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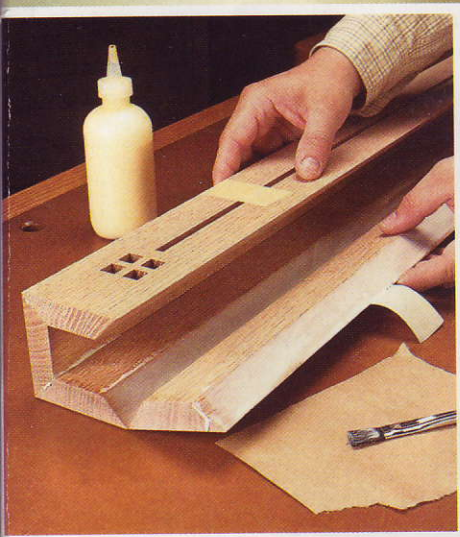
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October 2005

## Build Your Own **Dream Island**

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# KITCHEN ISLAND

start entertaining and get grilling  
—all indoors!



As we took an inventory of the “must-haves” for our kitchen island, we didn’t get any further than the first item on the list — an indoor grill — before we knew for certain that no ordinary island would do (Photo, left).

Mounting a gas grill in what is essentially a cabinet is no small thing, after all. But we didn’t want the island to be reduced to nothing more than a place to house this unique kitchen appliance. We also wanted to include additional storage for everything from grilling utensils to our favorite cookbooks. And, of course, the island had to look like it belonged in a kitchen.

**Fitting the Grill** — As you look over the *Construction Details* on the next page, you’ll see that this kitchen island is a bit unorthodox in the way it’s compartmentalized. By dividing the island in this manner, we were able to create a separate compartment for the grill and still make use of the rest of the cabinet for a bank of drawers, some undercounter storage, and even a bookshelf on the backside of the island.

Of course, the design of the island depends on using this particular grill. Specifically this model from ProFire (*Buyer’s Guide*, page 57) allows for a “zero-clearance” installation, which





## Construction Details

Overall Dimensions: 43½" W x 48½" D x 36" H

means we didn't need to be concerned with how close the case parts are to the grill. That allowed us to really maximize the space.

**Furniture Styling** — Technical issues aside, another priority for this island was to create a furniture-like appearance that could be carried to the other kitchen cabinets. To that end, we treated the island to a set of Craftsman-inspired legs that would look just as good on a living room piece as they do here (Photo, right).

The island is further embellished with frame-and-panel end assemblies and applied molding. The cabinet doors are built using genuine mortise-and-tenon joinery and are adorned with wood pegs. And, of course, the drawers are dovetailed

together, so they're on par with all the other fine details of the island.

Wood selection was another important choice. We carefully selected quartersawn red oak for the solid-wood pieces and looked for the straightest grain we could find when shopping for plywood.

Naturally, not just any countertop would do. So we built our own. We used time-tested plastic laminate over an MDF substrate to create the perfect countertop for this island.

Over the next few pages, we'll walk you through the construction of this kitchen showpiece. From the basic case, to the decorative legs, and all the way through the custom countertop, the step-by-step instructions begin on the next page.

▼ Simple table saw and router techniques make the shallow square recesses, decorative groove, and wrap-around trim easy to create.





# "nearly standard" case CONSTRUCTION

Beneath the decorative legs, applied molding, and frame-and-panel end assemblies, this kitchen island is a *nearly* standard plywood case (*Case Assembly*). I say *nearly* standard because there are a few unusual details. We'll come to those soon enough, but first let's look at the the basic case.

The case consists of a bottom (A), two sides (B,C), a back (D), a vertical divider (E), and a fixed shelf (F). All of these parts are cut from  $\frac{3}{4}$ " plywood and joined with dadoses, rabbets, grooves, and woodscrews.

The plywood edges get covered

with solid-wood edging, and that's when those unusual details I mentioned start showing up.

**Case Panels** — To get started, cut the panels (A through F) to size. Now cut a notch on the top corner of the vertical divider (*Notch Detail*, page 49). This notch will accept a stiffener a little later. Simply lay out the notch, and cut it with a handsaw.

The next step is cutting the joinery, and this is where you find the first of those unusual details.

Notice that the case sides have different letter designations (B,C) even

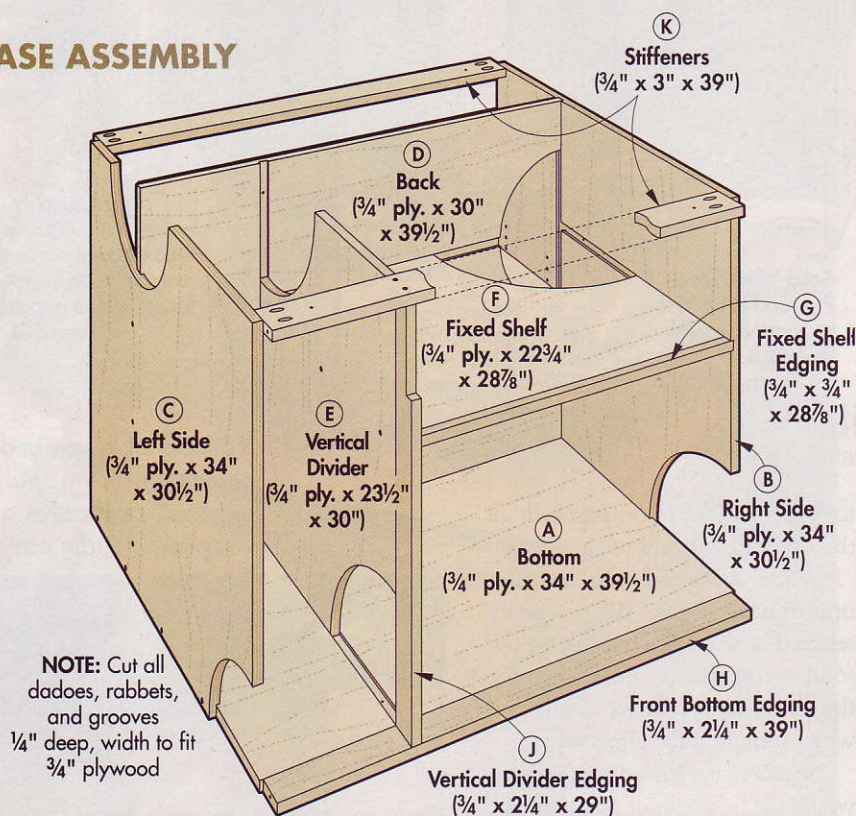
though they have identical dimensions. What differentiates these parts is the joinery. The right side panel (B) has a dado for the fixed shelf, and the left side (C) does not. It's an important detail that's easy to overlook.

With that in mind, you can get started making the joinery. The size of the plywood panels, and the fact that some of these joints are "stopped," pretty much dictates that you use a handheld router and a straight bit to make the joints. Clamp a straightedge to the workpiece to guide the base of the router, and use some wood scraps as stop blocks when routing the stopped dadoses.

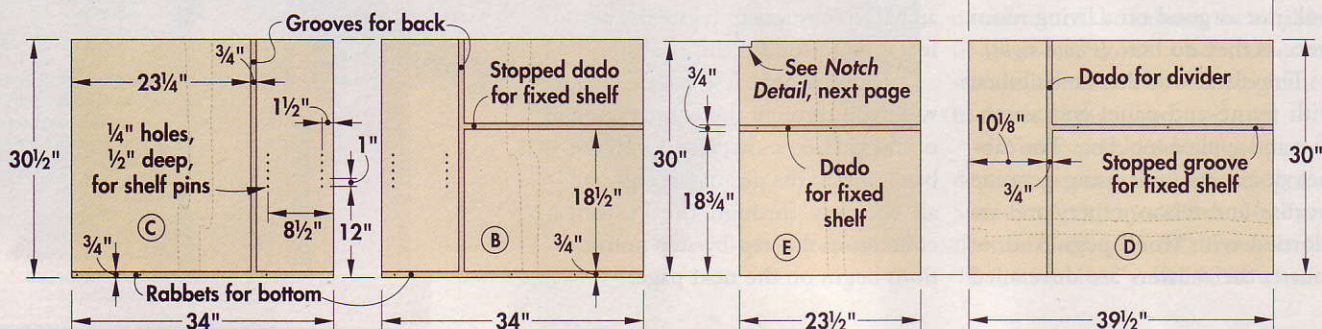
**Hardwood Edging** — With the panels cut to size and the joinery completed, you're ready to add hardwood edging. And once again we encounter some of those "details."

The four pieces we're dealing with here are the fixed shelf edging (G), the front and back bottom edging (H,I), and the vertical divider edging (J). Of these, only the fixed shelf edging is what you might think of as typical. It's cut to match the shelf in both thickness and width and then applied with glue and clamps.

## CASE ASSEMBLY



## PARTS VIEWS





## ASSEMBLING THE CASE

The bottom edging pieces are a little more involved. First of all, notice in the *Edging Detail*, right, that these pieces stop  $\frac{1}{4}$ " shy of the panel edge. This is because of the way the legs interlock with this panel. A second important point is that these edging pieces are *not* the same thickness. The edging on the *back* edge of the panel is *thicker* so it will match an adjustable shelf that you'll make later on.

The final detail to be aware of with these edging pieces is a pocket hole that must be drilled in each end. This will be used to attach the legs when the time comes.

As for the vertical divider edging, what makes this part unusual is a notch in the upper front corner (*Notch Detail*). This accommodates an apron that gets attached later.

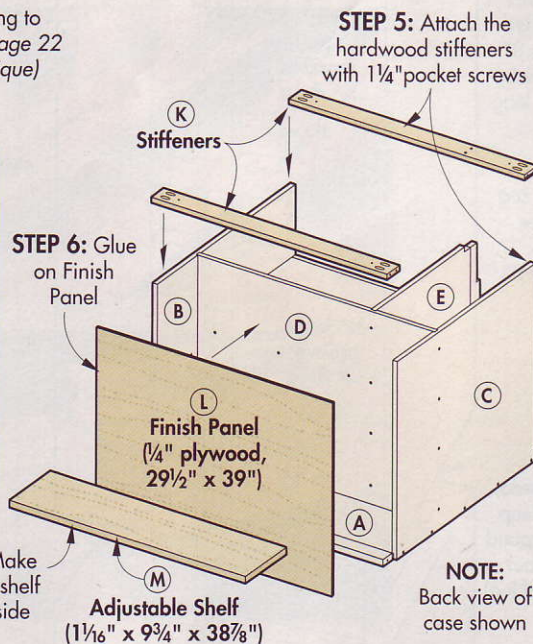
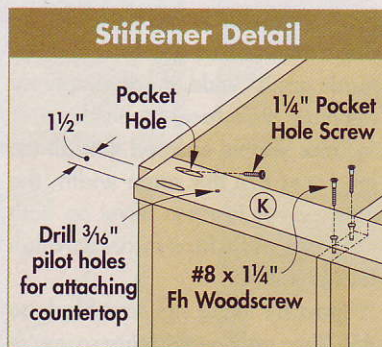
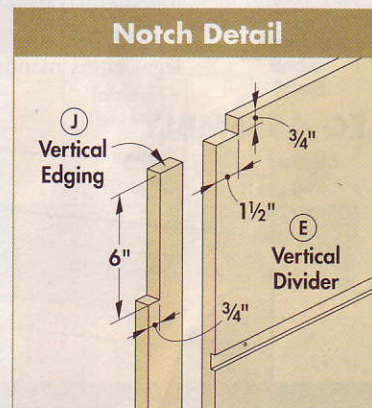
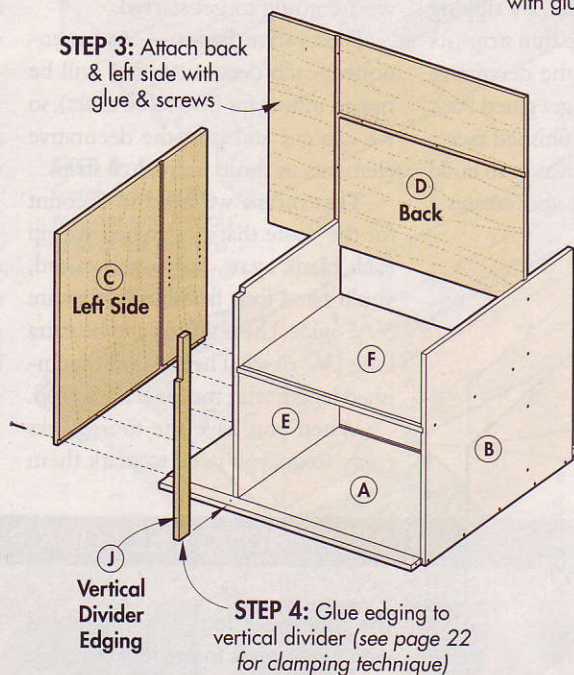
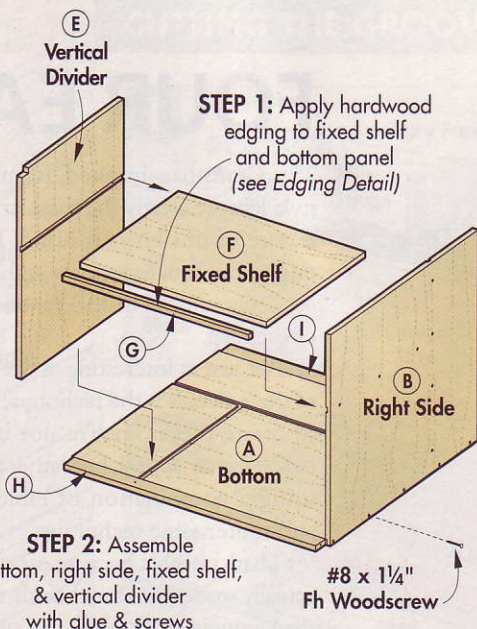
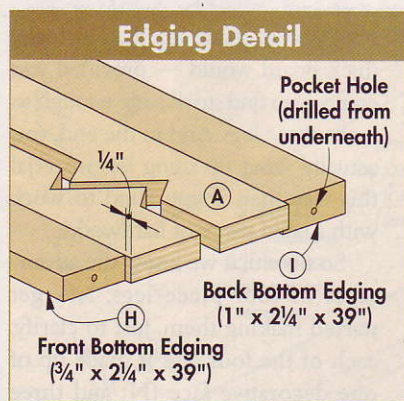
**Assemble the Case** — The *Illustrations* at right should make the assembly sequence clear. But there are a couple of points to take note of.

First, the vertical divider edging presents a bit of a clamping challenge. Fortunately, we worked out a simple tip for applying this piece (*page 22*).

Next are the hardwood stiffeners (K). These need to be pre-drilled with two pocket holes (*Stiffener Detail, below*). One hole is used to connect the stiffener to the case. The other helps secure the legs to the assembly later.

Then there's a  $\frac{1}{4}$ " plywood finish panel (L) that's glued to the back of the case. This panel not only hides the screws in the back, it also let us select an attractive grain pattern for this highly visible area of the island. However, clamping this panel would be tricky at best, so we used construction adhesive to create a strong bond. There are some helpful tips for this process on *page 22*.

The final piece of the case is an adjustable shelf (M). The shelf is 1" thick, so it can support heavy appliances or books without sagging. Simply cut the shelf to size from solid wood, and set it aside for now.





# Craftsman-inspired legs in FOUR EASY PIECES

The Craftsman-inspired, furniture-style legs are clearly the most striking feature of this kitchen island. That's due to the square recesses and long, decorative groove that adorn one face of each leg.

But just as interesting as the look of these details is the technique used to create them. They're not hand-cut, as it may appear, but rather made using a combination of table saw and router table techniques.

That's possible because each leg is actually made from four boards, rather than a single, thick blank. By ripping one of these boards into thin strips, it's simple to cut or rout the decorative details. Then the strips get glued back together to create the finished face.

But that's only one reason to build legs in this manner. It also creates a

much more stable leg than a single, thick board would — provided you could even find stock large enough to make these legs. And in the end, you actually wind up using less material this way than if you tried to work with a solid piece of hardwood.

So now that we know the advantages of four-piece legs, let's get started making them. Just to clarify, each of the four legs is made up of one decorative face (N) and three plain faces (O) (see *Leg Assembly, below*). The decorative faces are where we are going to get started.

**Decorative Faces** — As I mentioned, each decorative face will be ripped into strips (five to be exact), so we can cut and rout the decorative elements in those individual strips.

That means we need to account for the waste that's lost when we rip each blank apart. So to get started, you'll need four face blanks that are 3½"-wide. These should also be extra long (36" or so). They'll be cut to finished length after the leg is assembled.

When you have the four blanks ready to go, you need to mark them

in such a way that you'll easily be able to reassemble the strips correctly. If the strips get mixed up during this process, you could wind up with mismatched grain. An easy way to prevent that is to mark one end of each blank with a different color of marker.

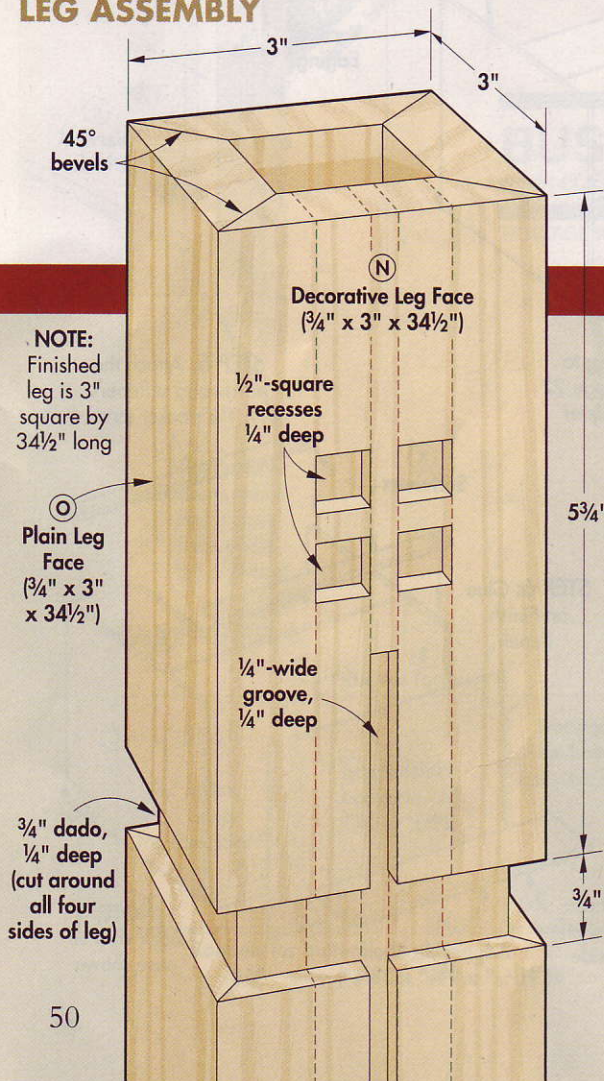
Now you're ready to rip the blanks into strips (*Illustrations, page 51*). This requires a couple different table saw setups. First, position the rip fence 7/8" from the blade. Cut the first strip from the blank, then turn the board end for end, and rip a strip from the opposite edge. Repeat this process for each blank.

Now, reposition the fence to cut a ½"-wide strip, and use the same process as before to cut the two inner strips. The final cut you make also forms the ¼"-wide center strip.

Take a moment now and make sure all the strips are grouped with their matching parts before moving on to the next step.

**Dadoing the Details** — The four square recesses that adorn the leg faces are created by cutting dados in the ½"-wide inner strips. Use a miter

## LEG ASSEMBLY



## ASSEMBLING THE FOUR-PIECE LEGS

The four-piece legs are assembled with miter joints to prevent the edge grain from showing. It's important when assembling the legs that all four faces are the same width. Ideally, the decorative faces you've already made are 3" wide. If not, simply rip the three plain faces to match.

Once you've ensured that all the leg faces are the same width, the next step is to rip a bevel on both edges of each face in preparation for assembly.

Start by tilting the saw blade to 45°. Then position the fence so you're just cutting away a wedge from the edge of the board *without* making the face any narrower (*Fig. 1*). You may want to perfect this setup on a

scrap piece before moving on to the actual leg parts.

To assemble the legs, lay the faces flat on pieces of tape. Spread glue on the mating edges. Then "roll" the leg faces together into a single post, and secure them with the tape (*Fig. 2*).

After the glue dries, the next step is to trim the legs to length (34½"). Measure down from the top of the leg to establish the cut line, then trim them, as shown in *Figure 3*.

Finally, mount a dado blade in your table saw to make the final cut in the legs. This dado will accept a trim strip that gets attached later in the island construction. Cut the dado all the way around the leg using the rip fence as a stop block (*Fig. 4*).



## MAKING DECORATIVE LEG FACES

**STEP 1:** Rip each decorative face into five strips

**NOTE:** Each decorative leg face starts as a  $\frac{3}{4}$ " x  $3\frac{1}{2}$ " x 36" blank

**STEP 3:** Form the groove by cutting a notch in the center strip (see art, right)

**STEP 2:** Cut  $\frac{1}{2}$ " dados  $\frac{1}{4}$ "-deep to create square recesses

**STEP 4:** Carefully align the recesses and the top ends of the strips as you glue the decorative face back together.

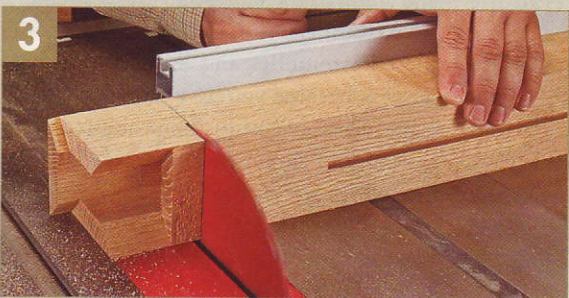
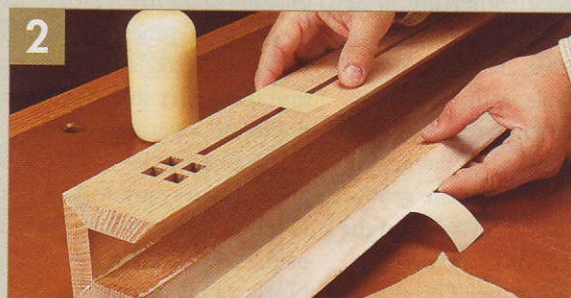
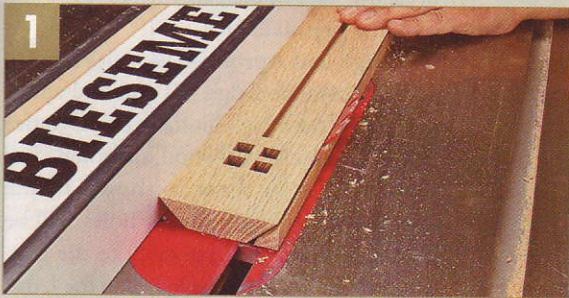
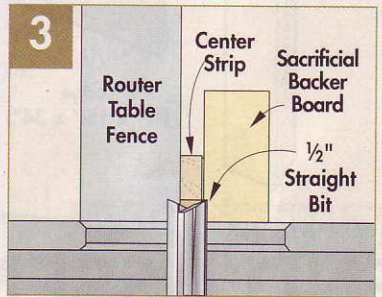
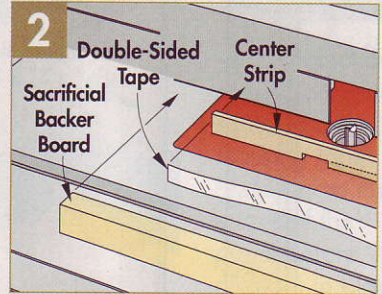
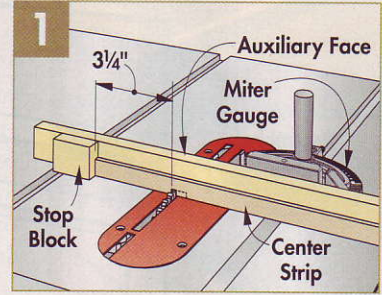
gauge and stop block to ensure consistent results when making these cuts.

**Routing the Groove** — Next comes the decorative groove. It's formed by cutting a long notch in the center strip. Most of this material will be removed on the router table, but it's best to first establish the shoulders of the notch on the table saw (Fig. 1). Once that's done, remove the stop block and make several more passes to widen the cuts to about  $\frac{1}{2}$ ". This will make it easier to start the cut on the router table.

To do that, mount a straight bit in the router table. Then tape the strip to a sacrificial backer board for support and to give yourself a safe handhold (Fig. 2). Now make a sideways plunge cut into the bit to remove the remaining waste material (Fig. 3).

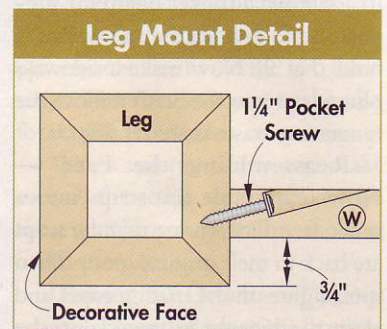
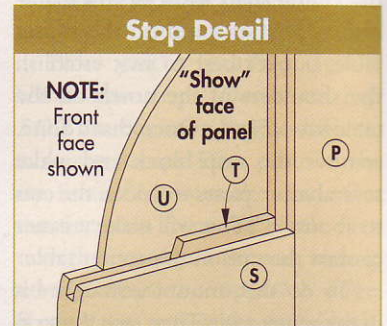
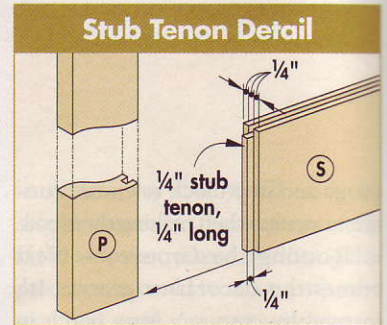
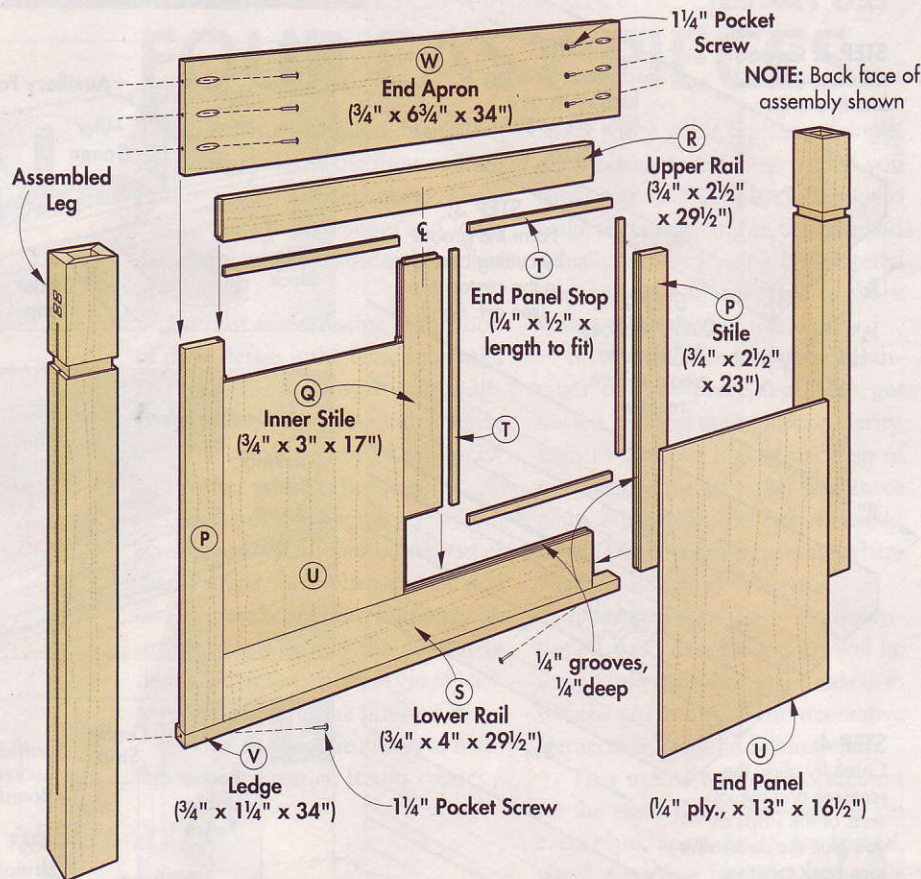
**Reassembling the Face** — Now reassemble the strips into a single face. First, ensure that the strips are back in their original group. Then spread glue on the mating edges and align the recesses as you clamp the assembly. After the glue dries, assemble each leg, as shown below.

## CUTTING THE GROOVE





## END ASSEMBLY VIEW



# frame & panel END ASSEMBLIES

The frame-and-panel end assemblies are just as important to the furniture-like appearance of this island as the legs are. And, just like the legs, they feature some unusual construction.

The frames themselves are fairly standard—they're solid-wood pieces that are assembled with stub-tenon-and-groove joinery (*End Assembly View, above*). What makes these assemblies unique is that the groove doesn't house the panel, as you might expect. Rather, it accepts a panel stop, which in turn holds the panel. This simple design twist adds one more layer of detail, or depth, to the assembly to make it look more like fine furniture and less like another ordinary cabinet.

**Frame First**—To get started on the assembly, cut the stiles (P), inner stile (Q), and rails (R,S) from 3/4"-thick hardwood.

Next, cut a groove in the inside edge of each of the frame pieces (in both edges of the center stile) to accept the panel stop

that will support the 1/4" plywood panels. Then, cut stub tenons on the ends of the rails and the center stile to fit into these grooves (*Stub Tenon Detail, above*).

Now it's time to assemble the frame. Be sure to make alignment marks to position the center stile as you glue and clamp the frame together.

**Panel Stops**—With the frames assembled, you're ready to add the panel stops (T). Besides providing a way to attach the panels, the stops serve another purpose. Notice how they add extra depth and dimension to the end assemblies in the *Photo* on page 46. To make the stops, plane some stock to thickness to fit snugly into the grooves. Then rip the stops to width, cut them to length, and glue them into the grooves (*Stop Detail*).

**End Panels**—Next, measure the opening in the frame, and cut the plywood end panels (U) to fit. Before gluing the panels into the frames, take a minute to

mask the panel with tape, so any excess glue winds up on the tape (*Photo, right*). By the way, be sure you're masking the good, or "show," face of the panel—1/4" plywood only has one such face.

**Ledge and Apron**—Now it's time to add a decorative ledge (V) and end apron (W) to the assembly. Cut these pieces to size from 3/4"-thick hardwood and then drill pocket holes in them as shown in the *Assembly View*. These pocket holes will be used to join the end assembly to the legs. Once these holes are drilled, glue the ledge and apron to the frame-and-panel assembly.

**Assembly**—Connecting the completed assemblies and legs can be challenging because you have to manage fairly large units and keep them aligned. And speaking of alignment, note how the end assemblies are set back 3/4" from the face of the leg (*Leg Mount Detail*). This is yet another detail that helps create a furniture-style look.



To assemble these pieces, start by placing the legs (outside face down) on a large, flat surface. Then position the end assembly (also face down) between the legs. Support the assembly with some 3/4" scrap pieces. This will give you the perfect setback from the face of the legs to the face of the end assembly.

Align the parts so the tops of the legs are flush with the top of the end assembly. Install the pocket screws to secure the whole works.

**Add the Spacers** — Before the end assemblies are ready to be attached to the case, you need to add a couple spacers (X). As the name implies, they “fill” the space between the end assemblies and the case, and also create a large glue surface for attaching the end assemblies to the case (*Spacer Detail*). Cut these pieces to fit between the legs, and glue and screw them to the end assemblies.

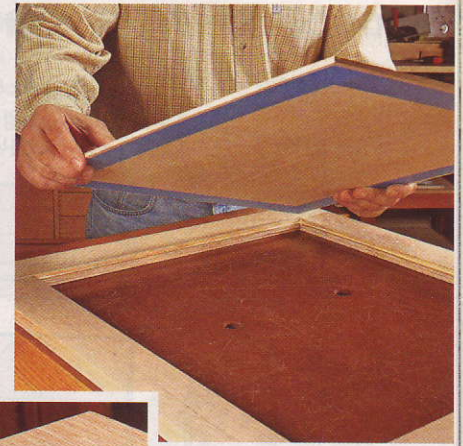
Now you can attach the end assemblies to the case. You’ll need to “jack up” the case, so it’s flush at the top with the end assemblies.

Spread glue on the spacers, and then clamp them to the end assemblies. Next, drive pocket screws from the stiffeners and into the end assemblies (*Installation Detail*).

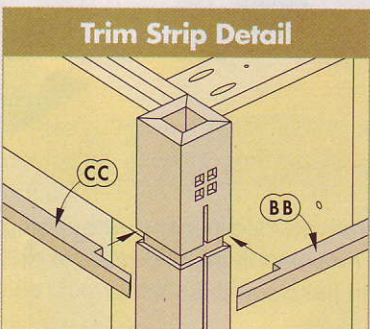
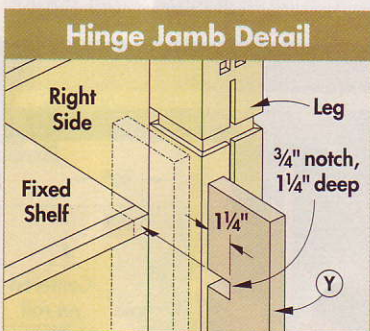
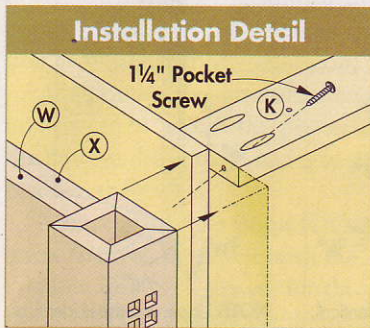
**Applied Details** — There are just a few details left to complete the case. First is a hinge jamb (Y). This piece ensures the proper clearance between the door and side of the case, so the hinges will be able to swing fully open. Notice that this piece has a notch cut in it to go around the fixed shelf (*see the Hinge Jamb Detail, below*).

Next are the front and back apron pieces (Z, AA). These are simply cut to fit, and then they are pocket-screwed to the case sides.

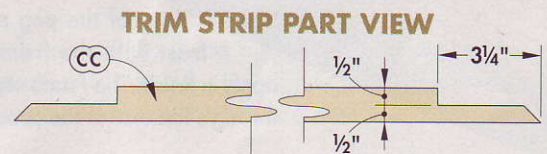
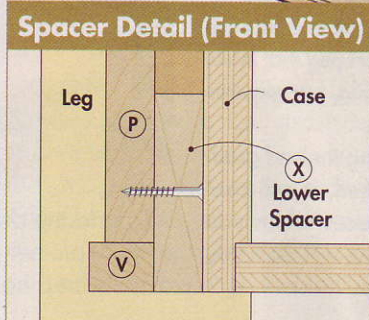
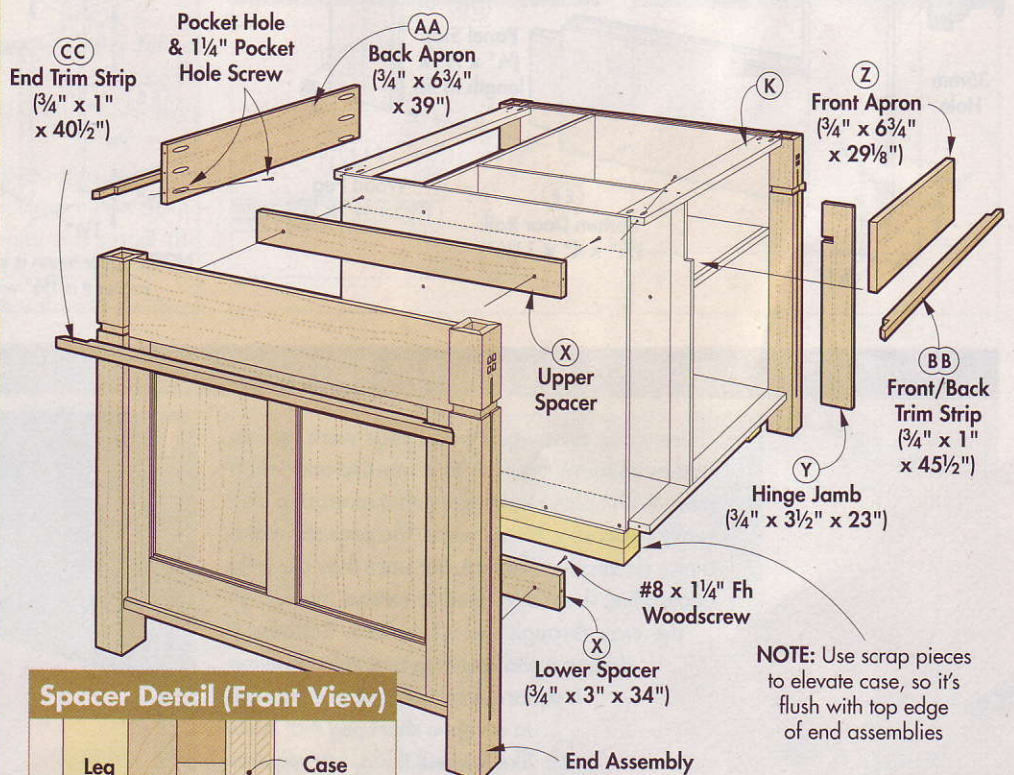
Finally, add the decorative trim strips (BB, CC) that wrap around the case. First, cut a notch in both ends of each trim strip to fit into the dados in the legs. Then miter the pieces to length, and glue and clamp them in place.



◀ To protect the panel from glue squeeze-out, run masking tape 1/4" in from the edges of the panel before gluing it in place.

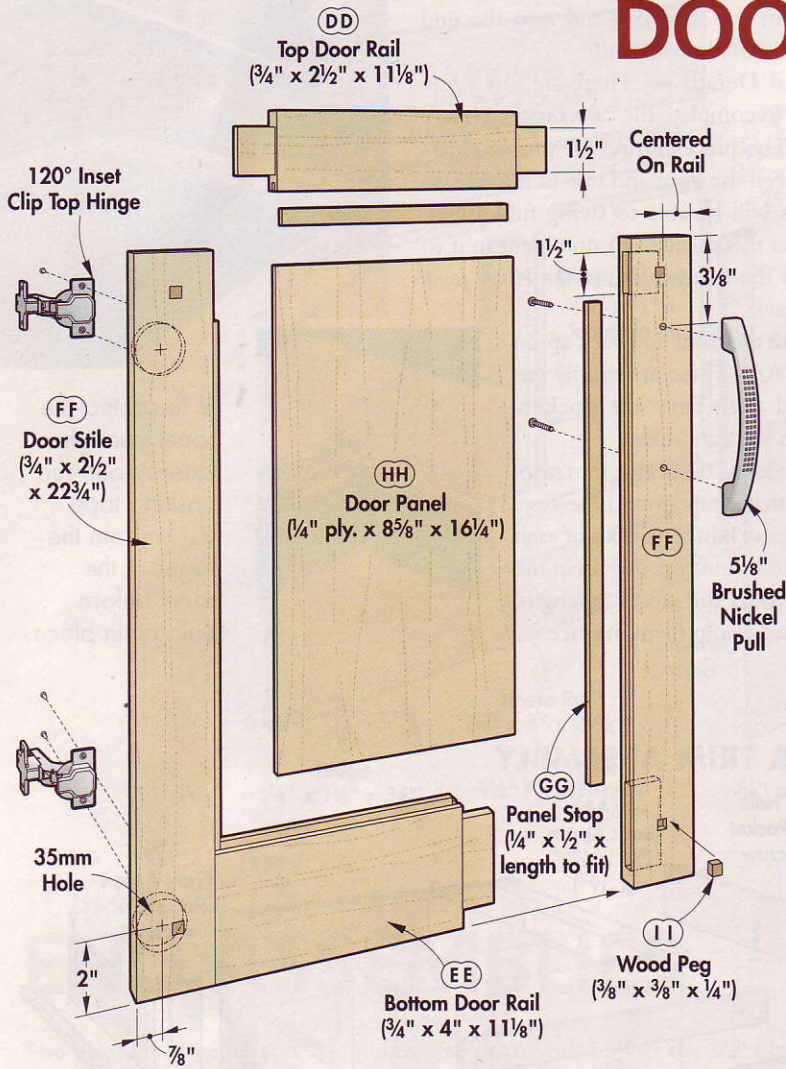


## END PANEL & TRIM ASSEMBLY





# DOORS & DRAWERS

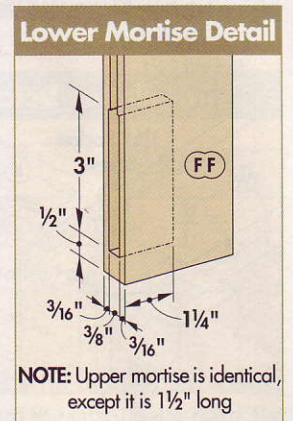
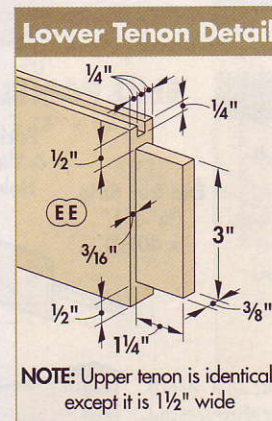


These doors share the frame-and-panel look of the end assemblies and require some of the same techniques (*Door Construction*). The difference in the doors, however, is joinery. Here, the rails and stiles are joined with mortise-and-tenon joints for extra strength.

**Door Frames** — Get started building the doors by cutting the rails (DD, EE) and stiles (FF) to size.

Now cut the tenons and mortises in these pieces. To cut the mortises, either use a mortising machine, or drill out the rough shape with a Forstner bit, and then chisel them to final size (*Mortise Detail*). The tenons are easy to make with a dado blade on the table saw (*Tenon Detail*).

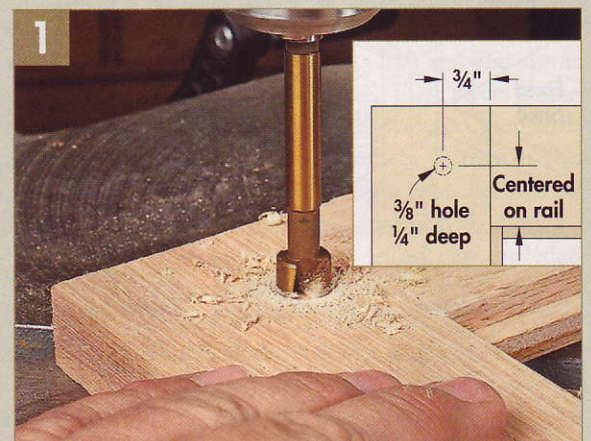
Next, cut the groove in the frame pieces for the panel stop. You'll want to do this on the router table, so you can stop the grooves in the mortises. Use stop blocks on the router table fence to start and stop this cut. Then assemble the door frames using glue and clamps.



## MAKING THE SQUARE PEGS

There was a time when wood pegs were used to add even more strength to a mortise-and-tenon joint. With today's adhesives, that extra step isn't really necessary. Nonetheless, the pegs still make a nice decorative element. But since they are only decorative, there's no need to extend the peg all the way through the workpiece. Rather, by drilling a shallow hole and then chiseling it square, you can create a mortise to accept a short peg that looks like the real thing, but requires a lot less work.

And by having the end grain of the peg exposed, it will contrast with the frame pieces when you apply a finish. The *Photo* sequence will walk you through the rest of the process.



▲ To add the decorative wood pegs, start by using a  $\frac{3}{8}$ " Forstner bit mounted in the drill press to drill a  $\frac{1}{4}$ "-deep hole in the door stile.



**Panel Stops** — The plywood panels in these doors, just like the panels in the end assemblies, are held in the frames with panel stops (GG). Just as before, plane these to thickness and cut them to fit. Then glue and clamp them into the grooves in the door frame.

Now measure the opening in each door, and cut a plywood panel (HH) to size. Once again, use masking tape to keep excess glue off the plywood panel.

**Decorative Pegs** — To add a bit more Craftsman flavor, these doors are accented with decorative wood pegs (II) at the corners. The four-step process for this is shown in the *Sidebar* below.

**Hardware** — The completed doors are now ready for hardware, which amounts to a couple of cup hinges and a door pull. Drill and mount those pieces according to the dimensions in the *Door Construction Illustration* on page 54.

**Dovetailed Drawers** — Now you're ready to build the drawers (*Drawer Construction Illustration*). These are standard dovetailed boxes with a false front.

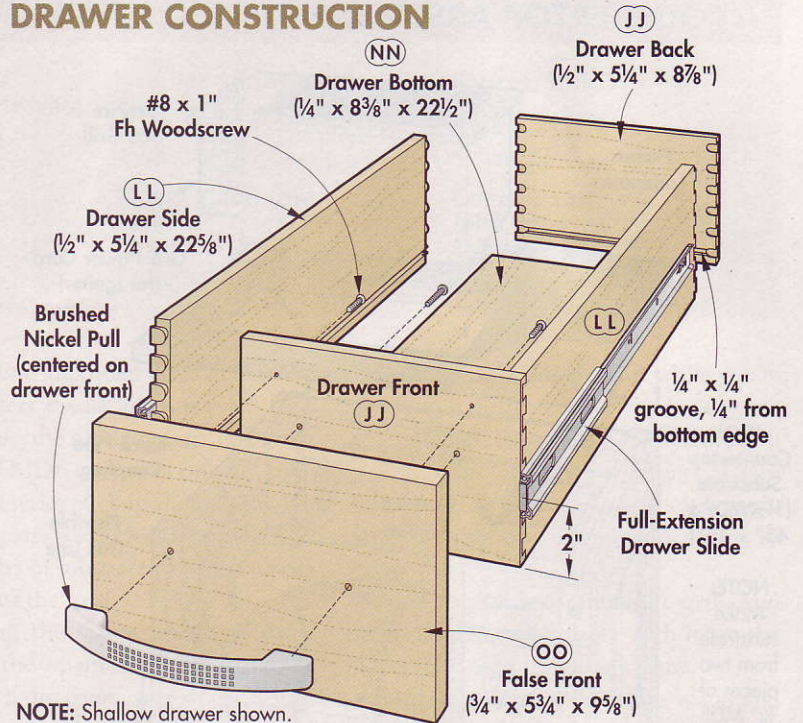
Start by cutting the drawer fronts, backs (JJ, KK), and sides (LL, MM) to size. Then lay out the dovetails according to the dimensions in the *Dovetail Detail*. Cut the dovetails with a handheld router and a half-blind dovetail jig. (For more information on routing half-blind dovetails, see the article in the *Online Extras* section at [WorkbenchMagazine.com](http://WorkbenchMagazine.com).)

After routing the dovetails, cut a groove in the drawer box pieces to accept the plywood bottom. Now cut the bottom (NN) to fit, and glue and clamp the drawer box together.

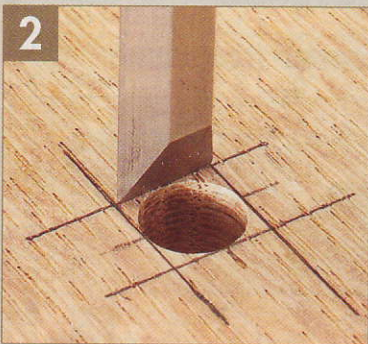
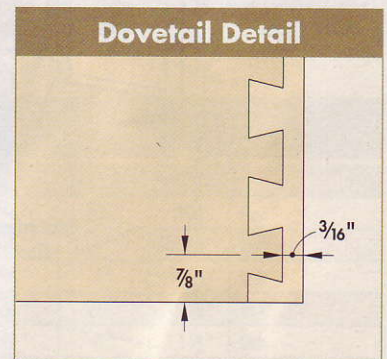
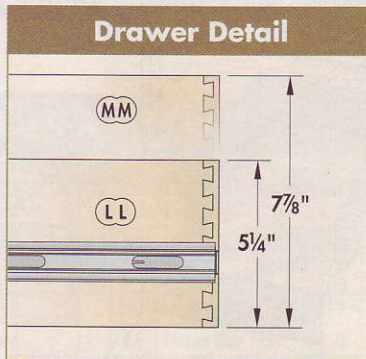
Next, cut the false fronts (OO, PP) to size, and then screw them to the boxes with the bottom edges flush.

Now drill each drawer for the pulls, and install the hardware. Finally, install the drawer pulls, and mount the drawers in the island with full-extension drawer glides.

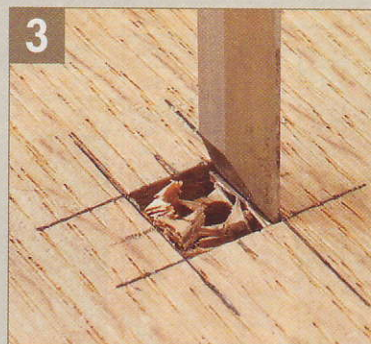
## DRAWER CONSTRUCTION



**NOTE:** Shallow drawer shown. See materials list on page 57 for dimensions of large drawers



▲ Next, use a chisel, and cut across the grain to establish the first edge of the mortise. By cutting across the grain first, you will prevent the the wood from splitting during the next few cuts.



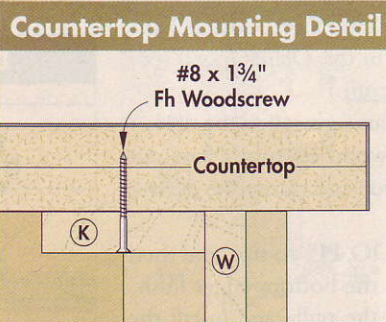
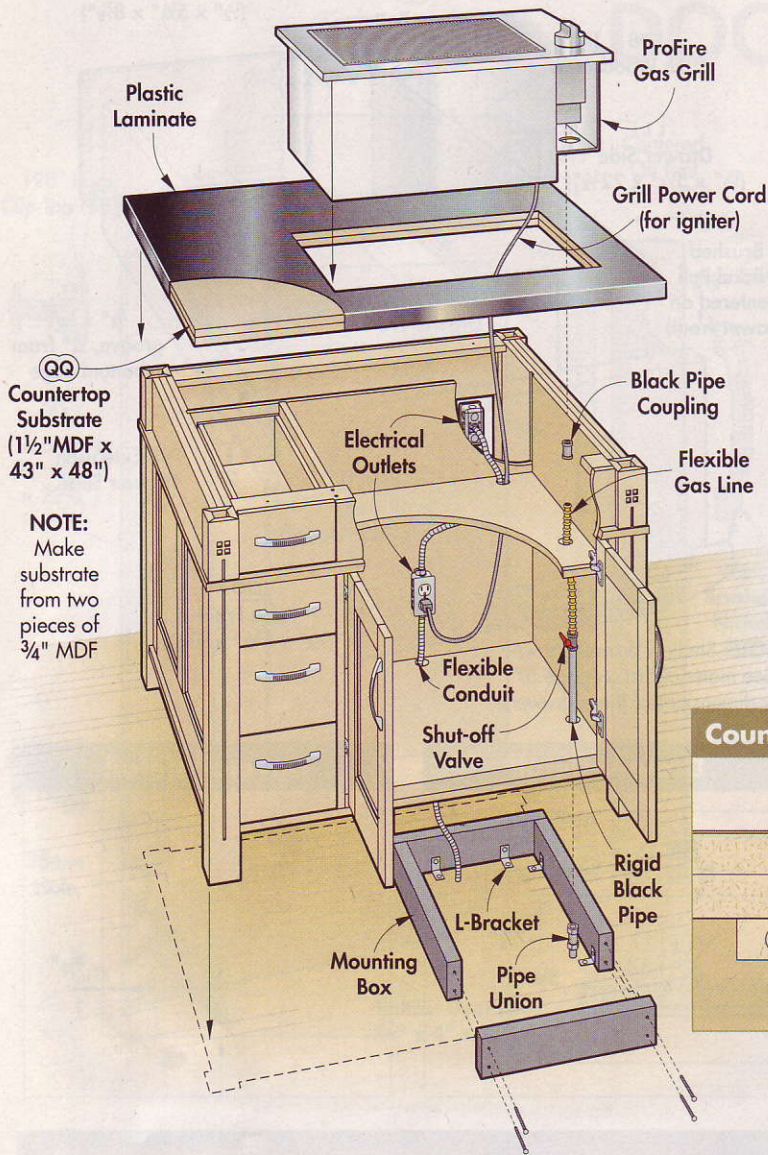
▲ Now, cut with the grain to square off the remaining edges of the mortise. The intersecting edges of the mortise have already been established, so this part of the cut will go smoothly.



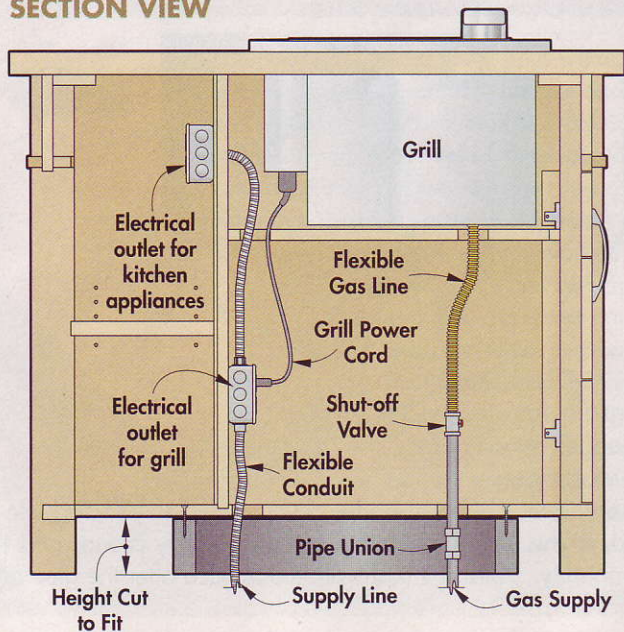
▲ Finish up by gluing a  $3/8" \times 3/8"$  peg into the mortise. Leave the peg slightly proud, and then sand it flush with the surface after the glue dries.



## COUNTERTOP ASSEMBLY



## SECTION VIEW



# island installation & COUNTERTOP

Installing the nearly complete kitchen island is more than just setting it in place. The island will also have to be wired with electricity and plumbed with gas.

The power line will feed two outlets: one inside the compartment for the grill igniter to plug into and another that's accessible from the outside of the island for plugging in appliances (see *Illustrations at left*). The gas line needs to include a shut-off valve inside the compartment. You'll want to have easy access to this shut-off valve, so it's important to keep the gas line toward the front of the island.

Both lines should be fed from underneath the floor and into the compartment through access holes drilled in the bottom of the case. This will leave the lines partially exposed where they span between the floor and the bottom of the island, so you'll need to protect them.

A simple box with one removable side (in case you need to access the utilities) will serve nicely. The box consists

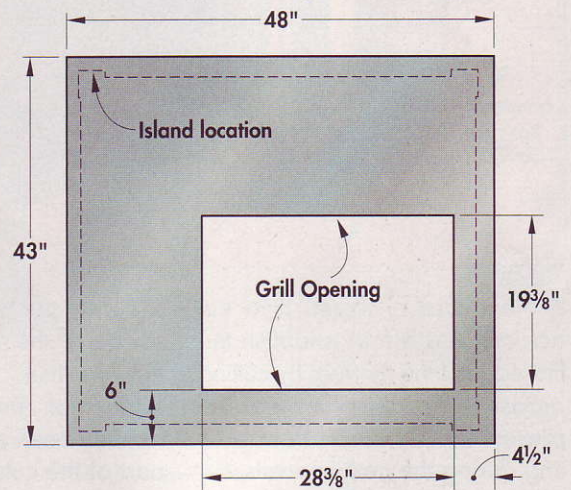
of four boards ripped to width from 2x6 stock to fit under the island and then butted and screwed together. Use metal L-brackets to secure three sides of the box to the floor.

Once the utilities are taken care of and you've moved the island into position, drive screws through the case bottom and into

three of the box sides (but not into the removable side).

**Custom Countertop** — Building a custom countertop for this island was an absolute necessity. There's no way we could find a pre-made version that would

## COUNTERTOP (TOP VIEW)





# KITCHEN ISLAND

start entertaining and get grilling  
—all indoors!

As we took an inventory of the “must-haves” for our kitchen island, we didn’t get any further than the first item on the list — an indoor grill — before we knew for certain that no ordinary island would do (Photo, left).

Mounting a gas grill in what is essentially a cabinet is no small thing, after all. But we didn’t want the island to be reduced to nothing more than a place to house this unique kitchen appliance. We also wanted to include additional storage for everything from grilling utensils to our favorite cookbooks. And, of course, the island had to look like it belonged in a kitchen.

**Fitting the Grill** — As you look over the *Construction Details* on the next page, you’ll see that this kitchen island is a bit unorthodox in the way it’s compartmentalized. By dividing the island in this manner, we were able to create a separate compartment for the grill and still make use of the rest of the cabinet for a bank of drawers, some undercounter storage, and even a bookshelf on the backside of the island.

Of course, the design of the island depends on using this particular grill. Specifically this model from ProFire (*Buyer’s Guide*, page 57) allows for a “zero-clearance” installation, which









# Contemporary Craftsman KITCHEN REMODEL

She's contemporary. He prefers the Craftsman style. He likes to grill. She'd rather bake. They both want a new kitchen that will suit their different tastes while also meeting their common needs. Needs like feeding a family of four and occasionally entertaining friends.

Can one kitchen possibly fill the bill? This one did.

It has all the standard fare of any well-appointed kitchen including a conventional oven, cooktop, and microwave oven. But it's the details of this kitchen that truly reflect the divergent tastes of the homeowners.

He got his grill built right into the kitchen island, which also serves nicely as a gathering point for dinner guests. Her contemporary sensibilities are completely satisfied with a stylish stainless-steel sink, trendy accessories, and fashionable fixtures and hardware. As for his Craftsman affection, the styling of the cabinets and butcher block countertops more than do the trick.

In the end, they wound up with a kitchen that they can both live with and live in. And over the next two issues, we'll show you how to recreate this contemporary Craftsman kitchen in your own home.

We begin with the furniture-style island, including how to build the base cabinet and all the decorative accents. Then we top it off with a laminate countertop that you make yourself. We also highlight some of the best kitchen accessories that will add organization and functionality to any kitchen.

In the next issue, we'll cover the matching cabinets, as well as the butcher block countertops and installation of an undermount stainless-steel sink.

