

# RoadEng® Civil

## Milling and Overlay Example

This example explains how to calculate milling and overlay volumes.

This example uses a specific E-library template component, **MillOverlay VII - CL Offsets**, located in the Overlay and Widening folder. The operation and behavior of this component is explained.

### Creating Reference Features - Lane and Shoulder

1. Open the Location module. Open *MillFill.DSNX* (included with this example). The screen should now display a cross section and a profile view as shown in Figure 1.

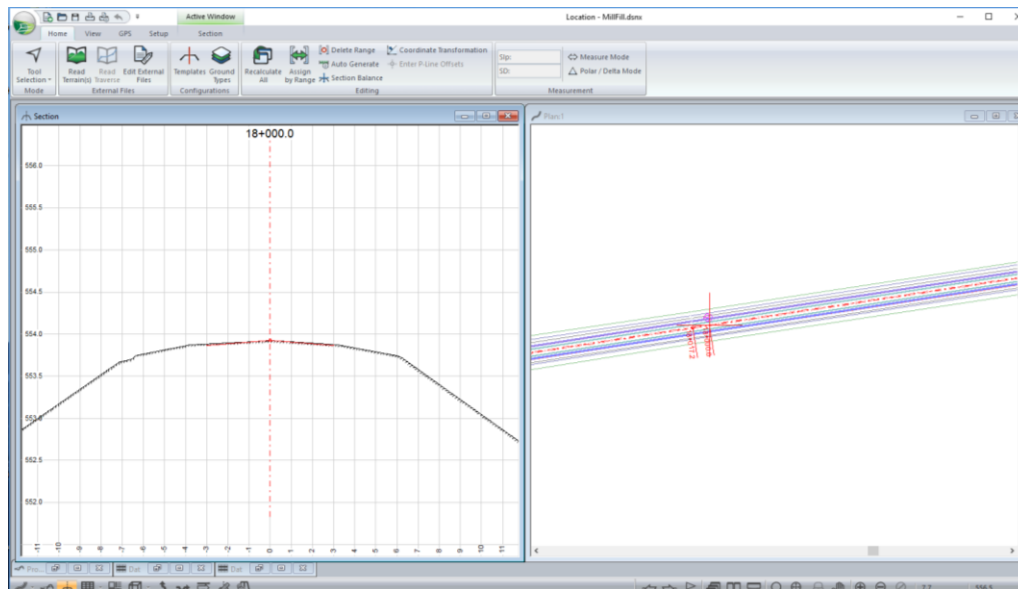


Figure 1 – MillFill.DSNX

2. Choose menu Setup | Location Setup | Alignment | Features. Setup Reference Features *RF 1* and *RF 2* as shown in Figure 2 below:
  - RF 1 -> RD RT-LANE-168
  - RF 2 -> RD RT-PAVE EDGE-173

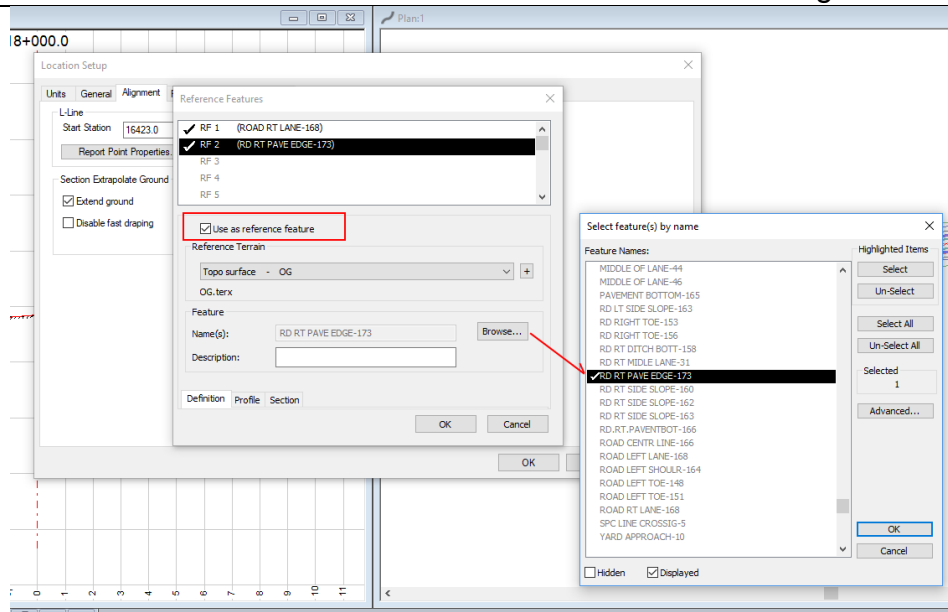


Figure 2 – Setting up Lane and Shoulder Reference Features.

- For both the reference features, make sure the Section tab setting is set to Intersection and that an appropriate symbol is chosen to display the reference features (see Figure 3 and 4 below):

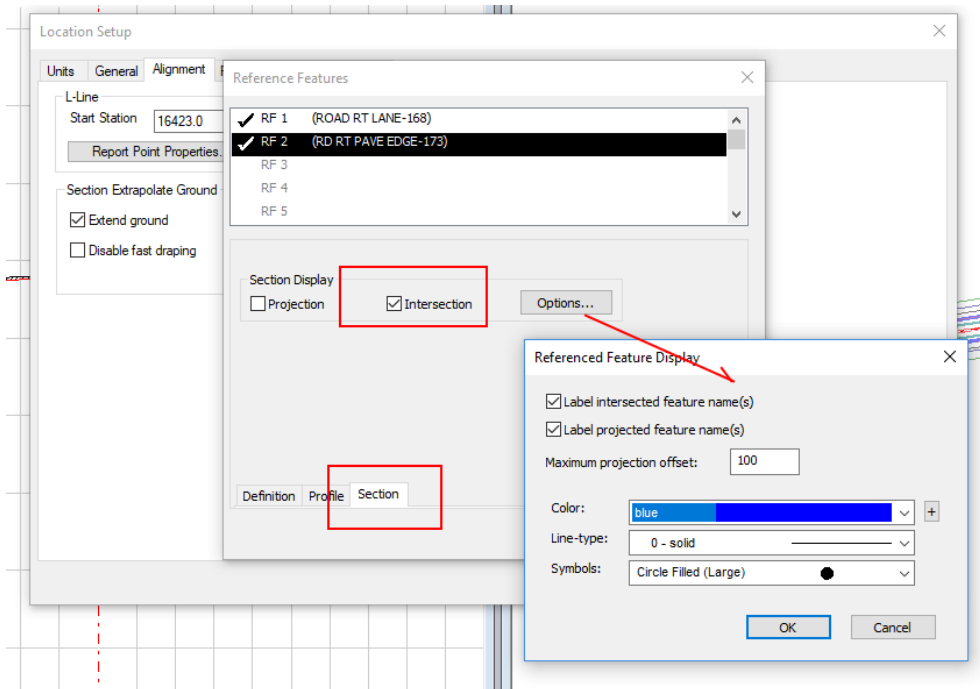


Figure 3 – Setting up Cross Section Display of Reference Features

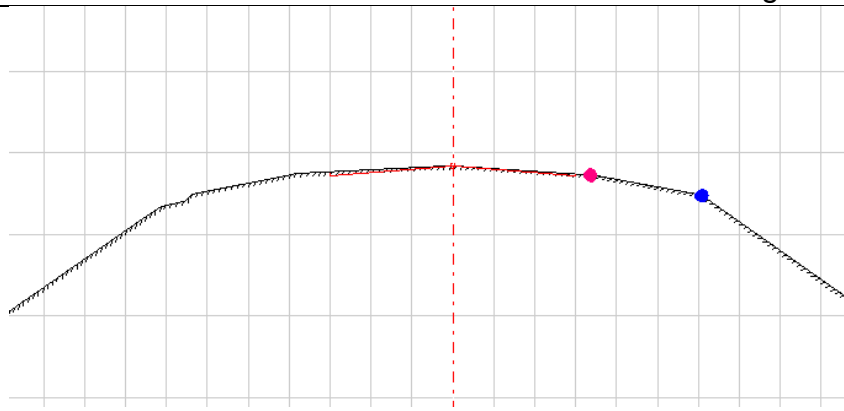


Figure 4 - Cross Section Display of Reference Features

### Applying the Mill and Overlay Template

4. Choose menu Home | Templates | E-Library and choose *Overlays and Widenings*, press OK.

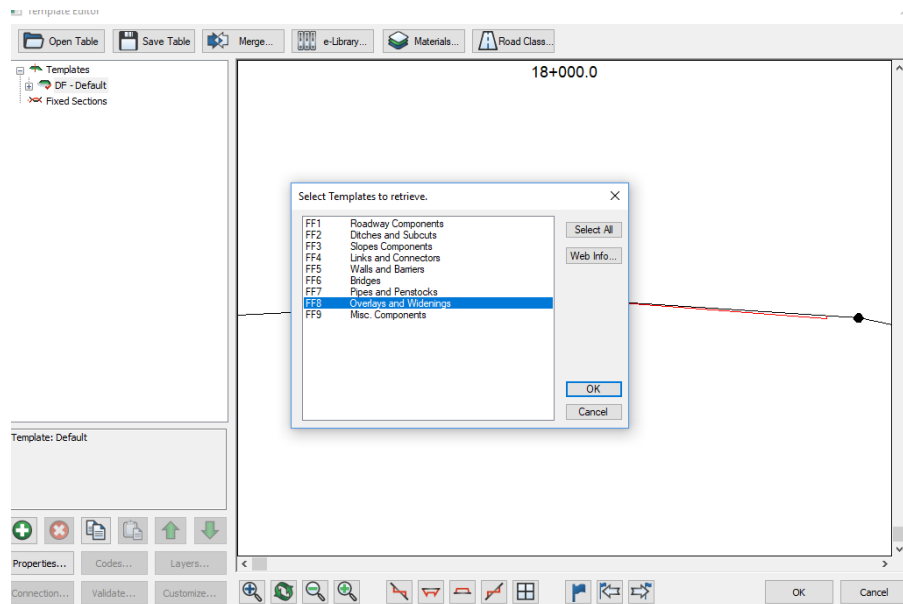


Figure 5 – E-library Overlays and Widenings

5. In the downloaded folder (*Overlays and Widenings*), select *MillOverlay VII* and choose Copy (from the right click menu). Click on the *DF - Default* template and choose Paste | As New (from the right click menu).
6. Remove the Roadway, Ditches and Slopes components in the DF- Default template (select them and press the delete button).
7. Flip the *MillOverlay VII* object to the right by clicking on it and selecting menu Flip. The DF - Default template should now appear as shown in Figure 6 below.

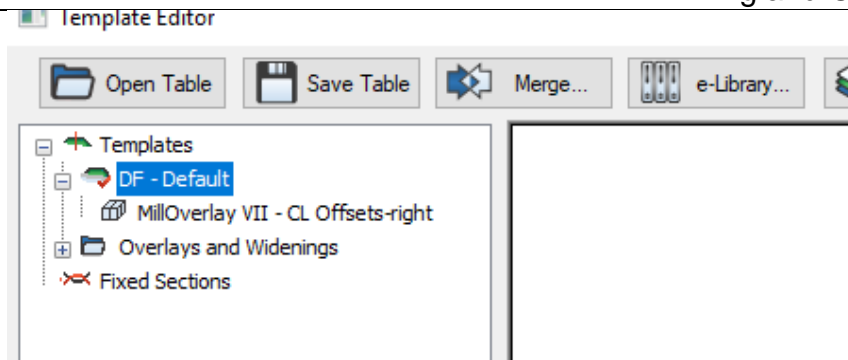


Figure 6 – Default Template with MillOverlay VII on the right side

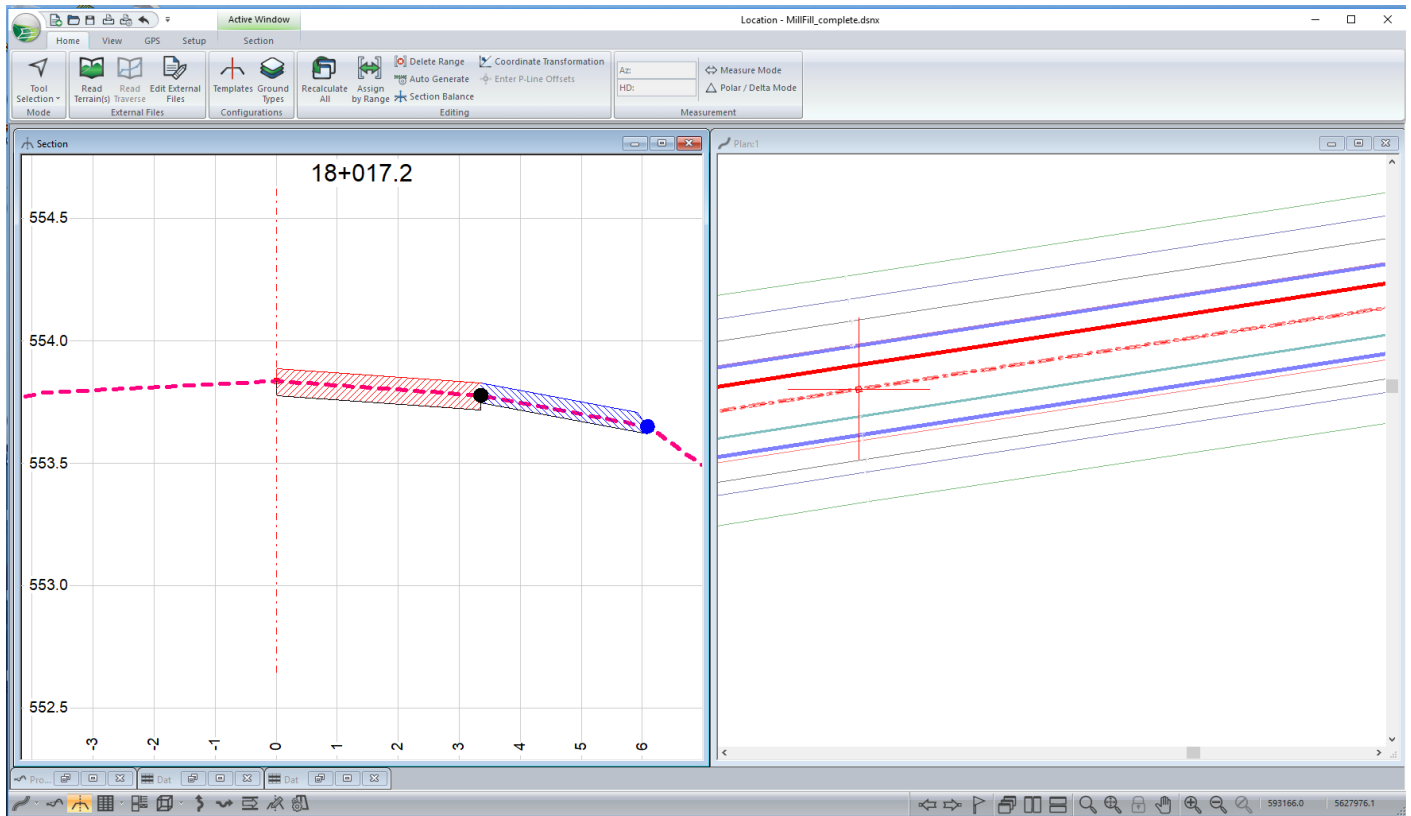
### Setting Up The Mill/Overlay Parameters

8. Right click while the *MillOverlay VII* is selected and choose menu Properties. Set the following parameters:

Variable	Value	Description
OverlayThick	.05	Thickness of overlay measured from existing CL elevation.
OverlayLaneDX	Reference Feature 1 (ROAD RT LANE-168)	Lane (inside) overlay offset from CL. If 0, it is ignored (only EOP will be used).
OverlayLaneSlp	-9999.0	Slope of lane (inside) overlay. If set to -9999, parameters OverlayLaneDX/DY will be used to determine slope. Super/Crown is added to this value.
OverlayShldrDX	Reference Feature 2 (RD RT PAVE EDGE-173)	Shoulder overlay offset (measured from CL to toe of new overlay pavement).
OverlayShldrWidth	0.0	Shoulder width. If 0, the shoulder will be calculated based on OverlayShldrDX position.
OverlayShldrSlp	-9999.0	If set to -9999, parameters OverlayShldrDX/DY will be used to determine slope. Super/Crown is added to this value.
OverlayFillSlp	33.3	Outside fill slope of overlay.
MillLaneDepth	.06	Milling depth of lane (inside shoulder).
MillLaneDX	Reference Feature 1 (ROAD RT LANE-168)	Horizontal offset from C/L for lane milling.
MillLaneSlp	-9999.0	Slope of lane (inside) milling. If set to -9999, parameter MillLaneDX/DY will be used to determine slope. Super/Crown is added to this value.
MillShldrDepth	.03	Depth of milling beyond the shoulder.
MillShldrSlp	-9999.0	If set to -9999, parameters MillShldrDX/DY (see advanced) will be used to determine slope. Super/Crown is added to this value.
MillDaylightSlope	-2.0	If set to -9999, parameters MillShldrDX/DY (see advanced) will be used to determine slope. Super/Crown is added to this value.

9. Press OK twice. When prompted, Recalculate Range.

The screen should appear as shown below.



*Figure 7 – Mill Fill Section with Filled Areas Highlighted*

This completes the example.