Workflow MS 5 - Sheet File Creation

This document guides you through creating a new sheet file in MicroStation. We will be going over placing the sheet border around coordinate based model graphics. Setting up sheets this way maintains the coordinate based information and measurements are in real-world dimensions.

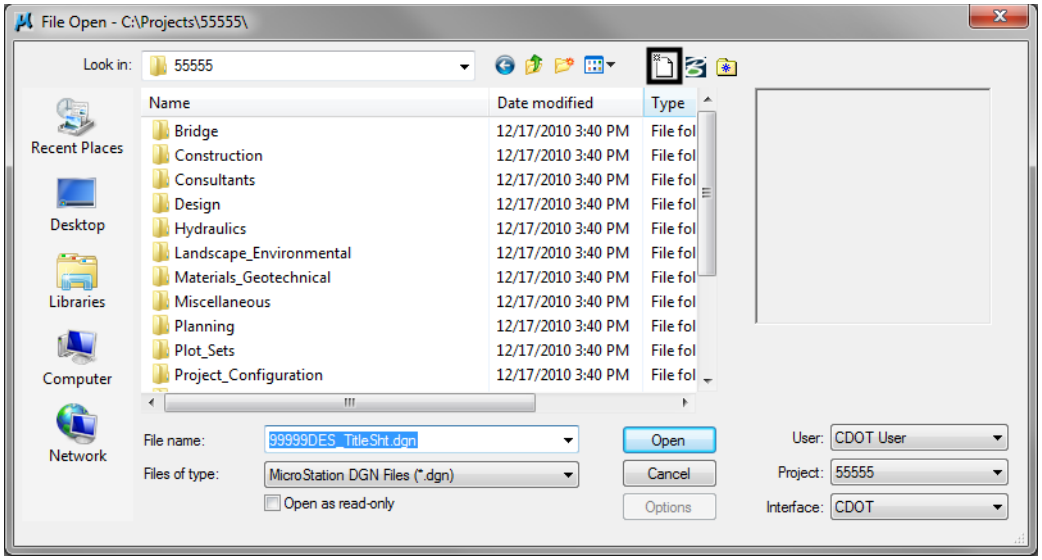
Workflow Outline

Setting up the Sheet File - The sheet file contains the sheet border and related data along with reference files of the project data. Setting up the Sheet File includes creating the blank dgn file, attaching the references and rotating the view to the correct orientation.

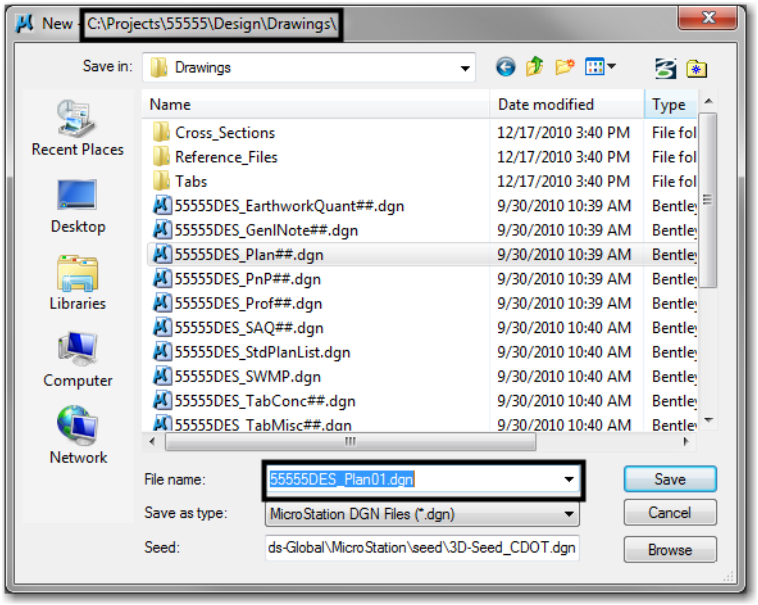
- **Create a New Drawing File** - The new drawing file will contain the sheet border and related material.
  - Commands Used: **File > Open** - Used to access the MicroStation Manager dialog box. From there, a new file can be created.
  - **New File** - Accesses the New File dialog box. The new file is created here.
- **Attach Model Files** - The model files are attached so that the view rotation angle can be determined.
  - Commands Used: **File > Reference** - Used to access the references dialog box. From there, the model files are attached.
  - **Tools > Attach** - Used to select the model files for attachment.
  - **Reference Attachment Settings** - Used to select the View and Scale for the model file.
- **Rotating the View** - Rotating the view so that the sheet is orthogonal to the screen makes the file easier to read and print.
  - Commands Used: **rv=0,0,## key in** - A method to rotate the view.
  - **Rotate View > 3 Points** - A method to rotate the view.
- **Attaching Border and Related Cells** - The sheet border, north arrow, and other cells are placed to create the sheet.
  - Commands Used: **CDOT Menu > Drafting > Border** - Used to set the rotation and scale, select, and place cells.
- **Clipping Reference Files** - When attached, the full contents of the reference files are displayed. Clipping reduces the visible portion of the reference files to the area within the sheet border.
  - Commands Used: **CDOT Menu > Drafting > Border > Clip Boundary** - Used to draw the clip boundary. The clip boundary is a shape that denotes the limits of the viewable area for the reference files.
  - **References > Clip Boundary** - Used to hide reference file data in areas outside of the clip boundary.
- **Setting The Annotation Scale** - For sheets that are printed at a scale other than 1" = 100', the annotation scale must be changed to match that printing scale.
  - Commands Used: **Models > Properties > Annotation Scale** - Used to adjust text and linestyle scales to match the desired print scale.

Setting up the Sheet File

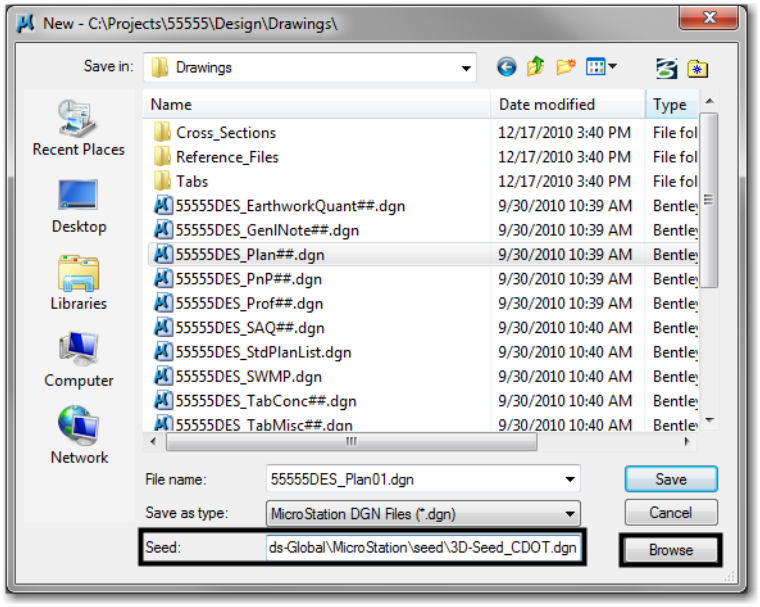
1. Create a new drawing file from the ***File > Open*** dialog box, select the ***New File*** icon.



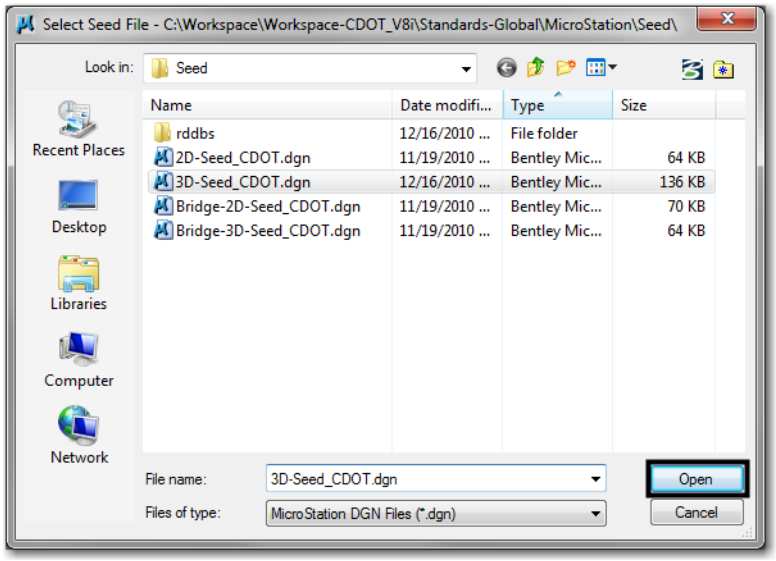
2. Enter a drawing file name that corresponds to the next consecutive sheet number and place it under the appropriate file location under **C:\Projects\.....**



3. Verify that the desired **Seed File** is selected. If it is not, **<D> Select** and navigate to **C:\Program Files\Workspace_CDOT\Standards-Global\MicroStation\Seed\.**

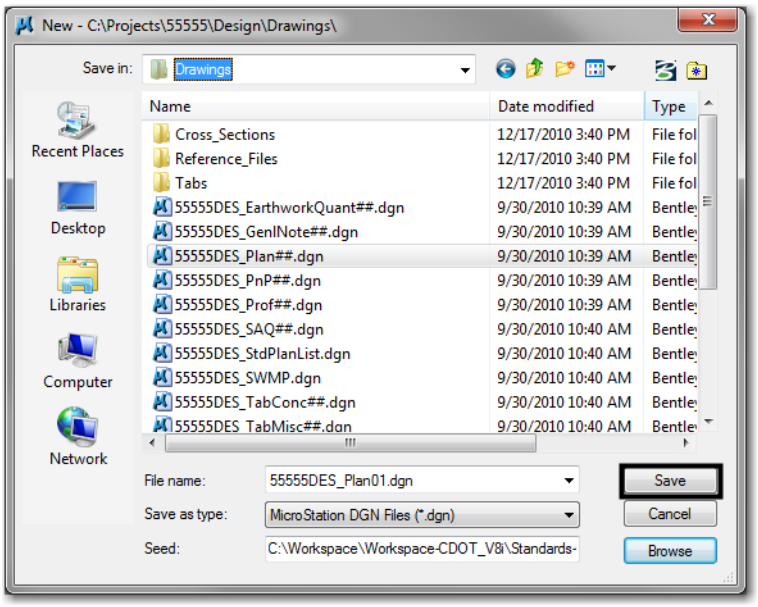


4. Highlight the desired seed file (for this example: **3D-Seed_CDOT.dgn**) and **<D> Open**.

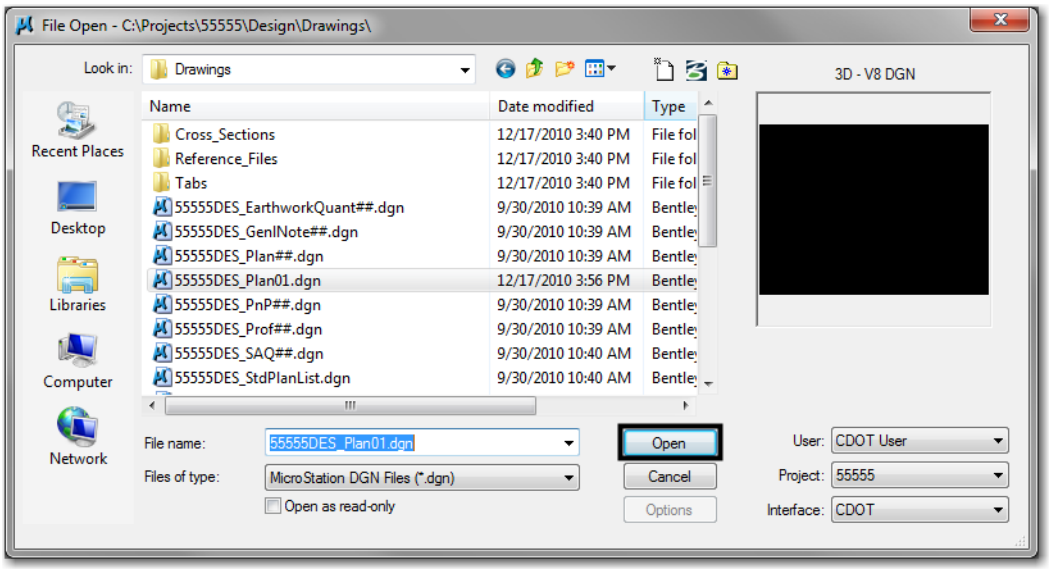


Note: All disciplines except for Bridge use the 2D-Seed_CDOT.dgn and the 3D-Seed_CDOT.dgn. The Bridge-2D-Seed_CDOT.dgn and Bridge-3D-Seed_CDOT.dgn has specific settings for Bridge only.

5. In the **New** dialog box, **<D> Save**.



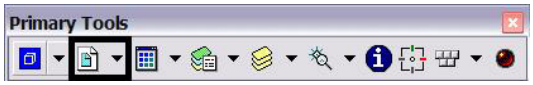
6. The file you created will be highlighted in the **File Open**. **<D> Open** to open that file.



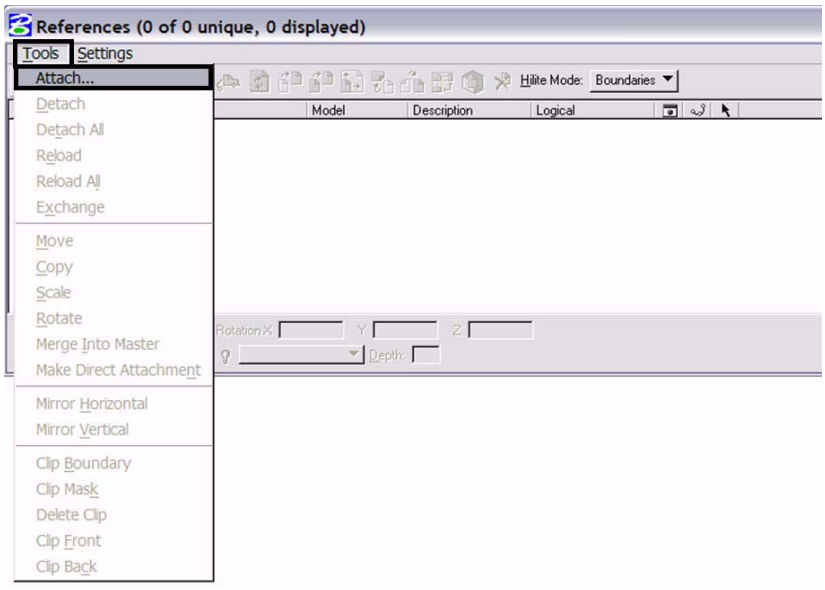
Attaching Model Files to the Sheet File

1. Select **File > Reference**.

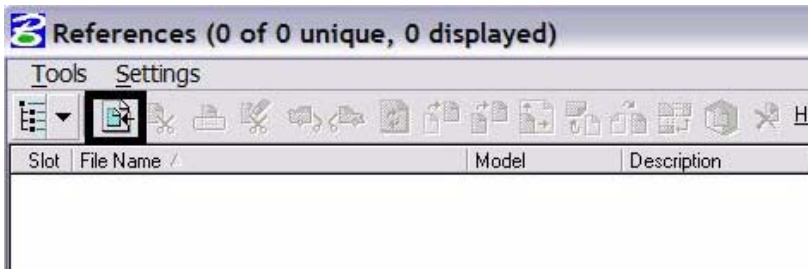
2. Or choose the **Reference** icon from the **Primary Tools** toolbar.



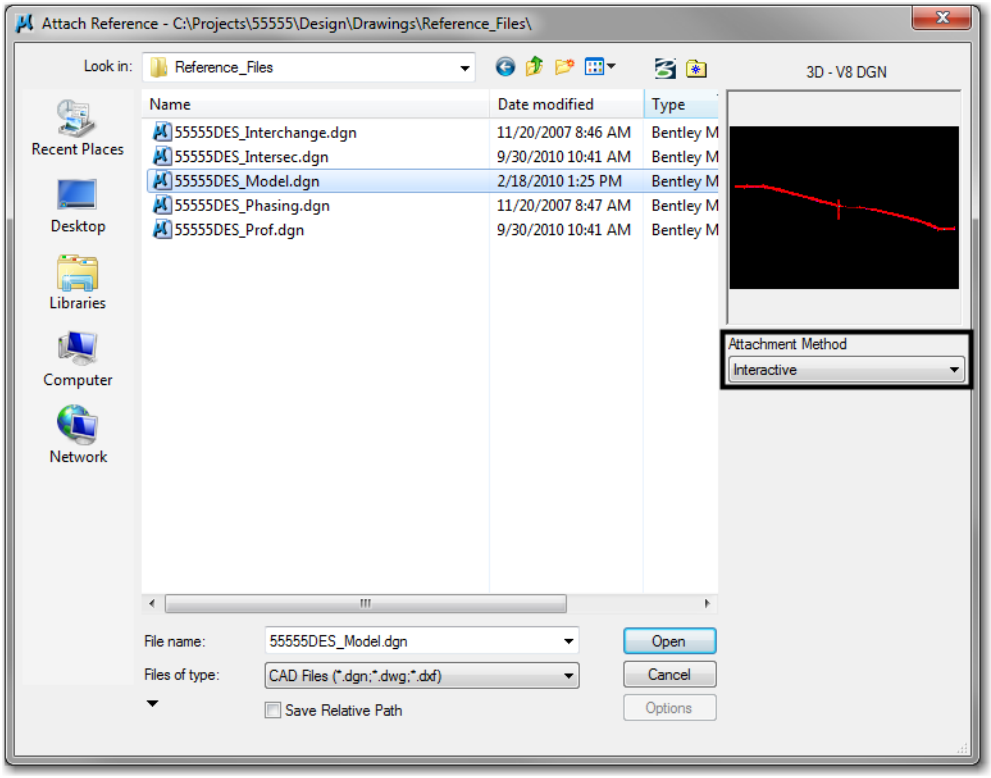
3. From the **Reference Manager** tool bar select **Tools > Attach** .



4. Or choose the **Attach Reference** icon .

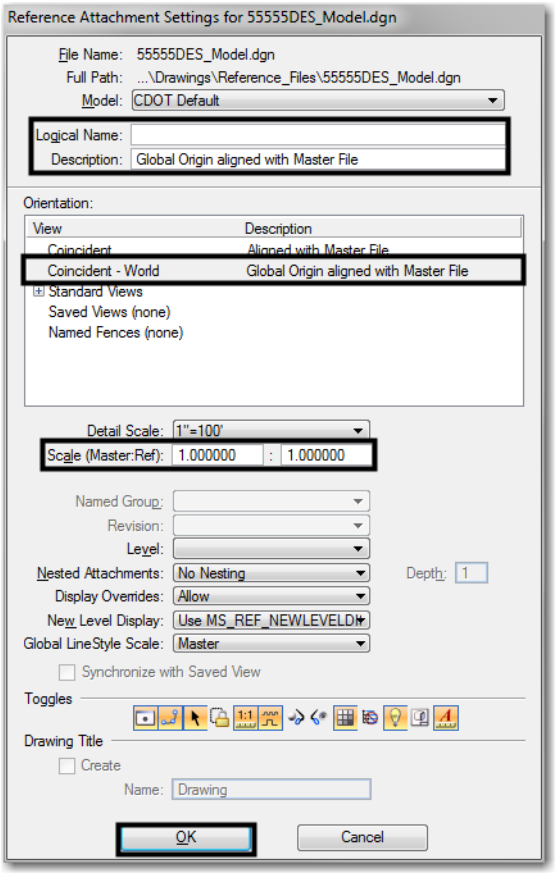


5. Search for the model file and verify the **Attachment Method** is set to ***Interactive***. **<D> Open**.



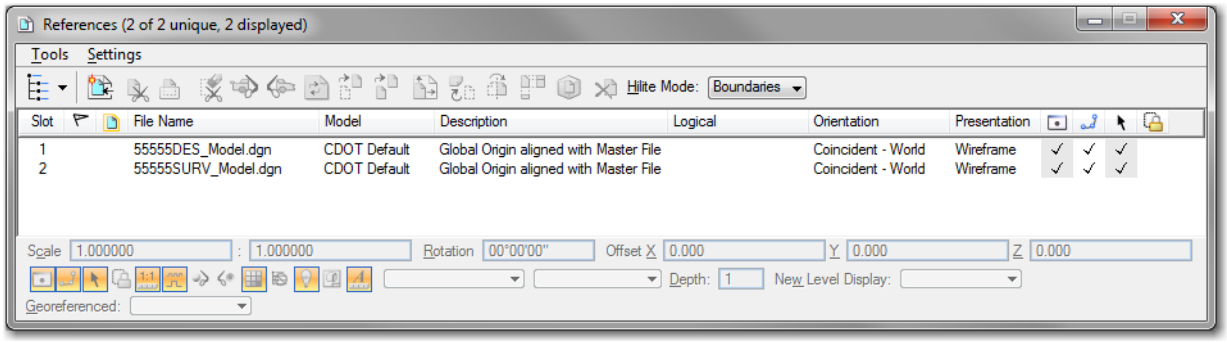
Note: You can select more than one file at a time by holding the **Shift** or **Ctrl** keys down while making your selection. You can also *Drag and Drop* directly from Windows Explorer into the **Reference Manager** Tool box, selecting several files at one time as mentioned above.

6. In the **Reference Attachment Settings** dialog box, key in a logical name and a description. For instance, the logical name might be ***Design*** for the Design Model drawing. The other settings should not have to be edited. ***Coincident-World*** is selected by default. Also the ***Scale (Master:Ref):*** is set at ***1:1*** by default. **<D> OK**.



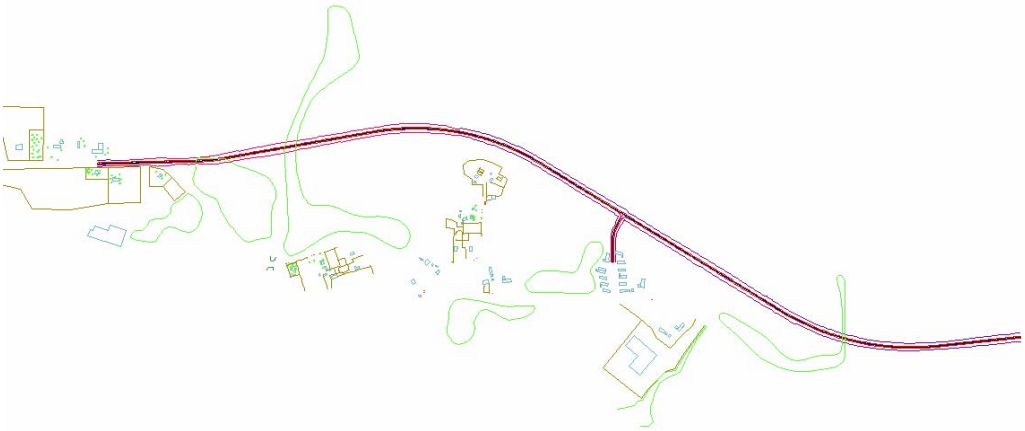
Note: When **Coincident World** under ***Orientation*** is selected and a **Scale** factor of ***1:1*** is entered, plan graphics are being referenced to the sheet file with the true coordinate information. All other attachment methods will not maintain the true coordinate values.

7. The files will be shown in the **References** dialog box.

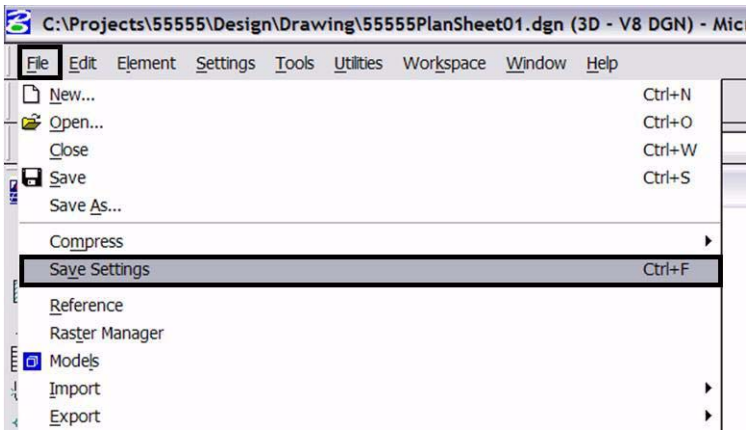


Note: Whenever you make graphical model file changes, your sheet file will automatically update.

8. **Fit View** using the icon so all graphics are displayed.



9. Select **File > Save Settings** from the **Primary** toolbar.

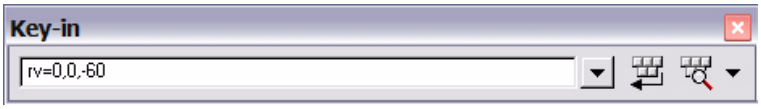


Rotating the View

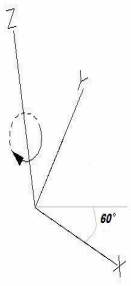
1. After the references are attached, you may need to rotate the view depending on the layout of the sheet.

   Note: You are not rotating the reference file(s). You are only rotating the view. The coordinate system will not change.

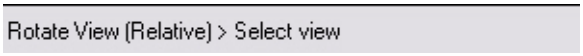
2. One option to rotate the view is to Key-in ***rv = x,y,z*** and press **<Enter>** or **<Tab>**.



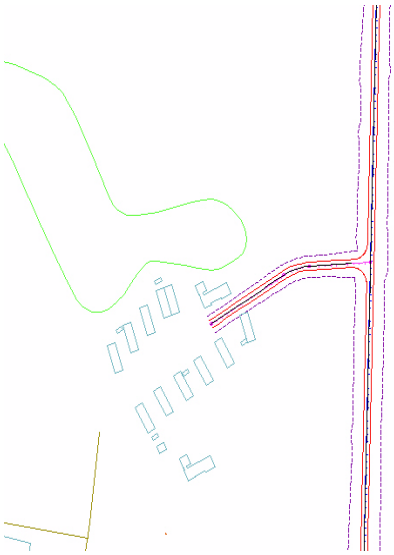
Note: Entering the recommended values x = 0, y = 0, and z = Rotation Angle will ensure the view is roatated about the z-axis in a 3D file. You are rotating the view about the z-axis. This is the axis perpendicular to the view. Otherwise, if you are working in a 2D file the key-in would be ***rv = value of rotation***.



3. You will be prompted to select the view you would like to rotate in. **<D>** in the active view window to select the view.

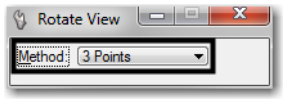


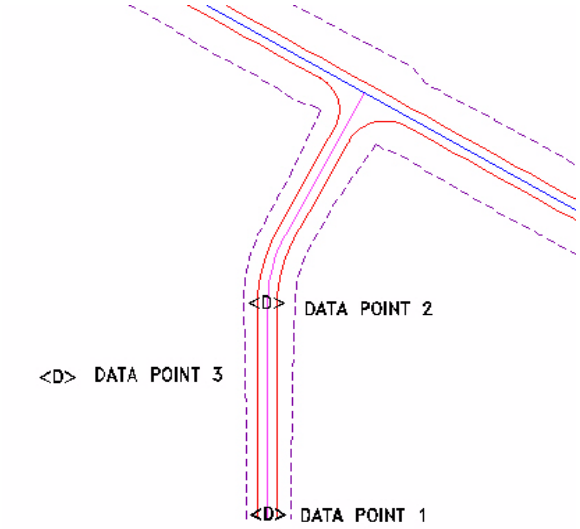
4. The view will be rotated.



5. You can also elect to rotate the graphics using **3 Points**. Select **Rotate View**.

6. Change the **Method** to ***3 Points***.



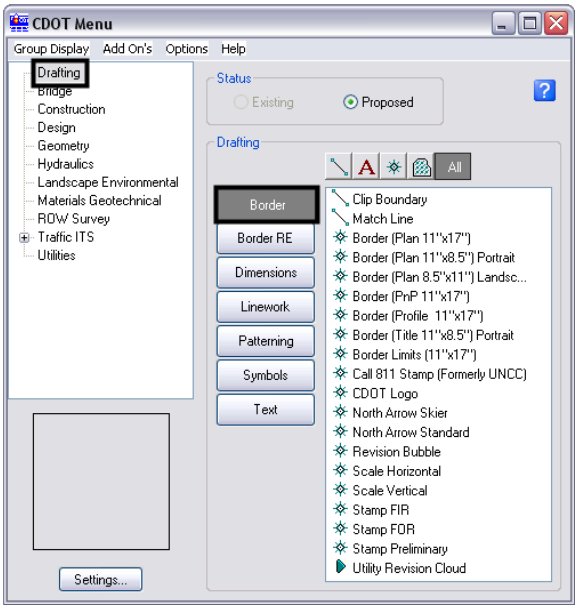


Note: Make sure you are picking a data point near the 3D element. Do not snap to 3D elements because you will be rotating along the z axis instead of just the x and y plane. Turn AccuSnap off or you can hold the <**Ctrl**> and <**Enter**> keys down at the same time to temporarily disable AccuSnap while you are locating the data points.

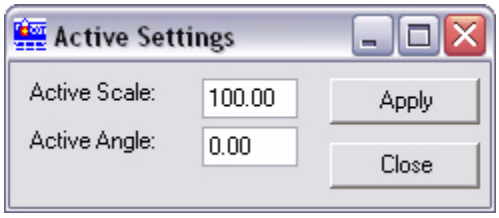
7. The view will be rotated.

Attaching the Border, Bar Scale, North Arrow, and Resident Engineer/Survey Supervisor Cells

1. From the ***CDOT Menu***, select **Drafting > Borders.**

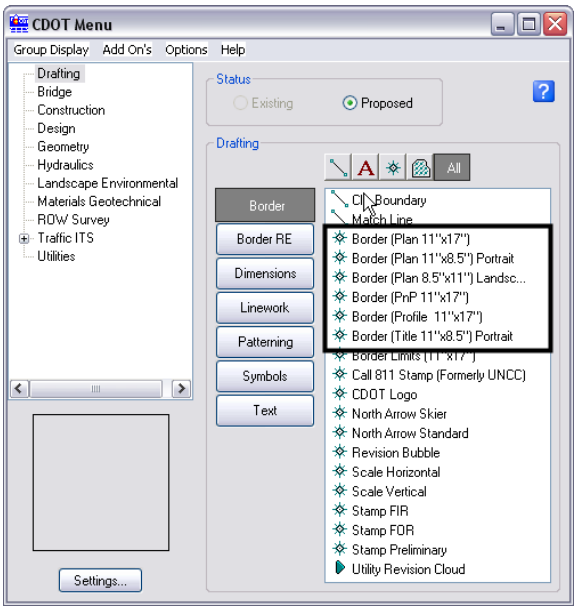


2. **<D> Settings** if the desired sheet scale is something other than 1" = 100'. In the **Active Settings** dialog box you can change the **Active Scale** and the **Active Angle**.



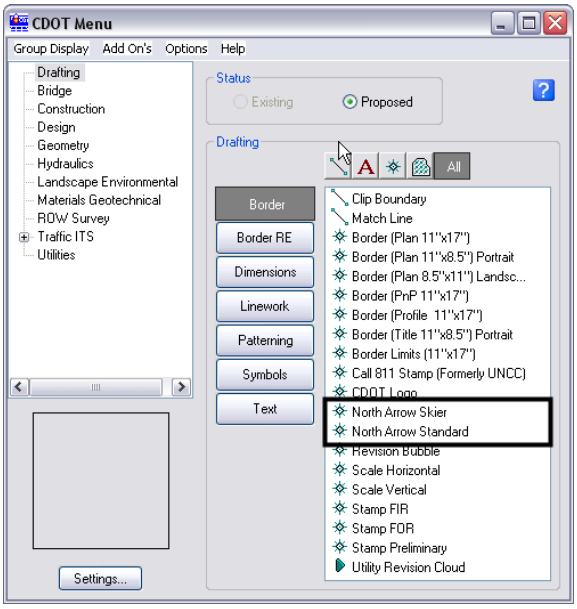
Note: The Active Angle is view independent and not associated with view rotation. Therefore, the x-axis is always horizontal regardless of the view rotation. You will not need to set this for correct placement of the North Arrow or other cells.

3. Select the desired sheet border cell from the list.

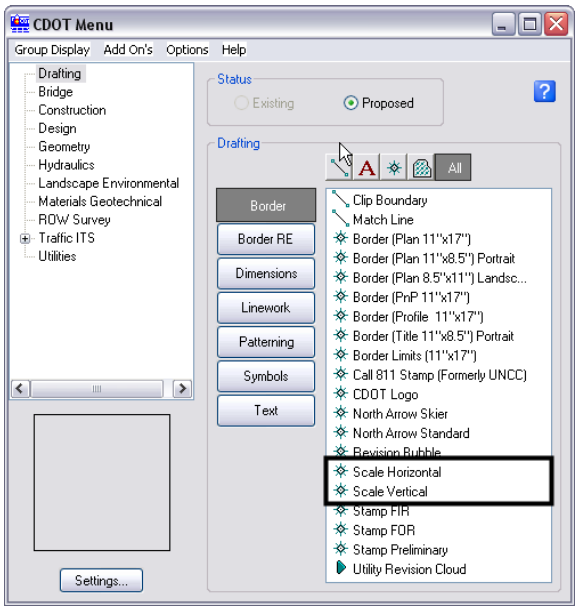


4. Once a sheet border is selected, you will be prompted to locate the lower left hand corner of the sheet border (the cell's origin). Move the cell to the desired location and **<D>**.

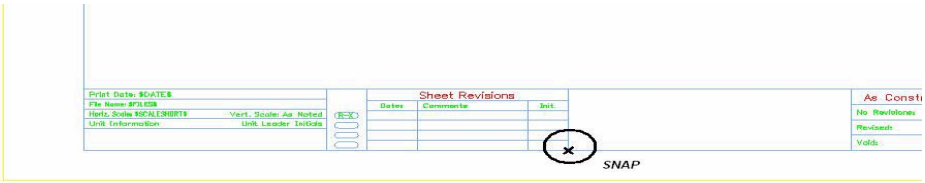
5. Select the desired **North Arrow**. Move the cell to the desired location and **<D>**.



6. Select a Bar Scale if desired. Move the cell to the desired location and **<D>**.



7. Finally, select the Border RE button, then select the desired Region Engineer cell. **<T>** to the location shown in the illustration below and **<D>** to accept placement.



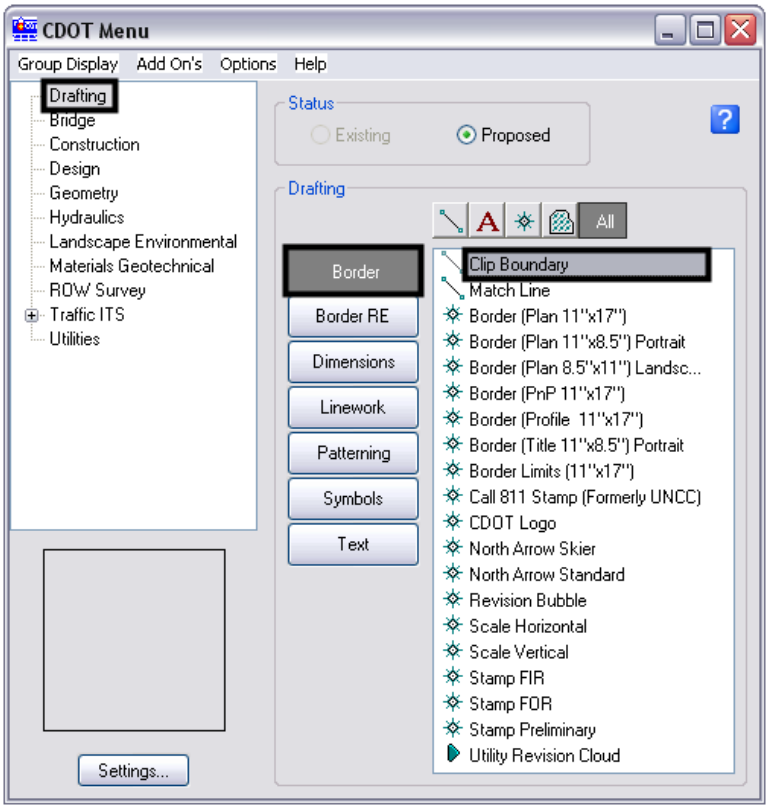
Note: Contact the CADD Manager if any edits need to be made to a Region Engineer cell. Remember, you **can** edit the cell with the **Edit Text** command until the changes are available in the next configuration.

8. Double click on any of the text fields in the border to add sheet specific information.

Note: Coordinate with the Region Surveyor when you are creating sheets that are not at a 1:100 scale. They will provide you with the topography and survey MicroStation files at a different scale. Otherwise, the line work and cells will not be the correct size for the print scale.

Placing a Clip Boundary

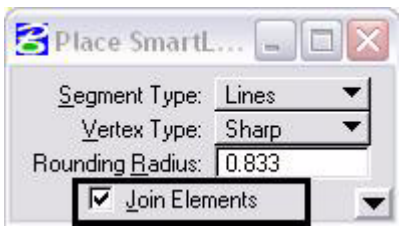
1. From the CDOT Group Menus select **Drafting > Border > Clip Boundary**.



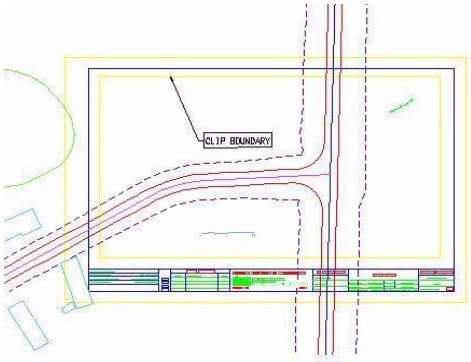
2. Verify the ***SHEET_Clip-Boundary*** level is active.

Note: The level **SHEET_Clip-Boundary** will not print.

3. The **Place Smart Line** command will be active. Verify the option for **Join Elements** is checked **ON** and draw a closed shape that will represent your clipping boundary of the model file.

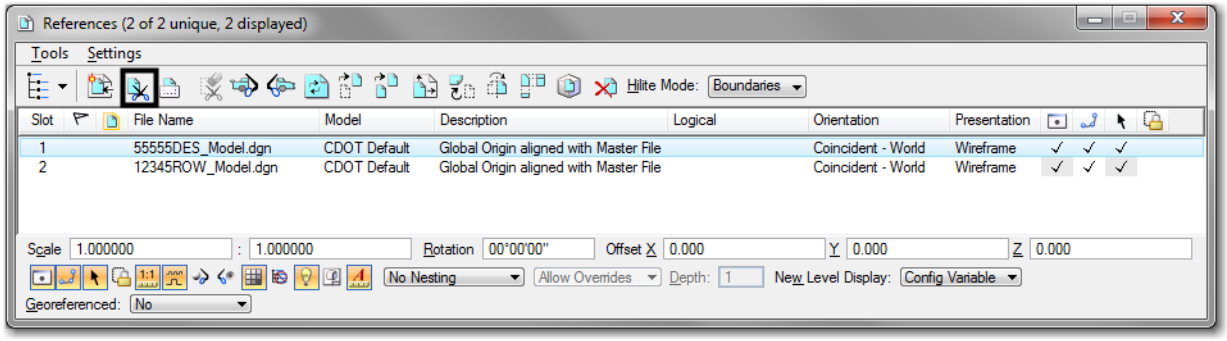


4. Otherwise, if the clipping boundary shape is rectangular, select the **Place Block** icon from the **Main** toolbar.



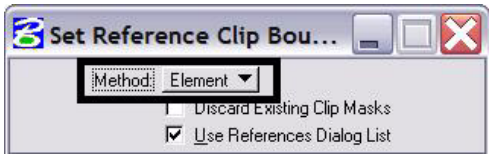
Clipping the Reference File

1. In **References** dialog box, highlight the Reference file to be clipped. Select the **Clip Reference** icon.



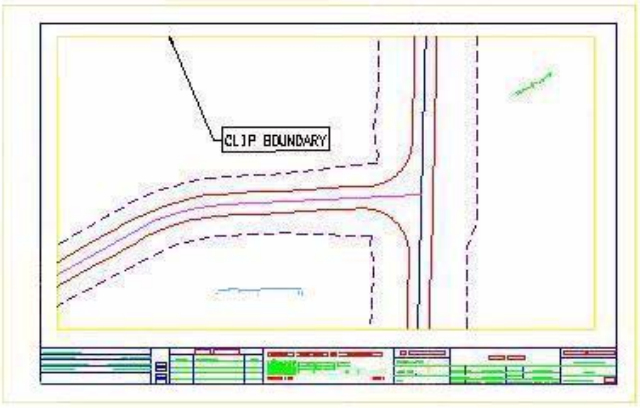
Note: You can select more than one reference file at a time by holding the **<Shift>** or **<Ctrl>** keys down while you are making your selection. You can clip multiple drawings in one step when they are all selected.

2. The following dialog box will open. Verify **Method** is set to ***Element***.



3. You will be prompted to select the **Element** you want to clip the reference from. Select the rectangular element that was placed inside the border on **GEN_SHEET_Clip-Boundary** level.

4. **Fit** the MicroStation view and **Save Settings** after clipping the reference files.

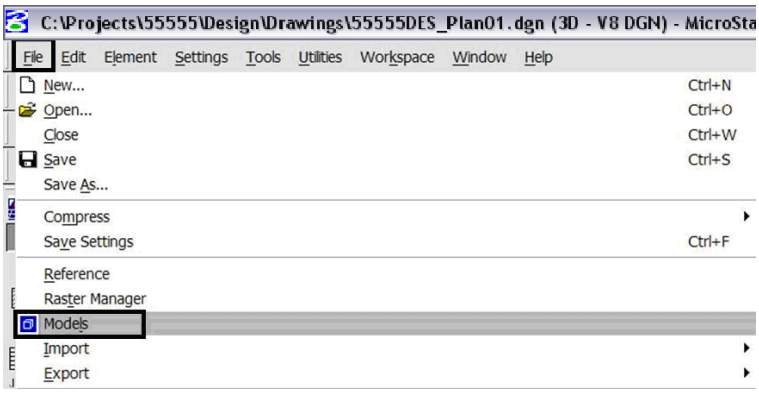


Note: Once the clipping boundary is placed, do not delete it. The clipping region of the reference file will be lost.

Additional Sheet File Information

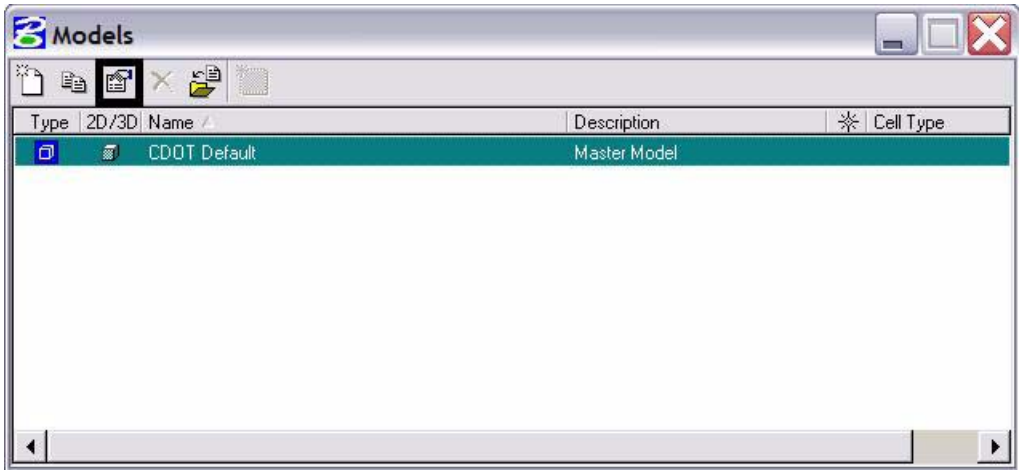
1. Setting up text and dimension scale in the sheet file must change the Annotation Scale Factor if the border cell was scaled to a factor other than 1:100. Otherwise, the text size in the sheet file will not correspond to the scale factor chosen when placing the border cell.

2. Select **File** > **Models** from the **Primary** toolbar.

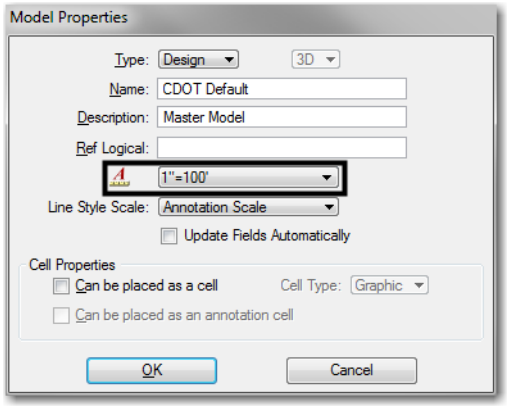


3. Or select **Models** icon from **Primary Tools**.

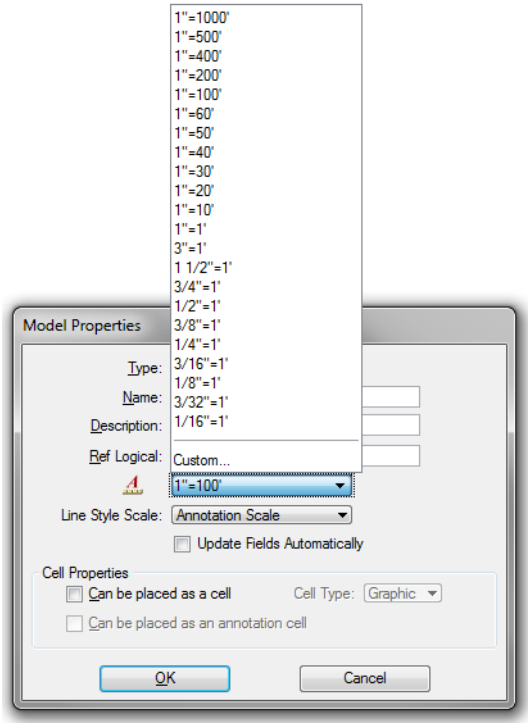
4. Select the **Edit Model Properties** icon



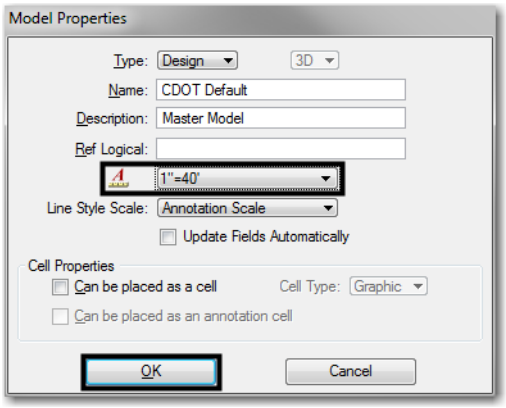
5. The **Annotation Scale** factor defaults to 1:100. Select the arrow to change the scale factor. If you try to place text before setting this, it will be too large since the drawing plot scale is at a 1:40.



6. From the pull down, select the **Annotation Scale** factor to match the scale factor used when placing the border cell.

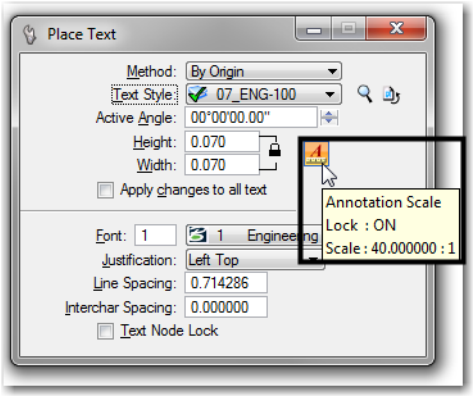


7. In this example, an annotation scale factor of 1:40 is chosen. Select **OK**.



Note: The annotation scale will take affect immediately.

8. You can now add text to the new sheet file. It will be scaled to the correct height based on the plot scale or in this case 1:40.



Note: Annotation Scale Lock must be turned **ON** when placing text or dimensions for the scale factor to take affect. Verify it is **ON** by hovering with your cursor over the icon.

9. Select **File > Save Settings** before you exit MicroStation.