

Back to Basics – Description Keys

A quick look back at the fundamental functionality of Description Keys

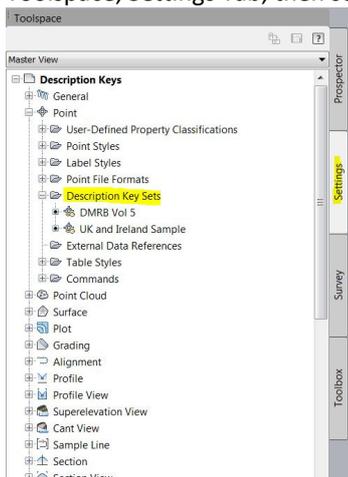
AutoCAD Civil 3D has the functionality to insert, style, scale and rotate points automatically when inserted into a drawing by way of Description keys, the aim of this whitepaper is to highlight the workflow to help you make the most of workflow automation.

As is usual with AutoCAD Civil 3D there are various methods of selecting and editing objects and styles, I will show just one method but it will be worth exploring further once you are familiar with the workflow to enable you to find your own method that you are comfortable with.

Descriptions Keys will, when importing a point file, automatically apply a symbol and scale it, a label can also be added if required, using the values from a point file usually held as a description in the file

I always use the UKIE Template as a default starting point for all my work, this saves me lots of time creating styles, labels, layers etc. it is worth bearing this in mind should my images look slightly different.

The first thing to do is to create or in my case edit an existing set of Description Keys, these are accessible from the Toolspace, Settings Tab, then select and expand Point and then expand Description keys



You will notice that there are already 2 sets of keys located here I am only going to use the UK and Ireland Sample so will delete the other set, easily done by selecting DMRB Vol 5 right click and Delete

If you select the UK and Ireland set and right click and Edit Keys you will be presented with the image below

Code	Style	Point Label Style	Format	Layer	Scale Parameter	Fixed Scale Factor	Use drawin...	Apply to X-Y	Apply to Z	Marker Rot...	Marker Fixe...	Label Rotat...
BG*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
BL*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
BT*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
EP*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
FE*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
G*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
GU*	<input checked="" type="checkbox"/> Gully	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
LP*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
MH*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
PO*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
SL*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
STA*	<input checked="" type="checkbox"/> Survey Station	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
TB*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
TE*	<input checked="" type="checkbox"/> Tree	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	
TR*	<input checked="" type="checkbox"/> Tree	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter : 000.000 (d)	<input type="checkbox"/> Parameter :	

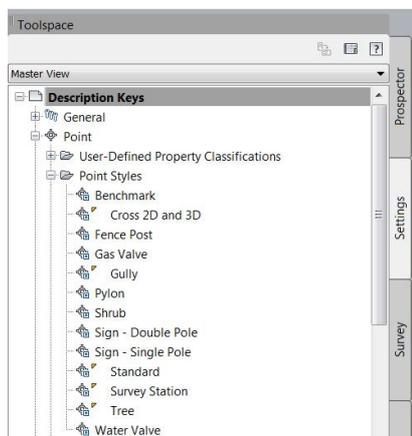
Each description key in a drawing is defined by its properties. Both the code property and the format properties are required in a description key

- Code Property - Used during description key matching, for example, if the code matches the raw description for the point, then the properties specified in that description keys are applied to the points when they are created. A description key code can contain characters, called wild cards that expand the matching capabilities of the description key.
- Format Property - Translates the raw description for a point into a full description. The default is \$* , which indicates that the full description is the same as the raw description.

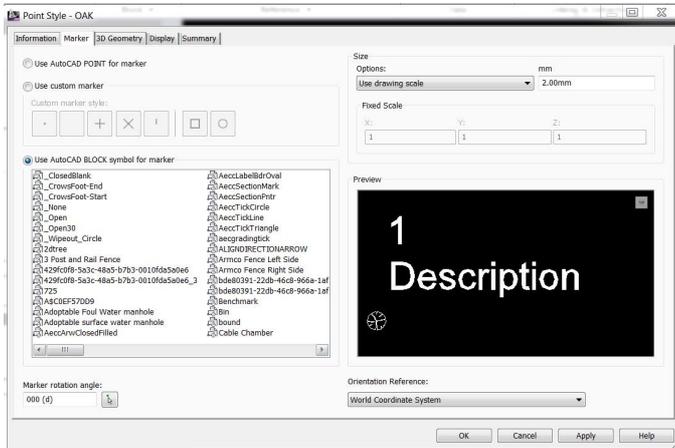
Other optional information can include point style, point label style, layer, point symbol scaling, point symbol rotation

You can see from the image above that the codes TE and TR have a style of tree allocated to them, in other words when a point contained within a point file has a description of either TE or TR then Civils 3D will automatically apply the style of tree, Ideally we need this point style to be a bit more intelligent in order for it to read and apply the information held in the point file so I generally create a new point style, to do that.

To create a Point Style that will reflect the spread of a tree canopy, Go to the Settings Tab of the Toolspace and expand the Point collection and then expand the Point Styles collection



If you select the style Tree and right click and copy, a new dialogue box opens and you can rename the style on the Information Tab, I have renamed my style OAK you can then select the Marker Tab

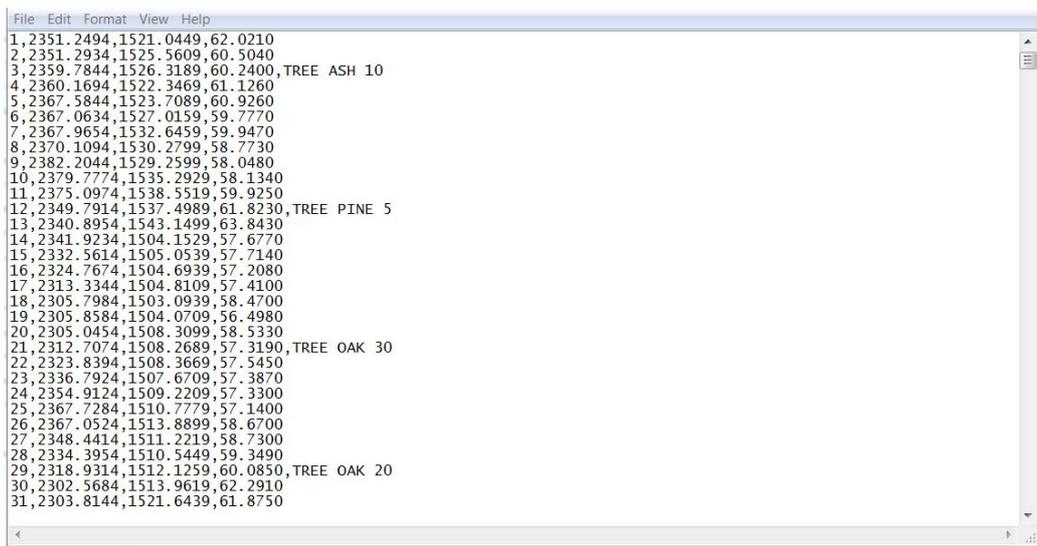


If you tick the AutoCAD Block option and scroll across the list you will see more styles I have selected Tree 6, you could if you already have a standard block right click in here and browse to your existing block.

On the sizing option at the top right of this screen I have selected the "Use size in absolute units" option, this means that it will scale the block according to the information contained within the point file.

To make things clearer I have changed the display colour to green on the Display Tab. Once done you can select apply and then ok.

We now need to explore the point file, in this case I have opened the file in WordPad, to see what information is contained in it



You can see from the file that there are a few points that have information regarding type and crown spread all we need to do now is tell the Description Key Set what to apply.

Open up the Description Keys for edit and change the parameters as per the image below

Code	Style	Point Label Style	Format	Layer	Scale Parameter	Fixed Scale Factor	Use drawin...	Apply to X-Y	Apply to Z	Marker Rot...	Marker Fixe...	Label Rotat...	Lab
BB*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
BG*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
BL*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
BT*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
EP*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
FE*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
G*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
GU*	Gully	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
LP*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
MH*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
PO*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
SL*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
STA*	Survey Station	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
TB*	<input checked="" type="checkbox"/> Cross 2D and 3D	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
TE*	Tree	<input checked="" type="checkbox"/> Point Number Description and Level	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 1	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00
TR*	OAK	RAW Description	\$*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Parameter 2	<input type="checkbox"/> 1.000	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 000.000 (d)	<input type="checkbox"/> Parameter ;	<input type="checkbox"/> 00

If you insert the points in the normal way by using the format PENZD in this case,

Import Points

Selected Files:

File Name	Status
✓ C:\CIVIL 3D DATA\TRAINING\ESSENTIALS\SURVE...	Matches selected point file format

Specify point file format (filtering ON):

- ENZ (comma delimited)
- XYZ_RGB (comma delimited)
- Autodesk Uploadable File
- NEZ (comma delimited)
- XYZ_LIDAR Classification (comma delimited)

Preview: PENZD (comma delimited) | TREVOR.txt

Point Number	Easting	Northing	Point Level	Raw Description
1	2351.2494	1521.0449	62.0210	
2	2351.2934	1525.5609	60.5040	
3	2359.7844	1526.3189	60.2400	TREE ASH 10
4	2360.1694	1522.3469	61.1260	

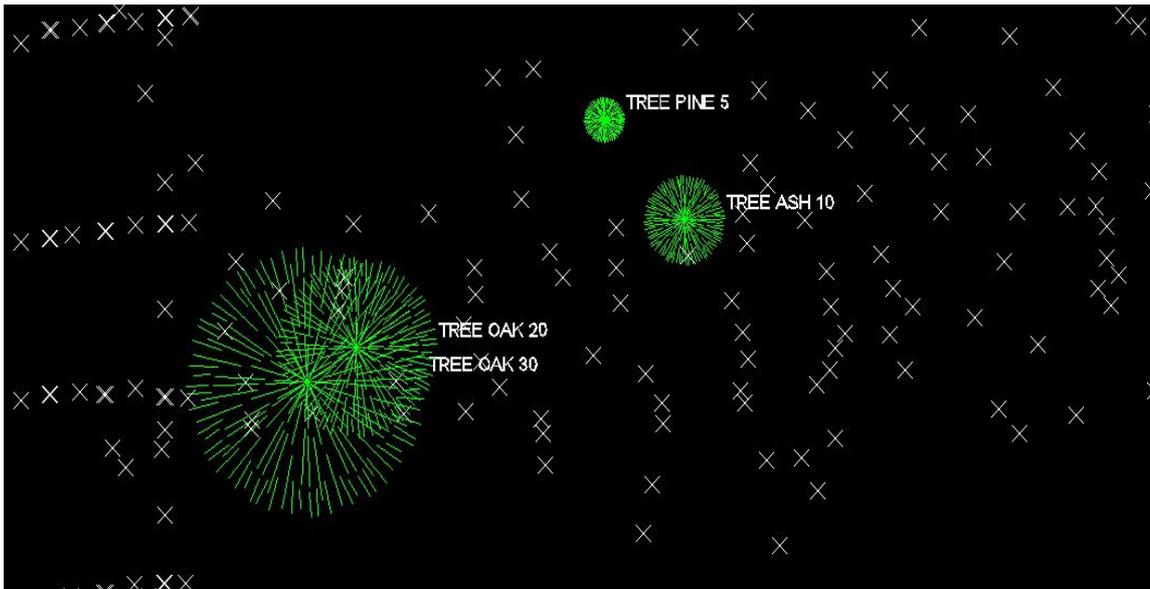
Add Points to Point Group.

Advanced options

- Do level adjustment if possible
- Do coordinate transformation if possible
- Do coordinate data expansion if possible

OK Cancel Help

You can see that I have changed the style of Code TR to OAK, (the style created earlier although not quite correct as we will apply style to a variety of trees) I have also changed the default label to Raw Description the important changes are in the apply to X,Y column followed by the Scale Parameter which is changed to 2 this just means that it is looking for the 2nd parameter to scale the block



The final image that the points with the added information have been automatically styled and scaled accordingly.