# Simple Inlay

The purpose of this is to provide students with the ability to navigate multiple software to produce a real world part. This also gives them understanding and experience in CNC and manufacturing. Rhino is the software being used here, but others maybe substituted if necessary. Make sure that students put their initials and period at the beginning of the file names. **(Example:** "WWWp2 Original letter") If your using a network that is unorganized with student folders this will help quite a bit.

1. Starting at 0,0, draw a rectangle in Quad 1 to the size of the material.
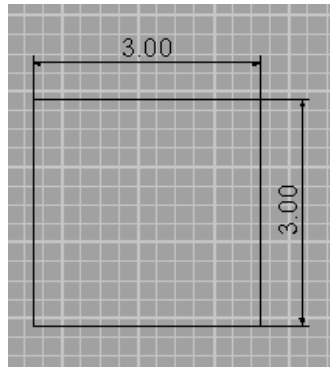
2. Create a letter and place it in the center of the rectangle and save as "Original letter" *((Before saving, size the letter so that the mill bit will fit into the small places. The bit is usually a .0625 diameter single fluted router bit.))*
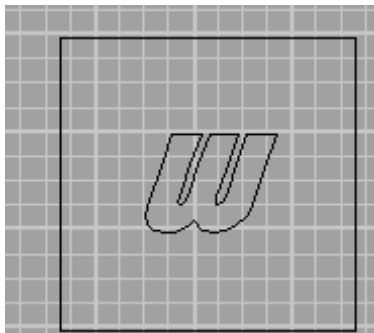

3. If needed, fillet the sharp corners of the letter to fit your mill bit's **radius**. Next, check all tight spaces with a circle the size of your chosen bit to make sure that the bit will fit into those spaces. *((Make sure that the **Join** option is yes at the fillet prompt. Try to go in a clockwise or counter clockwise pattern when filleting.))*
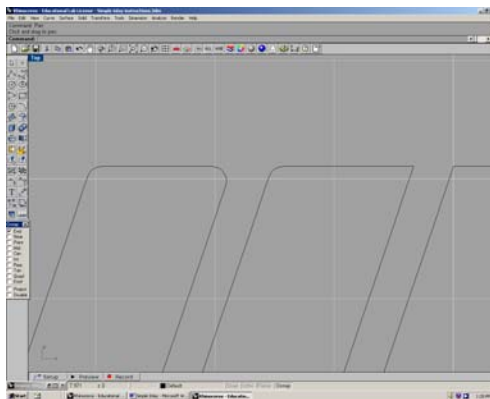
4. Save filleted letter as "letter contour". This will be that actual part so do not mess with it from now on unless you want to start a new contour and pocket *((This is the first of two drawing needed for milling.))*

5. Highlight the letter by picking it and off-setting it outwards .0025.
*((Letters with an island(s) like **B P & Q** will require that the island(s) be offset inwards. The goal is to give the letters enough clearance to slide into the pocket))*
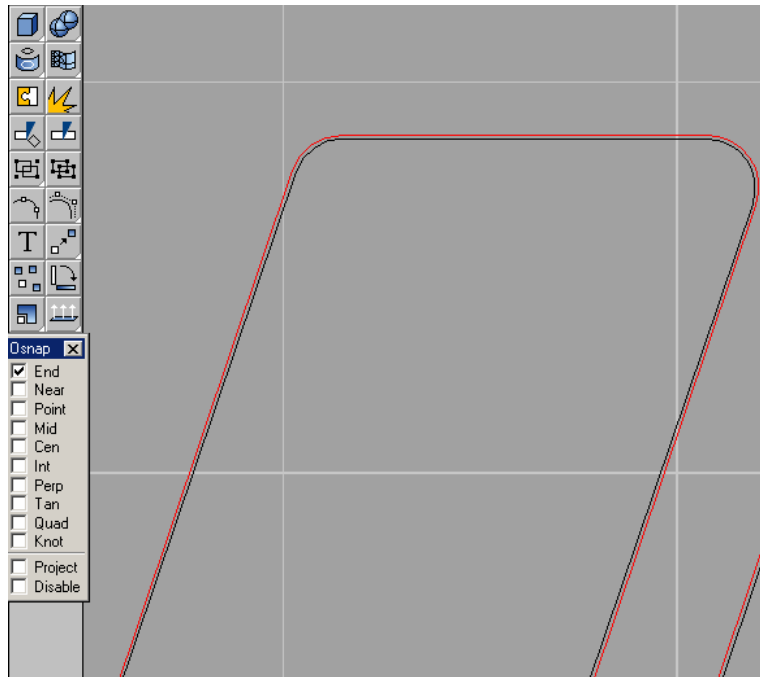
6. The original letter should still be highlighted so change it to another layer and turn it off.

7. Save this stage as "letter pocket".
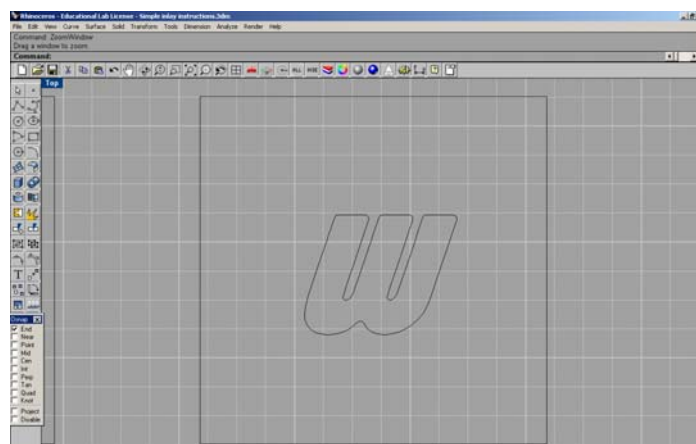
Each drawing is now ready for import into a milling software.

Warning: Any tweaking will require modification or replacement of both the contour and pocket drawings before saving and importing them into the milling software. Multi-piece inlays are similar, but require more planning and possible offset changes.