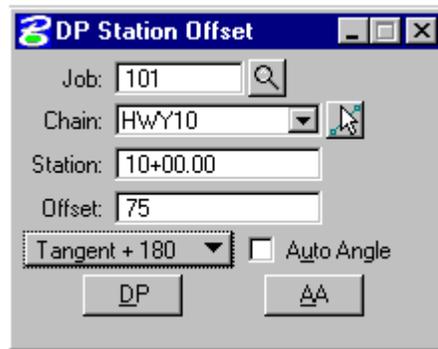


DP Station/Offset – Draw Transition

DP Station/Offset



The **DP Station/Offset** command works in conjunction with Microstation commands and the D&C Manager. It can be used as the *data point* for any Microstation command. **DP Station/Offset** provides precision placement of elements based on a station and offset of a stored chain. Uses for this command include precision placement of elements and window functions.



The **DP Station/Offset** dialog, as shown below, permits the issuance of any MicroStation data point in terms of a station and offset relative to a GEOPAK coordinate geometry chain. Once invoked, it can be utilized in concert with generic MicroStation commands. The **DP Station/Offset** dialog can be used in lieu of a data point in any MicroStation command which requires a data point. Place element and windowing functions are particularly useful applications of the DP Station/Offset tool.

Other uses for the **DP Station/Offset** include text and cell placement. It might be desirable to draw a cell representing such features as lighting standards and drainage structures relative to (i.e., perpendicular or radial) the chain. The bottom part of the **DP Station/Offset** provides for these options.

The most obvious use of the **DP Station/Offset** dialog is the precision placement of lines, curves, cells, etc. for plan view features which are located by station and offset measurements from a previously stored chain. This could include guard rail, fencing, walls, right of way features, sidewalks... the list is endless.

DP Station/Offset – Draw Transition

Job	Job number where the reference chain is stored.
Chain	Reference Chain. Reference Chain. Select from list or click Identify Chain and graphically define.
Station	If there are station equations in the chain, regions are not required unless the given station is located in two regions. The syntax for regions is 45+56 r 2 with a minimum of one space between the station and the r and a minimum of one space between the r and the region number.
Offset	Utilizing standard surveying convention, a positive offset (i.e. 45.6) would be to the right, while a negative offset (i.e. -92) would be to the left of the chain oriented towards the direction of stationing. Note the plus (+) sign is not required, as GEOPAK assumes a positive offset if no sign is given.
Tangent+180, Radial + 180, Tangent, Radial	All orientations are relative to the direction of stationing. To use these options, select the preferred option (such as Radial), then click AA. GEOPAK displays the Active Angle radial to the chain at the designated station in the MicroStation Command Window and sets the Active Angle. To place a lighting standard, set the active cell appropriately, and then, choose the Place Cell command. Key in the correct station and offset into the dialog, and then click DP. The text is placed in the MicroStation file at the desired location and orientation.
AA	When it is necessary to place elements along an alignment at one of the desired options, (i.e. radial), it is cumbersome to keep clicking AA to set the Active Angle. In this case, toggle on Auto Angle. When the toggle is on, redundant selection of AA is unnecessary as GEOPAK changes the active angle automatically every time a new station and offset is keyed in.
DP	Commence processing.

To Place a Line with **DP Station/Offset**

Select the generic MicroStation Place Line command.

Fill in the dialog above with the correct information for the initial point.

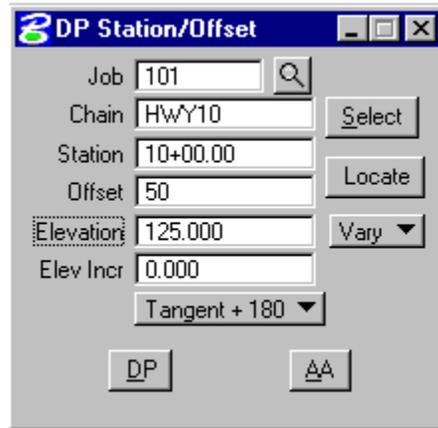
Click DP. GEOPAK now computes the xy coordinates of the station/offset value and uses those coordinates as the first point for the line. Note the movement of the cursor denotes the position of the **DP Station/Offset** as the beginning of the line.

Fill in the dialog above with the correct information for the initial point.

DP Station/Offset – Draw Transition

Click DP. The line is placed.

DP Station Offset in a 3D File



The DP Station / Offset tool is also supported within a MicroStation 3D file, with two elevation parameters.

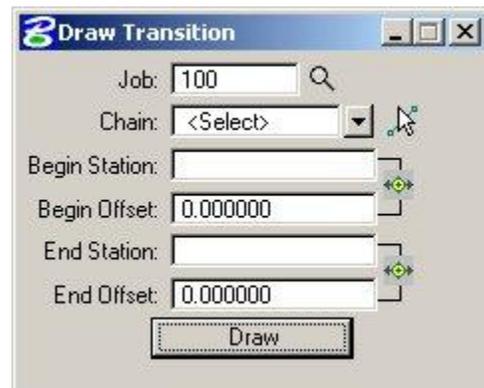
The Elevation option supports Hold or Vary. When the Hold option is utilized, the user manually enters an Elevation as the Z coordinate. When the Vary option is utilized, 3D surface elements are required, i.e., GEOPAK B-spline surfaces or graphic triangles. GEOPAK locates the specified station / offset, then determines the Z value from the surfaces. The Elevation Incr is the additional elevation or Z value added to the Elevation. For example, if the Elevation is 945.00 and the Elev Incr is 100, the Z value utilized in the DP Station / Offset tool is 1045.00 Note, a negative Elev Incr value is supported.

2.1 Draw Transition



Draw Transition will draw a line/curve based on a beginning station/offset and an ending station/offset relative to a selected chain. Use of this command includes turn lanes, mail box widening and lane transitions.

Note: Elements placed with **Draw Transition** will have Microstation element type **curve** when the beginning and ending offsets are different and will have Microstation element type **line** and/or **arc** when the beginning and ending offsets are the same.



DP Station/Offset – Draw Transition

The **Draw Transition** dialog enables the user to utilize pairs of station / offsets to draw transitions. Of course, one use is the placement of turn lanes, acceleration lanes, etc. However, if the offset is set to the same value for the beginning and ending of the transition, GEOPAK draws parallel to the chain. This is an excellent procedure to draw lane lines, edge of pavement, curb lines, etc. from the beginning to end of chain in one command.

Job	Job number where the reference chain is stored.
Chain	Reference Chain. Select from list or click Identify Chain and graphically define.
Begin Station, End Station	If there are station equations in the chain, regions are not required unless the given station is located in two regions. The syntax for regions is 45+56 r 2 with a minimum of one space between the station and the r and a minimum of one space between the r and the region number. Note the order of station does not matter, as long as the station and associated offset are paired (i.e., don't use the beginning station with the ending offset.) The Begin Station can be higher in stationing than the End Station.
Begin Offset End Offset	Utilizing standard surveying convention, a positive offset (i.e. 45.6) would be to the right, while a negative offset (i.e. -92) would be to the left of the chain oriented towards the direction of stationing. Note the plus (+) sign is not required, as GEOPAK assumes a positive offset if no sign is given.
Draw	Commence processing.

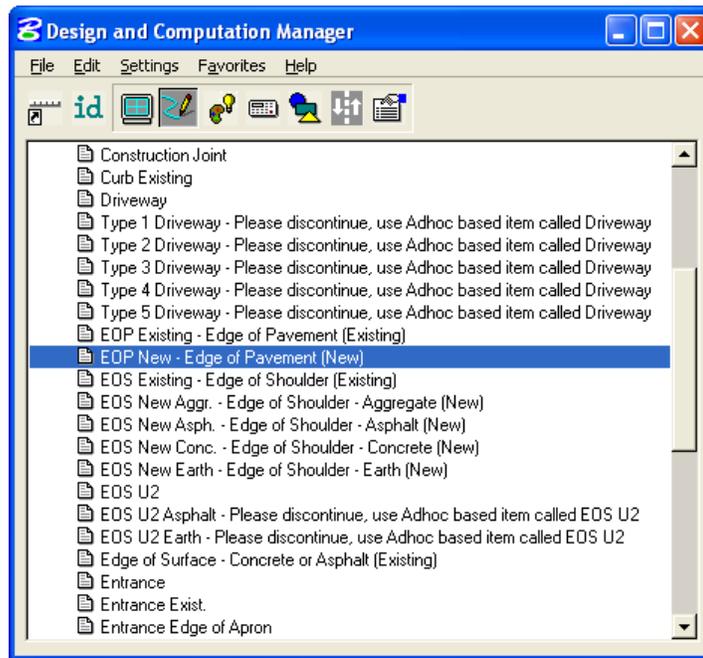
DP Station/Offset – Draw Transition

1. Open the MicroStation file **T:\de-proj\Carter\J9P0359D\data\ plan_Route63-Road1.dgn**.

2. Based on the typical section for the outer road the offsets for the edge of pavement are –12 and 12. Use the **Draw Transition** tool to create the edges of pavement for **ROAD1** with the following parameters.

Use the **Design and Computation Manager** item:

Design Standards\Roadway\EOP New – Edge of Pavement (New).



Be sure that at least the **Place Influence** is turned on. The **New Element Only** toggle is optional.



Use the following settings in the Draw Transition Tool:

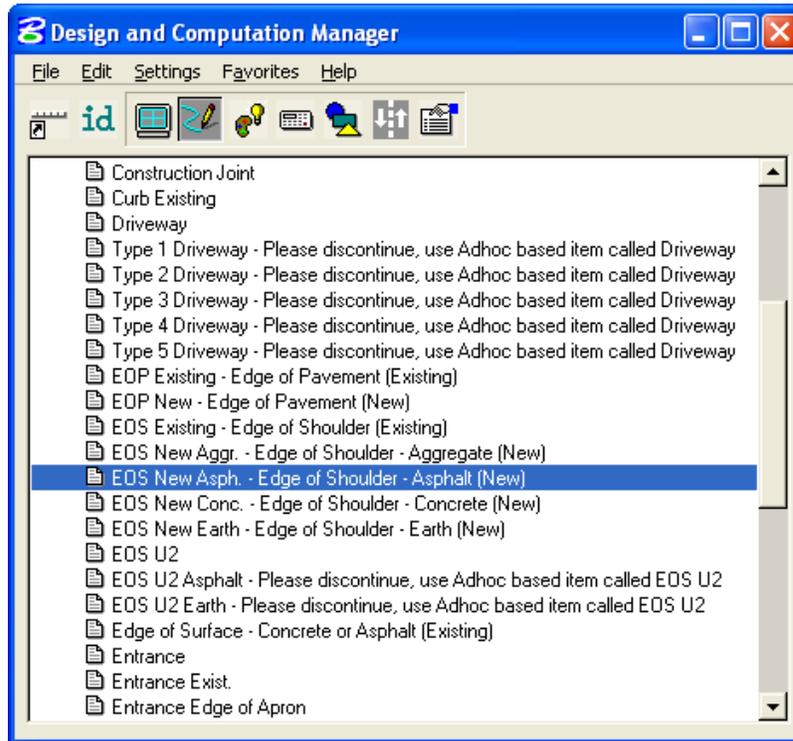
<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
Start of Chain	-12	End of Chain	-12
Start of Chain	12	End of Chain	12

DP Station/Offset – Draw Transition

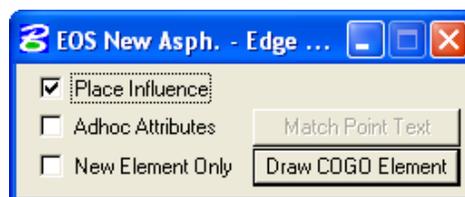
- Use the **Draw Transition** tool to create the edges of shoulder for **ROAD1** with the following parameters.

Use the **Design and Computation Manager** item:

Design Standards\Roadway\EOS New Asph. – Edge of Shoulder - Asphalt (New).



Be sure that **Place Influence** is turned on.



From the typical section, shoulder exists only from Sta. 25+30.00 to the end of the project. Use the following settings in the Draw Transition Tool:

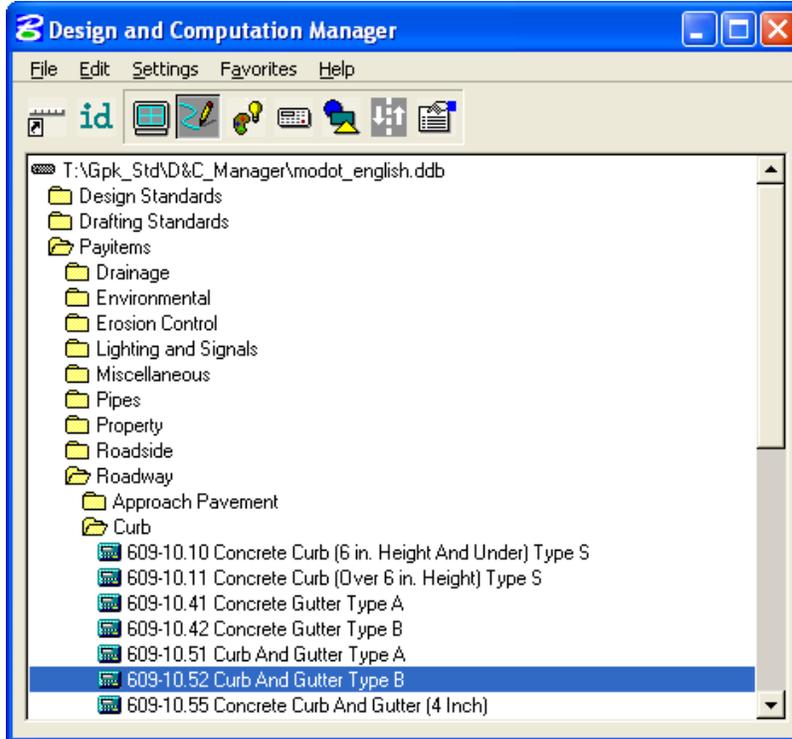
<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
25+30.00	-18	End of Chain	-18
25+30.00	18	End of Chain	18

DP Station/Offset – Draw Transition

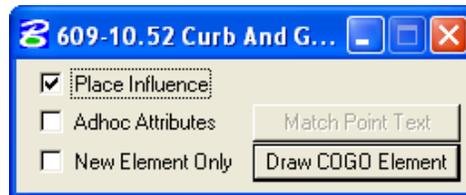
4. Use the **Draw Transition** tool to draw the curb for **ROAD1** with the following parameters.

Use the **Design and Computation Manager** item:

Payitems\Roadway\Curb\609-10.52 Curb And Gutter Type B



Be sure that **Place Influence** is turned on.



Use the following settings in the Draw Transition Tool:

<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
Start of Chain	-15	25+30	-15
Start of Chain	15	25+30	15

Save the changes to the DGN file.