

## Exercise 15-1

This begins a series of exercises that will demonstrate another method for determining bridge length, which will be by using cross-sections. The proposed cross sections for Route50 are drawn in this group exercise. Later exercises will use these and other cross sections to create a proposed TIN and determine the bridge length from this surface model.

1. Open the MicroStation file **t:\br-proj\a\_geopak\d5\j5p0100\data\xs\_50\_j5p0100.dgn**.

2. Open the project **t:\br-proj\a\_geopak\d5\j5p0100\project\j5p0100.prj**.

Enter the as user **userc**.

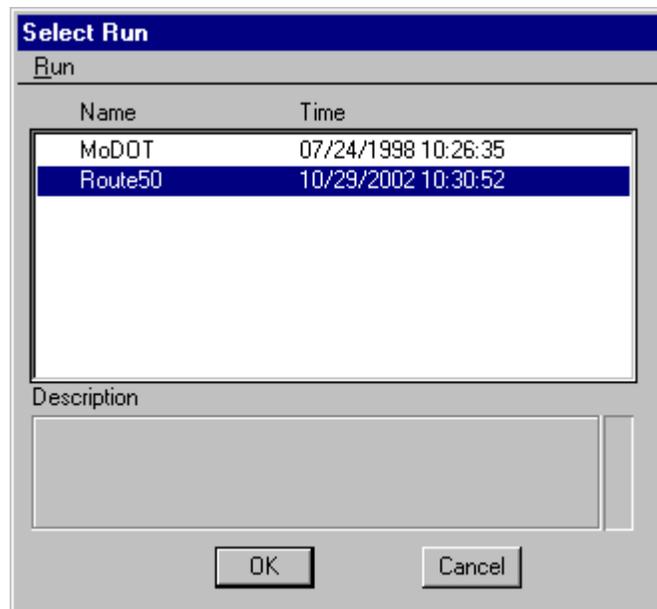
Go into **Road**.

3. Select the **Route50** working alignment.

4. Choose **Proposed Cross Sections** from the **Project Manager** dialog.

Proposed  
Cross Sections

Copy the **MoDOT** run to **Route50**, and open the **Route50** run.



# Ex. 15-1 Proposed Cross Sections      GEOPAK Road for Bridge

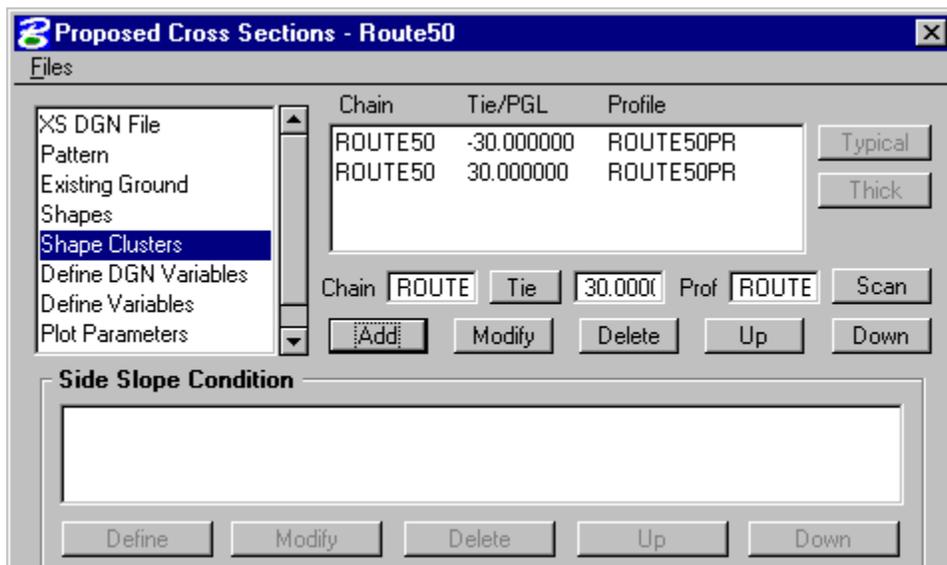
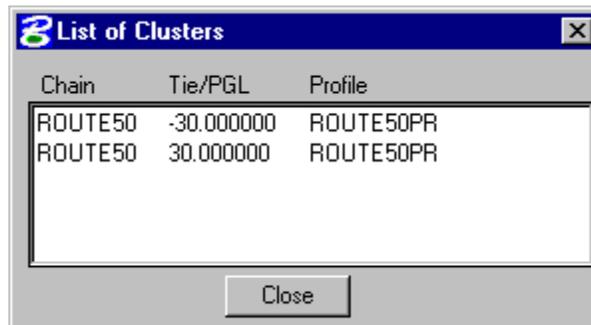
5. Be sure the following items are set in the given sections of the dialog:

XS DGN File:                **xs\_50\_j2p0200.dgn**  
 Pattern:                    **Use Working Alignment Definition**  
 Existing Ground:         **Use Working Alignment Definition**  
 Shapes:                    **Use Working Alignment Definition**

6. In the **Shape Clusters** section of the dialog, choose the **Scan** button. Add the two shape clusters in the following order:

<u>Chain</u>	<u>Tie</u>	<u>Profile</u>
<b>ROUTE50</b>	<b>-30</b>	<b>ROUTE50PR</b>
<b>ROUTE50</b>	<b>30</b>	<b>ROUTE50PR</b>

The clusters are added by highlighting a cluster in the top dialog shown below and clicking on **Add** in the Proposed Cross Sections dialog, which is depicted in the bottom figure. When you are finished adding the Shape Clusters, close the **List of Cluster** dialog by clicking on **Close** at the bottom of the dialog. Leave the **Proposed Cross Sections – Route50** dialog open. Information will be added to it in the next step.

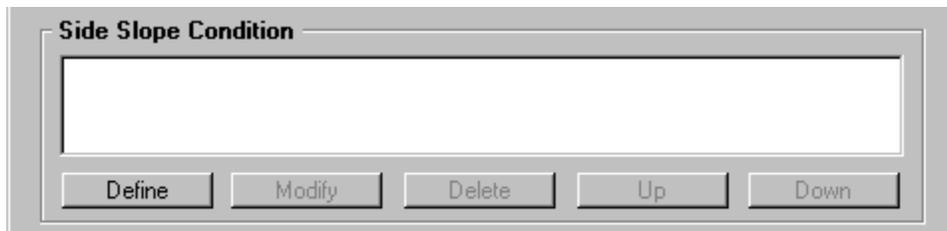


7. For each shape cluster, **add** the given side **Slope Conditions** and **Criteria Files**. (See the attached typical section for details.)

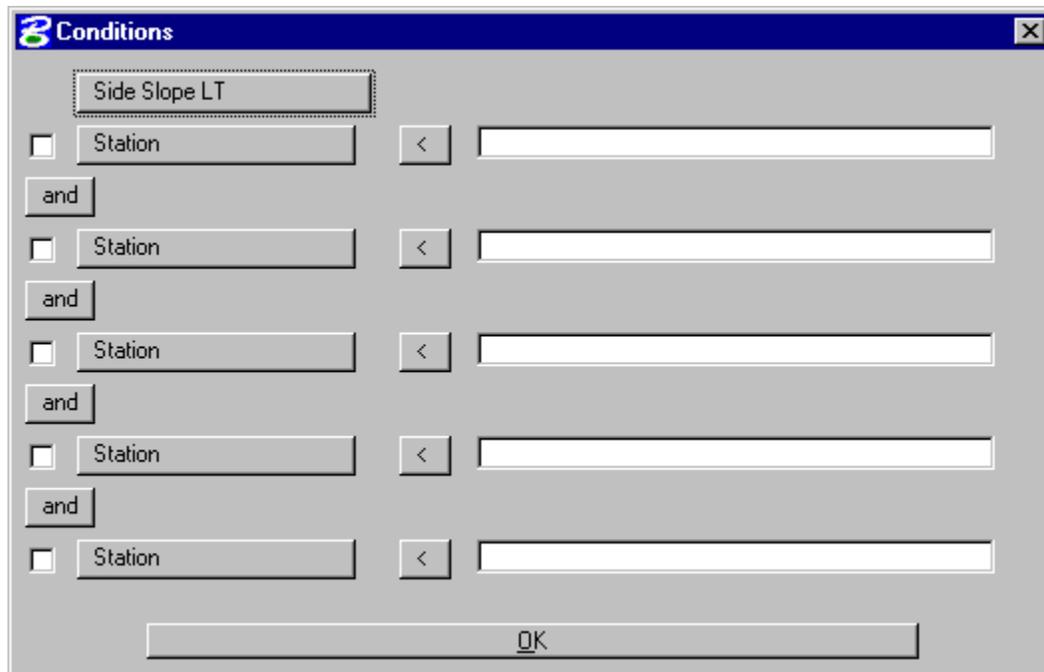
<u>Chain</u>	<u>Tie</u>	<u>Profile</u>
<b>ROUTE50</b>	<b>-30</b>	<b>ROUTE50PR</b>
Side Slope: LT		
Criteria Files: setup.x		
pvmt_layers.x		
shldr_a_c.x		
sideslope.x		
Side Slope: RT		
Criteria Files: setup.x		
pvmt_layers.x		
shldr_a1_c.x		
median_ditch.x		

<u>Chain</u>	<u>Tie</u>	<u>Profile</u>
<b>ROUTE50</b>	<b>30</b>	<b>ROUTE50PR</b>
Side Slope: LT		
Criteria Files: setup.x		
pvmt_layers.x		
shldr_a1_c.x		
median_ditch.x		
Side Slope: RT		
Criteria Files: setup.x		
pvmt_layers.x		
shldr_a_c.x		
sideslope.x		

To add the **Side Slope Conditions**, highlight a shape cluster, and click on the **Define** button under that section of the Proposed Cross Section dialog.

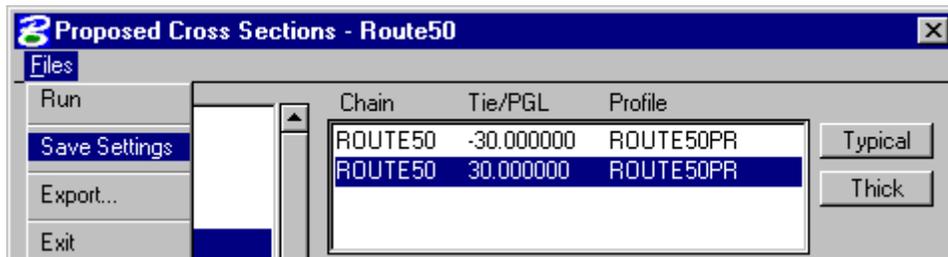


This will bring up the following dialog, which lets you define each condition. Once the condition is set, click OK in the dialog to add it to the list of Side Slope Conditions.



## Ex. 15-1 Proposed Cross Sections      GEOPAK Road for Bridge

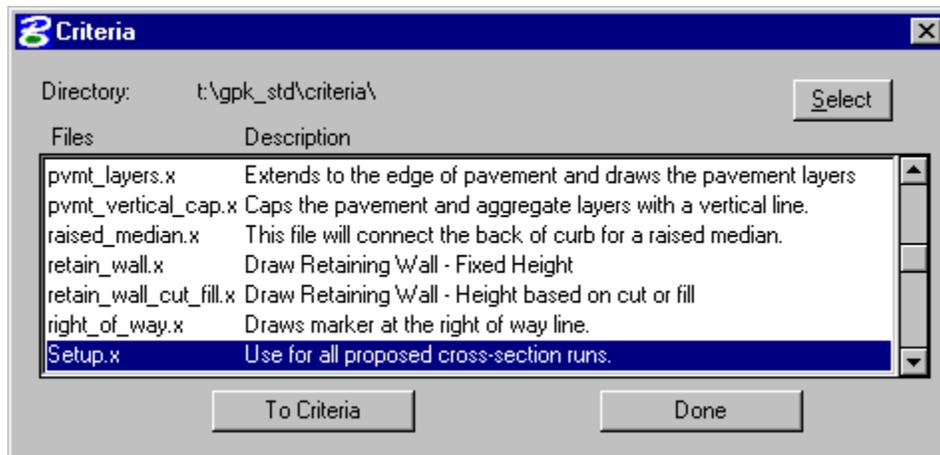
Once the Side Slope Conditions are defined, save the Proposed Cross Sections settings by going to **Files > Save Settings**, as shown in the following figure.



Add the Criteria Files to each condition by highlighting one of the conditions and clicking on the **Add** button at the bottom of the **Criteria File** list.



This brings up the **Criteria** dialog shown below. Criteria files are added to the highlighted side slope condition by selecting a criteria file of the list and clicking on **To Criteria**.

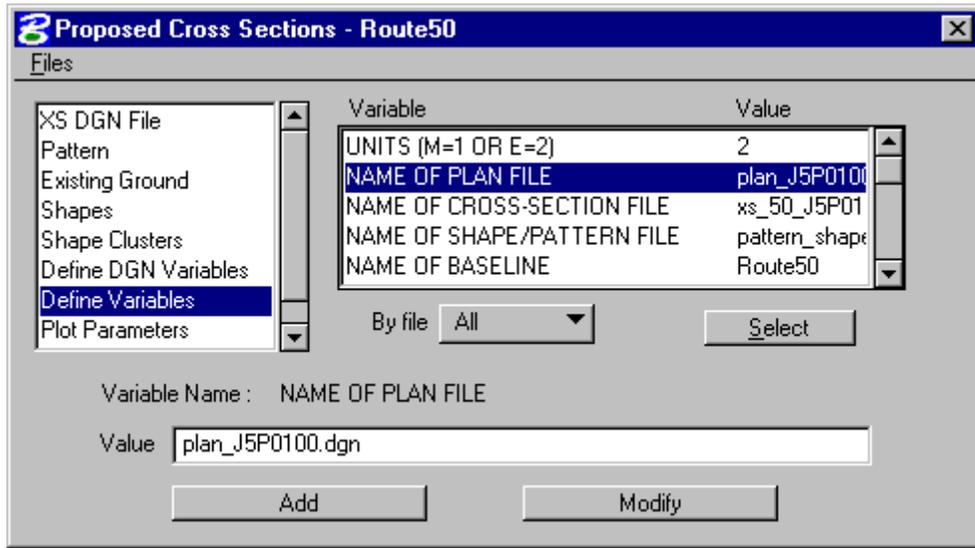


Select the **Setup.x** criteria file, as shown above, and add it to the selected condition by clicking on **To Criteria**. Since this file is used in all conditions, highlight the other condition for the shape cluster and clicking on **To Criteria**. Do the same thing for the other shape cluster. Add **pvmt\_layers.x** (which is the top file shown in the above figure) to all conditions and clusters. Add the criteria files **shldr\_a\_c.x**, **shldr\_a1\_c.x**, **sideslope.x**, and **median\_ditch.x** to the appropriate side slope conditions.

Once all of the files have been added, click on **Done** to close the Criteria dialog and save the Proposed Cross Section run by going to **Files > Save Settings**.

# GEOPAK Road for Bridge Ex. 15-1 Proposed Cross Sections

8. Switch to the Define Variables section of Proposed Cross Sections, as shown below:



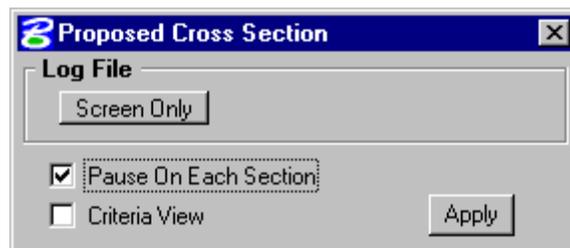
Set the following variable values.

NAME OF PLAN FILE.....plan\_J5P0100.dgn  
 NAME OF CROSS-SECTION FILE .....xs\_50\_J5P0100.dgn  
 NAME OF SHAPE/PATTERN FILE .....pattern\_shape\_J5P0100.dgn  
 NAME OF BASELINE .....Route50  
 PAVEMENT LAYER 1 THICKNESS (MM OR IN).....10  
 AGGREGATE LAYER 1 THICKNESS (MM OR IN).....4

Leave the remaining variables set to the defaults.

9. Save the settings for the run.

10. Run the proposed cross-sections (**Files > Run**). The following dialog will appear:



Set the **Log File** to **Screen Only**.

Turn on **Pause on Each Section**.

