10. Proposed Roadway Tracking

This exercise demonstrates tools for tracking along roadways in the plan, profile and cross section views. The first tool we will look at is Port Viewer which allows tracking along all of these at one time. The Active Chain Control tool is shown which can be used for "on the fly" tracking to quickly check stations, offsets, elevations, etc. Tacking on cross sections using the Cross Section Navigator tool is illustrated. Finally 2 of our TDOT Roadway Design Division tools are shown as alternatives that can be used for tracking in plan and profile.

NOTE:
For tracking on existing or proposed digital terrain model TIN files use the Height tool as illustrated in chapter 3.

I.) Port Viewer

1) Open the MicroStation file

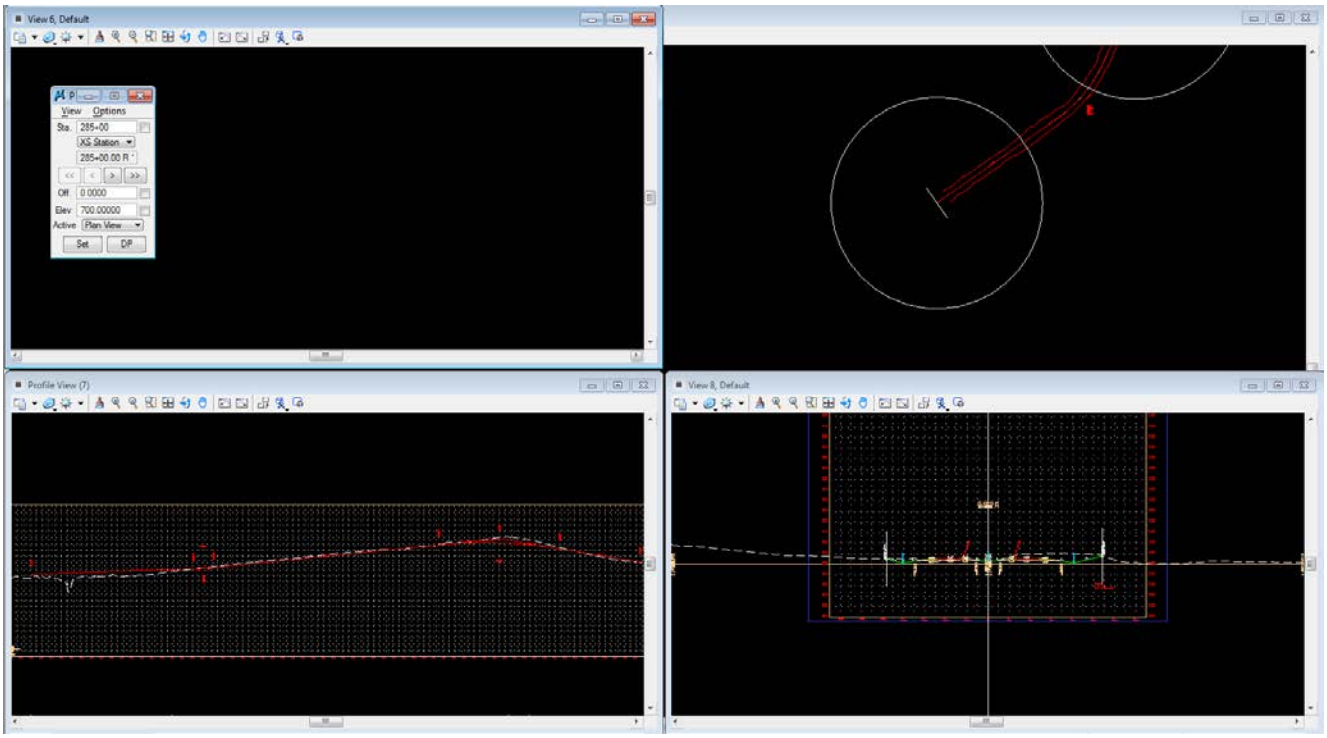
C:\Projects\Roane\SR95PoplarCr\ROSR95MainlineXSections.dgn

Access Project Manager

2) Click on the Port Viewer button at the upper right of the dialog.

3) The Port Viewer dialog is displayed as shown below. Views are dynamically turned on to display plan, profile and cross sections from the definitions established in the working alignment.

Depending on how view 1 is set, you may need to go to the drop down option Window → Tile**.**

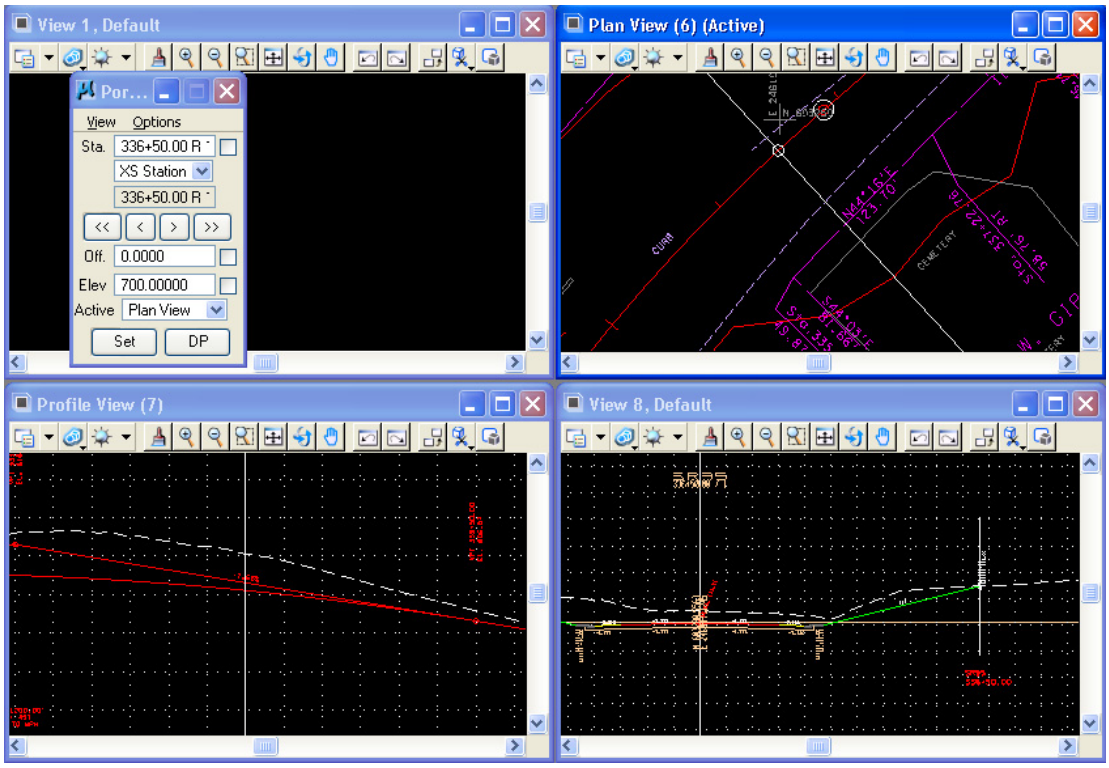


NOTE:
Port Viewer attaches all associated DGN graphics files as references to each other to perform its functions.

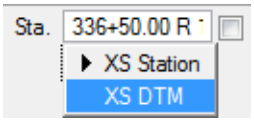
4) Use the VCR buttons in the Port Viewer dialog to scroll through the design, profile and cross sections. Views may need to be adjusted by zooming etc. for best view.

5) Go to MicroStation's menu bar option File → References and turn on the Survey topo (RO095-01Survey.dgn) reference file display.

Keyin station 336+50 and all views jump to that location. Notice that on the right design produced slopes encroach on a cemetery. In an up-coming exercise, we will update our profile to fix this problem.

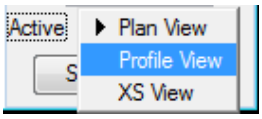


6) Change the Cross Section Option to XS DTM.



7) Press the Set button then move your cursor in the Plan View. As you move the cursor around you will be able to preview the dtm/ground information in the XS View.

8) Set the Active view to Profile View and click the Set button again. Now, you can pan the cursor in the Profile view and see the dynamic tracking in the other views.



9) Close the Port Viewer dialog by clicking on the X in the upper right corner.

10) Go back into your C:\Projects\Roane\SR95PoplarCr\ROSR95Proposed.dgn change the slope lines to the default level. We will be rerunning proposed cross sections and do not want two sets of slope lines on the same level.

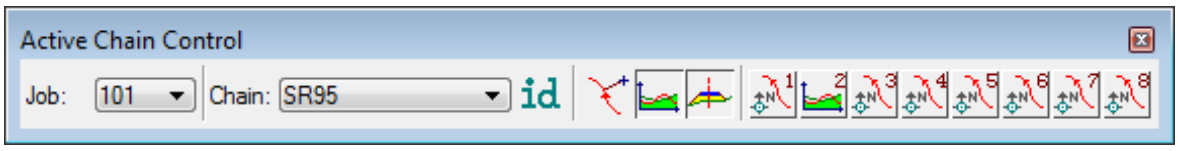
II.) Active Chain Control

1) Open the MicroStation file

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

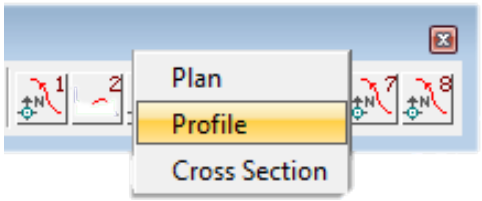
2) From the MicroStation menu bar click on the drop down option Applications → GEOPAK → ROAD → Active Chain Control or from the main tasks when using Civil Workflows click on the Active Chain Control icon.

The Active Chain Control bar is opened.



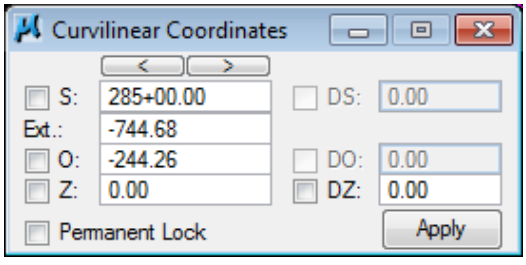
3) Set the Chain to SR95 from the chain list.

4) The icons on the right numbered 1 through 8 represent the 8 MicroStation views and what type of tracking they are set for. By default they are set to Plan (chain) tracking. If you right click on them you get the option to change setting to Plan, Profile or Cross section tracking.

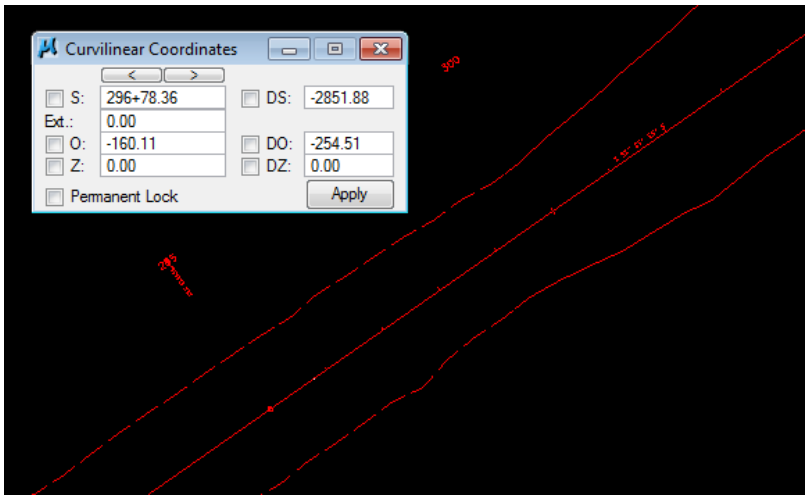


Right click on the icon for View 2 and set it to Profile.

5) Click on the Curvilinear Coordinates icon to open the tracking dialog.

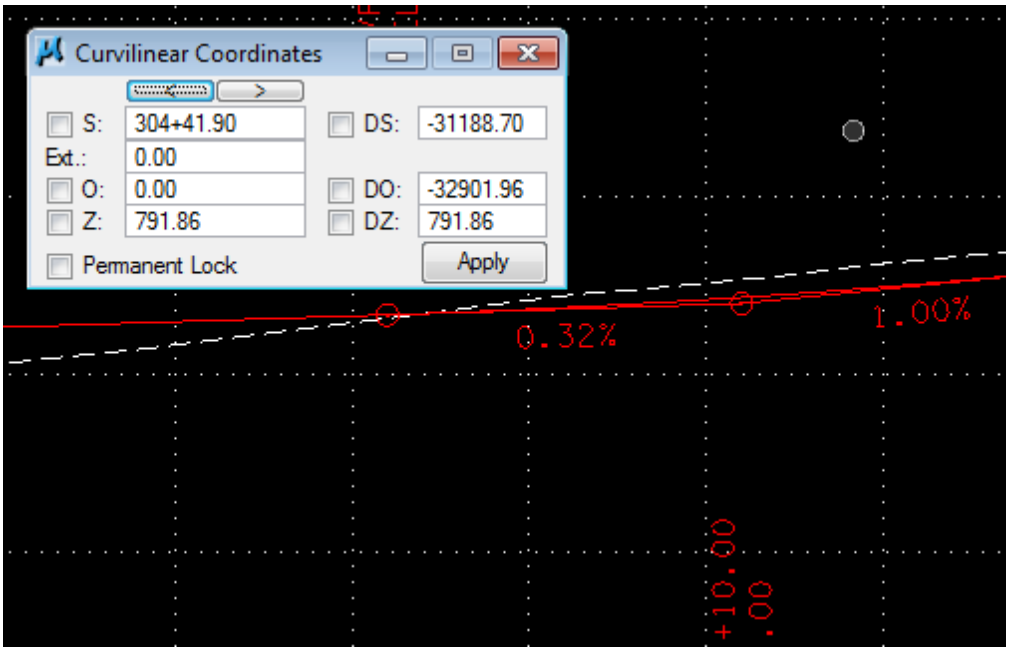


6) Move your cursor around in view 1. Notice that you are tracking station and offset along the alignment. You can click the lock toggle to the left of either value and only track the other,



7) Turn on view 2. The profile should be showing there already. When we set it to profile tracking, it automatically looked for the GEOPAK profile cell for chain SR95 and used it to set the view.

8) Move your cursor around in view 2. Notice that you are tracking station and elevation in this view.



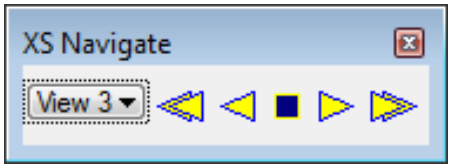
You can actually move from view 1 to 2 and see the tracking change from Plan to Profile.

9) Open the MicroStation file

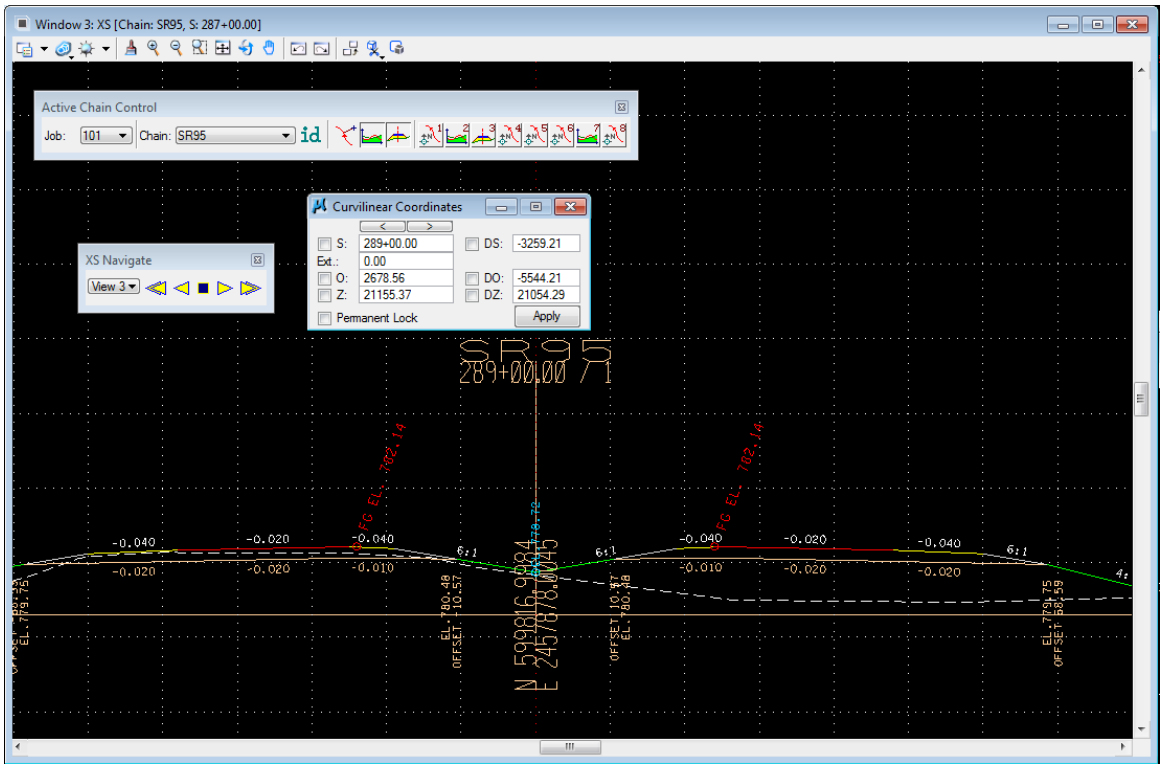
C:\Projects\Roane\SR95PoplarCr\ROSR95MainlineXSections.dgn

10) Right click on the icon for View 3 and set it to Cross Section**.** Open view 3 in MicroStation.

11) Right click on the icon for View 3 again and select the new option now available, Cross Section Navigate.

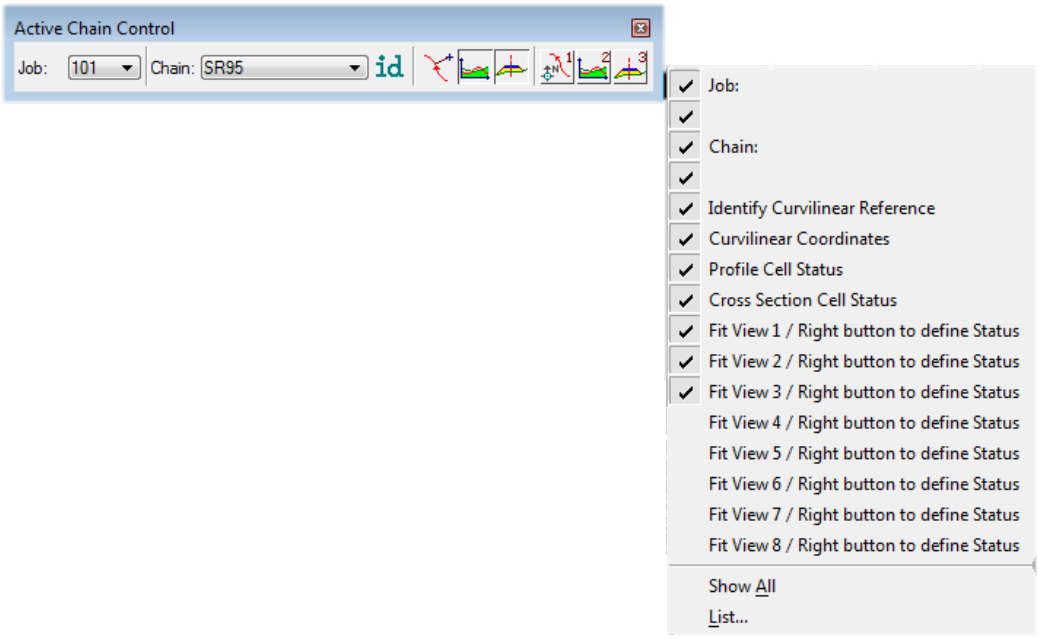


12) Move the XS Navigate tool into view 3, use it to navigate to a given station and then move your cursor around in the view. The offset and elevations are tracked in the Curvilinear Coordinates dialog.



NOTE:
This part of the Active Chain Control tool can be a little cumbersome to use. You can actually use a function on the regular Cross Section Navigator tool to get the same results which is illustrated in the next section of this exercise.

13) If you right click on the Active Chain Control tool away from the icons, you can control what icons are shown on the bar. Right click and turn off the icons for views 4-8.



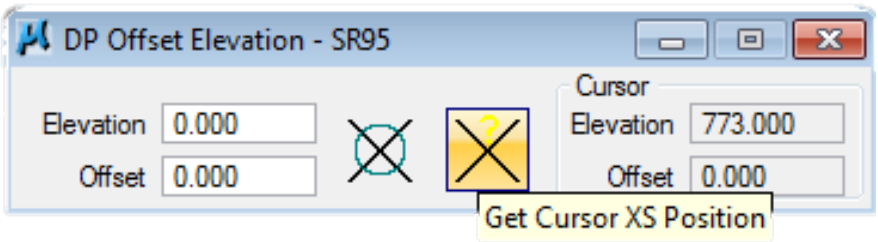
14) Close Active Chain Control by clicking the ✘ on the upper right of the bar.

III.) Tracking with Cross Section Navigator

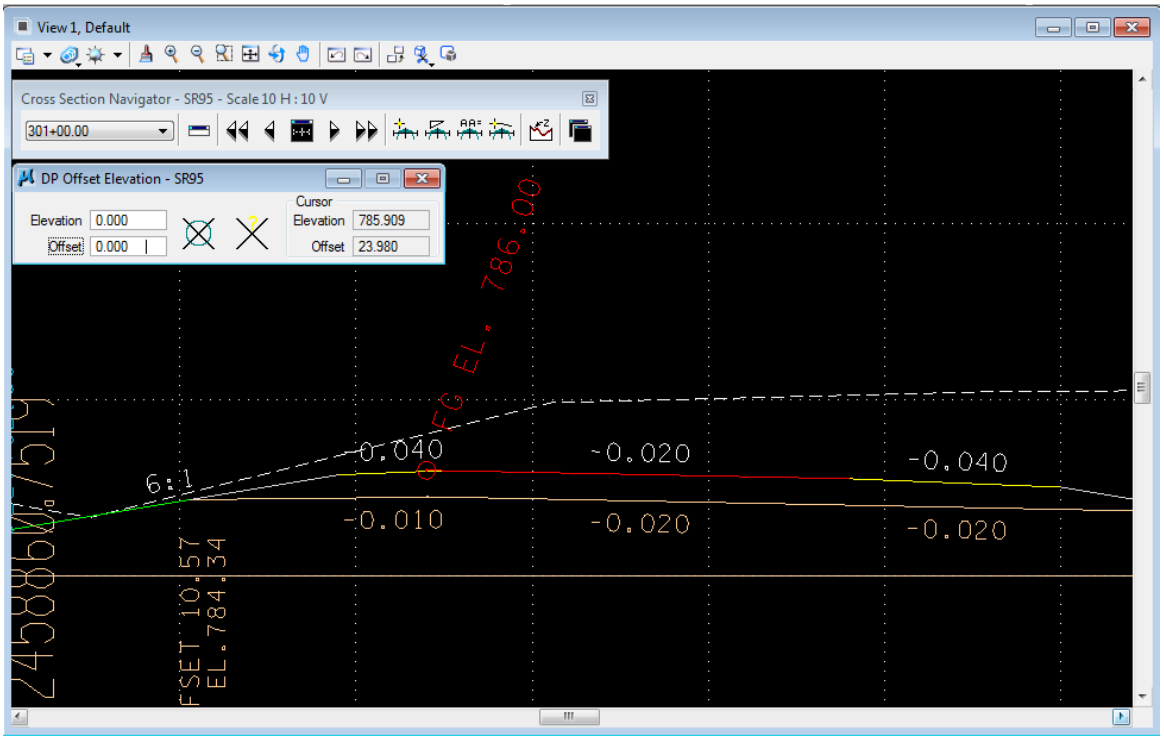
1) Select the Cross Section Navigator tool from the Road Tools task group. Navigate to one our proposed cross sections.

On the Navigator tool bar to the right of the navigate arrows are several drawing tools. Click on the DP Offset Elevation icon.

2) This tool is set up to send a data point for you based on elevation and offset values. You can enter those but you can also pick the cursor option. Click on the Get Cursor XS Position icon.



3) Move your cursor around in the view. The Elevation and Offset readings are displayed in the tool.

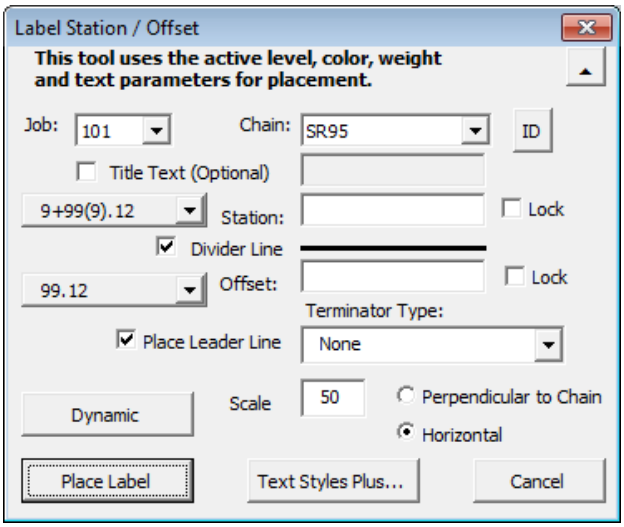


IV.) Tracking with the Label Station/Offset Tool

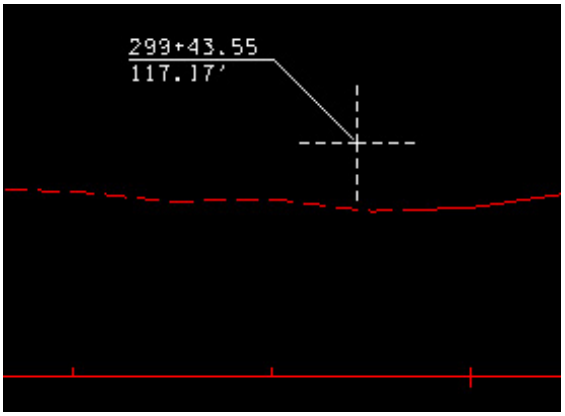
Although the T.D.O.T. Roadway Design Division Label Station/Offset tool is set up primarily to label stations and offsets in the plans, it can be used as just a tracking tool for these values as shown below.

1) In D&C manager activate Drafting Standards → Tools → Labeling → StaOffsetLabel or with the T.D.O.T. Roadway Design Division interface choose drop down option TDOT → Tools → Place Station Offset Label. The Label Station/Offset dialog appears.

All Geopak jobs found within the current active folder are listed in the Job drop down box with its chains listed in the Chain drop down box. If this tool has been used previously, the job number and chain name are remembered and will be used to populate those fields. Set those values as needed.



2) Click the Dynamic button to initiate the dynamic mode. Move the cursor off the dialog and a temporary label will follow the cursor with the station and offset values changing dynamically on the screen and within the dialog's text boxes as the cursor moves along the specified chain.

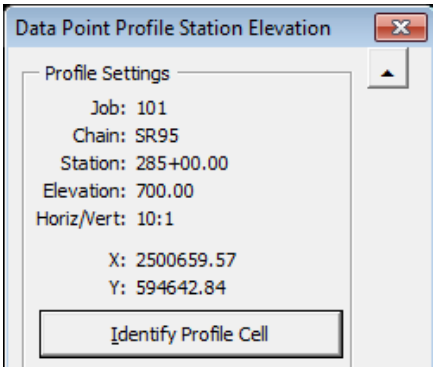


V.) Tracking with the DP Profile Station Elevation Tool

The T.D.O.T. Roadway Design Division DP Profile Station Elevation tool is set up to send data points to the profile based on station & elevation or just to label stations and elevation there. It also includes a dynamic function so it can be used as just a tracking tool for these values as shown below.

1) In D&C manager activate Drafting Standards → Tools → Labeling → DP Sta Elev or with the T.D.O.T. Roadway Design Division interface choose drop down option TDOT → Profiles → DP Profile Sta Elev w/Tracking. The Data Point Profile Station Elevation dialog appears.

Before use, the GEOPAK profile cell must be identified. Click the Identify Profile Cell button and select any part of the desired profile cell.



2) Click the Dynamic Tracking button to initiate the dynamic mode. Move the cursor off the dialog and a temporary label will follow the cursor with the station and elevation values changing dynamically on the screen and within the dialog's text boxes as the cursor moves along the profile.