Managing Survey Points with Description Key Sets

AutoCAD Civil 3D 2015

Introduction

In the last two White Papers I published I showed you how to create your first Survey Database and taught you about its dependencies. We built on this by learning how to import your first survey into Civil 3D and automatically styled the layer, colour and linetype of the generated linework. The natural next step is to incorporate Point Styles to theme the different elements of our survey, this will be the topic of this White Paper.

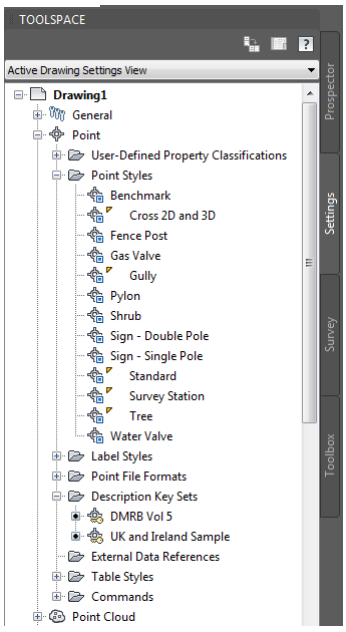
Before we jump into the specifics of theming points, we first need to understand the concepts that facilitate the workflow. Upon initial import into Civil 3D points are placed into the *_All Points* point group and a generic display style is applied, we can now sort and theme the points in one of two ways. The first way is to manually sort the points into your desired point groups and then apply styles to them to define their appearance. Alternatively we can use a feature called *Description Key Sets* to automatically apply style overrides to matching points in the *_All Points* point group. As a surveyor *Description Key Sets* should be our tool of choice.

Description Key Sets when configured correctly automatically control some of a points properties during import, such as the appearance and size of a point in the drawing. *Description Key Sets* are stored in the drawing file and should be kept as part of your template.

Dependency – Point Styles

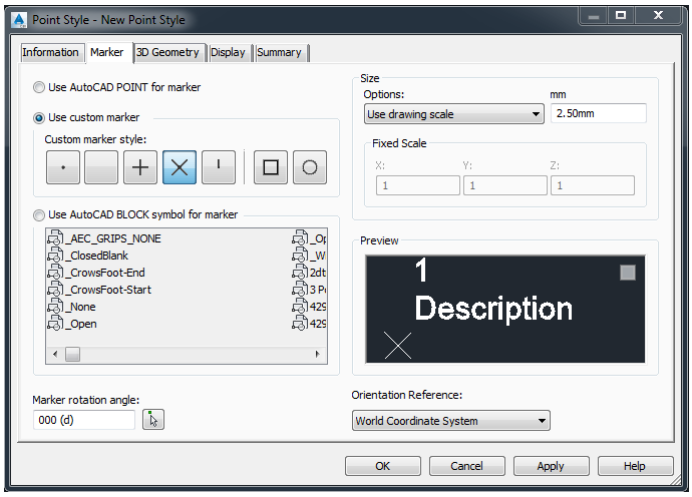
Description Keys reference *Point Styles*, as such it is necessary to create a *Point Style* for each unique symbol you would like to display as part of your Survey. *Point Styles* can be created and managed on the *Settings* tab of *Toolspace* under *Point* in the file tree (see Fig. 1).

Fig. 1



You can create new *Point Styles* by right clicking the *Point Styles* folder in the file tree and selecting *New*. Alternatively you can right click on an existing *Point Style* and select *Copy*. You will be presented with the *Point Style* dialog box (see Fig. 2), as with all Civil 3D Style dialog boxes you can specify the name of the style on the *Information* tab and the layer the object will sit on on the *Display* tab. The *Marker* tab (see Fig. 2) allows us to control the display settings for this *Point Style*. As can be seen on Fig. 2 we have the ability to use an AutoCAD POINT, Custom Marker or AutoCAD Block as the visual style for the survey point. AutoCAD Blocks provide the largest amount of freedom and are my marker of choice. To use an AutoCAD Block simply tick the Radio button and select the desired block name from the list. It is worth noting that you can only select blocks that are already inserted into the drawing. When happy with the configuration options you can select *OK* to save the *Point Style* and close the dialog box.

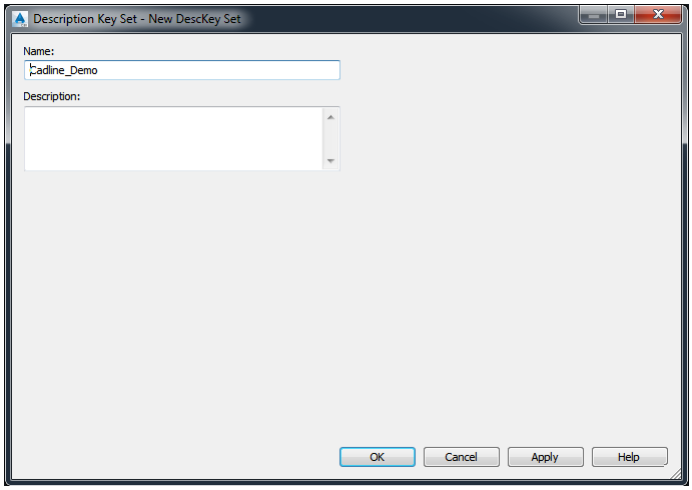
Fig. 2



Description Key Sets

Description Key Sets can be created and configured on the *Settings* tab of *Toolspace*. They can be found by expanding *Points* in the file tree (see Fig. 1). If you are using the UKIE template I recommend deleting the two supplied *Description Key Sets* as there is a good chance they will interfere with the Key Set we are about to create. Right click on the *Description Key Sets* folder in the file tree and choose *New*. On the resulting dialog box (see Fig. 3) provide a name for the *Description Key Set*, I am going to call mine Cadline_Demo and choose *OK*.

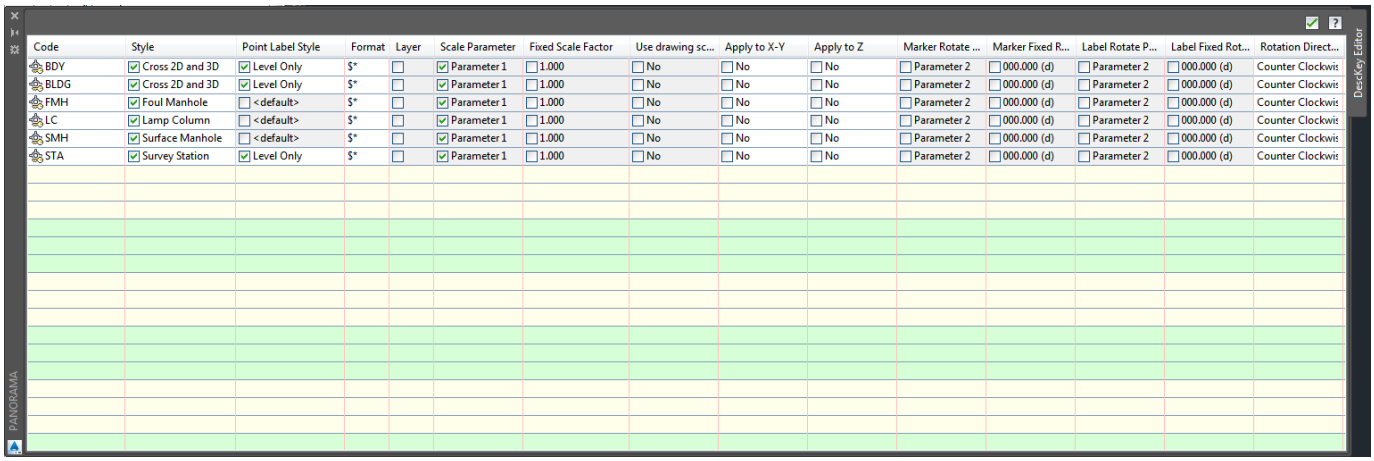
Fig. 3



Now right click on your newly created *Description Key Set* and select *Edit Keys*. I need to create a *Description Key* for each symbol I would like to customise, for my survey I require keys for Foul and Surface Manholes, Lamp Columns, Survey Stations, Buildings and Building Boundaries. You will be able to edit the first key presented on the *Description Key Editor* panel of *Panorama* (see Fig. 4). To add additional keys right click on the first line and select *New* or *Copy* if you would like to retain some parameters.

Having added the relevant Survey Codes to my *Description Key Set* I am now free to assign Styles and Point Label Styles to be applied to Survey Points whose code matches. When I am done assigning Styles I can close the *Panorama* window with the green tick box button.

Fig. 4



Code	Style	Point Label Style	Format	Layer	Scale Parameter	Fixed Scale Factor	Use drawing sc...	Apply to X-Y	Apply to Z	Marker Rotate ...	Marker Fixed R...	Label Rotate P...	Label Fixed Rot...	Rotation Direct...
BDY	Cross 2D and 3D	Level Only	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis
BLDG	Cross 2D and 3D	Level Only	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis
FMH	Foul Manhole	<default>	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis
LC	Lamp Column	<default>	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis
SMH	Surface Manhole	<default>	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis
STA	Survey Station	Level Only	$*		Parameter 1	1.000	No	No	No	Parameter 2	000.000 (d)	Parameter 2	000.000 (d)	Counter Clockwis

Having created the *Description Key Set* any new *Survey Data* I import will immediately be styled with the parameters I set. That brings us to the end of this White Paper, I will leave you with a screen capture of my styled Survey.

Fig. 5