Working Effectively in the OpenRoads Modeling Environment

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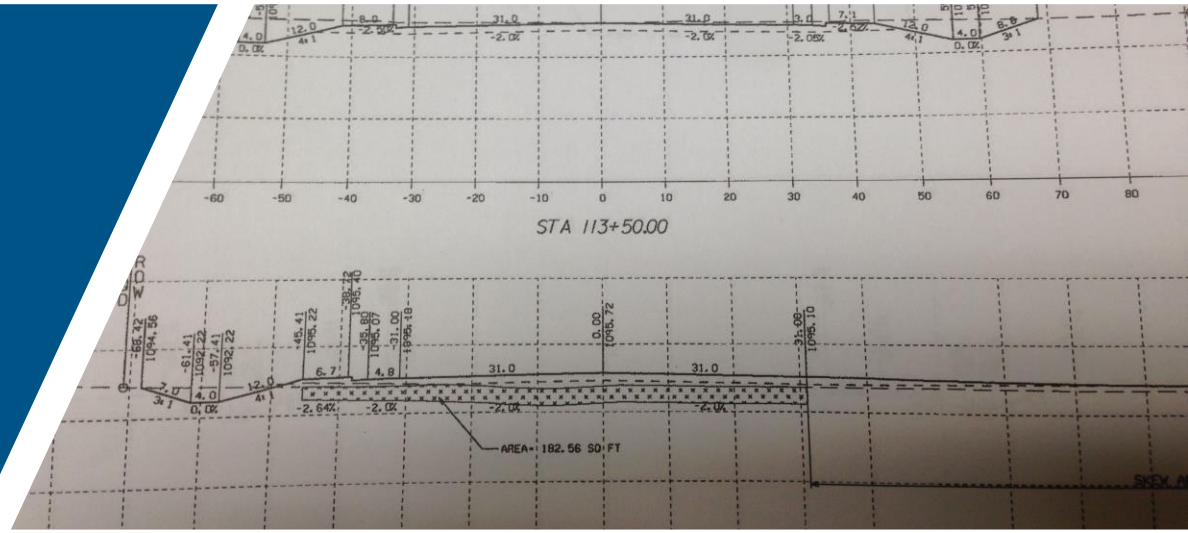
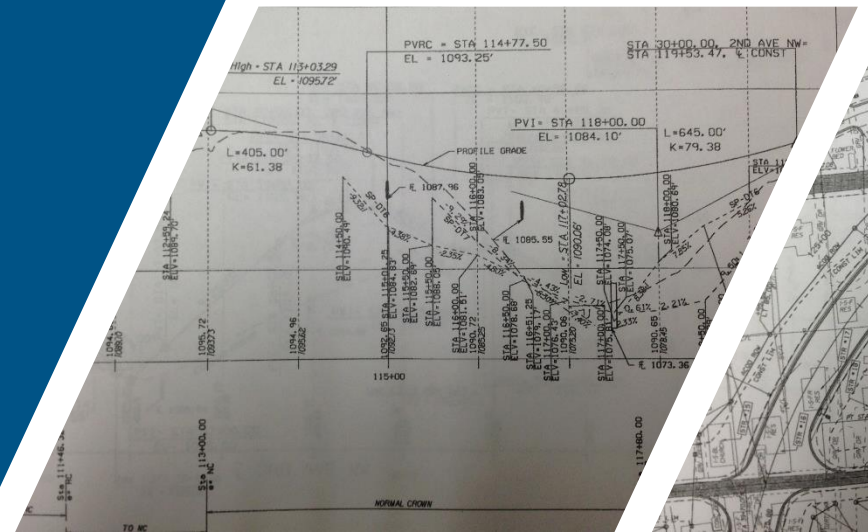
Our Reasoning…

- PLAN SHEETS ARE OUR COMMON DELIVERABLE.
- 2D



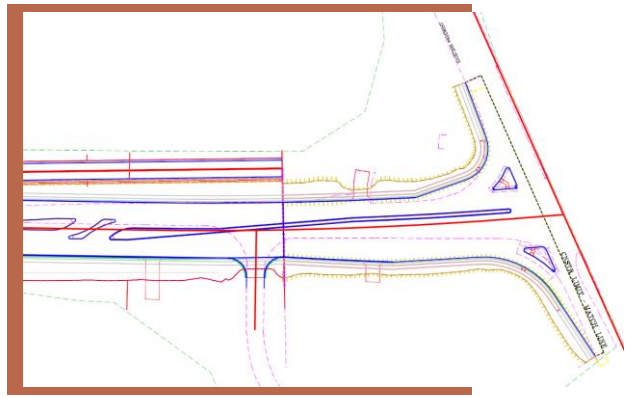


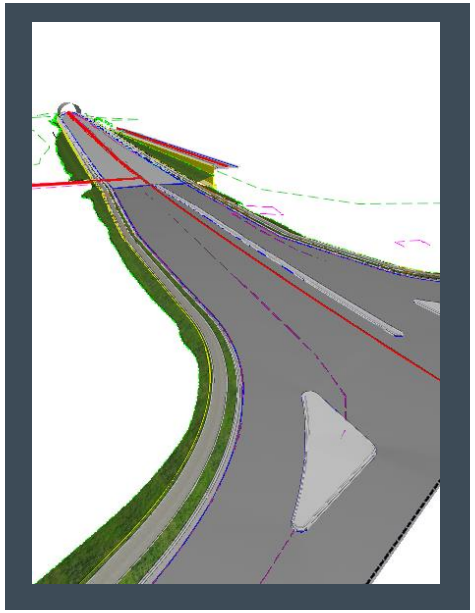
How Do Our Plans Make it to the Field?

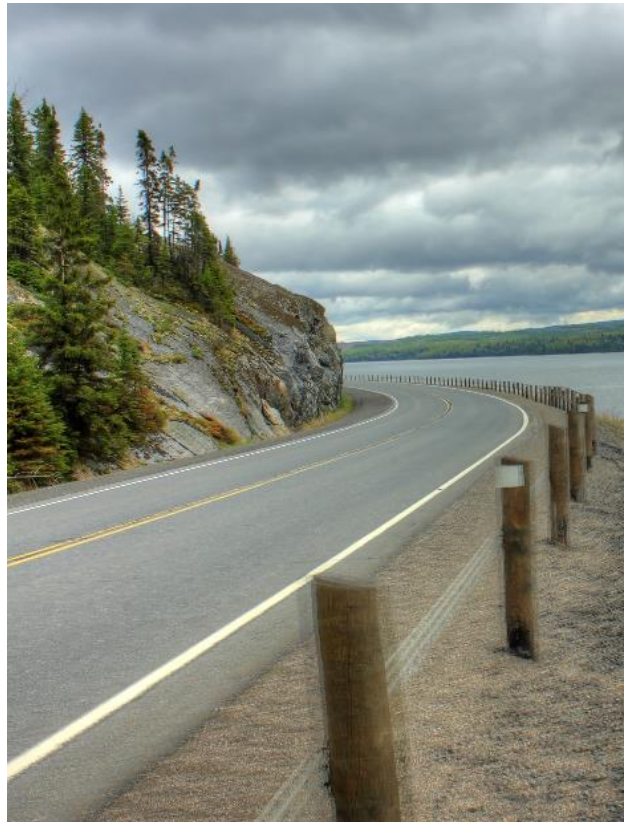
- Construction Staking (in some form) transfers known points (x, y, and Z) onto the earth’s surface.
- 3D

Bringing the Design Closer to Reality

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







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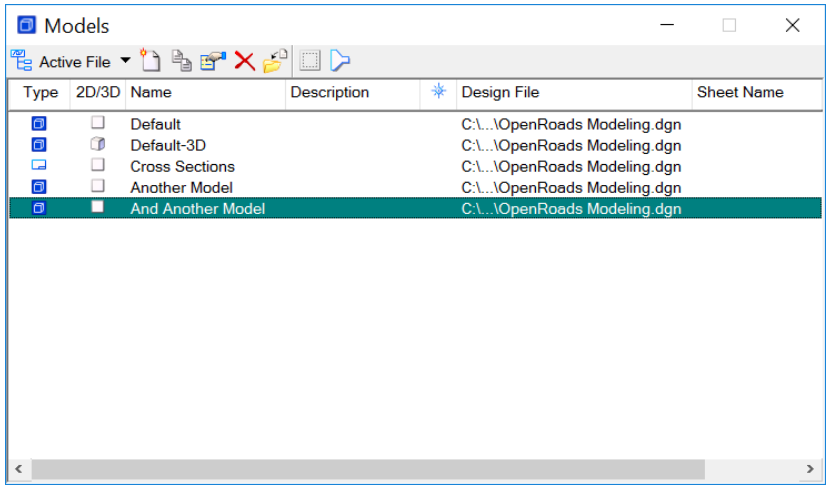
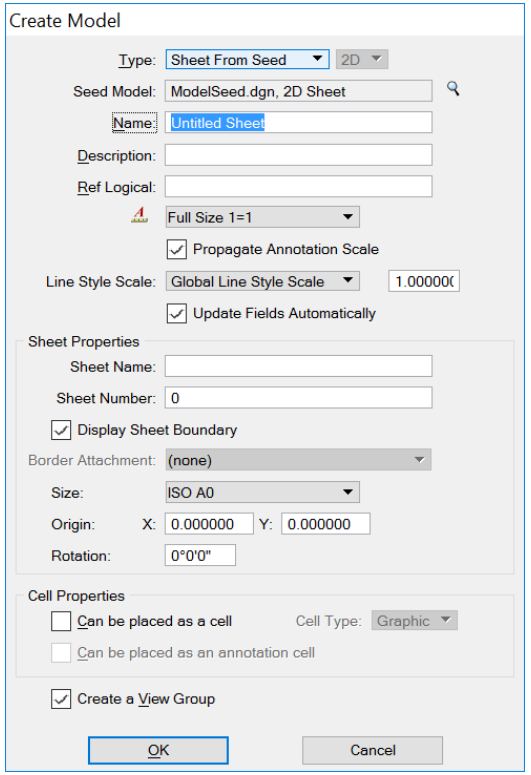
MicroStation Models

- MicroStation dgn contains multiple models.
- 2D
- 3D
- Drawing models / Sheets

- OpenRoads relies on these “models” to present our design information.





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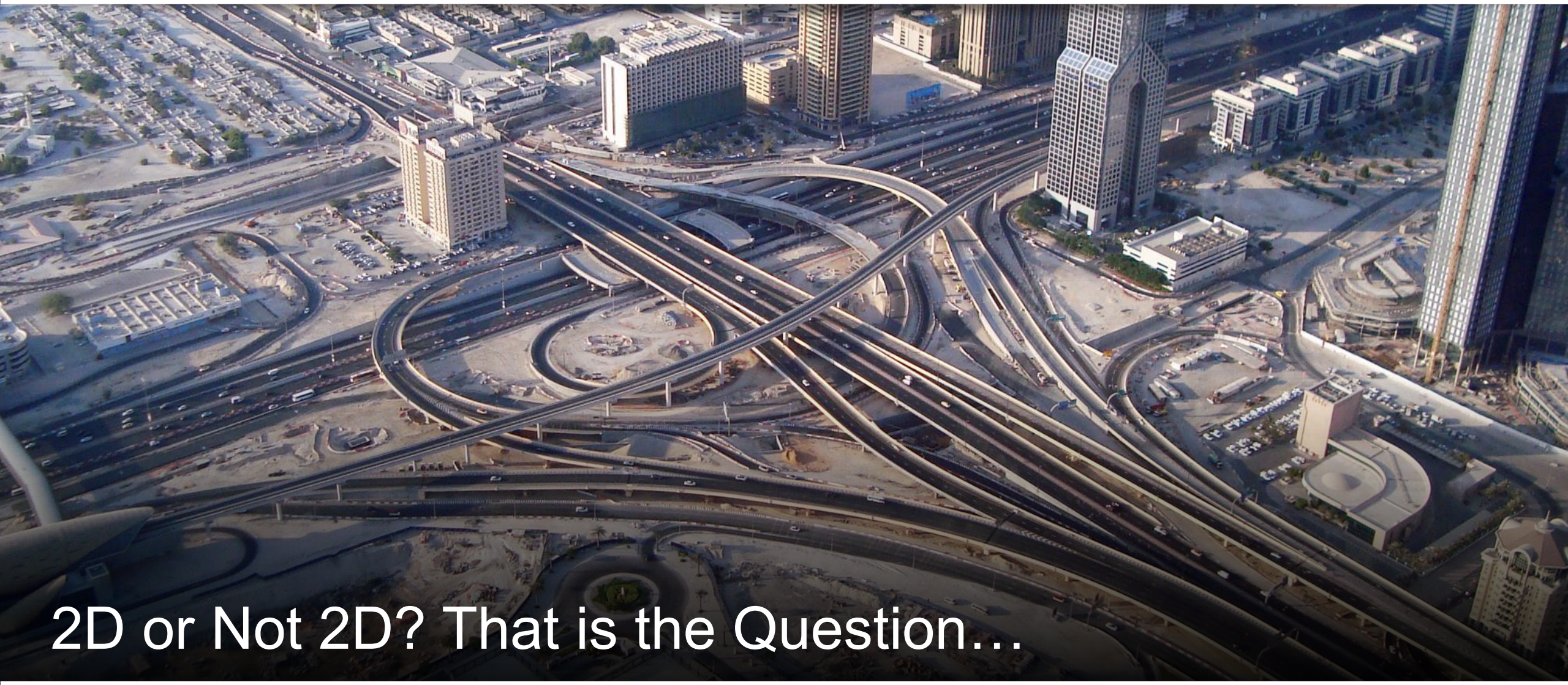

2D or Not 2D? That is the Question…

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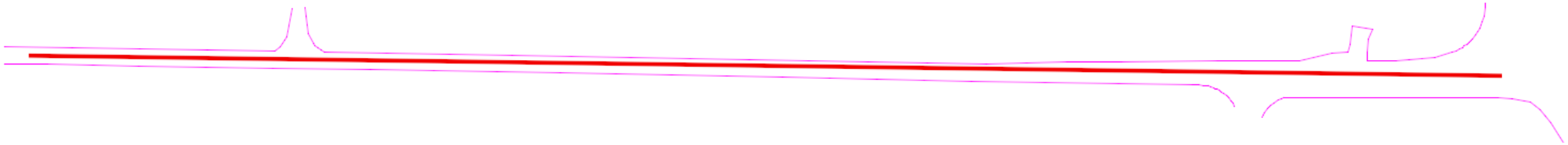
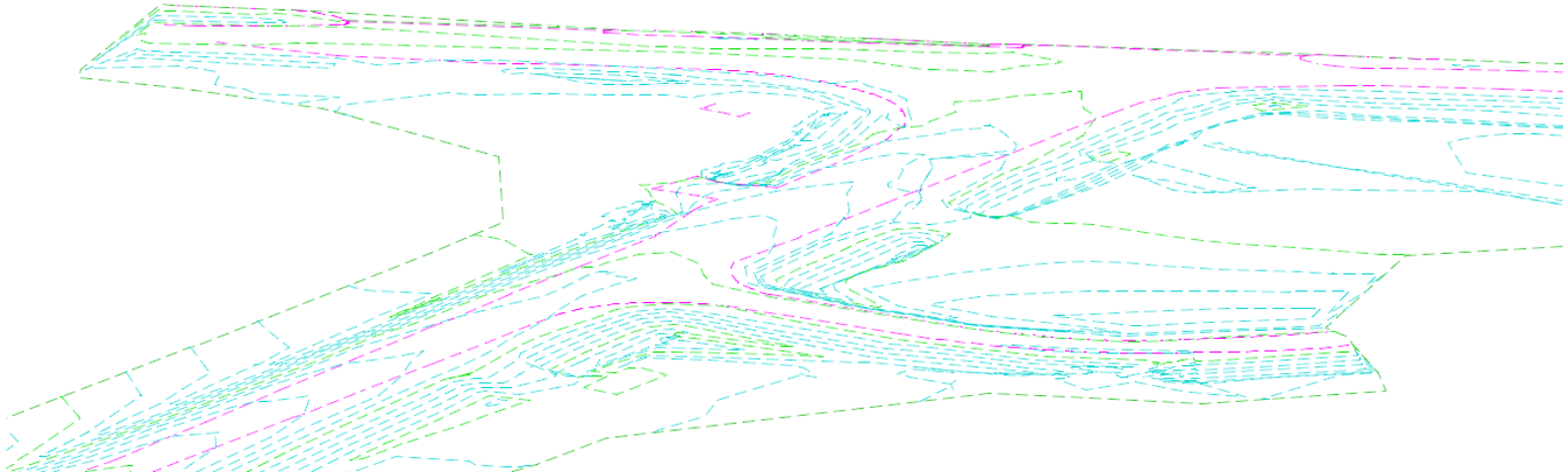
Where to Start?

- 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



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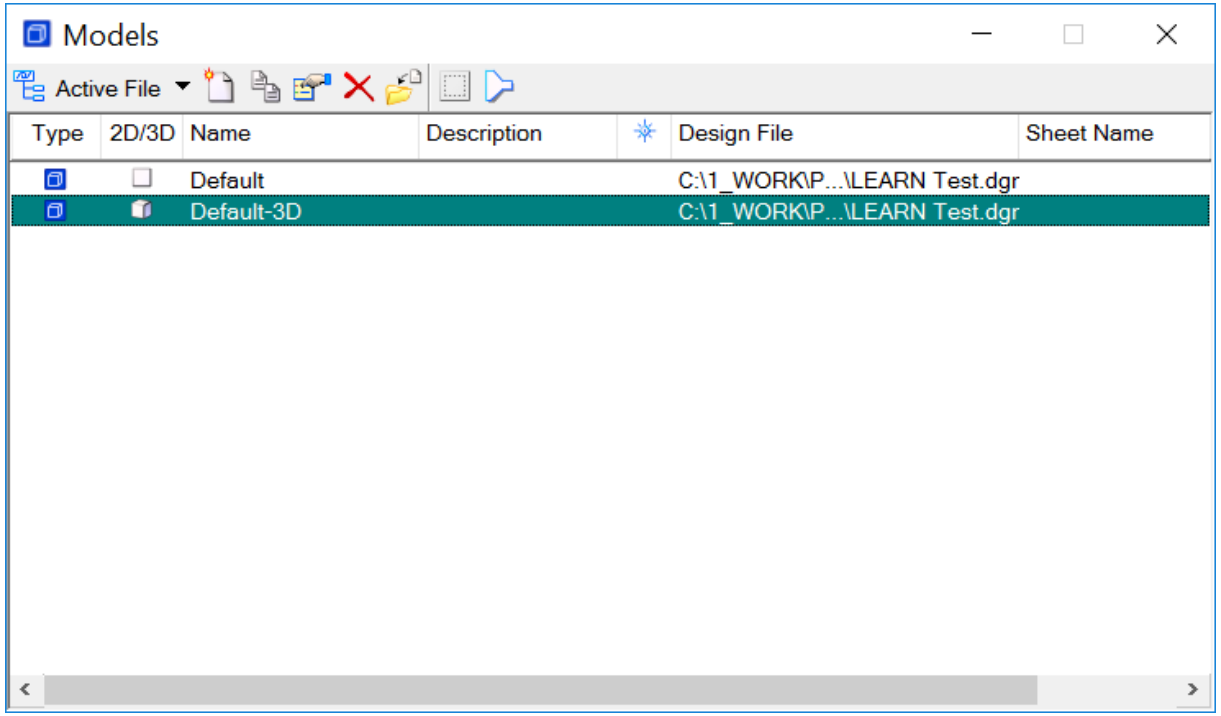
3D Models are Created Automatically

- 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



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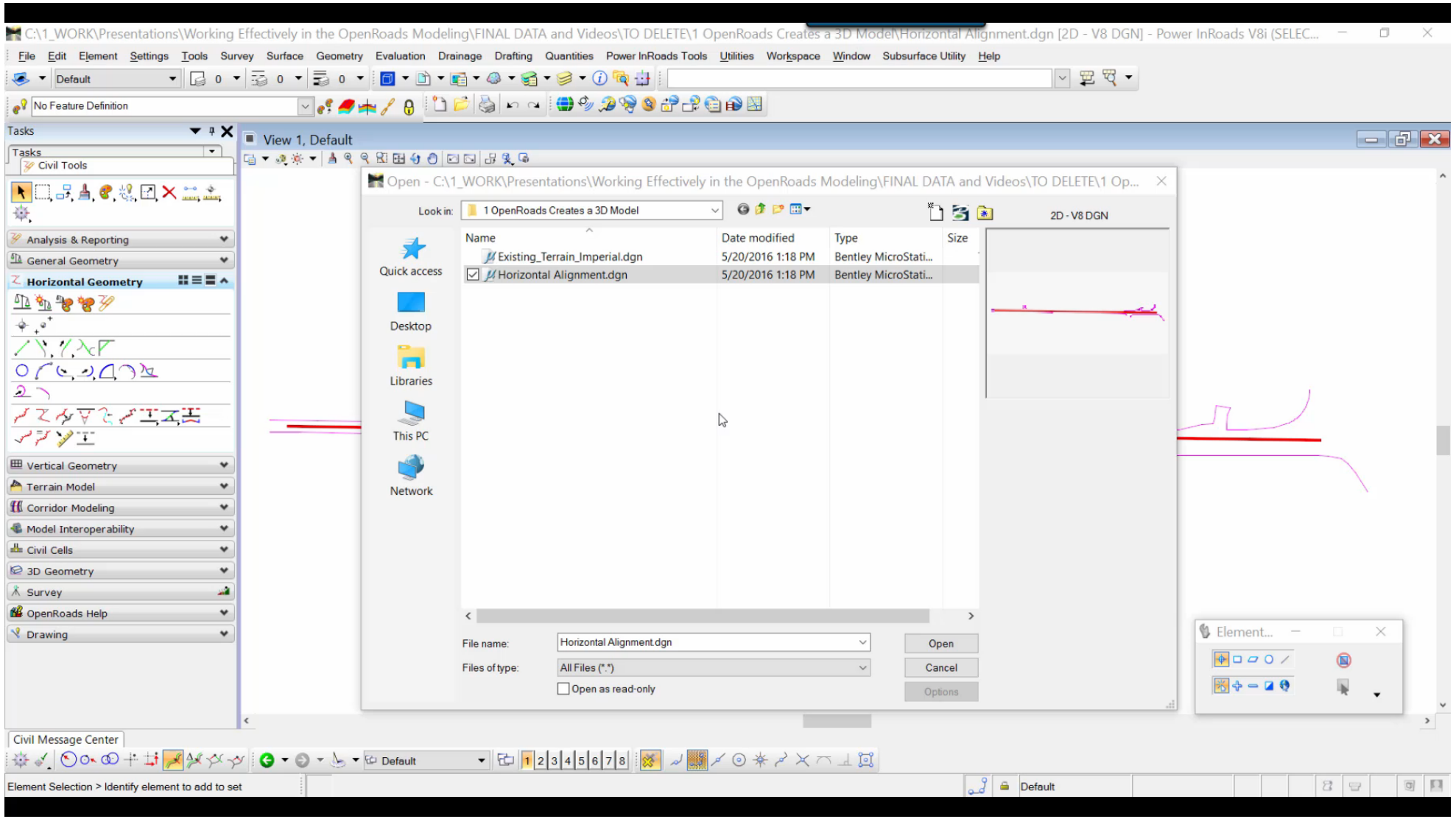
Demonstration – OpenRoads Creates the 3D Model



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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.

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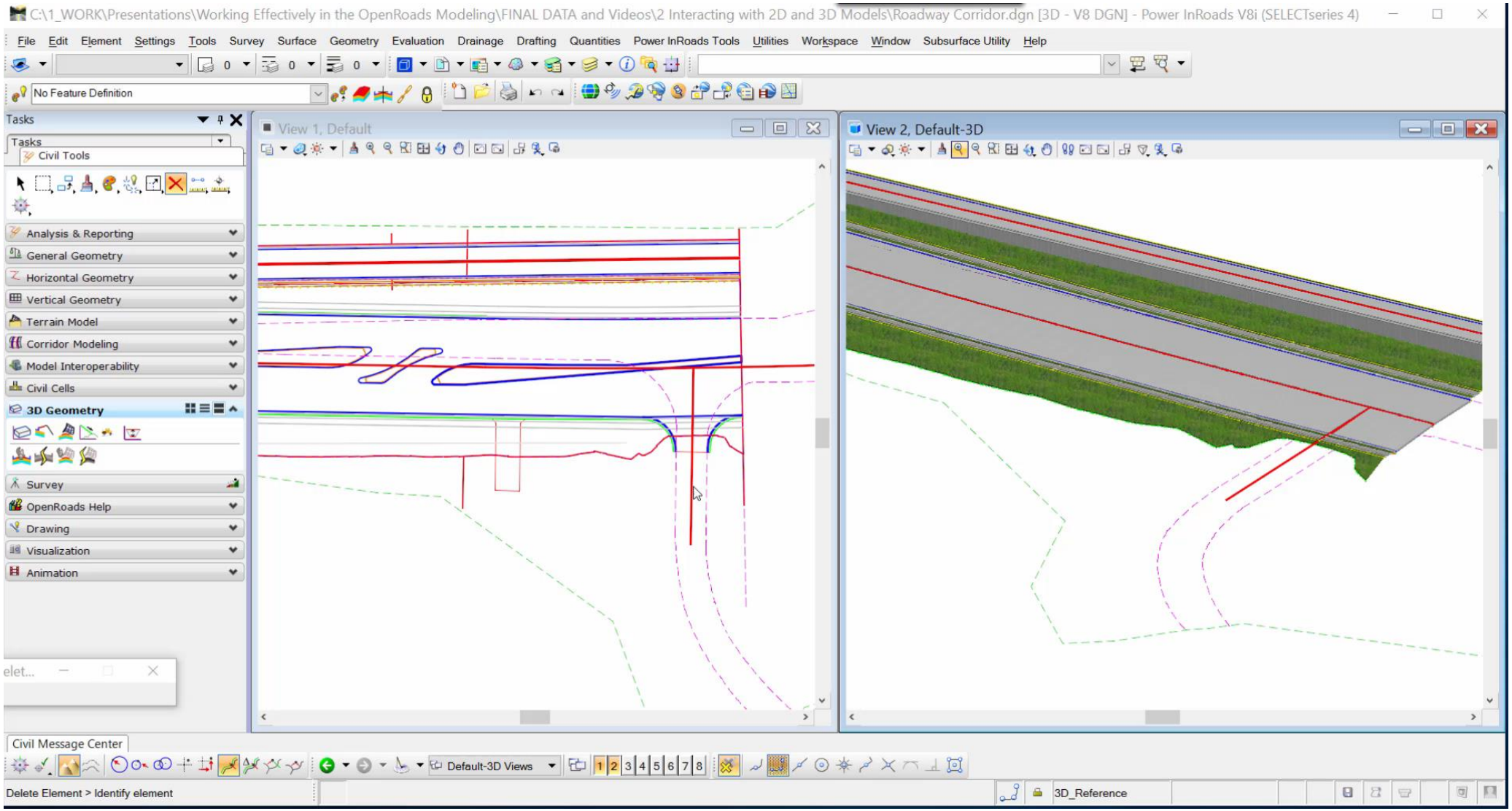
Interacting with the 2D Model and 3D Model

- 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



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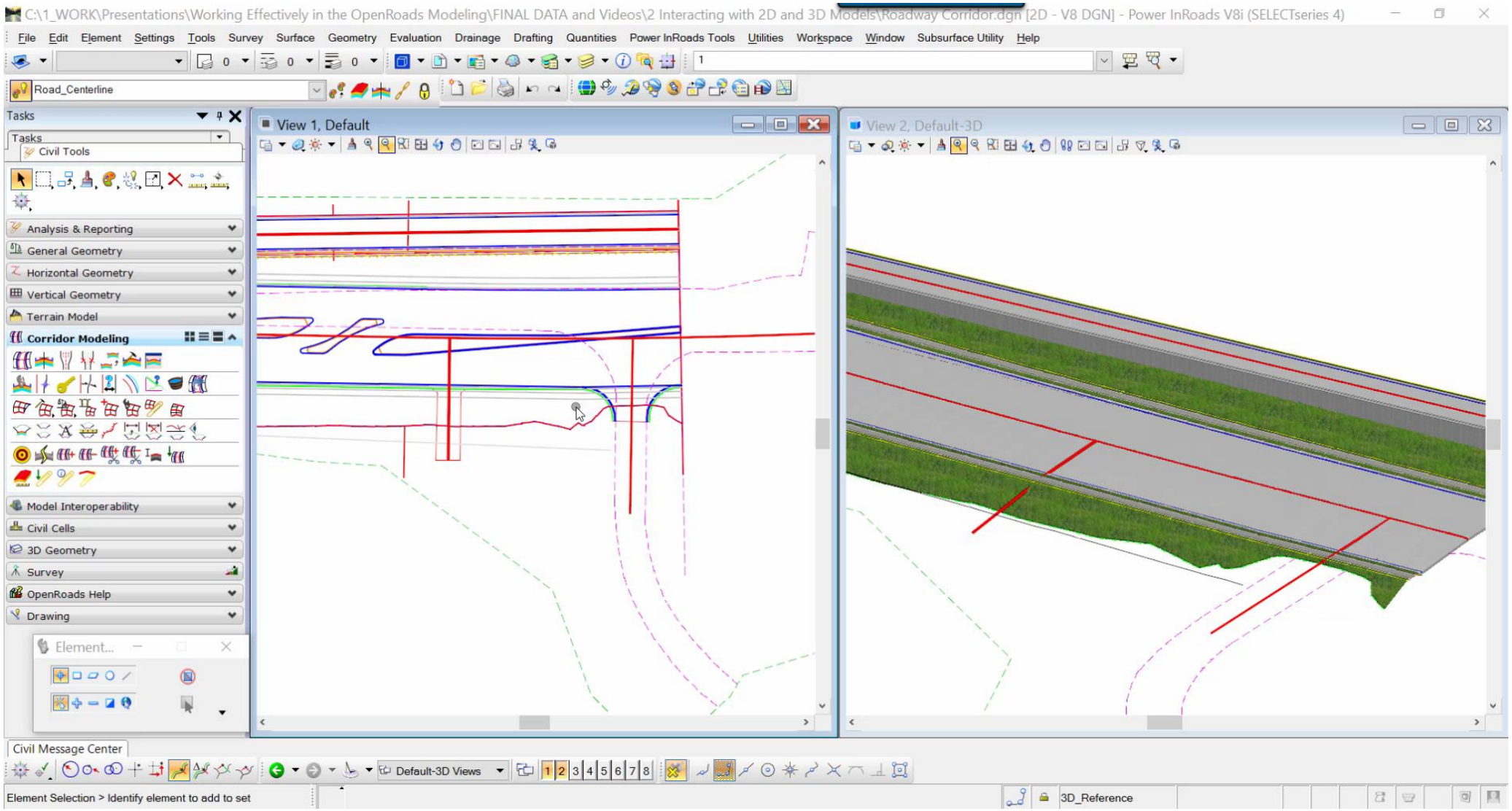
Demonstration – Corridors



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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.

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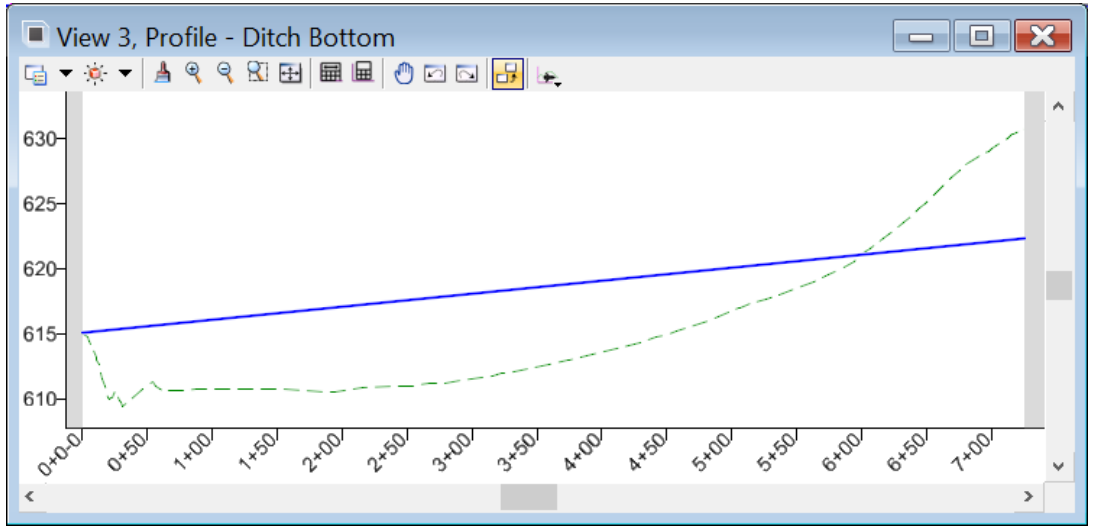
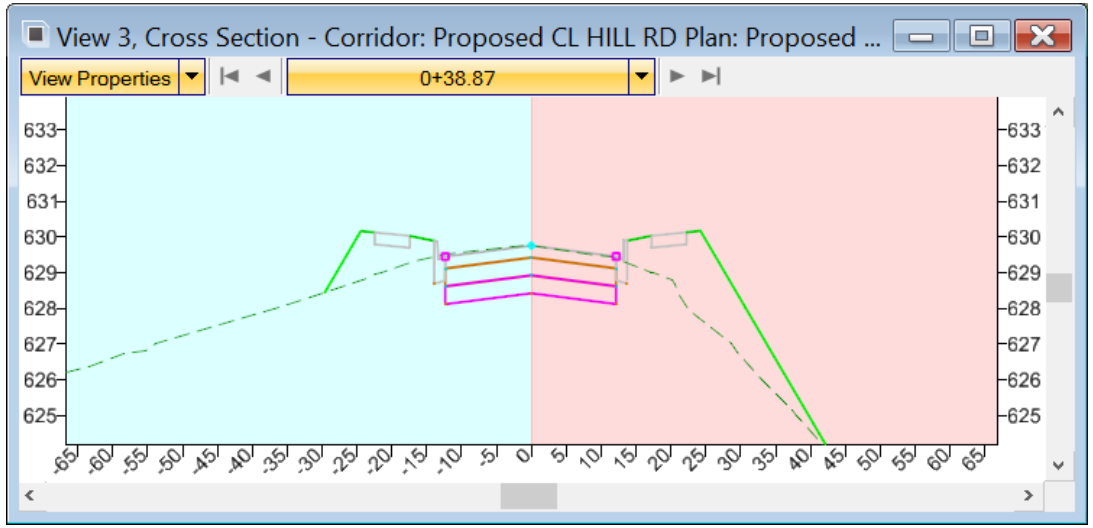
More Models… Non-Indexed models

- Profile Model



- Dynamics Cross Section Model



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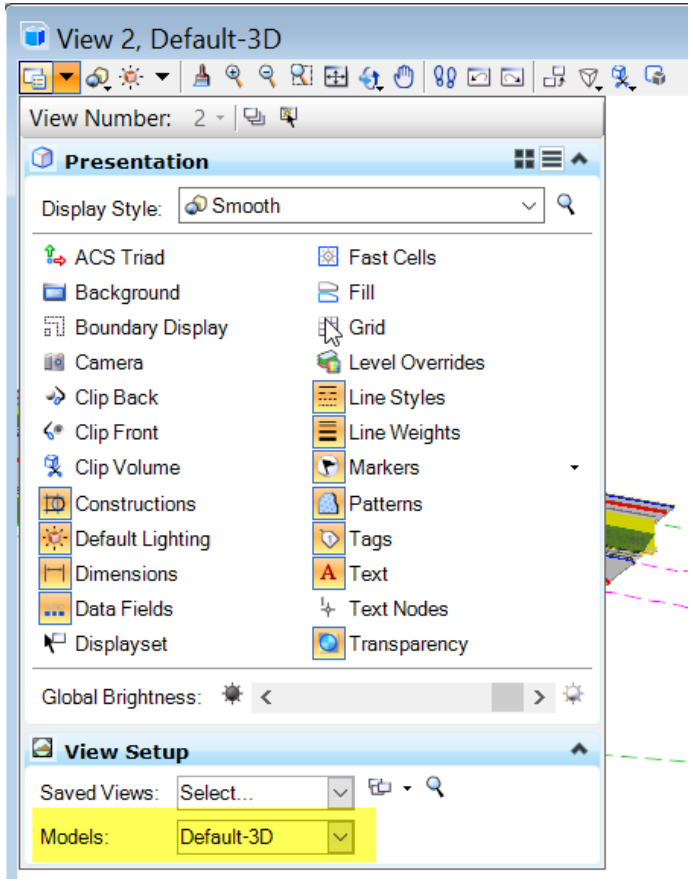
Managing the Models and Views

- 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.

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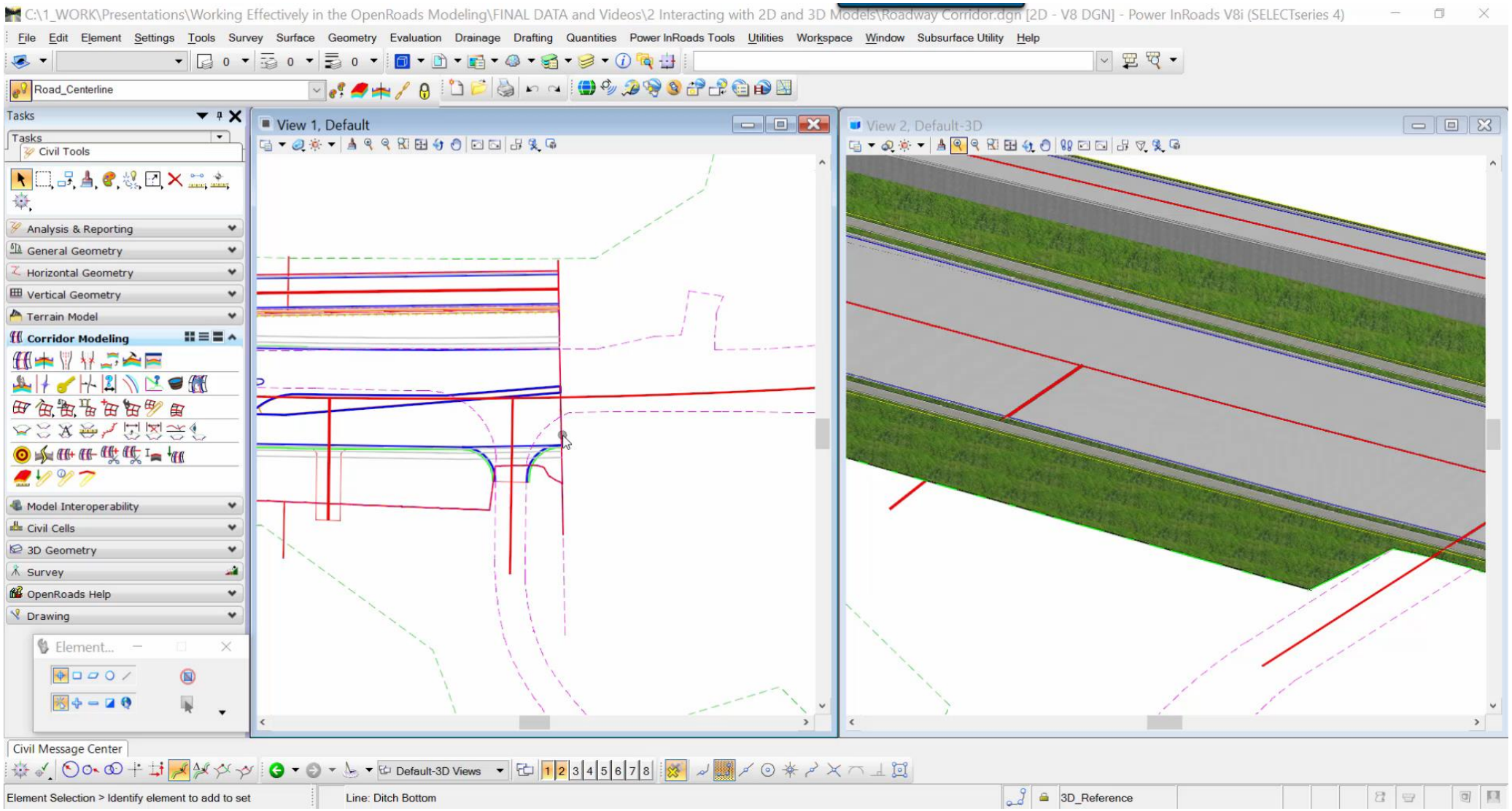
Demonstration – Managed Models



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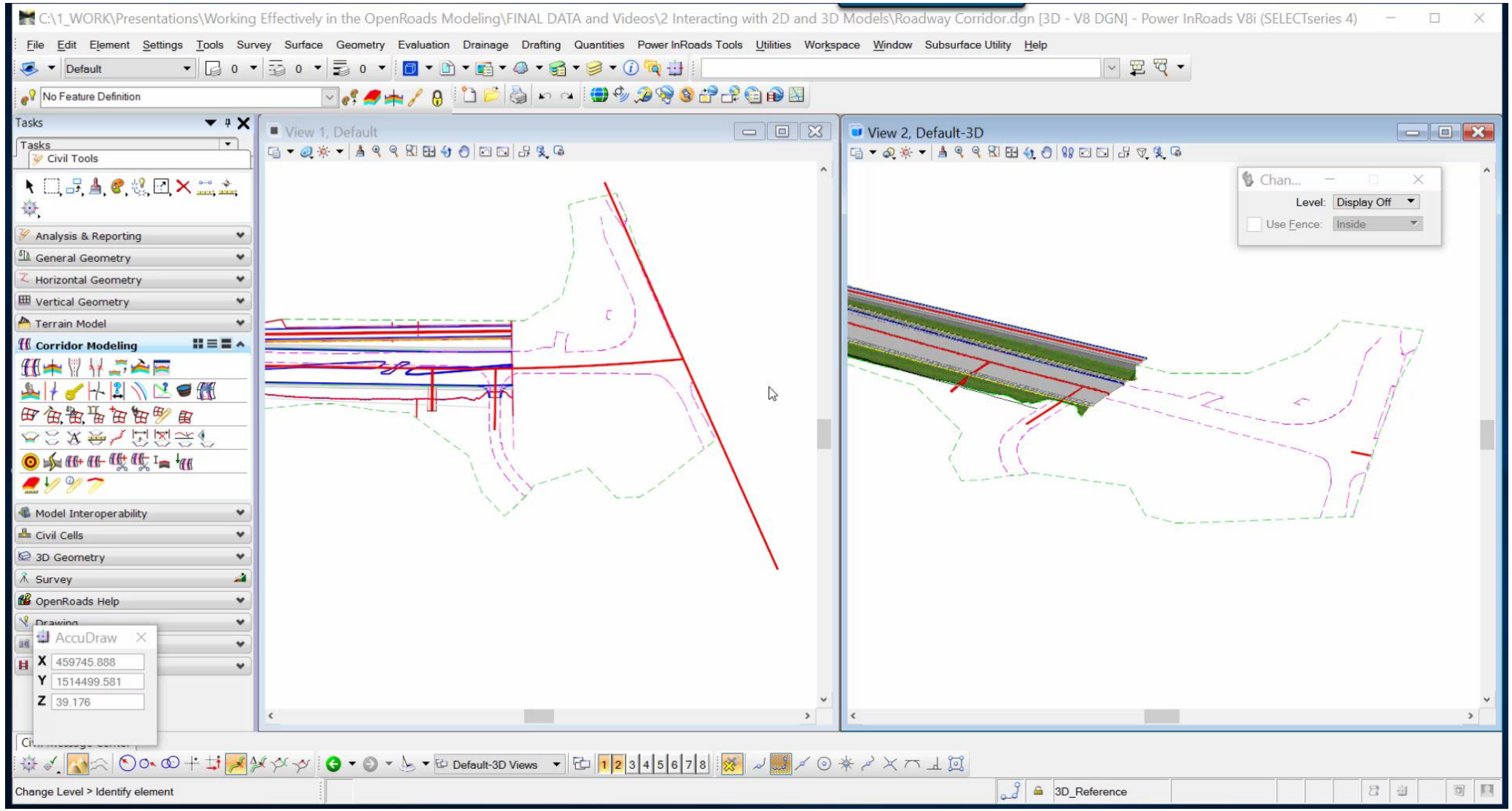
What about Reference Files?

- 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



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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.

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