InRoads – Sawcut & Widening by Template Method

Overview

Sawcut and widening is a common WSDOT design process. InRoads can automate the process of determining the existing cross slope and projecting the widening. There are several possible InRoads workflows available to accomplish this task – selecting the appropriate one for your project can depend on project-specific factors and the version of InRoads.

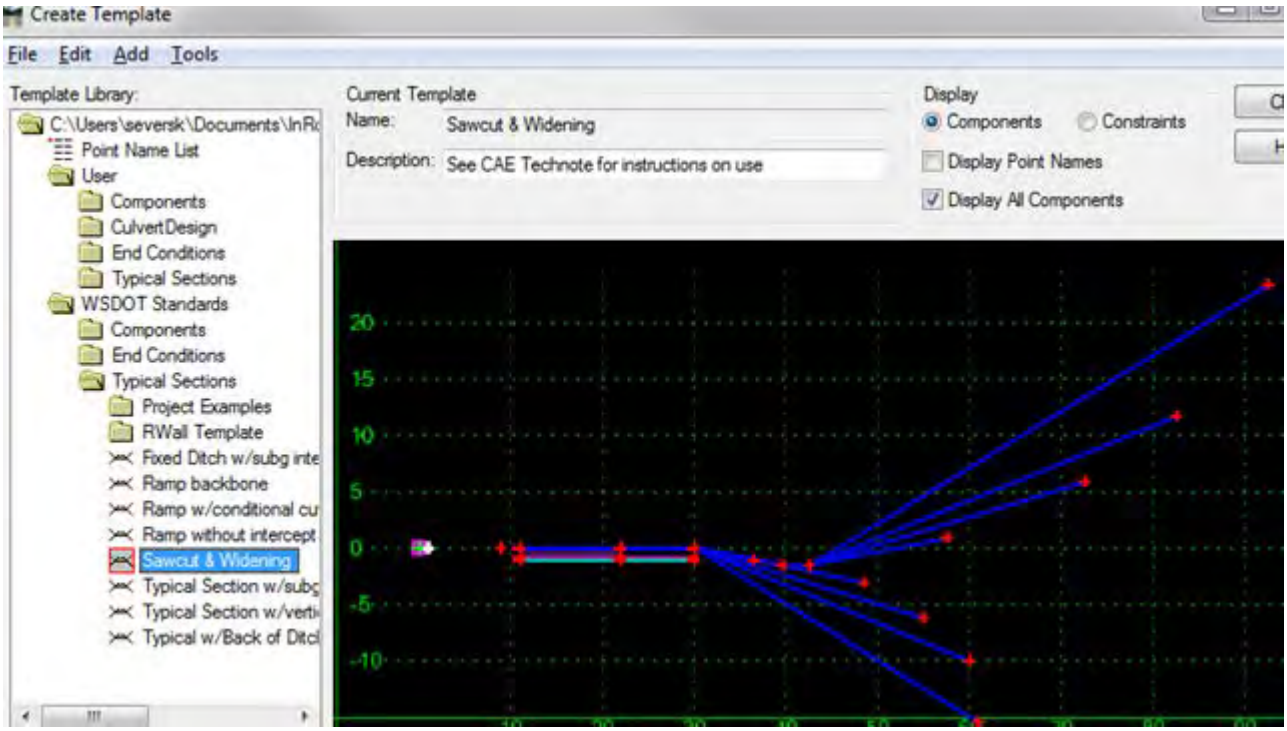
The process described in this Tech Note uses the **Sawcut & Widening** template. The template uses two null points to seek the existing roadway and vectors between these points to match and extend the cross slope for widening. Locate the null point horizontal constraints to best capture any existing crown or super elevation in the roadway. The inside null point might be located near the crown or inside fog stripe. The outside null point would typically be near the edge of the existing traveled way (ETW) or proposed sawcut.

Workflow

This process requires an existing surface that accurately models the existing roadway and a controlling horizontal and vertical alignment or surface feature.

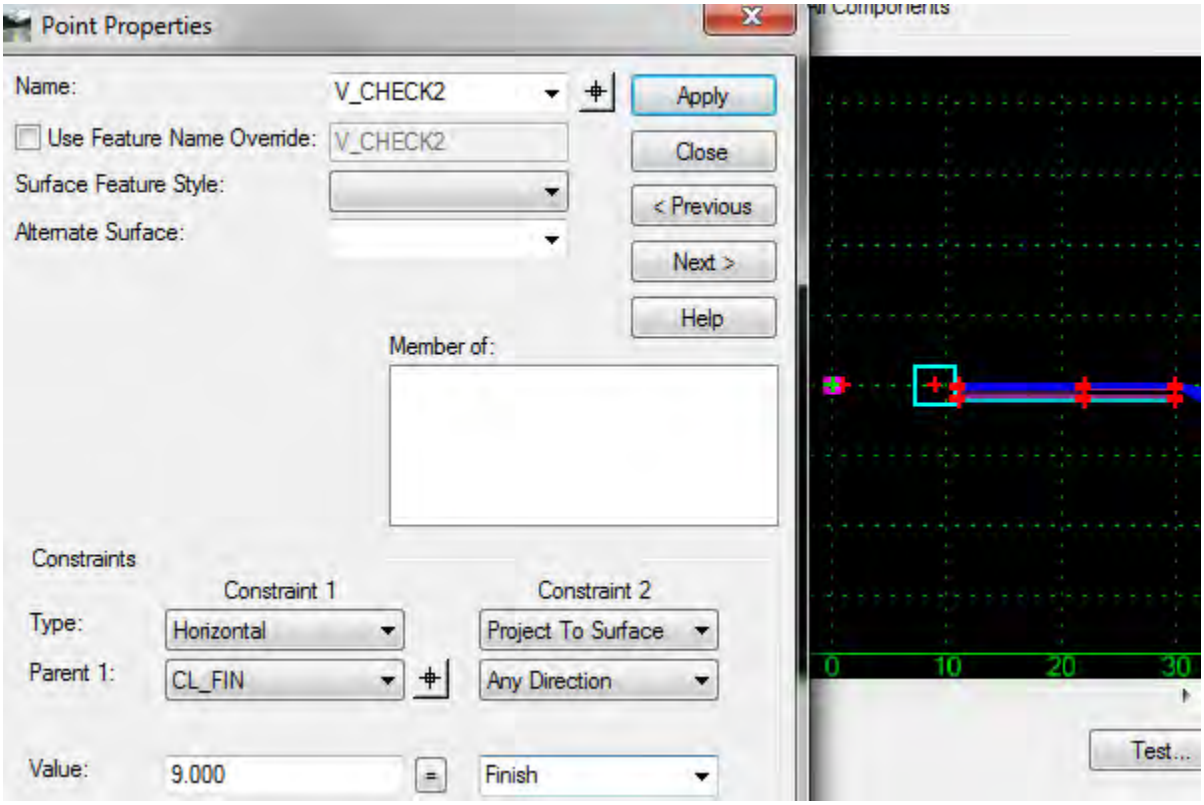
First, review the **Sawcut & Widening** template located in the **WSDOT_templates.itl**. This template is found in the *C:\Users\Public\CAE\Standards\WSDOT\Libraries* folder. Copy and paste this template to your *User > Typical Sections* folder.

If your project ITL library does not contain the WSDOT standards folder, use the *Tools >Template Library organizer* command to copy it in from the *C:\Users\Public\CAE\Standards\WSDOT\Libraries* folder and drag and drop the **WSDOT Standards** folder to the project file.



Set the user copy of the template active and edit null points **V_Check1** and **V_Check2**. Locate the horizontal constraints over the left and right sides of the existing roadway to match and widen, and the **Project To Surface Constraints** to seek the same existing roadway surface.

The existing roadway may be the active surface used in the Roadway Designer or a separate roadway surface may be referenced.

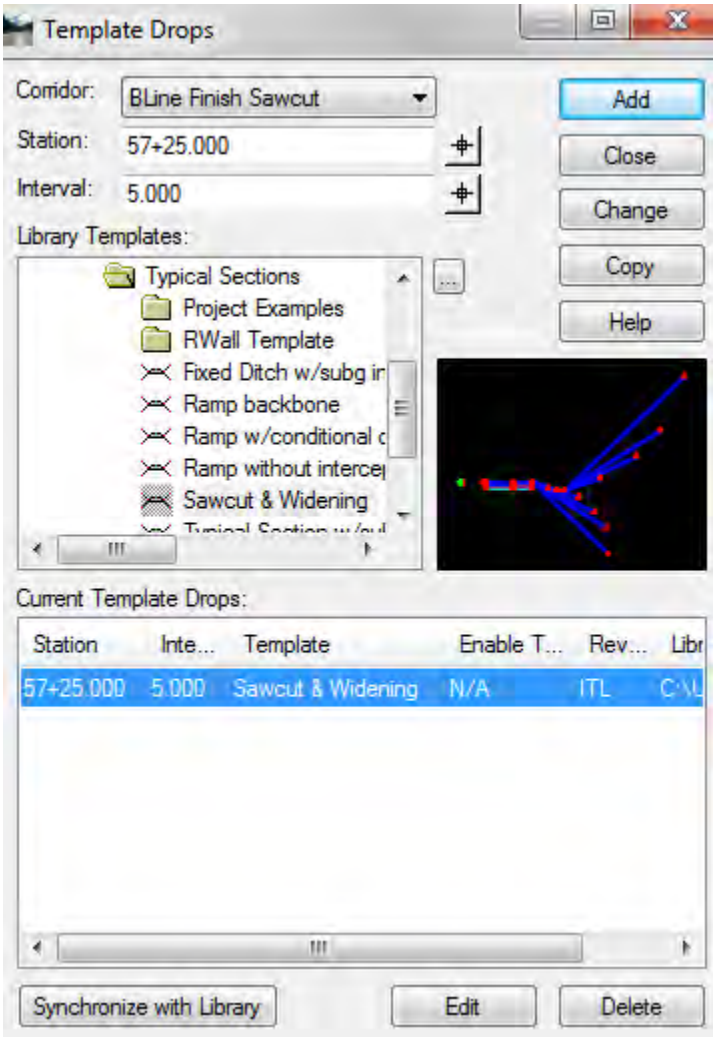


The FIN surface points (**SC**, **ETW**, **ESP_FIN**) are all preset vertically to match **V_Check1** and **V_Check2** using vector–offsets constraints. Set the horizontal widths***** of the sawcut, new lane and shoulder as needed to fit the project requirements. Save the template and exit the Create Template dialog.

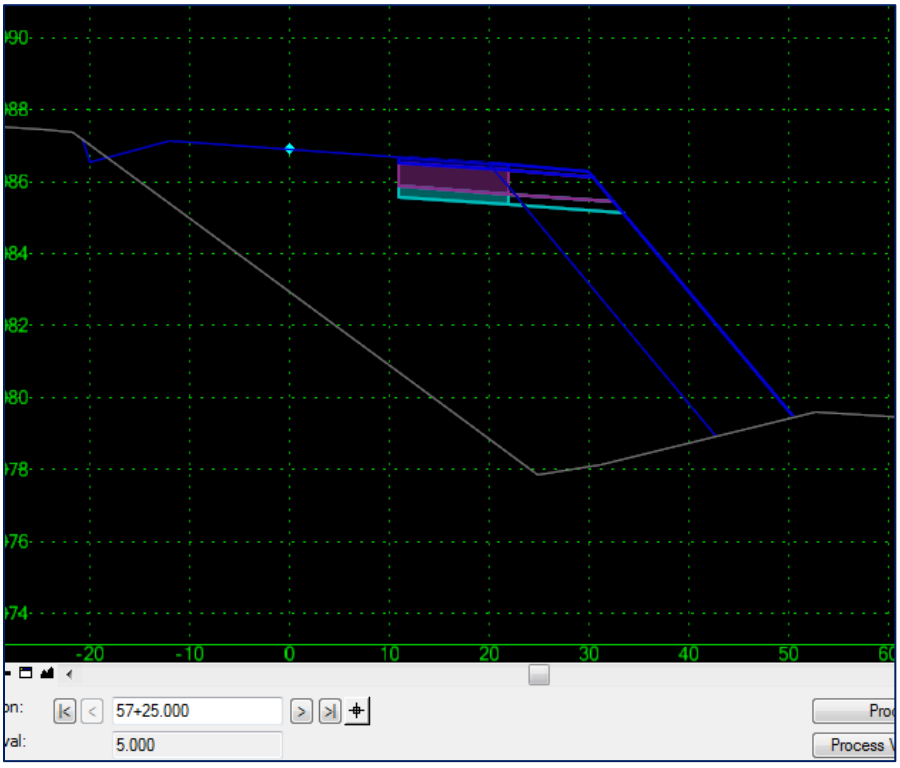
*NOTE: These widths may also be managed with point controls later in the Roadway Designer.

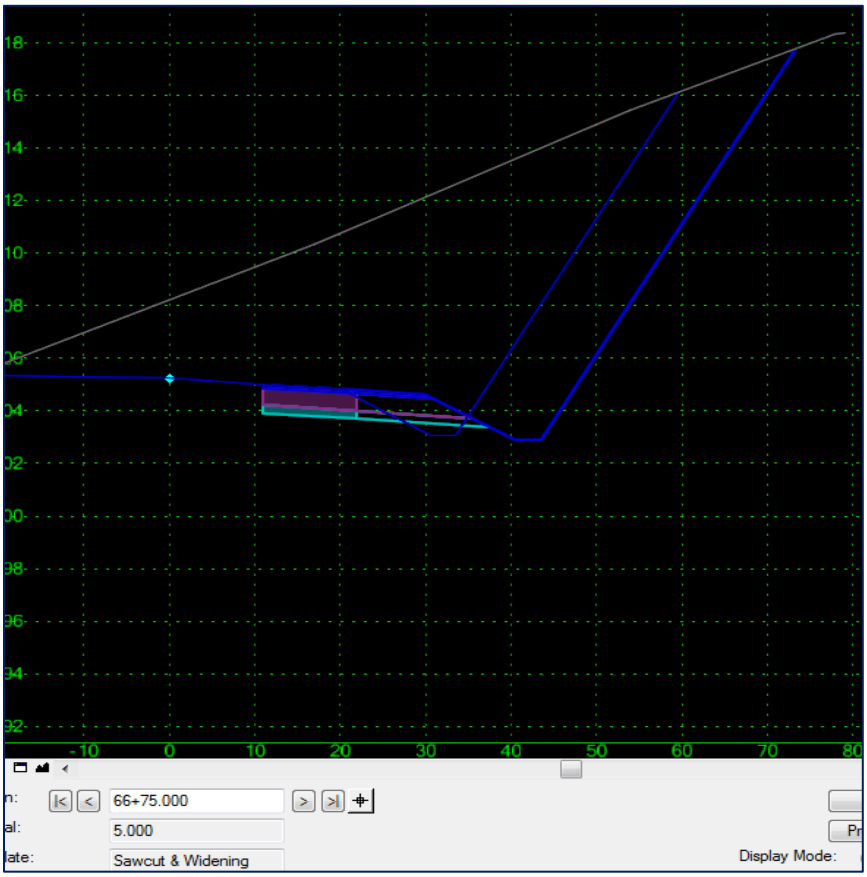
Open the InRoads Roadway Designer. Create a design corridor with a controlling horizontal and vertical alignment or surface feature.

Create template drops using the user copy of the **Saw Cut Widen** template. Frequent drop intervals will more closely match the existing roadway. Conversely, the number of templates drops will also affect the speed of the Roadway Designer in large projects.



Set the active surface in the Roadway Designer, and review the design. Verify that **V_Check1** and **V_Check2** are matching the desired surface as defined in the template constraints and that the end conditions are intercepting the active surface.


-20
-10
0
10
20
30
40
50
57+25.000
5.000


-10
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40
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Sawcut & Widening
Display Mode:

If a varying roadway width is necessary, point controls may be added at this time. For example, the proposed lane widening point **ETW** could follow a horizontal alignment that varies in width while the shoulder width and cross slope are maintained.

Create and save the design surface.

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