



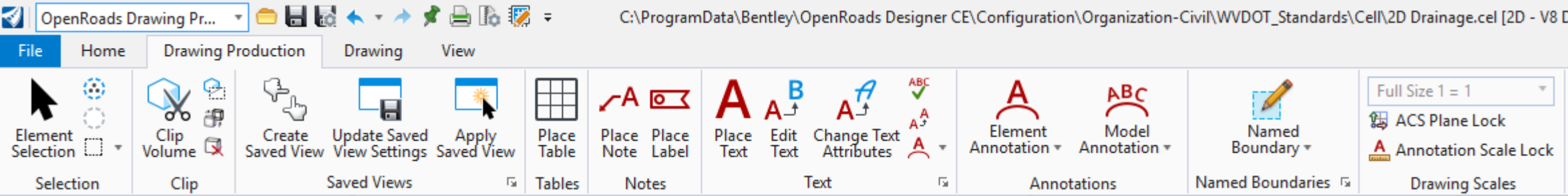
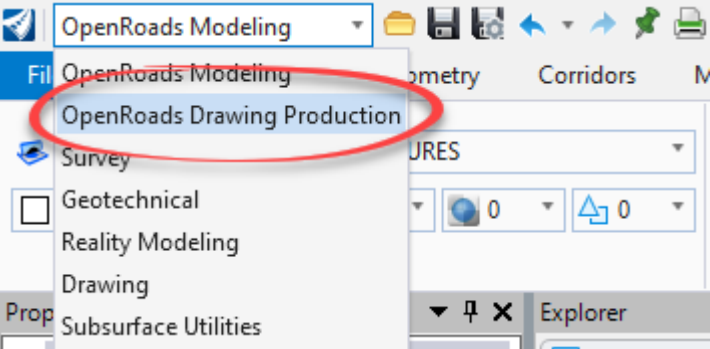
Creating and Managing Plan, Profile, and Cross Section Drawings

Robert Nice
Product Specialist (Rail)

Bentley[®]
Advancing Infrastructure

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Drawing Production Workflow and Ribbon



Place Named Boundary

- Automated Sheet Creation

- Civil Plan

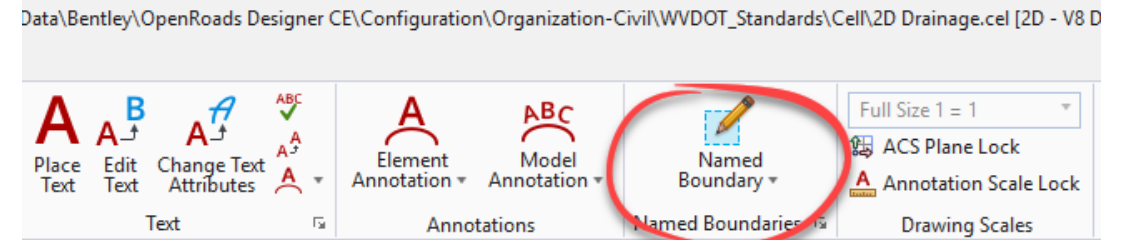
- Plan
- Dual Plan
- Plan-Profile

- Civil Profile

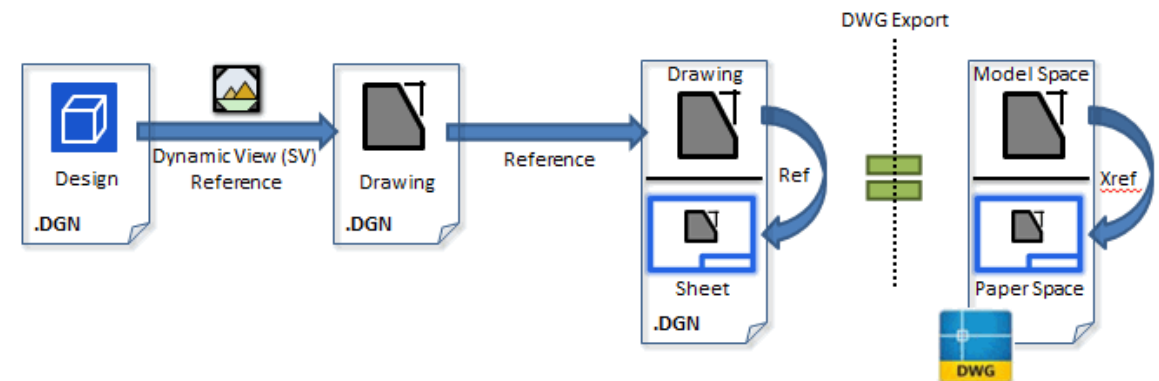
- Full Profile
- Dual Profile

- Cross Section

- Intervals – Station Range
- Individual



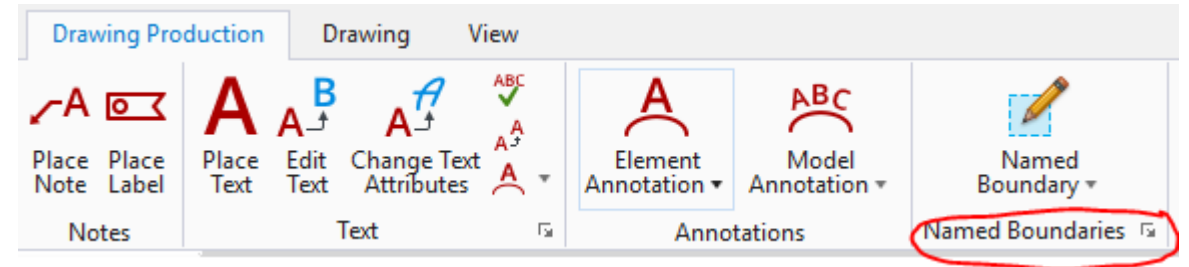
Behind the Scenes:



Easy export to .dwg sheets!

Named Boundary Manager

- Contains the boundaries that exist in the file.
 - Create or re-create drawings
 - Delete Named Boundaries
 - Annotate drawings
 - Etc.



The image shows the 'Named Boundaries' dialog box. It has a toolbar with various icons and a table with the following columns: Name, Description, File Name, and Show. The table contains a tree view of boundaries.

Name	Description	File Name	Show
▲ Plan Groups			<input type="checkbox"/>
▲ LondonRd		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
▶ Linked Profile Groups			<input type="checkbox"/>
Plan 1		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
Plan 2		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
▲ Profile Groups			<input type="checkbox"/>
▲ LondonRd			<input checked="" type="checkbox"/>
Profile 1		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
Profile 2		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
▲ Cross Section Groups			<input type="checkbox"/>
▲ LondonRd		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
50+00.0000		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>
50+50.0000		_Cross Section Sheets.dgn	<input checked="" type="checkbox"/>

Plan Profile Sheet Layout – The Basics

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Attributes: None, Default, 0, 0, 0, 0, 0

Primary: Explorer, Attach Tools, Models, Level Display

Selection: Element Selection

Model Analysis and Reporting: Reports, Civil Analysis, Corridor Reports

Model Import/Export: Terrain Import, Import Geometry, Import IRD

OpenRoads Help: OpenRoads Help, Open RSS Reader

View 1, Default

Navigation and tool icons: Home, View, Rotate, Zoom, etc.

Element Selection

Tools: Select, Lasso, Window, Pushpin, etc.



Sheet Annotation

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Attributes: None, Default, 0, 0, 0, 0, 0

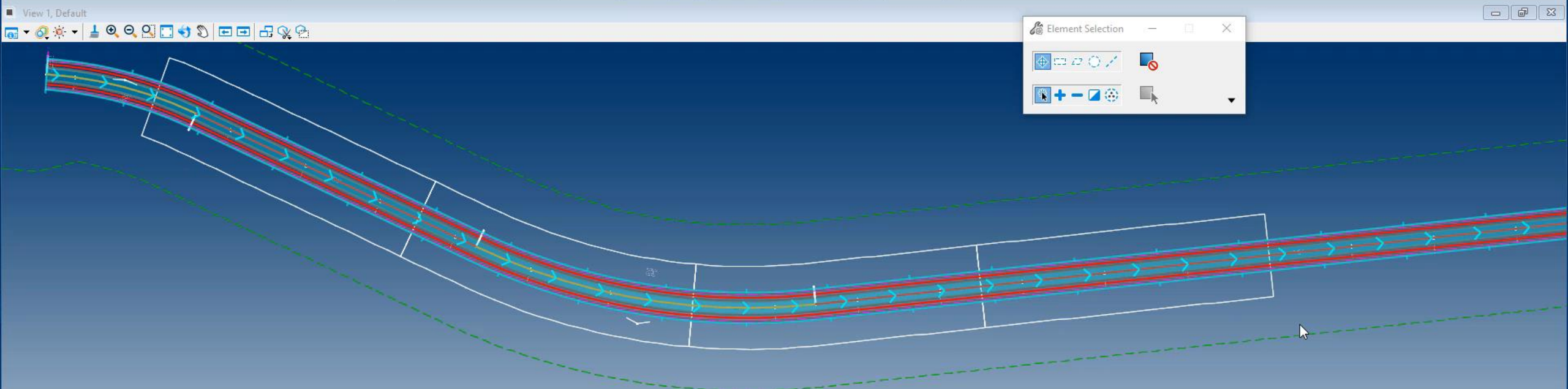
Primary: Explorer, Attach Tools, Models, Level Display

Selection: Element Selection

Model Analysis and Reporting: Reports, Civil Analysis, Corridor Reports

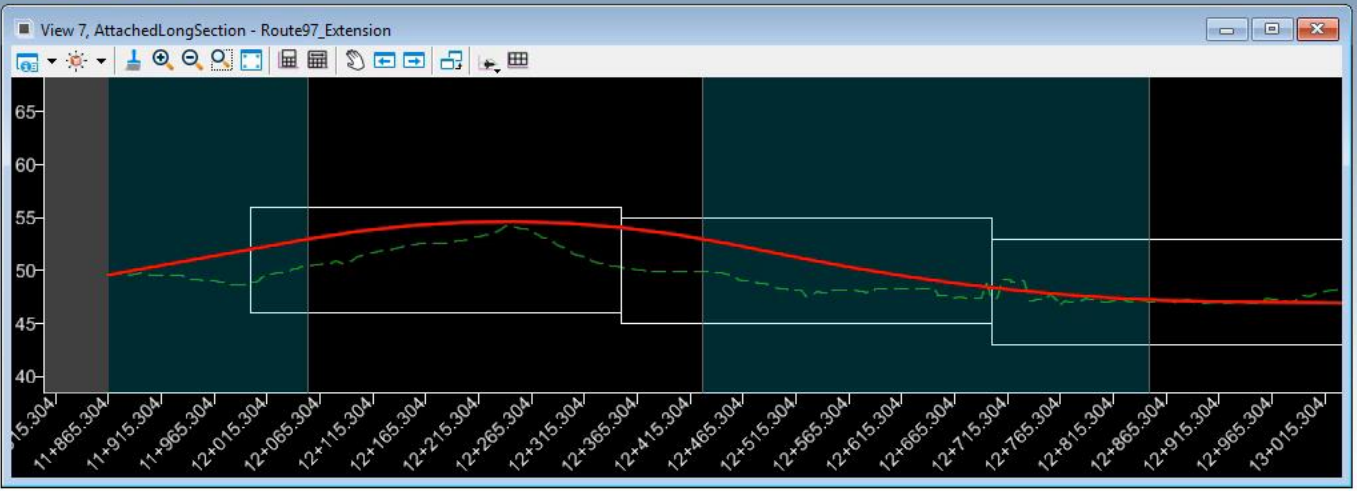
Model Import/Export: Terrain Import, Import Geometry, Import IRD

OpenRoads Help: OpenRoads Help, Open RSS Reader



Element Selection

- Selection tools: pan, zoom, rotate, move, delete, copy, paste, undo, redo, viewports, and a selection tool.



Modifying Named Boundaries (Plan)

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Attributes: None, Default, 0, 0, 0, 0, 0

Primary: Explorer, Attach Tools, Models, Level Display

Selection: Element Selection

Placement: Line Tools, Arc Tools, Ellipse Tools

Manipulate: Move, Copy, Rotate

Modify: Modify Element, Break Element, Trim Multiple

Measure: Measure Distance, Measure Radius, Measure Angle

Drawing Scales: 1:500, ACS Plane Lock, Annotation Scale Lock

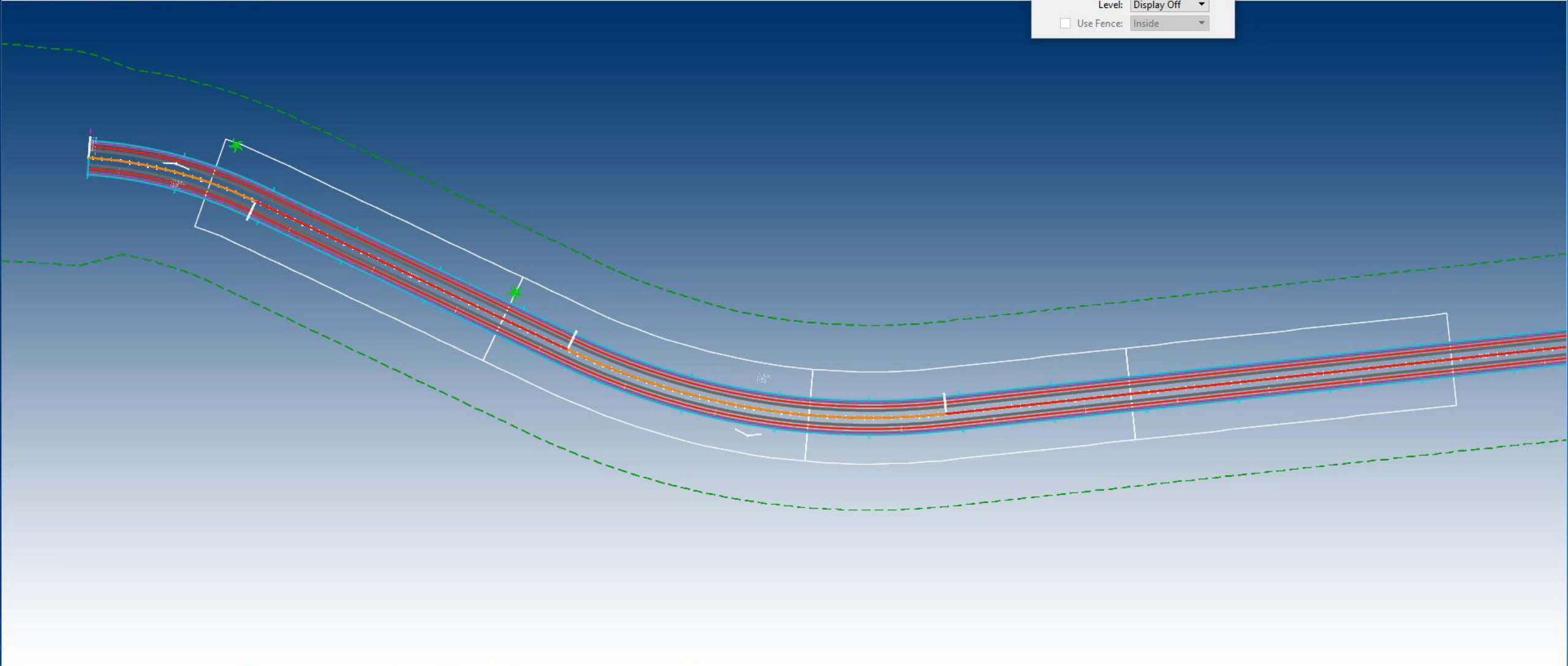
View 1, Default

Navigation icons: Pan, Rotate, Zoom, etc.

Change Level

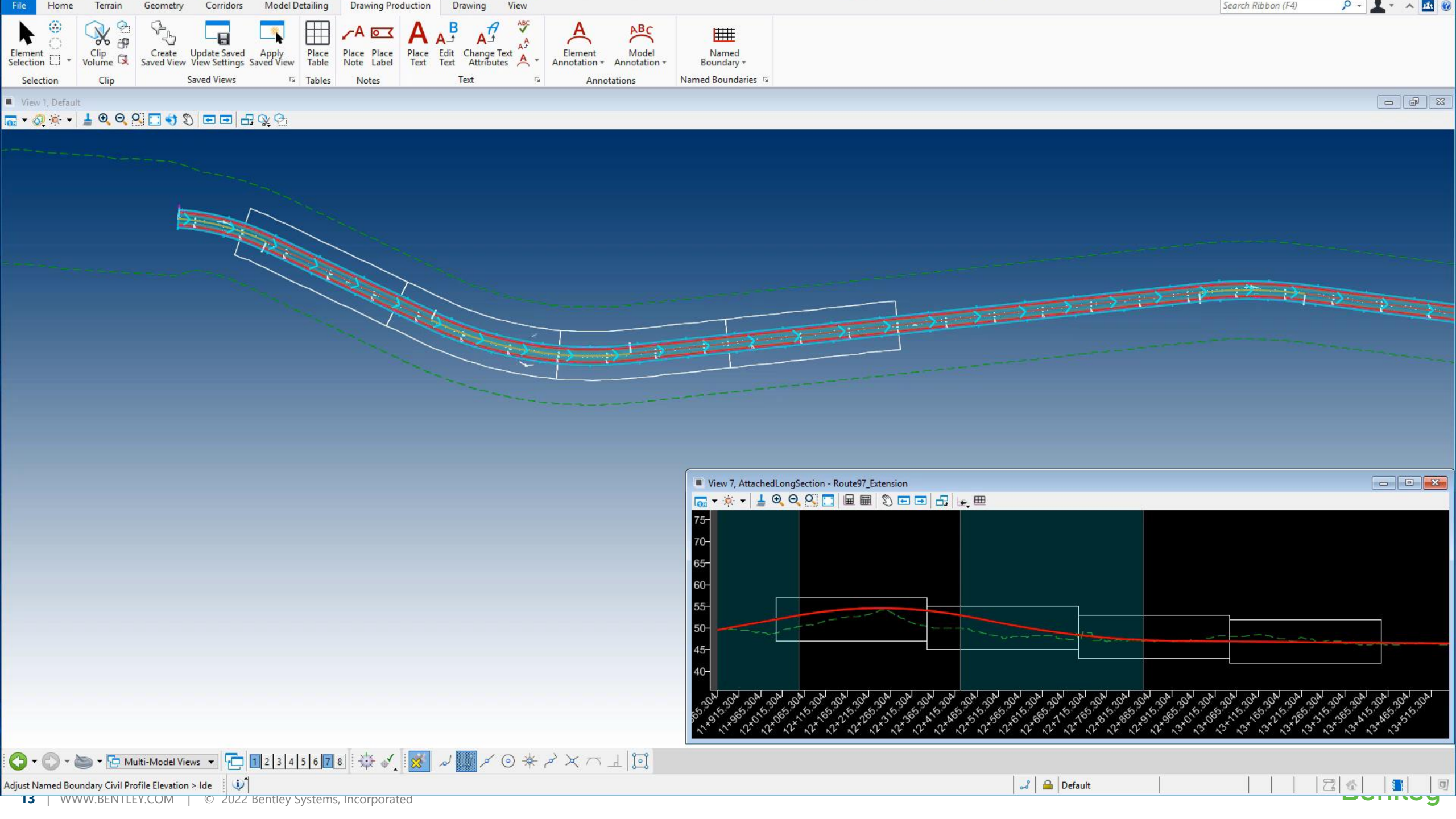
Level: Display Off

Use Fence: Inside



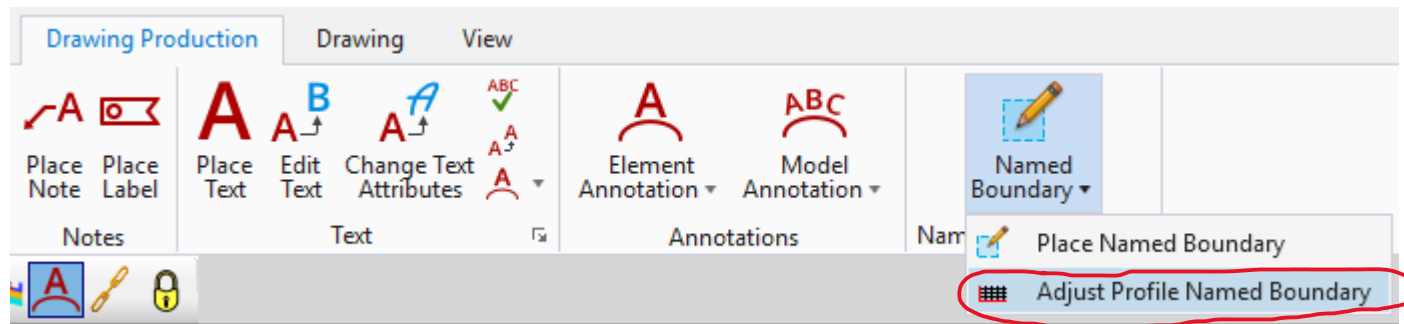
Change Level | Multi-Model Views | 1 2 3 4 5 6 7 8 | Default

Modifying Named Boundaries (Profile)



Adjust Profile Named Boundary (*Profiles Only*)

- Shift profile boundaries vertically.



Adjust Named Boundary Civil Profile Elevation

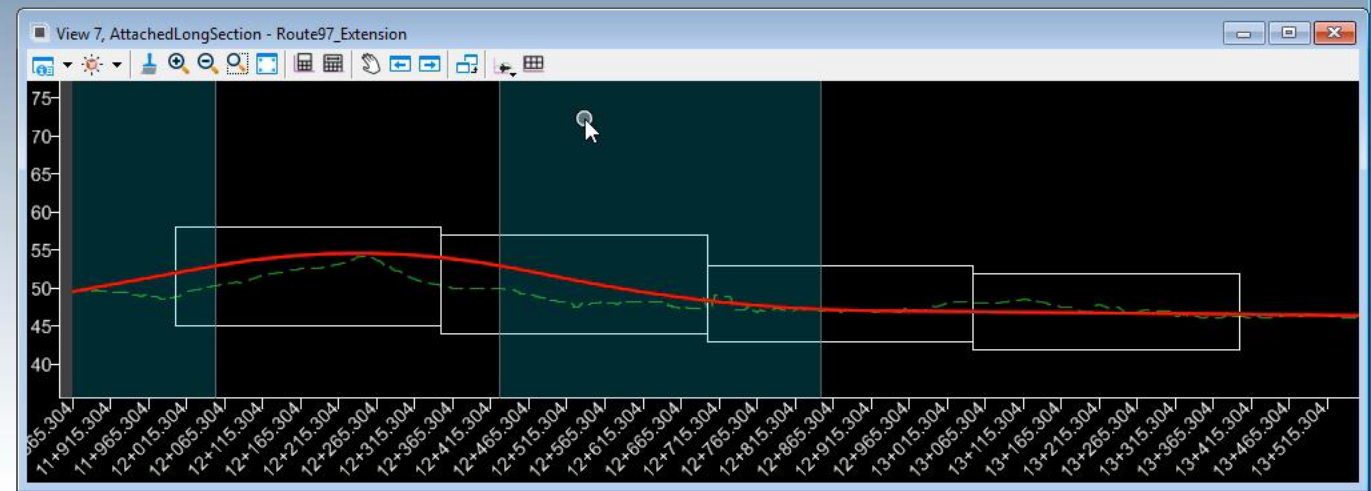
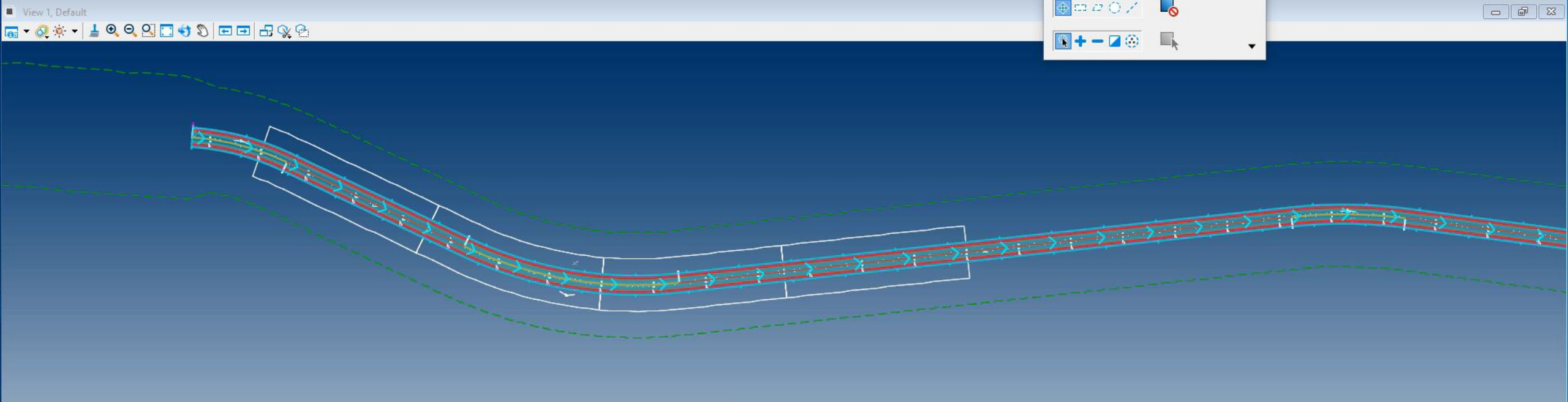
Start Station:	<input type="text"/>
Stop Station:	<input type="text"/>
High Elevation:	<input type="text" value="0.000000"/>
Low Elevation:	<input type="text" value="0.000000"/>
Elevation Datum Spacing:	<input type="text" value="1.000000"/>

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Search Ribbon (F4)

Element Selection Selection Clip Create Saved View Update Saved View Settings Apply Saved View Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Annotations Element Annotation Model Annotation Named Boundary

Element Selection



Cross Section Sheets – The Basics

Slices Created in the 3D View

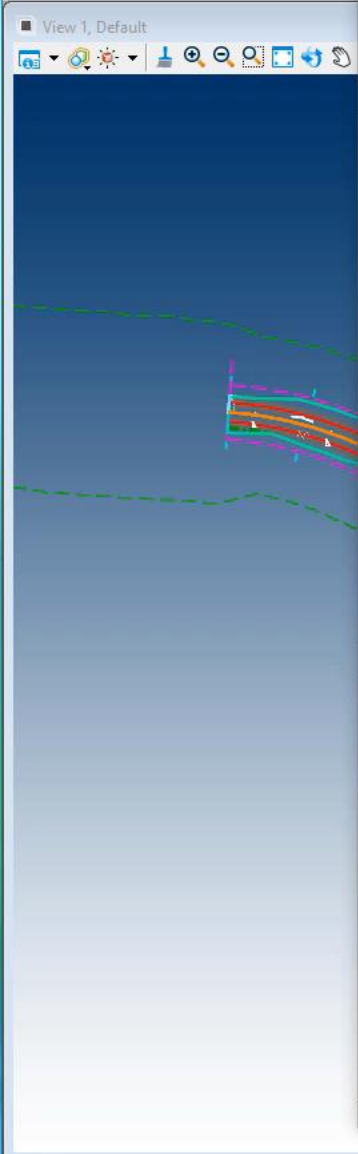
- To place Named Boundaries for cross section sheets, you must have the 3D model open and available. If not, you will receive a warning message.



File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Element Selection Selection Clip Create Saved View Up View

Search Ribbon (F4)



File Home Share View

Clipboard: Pin to Quick access, Copy, Paste, Copy path, Paste shortcut

Organize: Move to, Copy to, Delete, Rename

New: New folder, New item, Easy access

Open: Properties, Edit, History

Select: Select all, Select none, Invert selection

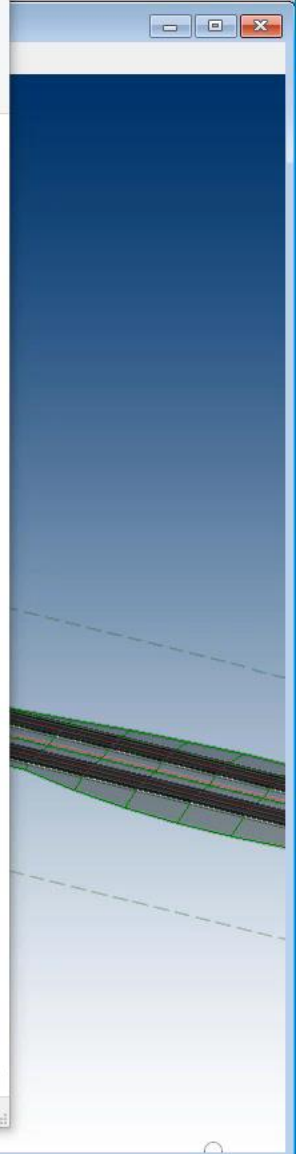
Address bar: This PC > Data (D:) > Civil Presentations > 2017 > Learn Conference 2017 > 5. OpenRoads Best Practices - Drawing Production > Data

Name	Date	Type	Size	Tags
1. Corporate Slides				
AECOM ORD Review-Analysis				
Burns-McDonnell				
Century Engineering				
Civil AccuDraw SIG				
FDOT Bentley Q&A				
Ferrovial				
FLUG 2017 Keynote				
Idaho DOT				
Informed Infrastructure Webinar				
Internal ORD Review				
ITD Bentley Suite Review				
Jacobs - SUE SUDA				
JMT Proficiency Forum				
Kimley-Horn QBR				
Learn Conference 2017				
Monthly Agency Calls				
NDOR				
OpenRoads Designer				
ORD Sales Support				
ORD SIG 5-10-17				
Trimble Meeting Denver				
YII - 2017				
Data_Connect				
Data_SS3				
Data_SS4				
Help				
My Downloads				
Geometry.alg	1/18/2017 9:12 AM	ALG File	96 KB	
Corridor.dgn	9/12/2017 10:53 AM	Bentley MicroStati...	3,119 KB	
Geometry.dgn	9/7/2017 9:08 AM	Bentley MicroStati...	500 KB	
Rt97_MOT_Sheets.dgn	9/13/2017 10:20 AM	Bentley MicroStati...	247 KB	
RT97_NamedBoundaries.dgn	9/13/2017 10:13 AM	Bentley MicroStati...	202 KB	
Rt97_PlanPro_Sheets.dgn	9/13/2017 10:22 AM	Bentley MicroStati...	333 KB	
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Terrain3d.dgn	9/7/2017 9:08 AM	Bentley MicroStati...	6,178 KB	
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Integrated Highway Lifecycle.pdf	9/12/2017 11:10 AM	PDF File	77 KB	
Background_1024x768.png	4/20/2012 3:23 PM	PNG File	9 KB	
OG.tin	1/18/2017 9:12 AM	TIN File	14,422 KB	

12 items 1 item selected 182 KB

Type: Bentley MicroStation Design, Size: 182 KB, Date modified: 9/13/2017 5:11 PM

182 KB Computer



Adding Data

- Once your cross sections are cut, you can continually add data by referencing additional models into the 3D model.

For Example: Referencing in the drainage or utility models, would cause them to automatically show up in the cross sections.



Adding Cross Sections – Single Station

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Search Ribbon (F4)

Element Selection Selection Element Selection

Clip Volume Clip

Create Saved View Update Saved View Settings Apply Saved View Saved Views

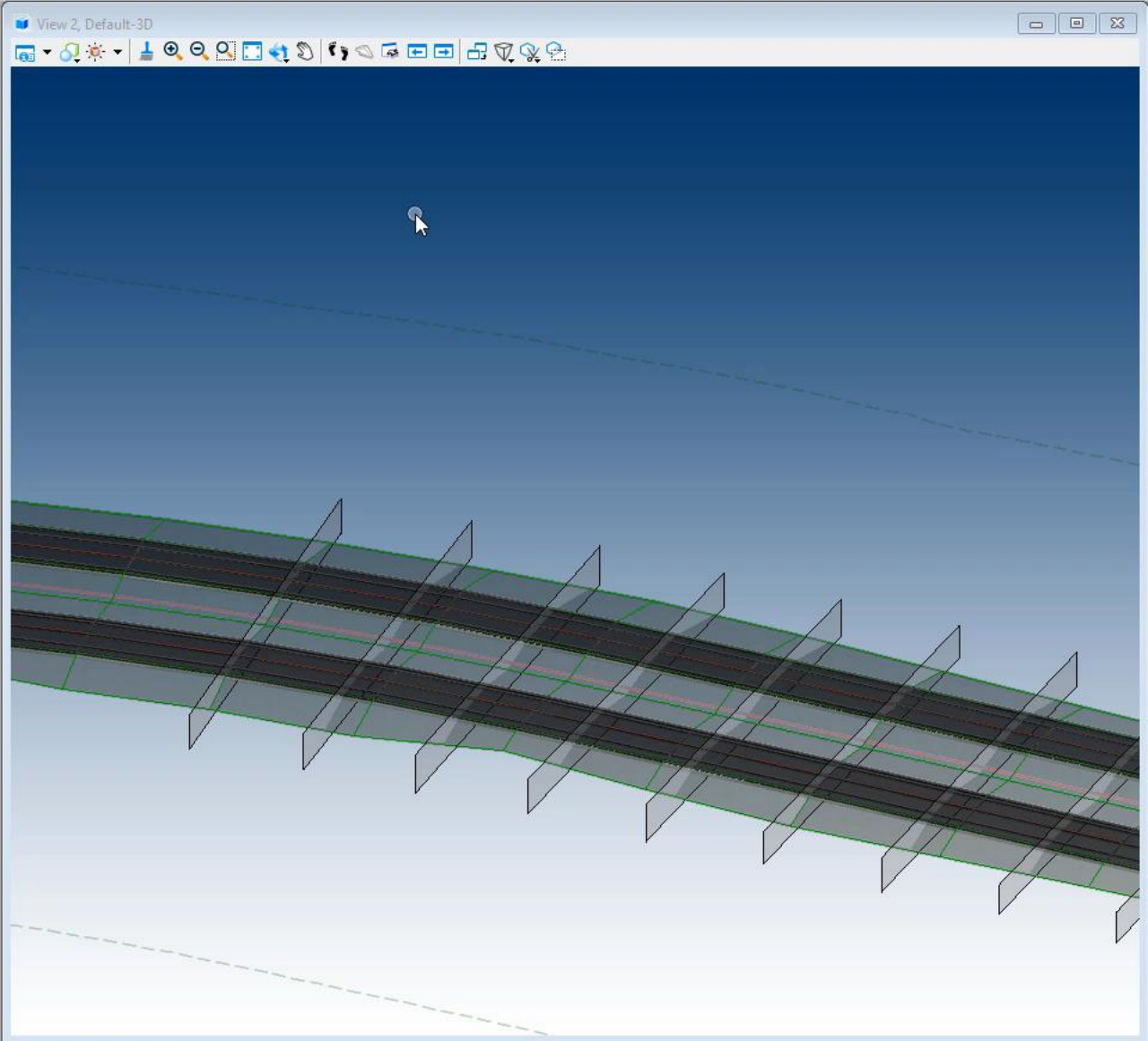
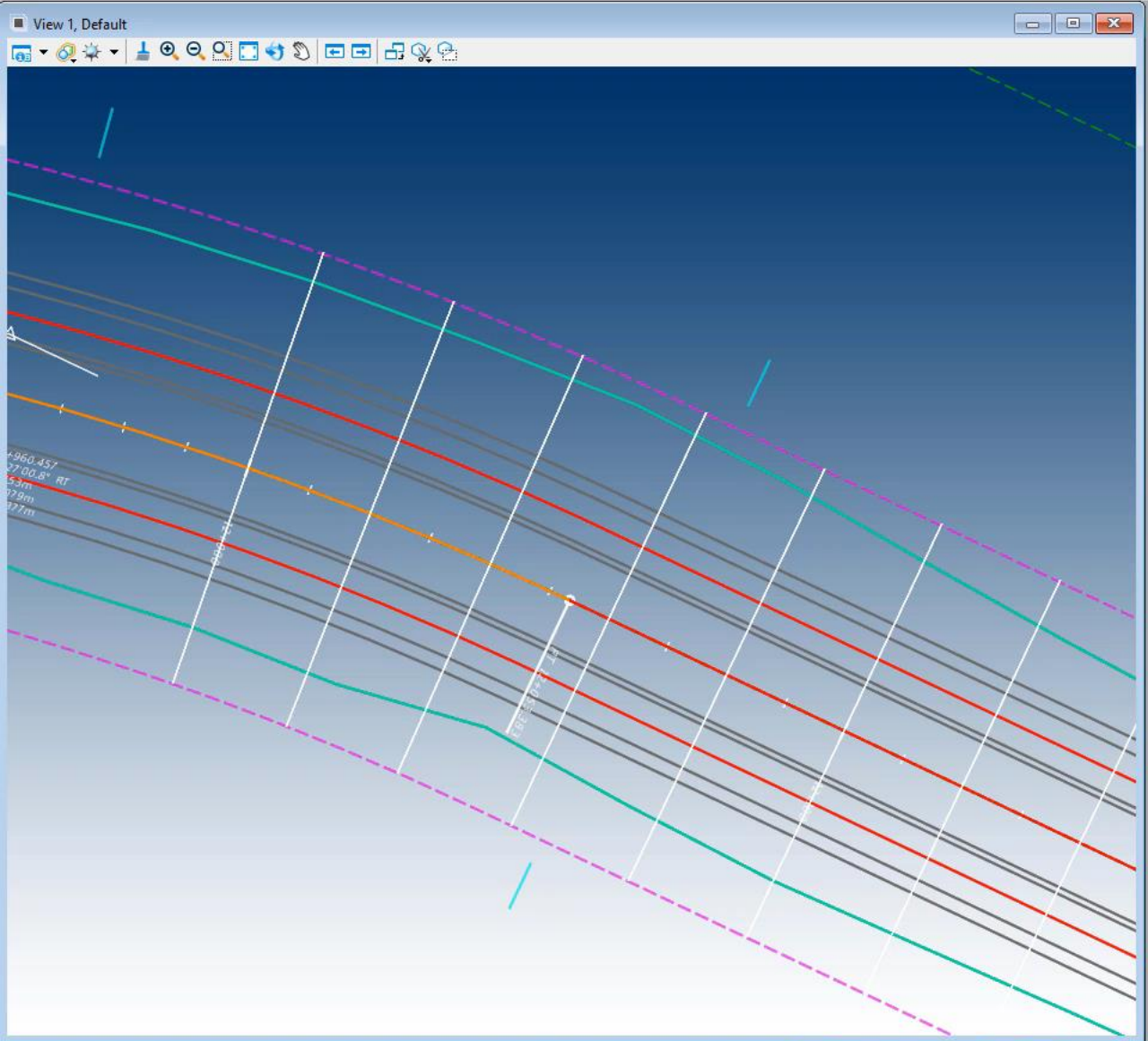
Place Table Tables

Place Note Place Label Notes

Place Text Edit Text Change Text Attributes Text

Element Annotation Model Annotation Annotations

Named Boundary Named Boundaries

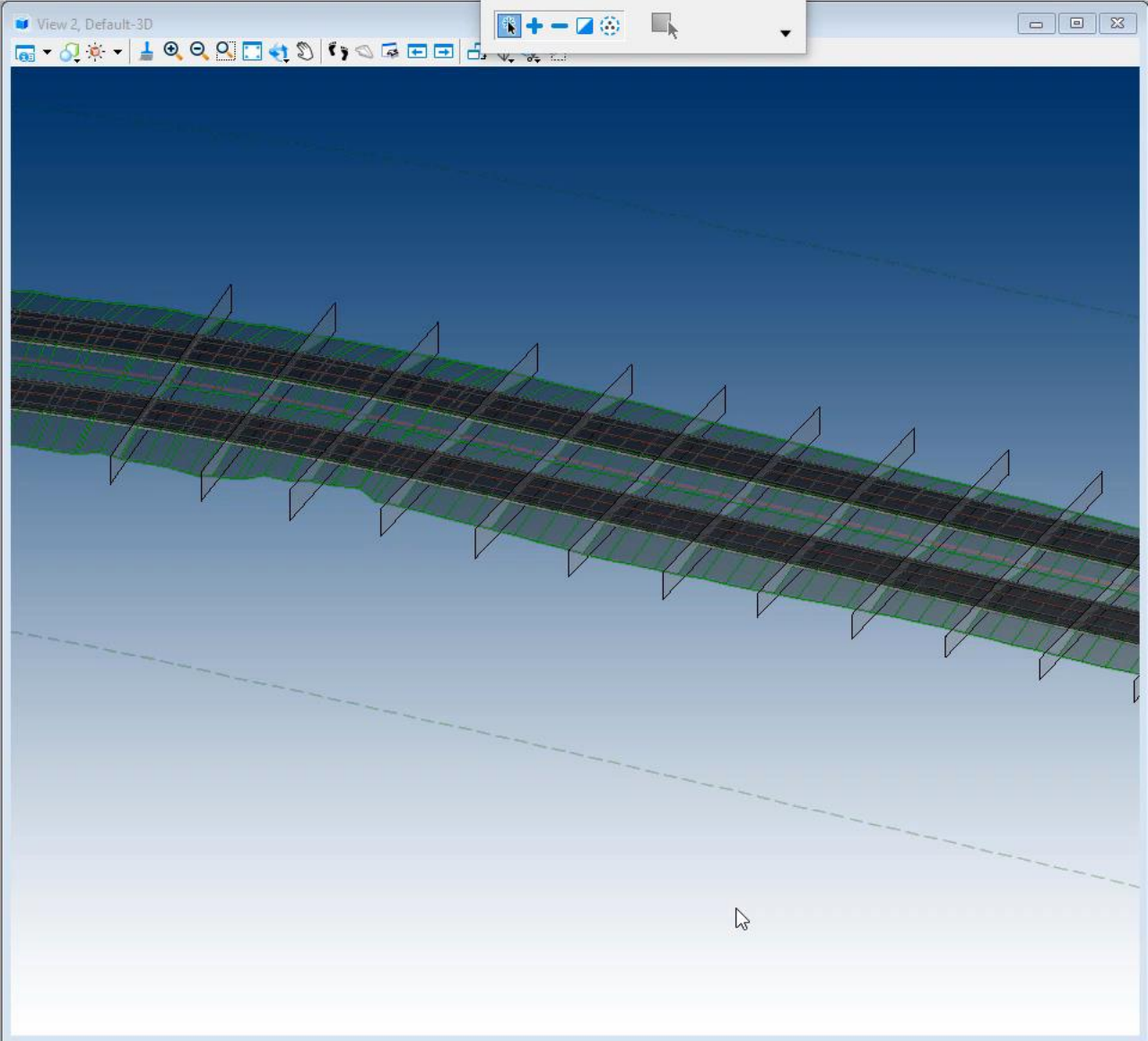
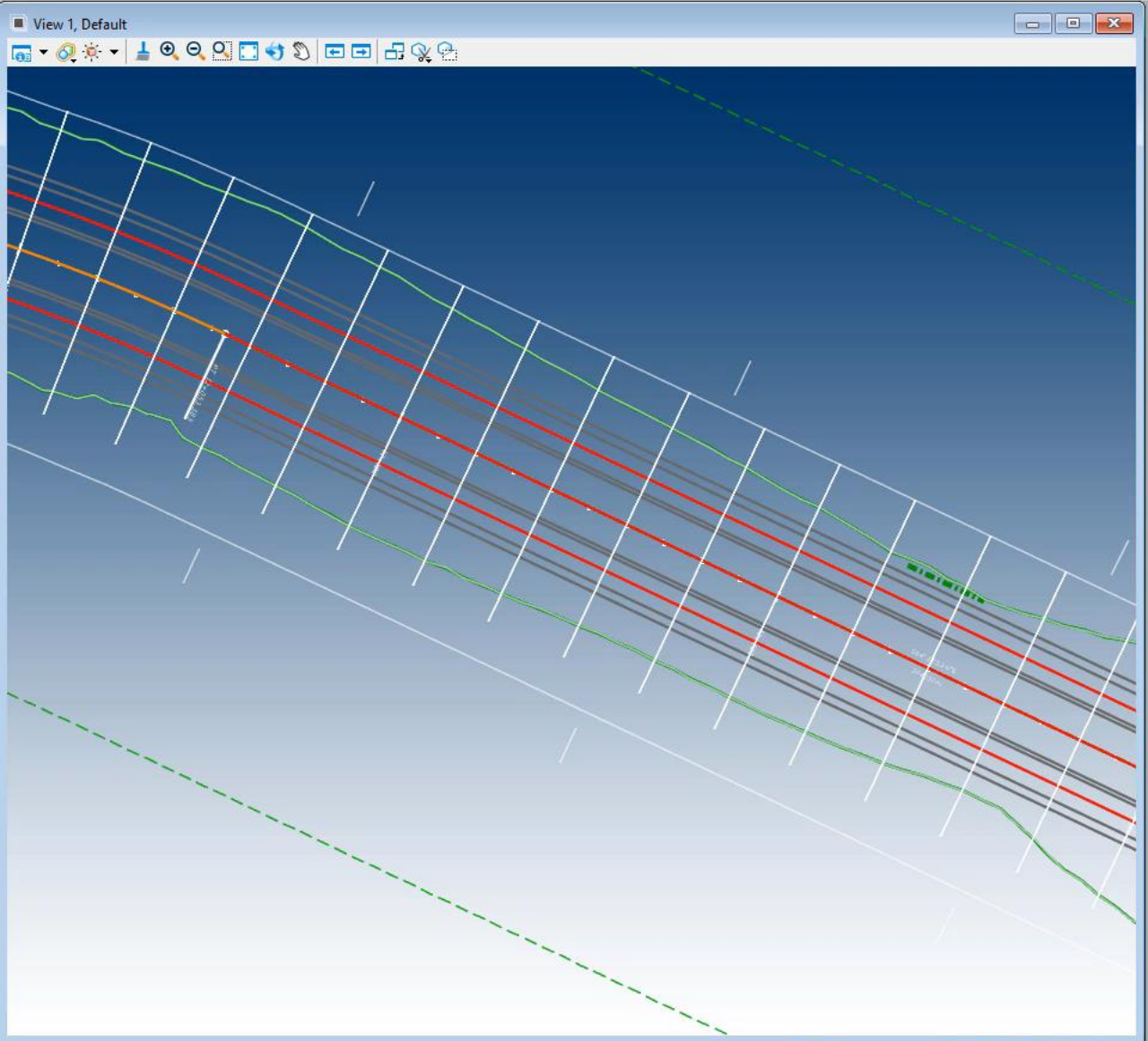



Cross Section Annotation

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Element Selection Selection Clip Volume Clip Create Saved View Update Saved View Settings Apply Saved View Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Annotations Element Annotation Model Annotation Named Boundary

Element Selection



Multi-Model Views 1 2 3 4 5 6 7 8

New Node

Default

FAQs

Our workflow has been...the Named Boundaries (clipping boundaries) and Sheets are *in the same file*.

QUESTION:

Can I place my Named Boundaries in one file and sheets in another?

ANSWER: For Plan and Profile, YES!!

Create your named boundaries in a dgn file and reference that dgn into your sheet file to create the sheets.



OpenRoads Modeling

D:\Civil Presentations\2017\Learn Conference 2017\5. OpenRoads Best Practices - Drawing Production\Data\Corridor.dgn [2D - V8 DGN] - OpenRoads Designer CONNECT Edition

Search Ribbon (F4)

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Element Selection Selection Clip Create Saved View Update Saved View Settings Apply Saved View Place Table Place Note Place Label Place Text Edit Text Change Text Attributes Element Annotation Model Annotation Named Boundary

View 1, Default

Element Selection

Identify element to add to set

Picture Tools

D:\Civil Presentations\2017\Learn Conference 2017\5. OpenRoads Best Practices - Drawing Product

File Home Share View Manage

Clipboard Organize New Open Select

This PC > Data (D:) > Civil Presentations > 2017 > Learn Conference 2017 > 5. OpenRoads Best Practices - Drawing Production > Data

Name	Date	Type	Size	Tags
Geometry.alg	1/18/2017 9:12 AM	ALG File	96 KB	
Corridor.dgn	9/12/2017 10:53 AM	Bentley MicroStati...	3,119 KB	
Geometry.dgn	9/7/2017 9:08 AM	Bentley MicroStati...	500 KB	
Terrain3d.dgn	9/7/2017 9:08 AM	Bentley MicroStati...	6,178 KB	
OriginalData.zip	9/7/2017 9:09 AM	Compressed (zipp...	9,304 KB	
Integrated Highway Lifecycle.pdf	9/12/2017 11:10 AM	PDF File	77 KB	
Background_1024x768.png	4/20/2012 3:23 PM	PNG File	9 KB	
OG.tin	1/18/2017 9:12 AM	TIN File	14,422 KB	

8 items

Availability: Available offline

8 items (Disk free space: 588 GB)

32.9 MB Computer

Multi-Model Views

1 2 3 4 5 6 7 8

Element Selection > Identify element to add to set

Default

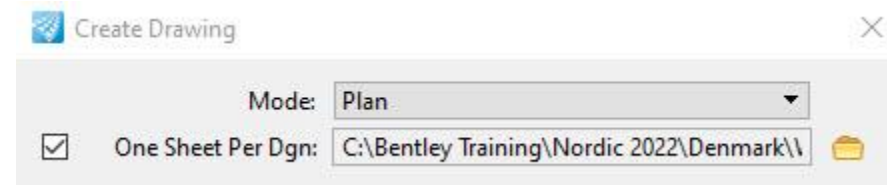
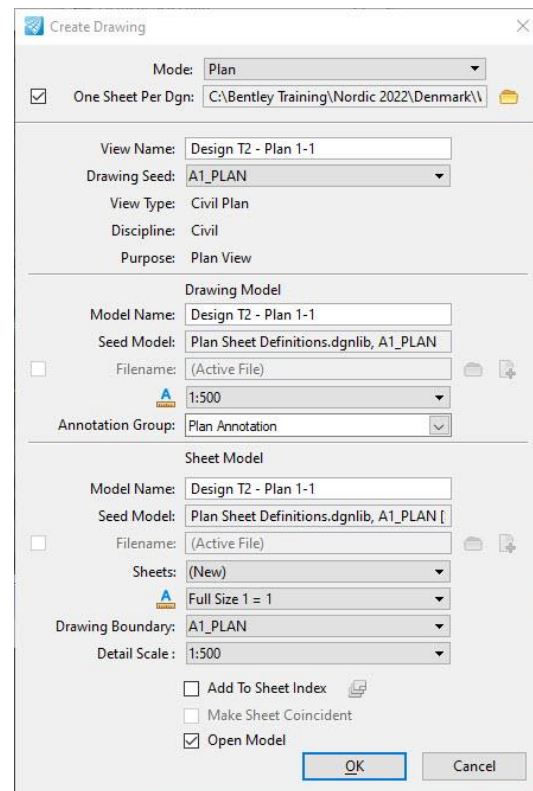
FAQs

Our workflow has been...all Sheets are *in the same file*.

QUESTION:

Can I place my sheets in individual files?

ANSWER: Yes



Sheet Index

File Home Terrain Geometry Corridors Model Detailing Drawing Production Drawing View

Attributes: None | Default

Primary: Explorer, Attach Tools, Models, Level Display

Selection: Element Selection

Model Analysis and Reporting: Reports, Civil Analysis, Corridor Reports

Model Import/Export: Terrain Import, Import Geometry, Import IRD

OpenRoads Help: OpenRoads Help, Open RSS Reader

Explorer

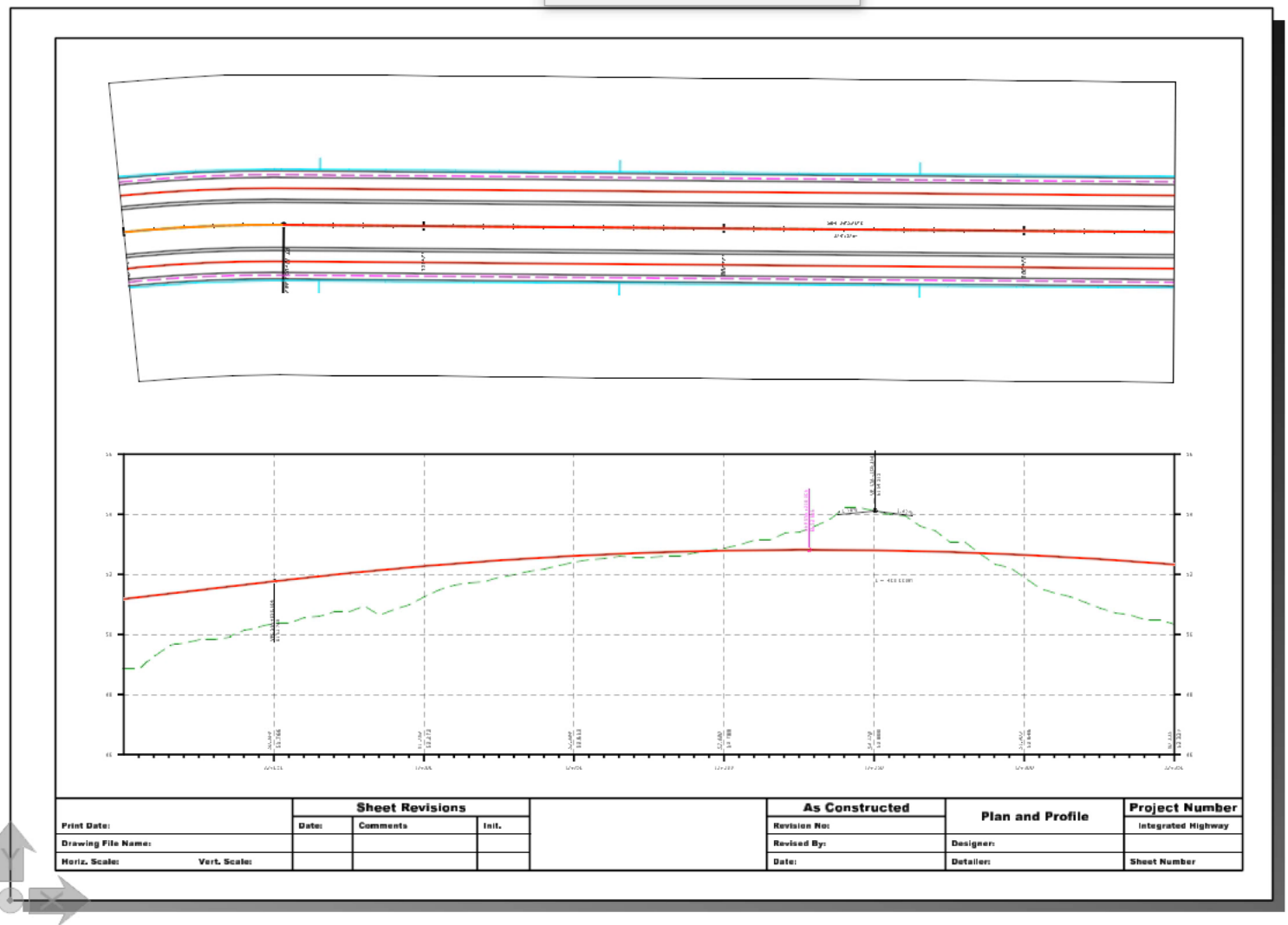
- File
- Items
- OpenRoads Model
- Sheet Index
- Links
- OpenRoads Standards
- Subsurface Utilities Model

View 1, Rt97_Plan1 [Sheet]

Navigation icons: Home, Back, Forward, Search, etc.

Element Selection

Navigation icons: Pan, Zoom, Rotate, etc.

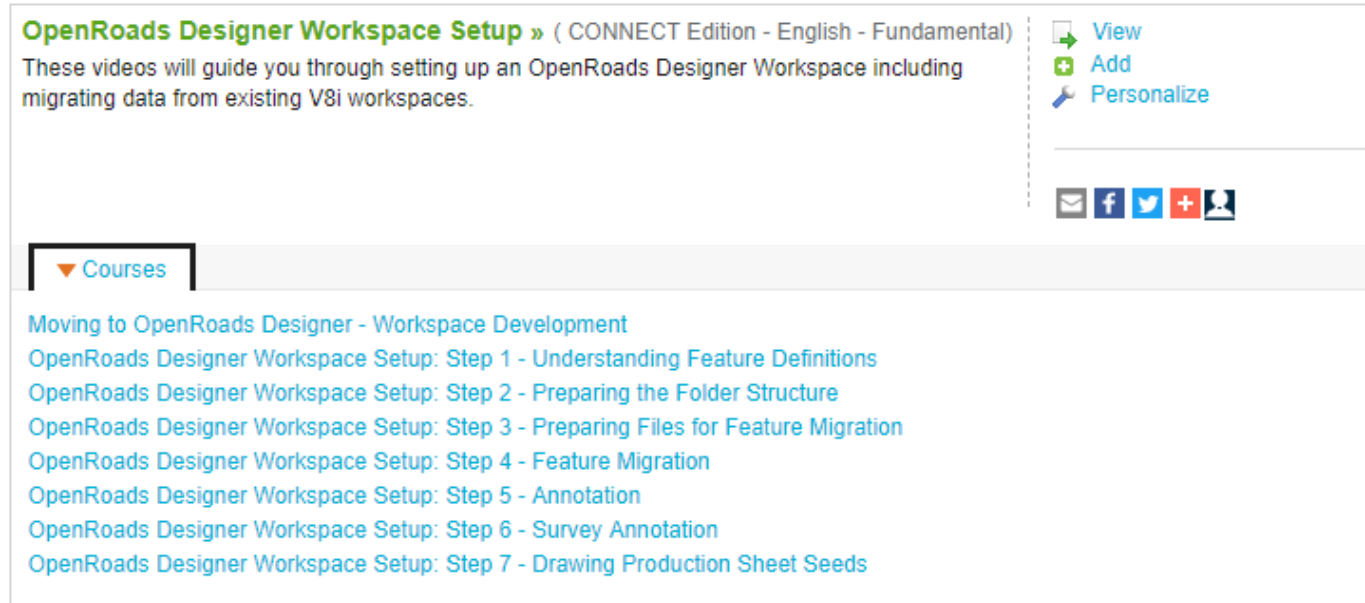


Sheet Seed Files

- The *Drawing Seed* and *Sheet Seed* **MUST** be created and added to the workspace to generate customized sheets.
- **Config Variables:** The 4 variables below must be set to properly configure the sheet creation process.
 - MS_DRAWINGMODELSEED
 - MS_DRAWINGMODELSEEDNAME
 - MS_SHEETMODELSEED
 - MS_SHEETMODELSEEDNAME

Other Information and/or Files to be Setup

- Sheet Border files/cells
- Sheet Seed Definitions
- Annotation Groups
- Sheet Index Customization



OpenRoads Designer Workspace Setup » (CONNECT Edition - English - Fundamental)

These videos will guide you through setting up an OpenRoads Designer Workspace including migrating data from existing V8i workspaces.

[View](#)
[Add](#)
[Personalize](#)

[Courses](#)

- [Moving to OpenRoads Designer - Workspace Development](#)
- [OpenRoads Designer Workspace Setup: Step 1 - Understanding Feature Definitions](#)
- [OpenRoads Designer Workspace Setup: Step 2 - Preparing the Folder Structure](#)
- [OpenRoads Designer Workspace Setup: Step 3 - Preparing Files for Feature Migration](#)
- [OpenRoads Designer Workspace Setup: Step 4 - Feature Migration](#)
- [OpenRoads Designer Workspace Setup: Step 5 - Annotation](#)
- [OpenRoads Designer Workspace Setup: Step 6 - Survey Annotation](#)
- [OpenRoads Designer Workspace Setup: Step 7 - Drawing Production Sheet Seeds](#)

- See the Bentley LEARN Server for training on sheet setup.

[OpenRoads Designer Workspace Setup Learning Path](#)



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