Chapter 12

Making Standard Note Blocks and Placing the Bracket in a Drawing Border

In this chapter, you will learn the following to World Class standards:

1. **Making Standard Mechanical Notes**
2. **Creating a Standards Note Drawing with the WBlock command**
3. **Moving from Model Space to Paper Space**
4. **Inserting a B-Size Drawing Border into the Paper Space Layout**
5. **Inserting a Standard Notes into the Paper Space Layout**
6. **Modifying Standard Notes in Paper Space**

Making Standard Mechanical Notes

Pick the New Drawing tool on the Standard toolbar and the Start window will appear. You will begin the drawing by selecting a template. In Figure 12.1, the Open window is loaded by selecting the Browse button. Find the Mechanical template you created previously and hit Open.

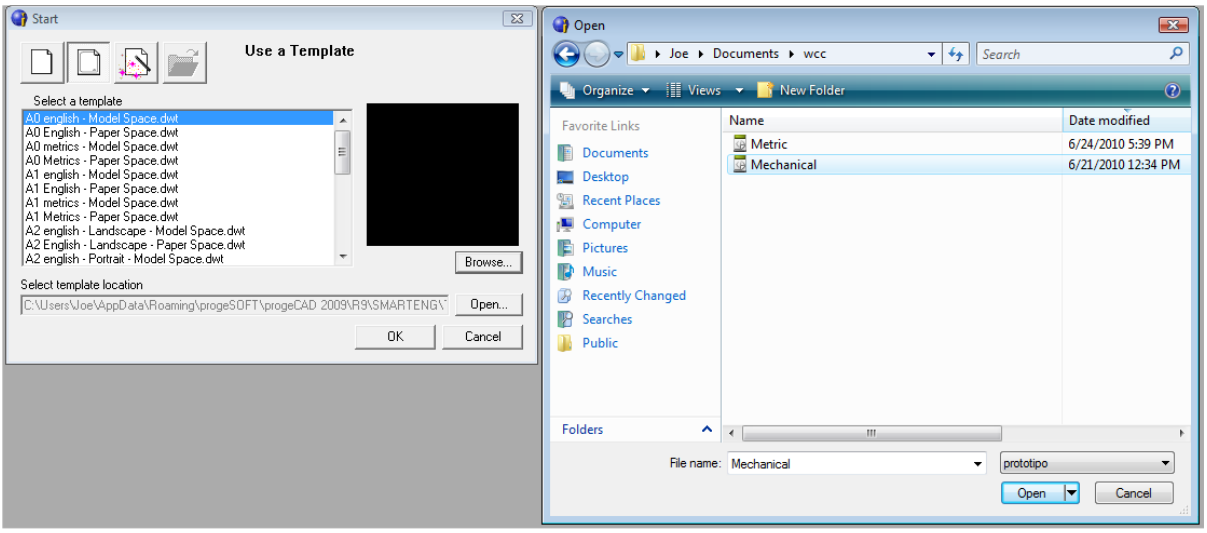


Figure 12.1 – Starting with the Mechanical Template

Next, you need to change the layer to Text Layer by clicking on the black arrow in the Layer Control List Box on the Entity Properties toolbar. Scroll down the list box and highlight the Text Layer. Once you left click on the Text Layer, Text will be displayed in the Layer Control window and become the current layer in the drawing. Now you are ready to place text.

Using the Mtext Command to Place Text in the Drawing

To place text on the drawing, select the Multiline Text command on the Draw toolbar. The command line will prompt you to select the first corner of the Mtext window. Select your first point then the command line will prompt you to specify the opposite corner. Make the Mtext window at least a few inches wide.

The Multiline Text window will appear in the center of the display. Remember in the Mechanical template that the text height is already set at 0.125 and the font is already set with Txt. Select the typing window with your mouse to set the cursor. Now you are ready to type your notes, using ENTER when you need to start a new line. The Multiline Text Editor is very much like a word processing program.

Notes:

1. Material:
2. Remove all sharp edges and burrs.
3. Corrosion Protection:
4. Tolerances unless otherwise specified:
   1 decimal: ±0.06
   2 decimal: ±0.010
   3 decimal: ±0.003
   Angular: ±0.5º

When adding the plus and minus symbol to the 1 decimal note, type the colon and add a space, and then type "**%%p**". This control code is one of many that can be used to enter special characters in text. When adding the degrees symbol after the Angular tolerance note, type the colon and add a space, and then type "**%%d**". This is the control code that adds a degree symbol. As progeCAD Smart! does not have a spell checking feature, make sure to double-check your notes for spelling errors (Figure 12.2).

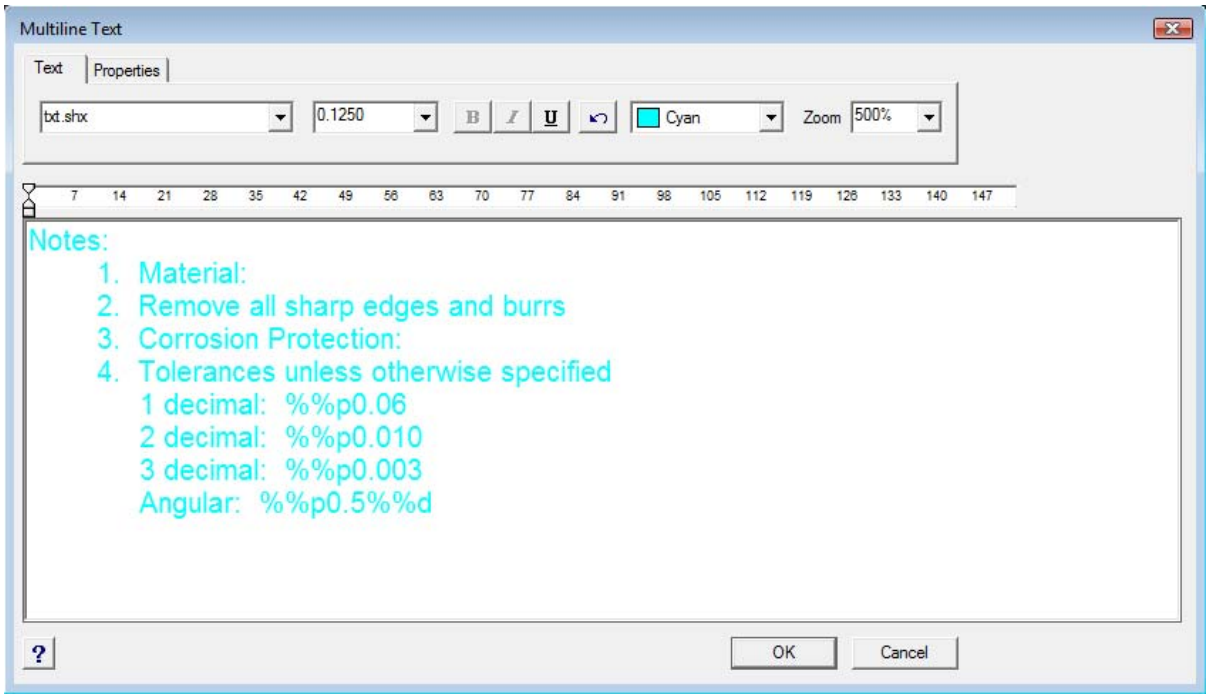
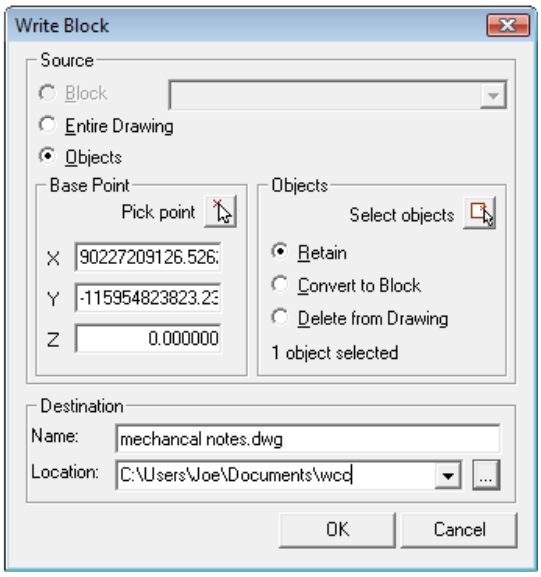


Figure 12.2 – Making a Set of Standard Notes

Creating a Standards Note Drawing with the WBlock command



To save the drawing, type WBLOCK at the Command line and the Write Block window will appear in your graphical display as shown in Figure 12.3. To save the notes as an editable block, type Mechanical Notes Destination Name field. Select the Pick point button in the Base Point area of the window to select a base point of insertion for the block. Select the top left of the text as shown in Figure 12.4. Next, pick the Select Objects button and pick the notes just typed. Select the OK button and a new drawing called Mechanical Notes will be saved to the folder you specified.

Figure 12.3 – Writing the Notes to a New Drawing

Figure 12.4 – Selecting the Insertion Point of the Text

Moving from Model Space to Paper Space

The drawing border and notes will be added to the drawing in Paper Space, which is an area of the drawing file that allows the CAD operator to place the drawing from Model Space into an A, B, C or D size border. You can open a single window or multiple windows in Paper Space, scaling each view to whatever proportion that you desire, and enabling you to show any detail that is desired in perfect clarity. The best application of the Paper Space

technology is when an Engineering Designer draws a solid 3D part in Model Space and then shows multiple views in Paper Space, opening three different windows to show each perspective. Many Architectural companies will have their D-size border in Paper Space set to print easily to their printer or plotter, and the architect can easily scale the floor plan in the window. When you learn the World Class CAD Fundamentals of 3D Drafting techniques, the more advanced techniques of Model and Paper Space interaction will come clearly into understanding. Presently for the Bracket problem you will use Layout 1 of Paper Space to setup the drawing border for printing.

In Figure 12.5, you can see the Bracket problem with the Layout 1tab set right above the status bar. To enter Layout 1, then just select the Layout 1 tab. The drawing area will appear much differently than what you are used to seeing in Model Space. There is still quite a bit to be done to the drawing before you will be ready to print.

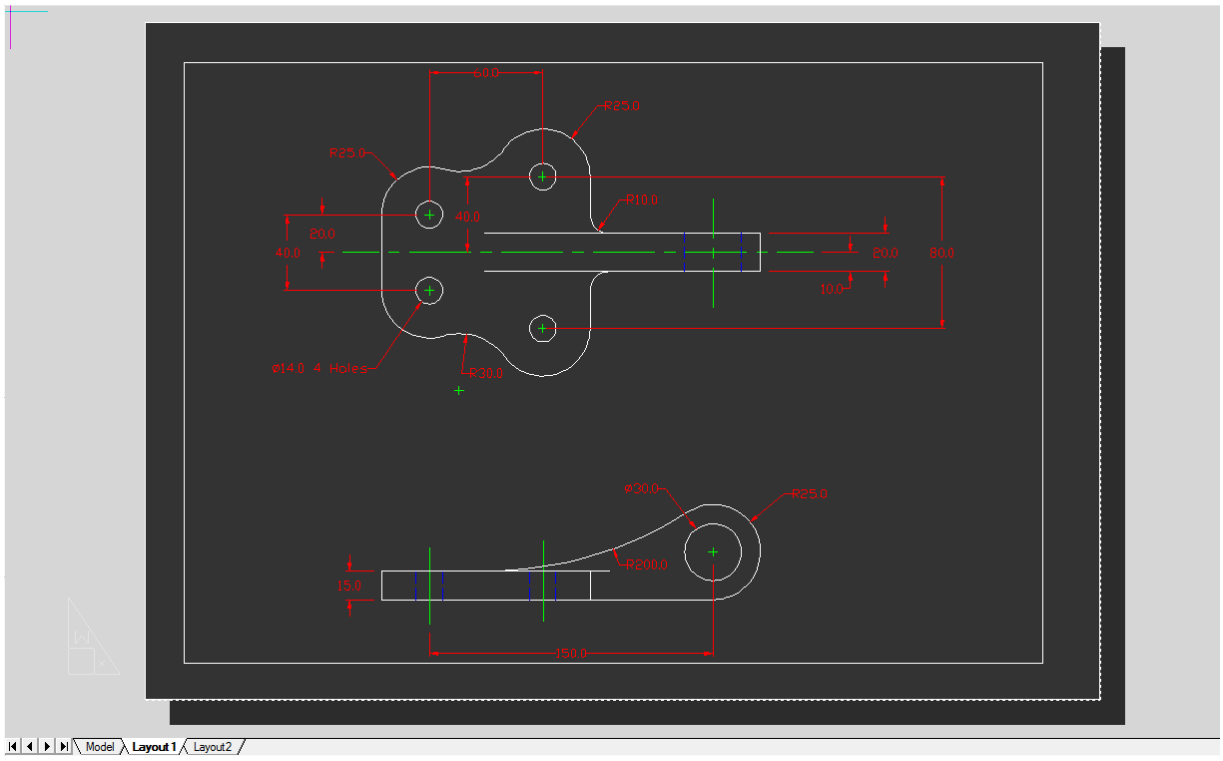


Figure 12.5 – Looking at Paper Space for the First Time

To set up Paper Space for this particular set of views, select the Plot tool from the File menu on the Menu Bar. The Print window will appear, allowing you to customize the format of Layout 1's Paper Space. On the first tab, Device, we need to to reformat the Paper size and layout (Figure 12.6). If you have a printer that will print on Legal size paper (11" x 17") you will be able to follow the rest of this chapter exactly, using the B border; however if you are only able to print on Letter size (8.5"x11") you will need to use the A size border and modify some steps so that your drawing will be compatible with whatever paper size your printer is using.

There are many companies that provide CAD printing services at very economical prices when larger layouts are needed for the customer. For those of you who are at an organization

with the abilities to print any A, B, C or D size drawings, always consult with the department manager to which printers are accessible for your use. In many professionals groups, there are black and white machines for check prints and color devices for finished drawings. Some printing equipment uses special paper that is costly, so again make sure that you pay attention to any orientation with special tools in the list box of available printers, and keep any special instructions posted in your work space as not to waste resources or time.

Select the printer you wish to use in the Printer List Box. Change the Paper Format to Legal and change the Drawing Orientation to Landscape (Figure 12.6). You can hit the Apply to Layout button at any time to see your changes reflected on the Paper Space behind the Print window.

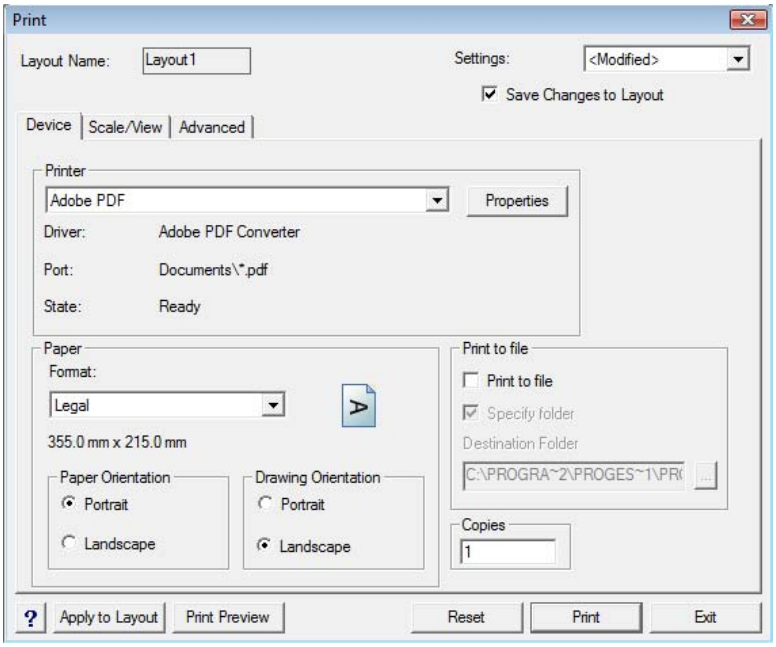


Figure 12.6 – Selecting a Printer to Plot Your Drawing

Before moving on to the Scale/View tab, you need to find the appropriate Scale in which to plot your drawing. The y axis of the Legal paper is listed as 215 mm, but the y-axis of the printable area is closer to 200 mm. The B-size drawing border of 10 inches or 254 mm will not fit into the smaller height. By using your calculator you will find that 200 divided by 254 is 0.79, when rounded to two decimal places. You probably do not wish to use a B-size border with 8 x 11 paper, since the proportions of the two do not coincide. If you choose the A-size document to print on, the printable area will probably be around is 260 mm, so since the 16 inch B-size border is 406.4 mm wide, take 279 and divide by 406.4 to get 0.69, when rounded to two decimal places. The custom scale is 0.69 mm = 1 drawing unit.

Use the scale number when you advance to the Scale/View tab. In the Print Scale area, select Custom from the list box and enter the correct scale in the Printed Units field (Figure 12.7). Keep the Drawing Units field as 1 and the paper size in millimeters. Under Print Area, select the Extents radial button. This will effectively Zoom Extents your Paper space, maximizing paper size.

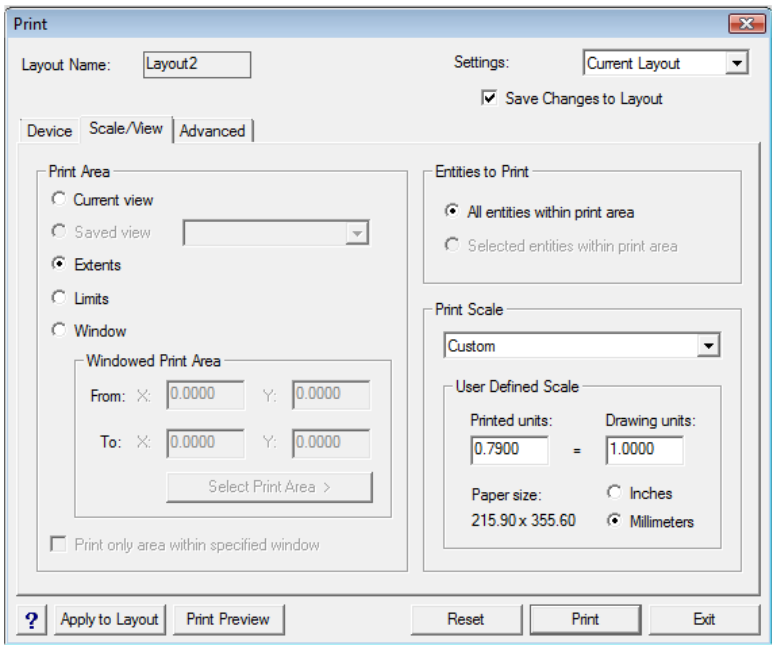


Figure 12.7 – Picking a Paper Size and Setting the Drawing Scale

On the final tab, Advanced, select the "Center on page" checkbox in the Print Offset area. This will automatically center your drawing in the center. Before you hit Exit, select the Apply to Layout button so that you can see the changes you made appear on the screen behind the window. Also, select the "Save Changes to Layout" checkbox at the top right corner of the window, so the settings you've changed become the current layout (Figure 12.8).

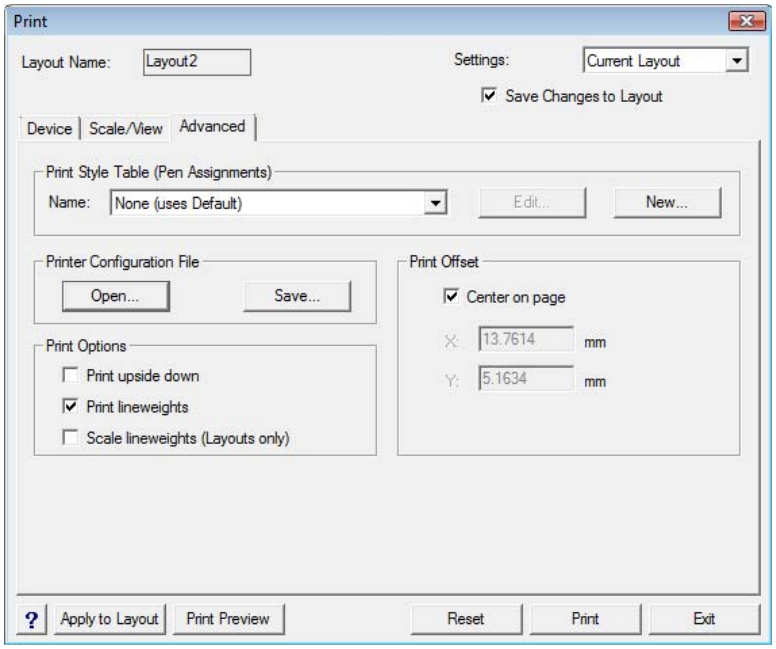


Figure 12.8 – Picking a Paper Size and Setting the Drawing Scale

So how can you determine if you are in Paper or Model space? First, you will see a representation of the document sitting on a grey background. Second, the UCS symbol is no longer the arrows pointing towards the x and y-axis, but is now a triangle. Third, the entire content in Model Space is inside another rectangle which is the window looking from the Layout 1's two dimensional area into Model Space (Figure 12.9).

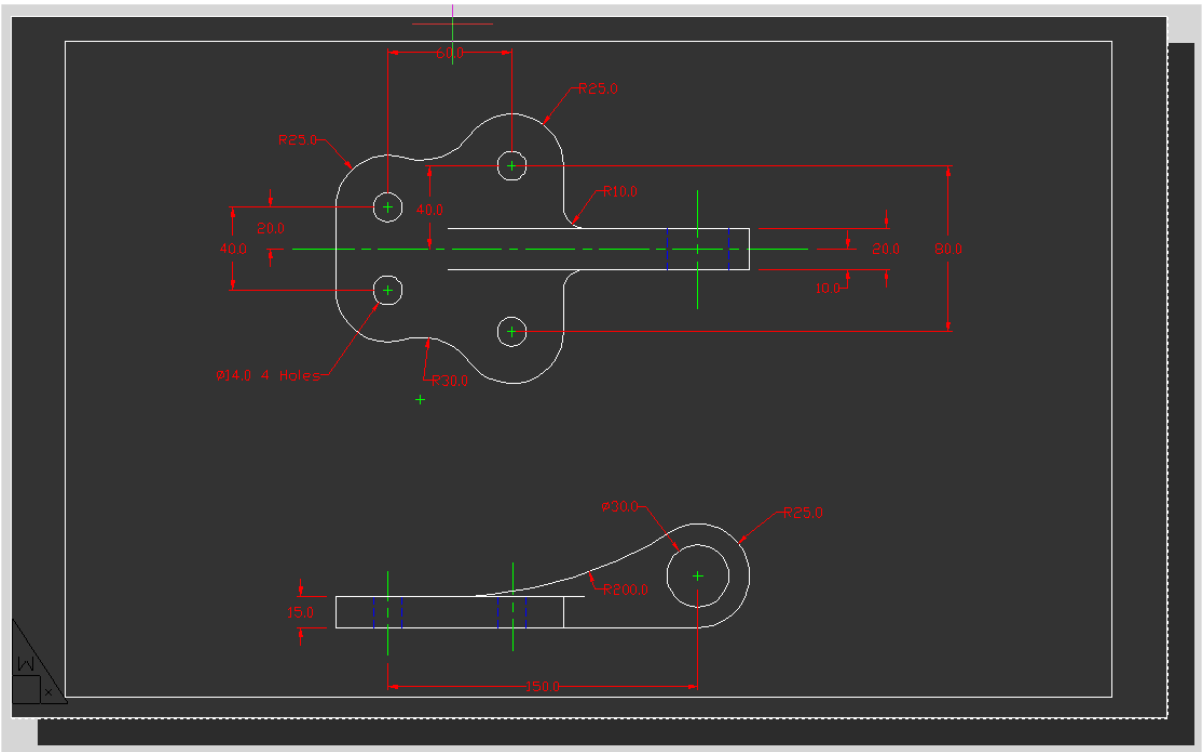


Figure 12.9 – Paper Space after Customizing the Plot Settings

Inserting a B-Size Drawing Border into the Paper Space Layout

To insert the block containing the B-Size Border into Layout 1, select the Insert tool on the Draw toolbar and the Insert window (Figure 12.10) will appear in the graphical display. Use the Browse button to find the "b size border" in your Fundamentals of 2D Drawing folder.

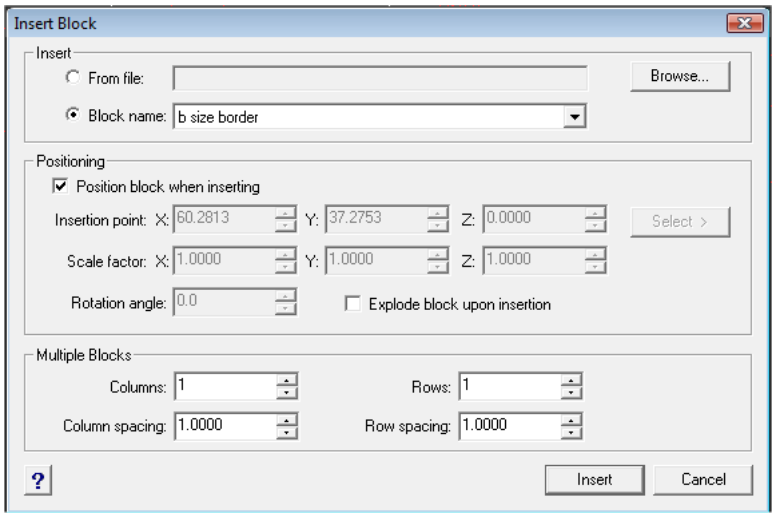


Figure 12.10 – Inserting the B Size Border

After picking the Insert button on the Insert window, pick the insertion point for the border, the bottom right-hand corner of the Model space box. The titleblock and border will appear very small; follow the command line prompts, typing **25.4** when you are prompted for the X scale factor and for the Y scale factor also. Hit ENTER to keep the default rotation angle for the block, 0.0. You will see in Figure 12.11 that the border is aligned with the Model Space box, and the titleblock appears aligned perfectly in the bottom right corner (Figure 12.11).

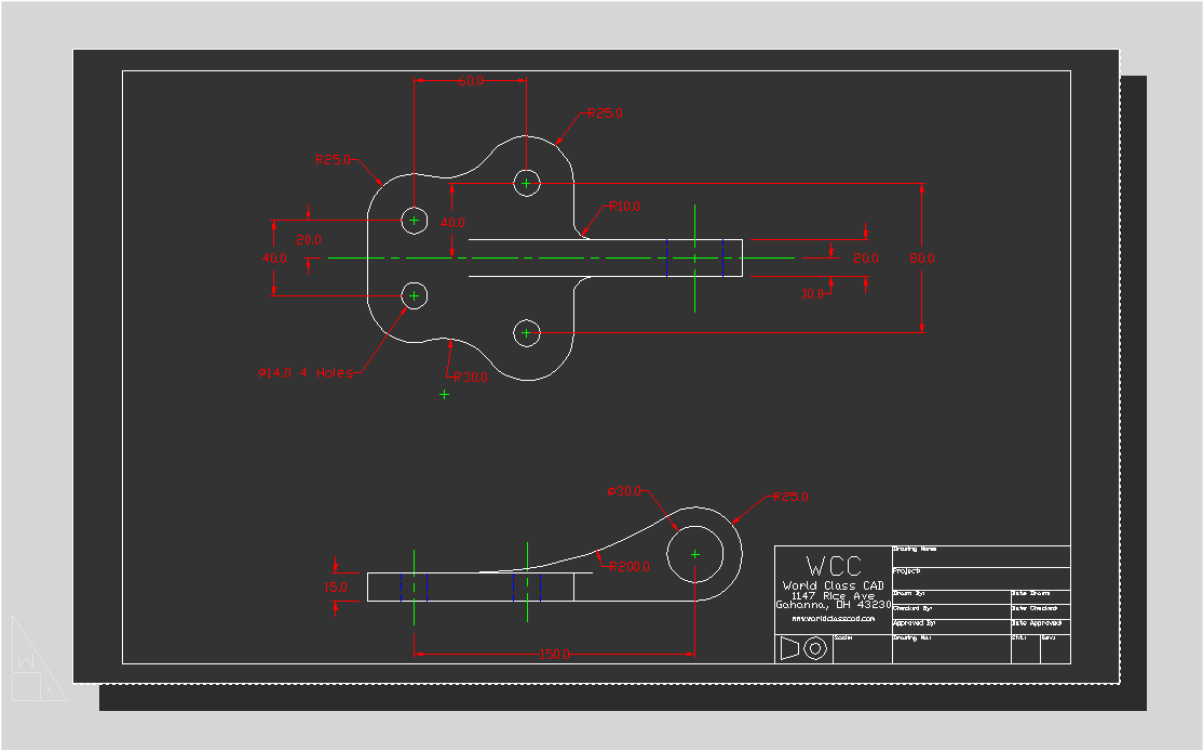


Figure 12.11 – The B Size Border in Paper Space

If you need to modify the paper space so that both views fit better in on the page, feel free. Double-click the Model space box to enter Model space while still in Layout 1. Now you will be able to use the Realtime Pan and Zoom tools to re-configure the display without changing the Paper space layout (Figure 12.12). Double-click outside of the Model space box to return to Paper Space.

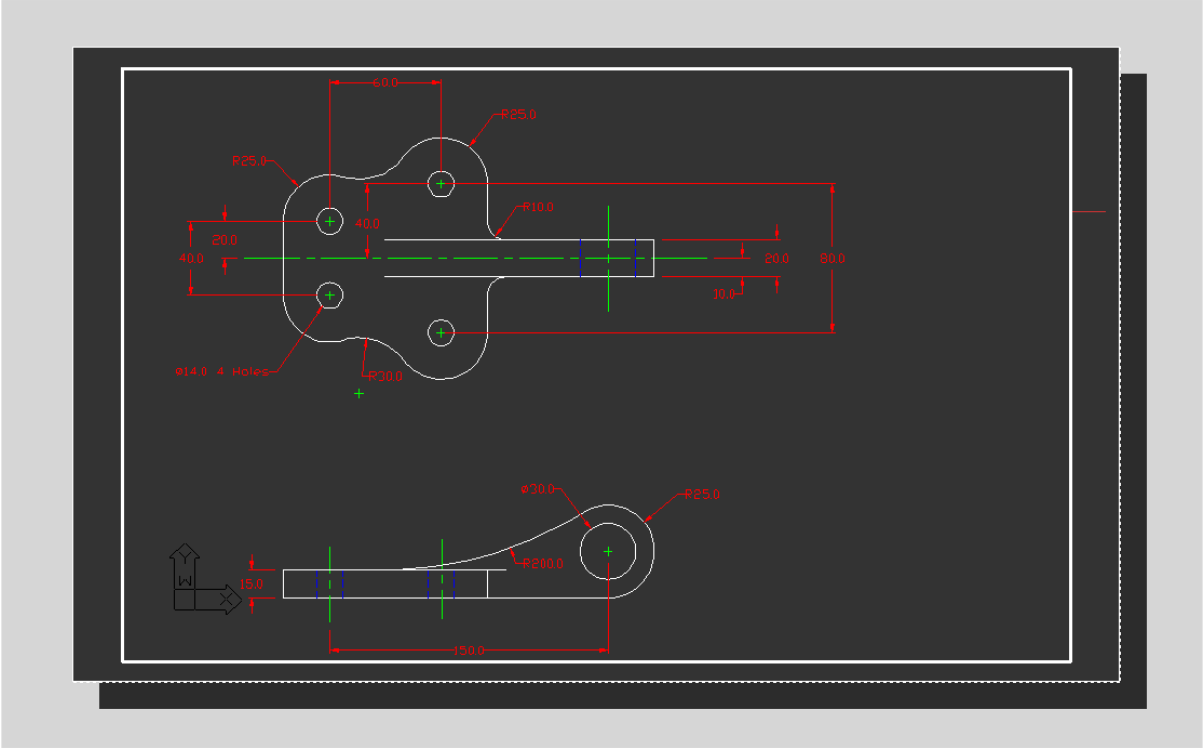


Figure 12.12 – Moving the Model Space Window to the Left

Inserting a Standard Notes into the Paper Space Layout

To insert the block containing the standard notes into Layout 1, select the Insert tool on the Draw toolbar and the Insert window will appear in the graphical display. Use the Browse button to find the “mechanical notes” (Figure 12.13).

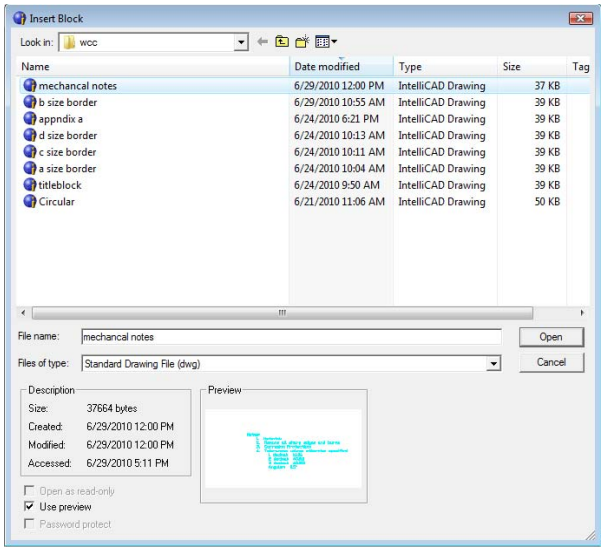


Figure 12.13 – Inserting the Metric Mechanical Notes

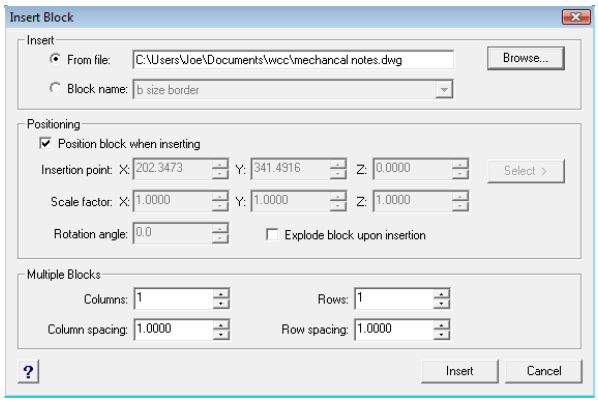


Figure 12.14 – Inserting the Metric Mechanical Notes

After picking the Insert button on the Insert window (Figure 12.14), pick the insertion point for the text on the right side of the page. Once again, the text will appear very small; follow the command line prompts, typing **25.4** when you are prompted for the X scale factor and for the Y scale factor also. Hit ENTER to keep the default rotation angle for the block, 0.0. You will see in Figure 12.15 that the notes fit perfectly on the right side of the page.

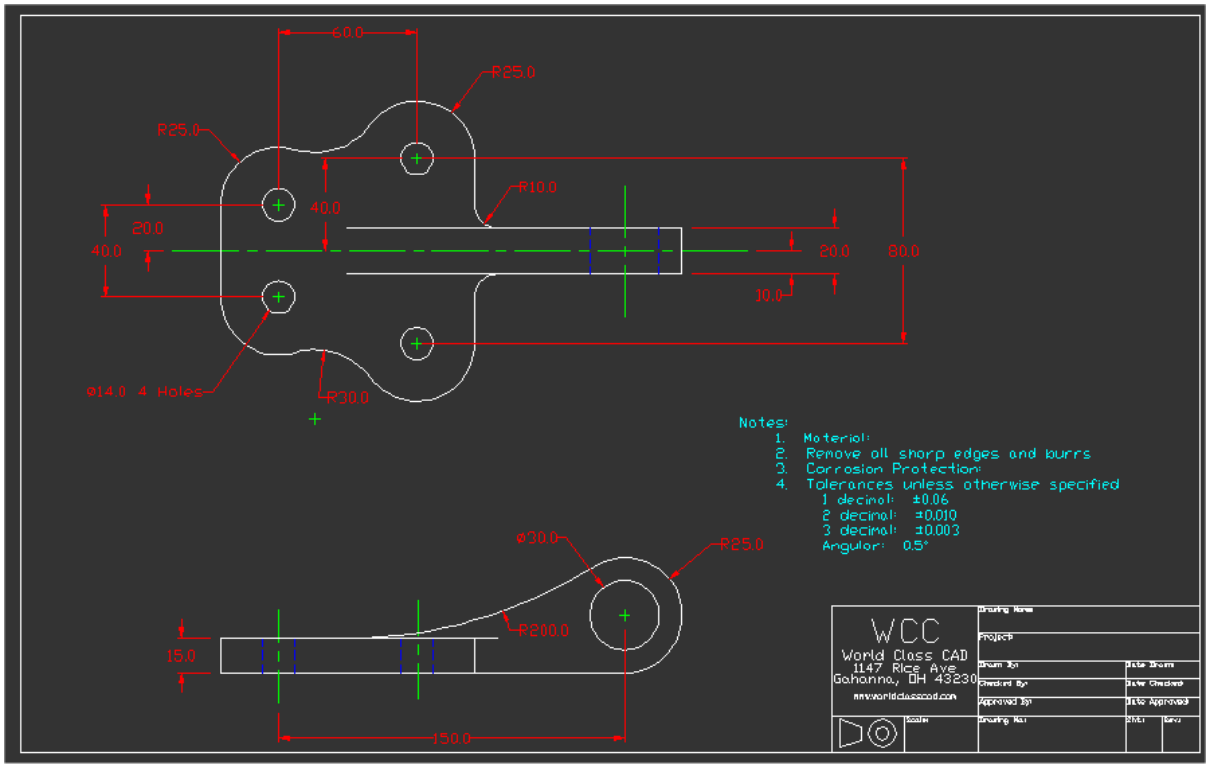


Figure 12.15 – Check Explode in the Insert Window

Modifying Standard Notes in Paper Space

Before you can add text to the standard notes, you will need to explode the Standard note block. Select the text and then right-click, and select Explode Reference from the menu (Figure 12.16). Now when you double-click the text The Multiline Text window will appear in the graphical screen. As you would type changes in a Word Processing program, make the following changes to notes one and three, while leaving notes two and four alone.

1. Material: 25 mm cold rolled steel

And

3. Corrosion Protection: zinc plate

Select "OK" to close the window. (See Figure 12.17) In later lessons, you will learn how to add attributes to the Titleblock, so each field will contain data regarding the drawing.

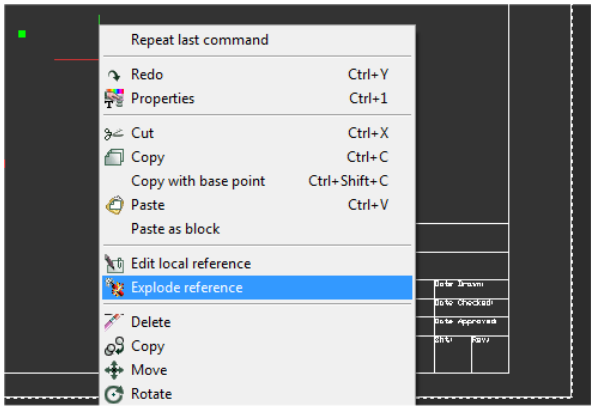


Figure 12.16 – Exploding the Text

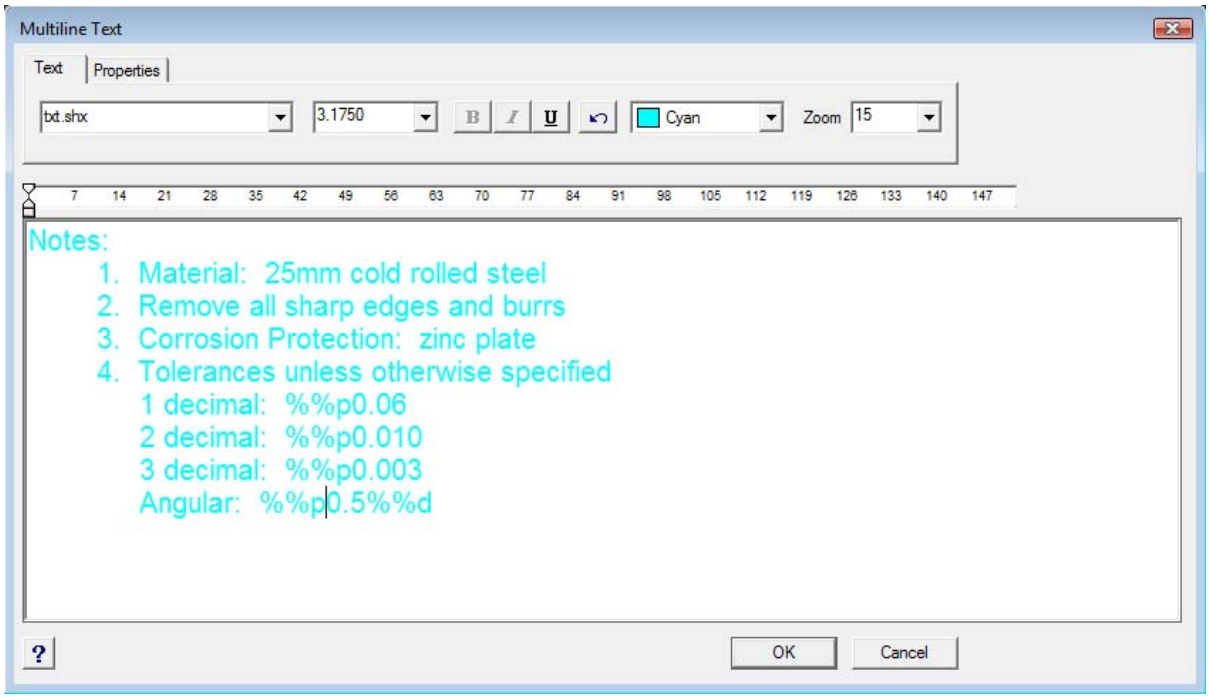


Figure 12.17 – Modifying the Notes by Adding Material and Corrosion Details

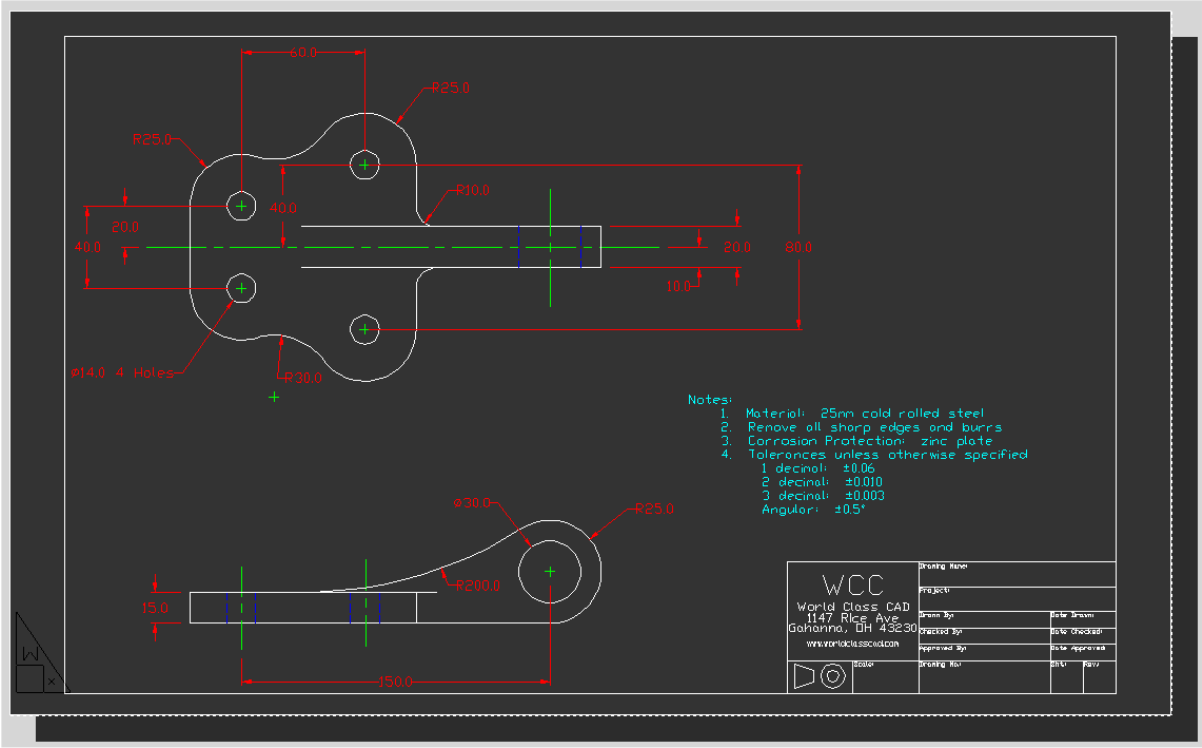


Figure 12.18 – The Finished Bracket Drawing

*** World Class CAD Challenge 100-23 * - Close this drawing file. Create a New file and draw the Bracket problem, dimension, and place the border and notes in less than 15 minutes. Continue this drill four times, each time completing the drawing under 15 minutes to maintain your World Class ranking.**