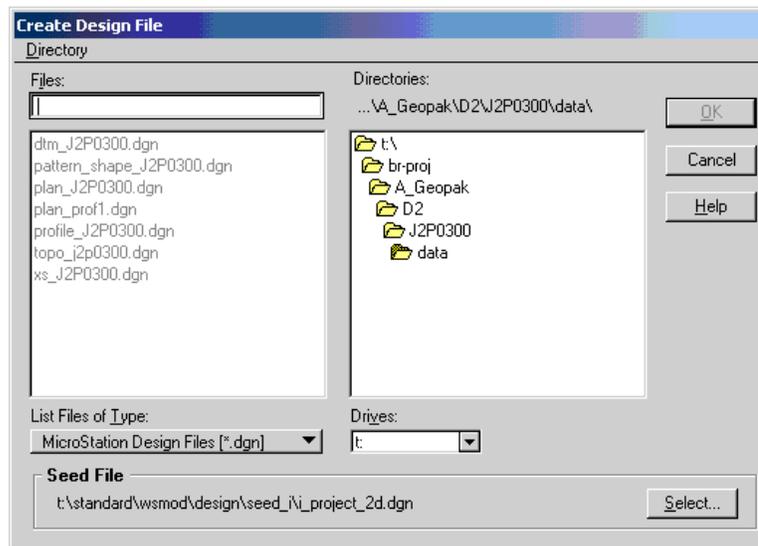


Exercise 12-2

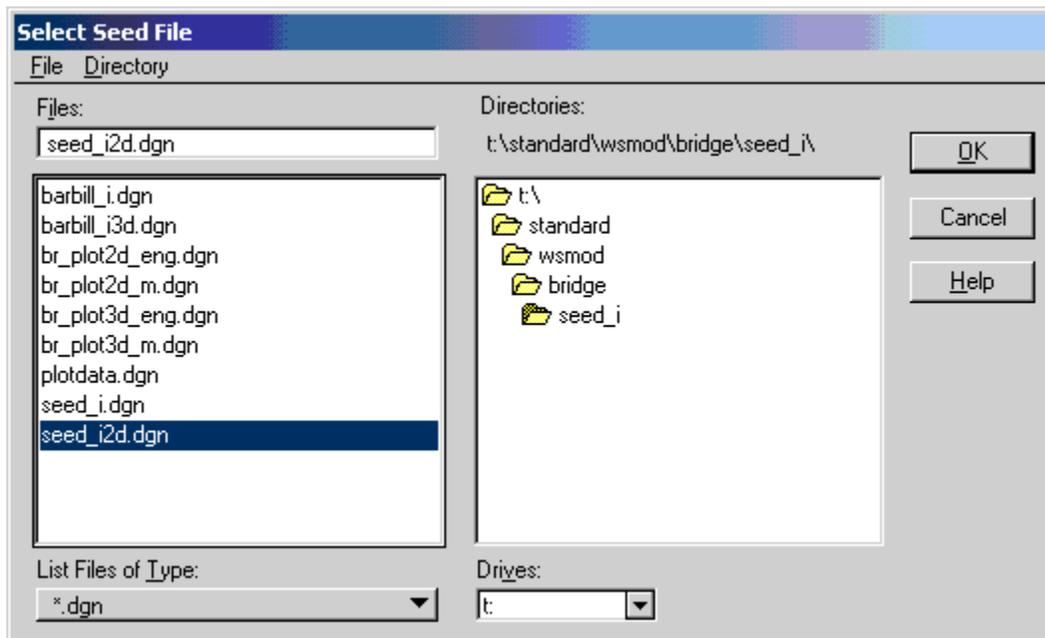
This is a group exercise to show how to create and use a MicroStation drawing with the Bridge working units that will be able to display GEOPAK based on Modified State Plane Coordinates.

1. Open any MicroStation file the **t:\br-proj\A_geopak\d2\j2p0300\data** directory.

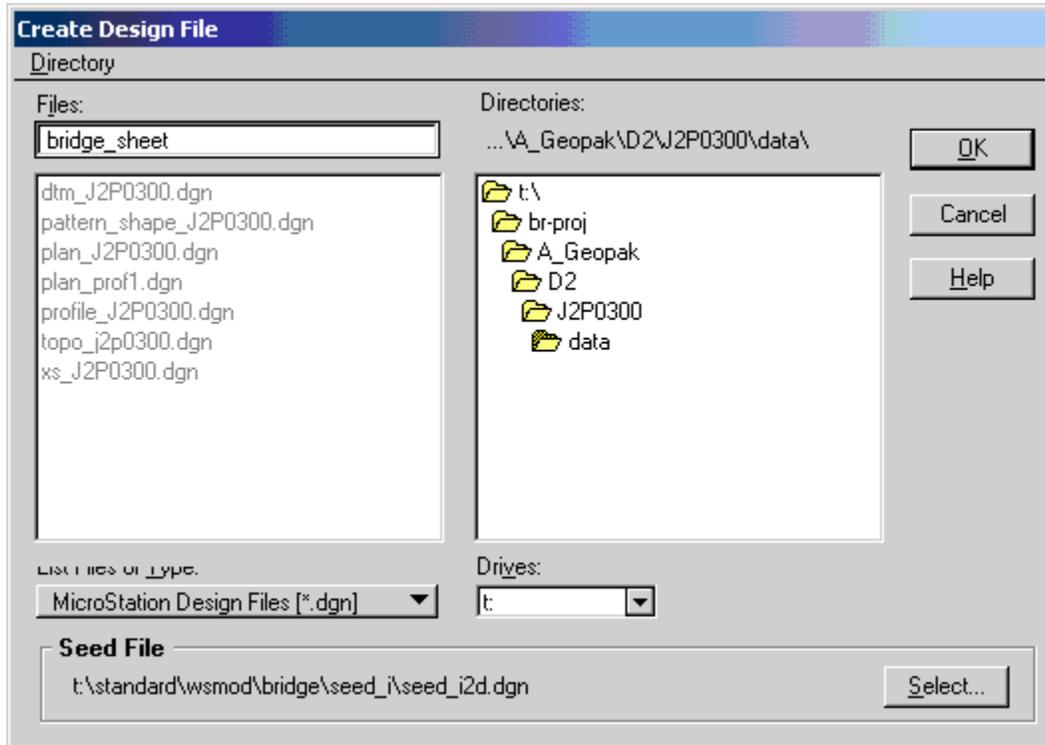
2. From the MicroStation Menu, select **File >New...** This will open the following dialog.



Click on the **Select** button in the lower right hand corner of the dialog to chose a different seed file. In the dialog that appears, navigate to **t:\standard\wsmod\bridge\seed_i** and select **seed_i2d.dgn** as the seed file, a shown below. Click **OK** in that dialog.



3. Name the new file **bridge_sheet** in the **Create Design File** dialog shown below.

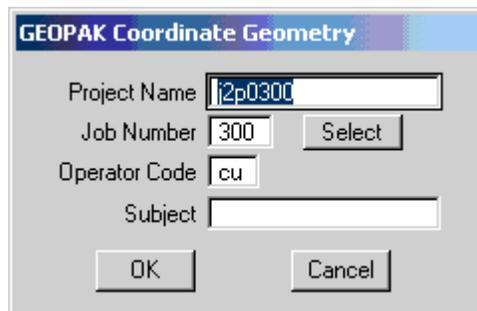


Click OK to create the new DGN.

4. Go to **Applications > GEOPAK Road > User Preferences** and clear out the **Working Directory**.

The global origin for the file needs to be set to match the coordinates of the project. The best way to do this is to find the southwest most point for the project. This point can be determined from **either** the alignment or the TIN information. Both methods are shown here since on method may work better than the other for a specific project.

To find the point from the alignment information, do into COGO and describe the alignment chain. For this example, enter COGO with the following information:



5. In COGO, go to **Element > Chain > Describe/List/Print**. The dialog pictured to the right will appear. Highlight the **RTE6** chain in the dialog and click on **Describe**, as shown to the right.



The chain description as output to COGO and saved in a text file is reproduced below:

Chain RTE6 contains:

601 CUR RTE6-1 604

Beginning chain RTE6 description

```

=====
Point 601      X 45,417.17   Y 90,893.15   Sta 1268+90.88

Course from 601 to PC RTE6-1  N 80^ 36' 26.00" E   Dist 121.69

                          Curve Data
                          *-----*

Curve RTE6-1
P.I.   Station 1278+75.13  X 46,388.23  Y 91,053.78
Delta   = 25^ 27' 00.00" (RT)
Degree  = 1^ 30' 00.00"
Tangent =          862.56
Length  =          1,696.67
Radius  =          3,819.72
External =          96.18
Long Chord =          1,682.75
Mid. Ord. =          93.82
P.C.   Station 1270+12.57  X 45,537.23  Y 90,913.01
P.T.   Station 1287+09.24  X 47,217.14  Y 90,815.20
C.C.                   X 46,160.61  Y 87,144.50
Back    = N 80^ 36' 26.00" E
Ahead   = S 73^ 56' 34.00" E
Chord Bear = S 86^ 40' 04.00" E

Course from PT RTE6-1 to 604  S 73^ 56' 34.00" E Dist 3,290.76

Point 604      X 50,379.51   Y 89,904.98   Sta 1320+00.00
    
```

Point 601 has the minimum **X = 45,417.1720**.
CC RTE6-1 has the minimum **Y = 87,144.50**.

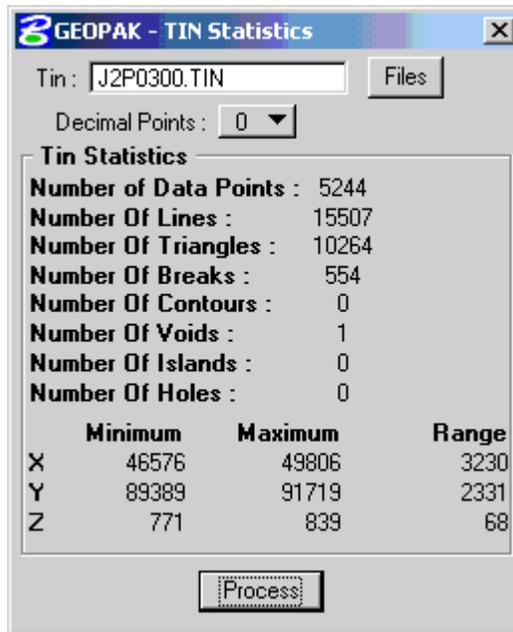
- To find the minimum X and Y from the TIN, go into the DTM Tools by clicking on the raised icon depicted to the right.

Go into the J2P0300 run, if you are in Project Manager; otherwise, the DTM tools will be displayed outside of a run.

From the DTM menu, shown below, select **Reports > Triangle Statistics**.



Process the TIN Statistics for the J2P0300.TIN, as shown below.

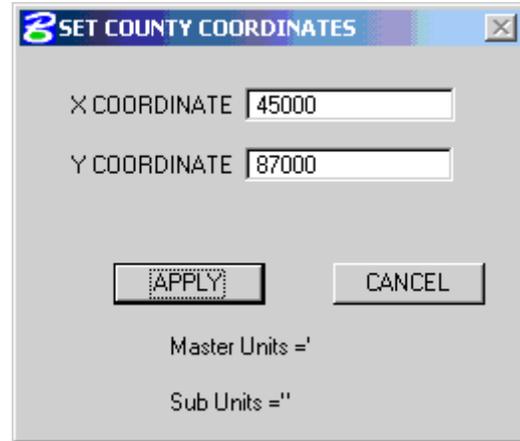
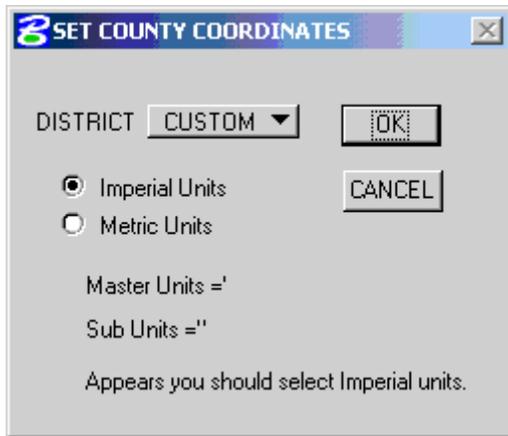


For the TIN, the **minimum X = 46,576** and the **minimum Y = 89,389**. Since these values are greater than the ones for the alignment, the values for the alignment control. The global origin for the file will be set at the rounded down values of:

$$X = 45,000$$

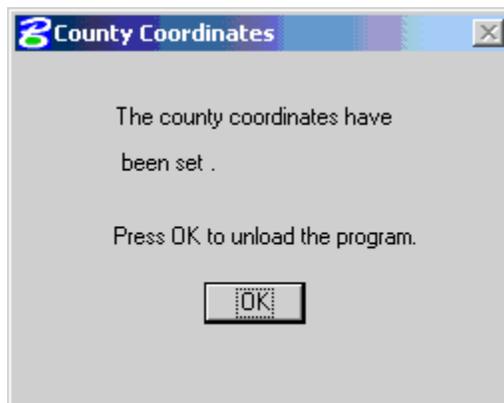
$$Y = 87,000$$

- Set the origin for the drawing by going to MicroStation menu **MoDOT > Tools > Set County Coordinates**. In the Set County Coordinates, leave the DISTRICT set to **CUSTOM**, **Imperial Units** and click **OK**, as shown below in the figure on the left.



This will display the next dialog, which is shown above in the figure on the right. Set the **X COORDINATE to 45000** and the **Y to 87000** as shown and click **APPLY**.

When the new origin is set, the follow dialog appears. Click **OK**.

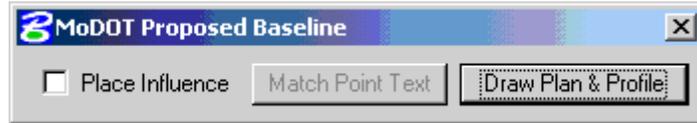


The drawing is ready for plotting information for the project. To demonstrate this, the alignment and the stationing will be plotted. Since the process for placing a border is unique because of using a drawing with Bridge working units in the Design workspace, this will be demonstrated as well.

8. Open D&C Manager and select the item:

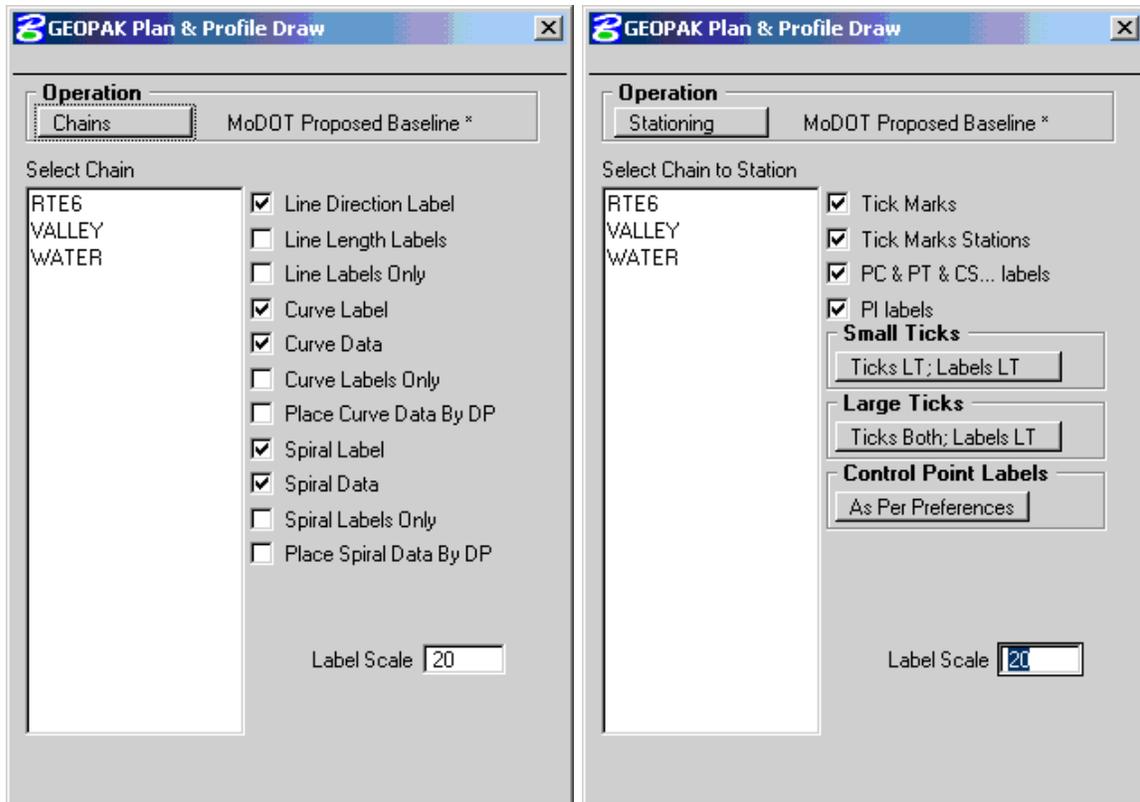
Drafting Standards \ Plan \ Alignments \ MoDOT Proposed Baseline.

Make sure that Place Influence is unchecked, as shown below, and click on **Draw Plan & Profile.**



If asked, select **Job 300.**

Set the **Operation** to **Chains** and the **Label Scale** to **20**, as shown below in the figure on the left and click ONCE on **RTE6**. Do a MicroStation **Fit View**. Change the operation to **Stationing** and make sure that Large Ticks is set to **Ticks Both; Labels LT** and click ONCE on **RTE6**.



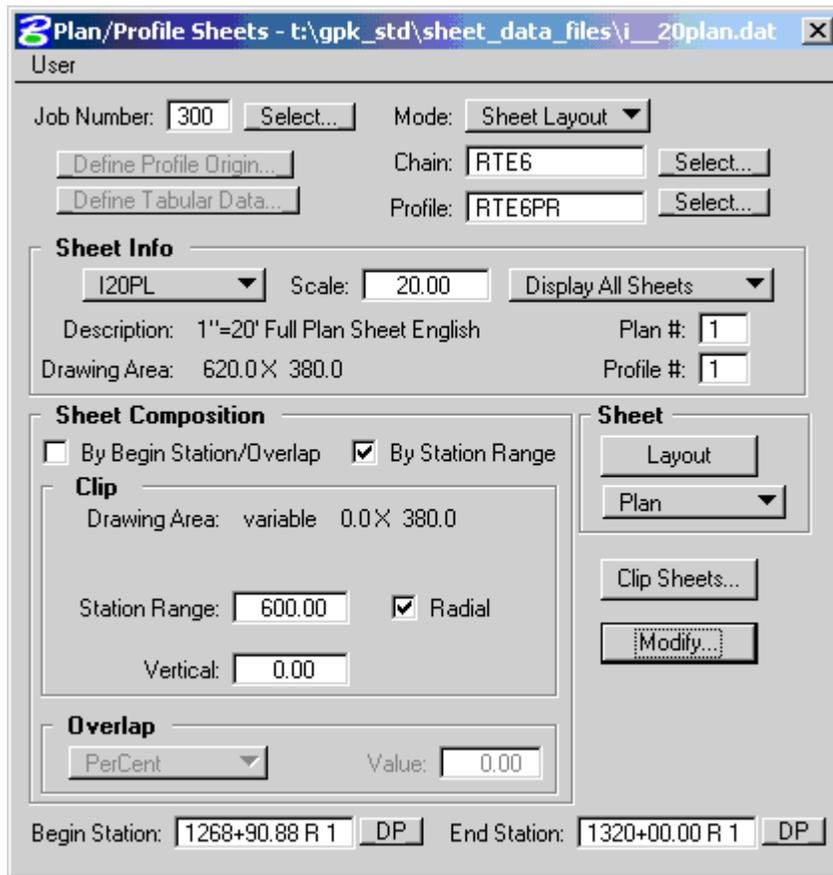
Close D&C Manager and window in on Station 1295+00, which is the second major label after the curve. Save changes to the MicroStation file.

9. Choose **Plan & Profile Sheets** from the **Road Project** flow chart.

Plan & Profile Sheets

Reenter the **Rte6** run since the same size will be cut as before.

10. Check if the settings match those shown in the following figure. Make any need corrections.



When the settings are verified, click on **Modify...**, which is the active button in the above figure. This will display the Modify dialog shown to the left.

Click on **Place Single Plan Sheet** in the dialog box and move the mouse cursor into the MicroStation window. Slide the white box that appears along the alignment until it is **center on Sta. 1295+00** and data point to accept the sheet's location. (Note: Only the digits to the left of the "+" are plotted in the drawing.)

If you need to reposition the sheet, once it is placed, click on **Slide Single Plan Sheet**, which will allow you to reposition the sheet.

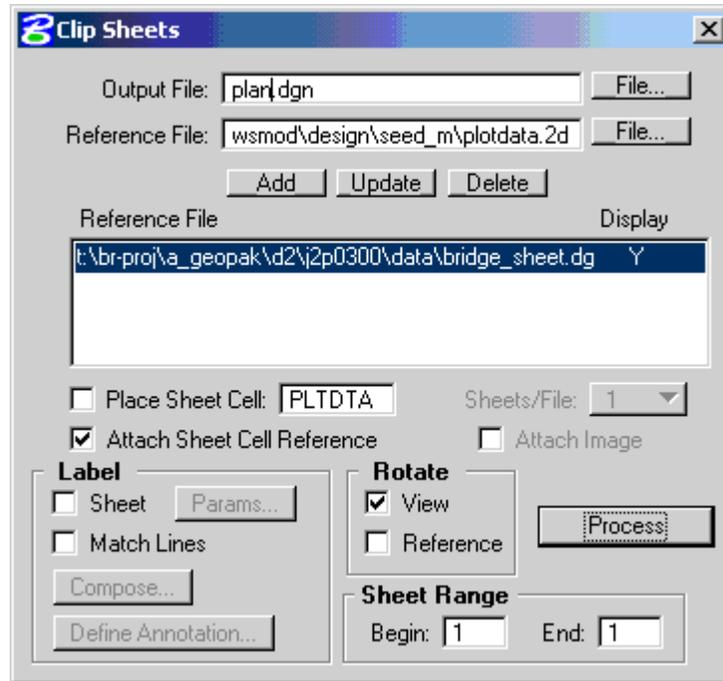
Once the sheet is positioned where you want it, close the Modify dialog box.

11. Save the changes to the MicroStation file.

Return to the Plan/Profile Sheets dialog and click on **Clip Sheets**, which is right above the Modify... button.

12. This will bring up the following **Clip Sheets** dialog

Change the Output File: to plan.dgn, as shown below.



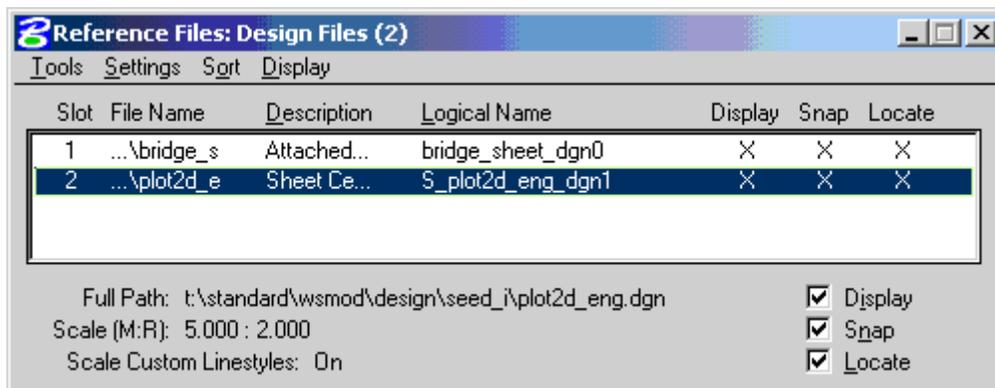
Click on **Process** to generate the sheets.

Once the new file is opened, close the Clip Sheets and Plan/Profile Sheets dialogs.

13. Because working units for an English Bridge seed file are 8 times smaller than a English Design file (the ratio is 12:1 for a metric file), the border is only 1/8 of the needed size.

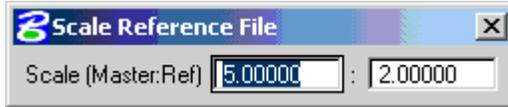
Adjust the border size by scaling the border file. To do this, open the MicroStation References Files dialog box (Files > Reference).

Highlight the border file as show in the following figure.

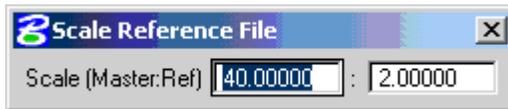


13 (continued)

In the Reference File dialog go to **Tools > Scale...** to display the **Scale Reference File** tool depicted below.



Currently, the Scale (Master:Ref) is 5:2. Increase the Master scale by a factor of 8 to 40 as shown below

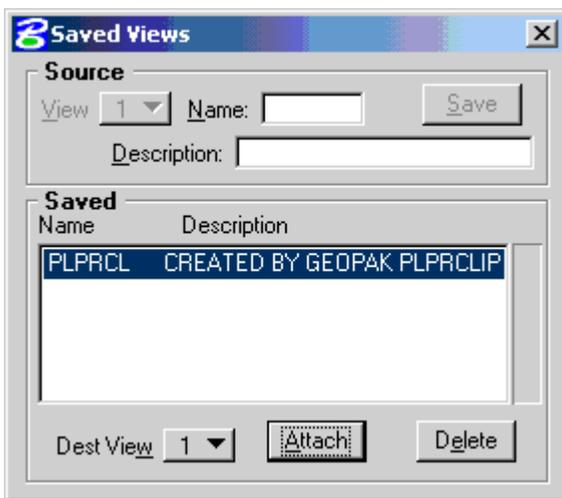


In the lower left hand corner of the screen, the MicroStation prompt is:
 “Scale Reference File > Enter point to scale ref file about.”

If your border is centered on station 1295+00, snap to the tick mark at that location and accept the snap; otherwise, data point near the center of the border. (Note: prior to scaling the border, a temporary MicroStation element could be placed to provide a snap point at the center of the boarder.)

Other Reference File Tools could be used to move reposition the border or to adjust the view are for the bridge_sheet.dgn referenced file.

Since the coordinates of the bridge_sheet.dgn match those of the current file (plan1.dgn), **DO NOT** move, scale, or rotate the bridge_sheet.dgn or else the items plotted will not have real world coordinates. In order that the alignment run from left to right, the view of the file has been rotated. Consequently, east is not necessarily to the right.



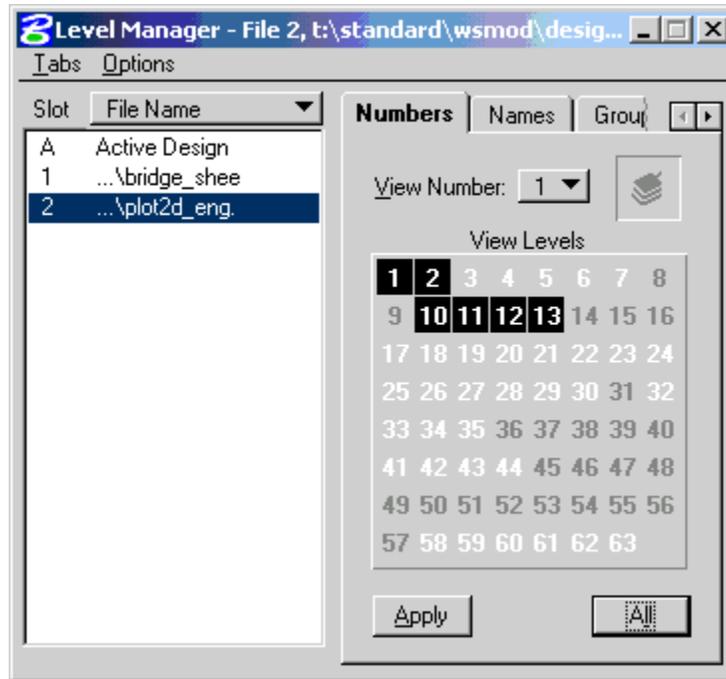
If the view becomes unrotated, attaching the saved view created by GEOPAK will restore the rotated view. To do this, go to MicroStation pull down menu **Utilities > Saved Views**.

When the Saved Views dialog appears, which is shown to the left, select the **PLPRCL** saved view and click on **Attach**.

Do a MicroStation **Fit View** to complete the view restoration.

The saved view was generated as part of the plan and profile clip sheet process.

14. Open the MicroStation Level Manager (**Settings > Level > Manager**). Select the border file in the left part of the dialog as shown below. Levels 1-2 and 10-13 are displayed by default, as noted in the figure.



The title block in the upper corner of the border file is on level 2. **Turn off level 2.** Since the bridge id block is on level 7, **turn on level 7.**

Close Level Manager and save the changes to the MicroStation file.