Chapter

12

Making Standard Note Blocks and Placing the Bracket in a Drawing Border
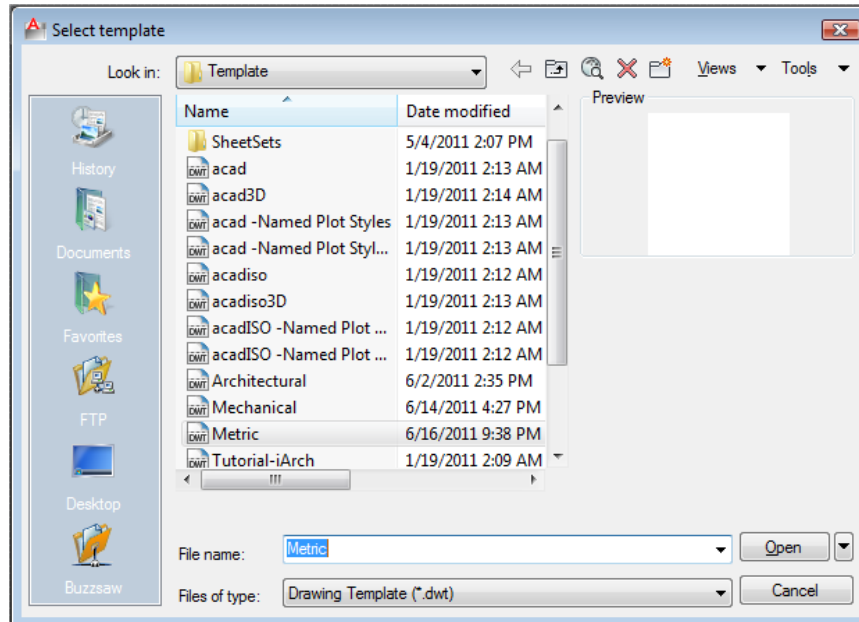
In this chapter, you will learn the following to World Class standards:

- **Making standard mechanical notes**
- **Using the Mtext command to place text in the drawing**
- **Creating a standards note drawing with the WBlock command**
- **Moving from model space to paper space**
- **Inserting an A-size drawing border into the paper space layout**
- **Inserting a standard notes into the paper space layout**
- **Modifying standard notes in paper space**

Making Standard Mechanical Notes

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Pick the New Drawing tool on the Quick Access toolbar and the Select template window will appear. You will begin this drawing by selecting the template you created in a previous assignment. Scroll down the list and select Metric.dwt.
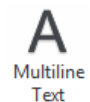

Figure 12.1 – Starting with the Metric template

Next you need to change the layer to Text Layer by clicking on the black arrow in the Layer Control list box. Scroll down the list box and highlight the Text Layer. Once you left click on the Text Layer, it will become the current layer in the drawing. Now you are ready to add text to the drawing.

Using the Mtext Command to Place Text in the Drawing

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To place text on the drawing, select the Multiline Text command on the Text panel under the Annotate tab. 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. Extend the Mtext window so that you will have enough space to type the notes on the next page.
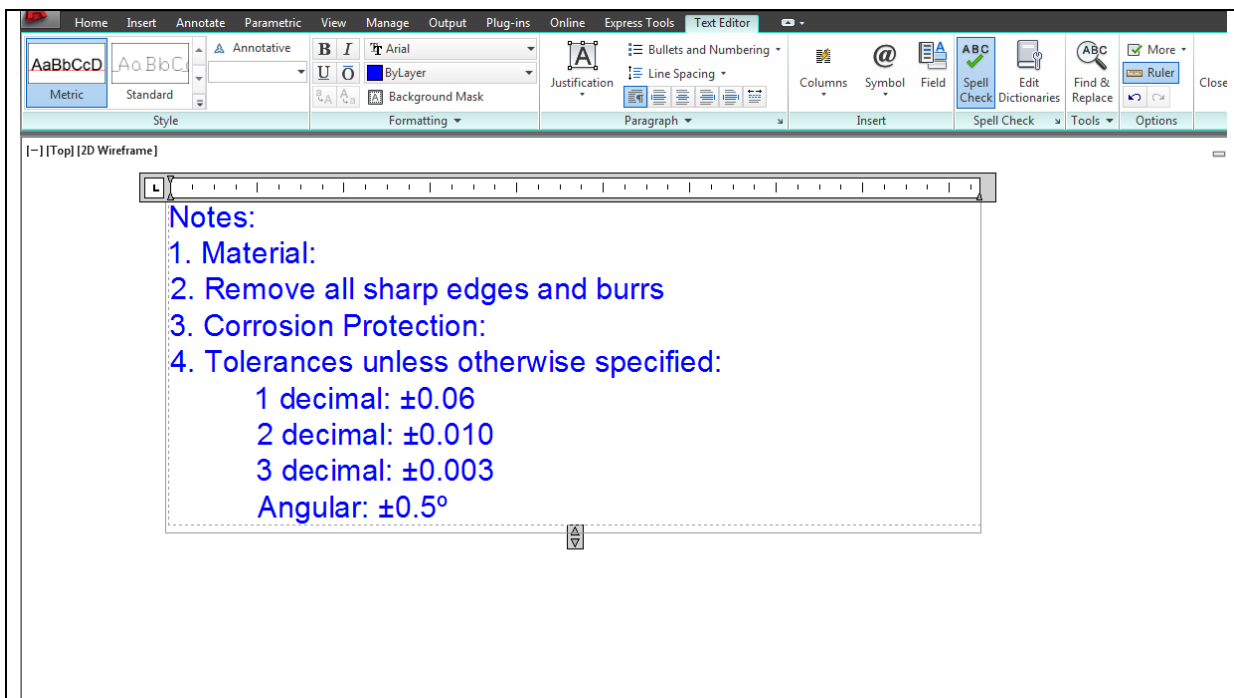
A text box will appear along with the Text tab. Remember to set your text style to Metric in the Style panel so that the text size is 2.5 mm in height and the font is set to Arial. Select the text box with your mouse to place the flashing typing bar. Now you are ready to type the notes, hitting ENTER when you need to start a new line.

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: ±0.5°

When adding the plus/minus symbol to the 1 decimal note, type the colon and add a space, then select the Symbol menu on the Insert panel. Select Plus/Minus to add the ± symbol before typing "0.06". When adding the degrees symbol after the Angular tolerance note, type the colon and add a space, then find the Symbol menu again. Select Degrees to add the ° symbol after typing "0.5".
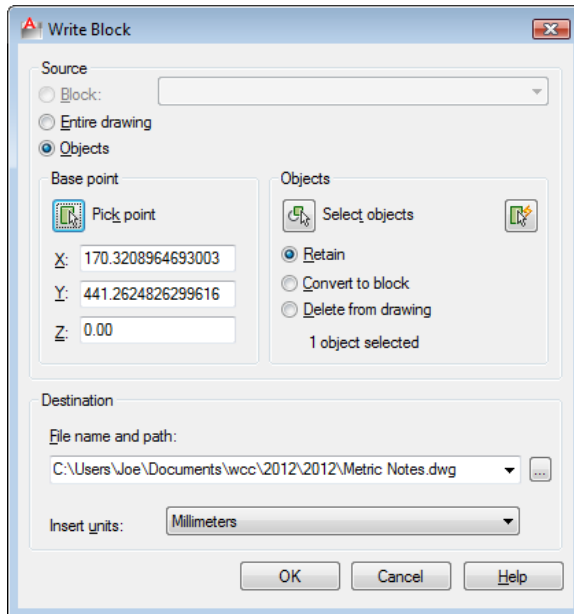

Figure 12.2 – Making a set of standard notes

To correct spelling errors in the drawing, make sure that the Spell Check button is selected on the Spell Check panel.   Right-click on any word underlined with a dashed red line and select the appropriate correction.
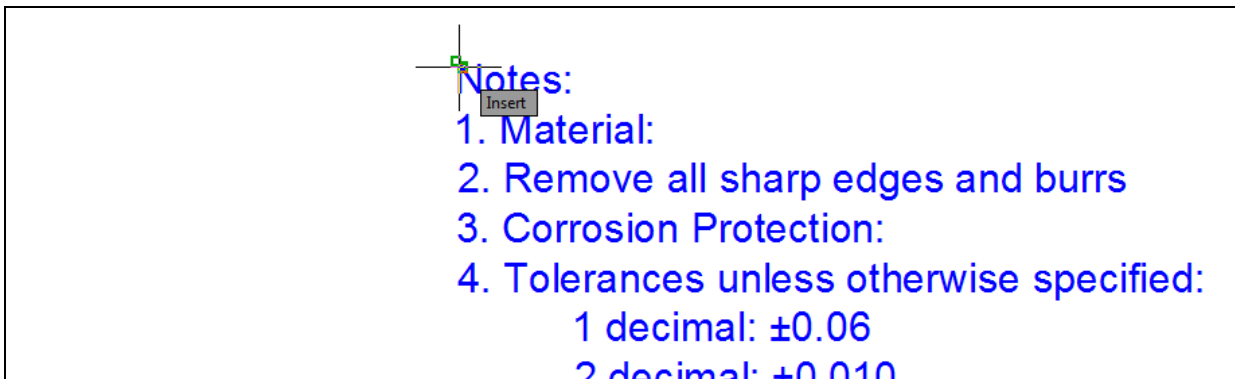
Creating a Standards Note Drawing with the WBlock command

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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 information in your Fundamentals of 2D Drawing Folder, type Metric Notes in the File Name textbox. Then select the button with the three dots to the right of the Location textbox and browse for your Fundamentals of 2D Drawing Folder. Choose the Pick Point for the Base Point option and select the Insertion Osnap as shown in Figure 12.4 (you may need to toggle the Insertion Osnap mode on). Next pick the Select Objects button and pick the notes just typed. Hit OK and a new drawing called Metric Notes will be created in your Fundamentals of 2D Drawing folder.

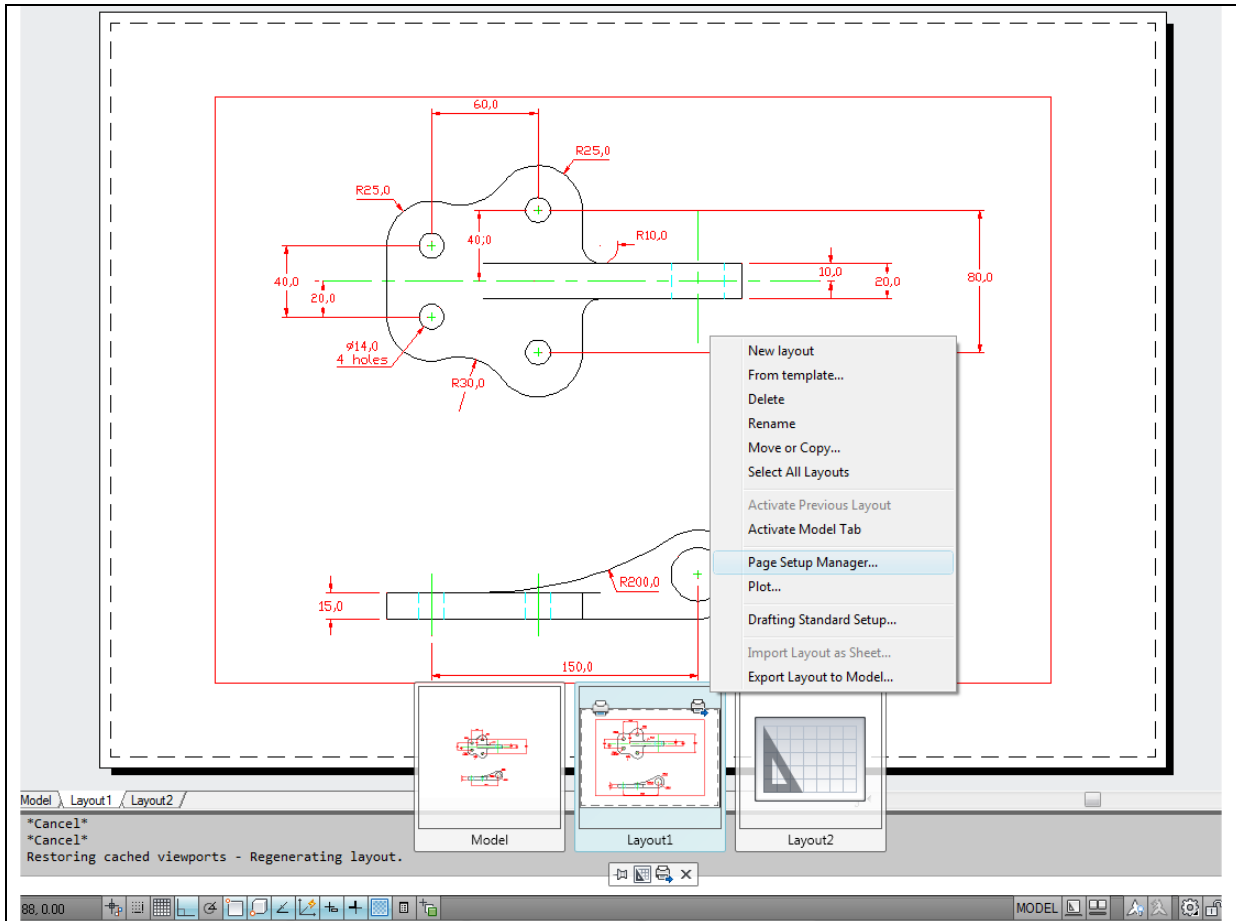**Figure 12.3 – Writing the notes to a new drawing**

Figure 12.4 – Selecting the insertion point of the text with the insertion object snap

Moving from Model Space to Paper Space

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You will add the drawing border and notes to the bracket problem in Paper Space, an area of the drawing file that allows the CAD operator to place views of the drawing from Model Space ino a printable design. You can open a single window or multiple windows from Paper Space and scale each view to whatever proportion that you desire, enabling you to show any detail in perfect clarity. The best application of Paper Space is to show the front, side, and

top views in a single drawing using different windows featuring each perspective generated from the same 3D model. Many architectural companies will set their D-size border in Paper Space to print easily to their printer or plotter so the architect can easily scale a floor plan in the window. As you continue on to the World Class CAD Fundamentals of 3D Drafting techniques, the relationship between Model and Paper space will become more apparent. Here in the Bracket problem you will use Layout 1 tab of Paper Space to setup the drawing border for printing.
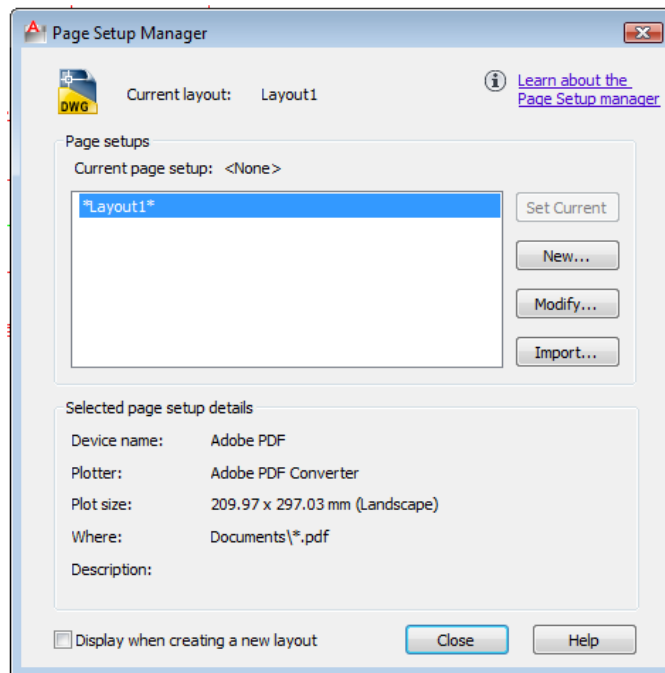

Figure 12.6 – Selecting Layout 1 to enter paper space

In Figure 12.6, you can see the Bracket problem opened with the Quick View Layouts visible. To bring up the same view on your screen, select the Quick View Layouts icon on the tray. To bring up Layout1, just select it when it appears. Right-click the Layout1 image and select Page Setup Manager to bring up the Page Setup Manager dialogue box (Figure 12.7). In the future, you can add these steps or procedures to your template file and the Page Setup Manager window will not appear because you configured the setup while designing the template.

Select Layout 1 and click Modify to reach the Page Setup – Layout 1 window (Figure 12.8). The first section in the Layout window is to name the plot device. You probably just have a letter sized printer and a stock of 8.5 x 11 legal size paper. By picking your printer in that case, you can run these smaller test plots using the A size paper for the A and C drawing

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borders. 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, you may have an 8.5 x 11 printer showing up in the Name window that is intended for letters or documents, but you will notice one, two or maybe more printers and plotters available for larger CAD drawing outputs. Always consult with the department manager to which printers are accessible for your use. Many professionals groups have black and white machines for check prints and color devices for finished drawings. Some printing equipment has special paper that is costly, so again make sure that you pay attention to any orientation to special tools in your list of offered devices, and keep any special instructions posted in your work space as not to waste resources or time.
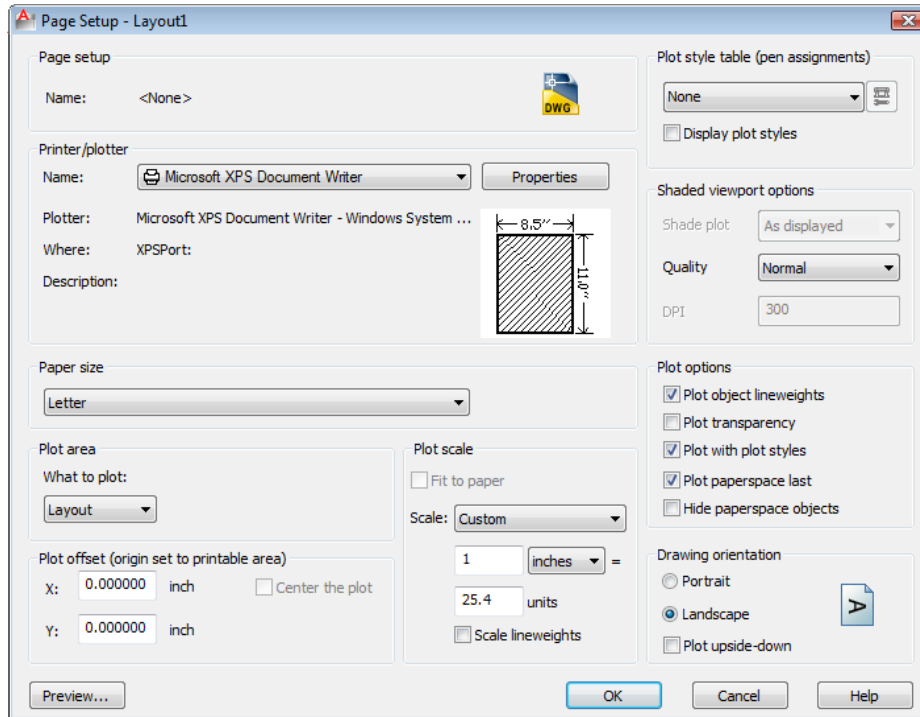

Figure 12.7 – Selecting a printer to plot your drawing

You can choose your printer in the Name window and for the present you will ignore the Plot Style Table for pen assignments. Next, because you will be printing the drawing on A size (8.5 x 11) paper, choose the "Letter" size in the Paper Size window list. Every document size your printer supports is listed in the list box.

In the Drawing Orientation frame, select the **Landscape** radial button to rotate the image within the wider paper size of the A-size border. Again, for this step you must know your plotting or printing equipment or use the Print Preview to check the drawing's direction.

Subsequently, the Plot Area can remain at Layout. When entering special scales in the Custom textboxes, the scale is set to "Custom" automatically. In this case your scale should read 1 inch = 25.4 units, because you are currently using Metric units.

Figure 12.8 – Picking a paper size and setting the drawing scale

Hit the OK button and you will enter Paper Space for the first time with the entire Bracket and dimensions appearing in a window that shows the drawing's appearance in model space (Figure 12.9).

So how can you determine that you are in a different dimension of the AutoCAD software? First, after selecting the paper size, you will see a representation of the white document sitting on a grey background. Second, a dotted rectangle covers the white area which displays the printable area of the document. Third, the UCS symbol is no longer the arrows pointing towards the x and y-axis, but is now a triangle. Fourth, 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. Right-click on the Quick View Layout button and select Display Model and Layout Tabs if you cannot see them directly below the drawing area. This will make it easier to plot your drawing in paper space.

Figure 12.9 – Looking at paper space for the first time

Inserting an A-Size Drawing Border into the Paper Space Layout

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To insert the block containing the A-Size Border into Layout 1, first change the active layer in the Layer Control list box to the Border layer. Next, select the Insert tool from the Block panel under the Insert tab and the Insert window (Figure 12.10) will appear in the graphical display. Use the Browse button to find the "a size border" in your Fundamentals of 2D Drawing folder. Keep the Specify On-screen checkbox unchecked and also indicate that the Uniform Scale by checking the box, making sure that the scale is set to 1.00.

Figure 12.10 – Inserting the A size border

After hitting OK, pick an insertion point for the border, placing the entire contents inside the dotted printable area. You will see in Figure 12.11 that the border has been placed evenly inside the dashed line that identifies the printable area on the page. To adjust the position of the model space window on the page, first expand the window so that its corners and edges align with the A size border. Next, double-click inside the model space window and the Viewcube and Navigation bar will appear. You should now be able to modify the view of the drawing by zooming in/out and panning so that the drawing does not interfere with the border or titleblock, while leaving space for the notes (Figure 12.12). Doubleclick outside of the display window to return to paper space.

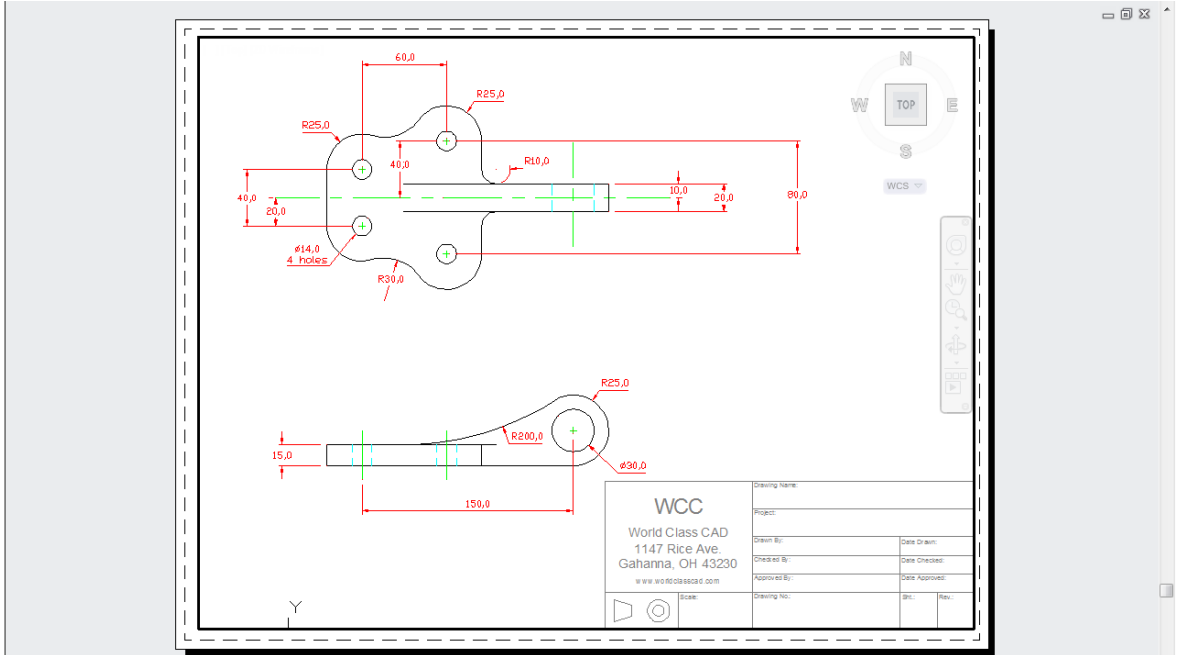**Figure 12.11 – The A Size border in paper space**

Figure 12.12 – Adjusting the display window

Inserting a Standard Notes into the Paper Space Layout

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To insert the block containing the Metric Notes into Layout 1, select the Insert tool from the Block panel under the Insert tab and the Insert window will appear. Use the Browse button to find the "Metric Notes" in your Fundamentals of 2D Drawing folder (Figure 12.13).
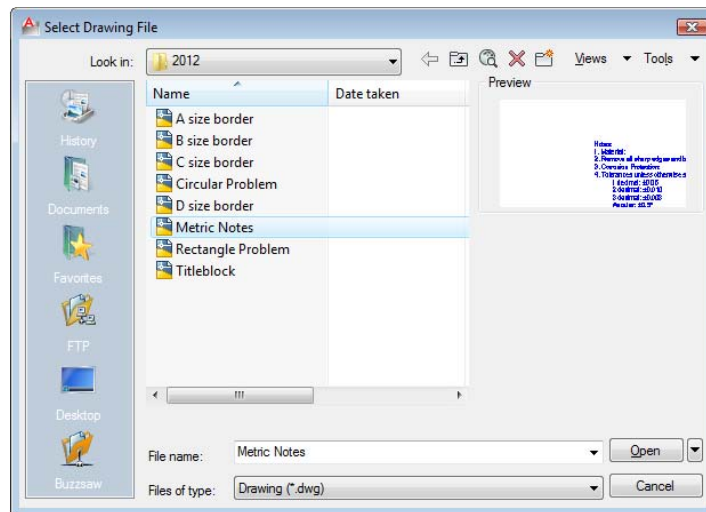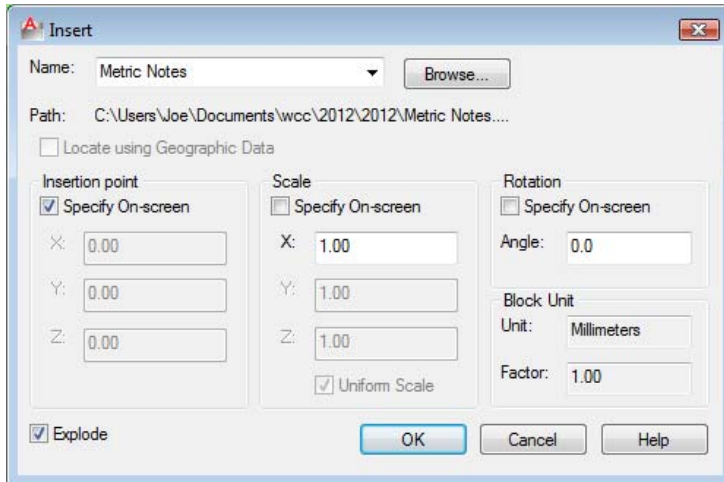

Figure 12.13 – Inserting the metric notes

The notes are already scaled appropriately, so keep the Specify On-screen checkbox checked, and the X scale at 1. Check the Explode checkbox so you can modify the standard notes after inserting them. Exploded text will allow you to modify each sentence. You have to rotate text very few instances, so the majority of time the Rotation Angle will remain at zero.

Figure 12.14 – Check explode in the insert window

After hitting OK on the Insert window, pick a point to the right of the Bracket problem to place the notes.

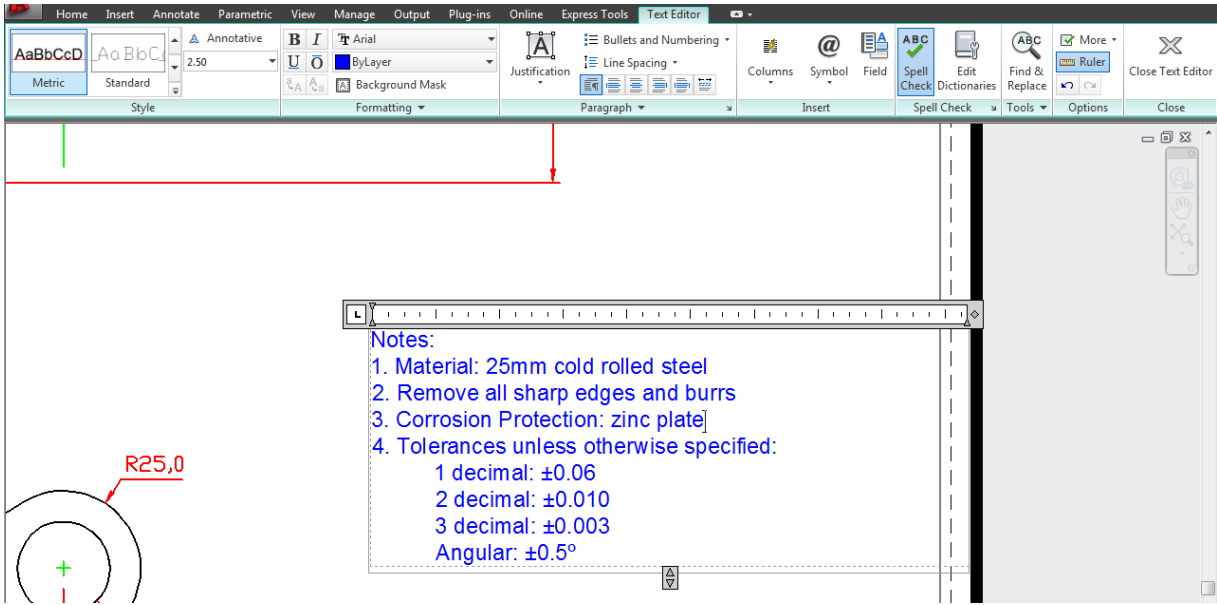## Modifying Standard Notes in Paper Space

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To add text to the standard notes, double-click the notes. The Multiline Text Editor window will appear in the graphical screen along with the Text tab. You need to add some additional information to two of the notes:

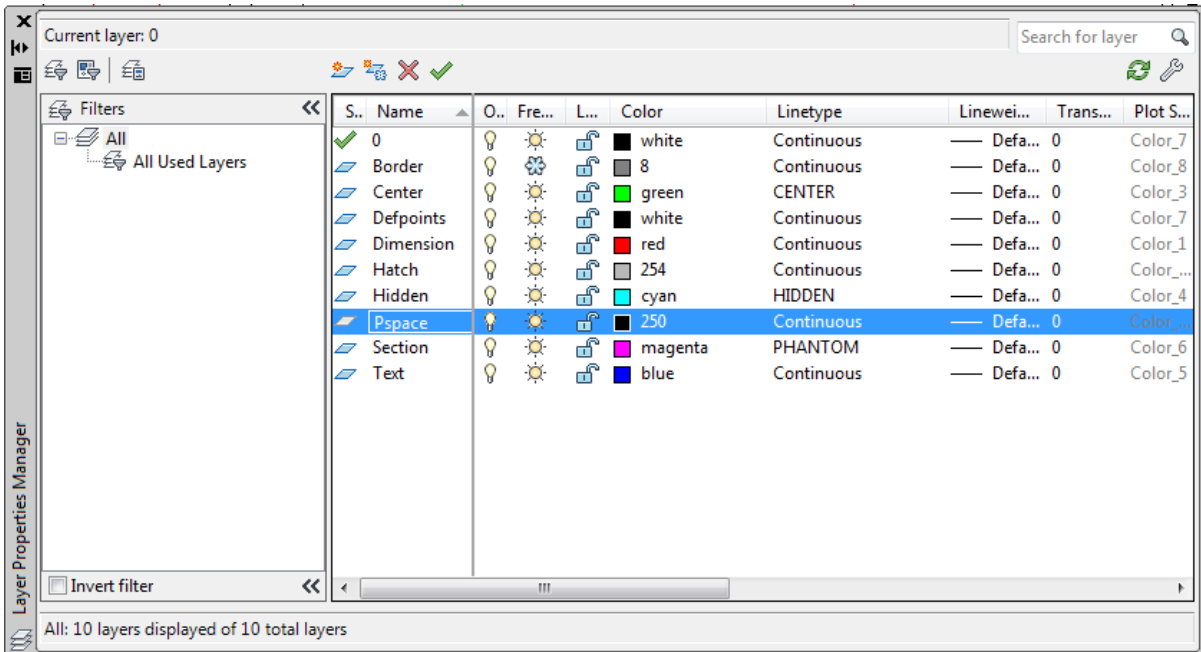1. Material: 25 mm cold rolled steel

   And

3. Corrosion Protection: zinc plate

Figure 12.15 – Modifying the notes by adding material and corrosion details

Now that you have your notes in the drawing, You need to create a new layer named "PSpace". Make the color black. Also, freeze the Border layer so that the Titleblock and border disappear (Figure 12.16). Now select the rectangle that surrounds the Bracket problem and place it in the PSpace layer. Then freeze the layer so the rectangle does not show up. The rectangle is now not visible and the Bracket cannot be moved in Layout 1. Unfreeze the Border layer so that the titleblock and border will be visible again (Figure 12.17).

Figure 12.16 – Adding the Pspace layer and freezing the Border layer

In later lessons, you will learn how to add attributes to the titleblock, so each block will contain data the appropriate information.
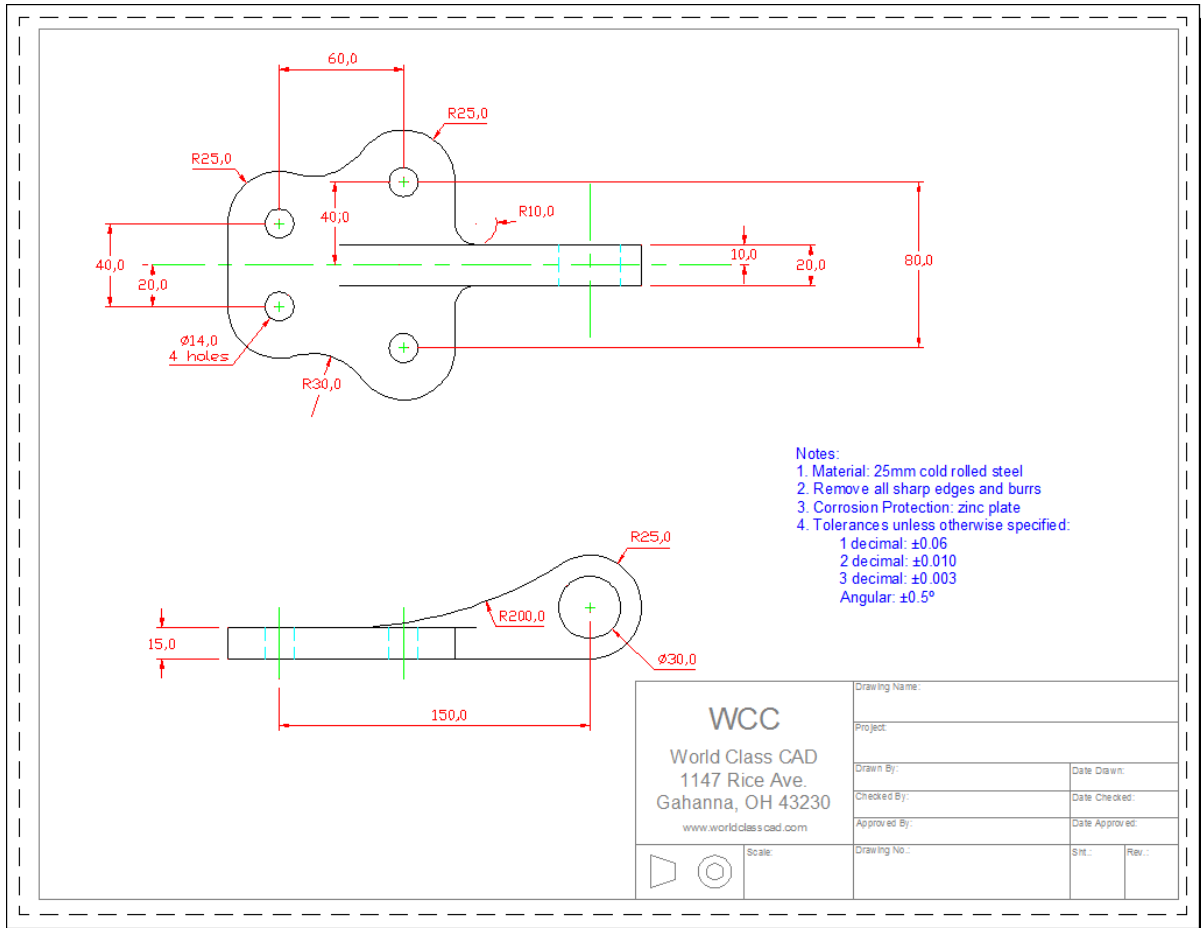

Figure 12.17 – The finished bracket drawing

* World Class CAD Challenge 02-23 * - 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 in less than 15 minutes to maintain your World Class ranking.