

# Profiles: Vertical Geometry Tools



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# Topics Covered

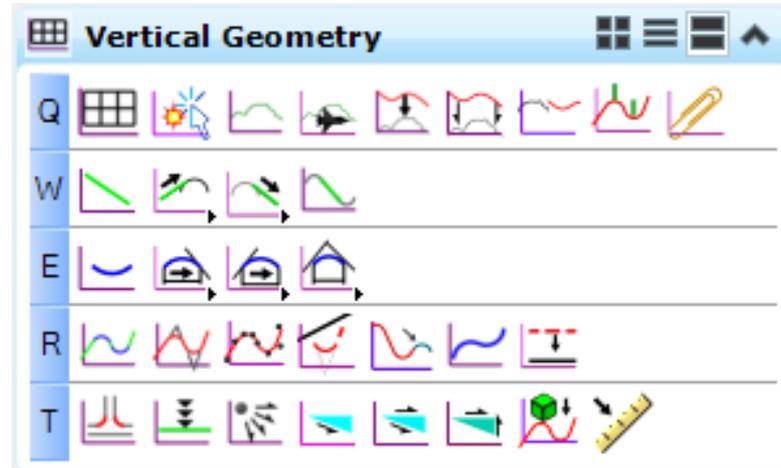
- Vertical Geometry Task Menu and Tools
- Importing/Exporting Profiles
- Viewing Existing Profile
- Creating/Editing Profiles with New Civil Tools





# Vertical Geometry Task Menu

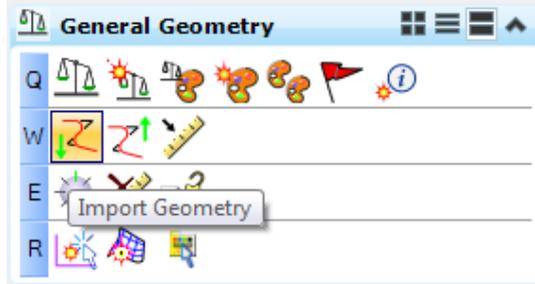
- Vertical Geometry
  - Main Vertical Geometry
  - Geometry Lines
  - Geometry Curves
  - Geometry Complex
  - Elements



# Import/Export Profiles

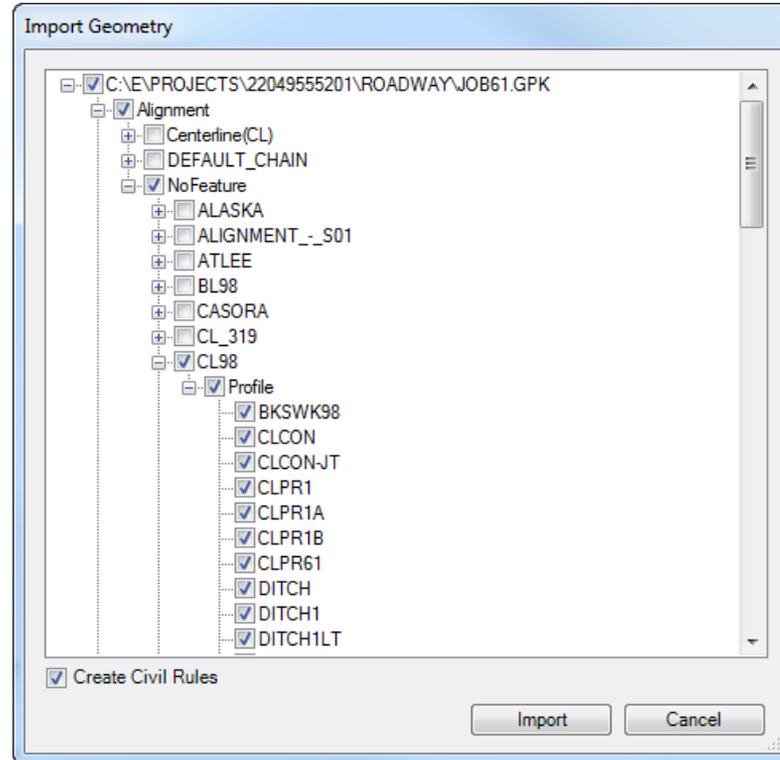
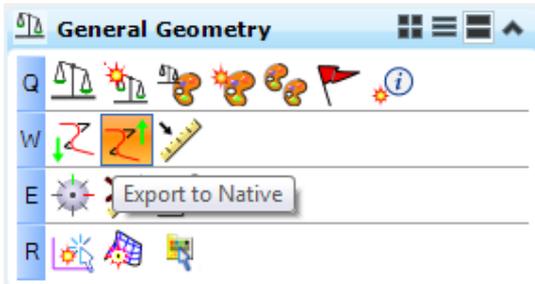
- Import Geometry Tool

- Used to store chains and/or profiles into the SS4 design file.



- Export Geometry Tool

- Used to export chains and/or profiles to the GPK file for plans production.



# Viewing Existing Profiles

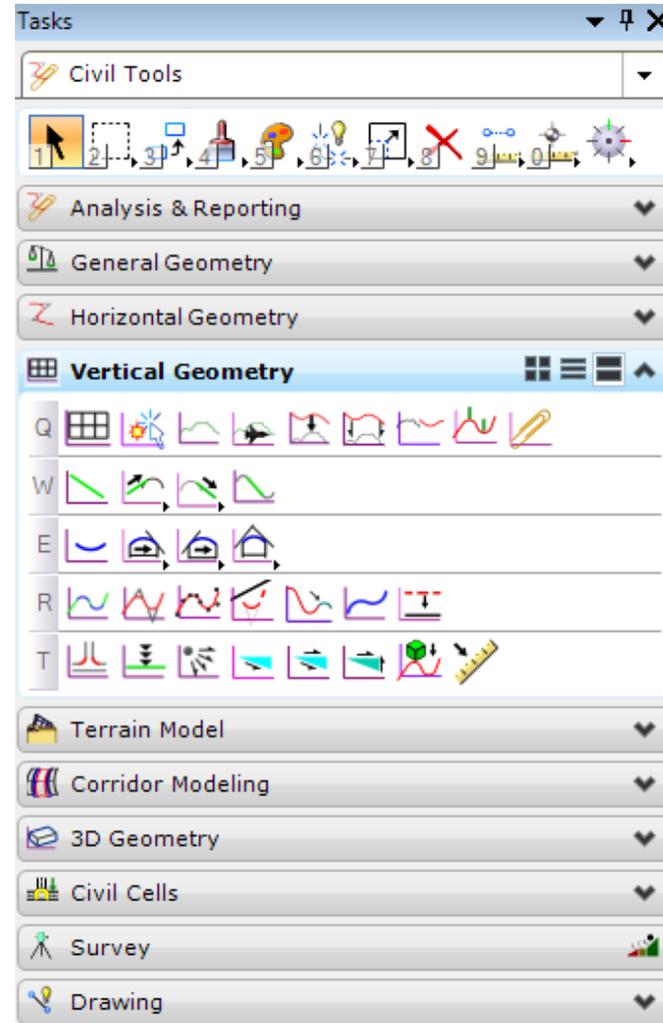
The image displays a software interface for terrain modeling and profile viewing. It includes the following components:

- Import Terrain Model(s) dialog:** Shows options for importing a terrain model. The 'Terrain Models' section has 'Append to existing Terrain Model' unchecked. The 'Filter' section shows 'Source File Units' set to 'Unknown'. The 'Feature Definition' section shows 'Feature Definition' set to 'DtmExisting' and 'Import Options' set to 'Import Terrain Only'. The 'Geographical Coordinate Systems' section shows 'Source' set to 'None'.
- Terrain Model toolbar:** Contains various icons for terrain operations, including a 'Create From File' button.
- Vertical Geometry toolbar:** Contains various icons for vertical alignment, including an 'Open Profile Model' button.
- View 3, Profile - SR61 window:** Displays a profile view of a road. The vertical axis represents elevation in feet, ranging from -20 to 100. The horizontal axis represents stationing, with labels such as 699+54 R/L, 700+54 R/L, 701+54 R/L, 702+54 R/L, 703+54 R/L, 704+54 R/L, 705+54 R/L, 706+54 R/L, 707+54 R/L, 708+54 R/L, 709+54 R/L, 710+54 R/L, 711+54 R/L, 712+54 R/L, 713+54 R/L, 714+54 R/L, 715+54 R/L, 716+54 R/L, 717+54 R/L, and 718+54 R/L. A green dashed line represents the existing ground profile.



# Key Vertical Geometry Tools

- Profile from Surface
- Profile By Best Fit
- Profile by VPI
- Profile Complex by VPI
- Profile Intersection Point
- Profile Lines and Curves
- Profile by Slope From Element
- Quick Profile Transition
- Profile by 3d Element
- Design Standard Checks
- Profile Reports



# Profile from Surface Tools

**Vertical Geometry**

Q [Grid] [Sun] [Profile From Surface] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile]

W [Profile] [Profile] [Profile From Surface]

E [Profile] [Profile] [Profile] [Profile]

R [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile]

T [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile]

Locate First Element To Profile

**Profile From Surface**

Point Selection: All

Profile Adjustment: None

Draping Option: Break Lines

Horizontal Offsets: 0.000000

Vertical Offsets: 1.000000

**Range**

Lock To Start:

Start Distance: 346.211026

Lock To End:

End Distance: 1646.211026

**Feature**

Name: [Text Box]

Element Template: None

700+04 R1V  
700+54 R1V  
701+04 R1V  
701+54 R1V  
702+04 R1V  
702+54 R1V  
703+04 R1V  
703+54 R1V  
704+04 R1V  
704+54 R1V  
705+04 R1V  
705+54 R1V  
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709+54 R1V  
710+04 R1V  
710+54 R1V  
711+04 R1V  
711+54 R1V  
712+04 R1V  
712+54 R1V  
713+04 R1V  
713+54 R1V  
714+04 R1V



# Profile by Best Fit

**Vertical Geometry**

Q [Icons for various vertical geometry tools]

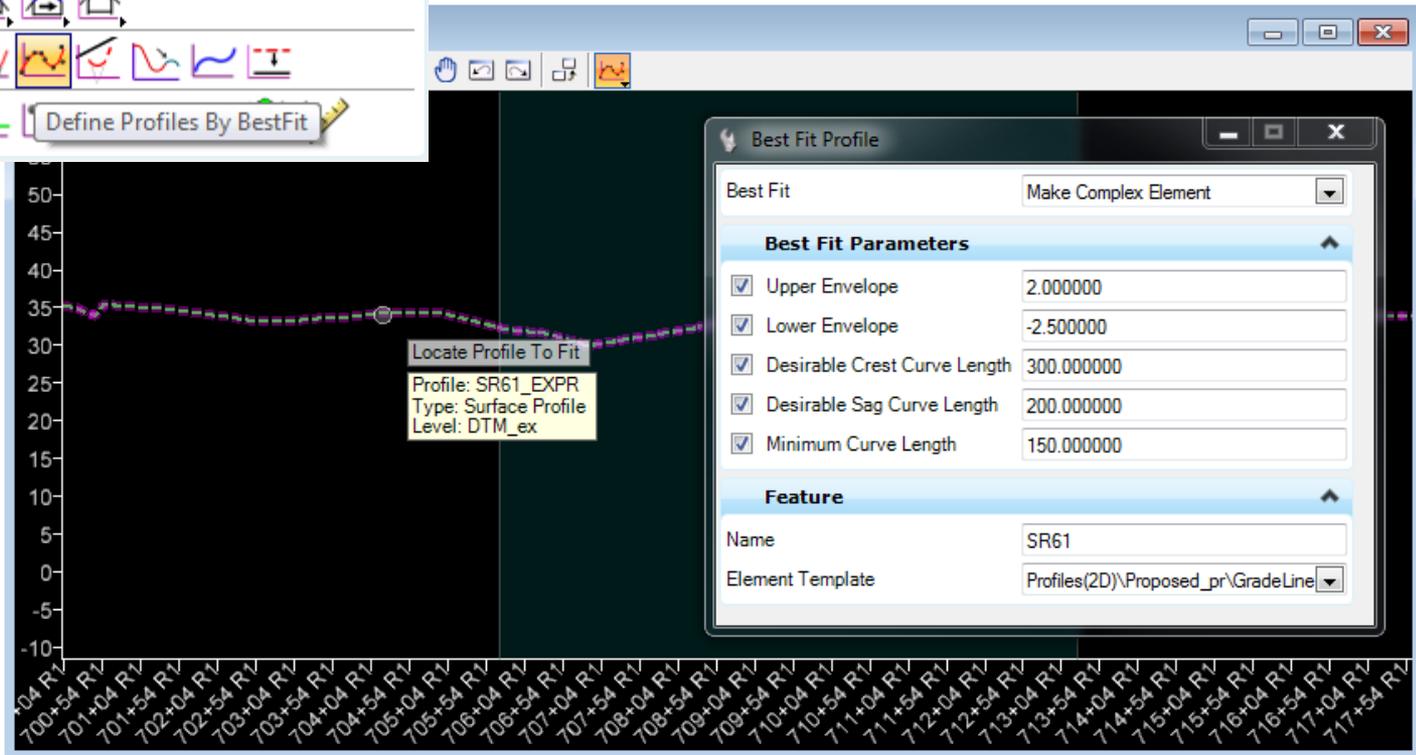
W [Icons for various vertical geometry tools]

E [Icons for various vertical geometry tools]

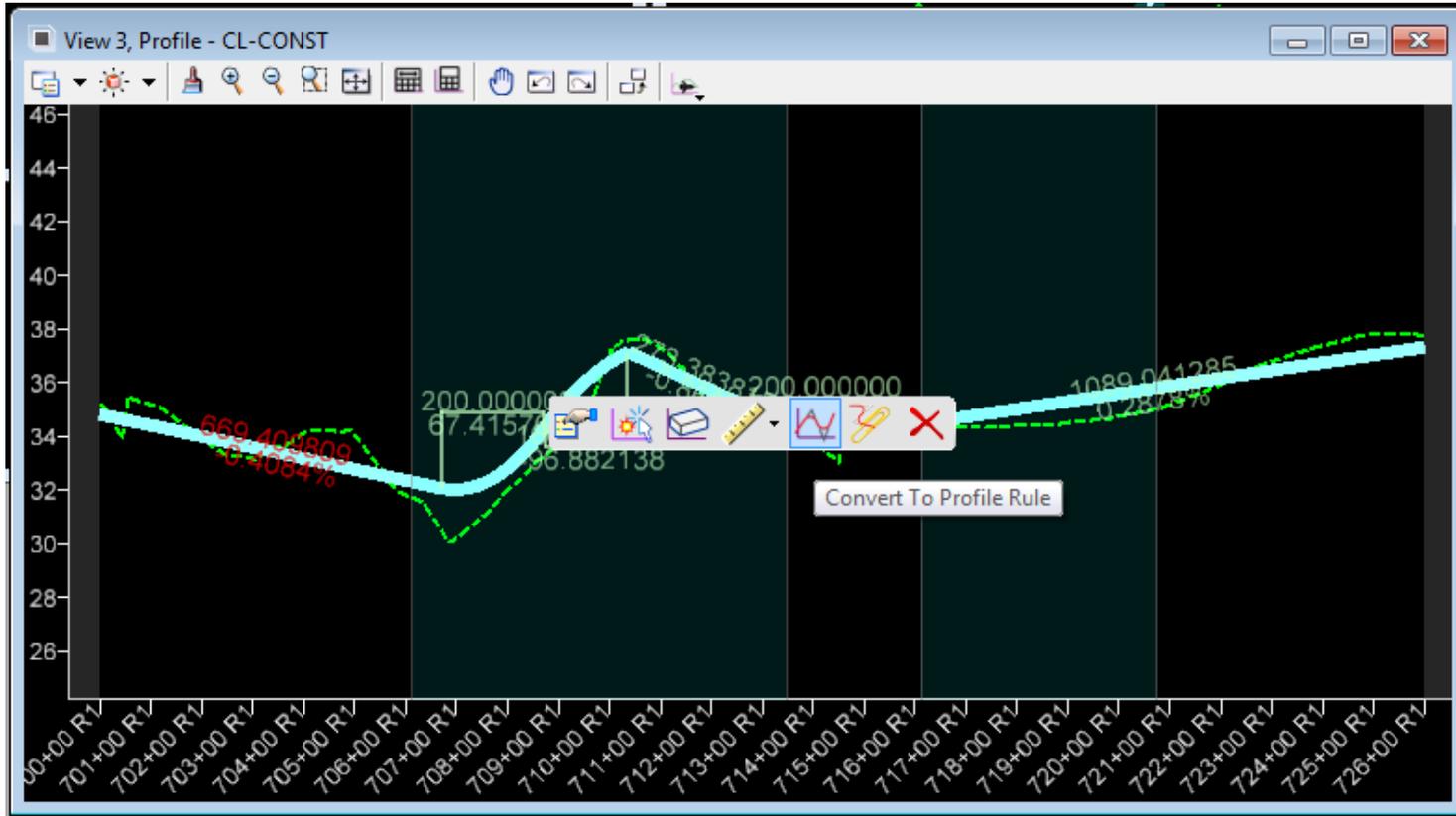
R [Icons for various vertical geometry tools]

T [Icons for various vertical geometry tools]

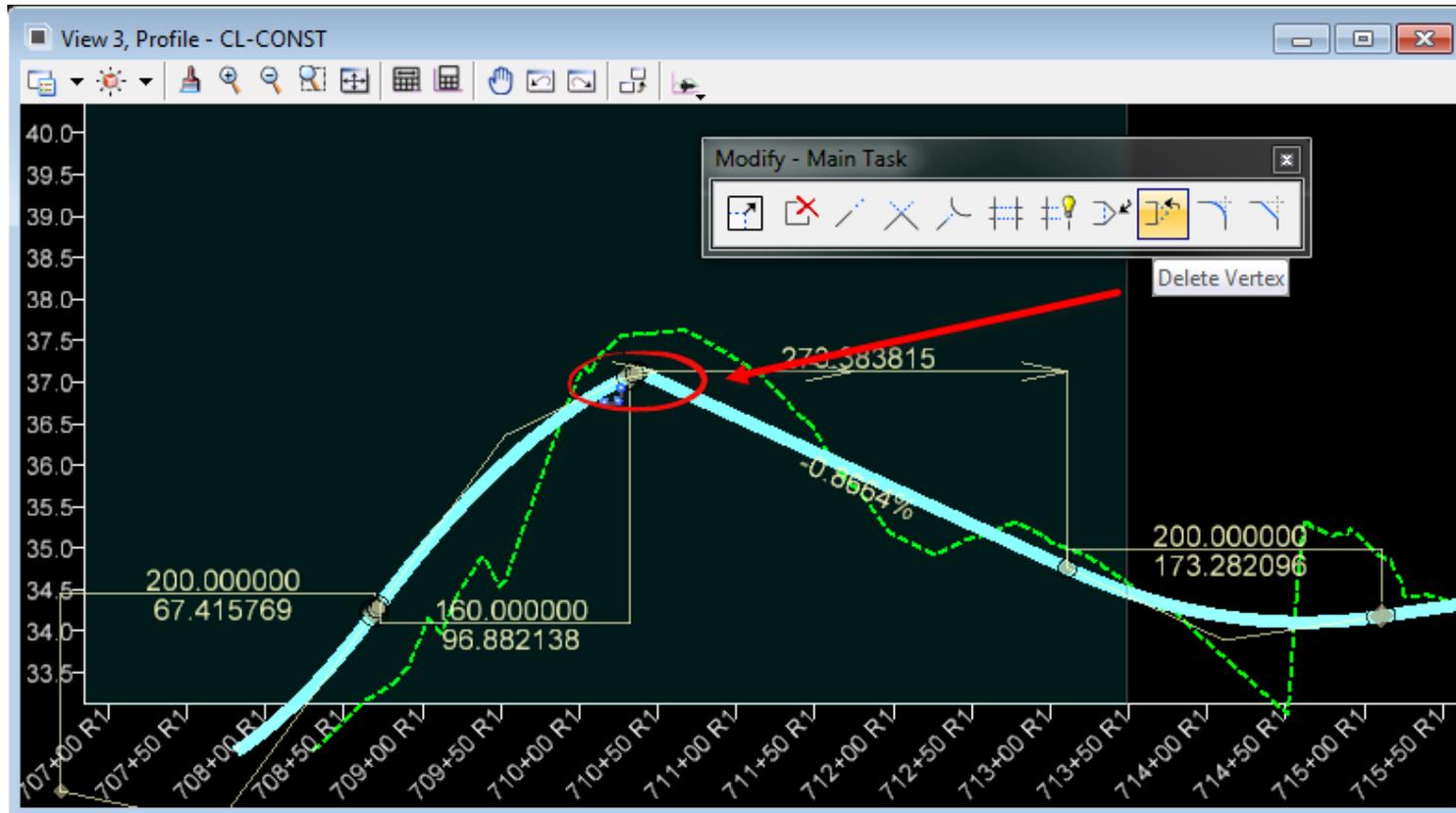
Define Profiles By BestFit



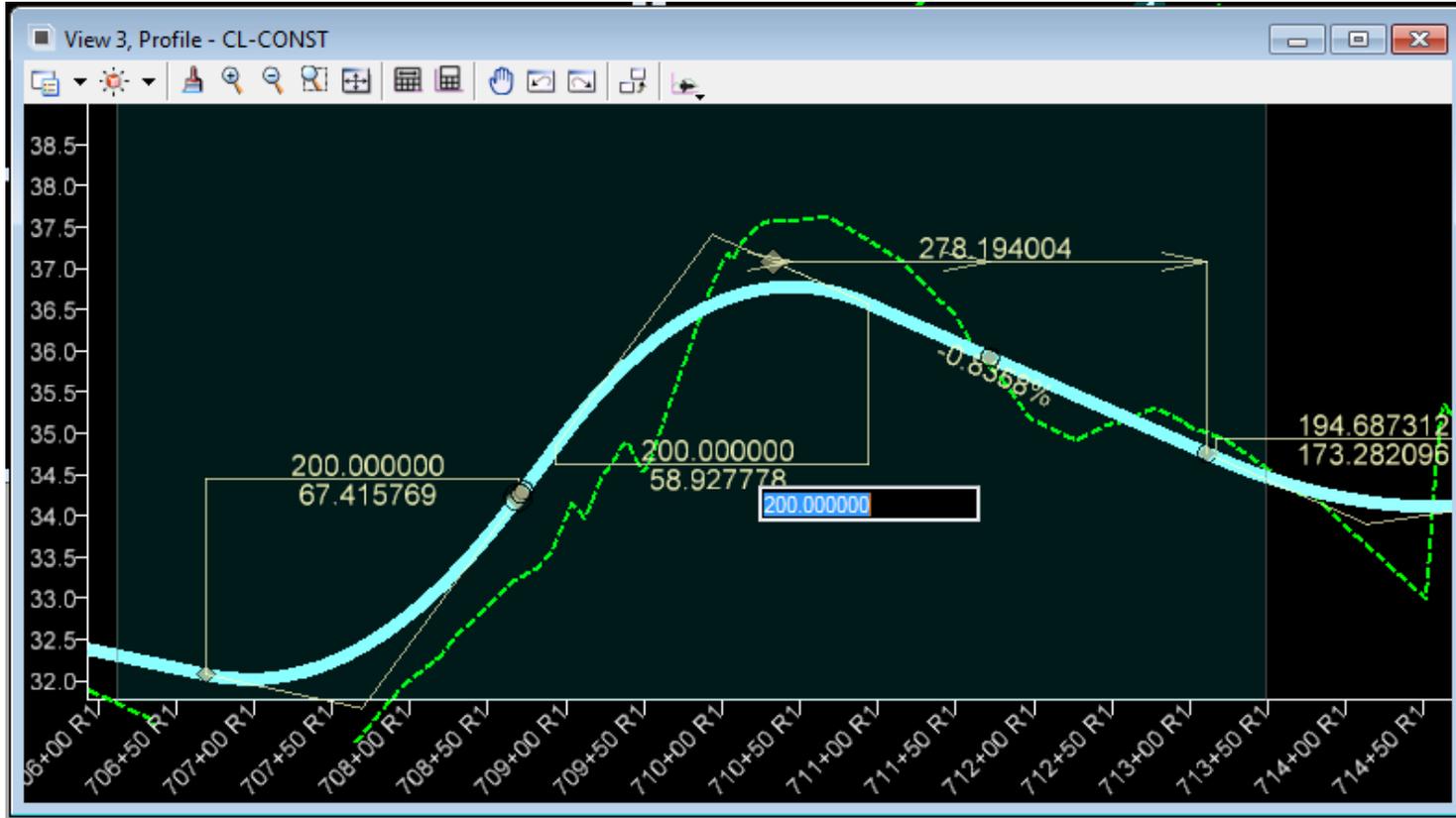
# Profile by VPI



# Profile by VPI

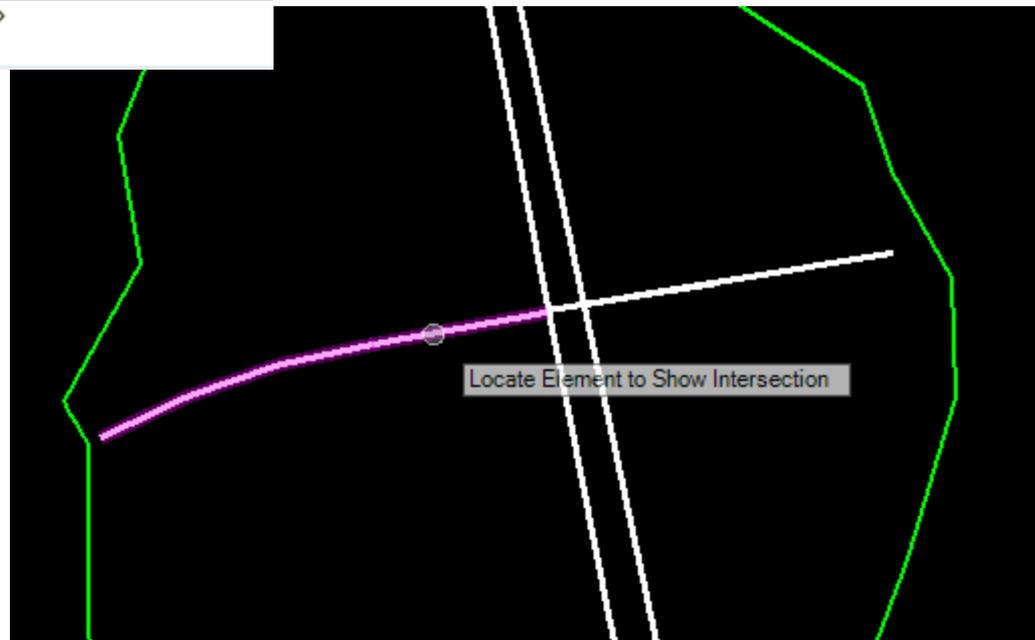
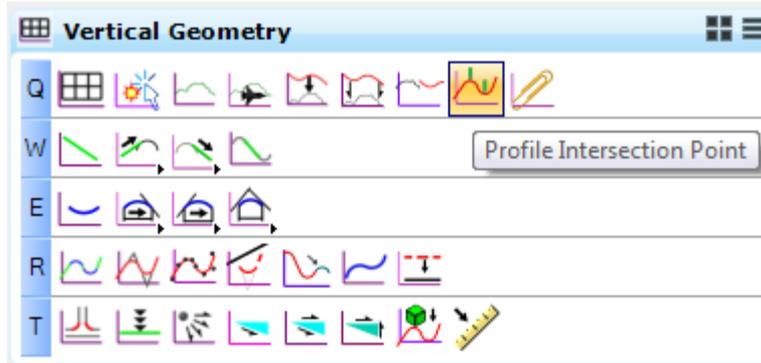


# Profile by VPI





# Profile Intersection Point





# Profile Intersection Point

**Vertical Geometry**

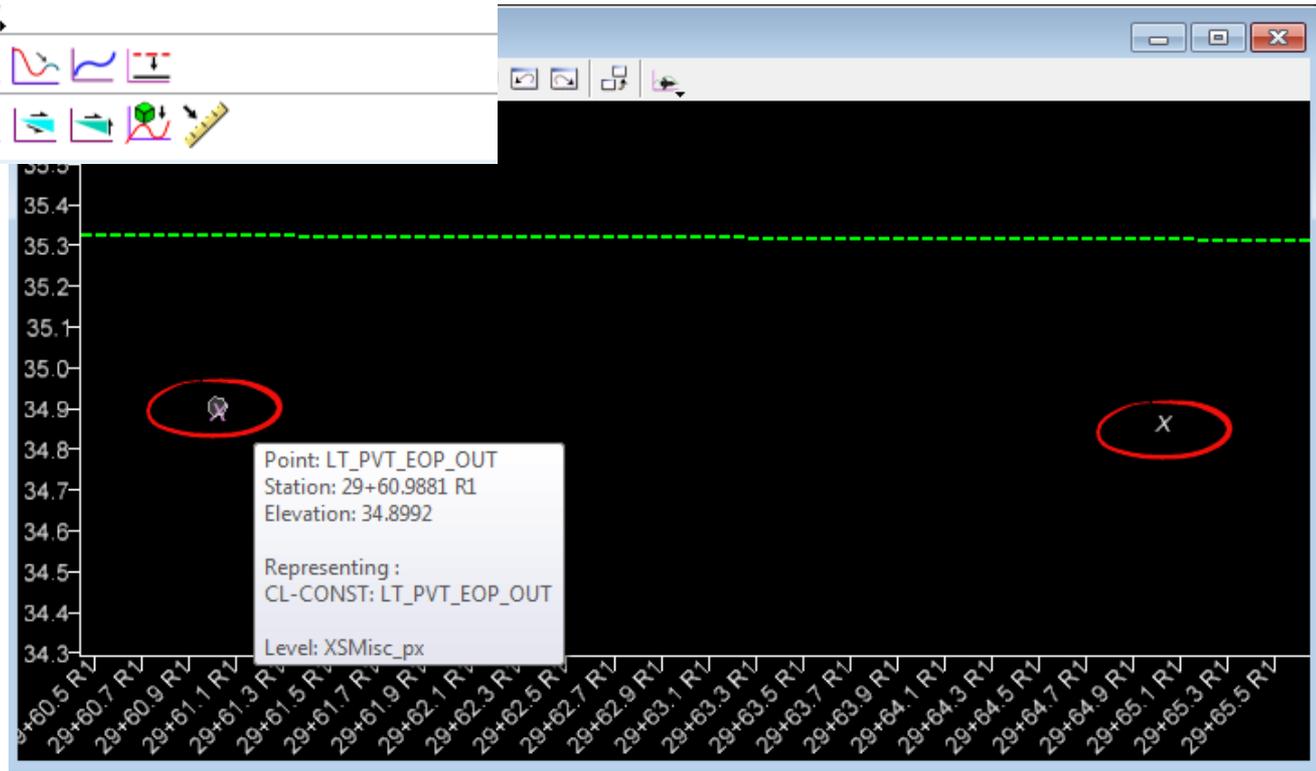
Q [Grid] [Sun] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Pencil]

W [Profile] [Profile] [Profile] [Profile] [Profile Intersection Point]

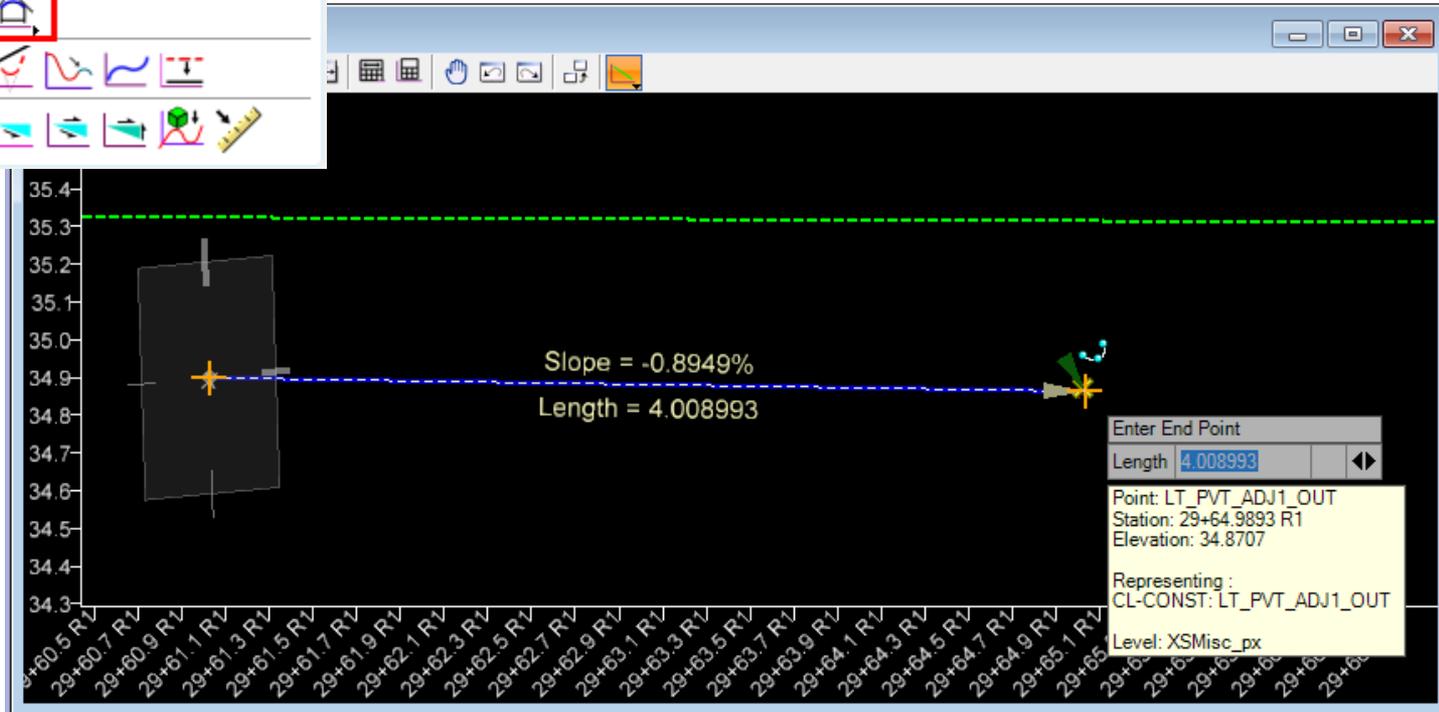
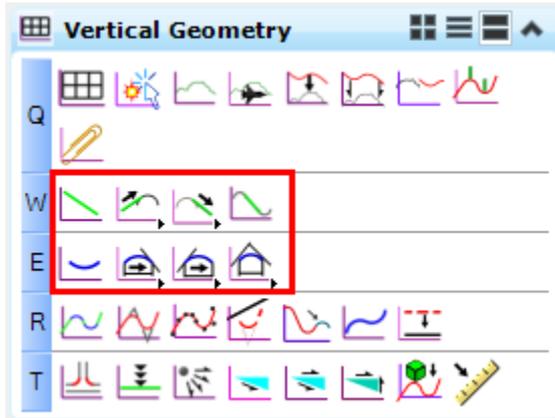
E [Profile] [Profile] [Profile] [Profile]

R [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile]

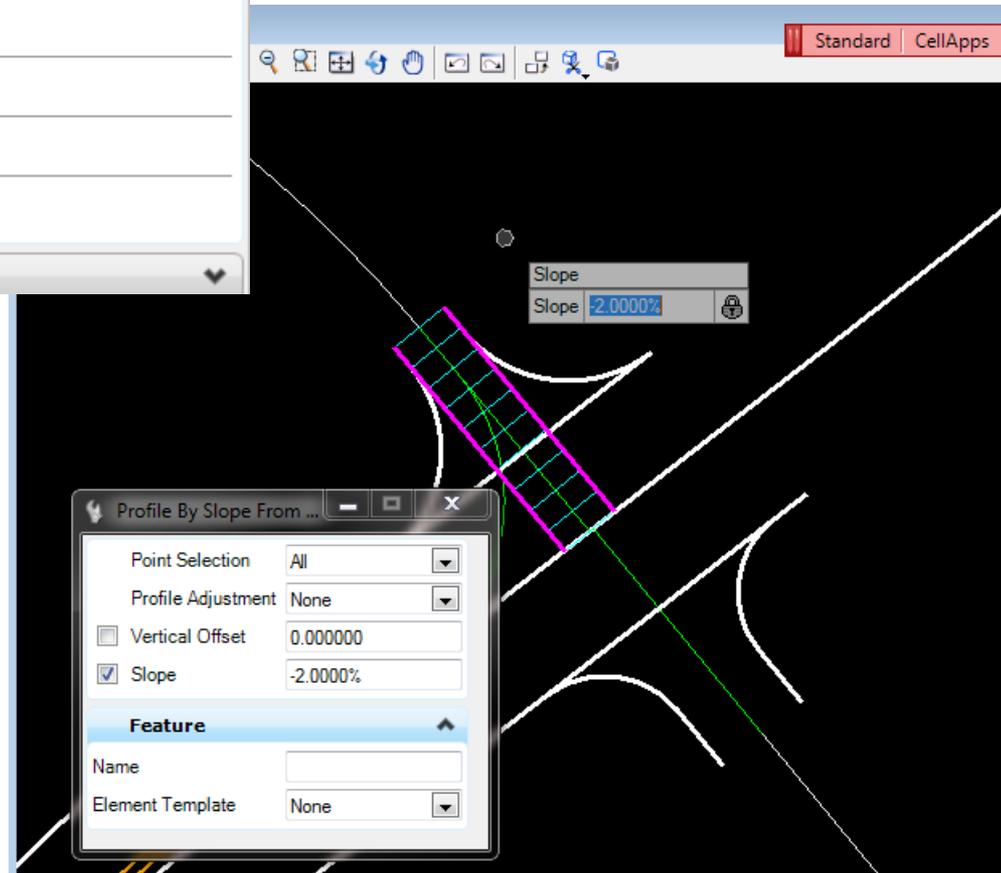
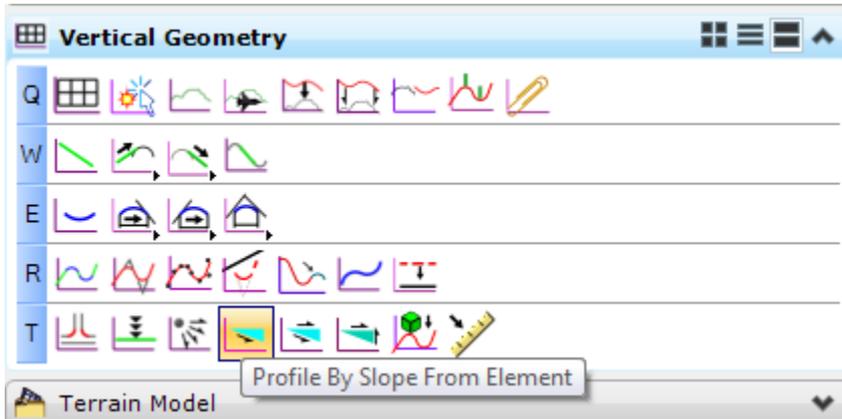
T [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile] [Profile]



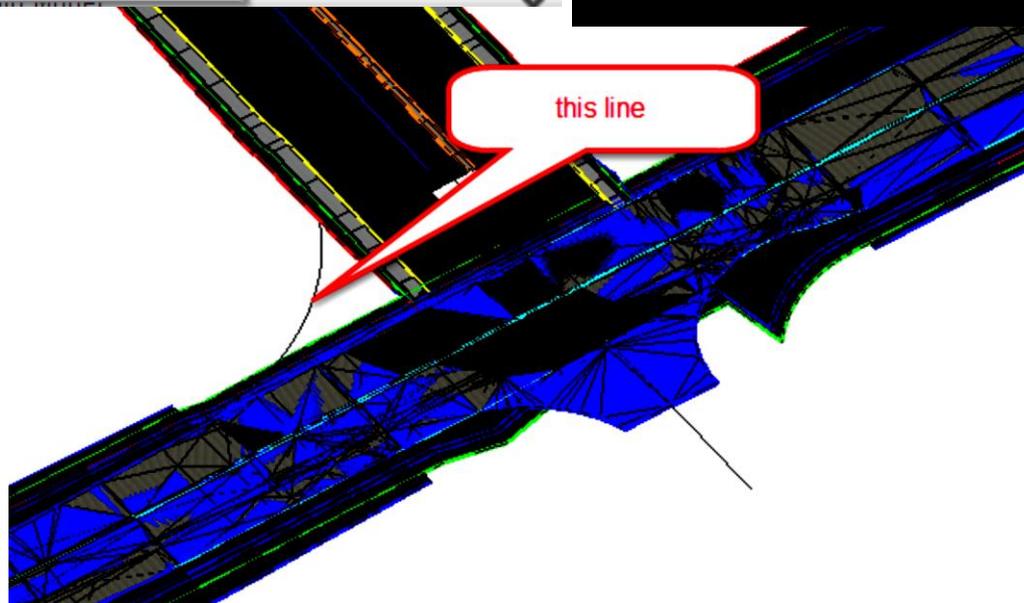
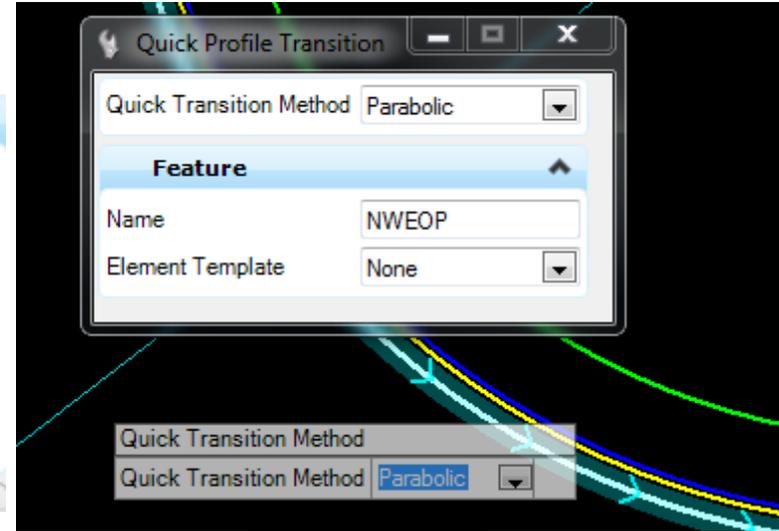
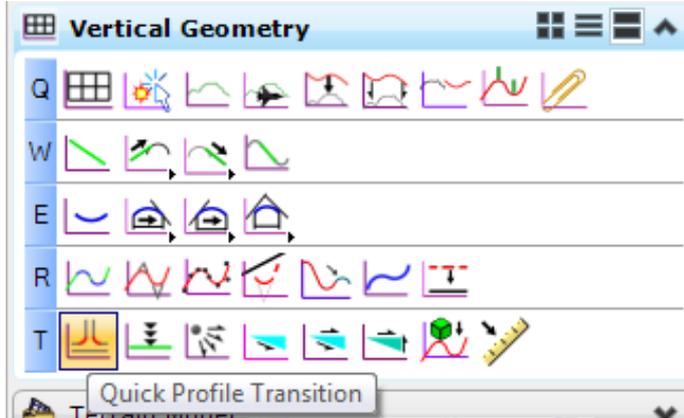
# Profile Lines and Curves



# Profile by Slope From Element



# Quick Profile Transition



# Profile by 3D Element

**Vertical Geometry**

**Profile By 3D Element**

**Feature**

Name: US98\_EOP

Element Template: Profiles(2D)\Proposed\_pr\GradeLine

Locate Element To Profile

Locate 3D Element Defining Profile

BL98: LT\_PVT\_EOP\_OUT

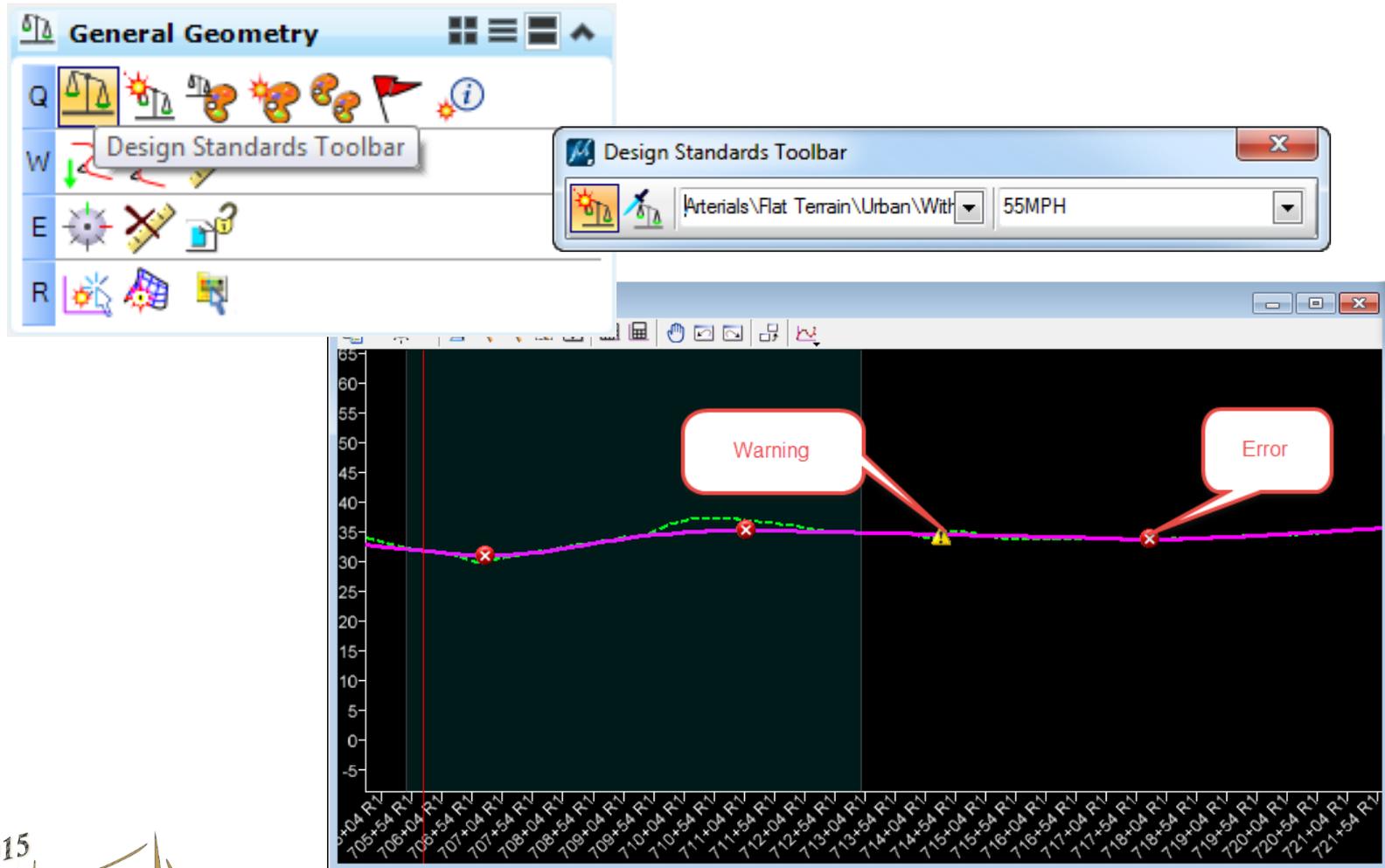
Level: PavtAsphalt\_pm

Active Profile: US98\_EOP  
Type: ProfileBy3d  
Level: GradeLine\_pr

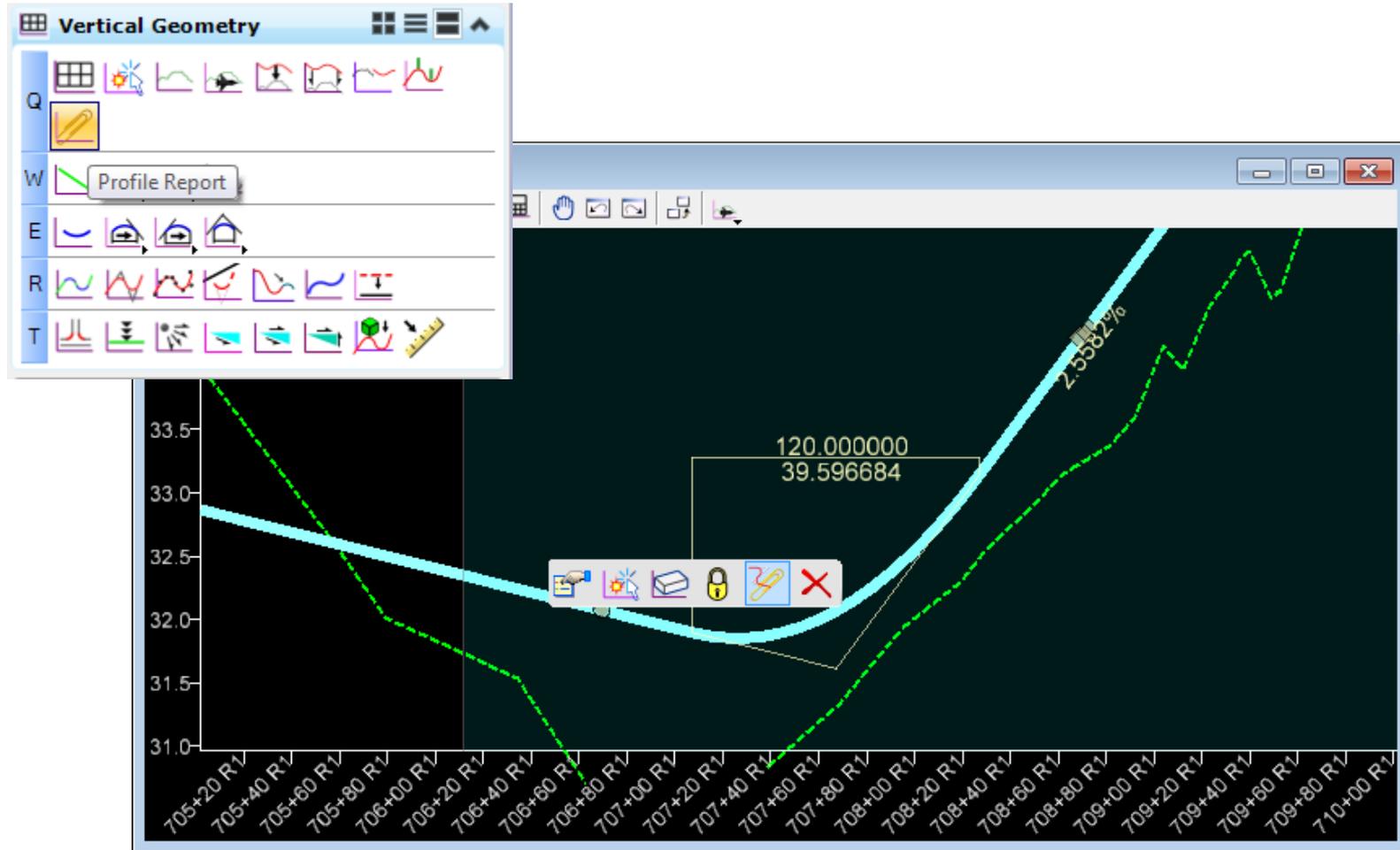
1+10 1+20 1+30 1+40 1+50 1+60 1+70 1+80 1+90 2+00 2+10 2+20 2+30 2+40 2+50 2+60 2+70 2+80 2+90 3+00



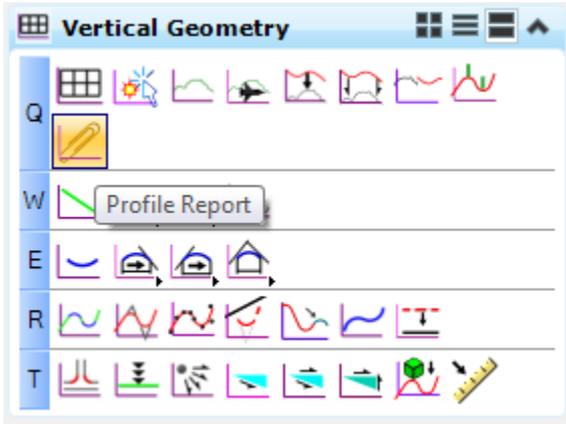
# Design Standard Checks



# Profile Reports



# Profile Reports



## Vertical Alignment Review Report

Report Created: 5/21/2014  
Time: 2:31pm

Project: Default  
Description:  
File Name: L:\E\Projects\22049555201\roadway\ALGNRD01\_SS3.dgn  
Last Revised: 5/21/2014 14:28:46

Note: All units in this report are in feet unless specified otherwise.

Horizontal Alignment: CL-CONST  
Horizontal Description:  
Horizontal Style: Centerline(CL)  
  
Vertical Alignment: PrProfile-S61  
Vertical Description:  
Vertical Style: Centerline(CL)

	Station	Elevation
Element: Linear		
POB	R1 700+00.00	35.24
PVC	R1 707+07.30	31.90
Tangent Grade:	-0.4723%	
Tangent Length:	707.301556	
Element: Symmetrical Parabola		
PVC	R1 707+07.30	31.90
PVI	R1 707+67.30	31.61
PVT	R1 708+27.30	33.15
VLOW	R1 707+26.00	31.85
Length:	120.000000	



# Training Manuals

- Many of the processes have changed for roadway design and for plans development. For that reason we have created 2 new training manuals for SS4:

1. FDOT Roadway Design and 3D Modeling for SS4
2. FDOT Plans Development Workflows for SS4

These manuals will be available on our website at the following link:

<http://www.dot.state.fl.us/ecso/main/FDOTCaddTraining.shtm>



# Questions?

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