6. Existing Ground Profile

In normal work flows, survey will develop a ground profile for the preliminary centerline. Only when the proposed centerline is altered from that location would it be necessary set up a new ground profile. Since we have altered the preliminary centerline, we need to generate a new ground profile.

In this exercise, we demonstrate the use of the Existing Ground Profile tool from Project Manager which generates and stores a profile in the GPK file which we later display. If only graphics are needed or in cases where multiple surfaces need to be profiled at one time, then the Draw Profile tool should be used.

I.) Extract Existing Ground Profile

1) Open the MicroStation file

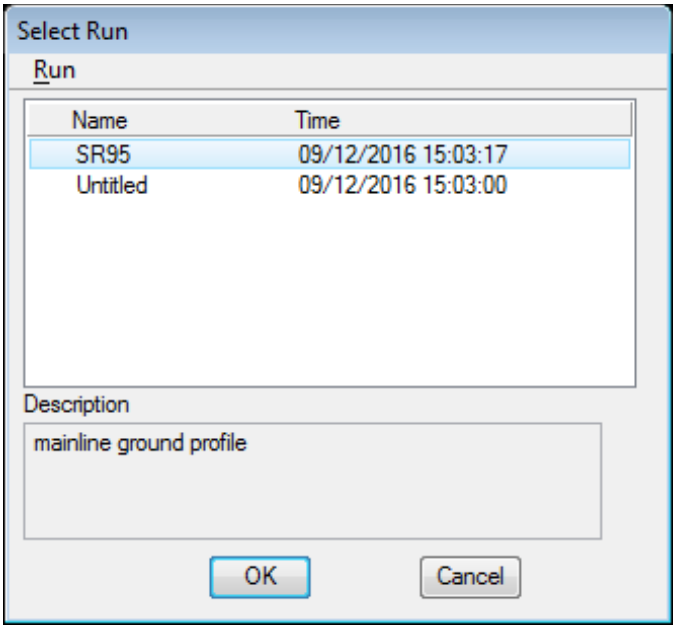
C:\Projects\Roane\SR95PoplarCr\ROSR95Alignments.dgn

Access Project Manager.

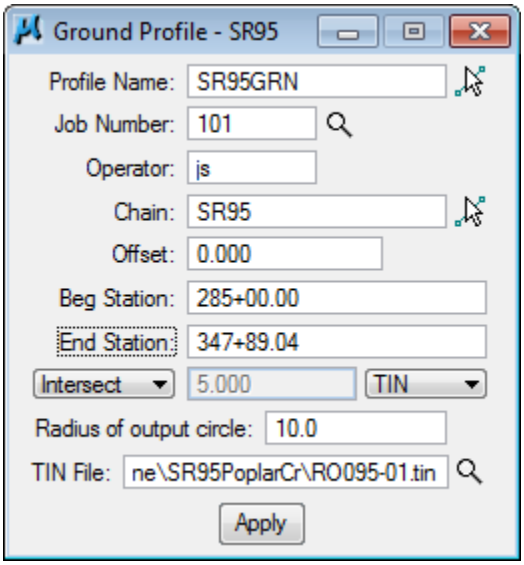
Do a fit view to make sure entire alignment is in viewing window.

2) Select the Existing Ground Profile button from the Project Manager workflow dialog.

3) Create a new run called SR95 then select the run and press OK.

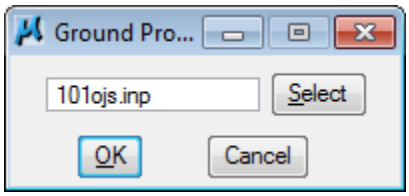


4) Populate the Ground Profile dialog as shown and press Apply. Enter the Profile Name as SR95GRN. All ground profiles should include the letters GRN to show that they are existing ground profiles and can be recognized separately from proposed roadway profiles. Intersect mode should always be used for the most accurate profile displays.

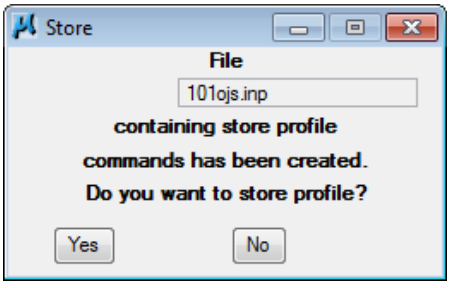


NOTE:
The beginning and ending station of an alignment can be filled in automatically by placing the cursor in the blank field and pressing Enter.

5) When prompted for an input file name use the default name j101o**.inp (the asterisks represent the users initials) as shown in the Ground Profile Input File dialog below and press the OK button.



6) When prompted to store the profile, press Yes.

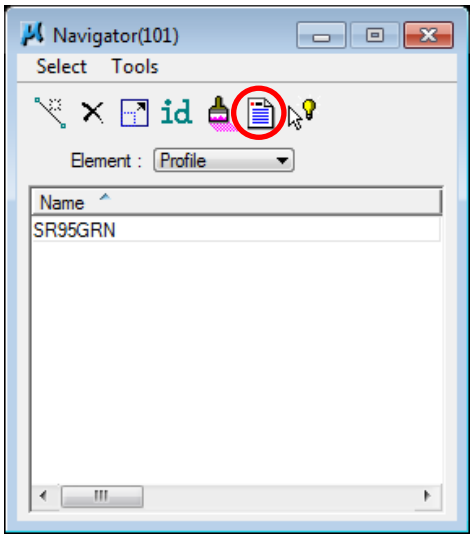


7) Press Yes to delete the 3D line string in the design file.

8) After the profile is stored, exit the Ground Profile dialog and Save Settings.

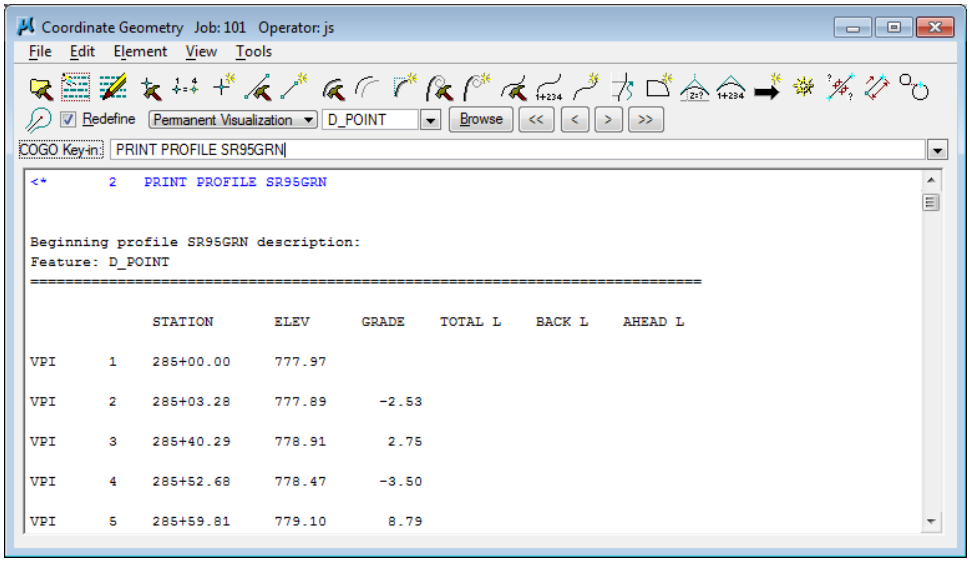
9) Access Coordinate Geometry. (Press the Coordinate Geometry button on the workflow dialog).

10) Access Navigator and go to Profiles.



11) Select the profile 'SR95GRN' and press the Describe icon.

12) Review the profile information in the COGO output display window.



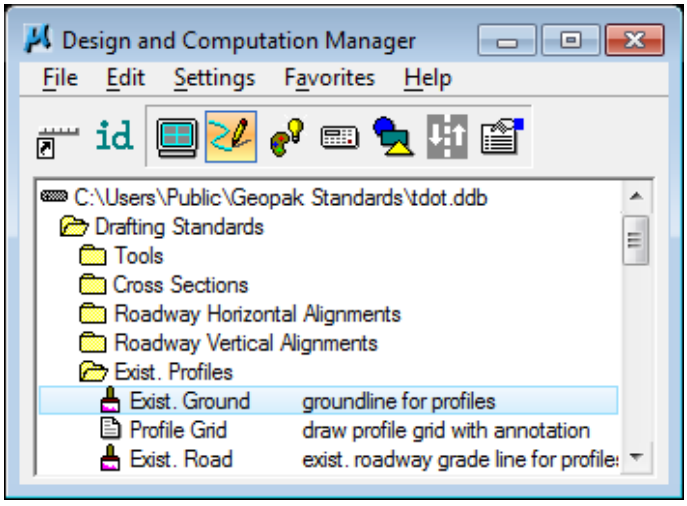
13) Close the Coordinate Geometry dialog (use X in upper right corner of the dialog). When prompted to save the COGO session press NO.

II.) Drawing Ground Profiles

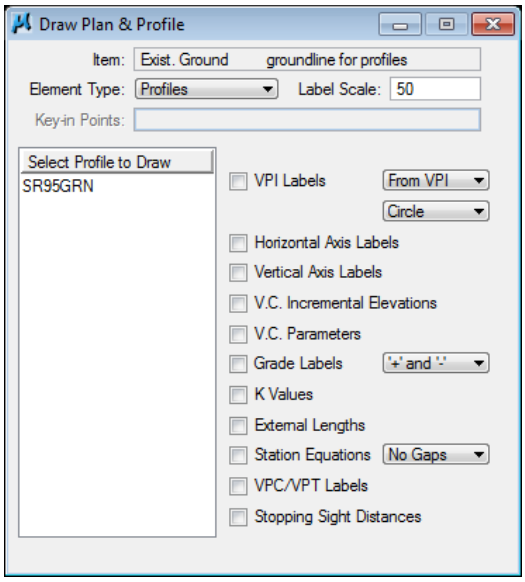
It is necessary to place the profiles far enough away from the plan view area so that graphical information does not overlap. Zoom out as shown in the picture below to place your profile. The next few steps will create the existing ground and proposed profiles at the bottom right of the image.

1) Access Design and Computation Manager by selecting the Plan View Design option on the workflow dialog and then selecting the Design and Computation Manager icon from the tool bar or from the Main Task group when the Civil Workflows are set.

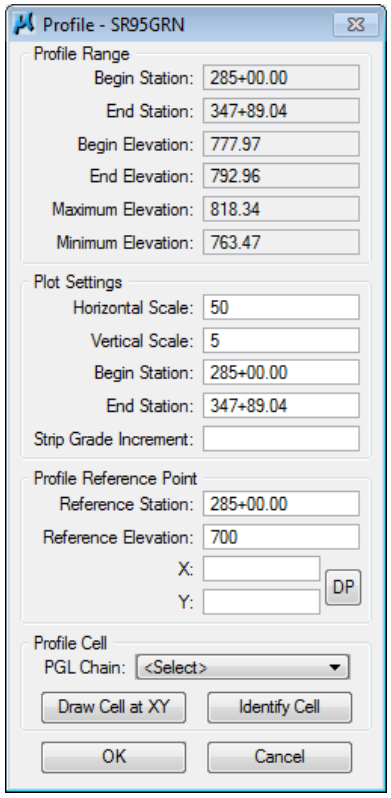
2) Select the item Drafting Standards → Exist. Profiles → Exist. Ground.



3) Press the Draw Plan & Profile button on the secondary dialog. The Element Type is automatically set to Profiles. The Label Scale should already be set to the desired scale of 50.



4) Click on the existing ground profile 'SR95GRN' to invoke the following profile parameter dialog. Populate it with the station, scale and elevation parameters shown.

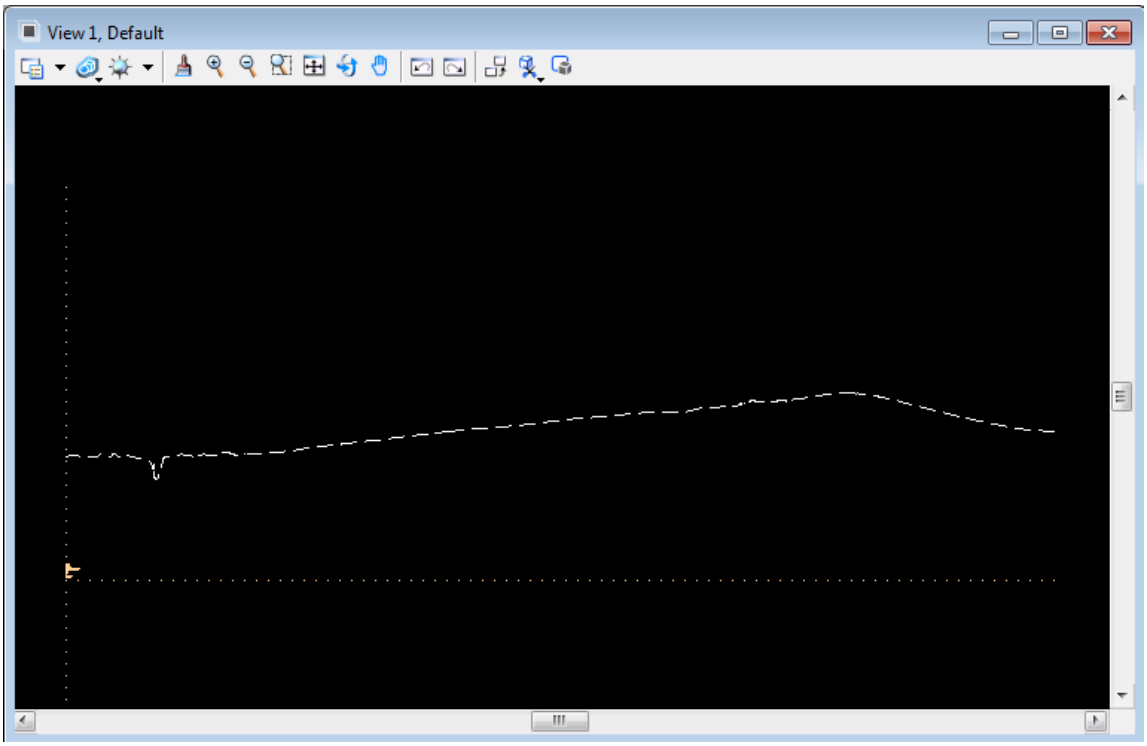


NOTE:
You do not need to enter a value in the Strip Grade Increment box. This is used to display elevations along the profile at the spacing entered. Normally this information is not needed.

5) Set the DP X and Y coordinates by clicking on the DP button and then click in any open area to the right of the Survey profile away from the plan view area to avoid overlapping graphics.

6) We will need the GEOPAK Profile Cell later so go ahead and set it up. Click on the drop down for PGL Chain and choose the chain name SR95. Now click on Draw Cell at XY. This places this special cell which holds all of the control data defining this profile set up. It can be identified while using any GEOPAK profile function to define the control information.

7) Press OK to display the ground profile. The existing profile should now be plotted in the design file.

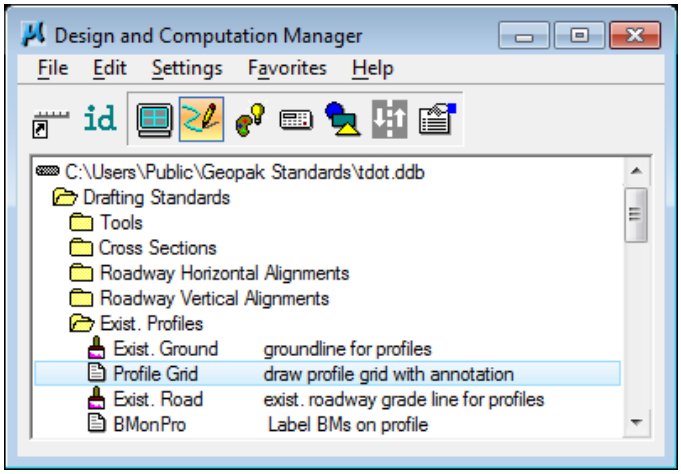


8) Exit the GEOPAK Plan and Profile Draw dialog and review your profile.

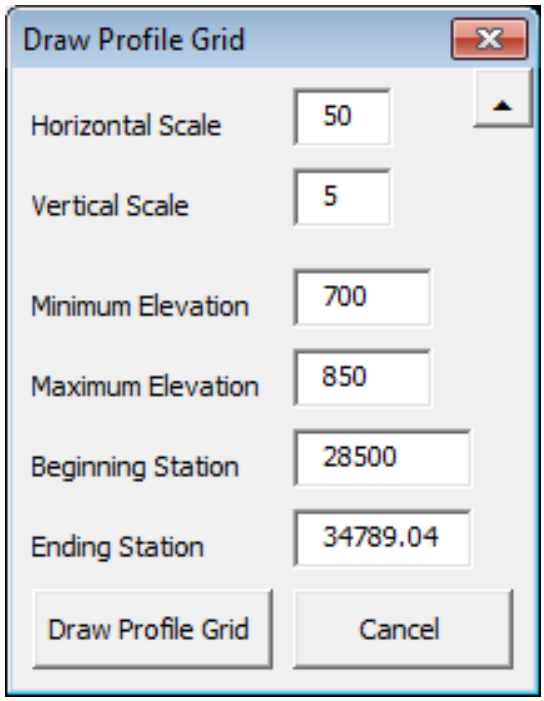
9) Do not exit the D&C Manager; go on to the next section.

III.) Drawing Profile Grids

1) Go to D&C Manager.



2) Double-click the item Profile Grid and the Draw Profile Grid dialog opens. The current active scale is read from the DGN file and is used to set the default Horizontal and Vertical Scale. Fill out the dialog as shown below.



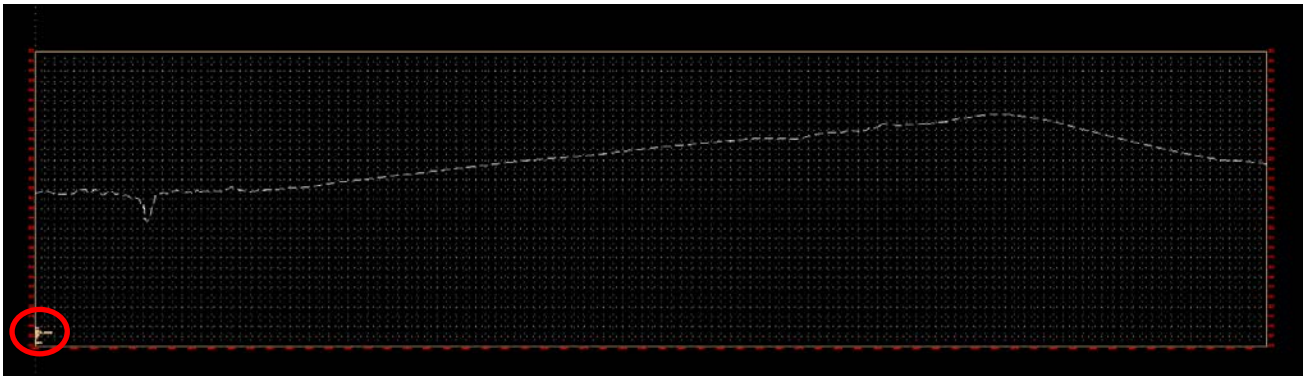
3) When all control values have been set, click on the Draw Profile Grid command button.

You are prompted to Data Point at Profile Origin. The profile grid range is shown dynamically.

NOTE:
If the profile coverage is not acceptable, you may give a Reset to stop and adjust the control values.

4) Data point at the reference origin location of the profile area.

Profile with profile grid displayed.



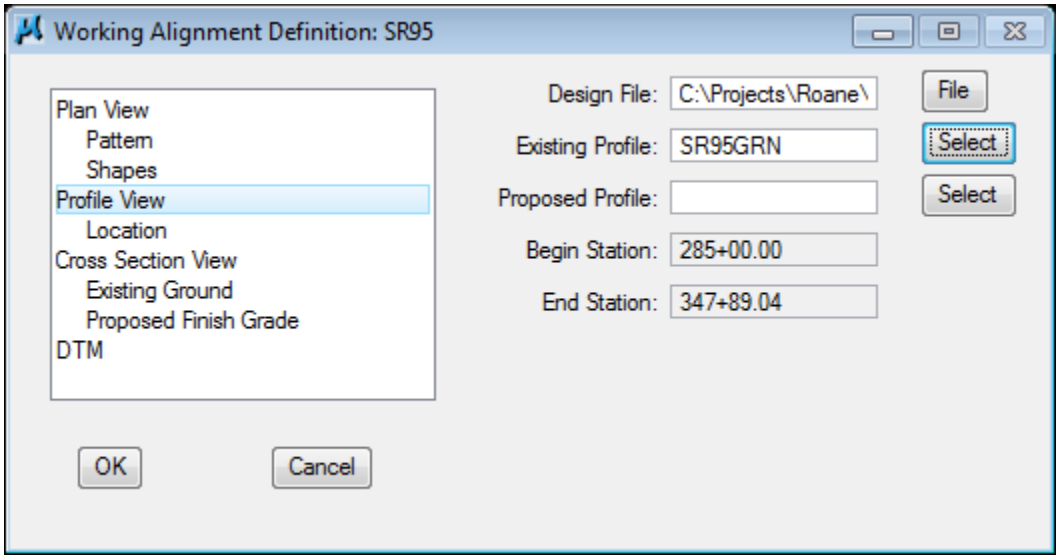
5) Click Cancel in the Draw Profile Grid dialog top close the tool and exit D&C Manager.

IV.) Working Alignment - Define Existing Profile

We are setting the Profile View and Location sections of the Working Alignment Definition in Project Manager.

1) From the Workflow dialog of Project Manager, press the Define button.

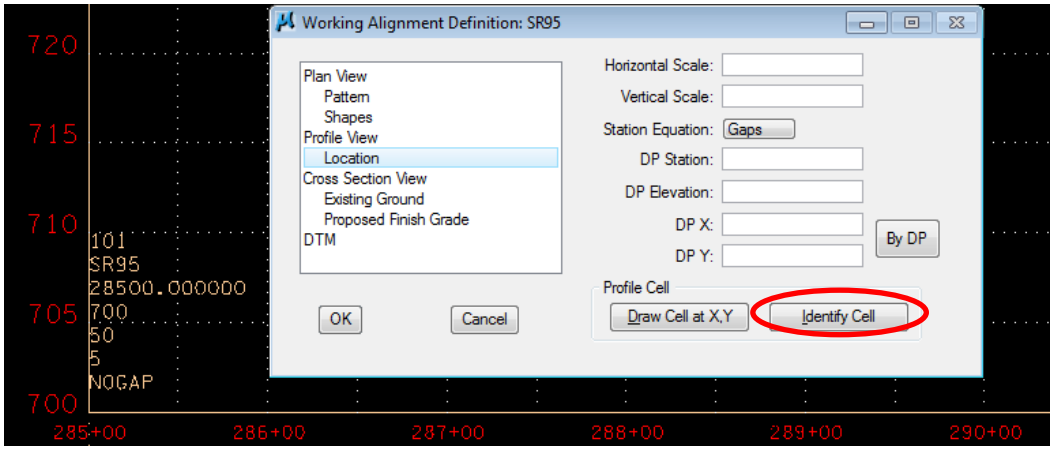
2) Select the Profile View option and populate the dialog as depicted below (the Design File is ROSR95Alignments.dgn).



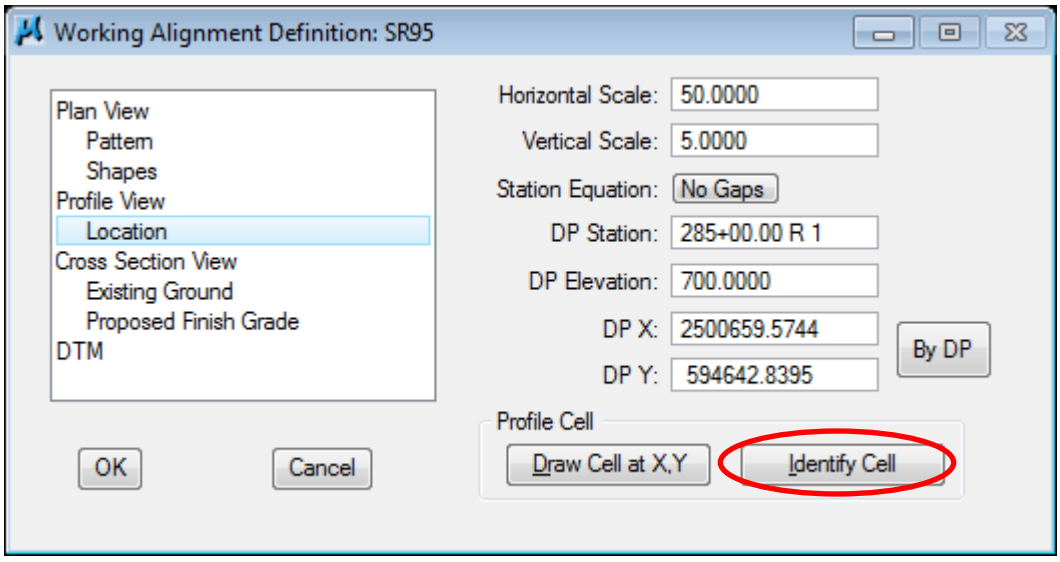
NOTE:
We have not designed the proposed profile; therefore, we will return later to populate this field.

3) Select the Location option and populate the dialog as depicted below. This can all be done automatically by clicking on the Identify Cell button.

Data point anywhere on the GEOPAK profile cell graphics to identify it and data point to accept.



All control values are filled in.



4) Press the OK button to save the updates and close the dialog.