

FOUNDATIONS

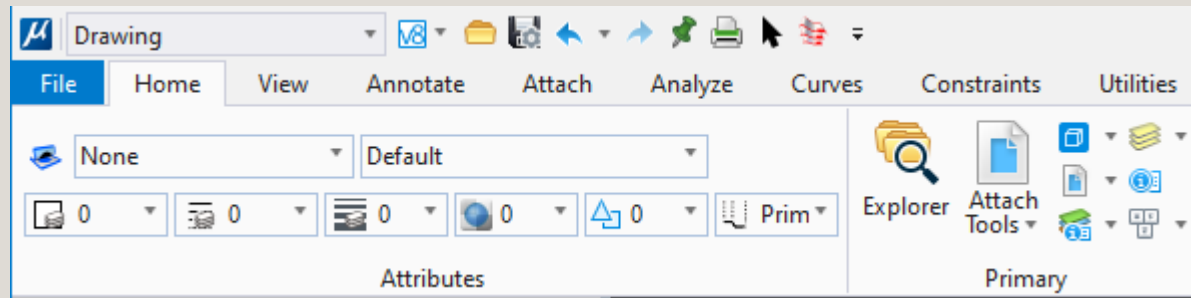
CONNECT PLANS PRODUCTION PROCESSES USING MICROSTATION CONNECT

TOPICS

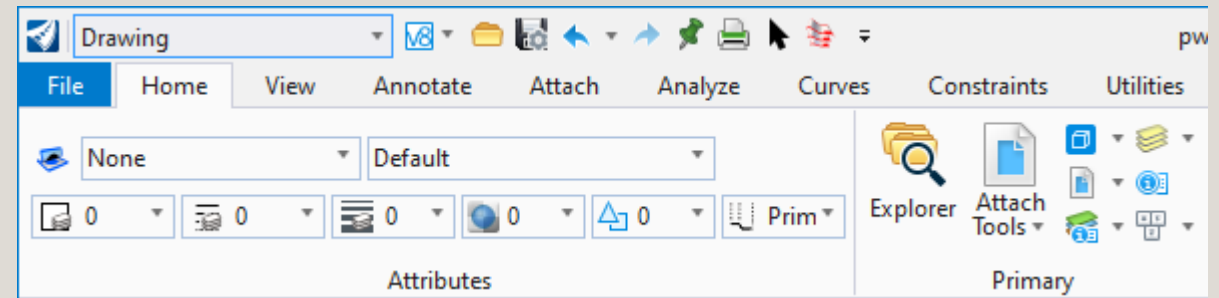
- **Models: Sheet model seeds** - supports creating one-off sketches or plan sheets.
- **Container Files** - supports understanding the structure of design deliverables to project delivery activities.
- **Live Nesting of References** - supports accessing design data from other disciplines and efficiently assembling contract plans.
- **Design Deliverables** - OPNP, XEC_bas, TERR_CF, CORR_CF, GEOM_CF - knowing how these are created should help you better utilize them in your work.

MSCE or ORD?

- MicroStation CONNECT Drawing Ribbon Workflow



- OpenRoads Designer CONNECT Drawing Ribbon Workflow



The Drawing ribbon workflow in both MicroStation CONNECT and OpenRoads Designer is identical - showing the Home tab with Attributes and Primary groups.

SEED FILES

- Design Model Seed Files

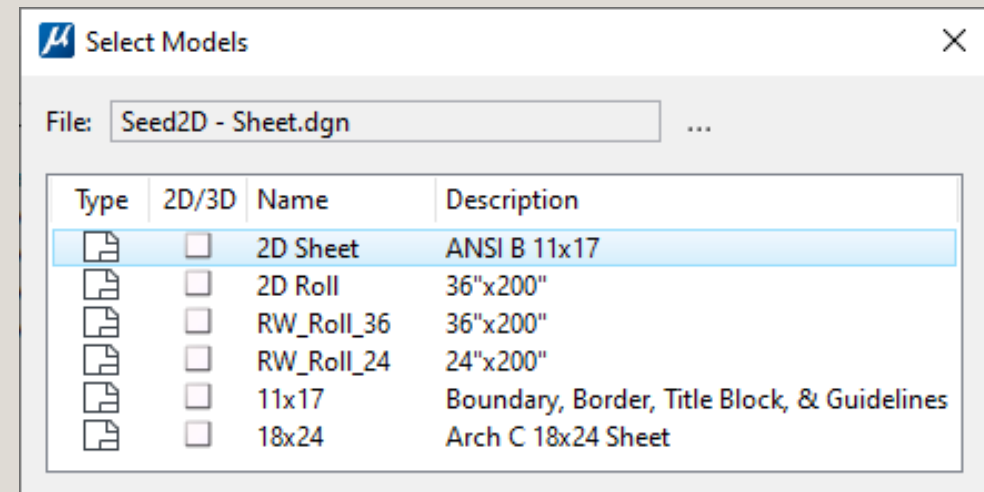
Software_Seed2D.dgn

For Geometry, Corridors, Superelevation, All Container Files, 2D Drafting

Software_Seed3D.dgn

For Terrains and 3D Drafting; NOT for Container Files

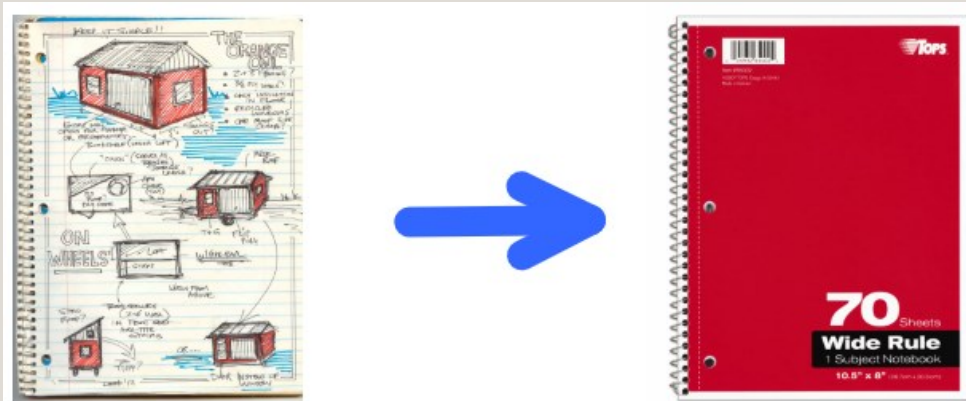
- Drawing Model Seed File
- Sheet Model Seed File: Seed2D – Sheet.dgn



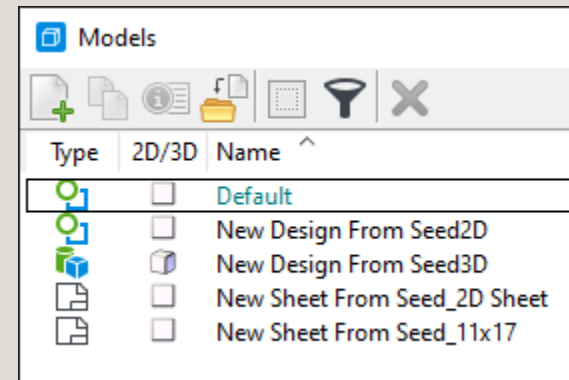
Both MicroStation CONNECT and OpenRoads Designer use seed files with the software name. The main one used for almost everything in OpenRoads is OpenRoads_Seed2D.dgn. Container Files must be made from OpenRoads_Seed2D.dgn. There are six different sheet-type models available for beginning work. Some have boundaries and even titleblocks.

MODEL ANALOGY

SINGLE PAGE IN A NOTEBOOK



A MODEL IN A DESIGN FILE (DGN)



A new model is like a blank page in a notebook - a fresh drawing place.
The new model doesn't have to be empty - it can be a template for standard work.

When we need a fresh place to work in a notebook, we turn the page. When working in a DGN file and we need a fresh place to work, we can create a new model.

CHOICES WHEN MANUALLY CREATING NEW MODELS

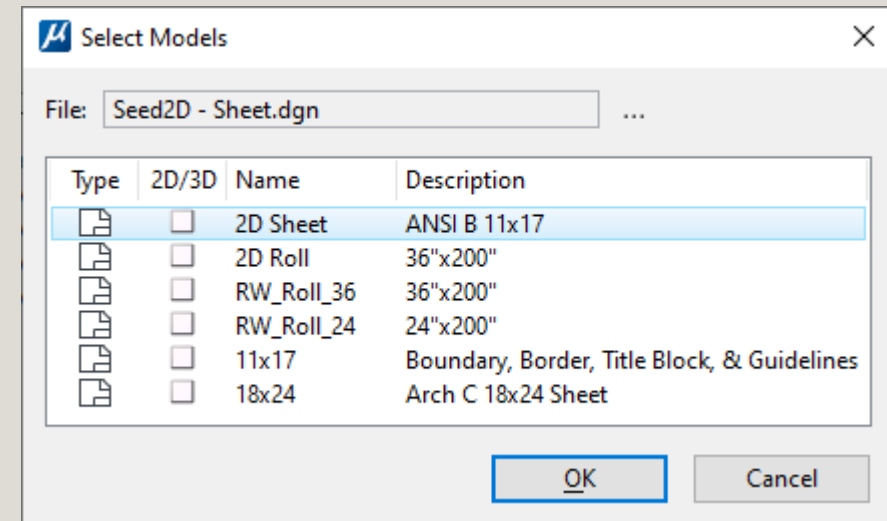
Design From Seed

- 2D
- 3D



Sheet From Seed

- Sheet size
- Graphics

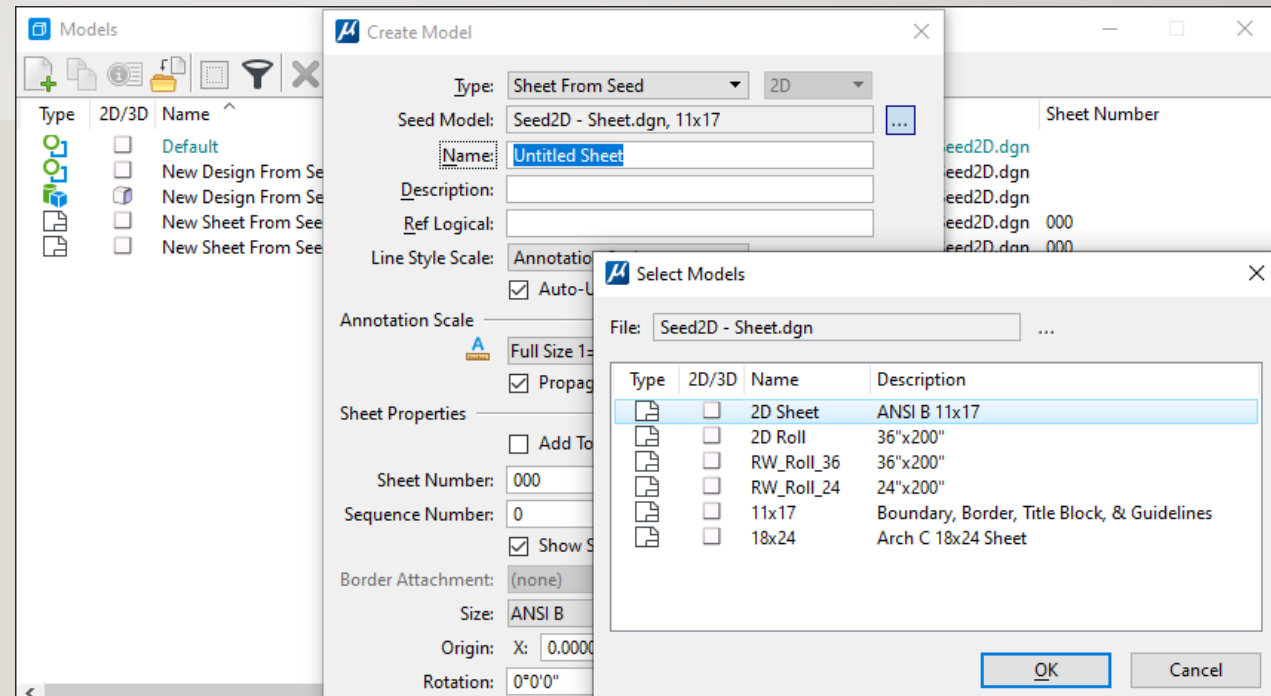


The icons that show the differences between models are also shown in the Models dialog. There are Type icons: Design, Drawing, and Sheet – and there are 2D/3D icons.

DEMO

MicroStation CONNECT

Create New Sheet Models



CONTAINER FILES – THERE’S MORE INSIDE



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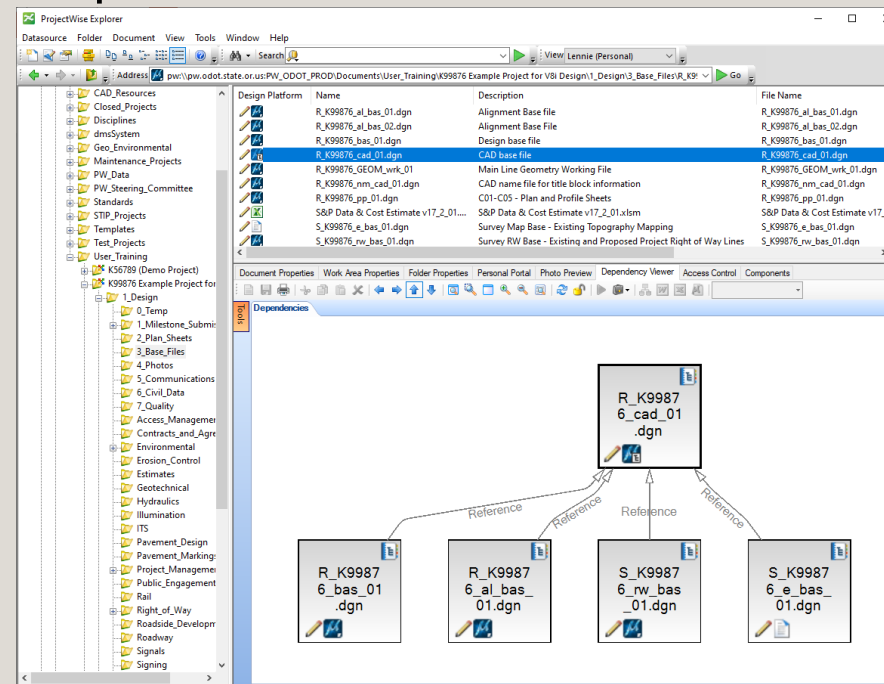


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Pretty sure the term “live nesting” is related to nesting dolls. Each doll nestled inside its parent doll is similar to a reference attachment (child) inside the master DGN file (parent).

CONTAINER FILES

- MicroStation – CAD technicians have been using container files for referencing and assembling plan sets for quite some time – a CAD Base File is a type of container file.



The Dependency Viewer in ProjectWise Explorer shows a CAD Base File with four reference attachments. A CAD Base File is a type of container file.

OPENROADS DESIGNER CONTAINER FILES

OpenRoads Designer uses the container file concept to allow access to civil data through reference attachments. Container files are created from OpenRoads_Seed2D.dgn.

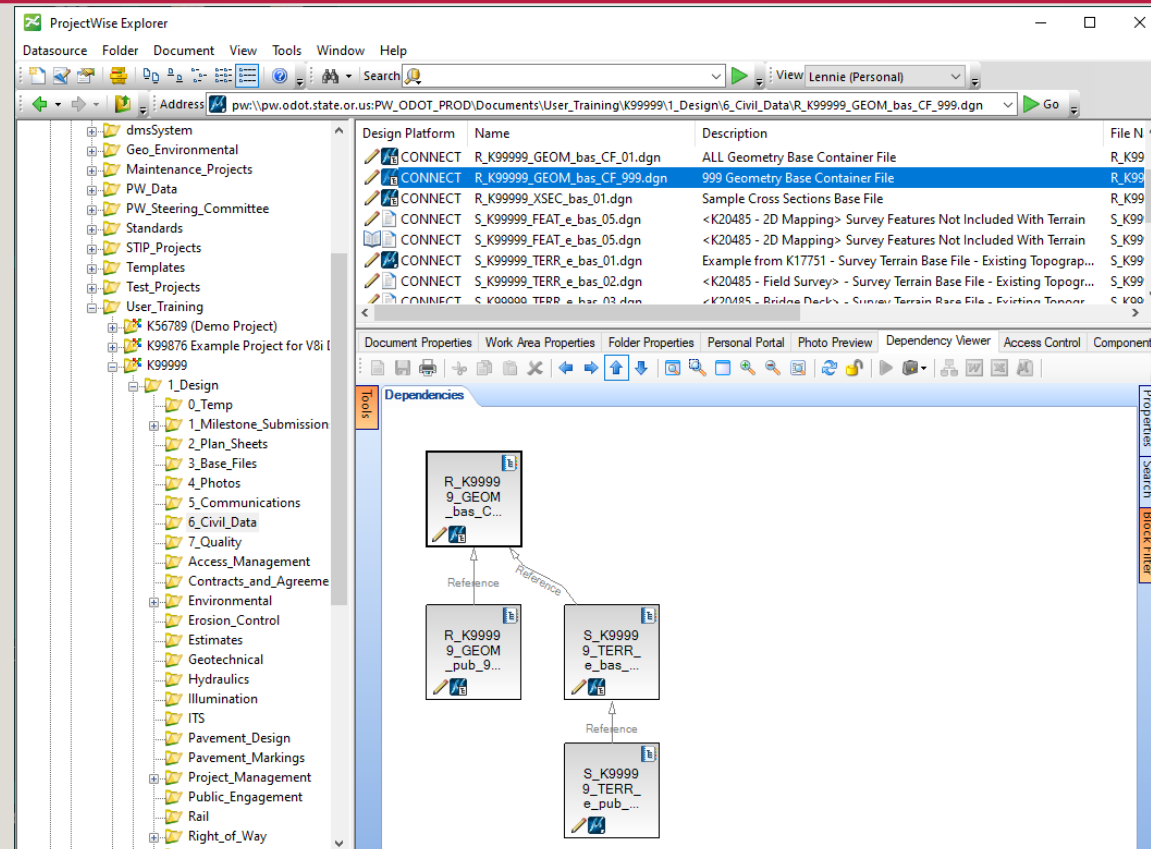
Examples are R_K#####_CORR_bas_CF_###.dgn, R_K#####_GEOM_bas_CF_###.dgn, and S_K#####_TERR_e_bas_CF_###.dgn

Typical ORD container files have:

- only one visible model - Default
- Default model is 2D
- Few graphics in the Default model
- One or many reference attachments
- May use nested referencing

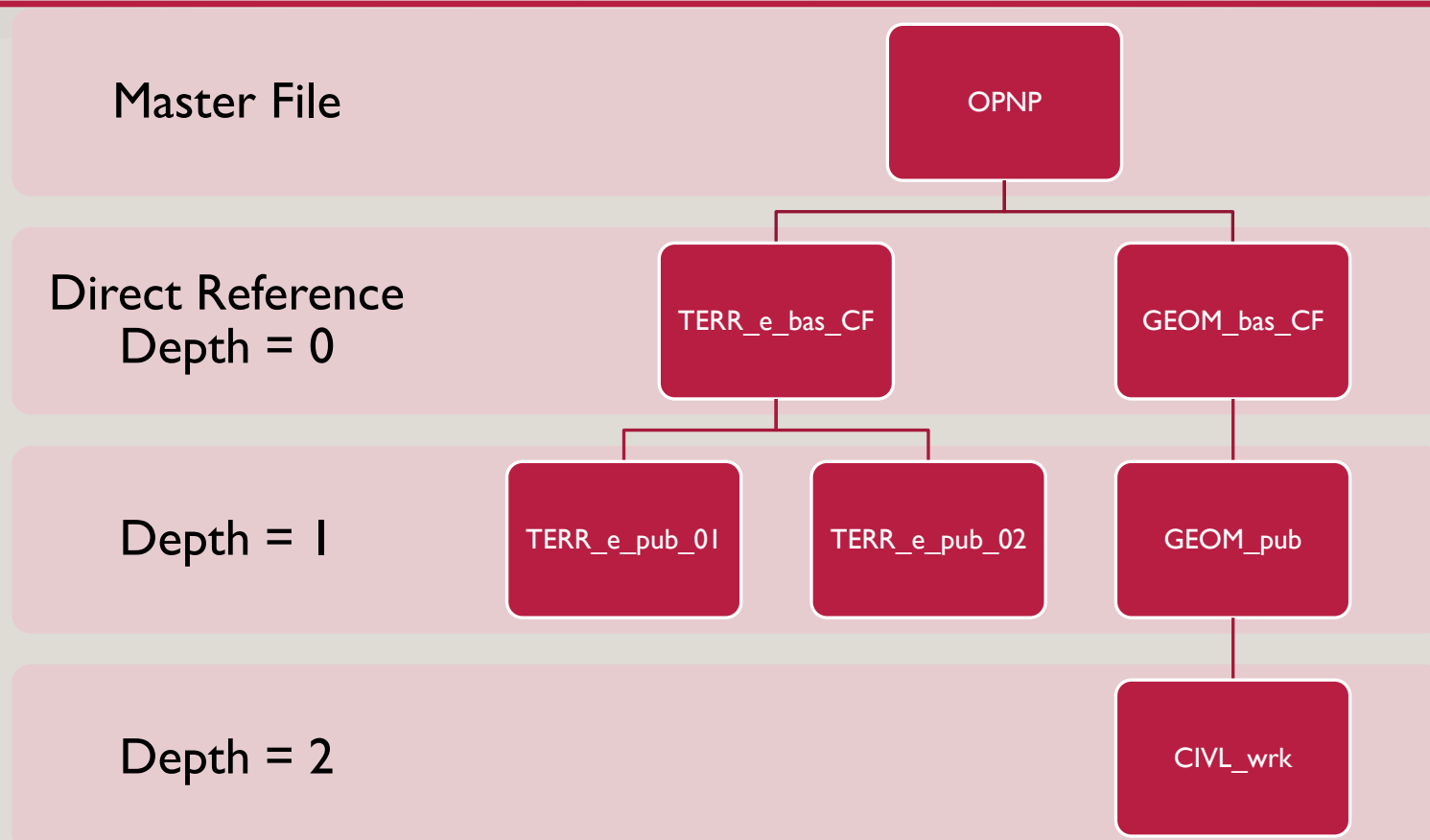
ORD container files have specific requirements and the most important is – it is created from a 2D file – use OpenRoads_Seed2D.dgn for creating all ORD container files.

OPENROADS DESIGNER CONTAINER FILES



The Dependency Viewer in ProjectWise Explorer shows a Geometry Base Container File with four reference attachments – at different levels. Live nesting will need to be toggled on for the Terrain Container File attachment in order to see the published terrain graphics nested inside.

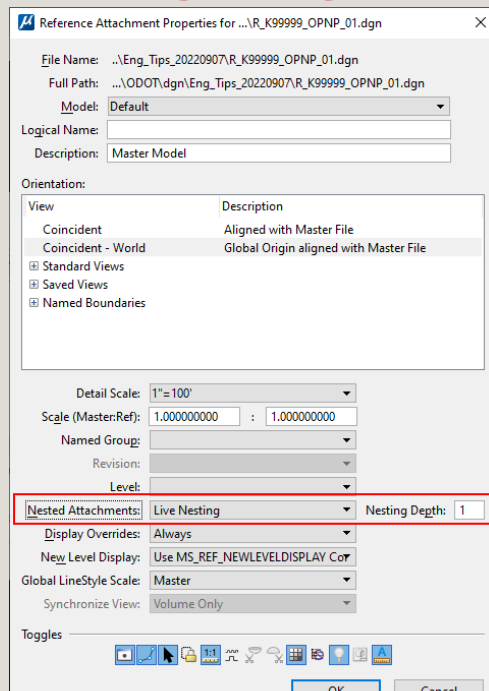
LIVE NESTING DEPTHS



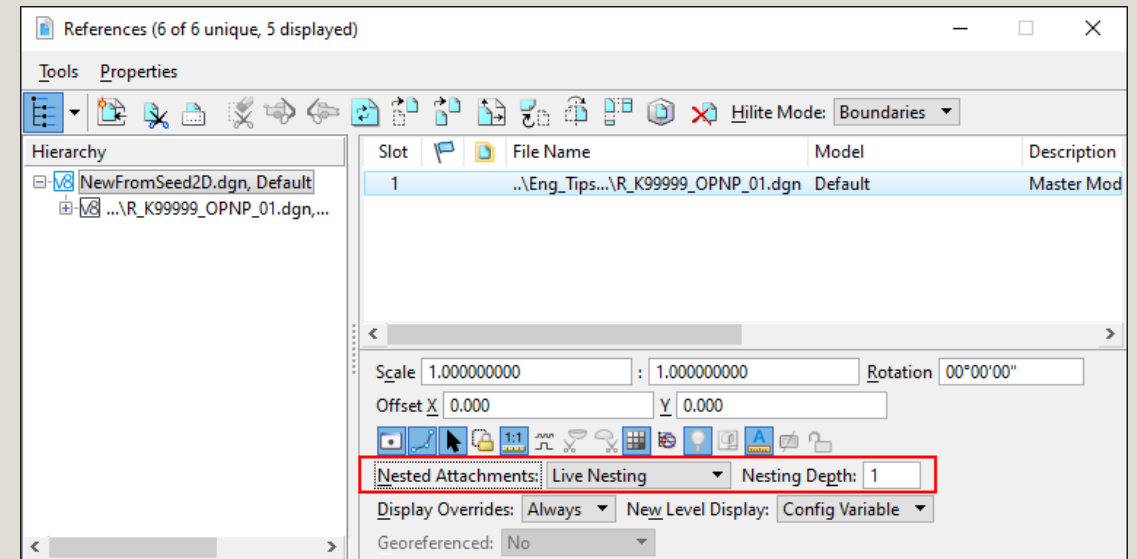
Good practice when attaching references with Live Nesting is to begin with Depth = 1. If you don't see the graphics, increase the depth by one until the graphics are seen.

ADDING LIVE NESTING

WHILE ATTACHING REFERENCE

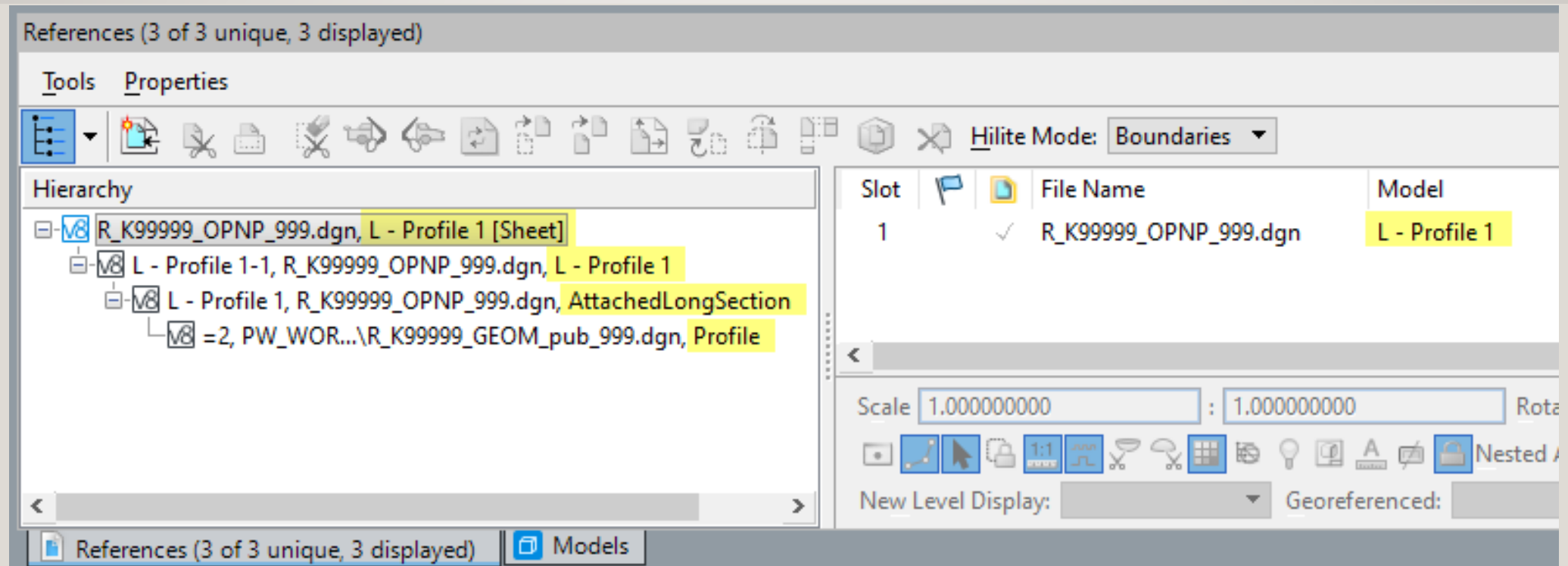


ON REFERENCE DIALOG



Live Nesting can be toggled on at the time the reference attachment is made and also toggled on later using the References dialog.

REFERENCE DIALOG SHOWS THE MODEL NAME

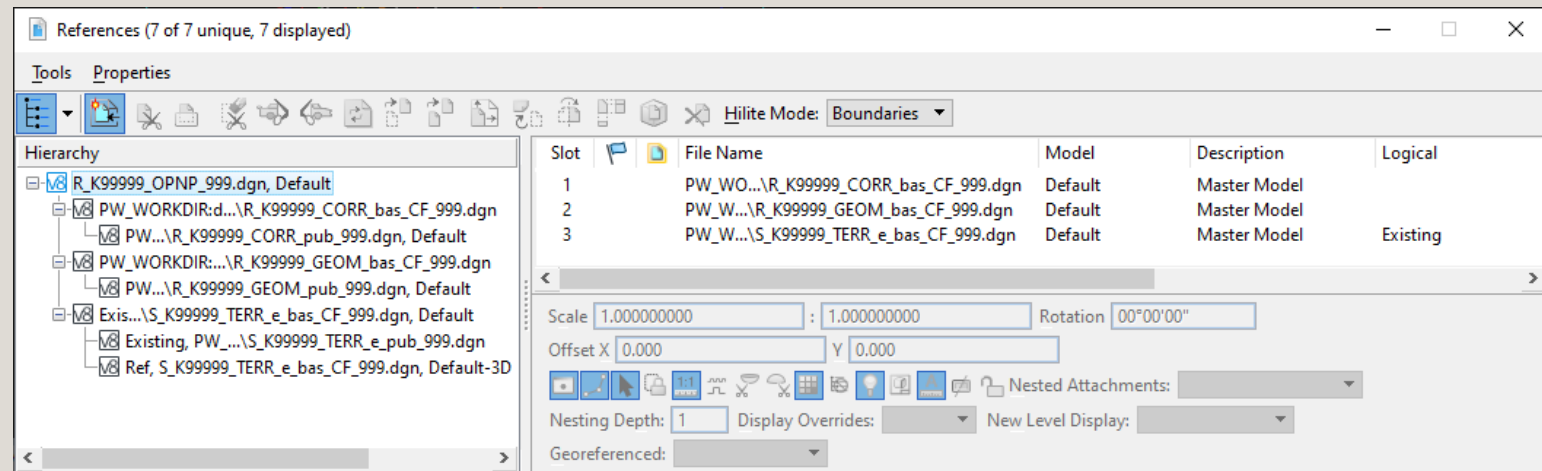
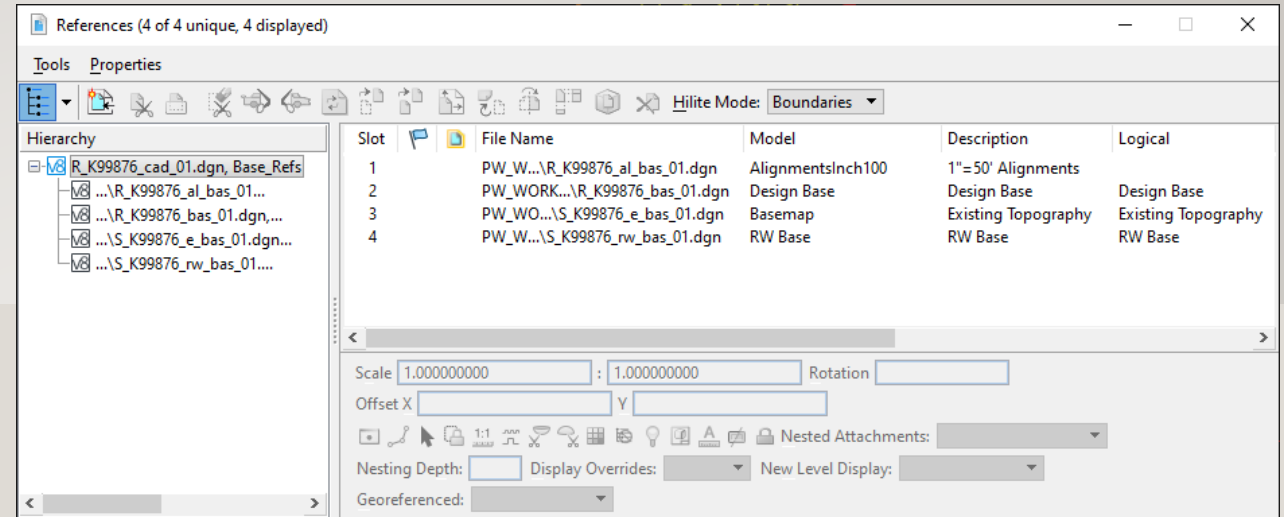


When Live Nesting is used to attach a sheet model that was created by ORD, you can see the nested model names (highlighted yellow). Note that “AttachedLongSection” and “Profile” are dynamic models that cannot be directly attached – they do not appear in the Models pick list when attaching references.

DEMO

Explore the Structure of a CAD Base File (top)

and an ORD Container File (bottom)



References dialogs with the hierarchy open and expanded on the left side – the demo will open two different container files – one created using MicroStation, the other created using OpenRoads Designer.

DESIGN DELIVERABLES – OPNP & XSEC_bas

The Plans Production Process and Design Deliverables

The CONNECT Processes group along with the ORD and CAD Standards Committees have been working on efficient methods for using both MicroStation CONNECT and OpenRoads Designer to produce contract plans. The following documents explain methods to create the files that display the design using OpenRoads Designer and methods of assembling that data into sheets using MicroStation CONNECT.

- [Design Deliverables for Plans Production](#)
- [Plans Production Process](#)
- [Using OpenRoads Designer and the ODOT Drawing Boundary Seeds](#)
- [Civil Drawing Boundary Sizes](#)
- [ORD and MSCE for Plan and Profile Sheets](#)

https://www.oregon.gov/odot/EAST/Pages/MSCE_UserGuide.aspx

Information about Design Deliverables and the Plans Production Process can be found on the EAST website in either CONNECT User Guide: MicroStation or OpenRoads Designer.

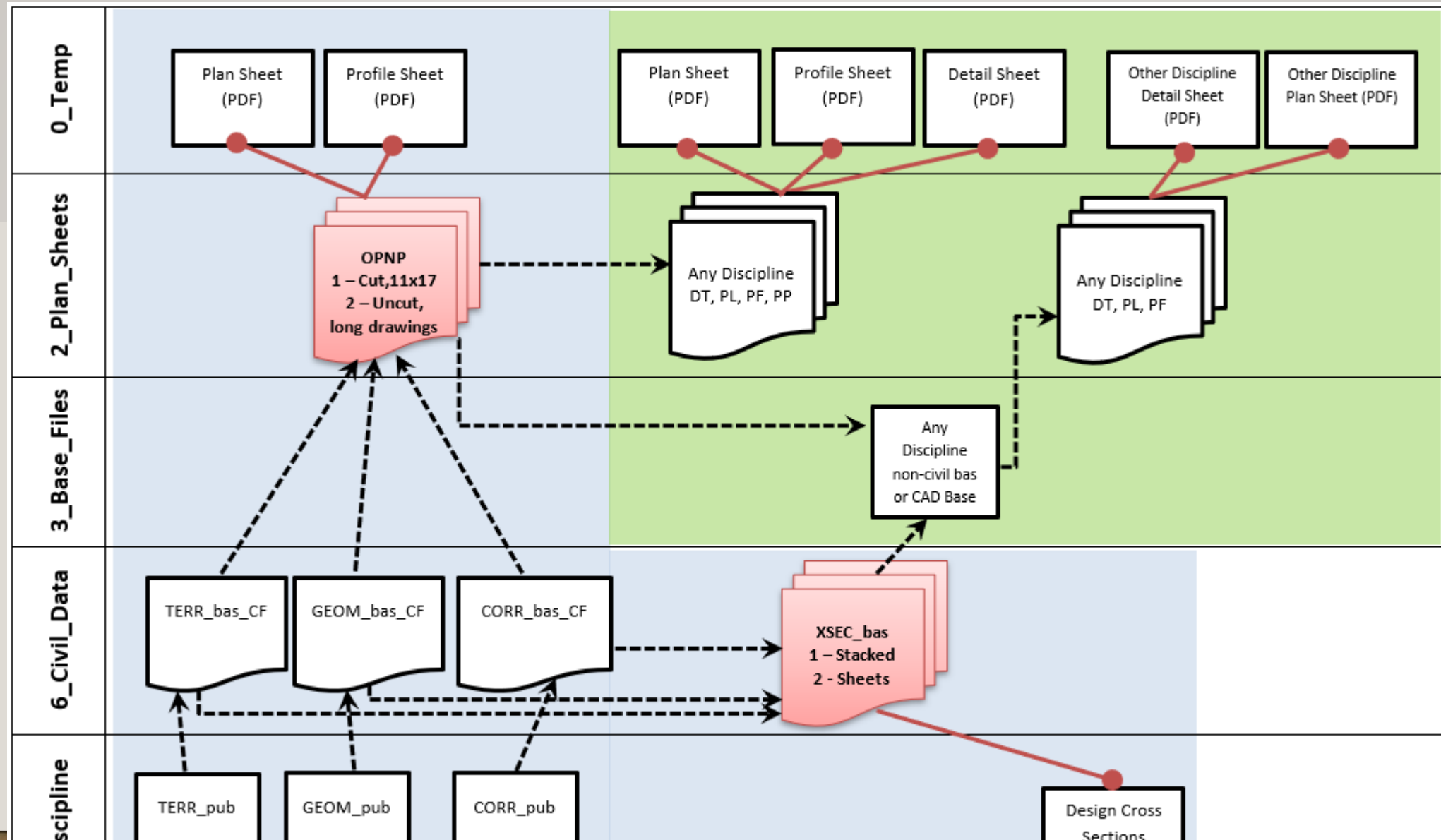
WHY DO WE HAVE TO USE DESIGN DELIVERABLES?

Displaying a design in drawing and sheet models is the only method that OpenRoads Designer provides for expressing the horizontal and vertical design with permanent graphics.

- The dynamic profile and cross section models used by designers with OpenRoads Designer cannot be attached as references!
- The dynamic profile and cross section models are not available for other discipline designers to use in their design!
- The dynamic profile and cross section models are not available for CAD technicians to use in plans production!

This question always comes up...

OPNP & XSEC_BAS DESIGN DELIVERABLES

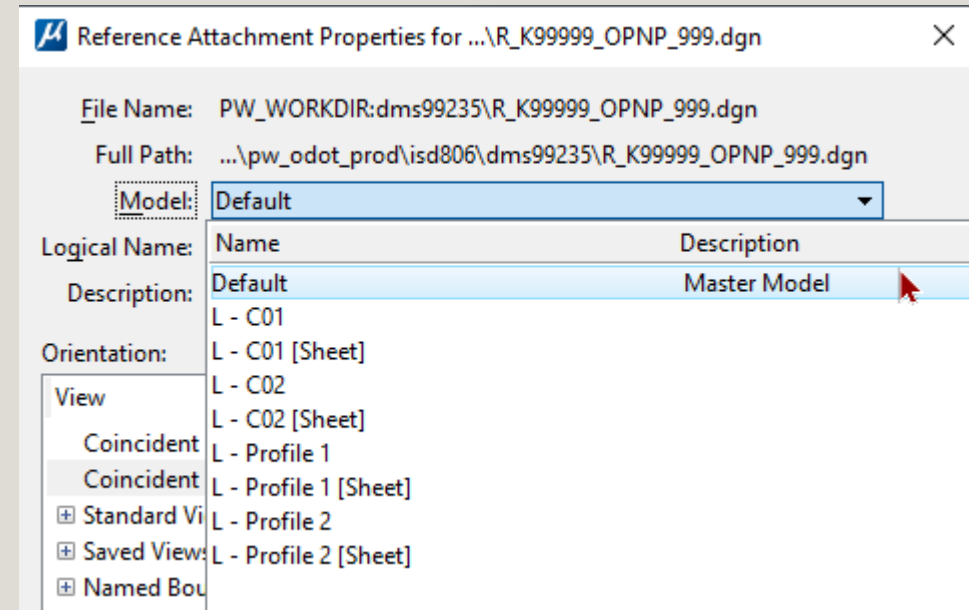
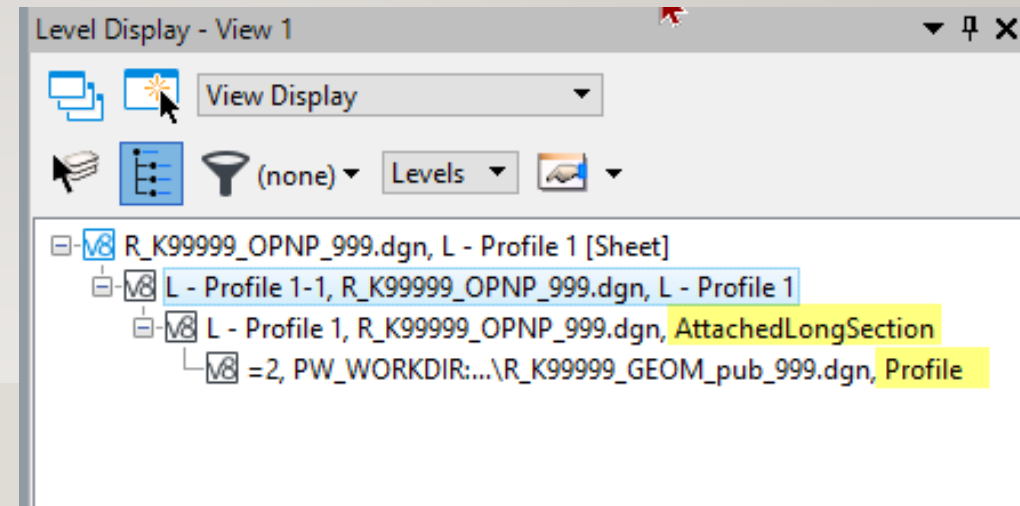


This swim lane schematic of the ProjectWise folder usage shows the OPNP and XSEC_bas Design Deliverables at the heart of the plans production process.

DEMO

MicroStation CONNECT

Compare models in an OPNP file to those available for reference attachment.



The Directory Tree of the Level Display dialog (top) and the Reference Attachment Properties dialog with the Models pick list expanded (bottom) illustrates that the dynamic models that ORD creates and manages are not available for direct reference attachment. This is exactly the reason that the OPNP and XSEC_bas files are required for project delivery.

QUESTIONS?

A LOOK AHEAD

November 2 - Civil Drawing Boundaries and Non-civil Drawing Boundaries

- Differences Between Civil Drawing Boundaries and Non-civil Drawing Boundaries:
Difference between civil plan and "along path"
- How to access and control the drawing boundaries
- Editing Drawing Boundary Names and Descriptions
- What happens when a civil drawing boundary is moved or the shape changed
- Civil Plan and Detail (Full and Notes)
- When to use Civil Plan versus From Drawing Boundary