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Workshop - X1
Introduction to Roadway Designer

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Lesson Name: Opening A Project (InRoads User)

> LESSON OBJECTIVE:
> In this lesson the student will learn to access an InRoads project in preparation for designing a model in Roadway Designer.

> > *EXERCISE: GETTING STARTED*

> > This exercise will guide you through the steps to get started

> > 1. Go to **Start > Programs > Bentley > InRoads Group Athens > InRoads Suite**.

> > 2. The instructor will provide the appropriate path location for this project. When the MicroStation Manager appears select the file:
> > **Plan.dgn** and press **Open**.

> > 3. When the InRoads Explorer appears, go to **File > Open** from the InRoads menu.

> > 4. When the Open dialog appears select the InRoads project file:
> > **My_Project.rwk** and press **OK**.
> > Opening the *RWK* project file opens the following files:
> > CMJOB001.alg
> > Templates.itl
> > Original.dtm
> > Default_Styles.xin

> > 5. Select **Modeler > Roadway Designer** from the InRoads Explorer menu to access Roadway Designer.
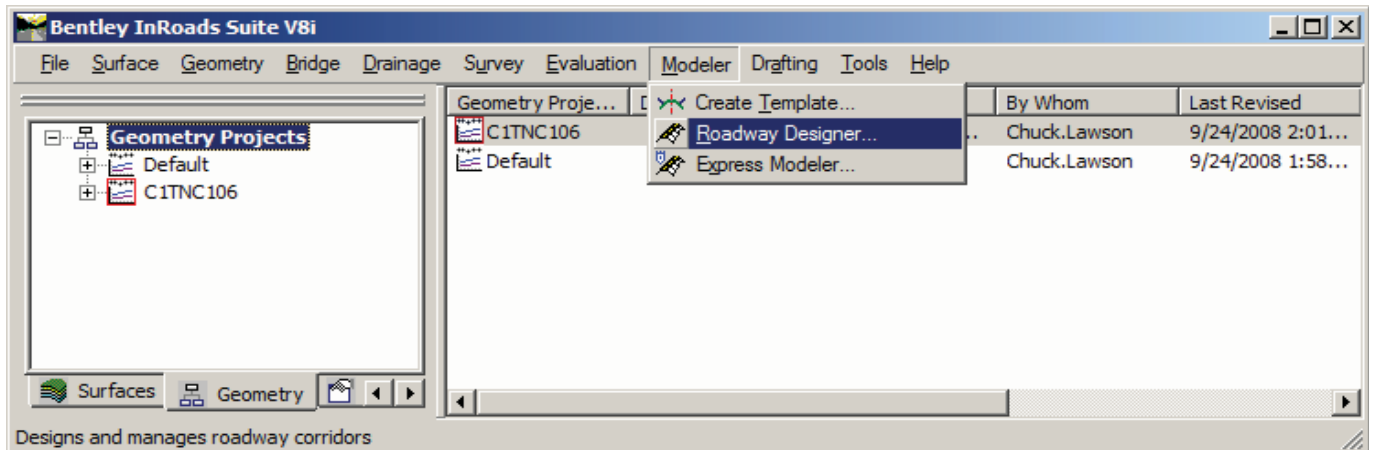
Lesson Name: Building a Corridor

LESSON OBJECTIVE:

This lesson will take you through how to setup and apply templates to a corridor.

On-Line Help Topic: Search on "Roadway Designer"

EXERCISE: BUILDING CORRIDORS

This exercise will take you through setting up a corridor in Roadway Designer.

1. When the Roadway Designer opens you will see three panes in the window. The top left pane is the plan view. The bottom left is the profile view. The right pane is the cross section view.
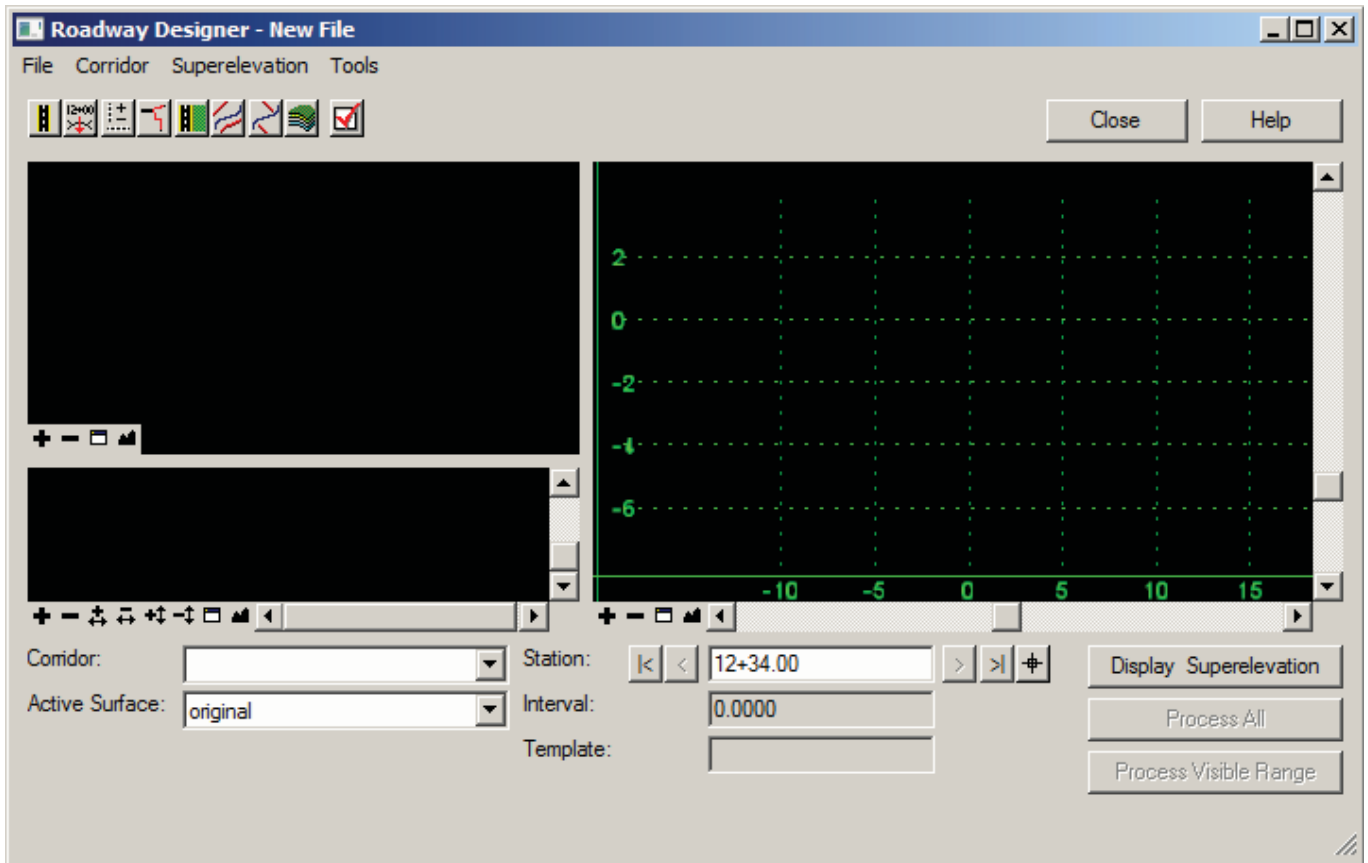
2. To create a corridor, select **Corridor > Corridor Management** from the menu on the **Roadway Designer**.

Enter *Route1* in the **Name** field and select **Add**.

3. **Close** the **Corridor Management** dialog.
4. On the **Roadway Designer** dialog click the **Fit** on the plan and profile panes. You should now see the plan view of the alignment and the profile view of it.
5. To apply templates to the corridor go to **Corridor > Template Drops**.
6. Key in *12+34* in the **Station** field for the first station.
7. Set the **Interval** to *10.00*.
8. Expand the **Library Templates** tree and highlight the **2Lane** template.
9. Select **Add**.
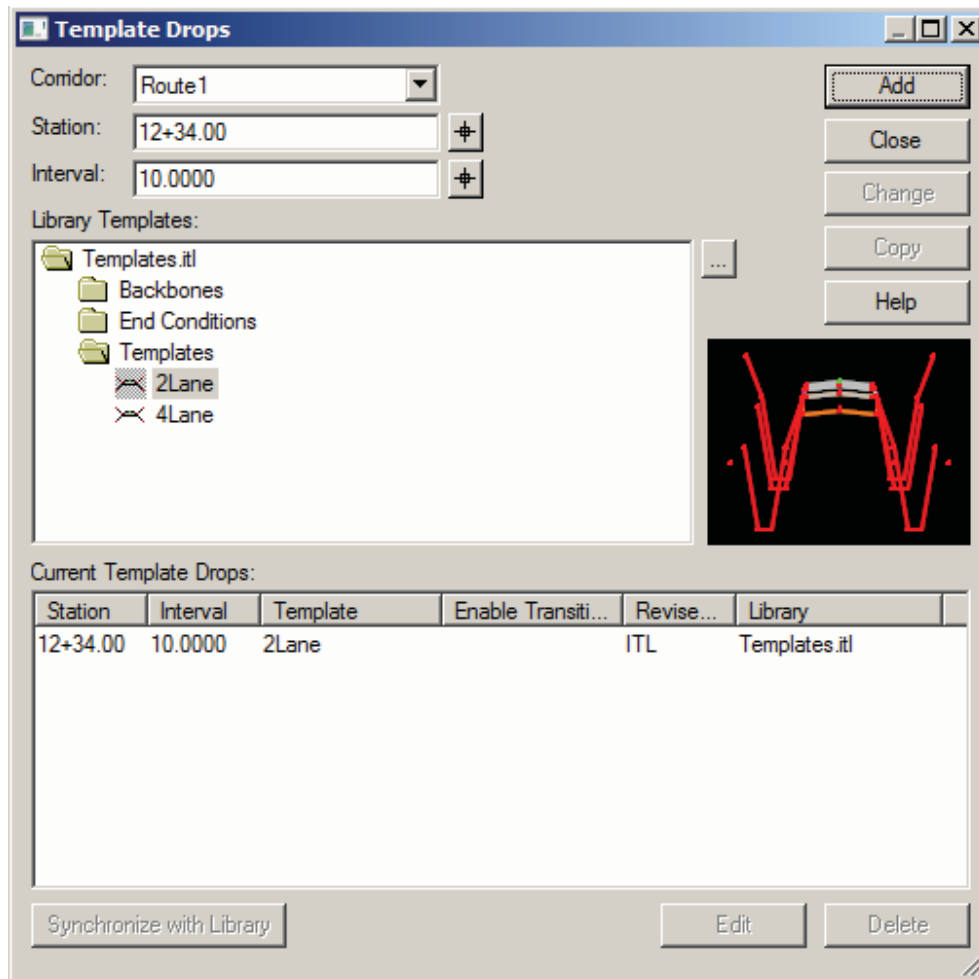
10. Key in station **25+00** and select the **2Lane** template again and select **Add**.

11. Add the following template drops:

   Station 30+00   Template: 4Lane

   Station 55+00   Template: 4Lane

   Station 60+00   Template: 2Lane

12. **Close** the **Template Drops** dialog.

13. Select the **Process All** button.

14. In the Roadway Designer dialog select **File > Save** to save the Roadway Designer project file. Name the file **My_Project.ird**

LESSON NAME: TEMPLATE TRANSITIONS

LESSON OBJECTIVE:
This lesson will take you through how to handle template transitions that you defined in the corridor.
On-Line Help Topic: Search on "template transitions"

EXERCISE: TEMPLATE TRANSITIONS

This exercise will take you through defining template transitions. The reason you will need to define transitions is because when transitioning between one template and a template that has more segments in it, the Roadway Designer does not know how to connect the segments. This is because there may be more than one way to connect them.

1. From the **Roadway Designer** double click on the west yellow shape in the plan view. This will bring up the **Edit Transition** dialog.
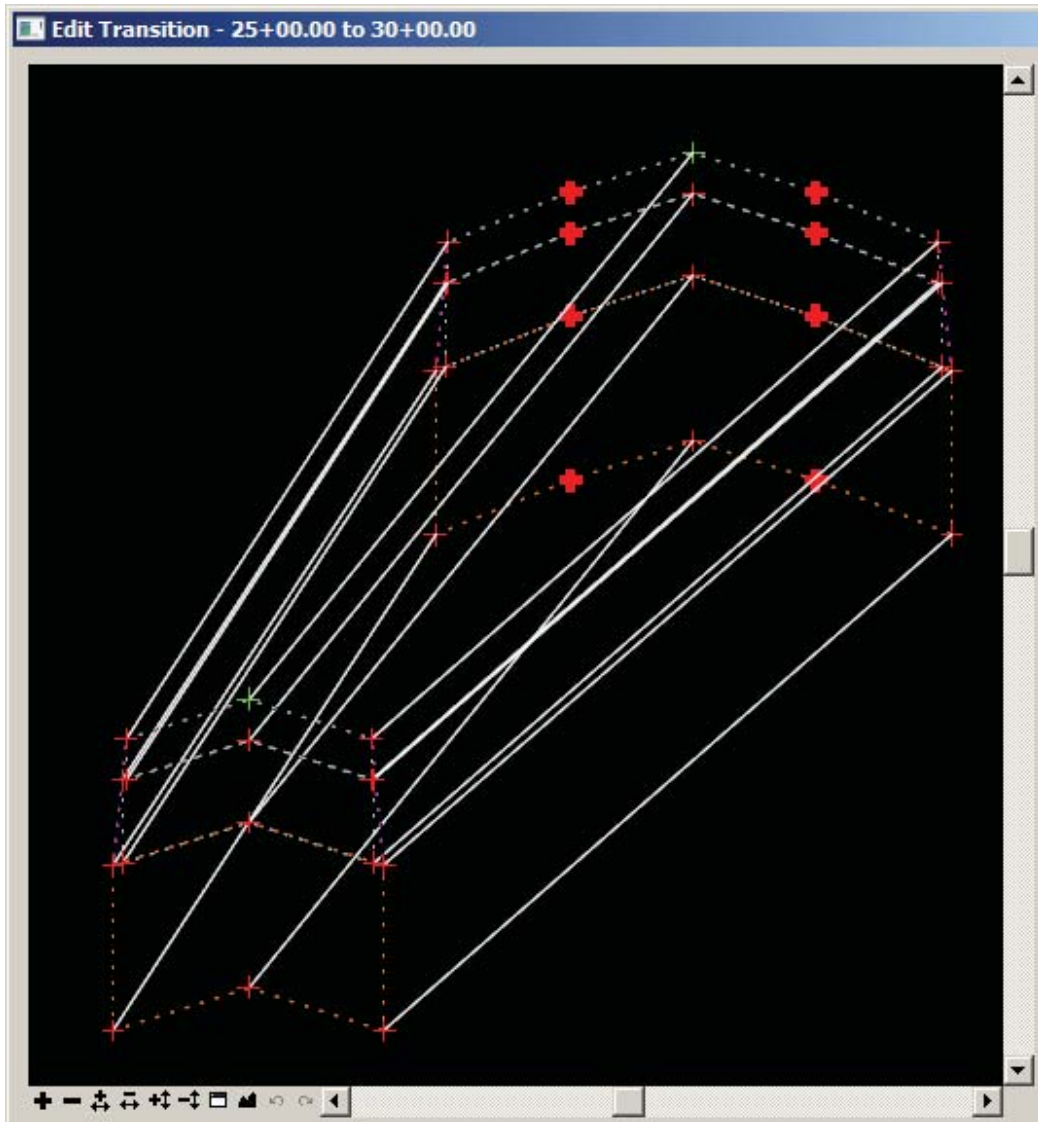
2. To edit the transitions **click** on the bolded tic mark and then connect it to the desired transition location by clicking on it.

3. Finish defining the transitions.

4. Select **OK**.

5. Now you see the cross section view that is half way through the transition.

6. At the bottom of the **Edit Transition Midpoint** dialog you will see a slider bar. Try moving the bar to the left and right. Is anything happening?

   Note: *Right-Click on the green tick to move the template around.*

The reason nothing is happening is because of the constraints on the template points. To modify the constraints **right click** on the right lane line point and select **Delete Horizontal Constraint**.
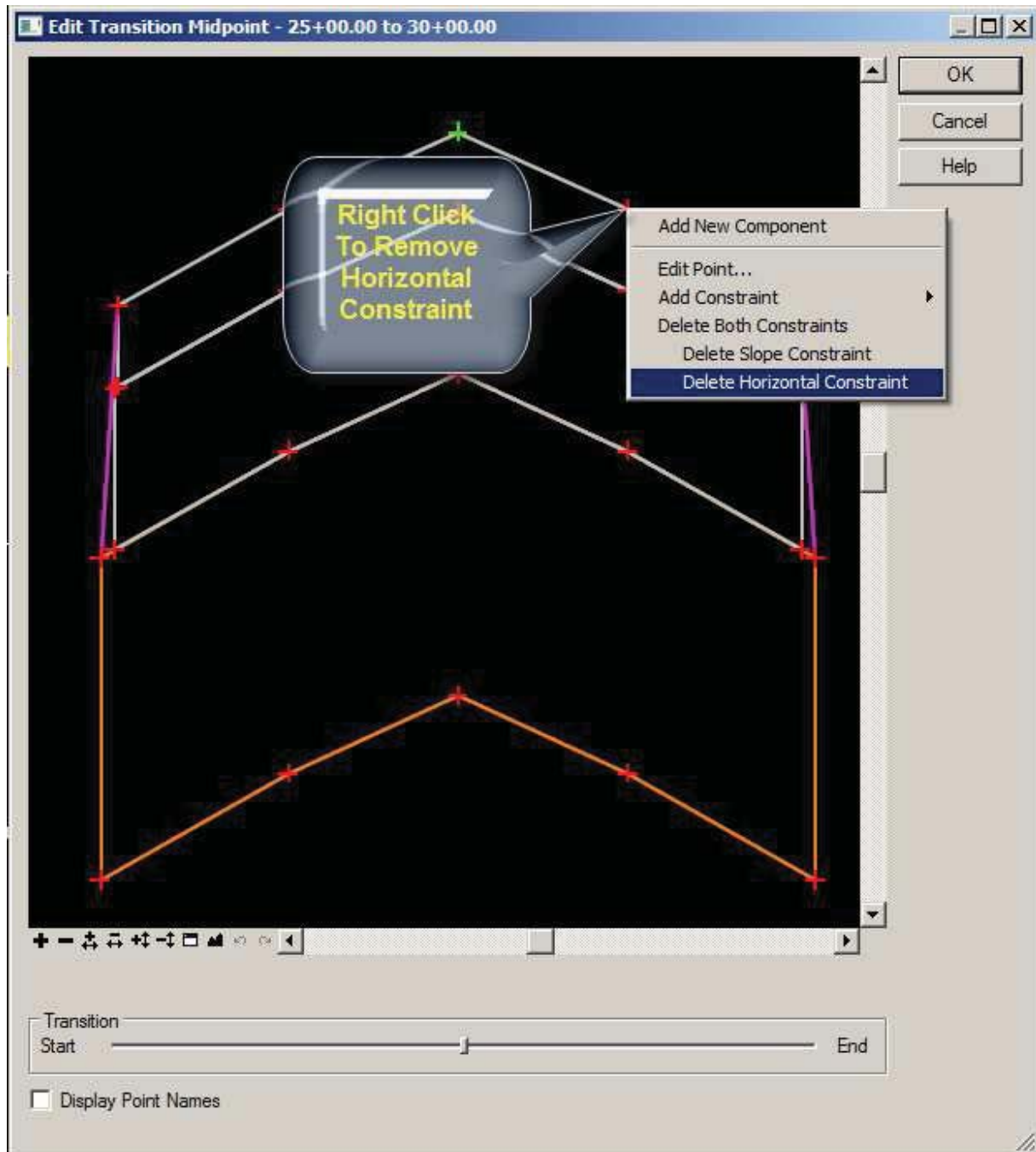
7. Try sliding the **Transition** bar again. What is happening?

8. Correct the constraint on the left lane line point.

9. When completed click **OK** on the **Edit Transition Midpoint** dialog.

10. Correct the east transition with the same steps as above.

11. In the Roadway Designer dialog select **File > Save** to save the Roadway Designer project file updating from the previous save.

**LESSON NAME: EXAMINING THE CORRIDOR**

LESSON OBJECTIVE:

This lesson will take you through how to navigate through the corridor.

On-Line Help Topic: Search on "Roadway Designer"

EXERCISE: CORRIDOR NAVIGATION

This exercise will take you through the navigation tools in the Roadway Designer.

1. From the **Roadway Designer** click on the Process All button.

2. At the bottom of the Roadway Designer dialog there is a station value with advancing arrows on either side of it.
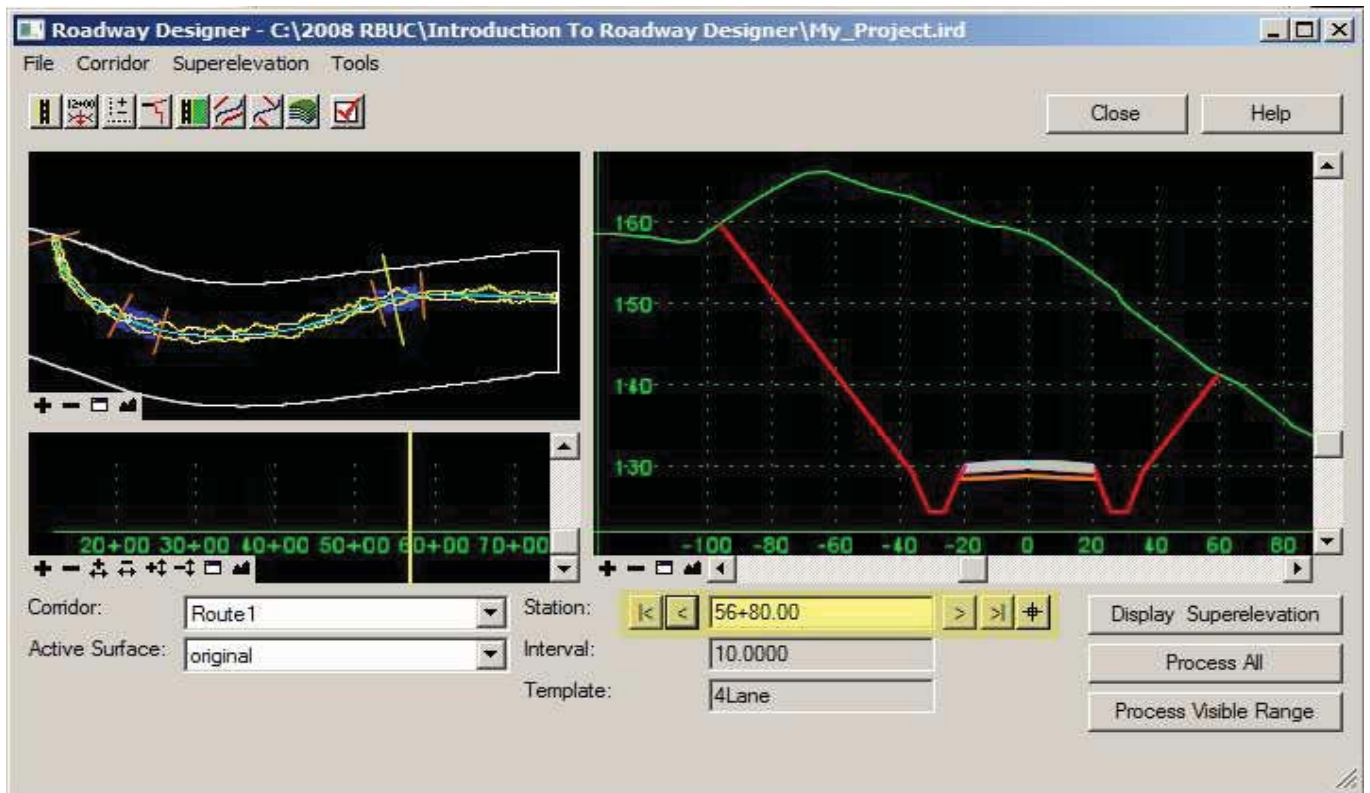
3. Clicking on the arrows move along the stations.

4. Notice in the plan view and the profile view there is a yellow line across the alignment and the profile. This line represents where the cross section view is.

5. Double click in the plan view. Notice that the line moved to the place on the alignment that was orthogonal to your double click.

6. Try the same in the profile view.

7. Now using your left mouse button click and hold on the yellow line in the plan view and drag it along the alignment.

8. Try the same in the profile view.

**LESSON NAME: SUPERELEVATION (GEOPAK / INROADS USERS)**

LESSON OBJECTIVE:

This lesson will take you through how to setup superelevation.

On-Line Help Topic: Search on "Superelevation"

EXERCISE: SUPERELEVATION

This exercise will take you through defining and setting up superelevation.

1. On the **Roadway Designer** click the **Display Superelevation** button on the bottom right of the dialog.

2. The top left pane is the plan view. The bottom left pane is the cross section view. The top right pane is the profile view and the bottom right pane is the superelevation diagram.
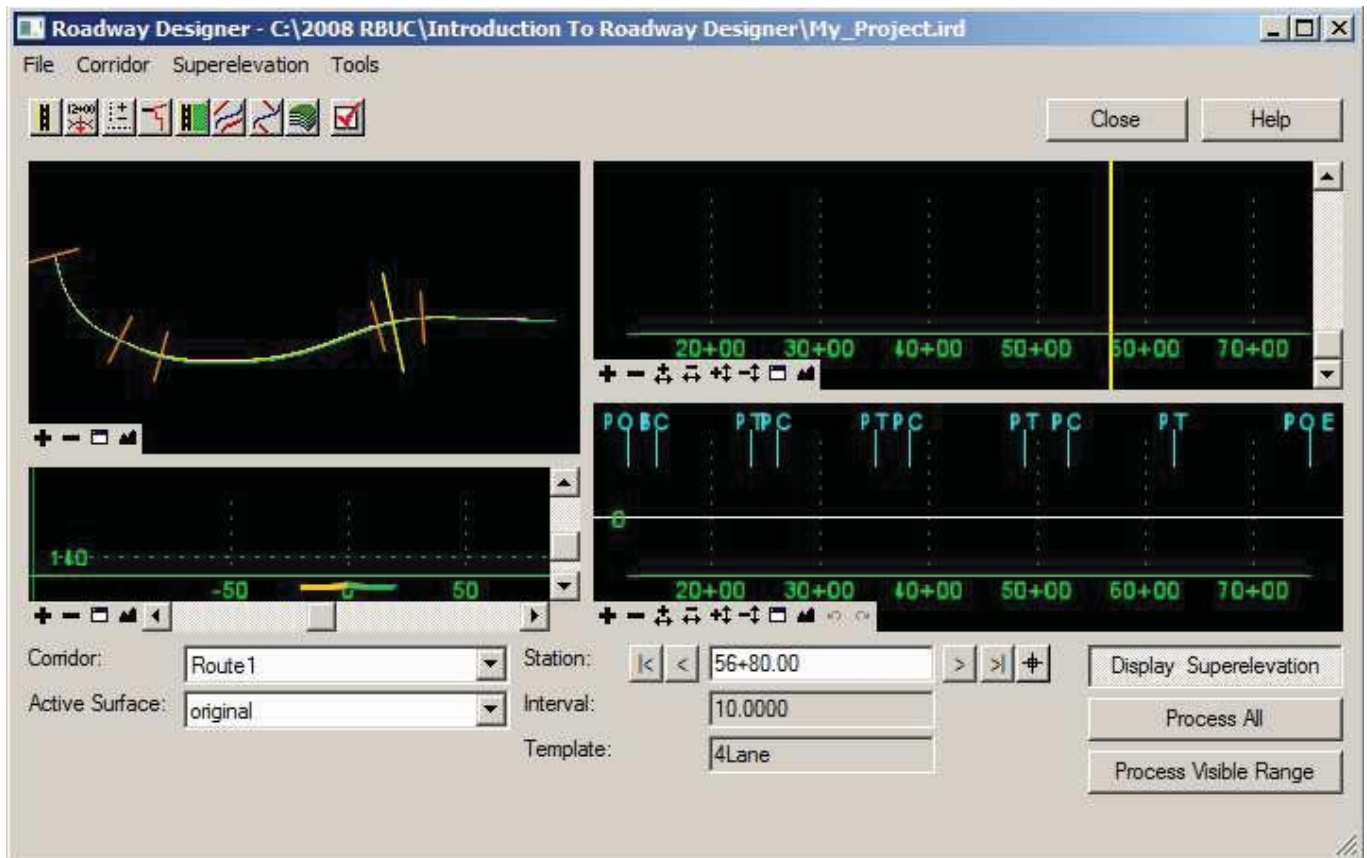
3. To set up superelevation we must first calculate the superelevation rates. **Right click** on the superelevation diagram pane and select **Create Superelevation Wizard > AASHTO**. This will bring up the **AASHTO Wizard**.

4. First we need to compute the rates. **Click** the **Rate Calculator** button.
5. When the **Rate Calculator** appears **Edit** each record and set the design speed to **55**.
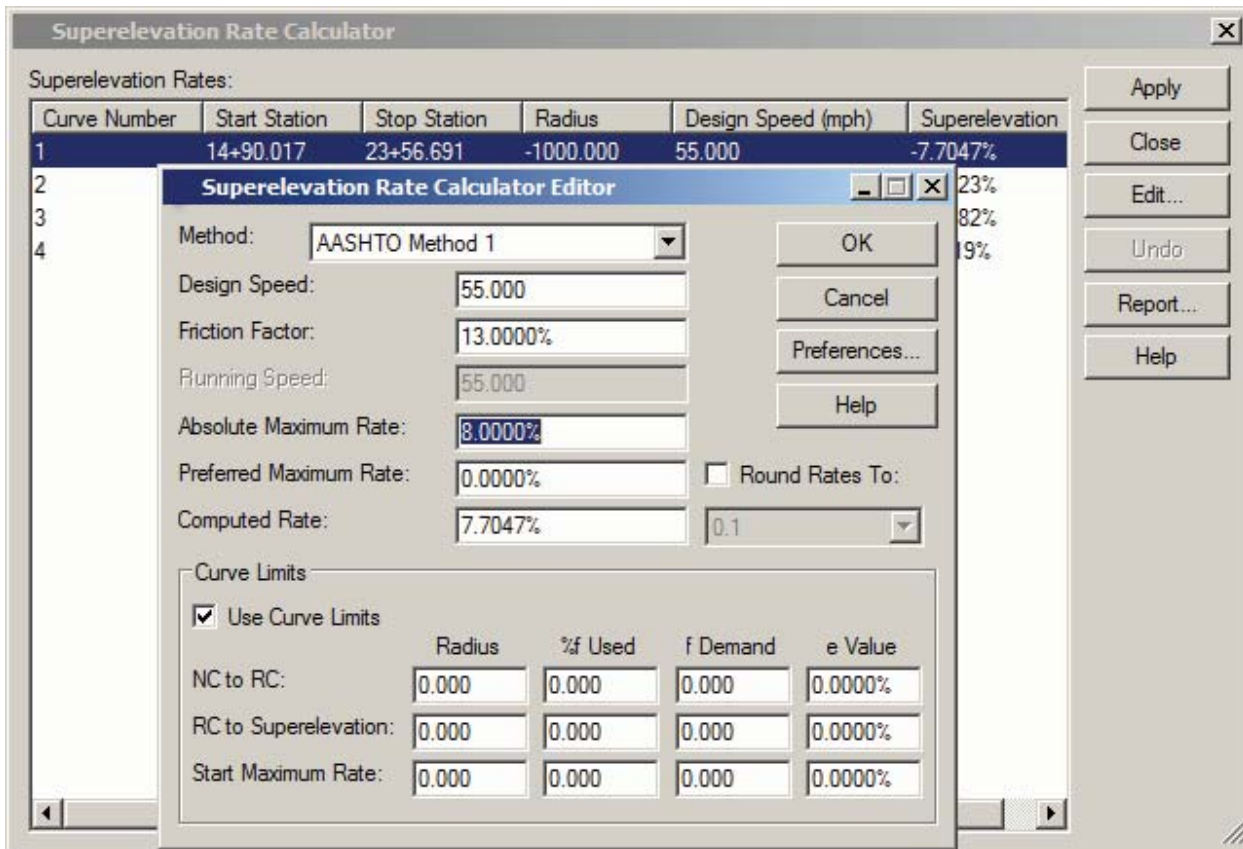
6. When editing is complete select **Apply** and then **Close**. You will be returned to the **AASHTO Wizard**.

7. **Move the yellow navigation line** to somewhere where the **2Lane** template exists.

8. Select **Next**.

9. Select **Add**.

10. When the **Add SuperElevation Section** dialog appears select the ⊕ button beside the **Crown Point** field and select the crown point in the cross section view.

11. Do the same for the **Left Range Point** and **Right Range Point** by selecting the edges of pavement.

12. Turn on the **Station** toggle and key in the *12+34* for the **Start** and *24+99.99* for the **Stop**.

13. Select OK to add the first superelevation section.

14. **Move the yellow navigation line** somewhere where the **4Lane** template exists.

15. Repeat the process for identifying the points and set the station range to **25+00** through **59+99.99**.

16. **Move the yellow navigation line** somewhere where the **2Lane** template exists.

17. Repeat the process for identifying the points and set the station range to **60+00** to **75+12.802**. Don't forget to move the yellow navigation line to the 2Lane section.
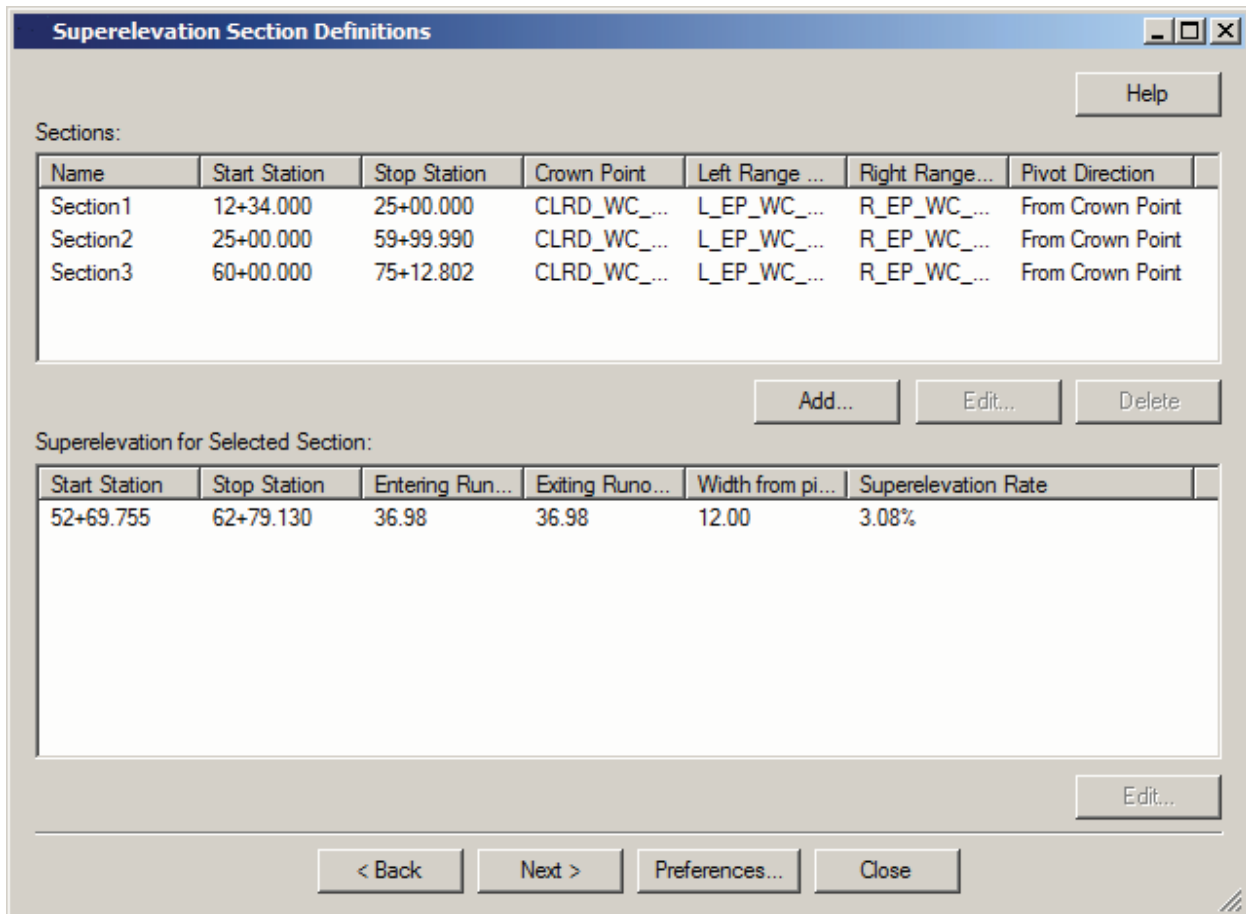
18. Select **Next**.

19. Select **Finish**.

20. Select **Process All**.

21. In the Roadway Designer dialog select **File > Save** to save the Roadway Designer project file updating from the previous save.

22. Spend some time navigating through the panes and looking at the model. Notice in the plan view that the cross slope is denoted by colors.

LESSON OBJECTIVE:

This lesson will take you through how to generate a surface from your roadway design.

On-Line Help Topic: Search on "Create Surface"

EXERCISE: CREATE SURFACE

This exercise will take you through defining and setting up the Create Surface command.

1. On the **Roadway Designer** click the **Corridor > Create Surface**.

2. Set or enter the following values:

Name:	*Design*
Default Preference:	*Default*
Empty Design Surface:	*On*
Add Exterior Boundary:	*On*
Style:	*Exterior Boundary*
Triangulate:	*On (InRoads Users Only)*
Display Features In Plan View: *On*	
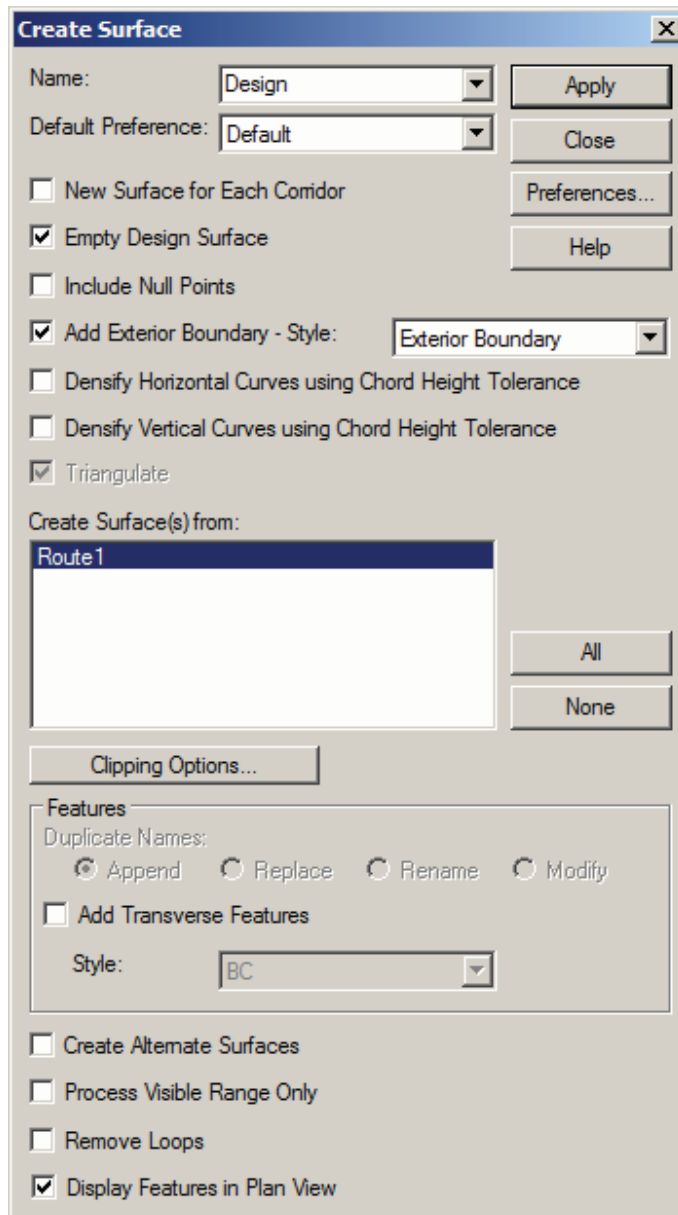
3. Click **Apply**.
4. Dismiss the **Results** dialog.
5. Click **Close** on the create surface dialog.
6. **Collapse** the **Roadway Designer**.
7. Using **MicroStation** examine the features displayed in the DGN file.