CADD Standards

DS_Util.dgn
Dec 2022

The DS_Util drawing shall include both 2D and 3D Models. An OpenRoads managed model "Default–3D" is recommended. The managed – civilized 3D model is automatically created from within the 2D model by creating a civilized 3D feature or setting an active terrain.

Presently, the most important reason for a 3D drainage model is to support OpenRoads cross sections. If drainage items need to be shown in cross sections, they should be drawn in the 3D model.

The 2D model should include the annotation, dimensions and other items not shown in the cross sections. Flow lines should also be shown in the 2D model. All ditches must be marked with flow lines to indicate direction of flow.

The 3D model should include the pipes and structures. Structures can be modeled with a basic slabs or cylinders or both. The NDDOT 3D structures library is incomplete. The NDDOT has not implemented the 3D features of Bentley – Drainage and Utilites.

A Macro has been devolved to help draw 3D pipe. The macro uses a 3D line as a reference. The 3D lines should be drawn from pipe invert to invert. The macro will use this line to place pipe and end sections.

The macro can be accessed from Design (workflow) > Main (tab) > Macros (panel) > Other > Pipe 3D by Line". This tool should be used in a 3D model.

The following dialog box should open when the tool is accessed. Select the type of pipe, size, and end sections. Then click the "Place Pipe" button and select a 3D line. The macro will place the 3D pipe.