the CASE

This bookcase is essentially a box made up of interlocking plywood panels. Then a face frame, base, top, and back are added to dress up the appearance of the case.

THE PANELS. Begin by cutting out the plywood panels for the top, bottom, sides, and dividers. One of the unusual things about this bookcase is the fact that the vertical dividers are actually made up of two layers of plywood. And if you take a close look, you'll notice that the width of the face frame stiles is sized to match. This way, books slide easily out of the case without hanging up.

To make the vertical dividers, I started by gluing together two slightly oversized pieces of plywood. Once the glue dries, you can trim each divider to final size.

TONGUES, DADOES, & RABBETS. The joinery used to assemble the case is pretty straightforward. It's just a series of tongues, dadoes, and rabbets. But before you cut any of the joints, you'll want to be sure to check the thickness of your plywood.

In most cases, plywood is slightly *under* ¾" thick. This can make joinery a challenge. So I used the methods shown in the box at left to ensure a good fit.

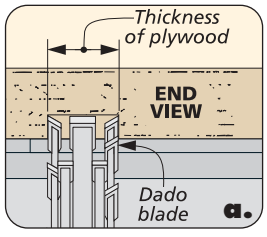
To create the tongues on the ends of the *center* and *upper dividers (C, D)*, I cut rabbets along both ends of each piece (detail 'b'). With a dado blade and an auxiliary fence, you can "sneak up" on the final size.

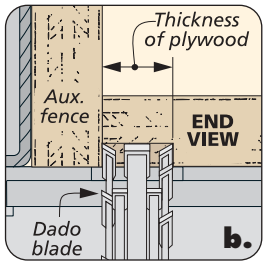
CASE ASSEMBLY. At this point, it's a good idea to dry assemble the case. This way, you can check for square and drill all the pilot holes. Once that's complete, add the glue and screw the case together. You don't have to worry about clamps here, the screws will take care of that.

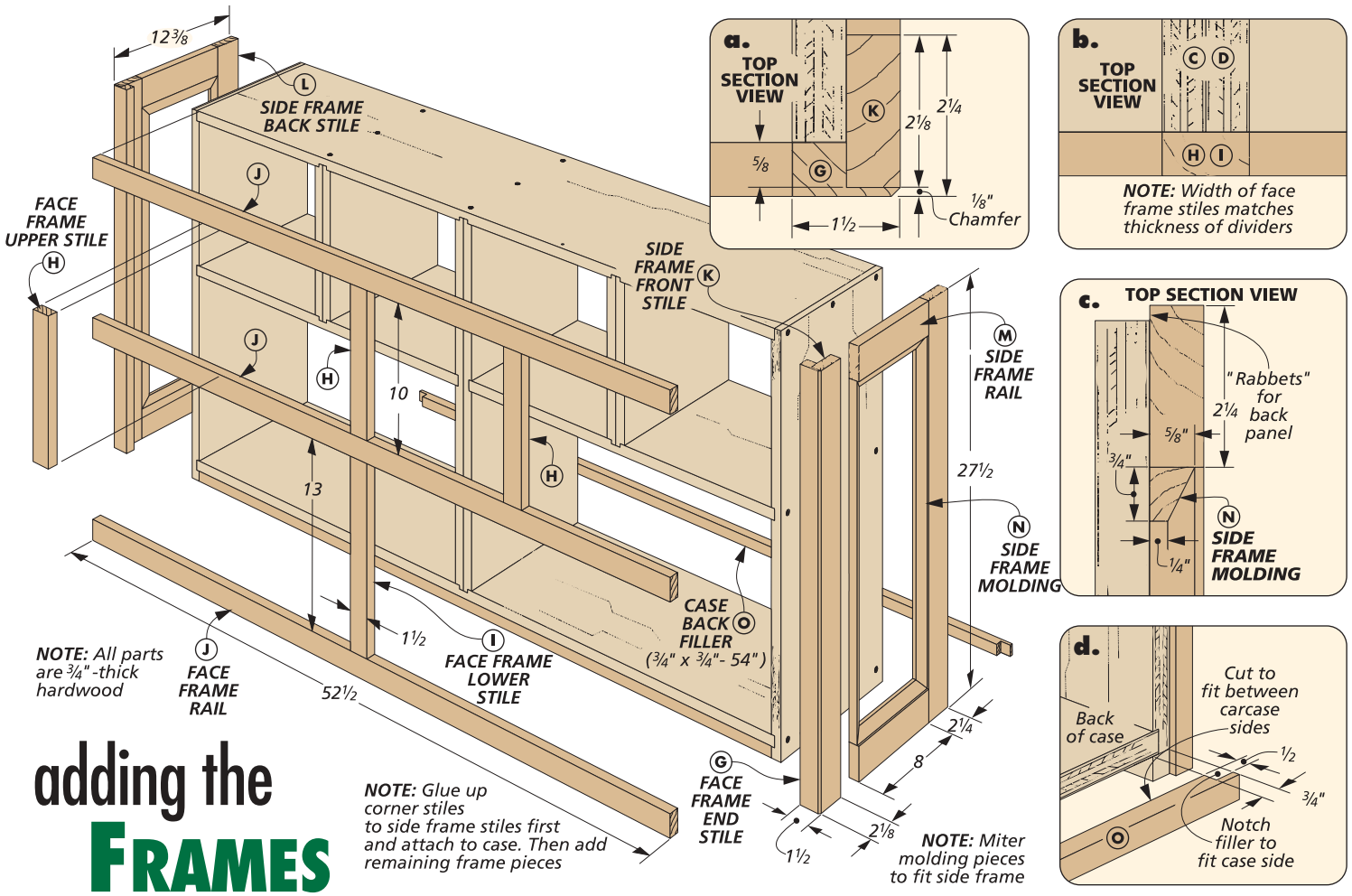
How-To: Cut Dadoes & Rabbets

Dadoes. *For a good fit, size your dado blade to match the thickness of your plywood (detail 'a'). Then simply cut the dadoes at the locations shown in the drawing above.*

Rabbets. *Once the dadoes are complete, cut the rabbets using the same dado blade setup. To protect your rip fence, it's a good idea to add an auxiliary fence (detail 'b').*







adding the FRAMES

To "dress up" the plywood case, I added face frames to the front and sides. If you take a look at the drawing above, you'll see how I did this.

Instead of building each frame separately and then trying to fit them together, I found it easier to build the "corners" of the frames first and then add the rest of the face frame parts by working out from each of the corners.

Each corner is made up of a *face frame end stile (G)* that's rabbeted to accept a *side frame front stile (K)*, as in detail 'a' above. To make the rabbeted stiles, I worked with an oversized workpiece (left box below).

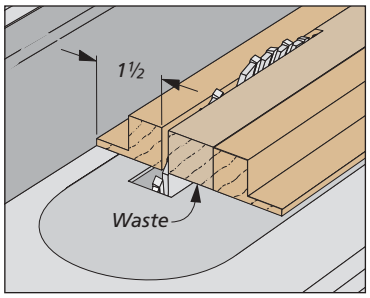
Once you've cut the two parts of the corner, you can glue them together. And then to ease the sharp edge, I routed a small chamfer (detail 'a'). Finally I glued each of the corners to the case.

To complete the rest of the face frame, all you have to do is cut the remaining rails and stiles to fit and simply glue them in place.

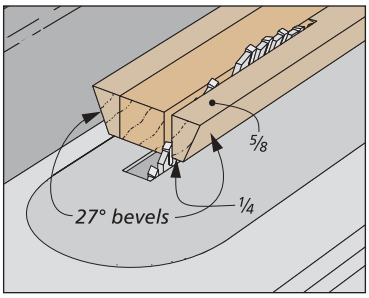
MOLDING. To give the sides of the bookcase the look of frame and panel construction, I added some *molding (N)* to the inside edges of each frame as illustrated in detail 'c' above. In the second drawing at left you can see how I used the table saw to cut the molding from an oversize workpiece. Once the molding is complete, you can miter the pieces to length and glue them around the inside of the side frame rails and stiles.

FILLER STRIP. Before moving on to the base, I added a *case back filler (O)*. To fit around the sides of the case, the ends of the filler are notched, as shown in detail 'd.'

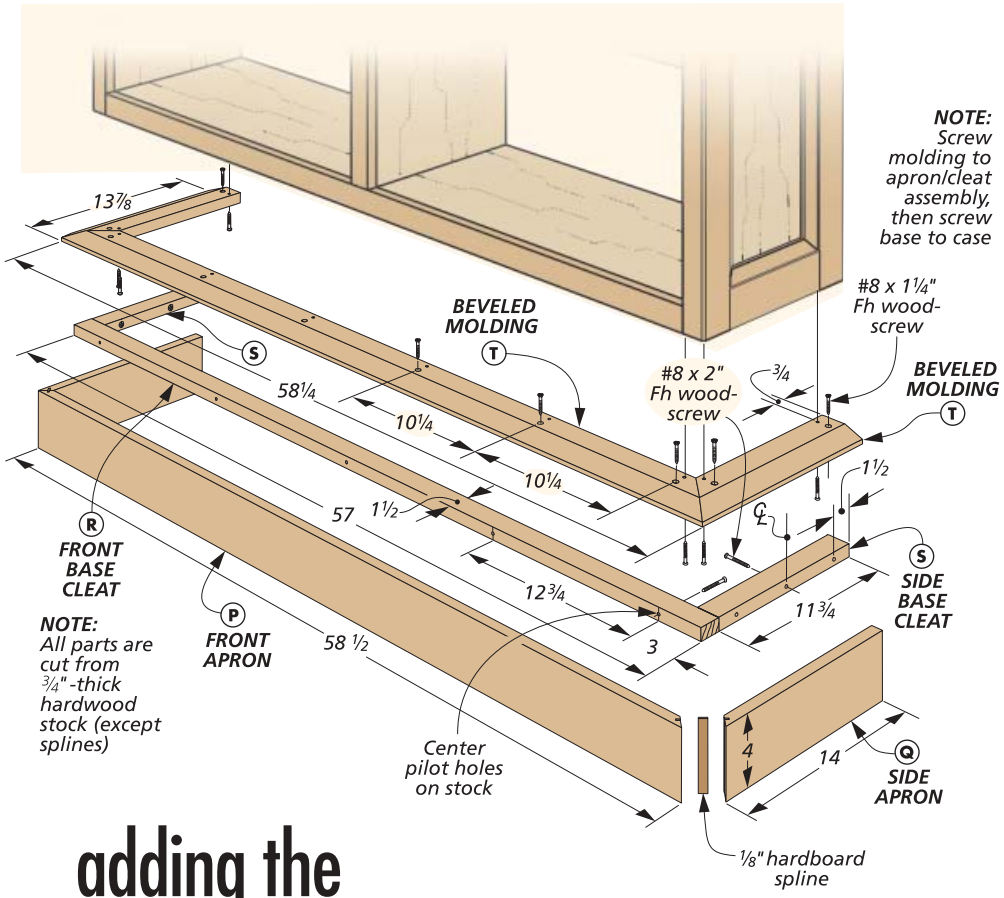
Shop Tip: Corner Face & Molding

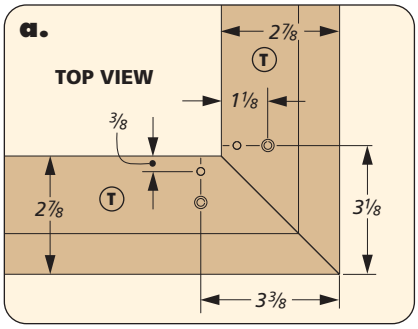


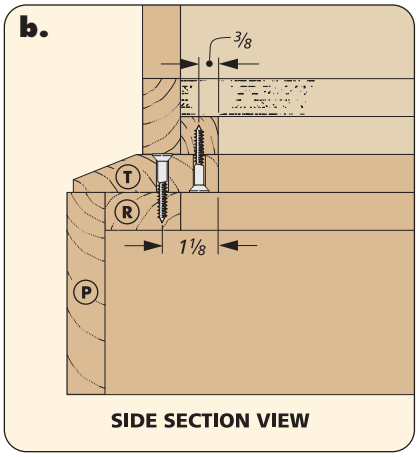
End Stile. *To make the end stiles, cut rabbets along the edges of an extra-wide workpiece. Then simply rip the stiles to final width.*



Side Frame Molding. *Cut 27° bevels along the outside edges of a piece of 3"-wide cherry and then cut the molding to final size.*







adding the BASE & TOP

Now that you have the face frame completed, you can next turn your attention to making the base and the top of the bookcase.

THE BASE. As shown in the drawing above, the base consists of a simple apron capped off with some beveled molding. A few cleats help hold everything together and provide a means for attaching the base to the bottom of the case.

I started with the aprons. The *front* and *side aprons (P, Q)* are joined with splined miter joints (see the photo in the box below). The drawing in the first box below shows you how to make this joint on your table saw.

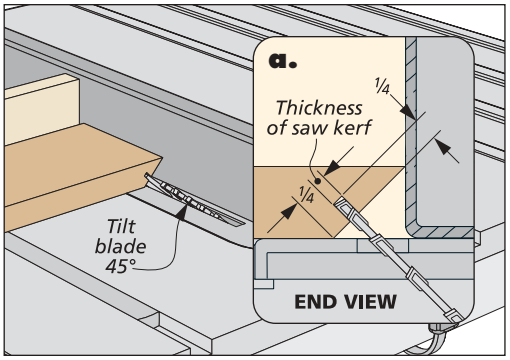
Before assembling the aprons, I cut the *base cleats (R, S)* to size from ¾"- thick hardwood stock. To strengthen the aprons during assembly, I screwed the front cleat to the back of the front apron. Then after gluing up the aprons, you can add the two side cleats.

MOLDING. The molding for the base is nothing more than a piece of hardwood with a wide bevel cut on one face (see box below). Since this molding is identical to the molding that will be used at the top of the bookcase, you might want to make enough for both assemblies at this time.

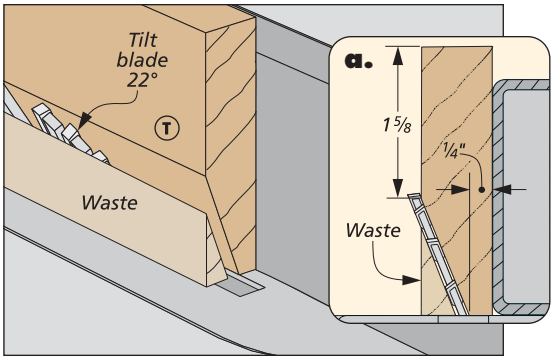
BASE ASSEMBLY. To attach the base to the case, start by gluing and screwing the *beveled molding (T)* to the top of the apron and cleat assembly. Then you can screw the

How-To: Miter and Spline & Bevel Molding

▲ *A hardboard spline adds strength to the miter joint in the apron of the bookcase.*



Base Corner Spline. *After mitering the corners of the apron, leave your saw blade tilted to 45° and make a pass along the face of the miter.*



Bevel Molding. *With blade tilted to a 22° angle, set the fence ¼" from the blade and cut the bevel for the top and bottom molding.*

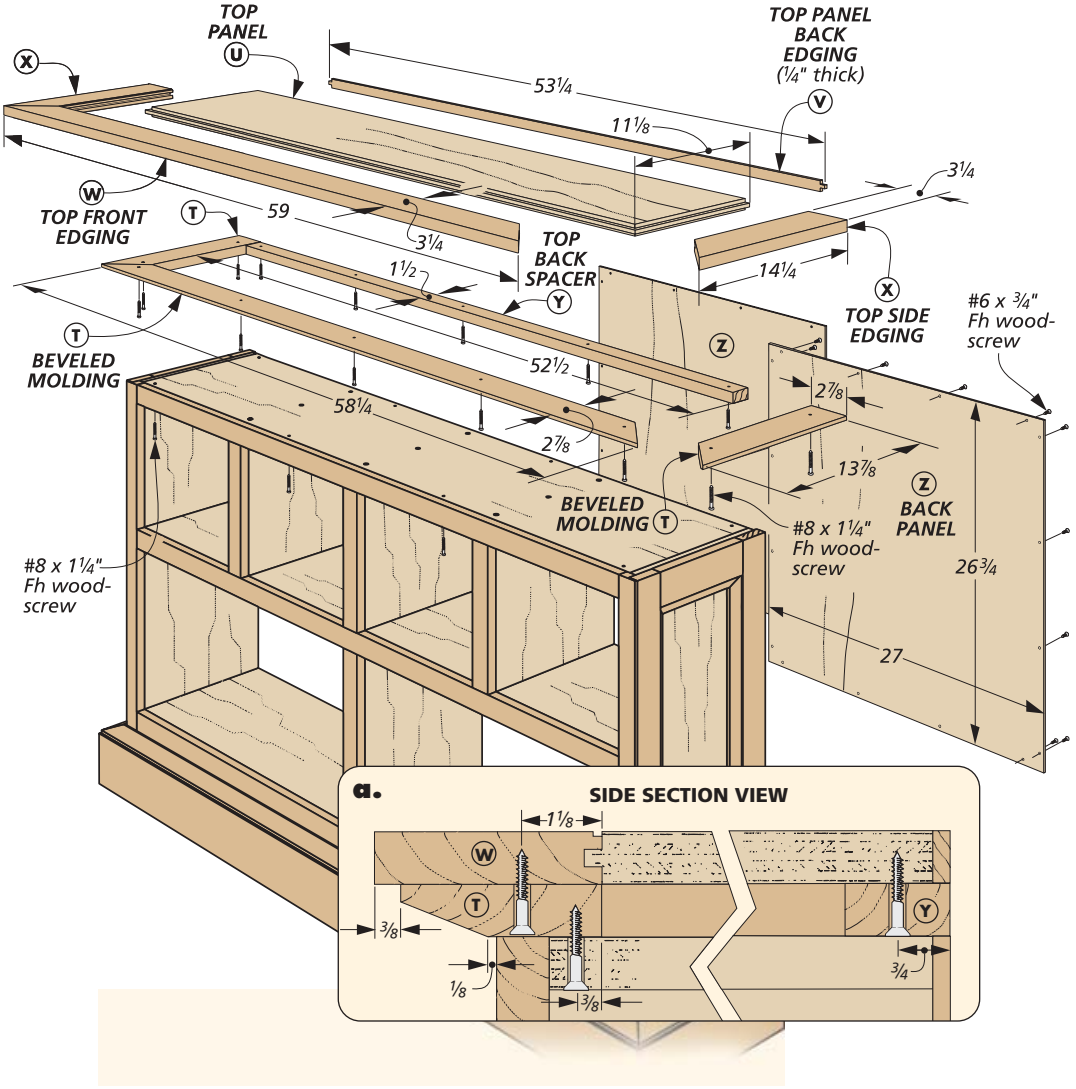
completed base to the bottom of the case (detail 'b' left).

MAKE THE TOP. Like the base, the top is also made up of several pieces. The main section of the top is a plywood panel surrounded by mitered edging on three sides. Sandwiched between the panel and the case is the molding that you cut earlier (detain 'a' at right).

To make the top, I started by cutting a *top panel (U)* to rough size from $^3/_4$" cherry plywood. Because only the front and ends of this panel will be covered by the mitered edging, I added a narrow strip of hardwood *edging (V)* to the back edge of the panel. Then I cut the top panel to final size on my table saw.

TOUNGE AND GROOVE. The mitered top *edging (W, X)* is attached to the top panel with a tongue and groove joint. A groove is cut along the inside of the edging pieces and a tongue is cut along the front and both sides of the top panel. The boxes below shows how to do this.

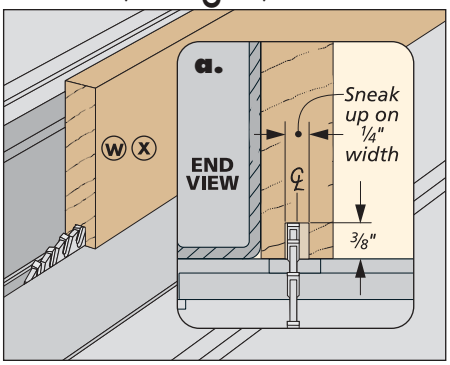
SHADOW LINE. I wanted to create a decorative shadow line around the top panel, so I cut a small rabbet along the top, inside edge of the front and side edging pieces, as shown in the third drawing below. I used a rip blade here to leave a nice, flat bottom on the rabbet. Once this is done, you can miter the edging to length and glue it in place to the top panel.



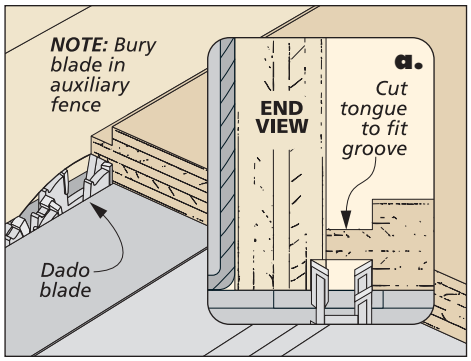
ASSEMBLY. Before attaching the top to the case, you'll need to add the *beveled molding (T)* and a *top back spacer (Y)* to the top panel. Then you can screw the entire top assembly in place (detail 'a' above).

BACK. All that's left is to add a plywood back. Since I wanted the grain to run vertically, I made the back in two pieces. After cutting the plywood *back panels (Z)* to size, screw them in place as shown in the drawing above. W

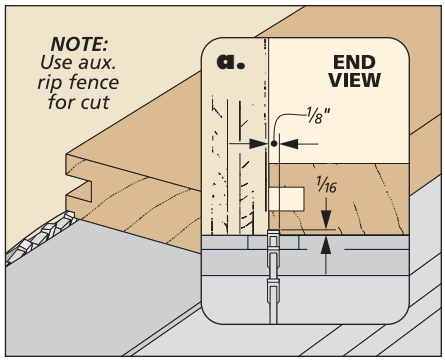
Groove, Tongue, & Shadow Line



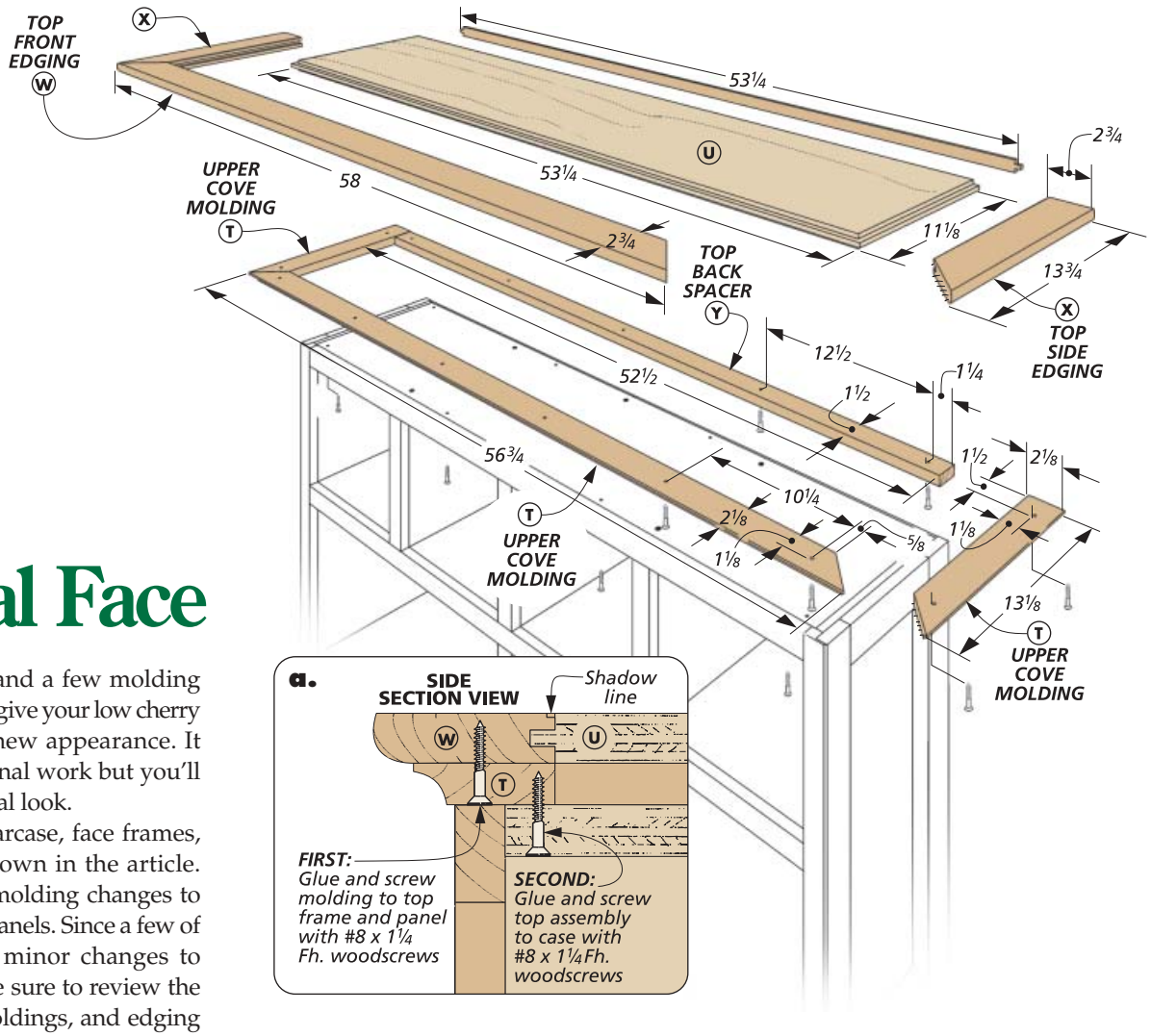
Center the Groove. *Set your fence so the blade cuts to the centerline. Make a pass, then turn the stock and make a second pass.*



Cut the Tongue. *Set the rip fence to match the length of the tenon. After making a pass, flip the stock over and make a second pass.*



Make the Shadow Line. *Make a pass along the top of the piece. A rip blade makes a flat bottom for the shadow line.*



Optional Face

With a different base and a few molding profile changes you can give your low cherry bookcase an entirely new appearance. It won't take any additional work but you'll notice a more traditional look.

You can build the carcase, face frames, and side frames as shown in the article. Then add some cove molding changes to the top, base and side panels. Since a few of the dimensions have minor changes to reflect the new look, be sure to review the sizes of the aprons, moldings, and edging pieces before you begin work.

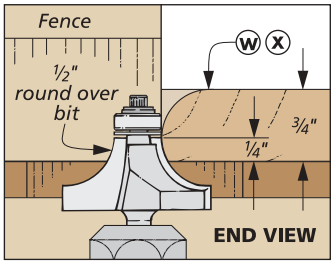
TOP EDGING. The top is built as described in the article. But to change the appearance I added a bullnose to the *front edging (W)* and *side edging (X)* pieces. I made the bullnose on the router table. The technique I used is shown in the first two boxes below.

Since you'll be using the same edging for the bottom of the bookcase, it's a good time to cut enough edging for both the top and bottom and then add the bullnose treatments to each piece.

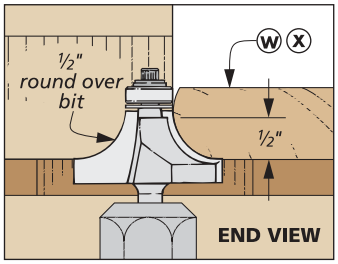
COVE MOLDING. I next made *cove molding (T)* for the top and base treatments to substitute for the beveled molding in the original project. The third box below shows you how this is done.

SIDE PANELS. Instead of beveled molding around the side panels I used a narrow *cove molding* (N). You can see how this narrow

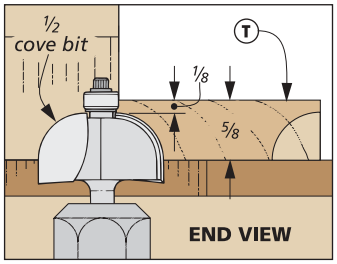
How-To: Make A Bullnose & Cove Moldings



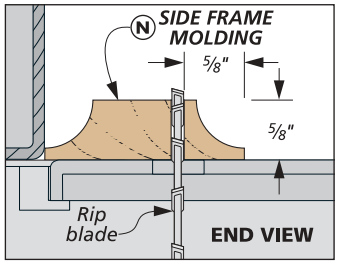
Bullnose Top. *Just mount a ½" round over bit in the router table ¼" above the table and rout the top edge of the workpiece.*



Bullnose Bottom. *Next set the round over bit ½" above the table. Then turn the workpiece over and rout the bottom edge.*



Cove Molding. *Just mount your ½" cove bit to sit ⅝" above the router table and rout a cove along the side of the workpiece.*



Narrow Cove Molding. *Rout a cove along each side of a wide workpiece and then cut to the desired width on your table saw.*

cove molding was made using the router and table saw in the last box on the previous page The molding is then glued inside the side frame .

TOP ASSEMBLY. One of the things you'll find different from the original project description is the way in which the top and bottom of the bookcase are assembled and screwed together. Let's take a look at the top assembly first.

The top is assembled in two steps, as shown in detail 'a' on page 7. This allows for an easy and secure assembly of the top components of the bookcase.

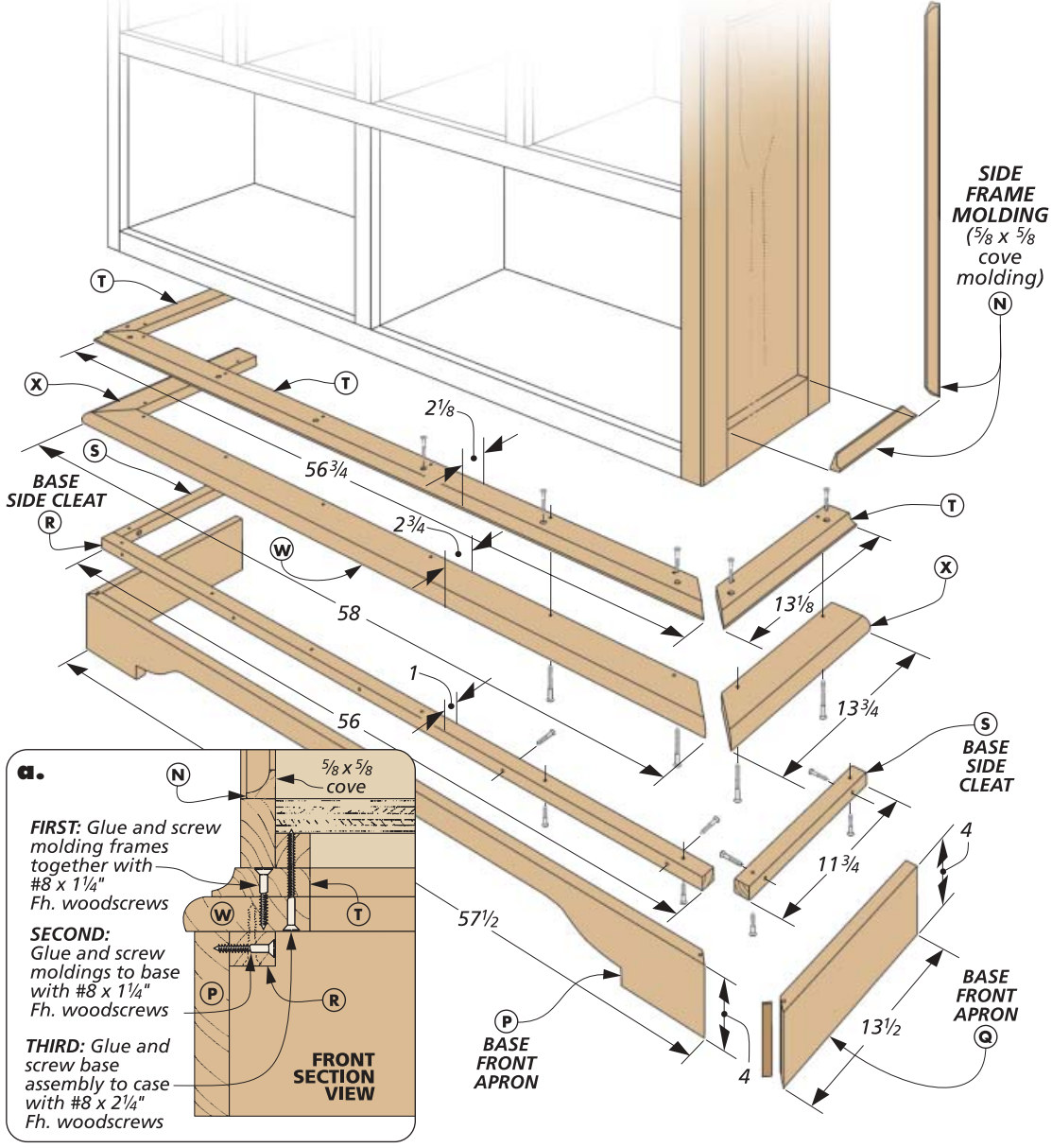
The first step is to add glue and then screw the cove molding to the bullnosed front and side edging from the bottom. Next you'll want to screw the top assembly to the carcase from below, as shown in detail 'a' on page 7.

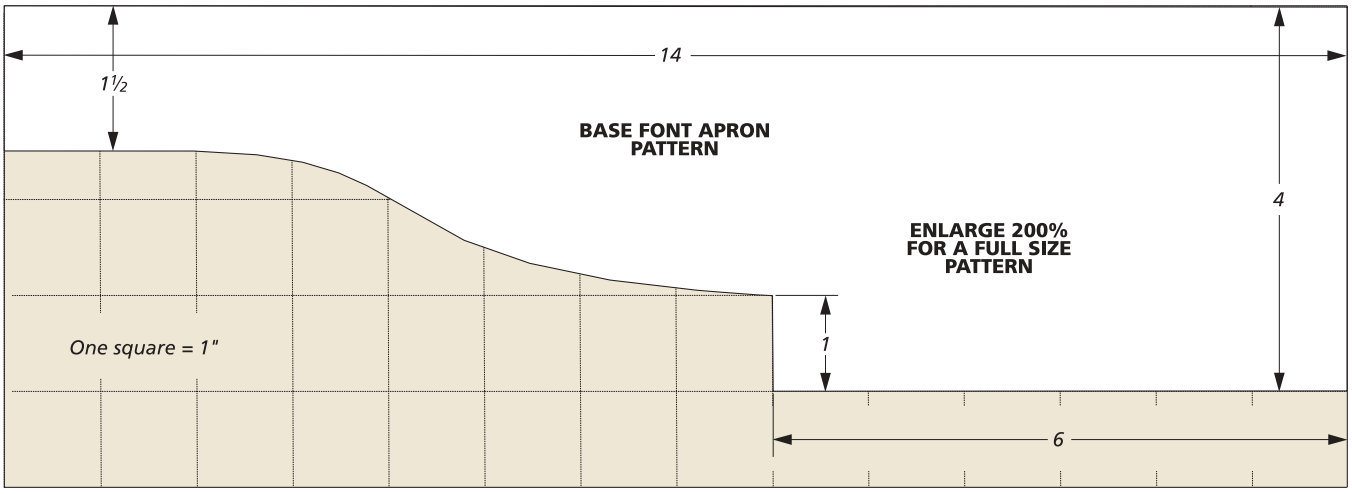
BASE APRON PROFILE. I added a new profile to the *base front apron (P).* Enlarging the template at the bottom of the page 200% will give you a full size pattern of this new profile. I used my jig saw to cut this profile in the front apron. Then base front and side pieces are put together as described in the article.

BASE ASSEMBLY. The base of the bookcase is assembled in three steps as shown in detail 'a' at the right. Again this allows easy assembly and a secure fit.

You'll first want to screw the cove molding to the bottom edging pieces. Next screw the base cleat to the apron and bottom pieces. And finally, use screws to secure the bottom edging throughthecove molding and into thefrontfiller already attached to the carcase.

With the base securely fastened to the carcase, all that's left to do is to cut the back panels to size and screw them in place. W



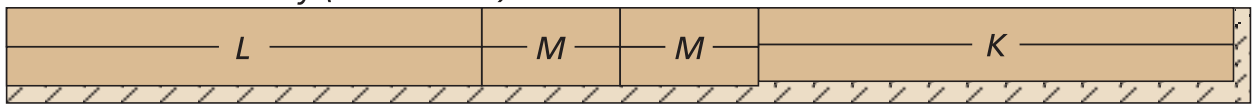


Materials, Supplies, & Cutting Diagram: Easy-to-Build Cherry Bookcase

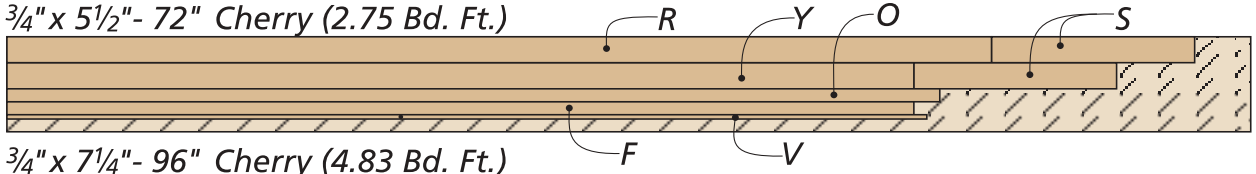
A	Case Top/Bottom (2)	¾ ply. - 11½ x 53
B	Case Sides (2)	¾ ply. - 11½ x 27½
C	Case Center Dividers (2)	¾ ply. - 11½ x 25¾
D	Case Upper Dividers (4)	¾ ply. - 11½ x 11¼
E	Case Horizontal Dividers (2)	¾ ply. - 11½ x 26
F	Case Front Filler (1)	¾ x ¾ - 52½
G	Face Frame End Stiles (2)	¾ x 1½ - 27½
H	Face Frame Upper Stiles (3)	¾ x 1½ - 10
I	Face Frame Lower Stile (1)	¾ x 1½ - 13
J	Face Frame Rails (3)	¾ x 1½ - 52½
K	Side Frame Front Stiles (2)	¾ x 2⅛ - 27½
L	Side Frame Back Stiles (2)	¾ x 2¼ - 27½
M	Side Frame Rails (4)	¾ x 2¼ - 8
N	Side Frame Molding (1)	¾ x ⅝ - 130 rgh.
O	Case Back Filler (1)	¾ x ¾ - 54
P	Base Front Apron (1)	¾ x 4 - 58½
Q	Base Side Aprons (2)	¾ x 4 - 14
R	Base Front Cleat (1)	¾ x 1½ - 57
S	Base Side Cleats (2)	¾ x 1½ - 11¾
T	Beveled Molding (2)	¾ x 2⅞ - 90 rgh.
U	Top Panel (1)	¾ ply. - 11⅛ x 53¼
V	Top Panel Back Edging (1)	¼ x¾ - 53¼
W	Top Front Edging (1)	¾ x 3¼ -59
X	Top Side Edging (2)	¾ x 3¼ - 14¼
Y	Top Back Spacer (1)	¾ x 1½ - 52½
Z	Back Panels (2)	¼ ply. - 27 x 26¾

- (76) #8 x 1¼ Fh Woodscrew
- (11) #8 x 2 Fh Woodscrew
- (32) #6 x ¾ Fh Woodscrew

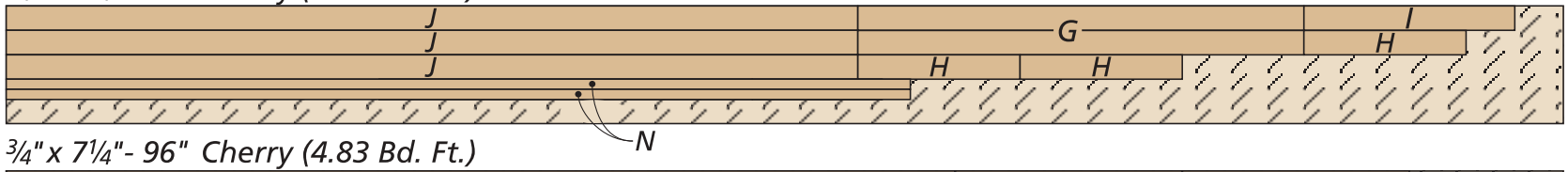
¾"x 5½"- 72" Cherry (2.75 Bd. Ft.)



¾"x 5½"- 72" Cherry (2.75 Bd. Ft.)



¾"x 7¼"- 96" Cherry (4.83 Bd. Ft.)



¾"x 7¼"- 96" Cherry (4.83 Bd. Ft.)

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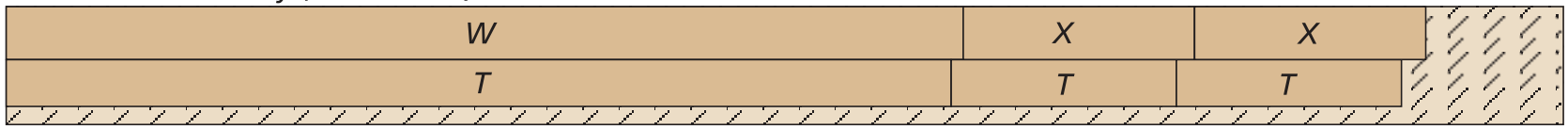
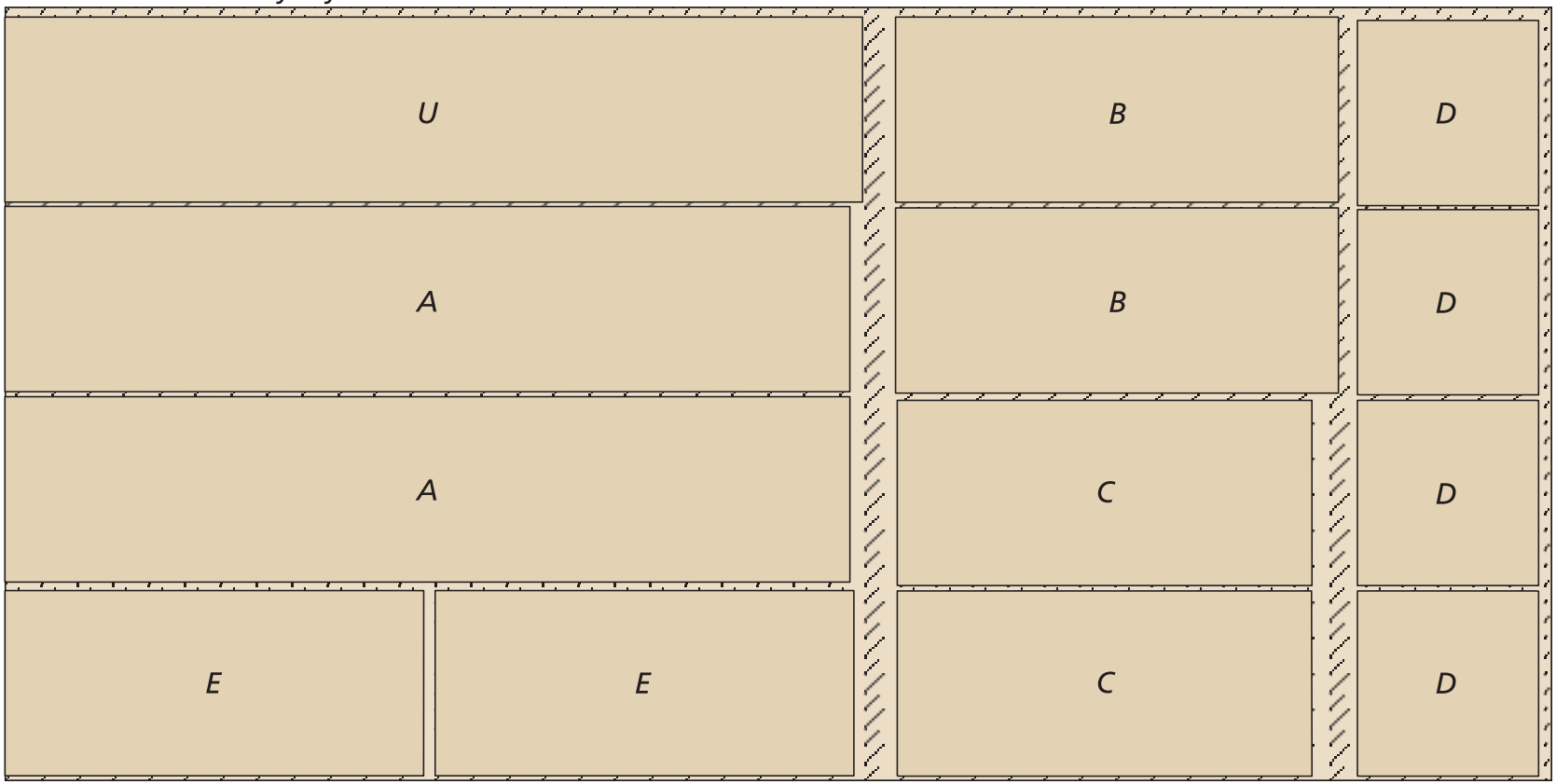


¾" - 48" x 96" Cherry Plywood



ALSO NEEDED: One - 48" x 96" sheet ¼" Cherry plywood