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Benjamin Seaton Tool Chest

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The completed tool chest is very heavy, especially when filled with tools and requires two physically fit adults to pick up or move.

Materials List:

I recommend Pine as the first choice of wood for this project due to its lighter weight. However, a beautiful hardwood makes a much nicer (and heavier) chest. It is always a wise move to buy extra material to allow for mistakes and problems with the materials. If you are not very experienced, consider buying nearly 50% extra. Read through these directions and make sure you understand them completely before starting the project.

Chest materials

No.	Item	Dimensions	Material
1	Bottom	7/8" x 22-5/8" x 34-5/8"	Pine
2	Cleats	1½" x 4¾" x 14¾"	Pine
2	Front & back	7/8" x 23¼4" x 35½"	Pine
2	Runners	1¼" x 3-1/16" x 21¾"	Pine
2	Sides	7/8" x 23¼" x 23½"	Pine
1	Top	7/8" x 23½" x 35½"	Pine
	Lid moulding	½" x 1-3/8" x 11' moulding	Pine
	Top moulding	7/8" x 2½" x 11' moulding	Pine
	Bottom moulding	¾" x 2-5/8" x 11' moulding	Pine

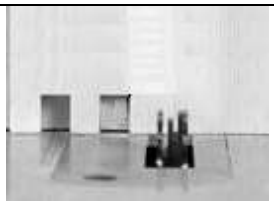
Till materials

No.	Item	Dimensions	Material
1	Back	¾" x 11" x 32¾"	Veneered pine
1	Bottom	¾" x 10-5/8" x 32¾"	Pine
1	Front	¾" x 2½" x 32"	Veneered pine
3	Horizontal div.	3/8" x 10-5/8" x 32¾"	Pine
2	Sides	¾" x 11" x 11"	Veneered pine
1	Top	¾" x 11" x 33½"	Walnut
2	Vert div. (bott)	3/8" x 3-5/8" x 5"	Pine
2	Vert. div. (mid)	3/8" x 2-3/8" x 5"	Pine
2	Vert. div. (top)	3/8" x 2-1/8" x 5"	Pine

Construction:

Finger Joints

Construction of the outer case is fairly easy. Finger joints are used to join the 4 sides and the bottom is captured by a groove in all four sides. The moulding is simply nailed or screwed to the exterior while the lid has a small piece of moulding attached to it that acts as a dust seal. Start building the case by gluing up the 7/8"-thick panels for the sides, top and bottom (Benjamin was lucky enough to have some 24" wide pine boards and didn't have to glue up his sides). Next, you need to make a jig to cut the ¾" x 7/8" deep finger joints. Take your time and be extremely careful with the jig because precision and patience will pay off with joints that won't split or plead for putty. Be sure to test your jig on scrap wood before cutting your final pieces. Adjust it if the fit is not precise enough for your taste.



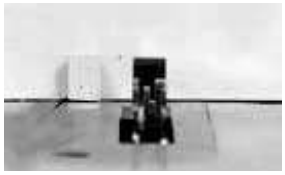
FINGER JOINT JIG

The trick to finger joints is to make sure the width of your dado stack is precisely the same as the space between the dado stack and the stop, called the "tooth" in this article. The tooth should also be exactly as wide as your dado stack. To begin, screw a large piece of plywood (8" high; about 25" long) to your table saw's miter gauge. Next, set up your dado stack to the required dimension and run your jig through the saw. Take the jig off the saw and attach the tooth to the jig with glue and screws. A good bond is essential.

Cut Your Joints

Once the jig is complete, you'll need to cut the joints. The secret to finger joints is to get all of the "spaces" and "fingers" to line up correctly. If one board begins with a space, then its mate must begin with a finger. To begin a board with a space, place a spacer between the dado stack and tooth. For a board beginning with a finger, place it on end on your table saw against the tooth on the jig and make your cut. Use some scrap finger joints and run a test with this jig then adjust if desired. Next, place the board on end against this spacer and run it through the saw. Remove the spacer and cut the remainder of the joints on that edge. Now cut the 7/16" deep by 7/8" wide grooves in the sides that hold the bottom in place. The grooves should be 1" up from the bottom edge. You may wish to stop these grooves before you cut into your finger joints and finish the grooves with a chisel. You can just run these grooves right through your joints -- since, after all, they'll be covered by the moulding on the outside of the case.

Now, assemble the case using carpentry glue on the finger joints, allowing the bottom to float in its groove. Clean off as much glue squeeze-out as you can then clamp the assembly and allow your case to dry completely.



CUT THE JOINTS

It might seem a little scary to hold 39" long boards on edge on your table saw. Feel free to clamp your work to the fence you screwed to your miter gauge, though this will slow you down a bit. If you proceed slowly and carefully -- and your table saw's table is sufficiently waxed -- you shouldn't have a problem. Once you cut the first space, pick the board up and place that space over the tooth in your jig. Then run the work through the saw again.

Moulding

Begin making the moulding by routing a small ogee profile on the bottom moulding pieces. Miter the pieces, then attach them with nails or screws (Benjamin used screws that he recessed into the wood and then covered with putty – you could plug the holes with flush dowel plugs).

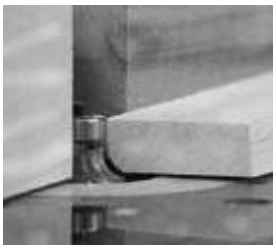
Dust Seal

Dust and grime has never been good for tools, and 18th century cabinetmakers went to extreme lengths to keep their tools separated from dirt and Benjamin used a simple but effective seal. Begin making the seal by cutting the lid to size and mortising the hinges into the case and lid.

Now rout a ¼" roundover on the 3 pieces of moulding for the lid. Miter and nail this moulding to the front and sides of the lid. The 2nd piece of moulding adds another layer of protection. Begin by cutting a 9/16" by ½" rabbet into one edge of the moulding. You also could use a roundnose bit in a router to cut a profile that will nest with the roundover on the lid's moulding. Next cut a 25° bevel on the bottom of the 4 pieces of moulding. Miter 3 pieces of moulding and nail or screw them to the front and sides of the case. Do not miter the back edges of the moulding that goes on the sides. Cut these flush with the case. Now make the moulding for the back. This moulding is different because it helps seal the back of the case and acts as a stop for the lid. It's pretty ingenious. Take a piece of moulding back to the table saw and rip off the rabbet. Now attach this moulding to the back, flush to the top edge of the case. You'll have to cut notches in the moulding for the barrels of the three hinges that hold the lid. Screw and glue this moulding to the back. Now cut the cleats for the sides that hold the rope handles. Use a band saw to cut them to rough shape and sand them down. Then drill a ½" hole through the center for the rope. Attach the cleats with screws.

If you want to add a lock to your chest, now is the best time. I used a small full-mortise chest lock. You can now add the dividers for your power tools at the bottom of the case. Fill all your screw holes with water putty and finish sand the exterior of the case to 120 grit. Paint the exterior. Now it's time to turn your attention to the till.

Build the Till



STOP THE DUST

First cut the roundover on the small piece of moulding for the lid (top). Then rabbet the larger moulding and cut the chamfer on the bottom. Nestle the big moulding in place under the lids moulding and nail or screw it into place.

VERTICAL DIVIDERS

Add these after your till is assembled. Try to make the grain run up and down on these pieces to minimize the chances your case will break open when the wood begins to move. A little glue on the front ends of these dividers is all you need.

The till is a box that's divided into 4 "stories" by wide 3/8"-thick pine boards that are dadoed into the back and sides. You access the top level by opening the lid of the box. The bottom 3 levels are for 9 drawers. So the till will weigh as little as possible, make the case from pine veneered with walnut (you'll need lots of clamps). The top is solid walnut while the bottom is plain pine. The drawings for the till are located at the end of this document.

Begin building the till by cutting the boards to size and then cutting 3/8" x ¾" rabbets in the sides for the back . Now cut 3/8" x 3/8" rabbets in the sides and back to capture the ¾" bottom. The bottom sticks out of the case 3/8", which allows the till to slide on runners in the large case.

Next cut the 3/8" x 3/8" grooves in the sides for the 3 horizontal dividers in locations shown in the drawings. Then cut the 3/16" x 3/8" grooves for the 6 vertical dividers that separate the drawers. Dry assemble the case. Once everything fits, assemble the till with nails and glue. Attach the vertical dividers last. Use only nails when attaching the horizontal dividers to allow for wood movement. Attach the vertical dividers with a little glue and a dead blow mallet. Now, using nails and glue, attach the front piece at the top that encloses the top tool area. Cut your top to finished size and cut a detail on the top edge to soften the look. Route a 3/8" deep by 1" chamfer on all four edges. Also, a table saw could do this job nicely. Finally, mortise a flush ring-pull into the lid to make opening the lid easier.

Till Details

Swage your hinges and then mortise them into the till and the lid then start dividing up the top tool area for the hand tools that you reach for most often. I suggest a rack for your chisels and cubbyholes for small planes. Finally, two holders that flip up. One holds drill bits, the other holds screwdrivers and a marking gauge.

If you've veneered your case, now is the time to add a piece of veneer to the front piece and to cover all the other pine edges that show. I suggest walnut veneer tape for all the dividers. This tape costs about $3 for an 8' length. After you've veneered the entire till, fill your nail holes with putty and sand the case.

Now cut your drawers. Mark all your pieces because you'll have 40 pieces to keep track of. The 9 drawers are all assembled in the same manner. On the ¾" thick drawer fronts, cut a 3/8" x 3/8"

MORTISE YOUR HINGES

Using a straight bit in a router or trimmer is a great way to cut the mortises for your hinges. You just have to be careful not to go over the edge you marked, which is an easy mistake to make. The easiest way to prevent this problem is to pare the edges with a chisel or a knife. When your bit gets near the pared edge it shears away, leaving a square edge.

rabbet on each end. On the 3/8" thick sides, cut a 3/16" deep by 3/8" wide dado for the back then cut a 3/16" deep by 3/8" wide groove in the front and sides for the bottom. Sand your pieces and then assemble the drawers with nails and glue. Fit your drawers into the till. Finish sand everything and cover the till with two coats of clear finish. Add a chain to the lid to prevent it from opening too far.

Build the Runners

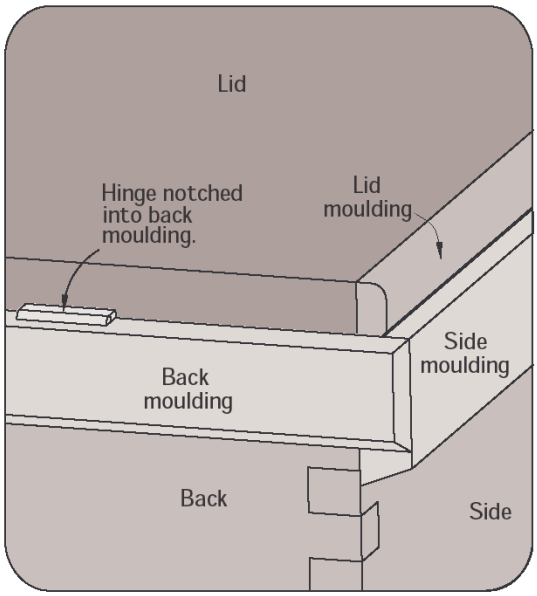
The till rests on runners screwed into the inside of the large case. These runners are made by using your table saw to cut two rabbets in 1¼" pine. Screw the runners to the inside of the case making sure you leave a couple inches of space above the top of the till to allow room for the saw holder.

Saw Holder

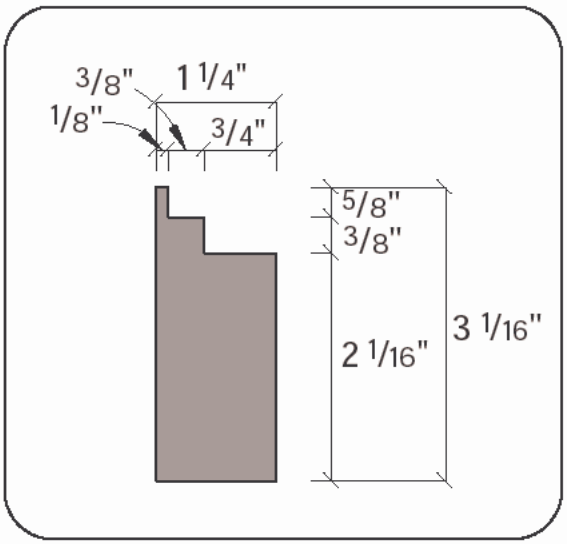
Make the saw holder by screwing strips of 1" thick pine to the lid of the large case. Position the strips for your own set of saws. You might want to cut rabbets or dadoes in the strips depending on your particular saws. Make the front face of the saw holder from pine and leftover walnut veneer. After cutting the panel to size, cut a ½" x ½" rabbet on all 4 edges. Miter and glue 4 strips of maple into the rabbet.

Screw the front face to the strips and cover the screw heads with caps. I cut my own diamond-shaped caps from some scrap maple. Stain the interior of the large case and lid. To make the inside look old and weathered, first put down a coat of walnut oil stain and allow that to dry then apply a cherry gel stain. Finally, cover the interior and saw holder with two coats of clear finish, sanding lightly between the coats.

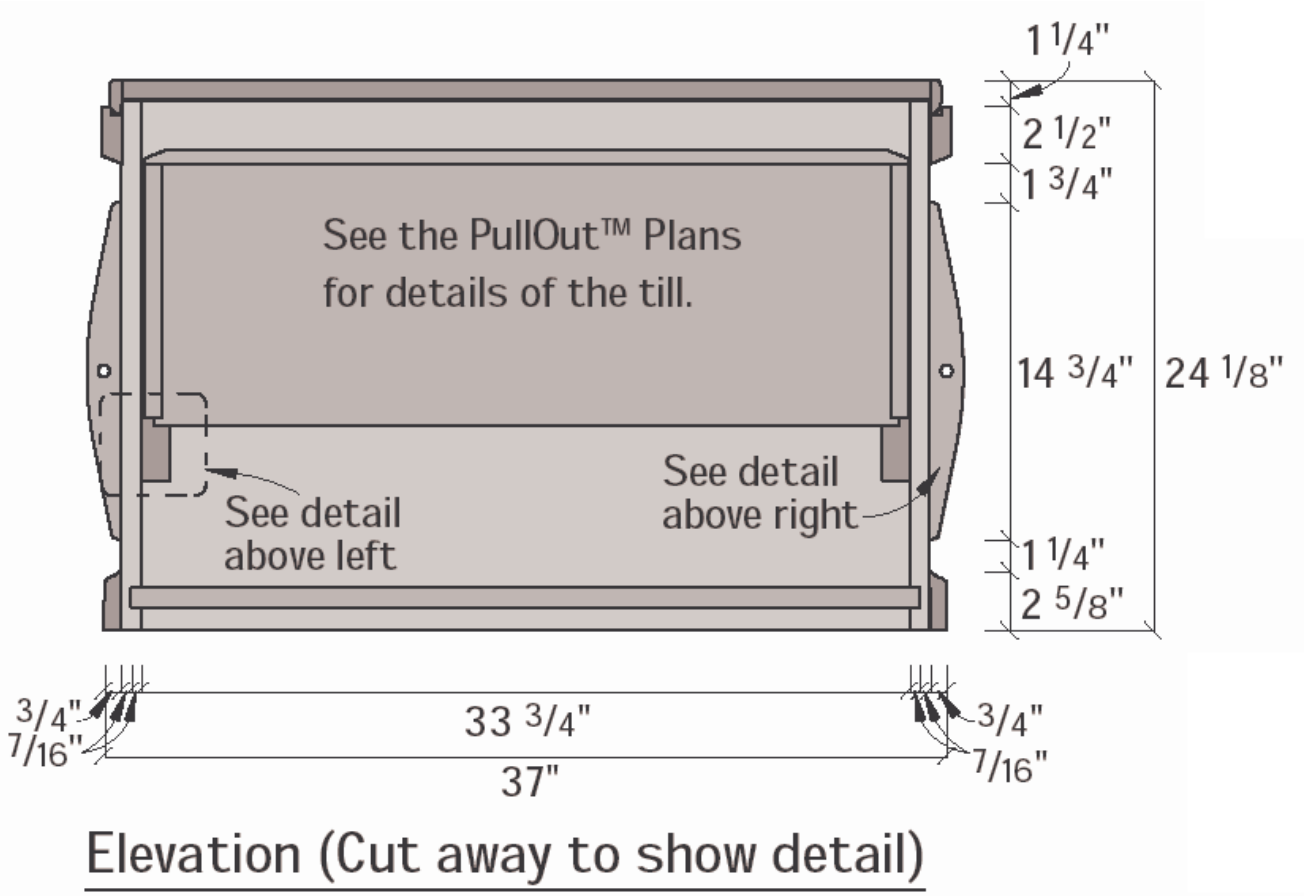
RUNNERS
When your runners are finished they should look like three steps. The top step is 1/8" thick and 5/8" high. The second step is 3/8" thick and 3/8" high. The third step is the remainder of the board. See the diagram for all the dimensions for the runners.



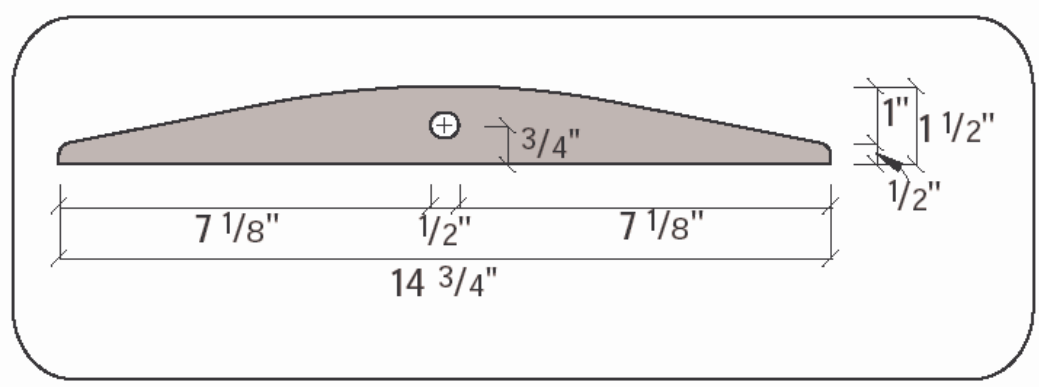
Detail of back corner of case



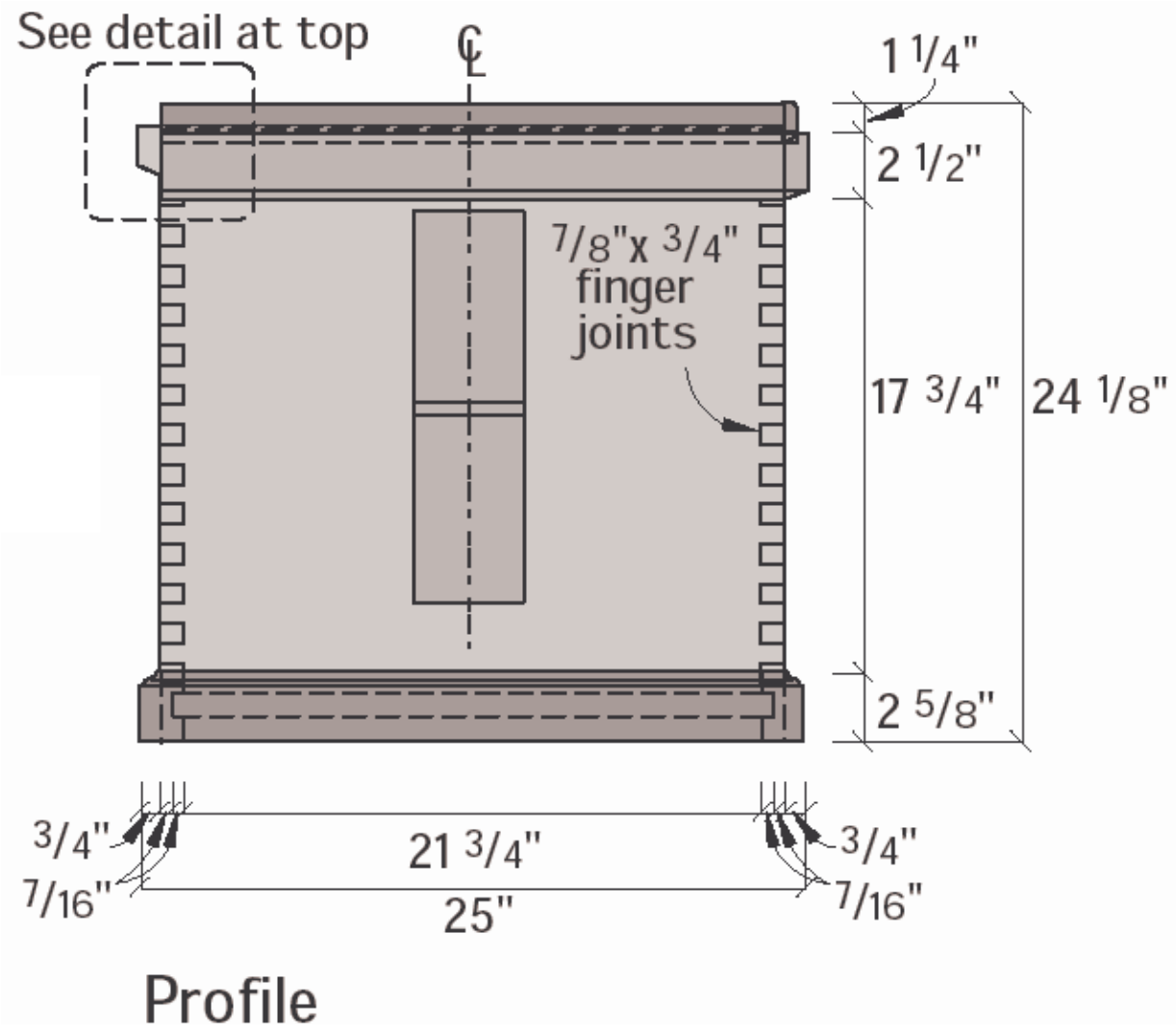
Detail of till runner



Elevation (Cut away to show detail)



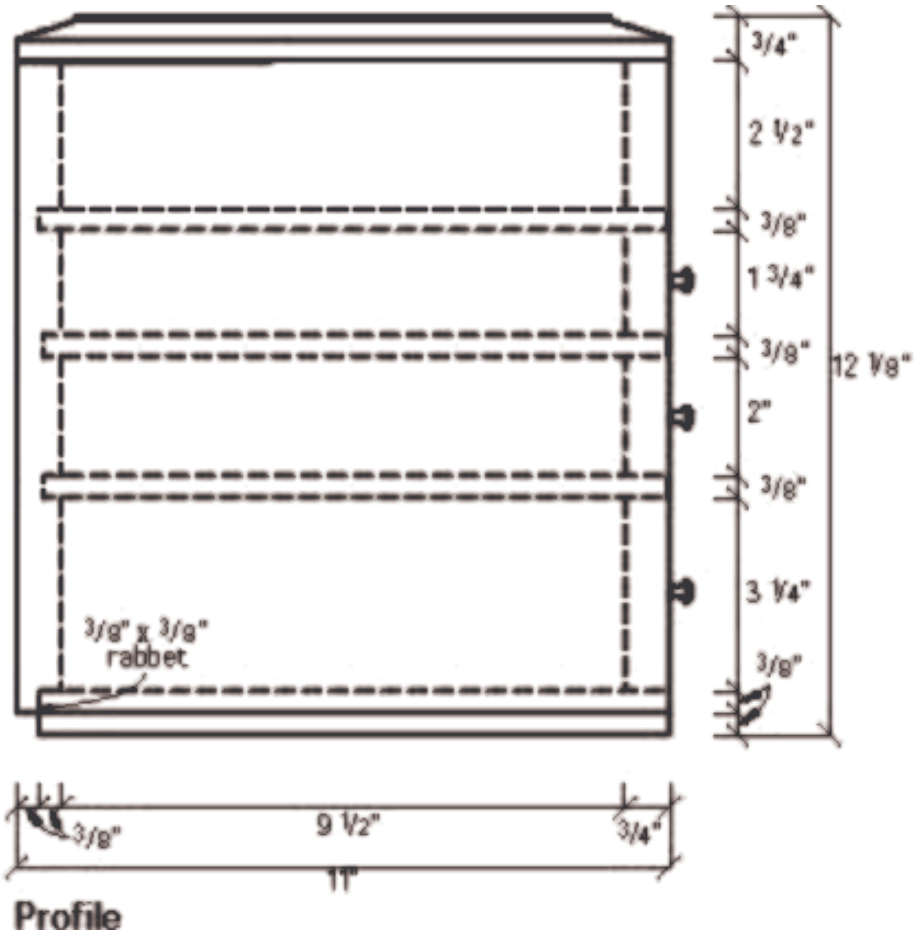
Detail of cleat



Profile

The

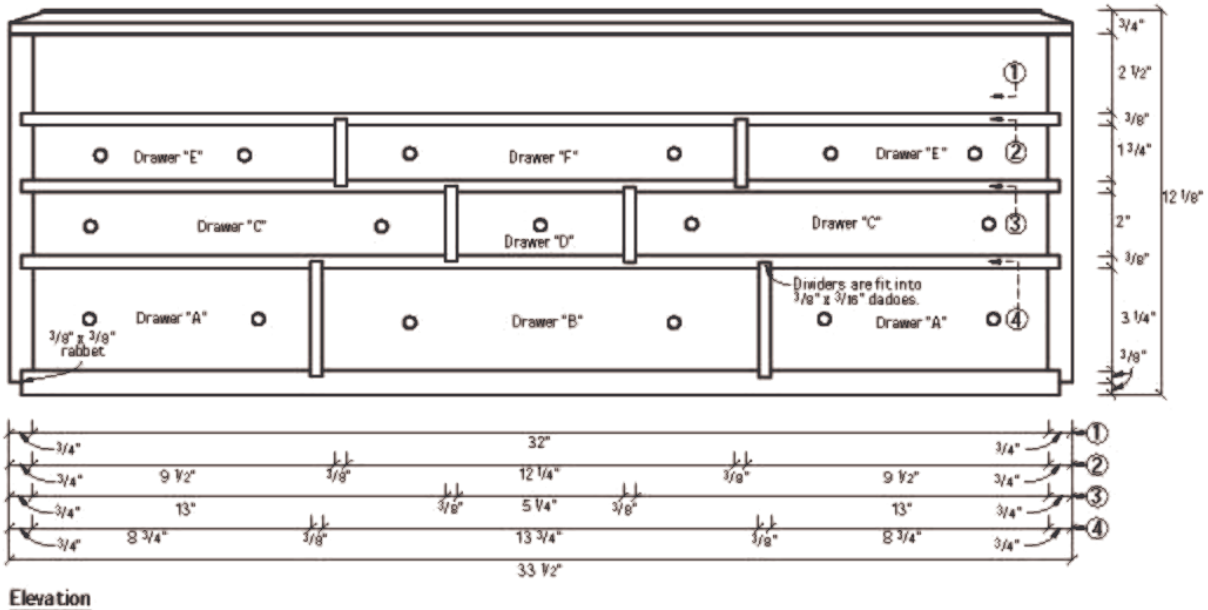
Till



Profile

Tool Chest

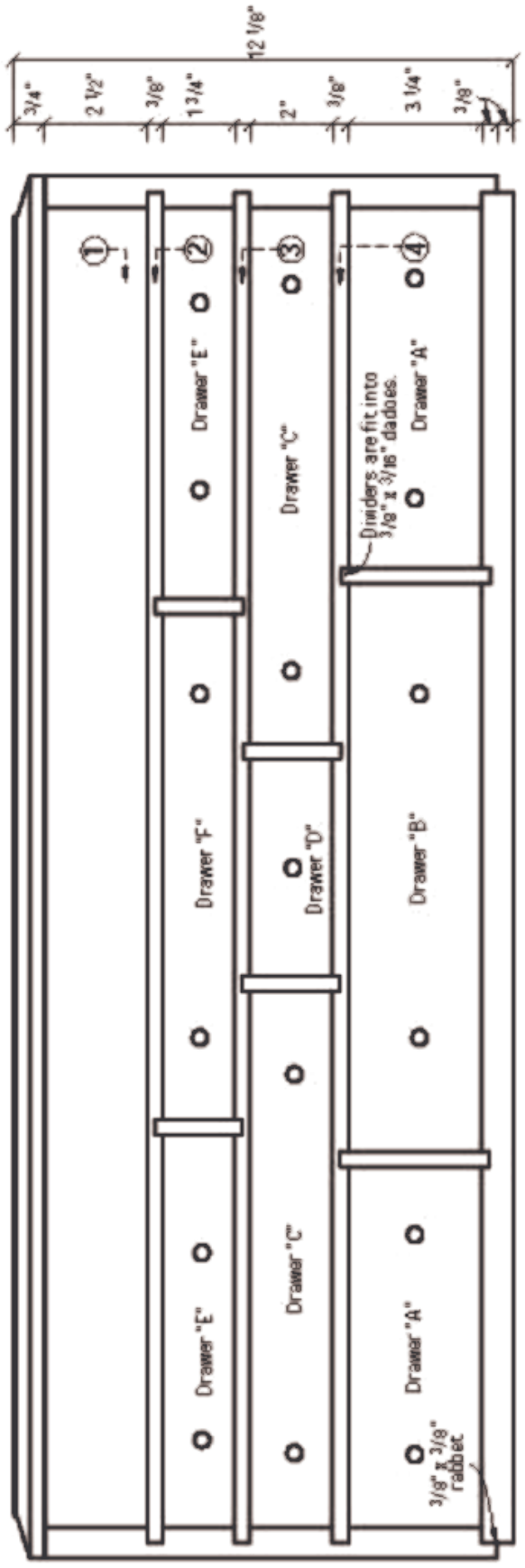
Diagram of till with drawer dimensions



Elevation

Tool Chest

Diagram of till with drawer dimensions



Elevation