

Working Effectively in the OpenRoads Modeling Environment

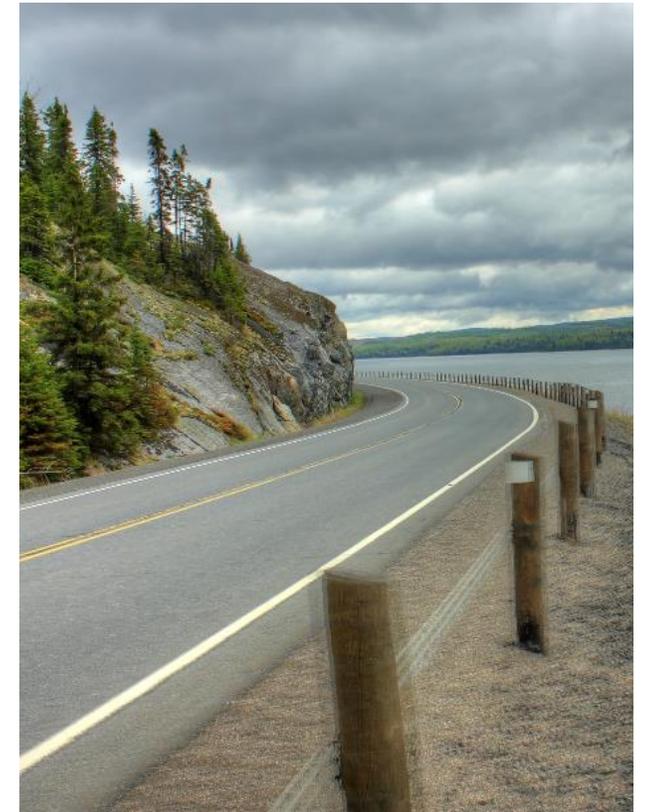
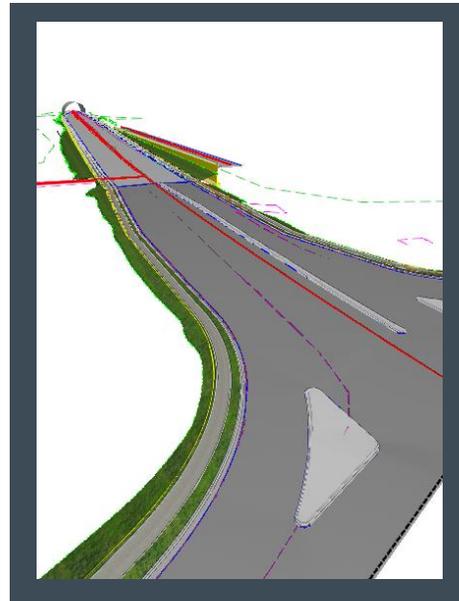
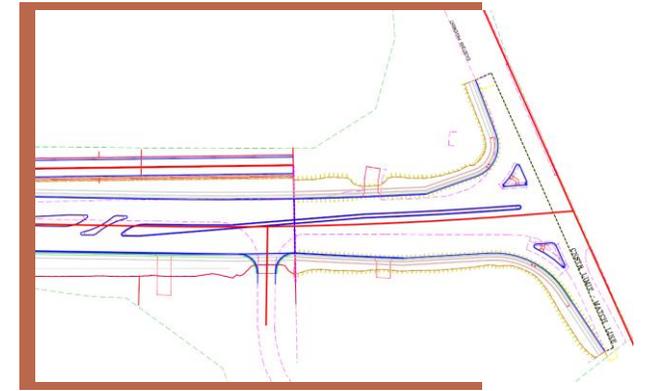
How Do Our Plans Make it to the Field?

- Construction Staking (in some form) transfers known points (x, y, and Z) onto the earth's surface.
- 3D



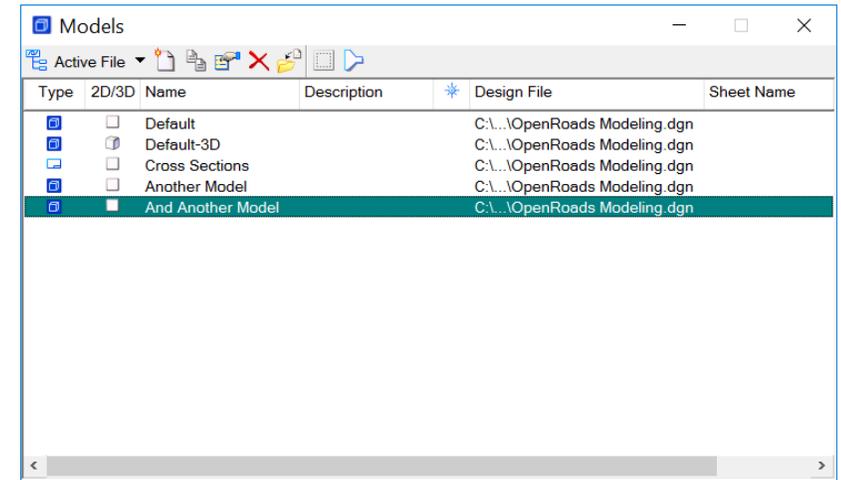
Bringing the Design Closer to Reality

- OpenRoads is meant to allow us to work in 2D to create 3D.



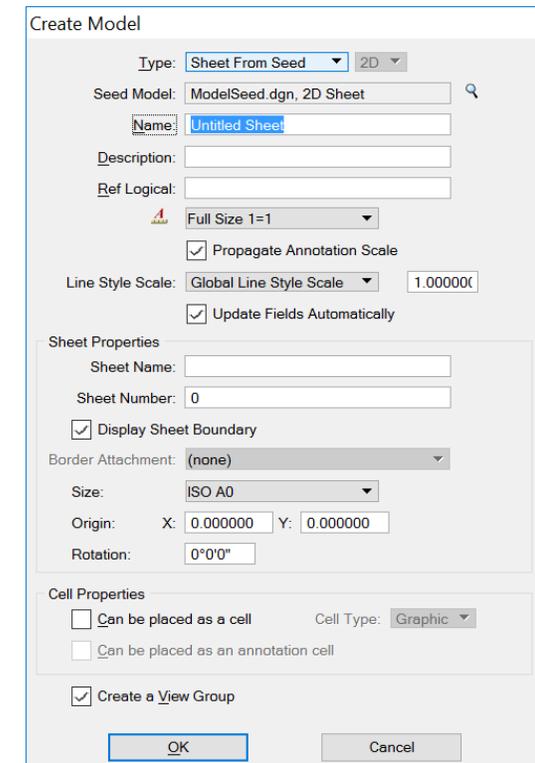
MicroStation Models

- MicroStation dgn contains multiple models.
- 2D
- 3D
- Drawing models / Sheets
- OpenRoads relies on these “models” to present our design information.



The screenshot shows the 'Models' dialog box in MicroStation. It features a table with columns for Type, 2D/3D, Name, Description, Design File, and Sheet Name. The table lists several models, with 'And Another Model' selected.

Type	2D/3D	Name	Description	Design File	Sheet Name
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Default		C:\...\OpenRoads Modeling.dgn	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Default-3D		C:\...\OpenRoads Modeling.dgn	
<input type="checkbox"/>	<input type="checkbox"/>	Cross Sections		C:\...\OpenRoads Modeling.dgn	
<input type="checkbox"/>	<input type="checkbox"/>	Another Model		C:\...\OpenRoads Modeling.dgn	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	And Another Model		C:\...\OpenRoads Modeling.dgn	



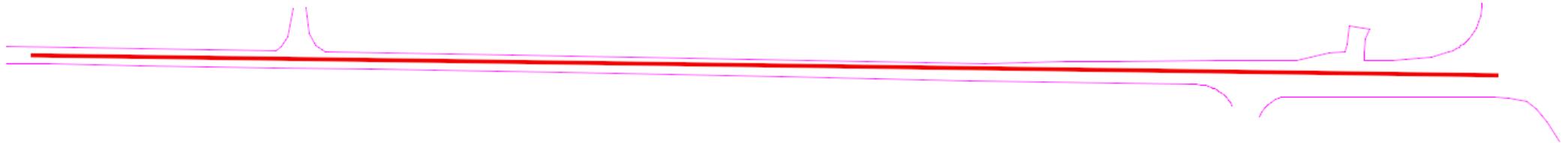
The screenshot shows the 'Create Model' dialog box. It contains various fields and options for creating a new model. The 'Type' is set to 'Sheet From Seed' and '2D'. The 'Seed Model' is 'ModelSeed.dgn, 2D Sheet'. The 'Name' is 'Untitled Sheet'. The 'Description' and 'Ref Logical' fields are empty. The 'Full Size' is '1=1'. The 'Propagate Annotation Scale' and 'Update Fields Automatically' checkboxes are checked. The 'Line Style Scale' is 'Global Line Style Scale' with a value of '1.000000'. The 'Sheet Properties' section includes 'Sheet Name', 'Sheet Number' (0), 'Display Sheet Boundary' (checked), 'Border Attachment' (none), 'Size' (ISO A0), 'Origin' (X: 0.000000, Y: 0.000000), and 'Rotation' (0°0'0"). The 'Cell Properties' section includes 'Can be placed as a cell' (unchecked), 'Cell Type' (Graphic), 'Can be placed as an annotation cell' (unchecked), and 'Create a View Group' (checked). The 'OK' and 'Cancel' buttons are at the bottom.



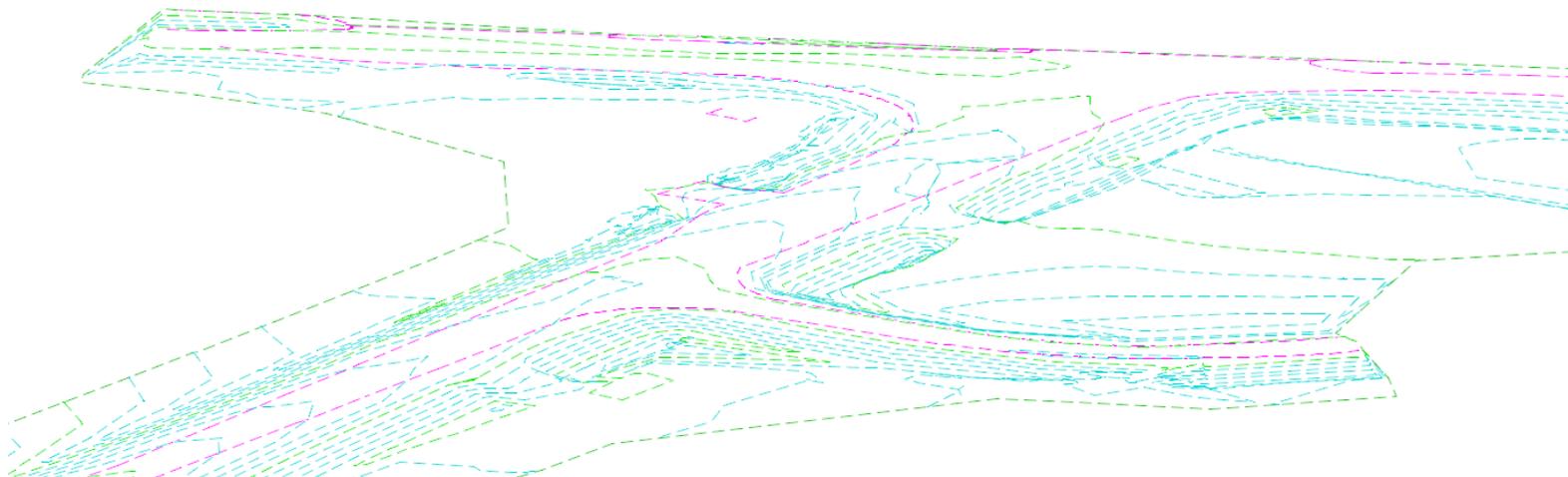
2D or Not 2D? That is the Question...

Where to Start?

- 2D dgn – for Geometry and Corridors
 - Contains at least one 2D MicroStation model

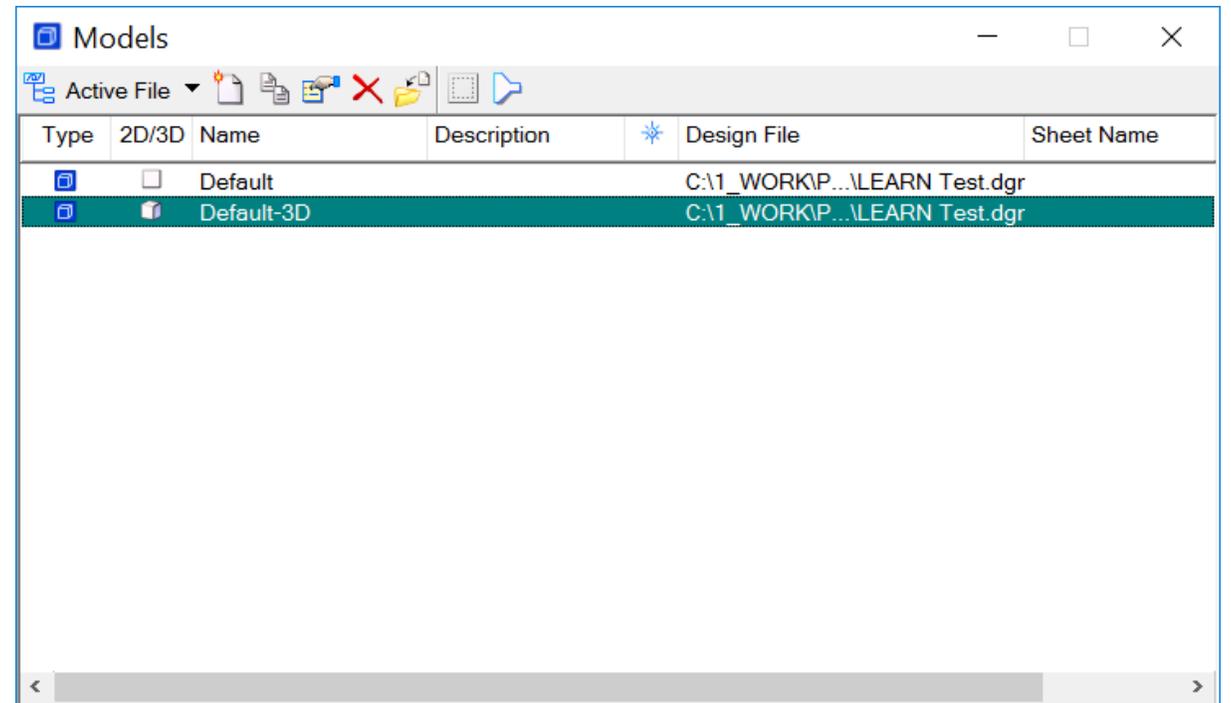


- 3D dgn – for Survey and Terrain
 - Contains at least one 3D MicroStation model

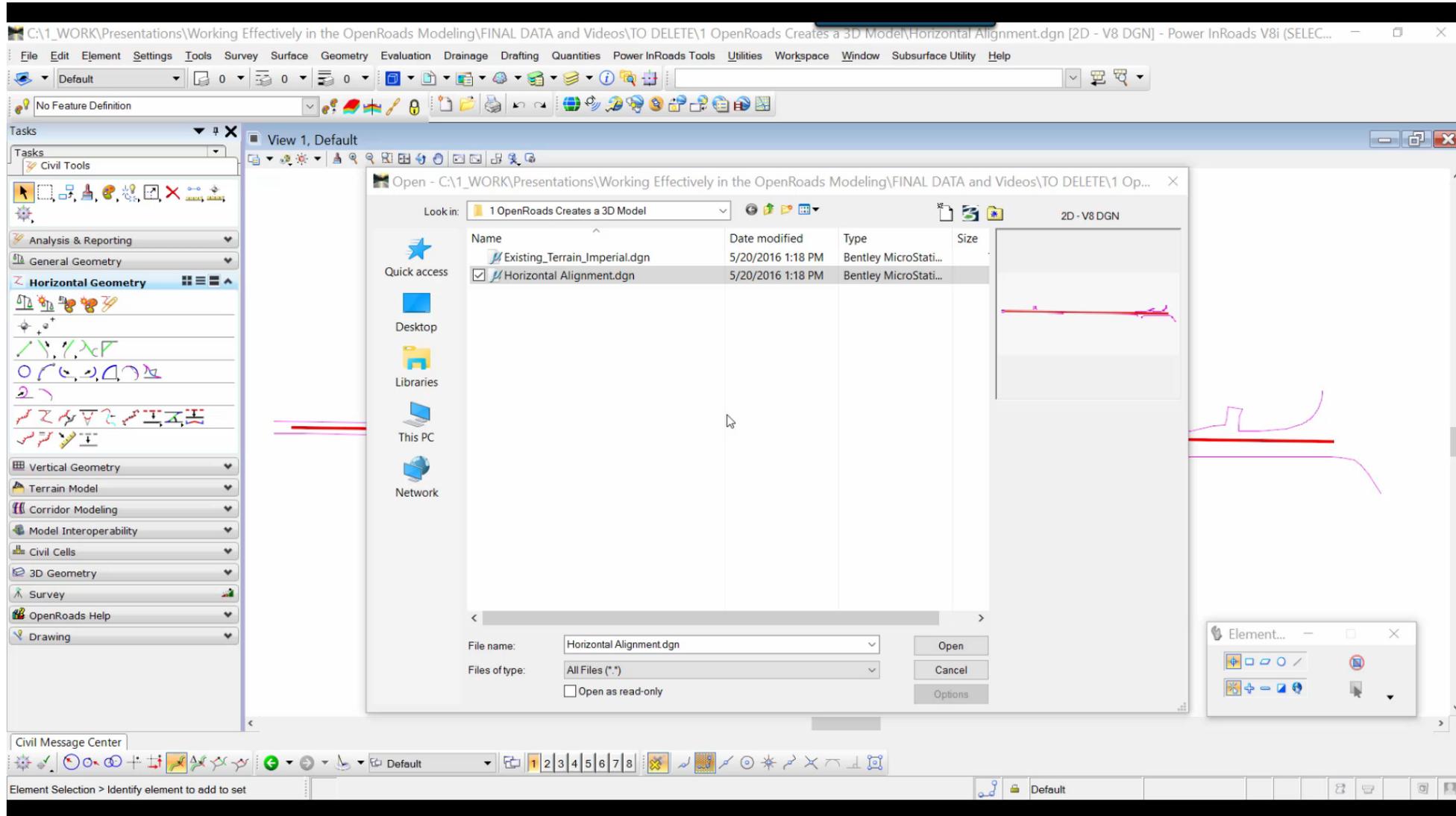


3D Models are Created Automatically

- Let OpenRoads manage the creation of the 3D model.
 - 3D model created upon invoking an element or function that requires elevations.
 - Activate a Terrain
 - Activate a Profile



Demonstration – OpenRoads Creates the 3D Model



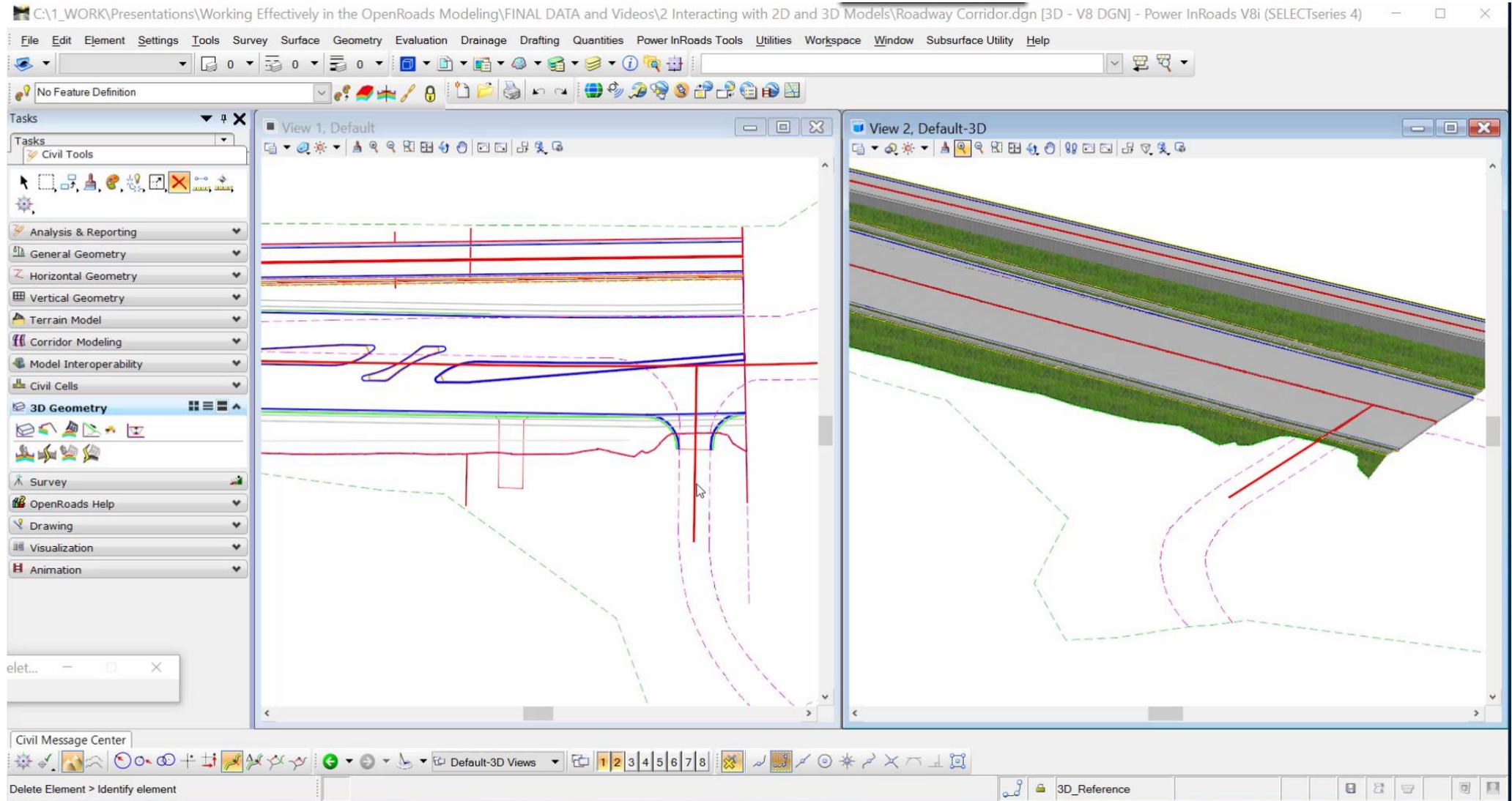
Key Points – The OpenRoads 3D Model

- The 3D (MicroStation) model can't be deleted.
- The 3D model shouldn't be re-named
- A view can be changed to show the model Default-3D.
- 3D model is automatically referenced back to the 2D model
 - Simply turn it off to simplify the 2D view.

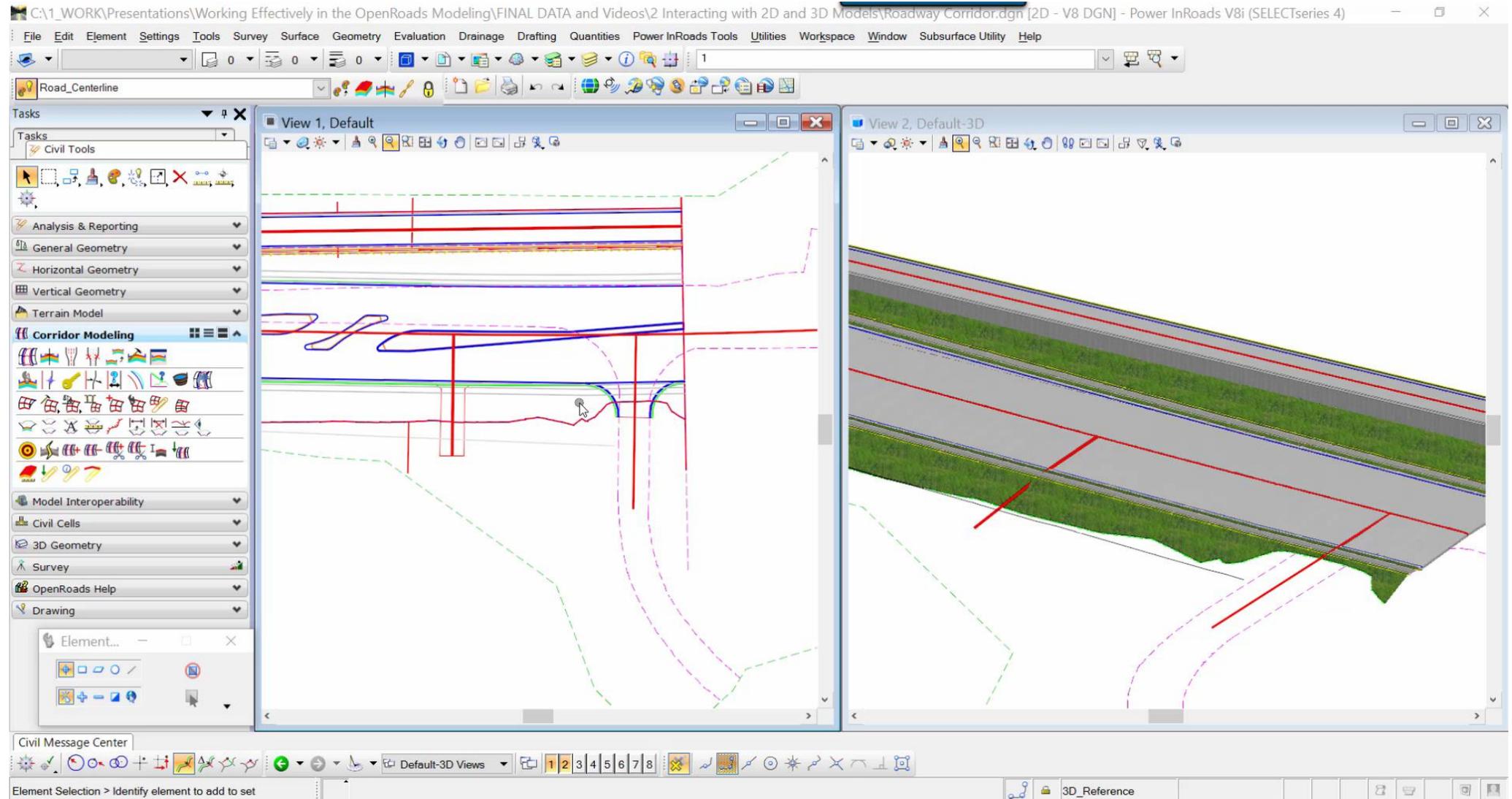
Interacting with the 2D Model and 3D Model

- Create Elements in the 2D model
 - Activate the profile to create and display the 3D representation
- Think of the 2D model/view as the interface to edit the 3D model.
 - Geometry
 - Select in 2D to edit profile
 - Corridors
 - Select 2D corridor elements to make edits
 - Corridor Element
 - Template Drop Element
 - Exception: Terrains and Survey

Demonstration – Creating Geometry



Demonstration – Corridors

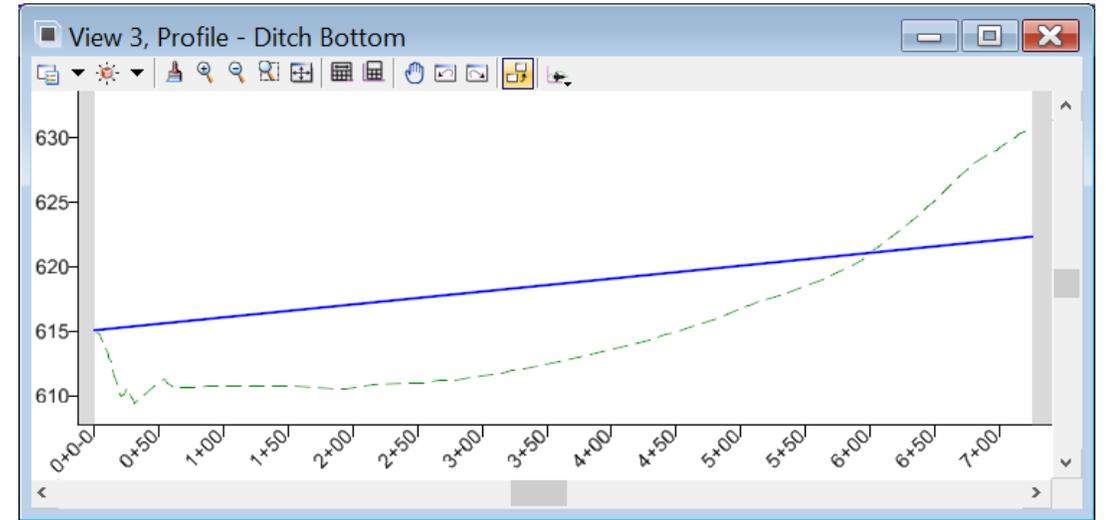


Key Points – Interacting with Geometry and Corridors

- Elements have a 2D Instance with a 3D Representation
- To effectively create or edit an OpenRoads geometry element, it must have a 2D instance.
- Edit corridors from the 2D model using the **Template Drop Object** and the **Corridor Object**.
- Think of the 2D model/view as the interface to edit the 3D model.

More Models... Non-Indexed models

- Profile Model



- Dynamics Cross Section Model

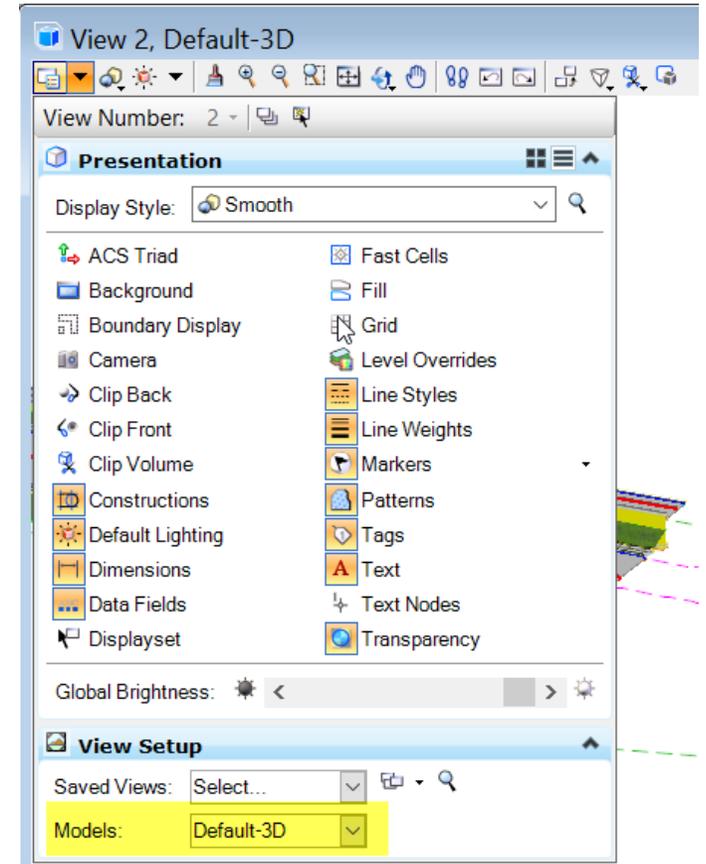


Managing the Models and Views

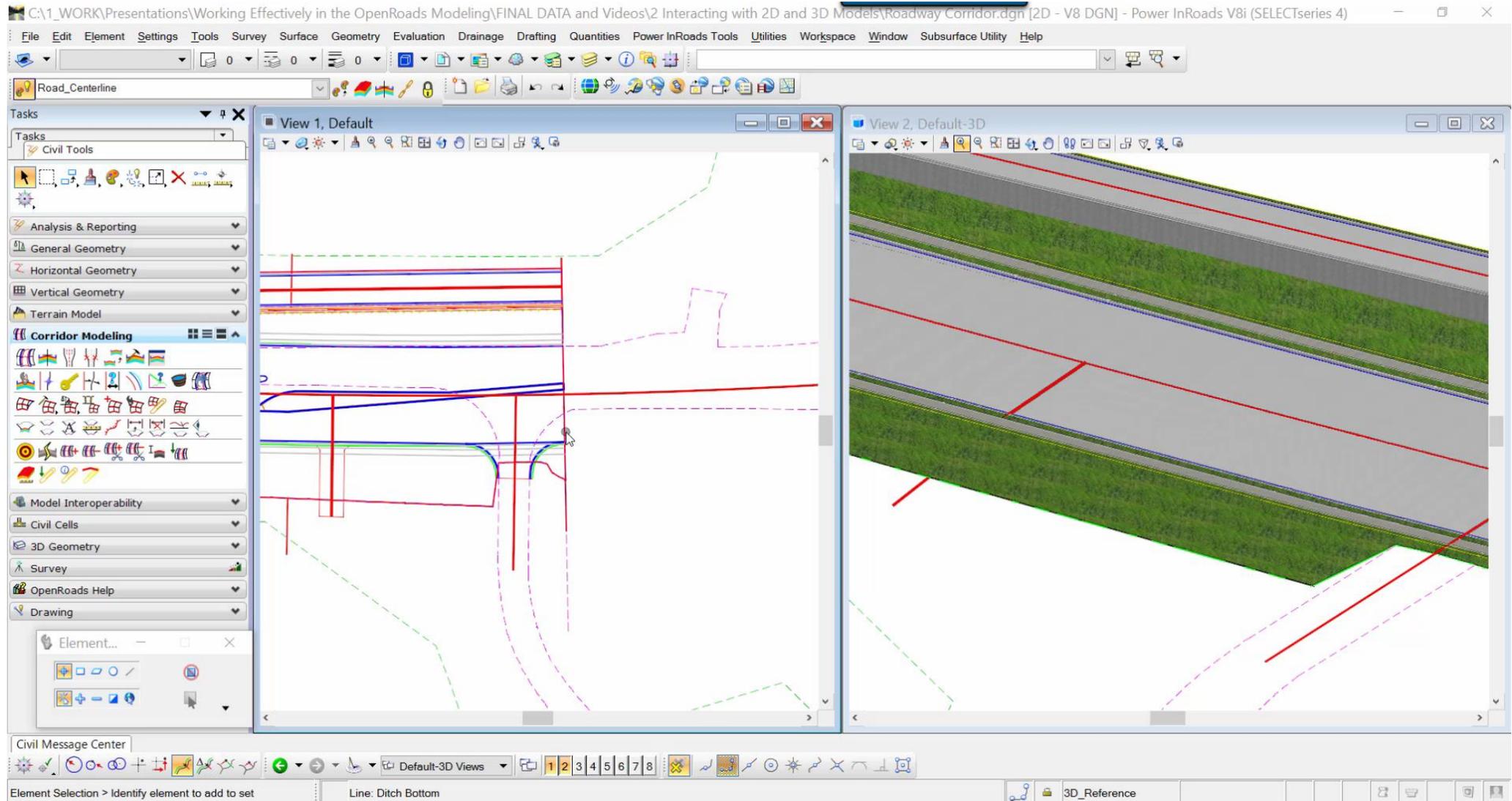
- How Do I change the views and models?
 - View Attributes > View Setup > Models



When the view contains a “non-indexed” model, a.k.a. dynamic cross section or profile, you can click on the icon in the top left to get to View Attributes.



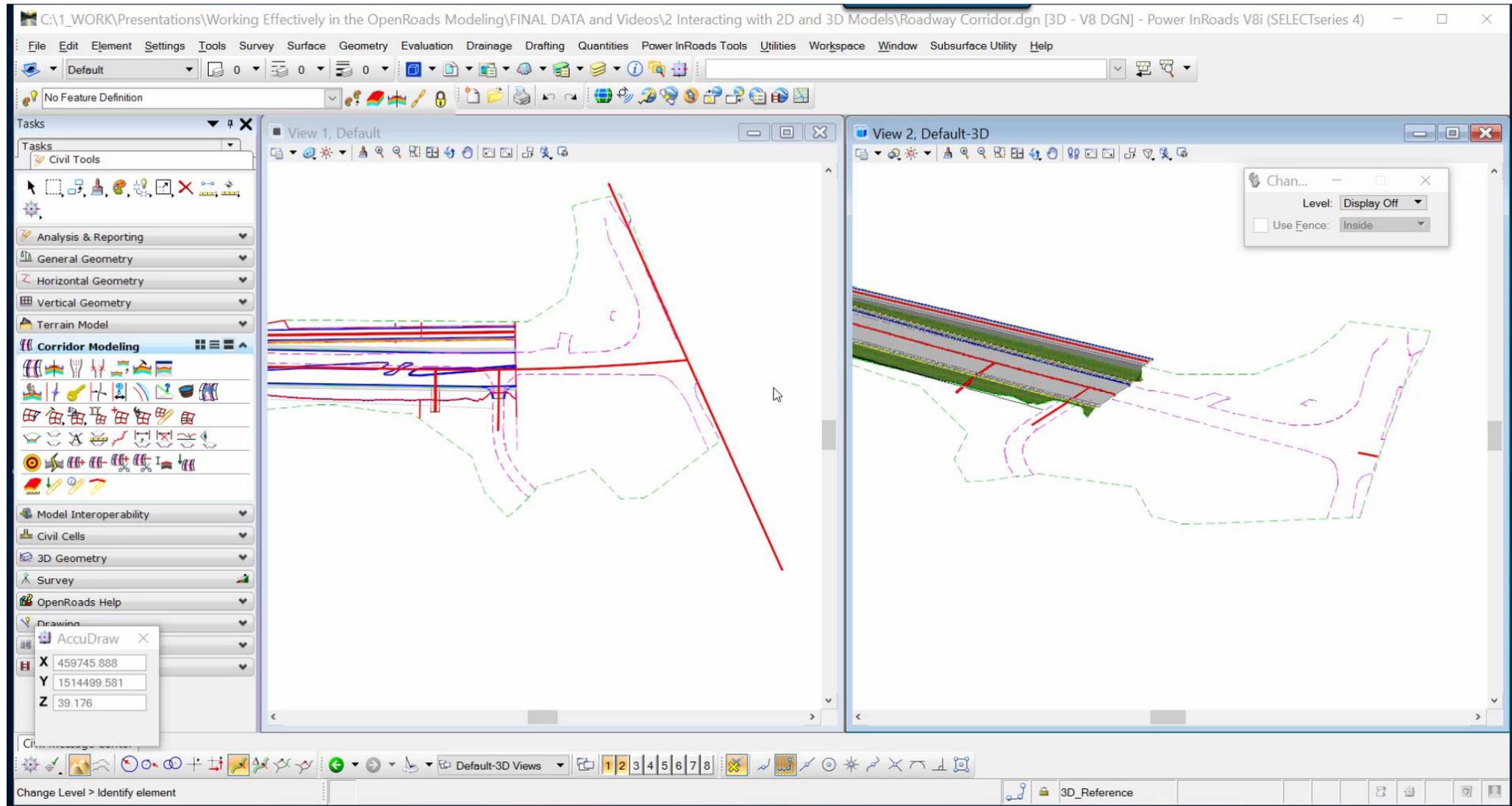
Demonstration – Managed Models



What about Reference Files?

- Do I have to keep up with the models when I reference dgn's together?
- **BEST PRACTICE**
 - When a ***civil model is present***, reference the 2D model to the 2D model
 - PAY ATTENTION TO THE ACTIVE VIEW WHEN REFERENCING
 - **EXCEPT** when the file being referenced is a 3D file that contains data from sources other than OpenRoads.

Demonstration – Models and Referencing



Key Points

- OpenRoads uses both 2D and 3D models.
- Think of the 2D view is the interface to edit geometry and corridors.
- Let OpenRoads manage the 3D model.
- The 3D model is referenced back to the 2D model, but can be turned off.
- The Openroads 3D model can't be deleted.
- Setting an element's profile active, displays its 3D representation.
- When referencing **OpenRoads models**, attach the 2D default model to the 2D model and let OpenRoads Manage the 3D model.
- When referencing **3D models from other sources**, attach them to the OpenRoads 3D model.



Thank You!