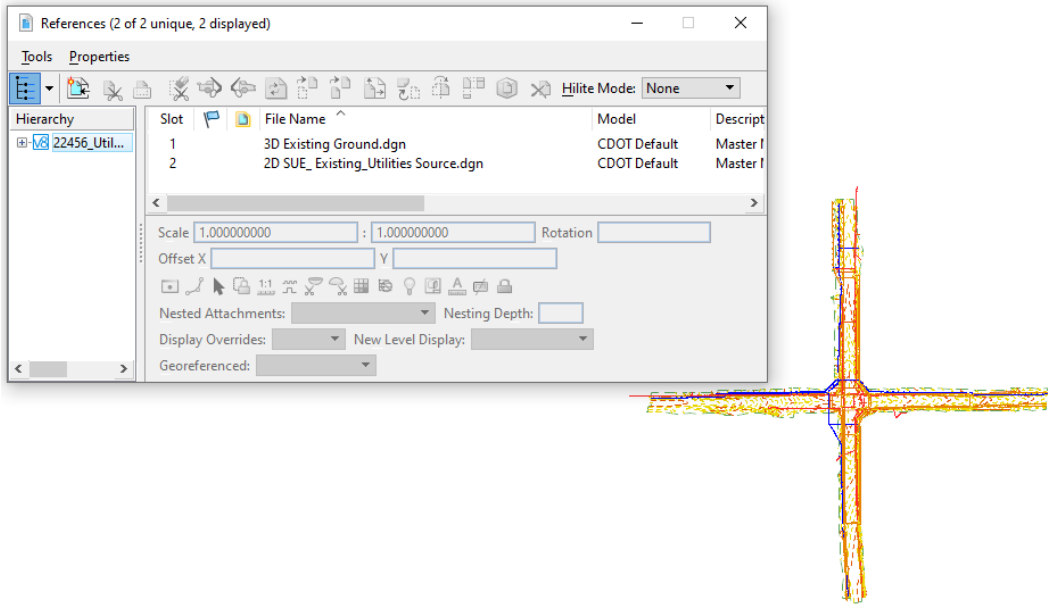
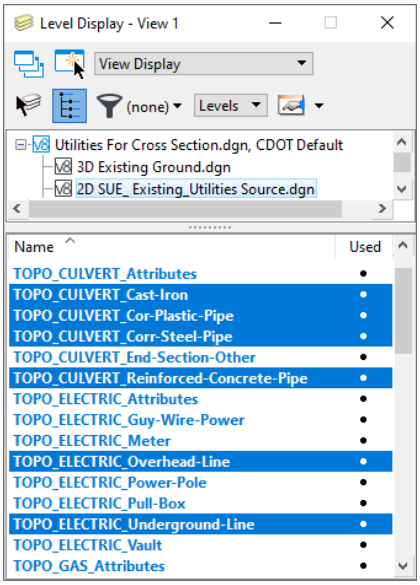
CDOT – Setting Up 2D D&U Linear Data For Display In Cross Sections

This is a supplemental workflow to outline the steps to take MicroStation based utility linear data and configure it for annotation of utility data in Cross sections outside of the full D&U modeling effort.

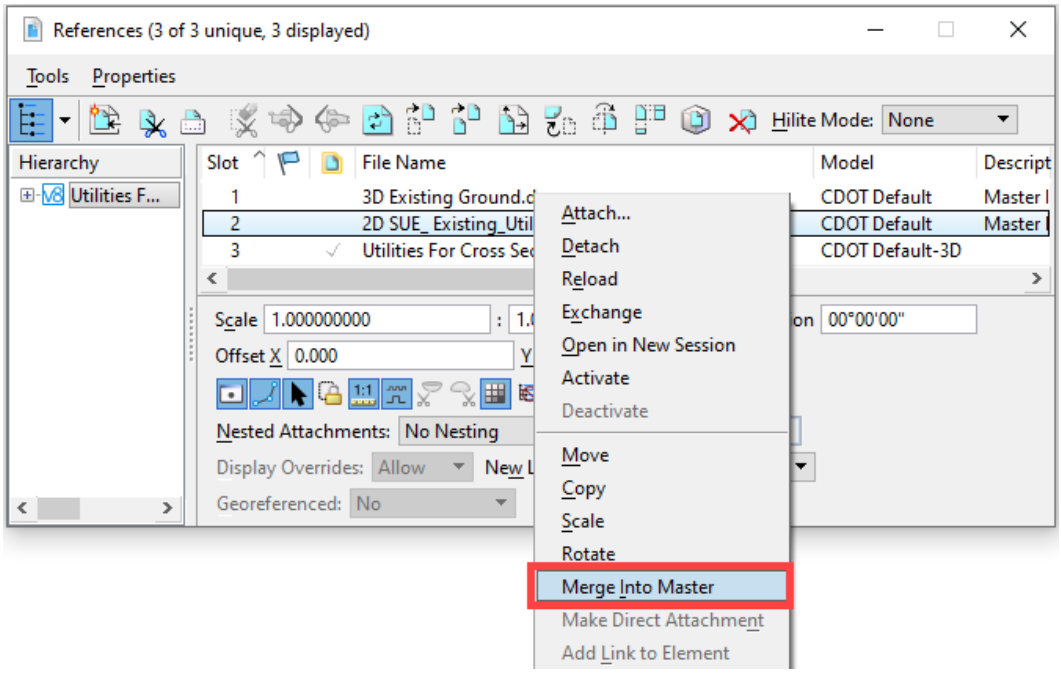
1. Launch **OpenRoads Designer** (ORD) and create new file from 2D Seed.
2. Reference SUE File (2D Existing utilities source file) & the survey 3D Existing Ground Terrain Model. In this example ***2D SUE_ Existing_Utilities Source.dgn*** is the SUE file and ***3D Existing Ground.dgn*** contains the existing terrain model.



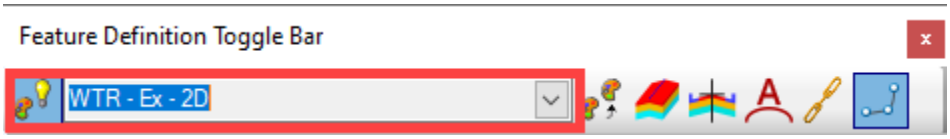
3. Set the *survey 3D existing ground terrain model* as active.
4. Turn off all levels in the ***2D SUE_ Existing_Utilities Source.dgn*** file except those that have desired linear features.



5. In the ***References*** dialog box, highlight the SUE File (2D SUE_ Existing_Utilities Source.dgn in this example), **right click** on it, and select **Merge into Master**. Into Master



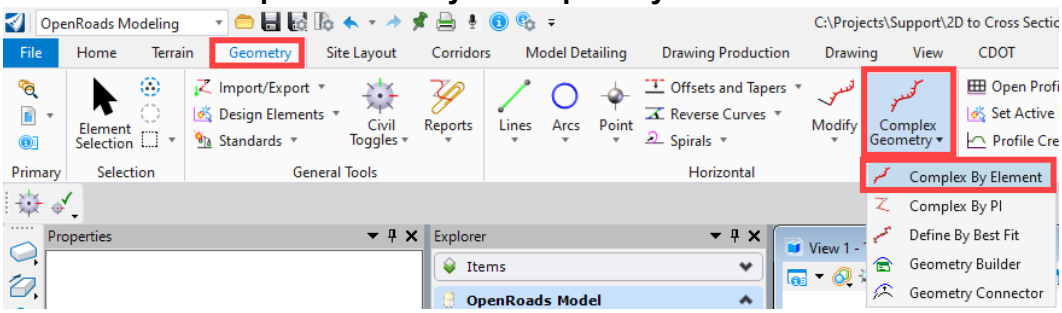
6. Optional: Set color on all lines to single a color (different than utility colors)
7. Open the ***Feature Definition Tool Bar*** and set the desired 2D Utility Feature. In this example, **WTR – EX - 2D** is used.
8. Toggle on the **Use Active Feature Definition** button.



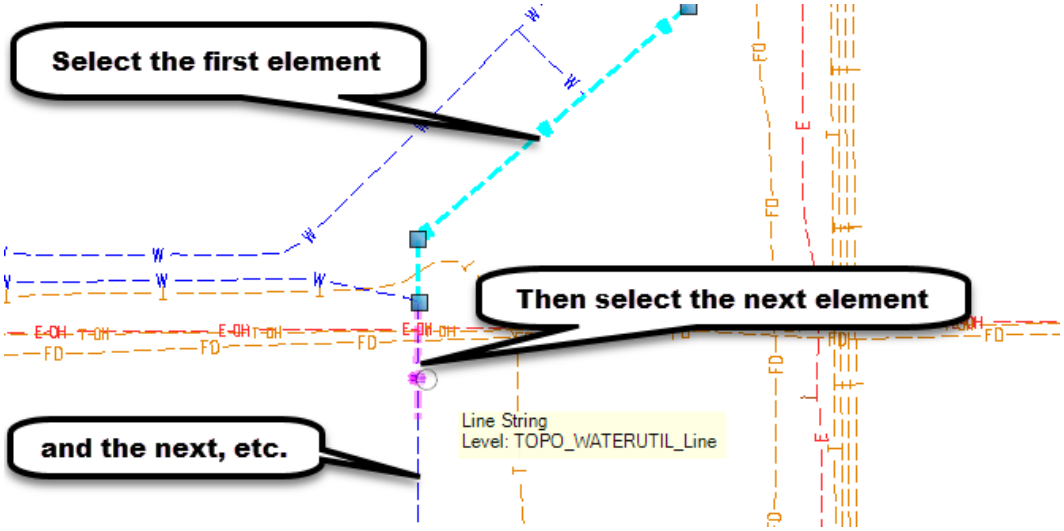
9. Apply Feature Definitions to the utility lines.

   Note: There is a defect in the 10.08 version of the software that prevents the annotation in cross section of elements created with the **Create Civil Rule Feature** Command

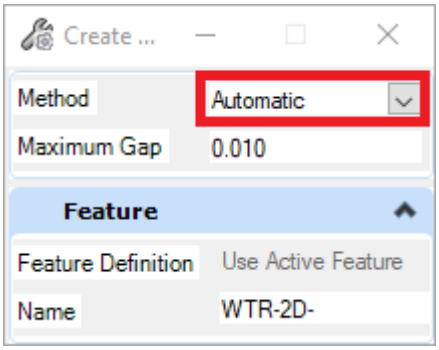
   a. **For ORD 10.08 –**
      i. Use **Complex By Element** to generate civil geometry for all lines that could cross needed sections - Repeat for all needed utility types and lines.
      ii. From the ribbon, select the **Geometry** tab > **Horizontal** group > **Complex Geometry > Complex By Element** command.



      iii. Select the elements that form a continuous chain. Right Click to complete the command.

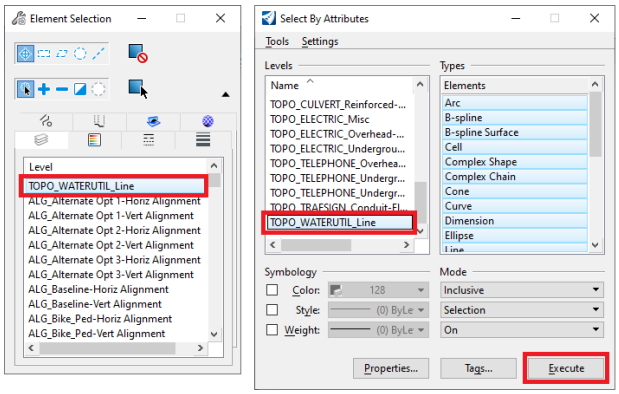


   Note: If the element to be converted is a single element (line or line string), set the ***Method*** to **Automatic**. The Manual Method does not allow for a single line to be selected.

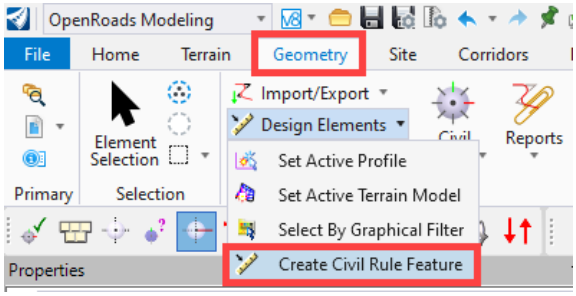


b. **For 10.10 / 21R1** -

i. Select all of the elements that will use the selected ***Feature Definition***. This can easily be accomplished by using either the expanded Element Selector tool settings or the **Select By Attributes** command.



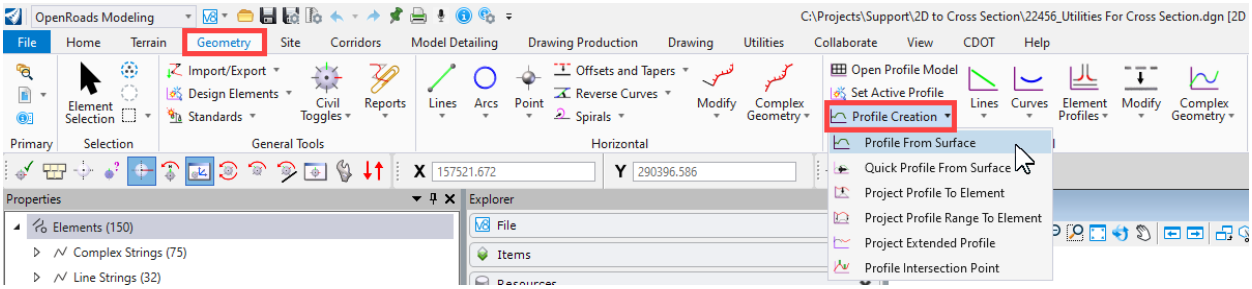
ii. From the ribbon, select the **Geometry** tab > **General Tools** group > **Create Civil Rule Feature** command.



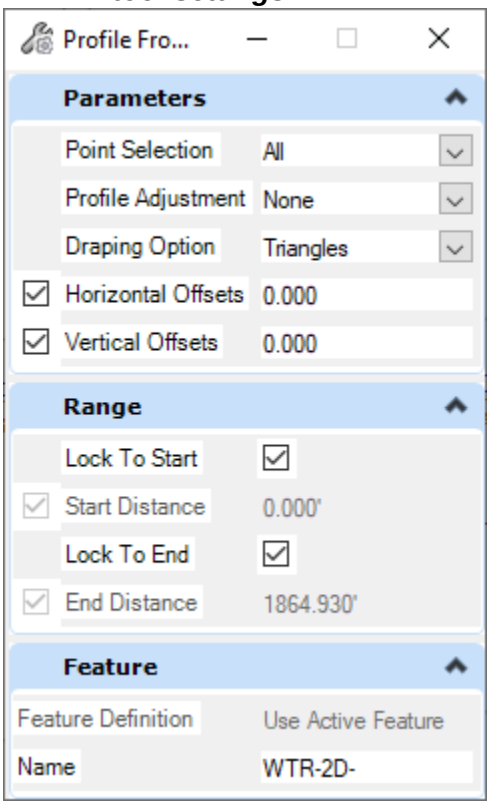
iii. **Left Click** in the view to execute the command.

10. Select all new geometry elements with the same feature definition. **Note**: the elements selected above should still be selected after the civil rule is added.

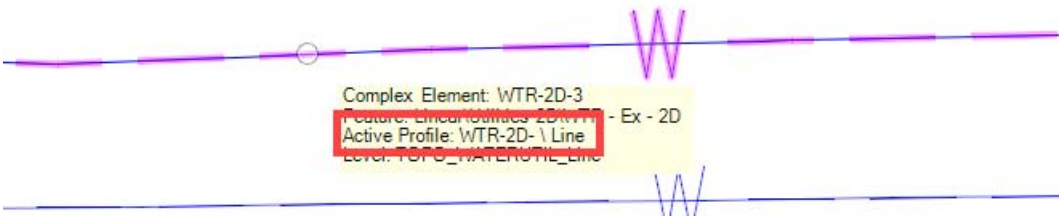
11. From the ribbon, select the **Geometry** tab > **Vertical** group > **Profile Creation > Profile From Surface** command.



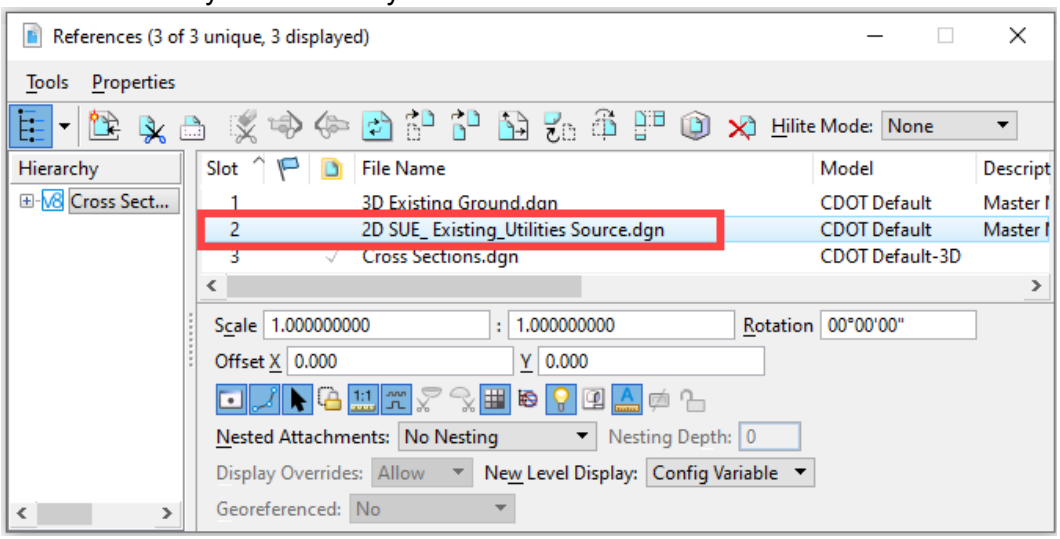
12. Set the ***tool settings*** as shown below and apply surface profile.



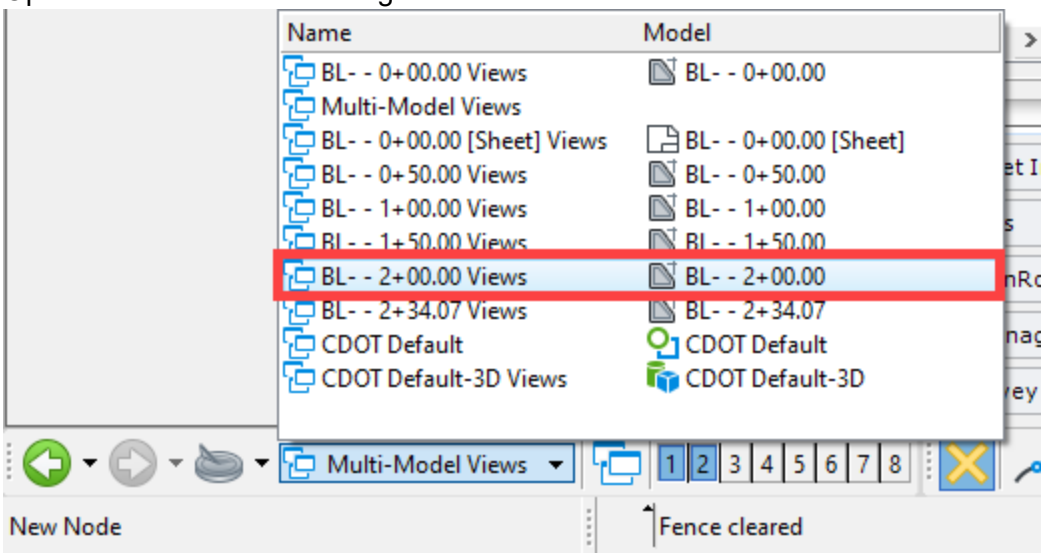
13. Confirm that created profiles were set as the Active Profile.



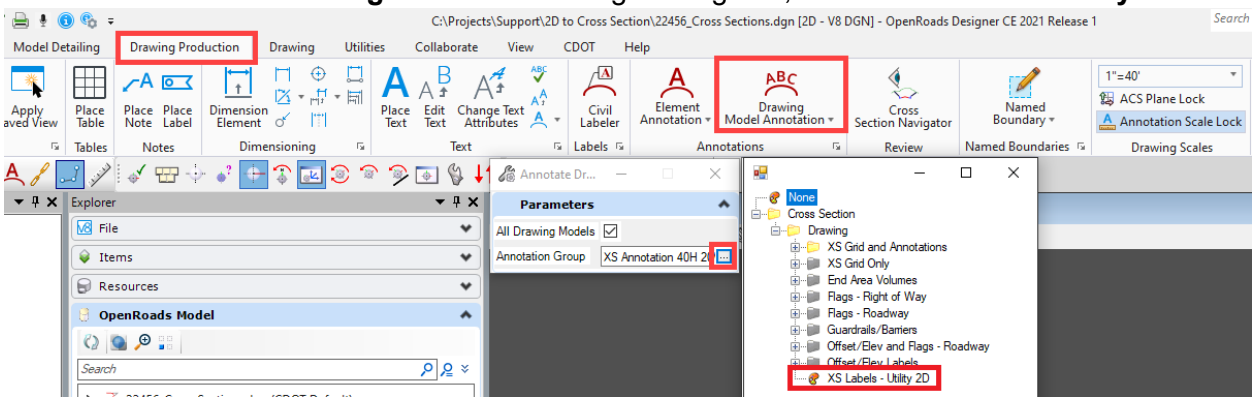
14. Open the DGN file containing the cross sections.
15. Reference newly created utility file to cross section file.



16. Open a cross section Drawing Model.



17. From the ribbon, select the **Drawing Production** tab > **Annotations** group > **Drawing Model Annotation** command.
18. In the **Annotate Drawing Model** tool settings dialog box, select **XS Labels - Utility 2D**



The utility flags are now displayed in the cross sections