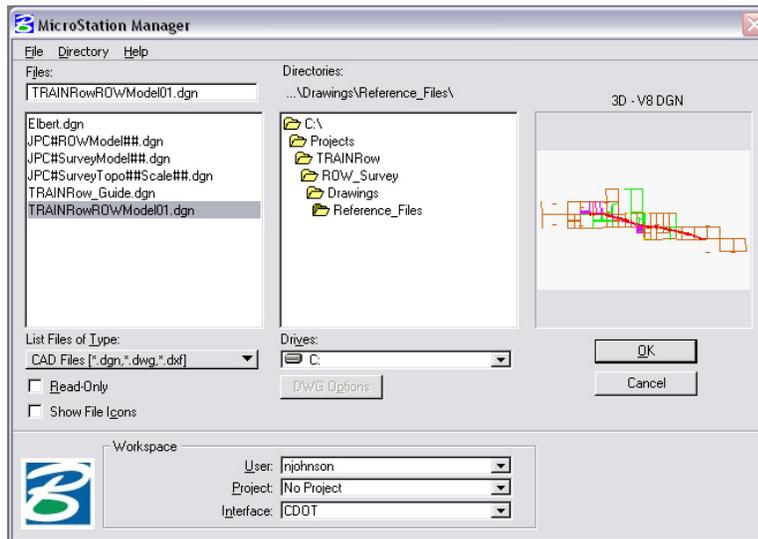




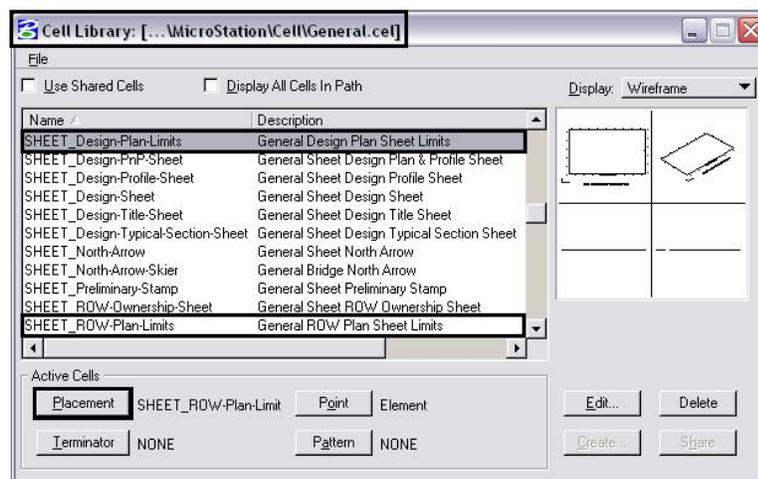
This document guides you through manually assembling multiple plan sheets using MicroStation. First, you will create a layout of how you want all your sheets printed out. Second, you will create the individual sheet files using those layouts. The major benefit of this workflow is the limits and orientations of plan sheets are determined early in the process. These sheet limits can be used to identify proper position, size, and rotation of text and tables.

Placing the Sheet Plan Limits Cell

1. Open a MicroStation model file that you will be basing your plan sheets on.



2. Select **Element > Cells** and open the **General** cell library. There are two cells in the General cell library that set the plan limits. **SHEET_Design-Plan-Limits** is to be used with the border cell SHEET_Design-Sheet. **SHEET_ROW-Plan-Limits** is to be used with the border cell SHEET_ROW-Plan-Sheet.



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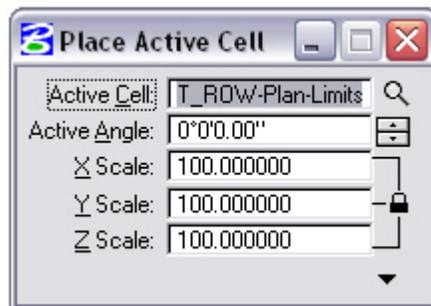
3. Set one of the two cells active depending on your discipline by double-clicking or selecting **Placement**.

4. **About the Sheet Plan Limit cell:**

This cell helps to define the plan sheet limits in the model file before placing the border. It contains text characters that can be edited to indicate sheet name, rotation, & scale. The outer line-work depicts the maximum display limits for graphics as it relates to the border sheet. The inside shape reflects ½ inch inside this maximum limit and is the clipping boundary. All graphical information for this cell is on to the MicroStation level, **DRAFT_INFO_No-Plot**.

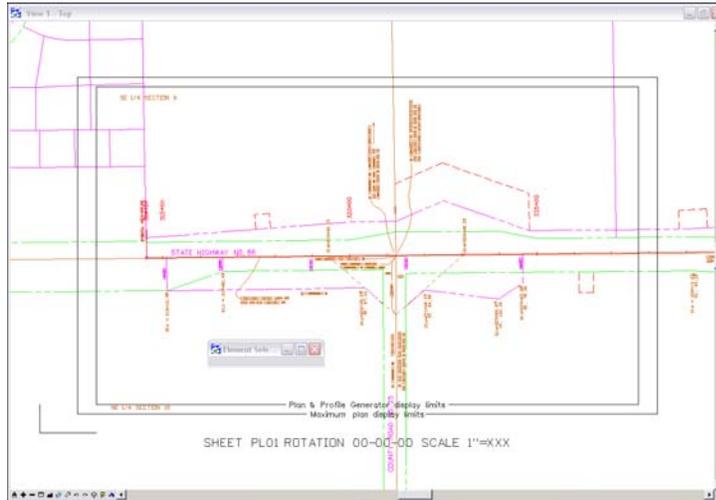


5. Under Place Active cell, set the Active Scale to the desired plot scale and set the Active Angle to 0.

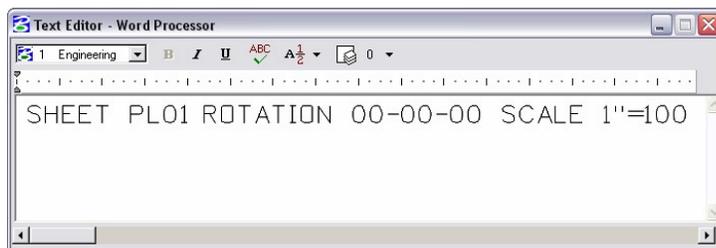


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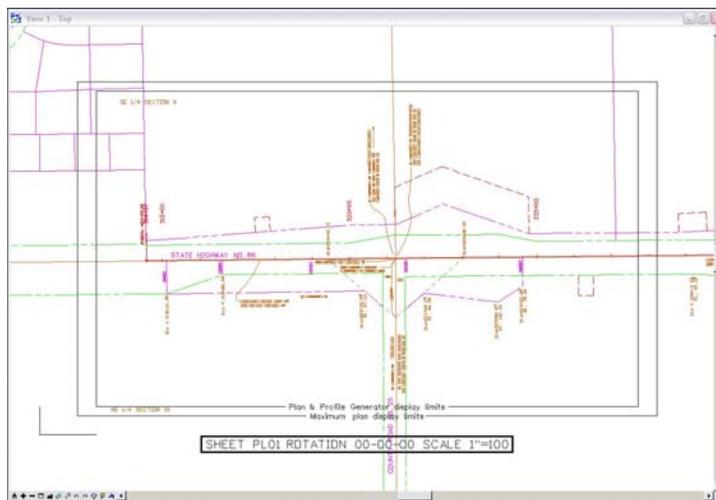
6. Position the Sheet Plan Limit cell as you see fit and place the cell in the model file.



7. Use the **Edit Text** command to update the text at the bottom of the sheet. This will assist in managing the sheet plan limits. Select the text at the bottom of the layout sheet and replace the appropriate sheet information in the **Text Editor**.



The plan sheet information text will be updated.



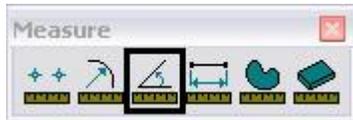
8. Use the MicroStation **Copy** command to duplicate the cell graphics for the second sheet.

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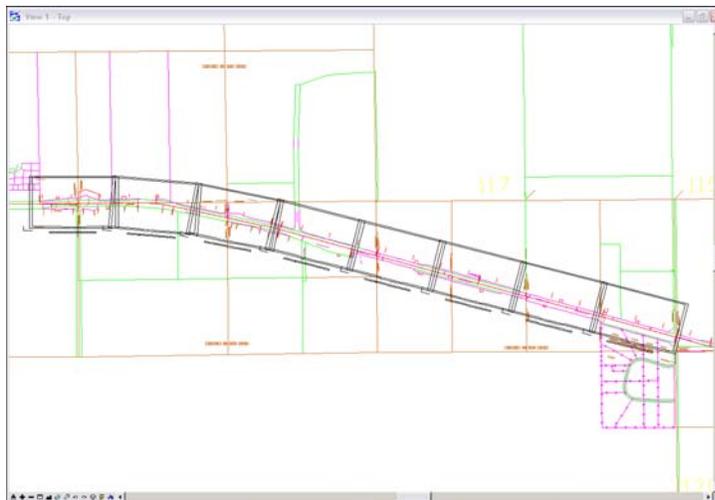
- Use the MicroStation **Rotate** command to align the graphics for the second sheet.
Note: Rotate the cell only and not the model file.
- Edit the information based on the Sheet name and Rotation angle for the second sheet using the **Text Edit** command.



Note: If the Sheet Plan Limits cell is placed at an arbitrary rotation angle, you will have to manually measure the angle. This is done by drawing a line horizontal from the lower left hand corner of the Sheet Plan Limits cell and then using the **Measure Angle** command in MicroStation. Measure the angle in-between the horizontal line drawn and the bottom edge line of the cell.



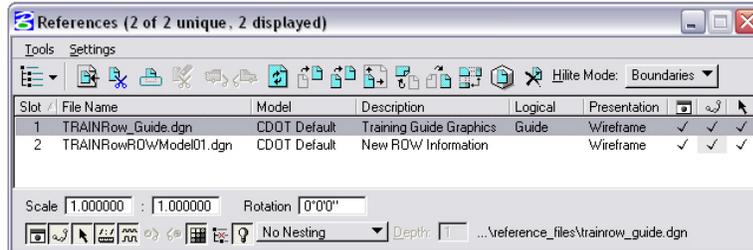
- Continue planning the sheet layout for the remainder of the project



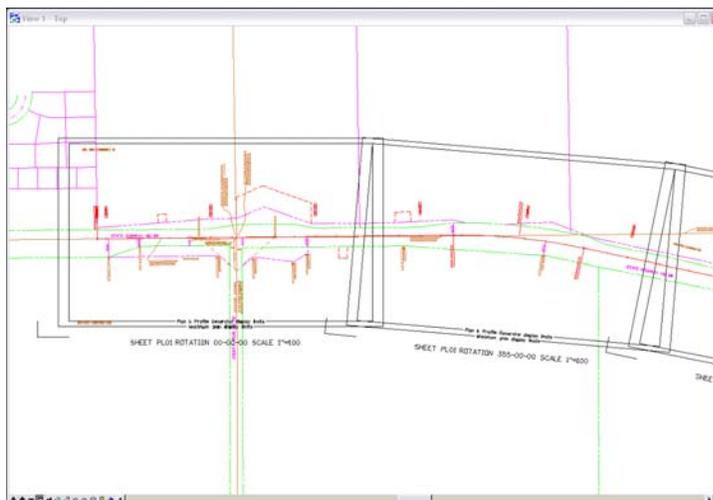
Note: The Sheet Plan Limit cell is to be placed side by side. This cell is setup to have no overlap in the plan view.

Assembling the plan sheets

12. Open up a MicroStation Sheet file and attach the model file that contains the Sheet Plan Limit cells.

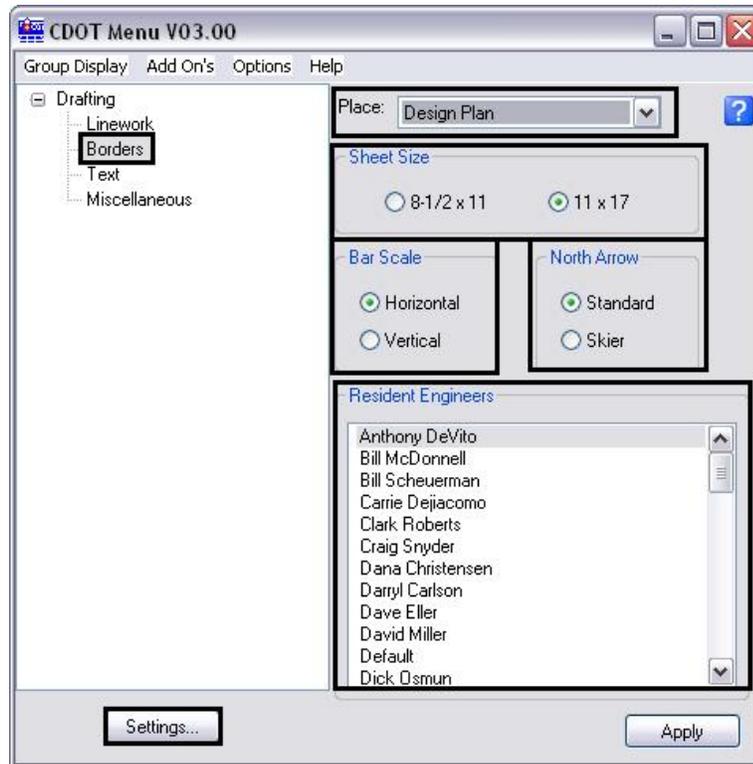


13. **Window** or **Zoom** into the beginning of the project so you can begin placing the border cell.

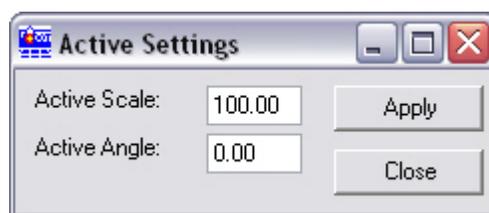


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- From the CDOT Menu, select **Drafting > Borders**. From here you will select the type of border to use from the **Place** pull-down menu then select the **Sheet Size**. Select a **Horizontal** or **Vertical Bar Scale** then select the **North Arrow** type. Finally, select **Resident Engineer** information.



- Select **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.

- Select **Apply**, when the desired changes are made in the **CDOT Menu**.

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17. First, you will be prompted to locate the lower left hand corner of the sheet border.

Locate lower left hand corner of sheet / Reset for next

Note: The sheet border cell is not anchored to your cursor but will be visible after you <D> (data-click) to accept placement.

18. Next, you will be prompted to locate the **Bar Scale**. <D> (data-click) to accept placement inside the sheet border.

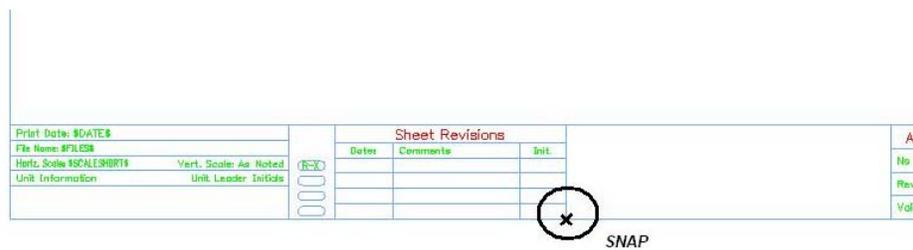
Locate point for bar scale / Reset for next

19. Then you will be prompted to locate the **North Arrow**, <D> (data-click) to accept placement inside the sheet border.

Locate point for north arrow / Reset for next

20. Lastly, you will be prompted to locate the **Region Engineer** cell. Tentative snap and <D> (data-click) to accept placement.

Locate point for regional engineer cell / Reset to exit

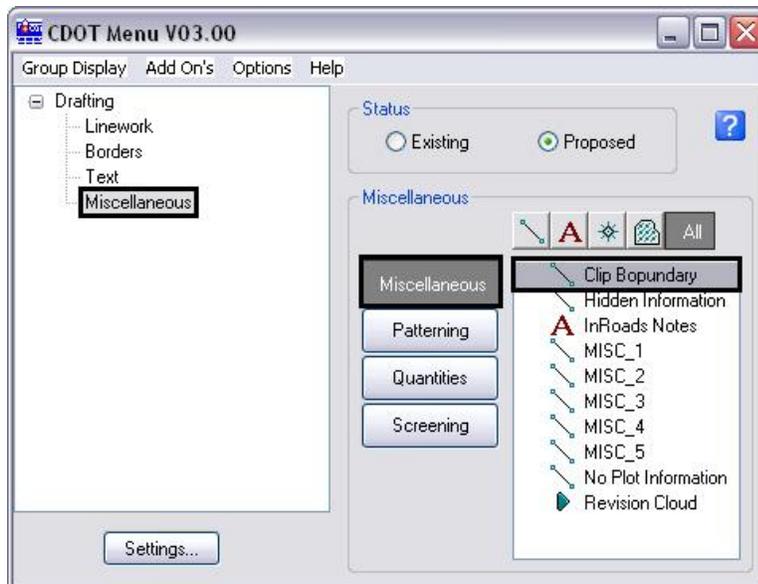


Note: Contact the CADD Manager if any edits need to be made to a Region Engineer cell. Remember, you **can** edit the cell with the Edit Text command until the changes are available in the next configuration.

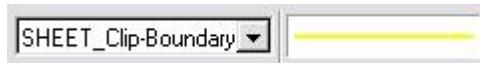
21. Double click on any of the text fields in the border to add sheet specific information
22. Coordinate with the Region Surveyor when you are creating sheets that are not at a 1:100 scale. They will provide you with the topography and survey MicroStation files at a different scale. Otherwise, the line work and cells will not be the correct size for the print scale.

Placing a Clip Boundary

23. From the CDOT Group Menus select **Drafting > Miscellaneous > Clip Boundary**.

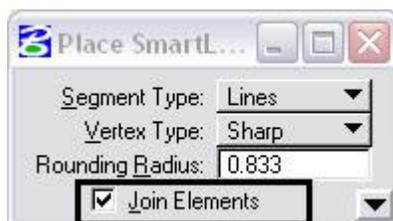


Verify the **SHEET_Clip-Boundary** level is active.



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

24. 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.

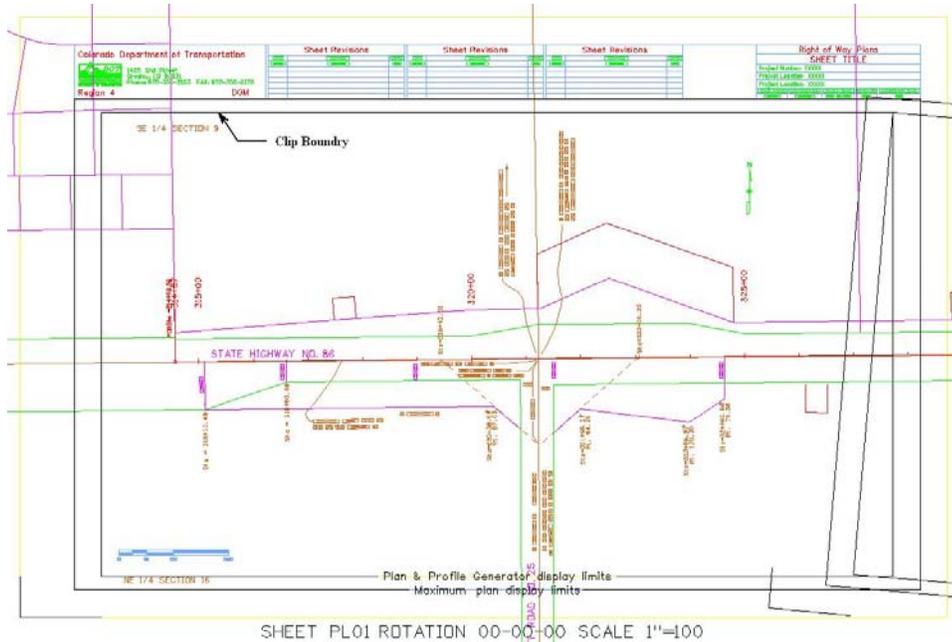


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25. Otherwise, if the clipping boundary shape is rectangular, select the **Place Block** icon

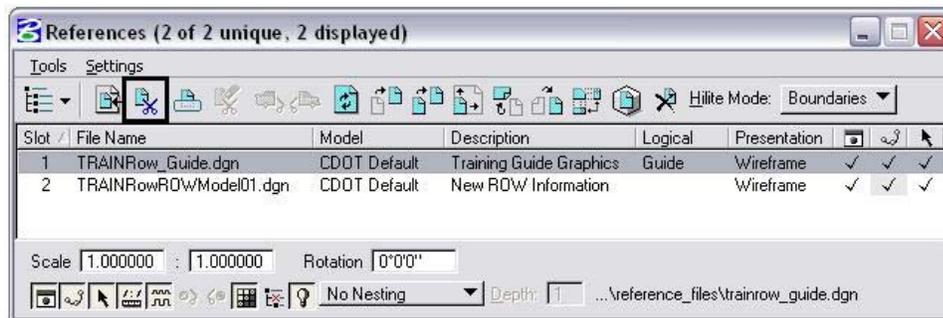


from the **Main** toolbar.



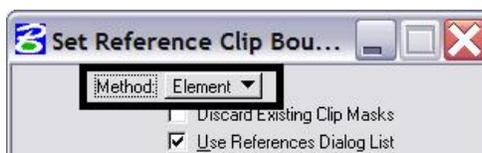
Clipping the Reference File

26. 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 **<Control>** keys down while you are making your selection. You can clip multiple drawings in one step when they are all selected.

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

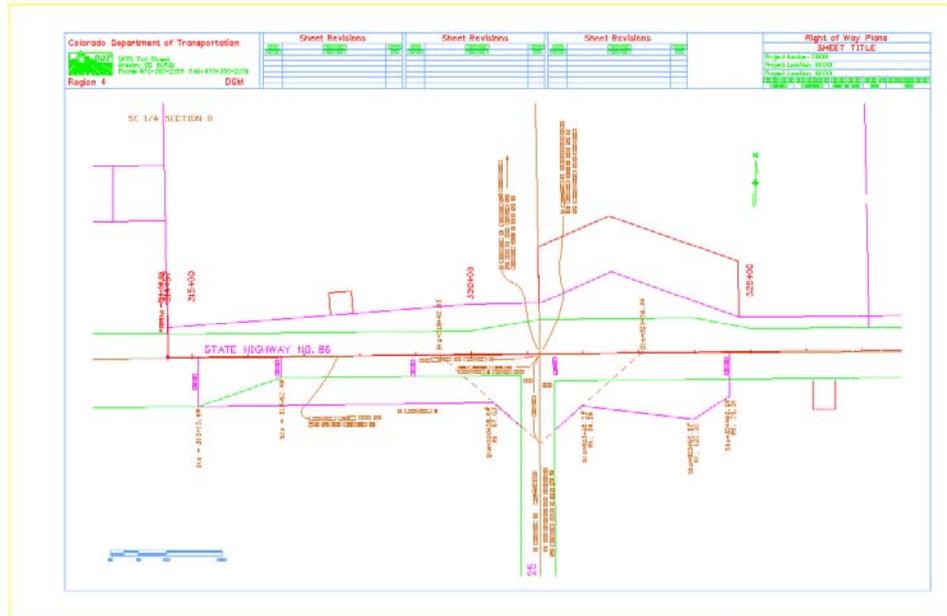


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- You will be prompted to select the **Element** you want to clip the reference from. Select the rectangular element that was placed inside the boarder on **SHEET_Clip-Boundary** level.

Set Reference Clip Element > Identify Clipping Element

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

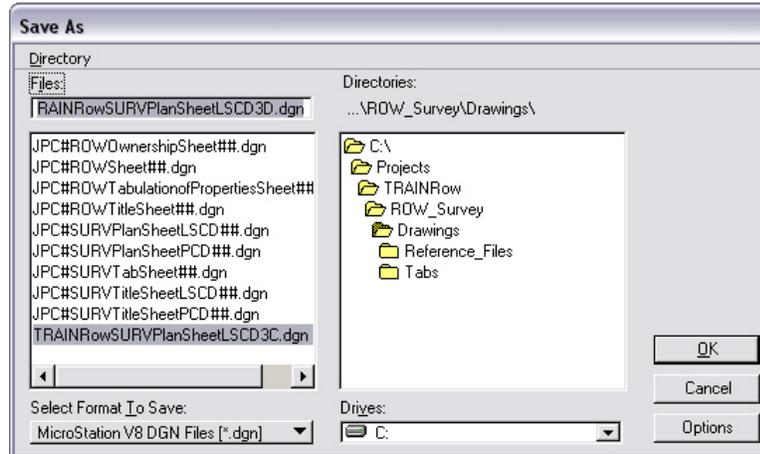


Note: Once the clipping boundary is placed, do not delete it. The clipping region of the reference file will be lost.

- Edit the title block and add any sheet specific information. You can turn off the level **DRAFT_INFO_No-Plot** so the Sheet Plan Limits cell information does not display.
- Select **File > Save Settings**.
This completes the first sheet. It should be noted that setting up sheets this way maintains the coordinate based information and measurements are in real-world dimensions.
- Once the first sheet is done, the second sheet is much easier. It is easier because the sheet file can be duplicated with the reference files already attached. Moving the border sheet and redefining the clipping boundaries will define subsequent sheets.

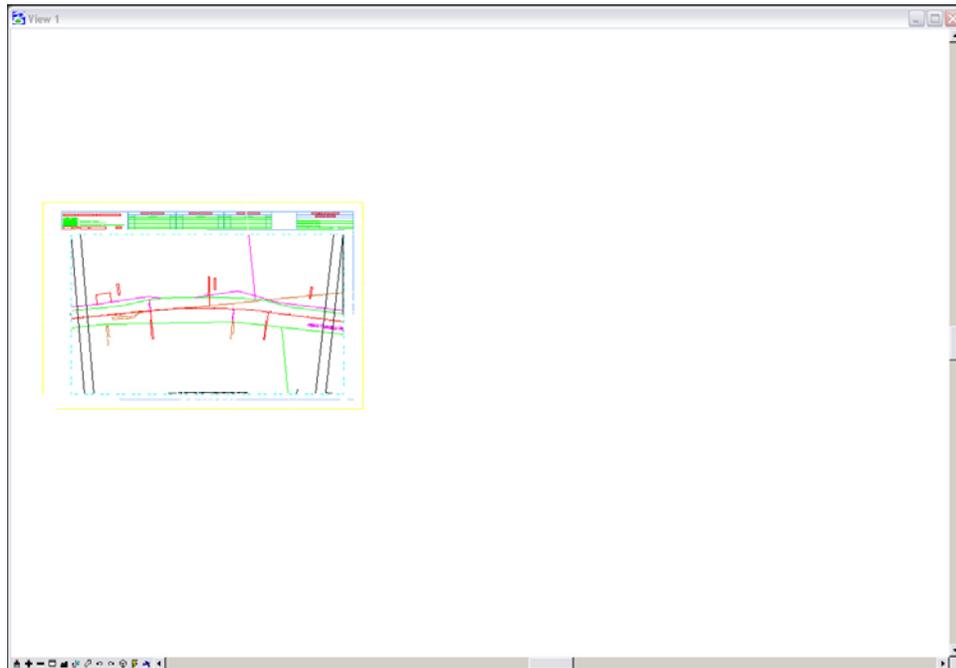
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33. Select **File > Save as** and input the next consecutive file name.



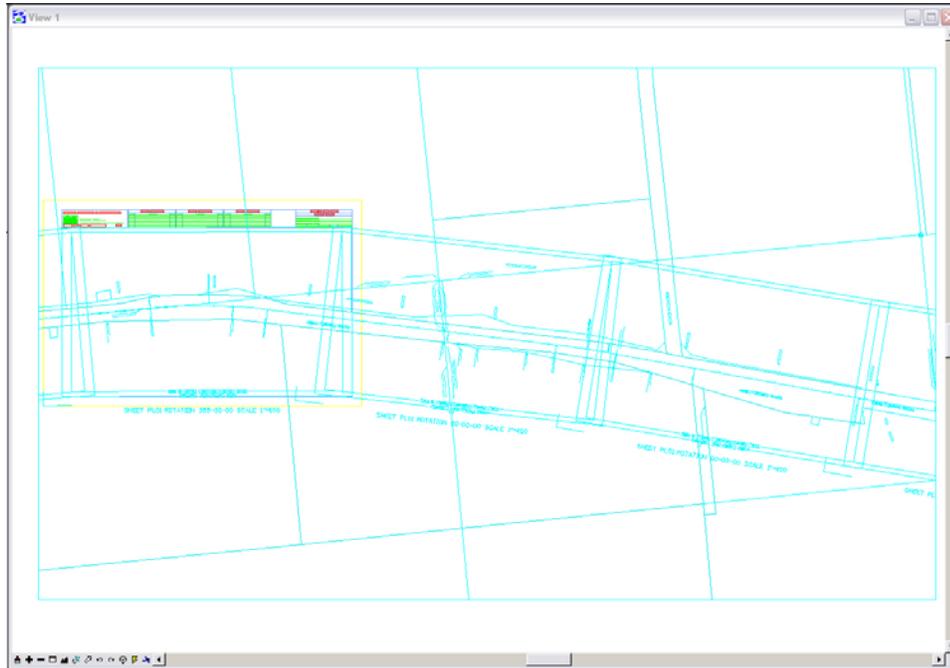
Note: The Save As command will automatically save the current drawing to the current directory, then copy and rename to the specified file name and open the new drawing.

34. Place a MicroStation *fence* over an area that would encompass the next sheet in the set.

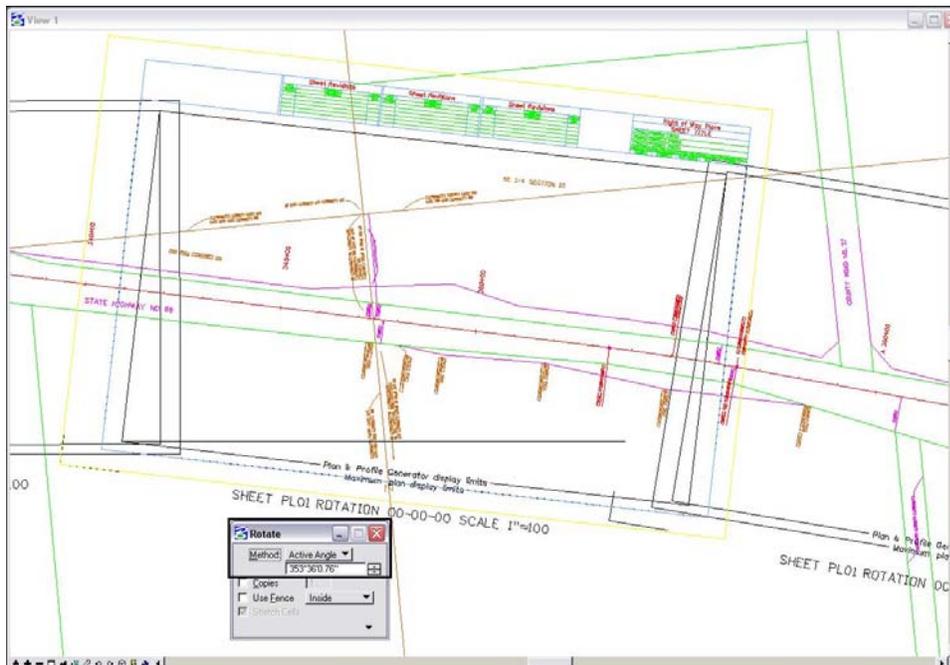


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35. In the References dialog, highlight all files and Select **Tools > Clip Boundary** – use fence and <D> on the MicroStation screen to accept the new clip boundary. This will re-clip the previous Clip Boundary placed inside of the border cell.

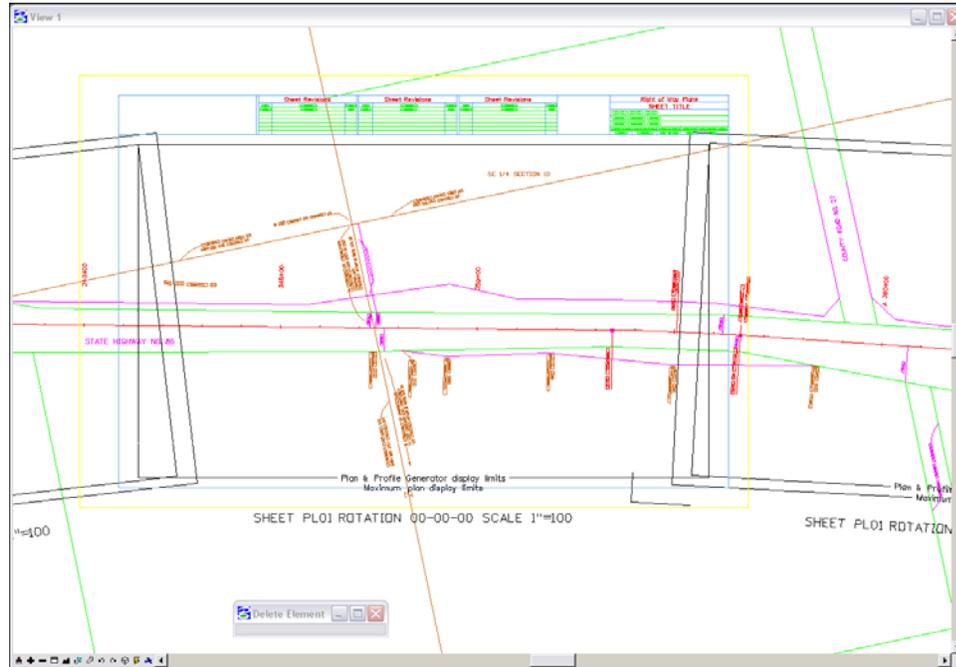


36. **Turn On** the level, **DRAFT_INFO_No-Plot** in the model file where the Sheet Plan Limits cells were placed.
37. Use the MicroStation **Move** command to relocate the border cell. Also **Rotate** the border sheet to align with the predefined sheet limits if the Sheet Limits cell was placed at an angle. Remember, the value of the angle is located in the text of the Sheet Limits cell.



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38. You may need to rotate the MicroStation view depending on the layout of the sheet. If you are in a 3D file, key-in $rv = x,y,z$ and press **<Enter>** or **<Tab>**. **Note:** $x = 0$, $y = 0$, and $z = \text{Rotation Angle}$. You are rotating the view about the z-axis because this is the axis perpendicular to the view. If you are in a 2D file, key-in $rv = \text{angle of rotation}$. **<D>** in the active view window to initialize the rotation.



Note: Rotating a MicroStation view simply rotates the viewing of the graphics. The coordinate system is still relative to the graphics and any coordinate or alignment information extracted will be correct.

39. Define the reference file clip boundaries as in steps 23-25 above.
40. Update information in the title block of the sheet as necessary
41. Select **File > Save Settings**
42. Repeat this procedure to complete the remainder of the sheets.