

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 Widenings 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.



- 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

Location Setup		×	
Units General Alignment	Reference Features ×		
Start Station 16423.0	✓ RF 1 (ROAD RT LANE-168)		
Report Point Properties.	RF 2 (RD RT PAVE EDGE-173)		
Section Extrapolate Ground	RF 5 RF 4		
Steed around	RF 5		
Disable fast draping		Salaat faatuur(a) ku nama	
	Vuse as reference feature	Select readure(s) by name	Contraction of Second
		Feature Names:	Highlighted Iter
	Iopo surface - OG	MIDDLE OF LANE-46	Us Calent
	OG.terx	PAVEMENT BOTTOM-165 RD LT STDE SLOPE-163	Un-select
	Feature	RD RIGHT TOE-153	Select All
	Name(s): RD RT PAVE EDGE-173	RD RIGHT TOE-156 RD RT DITCH BOTT-158	Un-Select Al
	Description:	RD RT MIDLE LANE-31	Coloritori
		RD RT PAVE EDGE-173	Selected 1
	Definition Profile Section	RD RT SIDE SLOPE-162	Advanced
	OK Cancel	RD RT SIDE SLOPE-163	Advanceu
		ROAD CENTR LINE-166	
	ОК	ROAD LEFT LANE-168	
		ROAD LEFT TOE-148	
		ROAD LEFT TOE-151	
		ROAD RT LANE-168	
		SPC LINE OROSSIG-S	

Figure 2 – Setting up Lane and Shoulder Reference Features.

3. 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):

Units General Alignment (Reference Features	×
L-Line		
Start Station 16423.0	RF 1 (ROAD RT LANE-168)	<u>^</u>
Report Point Properties	RF 2 (RD RT PAVE EDGE-173)	
	RF 3	
Section Extrapolate Ground	RF 4	
Extend around	RF 5	~
Disable fast draping		
	Section Display	
	Projection Intersection	Options
		Referenced Feature Display
		✓ Label intersected feature name(s)
		□ abel projected feature name(s)
		Maximum projection offset: 100
	Definition Profile Section	
		Color: blue +
		Line-type: 0 - solid
		Symbols: Circle Filled (Large)
		OK Cancel



Applying the Mill and Overlay Template

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



- 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/DYwill 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/DYwill 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/DYwill 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.