

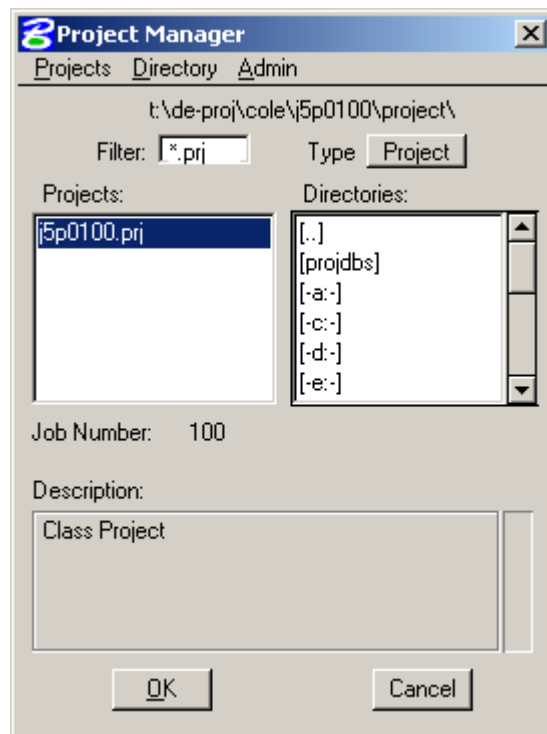
Exercise 8-1 Design & Computation Manager

Exercise 8-1

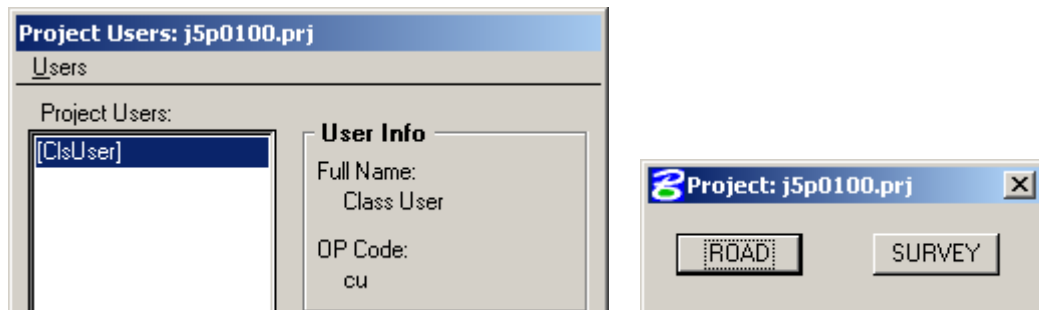
This exercise uses the GEOPAK Design and Computation Manager to plot the plan view items needed for the alignments of Route 50 (Chain ROUTE50) and Big Horn Dr. (Chain BIGHORN). Some of the items are needed for the plan sheets, while other items are needed only to process the proposed cross sections. Items needed for the plan sheets are plotted in the plan.dgn while those items not shown on the plan sheets are plotted in the patterern_shape.dgn. Different files are used for each alignment to get the geometry separate for the proposed cross section runs

1. Open the MicroStation file `t:\de-proj\cole\j5p0100\data\plan_j5p0100.dgn`. Save the file as `t:\de-proj\cole\j5p0100\data\rte50_plan_j5p0100.dgn`.

2. Open the GEOPAK project `t:\de-proj\cole\j5p0100\project\j5p0100.prj` using Job 100.

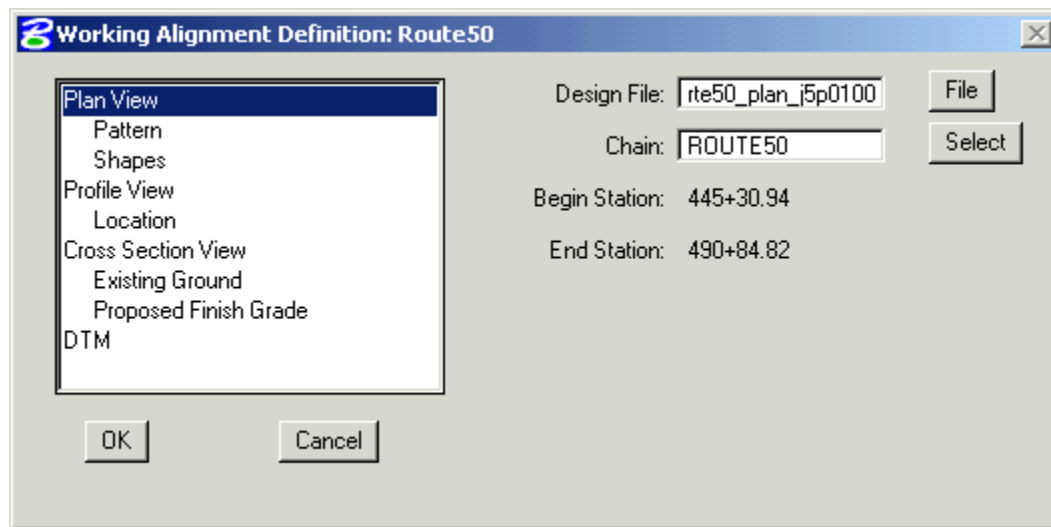


Enter the project as **ClsUser**. Go into **Road**.

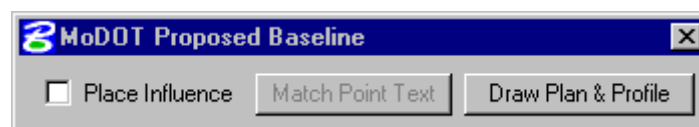
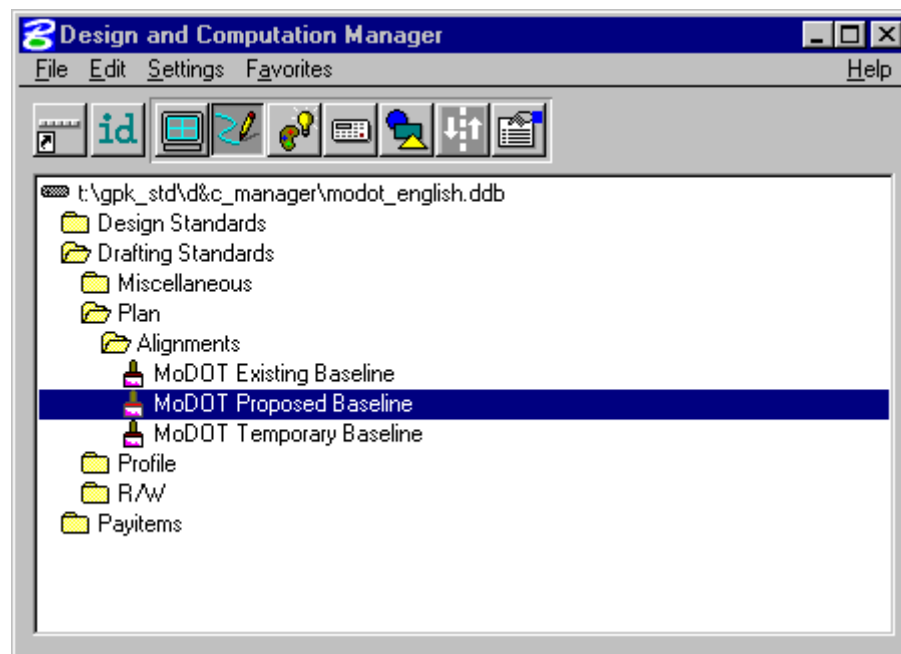


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3. In the **Plan View** section of the **Route50 Working Alignment (Define button)** set the **Design File** to **rte50_plan_j5p0100.dgn**, and the **Chain** to **Route50**.



4. The first step is to plat the alignment. Open the **Design and Computation Manager** dialog. Select the item **English/Drafting Standards/Plan/Alignments/MoDOT Proposed Baseline**. Select the **Draw Plan & Profile** button.



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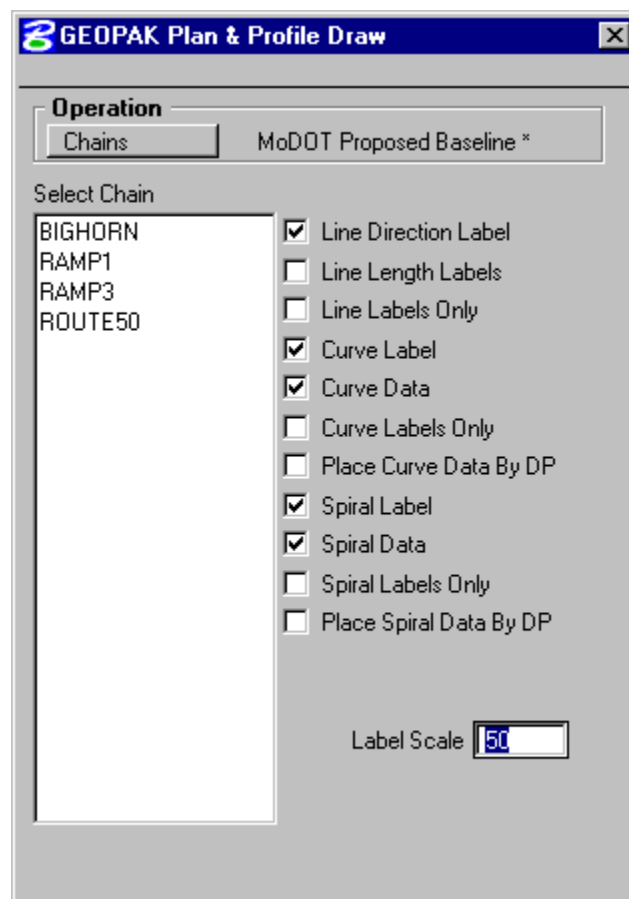
5. Select the **Chain** Operation.

Set the **Labeling Scale** to **50**

Turn on the following options:

Line Direction
Curve Label
Curve Data
Spiral Label
Spiral Data

Select the Chain **Route50**



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6. Select the **Stationing** Operation.

Be sure the **Labeling Scale** is set to **50**.

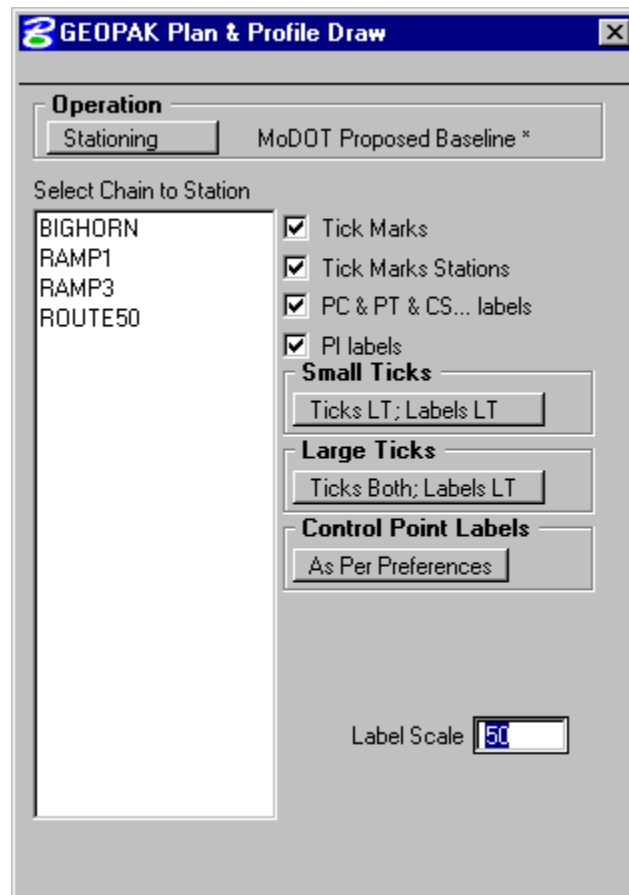
Turn on the following options:

Tick Marks
Tick Mark Stations
PC & PT & CS ... Labels
PI Labels

Set the following options:

Small Ticks: **Ticks LT, Labels LT**
Large Ticks: **Ticks Both, Labels LT**
Control Point Labels: **As Per Preferences**

Select the chain **Route50**.

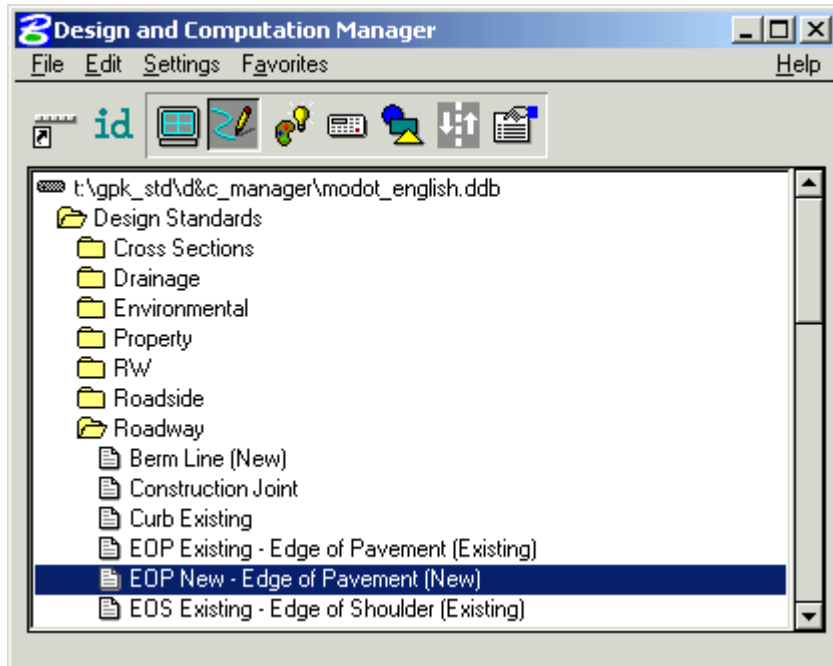


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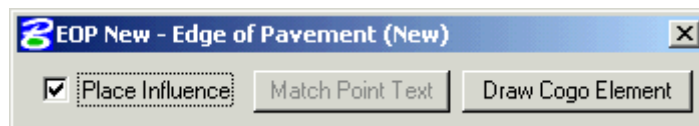
7. Use the **Draw Transition** tool to create the edges of pavement for **Route 50** with the following parameters.

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

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



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



Use the following settings in the Draw Transition Tool:

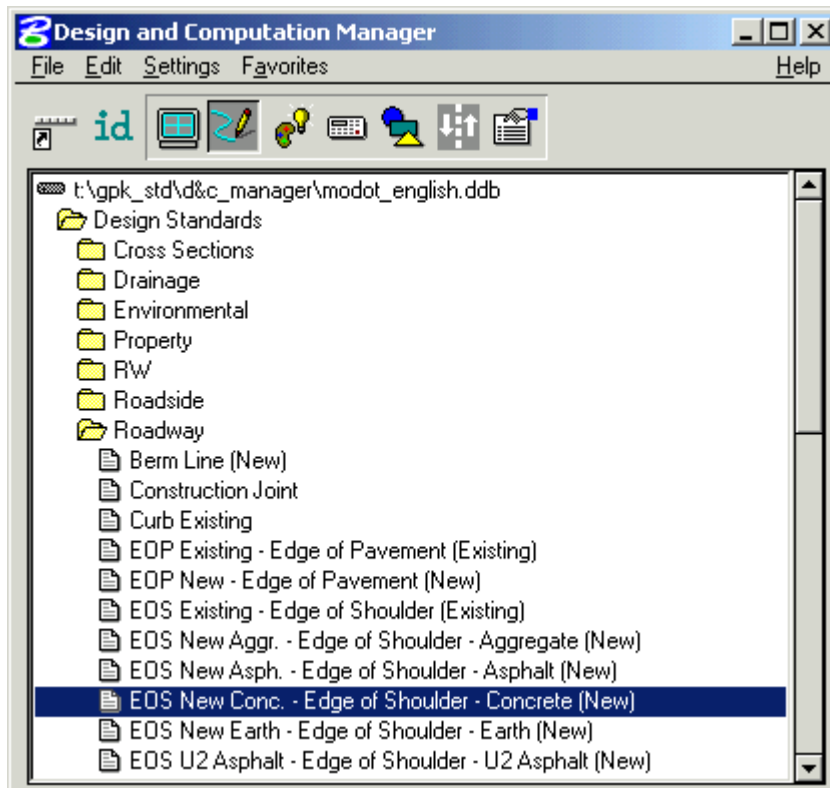
<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
Start of Chain	-56	End of Chain	-56
Start of Chain	-28	End of Chain	-28
Start of Chain	28	End of Chain	28
Start of Chain	56	End of Chain	56

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8. Use the **Draw Transition** tool to create the edges of shoulder for **Route 50** with the following parameters.

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

Design Standards\Roadway\EOS New Conc. – Edge of Shoulder - Concrete (New).



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	-64	End of Chain	-64
Start of Chain	-26	End of Chain	-26
Start of Chain	26	End of Chain	26
Start of Chain	64	End of Chain	64

Save the changes to the DGN file.

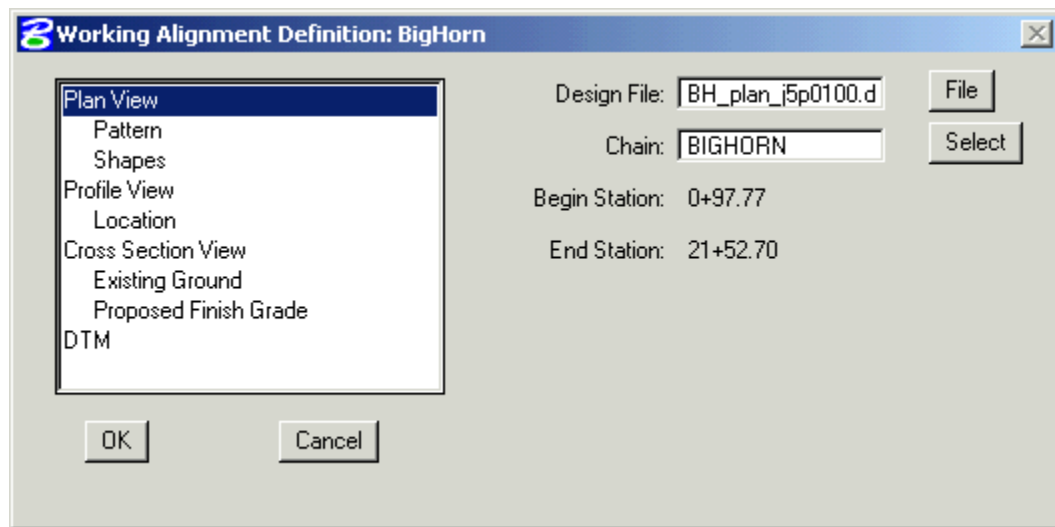
This completes the work for the Route 50 alignment. The cross road is Big Horn Drive, which will also need to have the alignment and other plan view geometry plotted. This will be done in a separate working alignment and set of DGN files.

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9. Open the MicroStation file `t:\de-proj\cole\j5p0100\data\plan_j5p0100.dgn`. Save the file as `t:\de-proj\cole\j5p0100\data\BH_plan_j5p0100.dgn`.

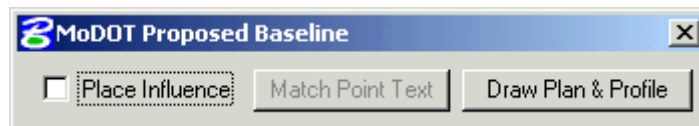
10. Create a working Alignment called BigHorn by copying the Route50 working alignment. (Click on the **Select** button and do a **Run > Copy > Run**.)

In the **Plan View** section of the BigHorn **Working Alignment** set the **Design File** to **BH_plan_j5p0100.dgn**, and the **Chain** to **BIGHORN**.



11. Use **Design and Computation Manager** to plot the **Chain** and **Stationing** for the **BigHorn** alignment using the same settings as were used for Route50.

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

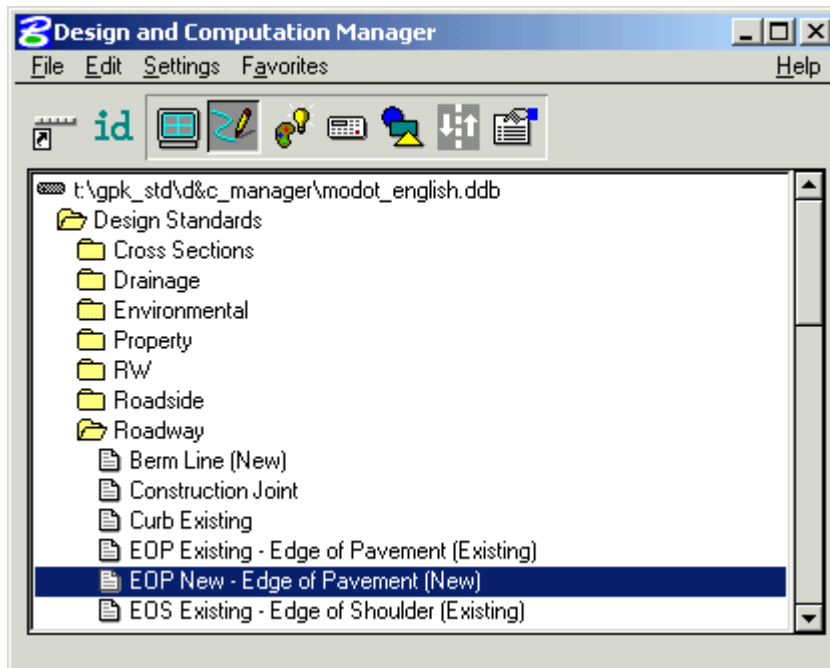


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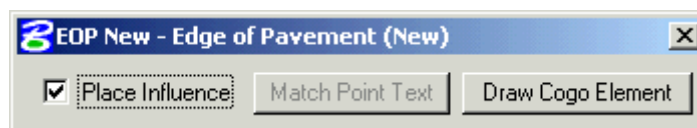
12. Use the **Draw Transition** tool to create the edges of pavement for **BigHorn** with the following parameters.

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

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



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



Use the following settings in the Draw Transition Tool:

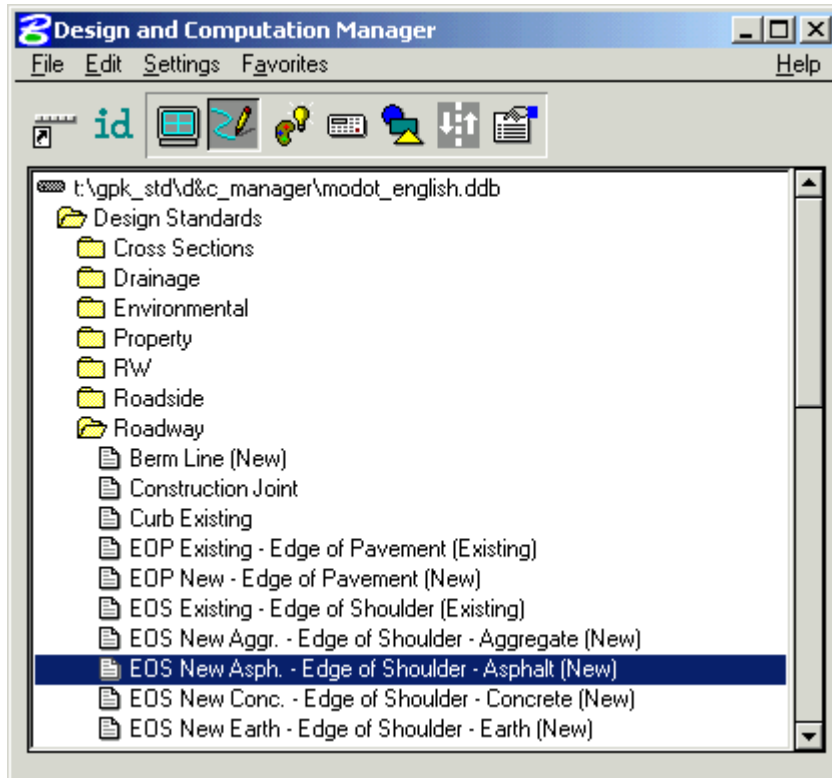
<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
Start of Chain	-16	17+31.61	-16
Start of Chain	16	17+31.61	16
17+31.61	-16	19+31.61	-12
17+31.61	16	19+31.61	12
19+31.61	-12	End of Chain	-12
19+31.61	12	End of Chain	12

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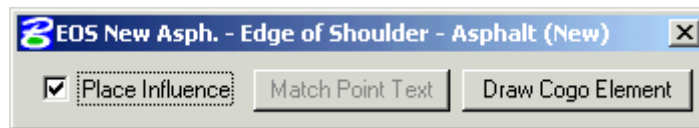
13. Use the **Draw Transition** tool to create the edges of shoulder for **BigHorn** with the following parameters.

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.



Use the following settings in the Draw Transition Tool:

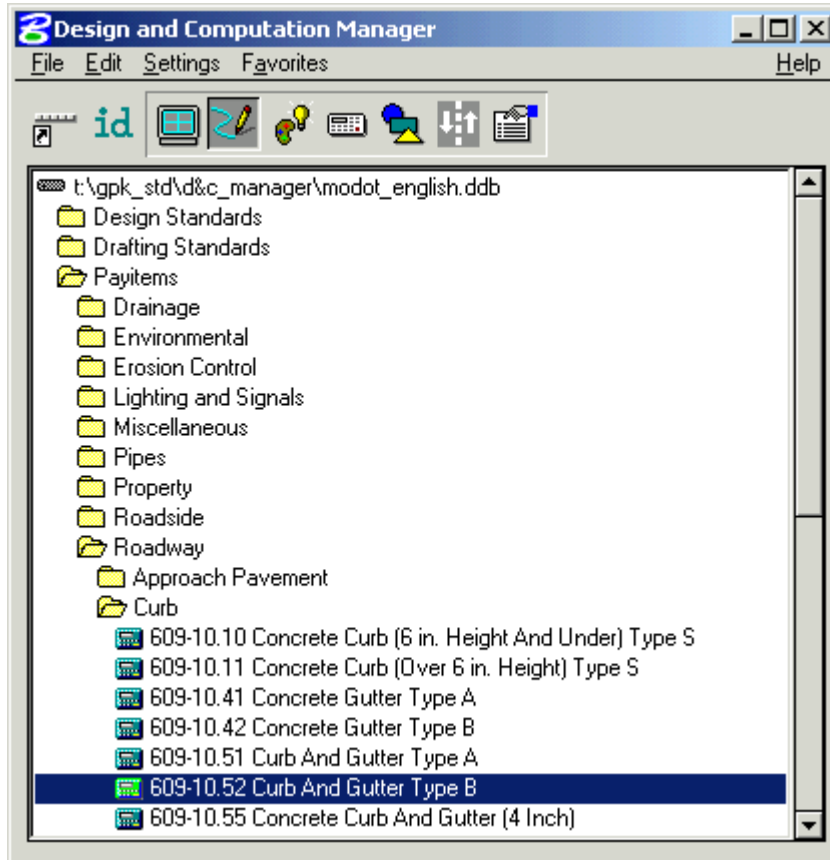
<u>Beginning Station</u>	<u>Beginning Offset</u>	<u>Ending Station</u>	<u>Ending Offset</u>
17+31.61	-24	19+31.61	-20
17+31.61	24	19+31.61	20
19+31.61	-20	End of Chain	-20
19+31.61	20	End of Chain	20

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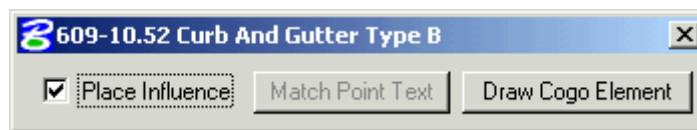
14. Use the **Draw Transition** tool to draw the curb for **BigHorn** with the following parameters.

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	-19	17+31.61	-19
Start of Chain	19	17+31.61	19

Save the changes to the DGN file.

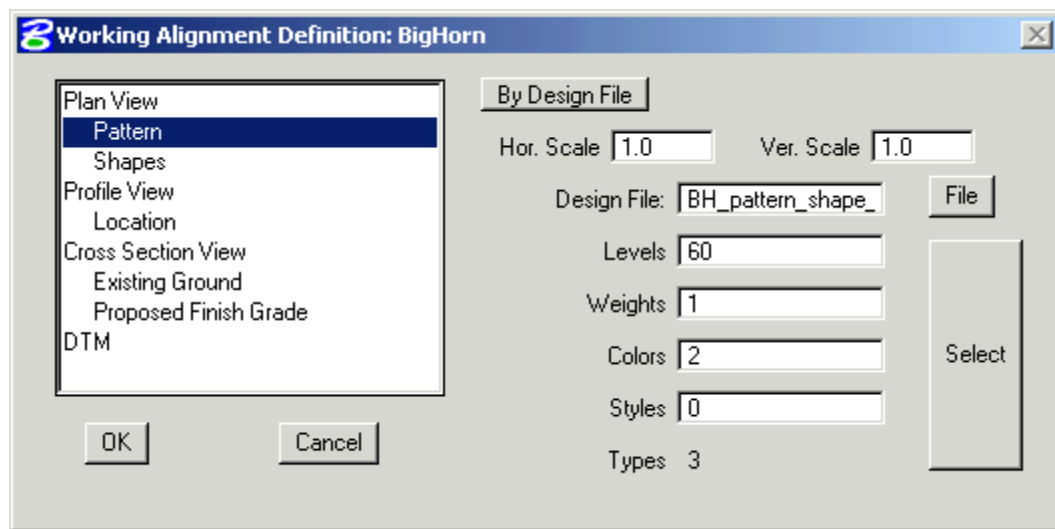
This completes the lines needed to show the roadway in the plan sheets for Big Horn Dr. The typical section for Big Horn Dr. indicates that there is a five-foot berm behind the curb and gutter. One option for indicating the width of the berm is to draw a plan view element at the outside edge of the berm, which is the option that will be used. Since this line is not shown on the plan sheets, it will be plotted in a different file.

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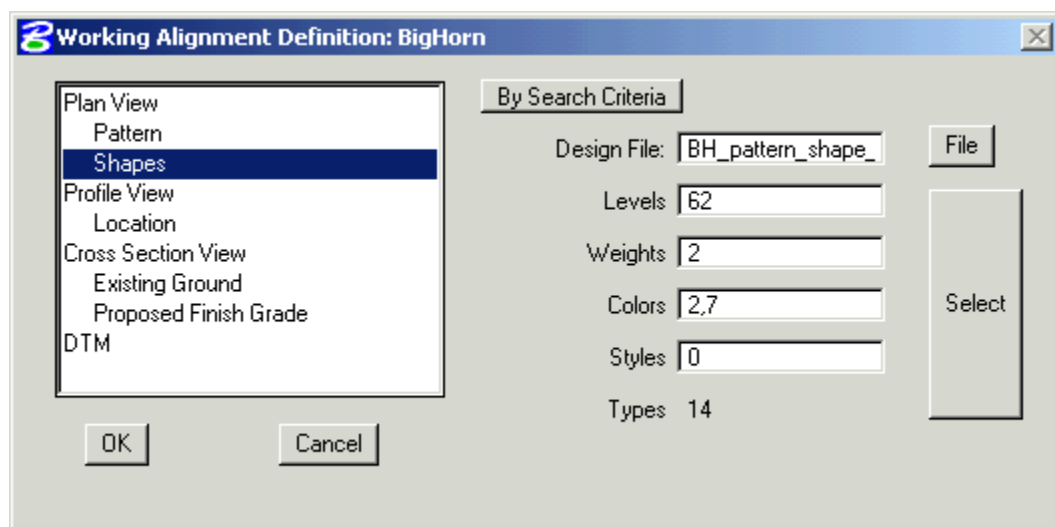
15. Open the MicroStation file **t:\de-proj\cole\j5p0100\data\pattern_shape_j5p0100.dgn**. Save the file as **t:\de-proj\cole\j5p0100\data\BH_pattern_shape_j5p0100.dgn**. This file will be used to plot an needed plan view elements that are not to be shown of the plan sheets, including the edge of berm line, the pattern lines to indicate the location of the cross sections and the shapes used to indicate the pavement cross slope.

16. Enter the working alignment definition for BIGHORN

In the **Pattern** section of the BigHorn **Working Alignment** set the **Design File** to **BH_pattern_shape_j5p0100.dgn**, the **Levels** to **60**, and the **Colors** to **2** (as shown below).



Switch to the **Shapes** section and set the **Design File** to **BH_pattern_shape_j5p0100.dgn**, the **Levels** to **62**, and the **Colors** to **2,7** (as shown below).



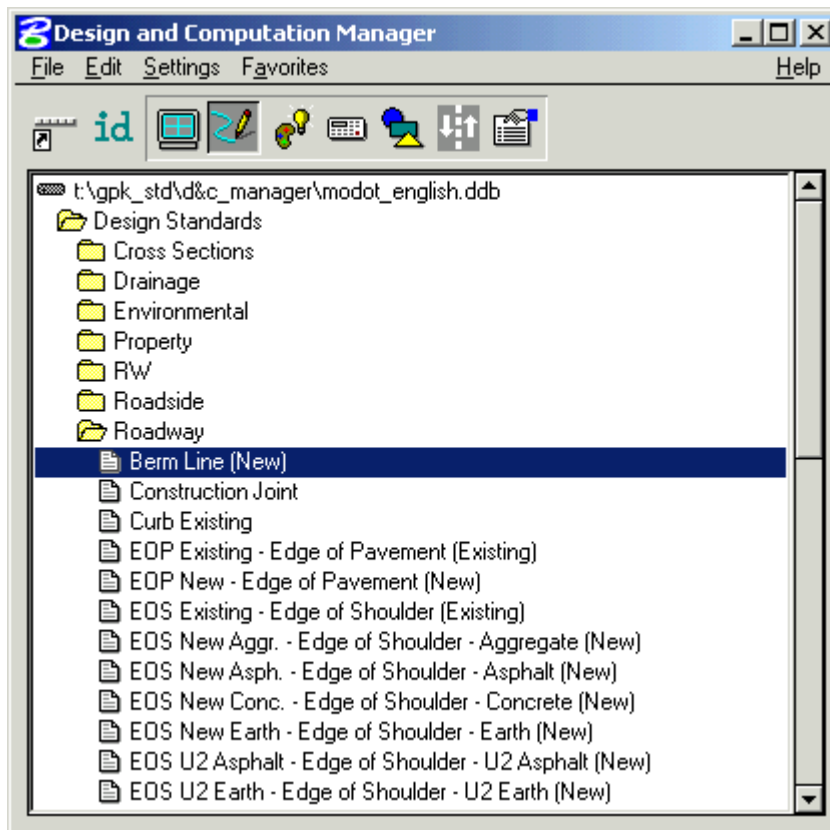
Accept the changes to the alignment definition by clicking OK. These changes will let GEOPAK keep track of which files are being used for the BIGHORN alignment.

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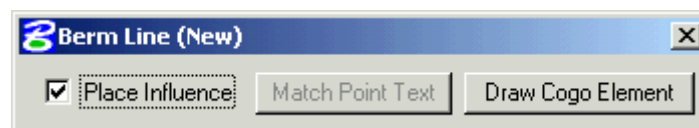
17. Attach **BH_plan_j5p0100.dgn** as a reference file so you can see the plan view geometry for Big Horn Dr. that has already been plotted.

Use the **Draw Transition** tool to draw the edge of berm line behind the curb for **BigHorn** with the following parameters.

Use the **Design and Computation Manager** item:
Design Standards\Roadway\Berm Line (New)



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	-24	17+31.61	-24
Start of Chain	24	17+31.61	24

Save the changes to the DGN file.