Matchline Exercise

1. Open the following MicroStation file:
pwname:\\MoDOT\Documents\District CADD\Design\Bates\j5p0721\data**rte50_pattern_shape.dgn.**

2. In the project j5p0721.prj, copy the working alignment **Route50 to 50-Match**, and select this working alignment.

3. In the **50-Match** Working Alignment definition, under the **Shape section**, **change the colors** to **1,3,5,6.**

   Close the working alignment definition box.

4. Create the matchline locations as follows:

   Use the copy parallel tool to copy the **Ramp1 shoulder 12' right**.

   Use the copy parallel tool to copy the **Ramp1 shoulder 20' right**.

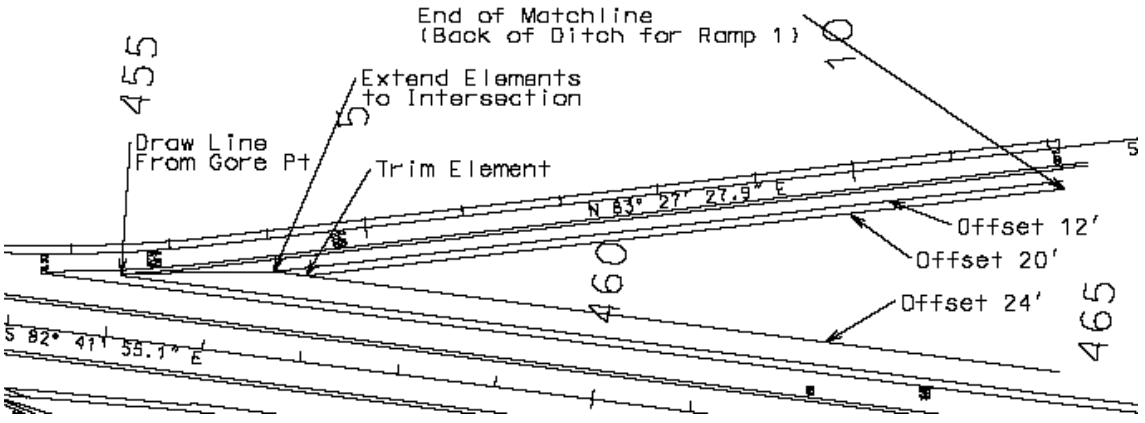
   Use the copy parallel tool to copy the **Route50 shoulder 24' left**.

   Intersect the line that is 12' offset from the ramp shoulder and the line that is offset 24' from the Route50 shoulder.

   Trim the line that is 20' offset from the ramp shoulder to the line that is offset 24' from the Route50 shoulder.

   Open D&C Manager and select the item in **Design Standards\Roadway\Matchline**

   Draw a line from the gore point to the 2 intersected lines and continue to the end of the back of ditch for ramp1 as shown below. You can at this point delete the construction lines used to draw the matchline. **SAVE Microstation File.**



5. From Project Manager select Draw Pattern. Copy the **MoDOT** run to **50-Match**.

6. Create pattern lines for the alignment.

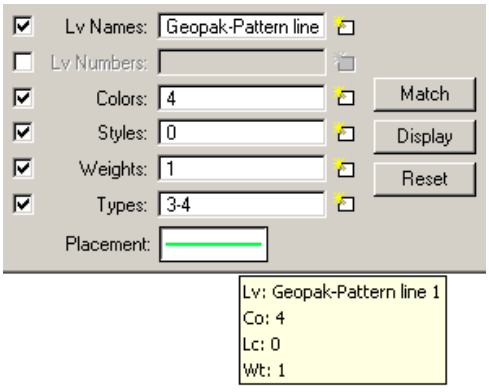
   Job: **100**
   Chain: **Route50**
   Beginning
   Offset LT: **200**
   Station: **455+00**
   Offset RT: **200**
   Ending
   Offset LT: **200**
   Station: **465+00**
   Offset RT: **200**

   Even **100**

7. From the Project Manager, copy the working alignment **Ramp1** to **R1-Match**, and select this working alignment.

8. In the **r1-match** working alignment definition, under the **Shape section**, change the **colors to 4**.

   Under the Pattern section, change the **color to 4**. Also set up the **Placement** dialog as shown below.



   Close the working alignment definition box.

9. From Project Manager select Draw Pattern. Copy the **MoDOT** run to **R1-Match**.

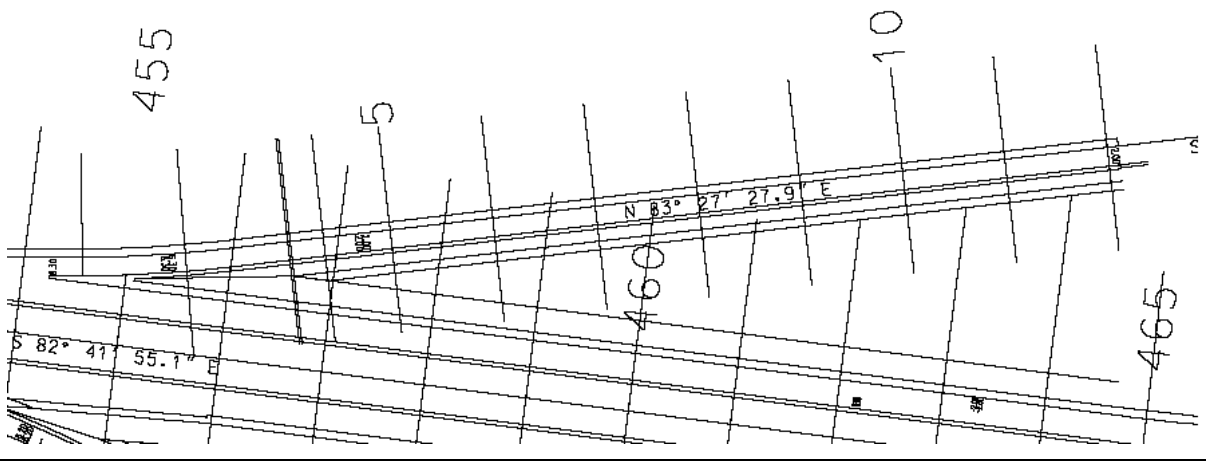
10. Create pattern lines for the alignment.

    Job: **100**
    Chain: **Ramp1**
        Beginning
        Offset LT: **100**
        Station: **3+00**
        Offset RT: **100**
    Ending
        Offset LT: **100**
        Station: **12+00**
        Offset RT: **100**

    Even **100**

11. Create pattern lines at stations **4+02.11** and **4+34.58** for the alignment **Ramp1**. Use the same offsets as specified previously.

12. Trim the first pattern line for Ramp 1 as well as the pattern line at station 455+00 for Route50 and Ramp1 as shown in the drawing.



13. Open the MicroStation file **ramp1_xs_matchline.dgn**.

14. From Project Manager select Existing Ground Cross Sections. Copy the **MoDOT** run to **R1-Match**.

15. Verify the settings on the XS Cells and Surfaces tabs.

16. Cut the existing ground cross sections.

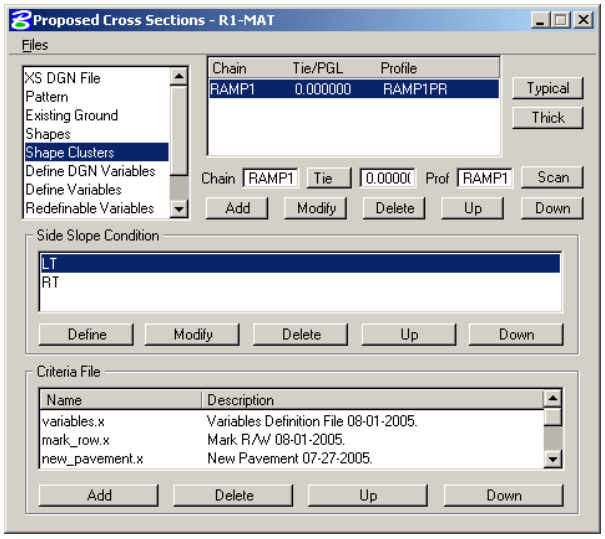
17. In the **R1-Match** working alignment, under the Cross Section View section, change the XS DGN File to **ramp1_xs_matchline.dgn**. Close the working alignment definition box.

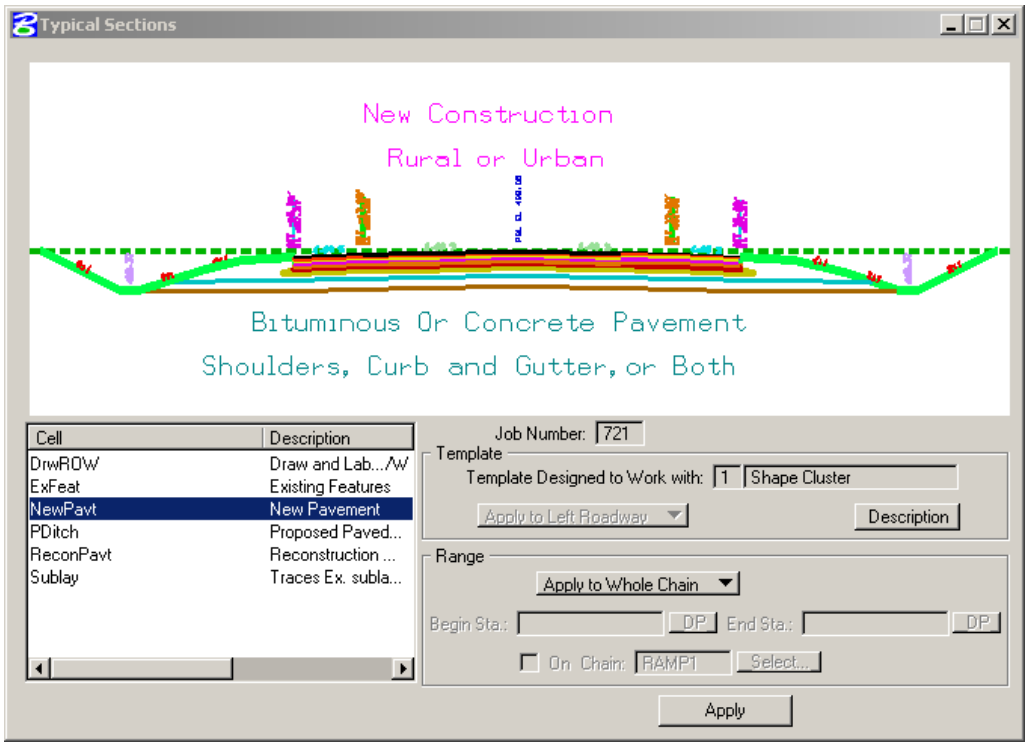
18. Select the Proposed Cross Sections Dialog. Copy the MoDOT run to **R1-Match**.

19. Add the following Shape Clusters.

shape cluster baseline = **RAMP1**
shape cluster profile = **RAMP1PR**
shape cluster tie = **0.000**

Select the **NewPavt - New Pavement** typical and apply to the whole chain. When you're finished, your side slope conditions should look like the dialog to the right ➔.





20. Open Proposed Cross Section run r1-match and set the **Define Variables** as follow:

"PROPOSED PLAN DGN"	Rte50_plan.dgn
" CROSS-SECTION DGN"	ramp1_xs_matchline.dgn
"GEOPAK LINES DGN"	rte50_pattern_shape.dgn
"XS SCALE"	10

Leave the remaining variables set to the defaults.

21. Set the **Redefinable Variables** as follow:

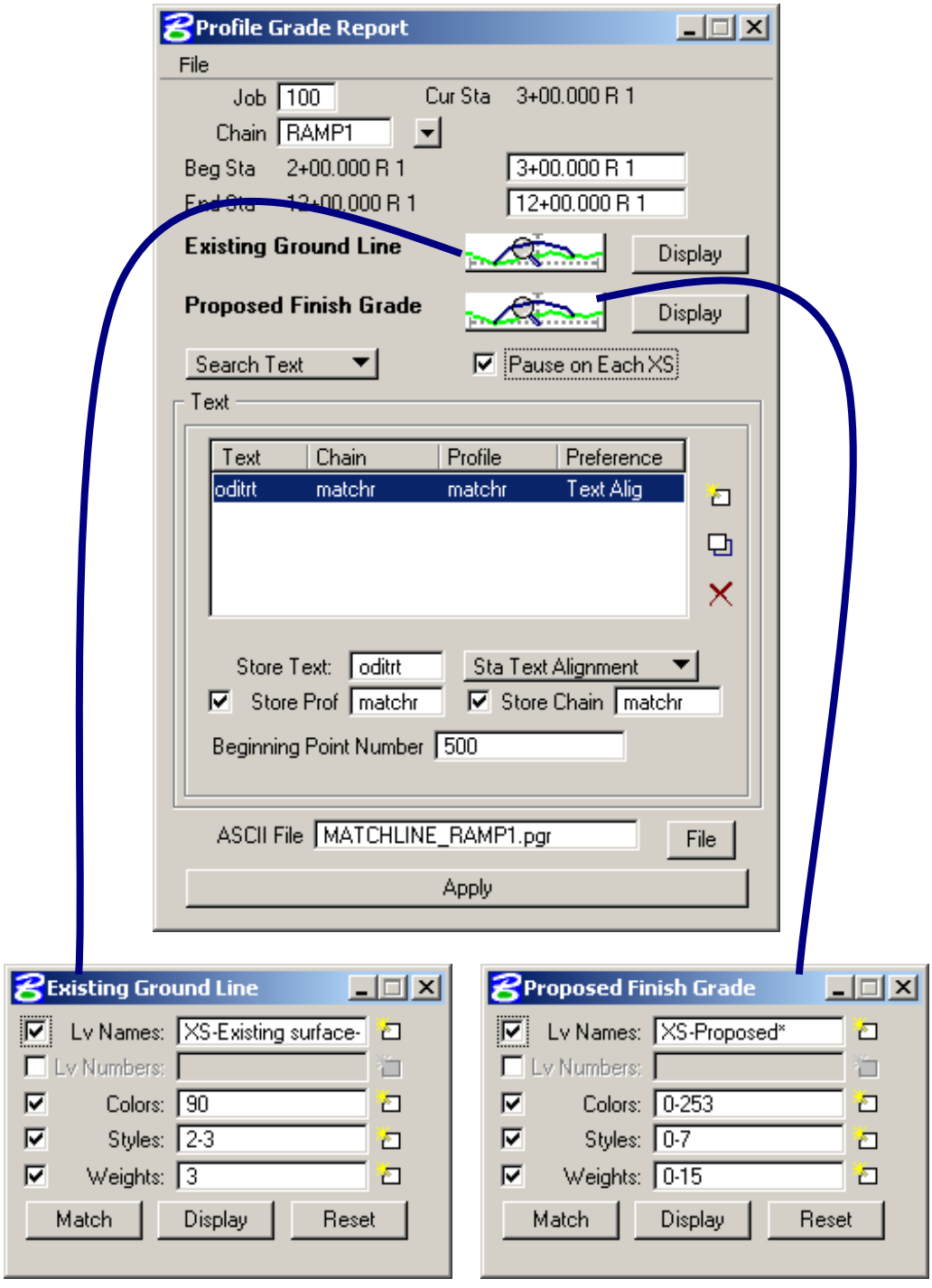
_s_PavementType = **C**
_d_PavementLayer1Thick = **12/12**
_d_ShoulderLayer1Thick = **12/12**
_d_Standard_DitchDepth_Left = **2**
_d_Standard_DitchDepth_Right = **2**
_d_Fillslope1Width_Left = **12**
_d_Fillslope1Width_Right = **12**

Close the run and save changes

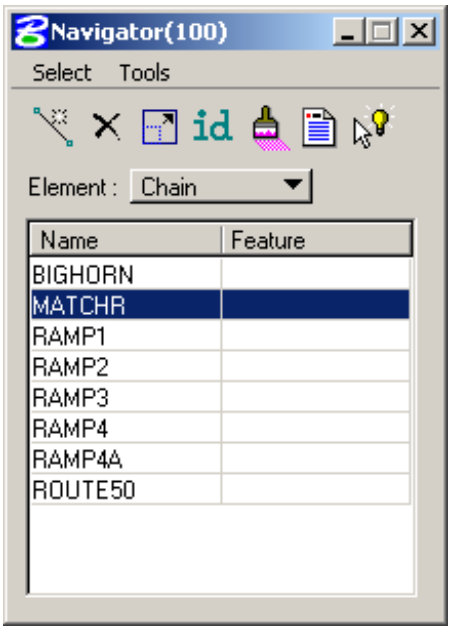
22. Open Proposed Cross Section run **r1-match** and Process and review the cross sections

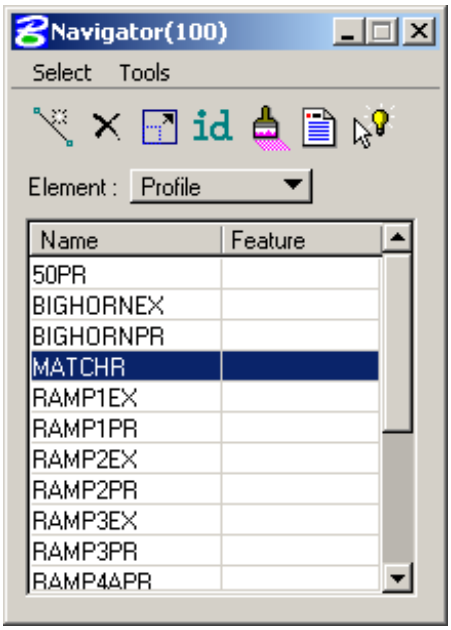
23. Use the **Profile Grade Report** to create a chain and profile at the cross section point **ODITRT**.

    Name the Chain and Profile **MATCHR**



24. Open COGO Navigator and make sure the chain and profile were created



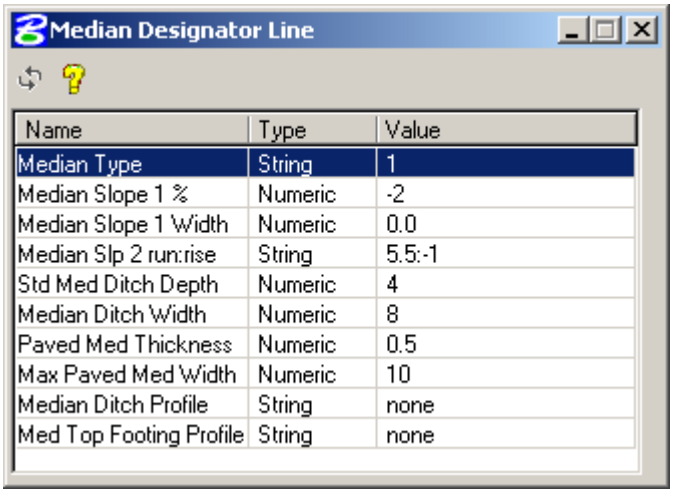


Close the Profile Grade Report Dialog and COGO Navigator

25. Select the **50-match** Working Alignment.

26. Open the MicroStation file **rte50_pattern_shape.dgn**

Add a **Median Designator Line** with the following adhoc settings in the median area between the median edges of shoulder.



27. Open the MicroStation file **rte50_xs_matchline.dgn**.

28. From Project Manager select **Existing Ground Cross Sections**. Copy the **MoDOT** run to **50-match**.

29. Verify the settings on the XS Cells and Surfaces tabs.

30. Cut the existing ground cross sections.

31. In the **50-match** working alignment, under the Cross Section View section, change the **XS DGN File** to **rte50_xs_matchline.dgn**. Close the working alignment definition box.

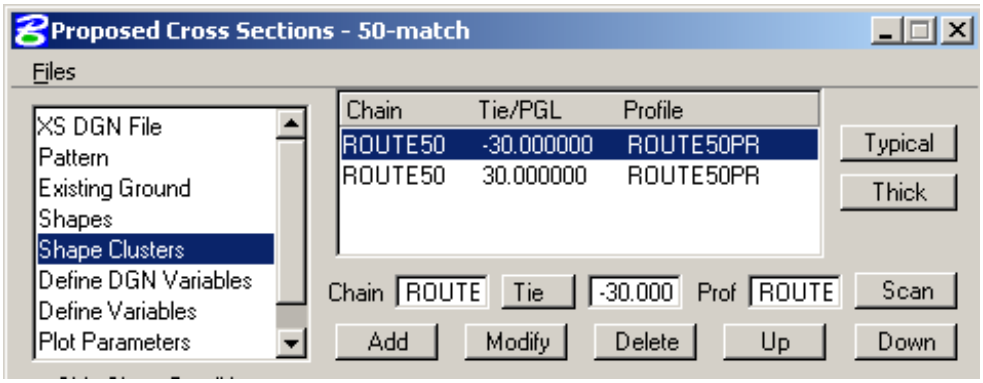
32. Select the Proposed Cross Sections Dialog. Copy the **MoDOT** run to **50-match**.

This space was intentionally left blank.

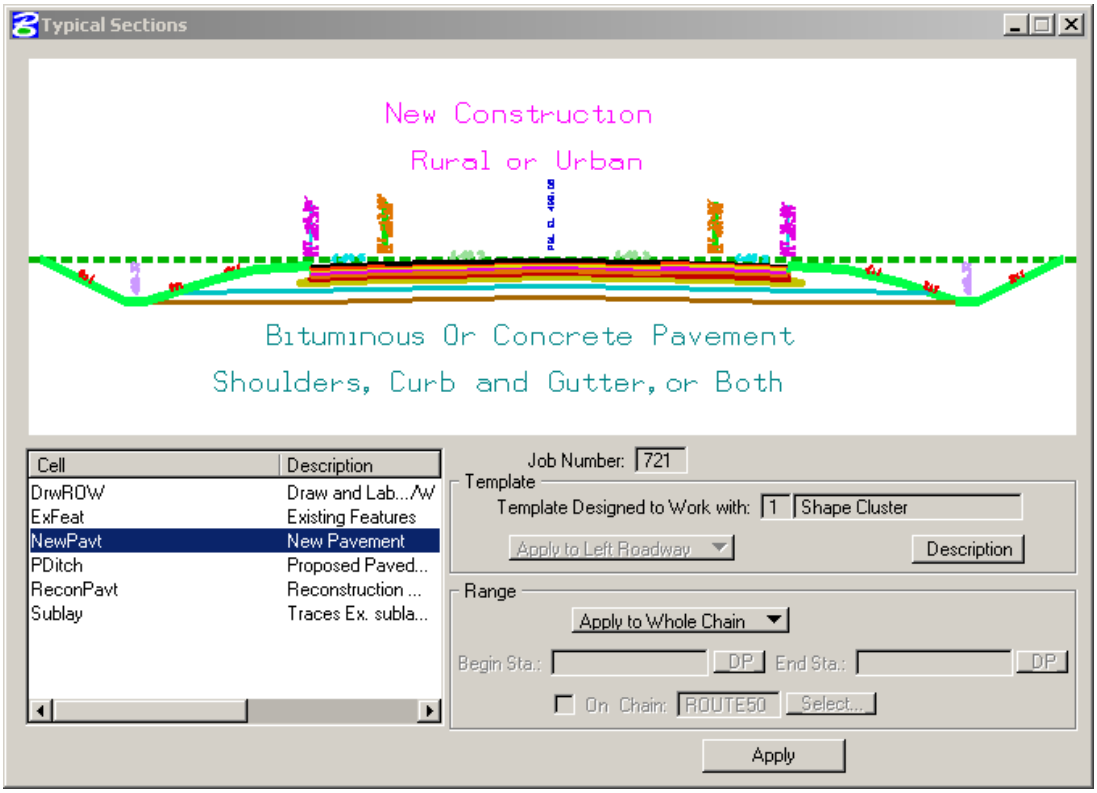
33. Add the following Shape Clusters as shown below.

shape cluster baseline = **ROUTE50**
shape cluster profile = **ROUTE50PR**
shape cluster tie = **-30.000**

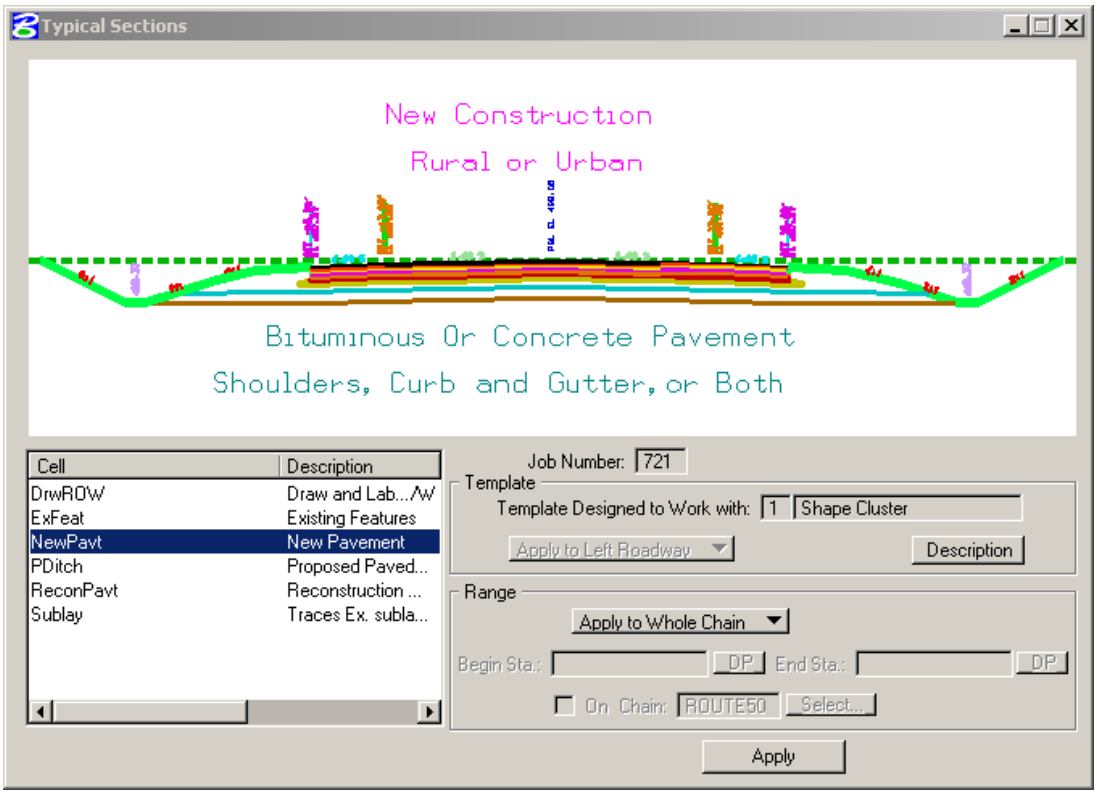
shape cluster baseline = **ROUTE50**
shape cluster profile = **ROUTE50PR**
shape cluster tie = **30.000**



First select the **–30 Shape Cluster** and apply the NewPavt (New Pavement) typical to the left side of the roadway.



32 (Cont'd)
Now select the **+30 Shape Cluster** and apply the same typical.



34. Select the Proposed Cross Section run **50-match** again and set the **Define Variables** with the values given below.

"PROPOSED PLAN DGN"	**rte50_plan.dgn**
"CROSS-SECTION DGN"	**rte50_xs_matchline.dgn**
"GEOPAK LINES DGN"	**rte50_pattern_shape.dgn**
"XS SCALE"	**10**
"LEFT MATCH LINE PROFILES"	**matchr**
"MATCHLINE CHAIN NAMES"	**matchr**

Leave the remaining variables set to the defaults.

35. Set the **Redefinable Variables** with the values given below.

_s_PavementType = **C**
_d_PavementLayer1Thick = **12/12**
_d_ShoulderLayer1Thick = **12/12**
_d_MatchLineChainSearchDistance = **200**

Leave the remaining variables set to the defaults. Close run and save changes.

36. Open Proposed Cross Section run **50-match** and process the cross sections. Review your cross sections.