

Modular Computer Corner Desk Unit

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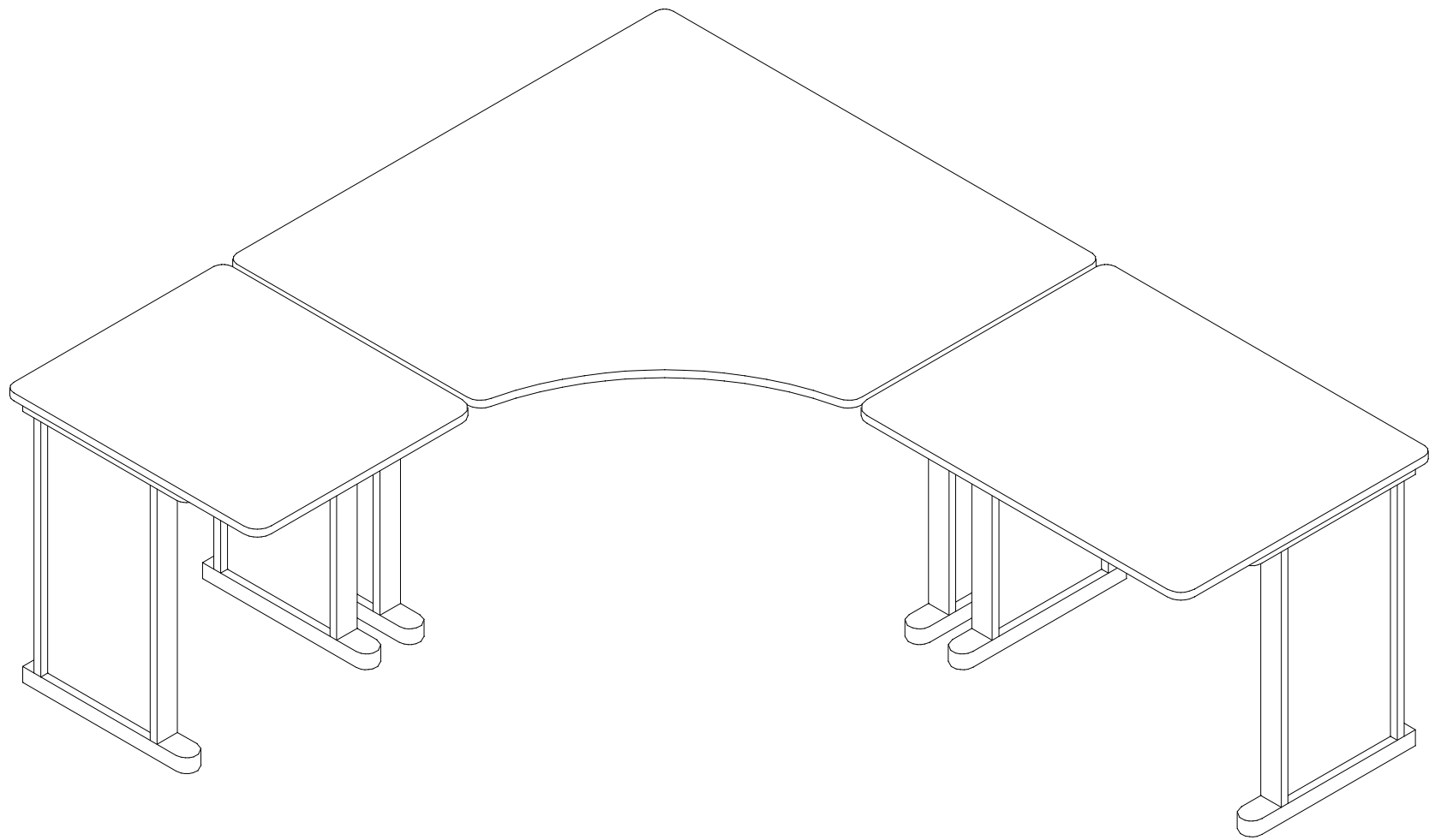
Introduction

This desk unit is designed to fit nicely into a corner and maximize the working space around the computer. The design makes use of readily available materials from your local home improvement center. The cost of this project will vary, but my estimate is around \$350 to \$400 depending on local lumber costs. For the most part the project can be built with just a few power tools; table saw (or circular saw using a guide fence), jig saw, drill, miter box, and a router. You will need some hand tools as well; hammer, plane, chisel, square, clamps, ruler or tape measure, glue, dowels and a compass.

I constructed the prototype unit from cabinet grade plywood and dimensioned oak lumber. The top working surface was covered with a smooth Formica laminate. The smooth surface will be great to write on and will not be damaged from a heavy pen. The plywood portion of the legs was covered with a vinyl contact paper. Of course, one could use a high grade veneer plywood and just stain it. I just did not want a monotone desk to work at.

The plans and this document are not meant to be a complete step by step instruction to building the project. This is a guide to illustrate the over all concept and provide dimensions and tips in construction. Be aware that the plans give dimensions which are the true measurements of the lumber. Example: A "one by two" twenty four inches long will be depicted on the drawing as "3/4 x 1-1/2 x 24". This is an effort to clarify the construction measurements. The plans will list a bill of materials as well as provide the basic dimensions.

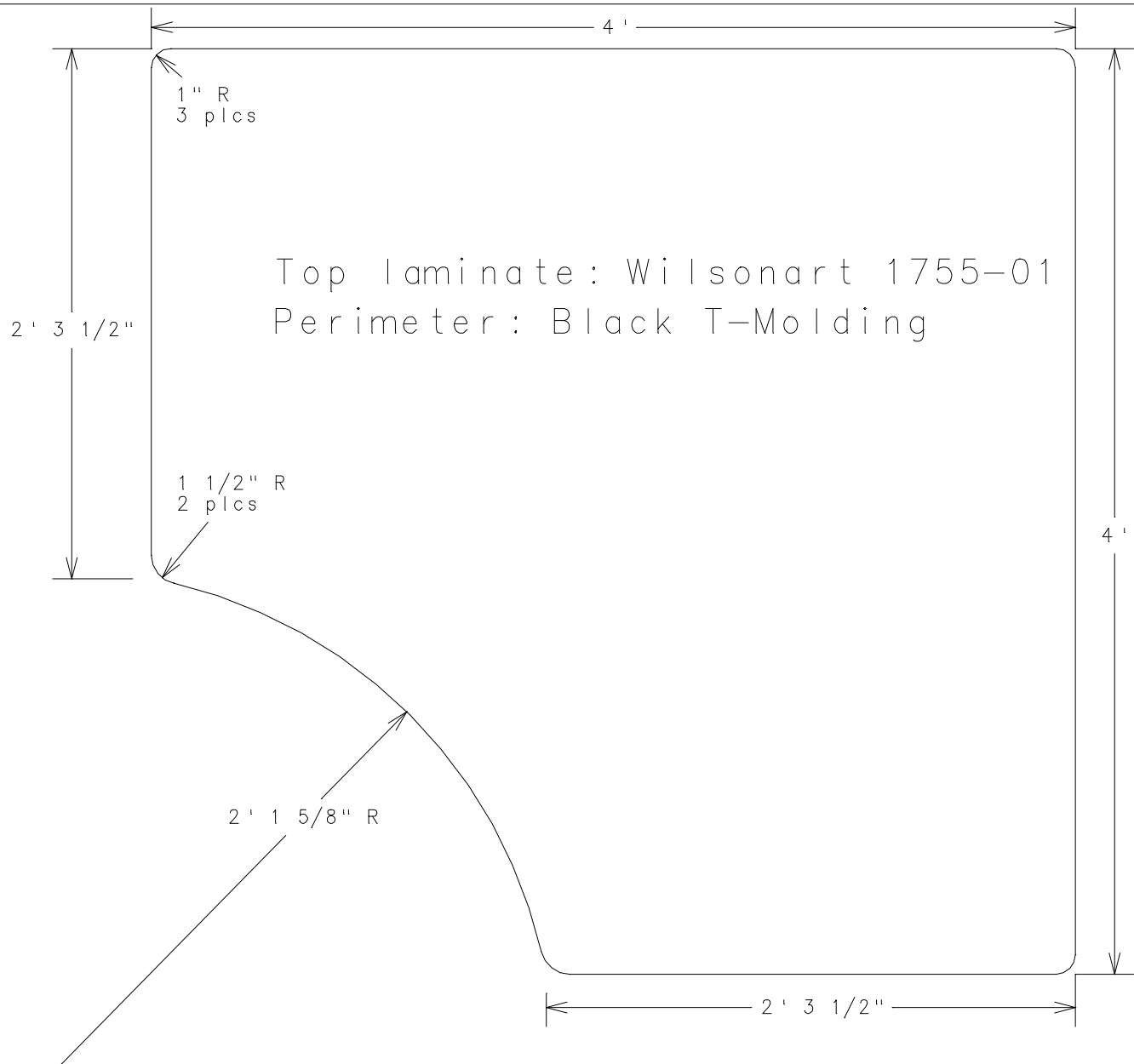
I highly recommend that the all of the parts be fabricated, and the entire desk assembly be "dry fit" before any glue is applied! I find that I always have to make some final adjustments to insure the proper fit I am looking for. A second piece can be quickly fabricated as a replacement if need be before the final assembly with out scrapping a completely glued up assembly.



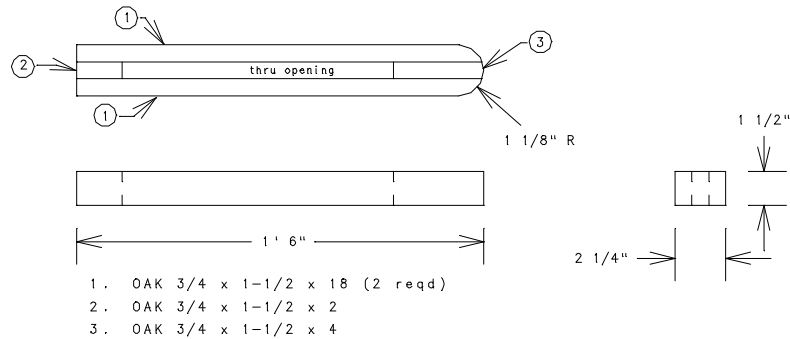
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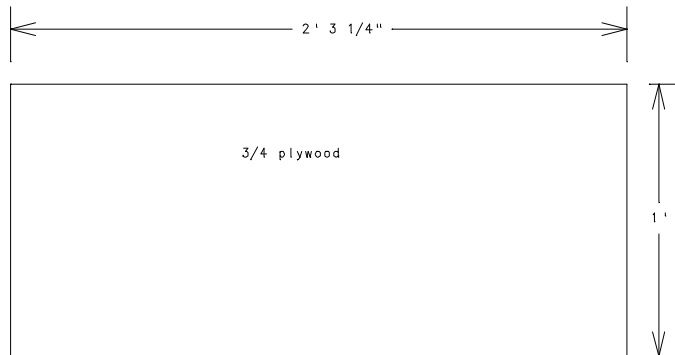
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Scale: none	Material: OAK/PLYWOOD
Page 01 of 04	Drawn By: K. Eubanks



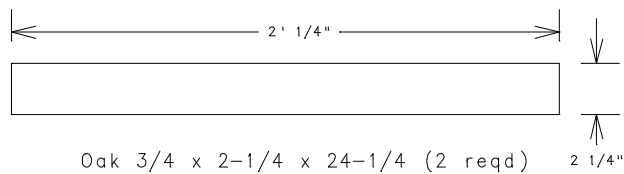
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		Page 02 of 04	Drawn By: K.Eubanks



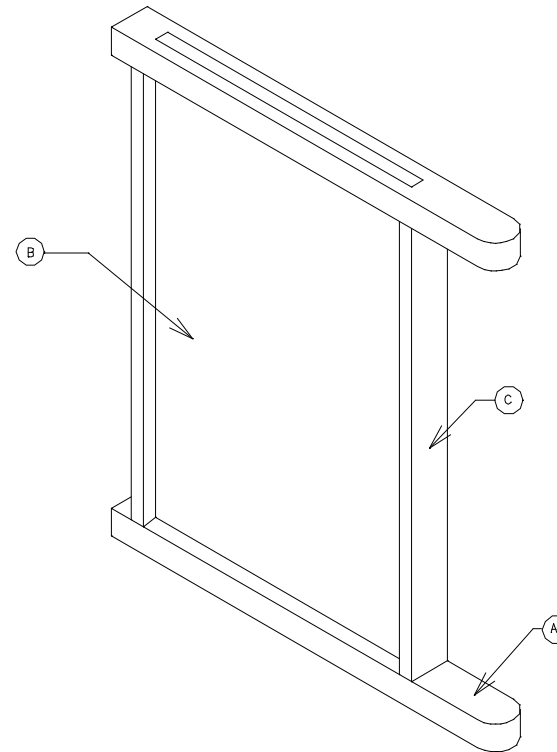
A Top/Bottom Support - Side Leg



B Center Panel - Side Leg



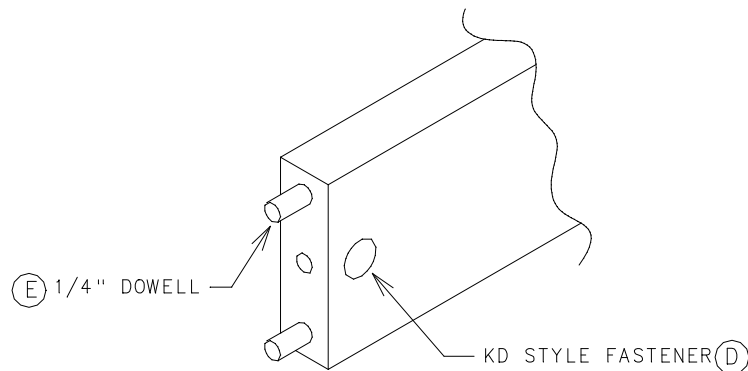
C Front/Rear Support - Side Leg



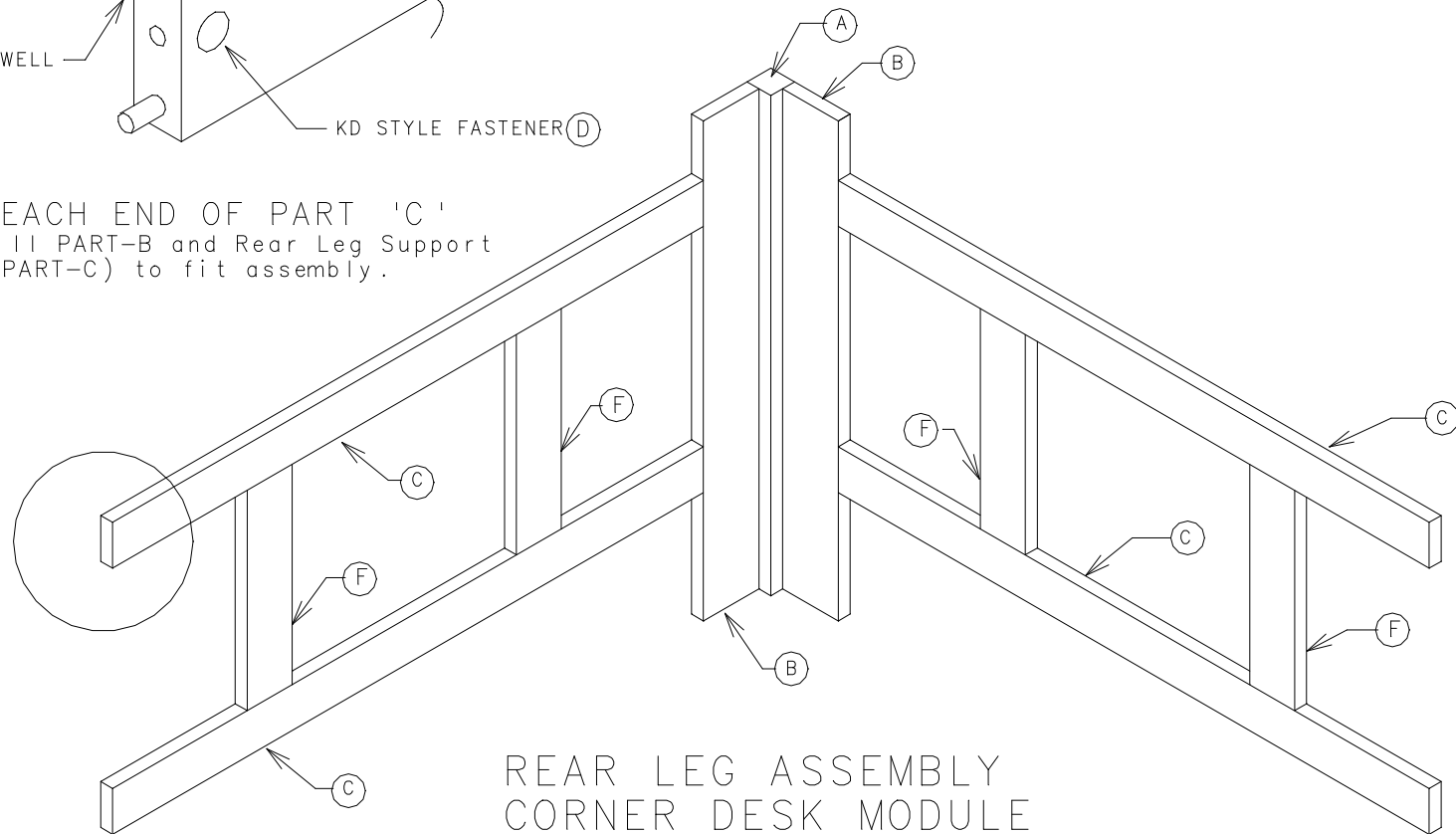
Side Leg Assembly

BILL OF MATERIALS

- (A) 2 x 2 x 27-1/4" (1 reqd)
- (B) 3/4 x 3-1/2 x 27-1/4" (2 reqd)
- (C) 3/4 x 2-1/2 x 36" (4 reqd)
- (D) KD STYLE FASTENERS (8 reqd)
- (E) 1/4"DIA DOWELL PINS (16 reqd)
- (F) 3/4 x 2-1/2 x 10-1/2 (4 reqd)



TYP EACH END OF PART 'C'
Match drill PART-B and Rear Leg Support
(sheet 3 PART-C) to fit assembly.



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Building the Legs (ref. Sheet three of plans)

The following process will be used for the leg components of each desk unit. This is by far the most complicated piece of this project and it is not that difficult to build. The legs are made up of three major components: 1) top and bottom supports, 2) center panel and 3) front and rear supports. Out of these three components the top and bottom supports will take the most time to construct.

Lets look at the make up of the top and bottom supports. See sheet **three**, detail “A”. These supports are made up of a sandwich of “one by two” lumber in three different lengths with a total of four pieces. Cut two pieces to **eighteen** inches long (*item 1 on plans*), one piece to **two** inches long (*item 2 on plans*) and a final piece to **four** inches long (*item 3 on plans*). Now place glue on both sides of item 2 & 3. Arrange these so that the assembly order is as follows: item 1, item 2 and item 3, item 1. Be sure to locate items 2 and 3 at opposing ends as shown in the plans. Once the glue has set up, mark a full radius on the end with item 3 (front end), then cut this radius and sand smooth. Each desk unit will require four of these supports.

TIP: make a “blank” to represent the center panel to aid in the placement of items 2 and 3. This blank should be twelve inches wide (the width of the center panel) and just long enough to easily grab and remove from the glued top and bottom assemblies before the glue dries.

Choose two of these to be used as the top supports. Select the side to be glued to the underside of the desk top. On this side mark for dowel pins to join to the desk top. Place them where it will be easy to drill the matching holes in the underside of the desk top. (I placed them one inch from the back end and two inches from the front end.) Drill for 3/8 inch dowel pins.

The next step will be to cut the front and rear supports. See sheet **three**, detail “C”. Each leg will require two of these supports. Now here is where some choices can be made on how these supports are attached to the center panel. I cut a slot 3/4 inch wide by 3/8 inch deep down the center on one side of each support to “capture” the center panel when assembled. One could just as easily dowel these pieces to the center panel. Determine which will be the rear supports and mark them and drill the mating dowel pin locations and the KD fastener pin to match the rear leg rail assembly. The plans do not show this detail.

The center panel should be cut square so the leg assembly fits together nicely. The center panels on my desk were covered with a black vinyl. They could have been painted as well. It was less expensive to purchase cabinet grade plywood than high grade plywood. But there is nothing preventing one from using plywood for these center panels which is suitable for stain. If one chooses to use the vinyl method, do not cover the area which will interface with the top and bottom supports. There is just enough room for the plywood to slip in these supports and the vinyl will peel off during assembly.

To assemble the leg, start with the bottom support. Insert the center panel applying glue to the joint. Then apply glue to the slot (or dowel pins) of the front and rear support and assemble them to the center panel. The last item is the top support. **DO NOT GLUE!** Place the top support on the leg assembly and mark for two holes to be drilled through this support and the center panel. The location does not really matter, these holes are for some bolts to make the legs removable from the desk.

Building the Rear Leg and Rail assembly (ref. Sheet 4)

The desk needs a rear leg and rail assembly to provide the support for the rear of the desk and provide the rigidity to keep the desk from “shaking”. The assembly of the rear leg is straight forward. The main component is Part-A, which is an oak piece 2 by 2 by 27 1/4 inches long. Cut Part-B (two required)

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and mark for dowel pins along the side that will mate with Part-A. After all of the dowel pin holes are drilled in both Part-B pieces and the Part-A piece to match, glue these pieces together.

Next cut the rail pieces, Part-C and Part-F. Four pieces are required of each. Layout the Part-F pieces so that there is equal spacing along Part-C. Mark and drill mating dowel pin locations to join these pieces together. Glue these together. The ends of Part-C will also be drilled for ¼ inch dowel pins and the locking part of the KD Style fastener. (see the manufactures instructions for the exact position of this fastener) The KD fastener is a quick release “cam-lock” fastener. The idea here is to allow for the leg assembly to be taken apart for easy transport. Coordinate the locations of these features with the KD style pins in the rear leg and the side leg assemblies. **DO NOT GLUE** the rail assembly to the rear leg or the side leg assemblies, the dowel pins provide the alignment and the KD style fastener provides the mechanical attachment of the pieces. (note the position of the rail assembly along the rear and side leg assemblies must be consistent with each other. The actual position does not matter, only that they all mate together to form a solid, square leg assembly.)

Desk Top (ref. Sheet 2)

The top is straight forward in its construction. Lay out the perimeter of the top and cut to shape. Route a slot around the edge of the top to accept the “T-molding” banding. The actual width and depth of the slot depends on the T-molding to be used. Purchase the slot cutter recommended by the T-molding manufacturer. Sand all surfaces and edges smooth. Mark which side is to be the top surface. On the bottom surface place the completed leg assembly to align and mark its position to the desk top. Position the leg assembly approximately two inches from the back and side edges of the desk top. Transfer the dowel pin locations from the side legs to the desk top and drill to match. The top supports from the side legs will be glued to the desk top. (make sure not to glue the center support of the leg assembly to the desk top!) Position some angled brackets to attach the rear leg to the desk top. After final assembly the brackets will allow the rear leg to be removed from the top.

After leg assembly has been positioned and attached to the desk top the laminate can be applied and trimmed. After the trimming of the laminate the T-molding can be installed.

Side Desk Units

I have chosen not to detail out the side desk units. The construction techniques of these desks is the same as the corner desk. The side units use the very same side leg assemblies as the corner desk unit. The rail assembly is borrowed from the corner desk and altered to fit between the side leg assemblies of the side desk units. This will allow these wing units to be fabricated to meet your specific needs. (In my case I needed a 24 inch wide unit for my printer and a 36 inch wide unit for a general work area.) These desks are small enough that the KD style fasteners can be omitted and the leg assemblies be permanently constructed using glue and attached to the desk tops.

Summary

I have more than enjoyed constructing and using my Modular Computer Corner Desk Unit. It has proven to be exactly what I needed to have a computer and an area to layout papers and really do some work. The chair radius makes “snuggling” up to the work very comfortable. I hope that you have the same experience with the construction and use of this project that I have had. Good luck!