Presentation | NOVEMBER 2022 – Denmark User Group

Bentley
Advancing Infrastructure

MicroStation
Update 17 and 17.1

Product Management Team
Engineering Applications

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MicroStation Senior Consultant

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Windows 11 Certification

General

Provide MicroStation full functionality with Windows 11

- *Problem/Pain* | MicroStation not Windows 11 compatible.
- *For* | All Bentley MicroStation users
- *Value* | All users with Windows 11 installed can work in MicroStation!

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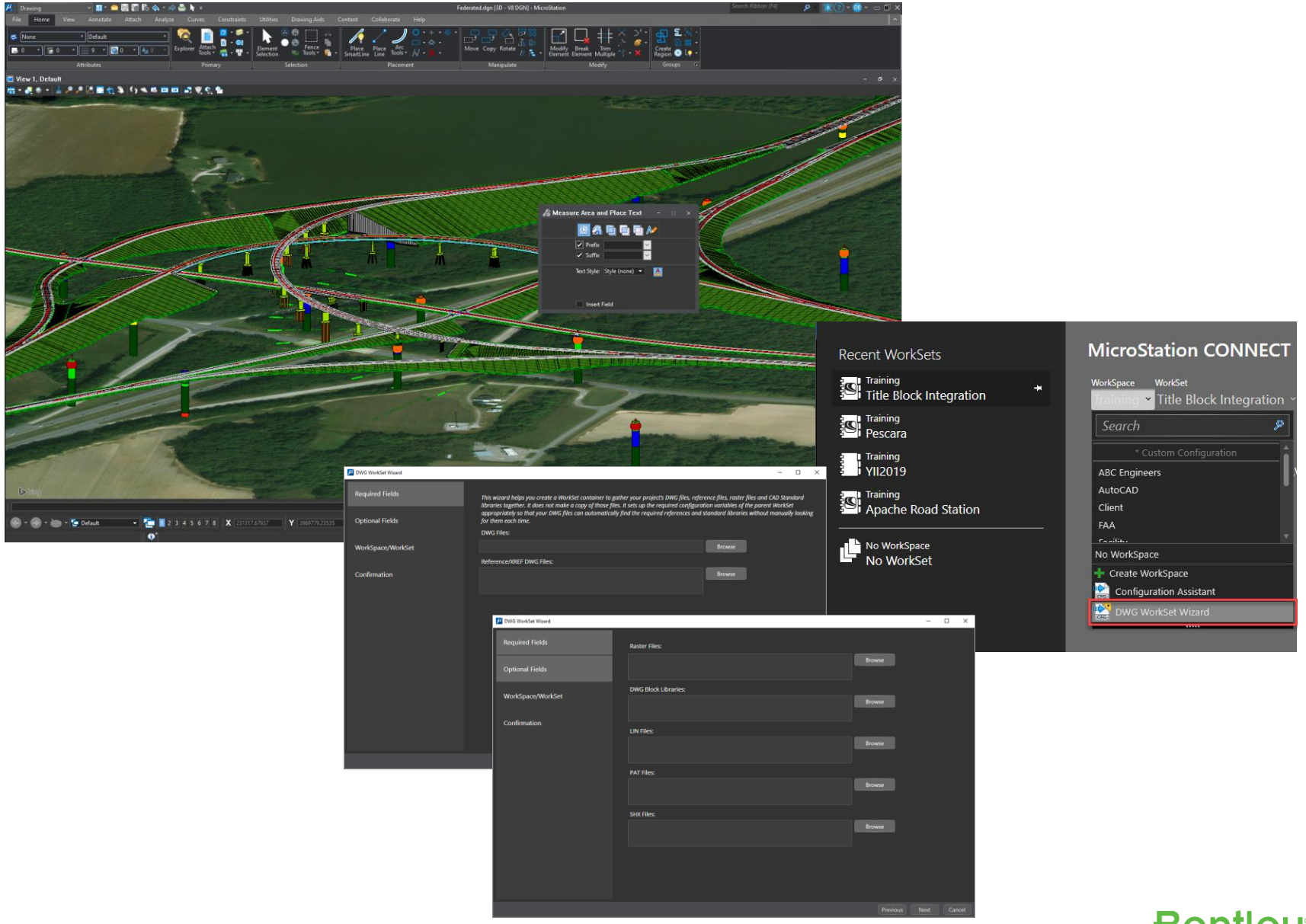
Product Initiative | RealDWG 2023 Support

2D Drawing

Open, Edit and Save RealDWG 2023 and previous formats.

- *Problem/Pain* | Mixed DGN and DWG workflows are continuously evolving and require regular support
- *For* | Engineers and Architects
- *Value* | Interoperability and compatibility between MicroStation and AutoCAD



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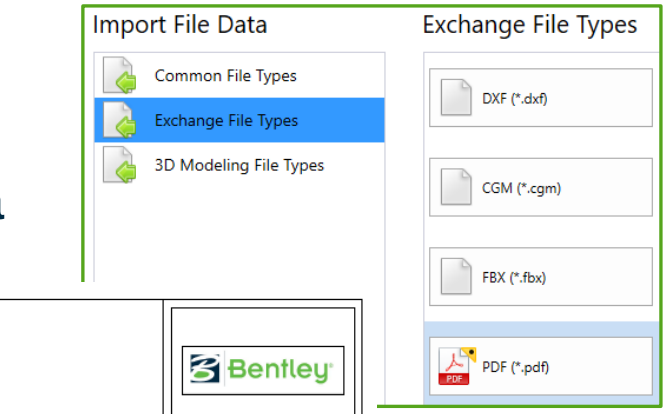
PDF Vector

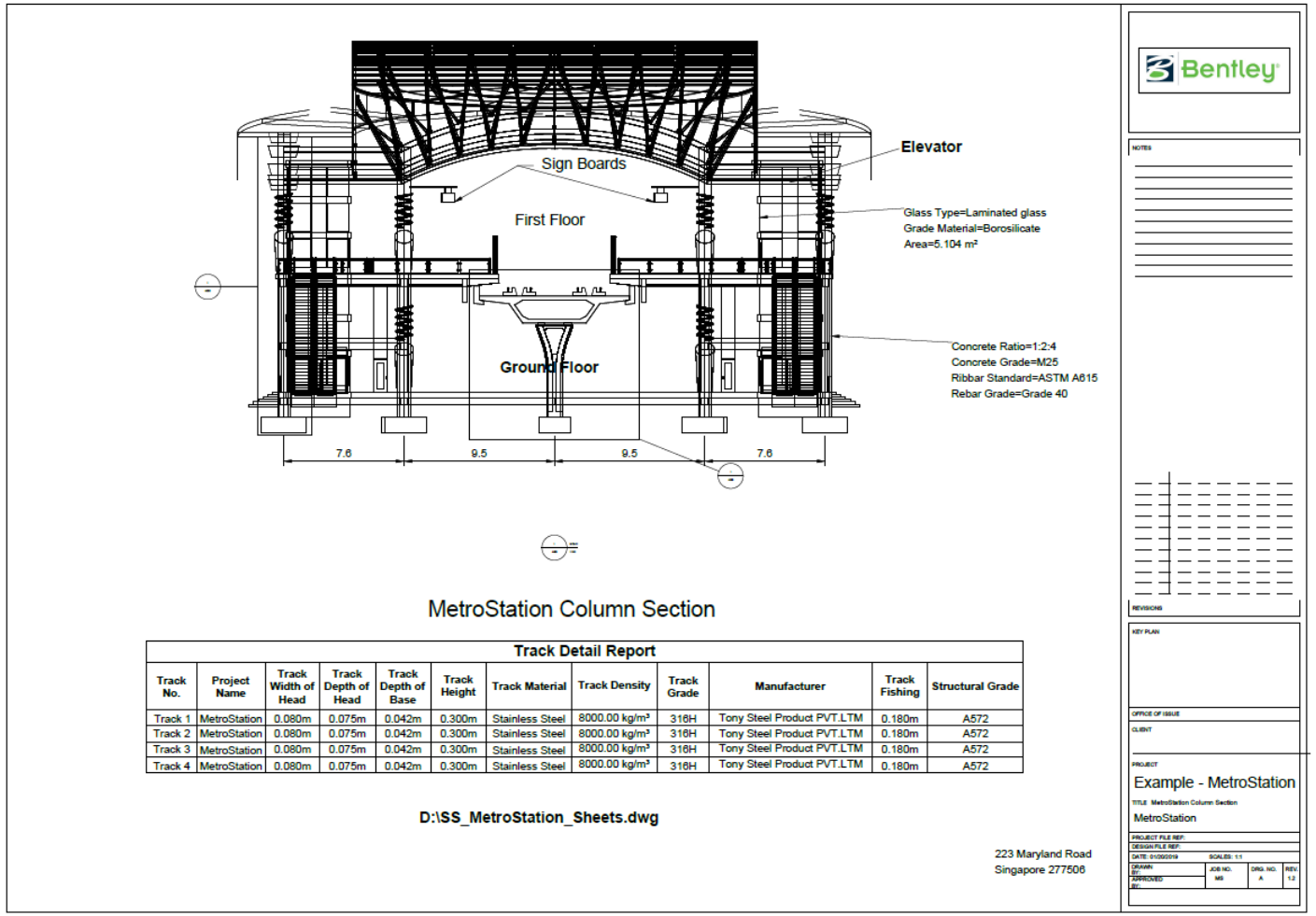
Collaboration

Support PDF vector information (importing and not vectorizing raster data). Raster data is already supported.

- *Problem/Pain* | PDF vector information currently not available for direct Import or Referencing
- *For* | Engineers and Architects
- *Value* | Save time and money by directly importing extended PDF data without the need for third party applications

Import, Reference, Open PDF vector data





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PDF Vector

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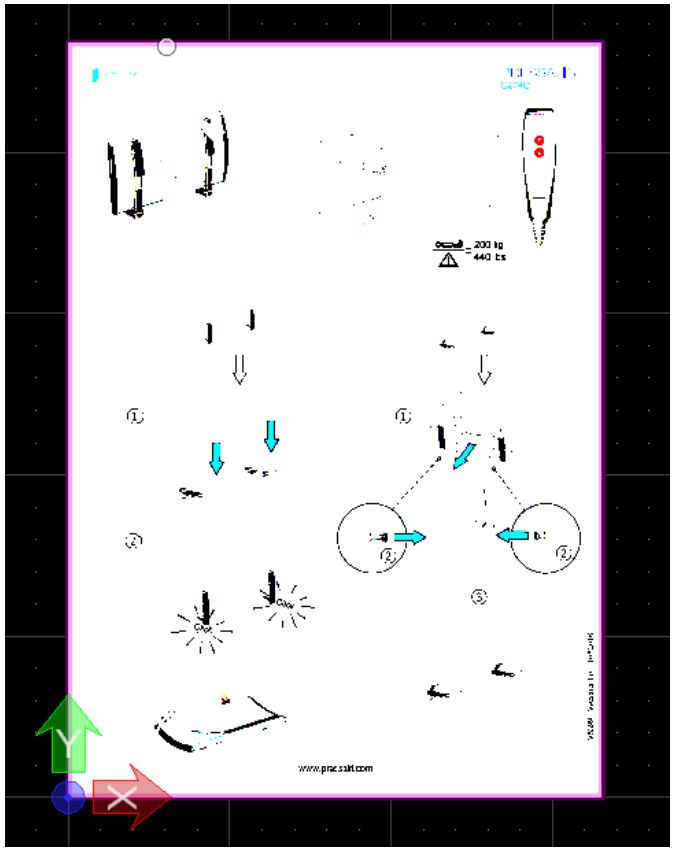
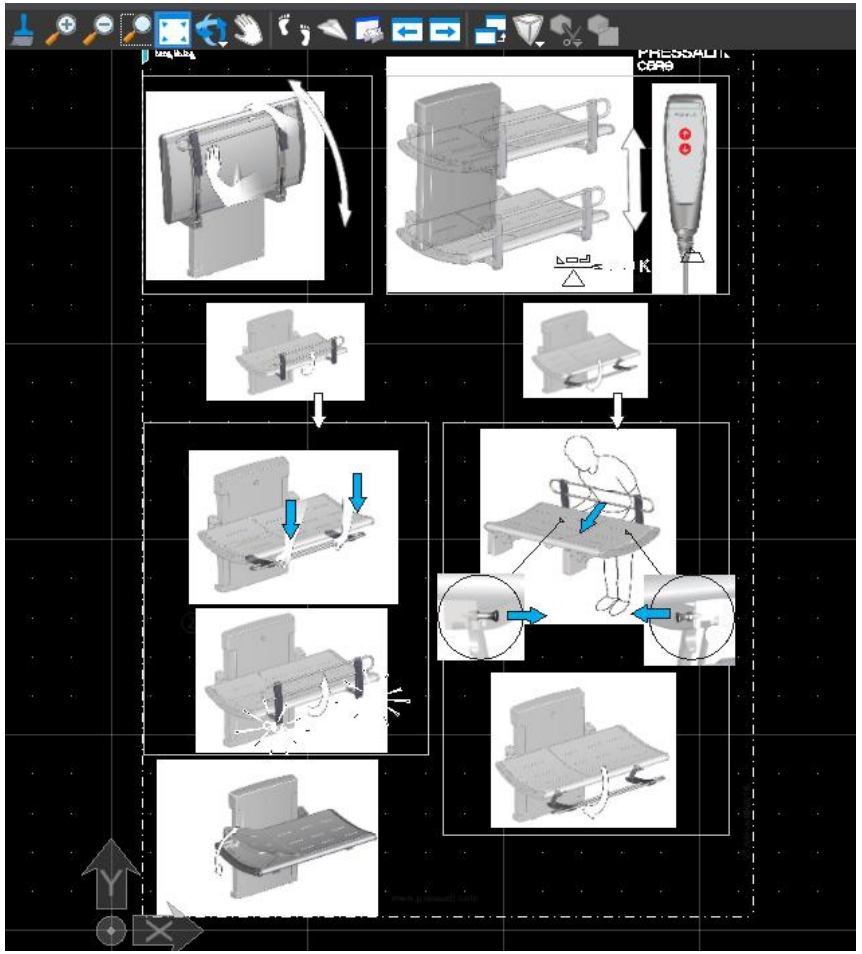
Open PDF As Vector Geometry - 17.1

DWG option

Import PDF vector data with DWG

- ***Problem/Pain*** | Redrawing elements when working in a DWG with importing PDF Vector Data
- ***For*** | Engineers and Architects
- ***Value*** | *Save Time from redrawing elements and parts of drawings in DWG files*





MS_IMPORT_USINGADOBEPDF

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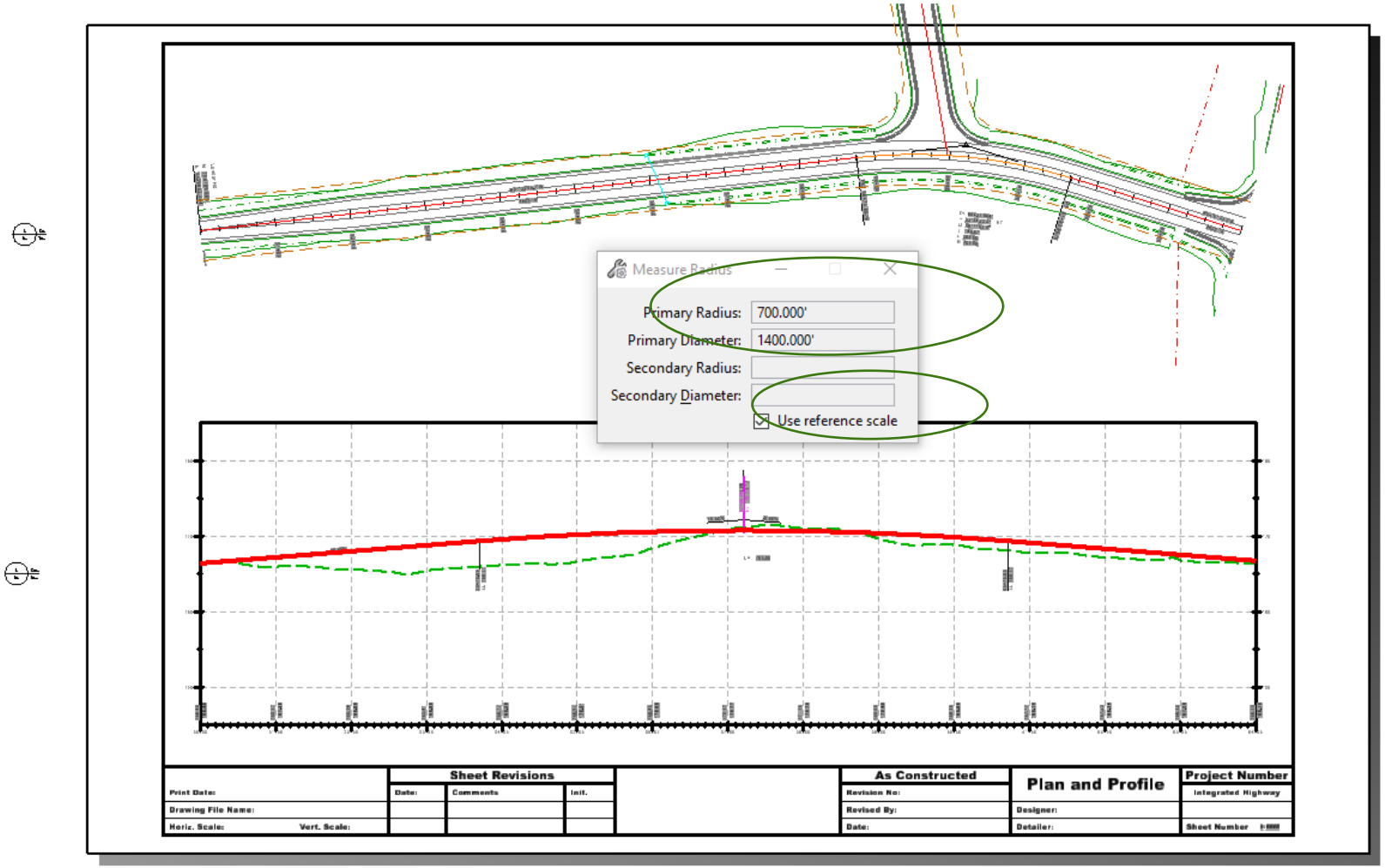
Measuring Model Units in Sheets

2D Drawing

Enable true model measurements in Sheets.

- *Problem/Pain* | Sheet models measure in Paper Units, not Model Units
- *For* | Reviewers, Engineers, and Designers
- *Value* | Faster, efficient workflow and verification while working in Sheet Models.



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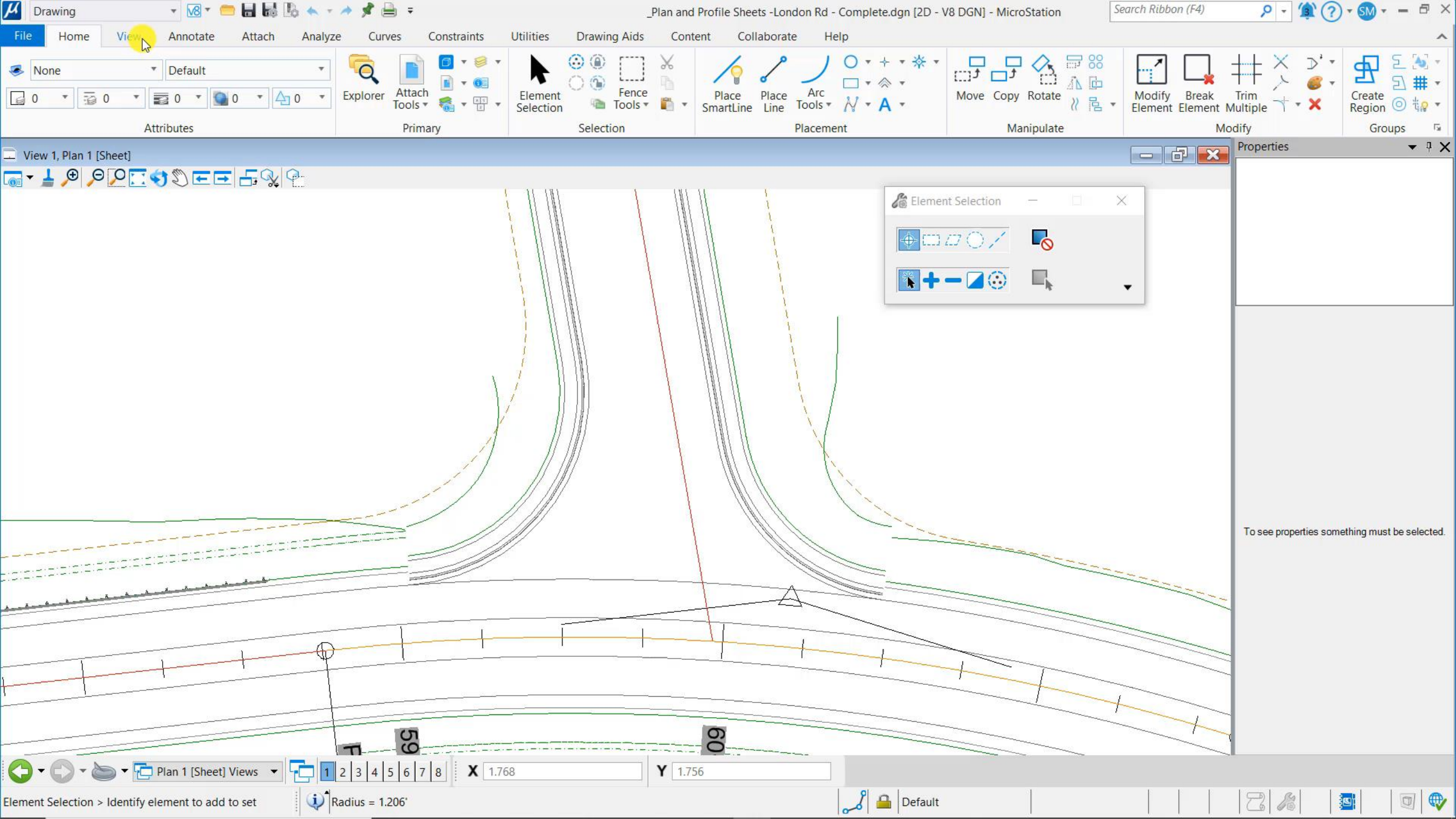
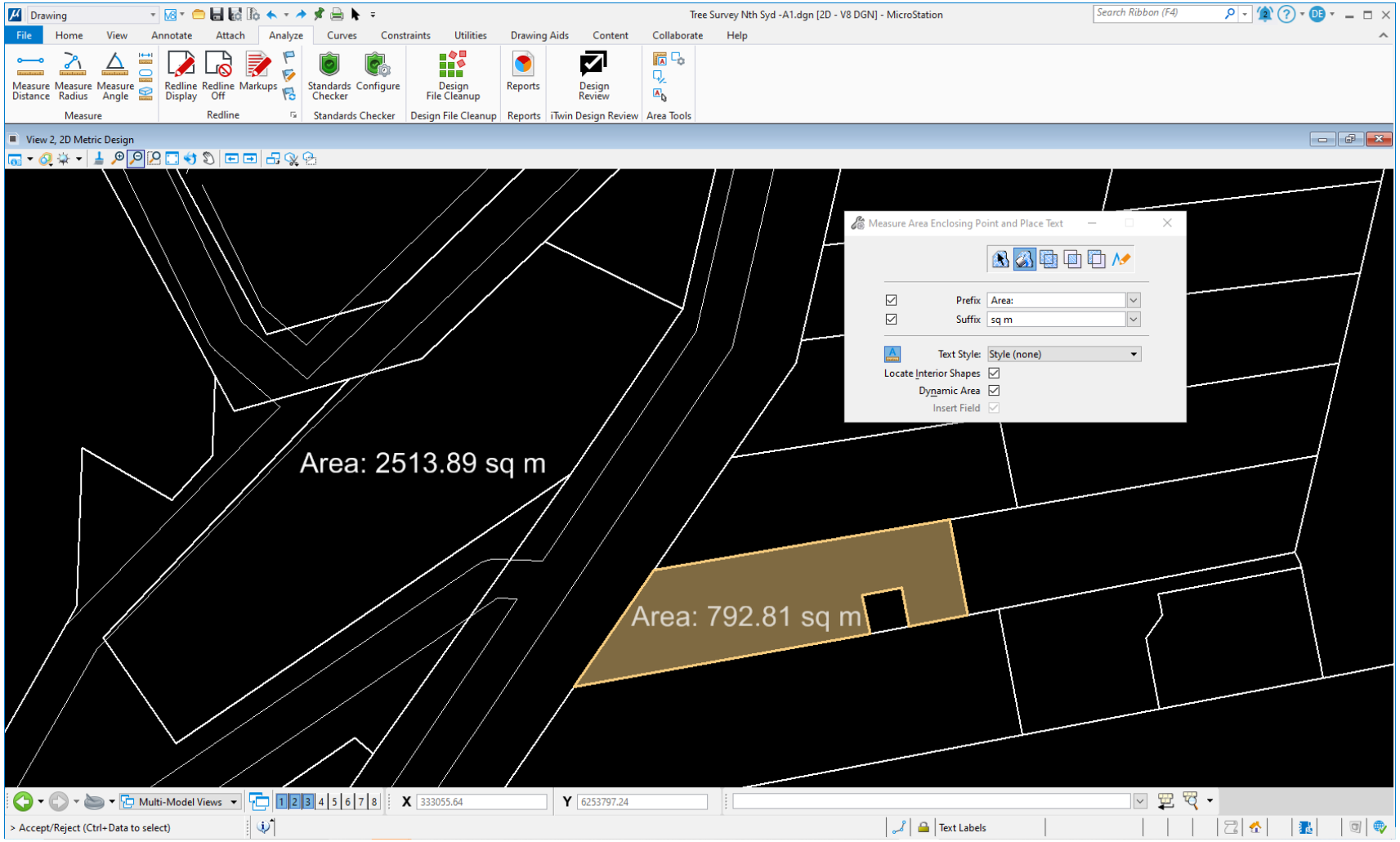

Drawing
_Plan and Profile Sheets -London Rd - Complete.dgn [2D - V8 DGN] - MicroStation
Search Ribbon (F4)
File
Home
View
Annotate
Attach
Analyze
Curves
Constraints
Utilities
Drawing Aids
Content
Collaborate
Help
None
Default
Attributes
Explorer
Attach Tools
Primary
Element Selection
Fence Tools
Selection
Place SmartLine
Place Line
Arc Tools
Placement
Move
Copy
Rotate
Manipulate
Modify Element
Break Element
Trim Multiple
Modify
Create Region
Groups
View 1, Plan 1 [Sheet]
Element Selection
Properties
To see properties something must be selected.
59
60
Plan 1 [Sheet] Views
1 2 3 4 5 6 7 8
X 1.768
Y 1.756
Element Selection > Identify element to add to set
Radius = 1.206'
Default

Area Tools

2D Measuring

Place Measurements as Text

- *Problem/Pain* | Placing area measurements requirements multiple steps
- *For* | Reviewers, Engineers, and Designers
- *Value* | Faster, efficient workflow, brings back previous user requested add on



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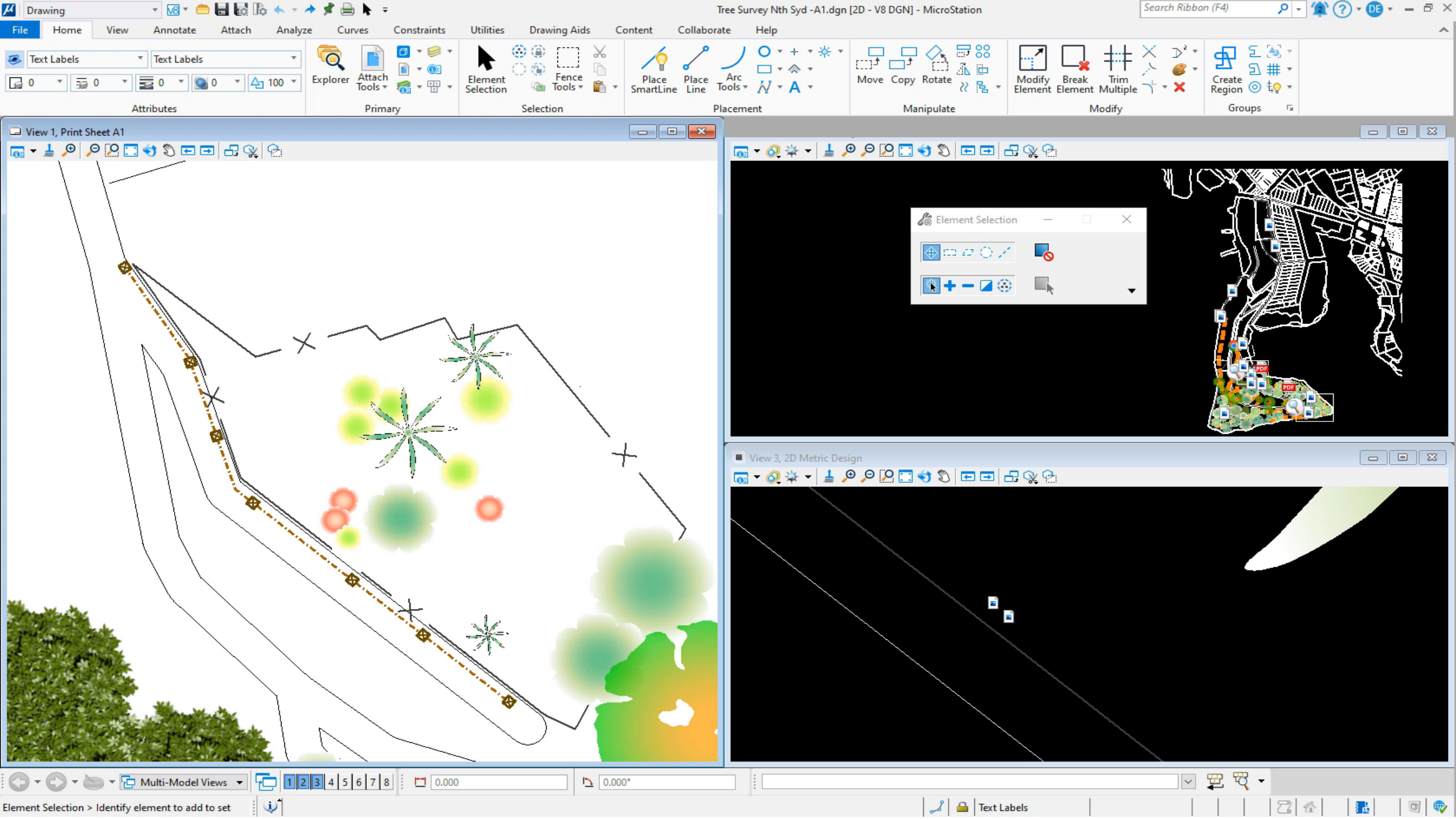
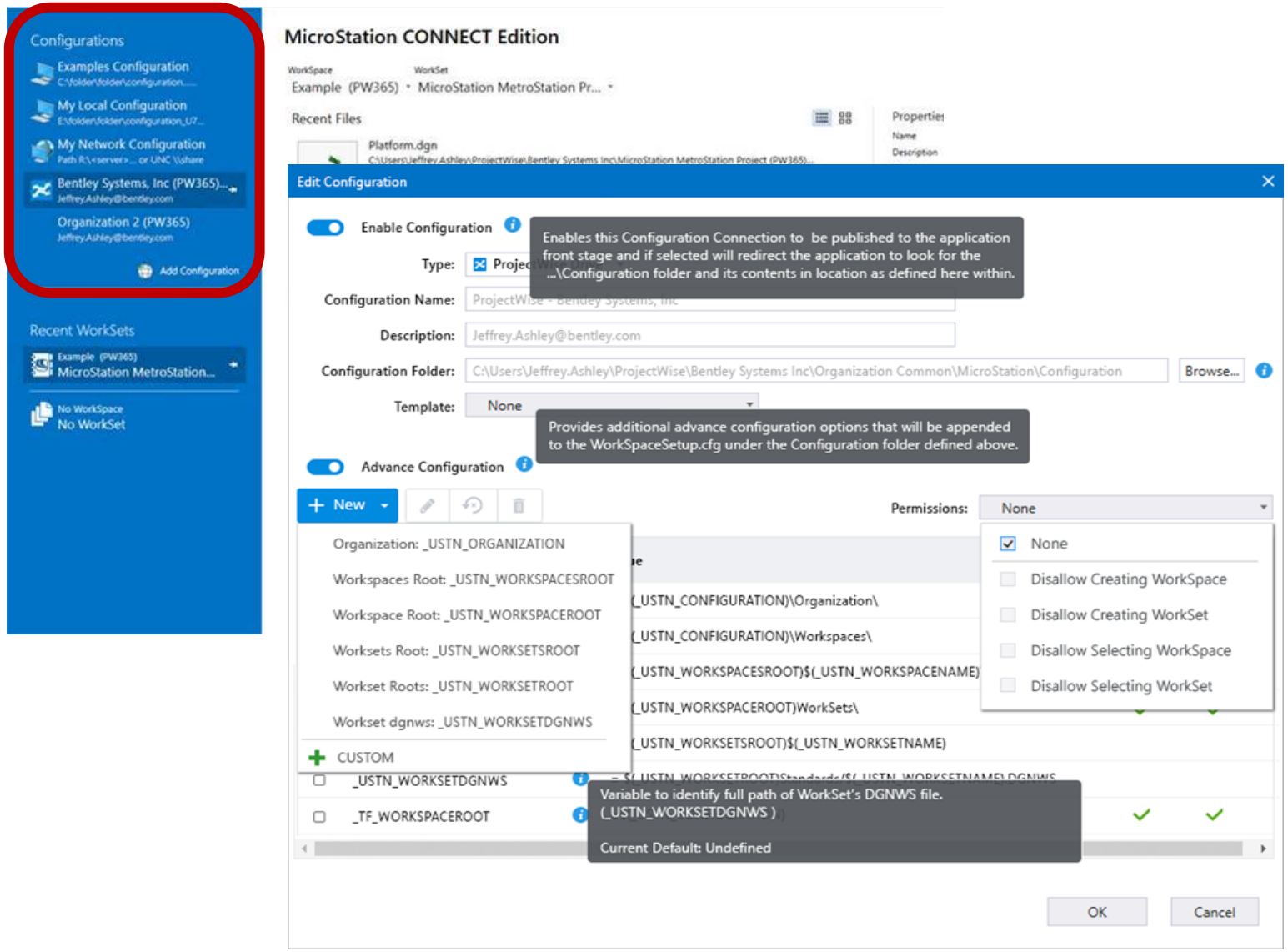

Drawing
Tree Survey Nth Syd -A1.dgn [2D - V8 DGN] - MicroStation
Search Ribbon (F4)
File
Home
View
Annotate
Attach
Analyze
Curves
Constraints
Utilities
Drawing Aids
Content
Collaborate
Help
Text Labels
Text Labels
Attributes
Explorer
Attach Tools
Primary
Element Selection
Fence Tools
Selection
Place SmartLine
Place Line
Arc Tools
Placement
Move
Copy
Rotate
Manipulate
Modify Element
Break Element
Trim Multiple
Modify
Create Region
Groups
View 1, Print Sheet A1
Element Selection
View 3, 2D Metric Design
Multi-Model Views
Element Selection > Identify element to add to set
Text Labels

Manage Configuration/ProjectWise Drive Connector

General

Allows users to access Configurations and Data on ProjectWise Drive directly from MicroStation.

- *Problem/Pain* | Sharing Configurations is error prone and confusing
- *For* | CAD Administrators
- *Value* | Easy sharing of Configurations and associated data



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Manage Configuration/ProjectWise Drive Connector

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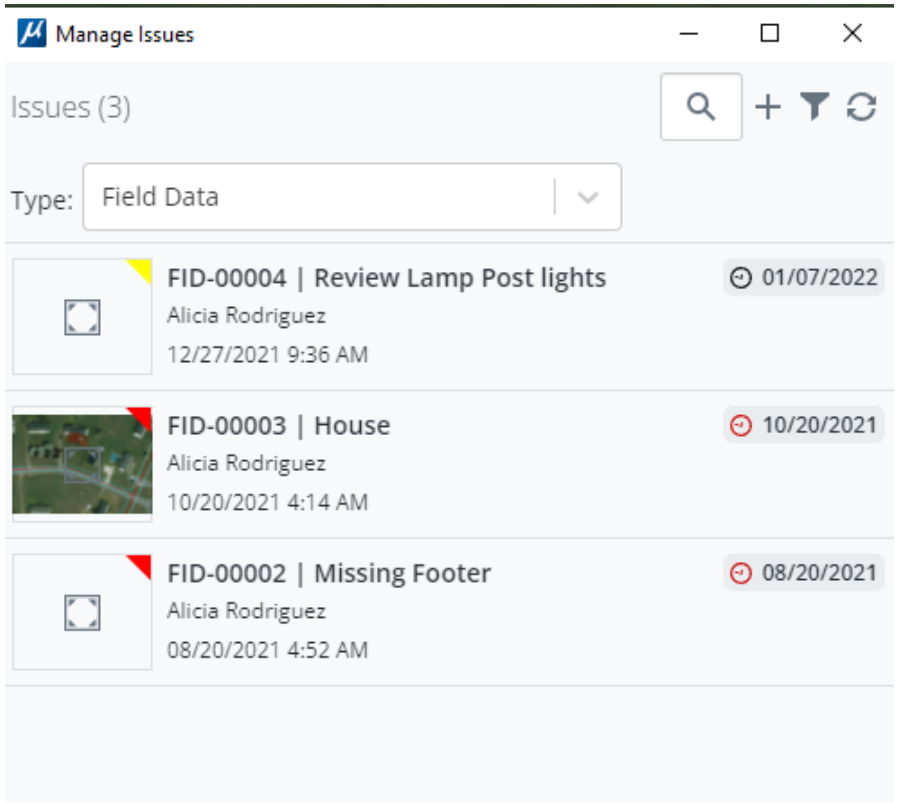
IRS Web Component

General

Updated Issue Resolution Service Web Component.

- *Problem/Pain* | Limited functionality of previous implementation
- *For* | Engineers and Reviewers
- *Value* | Improved functionality and way to expand future capabilities



State/Status

- Yellow: Issue Review
- Red: Issue Open
- Green: Issue Close (approved)
- Grey: Issue Closed (void)
- Orange: Issue Assigned

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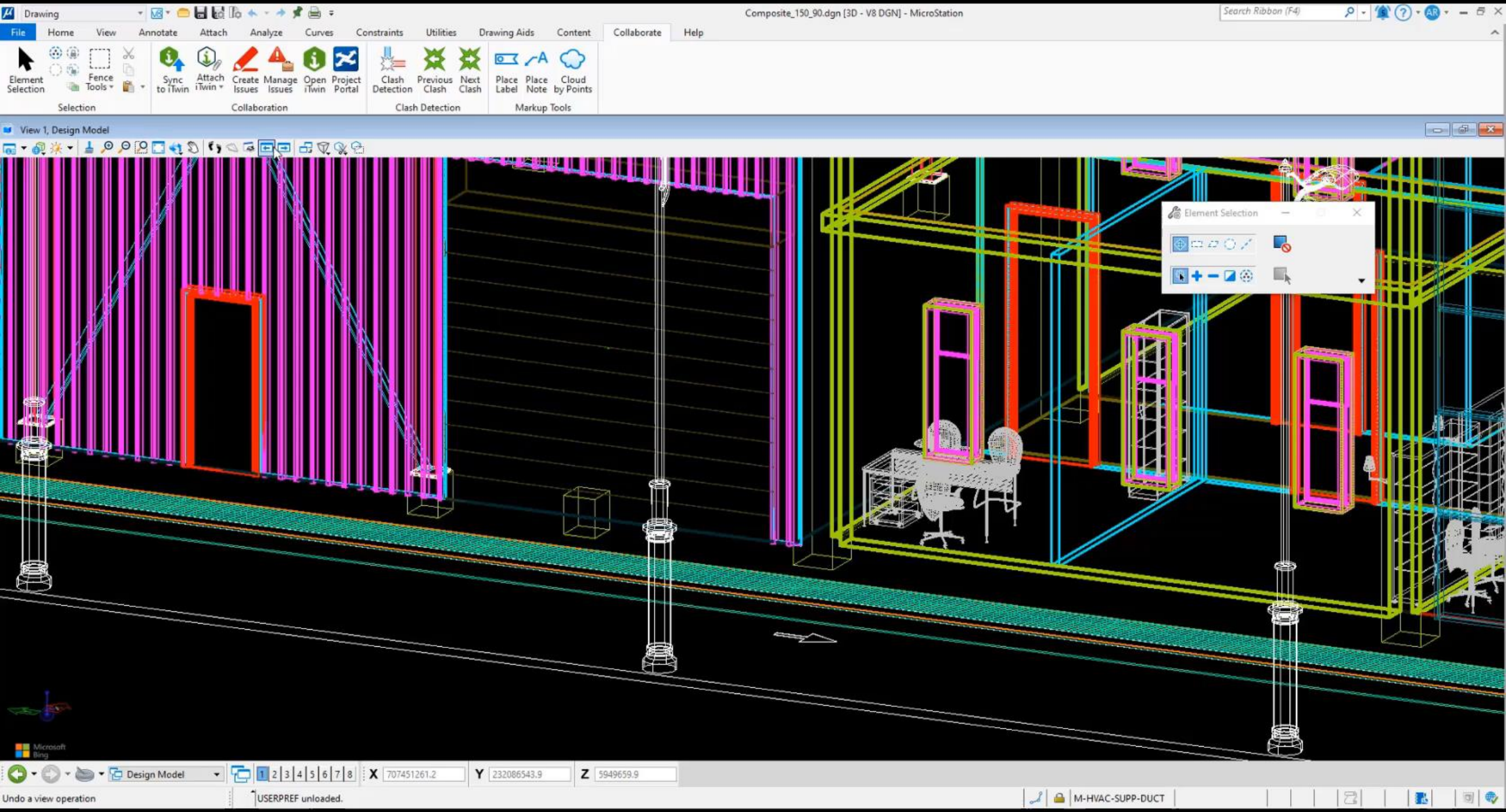

Drawing
Composite_150_90.dgn [3D - V8 DGN] - MicroStation
Search Ribbon (F4)
File
Home
View
Annotate
Attach
Analyze
Curves
Constraints
Utilities
Drawing Aids
Content
Collaborate
Help
Element Selection
Fence Tools
Selection
Sync to iTwin
Attach iTwin
Create Issues
Manage Issues
Open iTwin
Project Portal
Collaboration
Clash Detection
Previous Clash
Next Clash
Clash Detection
Place Label
Place Note
Cloud by Points
Markup Tools
View 1, Design Model
Element Selection
Design Model
X 707451261.2
Y 232086543.9
Z 5949659.9
Undo a view operation
USERPREF unloaded.
M-HVAC-SUPP-DUCT

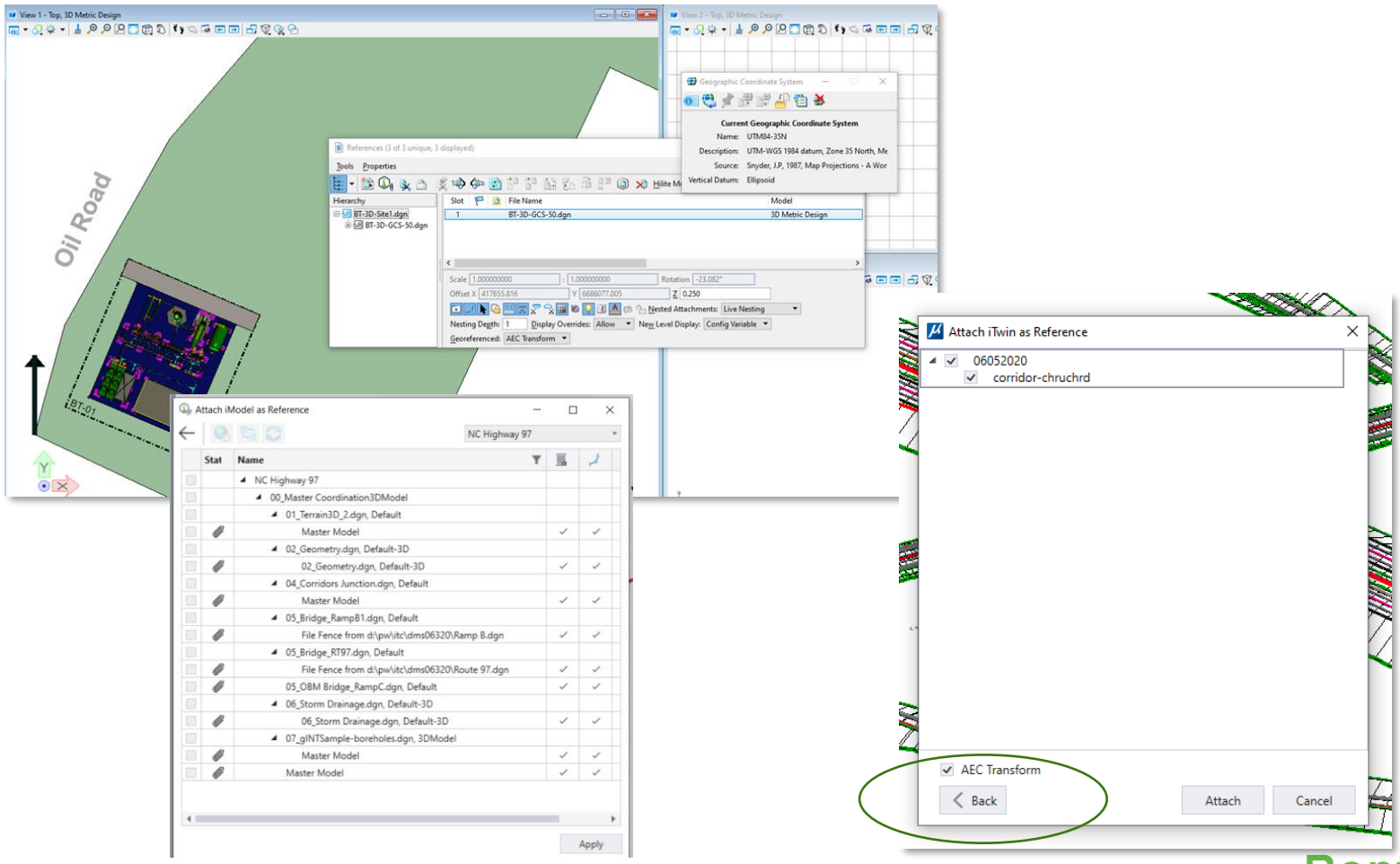
iTwin Powered MicroStation

Collaboration

Attach iTwins with AEC Transforms

- *Problem/Pain* | Project North setups for iTwins do not reference into the correct rotation
- *For* | Engineers and Architects
- *Value* | Referenced iTwins at correct AEC Transform allows for easier element placement and manipulation in a relative coordinate system

AEC Transform toggle at time of attachment for referencing iTwins



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iTwin Powered MicroStation

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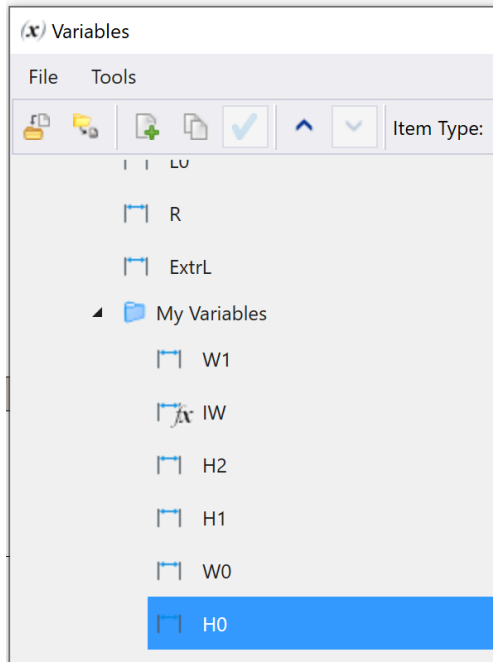
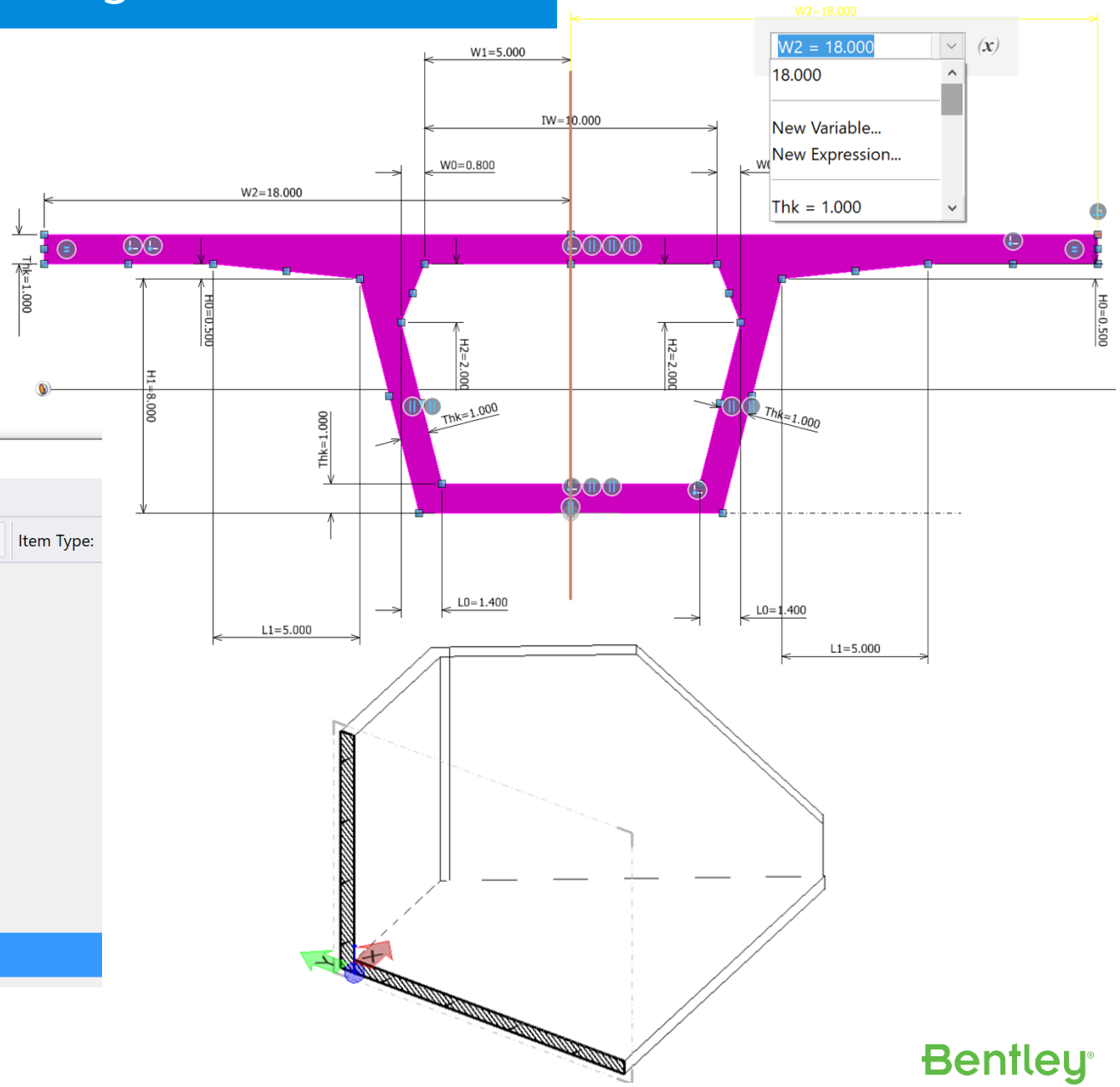
Product Initiative | Parametric Modeling Enhancements

2D Drawing & 3D Modeling

Improve the usability of the parametric tools.

- *Problem/Pain* | Parametric tools are powerful, but some of the workflows are not as streamlined as one would like
- *For* | Engineers and Architects
- *Value* | Reduced time to create, access and share intelligent and reusable content





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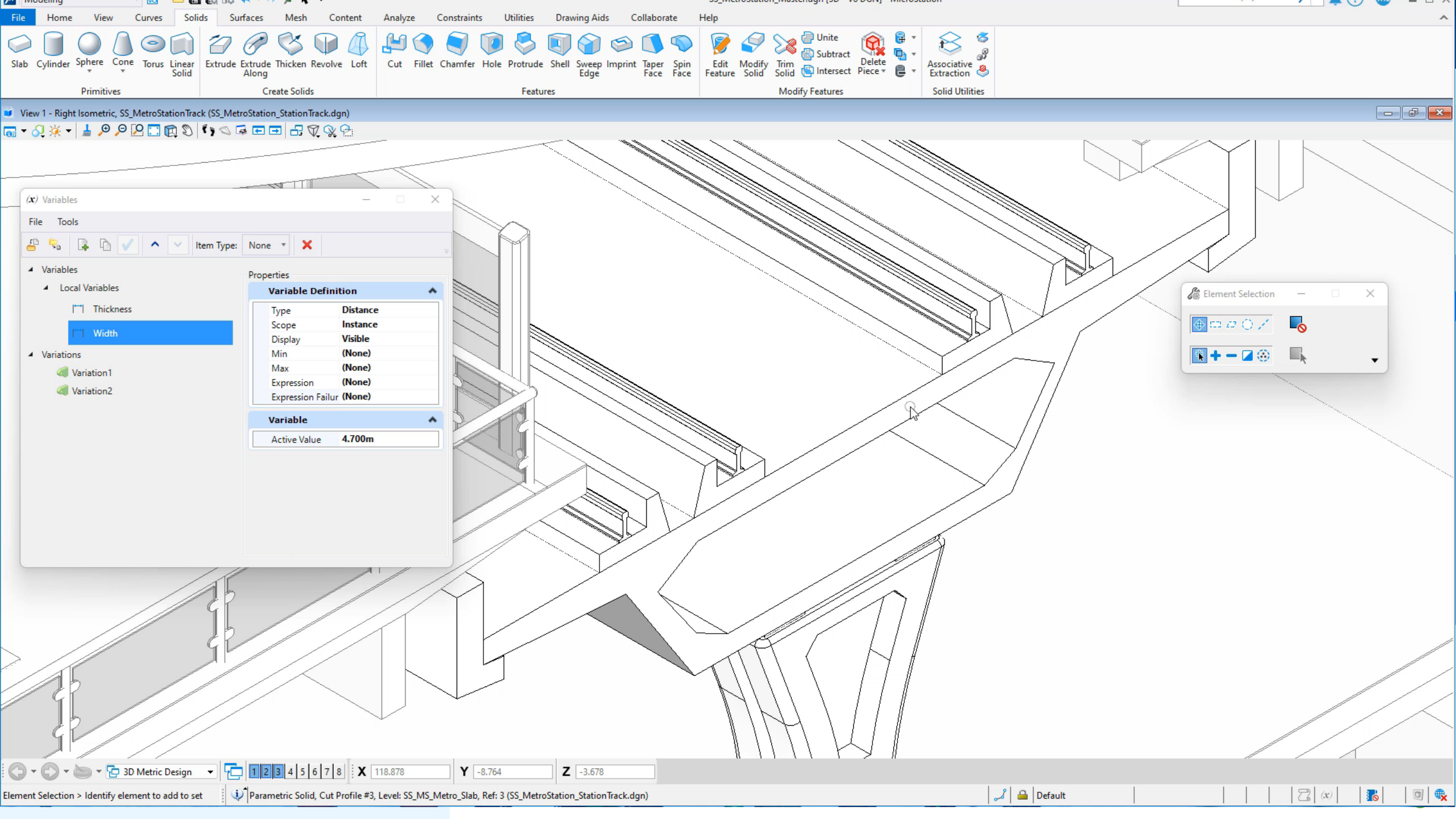
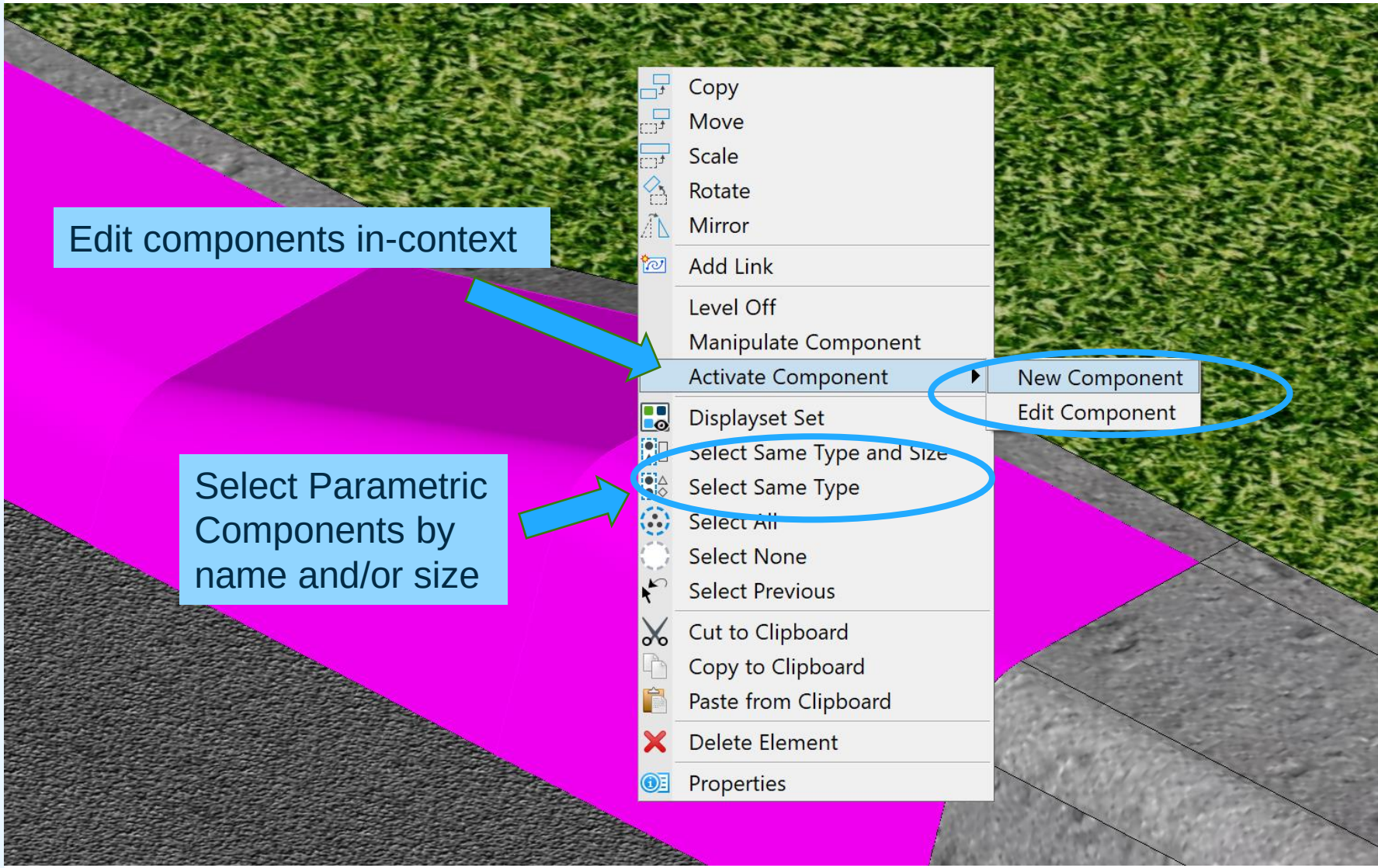

File
Home
View
Curves
Solids
Surfaces
Mesh
Content
Analyze
Constraints
Utilities
Drawing Aids
Collaborate
Help
Slab
Cylinder
Sphere
Cone
Torus
Linear Solid
Primitives
Extrude
Extrude Along
Thicken
Revolve
Loft
Create Solids
Cut
Fillet
Chamfer
Hole
Protrude
Shell
Sweep Edge
Imprint
Taper Face
Spin Face
Features
Edit Feature
Modify Solid
Trim Solid
Unite
Subtract
Intersect
Delete Piece
Modify Features
Associative Extraction
Solid Utilities
View 1 - Right Isometric, SS_MetroStationTrack (SS_MetroStation_StationTrack.dgn)
Variables
File
Tools
Item Type:
None
Variables
Local Variables
Thickness
Width
Variations
Variation1
Variation2
Properties
Variable Definition
Type
Distance
Scope
Instance
Display
Visible
Min
(None)
Max
(None)
Expression
(None)
Expression Failur
(None)
Variable
Active Value
4.700m
Element Selection
3D Metric Design
1 2 3 4 5 6 7 8
X
118.878
Y
-8.764
Z
-3.678
Element Selection > Identify element to add to set
Parametric Solid, Cut Profile #3, Level: SS_MS_Metro_Slab, Ref: 3 (SS_MetroStation_StationTrack.dgn)
Default

Parametric Components: Intelligent modeling

3D Modeling

Add further intelligence to parametric components.

- *Problem/Pain* | Time consuming, repetitive, manual work in parametric components workflows
- *For* | Engineers and Architects
- *Value* | Automate perforations, use multiple insertion points and re-symbolize components in different view orientations



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Modeling

Kerbs.cel [3D - V8 DGN] - MicroStation

Search Ribbon (F4)

File | Home | View | Curves | Solids | Surfaces | Mesh | Content | Analyze | Constraints | Utilities | Drawing Aids | Collaborate | Help

Primitives: Slab, Cylinder, Sphere, Cone, Torus, Linear Solid

Create Solids: Extrude, Extrude Along, Thicken, Revolve, Loft

Features: Cut, Fillet, Chamfer, Hole, Protrude, Shell, Sweep Edge, Imprint, Taper Face, Spin Face

Modify Features: Edit Feature, Modify Solid, Trim Solid, Unite, Subtract, Intersect, Delete Piece

Solid Utilities: Associative Extraction

View 1 - Isometric, Varying_Kerb

Properties

To see properties something must be selected.

Element Selection

Varying_Kerb-1 Views | 1 2 3 4 5 6 7 8 | X -0.09 | Y 0.65 | Z 2.47

Element Selection > Ic

Kerb

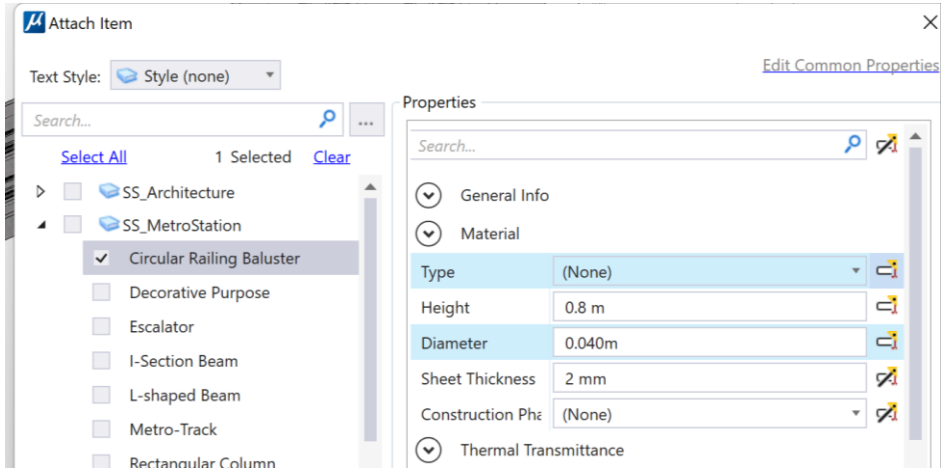
Product Initiative | Advanced Data Reporting

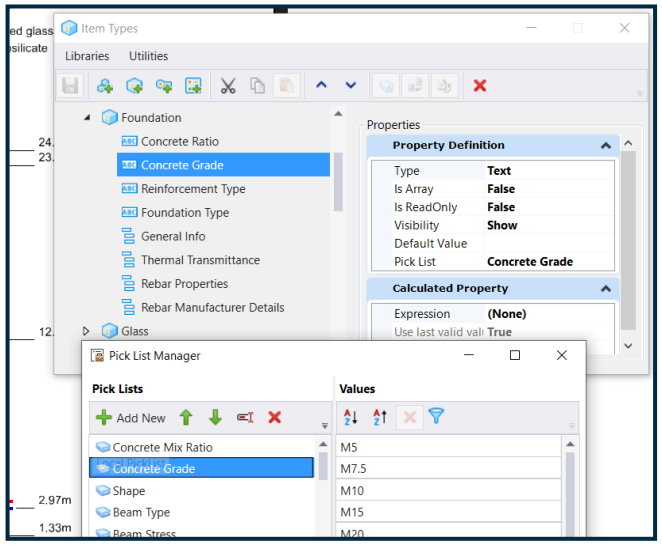
Collaboration

Add intelligence, reduce risk and save time.

- *Problem/Pain* | Certain project tasks can be repetitive and prone to errors
- *For* | Engineers and Architects
- *Value* | Work faster and smarter, adding value to your data

Automatically create Data driven annotations





Conditional picklists
Clone Item Types tool
Item Types propagation

Better control of tables layout with Table Styles

MetroStation Column Section

Track Detail Report											
Track No.	Project Name	Track Width of Head	Track Depth of Head	Track Depth of Base	Track Height	Track Material	Track Density	Track Grade	Manufacturer	Track Fishing	Structural Grade
Track 1	MetroStation	0.080m	0.075m	0.042m	0.300m	Stainless Steel	8000.00 kg/m³	316H	Tony Steel Product PVT.LTM	0.180m	A572
Track 2	MetroStation	0.080m	0.075m	0.042m	0.300m	Stainless Steel	8000.00 kg/m³	316H	Tony Steel Product PVT.LTM	0.180m	A572
Track 3	MetroStation	0.080m	0.075m	0.042m	0.300m	Stainless Steel	8000.00 kg/m³	316H	Tony Steel Product PVT.LTM	0.180m	A572
Track 4	MetroStation	0.080m	0.075m	0.042m	0.300m	Stainless Steel	8000.00 kg/m³	316H	Tony Steel Product PVT.LTM	0.180m	A572

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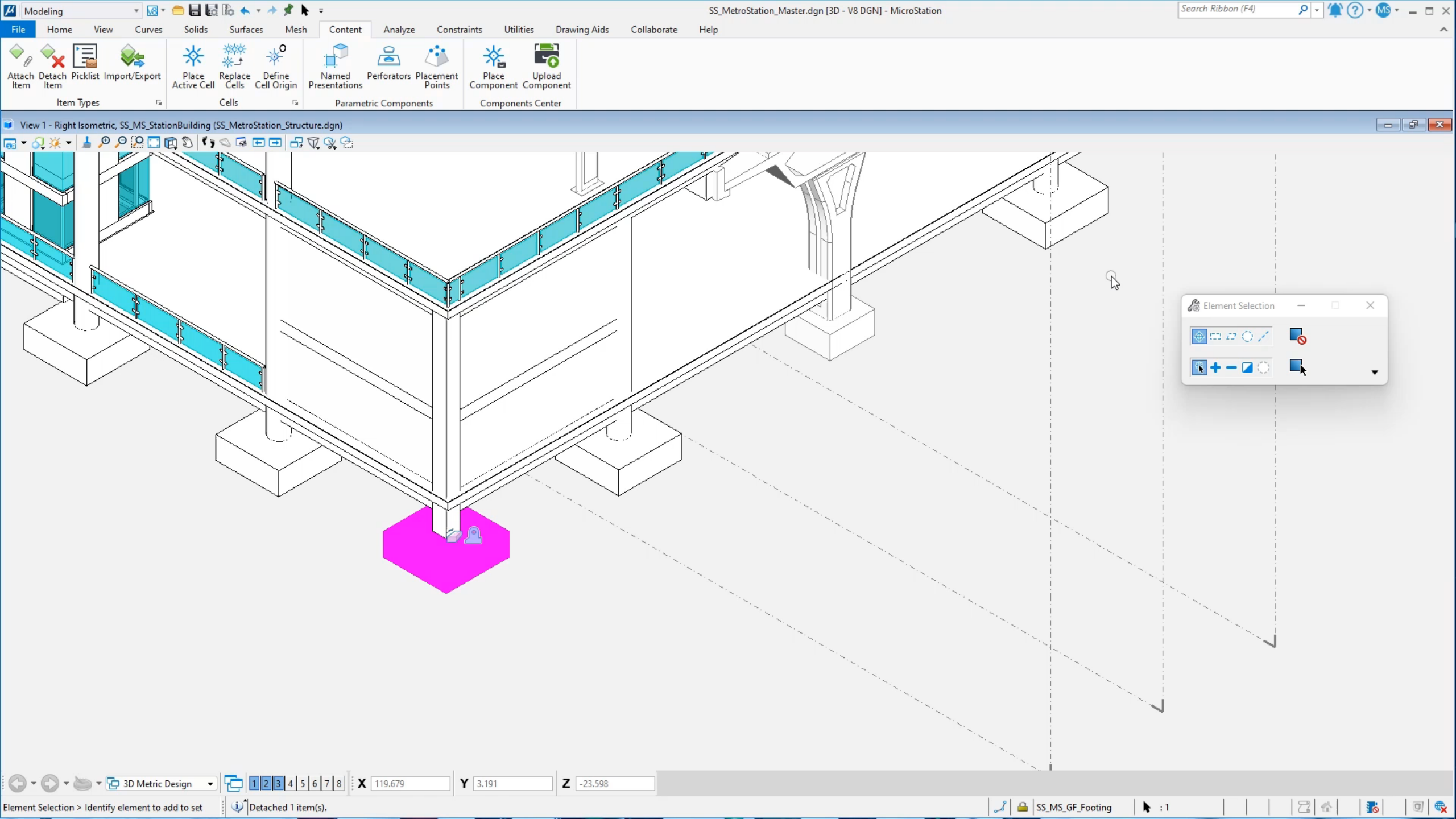
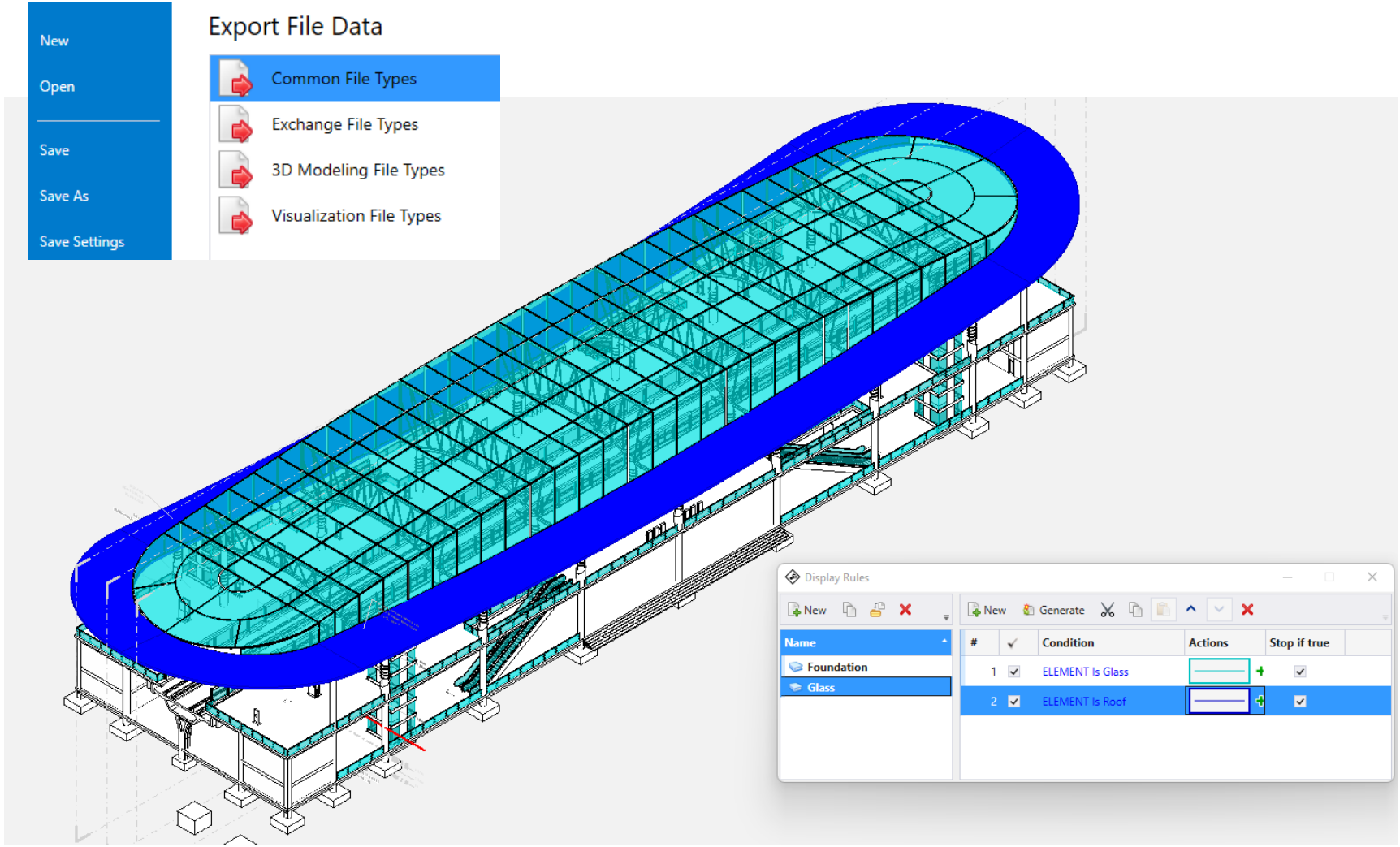

Modeling
SS_MetroStation_Master.dgn [3D - V8 DGN] - MicroStation
Search Ribbon (F4)
File
Home
View
Curves
Solids
Surfaces
Mesh
Content
Analyze
Constraints
Utilities
Drawing Aids
Collaborate
Help
Attach Item
Detach Item
Picklist
Import/Export
Item Types
Place Active Cell
Replace Cells
Define Cell Origin
Cells
Named Presentations
Perforators
Placement Points
Parametric Components
Place Component
Upload Component
Components Center
View 1 - Right Isometric, SS_MS_StationBuilding (SS_MetroStation_Structure.dgn)
Element Selection
3D Metric Design
X 119.679
Y 3.191
Z -23.598
Element Selection > Identify element to add to set
Detached 1 item(s).
SS_MS_GF_Footing
: 1

Display Rules Deliverables

Display Rules Deliverables

Display Rules are easier to use and an integral part of deliverables production

- *Problem/Pain* | Levels and layers are limited not flexible and disconnected from information added to designs
- *For* | Engineers and Architects
- *Value* | Change the presentation of your data on the fly using property-based rules and export to DWG



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Modeling

SS_Master_MetroStation.dgn [3D - V8 DGN] - MicroStation

Search Ribbon (F4)

File | Home | View | Curves | Solids | Surfaces | Mesh | Content | Analyze | Constraints | Utilities | Drawing Aids | Collaborate | Help

View Attributes | Apply Display Style | Apply Display Rule — Presentation

Window Area | Zoom Out | Fit View — Tools

Lens Type | Place Camera — Camera

Place Named Boundary — Named Boundaries

Clip Volume — Clip

Create Saved View | Update Saved View Settings | Apply Saved View — Saved Views

Copy View | Cascade | Tile | Arrange | View Size — Window

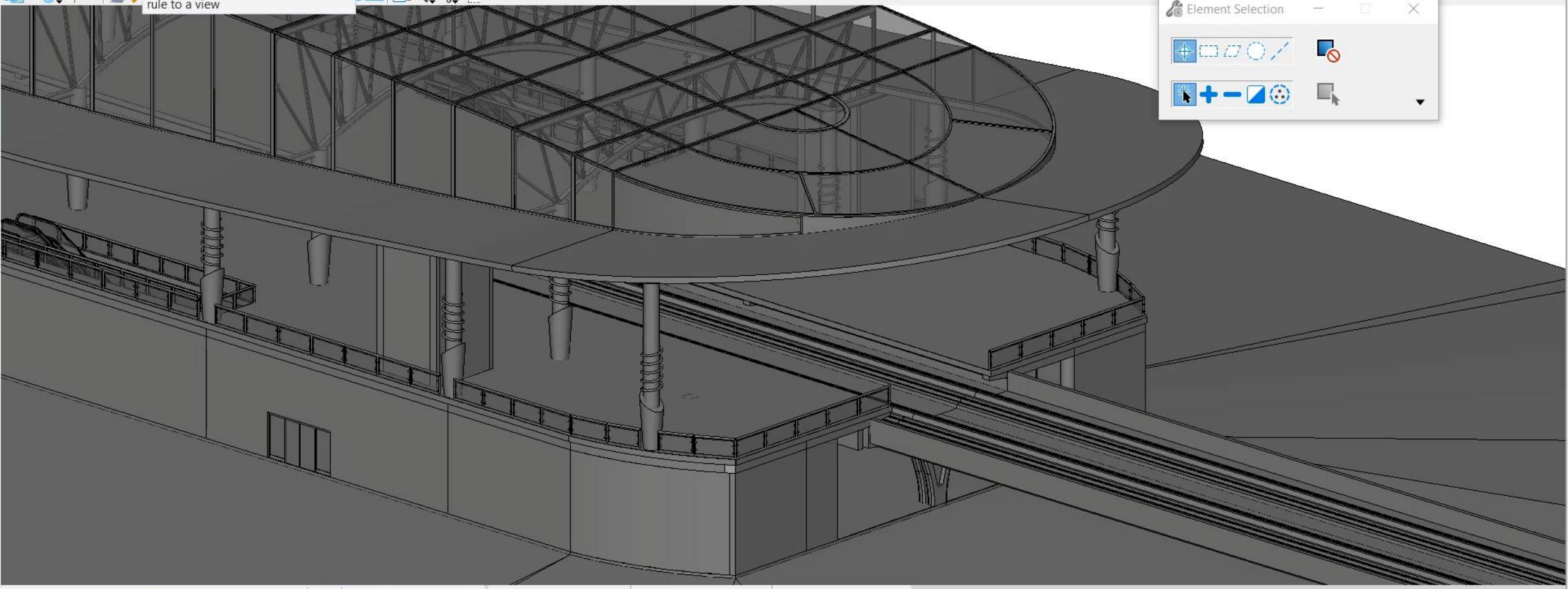
Prev | Next | All | 1 2 3 4 5 6 7 8 | 3D Metric Design — View Groups

Apply Display Rule

(Technology Preview) Apply a display rule to a view

View 1, 3D Metric Des

Element Selection



3D Metric Design | 1 2 3 4 5 6 7 8 | X -14.046 | Y 88.084 | Z -38.965

Adjust the magnification of a view so all elements are vi

SS_MS_GF_CellingLight

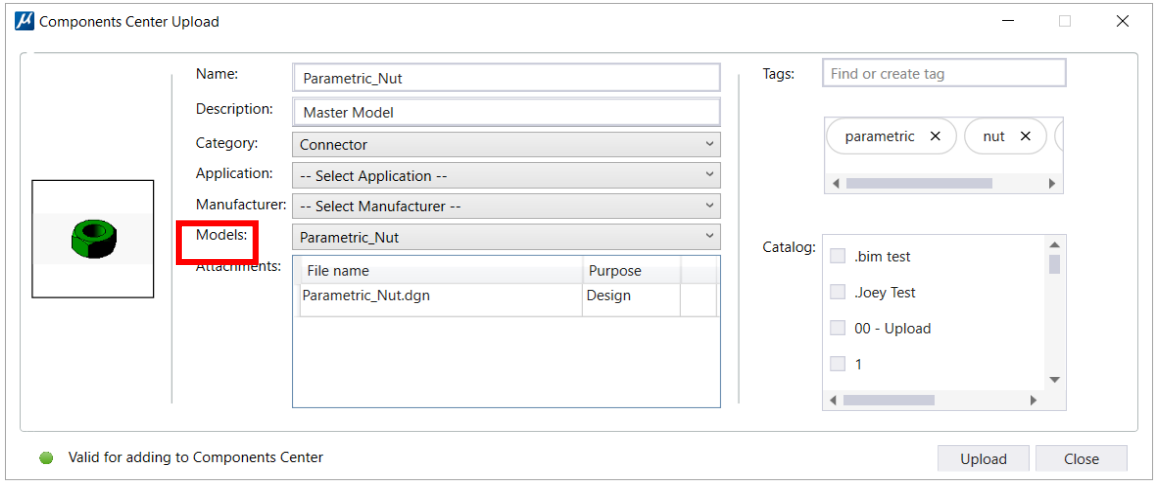
Components Center – 17.1

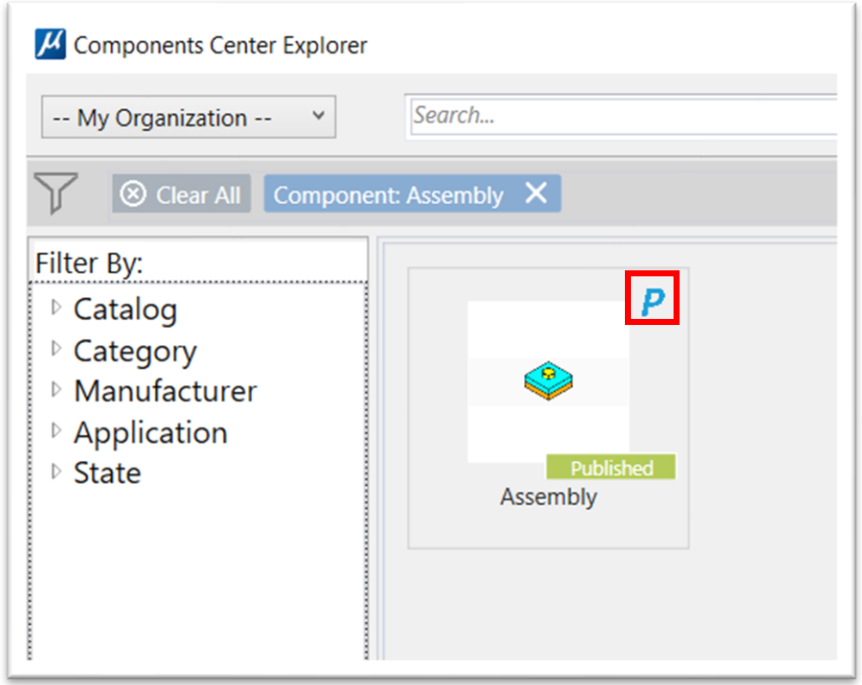
Component Center Enhancement

Easy to identify Parametric Components

- *Problem/Pain* | Unable to determine what components are Parametrically driven
- *For* | Engineers and Architects
- *Value* | *Easy to identify to save time from searching*

Select a model to upload in the new Models field in the Components Center Upload dialog





Identify parametric components by a **P** overlaid on their thumbnail previews in the Components Center Explorer dialog

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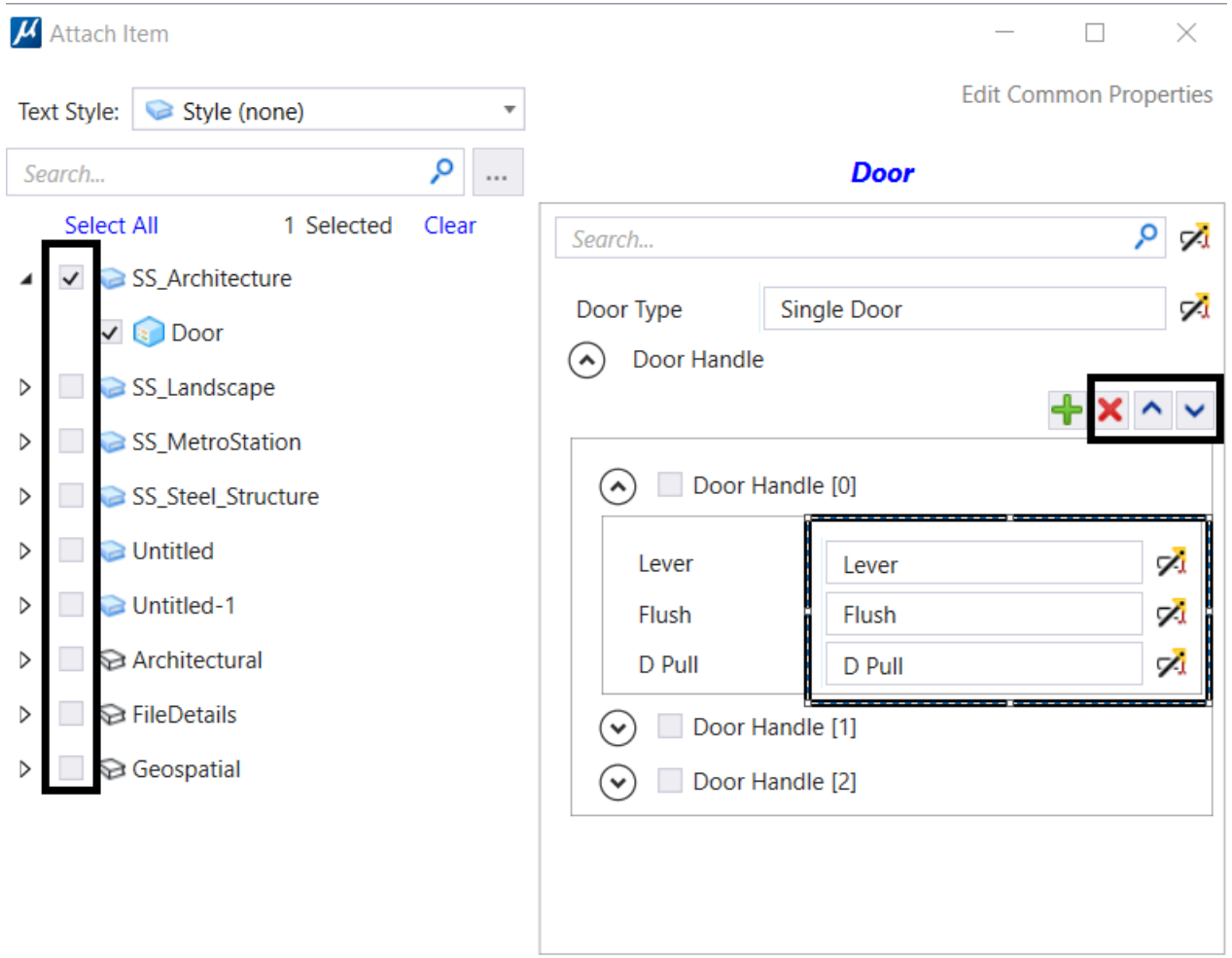
Attach Item Types – UX Improvements 17.1

Item Types

UX Improvements for Attach Item Types Dialog

- ***Problem/Pain*** | Unable to sort or rearrange components in the Item Types dialog
- ***For*** | Engineers and Architects
- ***Value*** | *Save Time with multiple selections and moving properties up and down for better sorting*



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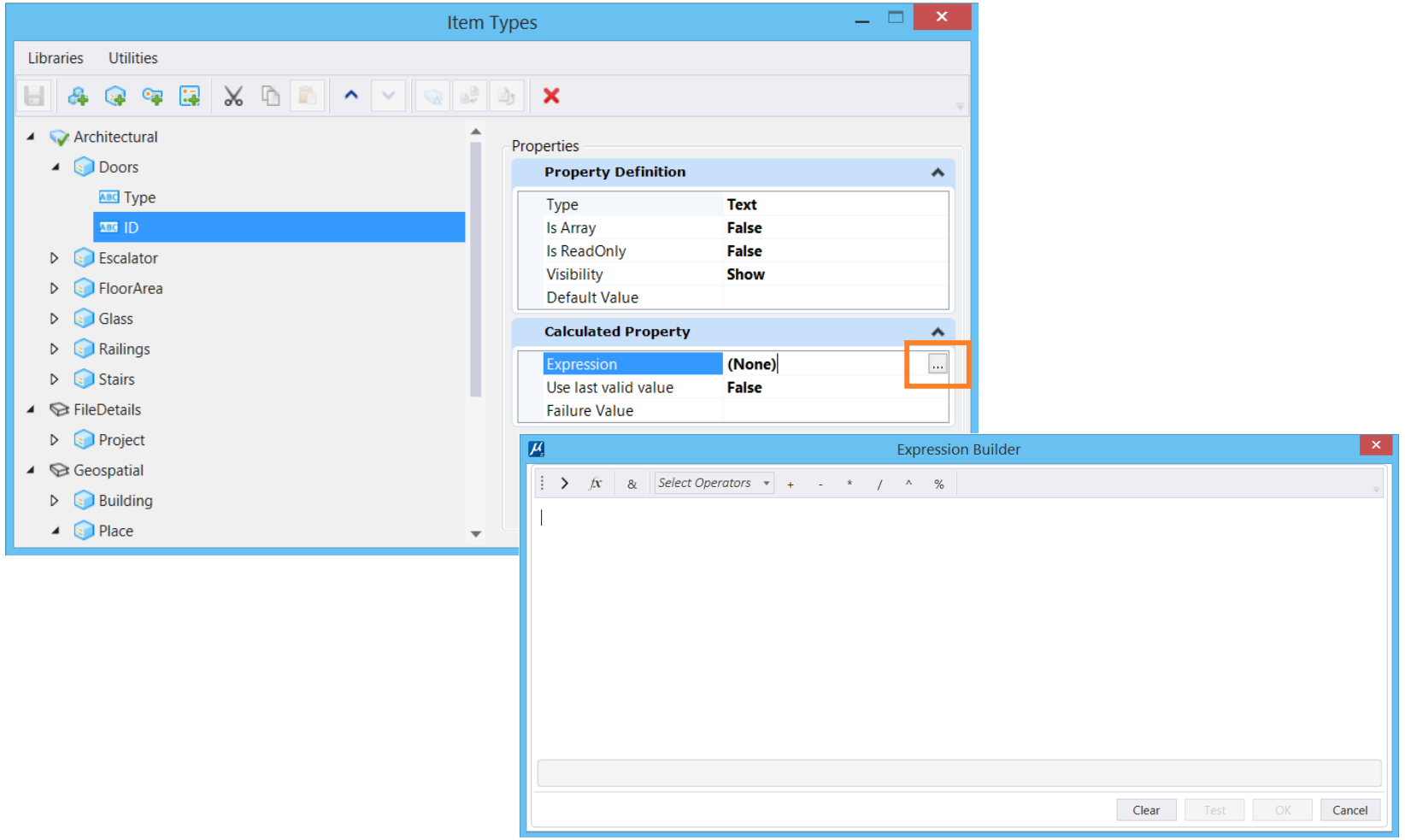
Expressions – ItemType - 17.1

Global Origin for Expressions

Using Expressions – Coordinates are calculated with Global Origin

- *Problem/Pain* | Coordinates were calculated with Respect to Design File Origin, not Global Origin
- *For* | Engineers and Architects
- *Value* | *Calculated results with expressions provide alternative information*



New expressions "**Coordinates.GlobalOrigin.GetX(this.GetElement().Origin)**" will return you the Global Origin converted value for the input point.

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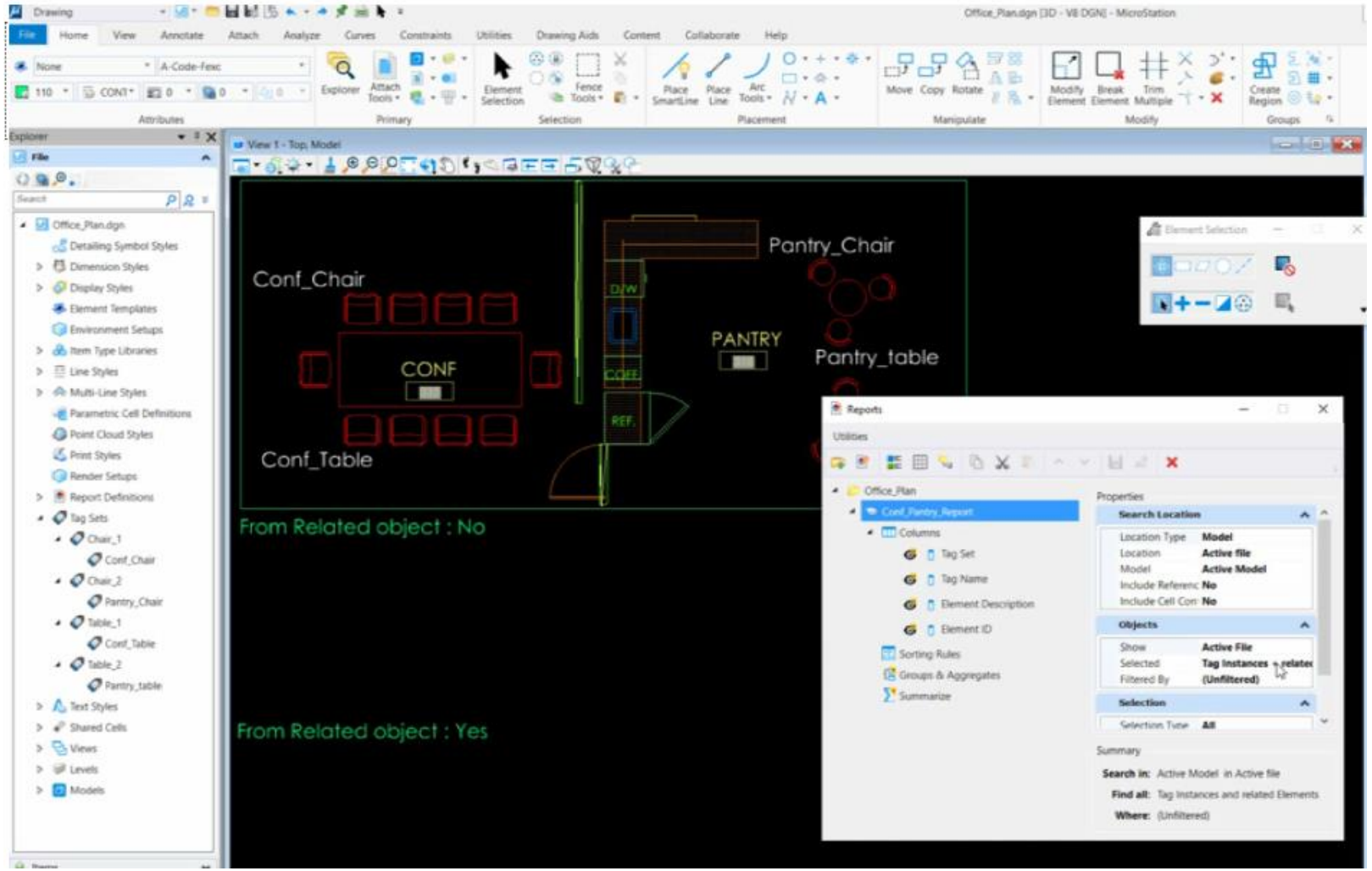
Reports- 17.1

Reports/Tables

Bring common properties of two or more related Object Settings.

- ***Problem/Pain*** | Not a way to report on common properties of related objects
- ***For*** | Engineers and Architects
- ***Value*** | *Better commonality between properties of similar objects*



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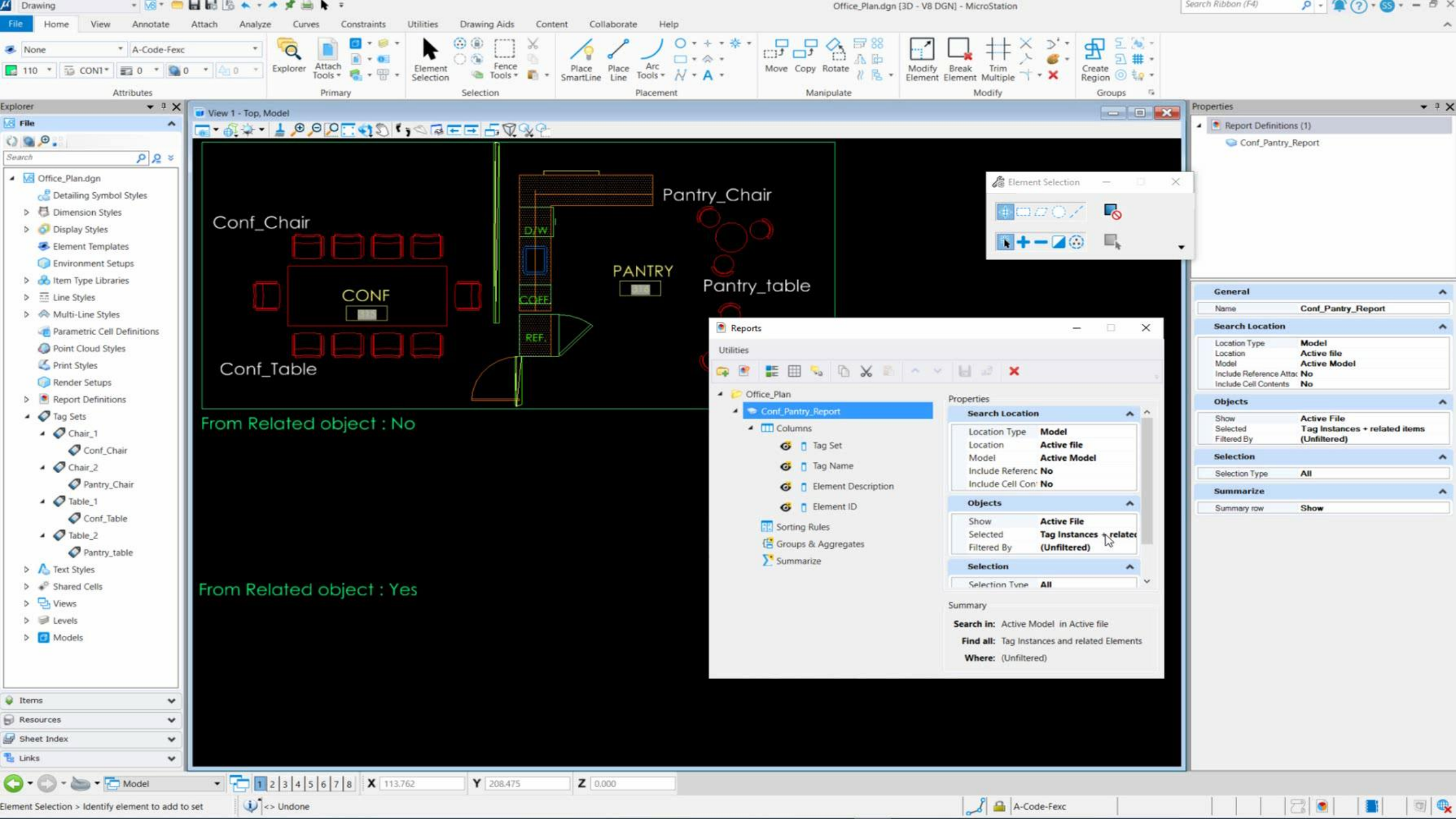
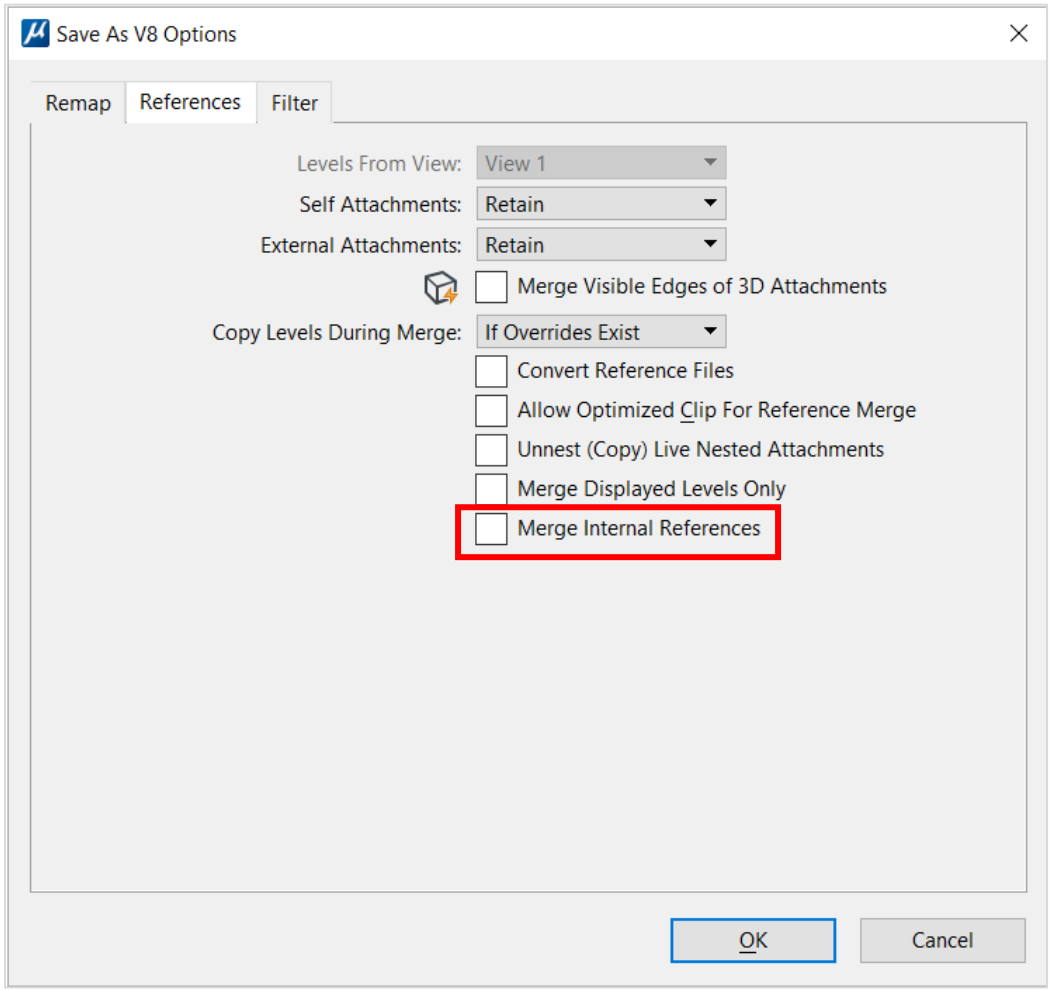

Office_Plan.dgn [3D - V8 DGN] - MicroStation
Explorer
View 1 - Top, Model
Properties
Report Definitions (1)
Conf_Pantry_Report
Conf_Chair
Pantry_Chair
CONF
PANTRY
Pantry_table
Conf_Table
D/W
COFF.
REF.
From Related object : No
From Related object : Yes
Element Selection
Reports
Utilities
Office_Plan
Conf_Pantry_Report
Columns
Tag Set
Tag Name
Element Description
Element ID
Sorting Rules
Groups & Aggregates
Summarize
Search Location
Location Type Model
Location Active file
Model Active Model
Objects
Show Active File
Selected Tag Instances + related
Filtered By (Unfiltered)
Selection
Selection Type All
Summary
Search in: Active Model in Active file
Find all: Tag Instances and related Elements
Where: (Unfiltered)
General
Name Conf_Pantry_Report
Search Location
Location Type Model
Location Active file
Model Active Model
Include Reference Attac No
Include Cell Contents No
Objects
Show Active File
Selected Tag Instances + related items
Filtered By (Unfiltered)
Selection
Selection Type All
Summarize
Summary row Show

Merge Internal Reference Settings - 17.1

Merge Internal Reference

Non-default models are previously kept as internal references

- ***Problem/Pain*** | addition references for non-default models
- ***For*** | Engineers and Architects
- ***Value*** | *Merge internal references while saving a DGN using the new setting available in the Save As V8 Options Dialog, References Tab*



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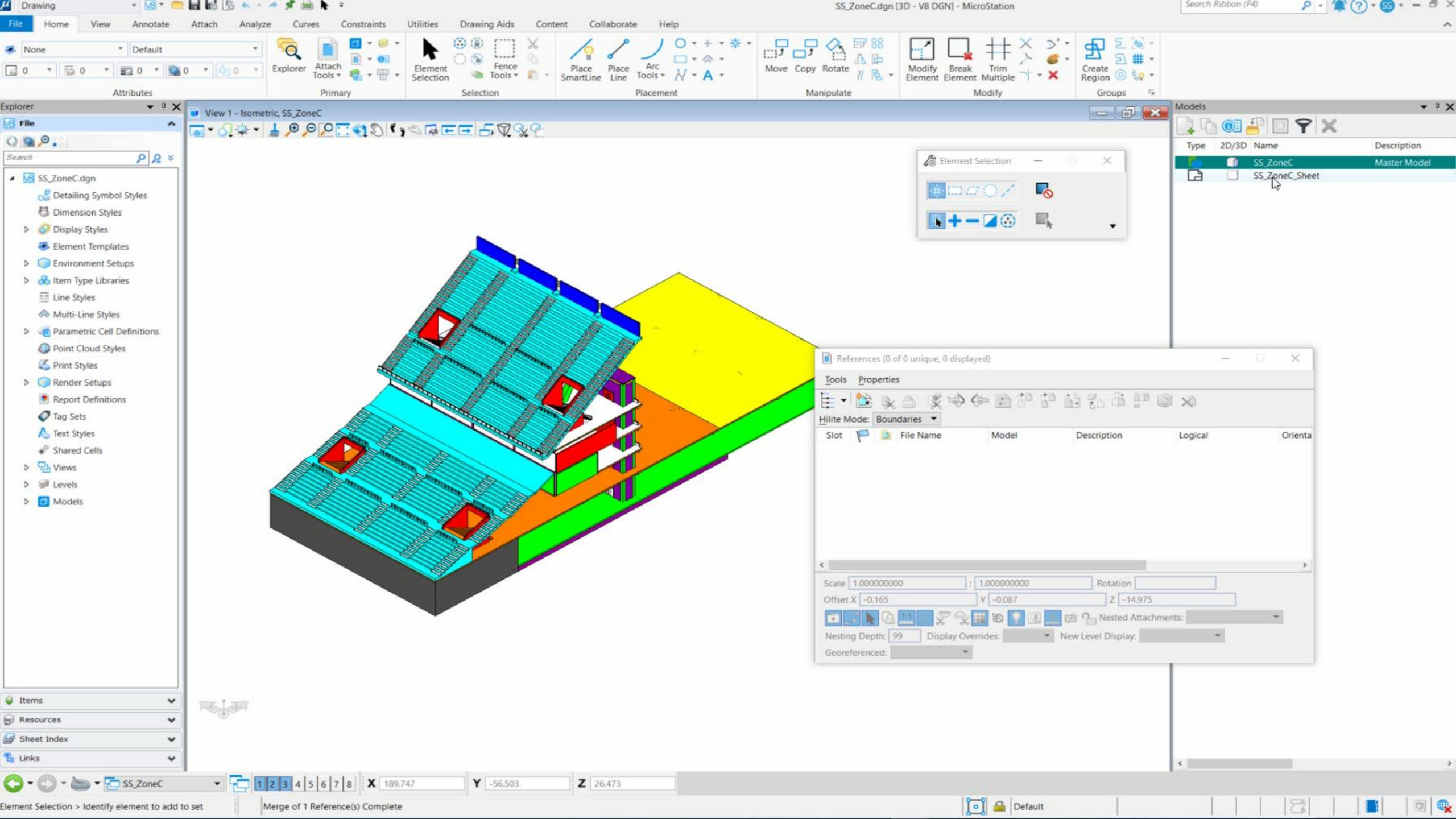
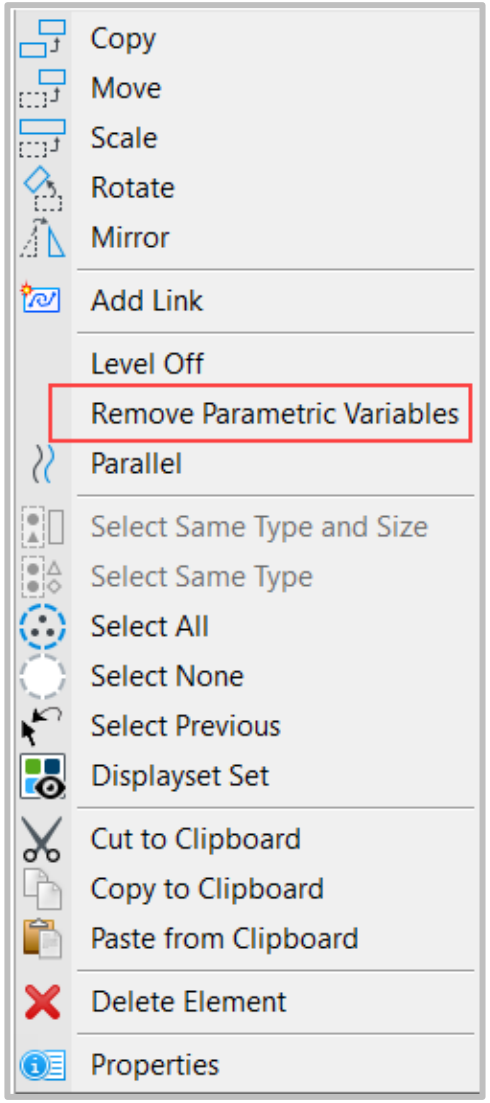

Drawing
SS_ZoneC.dgn [3D - V8 DGN] - MicroStation
Search Ribbon (F4)
File
Home
View
Annotate
Attach
Analyze
Curves
Constraints
Utilities
Drawing Aids
Content
Collaborate
Help
None
Default
Attributes
Explorer
Attach Tools
Primary
Element Selection
Fence Tools
Selection
Place SmartLine
Place Line
Arc Tools
Placement
Move
Copy
Rotate
Manipulate
Modify Element
Break Element
Trim Multiple
Modify
Create Region
Groups
Explorer
File
Search
SS_ZoneC.dgn
Detailing Symbol Styles
Dimension Styles
Display Styles
Element Templates
Environment Setups
Item Type Libraries
Line Styles
Multi-Line Styles
Parametric Cell Definitions
Point Cloud Styles
Print Styles
Render Setups
Report Definitions
Tag Sets
Text Styles
Shared Cells
Views
Levels
Models
Items
Resources
Sheet Index
Links
View 1 - Isometric, SS_ZoneC
Element Selection
References (0 of 0 unique, 0 displayed)
Tools
Properties
Hilite Mode:
Boundaries
Slot
File Name
Model
Description
Logical
Orienta
Scale
Rotation
Offset X
Y
Z
Nested Attachments:
Nesting Depth:
Display Overrides:
New Level Display:
Georeferenced:
Models
Type
2D/3D
Name
Description
SS_ZoneC
Master Model
SS_ZoneC_Sheet
SS_ZoneC
X
189.747
Y
-56.503
Z
26.473
Element Selection > Identify element to add to set
Merge of 1 Reference(s) Complete
Default

Remove Variable from Blocks - 17.1

Remove Parametric Variables

Remove variables from the Parametric Components

- ***Problem/Pain*** | Time lost removing parametric components from a block that has been placed
- ***For*** | Engineers and Architects
- ***Value*** | *Save time with a couple of clicks.*



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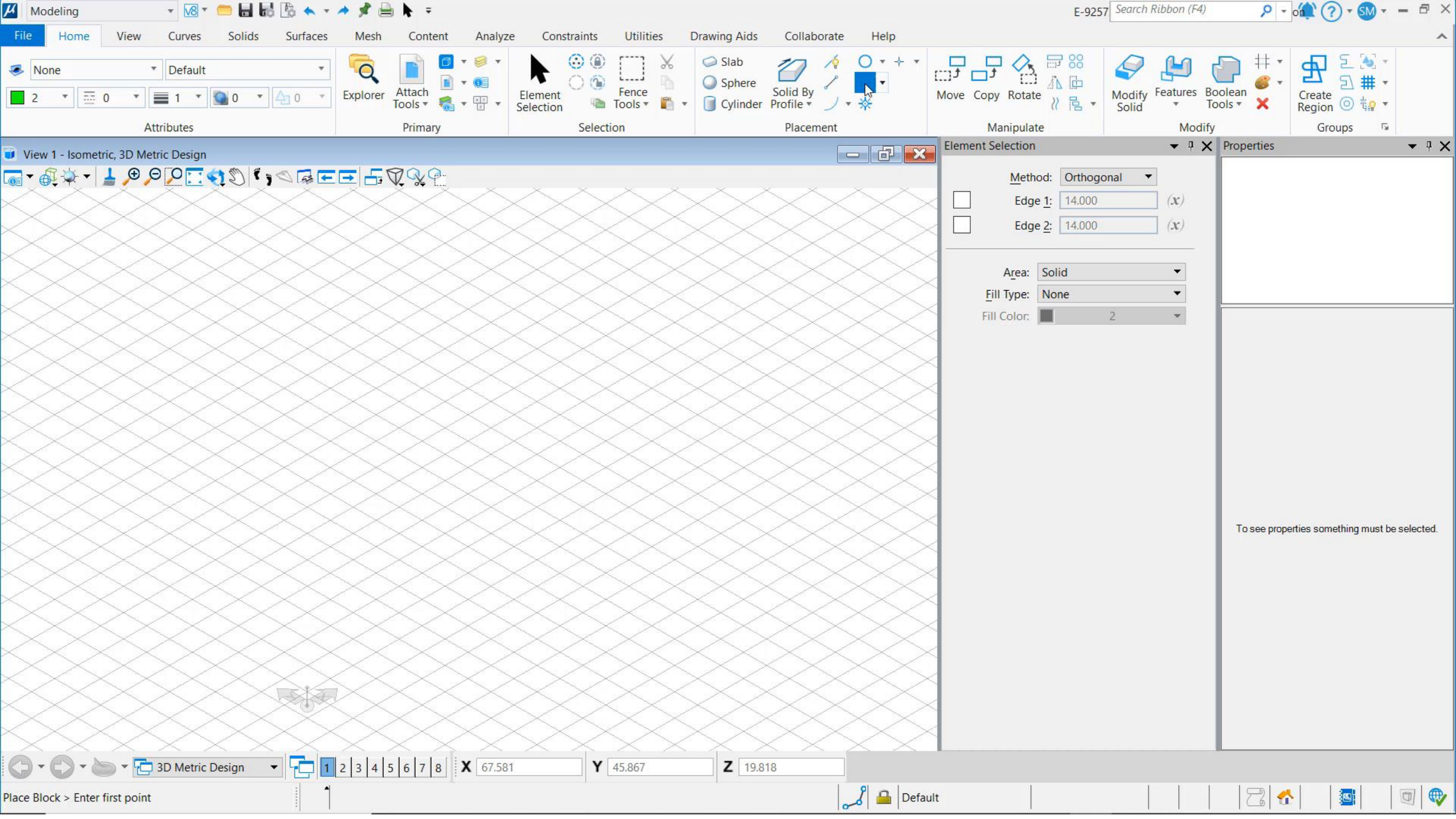
Modeling
E-9257
Search Ribbon (F4)
File
Home
View
Curves
Solids
Surfaces
Mesh
Content
Analyze
Constraints
Utilities
Drawing Aids
Collaborate
Help
None
Default
Attributes
Explorer
Attach Tools
Primary
Element Selection
Fence Tools
Selection
Slab
Sphere
Cylinder
Solid By Profile
Placement
Move
Copy
Rotate
Manipulate
Modify Solid
Features
Boolean Tools
Modify
Create Region
Groups
View 1 - Isometric, 3D Metric Design
Element Selection
Method: Orthogonal
Edge 1: 14.000
Edge 2: 14.000
Area: Solid
Fill Type: None
Fill Color: 2
Properties
To see properties something must be selected.
3D Metric Design
X 67.581
Y 45.867
Z 19.818
Place Block > Enter first point
Default

Summarizing video

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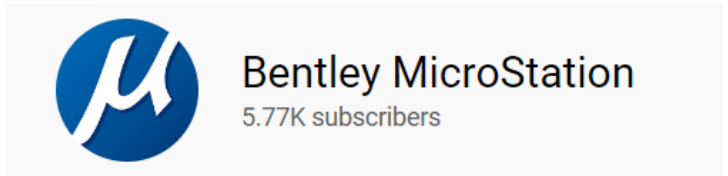
Link

- https://communities.bentley.com/products/microstation/b/microstation_blog



- https://www.youtube.com/c/BentleyMicroStation/playlists

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Coffee Corners

- Event Page
- Sigs

Webcasts

Select one or more of the following webcasts and complete registration. Click any webcast listing to view its details.

- [ ] Select All
- [ ] **Coffee Corner: MicroStation – MicroStation in collaboration with iTwin Services**
  Thursday, December 15, 2022, 11:00 AM EST
- [ ] **Coffee Corner: MicroStation – All about the benefits of the DGN file format**

Overview

Title: Coffee Corner: MicroStation – MicroStation in collaboration with iTwin Services

Date: Thursday, December 15, 2022

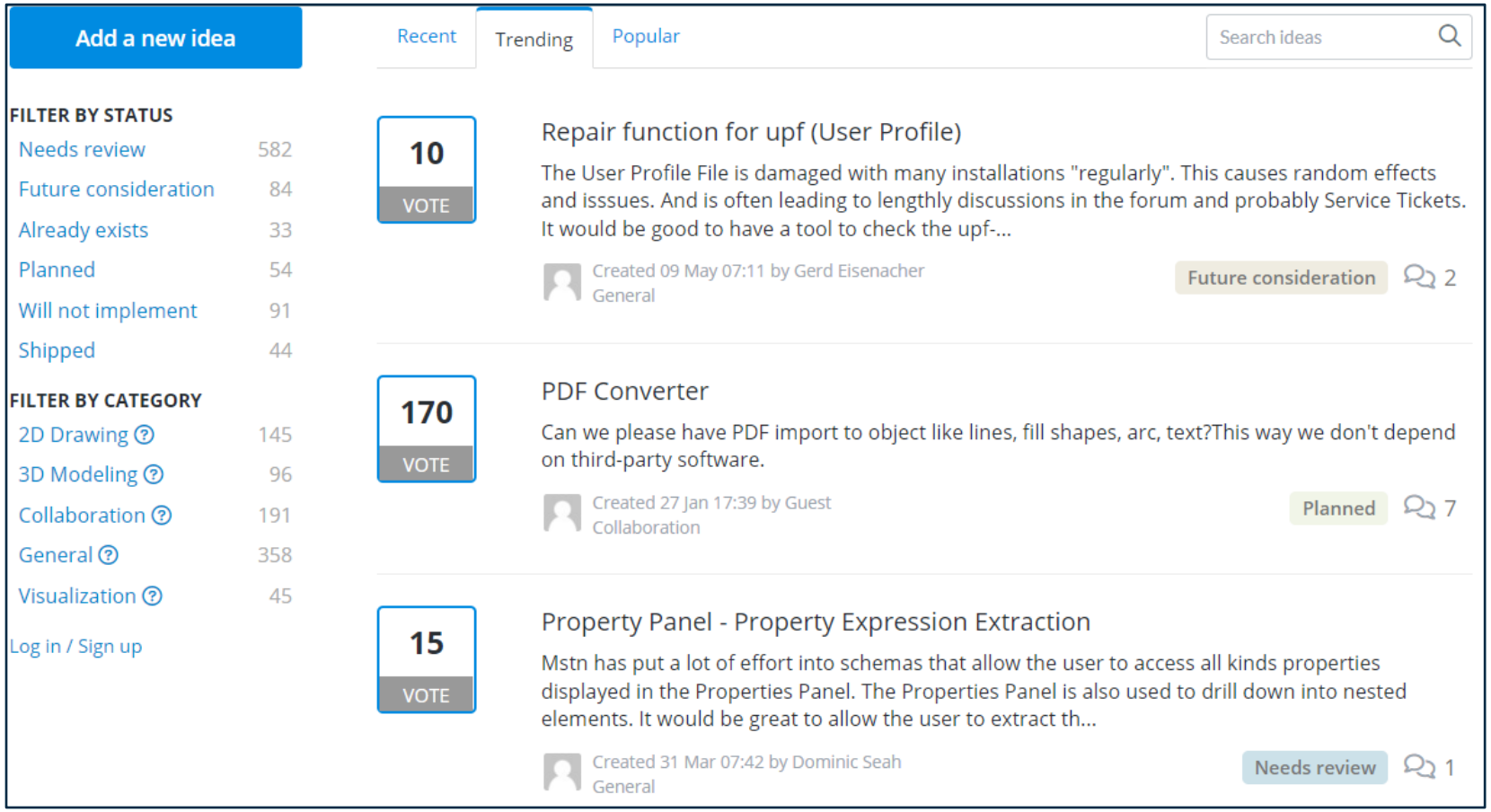
Time: 11:00 AM Eastern Standard Time

Duration: 1 hour

Summary

Ideas

https://microstation.ideas.aha.io/



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Thank you for your attention!