

## Bent Sections Exercise

1. Open the MicroStation file t:\de-proj\cole\j5p0100\data\rte50\_pattern\_shape.dgn

2. In the project j5p0100.prj, copy the working alignment Route50 to 50-bent, and select this working alignment.

3. In the 50-bent working alignment, under the Pattern section, change the level to 59, and the color to 6.

Under the Shape section, change color to 1,3,4,5,6,7

Close the working alignment definition box.

4. Set the MicroStation symbology to:

|        |    |
|--------|----|
| Level  | 59 |
| Color  | 6  |
| Weight | 1  |
| Style  | 0  |

5. Use the Place Smartline tool in MicroStation to draw a line along the center of the shown culvert. Draw the line from the left to the right.

Use the Extend Line tool in MicroStation to extend the ends of the line a few feet.

6. Open the MicroStation file t:\de-proj\cole\j5p0100\data\ xs\_bent\_sections.dgn.

7. From Project Manager select Existing Ground Cross Sections. Copy the MoDOT run to 50-bent.

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

9. Cut the existing ground cross sections.

10. In the 50-bent working alignment, under the Cross Section View section, change the XS DGN File to xs\_bent\_sections.dgn. Close the working alignment definition box.

11. Select the Proposed Cross Sections button from the Project Manager dialog. Copy the MoDOT run to 50-bent, and enter the run.

12. Setup the Shape Clusters as follows.

```
shape cluster baseline = RAMP1
shape cluster profile  = RAMP1PR
shape cluster tie      = 0.000
side slope LT
  include t:\gpk_std\criteria\Setup.x
  include t:\gpk_std\criteria\pvmt_layers.x
  include t:\gpk_std\criteria\shldr_a_c.x
  include t:\gpk_std\criteria\sideslope.x
```

```
side slope RT
  include t:\gpk_std\criteria\Setup.x
  include t:\gpk_std\criteria\pvmt_layers.x
  include t:\gpk_std\criteria\shldr_a_c.x
  include t:\gpk_std\criteria\median_ditch.x
```

```
shape cluster baseline = ROUTE50
shape cluster profile  = ROUTE50PR
shape cluster tie      = -30.000
side slope LTRT
  include t:\gpk_std\criteria\Setup.x
  include t:\gpk_std\criteria\pvmt_layers.x
  include t:\gpk_std\criteria\shldr_a_c.x
  include t:\gpk_std\criteria\median_ditch.x
```

```
shape cluster baseline = ROUTE50
shape cluster profile  = ROUTE50PR
shape cluster tie      = 30.000
side slope LTRT
  include t:\gpk_std\criteria\Setup.x
  include t:\gpk_std\criteria\pvmt_layers.x
  include t:\gpk_std\criteria\shldr_a_c.x
  include t:\gpk_std\criteria\median_ditch.x
```

13. (continued)

```
shape cluster baseline = RAMP2
shape cluster profile = RAMP2PR
shape cluster tie     = 0.000
side slope LT
    include t:\gpk_std\criteria\Setup.x
    include t:\gpk_std\criteria\pvmt_layers.x
    include t:\gpk_std\criteria\shldr_a_c.x
    include t:\gpk_std\criteria\median_ditch.x

side slope RT
    include t:\gpk_std\criteria\Setup.x
    include t:\gpk_std\criteria\pvmt_layers.x
    include t:\gpk_std\criteria\shldr_a_c.x
    include t:\gpk_std\criteria\sideslope.x
```

13. In the **Define Variables** set the following values for the given variables:

```
"NAME OF PLAN FILE" rte50_plan.dgn
"NAME OF CROSS-SECTION FILE" xs_bent_sections.dgn
"NAME OF SHAPE/PATTERN FILE" rte50_pattern_shape.dgn
"NAME OF BASELINE" route50
"PAVEMENT LAYER 1 THICKNESS (MM OR IN)" 12
"AGGREGATE LAYER 1 THICKNESS (MM OR IN)" 4
```

Leave the remaining variables set to the defaults.

14. Process the cross sections.