

LAB 13 - Template Transitions and End Condition Overrides

This lab demonstrates how template transitions and end condition overrides are set up. Template transitions are used to make a smooth change from one template to another. End condition overrides are used to make changes in end conditions without having to create a new template.

Chapter Objectives:


- Set up a template to template transition.
- Create an end condition transition.
- Create an end condition override.

Before beginning this lab, verify that the following files are loaded:

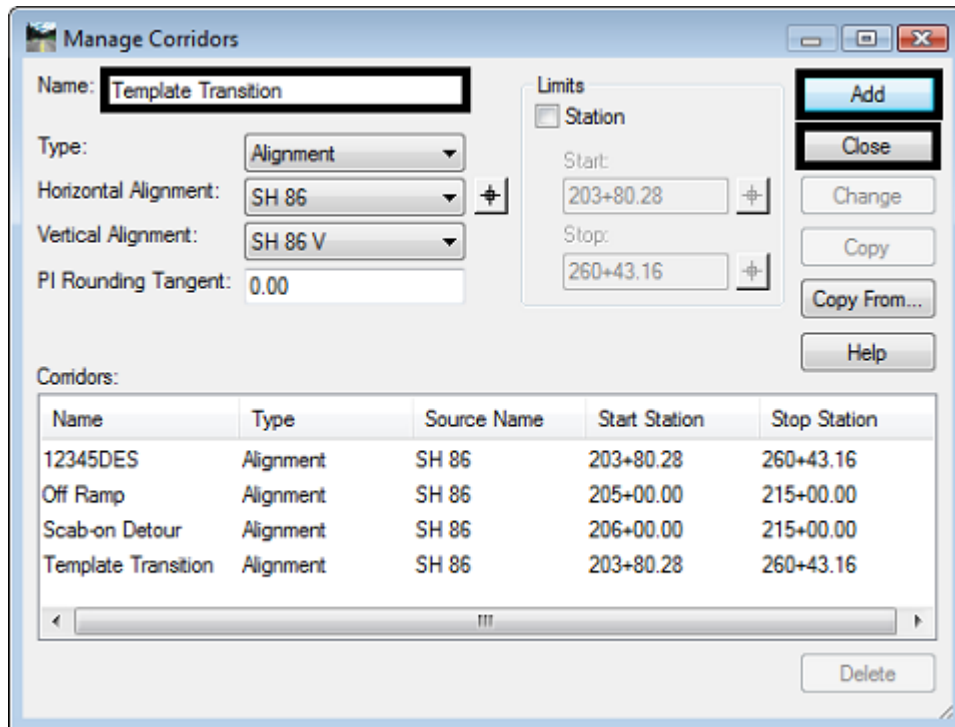
- C:\Projects\12345\Design\Drawings\Reference_Files\12345DES_Model.dgn
- C:\Workspace\Workspace-CDOT_XM\Standards-Global\InRoads\Preferences\CDOT_Civil.xin
- C:\Projects\12345\Design\InRoads\12345DES_Geometry.alg
- C:\Projects\12345\Design\InRoads\12345 existing ground.dtm
- C:\Projects\12345\Design\InRoads\12345DES.ird
- C:\Projects\12345\Design\InRoads\DES12345_Templates.itl

Lab 13.1 - Set Up a Template to Template Transition


In this exercise a new corridor is defined with two template drops. The transition area is identified in the plan view by a colored block at the transition location. The transition between the templates is defined using this block.

1. Select **Modeler > Roadway Designer** from the InRoads menu bar.
2. Select **Corridor > Corridor Management** from the Roadway Designer menu bar or <D> the corridor management button .
3. In the **Manage Corridors** dialog box, key in **Template Transition** in the Name field.
4. <D> **Add**.

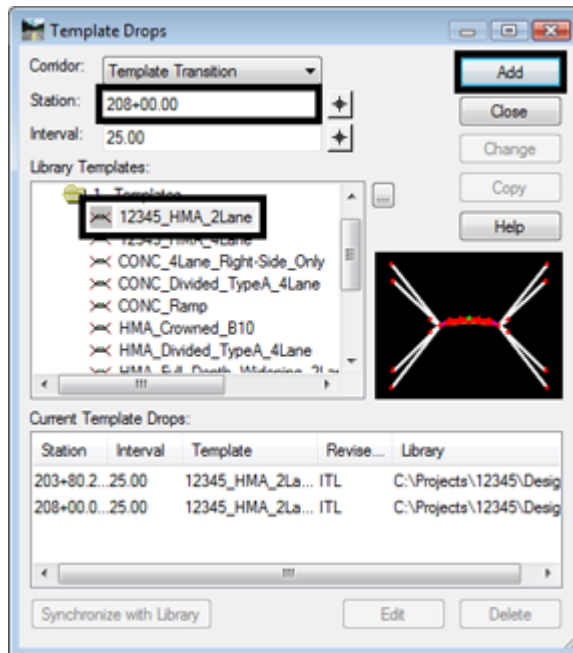
5. <D> Close.



Next, the template drops are defined. The first template requires two template drops, one at the beginning of the project and the second at the beginning of the transition.

6. Select **Corridor > Template Drops** from the Roadway Designer menu bar or <D> the template drops button .
7. Select **Template Transition** for the corridor name.
8. Key in **25** for the **Interval**.
9. Expand the **1- Templates** folder in the **Library Templates** area.
10. <D> on the **12345_HMA_2Lane** template.
11. <D> **Add**.
12. In the **Template Drops** dialog box, key in **208+00.00** for the **Station**.
13. <D> on the **12345_HMA_2Lane** template.

14. <D> Add.



The final template drop is used from the end of the transition to the end of the project.

15. In the **Template Drops** dialog box, key in **211+00.00** for the **Station**.16. <D> on the **12345_HMA_4Lane** template.

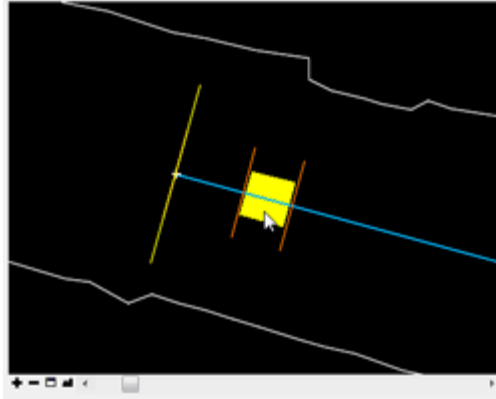
17. <D> Add.

18. <D> Close.

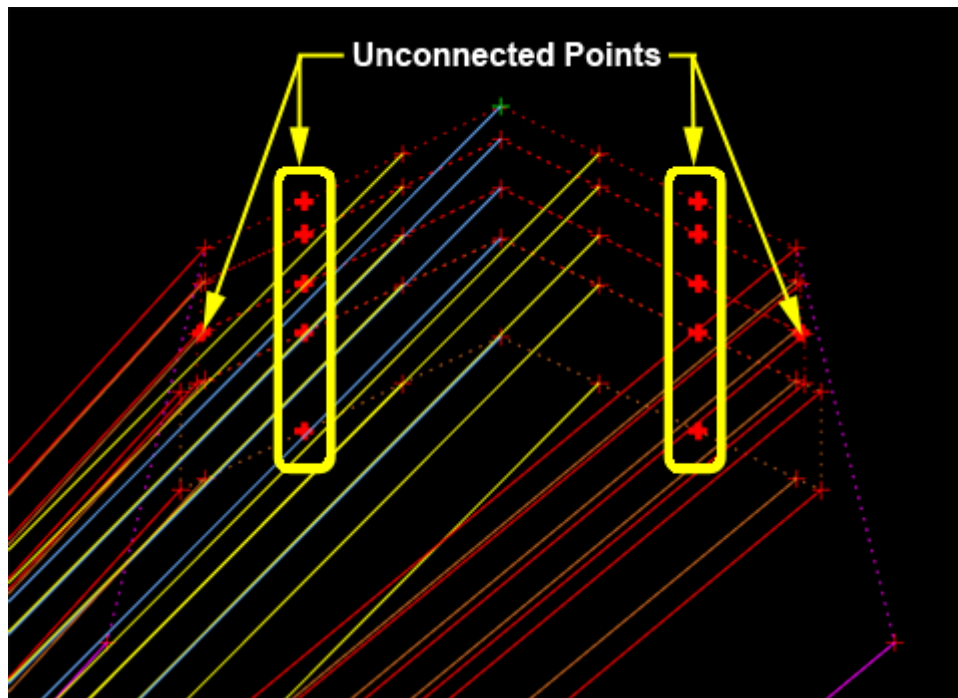
Note: Notice in the Plan view a yellow box has been displayed. This is the area of the transition. The yellow indicates that some of the points have been connected between the templates. Next, the remainder of the points are connected.

The color coding indicates that not all of the template points are connected. The steps blow connect the remaining unconnected points.

19. <D> <D> on the transition area. This displays the **Edit Transition – 208+00.00 to 211+00.00** dialog box.

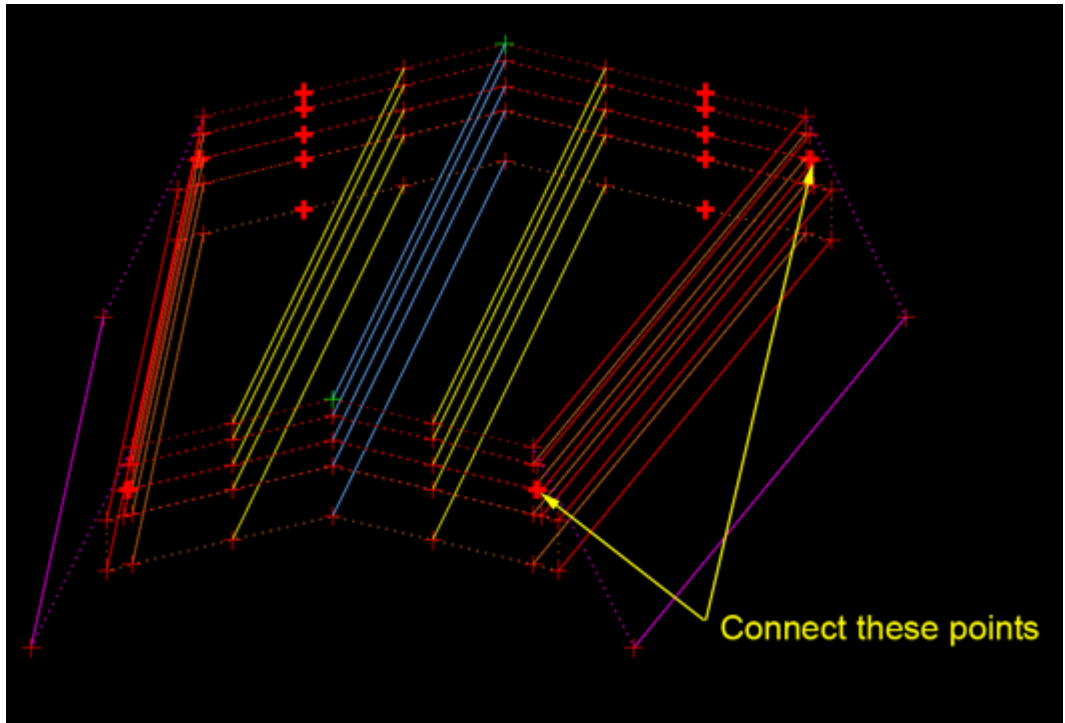


The display in the **Edit Transition – 208+00.00 to 211+00.00** dialog box shows the connections between points and the points that are not connected. The illustration below shows examples of unconnected points.



20. Zoom in on the bold "+" on the right side of the bottom template.
21. <D> on the "+". A line is attached to the "+" and the pointer.
22. Zoom out, then zoom in on the corresponding point on the upper template.

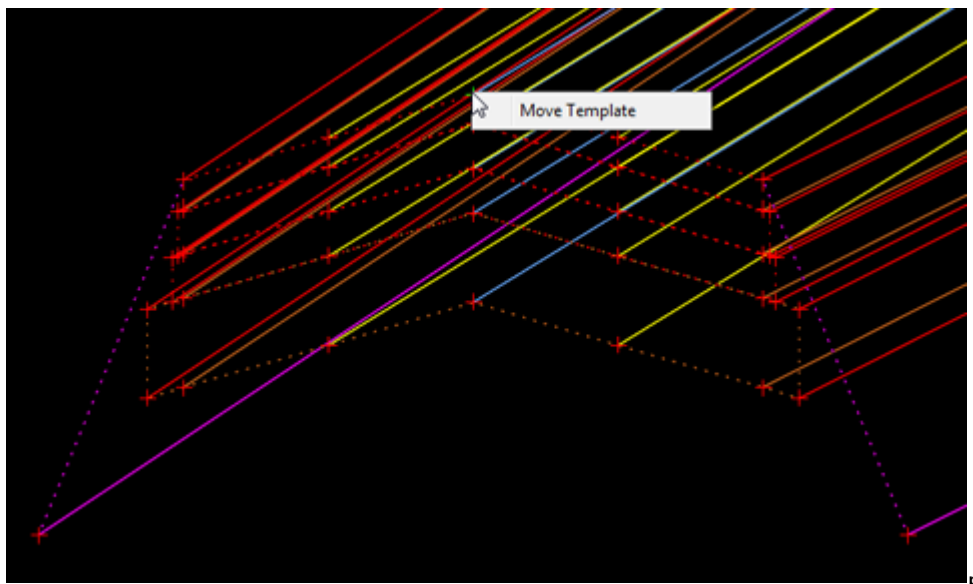
23. <D> on the “+”. The line is now attached to the “+” and it is unbolded.



24. Repeat steps 19 through 22 on the left side.

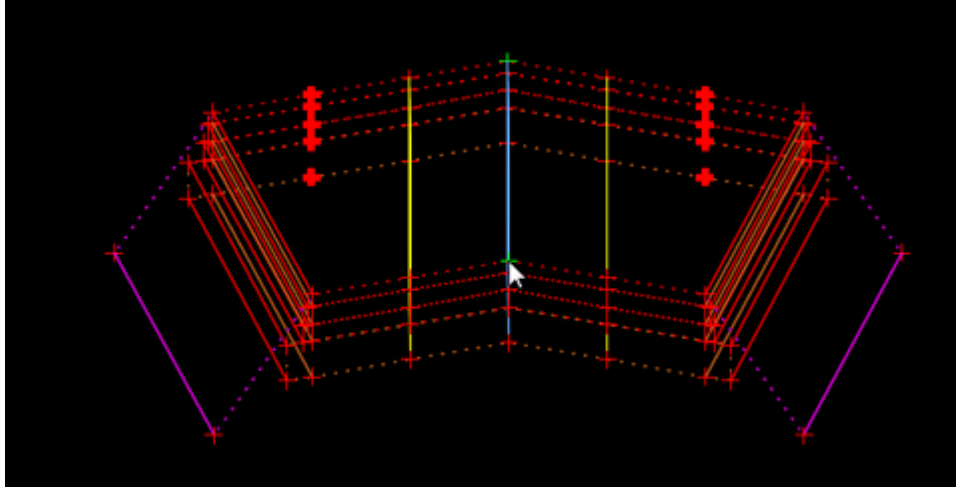
All of the points on the bottom template have been attached to points on the top template. However, points on the top template remain unconnected. These are connected to the appropriate laneline points of the bottom template.

25. <R> on the green “+” on the bottom template and select **Move Template**.

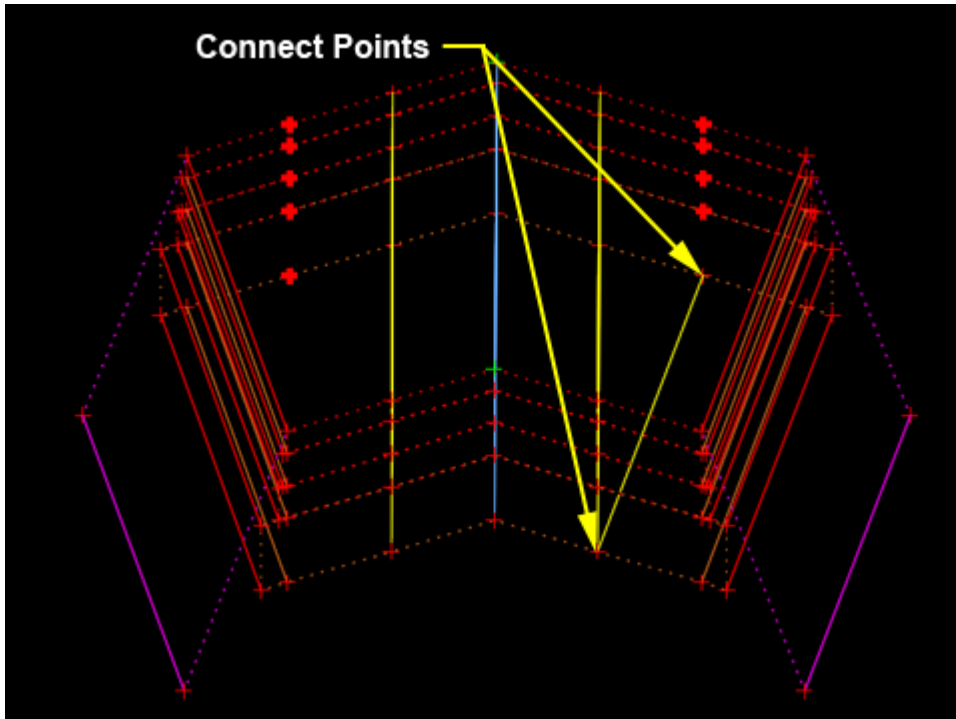


26. Move the bottom template so that it is easier to see the points to be connected.

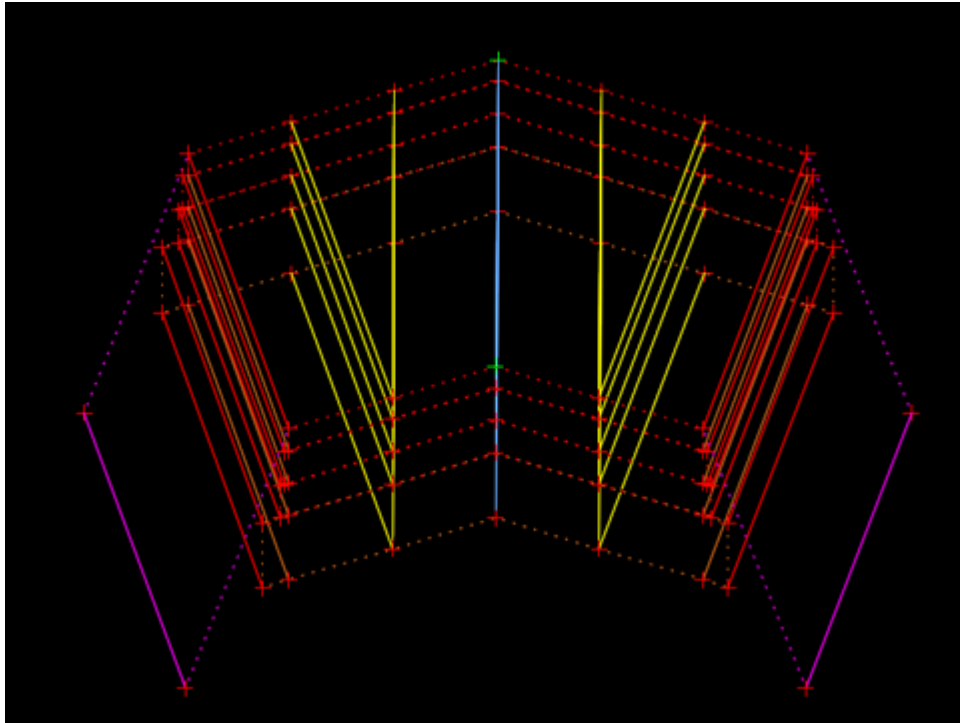
27. <D> to complete the move.



28. Starting at the bottom of the template, connect the outside lanelines on the four lane template to the lanelines on the two lane template.



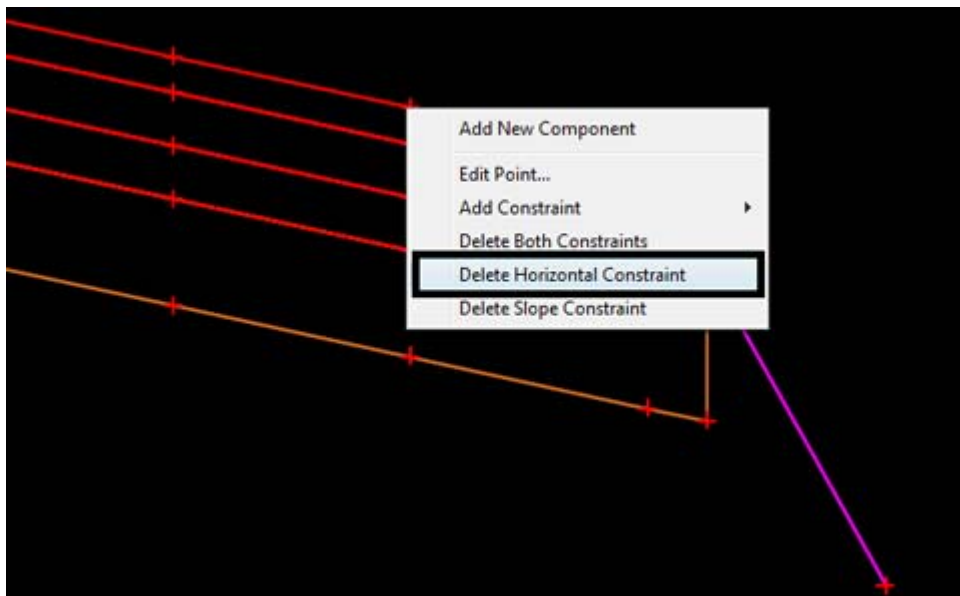
29. Connect the remaining points as shown below.



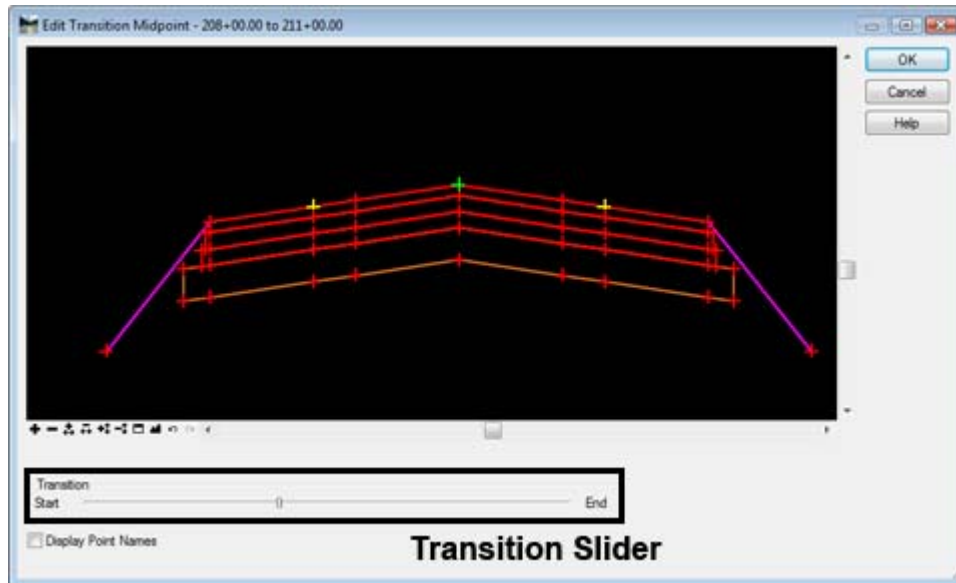
30. <D> OK. This displays the *Edit Transition Midpoint – 208+00.00 to 211+00.00* dialog box.

In order for the transition to function properly, the horizontal constraints on the lanelines must be deleted.

31. <R> on the RT_HMA_Lift1_Laneline-Top1 point and select **Delete Horizontal Constraint** from the menu.

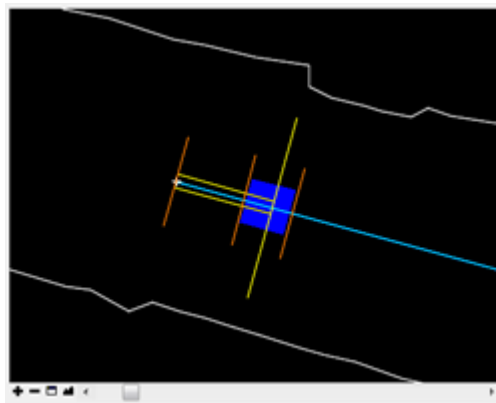


32. <R> on the LT_HMA_Lift1_Laneline-Top1 point and select **Delete Horizontal Constraint** from the menu.
33. Move the Transition slider and notice how the template behaves. The additional lane expands and contracts as the slider is moved back and forth.



34. <D> **OK** to complete the transition edit.

Notice in the plan view that the transition area is now dark blue. This signifies that all of the points are connected.



35. Select **File > Save** from the Roadway Designer menu bar.

Lab 13.2 - Set Up an End Condition Transition


In this exercise the transition between a cut slope and a fill slope between stations 219+75 to 220+00 is defined. This is done in a similar manner as the transition of two templates but it is accessed differently.

1. In the **Roadway Designer** dialog box, use the station indicator to select station **219+75.00**.

Station:

Interval:

Template:

2. Select **Corridor > End Condition Exceptions** from the Roadway Designer menu bar or <D> the End Condition Exceptions button .
3. In the **End Condition** Exceptions dialog box, note that the desired stations are already selected.
4. Toggle on **Right Transition**.
5. <D> **Add**. This adds the data to the **End Condition Exceptions** list.

Corridor: Template Transition

Station Range

Start:

Stop:

Apply To

Left Override

Right Override

Left Transition

Right Transition

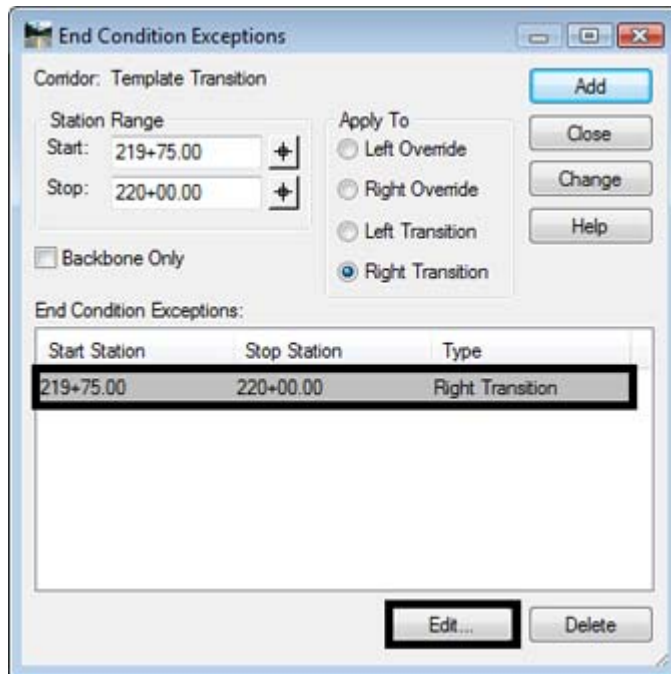
Backbone Only

End Condition Exceptions:

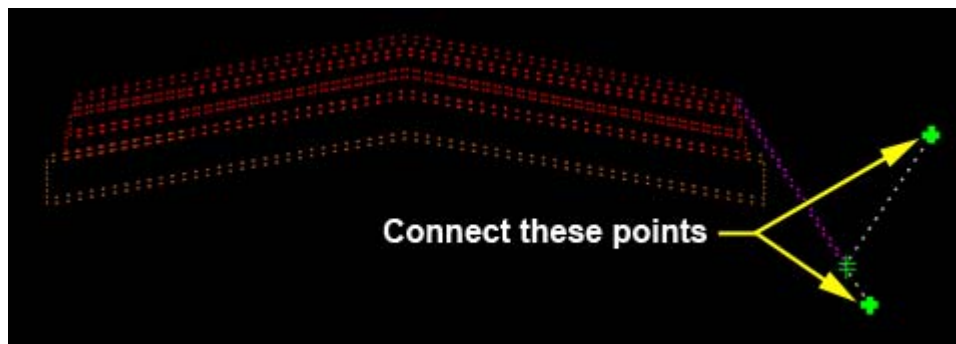
Start Station	Stop Station	Type
219+75.00	220+00.00	Right Transition

6. Highlight the entry.

7. <D> **Edit**. This displays the *Edit Transition – 219+75.00 to 220+00.00 Right* dialog box.



8. Connect the two bold “+” symbols.



9. <D> **OK**. This displays the *Edit Transition Midpoint – 219+75.00 to 220+00.00 Right* dialog box.
10. Move the Transition slider and notice how the template behaves.
11. <D> **OK** to complete the transition edit.
12. <D> **Close** to dismiss the End Condition Exceptions dialog box.
13. Select **File > Save** from the Roadway Designer menu bar.

Note: This exercise illustrates the use of the End Condition transition command. Typically, these transitions occur in areas where there is a template change. The transitions between typical cuts and fills do not have to be defined.

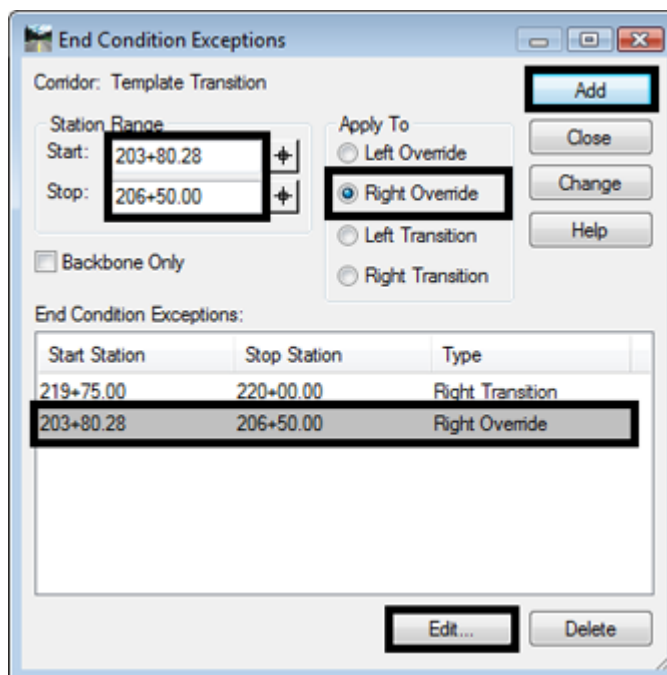
Lab 13.3 - Set Up an End Condition Exception

With using end condition exceptions, end condition points and components can be added, deleted, and/or modified. In this exercise an end condition override is used to create a deeper ditch from station 203+80.28 to 206+50.00. The existing cut slope is deleted and a new end condition is added to extend the ditch foreslope and create the backslope.

1. In the **Roadway Designer** dialog box, use the station indicator to select station **203+80.28**.
2. Select **Corridor > End Condition Exceptions** from the Roadway Designer menu bar or <D> the **End Condition Exceptions** button.
3. In the **End Condition Exceptions** dialog box, key in **206+50.00** for the **Stop** station (the **Start** station is already set).
4. Toggle on **Right Override**.
5. <D> **Add**. This adds the data to the **End Condition Exceptions** list.

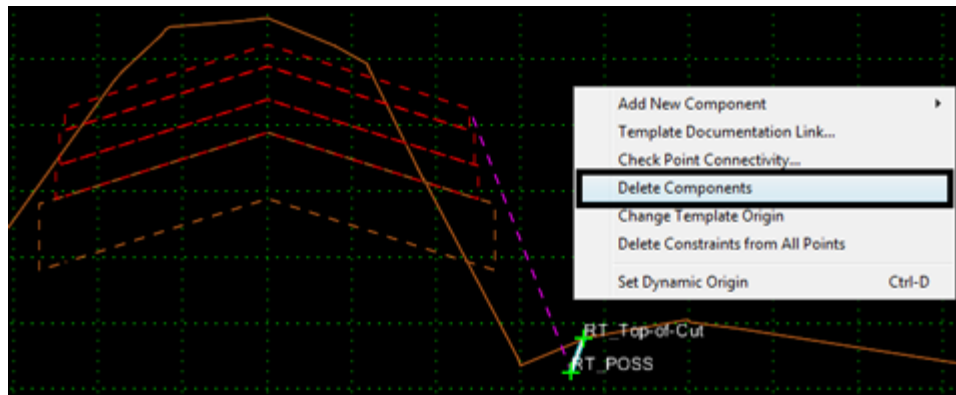
The steps below are used to actually modify the end condition data.

6. Highlight the entry.
7. <D> **Edit**. This displays the **Right Override – 203+80.28 to 206+50.00** dialog box.

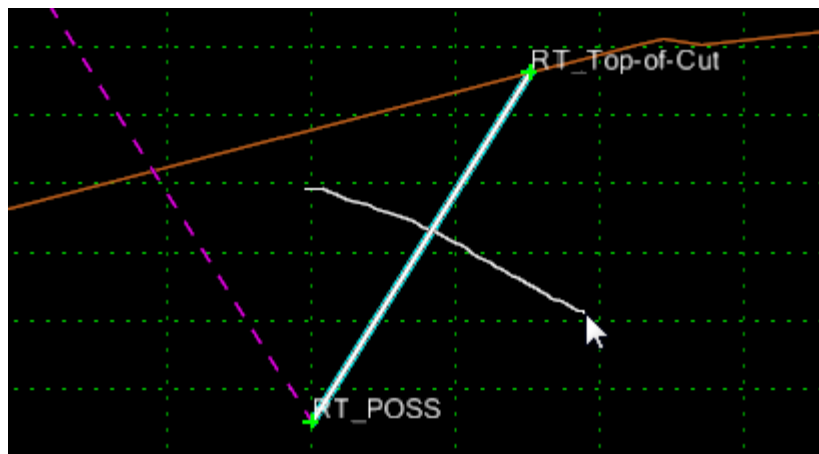


The existing end condition components are deleted from the right side of the template. Deleting the existing components is done in the same way as in the Create Template dialog box. However, when using an end condition override, the backbone components can not be deleted.

8. In the **Right Override – 203+80.28 to 206+50.00** dialog box, <R> and select **Delete Components**.



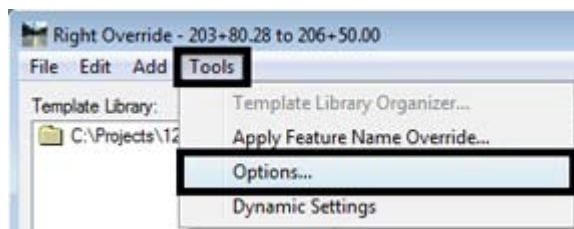
9. Zoom in around the existing cut slope component.
10. <D> and hold, then drag a line through the existing cut slope component. Release the mouse button to complete the delete.



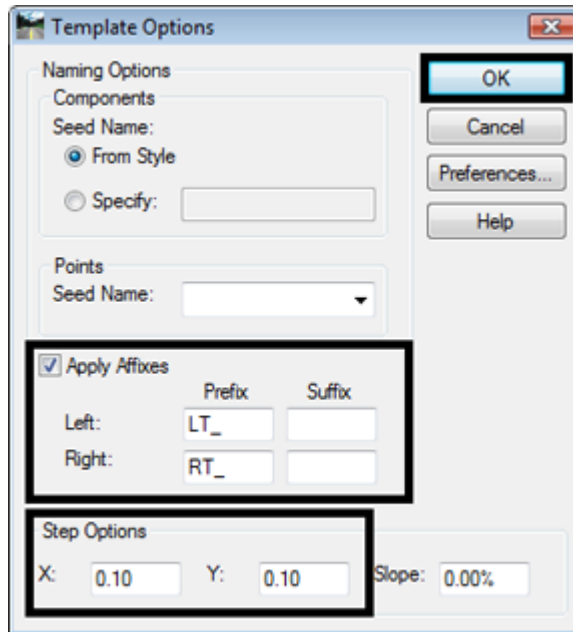
Note: The deleted component remains visible shown in light blue. However it is not incorporated into the model.

Next, the new ditch components are added. Adding new components is done in the same way as in the Create Template dialog box. However, when using an end condition override, only end condition components can be selected.

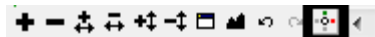
11. Select **Tools > Options** from the menu bar.



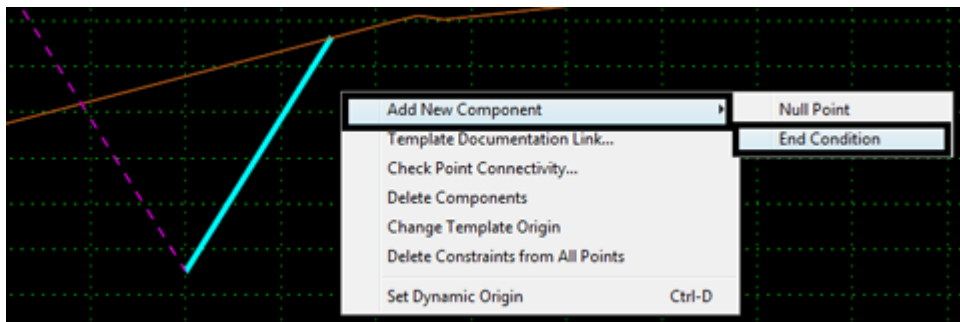
12. Toggle on **Apply Affixes**.
13. Key in **0.10** for the **X** and **Y Step Options**.
14. <D> OK.



15. <D> the **Dynamic Setting** button on the view control button bar. This displays the **Dynamic Settings** dialog box.

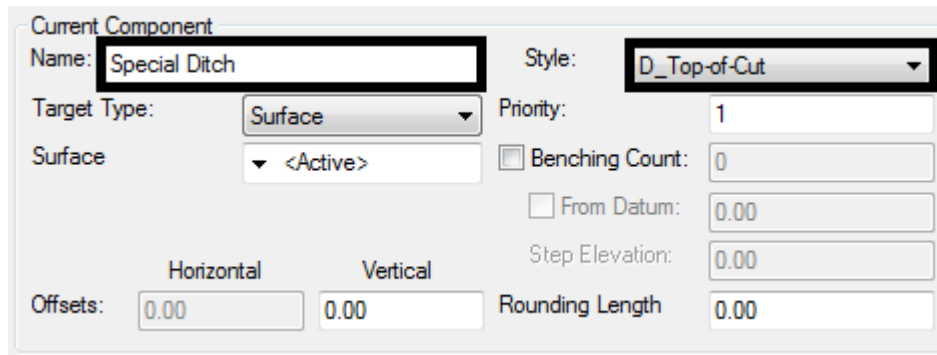


16. <R> in the template view and select **New Component > End Condition** from the menu.



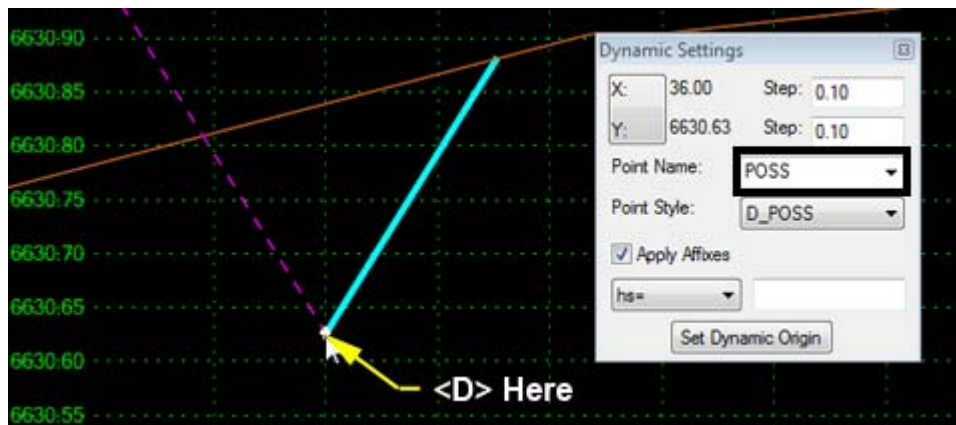
17. In the Current Component area, key in **Special Ditch** for the **Name**.

18. Select **D_Top-of-Cut** for the **Style**.



19. In the **Dynamic Settings** dialog box, select **POSS** for the **Point Name**.

20. <D> on the **RT_POSS** point.

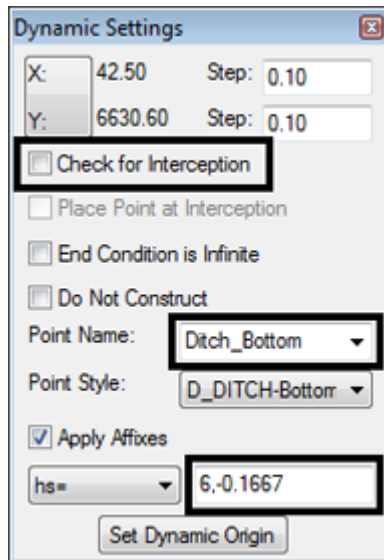


21. In the **Dynamic Settings** dialog box, toggle off **Check for Interception**.

22. Key in **Ditch_Bottom** for the **Point Name**.

23. Set the **Point Style** to **D_DITCH-Bottom**.

24. In the precision key-in field, key in **6,-0.1667**.



Dynamic Settings

X: 42.50 Step: 0.10

Y: 6630.60 Step: 0.10

Check for Interception

Place Point at Interception

End Condition is Infinite

Do Not Construct

Point Name: Ditch_Bottom

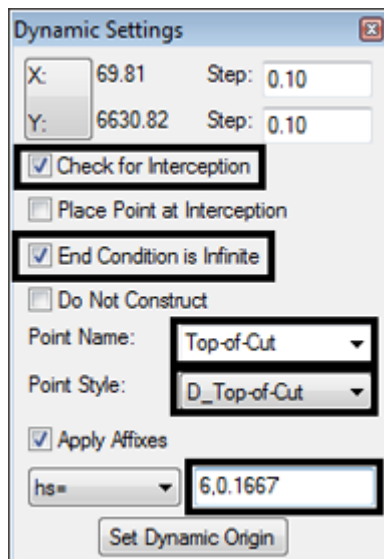
Point Style: D_DITCH-Bottom

Apply Affixes

hs= 6,-0.1667

Set Dynamic Origin

25. Press the **Enter** key.
26. In the **Dynamic Settings** dialog box, toggle on **Check for Interception**.
27. Toggle on End Condition is Infinite.
28. Select **Top-of-Cut** for the **Point Name**.
29. In the precision key-in field, key in **6,0.1667**.
30. Press the **Enter** key.



Dynamic Settings

X: 69.81 Step: 0.10

Y: 6630.82 Step: 0.10

Check for Interception

Place Point at Interception

End Condition is Infinite

Do Not Construct

Point Name: Top-of-Cut

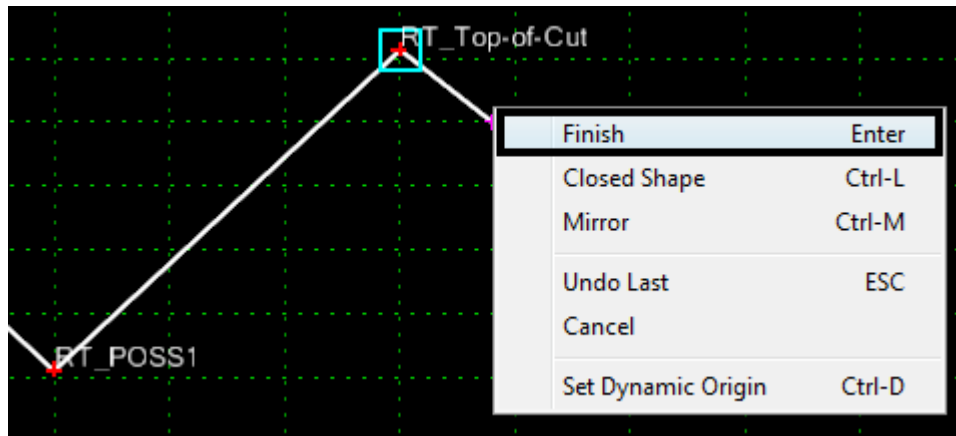
Point Style: D_Top-of-Cut

Apply Affixes

hs= 6,0.1667

Set Dynamic Origin

31. <R> in the template view and select **Finish** from the menu.



32. <D> **OK**. This completes the edit of the override.

33. <D> **Close** to dismiss the End Condition Override dialog box.

34. Use the **Station** indicator to scroll through the affected stations. Notice the changes.

35. Select **File > Save** from the Roadway Designer menu bar.

36. <D> **Close** to exit the Roadway Designer.

Chapter Summary:

- In [Lab 13.1 -Set Up a Template to Template Transition](#) the process of setting up a template to template transition was demonstrated. This included the necessary template drops, connecting template points and changing point constraints.
- In [Lab 13.2 -Set Up an End Condition Transition](#) an end condition transition was built. This involved selecting station a for the transition and connecting end condition points.
- In [Lab 13.3 -Set Up an End Condition Exception](#) an end condition override was created. This involved selecting a station for the override, deleting existing end condition components, and adding a new component.