



OpenSite



OpenRail

OpenRoads



Civil Product Update

Presented by:
Ian Rosam, Director Civil Product Management, Bentley Systems, Inc.





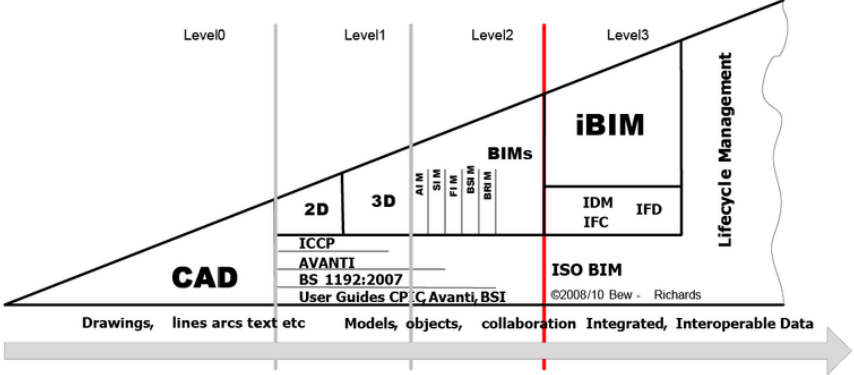
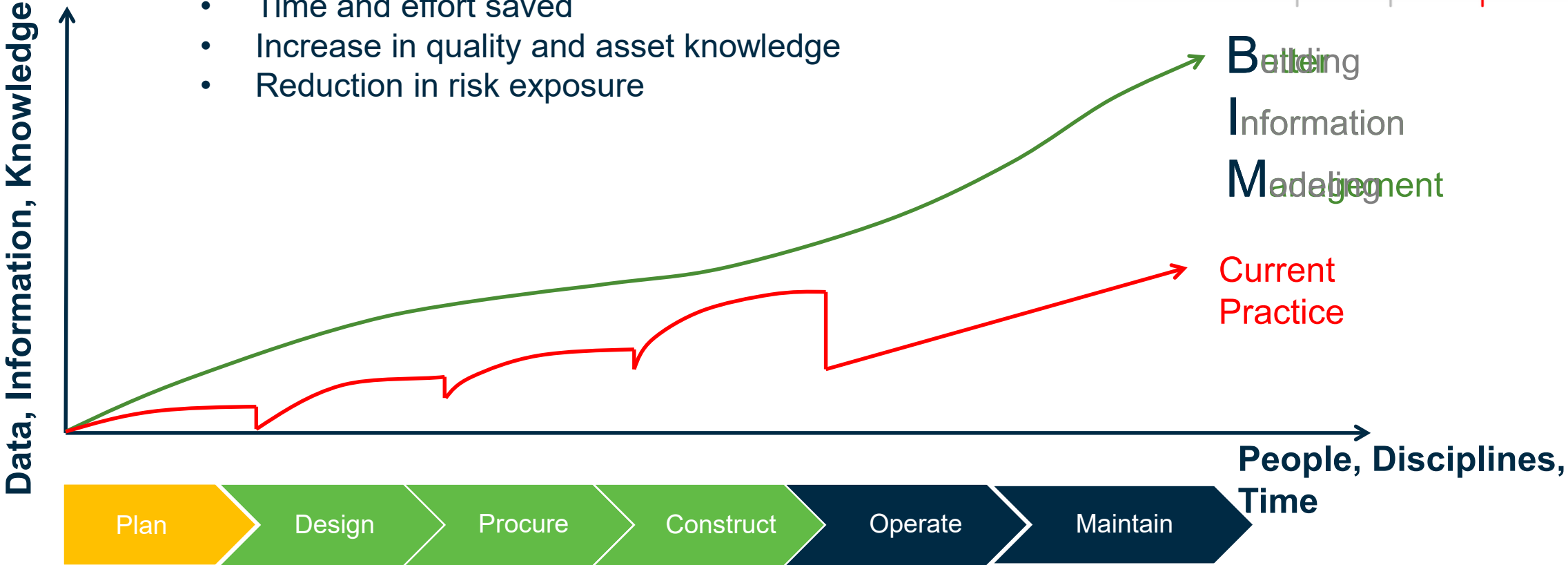
Agenda



- **Going Digital**
- **Civil product 2019 release highlights**
 - **Conceptual Design with OpenRoads / OpenRail Conceptstation**
 - **Detail Design with OpenSite / OpenRoads / OpenRail Designer CE**

Going Digital....

- Time and effort saved
- Increase in quality and asset knowledge
- Reduction in risk exposure



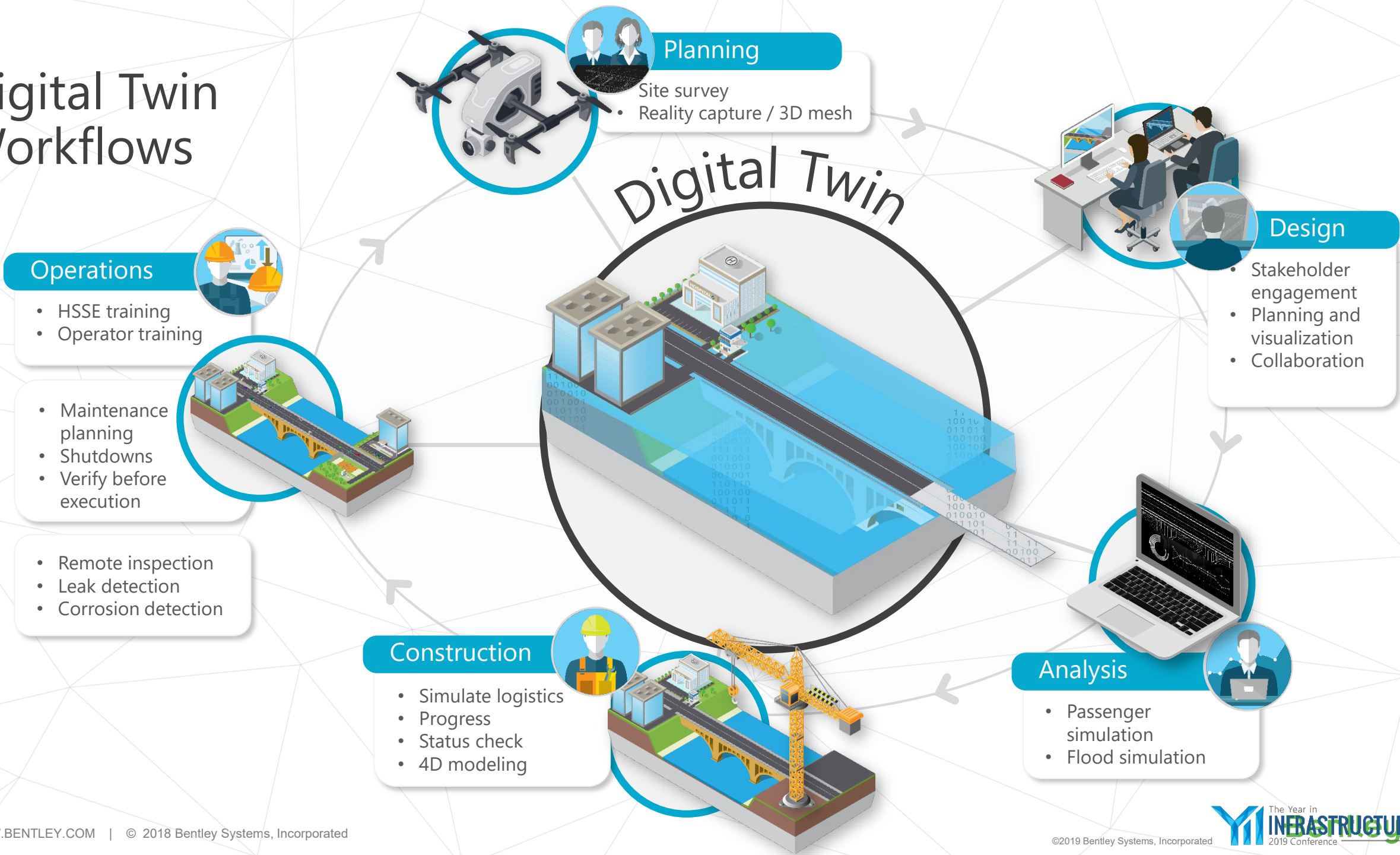
The background of the image is a composite of three aerial views. The top-left view shows a city skyline with a train on tracks. The top-right view shows a construction site with excavators and a building under construction. The bottom view shows a highway interchange with cars and a parking lot. Three overlapping circles (green, orange, and blue) are in the center, each containing a label. A dark grey horizontal bar is behind the text.

CAD

BIM

Digital Twin

Digital Twin Workflows





CAD

BIM

Digital Twin



OpenRoads

Bentley®



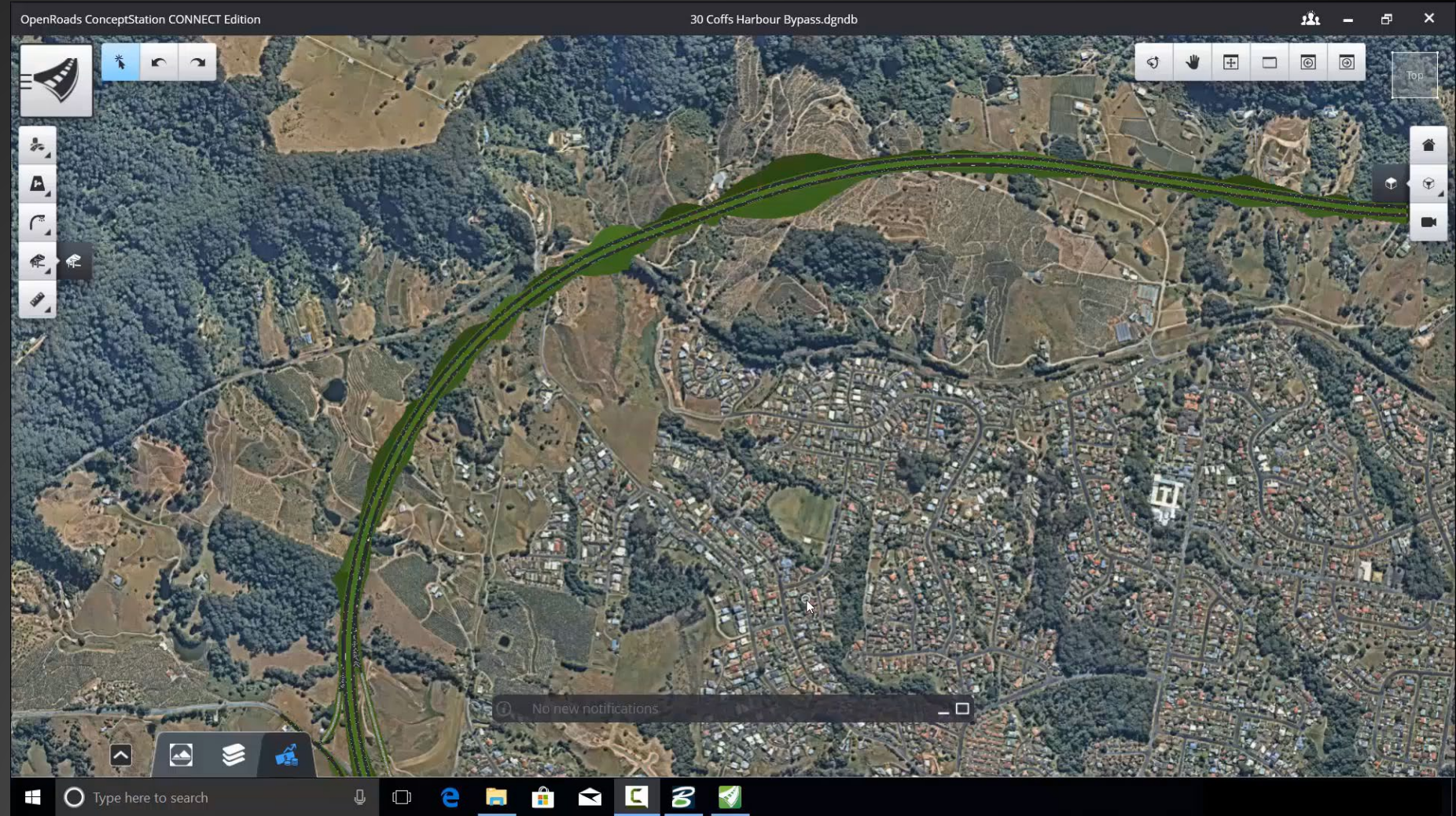
Conceptual Design



Conceptual Design with OpenRoads ConceptStation



Conceptual Design



Conceptual Design with OpenRail ConceptStation

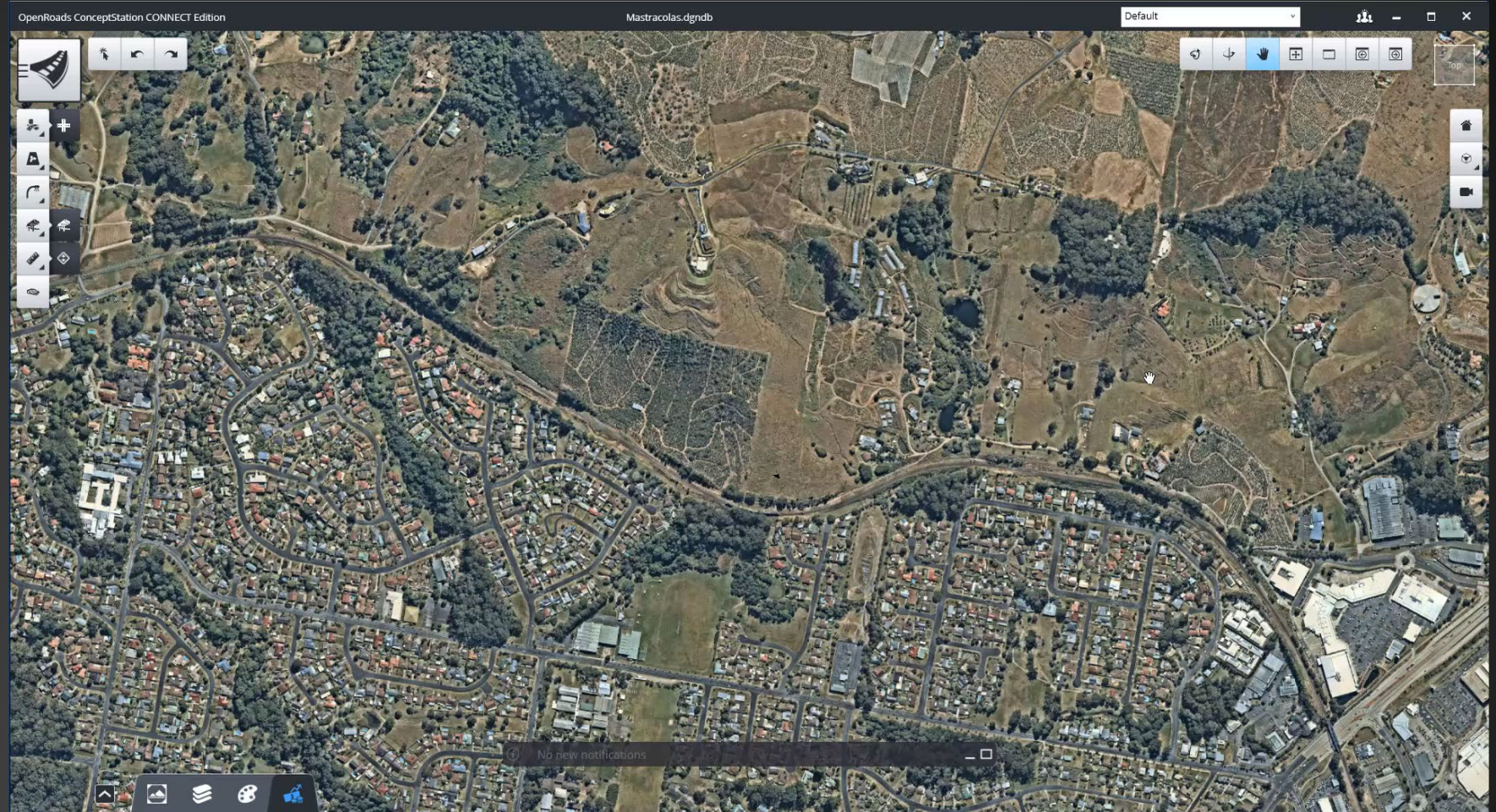


Conceptual Design



Conceptual Design with OpenRoads / OpenRail ConceptStation

Addition of Design Scenarios



Conceptual Design with OpenRoads / OpenRail ConceptStation

Design
Scenario
Costing

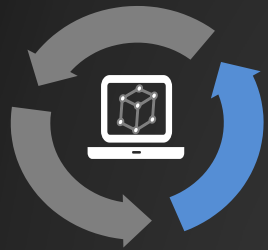




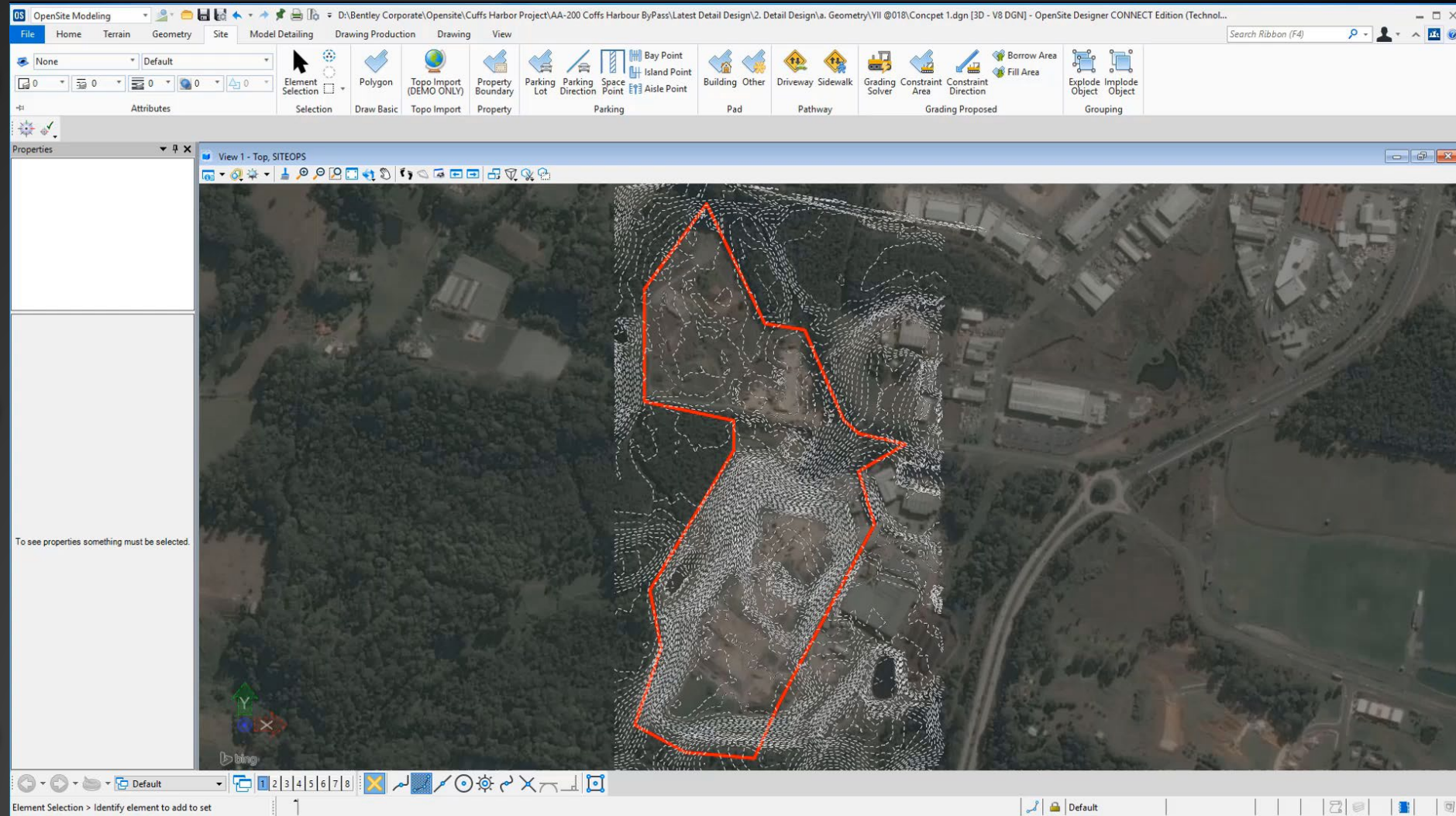
Detailed Design



OpenSite Designer

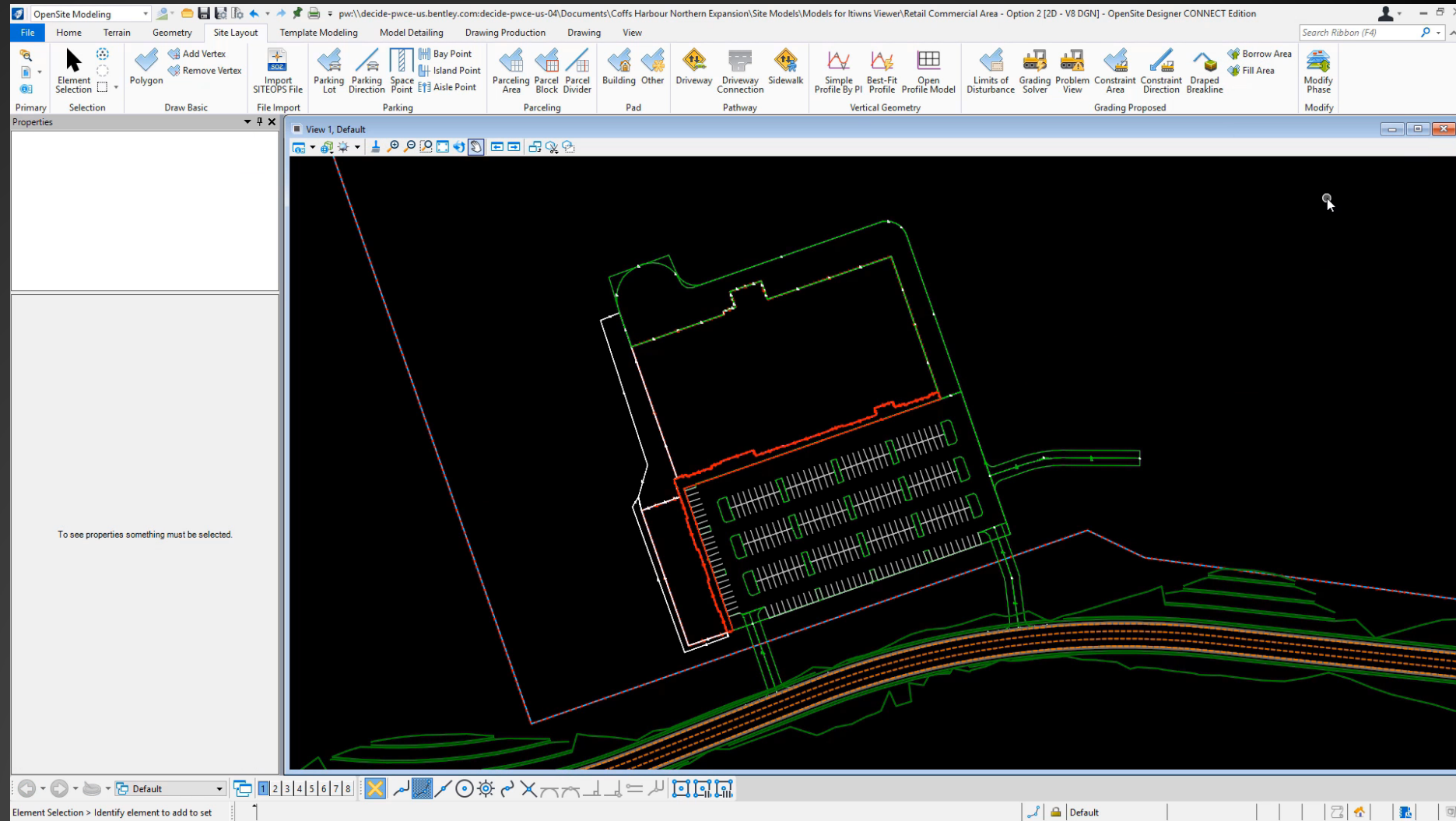


Detailed Design



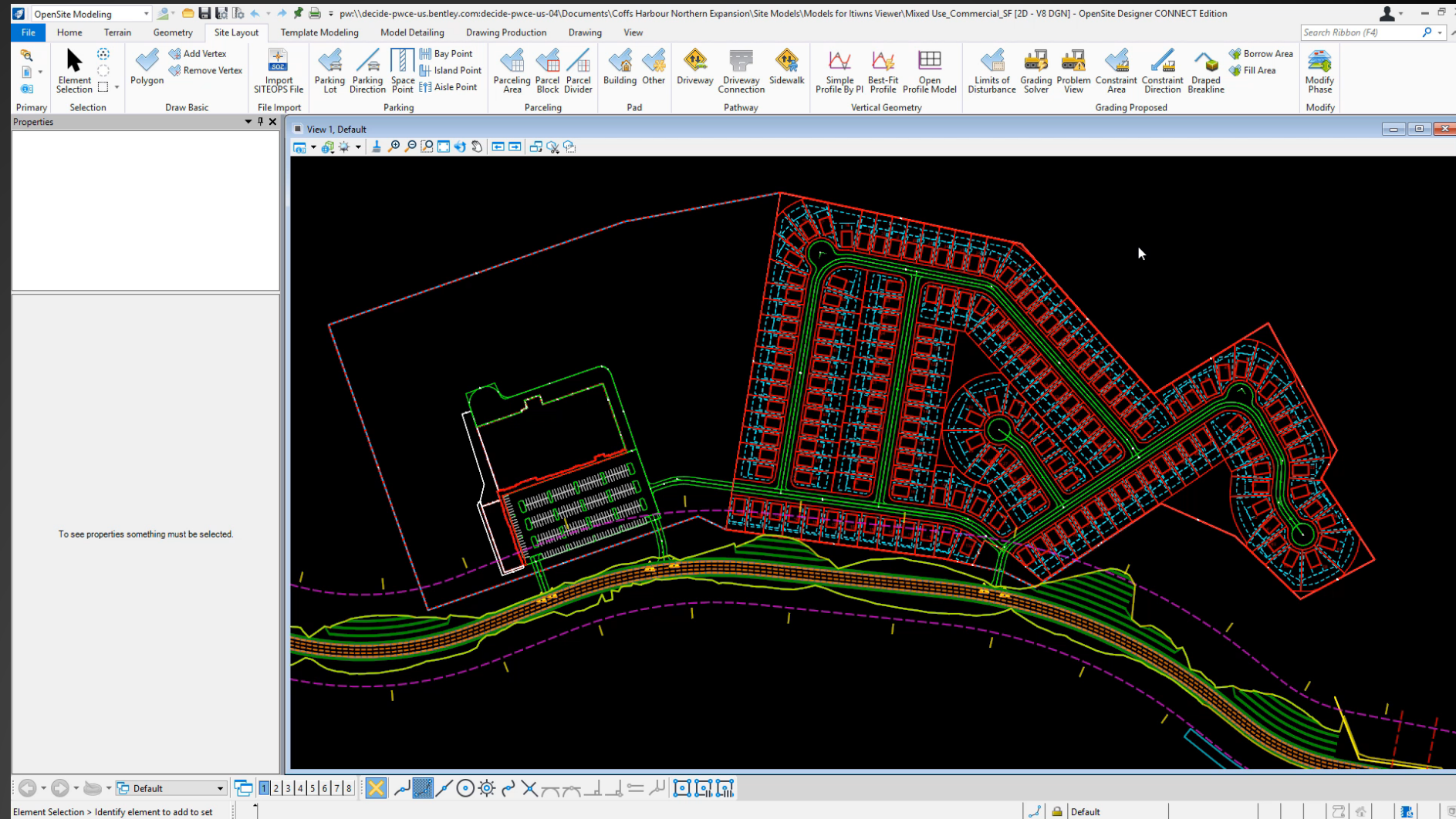
OpenSite Designer Enhancements

Residential



OpenSite Designer Enhancements

Powerful Grading Optimisation

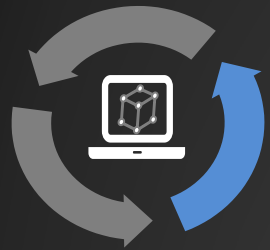


OpenSite Designer Deliverables

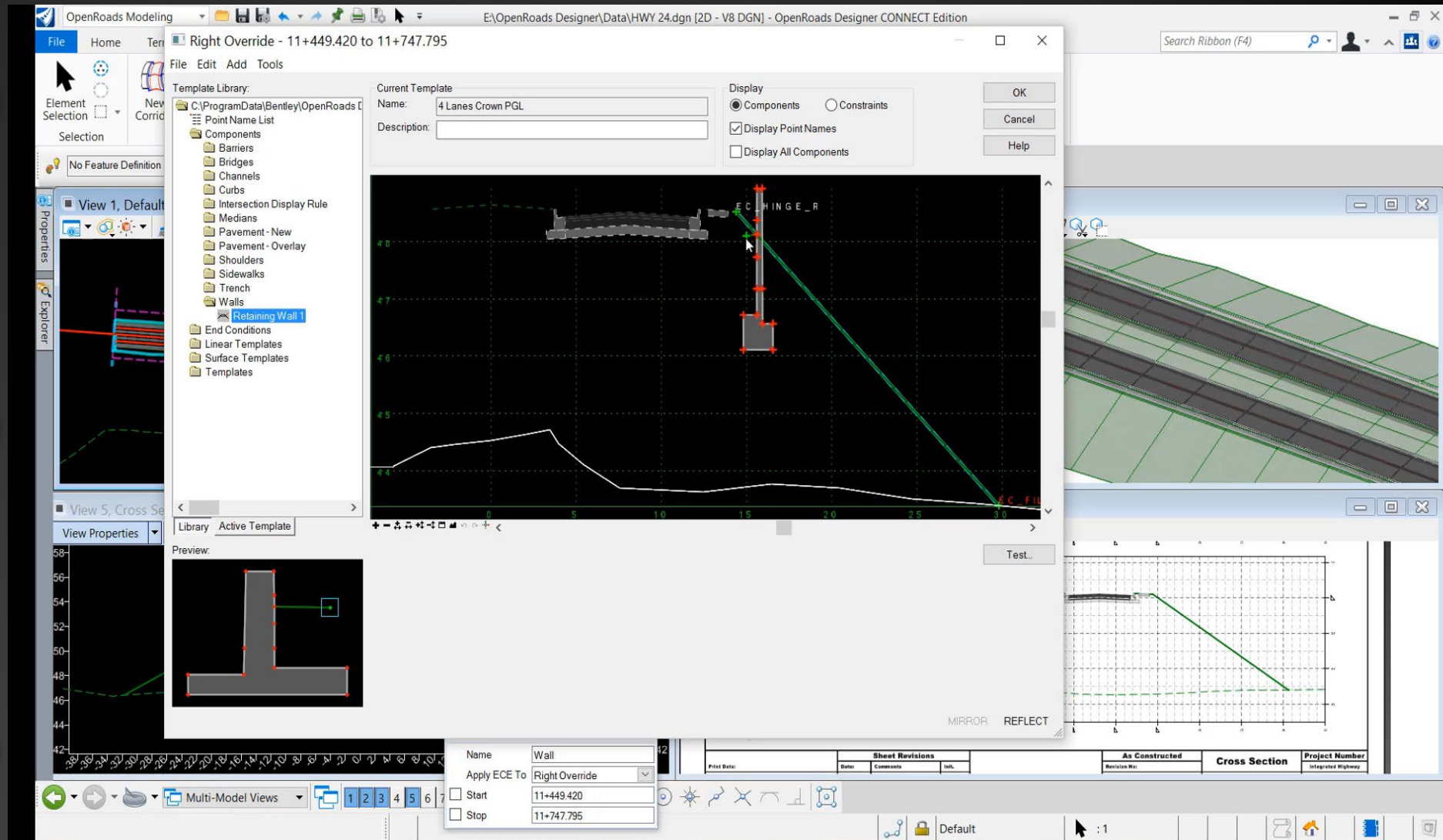
Visual



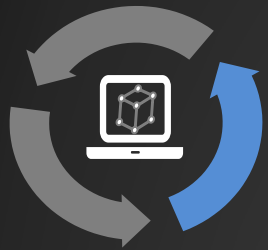
OpenRoads Designer - Modeling



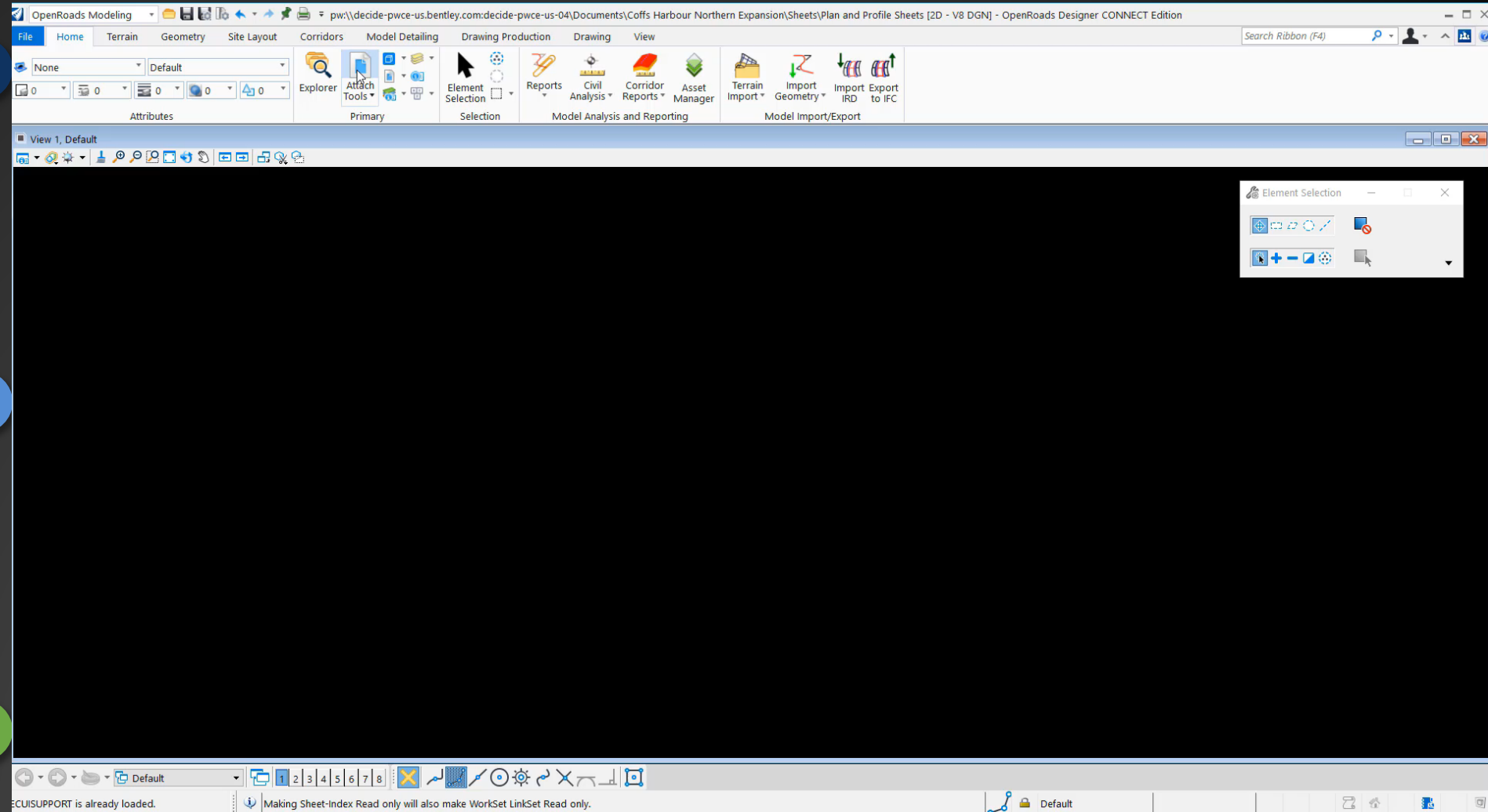
Detailed Design



OpenRoads Designer - Deliverables

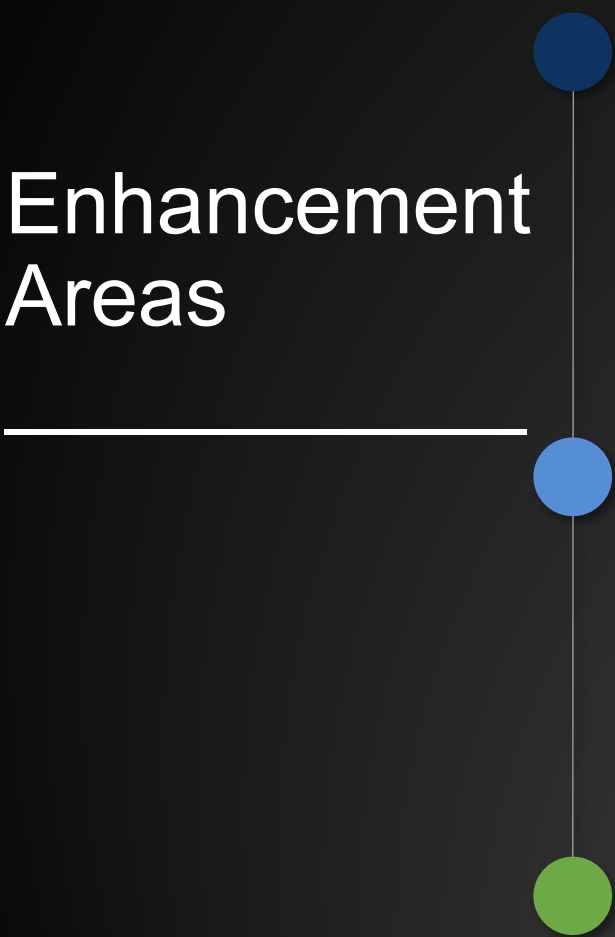


Detailed Design



Detailed Design with Open 'X' - General Enhancements

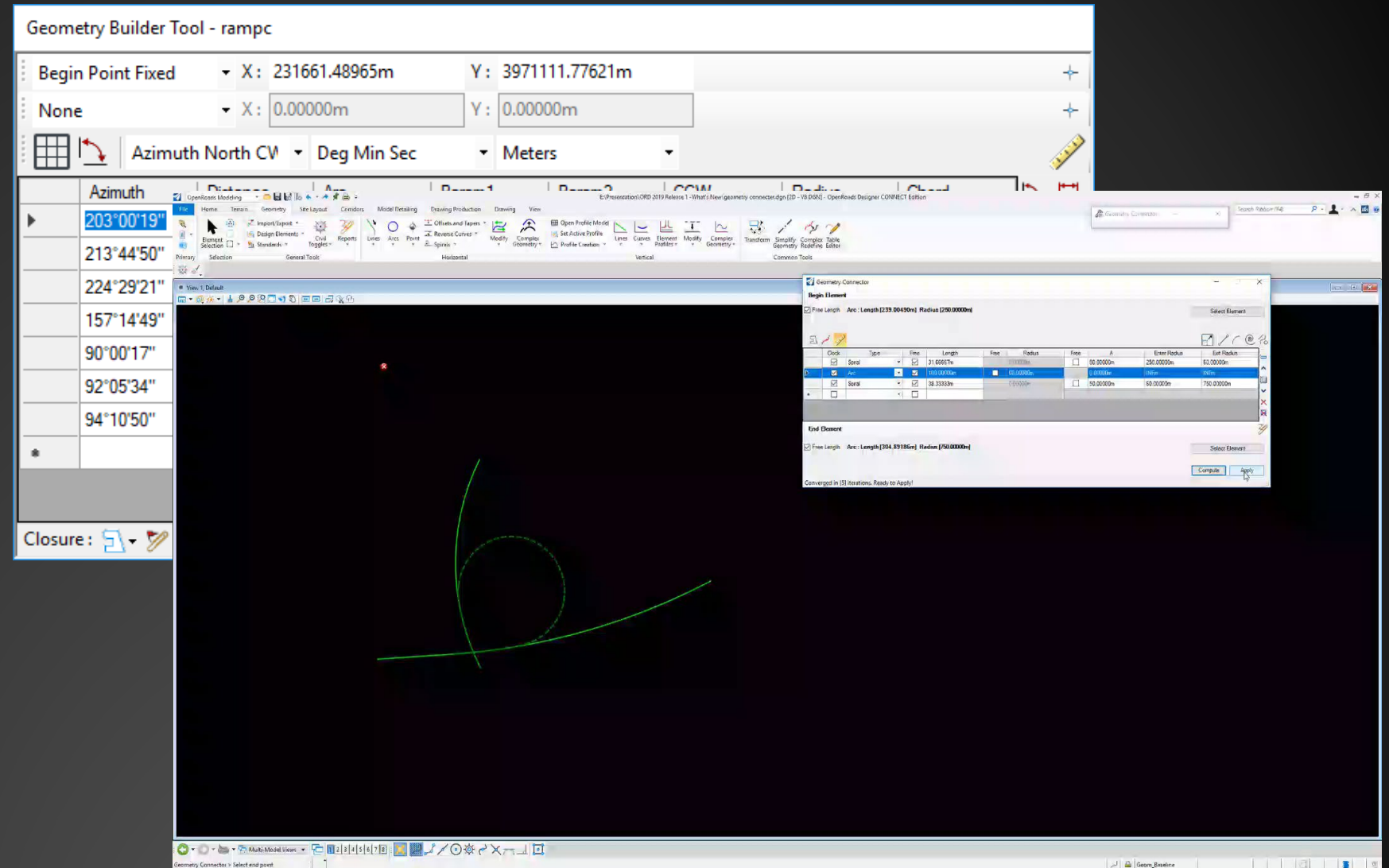
Enhancement Areas

- 
- Geometry Workflows
 - Modeling
 - Model Analytics
 - Deliverables and Handover

Geometry Modeling Improvements

Geometry workflows

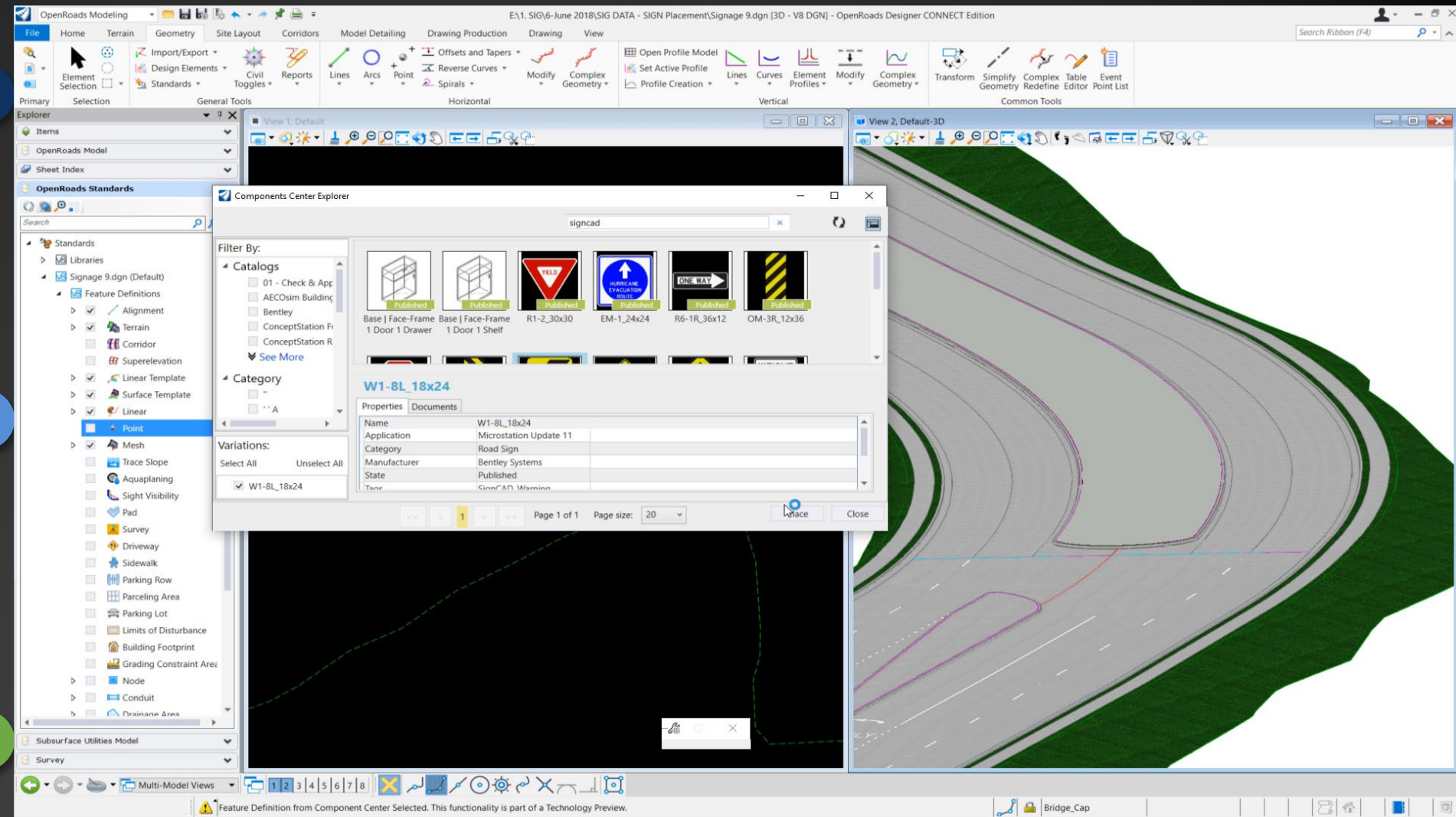
Geometry Builder and Connection Editor



Detailed Design with Open 'X' - General Enhancements

Geometry
Workflows

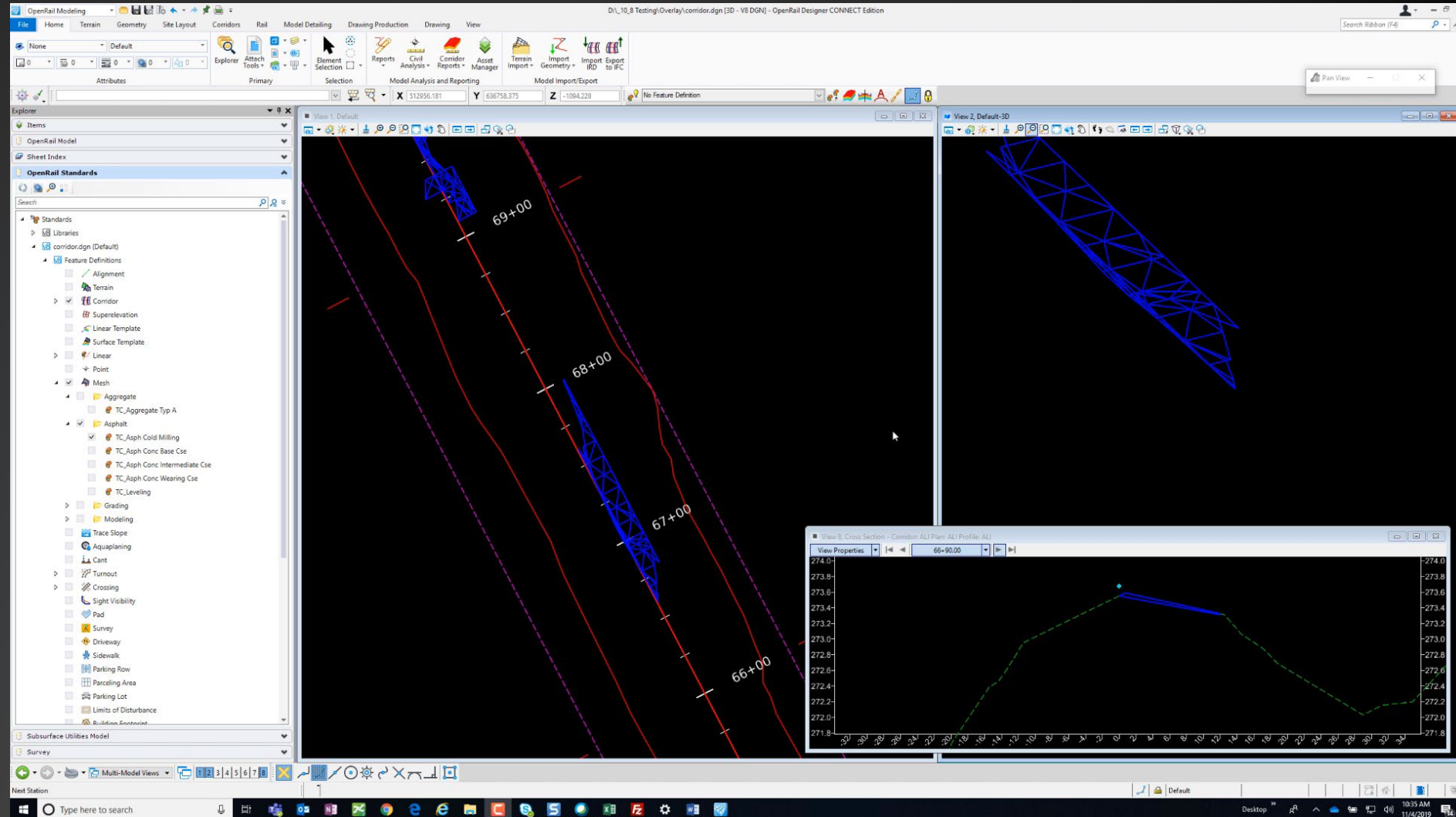
Equal Spaced
Points



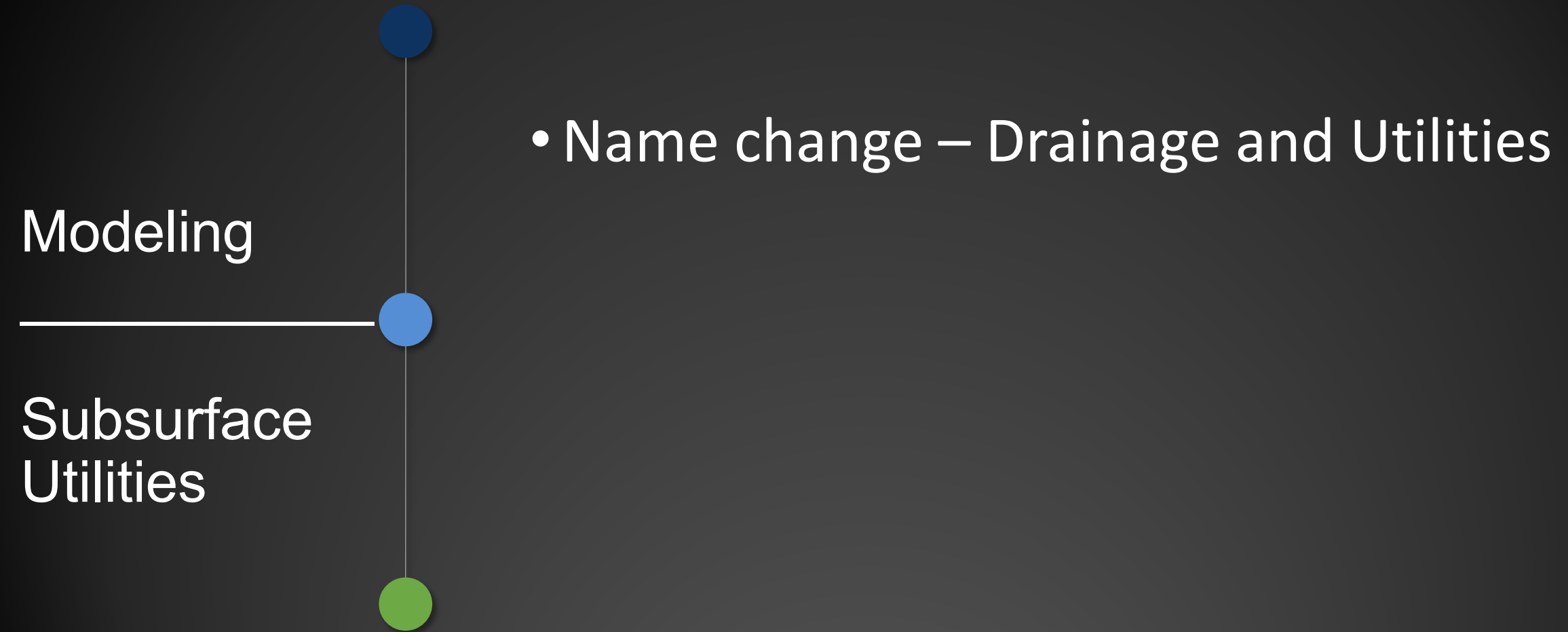
Detailed Design with Open 'X' - General Enhancements

Modeling

Overlay
Component
Improvements



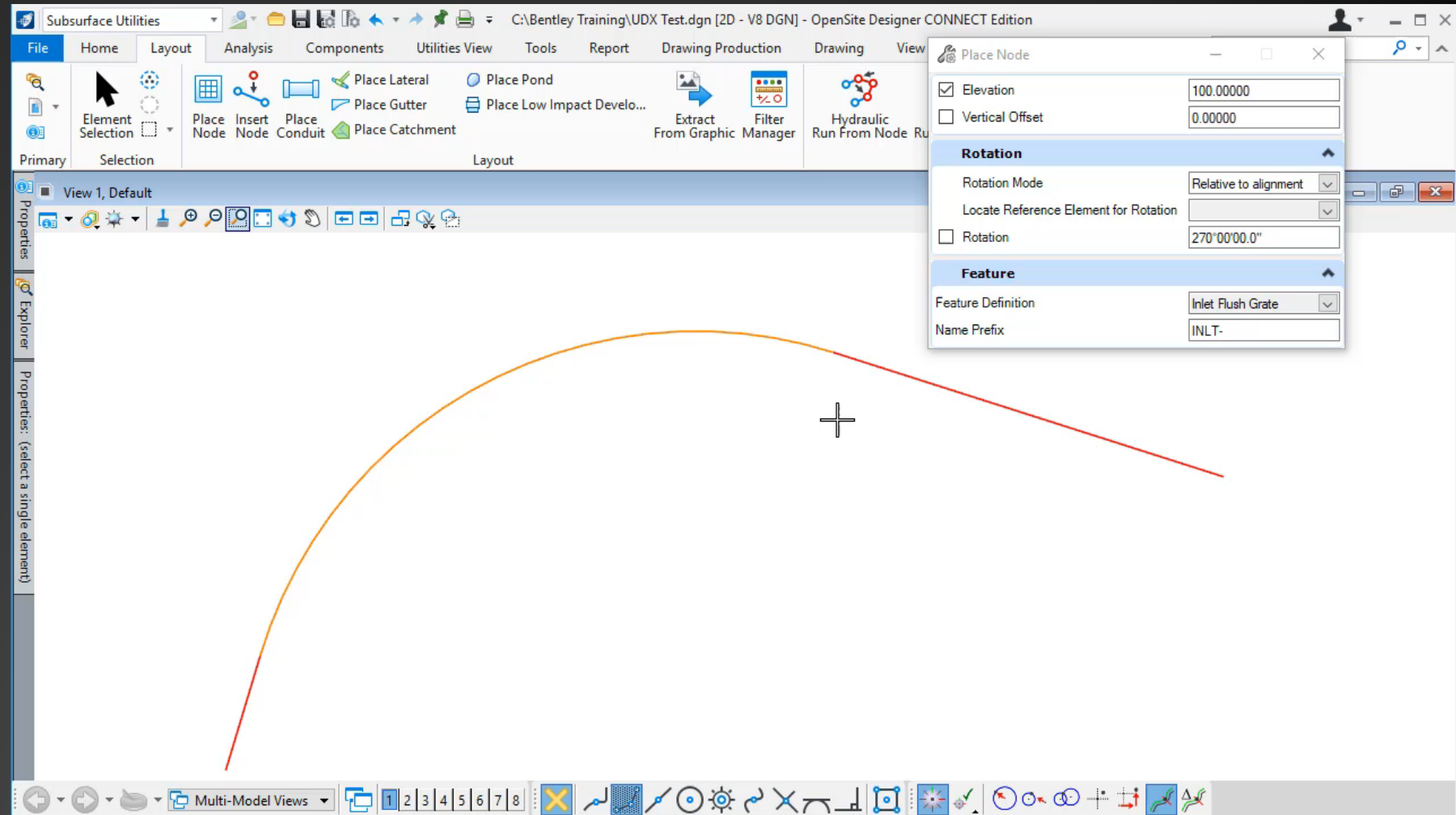
Detailed Design with Open 'X' - General Enhancements



Detailed Design with Open 'X' - General Enhancements

Drainage and
Utilities

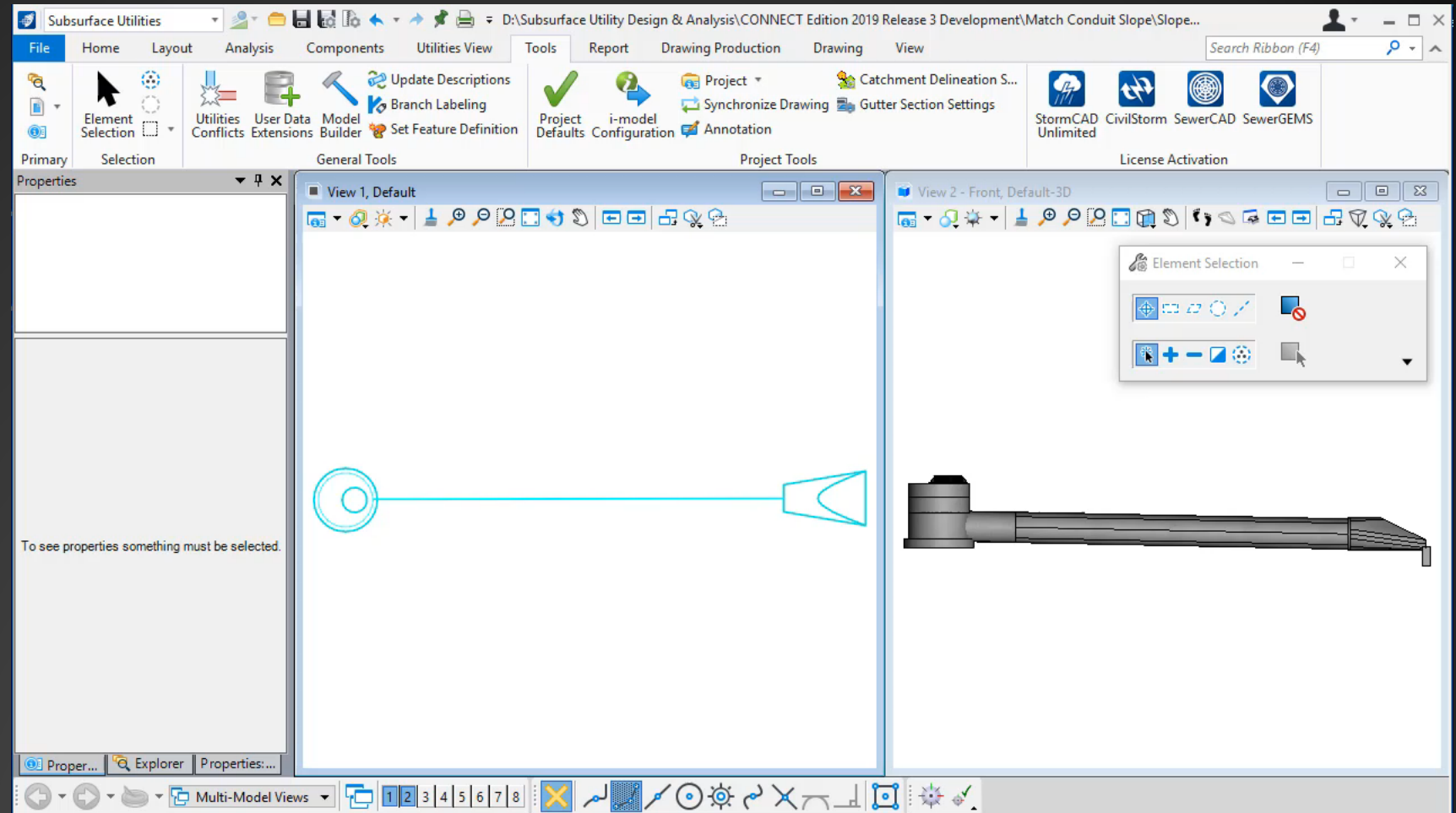
Relative
Rotation for
Nodes



Detailed Design with Open 'X' - General Enhancements

Drainage and
Utilities

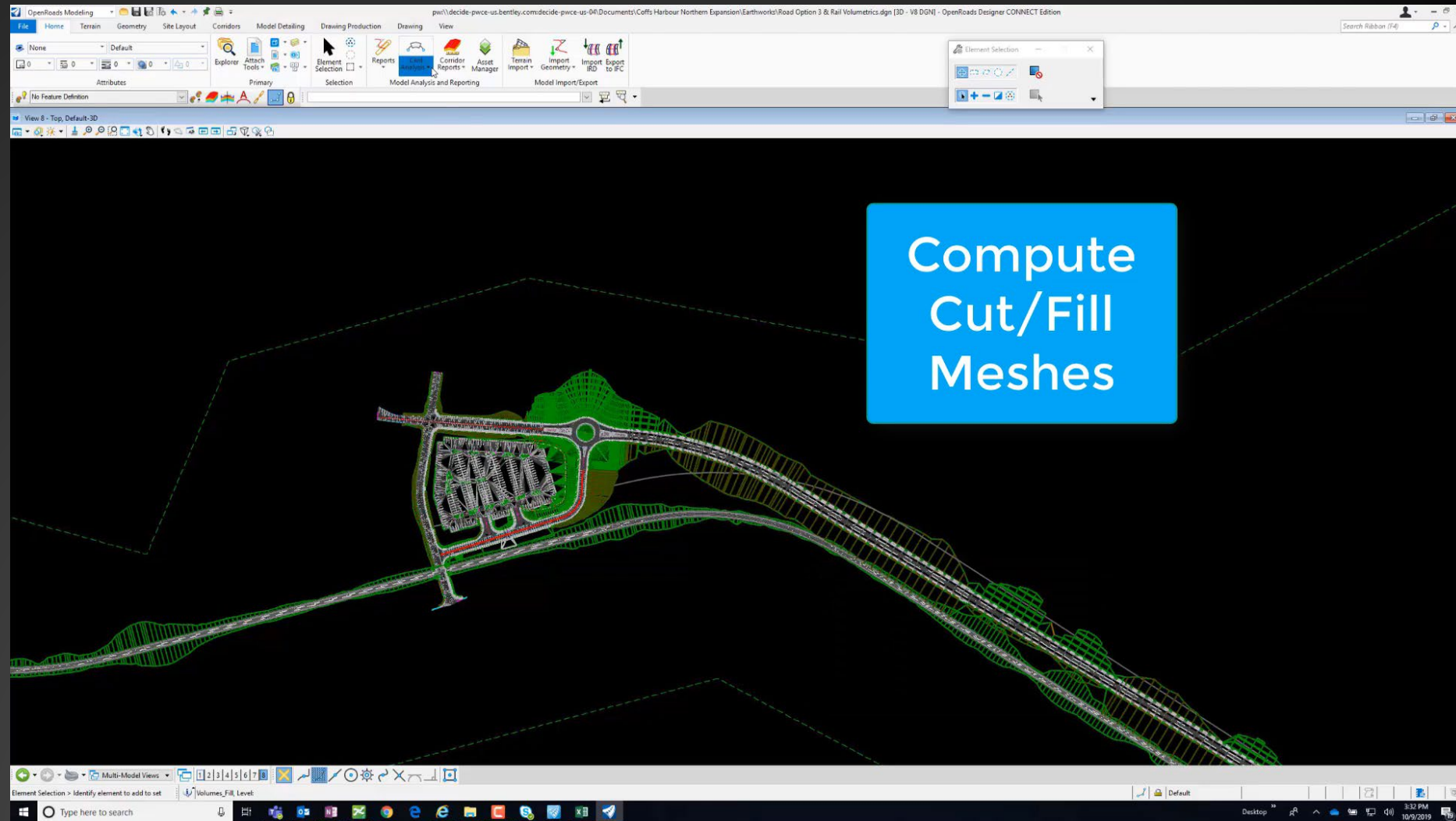
Culvert end to
match slope of
pipe



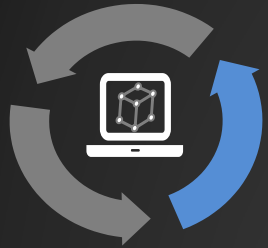
Detailed Design with Open 'X' - General Enhancements

Model Analytics

Volumetrics



OpenRail Designer



Detailed Design



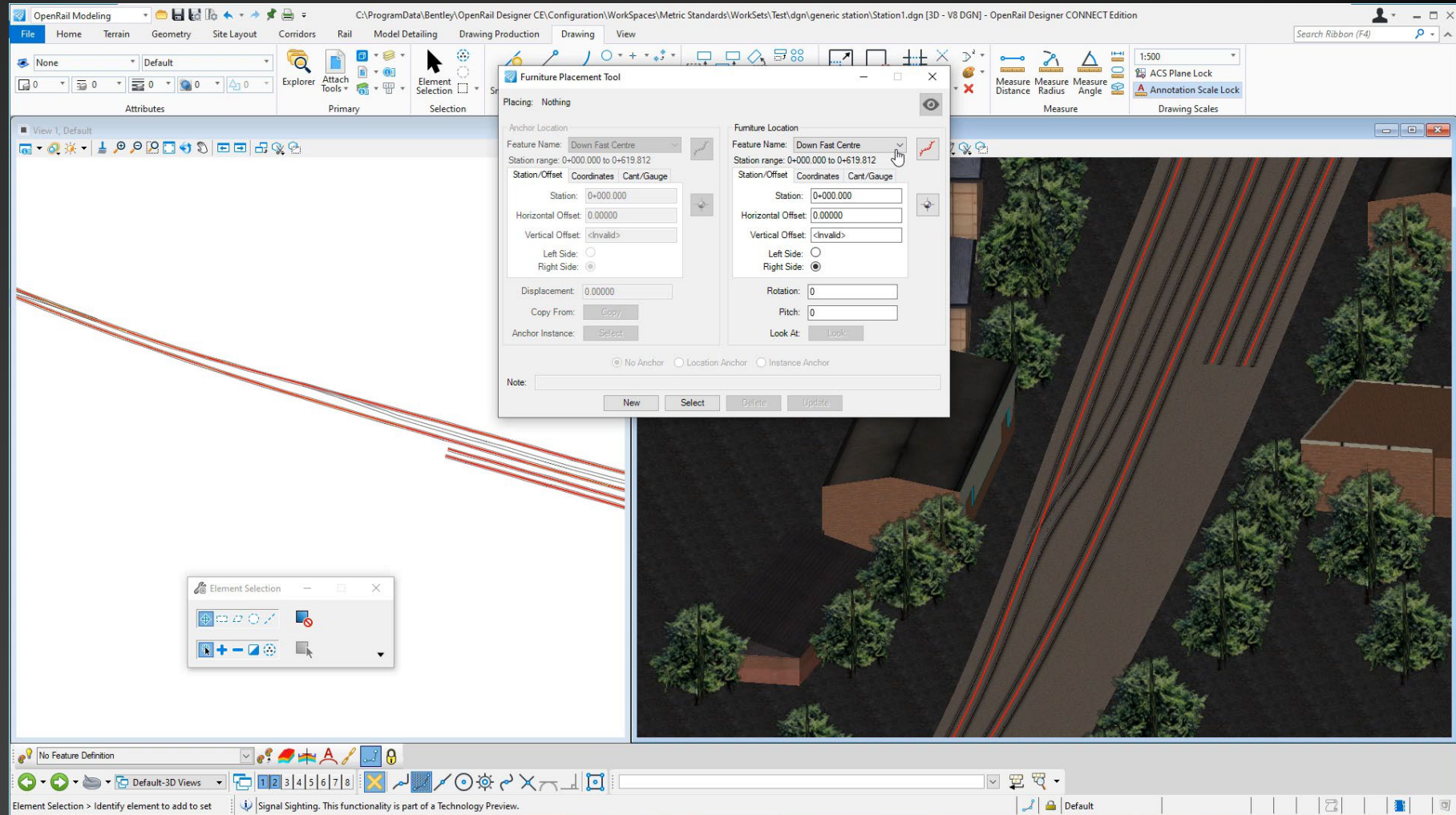
OpenRail Designer

Areas of Enhancement

- Signal Sighting tool
- Overhead line Structures

OpenRail Designer

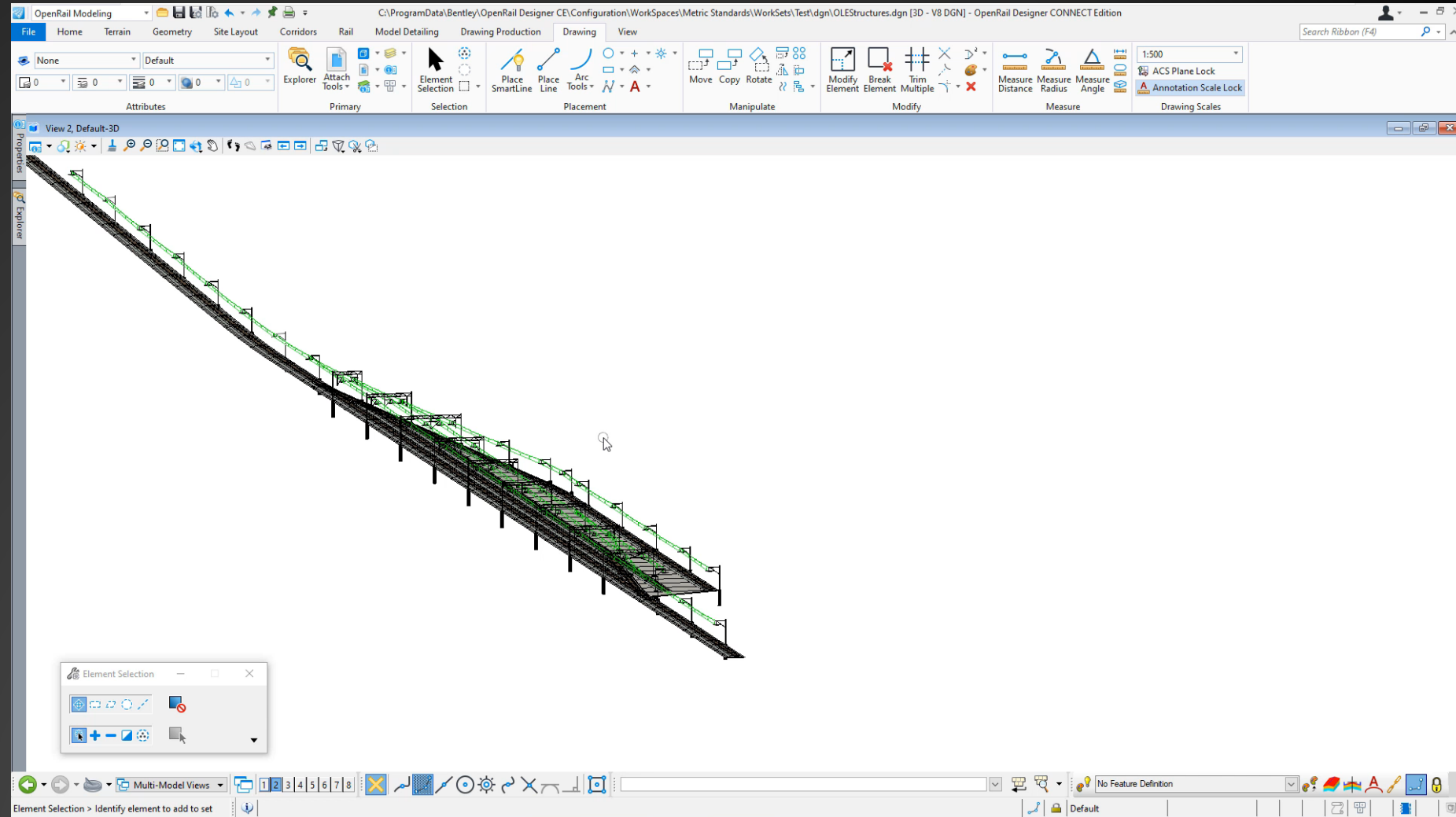
- Signal Sighting tool



OpenRail Designer

Overhead line Structures

(Technical preview)





Open 'X' Deliverables



Open 'X' Common Deliverables

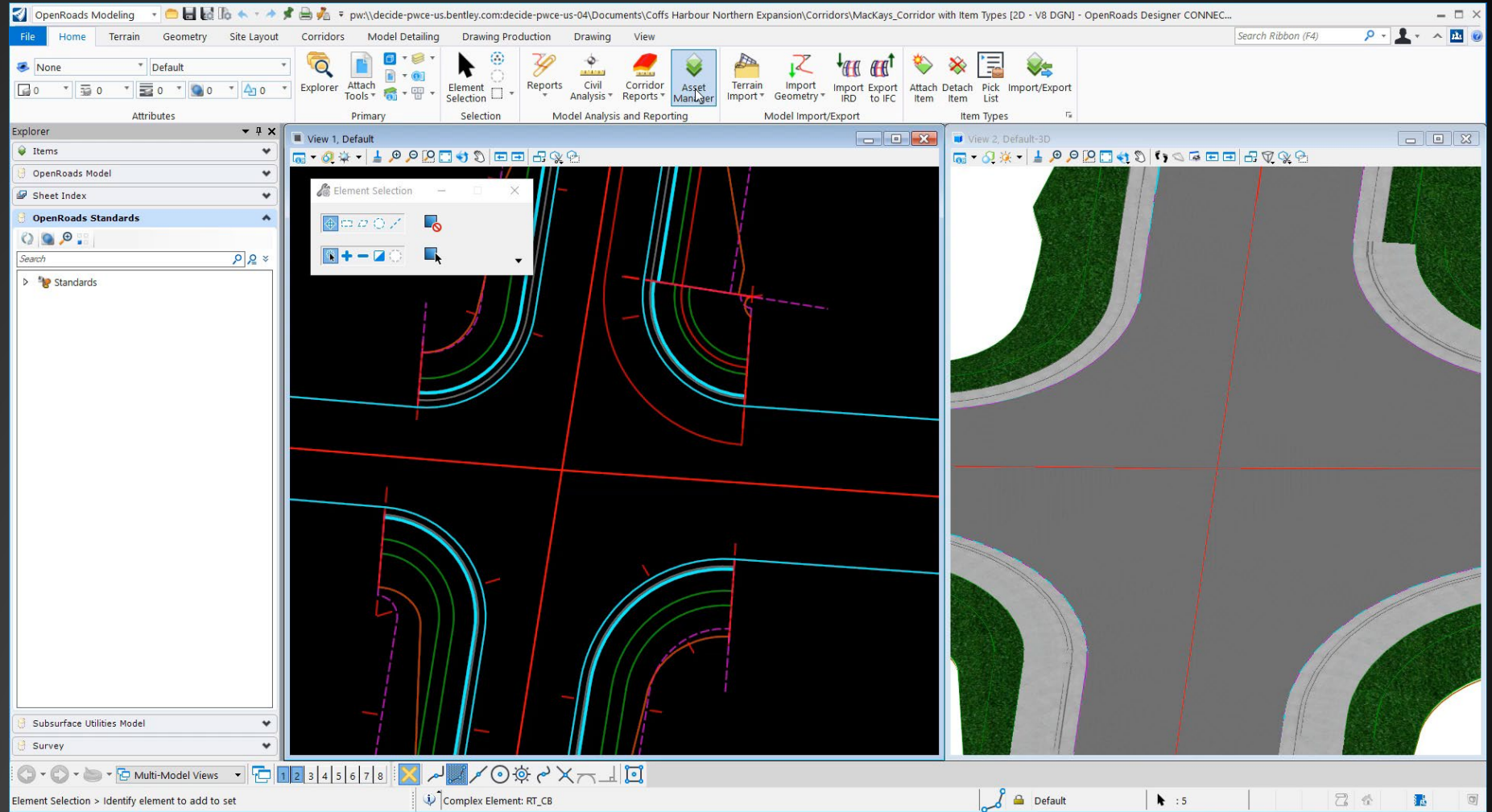
Areas of Enhancement

- BIM Attribution
- Integration with SignCAD
- Drawing Production
 - Allow option to create one sheet per DGN file
 - Matchline drawing production capability
 - Event points added for plan / profile annotation
 - Drainage and Utilities

Open 'X' Common Deliverables

**BIM
Attribution**

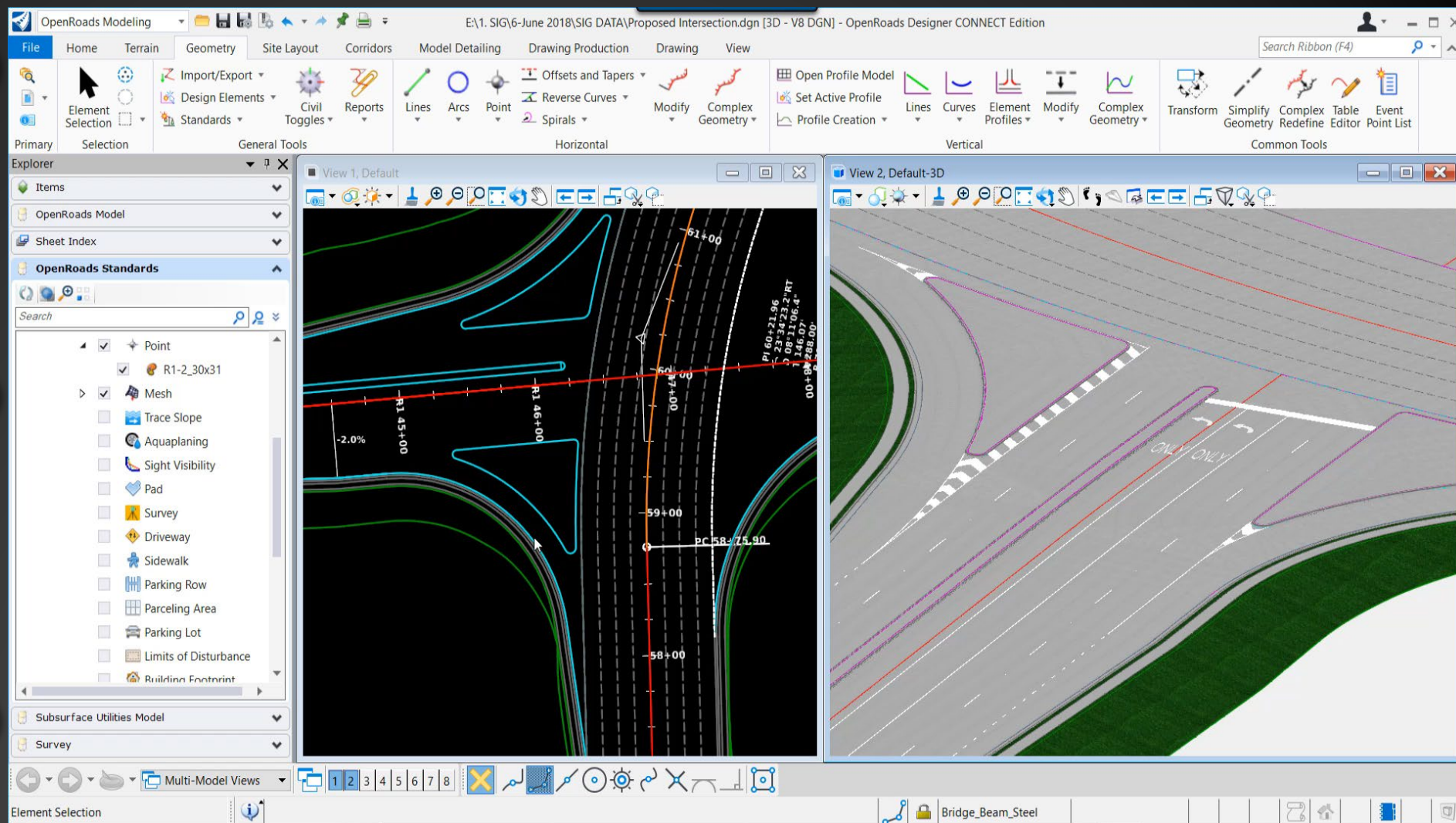
**Asset
Manager**



Open 'X' Common Deliverables

Signage

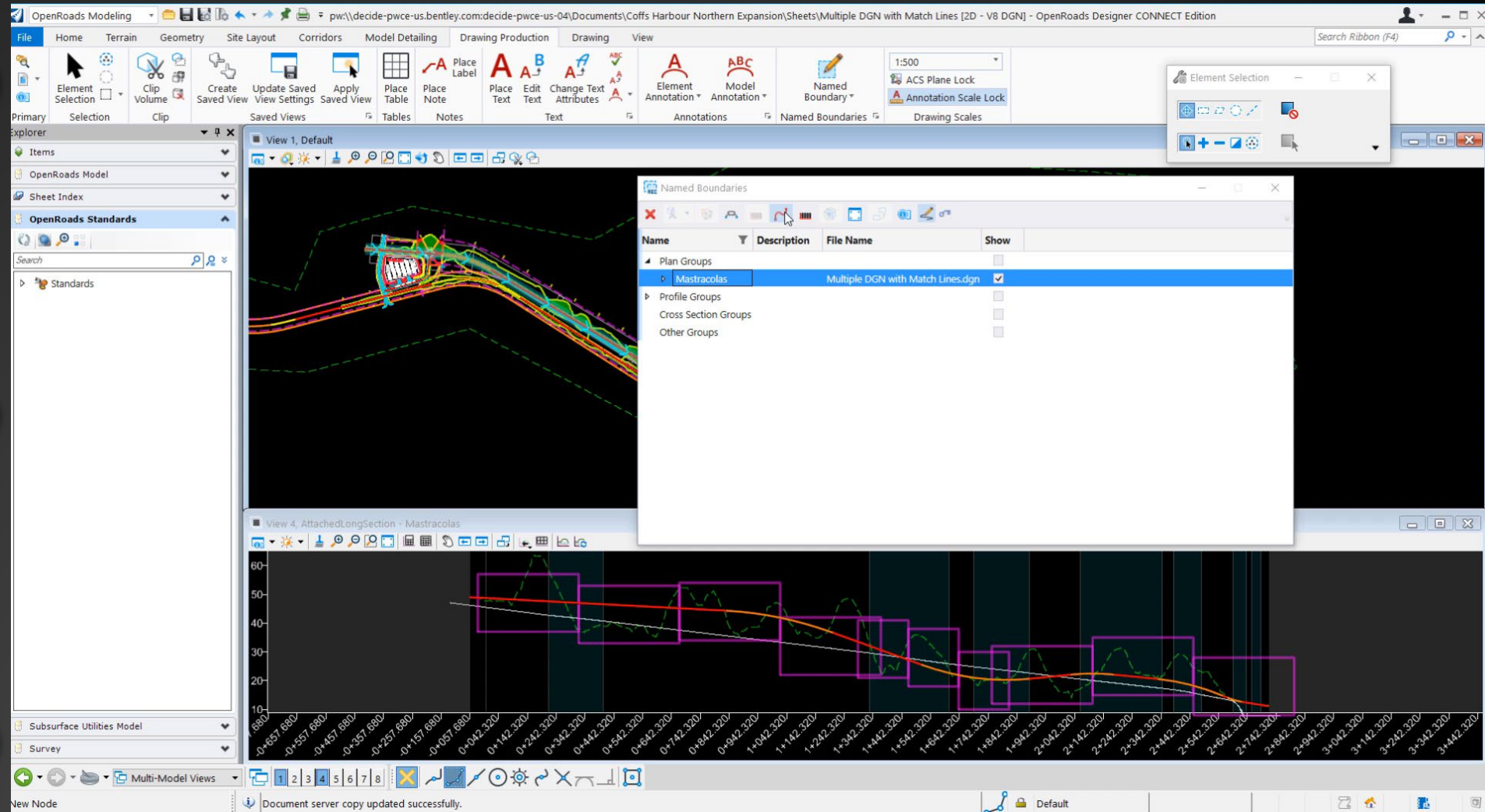
OpenRoads
SignCAD
Integration



Open 'X' Common Deliverables

Drawing
Production
Enhancements

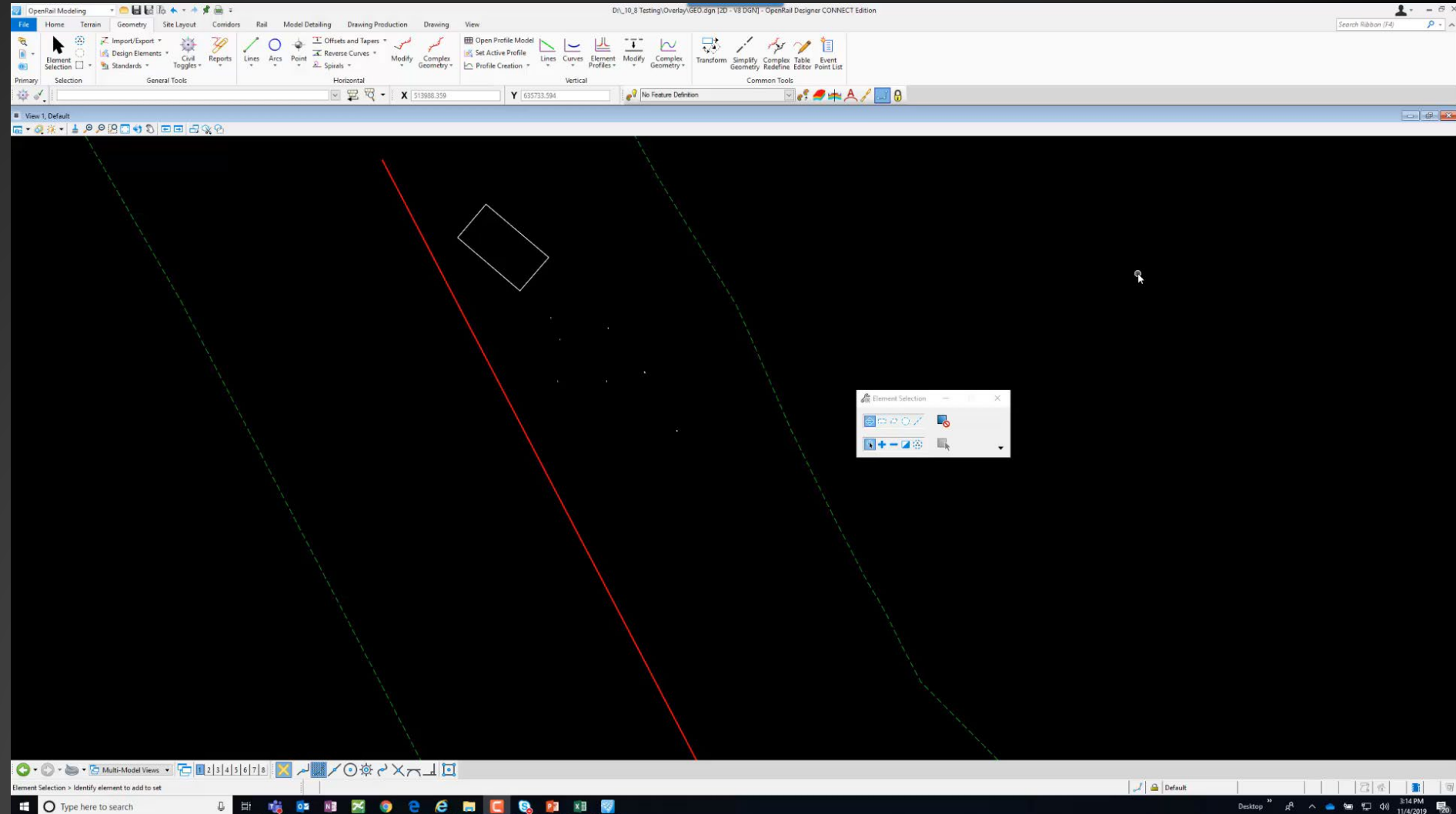
Single Sheet
DGN and
Matchlines



Open 'X' Common Deliverables

Drawing
Production
Enhancements

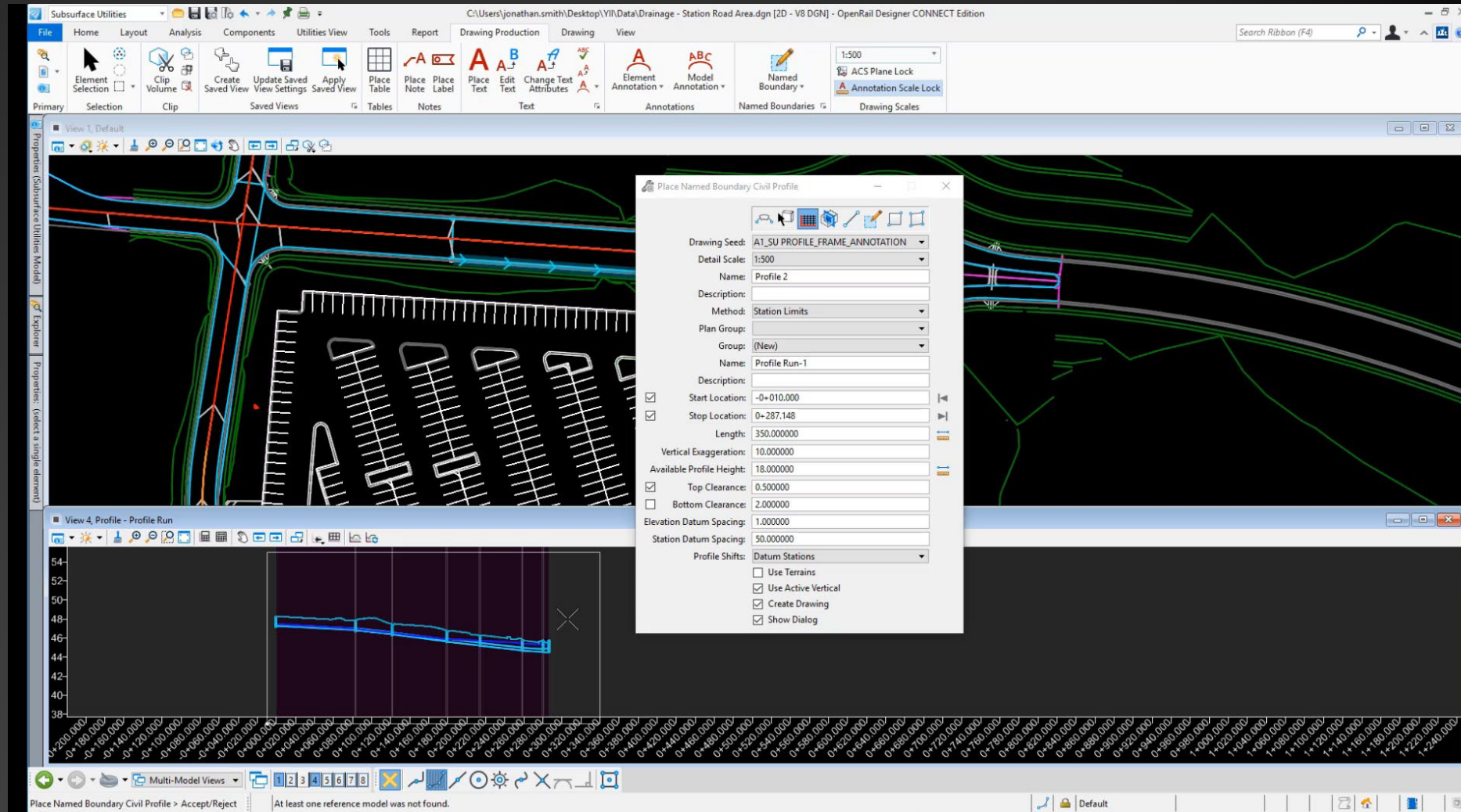
Event Points



Open 'X' Common Deliverables

Drawing
Production
Enhancements

Drainage and
Utilities

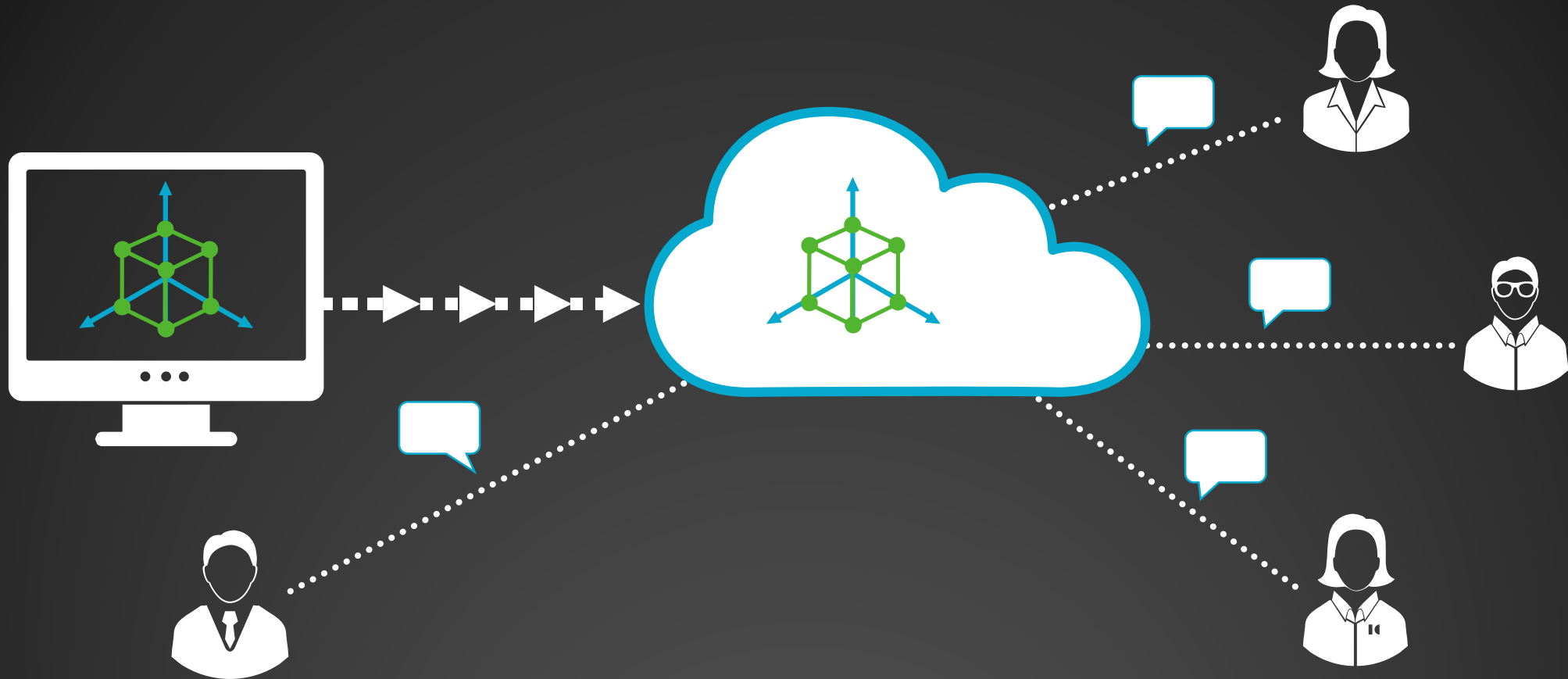




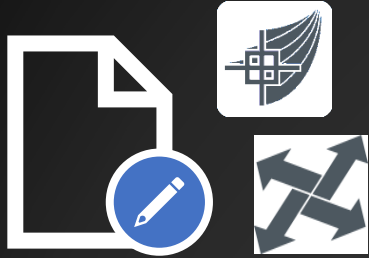
Collaborative Modeling and Review



iTwin Design Review – Ad hoc Review Workflow



Review and approval steps



1

Civil Engineer / Architect

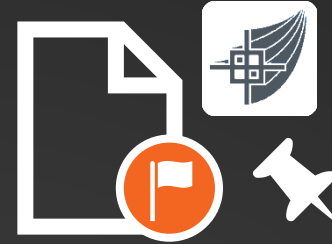
Design projects based on client and governmental requirements



2

Client

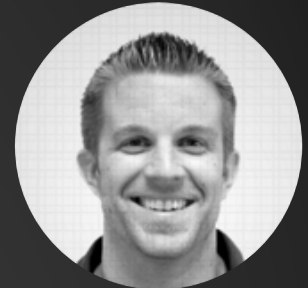
Need to work with design professional to get desired solutions



3

Civil Engineer / Architect

Review client comments, make revisions and reissue to client

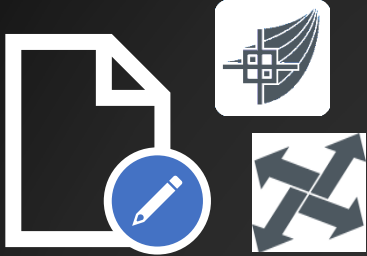


4

Client

Make decisions to accept or deny revisions

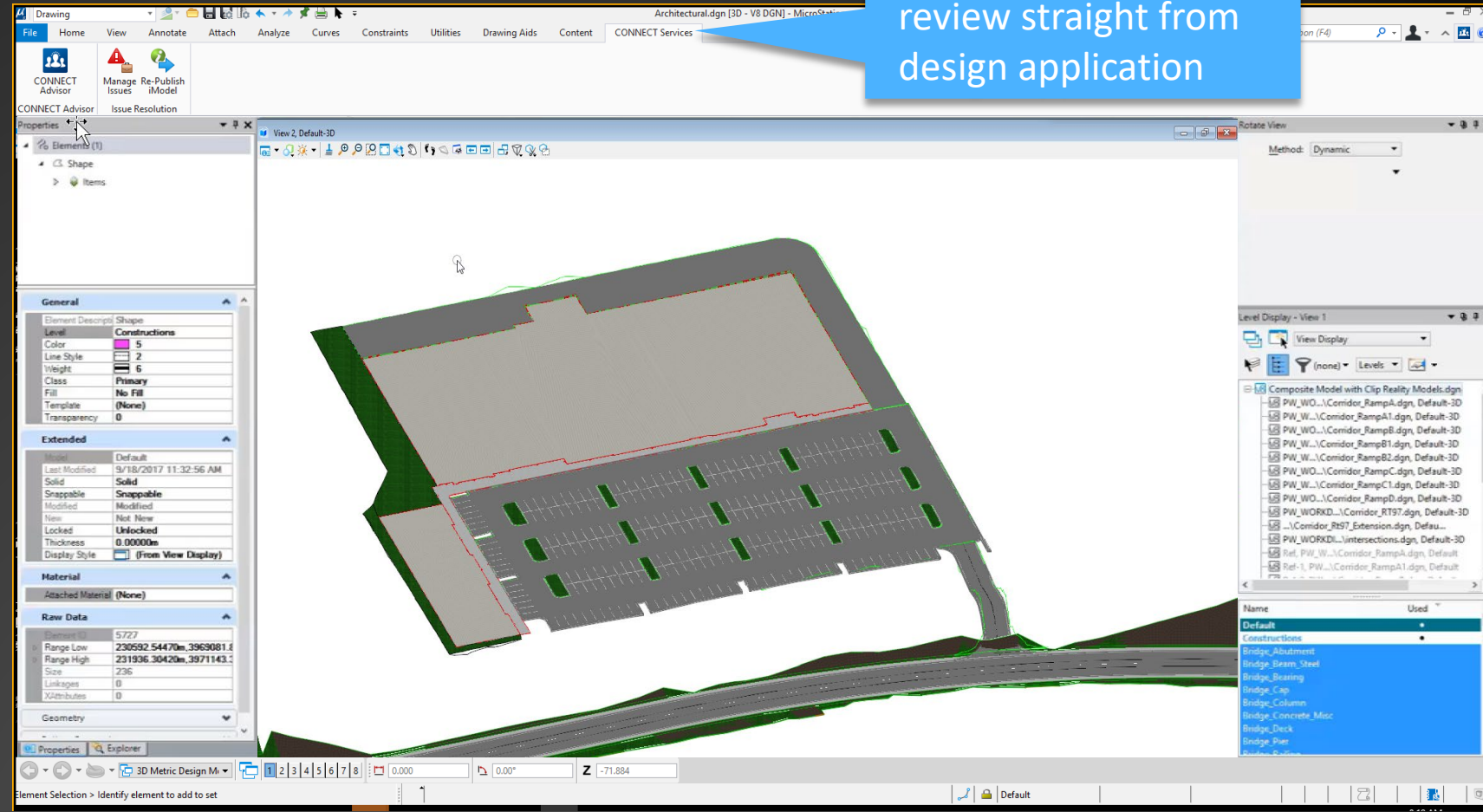
iTwins Design Review



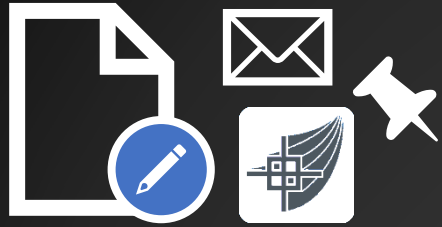
1

Engineer/Architect creates a 3D Design Model. He can do this either in the design application, or from ProjectWise. From within the Design application, the iTwin (iModel) can be published to push it into a review per a digital workflow.

Sending the design/project for review straight from design application

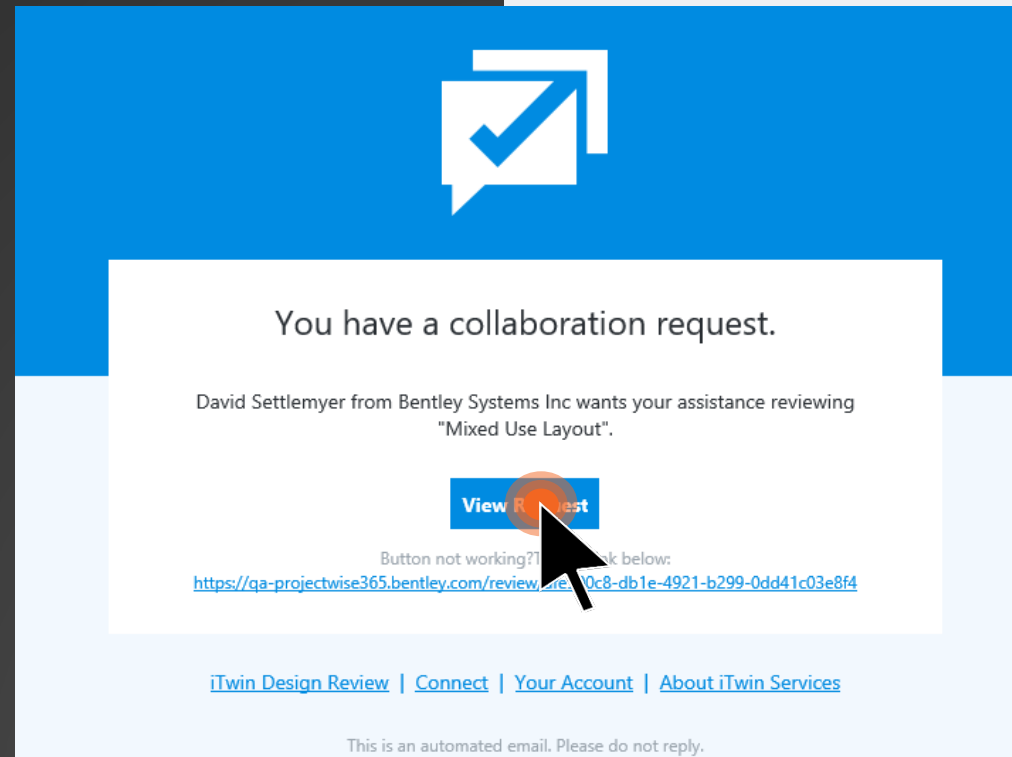
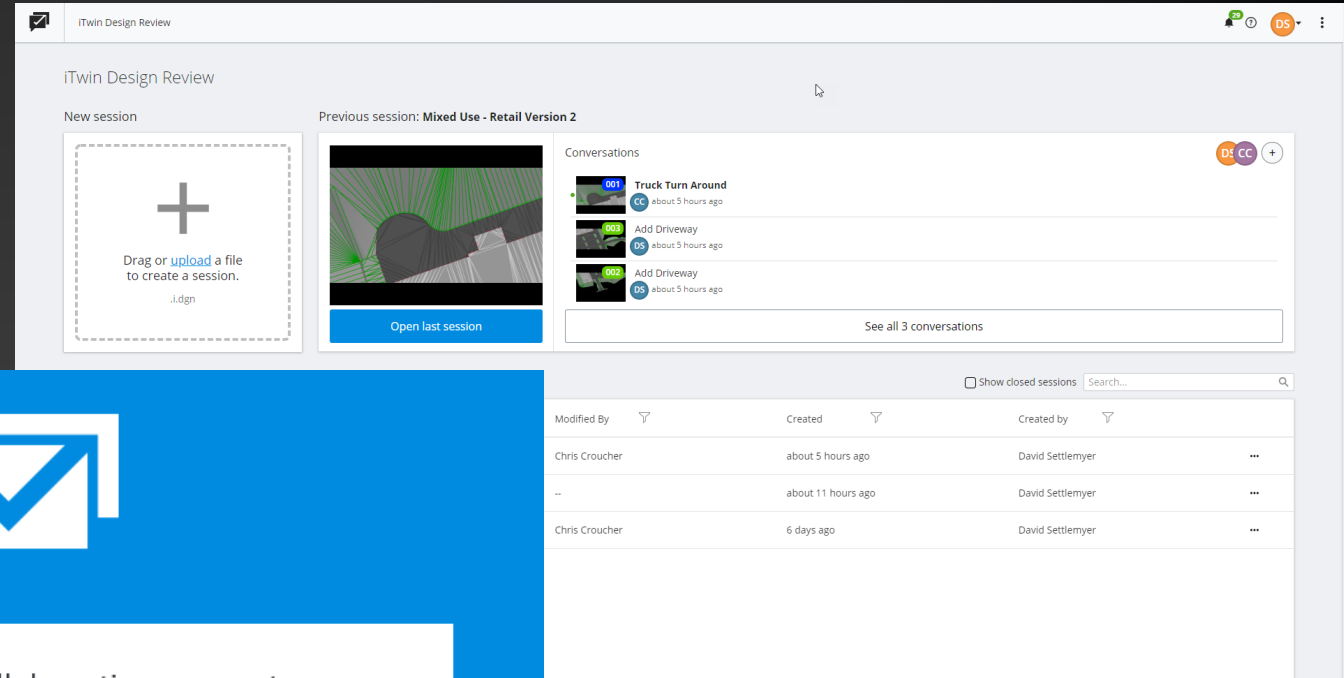


iTwins Design Review



2

Client is the one who has to review the design. He receives a notification via email and/or from the application Portal.

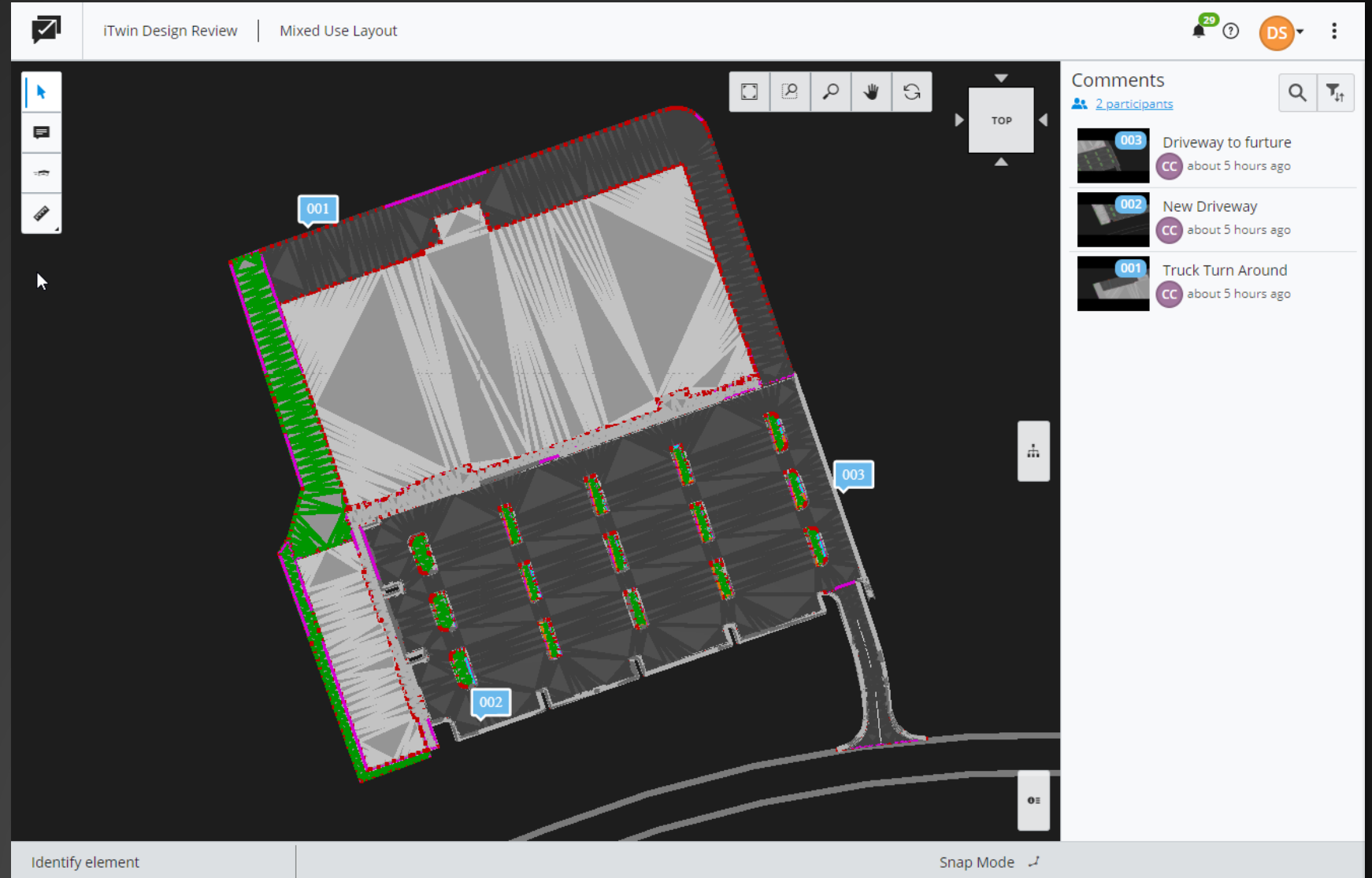


iTwins Design Review



3

The link the **Client** follows has all the context needed to insert him into the workflow to review and comment.



iTwins Design Review

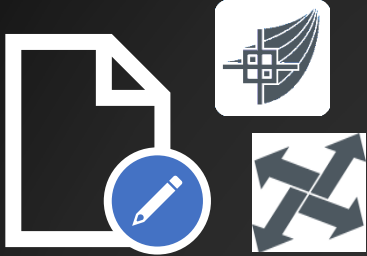


3

Client can review and create new issues, re-routing back for changes, or setting the status to approved as appropriate.

A screenshot of the iTwin Design Review software interface. The main window shows a 3D model of a road or bridge structure with a measurement of 54'-11 7/8" and a label '001'. A blue callout box points to the model with the text: "Client and other stakeholders can collaborate in comment streams. Note that this could be extended to any project participant associated with the project based on role." The right sidebar shows a panel for 'Truck Turn Around' with a status dropdown set to 'New' and a discipline set to 'None'. Below this is a 'Go to Saved View' button and a comment stream showing a comment from Chris Croucher: "Needs to be 100m wide". The bottom status bar includes a 'Pick Start point or reset to clear measurements' prompt and a 'Snap Mode' indicator.

iTwins Design Review



1

Engineer/Architect makes revisions as need to meet client revision request. Republishes changes for client review and approval.



iTwins Design Review



3

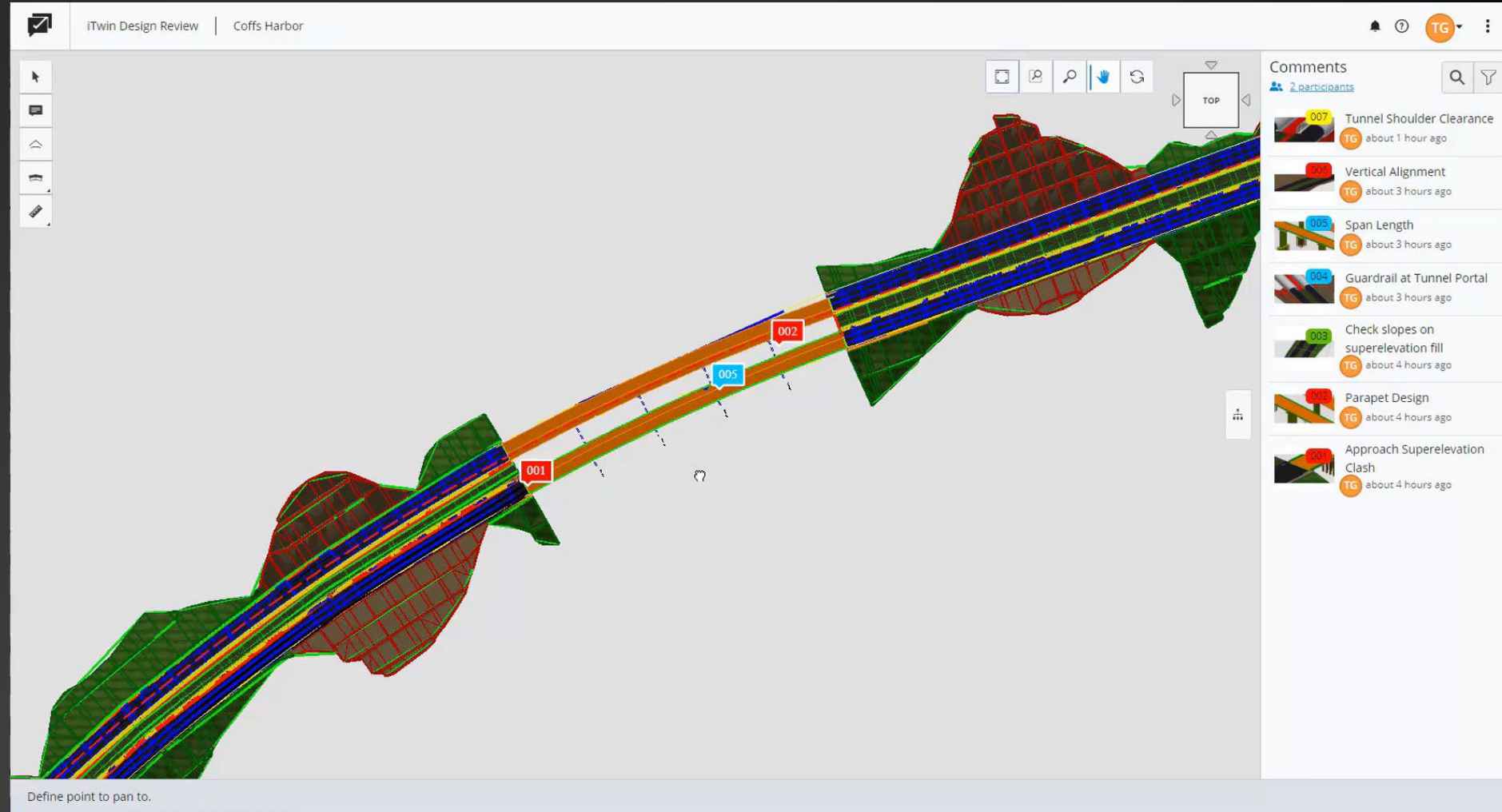
Client can review and create new issues, re-routing back for changes, or setting the status to approved as appropriate.

The screenshot displays the iTwin Design Review interface for 'Mixed Use - Retail Version 2'. The central view shows a 3D model of a road design with green lines indicating a proposed turn around. A blue callout box with a speech bubble icon contains the text: 'Comments client likes changes and gives approval of design changes.' The right-hand panel shows the details for a selected issue, 'Truck Turn Around 001', with a status of 'Verified' and a discipline of 'None'. It also includes a 'Go to Saved View' button, creation information (Created by David Settlemeyer October 16th, 2019), and a comment history section showing a comment from 'about 5 hours ago' stating 'Added 100m wide turn around'. The status is noted as 'Status changed to Verified by Chris Croucher'. At the bottom, there is a text input field for 'Add your comment'.

iTwins Design Review

Multi
Disciplinary
Workflows

Openroads
iTwin





Thank You!

