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## Topic: How to Show Utilities in Dynamic Cross Sections

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### Reason for Revision

Previously this was not possible to show utilities in cross sections.

### ORD Version

This workflow is intended for OpenRoads Designer 2022 Release 3, Version 10.12.02.4 ORD 2023, Version:2023.00.01.4. Note: The directions outlined below may respond differently in other versions of this software.

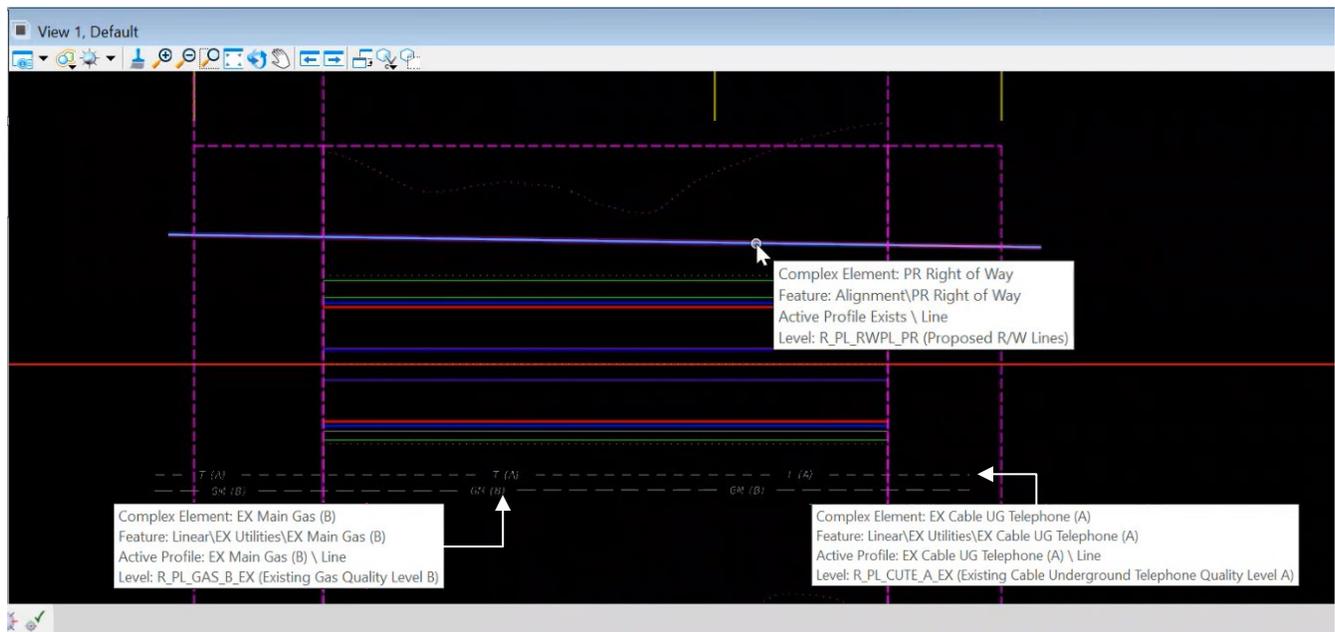
### Contact Information

This workflow was produced by Chris Congleton. Please send all questions, errors or overall complaints by filling out the support form on the KYTC CADD Support Website:

[https://transportation.ky.gov/Highway-Design/Pages/KYTCWorkflow\\_Support.aspx](https://transportation.ky.gov/Highway-Design/Pages/KYTCWorkflow_Support.aspx)

### Begin with a New Corridor:

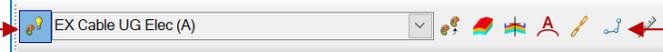
For this example a short section of corridor is used with some Proposed utilities already places as well as a proposed Right of Way line and two different utilities as labeled below:



Note: The utilities are designated with quality levels (A,B). This designation will be important for showing dynamic cross sections. It should also be noted that the Right of Way and utilities all have vertical geometries.

## Creating the Utilities Using Horizontal/Vertical Geometry

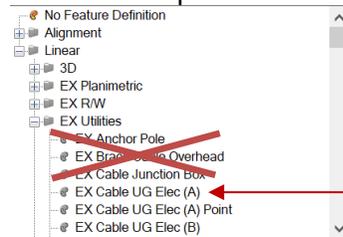
First, you need to turn on you feature definition by going to the feature definition toolbar:



If the persist snap button is highlighted turn it off:  TURN OFF

You will need to turn on the Use Active Feature Definition Button:  TURN ON

Nex you will need to select your feature definition by clicking on the drop-down box and selecting Linear>Ex Utilities from this list you will want to select a utility that has a quality level (A, B, C, Etc.) for this example I have chosen EX Cable UG Elec (A):



Select Utility with Quality Level

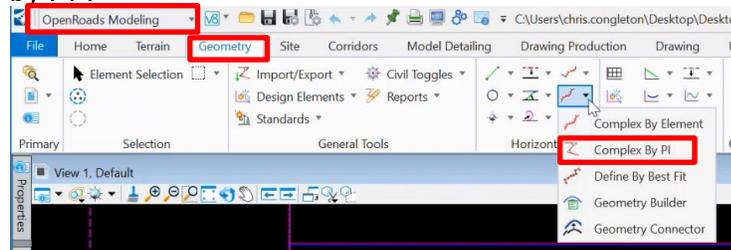
Note: Though you can create geometries from the utilities without Quality Levels many of them will not show in dynamic cross sections. Only the utilities with quality levels will show in dynamic cross sections.

Something that should also be mentioned is that only existing utilities can be shown. Proposed utilities are designed and located by the utility companies.

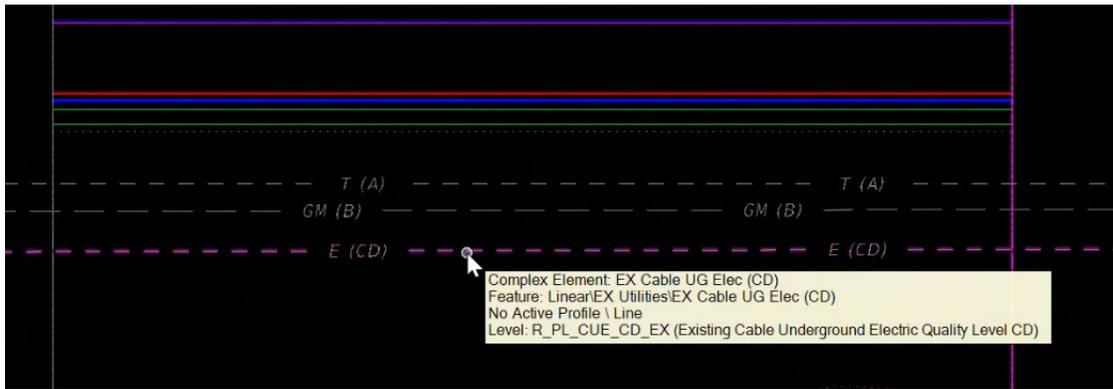
For this example I have selected Ex Cable Elec (CD):



Now you can create your geometry. Make sure you are working in the “OpenRoads Modeling” workflow and select the “Geometry Tab” and in the “Horizontal” section of the ribbon select “Complex by PI”:



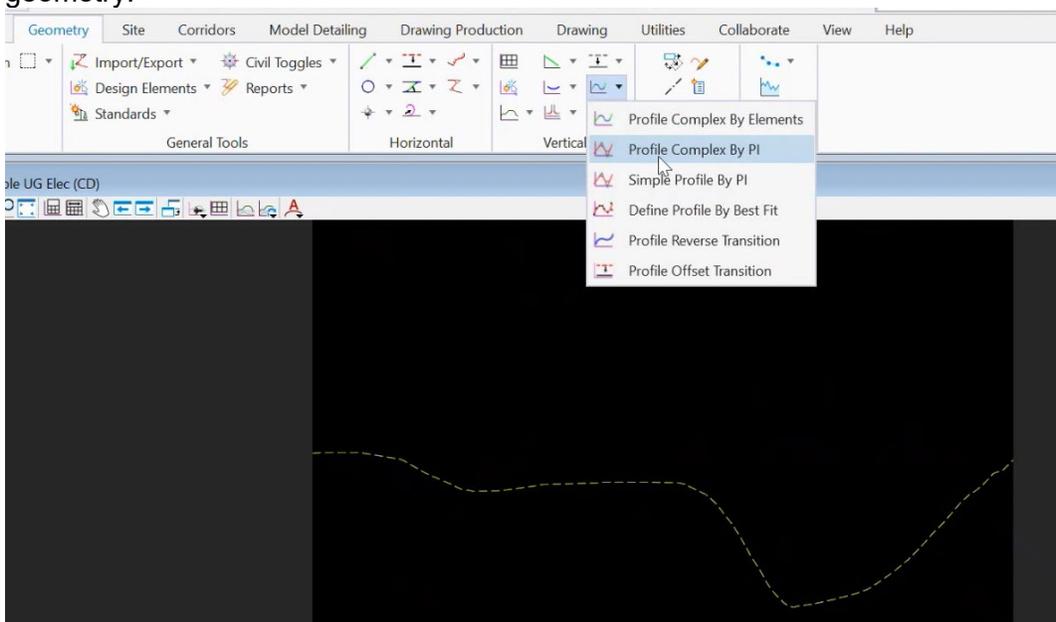
Then draw in your geometry. I placed the line as shown below:



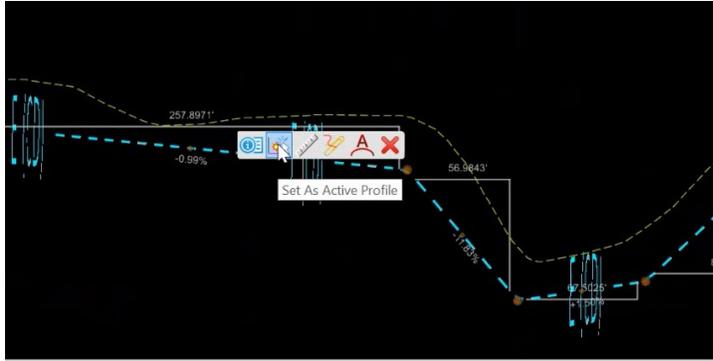
Next we must make a vertical geometry. To do this select the horizontal geometry and when the pop-up menu appears select the “Open Profile Model” button:



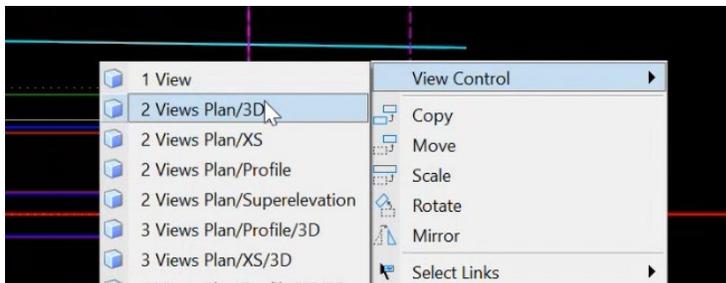
When the profile view pops up you will want to select “Profile Complex by PI” to create a vertical geometry:



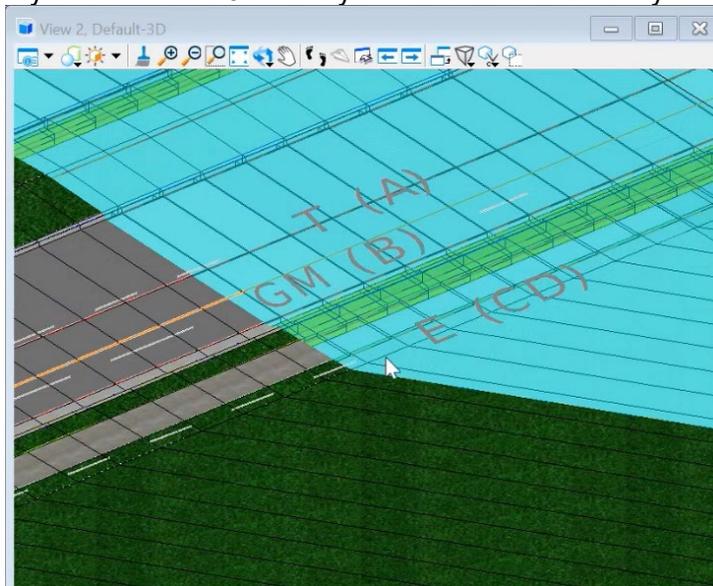
Then simply draw in the geometry as it is located. Then we must make our newly created geometry the active vertical geometry. This must be done to insure the utility will show up in our dynamic cross section. To do this, select the vertical geometry and when the pop-up menu appears select the “Set as Active Profile” button:



We can now check our 3D view to check and see if the newly created geometry is shown. This is done by clicking and holding the right mouse button in a blank area of the view you are in. A fly-up menu will appear. Select View Control>Views Plan/3D:



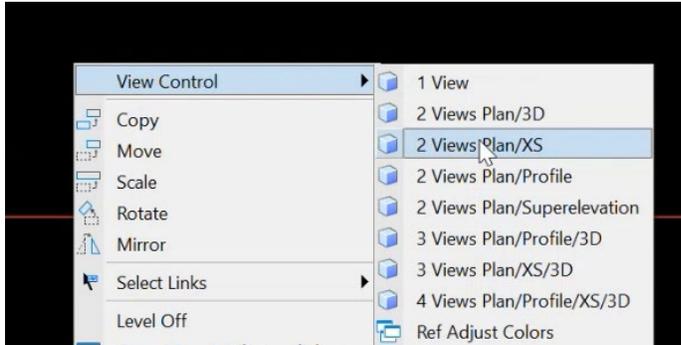
If you look in the 3D view you should see the newly created utility:



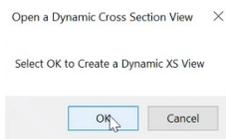
Now you can close the 3D view by clicking on the “x” in the 3D view and expand the view with your corridor.

## Creating the Dynamic Cross Section

To create a dynamic cross section click and hold the right mouse button in a blank area of the view you are in. A fly-up menu will appear. Select View Control>Views Plan/XS this time:



A window will appear asking if it is "OK" to create a dynamic cross section. Select "OK":



If you now look at your cursor there will be a request to locate the corridor or alignment. It is highly suggested you select the corridor as this usually produces better results. You can select the corridor by clicking on one of the yellow "handles" of the corridor:



Then it will ask you which view you want to display the cross section. A view will usually open when this function is selected. Select what ever view you would like to use. Note: you do not want to select a default or model view. It is best to select a high number view that is not used for anything important:



You may notice nothing is showing in the newly created dynamic cross section. If this is the case you should click on the “Next Station” arrow until the vertical blue line in the corridor view is over the model and your dynamic cross section should appear with labeled and located utilities:

