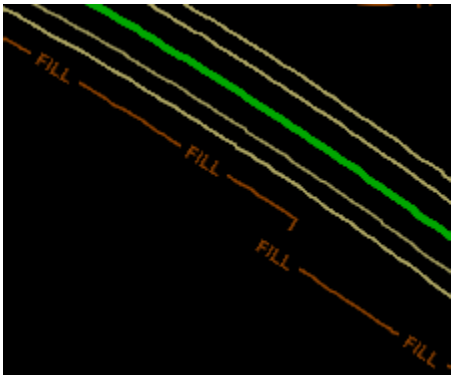
InRoads – End Condition Transitions

Create Template and Roadway Designer

Overview

Sometimes it is necessary to use specific cut or fill end conditions in your roadway design. For example, some conditions warrant a 2:1 cut or fill slope, and others may need a 4:1 or 6:1. A conditional cut/fill end condition could be used, but that can result in irregular slopes for your end condition components. Fixed end conditions should be transitioned, but InRoads does not automatically create those even transitions. This document describes how to transition between disparate end condition solutions, using two methods in the InRoads Roadway Designer.

This graphic illustrates a jagged fill slope where a 2:1 fill end condition is used, followed by a 6:1 slope. There are two viable methods for transitioning the end condition solutions – one uses Parametric Constraints and the other uses End Condition Exceptions. Each of these methods has its advantages.



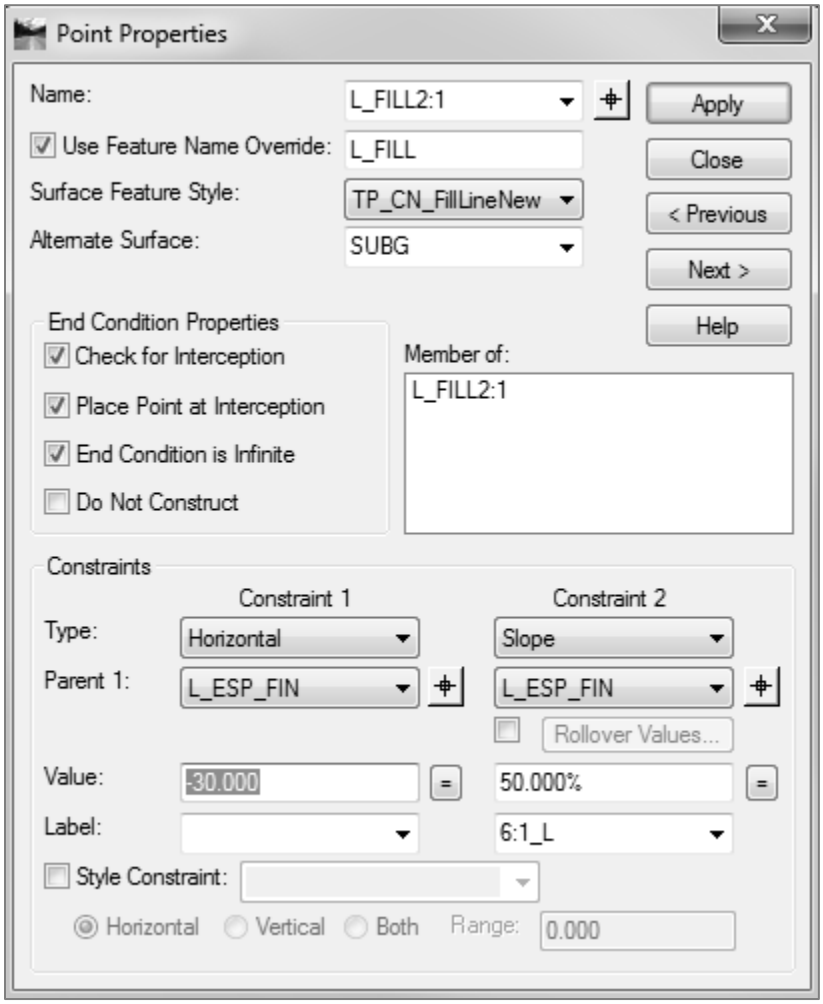
Workflow

The first method uses parametric constraints within the end condition component.

Parametric Constraints

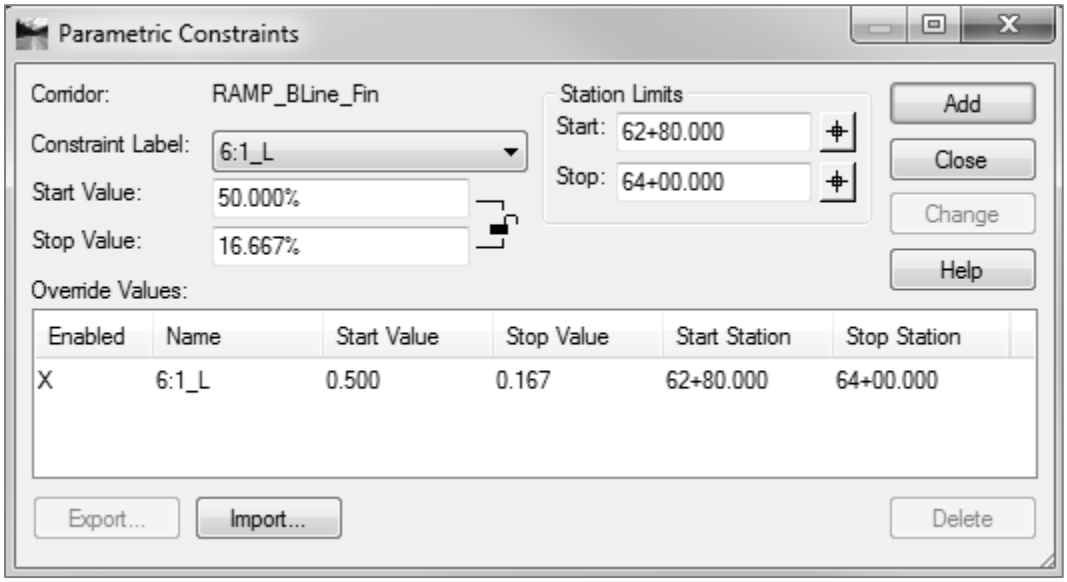
Open the template editor using the *Modeler* > *Create Template* command.

1. Edit the *Point Properties* for the catch point in your template.
2. Enter a label in the slope constraint Label field of the Point Properties dialog, then click **Apply** and then **Close**.



3. In the Roadway Designer, select the *Tools* > *Parametric Constraints* command.
4. Call the label from the template as a parametric constraint, using the start and stop stations to begin the transition.

Note: Parametric constraint labels are unique to each template. The ability to disable a constraint is a new feature in version V8i.

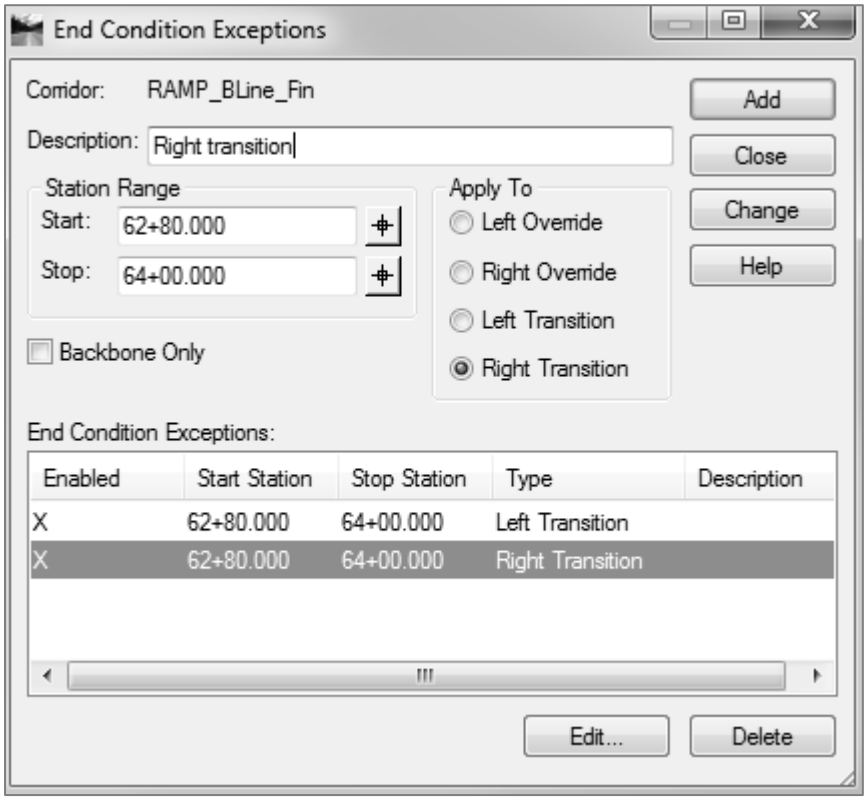


End Condition Exceptions

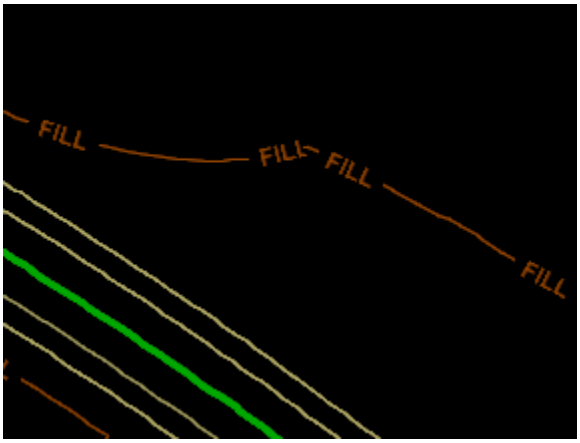
The next method uses the **End Condition Exceptions** command.

1. In the Roadway Designer, select the *Corridor* > *End Conditions Exception* command.
2. Set the left and right transition stations
3. Double-click on the transition in the *End Condition Exceptions* portion of the dialog box. This brings up the Edit Transitions dialog and allows you to create transitions for end conditions.

   Note: The Edit Transition command only works on the template backbone, but the Edit Transitions dialog within the End Condition Exceptions command allows you to edit end conditions.
4. Connect the bold crosses as appropriate and then click **OK**.
5. Check the results in the Edit Transition Midpoint dialog.



The plan view transition should now be a smooth transition, instead of a jagged edge.



Which method is better? Whichever method works the most reliably in the corridor. The end condition exception method allows you to span multiple template drops, although you can add the parametric constraint label to each of your end condition exceptions.

For questions or comments on this tech note, contact your regional CAE Support Coordinator or the WSDOT CAE Help Desk at (360) 709-**8013**.