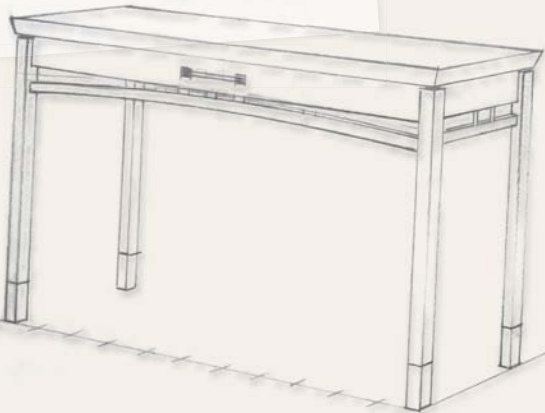
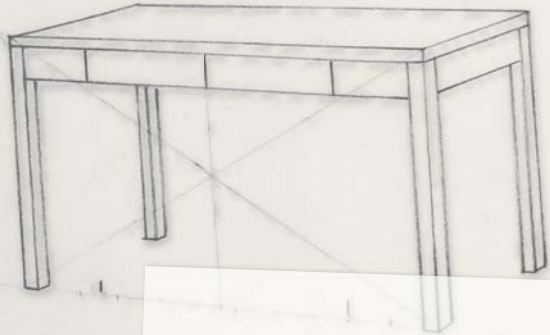




Put Your Designs in Perspective

Why pencil and paper
still beat the computer

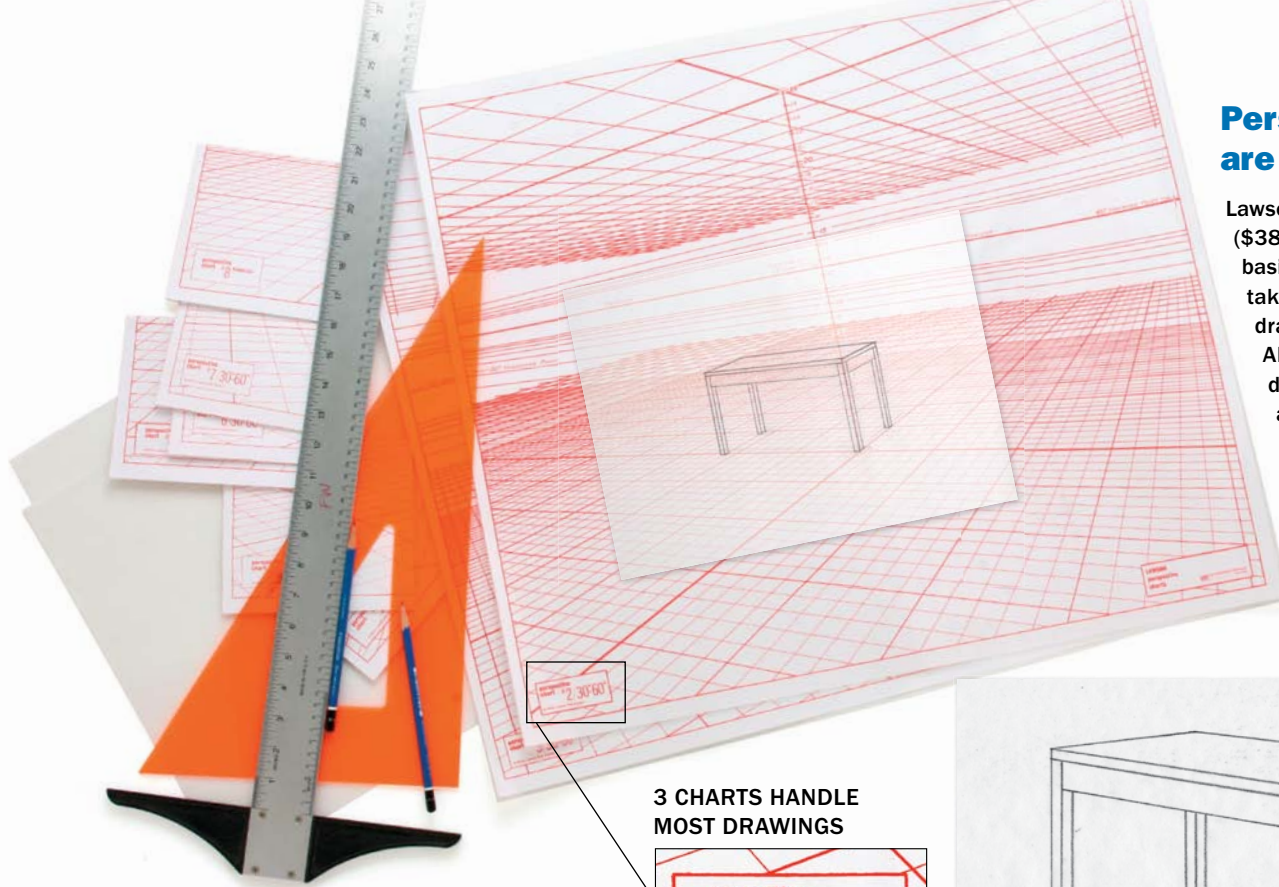
BY MICHAEL C. FORTUNE



Tracing paper allows rapid evolution of a design. After drawing the basic structure, overlay clean sheets to try different design ideas. This simple technique is easier to learn than a computer program, and the perspective and curves are more true and realistic.

Perspective charts are the secret

Lawson perspective charts (\$38, amazon.com) are basically smart grids that take all the work out of drawing in perspective. All you do is mark off distances and use the grid as a guide for lines. The charts come in a set of six types, but you'll use only three of them.



3 CHARTS HANDLE MOST DRAWINGS



If you want to show the front and side equally, use chart No. 1.

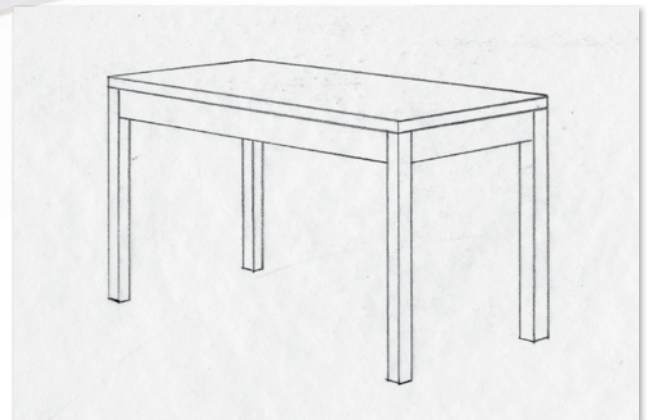


Chart No. 2 allows you to draw furniture as if you were seeing it while standing in front and a bit to the right.

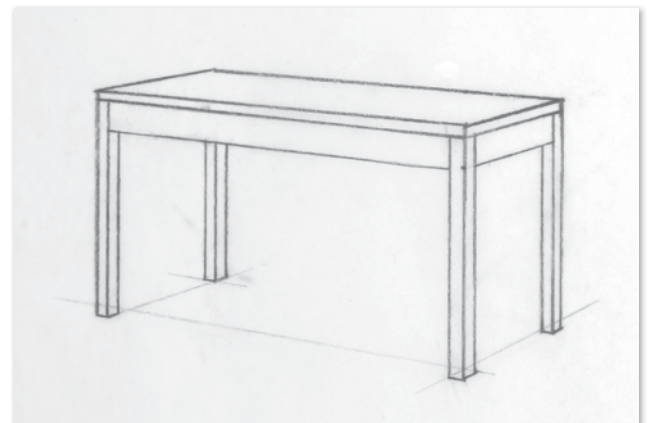
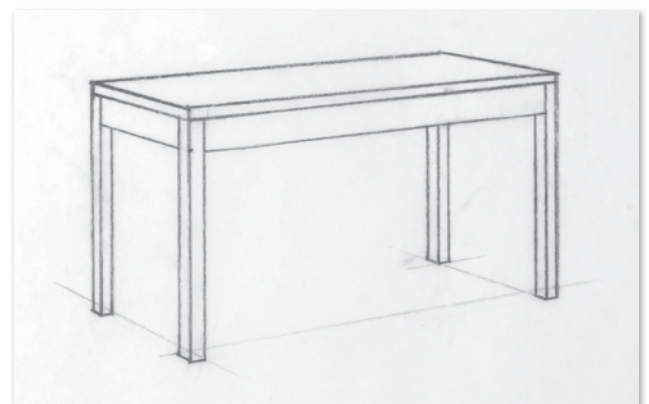


Chart No. 3 provides the perspective from in front and to the left.



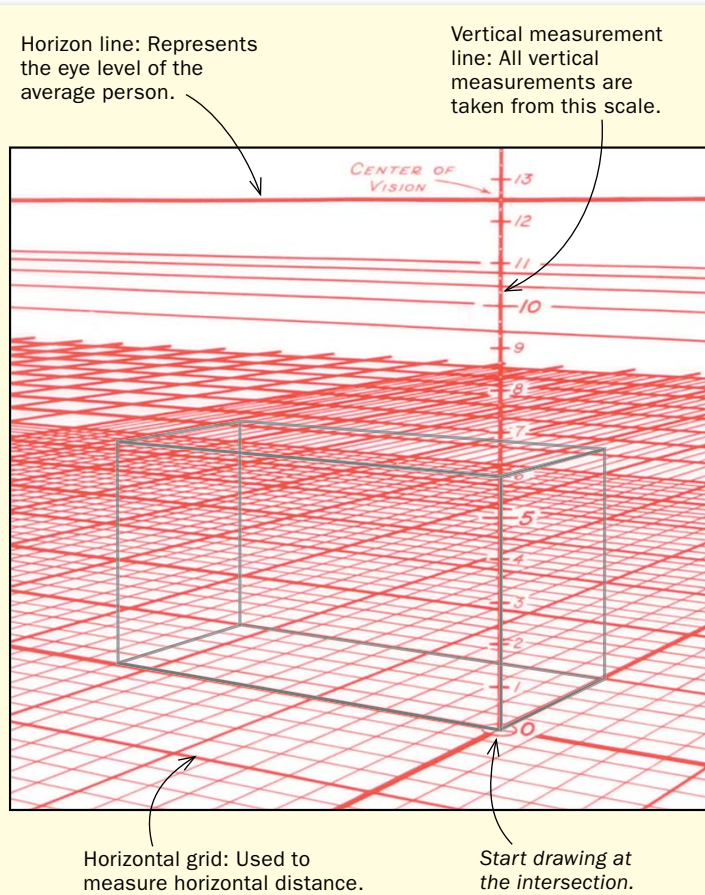
Elevation drawings—where the top, side, and front of a piece of furniture are shown separately—are a common design tool, but they have two serious flaws: They isolate the three views from one another, and they don't show perspective. That makes it difficult to visualize what the completed piece will look like. A perspective drawing of the same piece shows exactly how it will look, allowing you to catch design problems before you begin to make it.

Perspective drawings are also a great tool when you're building for someone else. A client, spouse, or friend is more likely to understand a perspective drawing than a set of elevations, and won't be surprised when the piece is delivered. I've also found that my perspective drawings have become a great "inspiration bank" when I'm casting about for something to make.

Ordinarily, learning to draw in perspective can take a long time. I spent four years in art school drawing still-lives and naked people, and converting those skills to furniture drawings proved difficult until I happened across a set of Lawson perspective charts. It was a real "eureka" moment for me: After using the charts for just a short time, I was drawing pictures of my furniture ideas that really looked like what I had in mind. All the parts were to the same scale and even my table legs all appeared to rest on the floor, a detail that had previously escaped me. A

Start with a box

When drawn in perspective, every piece of furniture fits in a box. Draw the box first, matching its height, width, and length to the overall dimensions of the piece.



USING A PERSPECTIVE CHART

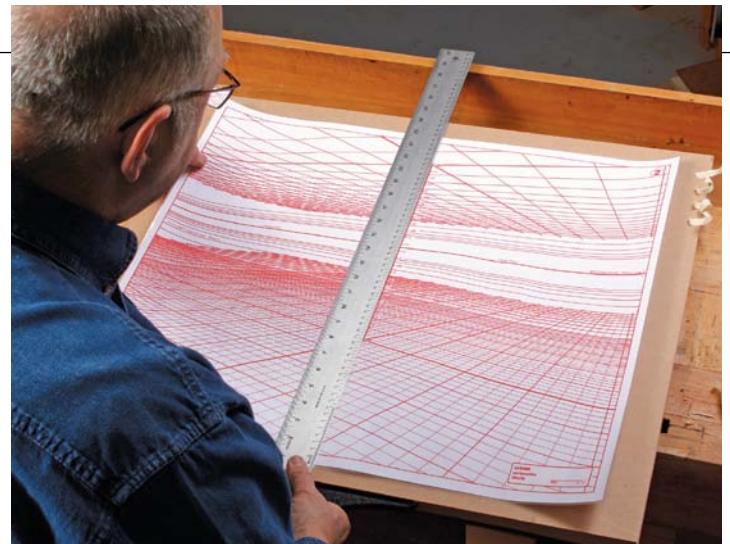
Start drawing where the three bold red lines intersect. The grid lines on the floor are laid out according to the scale on the vertical measurement line. The scale is arbitrary, but Fortune has found that assigning 5 in. to each unit works well, placing the horizon line at eye level. Of course, do not draw directly on the chart.

bit more practice allowed me to leave the charts behind, because I'd developed a sense of what perspective drawings should look like and how they're made. After I show you what I've learned, you, too, will be on the path to beautiful and useful drawings.

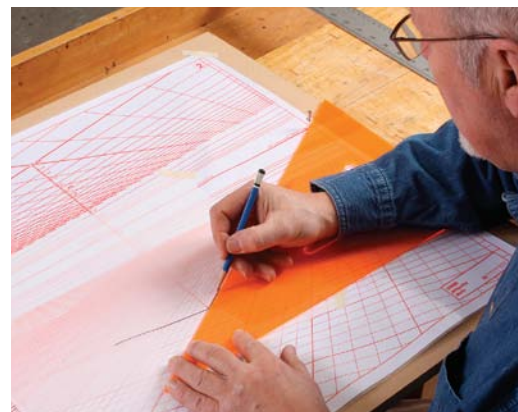
You need just a few tools

The first tool to buy is a set of Lawson perspective charts (amazon.com, \$38). They come as a set of eight, but you really only need charts No. 2 and No. 3 for the majority of your drawings, because they come closest to duplicating how we typically see furniture in a room, showing you more of the front than the side. I occasionally use chart No. 1, too, when I want to show the front and side equally.

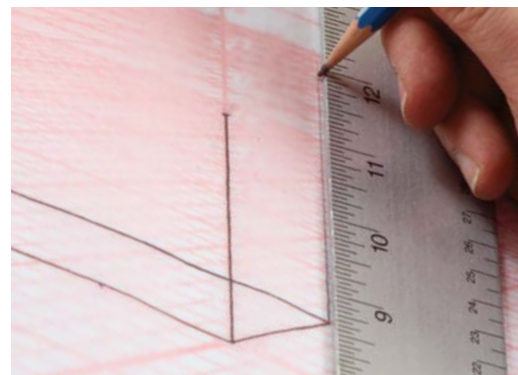
You also need a drafting table or other drawing surface. A piece of MDF 24 in. wide by 28 in. long works fine, but it is important that the top and bottom are parallel to one another, so you can use both to draw vertical lines. You use the grid to draw horizontal



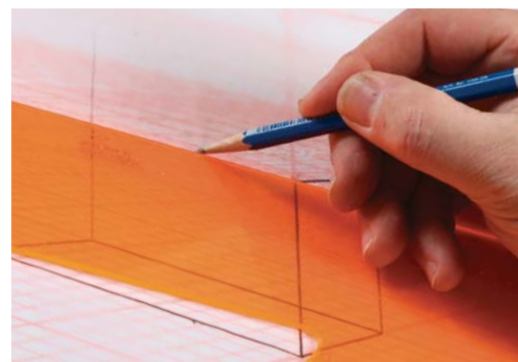
Align the chart. Because the T-square will be used to draw vertical lines, use it first to align the vertical measuring line on the chart. Then tape down the chart, and add a piece of tracing paper on top.



Start with the bottom of the box. A push pin in the right side vanishing point helps align the drafting triangle for lines on the side of the piece. Use the grid for lines that vanish toward the left.



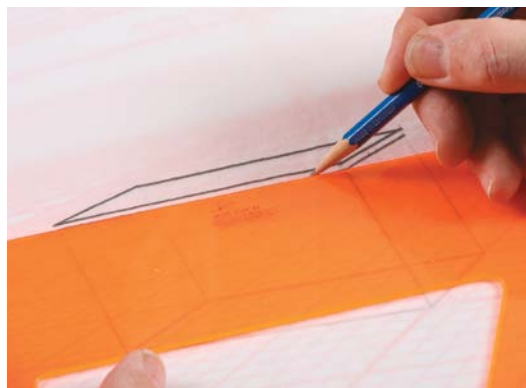
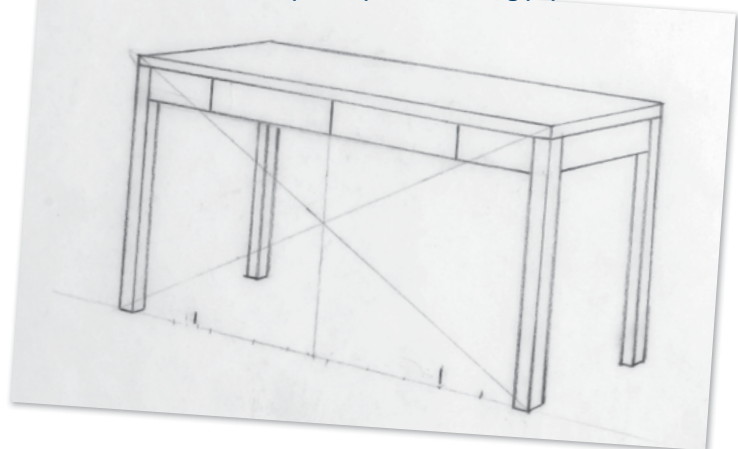
Draw the corners next. After marking the height of the box on the vertical measurement line, draw the front corner. Draw the other three as light construction lines that extend beyond the box's top.



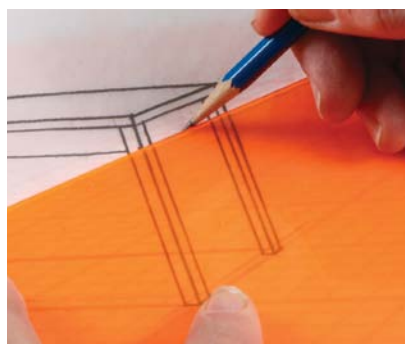
Then add the top. Align the drafting triangle with the top of the front corner and the vanishing points to draw the first two sides. Darken the remaining three corners after all four sides of the top are drawn.

Define the structure

Lay a second sheet of tracing paper over the box, and use the box as a guide for drawing in the basic parts of the piece. Leave them square, so this drawing can be used as a template for drawing multiple variations—each on a separate piece of tracing paper.



Draw the top first. Trace the top of the box and then measure down the front corner to get the thickness.

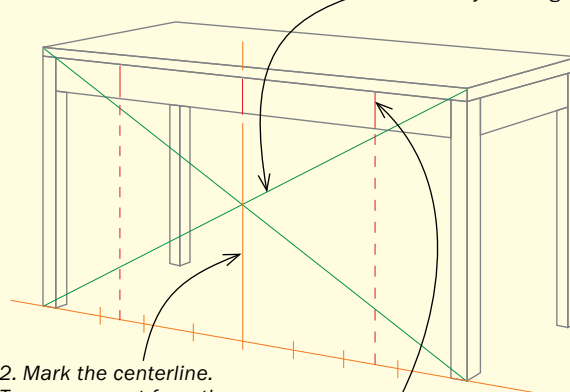


The legs and aprons are next. Use the grids on the chart underneath to figure out widths and thicknesses. Save the leg in the far back corner until after you've drawn the aprons. Draw only the aprons you'd see (left): the front and right side. For the leg in the far back corner, transfer its thickness from the other back leg and its width from the leg in front of it.

DIAGONALS FIND THE CENTER

It can be hard to judge distance along a vanishing line. To find the center of a table front or carcass side, draw diagonals from corner to corner. They intersect at the center. Repeat this process to divide a distance into quarters, eighths, etc., to add drawers and other components.

1. Draw diagonals. This works for any rectangle.

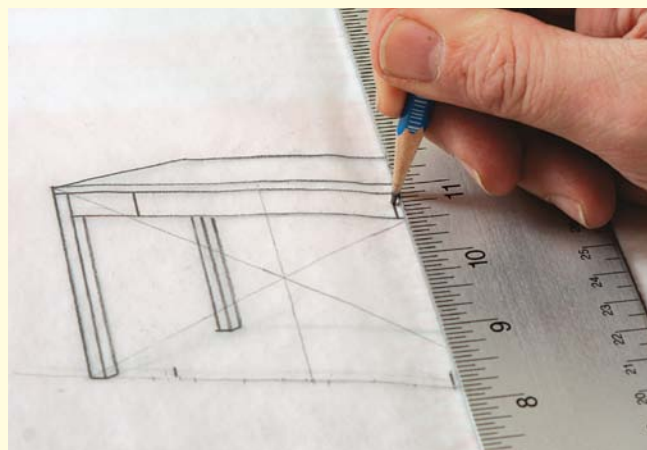


2. Mark the centerline. To measure out from the centerline, use the grid lines on the perspective chart.

3. Now draw the drawers. Use the T-square and mark the three vertical lines.



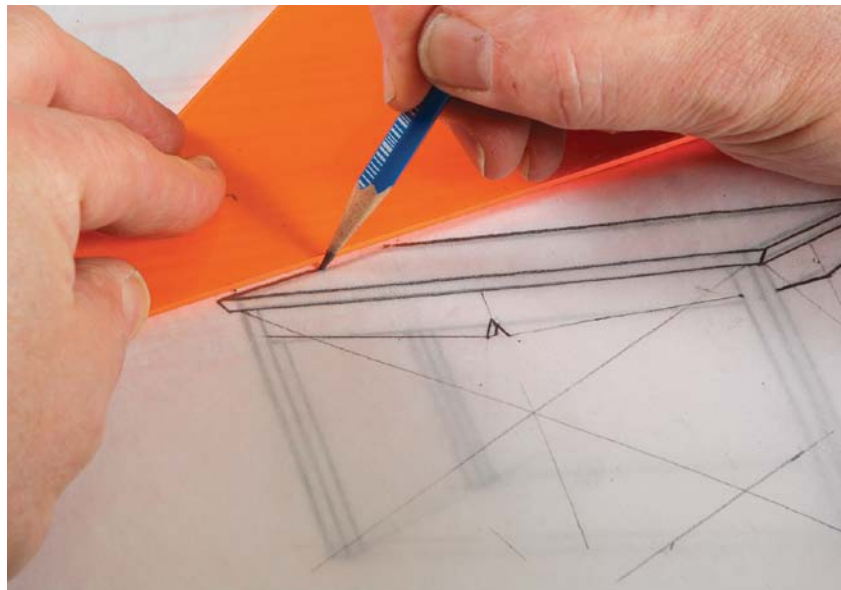
Divide with diagonals. The intersecting points of the diagonals will identify the center of the piece.



Measure from the center out. Use the chart's grid lines so that the correct perspective is preserved.

Explore details and variations

Now that you have a template of the table's basic structure, you can lay another sheet of tracing paper over it and quickly draw a version with design details, such as angled aprons. Knocking out several design variations is no problem.



Fast work. There is almost no new measuring needed, because the template tells you where parts start and stop. Just draw the shaped parts directly over it.

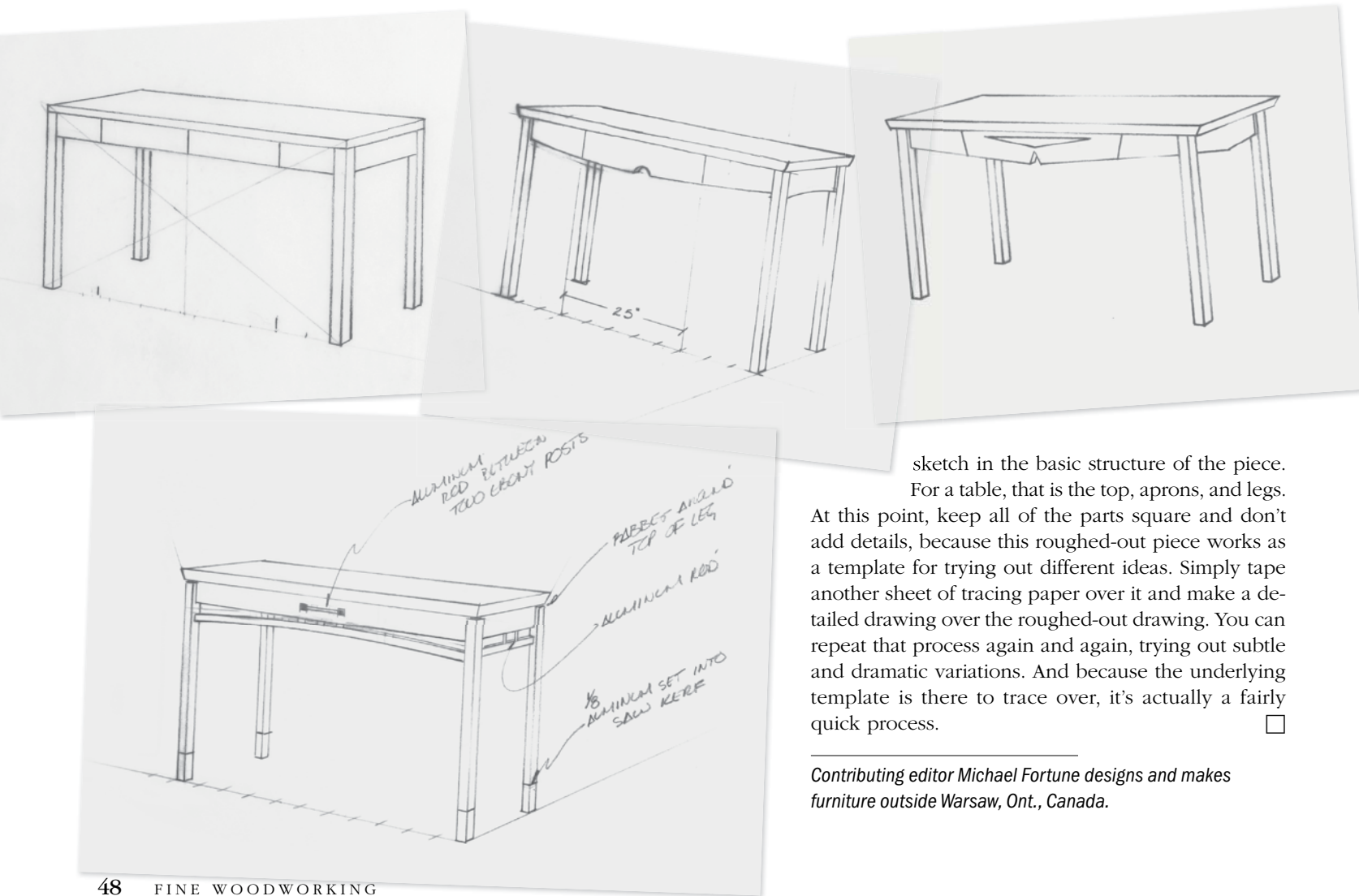
lines. The T-square should have a 30-in.-long blade. Get a drafting triangle, too. Use tracing paper: 11-in. by 14-in. sheets are the right size for most furniture. Get an H or 2H pencil for drawing fine lines, and a 2B or 4B pencil for bolder lines. Finally, pick up some blue painter's tape or low-tack drafting tape to hold everything in place on the drafting table and, because we all make mistakes, get an eraser.

Draw a box, rough out the piece, then add detail

Align the vertical measuring line with the edge of the T-square and tape the chart to the drafting table. Then tape a sheet of tracing paper over the perspective chart—if you draw directly on the chart, it's good for one use only.

Now draw a fine-line three-dimensional box that matches the overall dimensions of the piece of furniture you are drawing. To do this, you first need to assign a scale to the horizontal grid and the vertical measuring line. I've found that assigning 5 in. to each increment works best. Draw the bottom of the box, and then draw a vertical line for each of the four corners. Mark the height of the box on the vertical measurement line and then draw the top of the box.

After the box is drawn, use the same methods to



sketch in the basic structure of the piece.

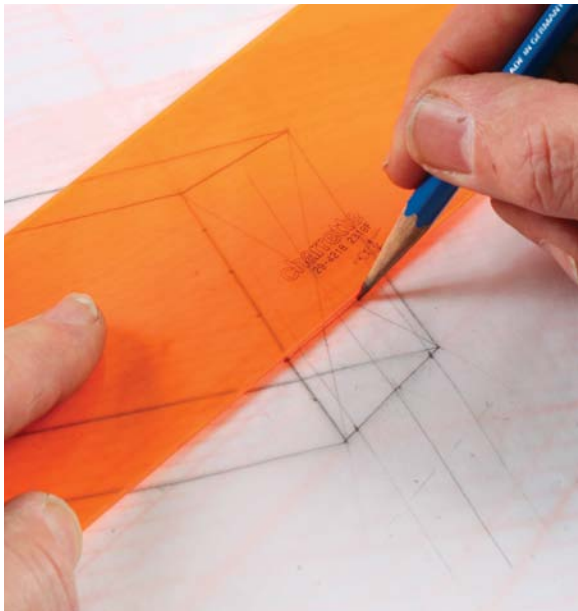
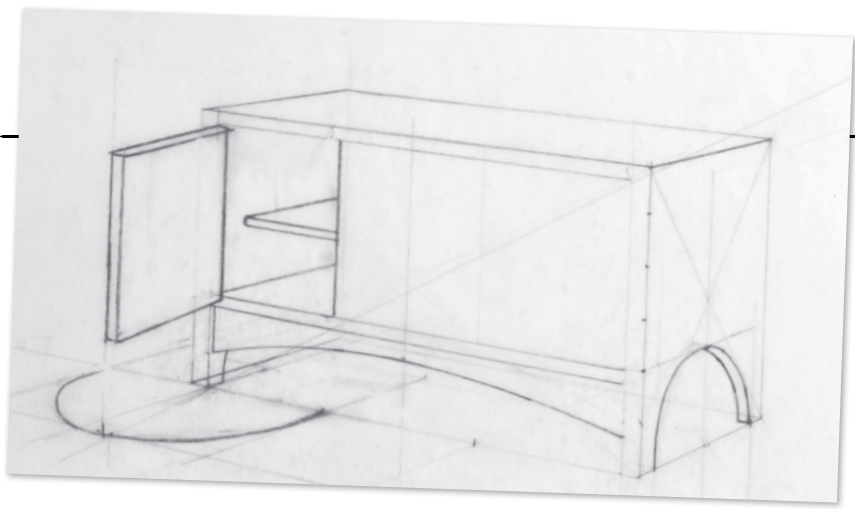
For a table, that is the top, aprons, and legs.

At this point, keep all of the parts square and don't add details, because this roughed-out piece works as a template for trying out different ideas. Simply tape another sheet of tracing paper over it and make a detailed drawing over the roughed-out drawing. You can repeat that process again and again, trying out subtle and dramatic variations. And because the underlying template is there to trace over, it's actually a fairly quick process. □

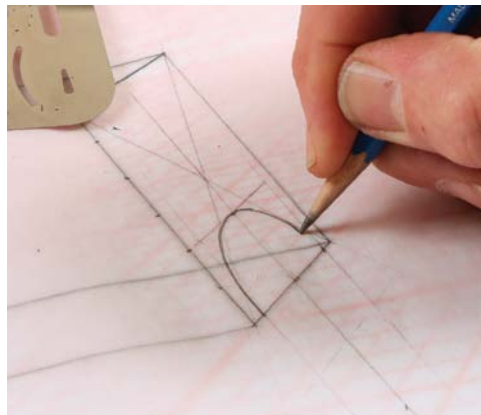
Contributing editor Michael Fortune designs and makes furniture outside Warsaw, Ont., Canada.

How to handle curves

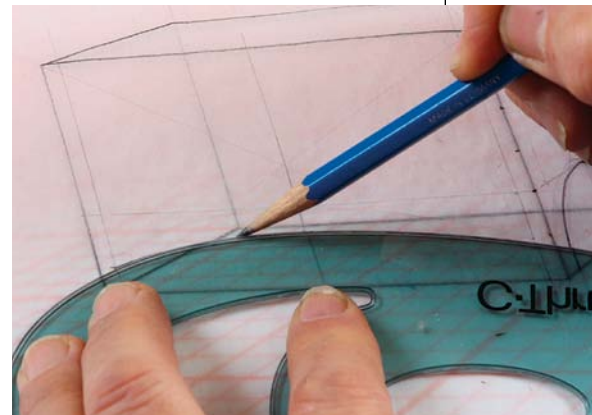
To draw curves in perspective, first lay out a grid for the height, width, and centerline. Then draw the two sides of the curve, keeping in mind that because of perspective one side is steeper than the other.



Start with a box. Draw vertical lines for the two sides and the center. Then draw a line (as shown) at the top of the curve.



Draw small curves freehand. Go from the middle down to the bottom and then repeat for the other side.



Use a French curve on the big ones. Try different parts of the curve until you find the section that looks right.

USE A CIRCLE TO OPEN A DOOR

Start with a virtual door that extends down to the floor line.

1. Locate the hinges' axis.
2. Draw a circle to define the door's swing.
3. Locate a vanishing point for the top and bottom edges of the virtual door.
4. Draw the front edge of the door.

5. Draw vanishing lines through the leading edges of the door and hinge axis.
6. Draw the actual door.



Start with a circle on the floor. Centered on the hinge axis, its radius is the door's width, and its circumference is the door's swing.



Find the vanishing point. A line through the centerpoint of the circle and the leading corner of the door finds the vanishing point on the horizon.



Draw the true top and bottom along new vanishing lines. Then draw the vertical edges. Mark the door's thickness and draw the rest.