

# **GEOTOPO v3.3 USER'S MANUAL**

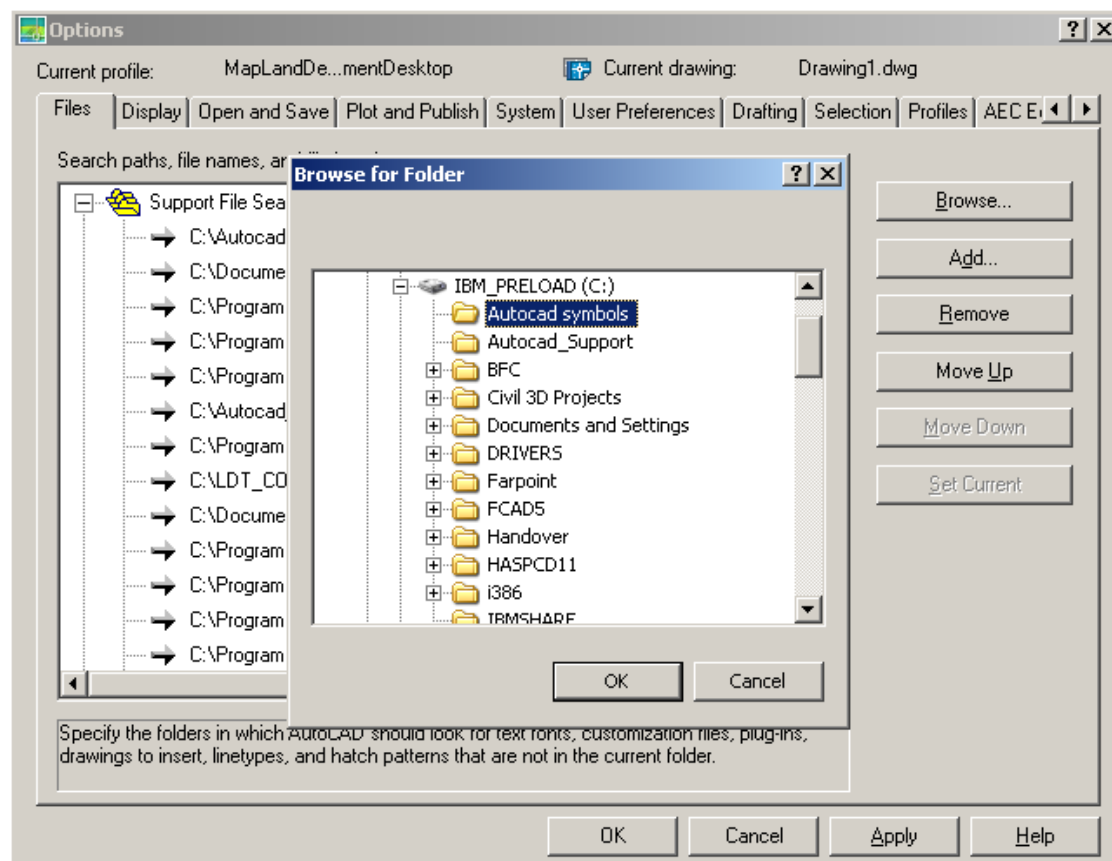
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## **Section 1 – Installation**

1. Insert disk into CD drive and double click on the **setup.exe** file to begin installing.
2. Look for the HASP dongle drive file **HASPUserSetup.exe** in the CD and double click on it to install the dongle driver.
3. Unzip and copy the folder "**Autocad symbols**" into your hard disk. Preferably in the **C:\** drive.

## **Section 2 – Configuring Autocad**

1. Launch Autocad. If any dialog box pops up, click the **Cancel** button to dismiss it. You should see a blank Autocad screen.
2. Type **options** in the command line to display the **options dialog box**.
3. Select the **Files** tab and expand the **Support File Search Path** item.
4. Click on the **Add...** button then the **Browse...** button to display the **Browse for Folder** dialog box.
5. Browse to the folder "**Autocad symbols**" and click **OK**.
6. Click **OK** in the **Options** dialog box.



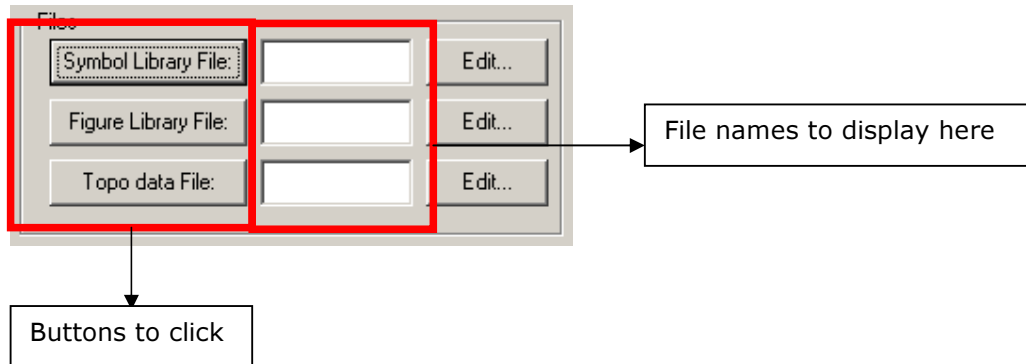
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## ***Section 3 – Getting to know GeoTopo***

### **3.1 Files section**

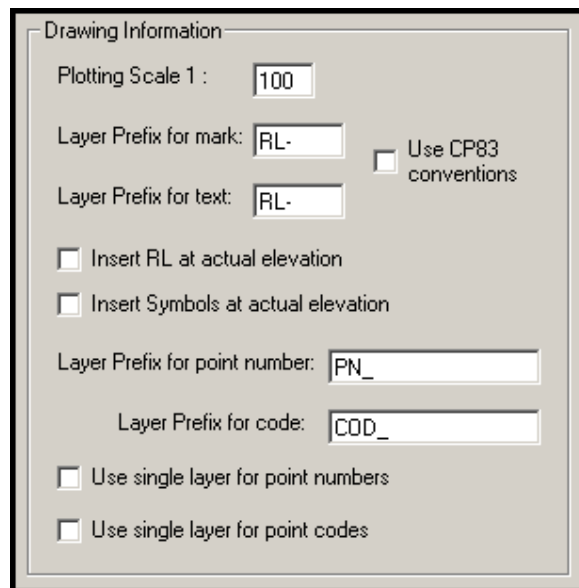
You will select the ***symbols file, figures file (for linework) and the topo data file (CSV format)*** by clicking on the corresponding buttons.



You can edit the library files as well as the topo data file by clicking on the corresponding **Edit...** button beside the displayed file name.

### **3.2 Drawing Information section**

You will need to provide some information about the drawing in this section.



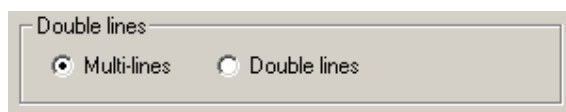
- **Plotting Scale** to be provided. This will affect the symbol sizes and the level text heights
- **Layer Prefix for mark** is the prefix to be added to the layer name of the particular feature for the cross where the point is surveyed
- **Layer Prefix for text** is the prefix to be added to the layer name of the particular feature for the level of the surveyed point

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- **Use CP83 conventions** if checked, will make use of CP83 layering conventions. The prefixes will be ignored.
- Check the box for **Insert RL at actual elevation** if you want the cross and the text for the levels to be drawn in the actual elevation. The default level is 0.
- Check the box for **Insert Symbols at actual elevation** if you want the symbols to be inserted at the actual elevation. The default level is 0.
- **Layer Prefix for point number** is the prefix to be added to the layer name of the particular feature's surveyed point number
- **Layer Prefix for code** is the prefix to be added to the layer name of the particular feature's surveyed point code (description)
- Check the box for **Use single layer for point numbers** if you want to use the layer that is specified from the above *Layer Prefix for point number* text box for every point number regardless of the feature
- Check the box for **Use single layer for point codes** if you want to use the layer that is specified from the above *Layer Prefix for code* text box for every point code regardless of the feature

### **3.3 Double lines**

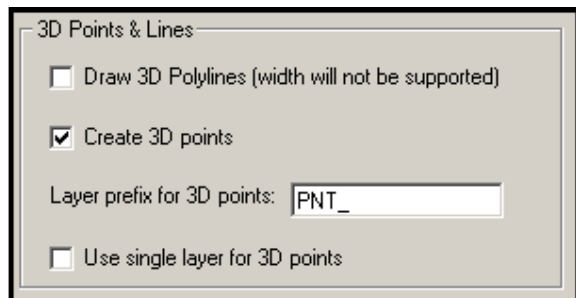


You will need to specify whether GeoTopo should generate *Multi-lines* or *double-lines* for those lines that require line width.

**For users of AutoCAD LT, you will need to select *Double lines* instead of *Multi-lines*.**

### **3.4 3D Points and Lines**

This section controls whether the linework will be drawn in 2D or 3D. Please take note that if 3D polylines is selected, any line with line width will be drawn as single line only.



- Check the box **Draw 3D Polylines** if you want the linework to be in 3D. All lines will be drawn in level 0 if this is not chosen
- **Create 3D points** will generate an Autocad point object at the surveyed point

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- **Layer prefix for 3D points** is the Autocad layer name prefix to be added in for the 3D point object
- Check the **Use single layer for 3D points** if you want to use the layer name specified by *Layer prefix for 3D points* text box on every surveyed point regardless of the feature

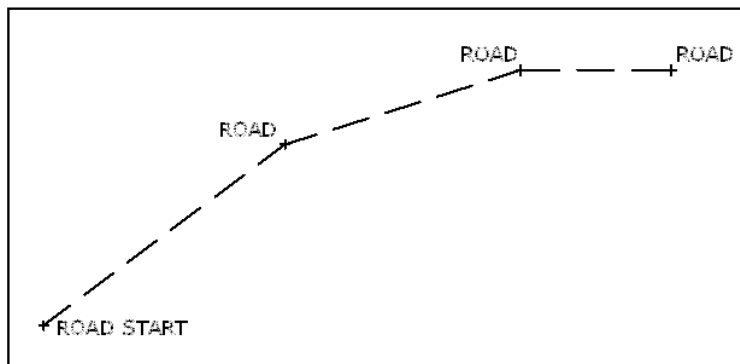
### **3.5 Control Codes**

These codes control how the line work is drawn. These codes are added to the feature code and separated by a single space. In the example below, **SA START** denotes the start of a line feature with **SA** as the feature code.

Control codes:

Start Code:	START
Close Code:	CLOSE
Rectangle Code:	RECT
"No level" Code:	NOLVL

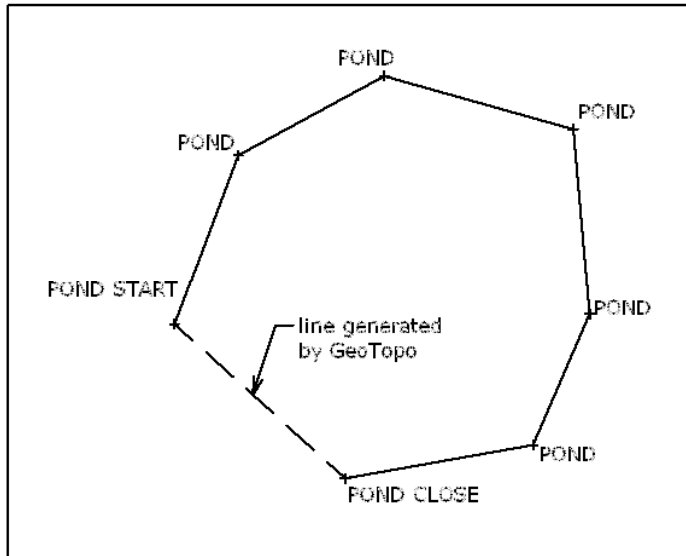
- The **Start Code** starts a new joining sequence. The previous joining sequence with the same code is ended (eg. *ROAD START* will start a joining sequence, subsequent points will just have the code *ROAD*).



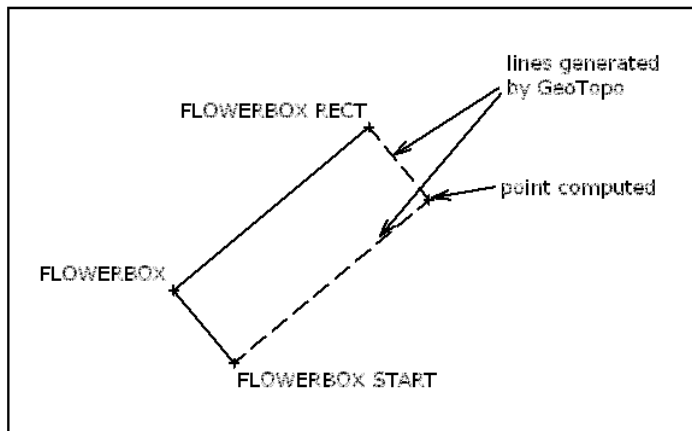
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- The **Close Code** close to the first point in the sequence (eg. *POND CLOSE* will join to the point with the code *POND START*).



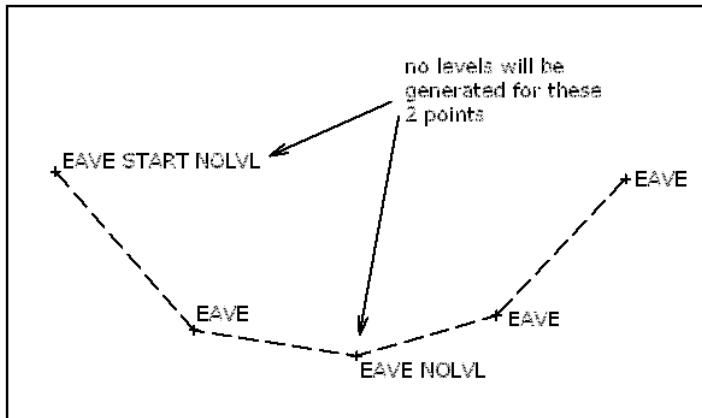
- The **Rectangle Code** creates a rectangle figure using 3 surveyed points, the forth point is computed (eg. *FLOWERBOX RECT* will compute a new point and joins the figure into a closed polygon).



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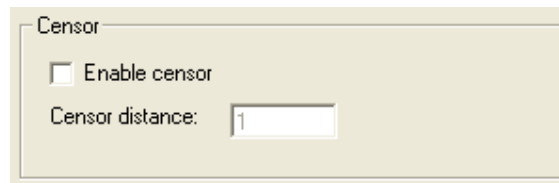
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- The **"No level" Code** will suppress the generation of levels (text) for that particular surveyed point.



## **3.6 Censor section (prevent overlapping texts)**

This function will aid the drafting in creating plans by plotting levels at specific intervals so that the levels will not overlap.



- Check **Enable censor** to activate this function
- The **Censor distance** (measured in metres), is calculated automatically based on the plotting scale. It may be changed manually if necessary.

## **3.7 Action buttons**

Four action buttons are included in **GeoTopo**.



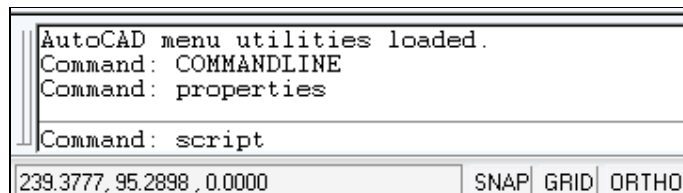
- Click on **Go** to begin generating the script file
- Click on **Save Settings** to save all the settings so that they may be loaded on the next launch (except for the topo data file name).
- Click on **Load Settings** to load previously saved settings.
- Click on **About** button to display **GeoTopo's** information and version.
- Click on **Close** button to close the application.

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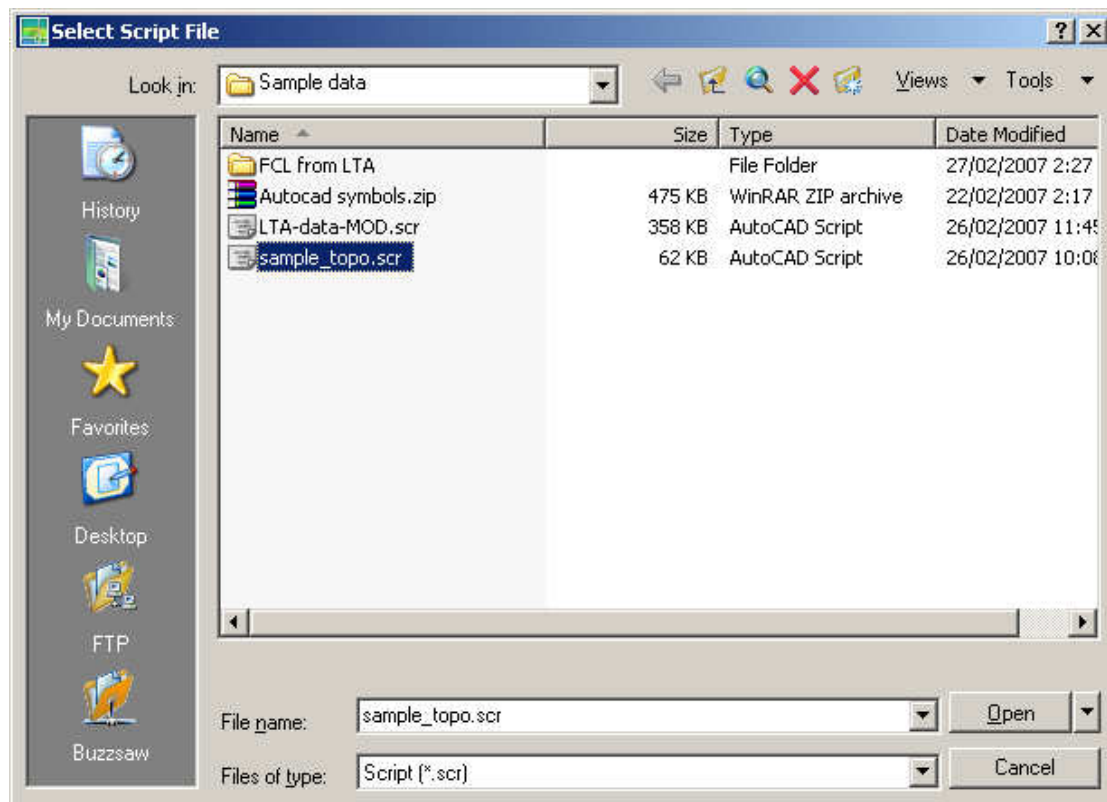
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## ***Section 4 – Scripting into Autocad***

1. After all the above options have been set, click on the button **Go** to begin creating the Autocad script file.
2. An Autocad script file and a log file will be created. The log file contains all the feature codes that cannot be found in both the symbol library file and the figure library file. You can use notepad or any text editor to view this file.
3. Launch Autocad. If a dialog box appears, click **Cancel** to dismiss it or you could select a pre-defined *template file*. You should see a blank drawing area.
4. Type the Autocad command, ***script*** and press the **Enter** key.



5. In the **Select Script File** dialog box, browse to the script file that is generated by **GeoTopo** and click **Open**.



6. The details will be drawn in the Autocad screen.

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## ***Section 5 – Understanding the GeoTopo Library files***

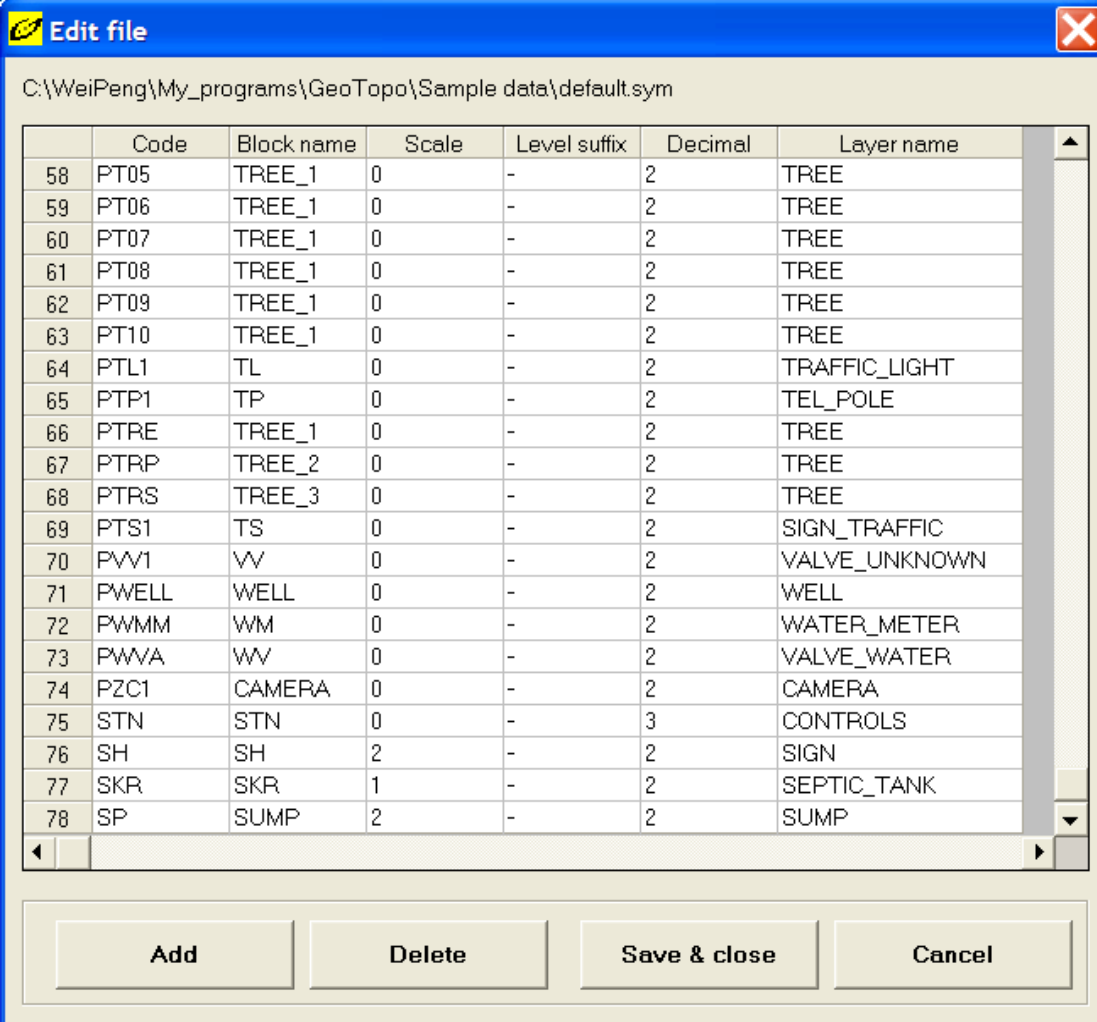
**GeoTopo** relies on two library files to generate the Autocad script file. A default symbol file and a default figure file is supplied with the installation CD.

You may made amendments to this two files to suit your company's feature coding standards. **You can also edit these two files by using any ASCII text editor, example Notepad or by using Microsoft Excel.**

### **5.1 The Symbol Library file**

The default symbol library file (*default.sym*) contains all the symbols that could be coded in the topographical field work.

Each field of the file is separated by a **TAB** space. You may use *Microsoft Excel* to open the file for amendments or click on the **Edit...** button in **GeoTopo**.



	Code	Block name	Scale	Level suffix	Decimal	Layer name
58	PT05	TREE_1	0	-	2	TREE
59	PT06	TREE_1	0	-	2	TREE
60	PT07	TREE_1	0	-	2	TREE
61	PT08	TREE_1	0	-	2	TREE
62	PT09	TREE_1	0	-	2	TREE
63	PT10	TREE_1	0	-	2	TREE
64	PTL1	TL	0	-	2	TRAFFIC_LIGHT
65	PTP1	TP	0	-	2	TEL_POLE
66	P TRE	TREE_1	0	-	2	TREE
67	P TRP	TREE_2	0	-	2	TREE
68	P TRS	TREE_3	0	-	2	TREE
69	PTS1	TS	0	-	2	SIGN_TRAFFIC
70	PWV1	WV	0	-	2	VALVE_UNKNOWN
71	PWELL	WELL	0	-	2	WELL
72	PWMM	WM	0	-	2	WATER_METER
73	PWVA	WV	0	-	2	VALVE_WATER
74	PZC1	CAMERA	0	-	2	CAMERA
75	STN	STN	0	-	3	CONTROLS
76	SH	SH	2	-	2	SIGN
77	SKR	SKR	1	-	2	SEPTIC_TANK
78	SP	SUMP	2	-	2	SUMP

- The first field contains a list of feature codes that should be used when picking up the appropriate point feature.



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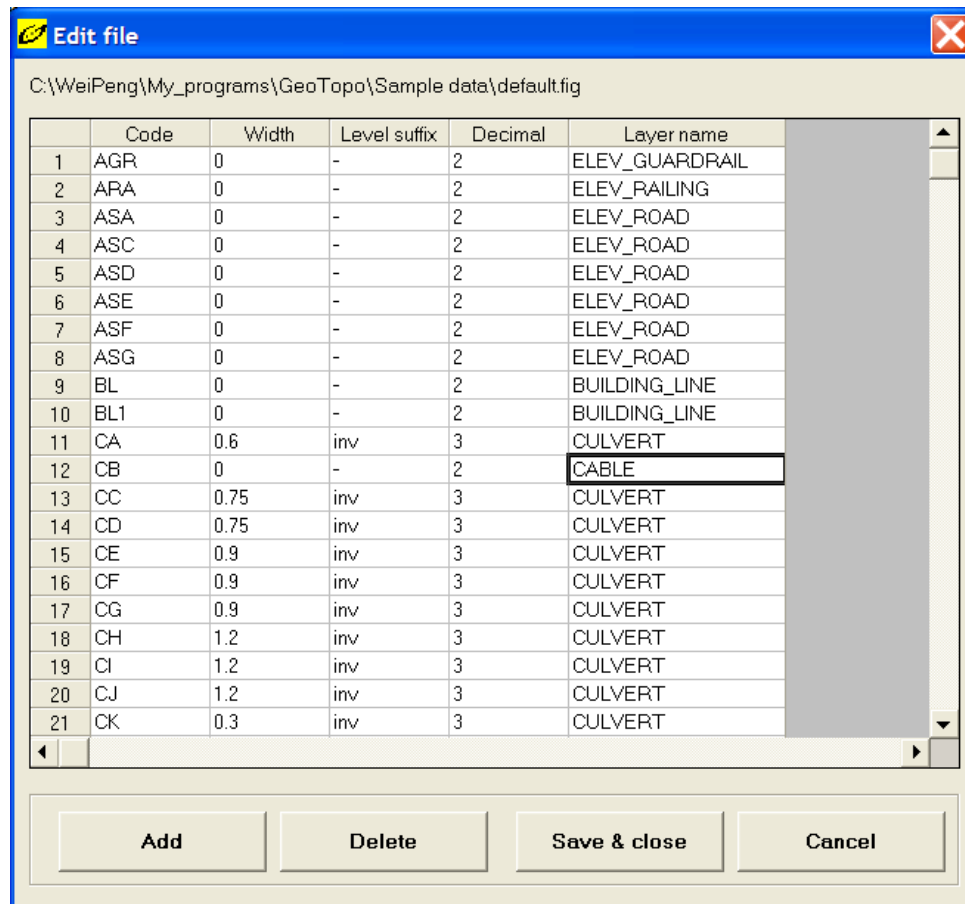
- The second field is the corresponding Autocad block name of the block that would be inserted into the drawing to represent the point feature. If no point symbol is to be inserted, a dash ("-") is used in place of the block name.
- The third field is either a "0", "1" or "2" value. A "0" value indicates that the symbol will be inserted in the Autocad drawing based on the **plotting scale** as specified. A "1" value will insert the symbol with a scale factor of 1 and will not be affected by the plotting scale. A "2" value indicates that the symbol will be rotated and scaled by **2 surveyed points**.
- The fourth field is the text that would be added **to the end** or **to the beginning** of the level texts of the surveyed points. E.g. 102.34**inv** if **inv** is the text in that column and **inv**102.34 if **\*inv** is the text in that column. To display the suffixes as prefixes, you will need to add in a "\*" in front of the text. To generate the level texts without any suffixes or prefixes, put a dash "-" in that column.
- The fifth field is the decimal places for the reduced levels. **Note that only 2 or 3 is accepted.**
- The last field is the Autocad layer that will be created when inserting the symbol.
- You can add a new library entry by clicking on the **Add** button.
- You can also delete an existing entry by clicking on the **Delete** button. The currently selected entry will be deleted.

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## 5.2 The Figure Library file

The figure is actually the linework. This file contains all the feature codes pertaining to all the line features.



The file is separated into 4 columns.

- The first field is a list of all the line feature codes
- The second field indicates the width of the feature. For example the code of *DA* has a width of 0.23m offset from the centre (0.115m on both side). If the width is negative (eg. -0.23), the line will be offset to the left by 0.23m.
- The third field is the text that would be added **to the end** or **to the beginning** of the level texts of the surveyed points. E.g. 102.34**inv** if **inv** is the text in that column and **inv**102.34 if **\*inv** is the text in that column. To display the suffixes as prefixes, you will need to add in a "\*" in front of the text. To generate the level texts without any suffixes or prefixes, put a dash "-" in that column.
- The fourth field is the decimal places for the reduced levels. **Note that only 2 or 3 is accepted.**
- The last field is the Autocad layer that will be created when the line feature is drawn.