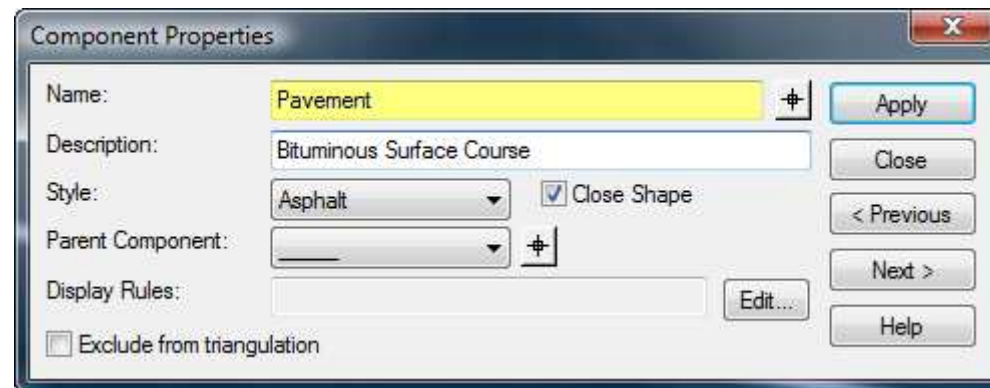


Best Practices In Creating Templates

Presented by: Robert Nice - Bentley UK

Component Naming

- Component naming is recommended to be consistent with the material type.
 - Used for displaying components
 - Component display rules
 - Displaying templates
 - Material quantities
 - Etc.

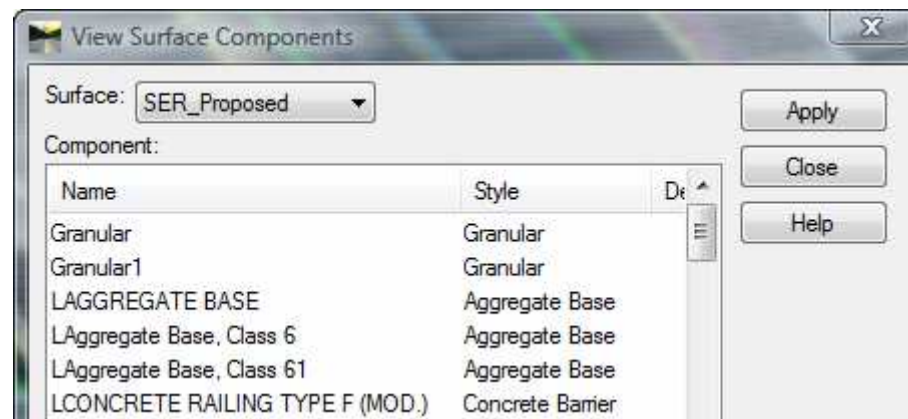


The screenshot shows a dialog box titled "Component Properties" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Name:** A text field containing "Pavement" with a yellow highlight and a plus sign icon to its right.
- Description:** A text field containing "Bituminous Surface Course".
- Style:** A dropdown menu showing "Asphalt" and a checked checkbox labeled "Close Shape".
- Parent Component:** A dropdown menu with a plus sign icon to its right.
- Display Rules:** A text field with an "Edit..." button to its right.
- Exclude from triangulation:** An unchecked checkbox.
- Buttons:** "Apply", "Close", "< Previous", "Next >", and "Help" are arranged vertically on the right side of the dialog.

Component Naming

- Component names are used when viewing Surface Components.



- Note: This option is currently only supported in InRoads.

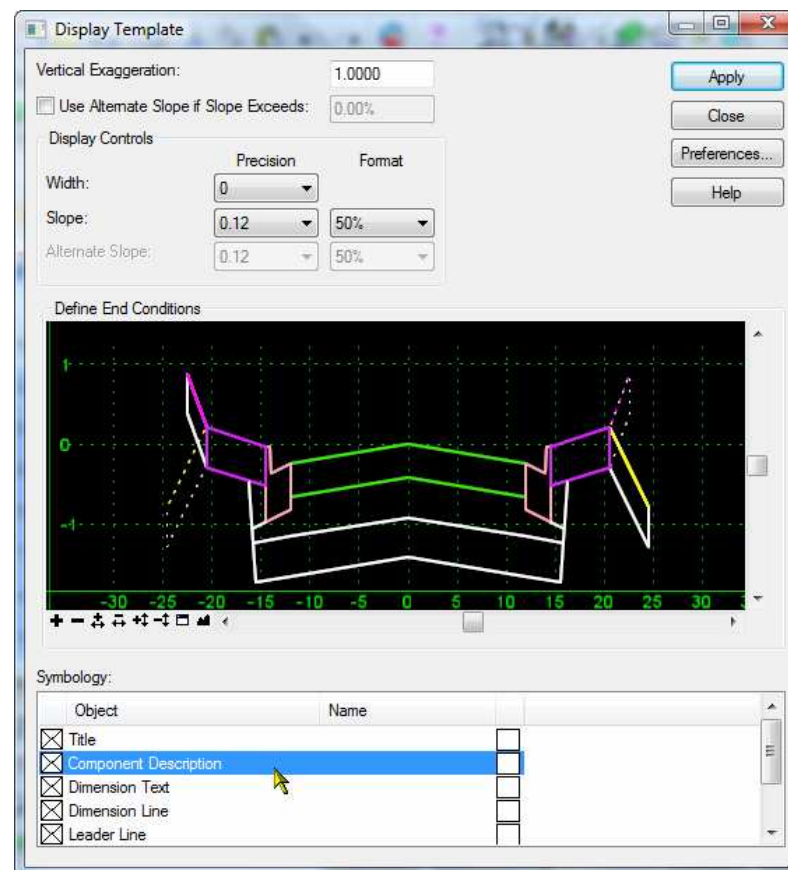
Component Naming

- Component names are used when creating / using Component Display Rules.



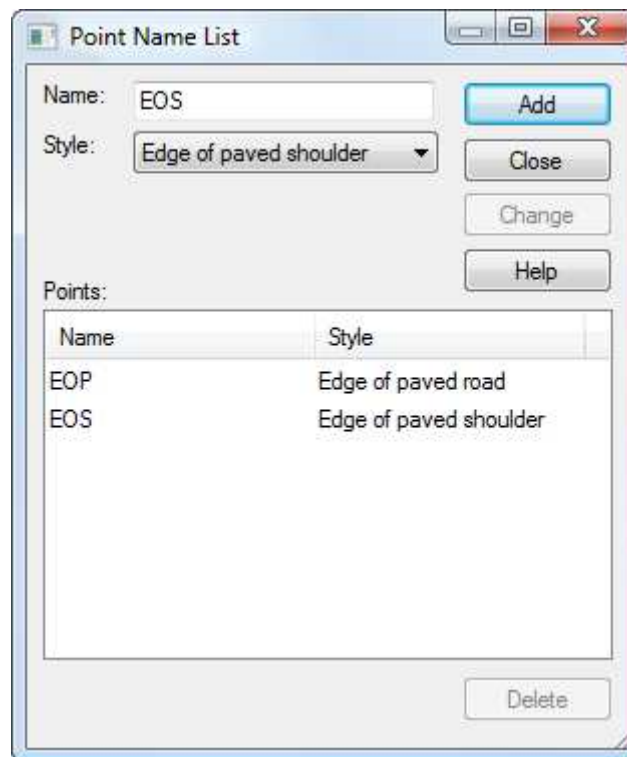
Component Naming

- Component names are used within the Display Templates application for creating typical sections.



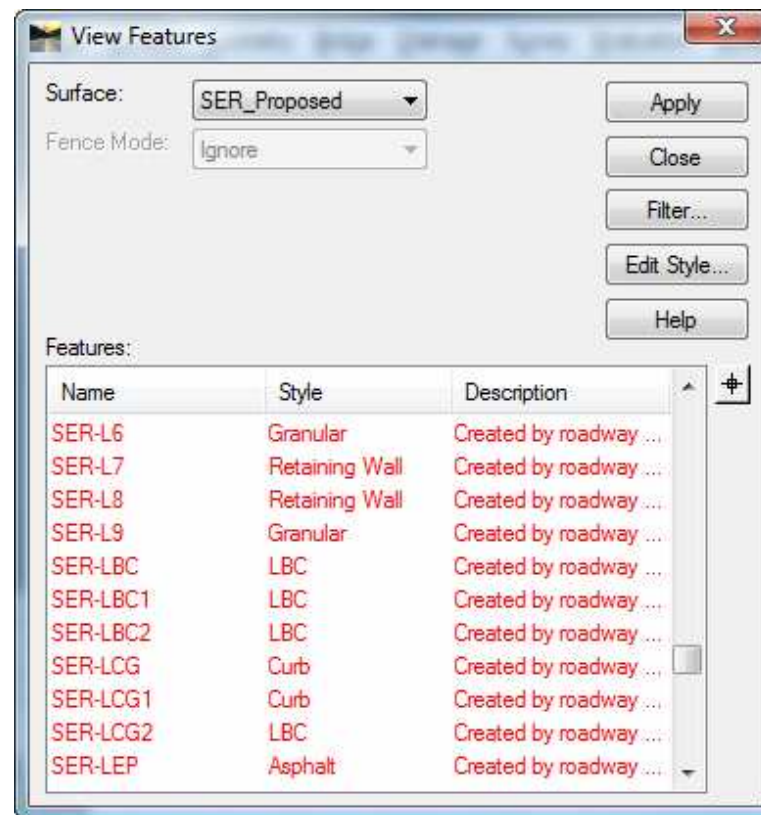
Point Naming

- Point names are used throughout Roadway Designer in many aspects.



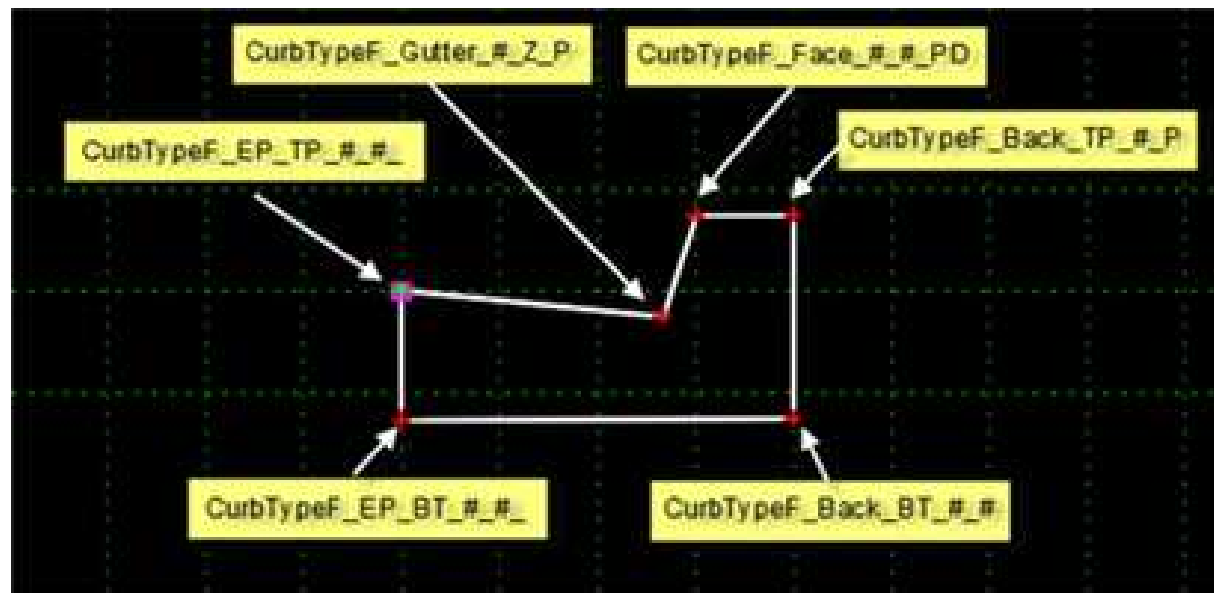
Point Naming

- Point names are used to establish the feature names within the DTM model.



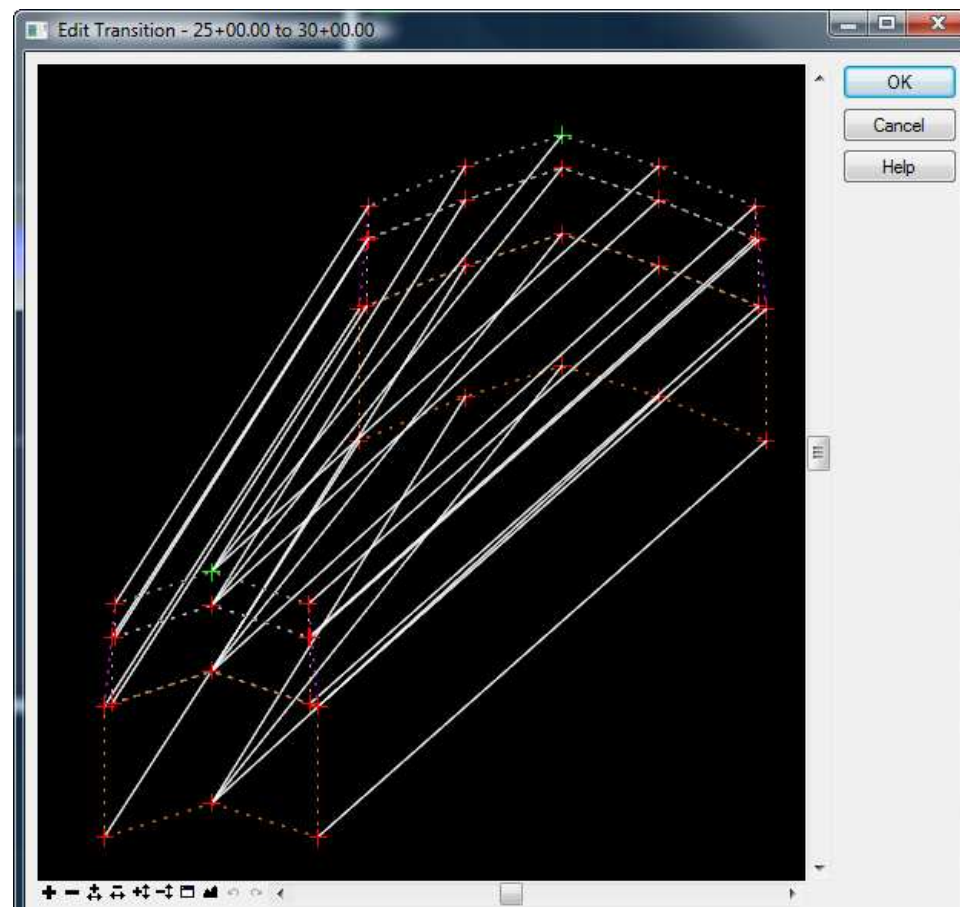
Point Naming

- Point naming conventions should be standardized and compliance enforced within your organization.
- Example:
 - **Component_Type_Location_Quantity_Display_Misc**



Point Naming

- Point naming consistency between templates allows transitions to complete automatically.



Point Naming

- Point names are vital to setting point controls.

Corridor: Route1

Point:

Mode: Horizontal Vertical Both

Control Type:

Horizontal Alignment:

Use as Secondary Alignment

Priority:

Station Limits: Start: Stop:

Horizontal Offsets: Start: Stop:

Vertical Offsets: Start: Stop:

Horizontal and Vertical Controls:

Enabled	Priority	Name	Start Station	Stop Station	Mode	Type	Control
X	1	L_EP_WC_Top	12+34.00	25+00.00	Vertical	Superelevation	Section1 CLRD_WC_...
X	1	R_EP_WC_Top	12+34.00	25+00.00	Vertical	Superelevation	Section1 CLRD_WC_...

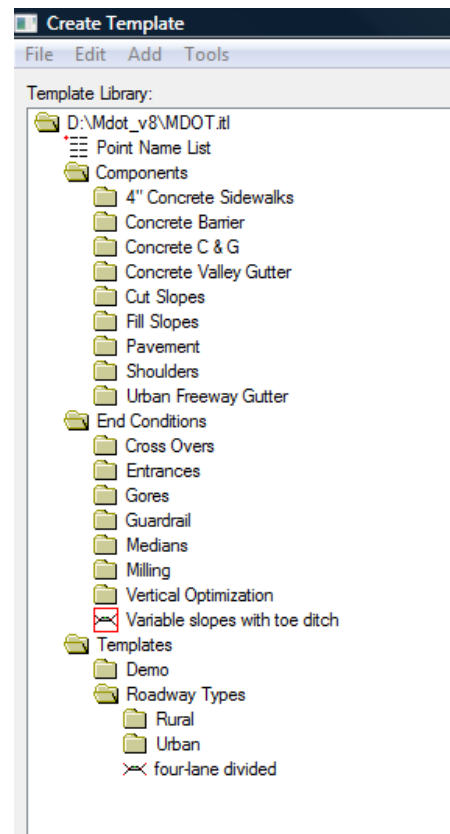
Point Naming

- Point name prefixes / suffixes should only be used when creating templates and not in the Point Name List.



ITL Folder Library

- Use the template library folder structure to organize the workflow and minimize the “search”

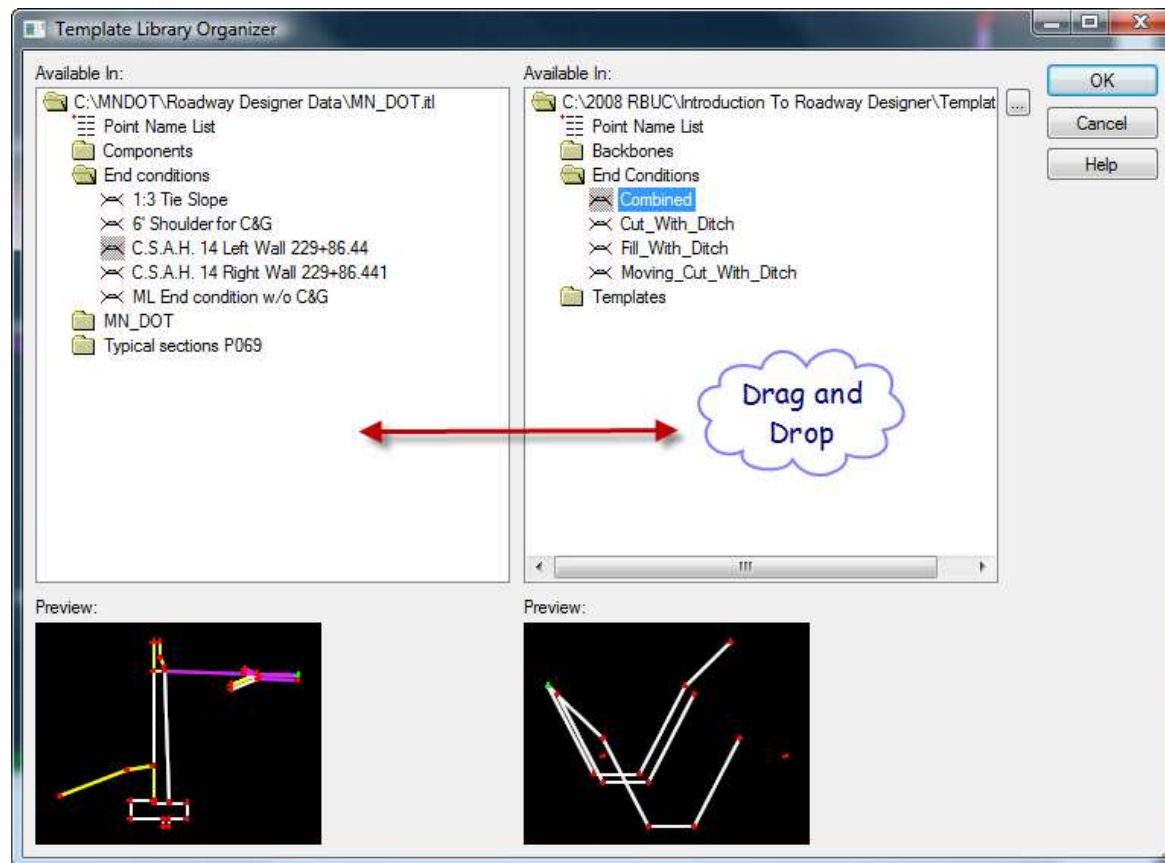


ITL Folder Library

- There are infinite possibilities and no right or wrong answer. Just keep it logical. Possible scenarios:
 - Organize by design speed
 - Organize by road classifications (rural, urban, highway, etc.)
 - Organize by design standards
 - etc

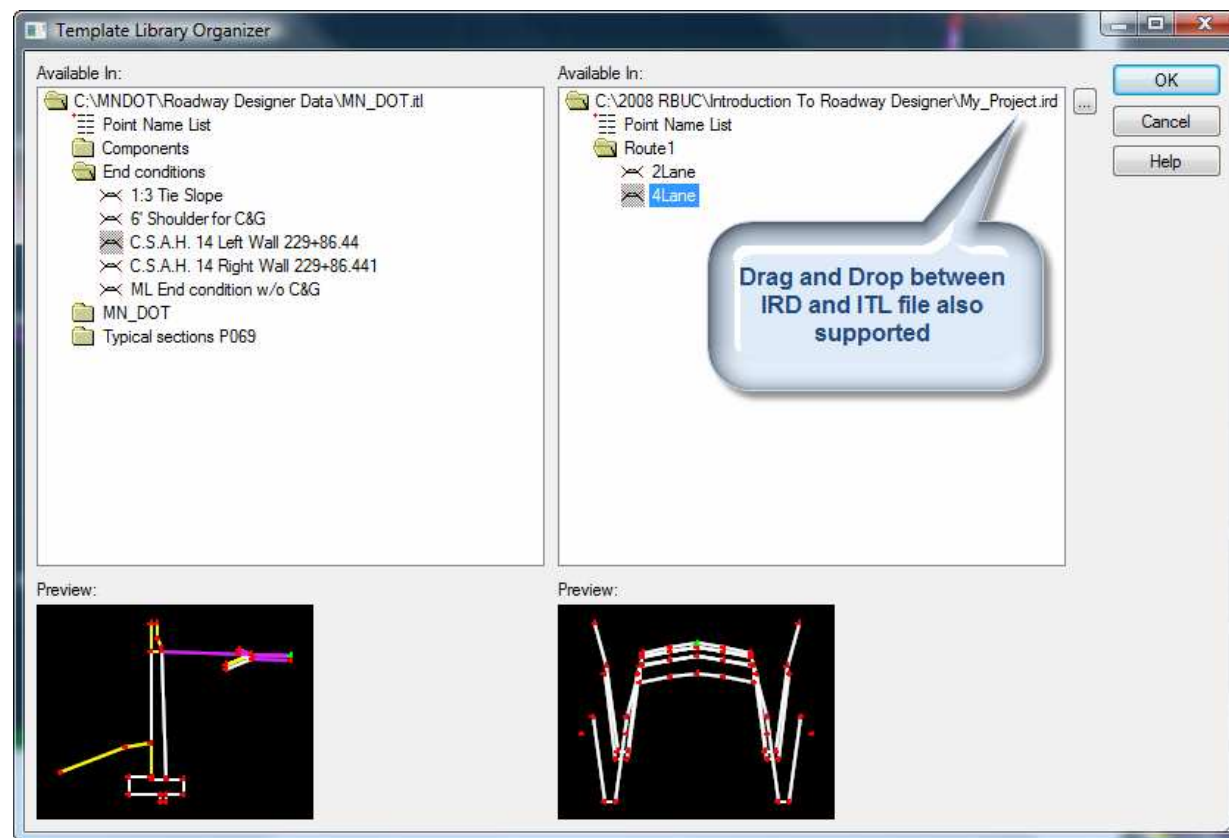
Organizer

- The organizer allows a user to copy templates from one template library to another



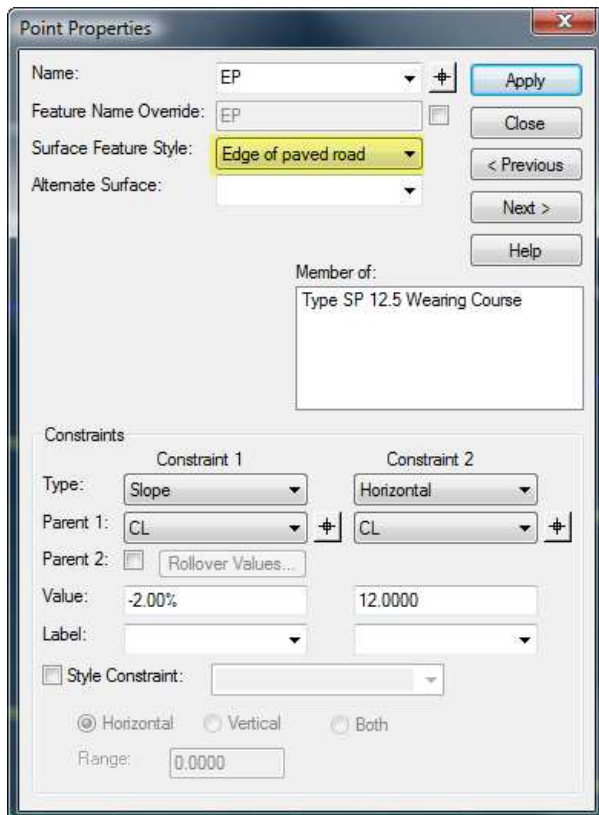
Organizer

- The organizer allows a user to copy templates from an IRD design file to ITL file



Styles – Symbology Control

- Styles control the symbologies of components and plan view elements.



The Point Properties dialog box is used to configure the symbology and constraints for a specific point. It includes fields for Name, Feature Name Override, Surface Feature Style, and Alternate Surface. The Surface Feature Style is currently set to 'Edge of paved road'. The Member of field shows 'Type SP 12.5 Wearing Course'. The Constraints section allows for defining two constraints with various parameters like Type, Parent, Value, and Label.

Point Properties

Name: EP

Feature Name Override: EP

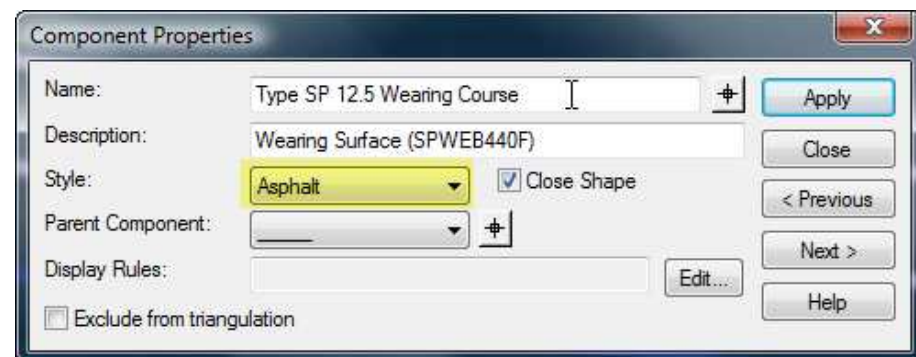
Surface Feature Style: Edge of paved road

Alternate Surface:

Member of: Type SP 12.5 Wearing Course

Constraints

	Constraint 1	Constraint 2
Type:	Slope	Horizontal
Parent 1:	CL	CL
Parent 2:	<input type="checkbox"/> Rollover Values...	
Value:	-2.00%	12.0000
Label:		
<input type="checkbox"/> Style Constraint:		
<input checked="" type="radio"/> Horizontal <input type="radio"/> Vertical <input type="radio"/> Both		
Range:	0.0000	



The Component Properties dialog box is used to configure the symbology and display rules for a component. It includes fields for Name, Description, Style, Parent Component, and Display Rules. The Style is currently set to 'Asphalt'. The Close Shape checkbox is checked. The Exclude from triangulation checkbox is unchecked.

Component Properties

Name: Type SP 12.5 Wearing Course

Description: Wearing Surface (SPWEB440F)

Style: Asphalt Close Shape

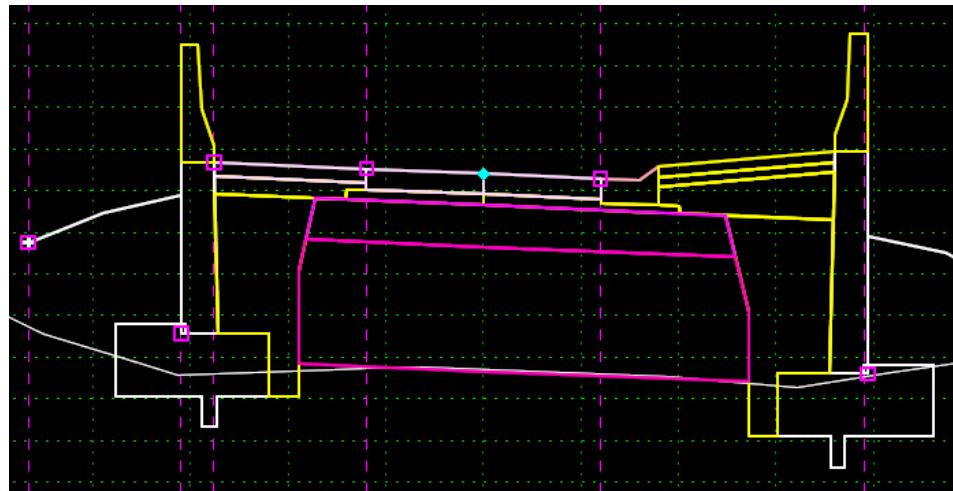
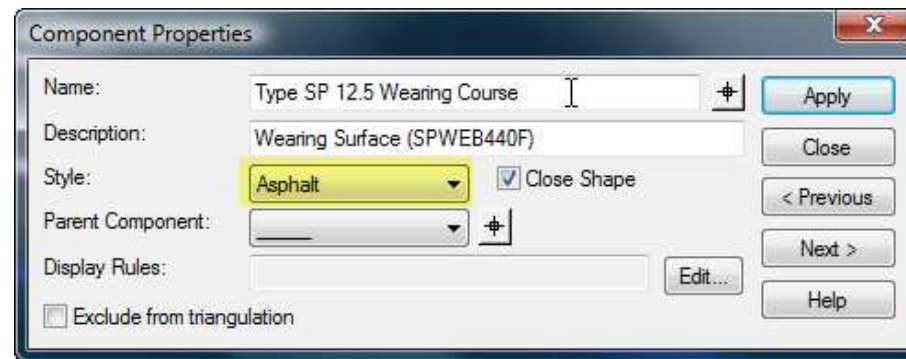
Parent Component:

Display Rules:

Exclude from triangulation

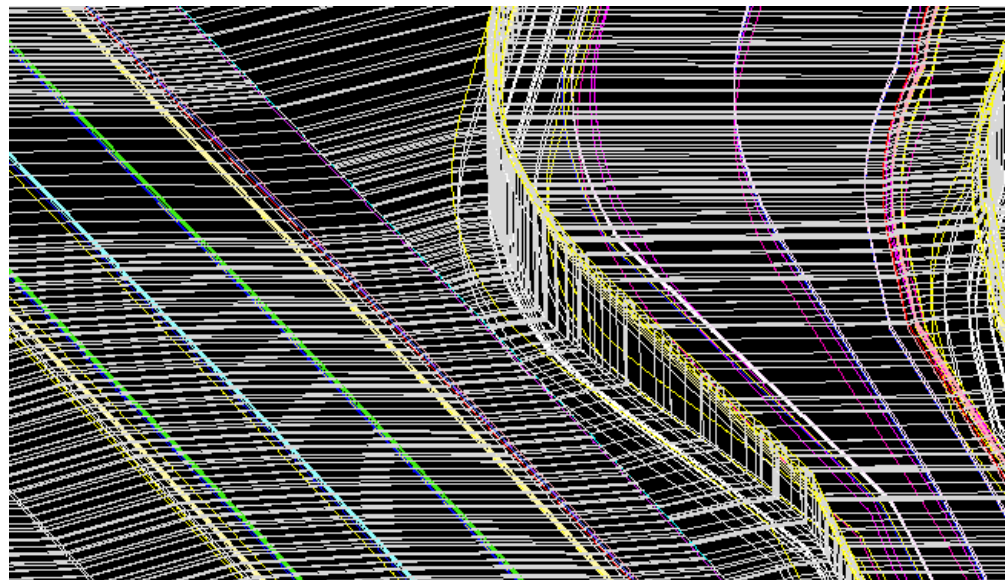
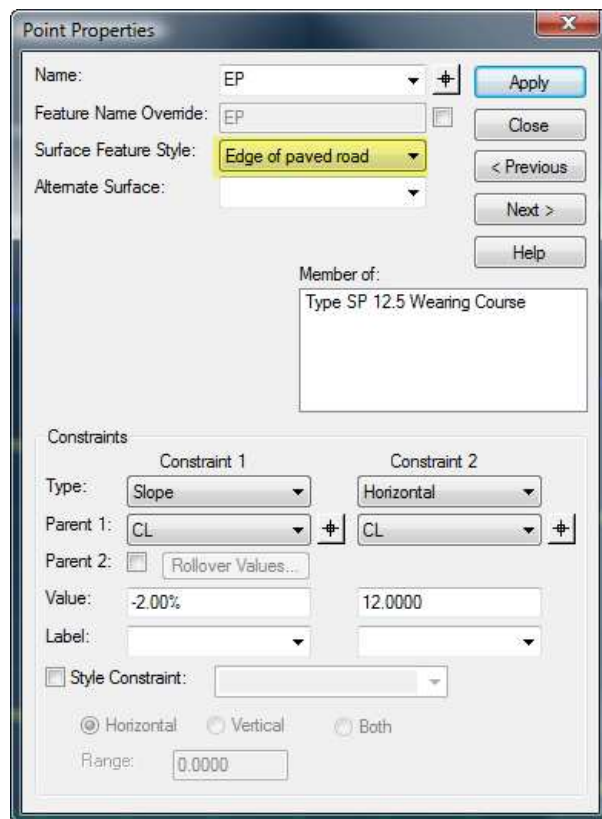
Styles – Symbology Control

- Component Property Styles control the symbologies of components in the cross section view.



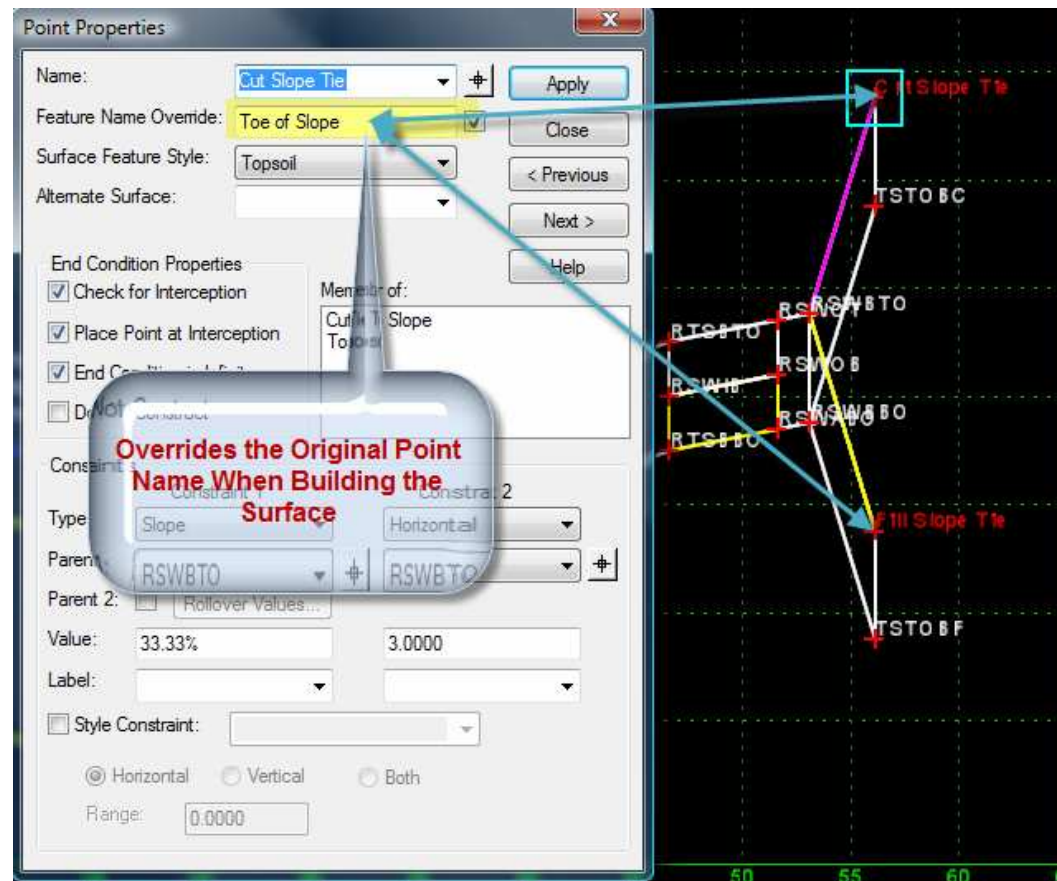
Styles – Symbology Control

- Point Property Surface Feature Styles control the symbologies of DTM breaklines when plotted to plan view.



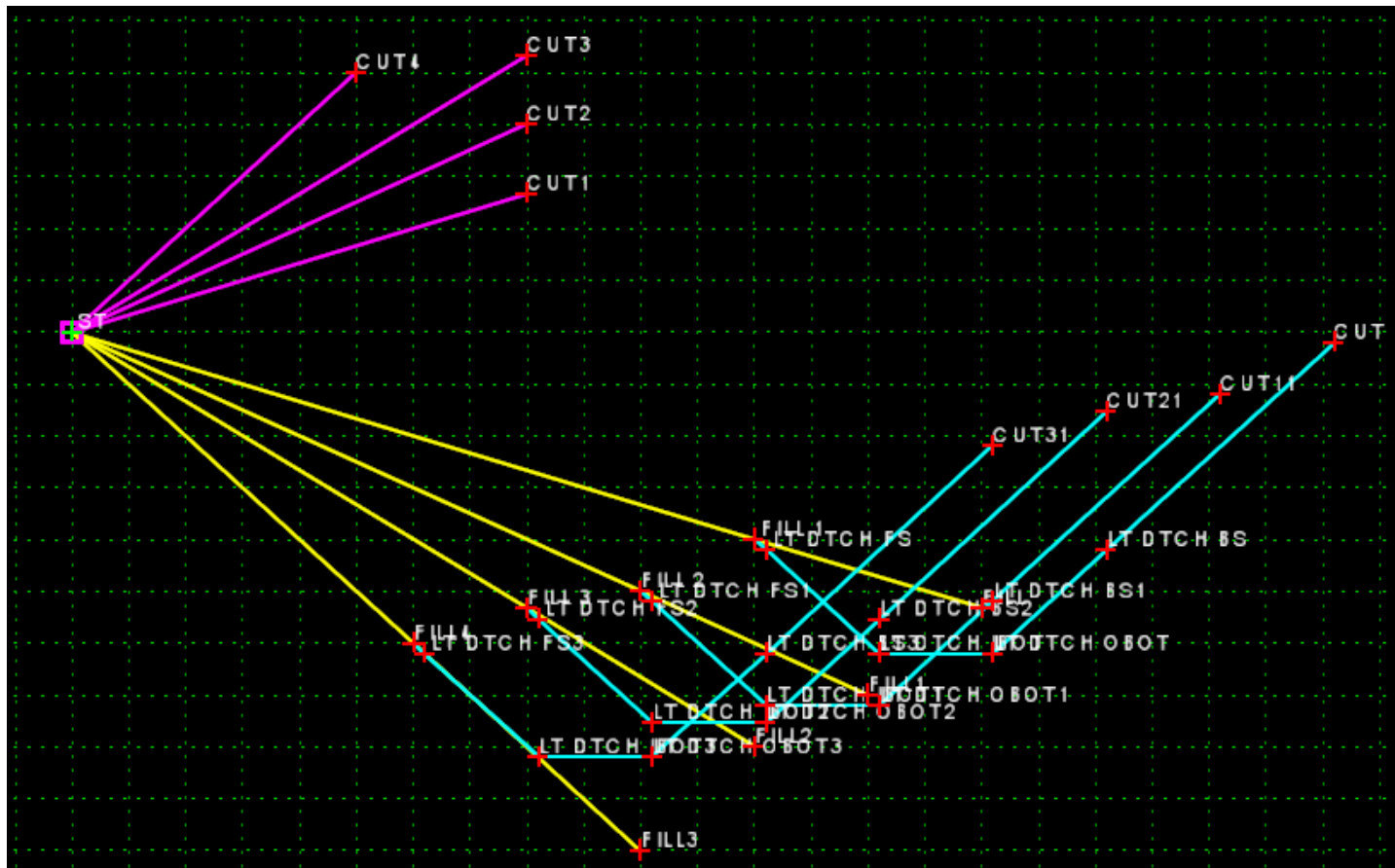
Feature Name Overrides

- Point Property Feature Name Override changes the final design surface point name to a common name for different tie slopes.



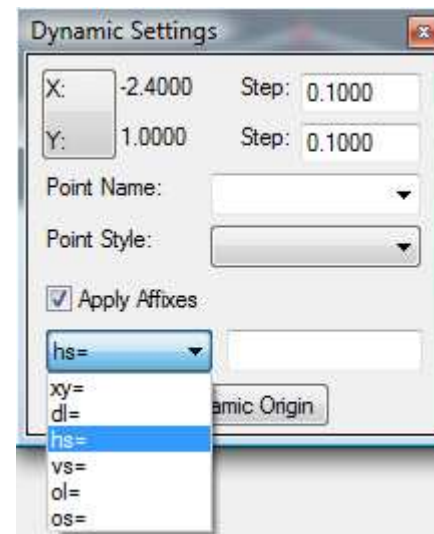
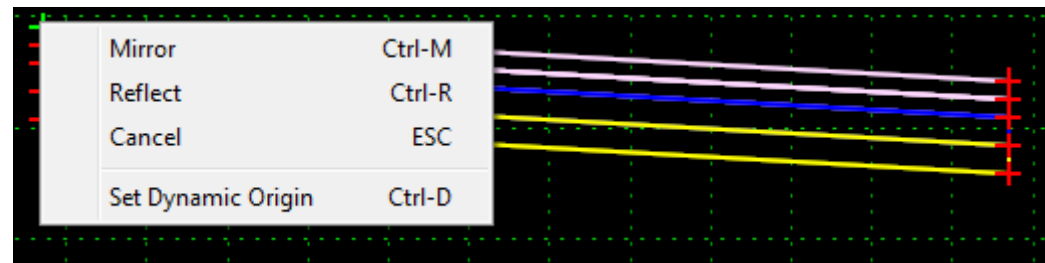
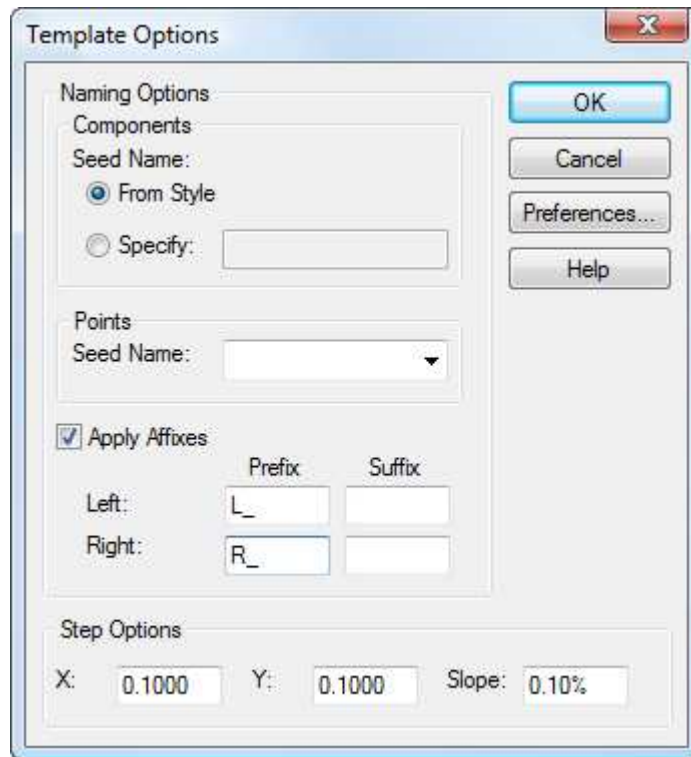
Feature Name Overrides

- Avoids end condition transition issues and keeping track of many tie point names.



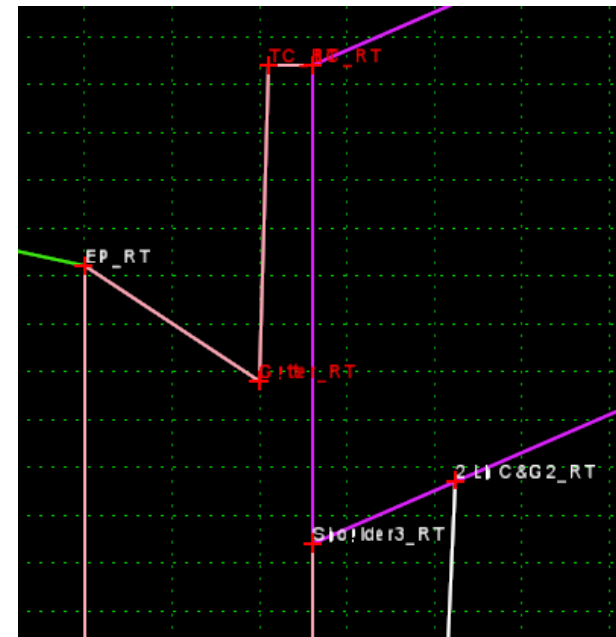
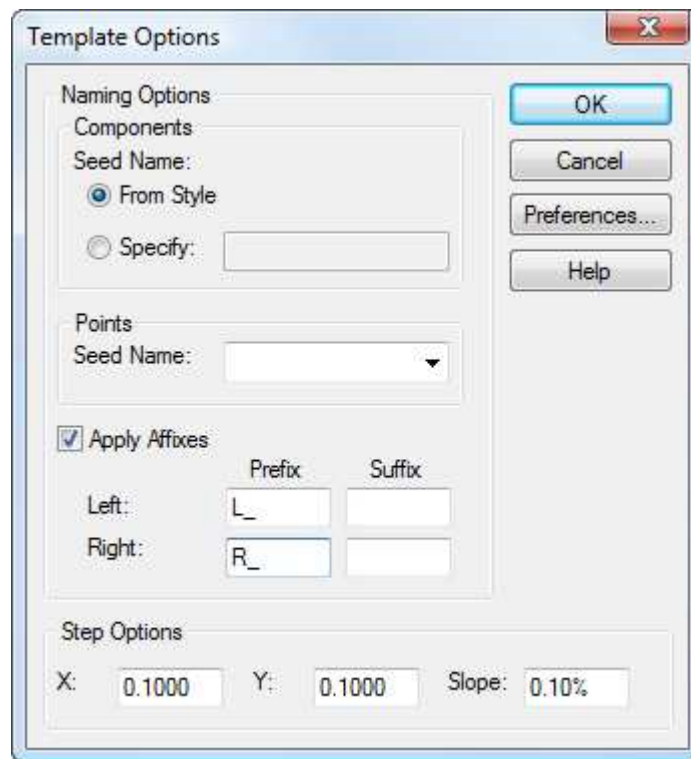
Drag and Drop 101

- Right mouse clicks and Affixes are crucial to the template layout process.



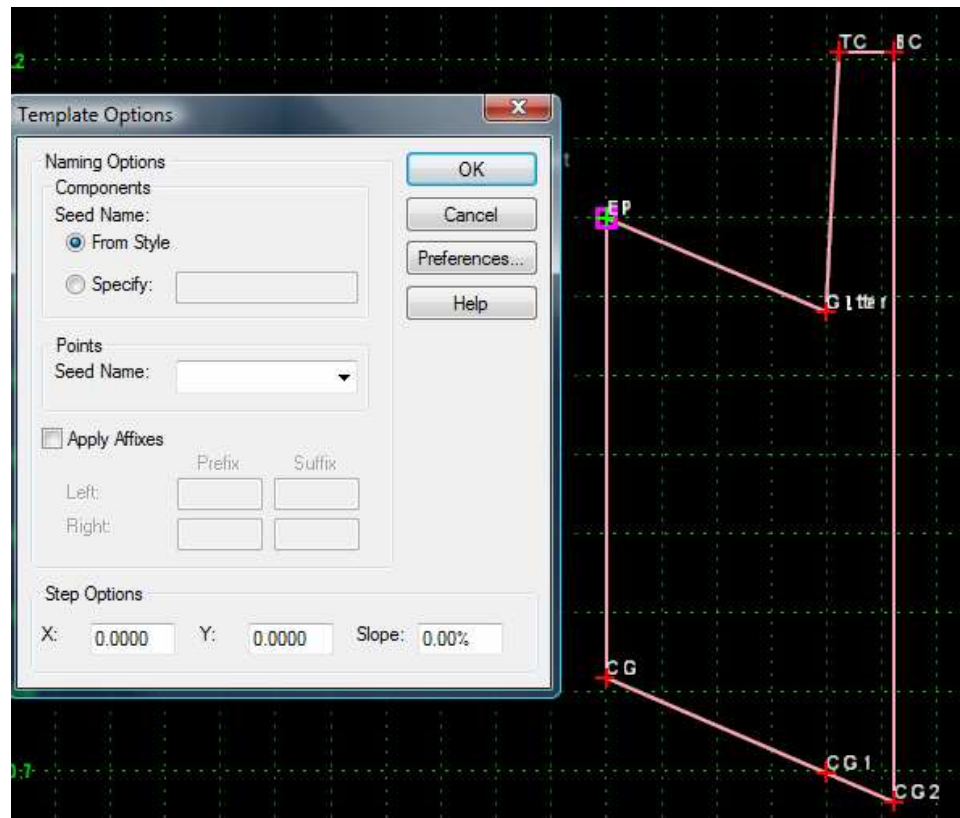
Drag and Drop 101

- Point name affixes should only be activated when composing a template. Intended to negate the need for left and right components.



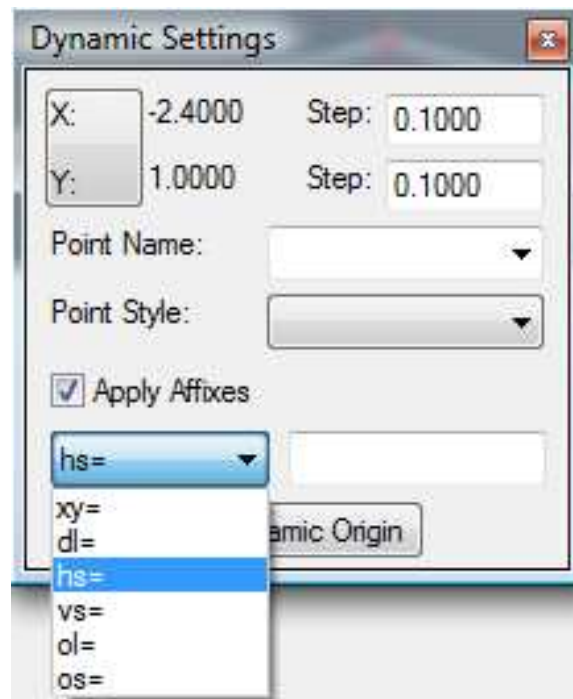
Drag and Drop 101

- When creating individual components turn off apply affixes.



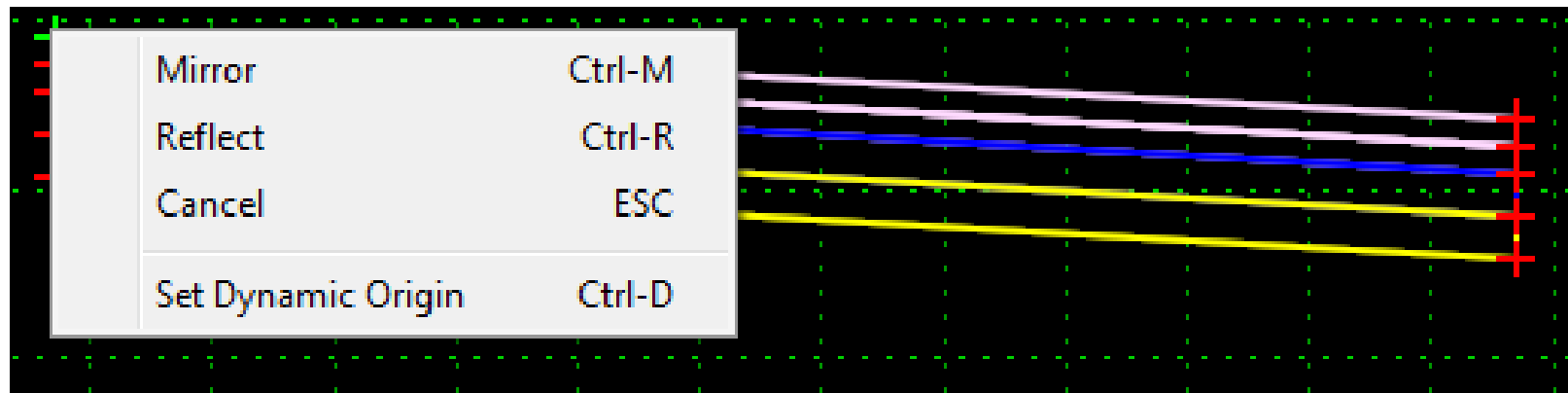
Drag and Drop 101

- Using Dynamic Settings when creating components and templates provides precision input ability.



Drag and Drop 101

- Settings within the right mouse click while dragging and dropping components enables mirroring and reflecting.



Using Proper Constraints

- Point constraints within the template confines set the “default” locations.

Point Properties

Name: TC_L

Feature Name Override: TC_L

Surface Feature Style: Curb

Alternate Surface:

Member of:
Curb and Gutter_L

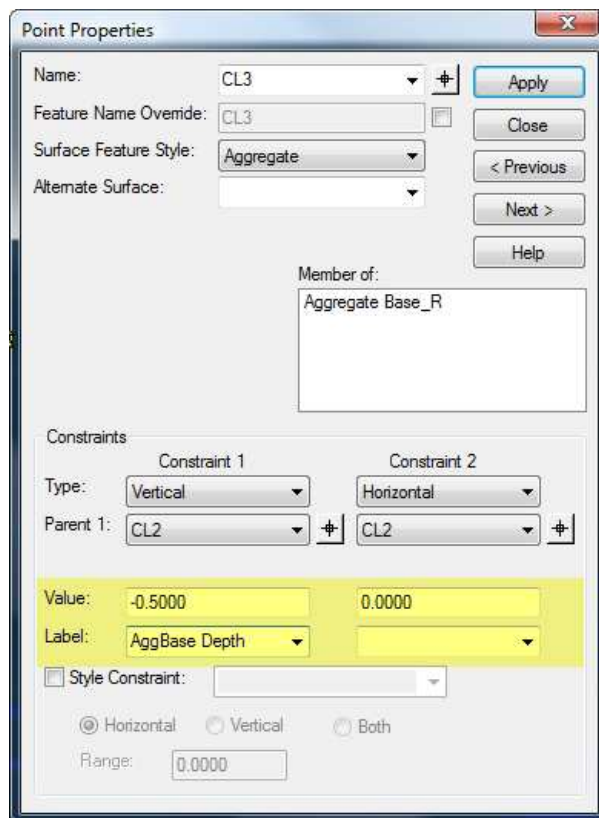
Constraints

	Constraint 1	Constraint 2
Type:	Horizontal	Vertical
Parent 1:	Gutter_L	Gutter_L
Value:	-0.1667	0.5000
Label:		
Style Constraint:		
Horizontal	<input checked="" type="radio"/>	<input type="radio"/>
Vertical	<input type="radio"/>	<input type="radio"/>
Both	<input type="radio"/>	<input type="radio"/>
Range:	0.0000	

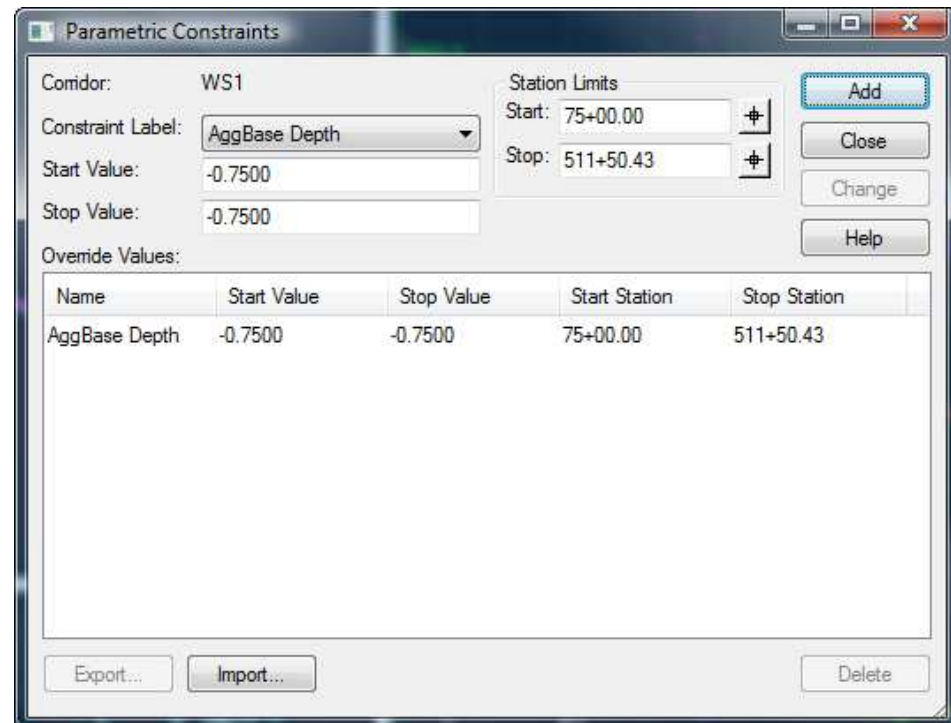
Buttons: Apply, Close, < Previous, Next >, Help

Parametric Labels

- Second in priority, the Parametric Labels can override any template point constraint.



The Point Properties dialog box shows the configuration for a point. The Name is CL3, and the Feature Name Override is also CL3. The Surface Feature Style is set to Aggregate. The Member of is Aggregate Base_R. The Constraints section shows two constraints: Constraint 1 is Vertical with Parent CL2 and Value -0.5000; Constraint 2 is Horizontal with Parent CL2 and Value 0.0000. The Label for both constraints is AggBase Depth. The Style Constraint is unchecked, and the Range is 0.0000.



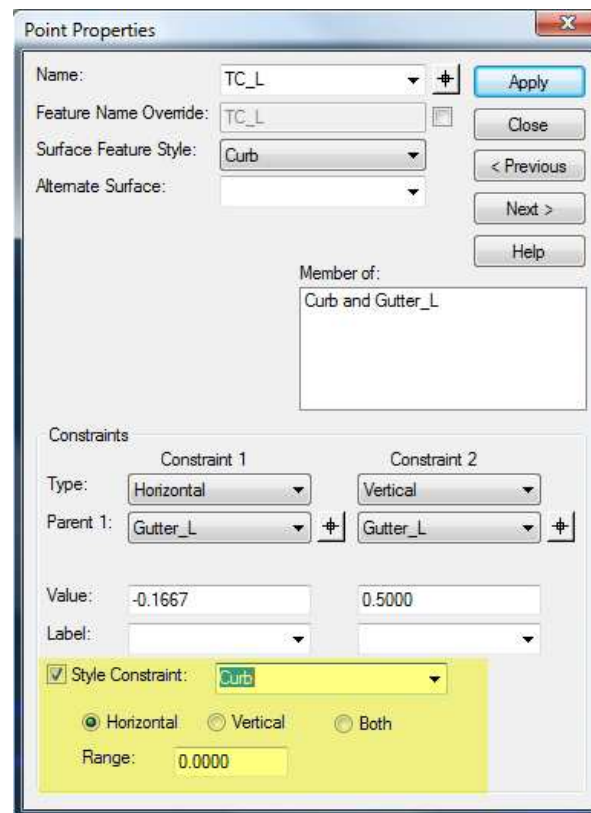
The Parametric Constraints dialog box shows the configuration for a parametric constraint. The Corridor is WS1, and the Station Limits are Start: 75+00.00 and Stop: 511+50.43. The Constraint Label is AggBase Depth, with Start Value: -0.7500 and Stop Value: -0.7500. The Override Values table is as follows:

Name	Start Value	Stop Value	Start Station	Stop Station
AggBase Depth	-0.7500	-0.7500	75+00.00	511+50.43

The dialog also includes buttons for Add, Close, Change, Help, Export..., Import..., and Delete.

Style Constraint Uses

- Third in priority, the Style Constraint is intended to “target” alignments.



The screenshot shows the 'Point Properties' dialog box with the following settings:

- Name: TC_L
- Feature Name Override: TC_L
- Surface Feature Style: Curb
- Alternate Surface: (empty)
- Member of: Curb and Gutter_L
- Constraints:
 - Constraint 1: Type: Horizontal, Parent 1: Gutter_L, Value: -0.1667
 - Constraint 2: Type: Vertical, Parent 1: Gutter_L, Value: 0.5000
- Style Constraint: Curb
- Horizontal: Vertical: Both:
- Range: 0.0000

Alternate Surfaces

- Alternate Surface option used for creating surfaces for different steps in the construction process.

Point Properties

Name: OS4

Feature Name Override: OS4

Surface Feature Style: OS

Alternate Surface: Top Of Dirt

Member of: Aggregate Base, Class 5

Constraints

Constraint 1	Constraint 2
Type: Vertical	Type: Horizontal
Parent 1: OS3	Parent 1: OS
Value: -0.2500	Value: 0.0000
Label:	Label:

Style Constraint:

Horizontal Vertical Both

Flange: 0.0000

Alternate Surfaces

- Alternate Surface can't contain any vertical lines as with any DTM surface.



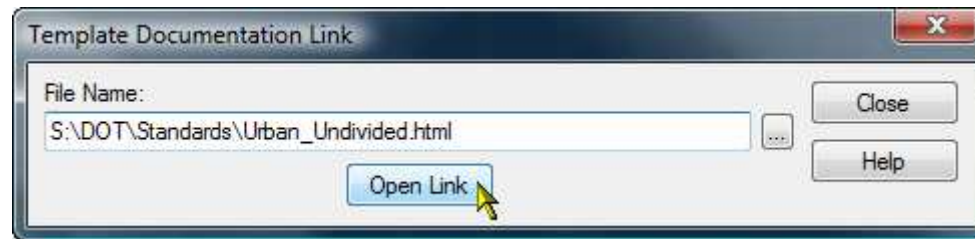
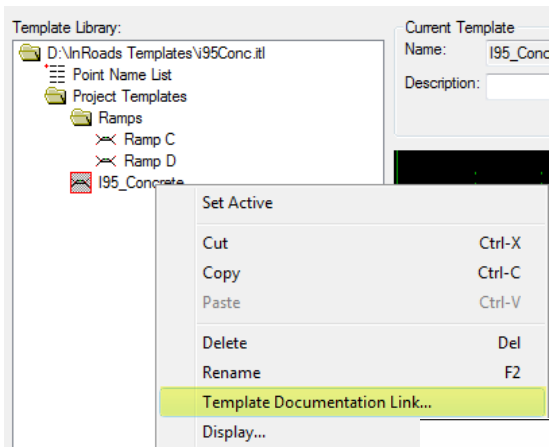
Alternate Surfaces

- Use common sense when creating your Alternate Surface...is it constructible?



Template Documentation Link

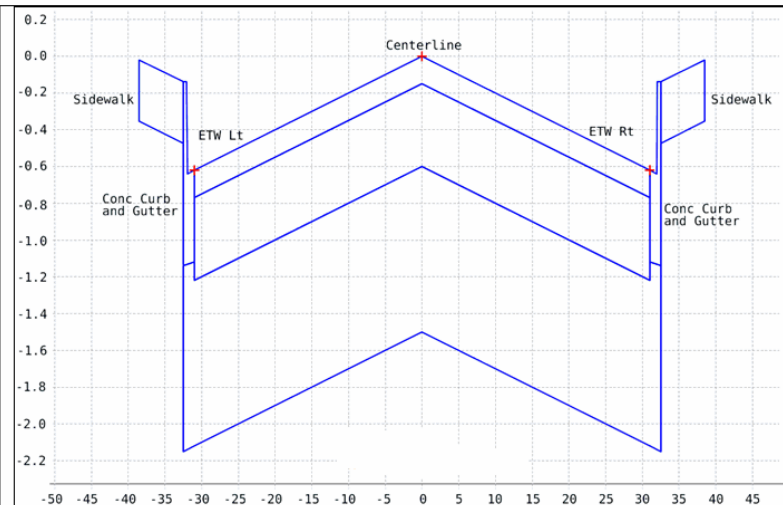
- Use the Template Documentation link to point to help files for each template. Remembered in the ITL File. Uses right mouse click.



5 Lane Urban Curb and Gutter

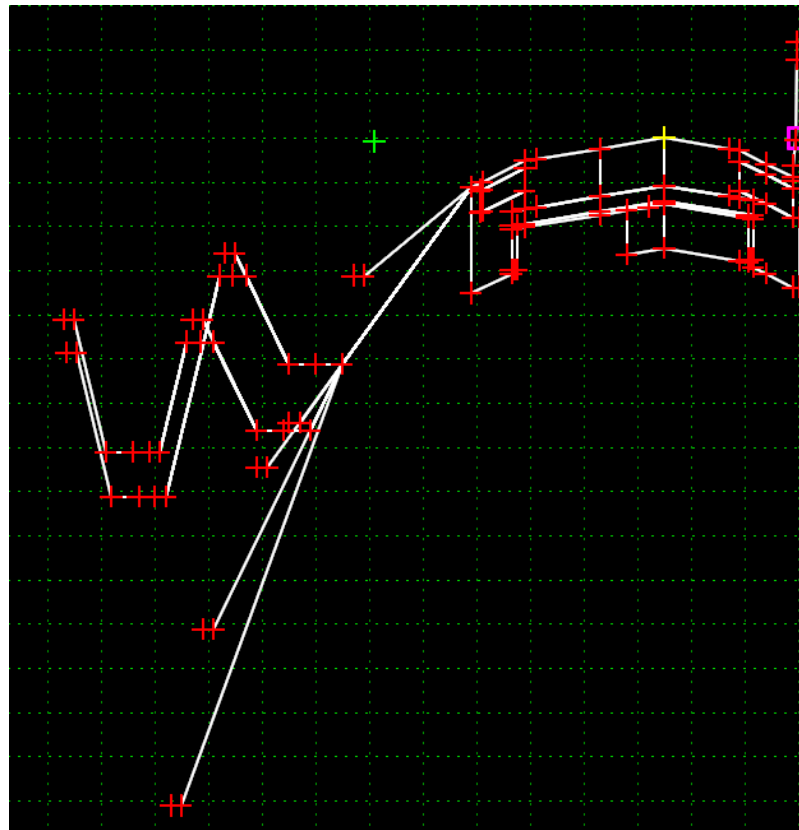
Common Use: This template is used in Urban applications. It is utilized where Sidewalk, Curb and Gutter is required. Lane widths, layer thicknesses, cross slopes can be adjusted using Parametric Constraints (listed below).

Controlling Point: Centerline



Avoid the “Super Template”

- The “Super Template” is your neighbor’s worst nightmare. Remember you might not be the only one working on this project.

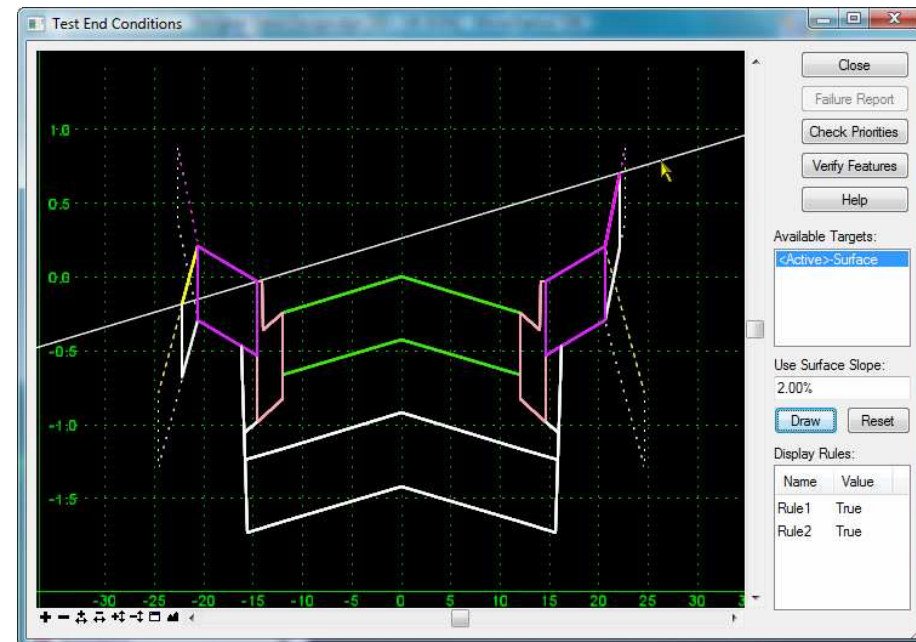
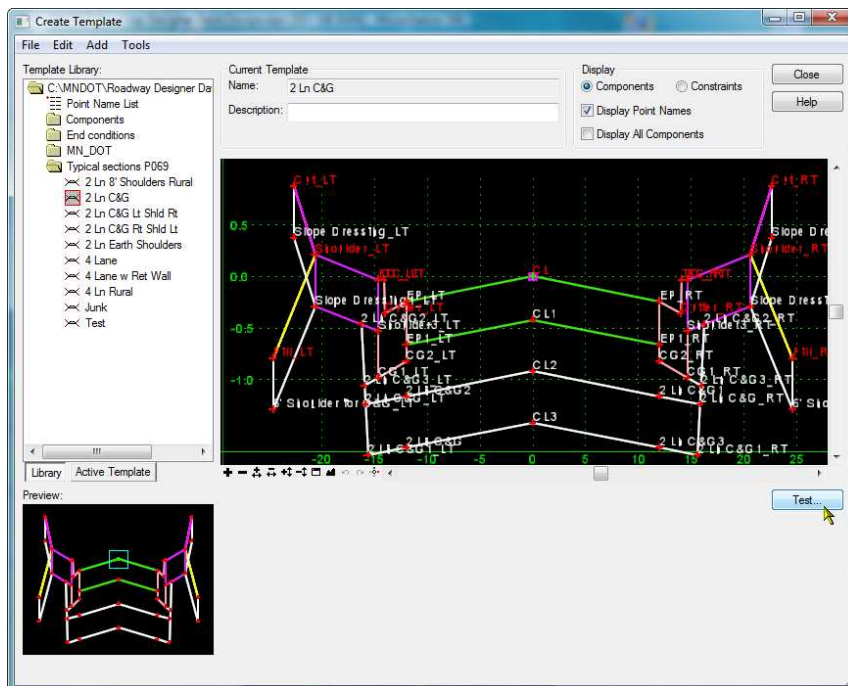


Avoid the “Super Template”

- A “happy medium” should be considered between too few and too many options
- Too few options results in a lot of End Condition Exceptions
- Too many options results in an unmanageable template
- Just because “You Can” doesn’t mean “You Should”

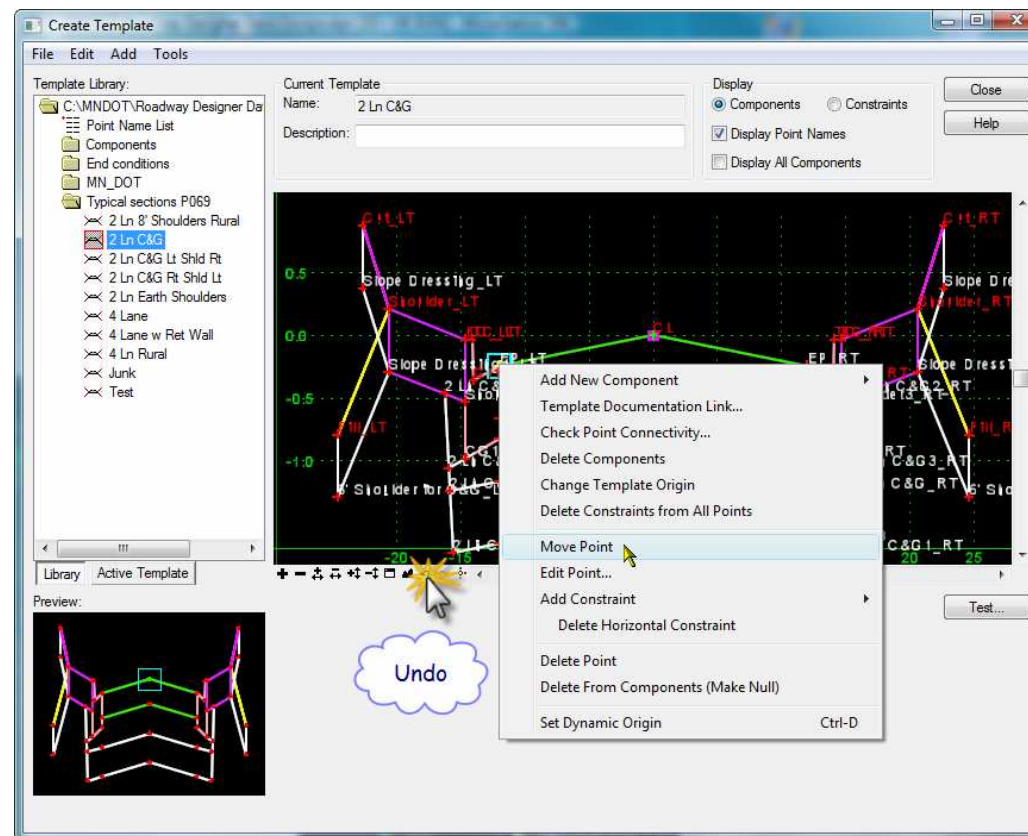
Testing Your Templates

- Testing End Conditions is simple. Select the Test button to draw a surface and examine End Condition behavior.



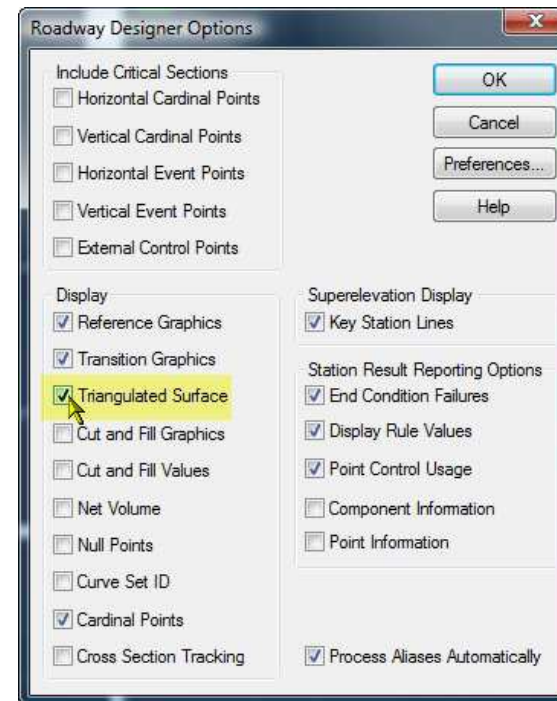
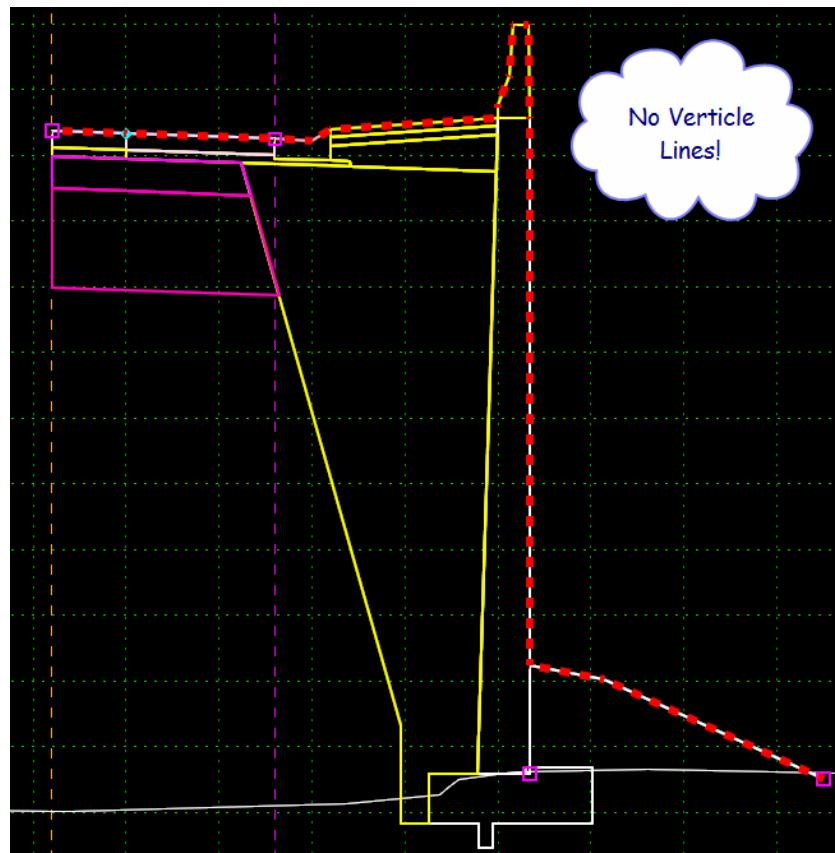
Testing Your Templates

- Temporarily delete constraints in your template to test super elevation and widening transitions by moving the point(s). Utilize the UNDO button.



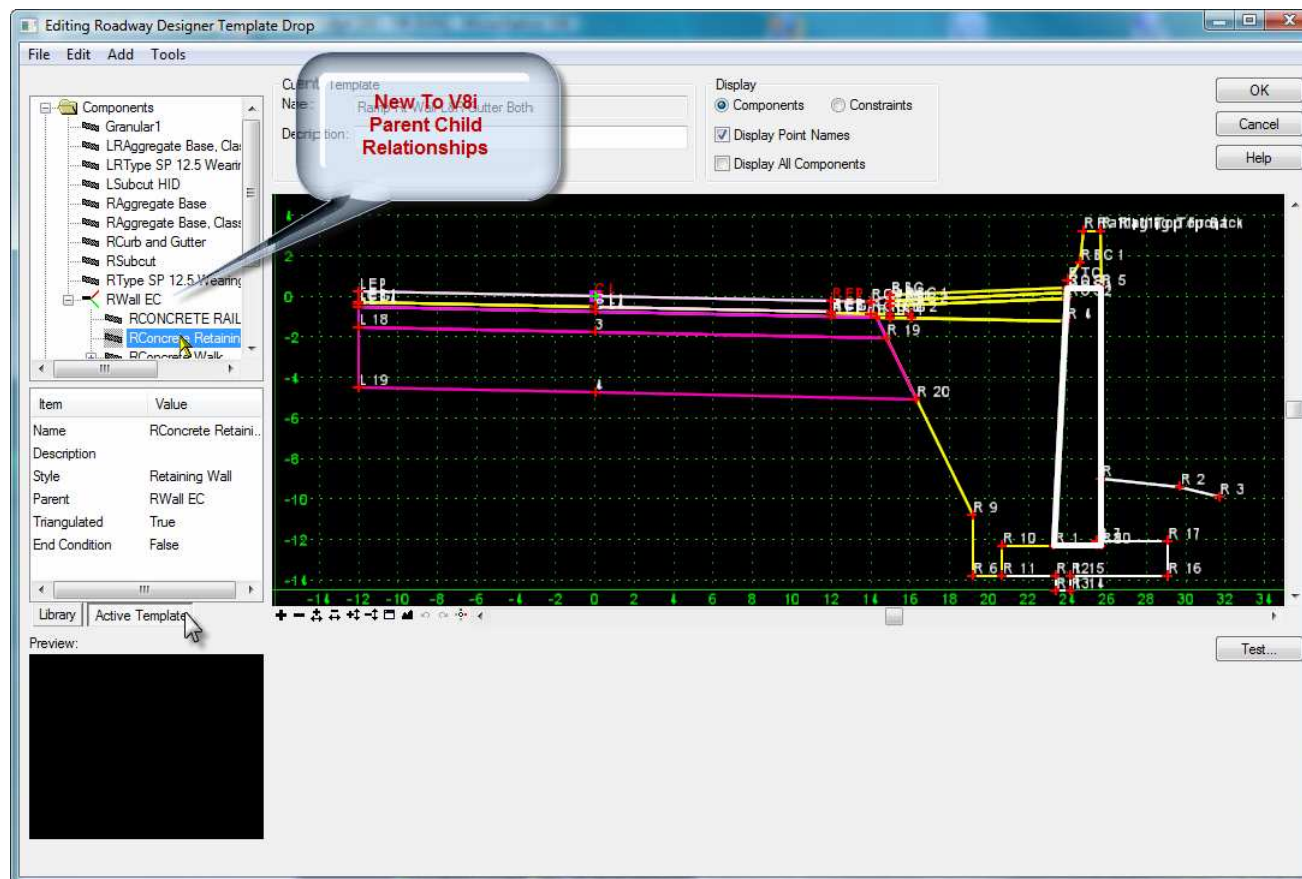
No Vertical Segments in Surfaces

- Surfaces can't contain any vertical lines. Use the Triangulated Surface option to highlight the proposed surface.



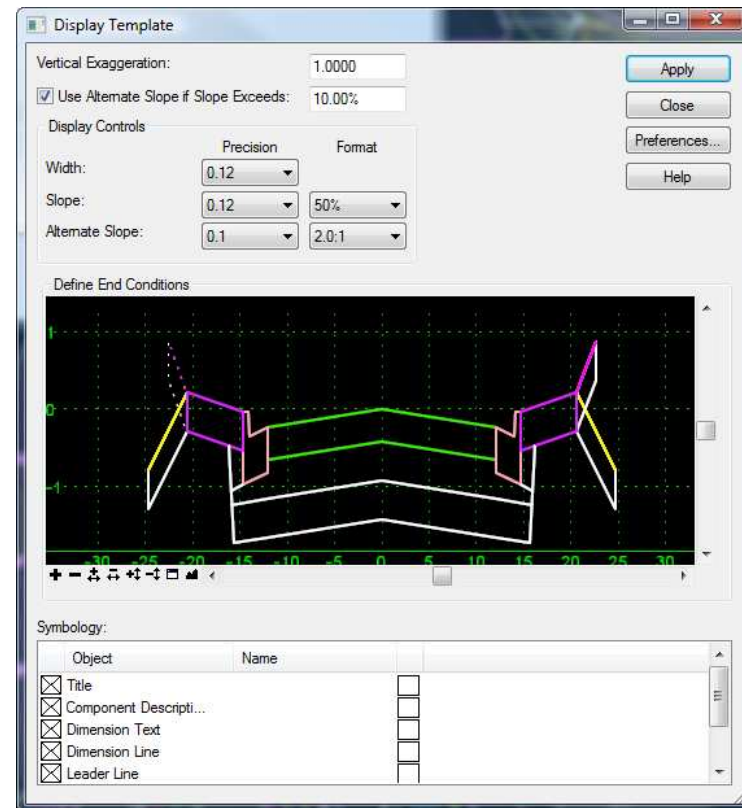
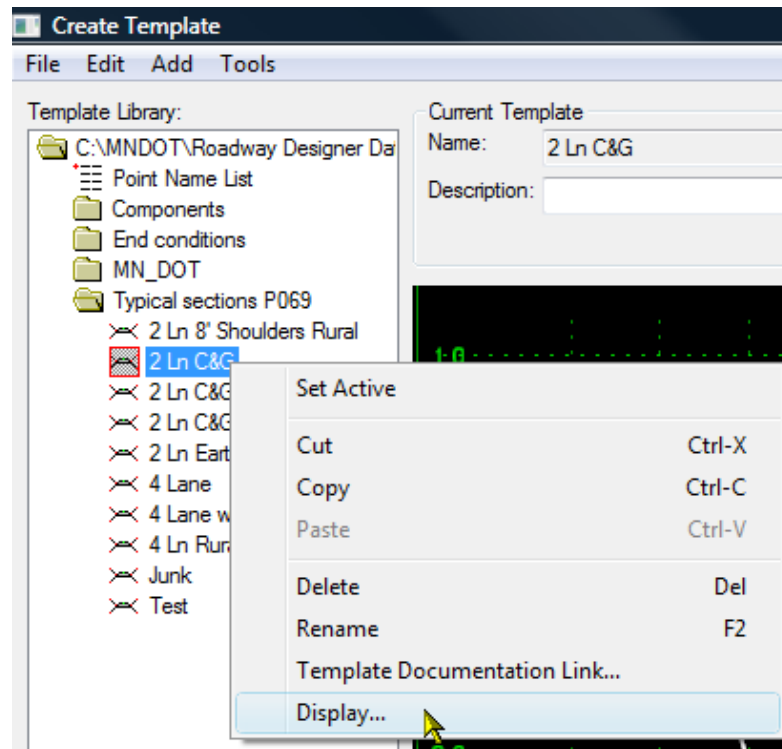
Active Template Options

- Active Template option allows for easy isolation of individual points or components. New to V8i, Parent – Child relationships.



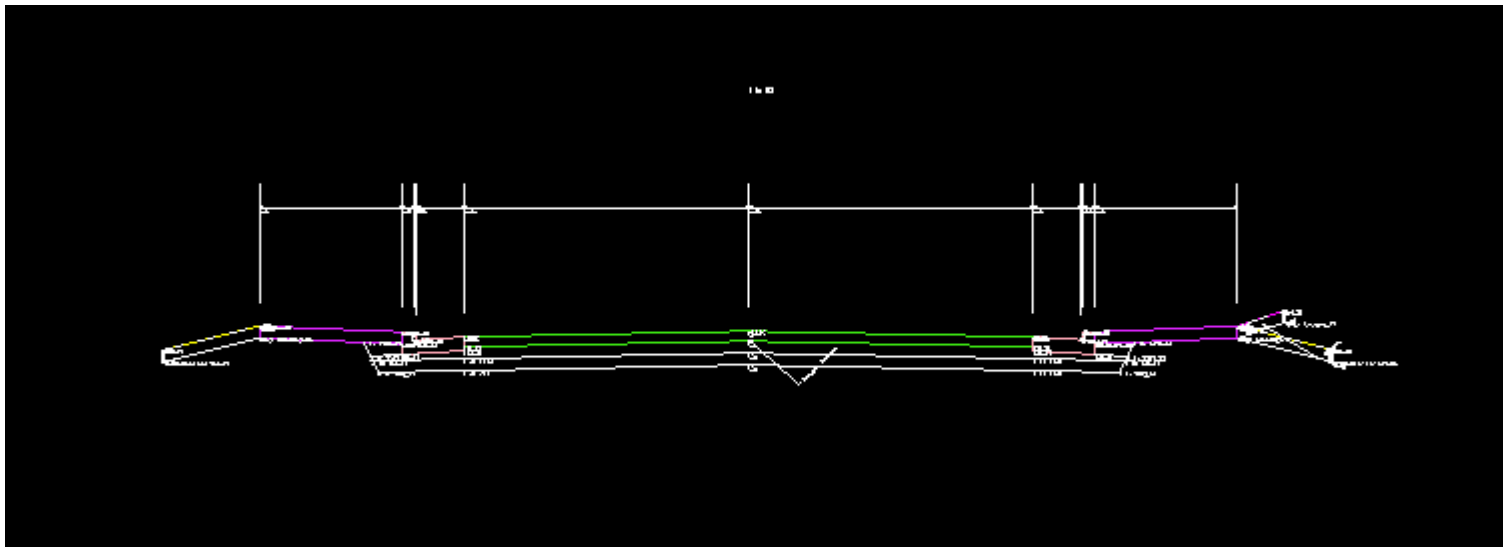
Display Template

- Right mouse click on any template and select “Display” to draw the template to MicroStation creating an instant “Typical Section”.



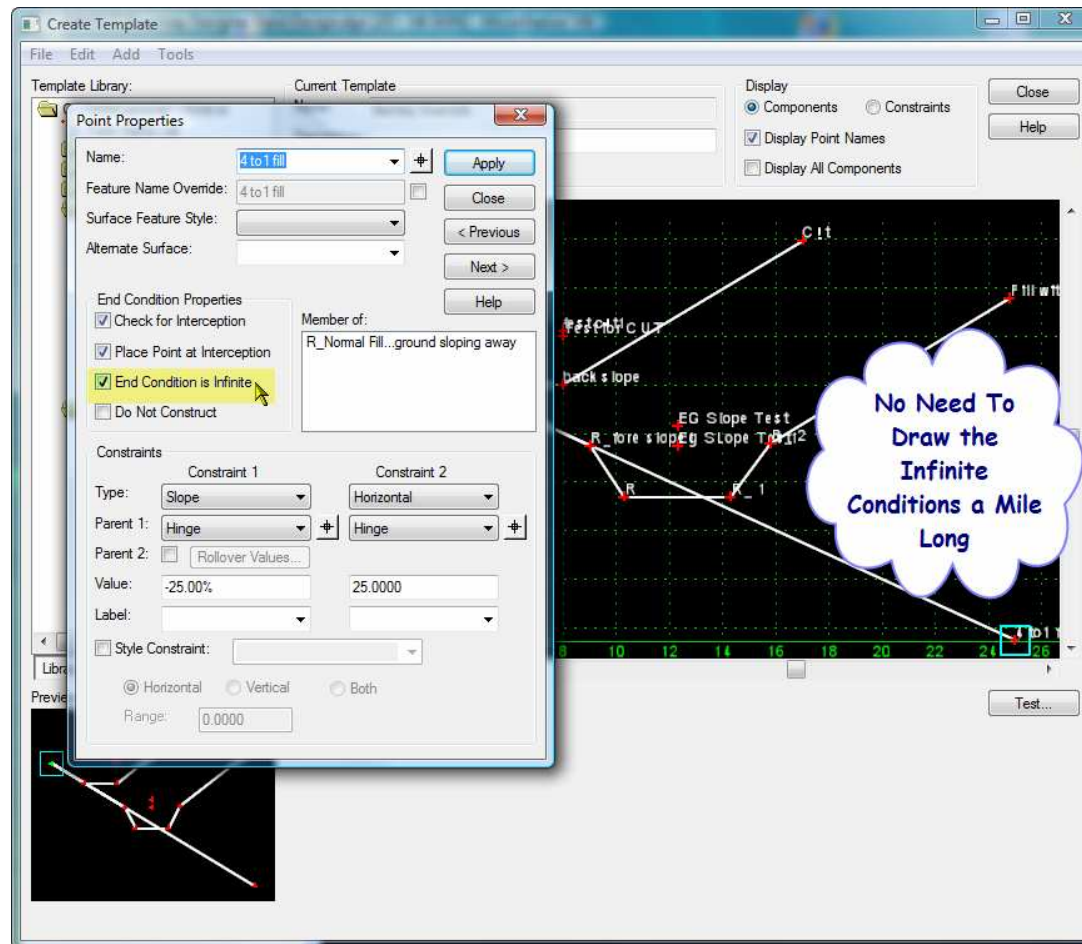
Display Template

- MicroStation drawing of the template Display feature.



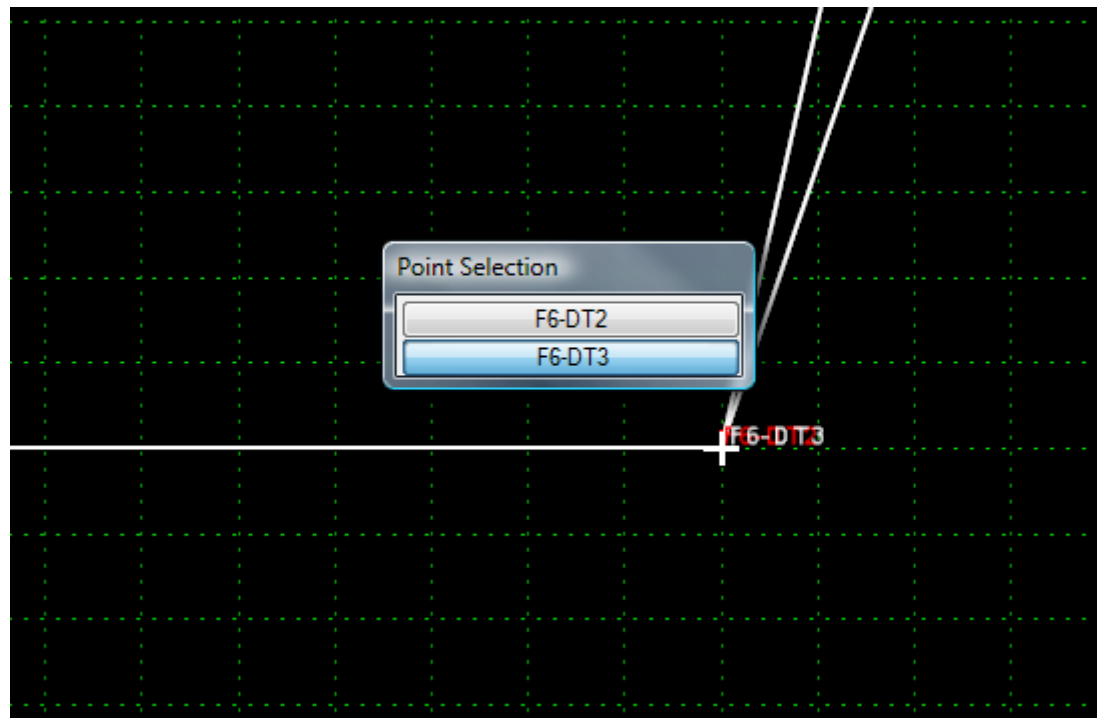
End Conditions Tips

- In an “Infinite” end condition, avoid drawing the end condition excessively long.



End Conditions Tips

- Avoid points on top of points when possible. This makes for a confusing situation.



Questions?