

Creating Survey Databases and their Dependencies

AutoCAD Civil 3D 2015

Introduction

In this White Paper I will be covering Creating Survey Databases and their Dependencies. Before we get started let's first talk about how Civil 3D handles Survey Data and what it needs from us in order to be able to do so.

In Civil 3D Survey Databases are stored separately from drawing files. This is to facilitate sharing and control of collected data and provides the ability to manage it from one location. It is also an excellent way of ensuring that the most current data is always available and used as Civil 3D will flag out of date Survey Networks as such, prompting the user to update them.

Before we can import Raw Survey Data into Civil 3D we must first configure the application to understand our Survey Language and Linework Code Set. If you intend on carrying out any Least Squares Calculations some information about the device the data was captured on will also be required.

Linework Code Set

Firstly let's examine the Sample Linework Code Set. The linework Code Set interprets the syntax of the field codes that are entered into the data collector by the survey field crew. Configuration options can be found on the Survey tab of the Toolspace and opened by Double Clicking or Right Clicking and selecting Edit. The Linework Code Set interprets the syntax of the field codes entered into the data collector by the survey crew. Linework Code Sets are a powerful tool as the Linework Codes used to create survey figures are changeable where the field book language is not. My data is in a field book file and has Begin and End codes specified and so I need to ensure that Automatic begin on figure prefix match is unchecked.

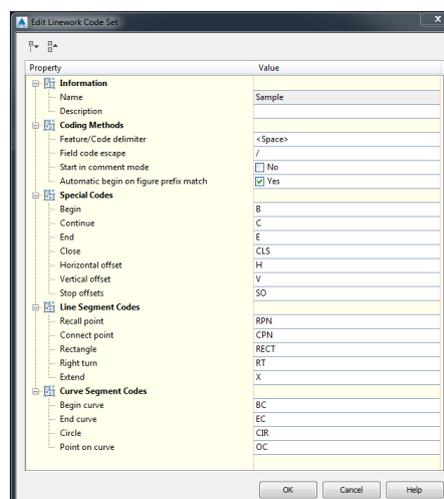
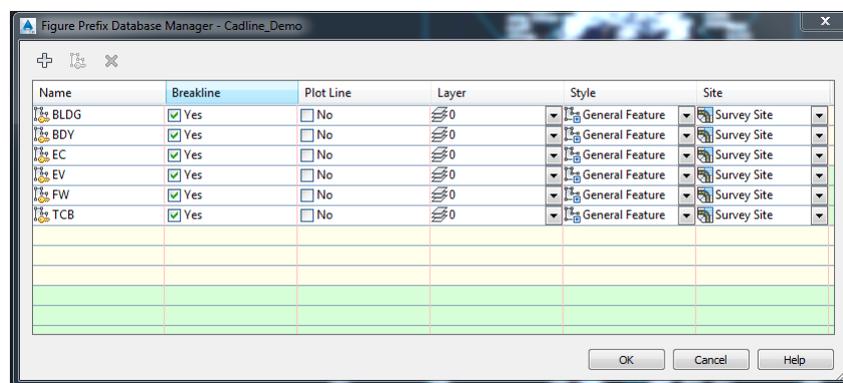


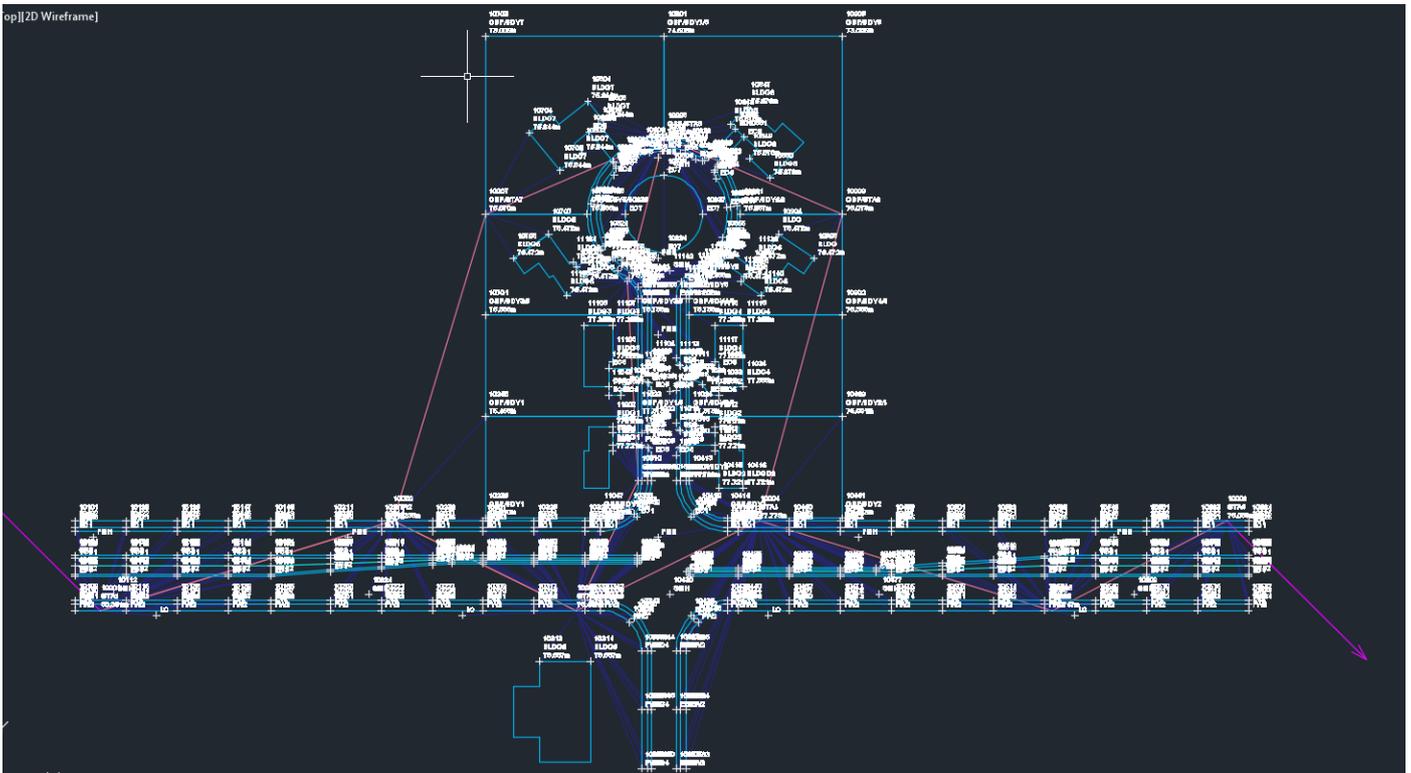
Figure Prefix Database

Next let's create and configure our Figure Prefix Database. The figure prefix database contains information to determine the layer that a figure is drawn on, how it is stylised and whether it is created as breaklines and plot lines. Figure prefixes are also used to determine linework connectivity when using the Process Linework command. It can be created by Right Clicking on Figure Prefix Databases and selecting New. In the spirit of best practice you should always give items you create a good descriptive name, I am going to name mine Cadline_Demo. Now Double Click on your newly created Figure Prefix Database or Right Click it and select Manage Figure Prefix Database. Click on the Plus button in the top left corner of the resulting dialog box to create a new item. We need to create items for each feature that we will collect on site, the name we give each item must exactly match the string entered by the field team unless we add wildcards. The dataset I am using requires an item for Buildings, Boundaries, Edge of Carriageways, Edge of Footways, Tension Corrugated Beams and Verges.



Bringing it all Together

Now it's time to import our data and see the fruits of our labour. Select Import Survey Data from the Home Panel of the Ribbon. On the dialog box you are presented with click Create New Survey Database, I'm going to name mine As Built, then select Next. Select the data source type from the drop down, my data is stored in a Field Book, and then navigate to the file. Click Next and then Create New Network, I'm going to name my network Network 1, select OK and next. Set the Current Figure Prefix Database to the one we created earlier, in my case Cadline_Demo and set the Point Identifier Offset to 10000. Click finish and watch as your figures are drawn, my results are shown below.



That brings us to the end of this document, I hope you've found the content useful. In a future Cadline Community content I will be taking a more in depth look at creating Survey Styles.