



Woodsmith **PLANS**

TV CABINET



WIDE-SCREEN TV CABINET

Simple lines, classic joinery, and lots of storage combine to make this project both functional and great-looking.



Televisions have changed a lot over the years. So it's only natural that the cabinets and stands that house them have also changed. The sleek, low-profile design of this TV cabinet fits right in with today's flat-panel televisions. Your television will look right at home sitting

on top of the cabinet or mounted on the wall behind it.

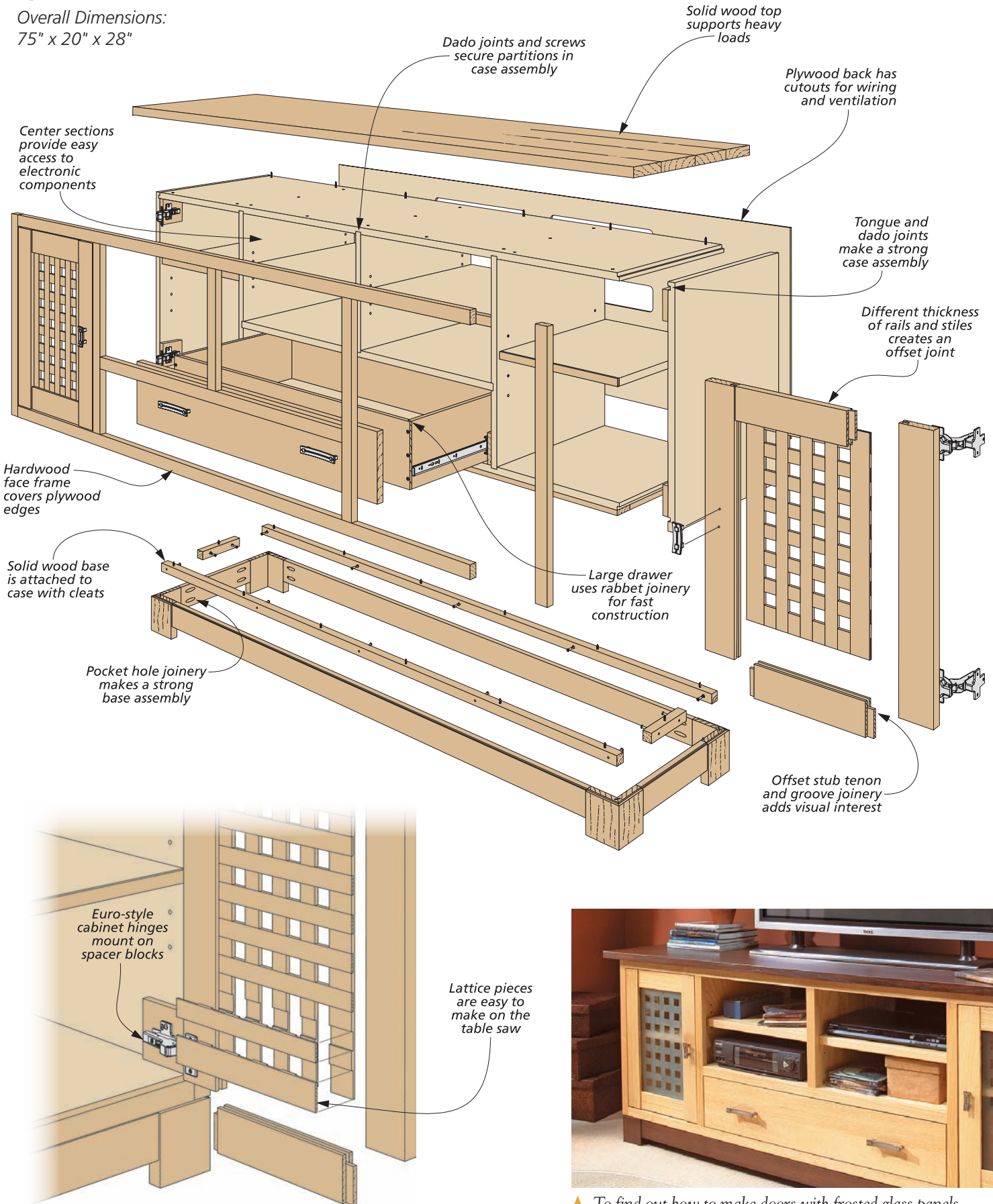
If you look at the photo, you'll see it's wide enough to handle most LCD or plasma screens. And down below, there's no lack of storage space. The shelves are perfect for electronic equipment. Behind the lattice doors,

there are adjustable shelves. And the drawer is great for DVD storage.

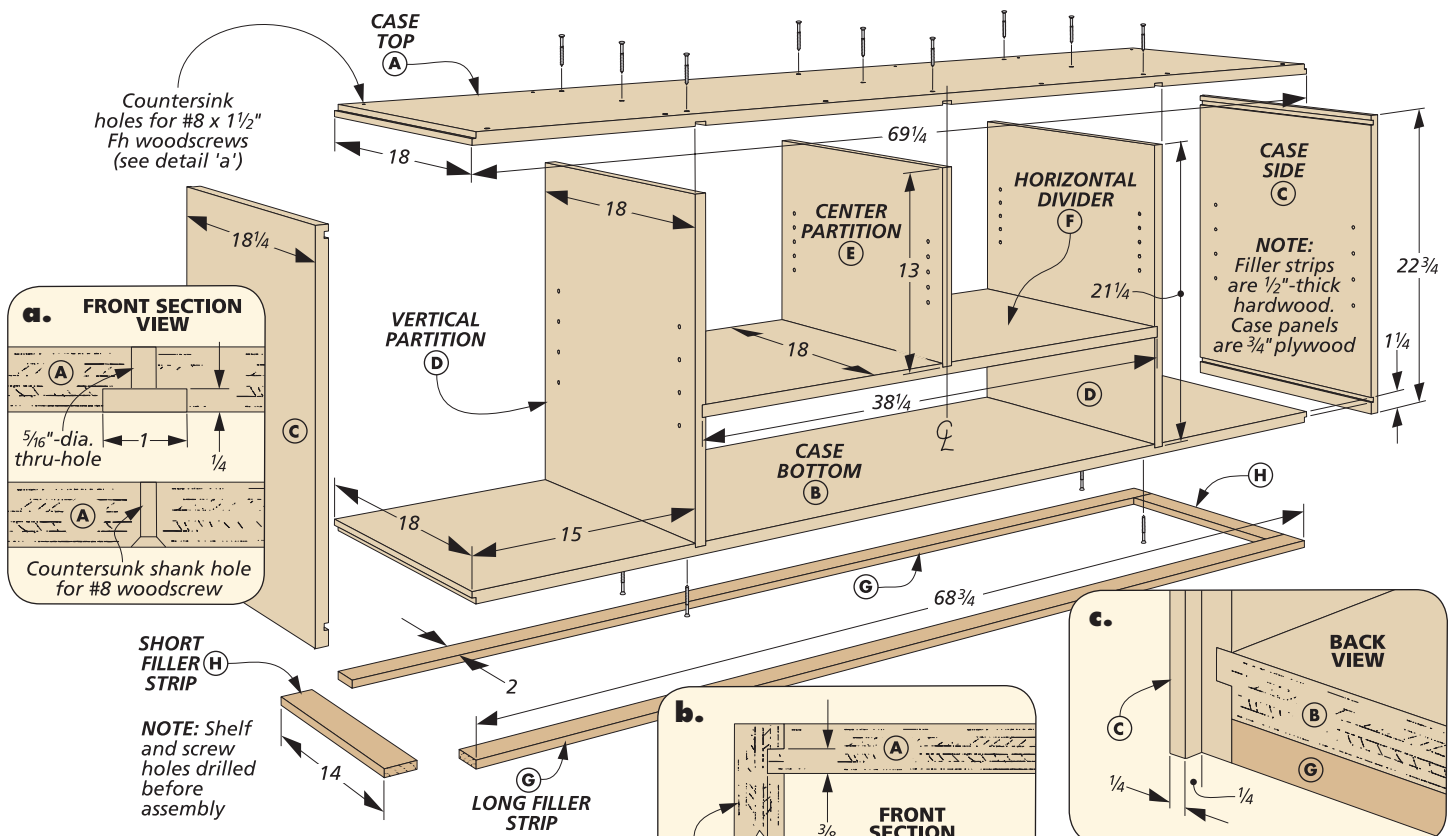
As nice as it looks, what you'll really appreciate is how easy it is to build. It's a simple plywood case trimmed out with a solid wood top, face frame, and base. And the lattice doors finish it off for a great look in any room.

Construction Details

Overall Dimensions:
75" x 20" x 28"



▲ To find out how to make doors with frosted glass panels, view the video at www.WoodsmithShop.com.



Building the Case

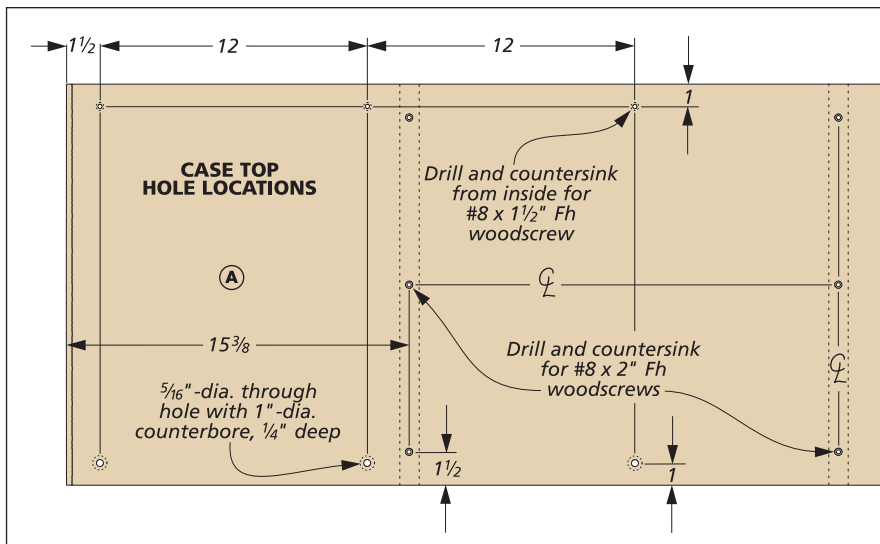
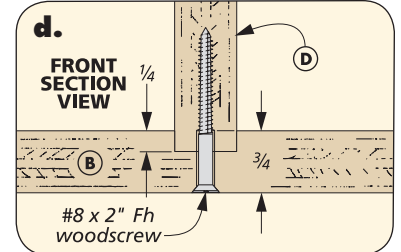
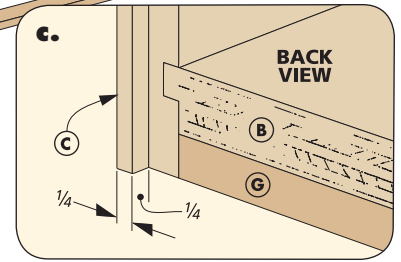
The place to start building the cabinet is the case. The main panels are cabinet-grade plywood. (I used white ash.) Simple joinery keeps everything square and easy to assemble.

BUILDING THE BOX. I started by cutting the top, bottom, and side pieces to size. After that's done, it's time to get out the router to start on the dados and rabbets for the joinery.

DADOES. The top and bottom will get dados on their inside faces to house the vertical partitions (refer to

the drawing above). To make sure that the top and bottom dados lined up, I clamped both pieces side-by-side, laid out the dados, and then routed them with a straight bit.

You can see in the drawing above that the top piece has an additional dado to house the center partition.

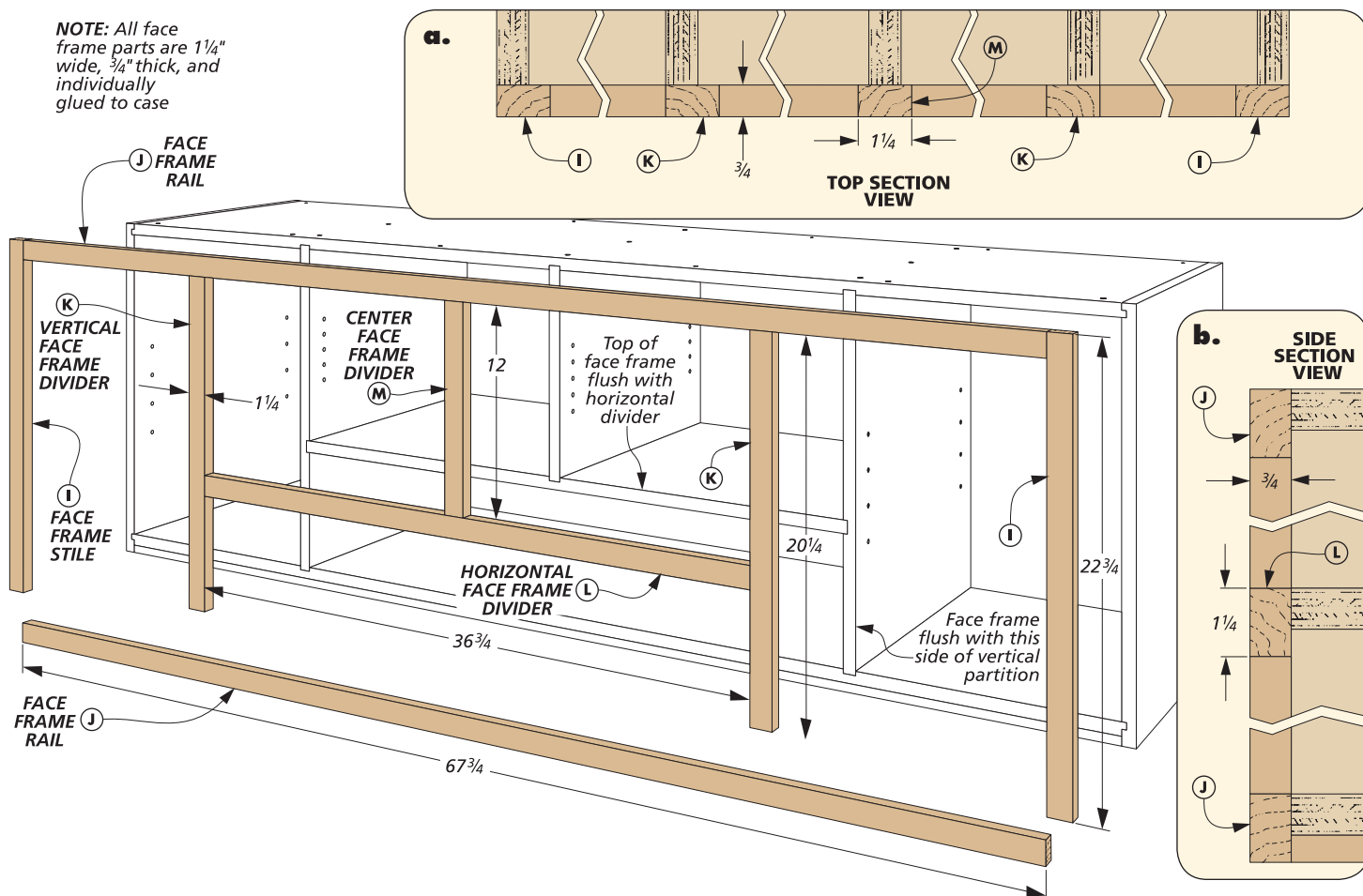


So you'll want to rout this dado while you've got things set up.

TONGUES AND DADOES. Now you can switch to a rabbeting bit and cut the tongues on the ends of the case top and bottom, as shown in detail 'a' above. While you're at it, rout a rabbet on the back edge of the side pieces for the back panel. Then change over to a straight bit to rout the matching dados in the two sides. Just be sure to locate the bottom dado so that you can add the filler strip (detail 'b' above).

HOLES. Before gluing up the case, you can go ahead and drill the holes in the top and bottom pieces that will be used for attaching the partition assembly (drawing at left). You'll also need to drill holes in the sides for shelf pins (lower drawing, page 4). Once that's done, you can glue up the top, bottom, and two sides then start to work on the internal partitions.

NOTE: All face frame parts are 1 1/4" wide, 3/4" thick, and individually glued to case



PARTITION ASSEMBLY. There's nothing too tricky about making the partitions. The main drawing on the previous page shows how it's all assembled. The two taller, vertical pieces are cut to fit between the dados of the case top and bottom. A horizontal divider fits in dados on

the two vertical pieces. And there's a center, vertical partition that divides the upper space.

PARTITIONS. I started by cutting the two long, vertical partitions to size. The goal was to get a snug fit in the dados of the case.

The next thing to do is cut the dados that will house the horizontal divider. Then you can slide the vertical pieces into the case and cut the horizontal divider to fit. The last step is to cut a centered dado on the horizontal divider to hold the short, center partition.

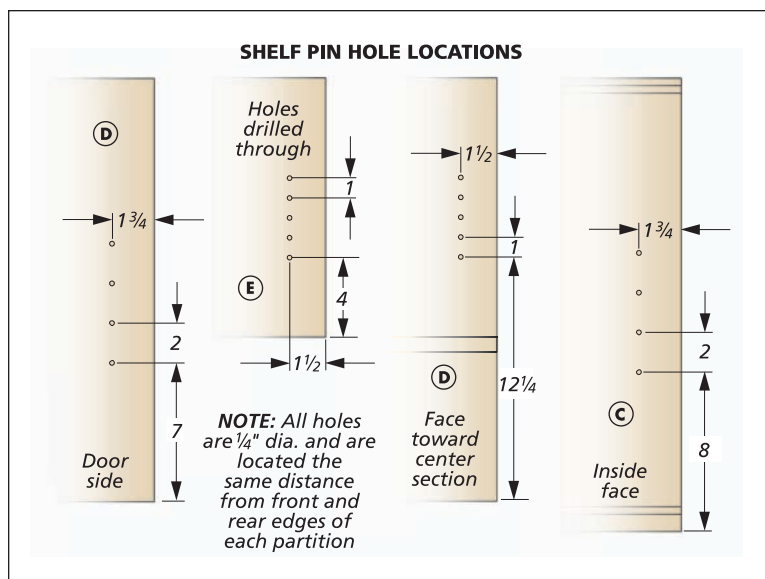
SHELF PIN HOLES. Before fastening the partition pieces in the case, it's a good idea to drill all of the holes for the shelf pins (see drawing at left). The trick is laying out the holes on the proper face of the workpiece.

All of the holes are stopped holes except for those in the short, vertical partition. These holes can be drilled all the way through.

Finally, you can glue the partition pieces into the case and fasten them in place with screws. Now is when you'll want to make sure everything is square before you move on to adding the face frame.

FACE FRAME. The face frame shown above is pretty straightforward. What's nice is you don't have to pre-assemble the entire frame then try to make it fit. Each piece is cut to fit and glued in place separately.

I started with the two end stiles, making sure they were flush on the outside edges, top, and bottom. Then you can cut the two long horizontal rails to fit between the stiles and glue them in place. Next, I trimmed out the vertical partitions, followed by the piece that covers the horizontal divider. Finally, you can add the shorter, vertical piece to the center partition. Next, you'll turn your attention to the base.



Assembling the Base

With the case complete, you can begin working on the base. As you can see below, the base is made up of $\frac{7}{8}$ "-thick mitered corner assemblies connected by $\frac{3}{4}$ "-thick rails. This creates an offset joint. The top edge of the base is rabbeted to form a reveal—or shadow line—between the base and case (see detail 'b' below).

Pocket hole screws join the rails to the corner blocks. You'll use splined miter joints to make the corners. And that's a good place to start.

CORNER BLOCKS. The four corner blocks are identical. The grain runs vertically and a splined miter joint connects the two pieces. I found it easier to bevel the edge of a couple of long blanks then cut the groove for the spline on the blanks.

SPLINED MITERS. The box at the bottom of the following page shows how I cut the slot for the splines using a standard blade with a $\frac{1}{8}$ " kerf. Since the joint won't show, I used a hardboard spline (detail 'c' below). You can cut the corner blocks to final length, then glue up the pairs using the splines. Finally, you can rout the shallow rabbet on the top, outside edge of the blocks.

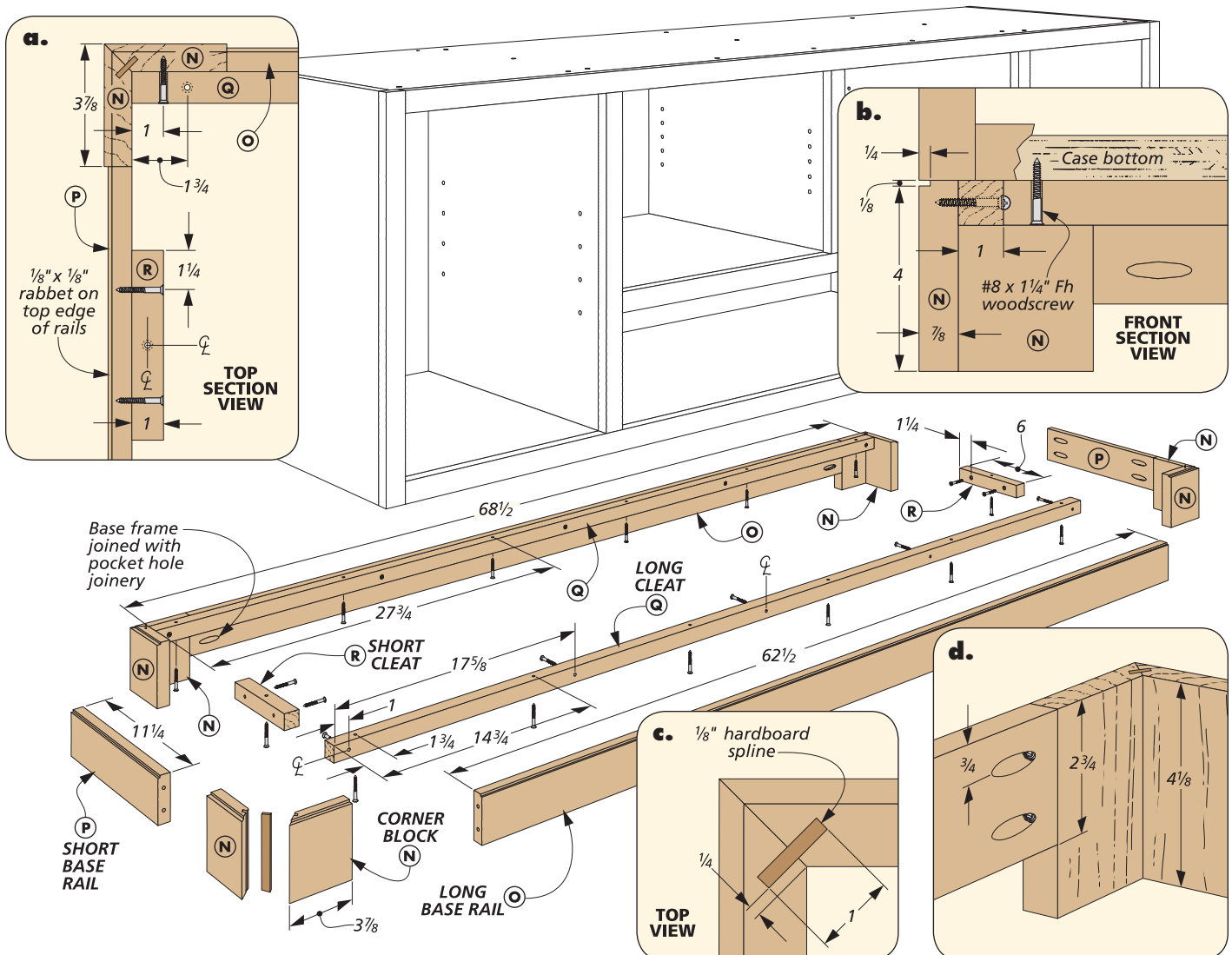
RAILS. Because pocket hole screws join the rails to the corner blocks, you can simply cut the rails to length. To get the exact length of the rails, I set the corner blocks on the case so that the outside faces were flush with the case. Then it was a simple task to measure between them for the length of the rails. I went ahead and routed

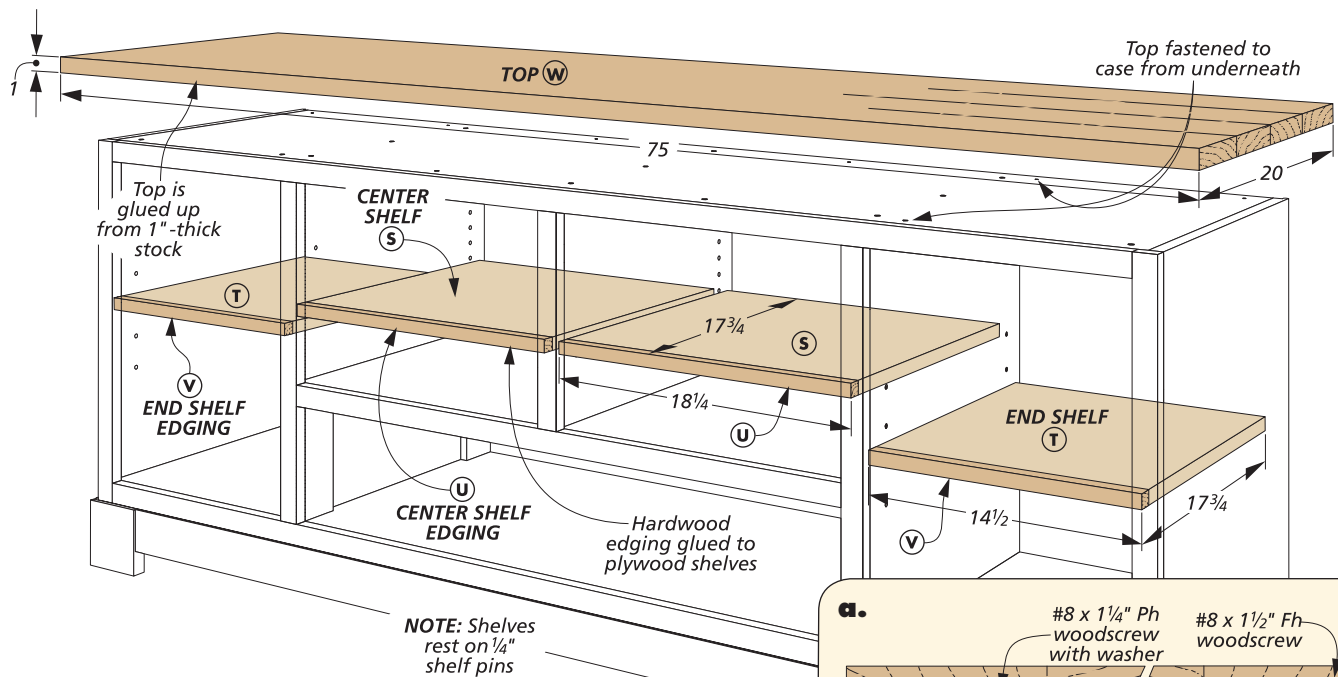
the rabbeted reveal on the top edge of the rails before moving on.

Once that's all done, you can fasten the rails to the corner blocks with pocket hole screws, keeping the back faces flush with one another (detail 'd'). A $\frac{1}{8}$ "-thick spacer helps with clamping and alignment. Now you can add the cleats.

CLEATS. You can see below that the cleats are nothing more than hardwood strips fastened to the inside of the base. The top of the cleat is flush with the top of the base.

The length of the cleats and locations of the screws aren't critical, but the drawings below give you some guidelines. After the cleats are fastened to the base, you can attach the base to the case (detail 'b').





Adding the Shelves & Top

The bulk of the work on the case is done. All you need to do now is add the shelves and the top.

SHELVES. The drawing above shows the four adjustable shelves. They're simple to make. All you need to do is cut some plywood panels to size and glue hardwood edging onto the front edge of each one.

I cut the edging just a little wide to slightly extend past the edges of the plywood. After the glue was dry, I used a hand plane to trim the edging flush with the plywood. You could also use a router with a flush-trim bit or a sanding block. Just be careful that you don't sand through the veneer of the plywood.

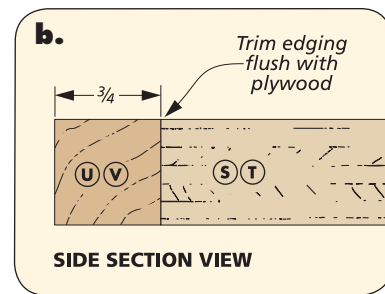
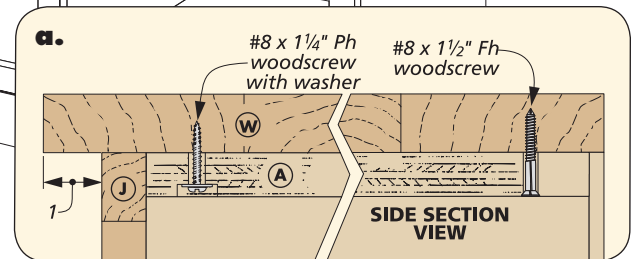
GLUED-UP TOP. At this point, you're ready to move on to the top of the cabinet. It's glued up from 1"-thick stock. Since it's the "crown" of the project, I took some extra time to sort through the lumber stack to get the best pieces. What you're looking for is a good color and grain match between the boards. The goal is to make your glue lines as inconspicuous as possible.

SECTION WORK. If you have access to a thickness planer, you can glue up the top in two sections, run each section through the planer, then glue up the two sections. This will help get a flat, smooth top.

Once the entire top is glued up, you can work on smoothing it. Careful use of a belt sander can make quick work of flattening it. Then you can follow up with a random orbit sander or sanding block, working your way through finer and finer grits.

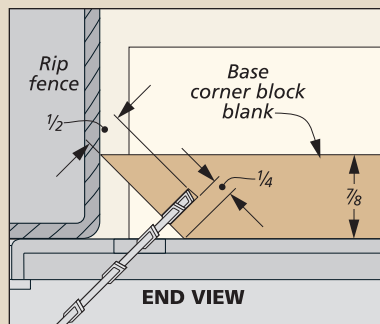
TRIMMING. This top is heavy, so it would be awkward to trim the ends square on the table saw. Instead, I used a straightedge with a circular saw, as shown in the box below.

After you've cut the ends square, you can sand them smooth with a sanding block. And while you're at it, you can slightly ease all the edges of the top to soften sharp corners.

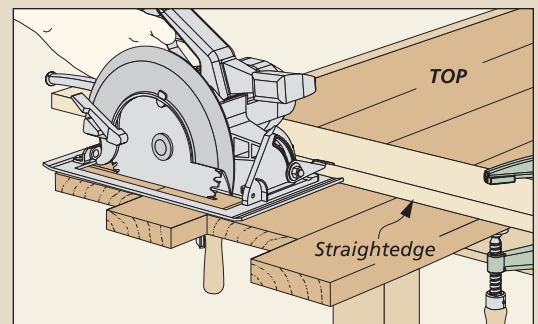


ATTACH THE TOP. Now you can fasten the top through the oversized holes in the case. This will allow the top to move with changes in humidity. Next, you'll add the doors.

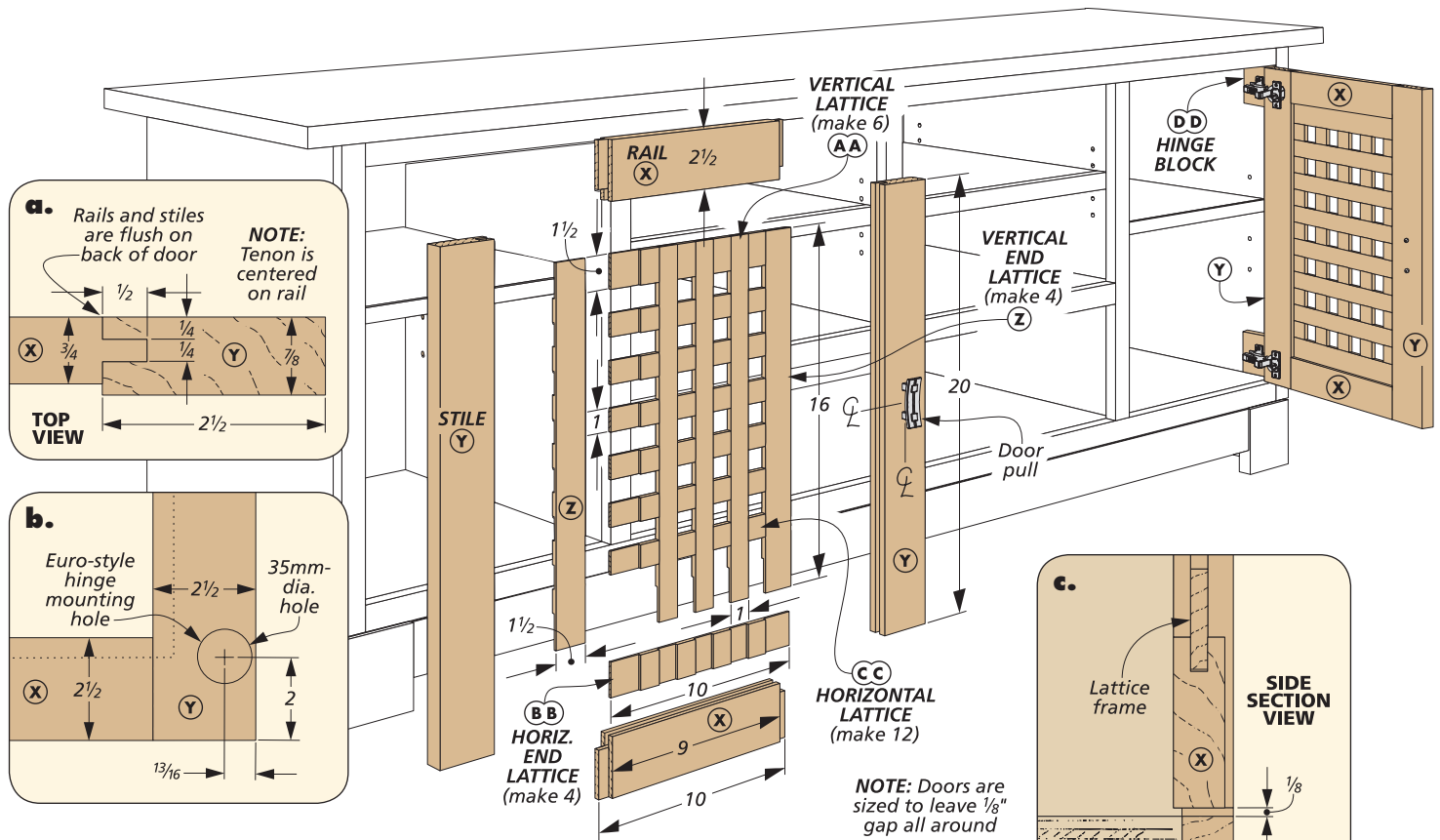
SHOP TIPS: SPLINES & TRIMMING



Cutting Spline Slots. Use the table saw to cut a straight, clean slot for the splined miter joints.



Squaring Up a Top. To trim the ends of the glued-up top, use a sturdy straightedge and a circular saw with a fine-toothed carbide blade.



Framing the Doors

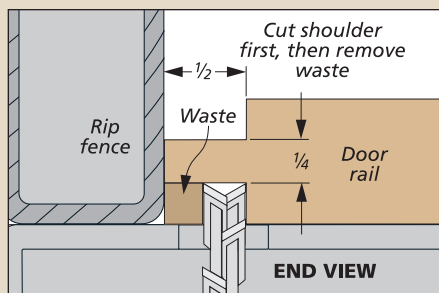
The thing that grabs your attention right off the bat on this project is the lattice door panels. The lattice is really a series of half-lap joints in strips of wood that are glued together to form a panel.

This panel fits into a groove in the rails and stiles of the door frame. But before you can work on the lattice panel, you need to make the door frames. They're made up of $\frac{7}{8}$ "-thick stock for the stiles and $\frac{3}{4}$ "-thick stock for the rails, as shown

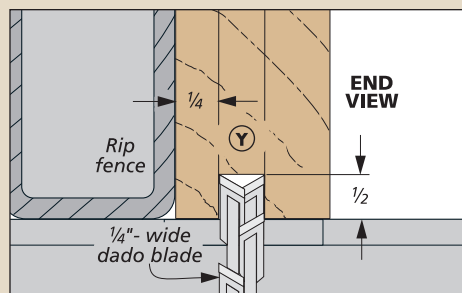
in detail 'a' above. And since the joinery is a stub tenon and groove, the groove in the stiles needs to be slightly offset from the center.

OFFSET GROOVE. If you look at detail 'a', you'll see what I mean about the offset groove in the stiles. It's not hard to locate this groove if you cut the tenon on the rails first. The box below shows you how I did this with a $\frac{1}{4}$ " dado blade. It just takes some time to get everything set up right so you can get a snug fit.

HOW-TO: OFFSET TENON & GROOVE



Start with the Tenon. Use a $\frac{1}{4}$ "-wide dado blade to form the tenons on the rails. Flip the workpiece to center the tenon.



Locate the Groove. Position the rip fence for cutting the groove in the rails and stiles. The groove in the stiles will be offset.

Now is a good time to put the pieces for the door frames aside and turn your attention to the lattice panels. You need to have them in hand before gluing up the frames.

LATTICE PANELS. It's not hard to cut all the pieces for the lattice panels. It's a lot of repetitive work, but if you pay attention, it should go smoothly. The box on the next page shows you how I started with wide blanks, cut the notches for the lap joints, then ripped the pieces to width.

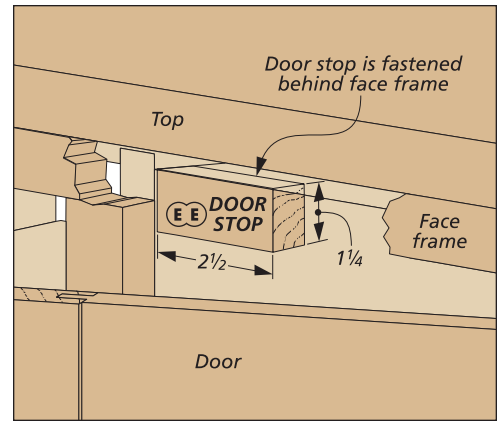
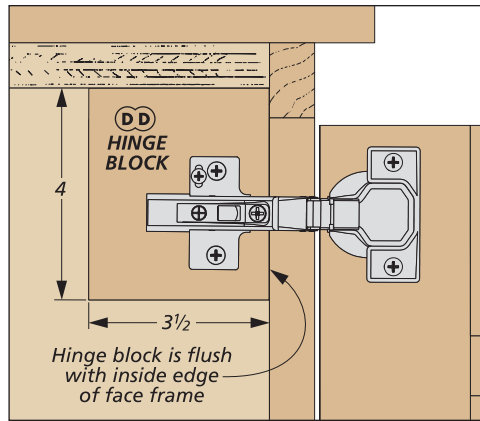
GLUING UP THE DOORS. Once the panels are complete, you can insert them in the door frames. But I didn't glue the panels in place. I wanted them to be able to move with changes in humidity. Now you can go ahead and glue up the door frames, making sure they're square.

MOUNTING THE DOORS. Before mounting the doors, you need to add some mounting blocks for the hinges. These hinge blocks need to be flush with the inside edge of the face frame, as shown in the drawing at the top of the following page.

Once the hinge blocks are glued in place, you can mount the hinges on the doors and set them in the opening. I used 1/8"-thick spacers to help maintain a consistent reveal all the way around the door.

Next are the door stops. They're just hardwood blocks glued in place behind the face frame. The drawing on the far right shows the location.

All that's left to do now is add the door pulls. Then you can start on the drawer and back panel.



HOW-TO: MAKING A LATTICE PANEL

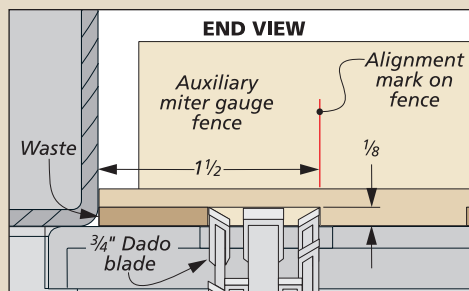
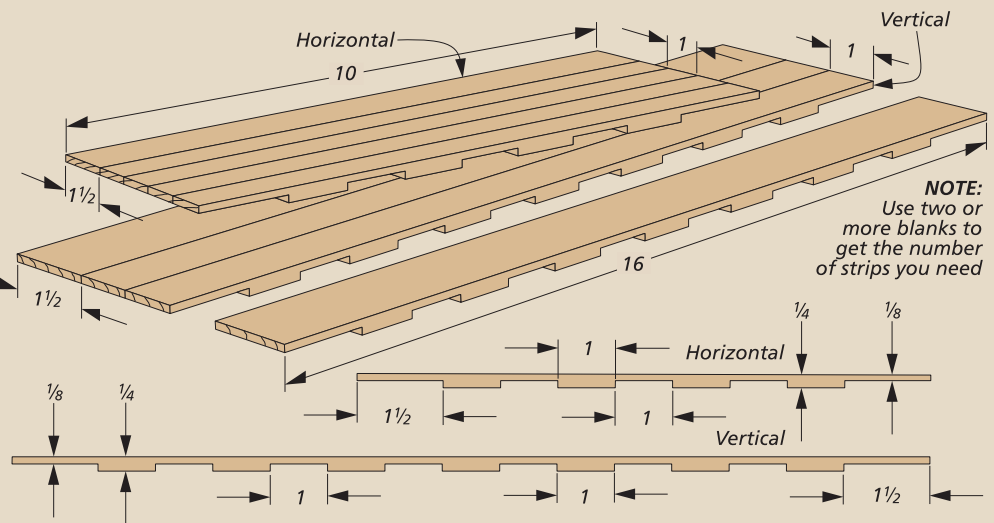
The trick to making all the pieces for the lattice panels is to start with several wide blanks, as shown on the right. This way, you can cut the notches for the lap joints all at once and know they'll all be lined up when you assemble the lattice. Then the strips can be ripped to width to fit the notches.

CUTTING DADOES. To start off, you're really just cutting a series of dados in wide blanks. The trick is to lay them out accurately. I found it easier to mark the dado location on the edge of the blank. Then I could align the marks with the dado blade to cut the dados in a couple of passes.

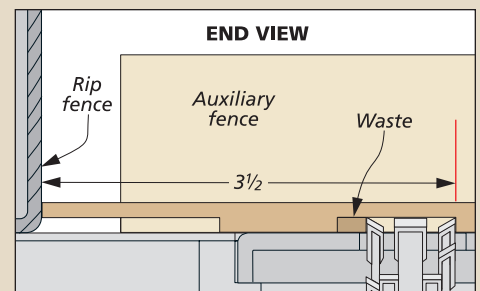
SETTING UP THE CUT. I used a 3/4" dado blade in my saw to cut all the joints for the lattice. But to get the right blade height, I used a scrap piece that was the same thickness as my blank. I adjusted the blade height to cut to the center of the thickness of the test piece.

START ON THE ENDS. To start, I cut the lap joints on the ends of the blanks first, using the rip fence as a guide. Then I flipped the blank end-for-end and made the same cut. Now you can move the fence to line up for the dados.

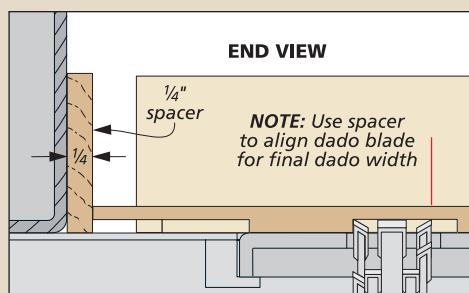
TWO PASSES. Looking at the drawings, you can see how I aligned my layout marks with the dado blade. Then I used a spacer at the end of the blank against the rip fence to "nudge" the piece over to make the second cut. Lastly, you can rip the pieces to width.



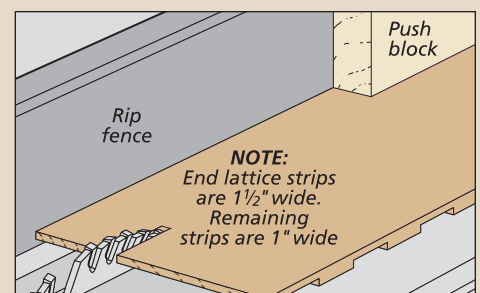
1 Starting at the Ends. Use the rip fence as a guide to cut the lap joints on the ends of the blanks with a dado blade.



2 Align for the First Pass. Use your layout lines to line up the dado blade to make the first pass for cutting the dado.



3 Use a Spacer. To make the 1"-wide dado, add a 1/4" spacer against the rip fence to move the blank over, then make a second pass.



4 Rip to Width. Rip the workpieces to width from the blank. Aim for a snug fit in the corresponding pieces that make up the panel.

Adding the Drawer & Back

The last two things to do are build the drawer and make the back panel. The drawer fits in the lower, center opening in the case. It's made with simple, rabbeted joints and finished off with a false front. You'll build the drawer first, then install the metal slides.

A SIMPLE BOX. To start on the drawer, I cut the front, back, and two side pieces to final size. Then you can cut a rabbet on the ends of the front and back pieces (drawing below).

The next thing to do is cut a groove on the inside face of all four pieces to hold the drawer bottom. After cutting the $\frac{1}{4}$ " plywood bottom

to size, you can glue and screw the drawer box together, making sure that everything stays square.

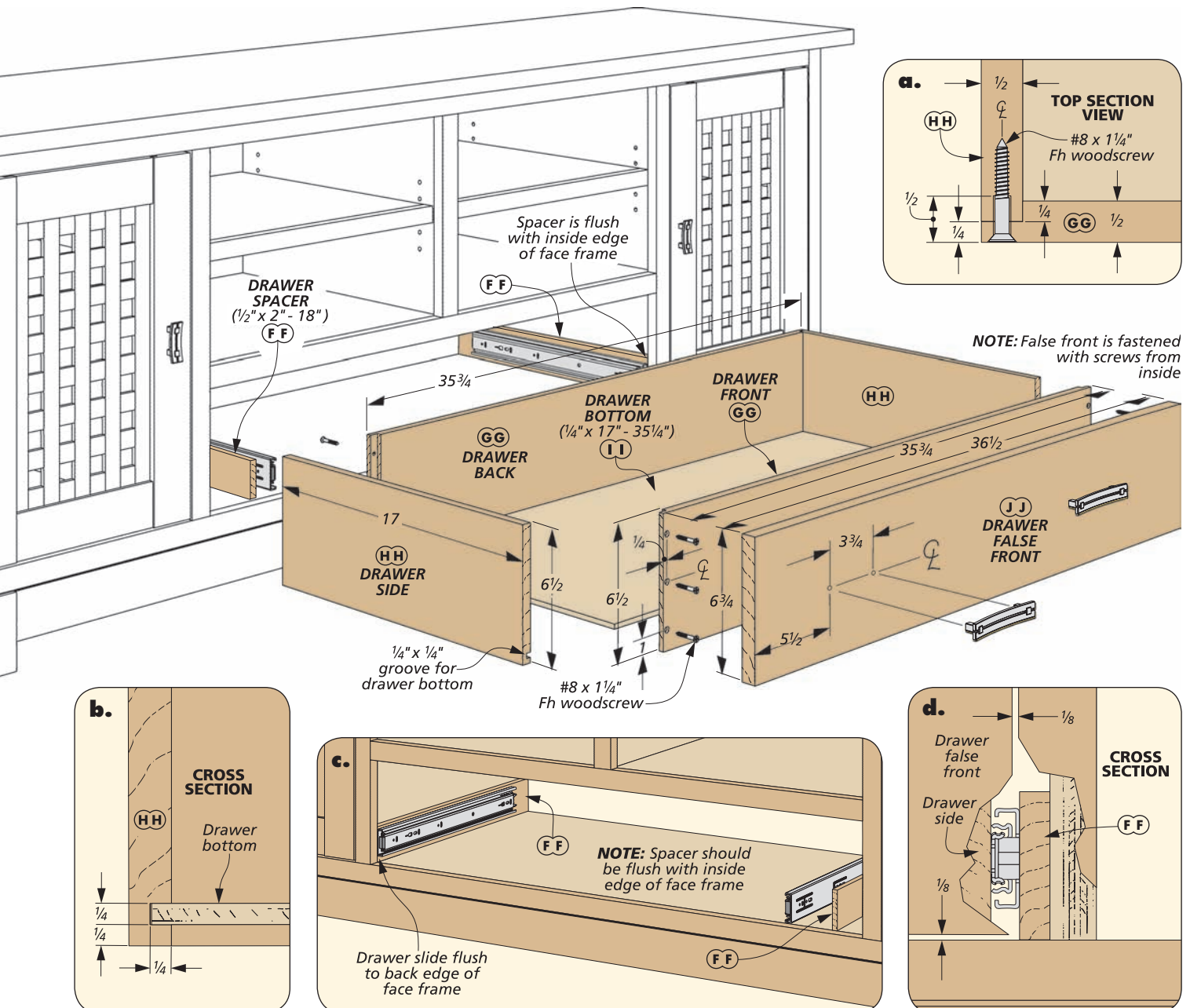
SPACERS. There's just one more thing you need to do before you can install the metal drawer slides in the case. I couldn't mount the metal drawer slides directly onto the sides of the case because the face frame overhangs the drawer opening.

To get around this problem, I made spacers to fit on the sides of the opening, flush with the edge of the face frame (detail 'd' below). They allow the metal slides to open fully without being obstructed by the face frame. Once the spacers and slides are in

place, you're ready to work on the drawer false front.

FALSE FRONT. The false front couldn't be simpler. It's a piece of hardwood sized to fit the opening. The only tricky part is getting it sized so that there's an even $\frac{1}{8}$ " reveal all around. Then it's just a matter of fastening it to the front of the drawer box.

To mount the false front, put some double-sided tape on the front of the drawer box. Then carefully position the false drawer front in the opening. You'll press firmly until the tape "grabs." Once the false front is in position, fasten it in place with screws from the inside of the drawer.

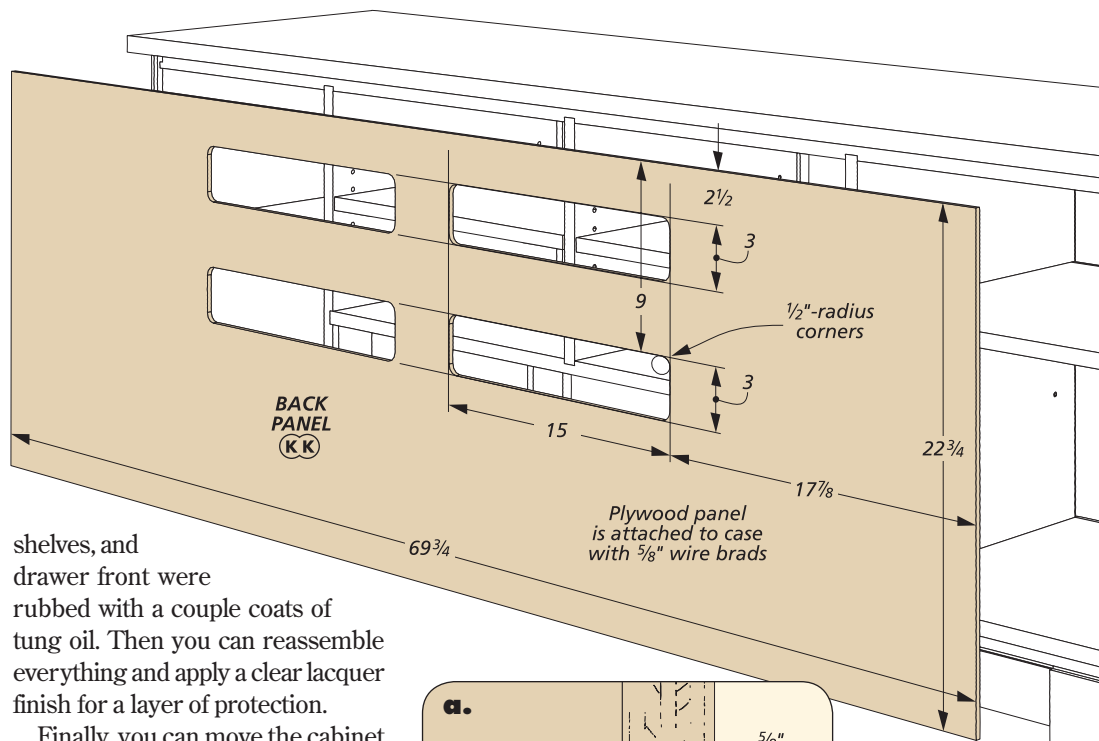


BACK PANEL. The last piece you'll need to add is the back panel. The openings you see in the drawing provide access to all the cables for electronic components. But more importantly, they provide ventilation to prevent heat build-up. I used a jig saw to rough cut the openings and then smoothed the edges with a pattern bit in my router and a template. Then I mounted the back panel to the case using wire brads around the edge (detail 'a').

After going over the entire project with some sandpaper, you can think about the finish.

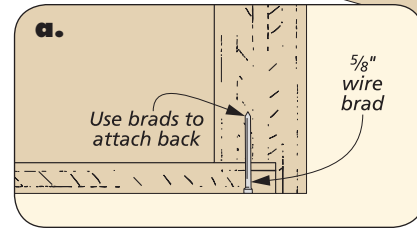
FINISHING UP. I decided to use a "two-tone" finish for this project. I chose a dark stain for the top and base. A natural tung oil finish on the case contrasts with the dark stain and adds a nice, warm tone.

To make the task of applying the stain easier, I removed the top and base from the case before applying the stain to those pieces. The case,



shelves, and drawer front were rubbed with a couple coats of tung oil. Then you can reassemble everything and apply a clear lacquer finish for a layer of protection.

Finally, you can move the cabinet into your favorite room to show it off to friends and family. After you install the shelves and all your electronic equipment, just sit back, relax, and enjoy the show.



MATERIALS & CUTTING DIAGRAM

A Case Top (1)	$\frac{3}{4}$ ply. - 18 x 69 $\frac{1}{4}$	Q Long Cleats (2)	1 x 1 - 68 $\frac{1}{2}$	GG Drawer Front/Back (2)	$\frac{1}{2}$ x 6 $\frac{1}{2}$ - 35 $\frac{3}{4}$
B Case Bottom (1)	$\frac{3}{4}$ ply. - 18 x 69 $\frac{1}{4}$	R Short Cleats (2)	1 x 1 - 6	HH Drawer Sides (2)	$\frac{1}{2}$ x 6 $\frac{1}{2}$ - 17
C Case Sides (2)	$\frac{3}{4}$ ply. - 18 $\frac{1}{4}$ x 22 $\frac{3}{4}$	S Center Shelves (2)	$\frac{3}{4}$ ply. - 17 x 18 $\frac{1}{4}$	II Drawer Bottom (1)	$\frac{1}{4}$ ply. - 17 x 35 $\frac{1}{4}$
D Vert. Partitions (2)	$\frac{3}{4}$ ply. - 18 x 21 $\frac{1}{4}$	T End Shelves (2)	$\frac{3}{4}$ ply. - 17 x 14 $\frac{1}{2}$	JJ False Front (1)	$\frac{3}{4}$ x 6 $\frac{3}{4}$ - 36 $\frac{1}{2}$
E Center Partition (1)	$\frac{3}{4}$ ply. - 18 x 13	U Center Shelf Edging (2)	$\frac{3}{4}$ x $\frac{3}{4}$ - 18 $\frac{1}{4}$	KK Back Panel (1)	$\frac{1}{4}$ ply. - 22 $\frac{3}{4}$ x 69 $\frac{3}{4}$
F Hor. Divider (1)	$\frac{3}{4}$ ply. - 18 x 38 $\frac{1}{4}$	V End Shelf Edging (2)	$\frac{3}{4}$ x $\frac{3}{4}$ - 14 $\frac{1}{2}$		
G Long Filler Strips (2)	$\frac{1}{2}$ x 2 - 68 $\frac{3}{4}$	W Top (1)	1 x 20 - 75		
H Short Filler Strips (2)	$\frac{1}{2}$ x 2 - 14	X Door Rails (4)	$\frac{3}{4}$ x 2 $\frac{1}{2}$ - 10		
I End Face Frames (2)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 22 $\frac{3}{4}$	Y Door Stiles (4)	$\frac{7}{8}$ x 2 $\frac{1}{2}$ - 20		
J Top/Bot. Face Fra. (2)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 67 $\frac{3}{4}$	Z Vertical End Lattice (4)	$\frac{1}{4}$ x 1 $\frac{1}{2}$ - 16		
K Vert. Face Frames (2)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 20 $\frac{1}{4}$	AA Vertical Lattice (6)	$\frac{1}{4}$ x 1 - 16		
L Hor. Face Frame (1)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 36 $\frac{3}{4}$	BB Horizontal End Lattice (4)	$\frac{1}{4}$ x 1 $\frac{1}{2}$ - 10		
M Center Face Frame (1)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 12	CC Horizontal Lattice (12)	$\frac{1}{4}$ x 1 - 10		
N Corner Block (8)	$\frac{7}{8}$ x 3 $\frac{7}{8}$ - 4 $\frac{1}{8}$	DD Hinge Blocks (4)	$\frac{1}{2}$ x 3 $\frac{1}{2}$ - 4		
O Long Base Rails (2)	$\frac{3}{4}$ x 23 $\frac{1}{4}$ - 62 $\frac{1}{2}$	EE Door Stops (2)	$\frac{3}{4}$ x 1 $\frac{1}{4}$ - 2 $\frac{1}{2}$		
P Short Base Rails (2)	$\frac{3}{4}$ x 23 $\frac{1}{4}$ - 11 $\frac{1}{4}$	FF Drawer Spacers (2)	$\frac{1}{2}$ x 2 - 18		

1" x 6" - 84" White Ash (4 boards @ 4.4 Bd. Ft. each)



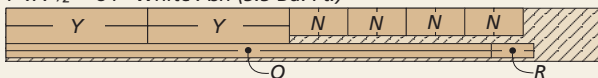
$\frac{3}{4}$ " x 7" - 96" White Ash (4.7 Bd. Ft.)



$\frac{3}{4}$ " x 7" - 84" White Ash (4.0 Bd. Ft.)



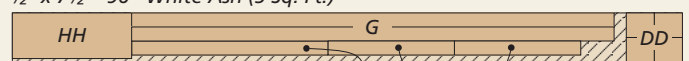
1" x 7 $\frac{1}{2}$ " - 84" White Ash (5.5 Bd. Ft.)



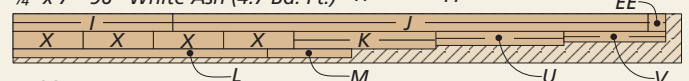
$\frac{1}{2}$ " x 7" - 96" White Ash (4.7 Sq. Ft.)



$\frac{1}{2}$ " x 7 $\frac{1}{2}$ " - 96" White Ash (5 Sq. Ft.)



$\frac{3}{4}$ " x 7" - 96" White Ash (4.7 Bd. Ft.)



ALSO NEEDED:

Two - 48" x 96" Sheets of $\frac{3}{4}$ " White Ash plywood
One - 48" x 96" Sheet of $\frac{1}{4}$ " White Ash plywood