

***Plan Production –
Civil Geometry & Civil Cells for
2D FDOTSS4 OpenRoads***



Presented by Todd Holt

Slide show created by Vern Danforth

Session Topics

Working with PowerGEOPAK SS4 Civil Tools

- ◆ Rule based design and why?
- ◆ Horizontal Geometry
- ◆ Civil Cells



Rule based design and why?

- ◆ Design changes will update “heal”:
 - ✓ 2D geometry
 - ✓ Profiles (if ruled to the existing terrain or another profile)
 - ✓ 3D Model
 - ✓ Pay item elements
 - ✓ Plan Sheets via reference files
 - ✓ Cross Sections (future)
 - ✓ Labels (Labels)
 - ✓ Summary of Quantity tables (future)
 - ✓ Etc.

Learning these tools will improve productivity now and for future releases!



Rule based design and why?

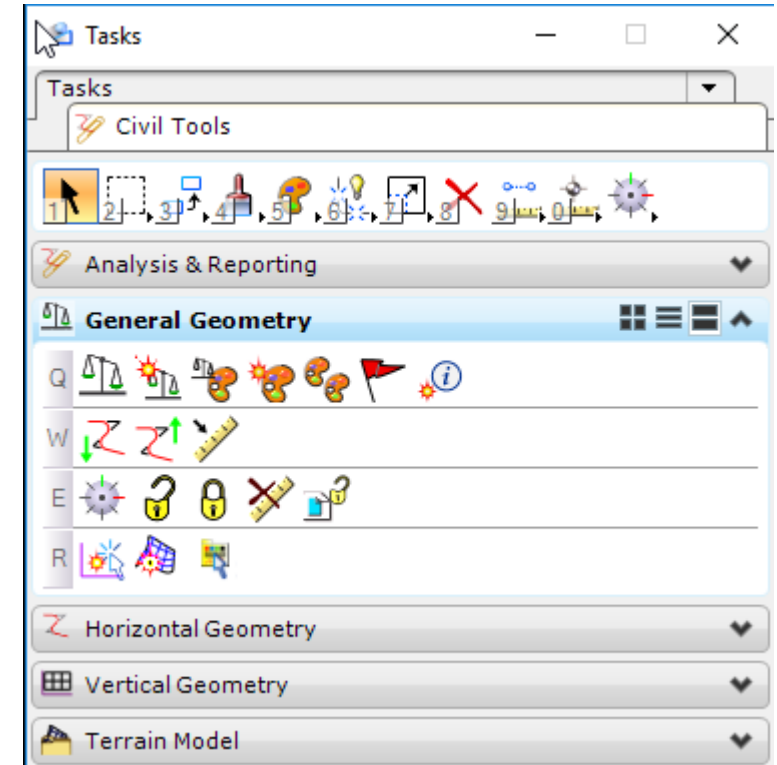
Demonstration:

**MicroStation versus Civil
Geometry**



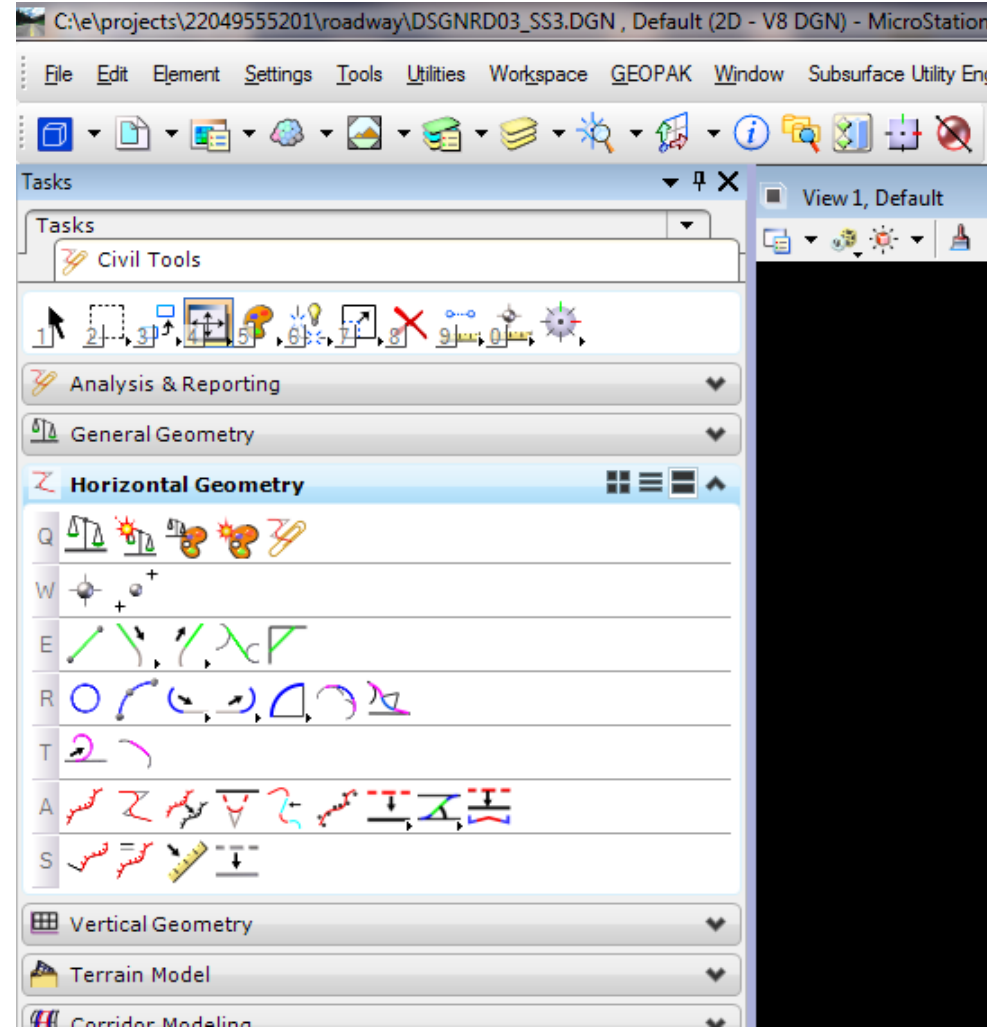
Civil Tools - General Geometry:

- ◆ Geometry Toggles
 - ✓ Design Standards
 - Feature Definitions
 - Civil Message Center
- ◆ Import/Export
- ◆ Create Civil Rule
- ◆ Civil Accudraw, Activate Rules, Deactivate Rules, Remove Rules
- ◆ Set Active Profile/Terrain



Civil Tools – Horizontal Geometry:

- ◆ Lines Simple, To, From
- ◆ Arcs Between Elements
- ◆ Offsets and Tapers
- ◆ Complex by Elements
- ◆ Modify Civil Elements

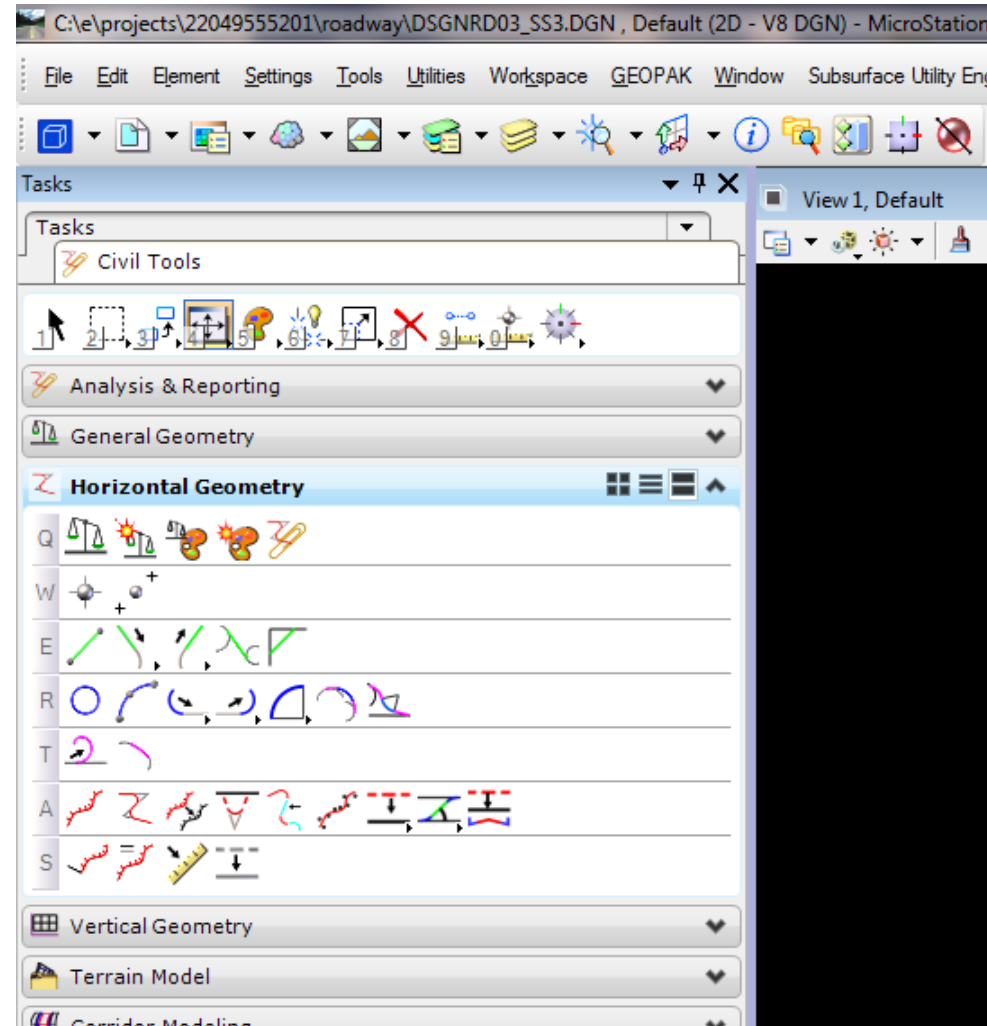


Civil Tools – Horizontal Geometry:

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Demonstration:

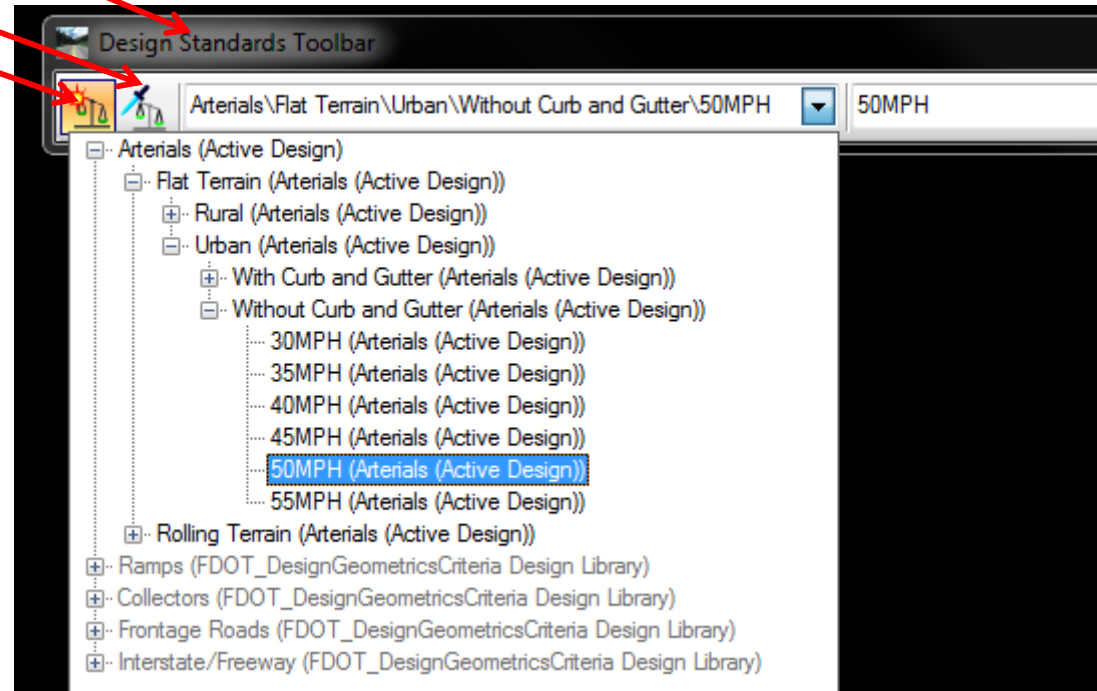
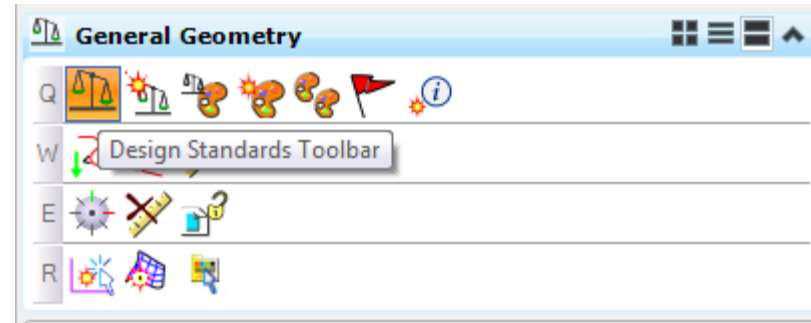
**MicroStation versus Civil
Geometry**



Geometry Toggles

Design Standards

- Toolbar
- Match
- Set Active

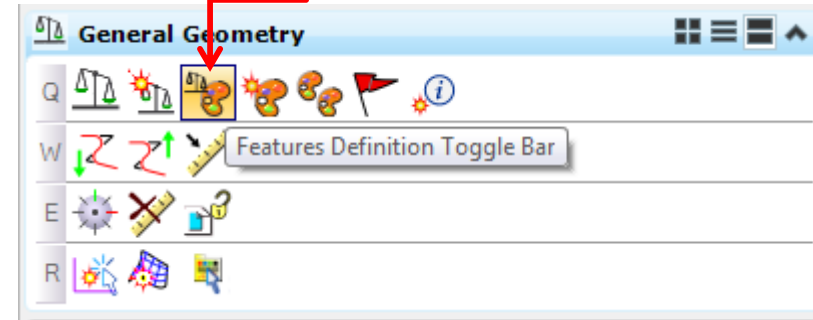


Geometry Toggles

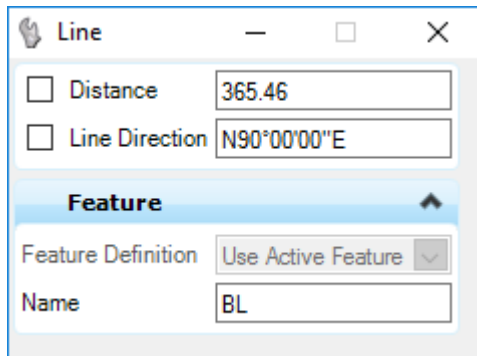
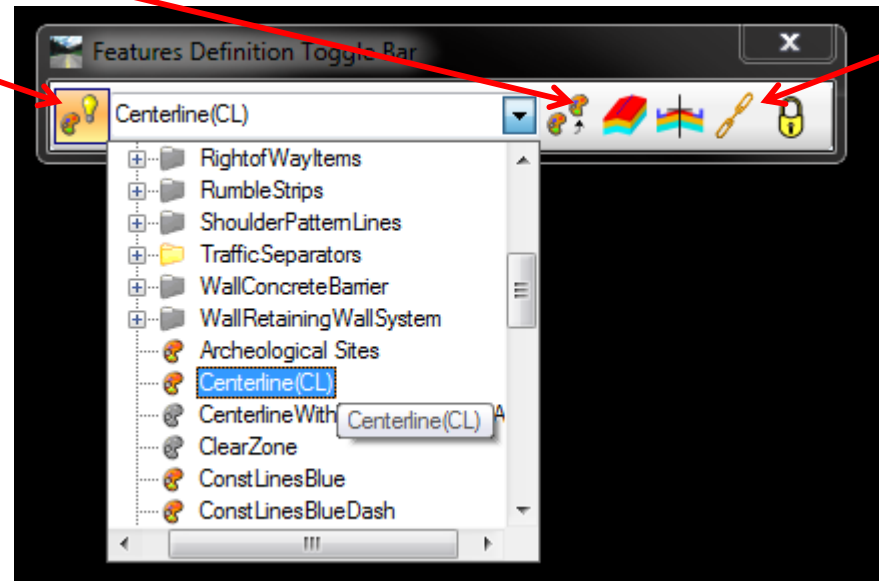
Feature Definition Toggle Bar

- Match
- Use Active

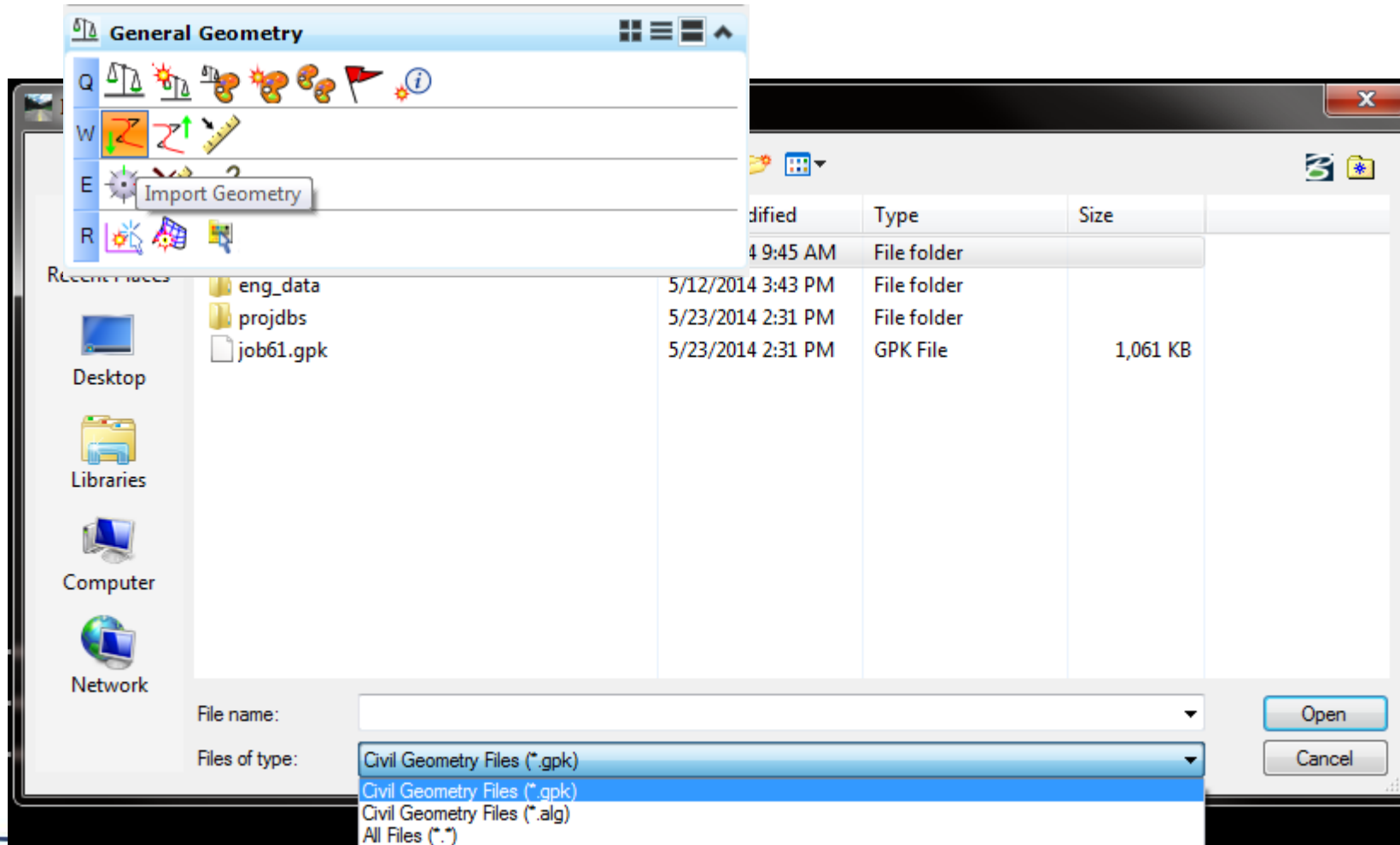
Feature Definition Toggle Bar



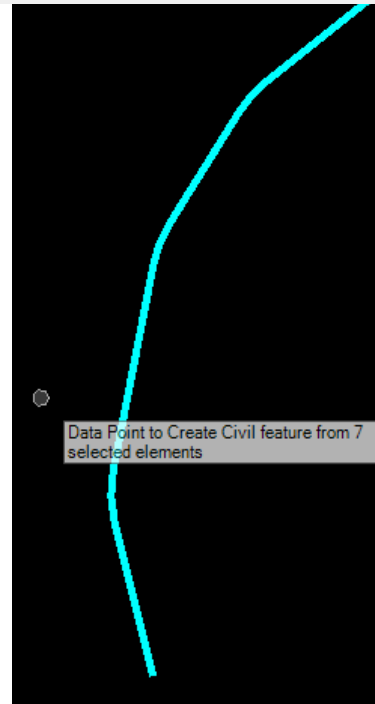
Chain Feature



Import/Export



Create Civil Rule



The "Element Information" panel displays the properties of the selected line. It is divided into "General" and "Geometry" sections.

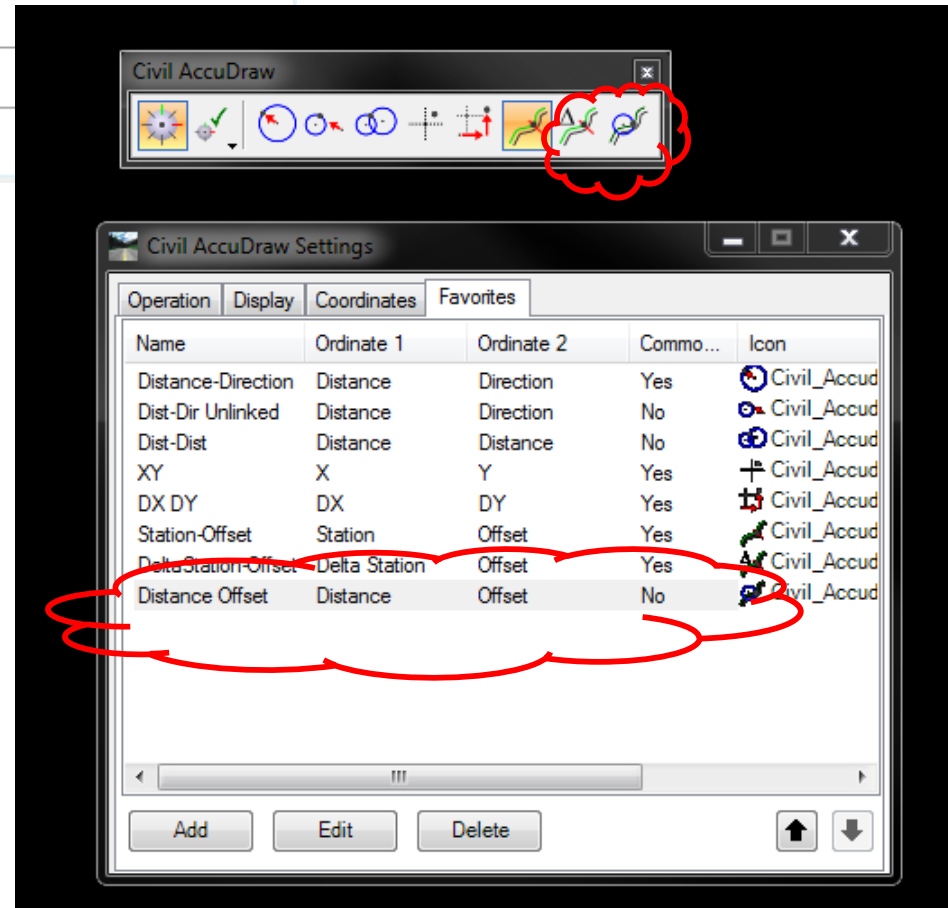
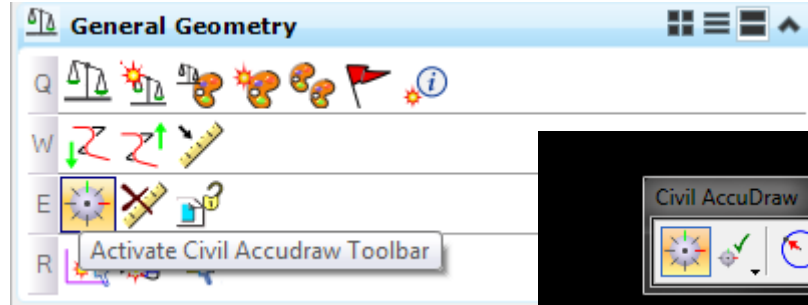
General	
Description	Line
Level	PavtAsphalt
Color	ByLevel (0)
Line Style	ByLevel (0)
Weight	ByLevel (2)
Class	Primary
Template	None
Transparency	0
Priority	0

Geometry	
Start Point	2006726.853825,4040
End Point	2006597.750462,4041
Length	171.165403
Direction	138°57'38.976801"

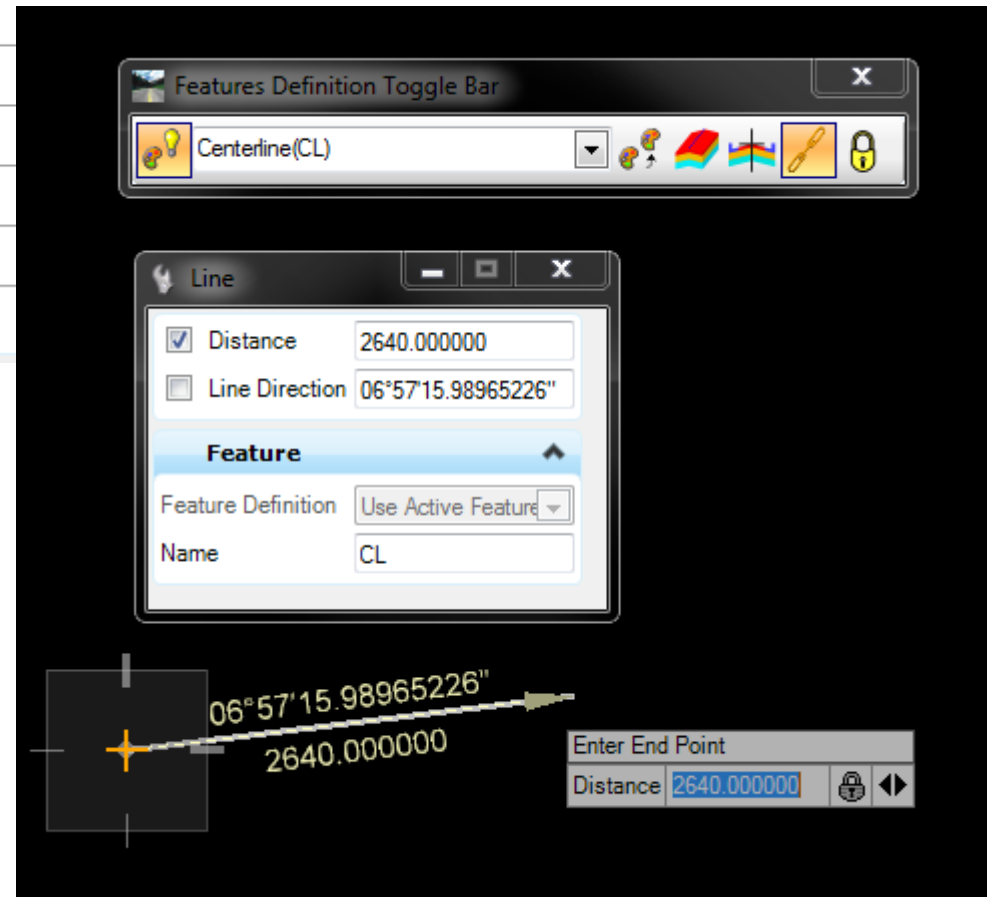
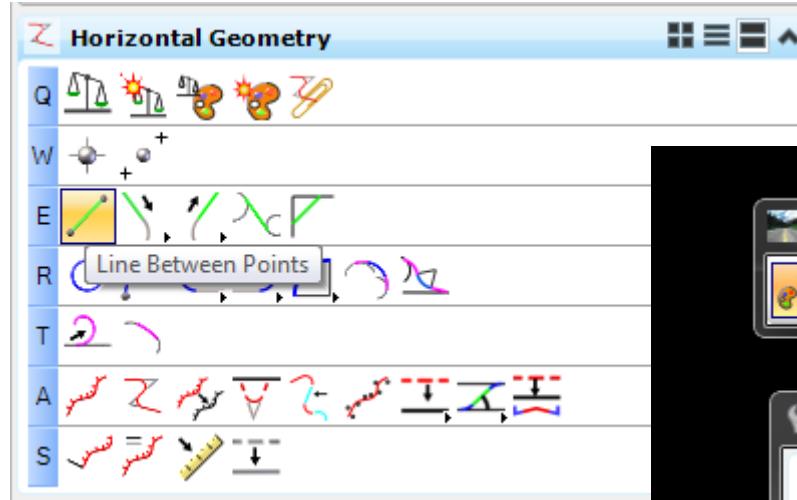
Below the tables are expandable sections: "Extended", "Geometry Points", and "Line Between Points Rule".



Civil Accudraw



Lines; Simple, To, From



Lines; Simple, To, From

The image displays a software interface for creating horizontal geometry. On the left is a 'Horizontal Geometry' toolbar with icons for various line types. A 'Features Definition Toggle Bar' is shown above the main workspace, currently set to 'Centerline(CL)'. The 'Line From Element' dialog box is open, showing the following settings:

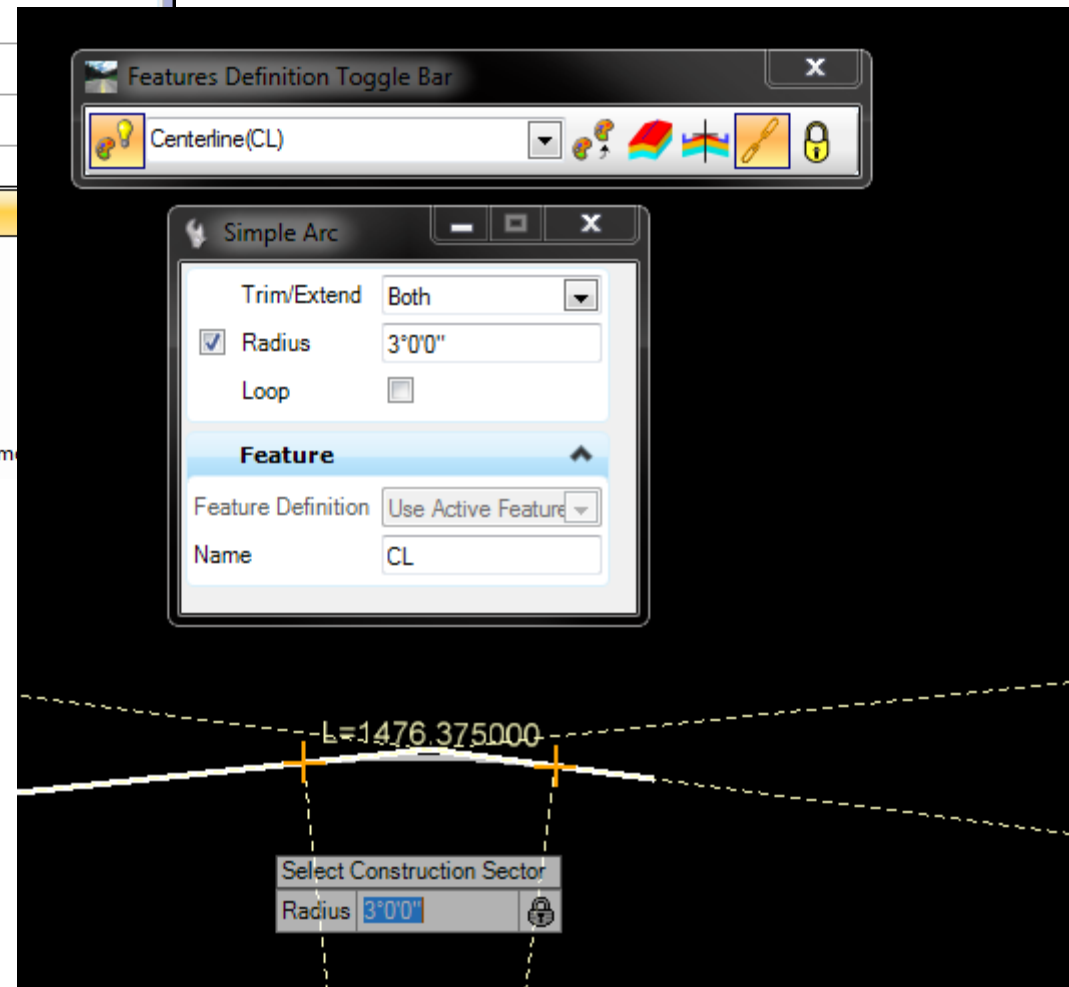
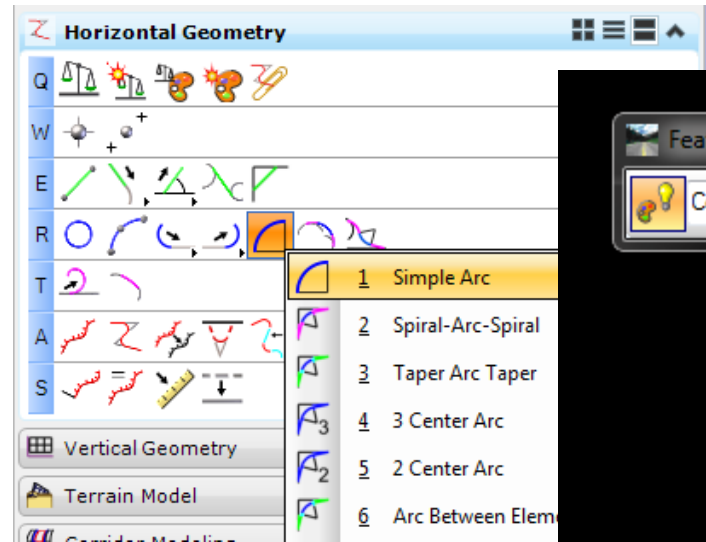
Property	Value
Offset	0.000000
Trim/Extend	None
Skew	13°30'0"
Start Distance	0.000000
End Distance	1320.000000

Below the dialog box, the 'Feature' section is visible:

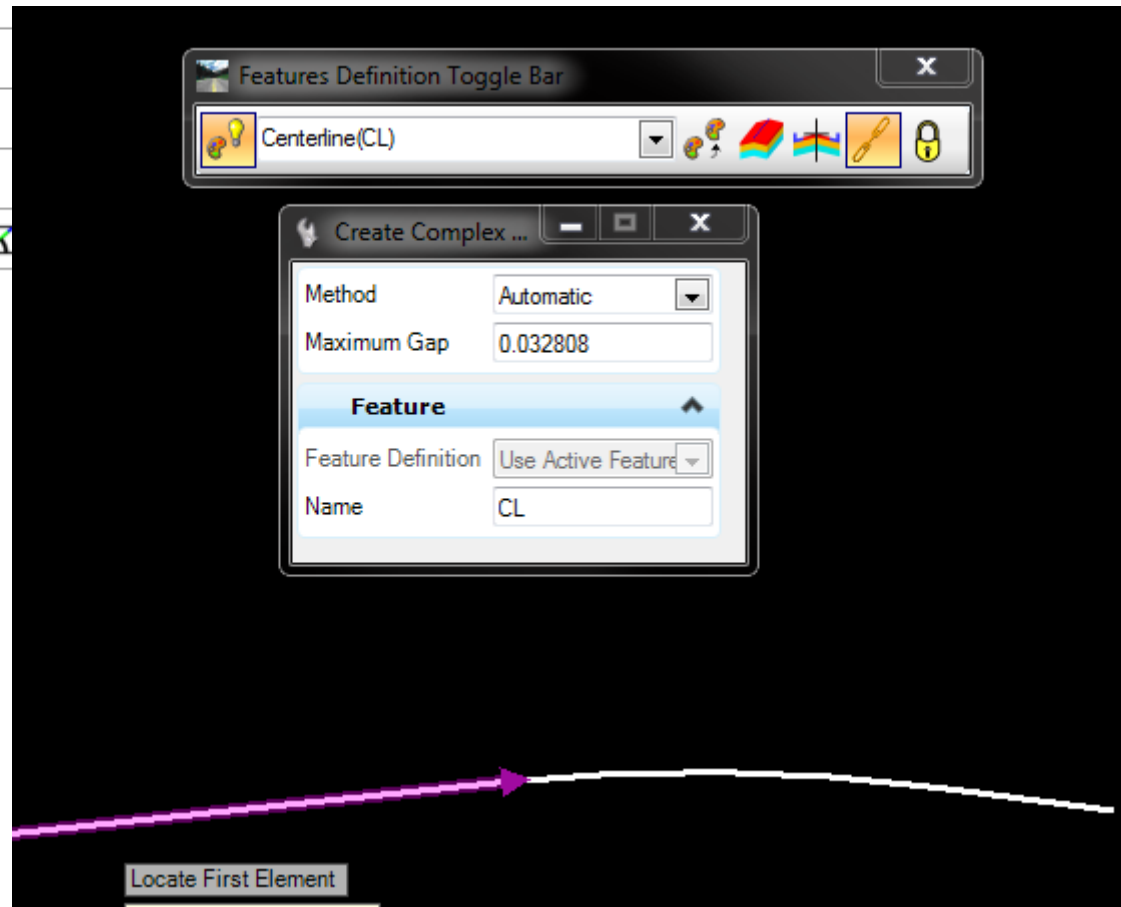
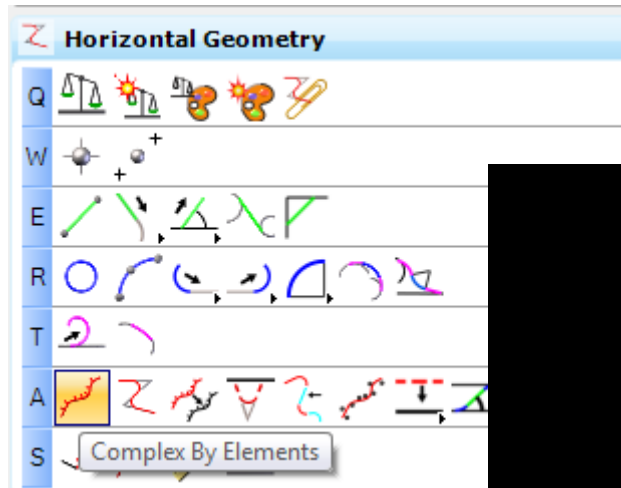
Property	Value
Feature Definition	Use Active Feature
Name	EOP

The main workspace shows a dashed line with a yellow crosshair at its end. A small input box at the bottom right contains the text 'Enter End Distance' and 'End Distance 1320.000000' with a lock icon.

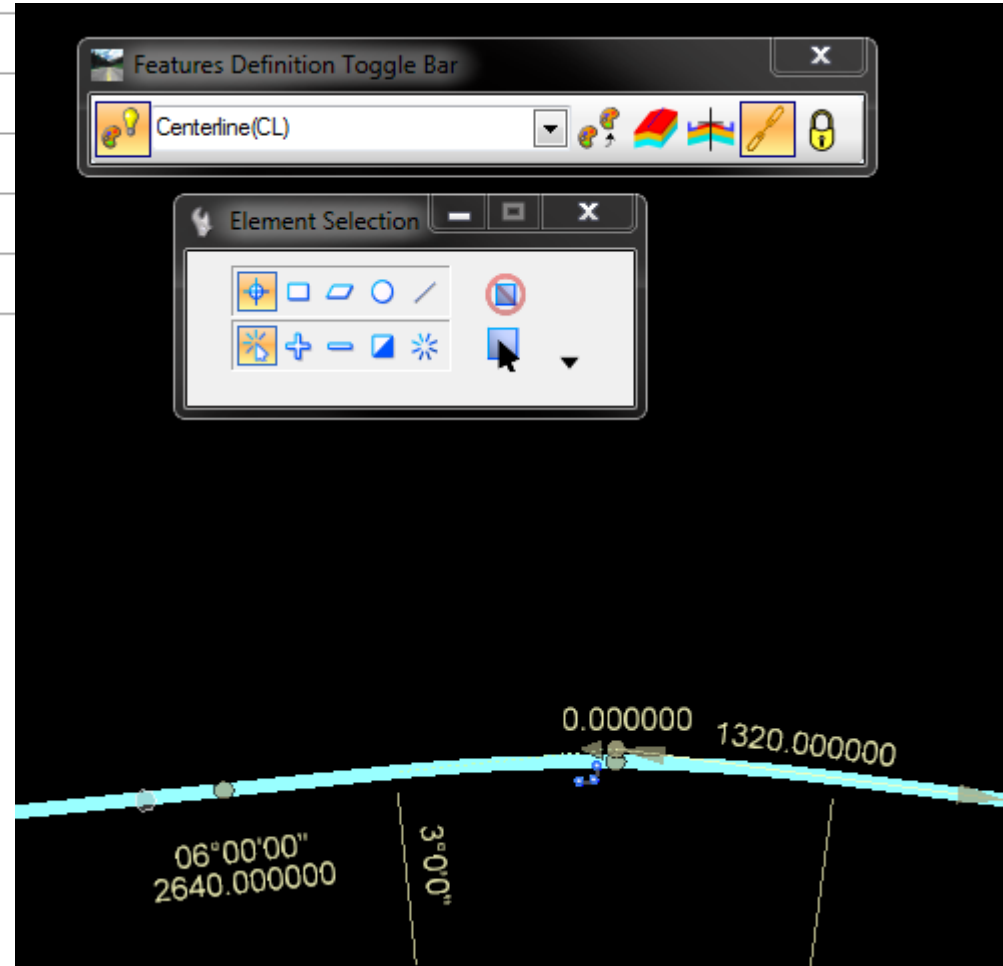
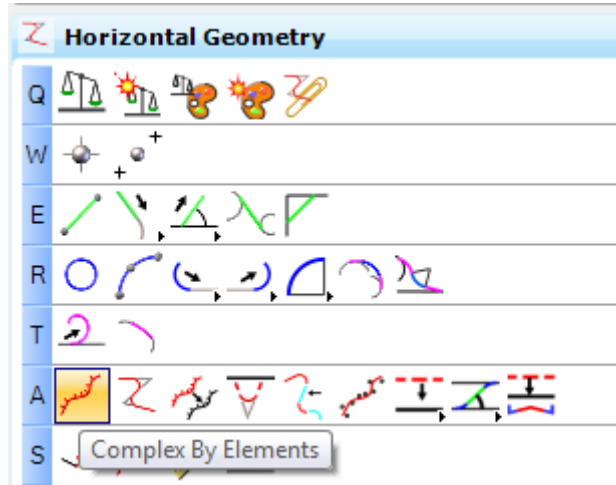
Arcs Between Elements



Complex by Elements



Complex by Elements



Offsets and Tapers

The screenshot shows the 'Horizontal Geometry' toolbar with a context menu open over the 'Single Offset Entire Element' icon. The toolbar is organized into rows labeled Q, W, E, R, T, A, and S. The context menu lists four options:

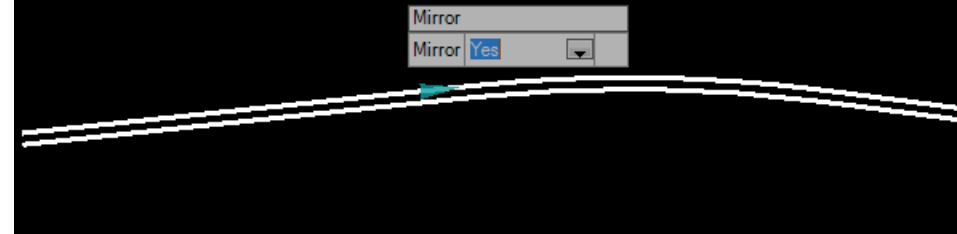
- 1 Single Offset Entire Element
- 2 Single Offset Partial
- 3 Variable Offset Taper
- 4 Ratio Defined Taper

Below the toolbar, there are tabs for 'Vertical Geometry', 'Terrain Model', and 'Corridor Modeling'.

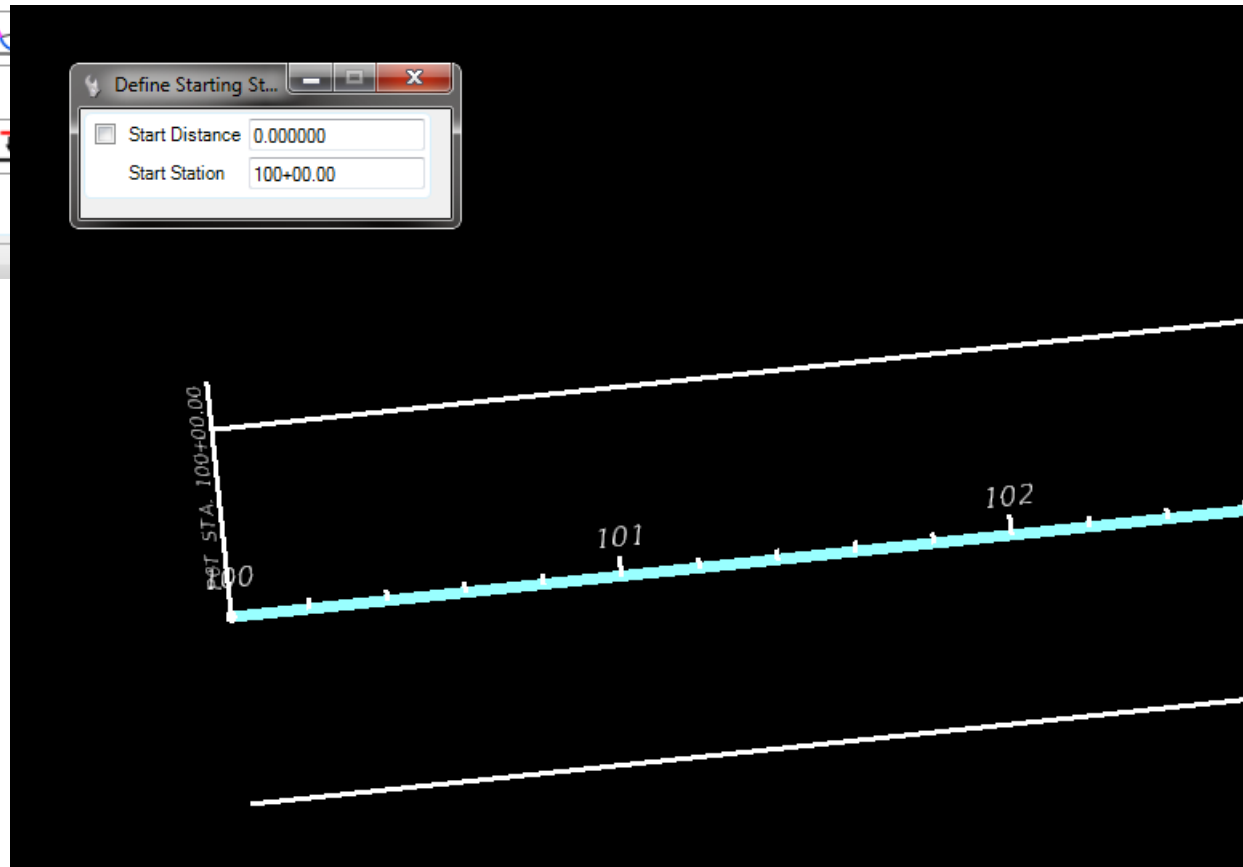
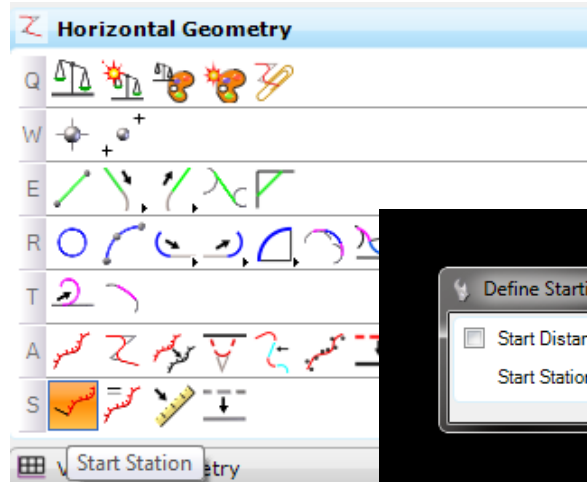
The 'Features Definition Toggle Bar' shows a dropdown menu with 'PavementAsphalt(EOPA)' selected. It includes icons for help, undo, redo, and lock.

The 'Single Offset Entire Element' dialog box has the following settings:

- Offset: 48.000000
- Mirror
- Feature**
- Feature Definition: Use Active Feature
- Name: EOPA



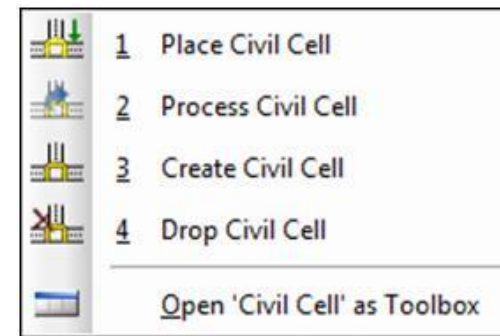
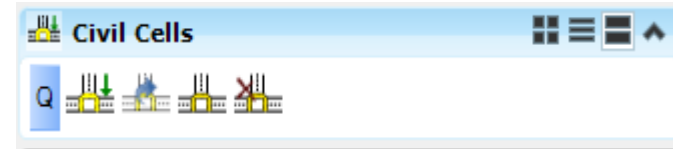
Modify Civil Elements



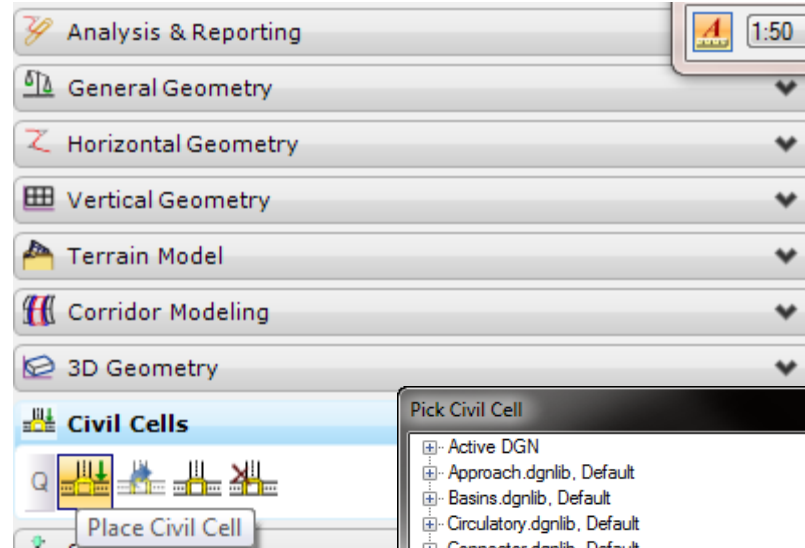
Civil Tools – Civil Cells

◆ Place Civil Cells

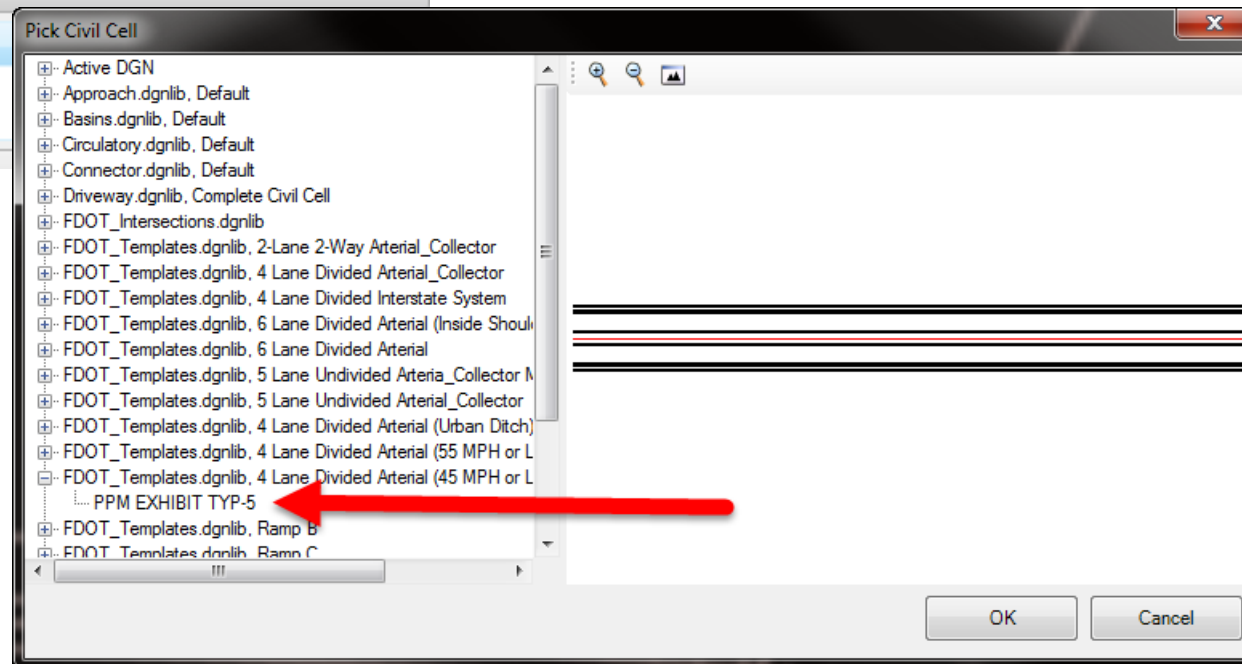
- Draw 2D Template Lines
- Left Turn with TS
- Right Turn
- Rural Sideroad
- Urban Driveway



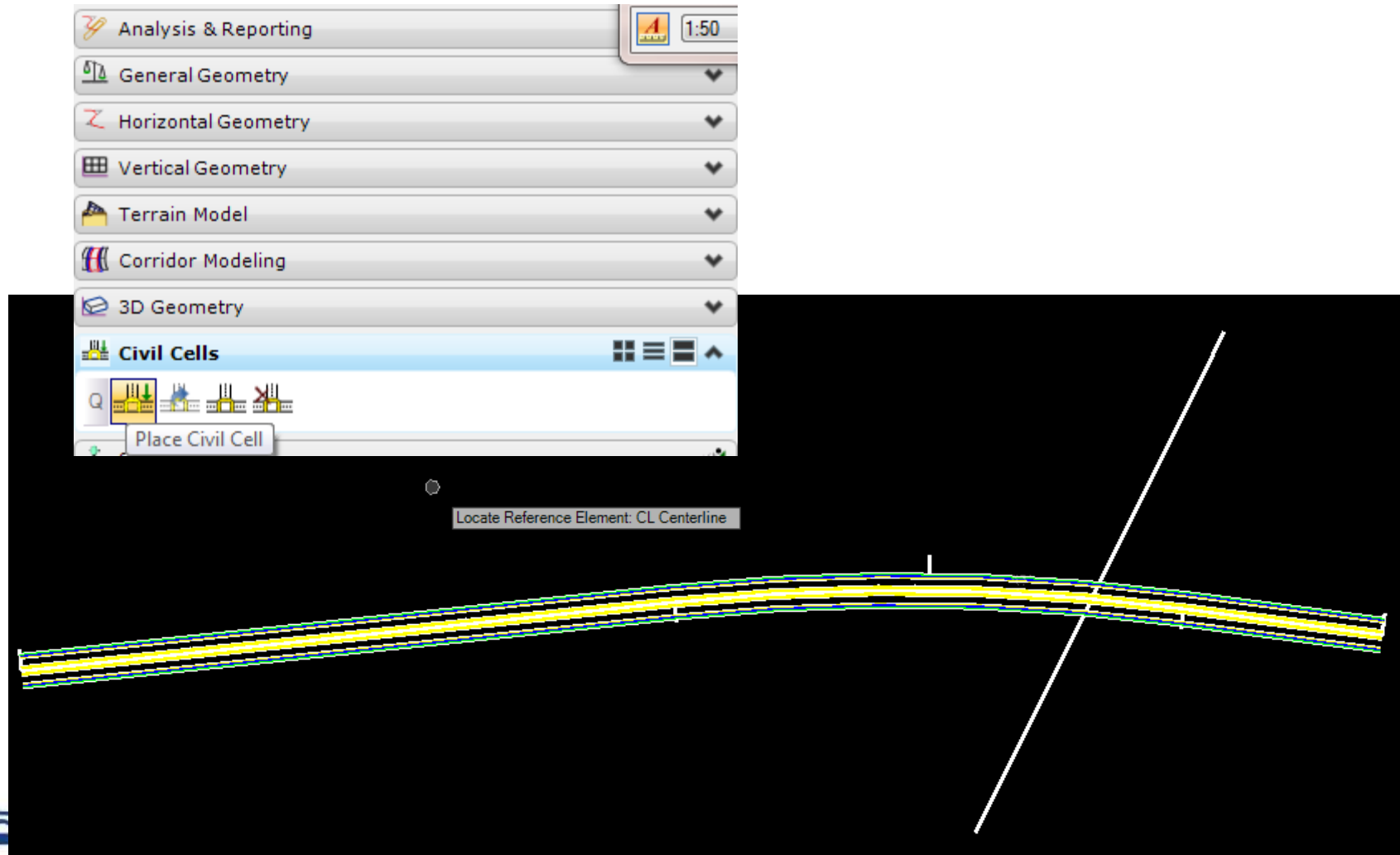
Place Civil Cells



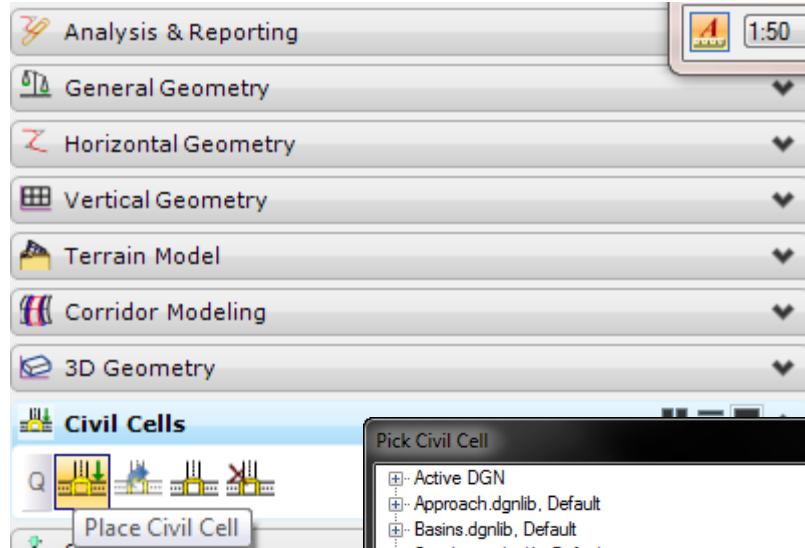
2D Template Lines



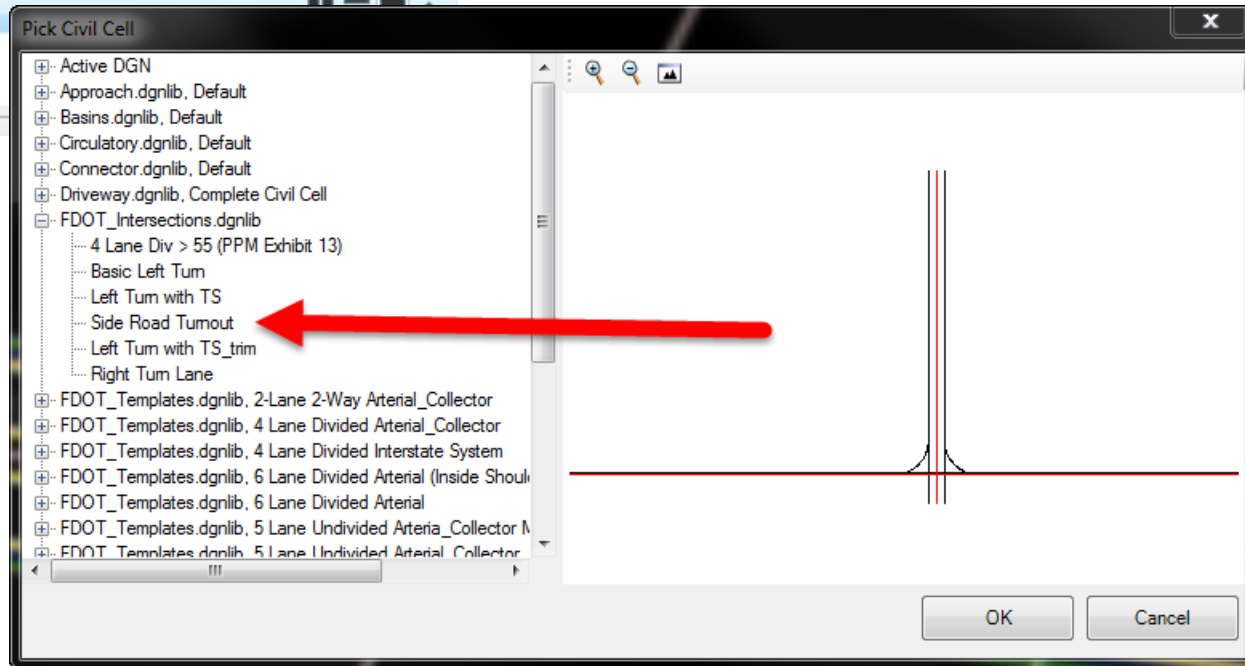
Place Civil Cells



Place Civil Cells

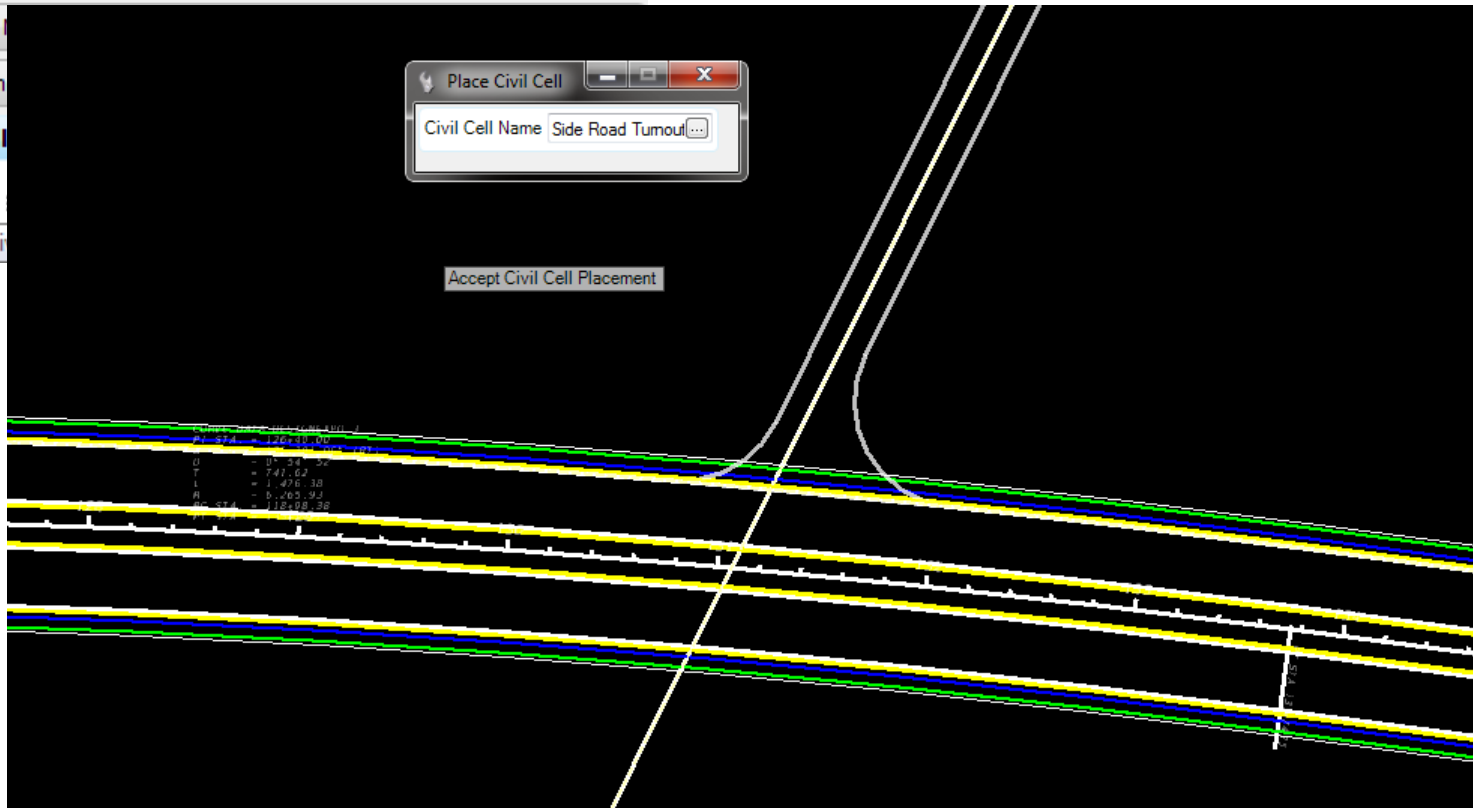


Side Road

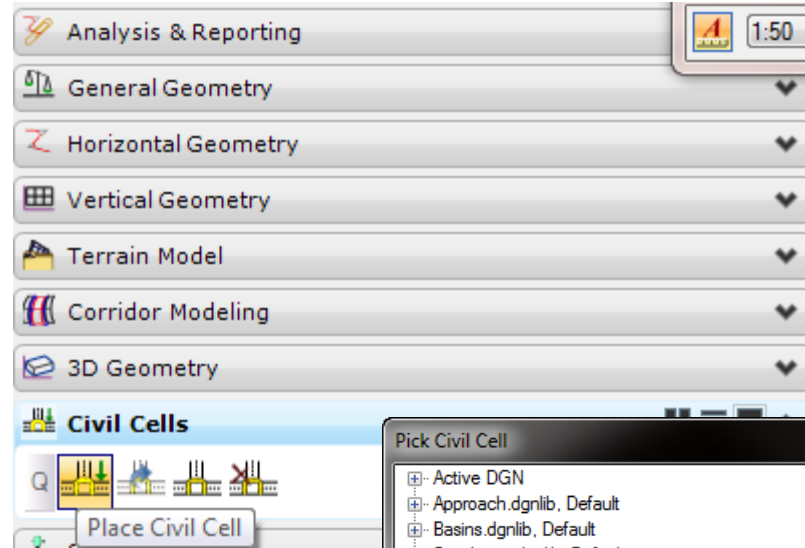


Place Civil Cells

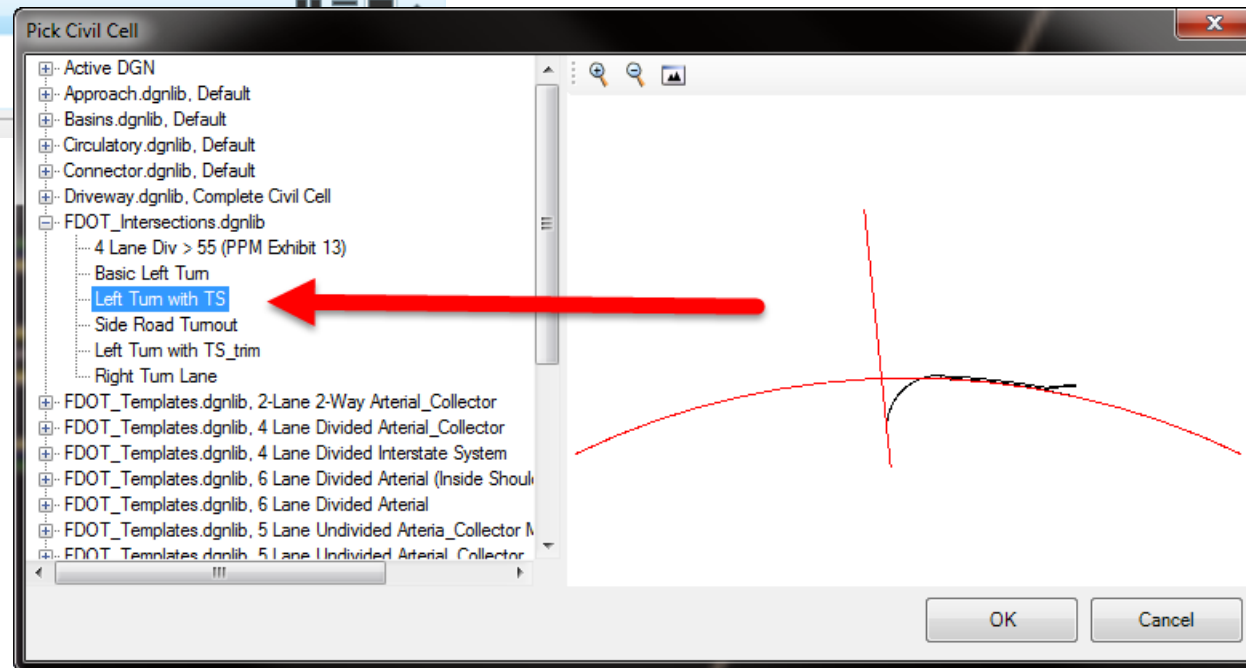
Analysis & Reporting 1:50
General Geometry
Horizontal Geometry
Vertical Geometry
Terrain Model
Corridor
3D Geom
Civil Cell
Place Ci



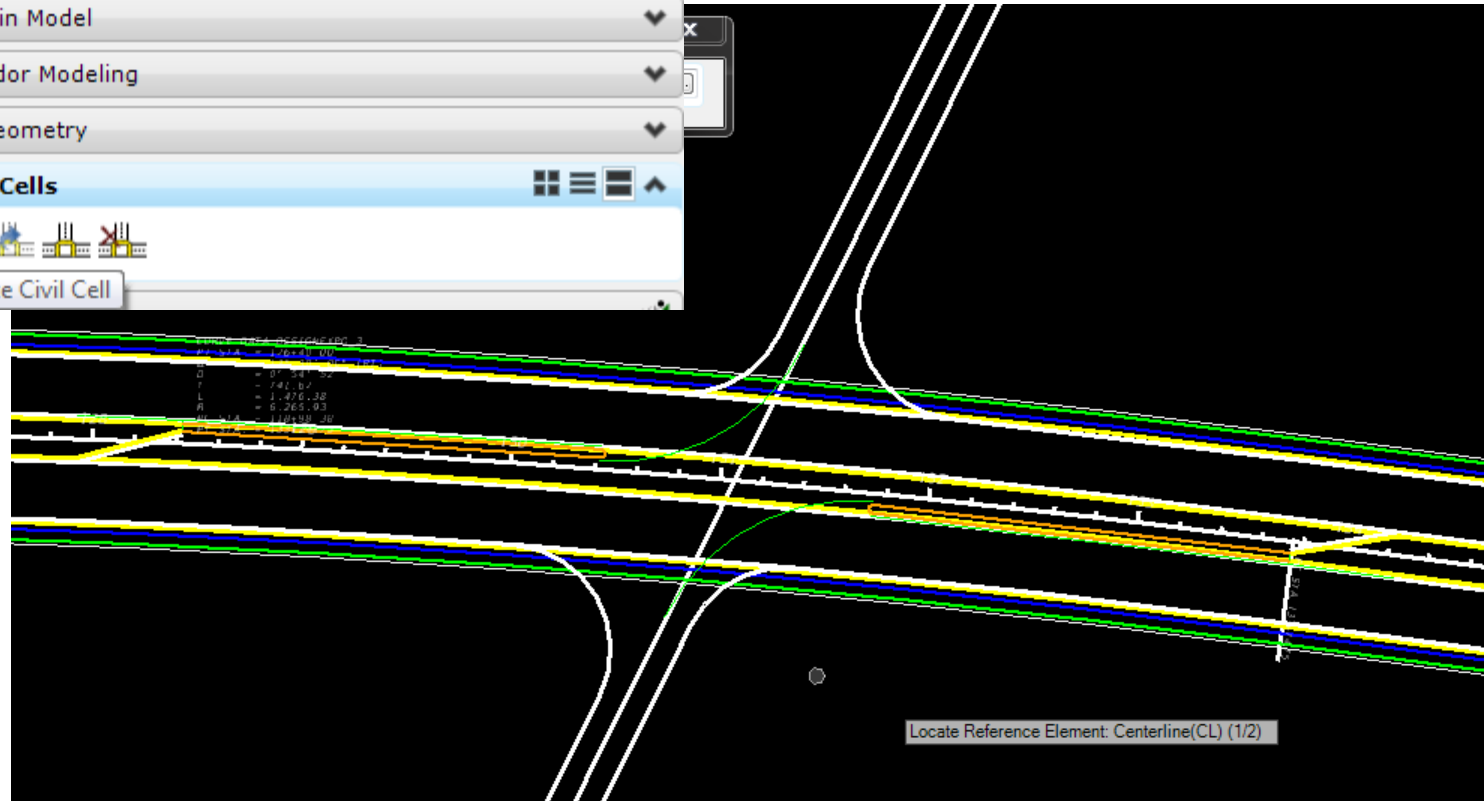
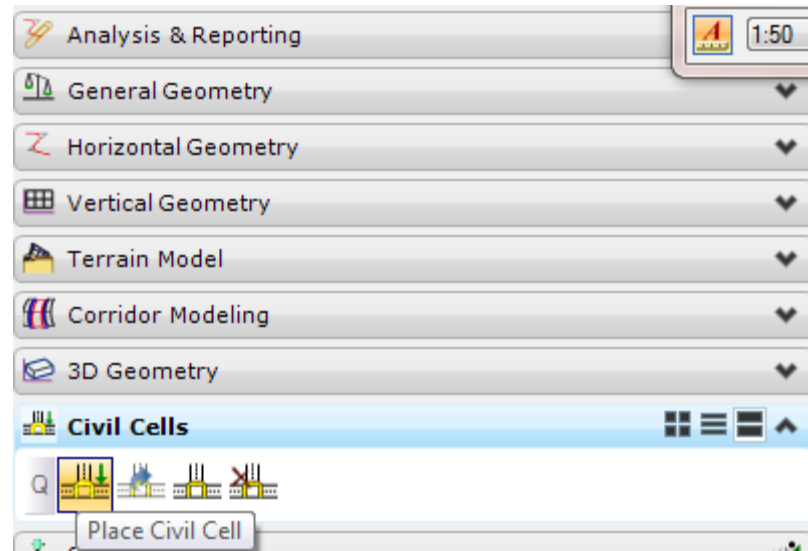
Place Civil Cells



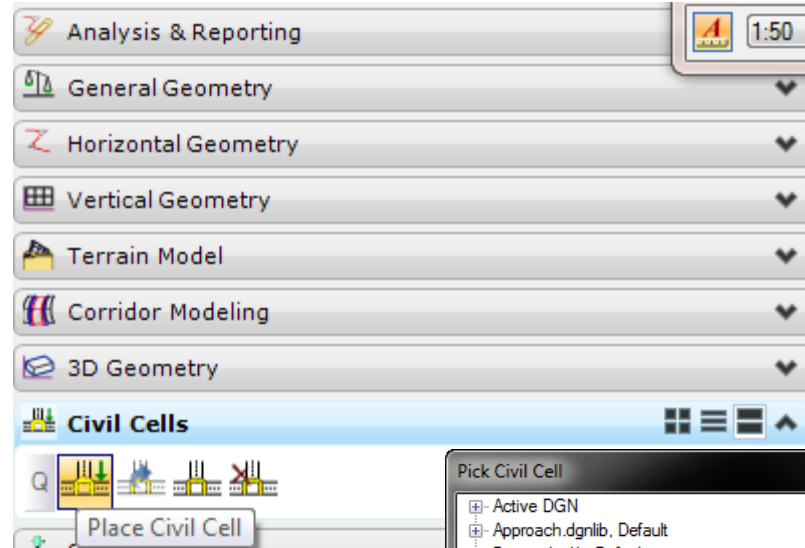
Left Turn w/ TS



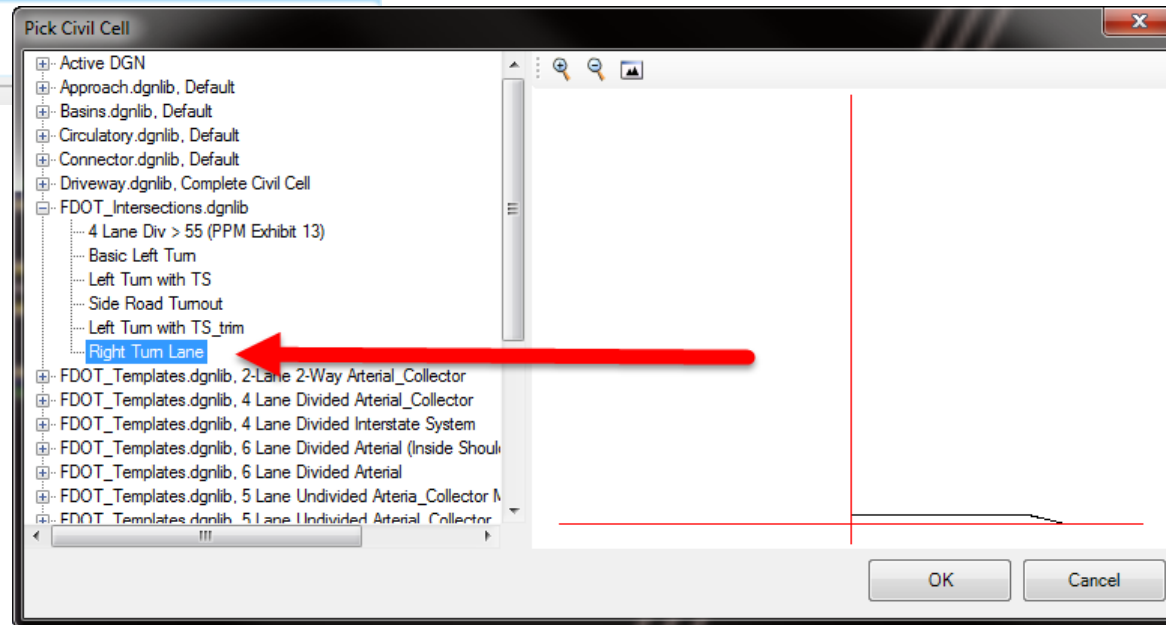
Place Civil Cells



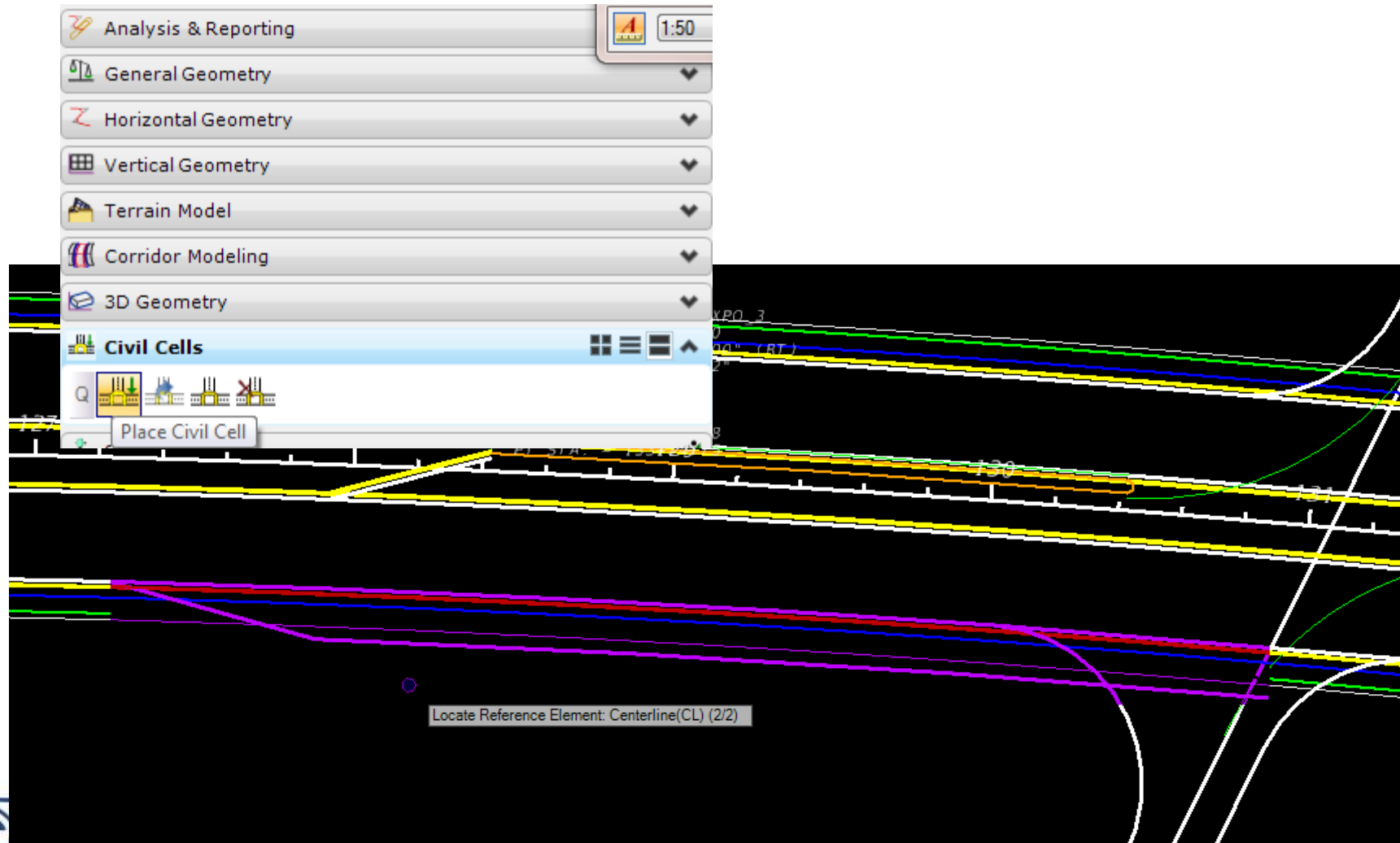
Place Civil Cells



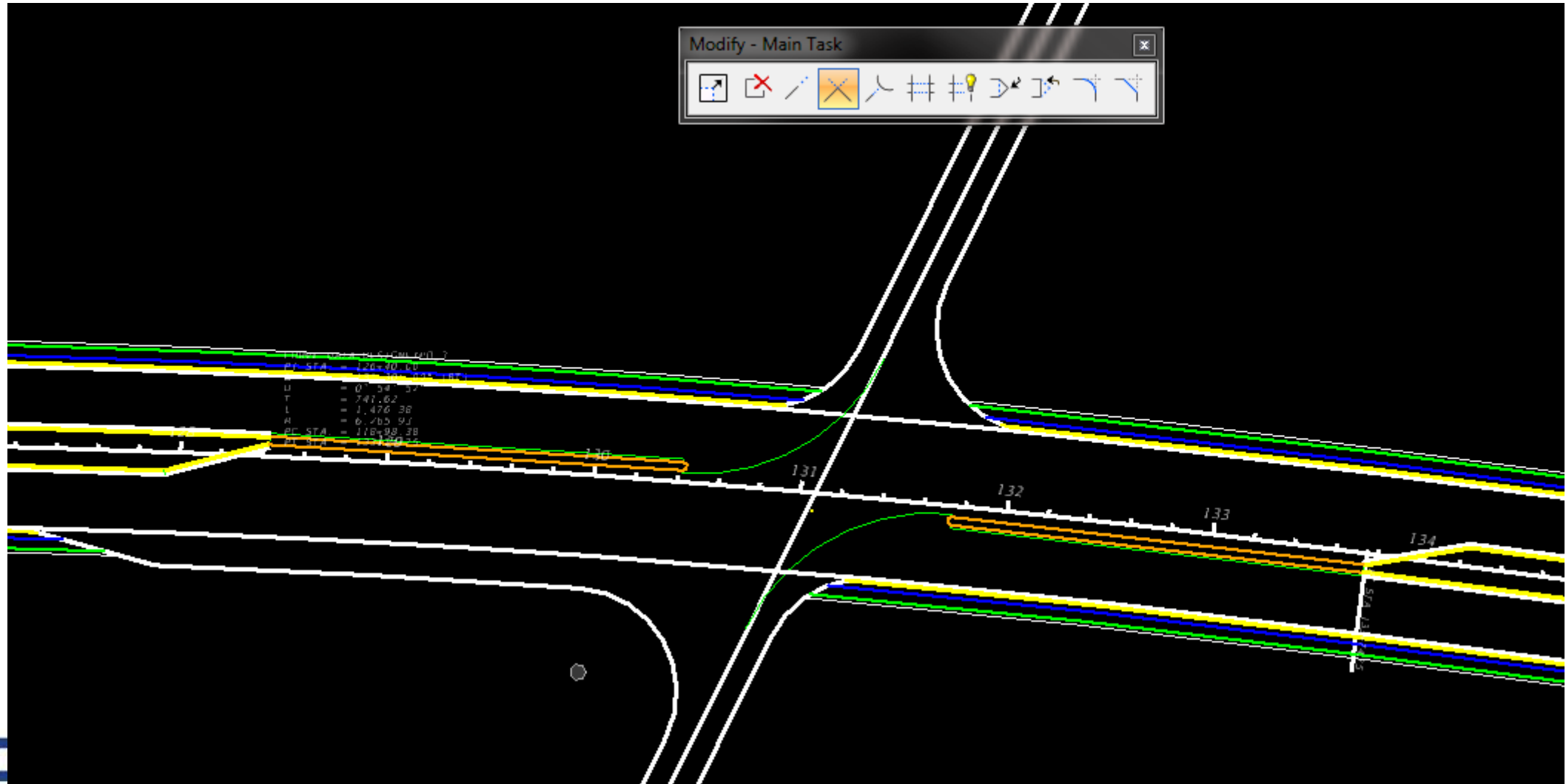
Right Turn Lane



Place Civil Cells



Modify Civil Elements

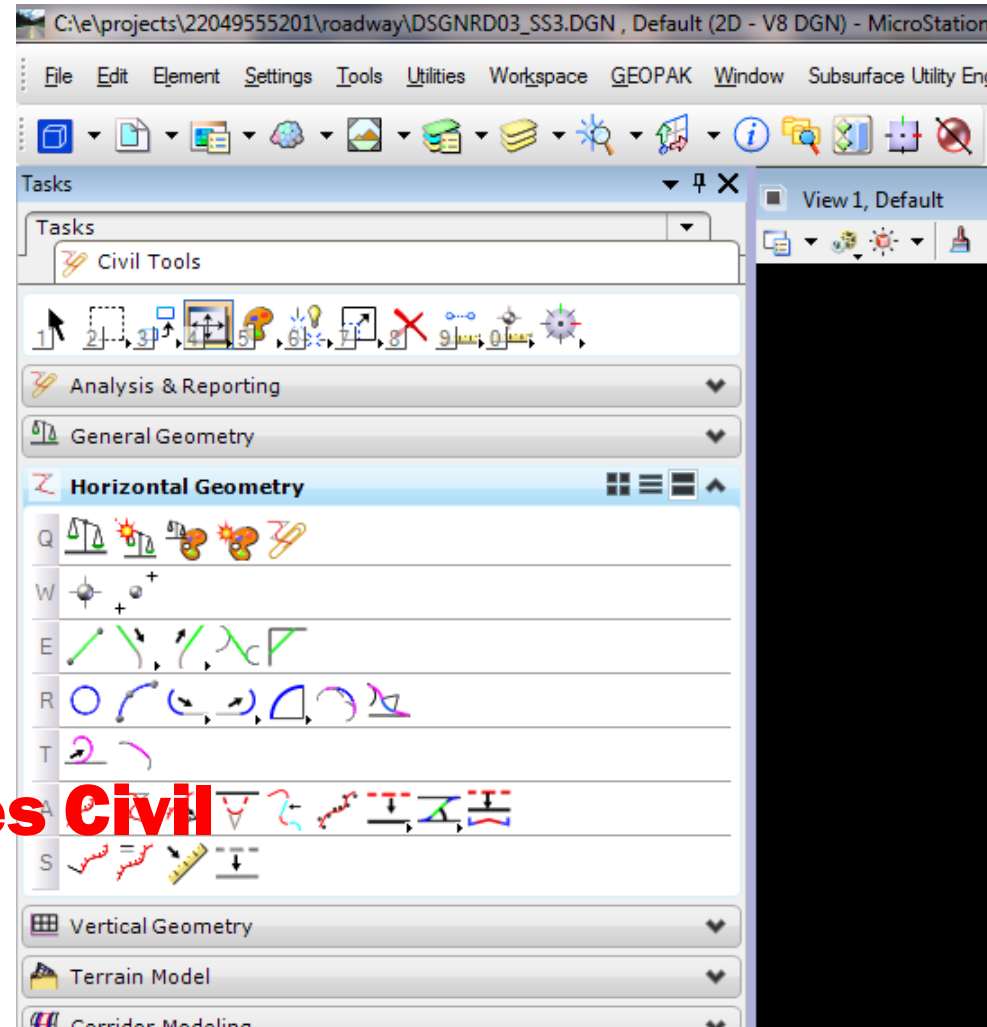


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Demonstration:

**MicroStation versus Civil
Geometry**



Contact Information

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