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In this plan you will be getting:

- Step by Step construction instruction.
- A complete bill of materials.
- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.

A Table for Four... with a View

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A Table for Four… with a View

One of the best ways to spend more time on the deck or patio is to build a picnic table and benches. Made of redwood, our design easily seats four adults. The pedestal style provides ample leg room, and everyone gets a generously sized bench. With a little seasonal care, here's an outdoor project that will easily last for decades.

Spring and summer are natural elixers for creating outdoor projects. As the temperature rises, the urge to spend as much time as possible outdoors can be overwhelming. It's time to clean up the barbeque, sweep off the deck and think about building a sturdy picnic table and benches.

Most picnic sets are designed for larger groups of people. They're big and bulky, and when it comes to Memorial Day or July 4th celebrations, they're perfect. But most of us, when you think about it, spend our summer evenings with four or fewer people, and ideally this calls for a smaller, more intimate table. Our design makes no pretension about handling large crowds, fits easily on an average-sized deck and provides a perfect view the yard.

A pedestal table like this allows lots of room for knees, and no one ends up straddling a leg. Our picnic set is made of redwood for its exceptional resistance to harsh weather conditions and for it's beautiful color. The base is sturdy while still being simple to construct. The joinery is simple, requiring only a couple of half laps in the base and spline joints for the top. Most concealed joints, like mortises and tenons, would eventually come apart due to humidity changes and stress on such soft wood.

Redwood is still available at some lumberyards, or you can substitute cedar if you prefer. The table and four benches require 18 eight foot 2" x 4"s, one eight foot 2" x 6" and two six foot 1" x 4"s. You'll also need a quantity of non-corrosive wood screws, lag screws and washers as specified in the *Material Lists* on pages 107 and 111.

Constructing the Pedestal

Begin building the table from the bottom and work upward. The *patterns* on pages 106 and 107 outline the four pedestal feet and detail the construction of the base. Be sure to remember that all the lumber sizes are nominal, meaning that a 2" x 4" is actually 1½" x 3½" so always measure your stock to check it against the measurements in this project. Each foot is comprised of a 2" x 4" core sandwiched between two smaller 1¼"-thick pieces. Begin by cutting two

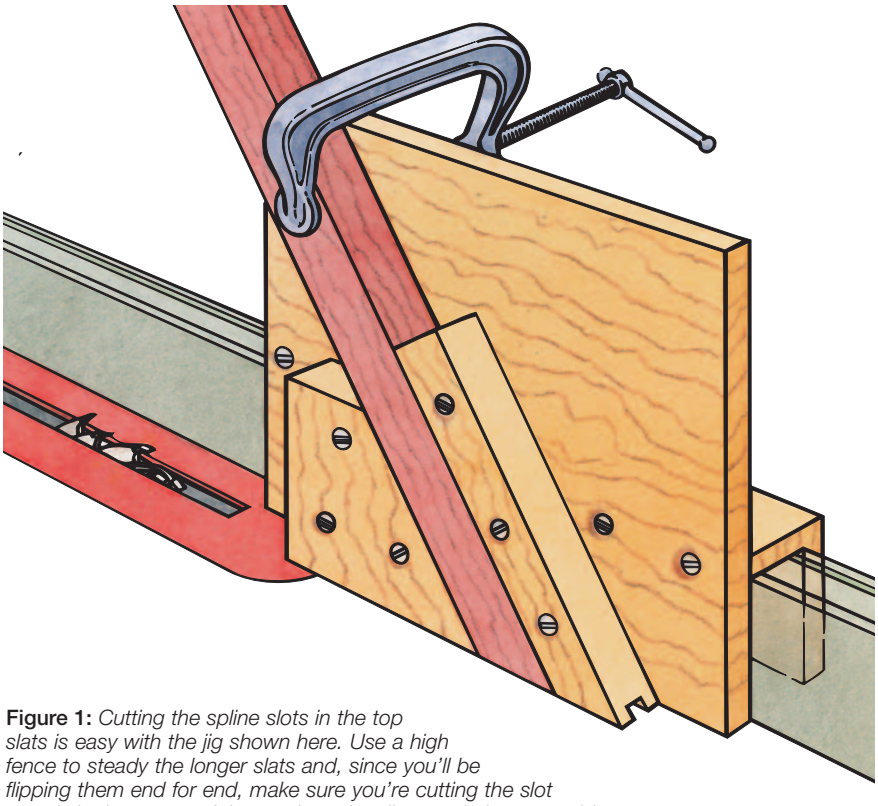
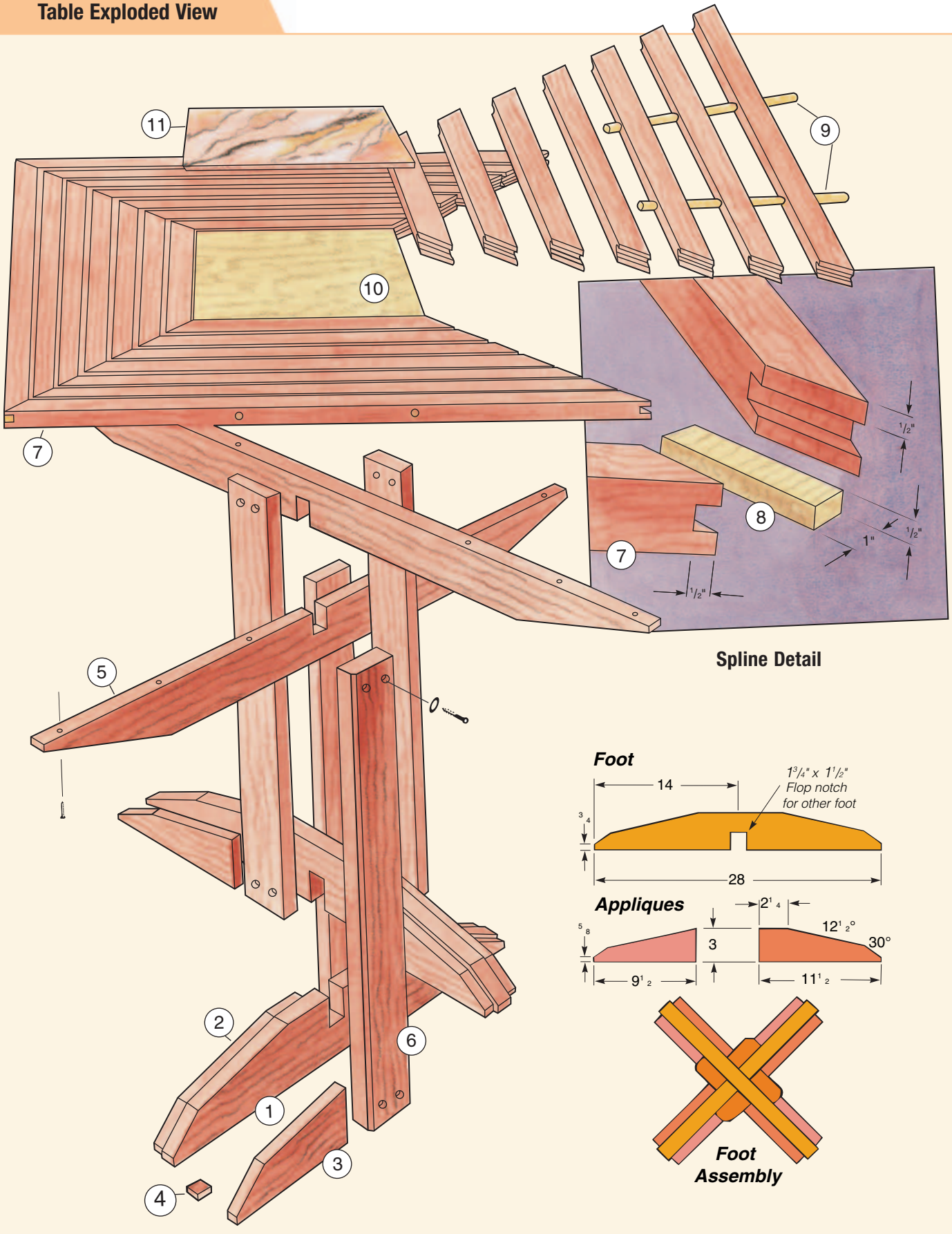


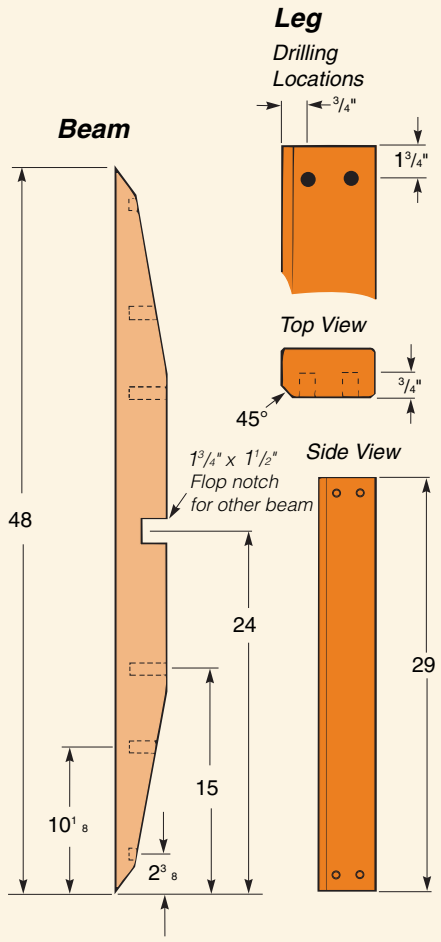
Figure 1: *Cutting the spline slots in the top slats is easy with the jig shown here. Use a high fence to steady the longer slats and, since you'll be flipping them end for end, make sure you're cutting the slot exactly in the center of the stock so they line up during assembly.*

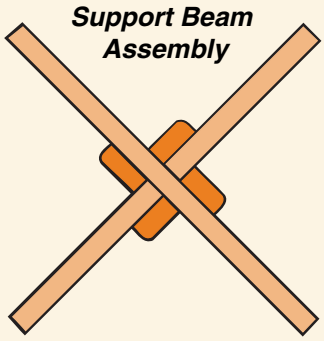
Table Exploded View



Spline Detail

Foot Assembly





MATERIAL LIST – *Table*

		T x W x L
1	Foot Cores (2)	1½" x 3½" x 28"
2	Foot Appliques (Left) (4)	1¼" x 3" x 11½"
3	Foot Appliques (Right) (4)	1¼" x 3" x 9½"
4	Foot Pads (4)	1/4" x 1½" x 2"
5	Support Beams (2)	1½" x 3½" x 48"
6	Legs (4)	1½" x 3½" x 29"
7	Top Slats (28)	1½" x 1½" (for lengths, see pg. 106)
8	Splines (28)	1/2" x 1" x 2" (White Oak)
9	Dowels (8)	3/4" x 14" (White Oak)
10	Plywood Base (1)	1/2" x 12¾" x 12¾"
11	Marble Center Piece (1)	3/8" x 12" x 12"
12	Lag Screws (16)	5/16" x 2"

2" x 4"s to a length of 28" for the foot cores (pieces 1), then cut four 2" x 4"s to a length of 11½" for the left foot appliques (pieces 2) and four more 2" x 4"s to a length of 9½" for the right foot appliques (pieces 3). In two passes, rip the applique pieces to a thickness of 1¼". Then cut the four foot pads (pieces 4) so they're ready to glue onto the assembly later.

Cut the two table support beams (pieces 5) to a length of 48" and lay out the half lap joint at the midpoint (see *Beam Elevation* above). While you're at it, cut the half laps on the foot cores, remembering that for each pair, one member is notched on its top edge, while the other is notched on its bottom edge. Mount a 1/2"-wide dado blade in your table saw and raise it 1¾", then, using a miter gauge for support, remove the waste in the dadoes by taking three passes with each piece. A snug fit is best for these joints.

One edge on the foot cores, the appliques and the support beams must now be cut at an angle on the band saw. Follow the *Elevations* to lay out each of these angles and, once the shapes are cut, belt-sand the surfaces smooth. Next, rout a 3/16" roundover on the bottom edges of the beams, the top edges of the two foot cores and the outside top edge of the foot appliques.

The foot core and beam pieces are now ready for assembly. Epoxy is an excellent waterproof glue that provides a long set-up time and good gap filling properties, making it the best choice for this application. Mix only the amount you can use in a short period of time, then spread it into the half laps. Secure the half laps by driving two non-corrosive screws up into each joint.

For the legs (pieces 6) cut four 2" x 4"s to a length of 29", and rout a 1/2" chamfer on one edge of every leg. Now prepare the legs for joining with the foot and beam assemblies by drilling counterbored pilot holes at the locations indicated on the *Leg Elevations* shown above. First drill 1/2"-deep by 3/4"-diameter counterbores and follow with 5/16" pilot holes.

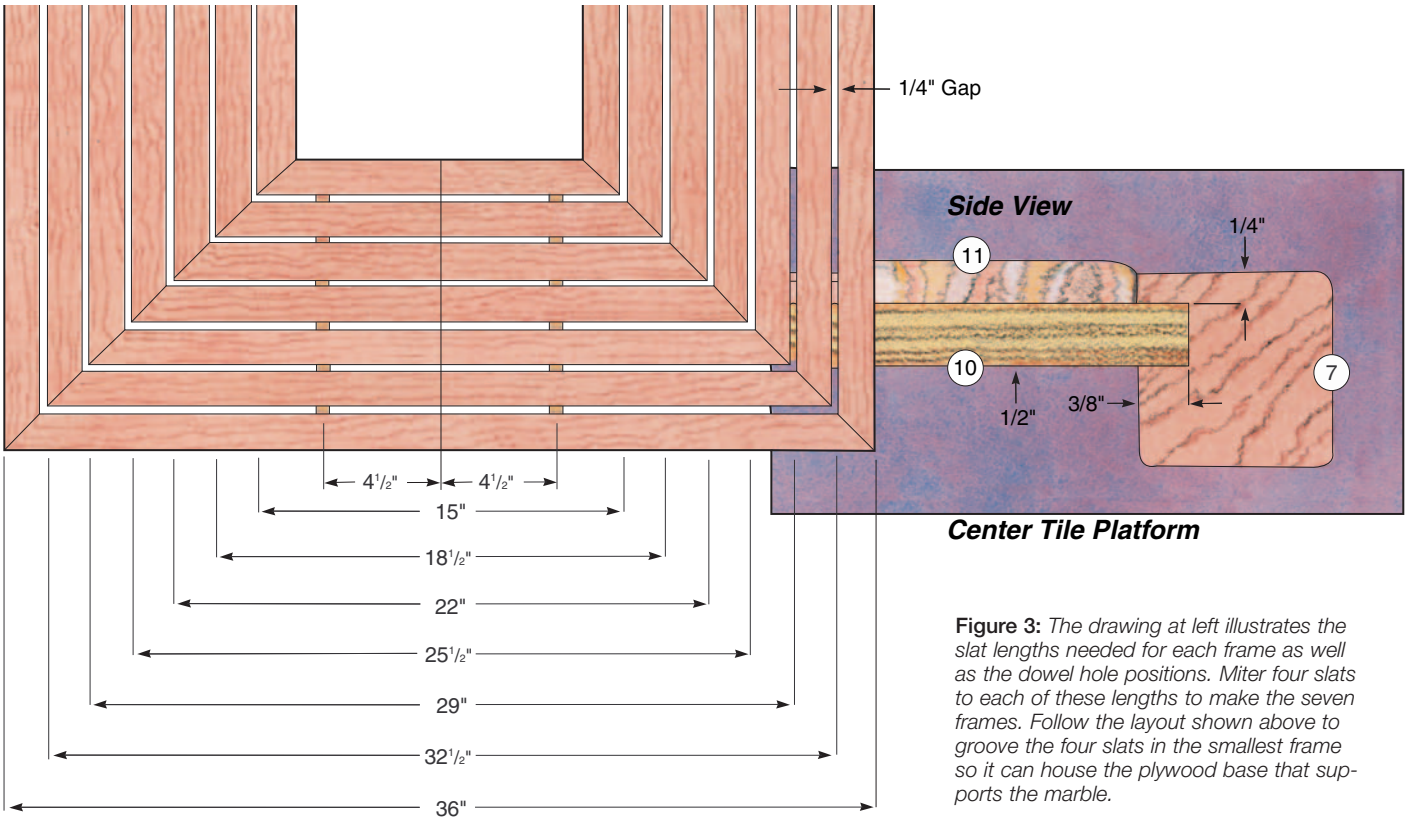


Figure 3: *The drawing at left illustrates the slat lengths needed for each frame as well as the dowel hole positions. Miter four slats to each of these lengths to make the seven frames. Follow the layout shown above to groove the four slats in the smallest frame so it can house the plywood base that supports the marble.*

Slip the legs into position with the feet to mark the screw locations, then remove the legs and drill 1/4" pilot holes in the feet. Repeat this last procedure with the legs and the beams.

Now mix a new batch of epoxy and spread it on the legs where they join the feet and beams. Place the legs into position and secure the joints with lag screws (pieces 12), remembering to put a washer on each one. Spread epoxy on the eight foot appliques as well and clamp them to each side of the foot core pieces. Clean up as much glue as possible with a damp rag and later, when the glue has dried, scrape off any remaining epoxy residue.

Machining the Table Top

You'll need 64 lineal feet of 1½"-by-1½" stock (pieces 7) to make the seven frames of the top. Each frame is joined at the corners with splines (pieces 8), and the frames are then joined to one another with dowels (pieces 9). The center frame is filled with a piece of marble backed by 1/2"-thick plywood.

Rip 4 eight foot 2" x 4"s into 1½"-square stock for the slats that make up the top. Once this is done, roundover all the edges on the eight-foot-long strips with a 3/16"-radius bit. Next, miter the pieces to length with a power miter saw, a table saw or a radial arm saw. Follow the measurements shown above in the *Top Elevation,* to cut four slats of equal length for each frame.

The slats are splined together at their mitered ends to give the top extra rigidity and to minimize any gaps that might occur due to the effects of humidity. A typical table saw jig for this operation is shown in *Figure 1* on page 105. The jig, which looks like a lower case "h" from the end, is made of plywood to wrap over the rip fence. Cut two pieces of 2" x 4" scrap to the shapes shown in the *drawing* and screw them to the jig at a 45° angle for supporting the slats as they pass over the blade.

Install a 1/2"-wide dado blade in your table saw and raise it 1/2". Now clamp the rip fence so the face of the jig is 3/4" from the center of the blade and you'll get perfectly centered dadoes.

Next, drill two 3/4" holes into every slat for inserting the dowels that reinforce the top assembly. Chuck a 3/4"-diameter bit in your drill press and, to ensure accuracy, make the alignment jig shown in *Figure 2* by screwing a 1½" x 12" fence to a piece of scrap 1" x 8". Clamp the jig to your drill press table so the center of the bit is 3/4" from the fence. Draw lines on the drill press fence 4½" to the left and right of the bit's center and put center lines on the longest edge of each slat. Match the center line of the slat with the mark on the left side of the fence and drill the first hole, then slide the slat to the right to align the marks and drill the second hole.

The slats for the smallest frame must be grooved on their inside edge to house the plywood base (piece 10) that supports the marble (piece 11). Set up a 1/2"-wide dado and raise it to 3/8".

Plow the groove so it is set back 1/4" from the top surface of the slats (see *Figure 3*, facing page).

The splines (pieces 8) are made of white oak for strength and weather resistance. Rip a 1/2" x 6" x 20"-long oak board into 2½"-wide strips. Next, cut the strips into 1"-long pieces. You'll notice that the grain runs the short way on these splines, which is correct for this application. If the grain of the splines runs parallel with the joint they are much more likely to break. You'll need a total of 28 splines.

The dowel rods (pieces 9) are also made of white oak. Cut four 36" dowels in half and sand them vigorously with 100-grit paper to slightly reduce their size so they fit into the slat holes easily. Now chamfer one end of every dowel with a belt sander.

Making the Top Assembly

Assembling the frames isn't difficult at all if you make yourself the special framing jig shown in *Figure 4* on the next page. Make four blocks from scrap 2" x 4" material, cutting each block 3½" square. Mark the center of the blocks and drill a 1½"-diameter hole through each one. Next, cut in from two sides to form a 90° inside corner. Place one of these blocks outside each corner of a frame and use a band clamp, running around the entire assembly, to pull the frame and blocks tight.

Glue up each frame by spreading epoxy in the spline grooves and on the mitered ends of the slats. Next, put the splines in place and assemble the frame. Now set up the band clamp and corner blocks to pull the frame together while the glue dries. Check for squareness by measuring diagonally across each frame, adjusting the frame until the two measurements are equal. Remember that the plywood base (piece 10) for supporting the tile should be installed at this time in the smallest frame.

The top is designed with 1/4" gaps between each frame. In order to maintain this spacing, make a bunch of 1/4"-thick spacers to place between the frames while you drive the dowels through the holes. Put some epoxy in the holes in the smallest and largest frames, then lay all the frames and 1/4" spacers in sequence on your bench. Tap the chamfered ends of the dowels into the frames and continue until they contact the plywood center plate. Once all the dowels are driven, turn the assembly over and pin the dowels in every frame with a 1¼"-long brad. Drill pilot holes before driving the brads and, after countersinking them slightly, fill the hole with wood putty to minimize the effects of moisture. Finally, cut off the ends of the dowels and sand them flush with the outside frame.

Center the pedestal on the overturned top and mark three screw locations in each support beam where they solidly cross the frames (see *Exploded View* on page 106). Use a 1/2"-diameter bit to counterbore these positions. Since the width of the beams vary from one screw location to another, drill your counterbores deep enough to leave 1" of stock remaining from the bottom of the hole to the top edge of the beam. Now drill 1/8" pilot holes through the beam and 1/2" into the top. Join the assemblies with #10-2" non-corrosive wood screws. It's also convenient at this time to glue and pin the foot pads (pieces 4) onto the bottom of each foot core.

Figure 2: *Once the drilling jig is clamped to the drill press table, align the center mark on the slat with the left line on the fence to drill the first hole. Next, slide the slat along the jig to line up its center line with the right location mark on the fence and drill the second hole.*

Set the table upright to install the marble. Run a thin bead of silicone caulk on the plywood where it meets the redwood frame, and add four evenly spaced dollops of caulk on the interior area of the plywood. Set the marble in place, wipe away any squeeze-out with a damp rag and let the caulk cure overnight.

Building the Benches

The benches are designed in a trestle style that incorporates many of the same elements as the table. As you did with the table, make the feet and support beams first. The *patterns* for these pieces are on page 111, so go ahead and cut out eight feet (pieces 13) and eight support beams (pieces 15) from 2" x 4" stock, and sixteen appliques (pieces 14) for the feet from 3/4" redwood. Roundover all the top edges of the feet, the outside top edges of the appliques, and all the bottom edges of the beams with a 3/16"-radius bit. Prepare the beams and feet for joining the legs by drilling 1/2"-deep by 3/4"-diameter counterbores as shown in the *Elevation Drawings* on page 111. Follow the counterbores by drilling 5/16" pilot holes. Each beam also requires two 1/2"-diameter by 1¼"-deep counterbores on the bottom edge for securing the outside slats in the seat assembly (see page 111). Follow these counterbores with 1/8" pilot holes.

All the legs (pieces 16) are cham-

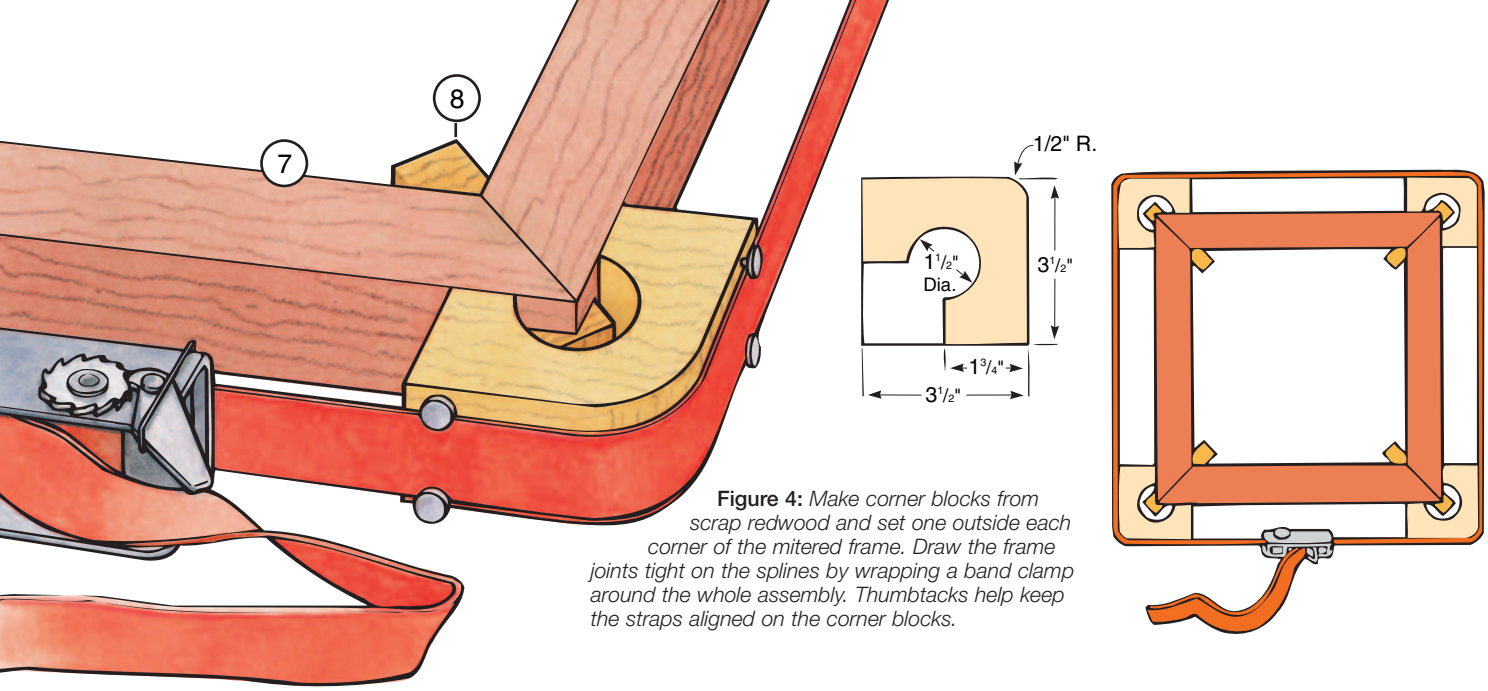


Figure 4: *Make corner blocks from scrap redwood and set one outside each corner of the mitered frame. Draw the frame joints tight on the splines by wrapping a band clamp around the whole assembly. Thumbtacks help keep the straps aligned on the corner blocks.*

fered on their bottom edges and notched at the top to join with the stretchers. Cut the legs to length and chamfer their bottom edges on the table saw. Lay out the notches following the *elevation* on the next page and remove the waste with a jigsaw. Lay the feet and beams on the legs, then drill the pilot holes and join the pieces together with lag screws (pieces 20). Use epoxy to adhere the appliques to each foot.

The stretchers (pieces 17) span between the legs, giving the benches their strength and acting as the middle slat in the seats. Use the *pattern* on the next page to lay out the stretchers, including the dowel hole locations. Cut them out with a jigsaw and round over the top and bottom edges with a 3/16"-radius bit. Slip the stretchers into the leg notches and equip your portable drill with a 1/4" bit. Now extend the center lag screw hole from each support beam into the stretchers for 2".

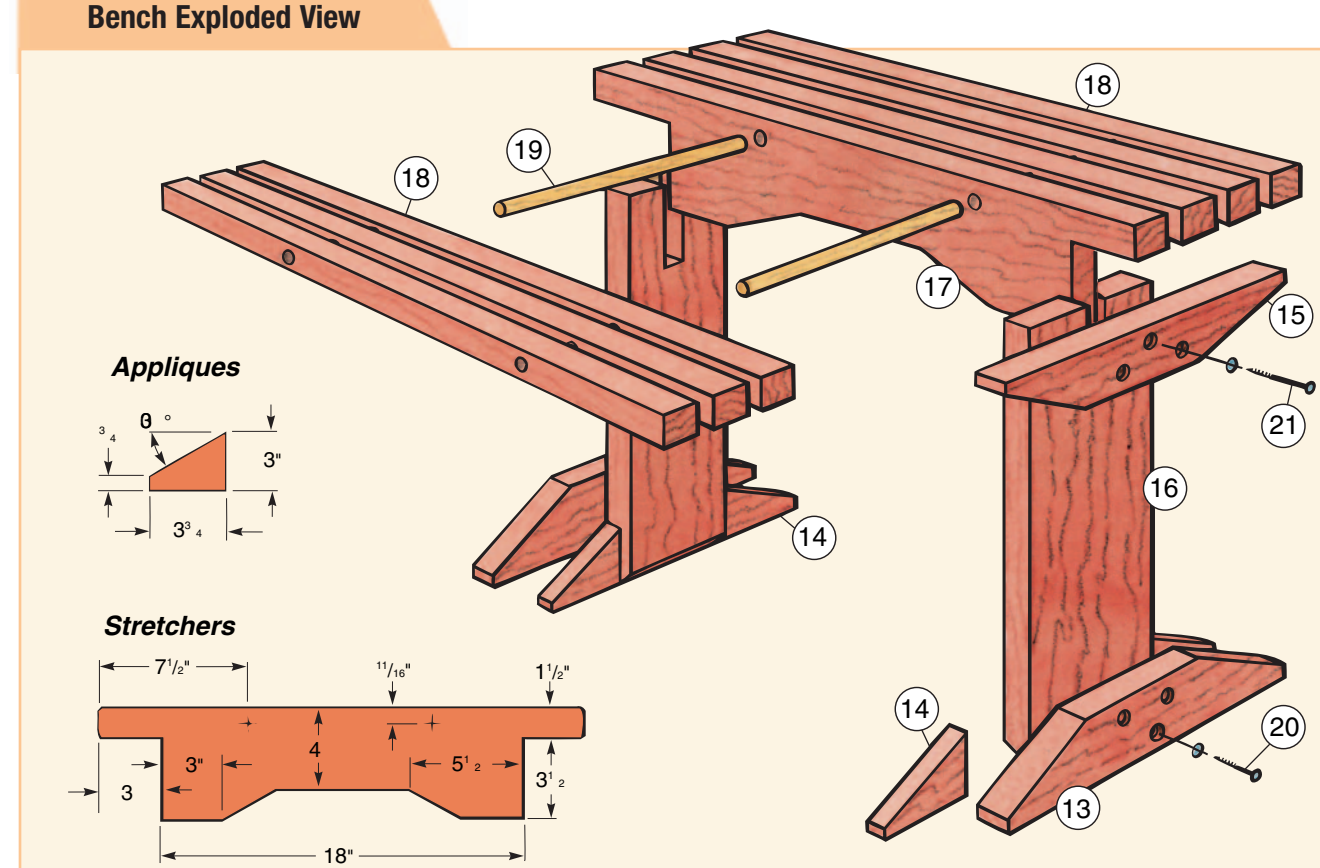
The slats (pieces 18) that make up the seat are the same as those on the table top, so you can rip four eight foot 2" x 4"s into 1½" x 1½" strips and cut them into 24" lengths. Round over all the slat edges with the 3/16"-radius bit. Now use the same drill press jig you made for the table top and drill two dowel holes 4½" off center on each slat. Remember to drill these holes through the slat portion of each stretcher also.

Cut two 13"-long dowels (pieces 19) for each seat and sand them with 100-grit paper so they slip into the slat holes easily. Now put epoxy in the stretcher holes and slip the dowels in place, leaving about 5¼" stick out on each side. Wipe the glue from the dowels and add two more slats on both sides of the stretcher. Be sure to use 1/4" spacers between every piece and pin these slats with brads. Now put epoxy into the holes in the two outside slats and mount them onto the dowels. The finished width of the seat should be 12". When the glue is dry, cut off the ends of the dowels and sand them flush with the slats.

Set the seat assembly onto the legs, dropping the stretcher tenons into the notches and securing the joints with 3" lag screws (pieces 21). Now flip the entire bench over and drive #10-2" wood screws (pieces 22) through the beams into the outside slats to completely secure the seat to the leg assembly.

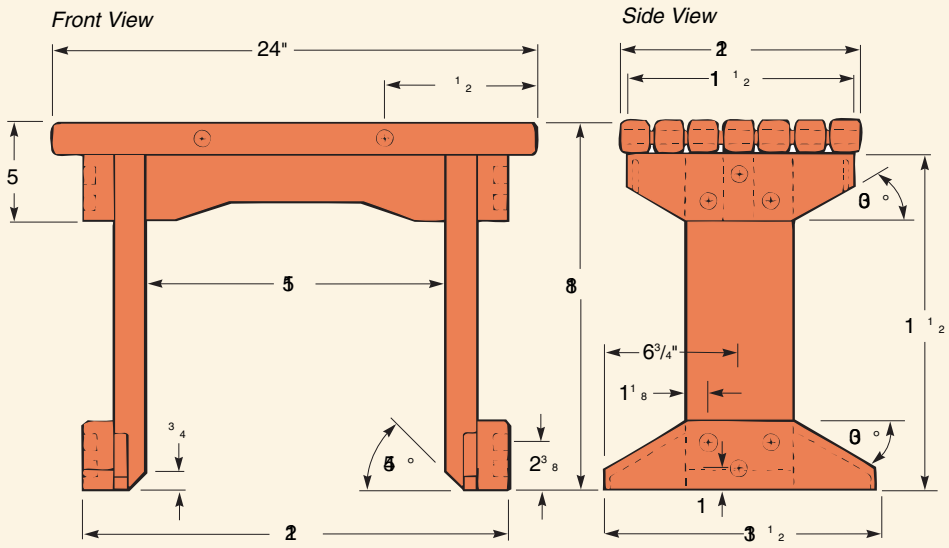
Redwood, as it ages, turns from its original red color to silvery grey. The only way to maintain the original reddish tone is to color the wood with an exterior wood preservative. Reapply this finish every season.

Bench Exploded View



Appliques

Stretchers



MATERIAL LIST – *Four Benches*

	T x W x L		T x W x L
13 Feet (8)	1½" x 3½" x 13½"	18 Seat Slats (24)	1½" x 1½" x 24"
14 Appliques (16)	3/4" x 3" x 3¾"	19 Dowels (8)	3/4" x 13"(White Oak)
15 Support Beams (8)	1½" x 3½" x 11½"	20 Lag Screws (40)	5/16" x 2"
16 Legs (8)	1½" x 5½" x 16½"	21 Lag Screws (8)	5/16" x 3"
17 Stretchers (4)	1½" x 5" x 24"	22 Wood Screws (16)	#10 - 2"