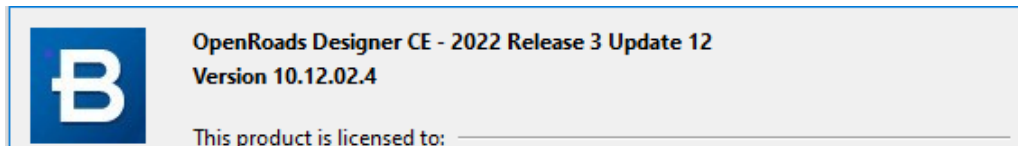
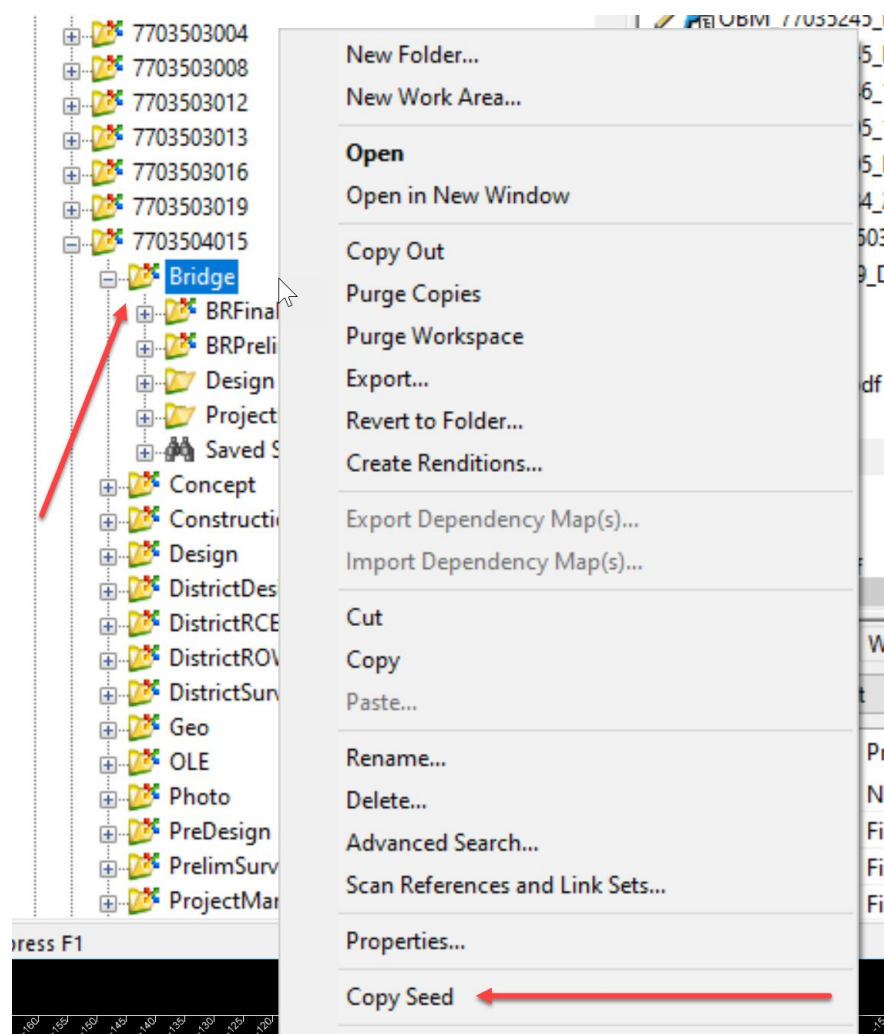


Setting up the OpenRoads Designer File for Pipe Design

These instructions were created February 2024. These instructions were created with:



The first step to a pipe design, is to create the OpenRoads Designer files that are needed. In ProjectWise, use the Copy Seed tool. Navigate to the correct project directory for the project. In the Bridge folder right click on the folder and select the Copy Seed command.



The Copy Seed utility will open.

The screenshot shows the 'Copy Seed v.08' window. It has a blue title bar. Inside, there are several input fields and buttons. At the top left is 'File Suffix:' with an empty text box. To its right is 'Name of file to create (CCRRRPPP) : C=County, R=Route, P=Parenthesis' with an empty text box. Below these is 'Location of file to create: Projects\7703504015\Bridge'. In the center is a 'Choose file type:' dropdown menu currently showing 'ORD PIPE CULVERTS Seed'. To the right of this dropdown is a 'Create File' button. At the bottom left is 'Extension of file to create : dgn' with a small text box. To its right is 'Scale of file to create : Z08' with a dropdown menu. At the bottom right is an 'Exit' button.

Next, name the file. For pipes, the naming convention for the file is
ORD_CCRRRPPP_DOT_PIPE_CULVERTS_SPN

where

- ORD** = the application the work is done in
- CC** = County
- RRR** = Route
- PPP** = Parenthesis
- DOT** = company and or source of the file
- PIPE CULVERTS** = type of work
- SPN** = coordinate projection of this project.

For this example, the file will be ORD_8075057_DOT_PIPE_CULVERTS_Z01.dgn. Please refer to the [Seed File](#) document on Iowa Department of Transportation Bridge Connect Documentation page for further instructions on naming the files.

Next select the correct file type. For this work, choose the ORD PIPE CULVERTS Seed.

The screenshot shows the 'Copy Seed v 10.0.0.0' window. It has a blue title bar. The 'File Suffix:' and 'Name of file to create (CCRRRPPP) : C=County, R=Route, P=Parenthesis' fields are at the top. The 'Location of file to create: Projects\3600202024\Bridge' is below. The 'Choose file type:' dropdown menu is open, showing a list of file types. A red arrow points to the 'ORD PIPE CULVERTS Seed' option, which is highlighted in blue. Another red arrow points to the 'Create File' button. The 'Extension of file to create' field is partially visible on the left. The 'Exit' button is at the bottom right.

Then select the correct coordinate projection for the file. For this example, select Z08 for IaRCS Zone 08.

The screenshot shows the 'Copy Seed v 10.0.0.0' dialog box. The 'Name of file to create (CCRRRPPP)' field contains '075057_DOT_PIPE_CULVERTS_Z01'. The 'Location of file to create' is 'Projects\8407501017\Bridge'. The 'Choose file type' dropdown is set to 'ORD PIPE CULVERTS Seed'. The 'Extension of file to create' is 'dgn'. The 'Scale of file to create' dropdown is open, showing a list of options from Z01 to Z07. The 'Z01' option is selected. Red arrows point to the dropdown menu and the 'Z01' option. The 'Create File' button is visible.

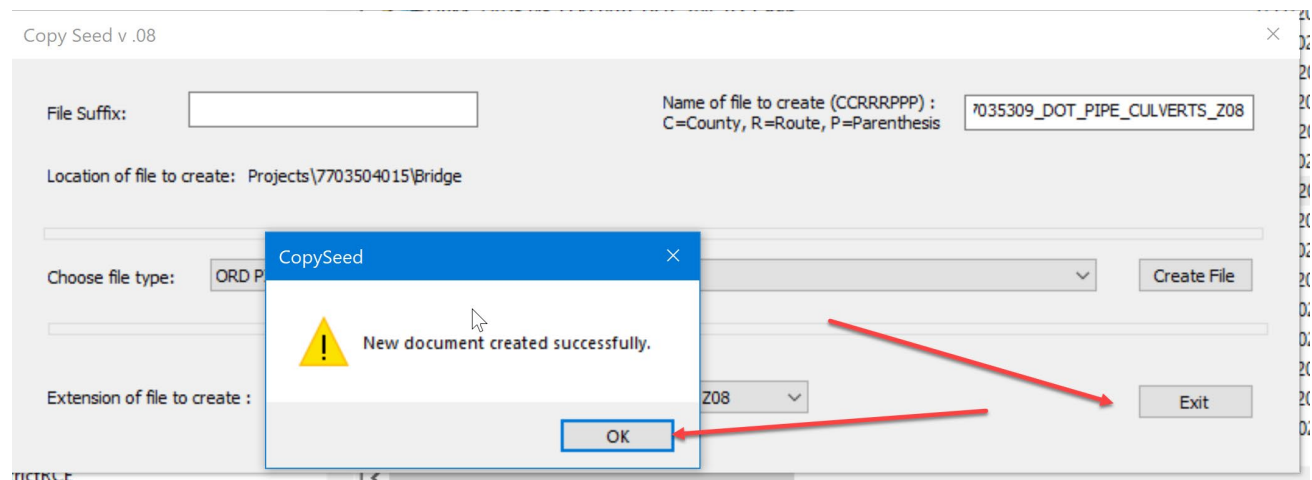
Properties (Work Area Type - IDOT_Bridge_Project_Number)	Scale of file to create
BRG_PIN_NUM	Z01
BRG_PROJ_NUM	Z02
BRG_PROJ_TYPE	Z03
BRG_TYPE_OF_PLANS	Z04
IA_GROUP	Z05
BRG_FILE_NUMBER	Z06
BRG_PRELIM_ENGINEER	Z07
BRG_FINAL_ENGINEER	Z08
BRG_DESIGN_NO	Z09
BRG_STATUS	Z10
BRG_STATION_NUMBER	Z11
	Z12
	Z13
	Z14
	UD
	SPN
	SPS
	Z01
	Z02
	Z03
	Z04
	Z05
	Z06
	Z07

Once everything is set, click on the Create File button.

The screenshot shows the 'Copy Seed v 10.0.0.0' dialog box with the 'Create File' button highlighted by a red arrow. The 'Name of file to create (CCRRRPPP)' field contains '075057_DOT_PIPE_CULVERTS_Z01'. The 'Location of file to create' is 'Projects\8407501017\Bridge'. The 'Choose file type' dropdown is set to 'ORD PIPE CULVERTS Seed'. The 'Extension of file to create' is 'dgn'. The 'Scale of file to create' dropdown is set to 'Z01'. The 'Create File' button is highlighted.

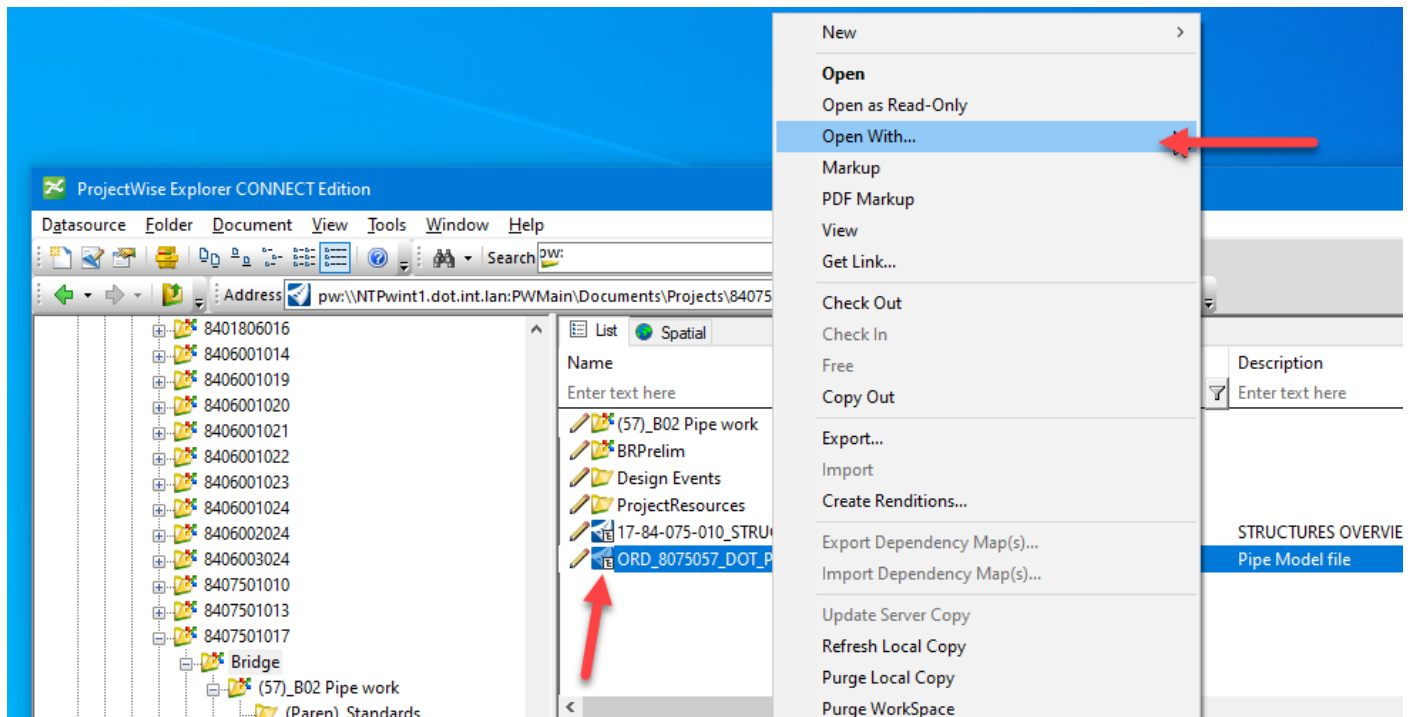
This creates the correct dgn file in the project directory.

A message saying New document created successfully displays. Click OK button on the message.

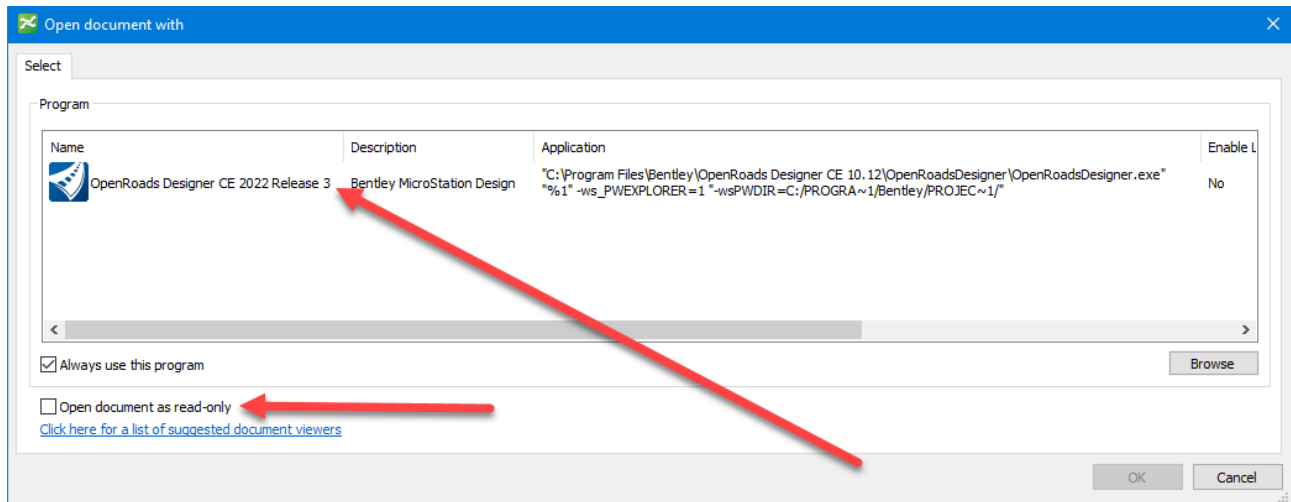


Then, click on the Exit button to close the Copy Seed tool.

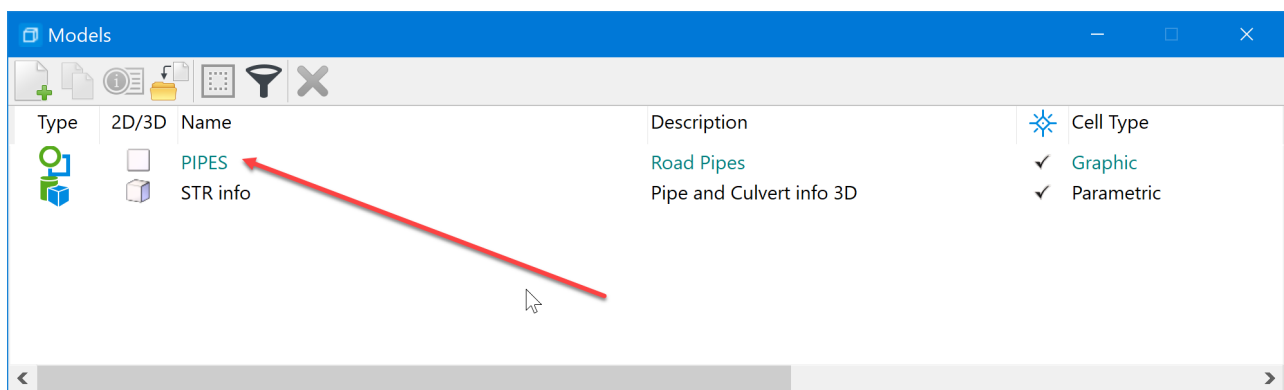
Once the file is created, open it in the project directory. To do this, select the file, then right click and select Open with...



Select the OpenRoads Designer CONNECT Edition program. Then click on OK.



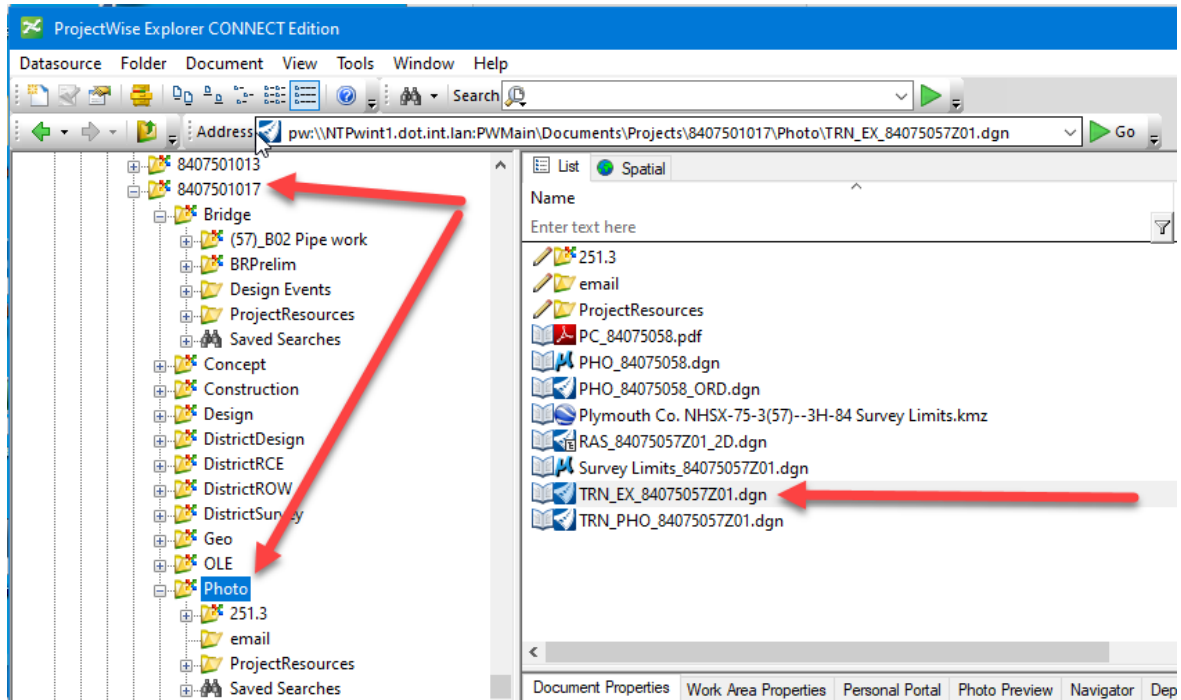
Now that the file is open, set the file up to allow the use of the multi-model workflow and make a 3D cut of the proposed corridor.



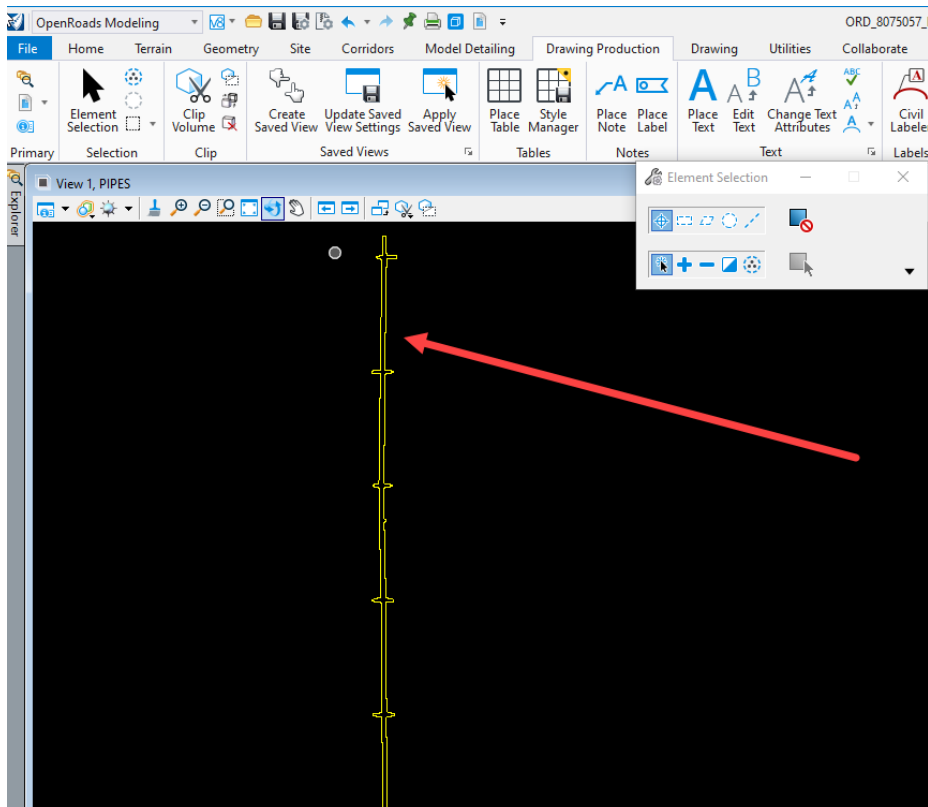
Next, use the existing ground TRN file to create the 3D managed model. Reference in the existing ground TRN file to the PIPES 2D model in the file that was just created.

In ORD when 3D information is leveraged in a 2D file it will automatically create the 3D managed model.

For this example, reference in the TRN file from the survey or Photo location. For this example, it is in the Photo folder and is called TRN_EX_84075057Z01.dgn.

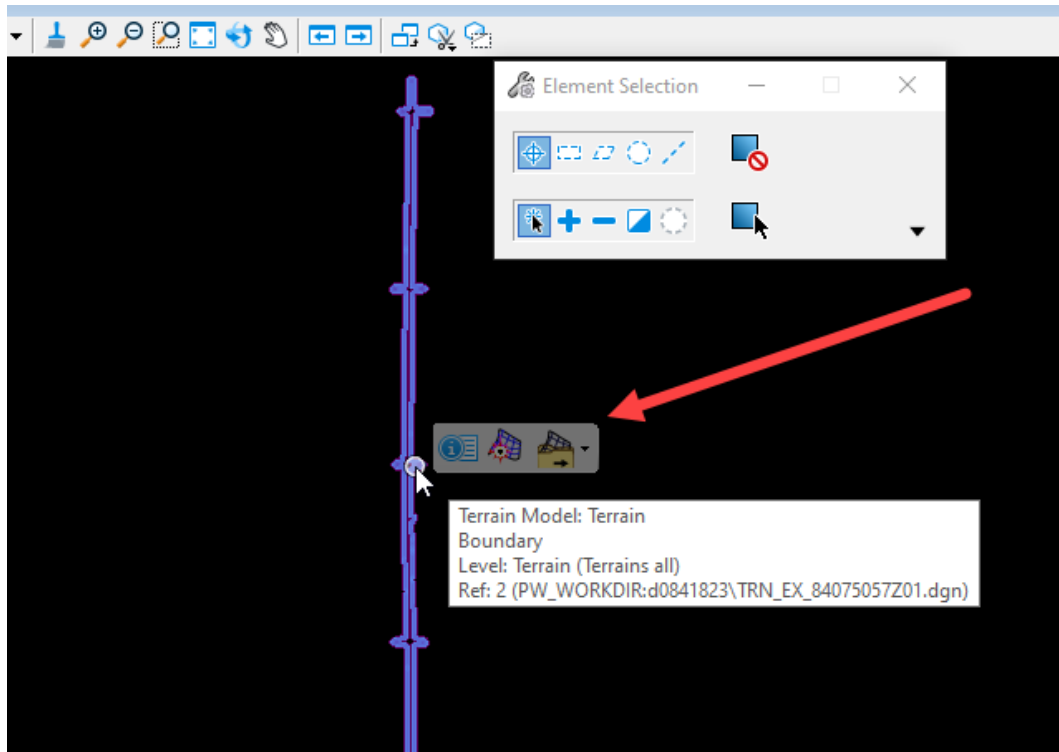


The content of the file should look like this:

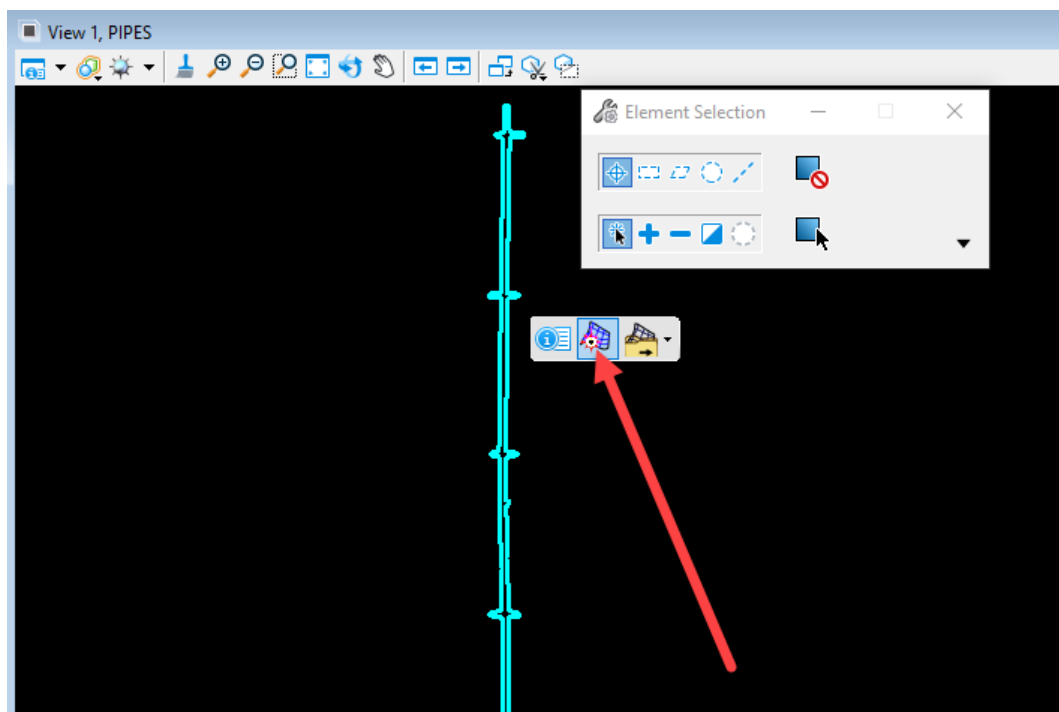


Next, using the Element Selection tool select the boundary of the TRN file.

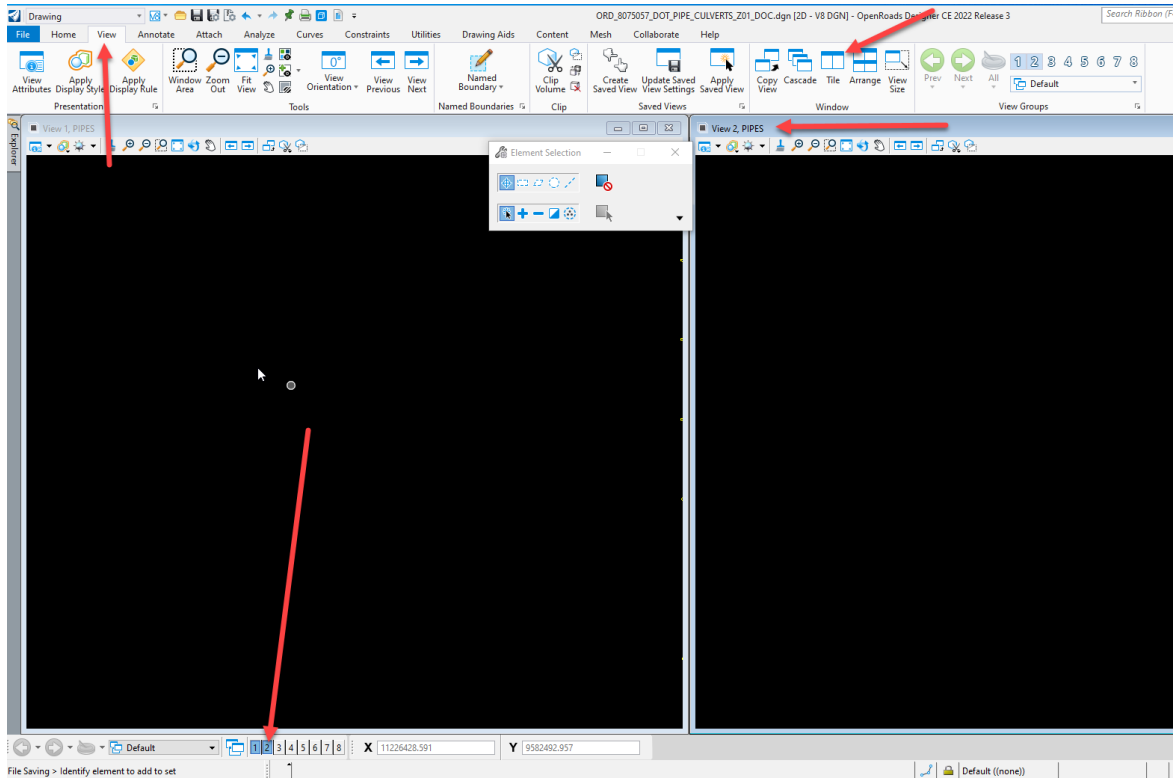
It should turn blue. Then hover over it to activate the heads-up toolbox.



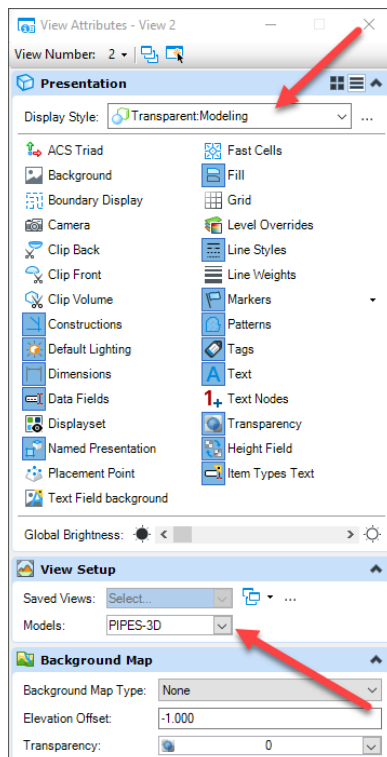
Select the middle tool, Set As Active Terrain Model. Once selected, it will change the icon.



Next, open a second view window. Then select the Tile windows tool in the Window ribbon.

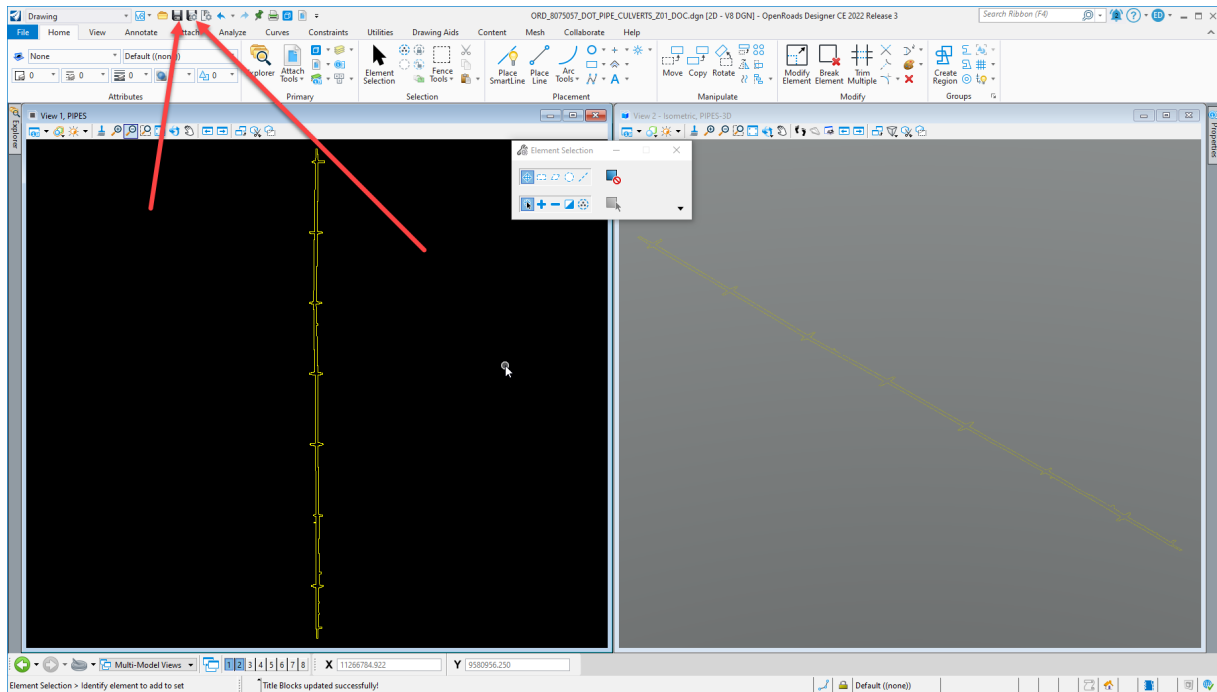


Open the View Attributes tool in view 2. Select the PIPES-3D model in the View Setup section of the View Attributes tool.

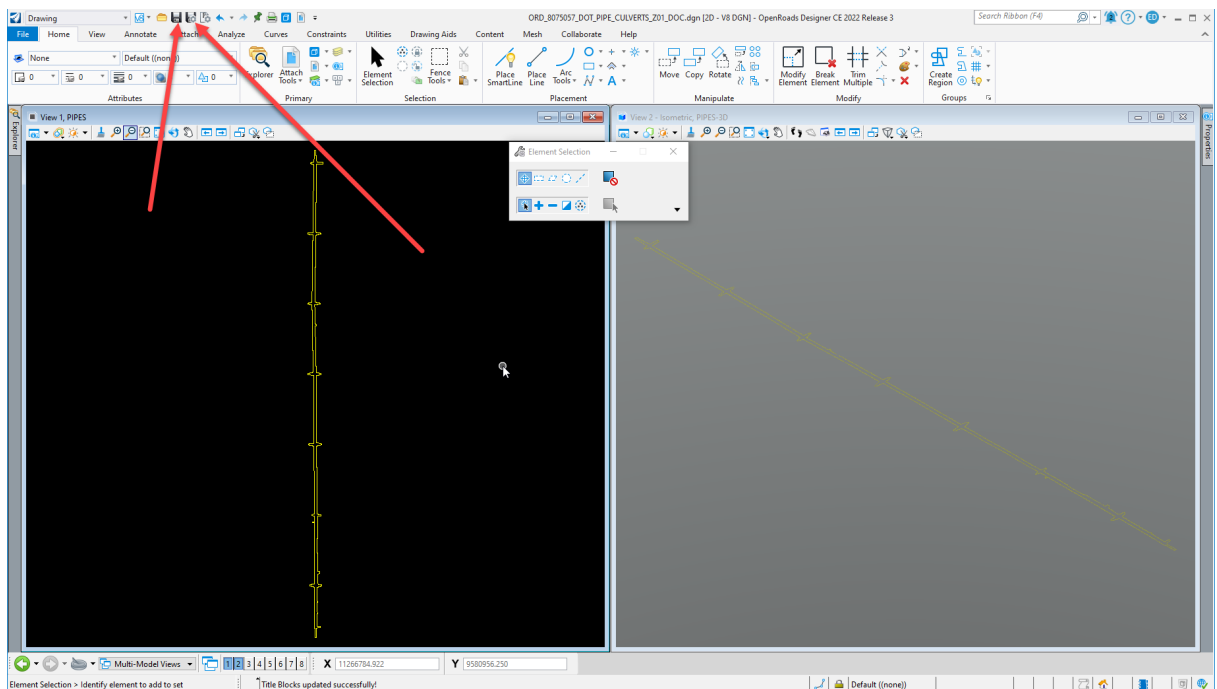


Note: It is preferred to change the Display Style in this view to Transparent Modeling to make it obvious when working in 2D or 3D.

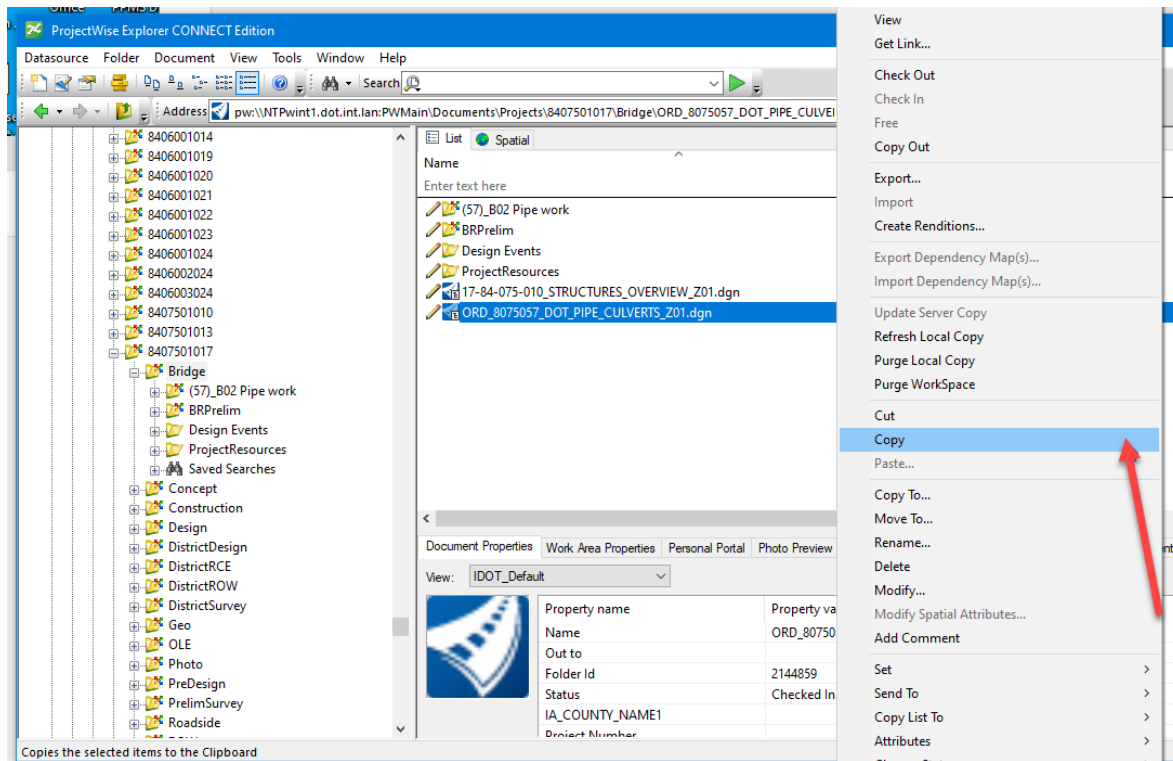
The content of the file should look like this:



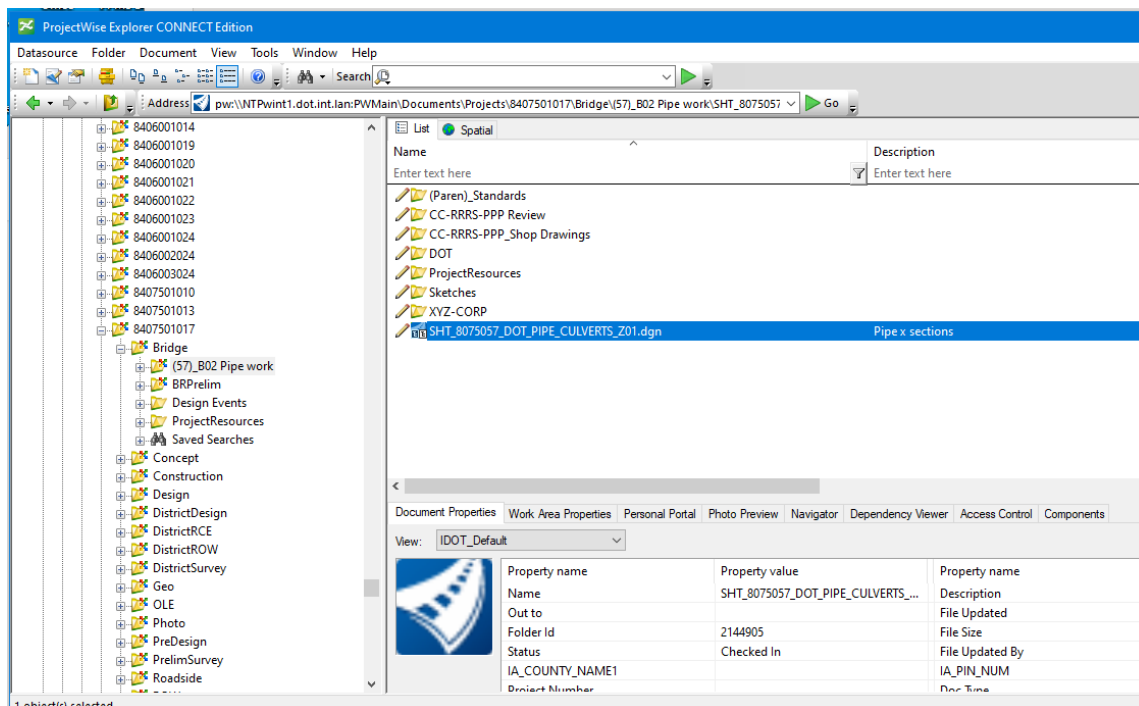
Save the file and save the settings so that the next time the file is opened it will be set to these view settings.



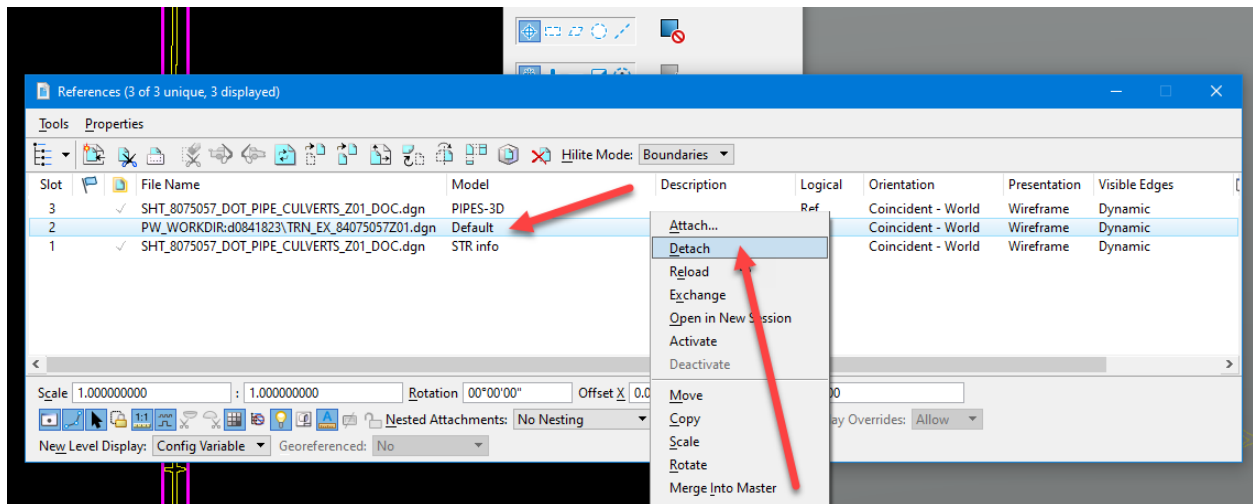
Next, close the file and check it into ProjectWise. Then, select this file and right click to select Copy.



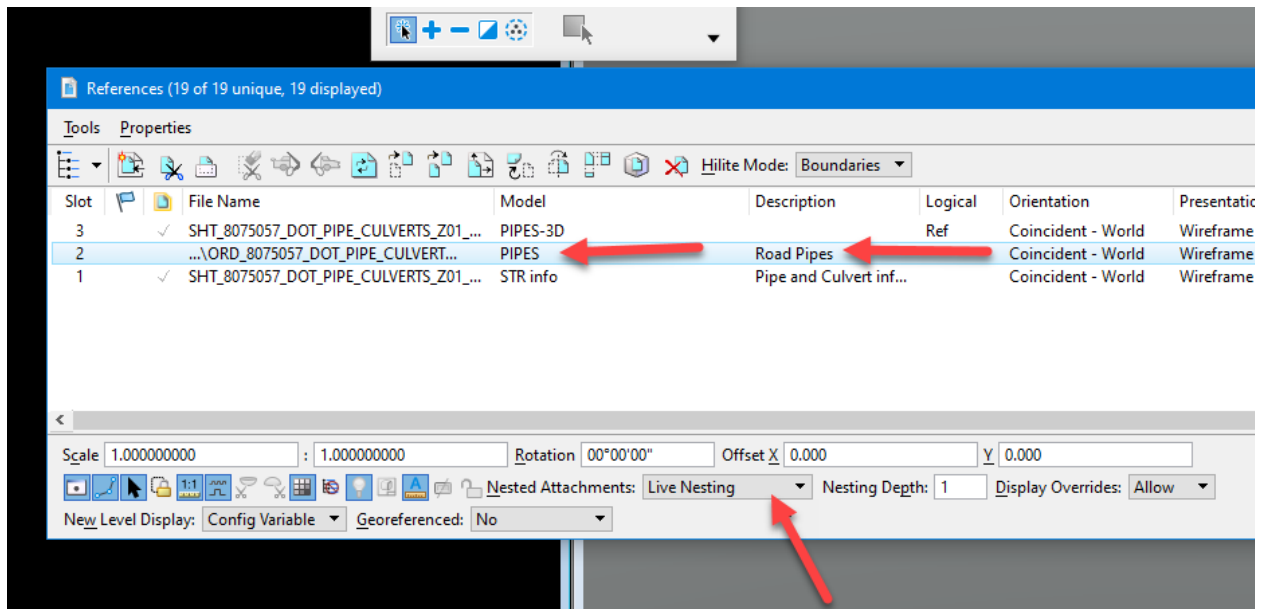
Paste the copied file in the parenthesis folder for making sheets. Rename the file to SHT_8075057_DOT_PIPE_CULVERTS_Z01.dgn. Please refer to the [Seed File](#) document on Iowa Department of Transportation Bridge Connect Documentation page for further instructions on naming the files.



Next, open the SHT file. Then, detach the TRN file reference.



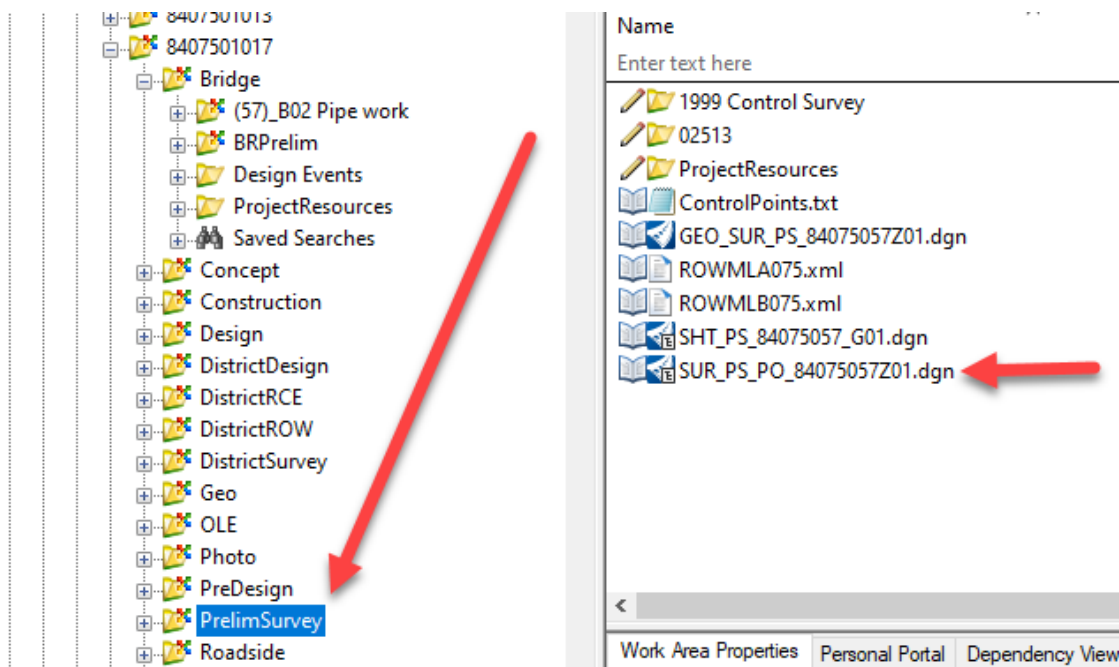
Then attach the model file ORD_CCCRRRPPP_DOT_PIPE_CULVERTS_Z01.dgn from under the Bridge folder using live Nesting Depth of 2.



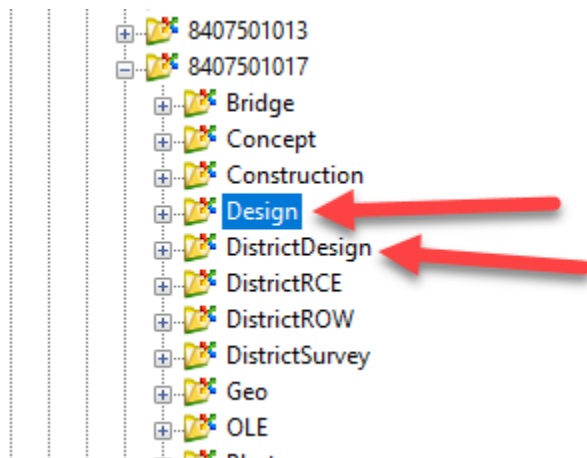
Save settings and exit the file.

The sheet file and model file are now created for the pipe design.

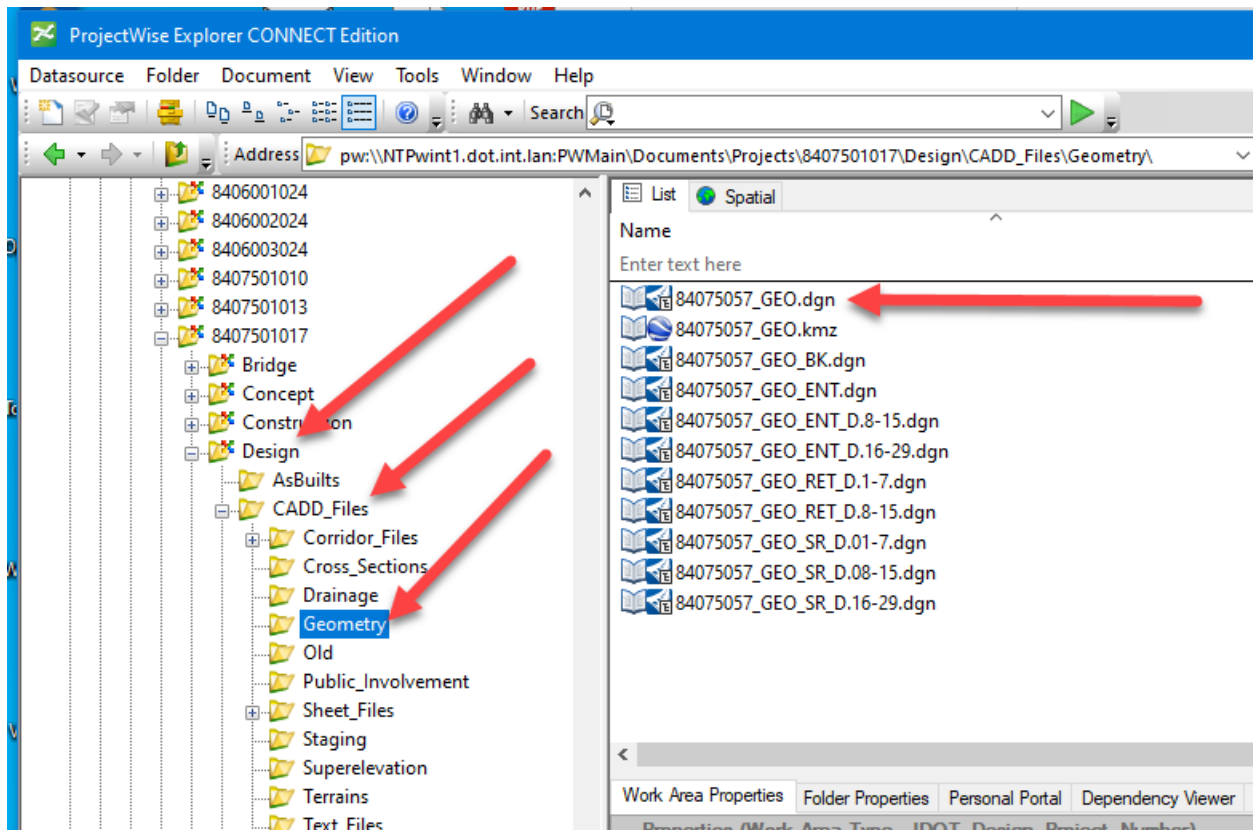
In the Bridge folder open the ORD_CRRRPPP_DOT_PIPE_CULVERTS_Z01.dgn. Attach the survey file that contains the existing 3D pipes and surrounding topo features that are needed to do an effective design.



Next reference in the Design alignment that has an active profile. This file should be located in the Design or the District Design folder depending on what group is doing the road design portion of this project.

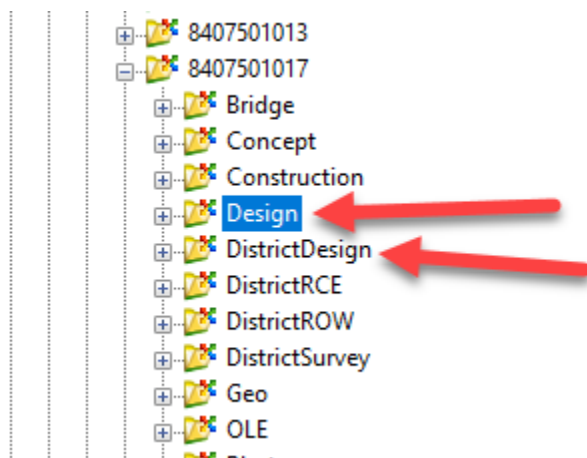


For this example, it is being done by the design group. So the alignment is under the CADD_Files\Geometry\ folder. Select the GEO Alignment file that is named GEO_CCRRRPPPPZZZ.dgn.

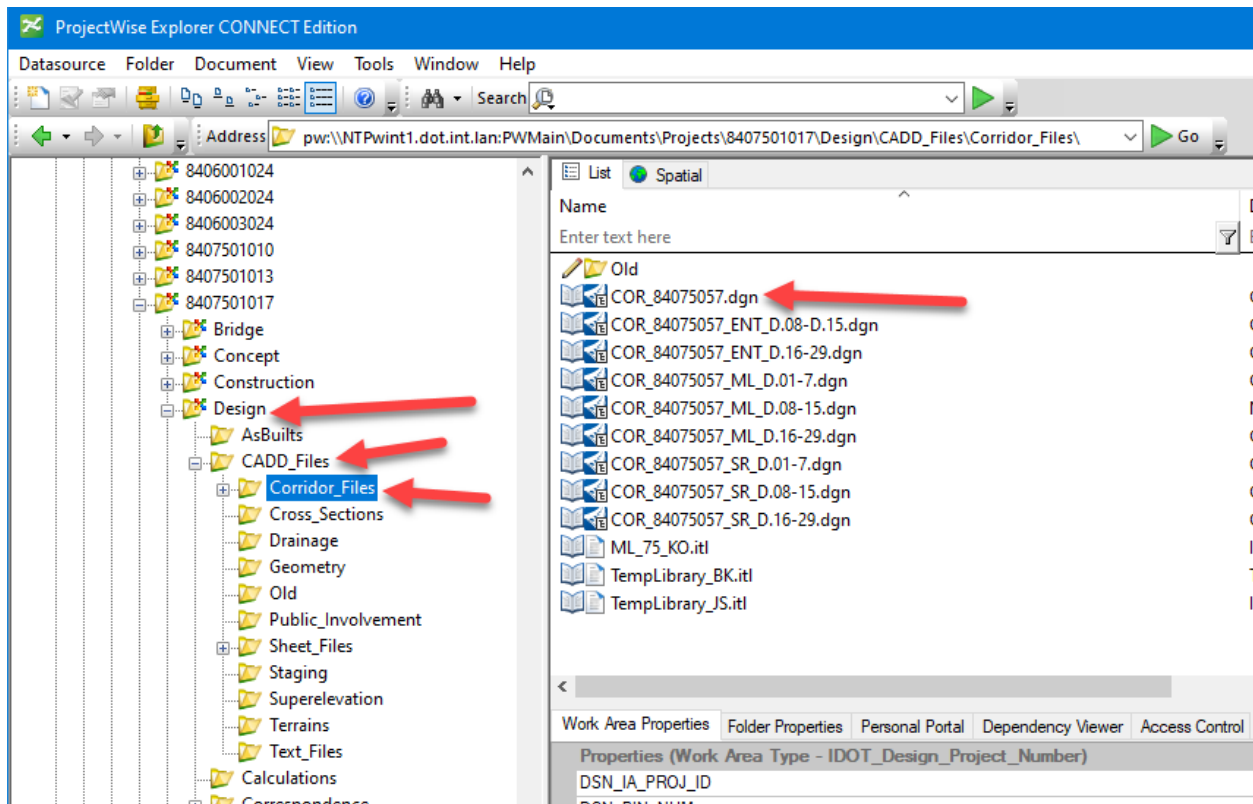


This is the container GEO file that will contain all the Alignments for this project. Attach it using the orientation of Coincident World. Turn on the live nesting and set its depth to 1.

Next, reference the proposed corridor container file. This file should be located in the Design or the District Design folder depending on what group is doing the road design portion of this project.

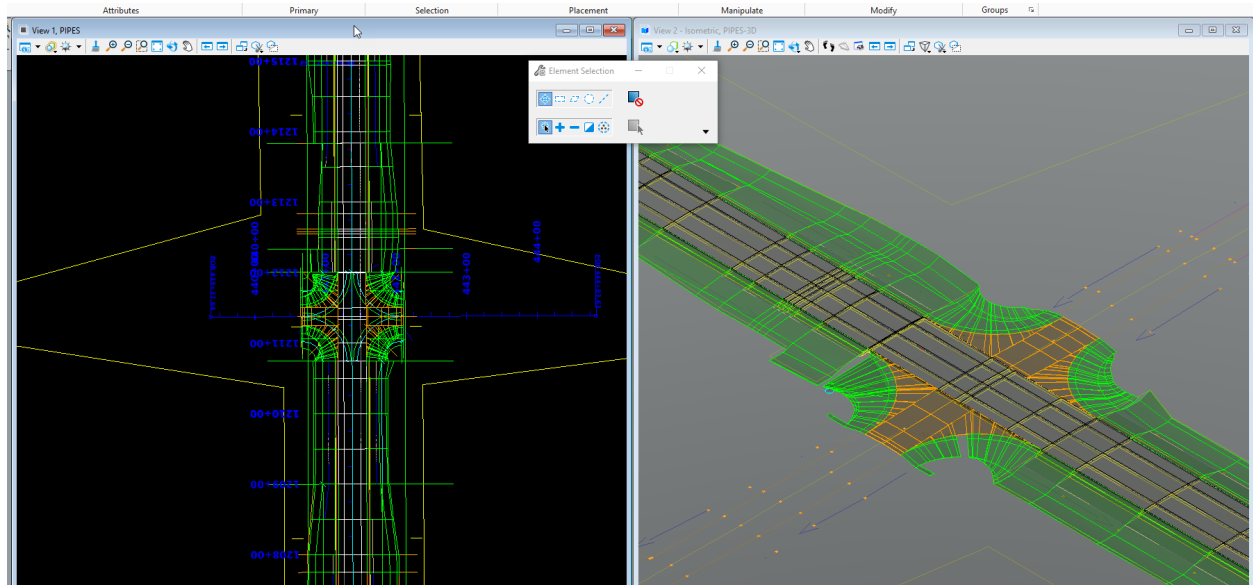


For this example, it is being done by the design group. So the corridor file is under the CADD_Files\Corridor_Files\ folder. Select the COR Corridor file that is named COR_CRRRPPPPZZZ.dgn.



This is the container COR file that will contain all the Corridor for this project. Attach it using the orientation of Coincident World. Turn on the live nesting and set its depth to 1.

The file content should look like this:



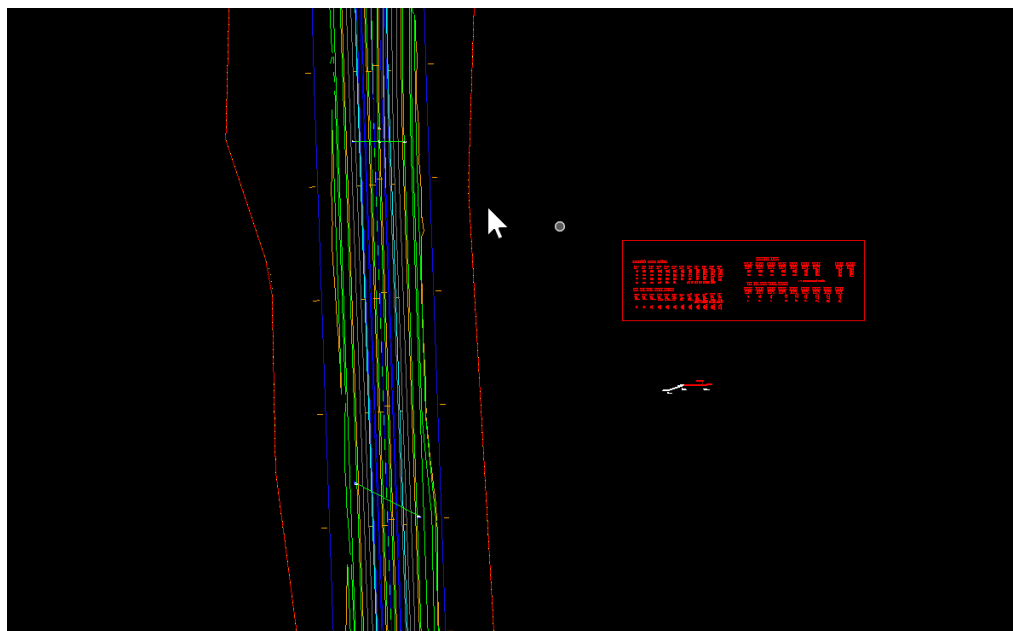
Next, reference in a file that contains a selection of Iowa DOT pipe aprons 2D cells. This file is located in
 pw:\\NTPwint1.dot.int.lan:PWMain\\Documents\\Resources\\ClientWorkspaces\\IowaDOT\\IowaDOTProduction\\Organization-Civil\\IowaDOT_Standards\\Cell\\BridgeDesignDetails\\ [ApronsConnect.dgn](#)

Then find this referenced content. It should look like this:



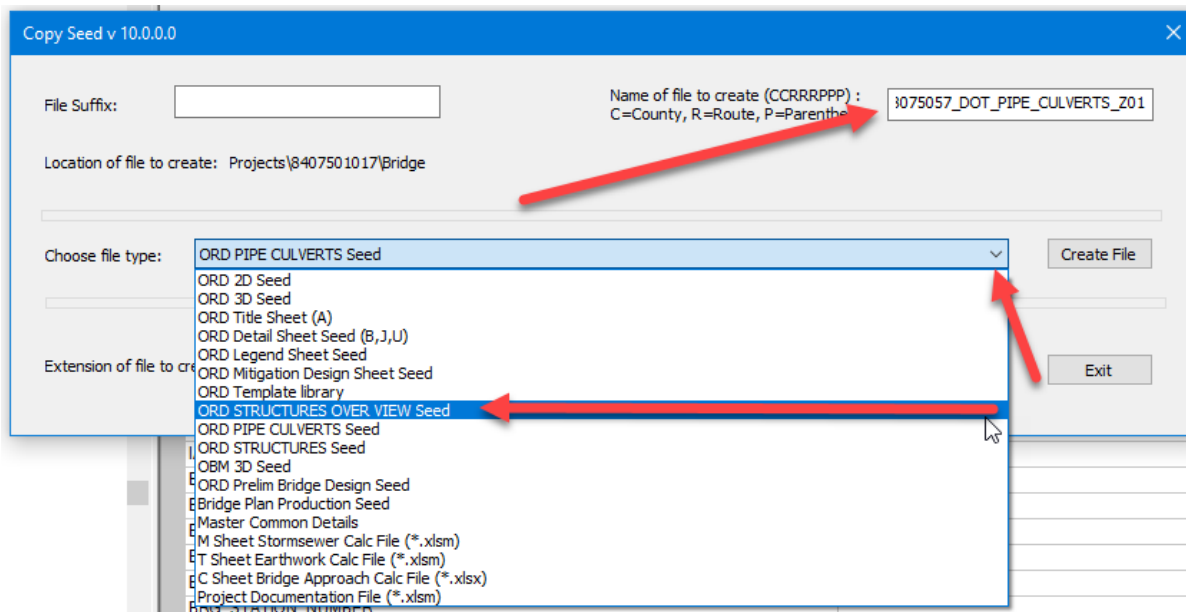
Select it with the Element Selection tool.

With the Copy tool make a copy of it and place it close to the design corridor.



Then, detach the reference file and save the settings.

The last step to setting up the CADD files for pipe design is to make sure the pipe3D model is referenced into the Structures overview file. If there is not a Structures overview file in the project directory, create it with the Copy Seed tool.



The Structures overview file will only contain the 3D information from the model files under the Bridge folder. Make sure only the 3D model is referenced from the ORD_CCRRRPPP_DOT_PIPE_CULVERTS_SPN.dgn into the overview file.

Other designers will be referencing this file nested and don't need to be pulling in any information, but the models that were just created. Make sure all references to the overview file are not nested.

Now that the file is set up, start designing and calculating the pipe inverts from the project information.

[PW02 Laying out Pipes in Connect](#)