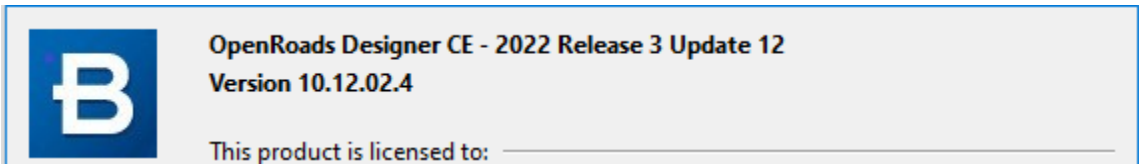
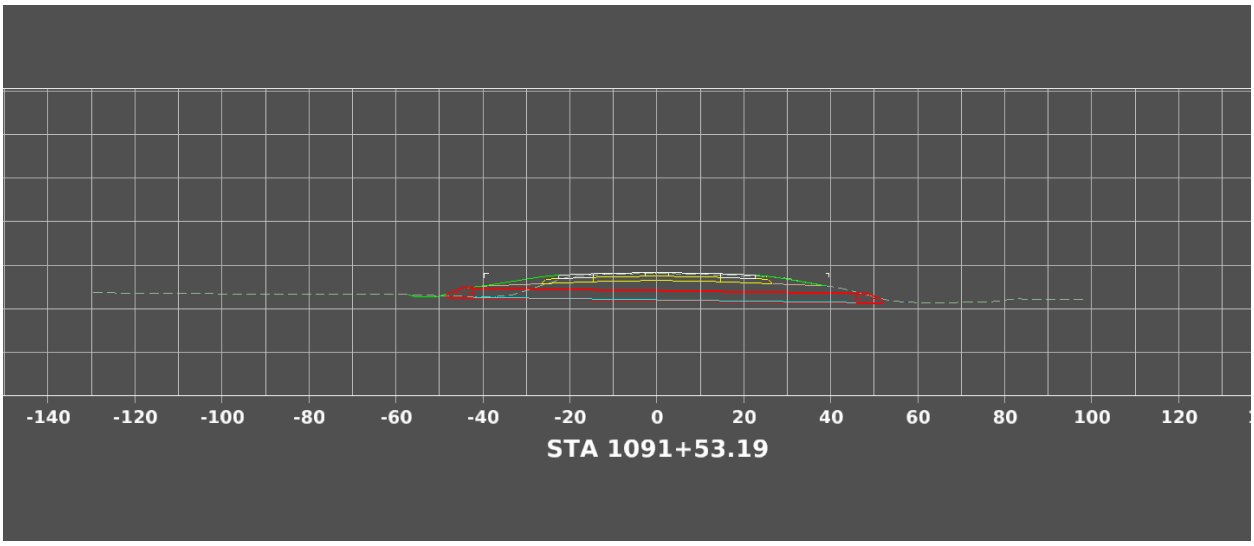
Making Pipe X-Section Sheets

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



Now that the pipes are modeled in the pipe model file (as covered in the PW03_ Modeling Pipes in connect), open the SHT file under the parenthesis folder that applies to this design. For this example, it will be SHT_8075057_DOT_PIPE_CULVERTS_Z01.dgn. Open the drawing model that was used to design the pipe in. The 3D pipe from the model file should be visible in the cross section now.

It should look something like this:



The next step is to annotate the cross section. This is where the ASCII input file is very helpful. Use the information in this file to copy and paste for labeling the key parts of the pipe that need to be annotated.

The key annotations are:

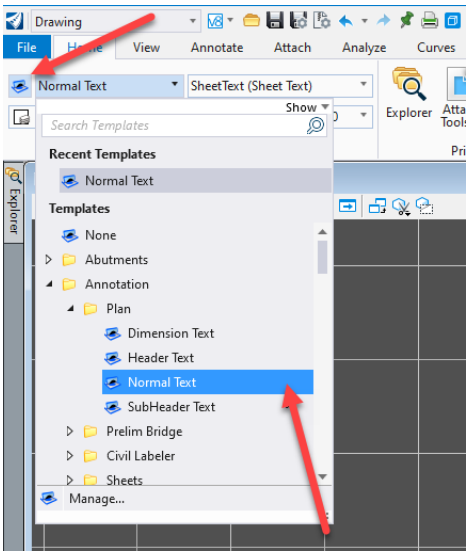
1. Design Cover.
2. Profile Grade Elevation.
3. Distance from centerline right.
4. Distance from centerline left.
5. Total length of new construction
6. Flowline Elevation at each critical point in the pipe.
7. Clear zone (if it is needed).
8. Structure description and any other unique items that need to be called out.

Hint: Anything that is needed to be input into the database for the pipe design should be annotated.

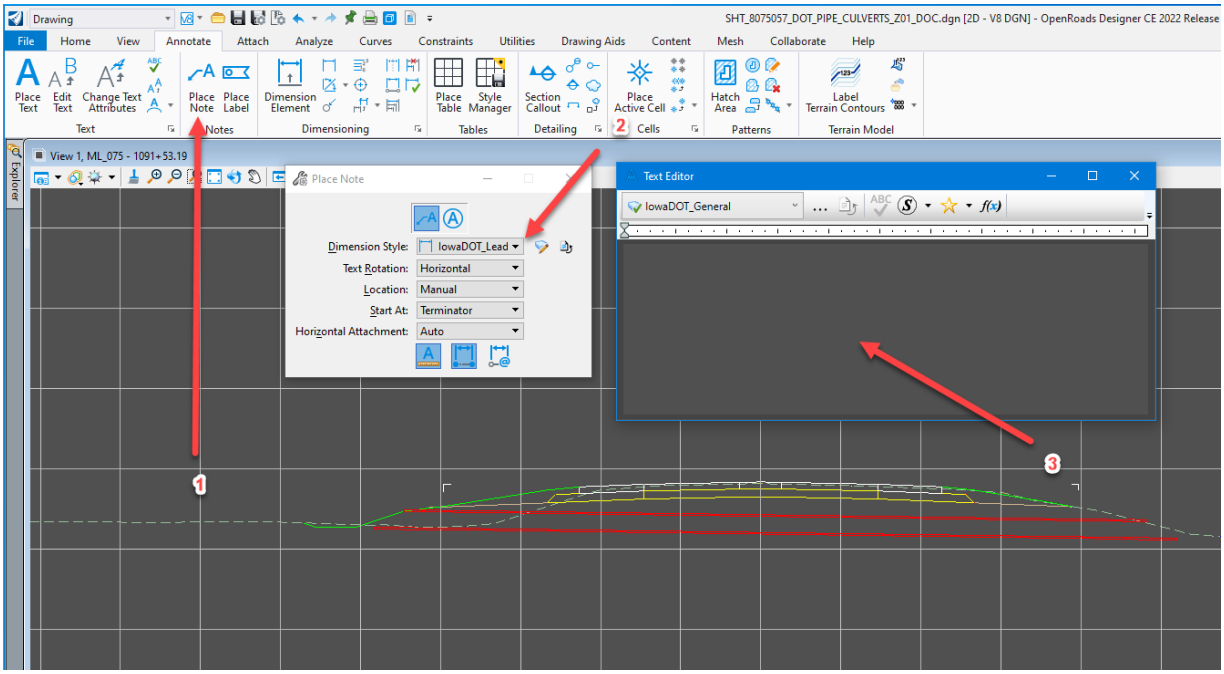
The first thing to do is to delete the pipe apron templates that were used to determine the elevations and offsets of the key points in the design. These are no longer needed since the pipe is modeled.

Hint: It is recommended to leave them in place until the pipe is modeled to verify that the pipe model matches the design. For this example they match.

Next, select the correct element template to place the annotations on. Use the Normal Text template.

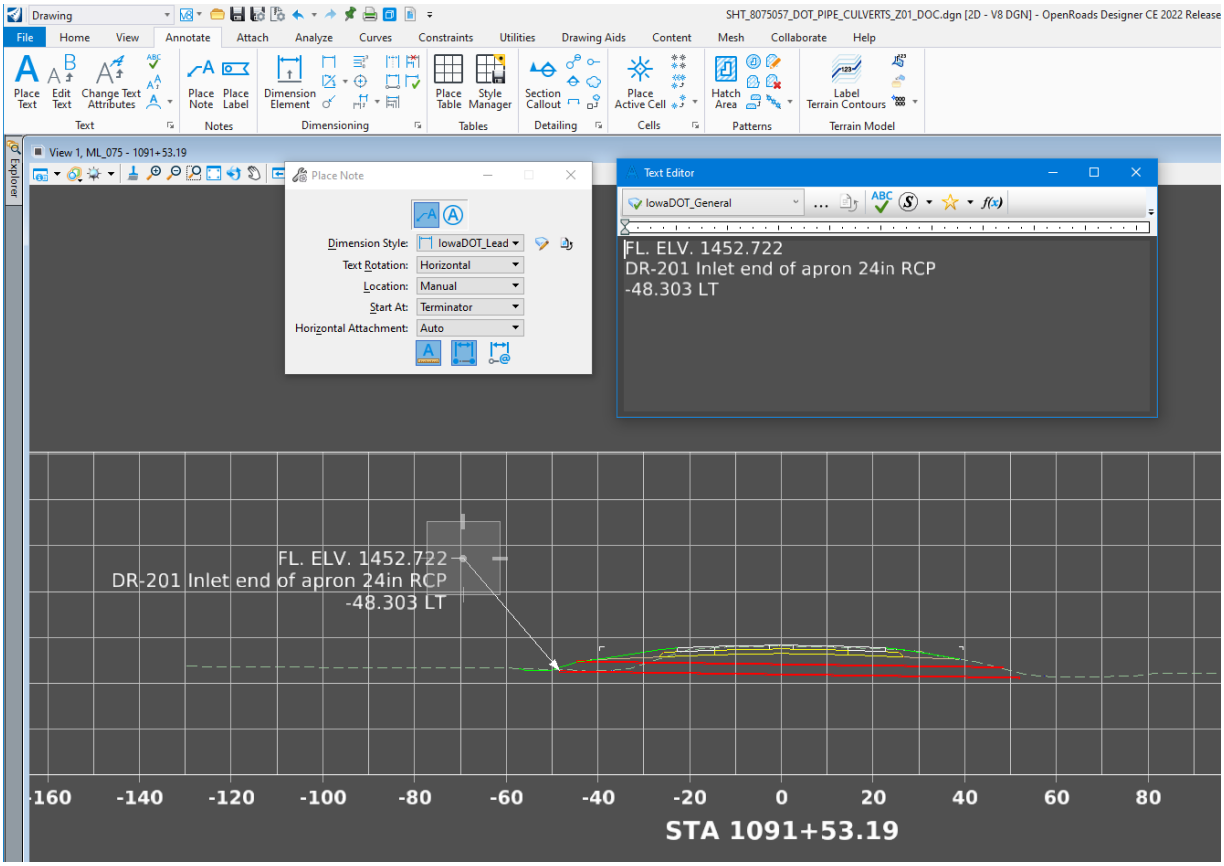


1. Select the Place Note tool.
2. Set the Dimension Style to IowaDOT_Leader_Note.
3. Type the note that needs placed. This is where the ASCII input file is very helpful using copy and paste for the note.

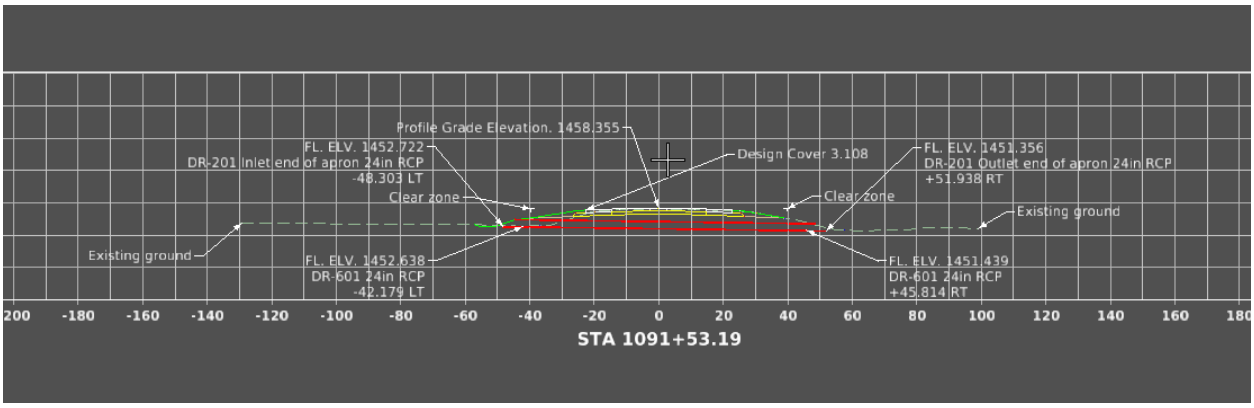


Place the notes in the proper locations.

The annotation should look something like this:

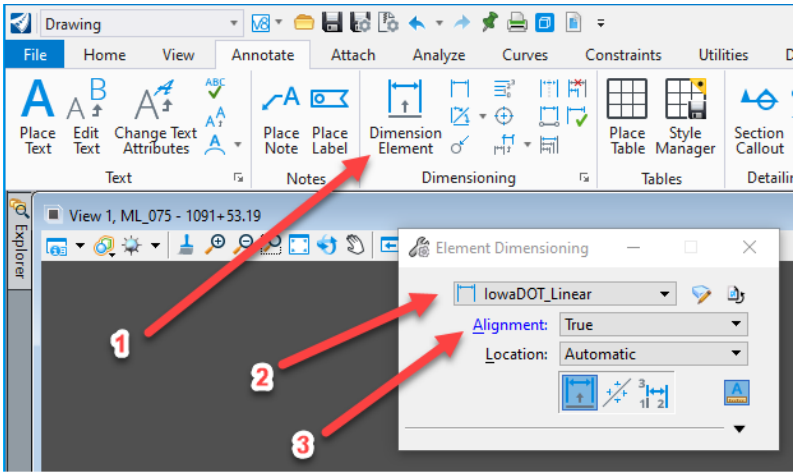


Once all the notes have been placed it should look something like this:



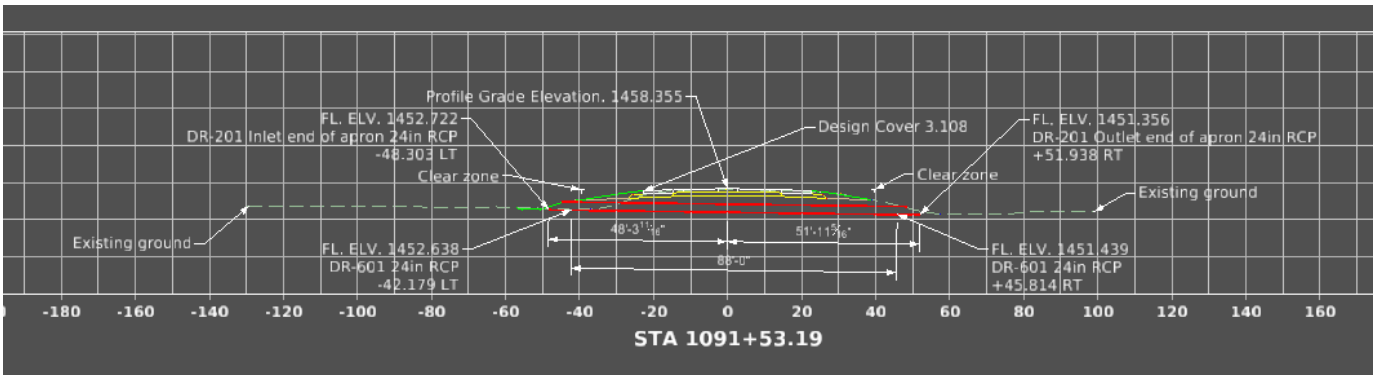
Next, place additional distance annotations.

1. Select the Dimension Element tool.
2. Set the Dimension Style to IowaDOT_Linear.
3. Set Alignment to True



Then place the Distance from centerline right, Distance from centerline left, and Total length of new construction.

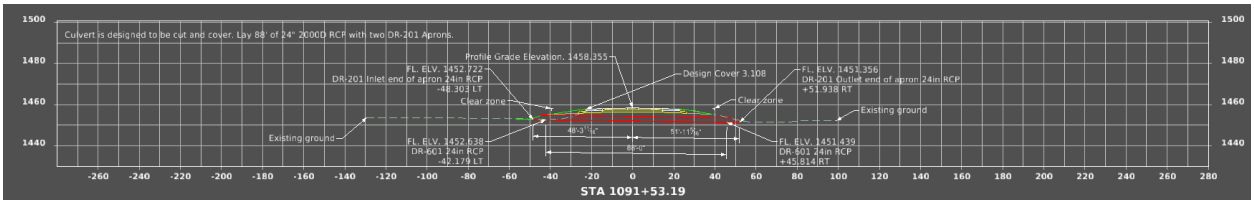
It should look something like this:



Last is to place the structure description and any other unique items that need to be called out. It is recommended to use the same note that is placed in the database that was typed earlier in the ASCII input file. For this example, it is “Culvert is designed to be cut and cover. Lay 88' of 24" 2000D RCP with two DR-201 Aprons.”

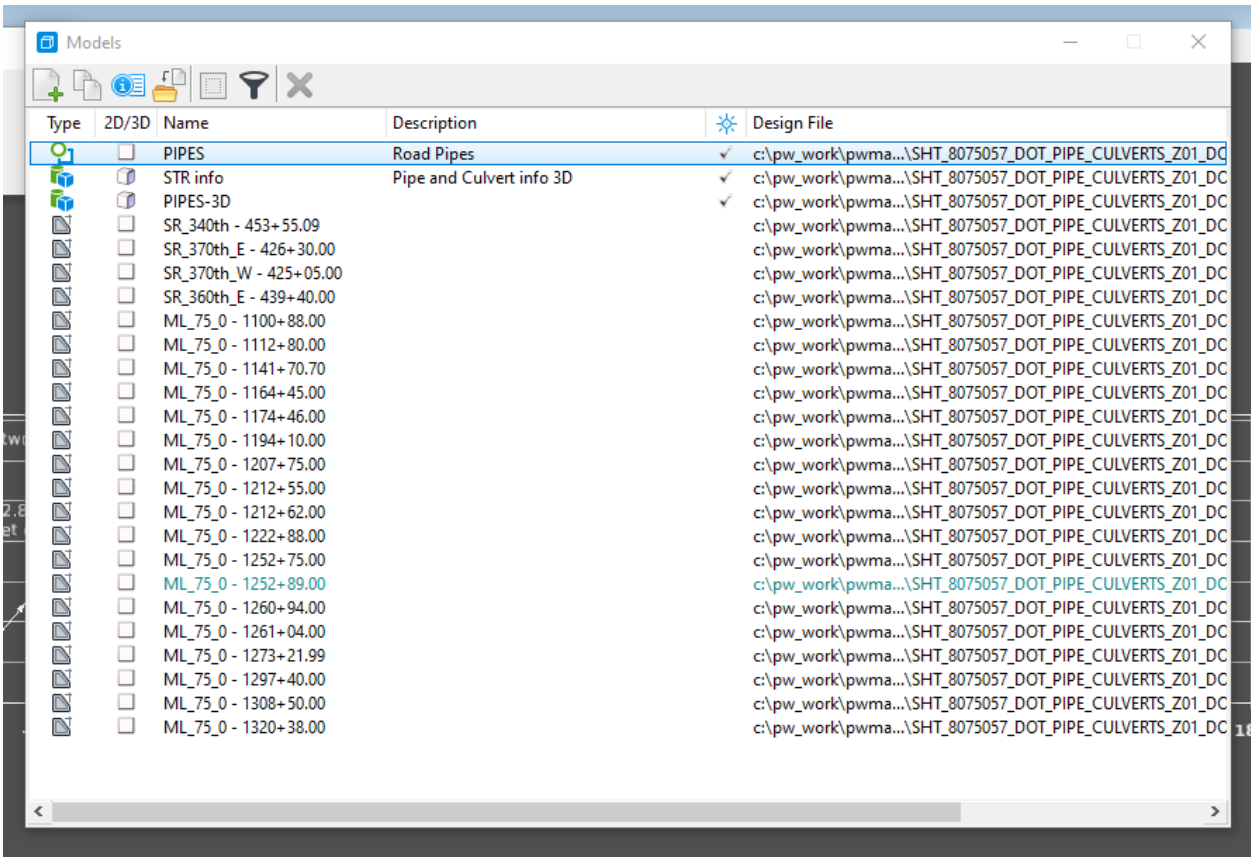
To place this, use the Place Text tool.

It will look something like this:



Once all the pipes are modeled in the ORD file and annotated in the SHT file, the files are finally ready to make sheets in the SHT file.

The model dialog box should look something like this:

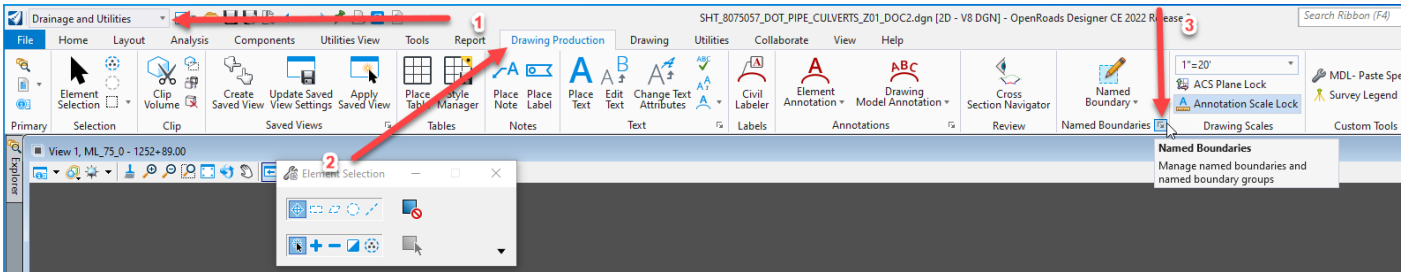


There should be a drawing model for each cross section that represents each pipe location.

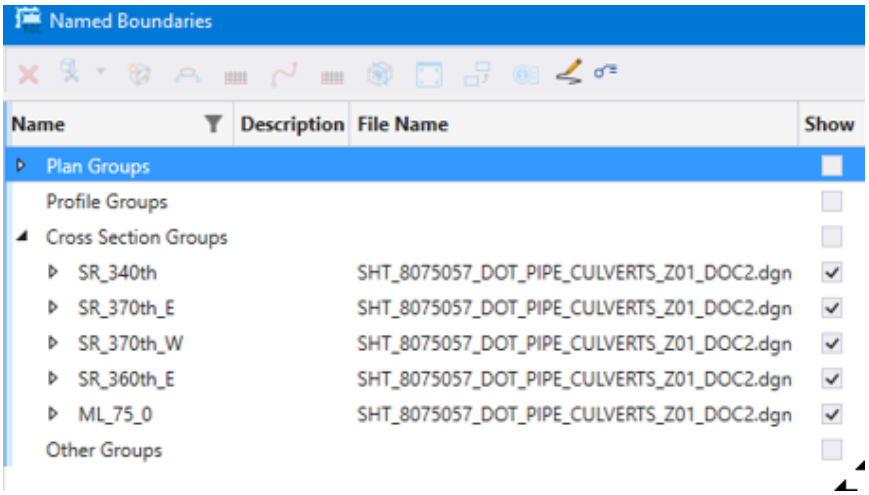
Note: Suggestion to not complete this step until confident that the pipe designs are complete.

Now, make some sheets.

1. Set the workflow to Drainage and Utilities.
2. Click on the Drawing Production tab .
3. Click on the Manage named boundaries and name boundary groups.

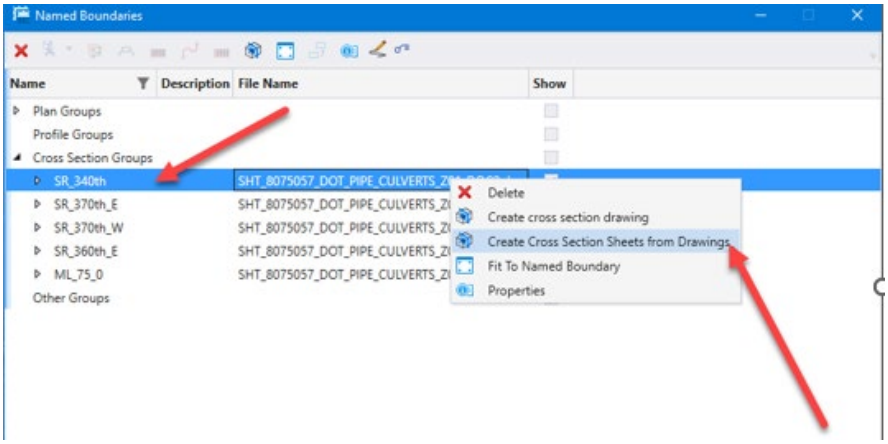


These steps will open the Named Boundaries list:



Note: This is where making the cross sections from the correct alignments and having used the correct cross section groups really pays off.

Select one of the groups and right click and select the Create Cross Sections Sheets from Drawings option.



This will make the cross-section sheets for each alignment and stack then in order of the station value. The reason to make the sheets at the end is if there is a need to remove, add or cut new sections in the design process, it will still stack the cross sections correctly based on alignment and station.

The last step to finish the sheets will be covered in the next chapter.
PW05_ Placing Pipe X-section Sheets into Sheet Index File