



**WOODWORKS: INTERMEDIATE PROJECT 2006-2007**  
**SIDE TABLE**



Here's a perfect table for use in a front hall, behind a living-room sofa or in your bedroom for showcasing your favorite knickknacks. Besides being narrow enough to fit in a variety of locations, its two drawers provide convenient storage for small items. For intermediate woodworkers, the tapered legs, doweled joints and close tolerances throughout will present a challenge but also produce great satisfaction when properly executed. And when it's all assembled, you'll learn more about applying and using stains and finishes to protect the wood and keep it looking beautiful.

**TOOLS REQUIRED****Hand Tools**

- Hammer
- Nail set
- 4' pipe clamp
- 18" pipe clamps (4)
- Doweling jig

**Power Tools**

- Tablesaw with combination rip/crosscut blade and dado blade
- Saber saw
- Router, 3/8" roundover bit
- Jigsaw
- Electric drill

**Miscellaneous**

- Pencil
- Tape measure
- Safety glasses
- Carpenter's glue
- 120, 150 and 220-grit sandpaper
- Clean, lint-free cloths
- Respirator
- Gloves for finishing
- Mineral spirits (for oil-based stains and finishes)
- Water-filled metal container with tight-fitting lid (for oil-based stains and finishes waste products)
- Minwax® Wood Finish™ Stain Brush or other good quality, natural-bristle brush (for oil-based stains and finishes)
- Minwax® Polycrylic® Brush or other good quality, synthetic-bristle brush (for water-based stains and finishes)

**SHOPPING LIST**

Item	Quantity
1x8 oak	1 @ 9', 2 @ 6'
2x4 birch	1 @ 6'
1x6 birch	2 @ 6'
1x4 birch	2 @ 6'
1/4" birch plywood	1 @ 12" x 36"
4d finish nails	50
3/8" x 2" dowel pins	16
#8 x 3/4" pan-head screws with washers	2
Oak drawer knobs	2
Tabletop fasteners	6

**CUTTING LIST**

Overall Dimensions: 32"H x 48"W x 14"D				
Key	Part	Pcs.	Material	Dimensions
A	Table top	1	oak	3/4" x 14" x 48"
B	Legs	4	birch	1-1/2" x 1-1/2" x 31-1/4"
C	Front & back aprons	2	birch	3/4" x 4-1/2" x 37"
D	Side aprons	2	birch	3/4" x 4-1/2" x 10"
E	Drawer fronts	2	birch	3/4" x 3-5/8" x 15-1/2"
F	Drawer sides	4	birch	3/4" x 2-7/8" x 11"
G	Drawer backs	2	birch	3/4" x 2-3/8" x 13-3/4"
H	Upper drawer runners	2	birch	3/4" x 2" x 10-3/4"
J	Drawer runners	4	birch	3/4" x 1-1/2" x 10-3/4"
K	Drawer runners	4	birch	3/4" x 3/4" x 10-3/4"
L	Stop blocks	2	birch	3/4" x 3/4" x 6"
M	Drawer bottoms	2	birch plywood	1/4" x 10-3/4" x 13-3/4"
N	Drawer stops	2	birch plywood	1/4" x 1" x 3"

Recommended Wood: Oak/Birch  
Alternate Wood: Pine (stain grade)

**WOOD FINISHING PRODUCTS****Recommended Finish**

Prep: Minwax® Pre-Stain Wood Conditioner  
Stain: Minwax® Wood Finish™ English Chestnut (or your choice of any of the 22 Minwax® Wood Finish™ Stain colors)  
Finish: Minwax® Wipe-On Poly Satin or Gloss

**Alternate Finish**

Prep: Minwax® Water-Based Pre-Stain Wood Conditioner  
Stain: Minwax® Water-Based Wood Stain Verdigris (or a Minwax® Water-Based Stain of your choice, available in 6 wood tones, 60 custom colors and 8 bold Accents™ colors)  
Finish: Minwax® Polycrylic® Protective Finish Semi-Gloss

## BEFORE YOU BEGIN

Good craftsmanship begins and ends with good work habits, so make the following steps part of your routine workshop practice. If you have any doubts or questions about how to proceed with a project, always discuss them with your shop instructor.

- Carefully and fully review plans and instructions before putting a tool to the project lumber.
- Work sensibly and safely. Wear safety goggles when doing work that creates flying chips and sawdust; wear the appropriate respirator whenever making sawdust or working with thinners or other solvents.
- At the end of every work session, clean up your shop area and put away all portable tools.

## CUTTING AND ASSEMBLY PROCEDURE

### Glue the Top

1. To make the top (A), edge-glue together two 1 x 8 boards that are 49" long. Alternate the direction of the growth rings in the end grain of the boards to prevent the top from warping. After the glue has dried, cut the top to its finished dimension.

### Make the Initial Cuts

2. Cut all the pieces, (B) through (N), to the dimensions given in the CUTTING LIST. Glue the drawer runner pieces, (J) and (K), together.

### Taper the Legs

The legs are made of solid birch stock 1-1/2" thick. If you have trouble finding birch that thick, glue together two 3/4" pieces. The taper on two sides of each leg is easy to cut with a homemade tapering jig. The drawers are boxes assembled with nails—very easy to make and align—and they ride on wooden runners.

3. Make the leg-tapering jig by cutting a 3/4"-thick piece of scrap plywood 5" wide by 33" long (Fig. 4). Draw the angled side as shown in the diagram and cut out the notch with a saber saw.

4. To cut the legs, set the tablesaw fence 5" from the saw blade and set the blade slightly higher than 1-1/2". You must cut a taper on two adjacent sides of each leg and leave the sides that fit against the aprons uncut. Place a leg (B) in the notch of the taper jig and slide the jig across the table, holding it tight to the fence (Fig. 5). Use a push stick to hold the leg tight against the side of the notch as you cut the taper. Rotate the leg 90 degrees in the jig so the tapered side you just cut is facing up, then cut the other tapered side of the leg. Repeat these steps for the remaining three legs.

### Drill the Dowel Holes

5. Drilling the dowel holes can be confusing unless you first mark which sides of the legs (B) and ends of the apron pieces (C) go together. The easiest way to do this is to place all the legs and apron pieces upside down on your worktable in the relative positions they'll assume when the base is assembled. Label each joint with a different identifying mark so you can assemble it the same way later.

**Woodworker's Tip:** *Drilling the dowel holes in the legs and aprons is simpler and more accurate if you use a dowel-drilling jig. Place a piece of masking tape on the drill bit for a depth stop flat.*

6. Mark the positions of the dowel holes in the sides of the legs and the ends of the apron pieces (Fig. 3). Offset the dowels slightly on each side of the legs so they won't interfere with each other. Drill the 3/8"-diameter dowel holes.

7. With the tablesaw blade set 1/4" high, cut the grooves for the tabletop fasteners 1/2" from the top edge of the front and back aprons (C, Figs. 3 and 6).

### Assembling the Table

There are three stages in assembling the table. First, construct the frame from the legs and apron pieces. Second, make the drawers. Third, complete the top, which has already been glued together and cut to size.

### Construct the Frame

8. Lay out and cut the two drawer openings in one of the long apron pieces (C). To do this, drill 3/8" holes within the cutout area of each opening. Then use a saber saw to cut along each line. Proceed slowly and carefully to ensure straight cuts and square corners. After the cutting, file and sand all edges smooth.

9. Sand the legs and aprons with 120-grit paper, then smooth them all with 180-grit paper. Dowel, glue and clamp the front legs to the front apron and the back legs to the back apron. Then dowel, glue and clamp the side aprons to the assembled front and back. Quickly wipe away excess glue with a damp cloth.

### Make the Drawers

10. Drill the holes for the knobs in the drawer fronts (E, Fig. 1). Shape the drawer front edges with a router and 3/8" roundover bit.

11. Cut rabbets 1-1/8" wide by 3/8" deep on the inside ends of the drawer fronts, using a dado blade on the tablesaw. Use the tablesaw miter gauge to ensure square cuts. Clamp a stop block to the fence to hold the piece the correct distance from the blade. Cut rabbets 3/4" wide x 1/4" deep on the back ends of the drawer sides (F) in the same way (Fig. 2). Cut the grooves for the drawer bottoms (M) in the drawer fronts and sides.

12. Sand all the drawer pieces, then glue and clamp all the pieces together except for the drawer bottoms. Push the bottoms into their grooves after finishing, to avoid having to wipe the stain and topcoat out of the corners.

13. Drill pilot holes, and then drive finish nails through the drawer sides into the drawer fronts and backs. To make nailing easier, clamp the drawer front or back in a vise so that the drawer side is supported on the top edge of the vise jaw. Use a nail set to finish driving the nails into the drawer fronts past the lips of the fronts.

14. Align the upper drawer runners (H, Fig. 1) between the front and back aprons. Use a clamp to hold them in place, then drill pilot holes and drive finish nails. Use a nail set to drive the heads below the surface. Fill the nail holes with wood putty. Then glue the stop block (L) in place at the bottom of each drawer opening in the front apron.

**Affix the Lower Runners**

15. To mount the runners (J, K) that guide the sides and bottoms of the drawers, set the table base on its back and align the drawers in their openings. Set them tight to the bottom edge of the opening in the apron, with an even gap on each side.

16. Set the drawer runners in place and mark their outside edges on the front and back aprons (Fig. 6). Mark where the ends of the drawer runners join the front and back apron pieces. Leave a 1/32" gap between the runners and the sides of the drawers. Hammer finish nails through the aprons and into the drawer runners to hold them in place. Use a nail set to drive the nailheads slightly below the surface. Fill the nail holes with wood putty.

17. Finish the drawer assembly after the final topcoat is dry. Slide the drawer bottoms (M) into their grooves and then fasten them with two 4d finish nails driven into the drawer backs.

18. Attach the knobs to the drawer fronts and pivoted stops to the backs of the drawers. The stops are 1"x 3" pieces of 1/4" plywood. Attach them with a single pan-head screw and a washer (see Drawer Section View, Fig. 2).

19. Reattach the top to the base with table fastener brackets (Fig. 6). Leave a 1/16" space between the fasteners and the aprons to allow the top to expand. Turn the rear drawer stops horizontal so you can slide the drawers in place. Then turn the stops downward so the drawers won't fall out when you open them.

**STAINING AND FINISHING**

***Woodworker's Tip:** Though you may be tempted to cut short your sanding, preparation and application time, don't do it. These tasks are very important steps in obtaining a high-quality finish. Remember, it is the finish, just as much as the fit and smoothness of the parts that will have great bearing on how people judge your craftsmanship. To ensure an excellent result, follow the steps listed in this section and also the instructions the finish manufacturer puts on its products.*

**FINISHING TIPS**

- Test the stains and finishes you are planning to use on scraps of wood. On the back of the scrap, mark the stain/finish combination and the type of wood. Allow all samples to dry thoroughly before making your final finish selection. Save your samples for quick reference on future projects.
- All stains and finishes must be allowed to dry thoroughly between coats. Remember that drying times can vary due to humidity and other climatic conditions.
- If you have some leftover stain or finish, wipe the can rim so that stain or finish in the rim won't dry out and prevent the lid from forming a tight seal.
- Brushes used for water-based products, such as Minwax® Water-Based Wood Stains or Minwax® Polycrylic® Protective Finish, must be cleaned with soap and water; oil-based finishes must be cleaned with mineral spirits.

20. Sand all pieces starting with 120-grit paper, then move up to 220-grit to complete the pre-finish smoothing. Use an orbital sander to

remove any marks or scratches, then lightly sand by hand using with-the-grain sanding strokes. Dust off the piece and wipe it carefully with a clean, lint-free cloth lightly dampened with mineral spirits.

**Recommended Finish**

21. Apply the Minwax® Wood Finish™ you've chosen to the interior surfaces using a natural-bristle brush and a clean, lint-free cloth following the directions on the can. The brush will help you get the stain into the many inside corners and other tight spots. Allow the Wood Finish™ to set for about 5 to 15 minutes, then wipe off any excess. To achieve a deeper color, you may apply a second coat after 4-6 hours, repeating the application directions for the first coat. Allow the stain to dry for 24 hours before applying the protective clear finish.

***Woodworker's Tip:** Different species of wood take to stain differently. When using a combination of woods like oak and birch, you may need to apply a second or third coat to birch to achieve a uniform finish. When wiping off stain, make certain that your last wipe with the cloth goes with the grain of the wood. This way, any stain you might miss during wipe-off will be visually minimized by the wood grain.*

22. Apply Minwax® Wipe-On Poly following the directions on the can. Shake the can thoroughly. Apply a liberal amount of Wipe-On Poly on a clean, soft, lint-free cloth into the wood. It can be brushed on or wiped on with a cloth. Allow the first coat to dry for at least 4 hours.

23. Once completely dry, sand all surfaces very lightly with 220-grit or finer sandpaper or very fine (000) steel wool using with-the-grain strokes. Thoroughly wipe off all surfaces with a soft cloth. Apply a second coat of Minwax® Wipe-On Poly and set the piece aside to dry for at least 4 hours.

24. Once completely dry, sand all surfaces lightly with 220-grit or finer sandpaper or very fine (000) steel wool. Thoroughly wipe off the piece with a soft cloth and apply a third and final coat of Wipe-On Poly. Allow the table to cure for several days before using it.

***Woodworker's Tip:** For an ultrasmooth finish, use 400-grit sandpaper to apply the final coat of Minwax® Wipe-On Poly.*

**Alternate Finish**

25. Before applying Minwax® Water-Based Wood Stain to a hardwood or softwood, apply Minwax® Pre-Stain Water-Based Wood Conditioner following the directions on the can. This will help to ensure even absorption of stain and prevent blotchiness that can occur with some woods. After 1 to 5 minutes, wipe off all excess conditioner using a clean, soft cloth. Wait 15 to 30 minutes then use 220-grit or finer sandpaper to sand off any "whiskers" raised by the conditioner. Proceed to the staining within 2 hours.

26. Do the staining in two steps, starting on the interior surfaces and then do to the exterior surfaces. Apply the Minwax® Water-Based Wood Stain you've chosen to the table using either a nylon/polyester brush or a cloth. Allow stain to penetrate no longer than 3 minutes. While stain is still wet, wipe off all excess with a clean cloth that's been lightly dampened with stain. Allow the piece to dry for 2 hours before

applying a second coat, if desired. Allow the piece to dry overnight before applying the protective clear finish.

**NOTE:** Minwax® Water-Based Wood Stain is available in 6 wood tones, 60 custom-mixed colors and 8 bold Accent™ colors. This means that you are not limited to just traditional wood colors (pine, oak, walnut, etc.). Instead, you can actually pick and apply a color to complement the décor of the room in which the table will be placed. For this reason, make sure you look over all of the Minwax® color charts or go to [minwax.com](http://minwax.com) before making your final selection.

27. After allowing the piece to dry overnight, apply Minwax® Polycrylic® Protective Finish following the directions on the can. Stir the can contents thoroughly before starting and periodically repeat the stirring during your work session.

28. Working a small area at a time to maintain a wet edge, apply the first coat. Work quickly and make the final strokes in each newly finished section using with-the-grain brushstrokes.

29. Allow the finish to dry a minimum of 2 hours. Then sand lightly with 220-grit or finer sandpaper wrapped around a flexible sanding block. Thoroughly dust off and wipe all surfaces with a cloth lightly dampened with water.

30. Repeat steps 28 and 29 to apply the second and final coat.

#### PRODUCT SAFETY

For your safety and the safety of those you work with, always read the safety warnings, which manufacturers print on their labels, and follow them to the letter.

**WARNING!** Removal of old paint by sanding, scraping or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as properly fitted respirator (NIOSH approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in US) or contact your local health authority.

**DANGER:** Rags, steel wool, other waste soaked with oil-based stains and clear finishes, and sanding residue may spontaneously catch fire if improperly discarded. Immediately place rags, steel wool, other waste soaked with these products, and sanding residue in a sealed, water-filled metal container. Dispose of in accordance with local fire regulations.

#### When using oil-based wood finishing products:

**CAUTIONS: CONTAINS ALIPHATIC HYDROCARBONS.** Contents are **COMBUSTIBLE**. Keep away from heat and open flame. **VAPOR HARMFUL.** Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

**FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water for 15 minutes and get medical attention. For skin contact, wash thoroughly with soap and water. In case of respiratory difficulty, provide fresh air and call physician. If swallowed, call Poison Control Center, hospital emergency room, or physician immediately.

#### DELAYED EFFECTS FROM LONG-TERM OVEREXPOSURE.

Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN.** CONFORMS TO ASTM D-4326. Contact a physician for more health information.

#### When using water-based wood finishing products:

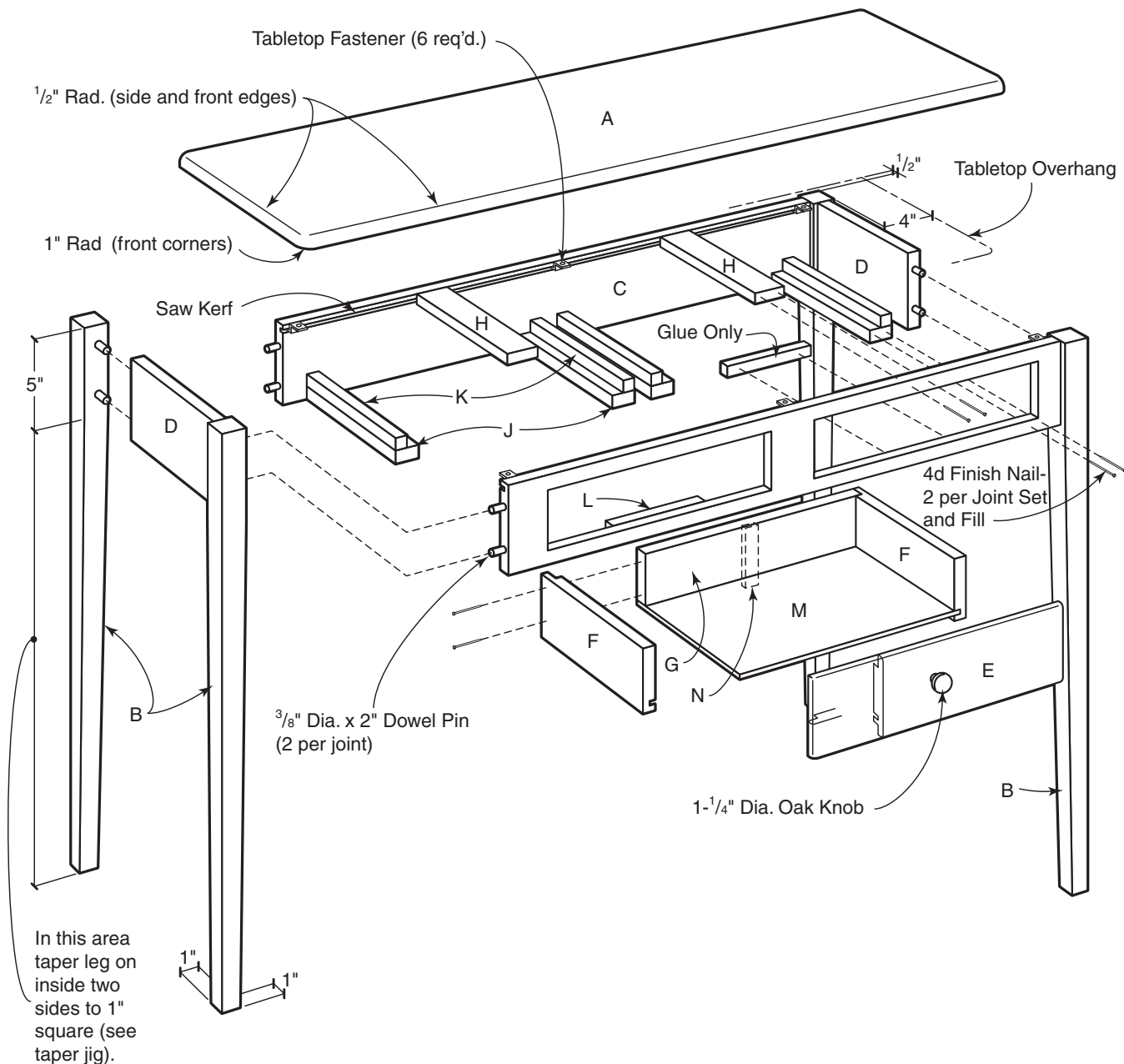
**CAUTIONS:** Use Only With Adequate Ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved), or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

**FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water. Get medical attention if irritation persists. If swallowed, get medical attention immediately.

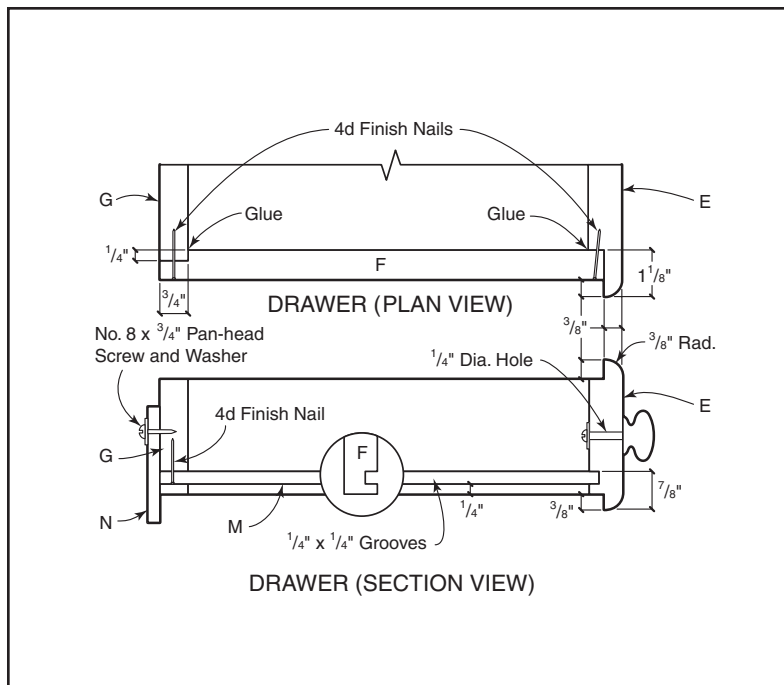
**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **DO NOT TAKE INTERNALLY. KEEP OUT OF REACH OF CHILDREN.** CONFORMS TO ASTM D-4326. Contact a physician for more health information.

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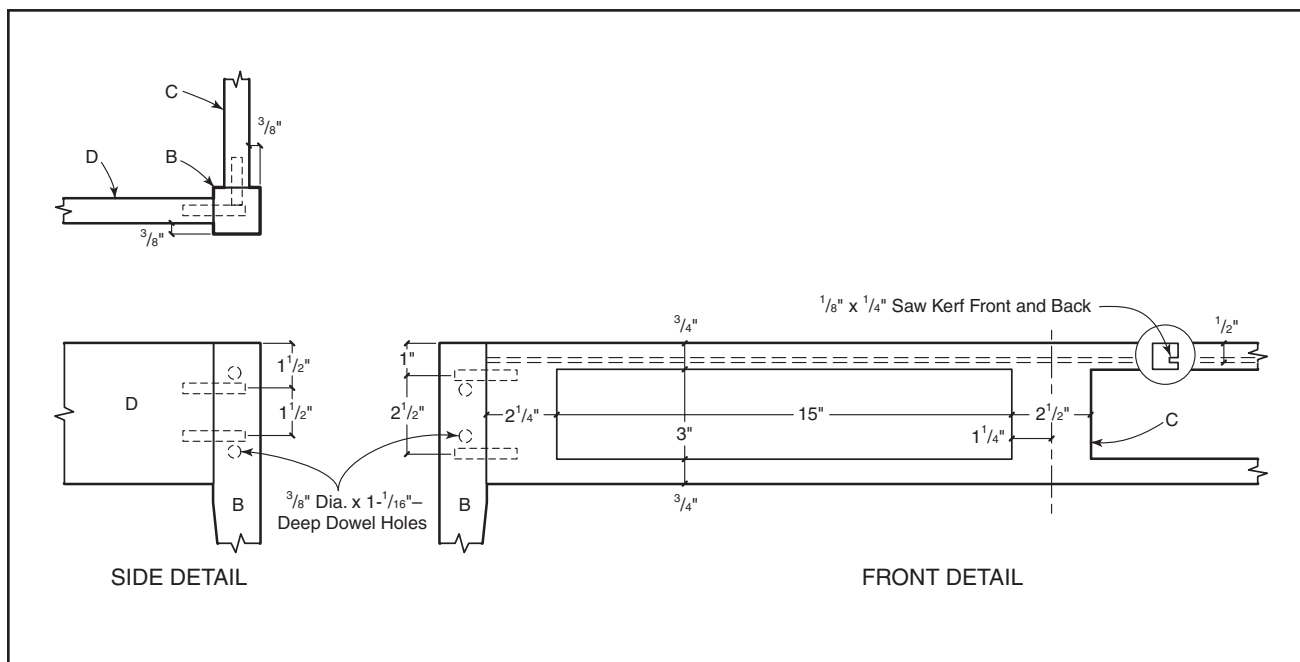
**FIG 1. TABLE DETAILS**



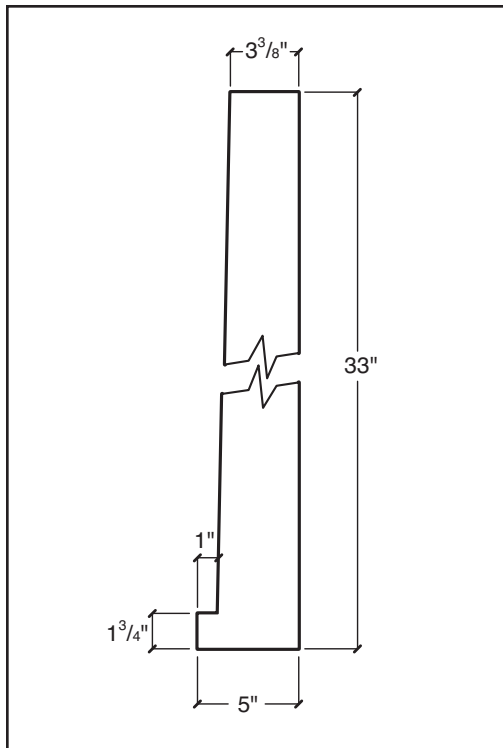
**FIG 2. DRAWER DETAILS**



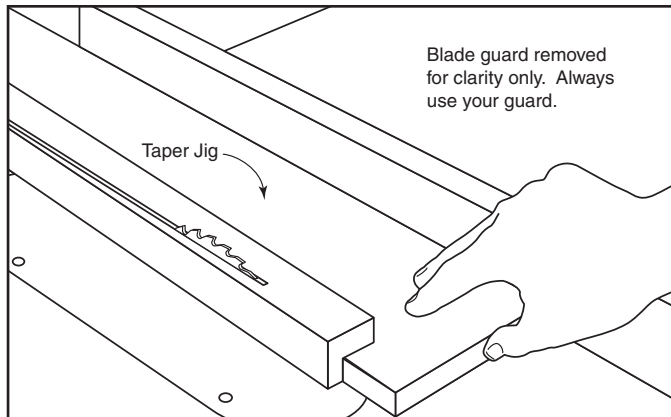
**FIG 3. LEG AND APRON DETAILS**



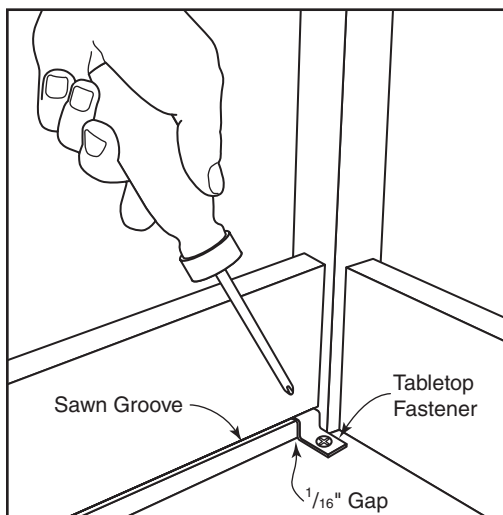
**FIG 4. TAPERING JIG**



**FIG 5. CUTTING THE LEGS**



**FIG 6. REATTACH TO BASE**



**FIG 7. MARK THE DRAWER RUNNERS**

