

# LAB 30 - End Conditions that Require Multiple Solutions

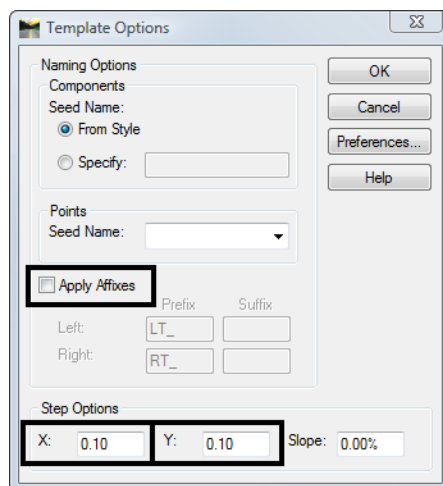
This lab demonstrates the construction of end conditions that require multiple solutions. The section will place a minimum 2-foot depth ditch, with a berm if necessary, when in cut. The section will also place a 4 to 1 fill slope when the embankment height is 10-feet or less and a 3 to 1 fill slope when over 10-feet in height. This section is constructed using the drag and drop method. Then, the end condition priorities are reset so that the section operates properly.

## Chapter Objectives:

- Build an end condition section that tests for solutions based on priority
- Build an end condition section using existing components with the drag and drop method

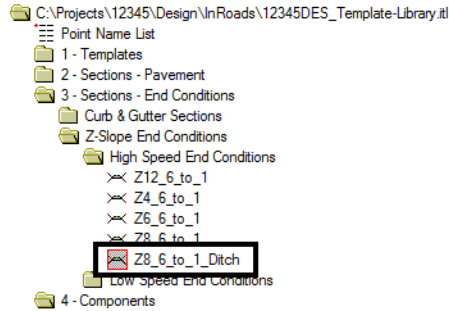
## Lab 30.1 - End Conditions that Require Multiple Solutions

1. Open MicroStation and InRoads using the *12345DES\_Model-End Cond Mult Sol.dgn* file.
2. Select **File> Open** from the InRoads menu bar.
3. Select the *C:\Projects\12345\Design\InRoads\12345DES\_Template-End Cond Mult Sol.itl* from the available files.
4. <D> **Open** then <D> **Cancel** the *Open* dialog box.
5. Select **Modeler> Create Template** from the InRoads menu bar.
6. Select *Tools> Options* from the *Create Template* menu bar.
7. Make sure that **Apply Affixes** is toggled off and the **X and Y Step Options** are set to **0.10**.

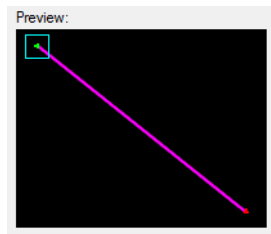


8. <D> the **OK** button.
9. <D> <D> on the root folder in the Template Library pane to expand the folder structure.

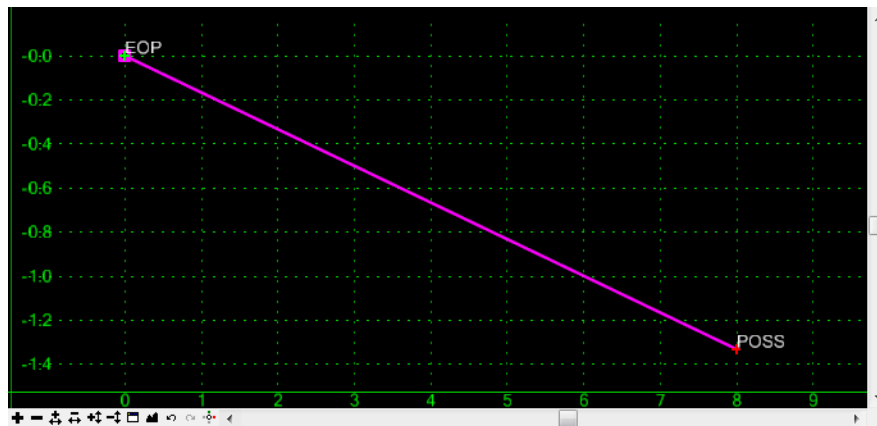
10. Expand the **3 - Sections - End Conditions > Z-Slope End Conditions > High Speed End Conditions** folder.
11. Create a new template in the **High Speed End Conditions** folder. Name it **Z8\_6\_to\_1\_Ditch**.



12. Expand **4 - Components > End Conditions > Z-Slope Components > High Speed End Conditions** folder.
13. <D> on the **Z-Slope\_8\_6\_to\_1** component. The component is displayed in the Preview window.
14. <D> **and hold** on component's origin (the green dot).

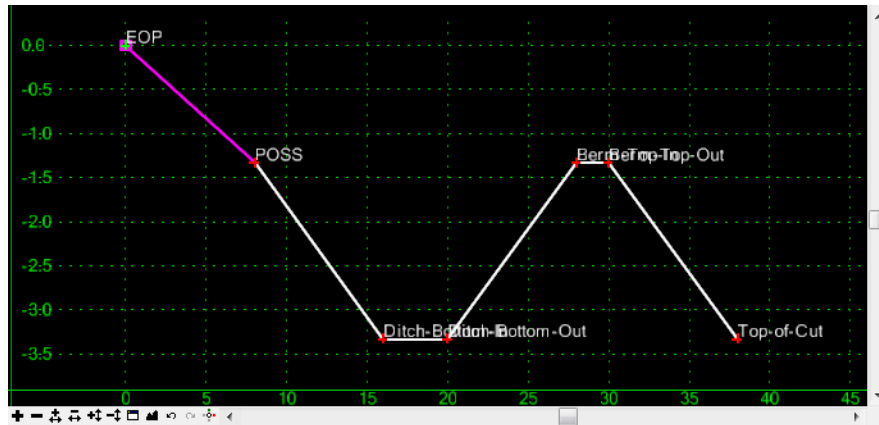


15. **Drag** the component into the Template View and **drop** (release the data button) it on the new section's origin.

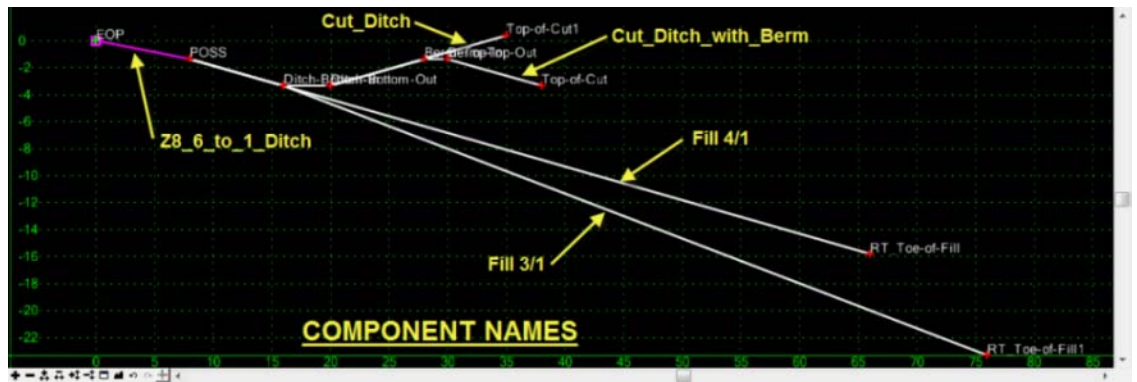


16. Expand **4 - Components > End Conditions > Cut Slope Components** folder.
17. <D> on the **Cut\_Ditch\_with\_Berm** component.

18. <D> and hold on component's origin (the green dot).
19. Drag the component into the Template View and move the pointer on to the component point named POSS and drop. The "+" on the component point turns white when the pointer is on it.

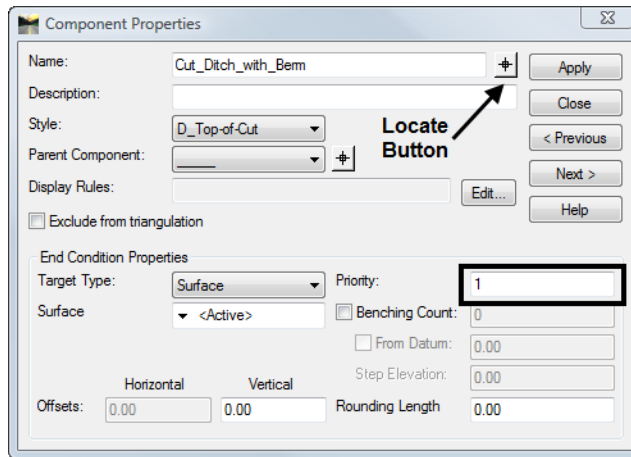


20. Repeat steps 16, 17 & 18 for the *Cut\_Ditch* component.
21. Expand **4 - Components > End Conditions > Fill Slope Components** folder. Repeat steps 16, 17 & 18 for the *Fill\_4\_to\_1* and *Fill\_3\_to\_1* components.



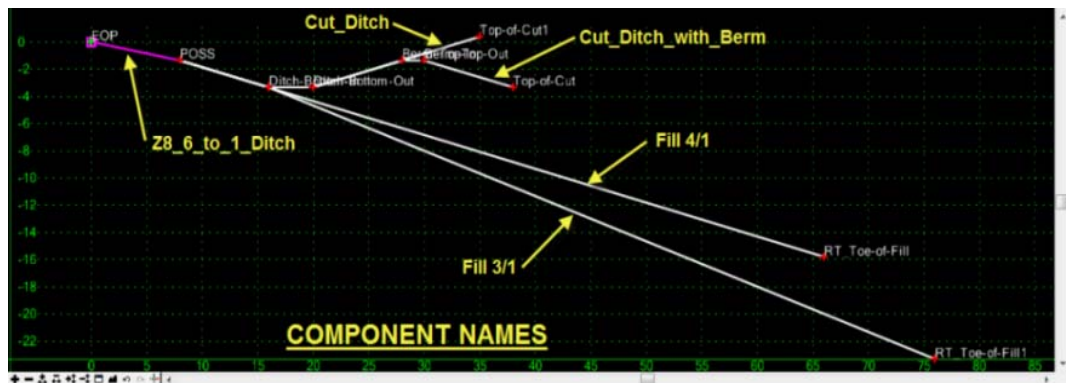
22. <D> <D> on the *Cut\_Ditch\_with\_Berm* component.

23. Verify that the **Priority** is set to **1**.



24. <D> on the **Locate Button** next to **Name** in the **Component Properties** dialog box.

25. <D> on the **Cut\_Ditch** component in the Template View.



26. Verify that the **Priority** is set to **2** in the **Component Properties** dialog box.

27. Set the remaining End Condition Component priorities as follows:

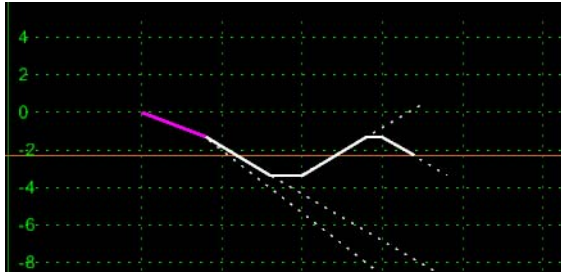
- ◆ **Fill\_4/1 = 3**
- ◆ **Fill\_3/1 = 4**

28. Be sure to <D> the **Apply** button if any Priority values were modified.

29. <D> the **Close** button in the Component Properties dialog.

30. <D> the **Test Button**.

31. In the *Test End Conditions* dialog box, <D> **Draw** and notice how end conditions behave.



32. <D> Close.

