

1.1 Overview and Initial Setup:

This guide and included files are designed to assist you in setting up and using a basic **Field to Finish** configuration. It is designed to help get you “up and running” with this extremely efficient program that will save you time and money. There are many options to consider when setting up Field to Finish that are directly related to your current “in-house” standards, such as layer names, symbols and field codes. This guide includes instructions on editing the code list to match those in use by your company. It is recommended that other than the code names, you begin by using the supplied files “as is” to become familiar with their operation. You may then decide which if any to modify.



This guide is NOT a complete tutorial neither is it intended to replace the Carlson help menu or knowledge base help center. Please refer to the available help menu or visit support at Carlsonsw.com for more information.

The files included in the Easy Start Guide are:

- **CSW-EX.cfg** - a general configuration file that contains default settings for most commands
- **CSW-EX.dwt** - a default drawing template that contains layers matching those in the FLD files
- **Tree Setup.tree** - a simple tree survey setup for use in Field to Finish
- **CSW-ATT.fld** - an optional Field Code Table that utilizes labeling points with attributes
- **CSW-TXT.fld** - an optional Field Code Table that utilizes labeling points with text
- **F2F.crd** – a sample coordinate file to use as practice and to aid in examining field coding methods.

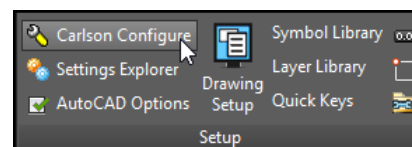
1.1.1 Using the supplied files

1. Copy all the above files with the exception of the F2F.CRD to C:\Carlson Projects\Settings folder
2. Copy the **F2F.crd** sample coordinate file to your working directory. The default is C:\Carlson Projects

1.1.2 General Configuration

The following steps will set up the general configuration for Carlson. There are many different default settings throughout Carlson that can seem overwhelming to begin with. But in actuality, most have to do with things like text size and layers. If you are a new user to Carlson, I recommend that you begin by accepting the defaults, use the software in order to get used to it, and then go back and change the defaults to your liking. The general configuration file **CFG**, contains all of the default settings available and stores them in the one file.

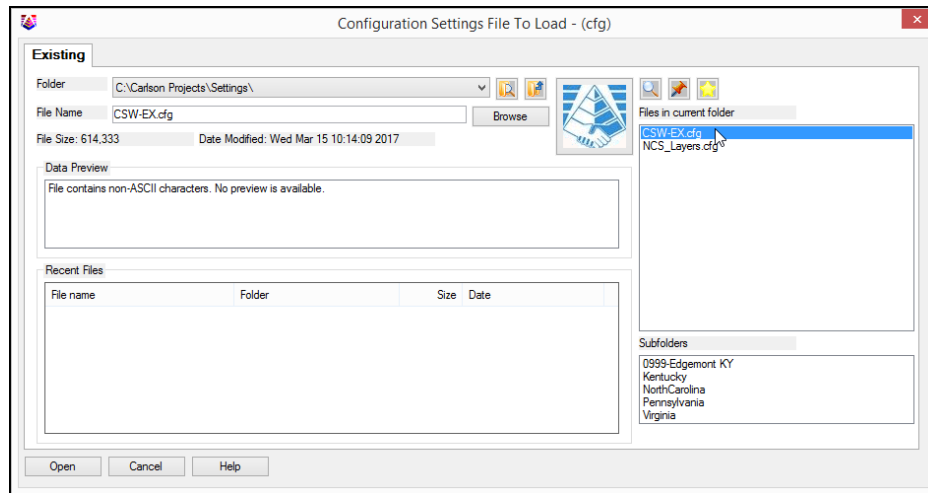
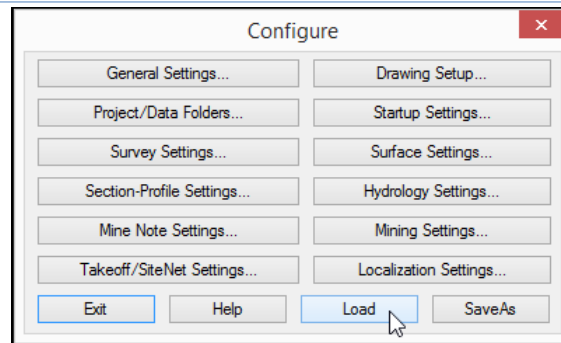
1. From the Setup Ribbon, select **Carlson Configure**



EASY START GUIDE FIELD TO FINISH



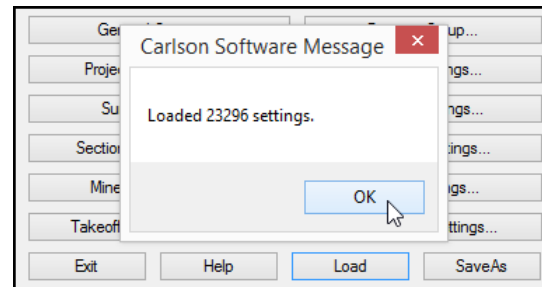
3. From the *Configure* dialog box, select **Load**



4. Select the file **CSW-EX.cfg** and click **Open**

A dialog box similar to the one to the right displays indicating how many settings have been loaded.

5. Click **OK**



Note: you do NOT have to set over 22,000 settings. These are just all the potential settings that could be set including all Carlson modules.

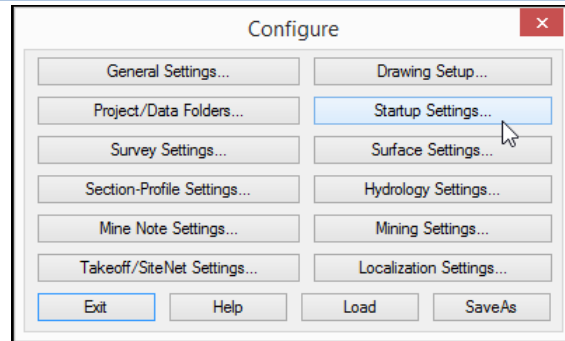
Load Template File

There is a supplied template containing layers and linetypes that will assist in these lessons. Once again, this is user defined and can easily be modified.

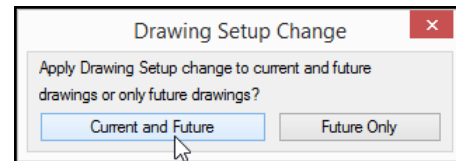
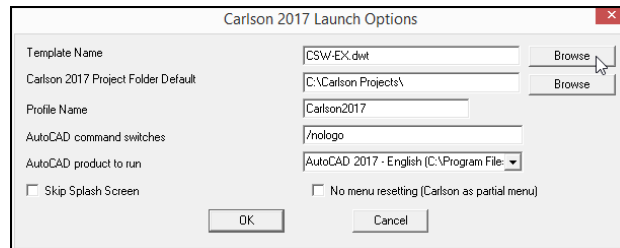
EASY START GUIDE FIELD TO FINISH



- From the *Configure* dialog box, select **Startup Settings**



- Browse and select the file **CSW_EX.dwt** and click **Open**
- Click **OK**
- Back in the *Configure* dialog box, Click **Exit** to complete the configuration
- When the *Drawing Setup Change* dialog box appears, select **Current and Future**

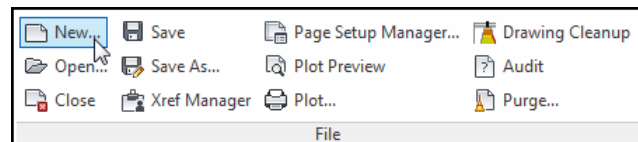


1.1.3 Using the Field to Finish Code Table

“Field to Finish” is Carlson’s premier program that can drastically increase the efficiency of processing raw field data and drafting a plan. Field to Finish will draw lines, polylines (2D and 3D), symbols and annotations automatically from the data collected in the field and stored in the **CRD** file. To control how Carlson handles and places those entities in a drawing, it uses a field code definition file **FLD**. The mistaken assumption usually made is that setting up and employing these codes will slow down your field work. Most surveyors already code their shots in the field. You simply just need to take full advantage of what is already being done and allow Carlson to save you a great deal of effort in finalizing your plan.

If you are new to Field to Finish, it is recommended that you start a new drawing and use the supplied example coordinate file **F2F.crd** before modifying the supplied Code Tables.

- Select **Ribbon: File ⇒ File ⇒ New**.



- Select the supplied drawing template **CSW-EX.dwt** and click **<<Open>>**.

EASY START GUIDE FIELD TO FINISH



3. Set the drawing scale to **20**
4. Select **Set** to create and name a new drawing

The 'Startup Drawing Wizard' dialog box is shown. It has a title bar with a close button. The main area is divided into sections: 'NEW Drawing Name' with a 'Set' button; 'Scale Settings' with radio buttons for 'English 1in=2ft' (selected) and 'Metric 1m=2m'; input fields for 'Horizontal Scale' (20.0), 'Symbol Plot Size' (0.080), and 'Text Plot Size' (0.080); 'Drawing Units' set to '1.600'; 'Coordinate System' section with 'Projection' set to 'None' and 'Zone' set to 'WGS84'; a checkbox for 'Skip Startup Wizard Next Time'; and 'Next', 'Exit', and 'Help' buttons at the bottom.

5. Create and name a new drawing ie **C:\Carlson Projects\F2F-ATT.dwg**
6. Click **Save**
7. Back in the *Startup Drawing Wizard* Click **Next**

The 'Drawing to Create - (dwg)' dialog box is shown. It has a title bar with a close button. The main area is divided into sections: 'New' section with 'Folder' set to 'C:\Carlson Projects\' and 'File Name' set to 'F2F-ATT.dwg'; 'Recent Files' table with columns 'File name', 'Folder', 'Size', and 'Date'; 'Files in current folder' list showing various .dwg files; 'Subfolders' list showing 'Mining Case Studies', 'Settings', 'SurvNetExamples', 'test', and 'UC17'; and 'Save', 'Cancel', and 'Help' buttons at the bottom.

8. Ensure the Coordinate File option is set to *Existing* and click **Set** to select the coordinate file **F2F.crd**
9. Click **Next** to complete the setup

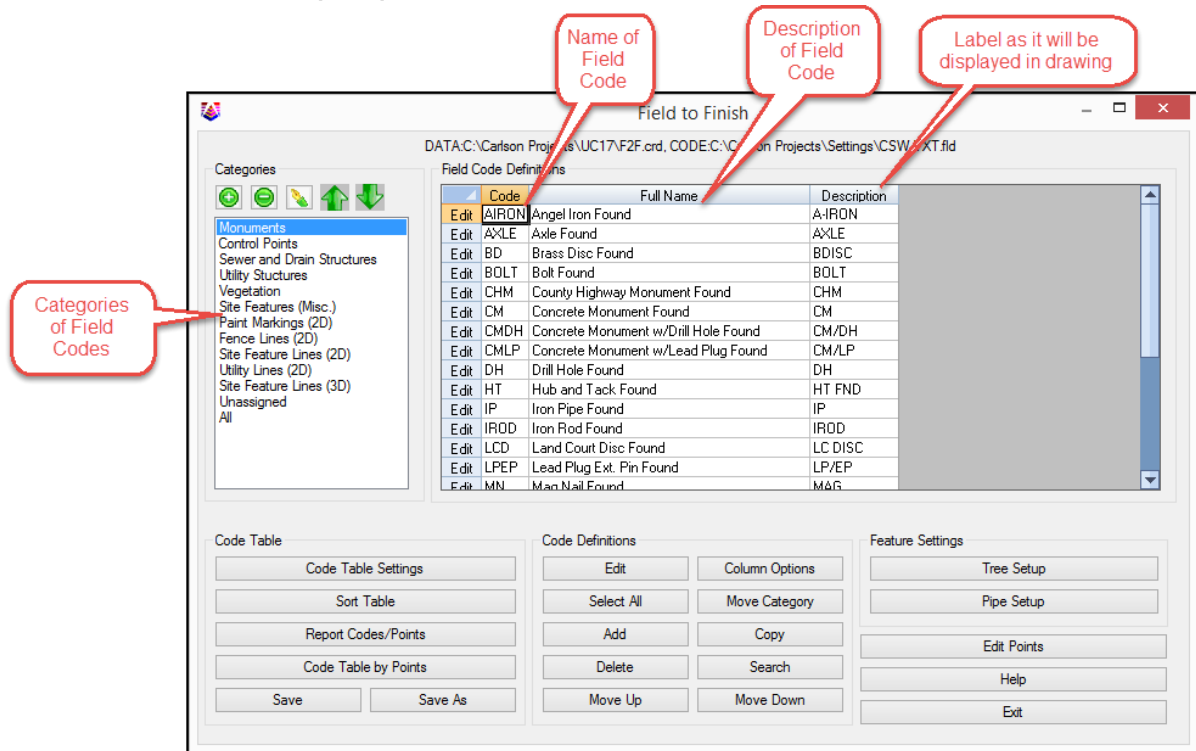
The 'Startup Wizard Data Files' dialog box is shown. It has a title bar with a close button. The main area is divided into sections: 'Data Path' set to 'C:\Carlson Projects\' with a 'Set' button; 'CRD File' set to 'C:\Carlson Projects\F2F.crd' with a 'Set' button; 'Coordinate File' section with radio buttons for 'New' and 'Existing' (selected); 'Import Points From ...' section with radio buttons for 'Data Collector', 'Text/ASCII File', 'Current CRD File', and 'None' (selected); and 'Next', 'Exit', and 'Help' buttons at the bottom.

EASY START GUIDE

FIELD TO FINISH

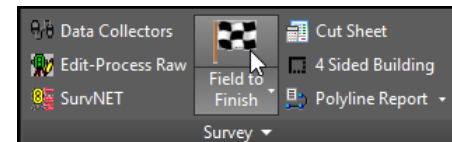


Field Code Definition File (FLD)



Each field code has a series of settings to tell Carlson what to do. By selecting any code and clicking **[Edit]** you will see that there is a dialog box containing three tabs. Each tab then contains multiple options all of which have specific settings that affect the placement of each point, line, polyline, symbol and annotation (label). Also note the categories on the left side. You can create categories and sort your code list in any manner you choose.

10. From the survey Ribbon select **Field to Finish**



EASY START GUIDE

FIELD TO FINISH



11. From the *Draw Field to Finish* dialog box, Select **Edit Codes**

The 'Draw Field to Finish' dialog box contains the following elements:

- Draw Options**
 - Highest point number: 1890
 - Range of Points: 1-1890, All, Point Group
 - Entities to Draw: ☒ Points, ☒ Lines, ☒ Symbols, ☐ 3D Faces
 - Draw within: ☐ Polyline, ☐ Distance, ☐ Window/Coordinate Range
 - Layer Prefix: [Empty], Additional Draw Options
 - ☒ Erase Existing Field to Finish Entities, ☒ Erase In Range
 - ☐ Preview Only, ☐ Fix Overlaps
- Code Table: C:\...son projects\Settings\Csw-att.fld (Set)
- Coordinate File: C:\Carlson Projects\UC17\F2F.crd (Set)
- GIS Table: (Set)
- Buttons: Edit Codes (highlighted), Report Codes/Points, OK, Cancel, Help

The 'Field to Finish' dialog box displays the 'Field Code Definitions' table and various settings panels.

Field Code Definitions Table:

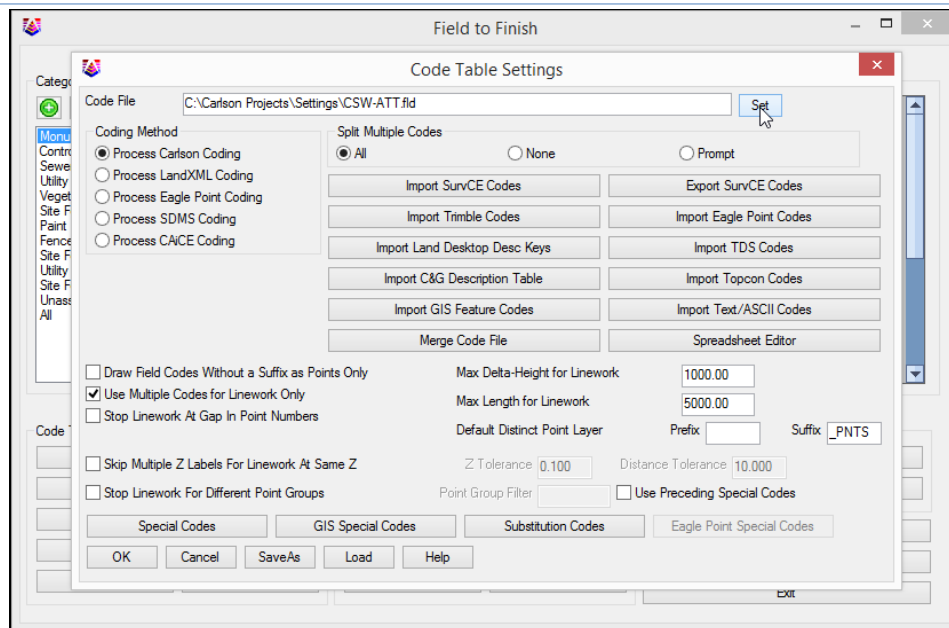
	Code	Full Name	Description	Entity Type	Layer
Edit	AIIRON	Angel Iron Found	A-IRON	Points Only	EX-MONUMENTS
Edit	AXLE	Axle Found	AXLE	Points Only	EX-MONUMENTS
Edit	BD	Brass Disc Found	BDISC	Points Only	EX-MONUMENTS
Edit	BOLT	Bolt Found	BOLT	Points Only	EX-MONUMENTS
Edit	CHM	County Highway Monument Found	CHM	Points Only	EX-MONUMENTS
Edit	CM	Concrete Monument Found	CM	Points Only	EX-MONUMENTS
Edit	CMDH	Concrete Monument w/Drill Hole Found	CM/DH	Points Only	EX-MONUMENTS
Edit	CMLP	Concrete Monument w/Lead Plug Found	CM/LP	Points Only	EX-MONUMENTS
Edit	DH	Drill Hole Found	DH	Points Only	EX-MONUMENTS
Edit	HT	Hub and Tack Found	HT FND	Points Only	EX-MONUMENTS
Edit	IP	Iron Pipe Found	IP	Points Only	EX-MONUMENTS
Edit	IROD	Iron Rod Found	IROD	Points Only	EX-MONUMENTS
Edit	LCD	Land Court Disc Found	LC DISC	Points Only	EX-MONUMENTS
Edit	LPEP	Lead Plug EX-t. Pin Found	LP/EP	Points Only	EX-MONUMENTS
Edit	MN	Mag Nail Found	M&G	Points Only	EX-MONUMENTS

Code Table Panel: Code Table Settings (highlighted), Sort Table, Report Codes/Points, Code Table by Points, Save, Save As.

Code Definitions Panel: Edit, Column Options, Select All, Move Category, Add, Copy, Delete, Search, Move Up, Move Down.

Feature Settings Panel: Tree Setup, Pipe Setup, Edit Points, Help, Exit.

12. From the *Field to Finish Code Table* editor dialog box, select **Code Table Settings**



13. From the *Code Table Settings* dialog box, click **Set** and select either the code table **CSW-ATT.fld** for labeling with attributes or the code table **CSW-TXT.fld** for labeling with text.



NOTE: Please see **Appendix A “Text vs Attributes”** for an explanation of both methods. If you are unfamiliar with the concept of drafting and manipulating attributes, it is recommended that you choose the Text option: **CSW-TXT.fld**

14. Click **OK**

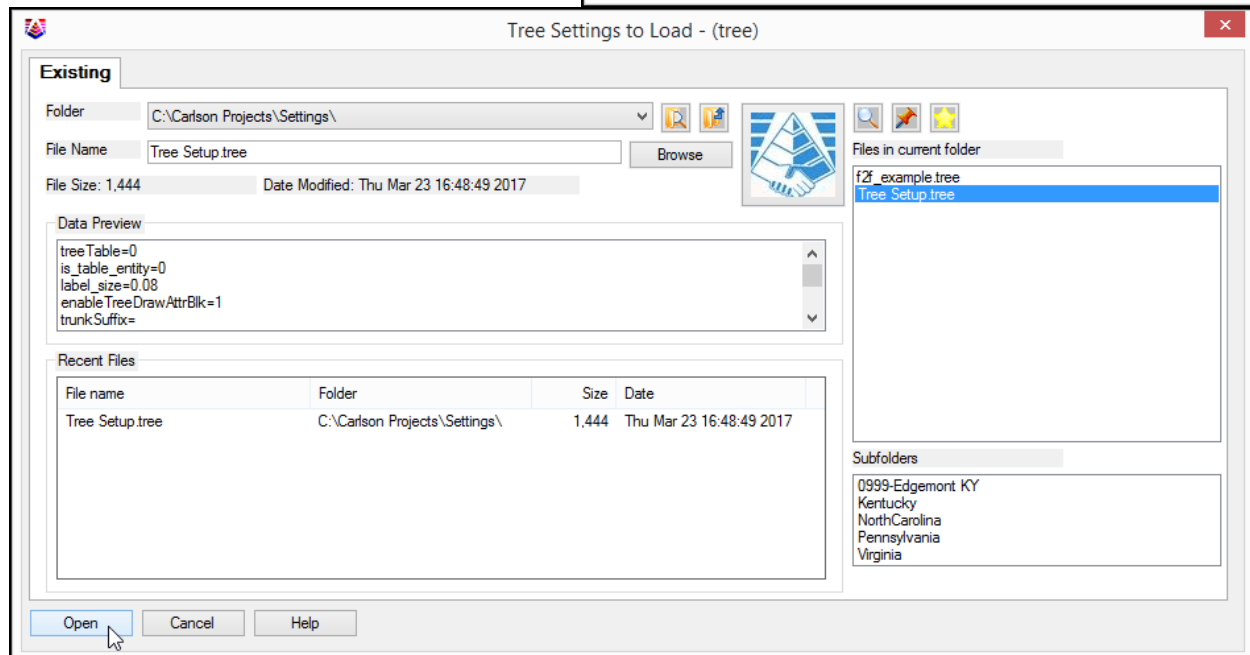
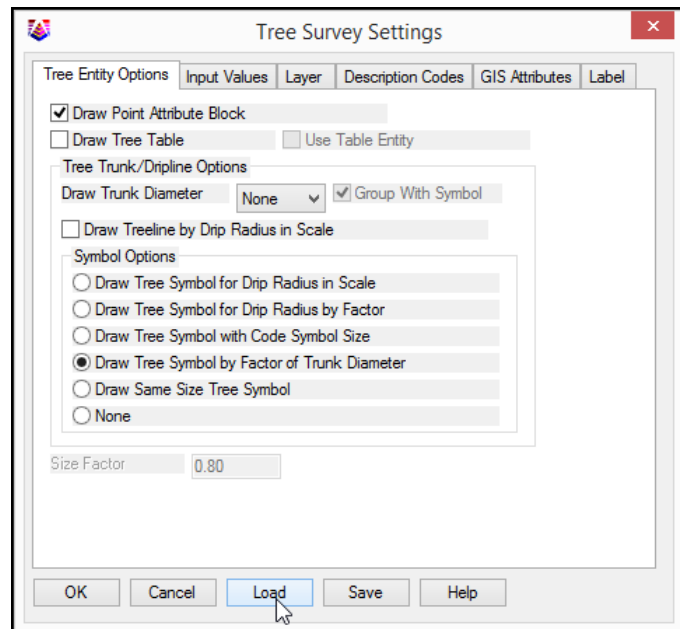
EASY START GUIDE FIELD TO FINISH



Using the Tree Set up

15. From the Field to Finish Code Table editor dialog box select **Tree Setup**

16. Select **Load**



17. Browse and select the supplied file **Tree Setup.tree**

18. Click **Open**

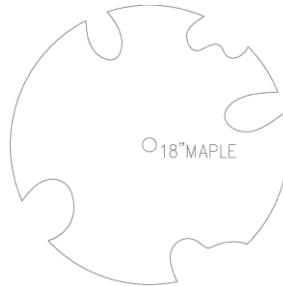
Coding Trees

In this setup, the location and description of trees has been kept very simple. A tree will be drawn either Deciduous Tree (**DT**) or Coniferous Tree (**CT**) as a point symbol scaled by a factor of the trunk diameter and labeled with the trunk size with an optional description such as Maple or Oak.

EASY START GUIDE FIELD TO FINISH



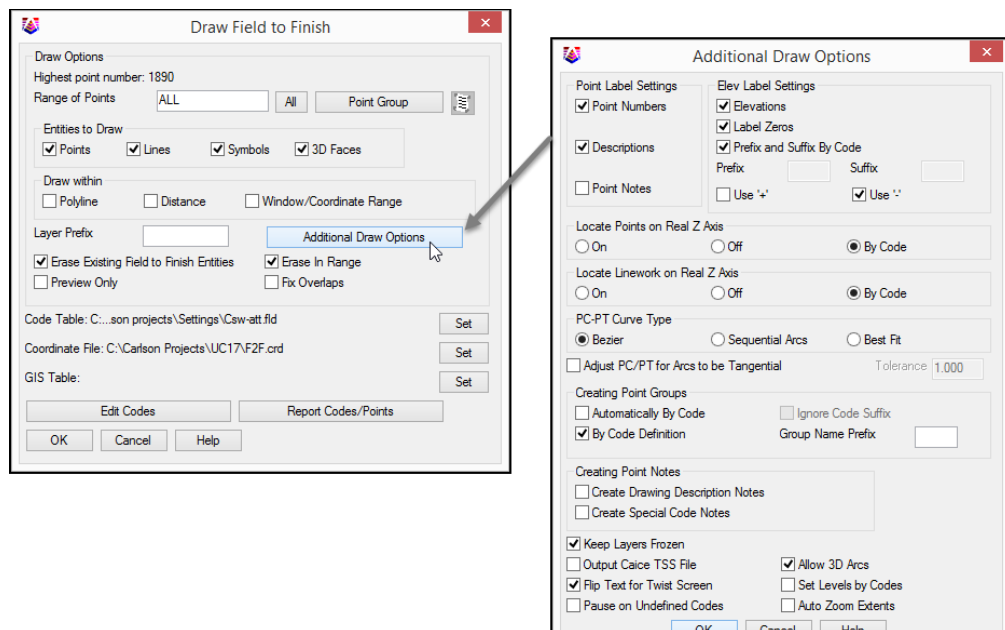
Code for tree in the field: Field code (**DT** or **CT**) followed by trunk size (diameter) followed by an optional tree type. Example: An 18" Maple Tree is coded **DT 18 MAPLE**



19. Click **OK** then **OK** again to return to the *Field to Finish Code Table* dialog box

Examine many of the other codes to get an idea of how each are set up to work. This of course is all completely based on user preference and easily modified.

20. Click **Exit** to exit the *Field to Finish Code Table* dialog box



21. In the *Draw Field to Finish* dialog box, ensure all settings are the same as shown above

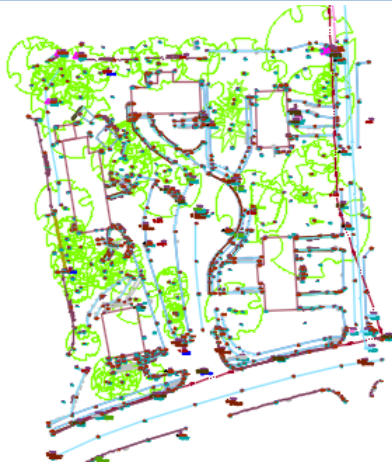
22. Select **Additional Draw Options**

23. In the *Additional Draw Options* dialog box, ensure all the settings are the same as above.

24. In the *Additional Draw Options* dialog box click **OK**

25. In the *Draw Field to Finish* dialog box click **OK**

EASY START GUIDE FIELD TO FINISH



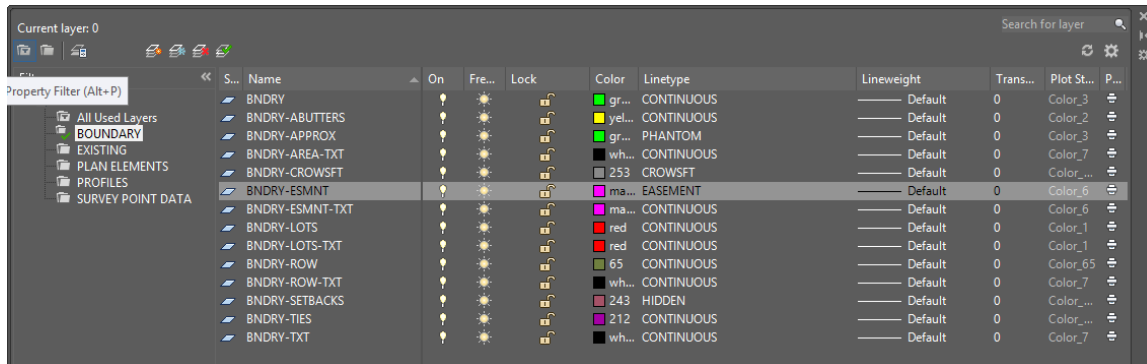
Field to finish draws all the points in the CRD file in accordance with the settings in the **CSW-ATT** or **CSW-TXT** field code tables.

1.2 Editing The Plan

In both situations, attribute blocks or text, the plan looks similar. Both options have tools for editing, moving and adding leaders to labels.

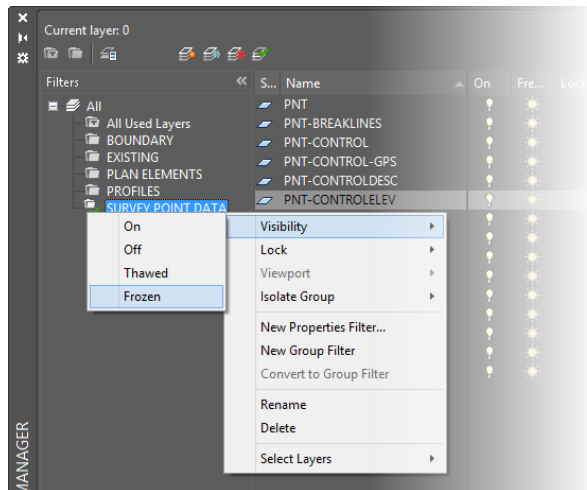
1.2.1 Controlling the plan through layer filters

1. Select the **Layer Control**



In the layer control dialog box, you can create layer filters and add individual layers to those filters. This helps in not only limiting the amount of layers displayed, but allows you to freeze, thaw, lock and isolate those layers.

2. Highlight the layer filter **SURVEY POINT DATA** and **Right Click** your mouse
3. Select **Visibility** then **Frozen**



1.2.2 Editing with Text

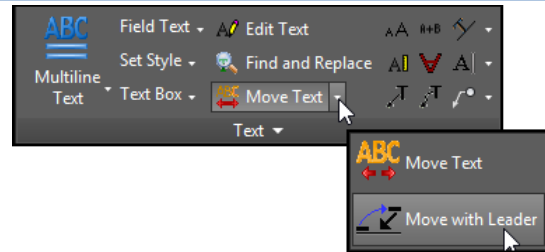
One great advantage as far as being able to draft a plan with Carlson is the ability to create simple CAD objects like symbols and text

EASY START GUIDE

FIELD TO FINISH

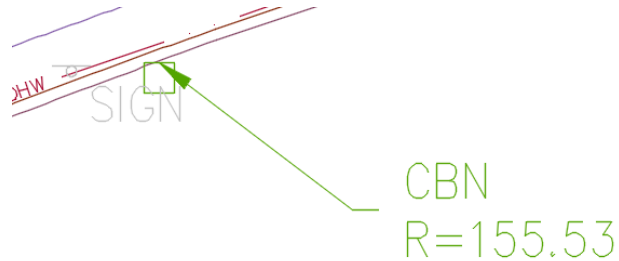


1. From the Draft Ribbon, select **Move with Leader**

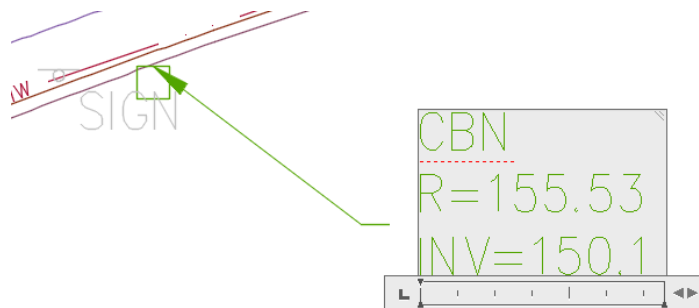


2. Select a text label and move your cursor to the left or right.

The catch basin label is annotated with a leader.



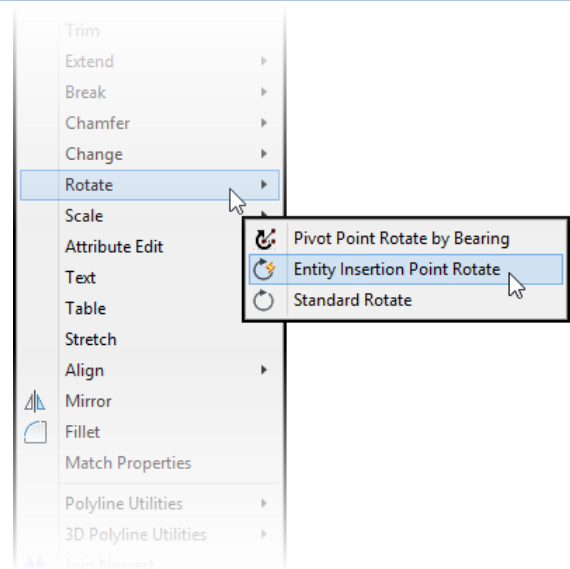
But since it is Mtext, you can simply double click on the label and add any additional text you may like.



Rotating Symbols

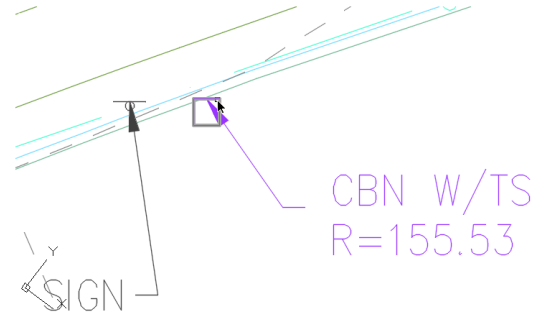
It will be necessary to rotate some of the symbols after they have been placed in the drawing. A symbol's rotation can be set in the field by using specific codes and setting but often, it is more procticle to make these changes in the office.

3. From the **Edit** pull down menu select **Entity insertion Point Rotate**



Rotate symbols by Entity

4. *Rotate by [Twist Screen/Azimuth/<Entity segment>/Follow/Pick]? E*
5. *Pick Line Or Polyline:* Select line or polyline to use as a reference line
6. *Select Entities to Rotate:* Select the symbol to be rotated



Select objects: 1 found

7. *Select objects:* Press **Enter** to complete the command



Note the other options available:

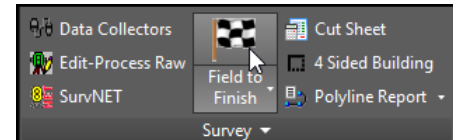
- **Twist Screen** – rotates the symbol relative to the drawing rotation
- **Azimuth** – rotates the symbol by an entered azimuth
- **Follow** – rotates multiple symbols based on a polyline such as the centerline of a road
- **Pick** – allows the user to manually pick a rotation for the symbol

1.3 Modifying the Code Table

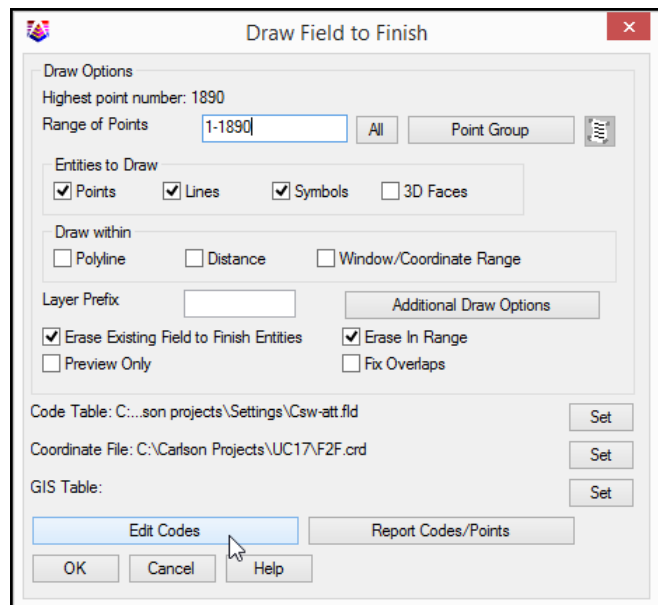
Most likely, the codes in the supplied field code table are not identical to the ones you or your company normally uses. Furthermore, you may not wish to revise your code list to match the one supplied. Your option then is simply to modify the names of the codes as you see fit.

1.3.1 Modify codes

1. From the survey Ribbon select **Field to Finish**

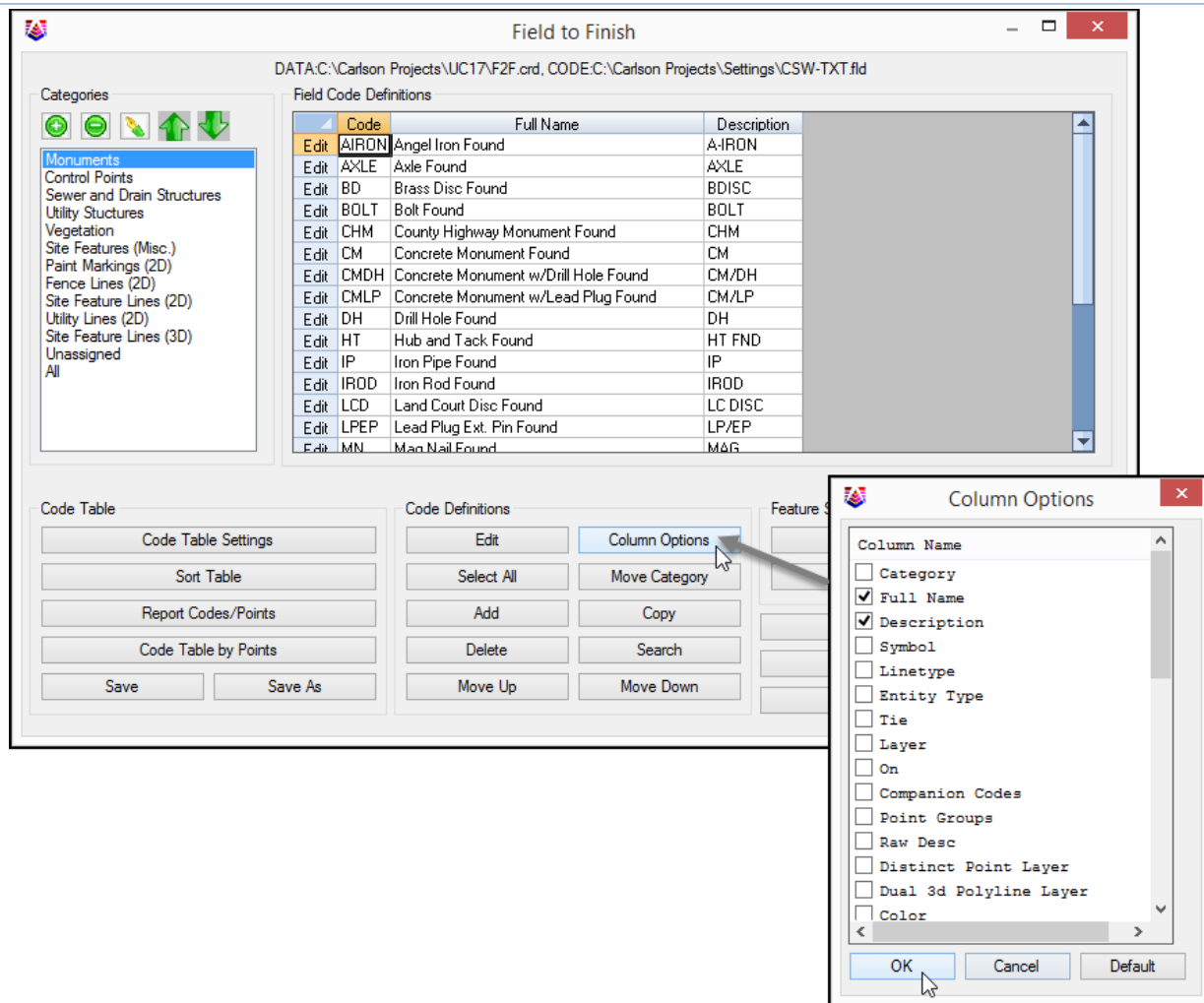


2. From the *Draw Field to Finish* dialog box, Select **Edit Codes**



3. From the *Field to Finish Code Table* editor dialog box select **Column Options**

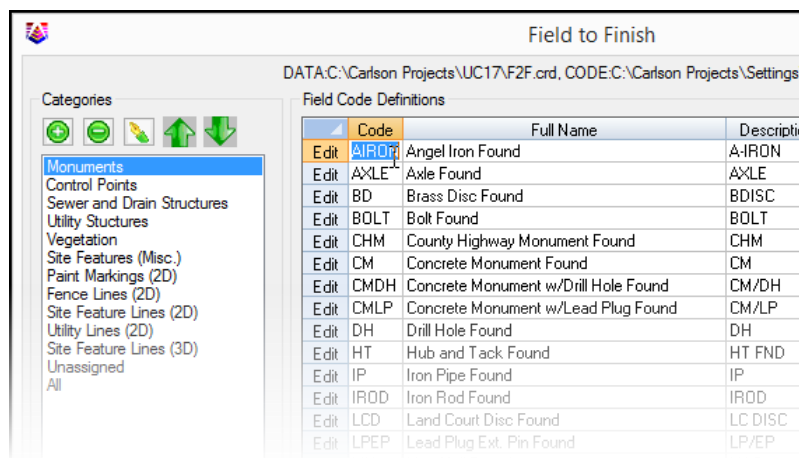
EASY START GUIDE FIELD TO FINISH



4. Ensure that the only columns visible are the Full Name and Description.

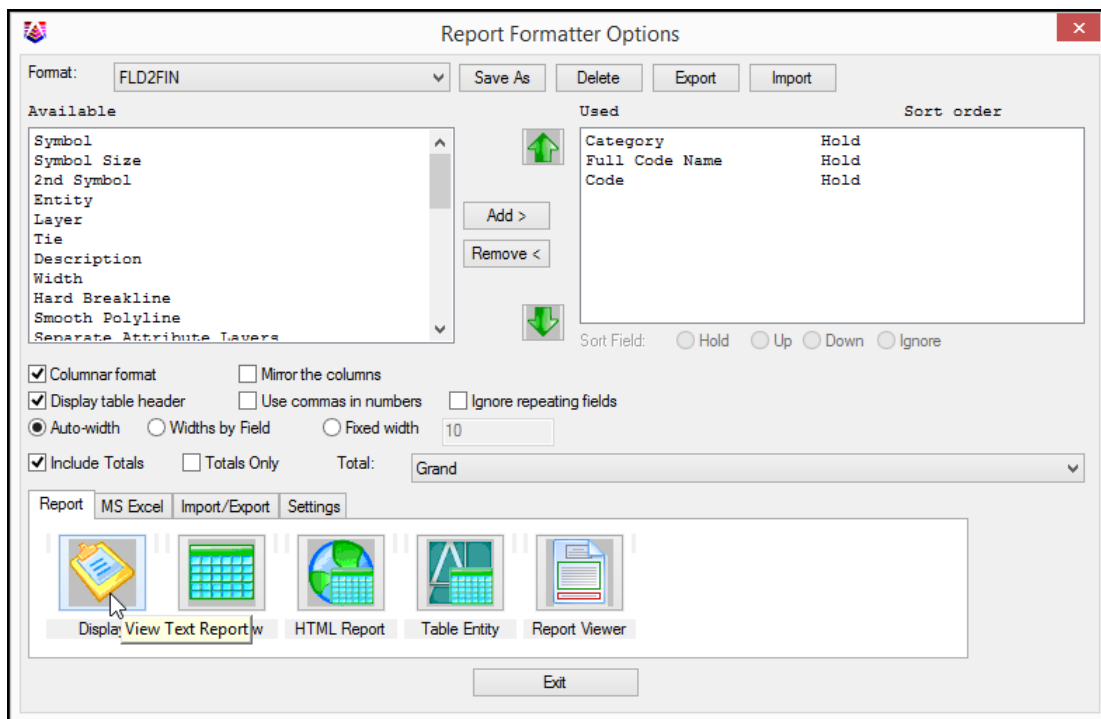
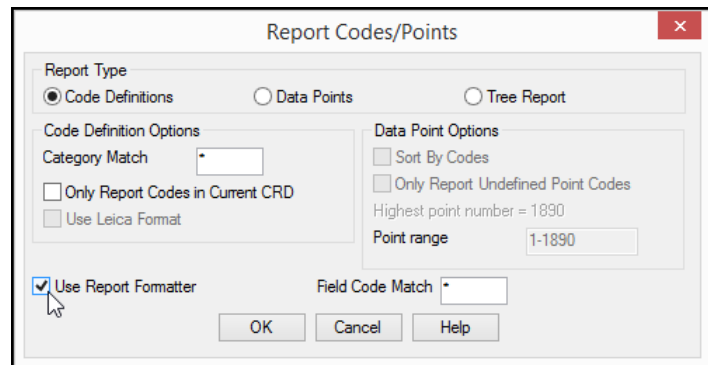
This just simplifies the amount of data seen to aid in the editing process.

5. Double click in any field code and the respective description and change them to match your own codes



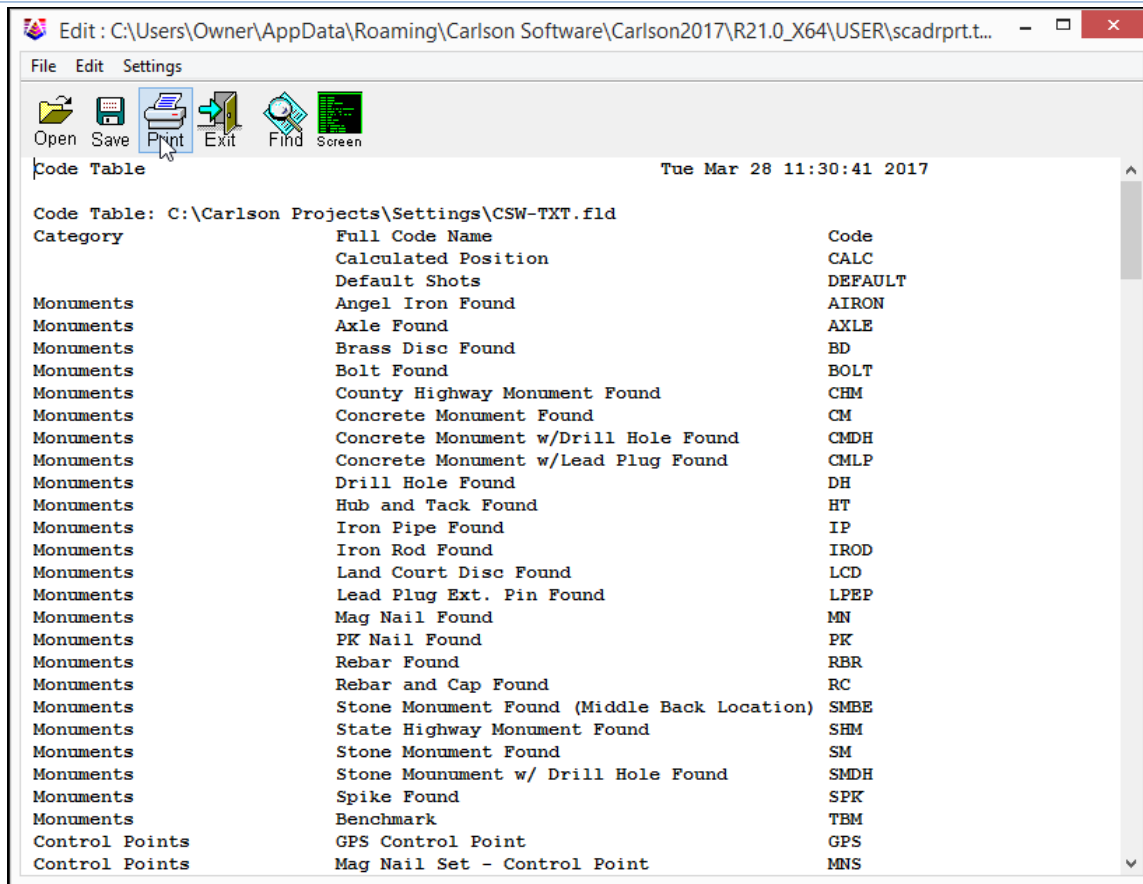
1.3.2 Printing the Code List

6. After the codes have been edited to your satisfaction, select **Report Codes/Points**
7. From the *Report Codes/Points* dialog box, enable the **Use Report Formatter** option
8. Click **OK**



9. **Add or Remove** the items from the Available to the Used columns to customize the report. Ensure that the items and order are the same as shown above.
10. Click **Display**

EASY START GUIDE FIELD TO FINISH



11. Print the code list and share with those who will be coding surveys in the field.

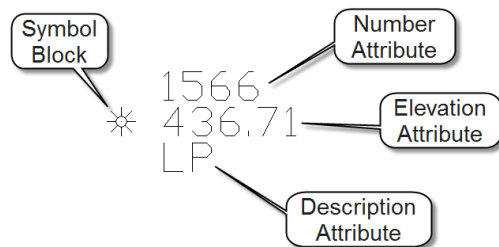
This will undoubtedly take some time to memorize and/or modify this code list to suit your needs, but once you have worked with it, you will quickly see the benefits of Carlson's Field to Finish.

Appendix A – Text vs Attributes

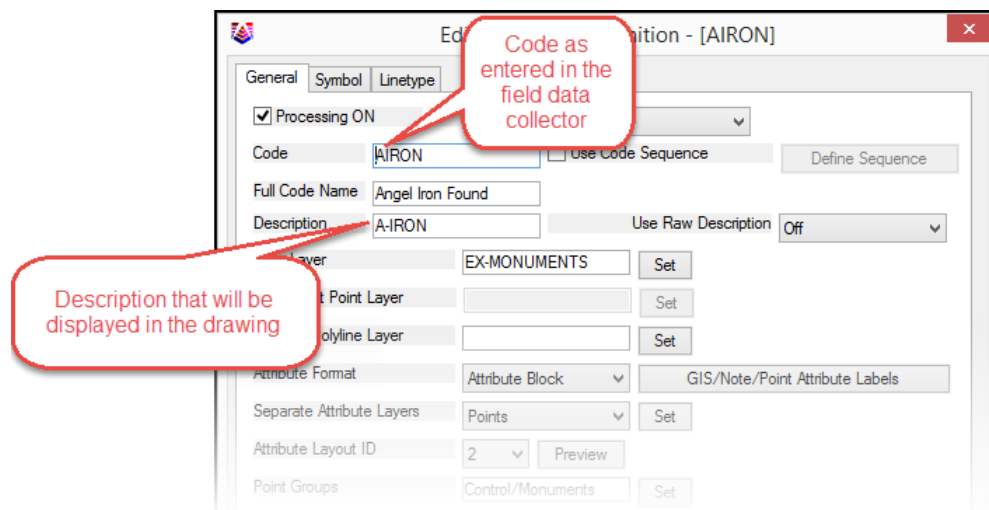
When processing points in field to finish you have many options and choices, one significant one being whether each point will be annotated using an attribute or a string of text.

What is an attribute?

Each Carlson point created contains essentially 5 parts. The point block itself, a symbol, and 3 attributes: number elevation and description.



When Carlson processes through F2F, it makes use of these attributes. The point number will remain the same as that in the coordinate file. The elevation usually will as well but you do have some options such as to not displaying zero elevations or adding a prefix such as R=. The most use of the attributes though is the description. The code in the table can be set to virtually any description.



This allows you to have a short 1 or 2 letter field code annotate a shot with a more descriptive attribute or text. The point is to NOT spend time adding text manually to each surveyed point when the software can do it for you.

What's the difference?

EASY START GUIDE

FIELD TO FINISH



Using Attributes

If Carlson is set to add annotations to the plan by using attributes, you will see points placed in the drawing and when selected, you will see four “grips”. One for each attribute and one for the point (node) itself. The symbol that is placed is associated with the point.



If you double click on the symbol you will invoke the Carlson point dialog box. If you move the point or the symbol, Carlson will recognize that they are in two different locations and seek to rectify it. In short, setting the descriptions to display as attributes leaves all point association intact.

Using Text

If Carlson is set to add annotations to the plan by using text, you will see a symbol for the point and a separate piece of text or Mtext. In this example the symbol and description (Mtext) are placed separately from each other and can be moved independently. The point from the coordinate file can actually be placed on its own layer allowing you to freeze that layer for drafting purposes.



The Choice

There are advantages to either method of annotating the points and surveyors and drafters will disagree on the best way. Here are the primary benefits and short falls to consider:

Descriptions as Attributes

- Point data stays together and is directly tied to the coordinate file
- Modifications to the point can be made right from any attribute and are updated in the CRD
- Updates to the CRD file such as elevation datum change, are

Descriptions as Text

- Points are independent of the symbol and text which aids in drafting and allows the user to easily strip point data from the drawing
- Text or the symbol can easily be moved without fear of altering the coordinates of the point

EASY START GUIDE FIELD TO FINISH

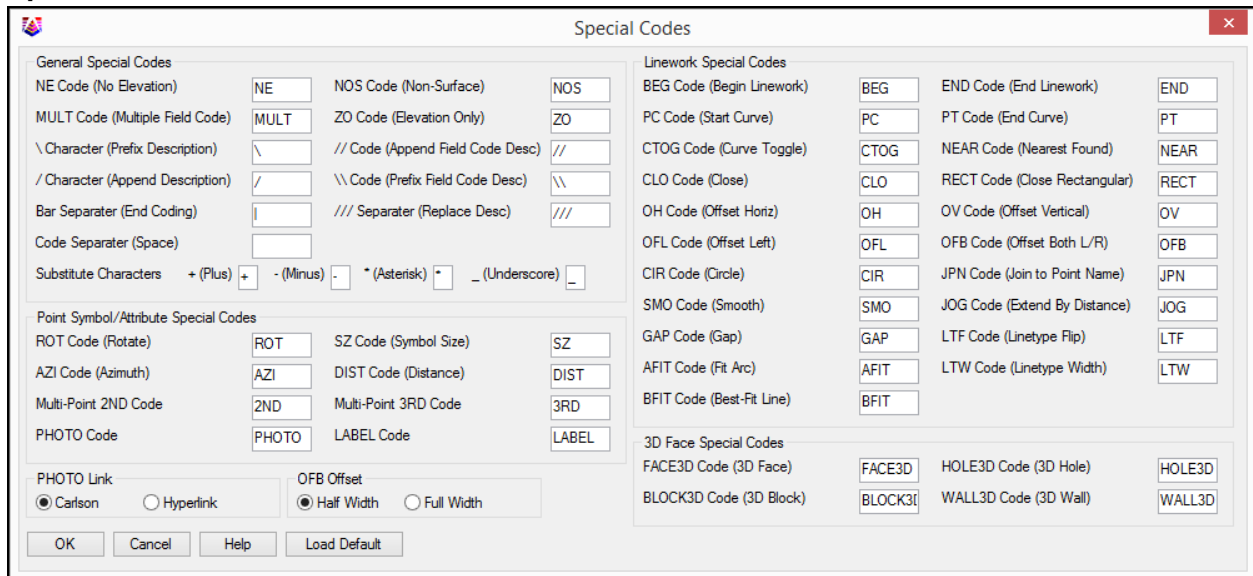


- immediately updated in the drawing
- Moving an attribute using some tools can potentially alter the coordinates of the point.
- User can easily modify the text and add unlimited characters using text wrap etc.
- Updating the drawing after a datum change usually requires reprocessing through field to finish.

Both methods have easy to use tools that allow relocating the description. The choice is based on your work flow, personnel, and type of projects you tend to do.

Appendix B – Special Codes and Linework

Special Codes



Special Codes

General Special Codes

NE Code (No Elevation)	NE	NOS Code (Non-Surface)	NOS
MULT Code (Multiple Field Code)	MULT	ZO Code (Elevation Only)	ZO
\ Character (Prefix Description)	\	// Code (Append Field Code Desc)	//
/ Character (Append Description)	/	\\ Code (Prefix Field Code Desc)	\\
Bar Separator (End Coding)		/// Separator (Replace Desc)	///
Code Separator (Space)			
Substitute Characters	+ (Plus) + - (Minus) - * (Asterisk) * _ (Underscore) _		

Point Symbol/Attribute Special Codes

ROT Code (Rotate)	ROT	SZ Code (Symbol Size)	SZ
AZI Code (Azimuth)	AZI	DIST Code (Distance)	DIST
Multi-Point 2ND Code	2ND	Multi-Point 3RD Code	3RD
PHOTO Code	PHOTO	LABEL Code	LABEL

PHOTO Link
☒ Carlson ☐ Hyperlink
 OFB Offset
☒ Half Width ☐ Full Width

Linework Special Codes

BEG Code (Begin Linework)	BEG	END Code (End Linework)	END
PC Code (Start Curve)	PC	PT Code (End Curve)	PT
CTOG Code (Curve Toggle)	CTOG	NEAR Code (Nearest Found)	NEAR
CLO Code (Close)	CLO	RECT Code (Close Rectangular)	RECT
OH Code (Offset Horiz)	OH	OV Code (Offset Vertical)	OV
OFL Code (Offset Left)	OFL	OFB Code (Offset Both L/R)	OFB
CIR Code (Circle)	CIR	JPN Code (Join to Point Name)	JPN
SMO Code (Smooth)	SMO	JOG Code (Extend By Distance)	JOG
GAP Code (Gap)	GAP	LTF Code (Linetype Flip)	LTF
AFIT Code (Fit Arc)	AFIT	LTW Code (Linetype Width)	LTW
BFIT Code (Best-Fit Line)	BFIT		

3D Face Special Codes

FACE3D Code (3D Face)	FACE3D	HOLE3D Code (3D Hole)	HOLE3D
BLOCK3D Code (3D Block)	BLOCK3D	WALL3D Code (3D Wall)	WALL3D

OK Cancel Help Load Default

A Lot of Carlson's F2F power and efficiency comes from the ability to create multiple codes. That is essentially entering many codes separated by a space that either recall the code in the code table or on of the above Special Codes. For example, if an edge of pavement line (EP) intersects an edge of gravel line it may be coded: **EP EOG**. Special codes can be added after the main code descriptor. For example if in the previous example the edge of pavement was also at the beginning of a curve, it may be coded: **EP**

PC EOG

Special codes also allow a user to modify or overwrite the properties of a code definition in a multitude of ways. For example: setting a point to be non-surface, add a prefix or suffix to a preset description, scale or rotate a symbol, begin and end line work, start and end curves, draw circles and rectangles, offset line work both horizontally and vertically etc.

These special codes can be very powerful tools in the process of drafting a plan right from the field. They may take a little practice but are invaluable once you get them employed.

"/": Append Description

Carlson points in the drawing have point attributes including a description. When Field-to-Finish draws the points, the point description from the coordinate file is processed to match a code. The code then defines the description that is drawn with the point. For example, consider a code of "UP" with a description of "POLE" and a data point with the description "UP". The data point description "UP" would be matched with the code "UP" and the point would end up being drawn with the description "POLE". A special character "/" (the forward slash or divide key) can be used for an unprocessed description to append. Everything after the "/" is added directly to the point description and is not considered a code and no further substitution is done on it. For example, a data point with the description "UP / 150" with the same code "UP" definition above would be drawn with the description "POLE 150".

"///": Replace Description

This special code takes the part of the description after the "///" and uses it as the point description label.

"\": Prefix Description

This special code takes the part of the description after the "\" and puts it as the prefix before the point description. For example, a data point with the description "TR \ 24ft" and a "TR" code definition with a description of "Tree" would be drawn with a description of "24ft Tree".

"/": Append Field Code Description

This special code causes text after the "/" to be interpreted as a field code. That field code's description is then appended to the first field code's description. For example, if the field code 02 has the description 2" and the field code OAK has the description *oak tree*, then 02//OAK will result in the point having the description of 2" *oak tree*. If the "/" character has been replaced with a different character, for example with a & character, then the "/" code would become "&&".

"\\": Prefix Field Code Description

This special code is the same as "/" except that field code's description is then prefixed instead of appended to the first field code's description.

"|": End Coding

The bar separator indicates the end of coding. Everything after the bar is ignored for Field-to-Finish processing.

MULT: Multiple Field Code

This code applies when the Split Multiple Codes under Code Table Settings is set to None and you want to override this setting and explicitly split selected codes. Multiple codes apply to points with dual code definitions for drawing two different style points or for connecting different linework to the same point. For example, if a point is both a sidewalk and driveway corner, then the point description could be "SW MULTDR".

PC: Start Curve

This code begins a three point arc or a curved line when used with the "PT" code (see below). The point with this special code is the first point on the arc. The next point with the code is considered a point on the arc, and third point with the code is the arc endpoint. For example (in point number, X, Y, Z, description format),

10, 500, 500, 0, EP PC - start curve

11, 525, 527, 0, EP - second point on curve

12, 531, 533, 0, EP - end point of curve

PT: End Curve

This code can be used with "PC" to define a curve with more than three points or a tangent two-point curve. Starting at the point with the "PC", the program will look for a "PT". If the "PT" is found, all the points between the "PC" and "PT" are used for the curve which is drawn as a smoothed polyline that passes through all points and only curves the polyline between points. If no "PT" is found, then the regular three point arc is applied as explained above. If no points are found between the "PC" and "PT", then the point prior to the "PC" and the point after the "PT" are used to create tangents for the resulting curve.

AFIT: Fit Arc

This special code adjusts the PC/PT points for the current arc to make the arc tangential. This special code is a way to individually control this tangential arc adjustment. To adjust all arcs within a specified adjustment tolerance, use the Adjust PC/PT setting under the Additional Draw Options from the first Field-To-Finish dialog.

BFIT: Best-Fit Line

This code creates a best-fit line using the points for the linework. This feature can be used when you have multiple points on a feature that you know is a straight line such as a sidewalk and you want a single line to be drawn.

CTOG: Curve Toggle

This special code toggles curve mode on and off. Instead of using PC to start a curve, you can use CTOG. Likewise, instead of using PT to end a curve, you can use CTOG.

CLO: Close

This code forces the lines drawn between a series of points with the same code to close back to the first point with the same code. For example, shots 1-4 all have the BLD description with the exception of point 4. Its description is BLD CLO. This will force the linework drawn for the BLD code to close back to point 1 which is the first point with the description of BLD.

GAP

This special code makes a single segment break in the current linework. For example, if you have a curb polyline that you want to break to skip over a driveway, then you could add the GAP code at the start of the driveway and continue the curb as normal on the other side.

NE: No Elevation

This code represents no elevation. A point with this special code is located at zero elevation.

NOS: Non-Surface

This code indicates that the point should be "non-surface"; that is, that it should be ignored when contouring or creating surfaces. This can also be controlled per-field code by turning on the Non-Surface toggle in the Edit Field Code Definition dialog box.

ZO: Elevation Only

This code represents elevation only (Z-Only). A point with this special code is used at part of a 3D polyline for elevating the 3D polyline without effecting the horizontal position of the polyline. For example, this code could be used on a grade break point along a cube where only the elevation should change and not the horizontal alignment.

PHOTO

This code attaches a photo file to the point. The name of the photo file should be right after the PHOTO code. The PHOTO Link setting controls whether the photo is attached using a Carlson-format link or a CAD Hyperlink. Use the Image Inspector command to view photos attached to points by either link method. To use the Hyperlink, you can Ctrl-click or right-click on the point entity.

In addition to the PHOTO code, Field-to-Finish will also automatically create the photo links for SurvCE photos. The program looks for the photo database from SurvCE which should have the same name as the coordinate file with an extension of .phdb. This photo database file should be in a sub-folder of the coordinate file folder and called Pictures_X where X is the name of the coordinate file. For example, if your coordinate file is C:\Projects\Job1\Job1.crd, then the program looks for C:\Projects\Job1\Pictures_Job1\Job1.phdb.

When SurvCE stores photos, it creates this photo database using this naming. So to process with Field-to-Finish, copy the coordinate file and photo files from the data collector to your computer.

LABEL

This code controls the point attribute format using a number after the code. This number uses 0=attribute block, 1=text, 2=both. For example, LABEL1 means draw that point using text attributes.

Offsets: OH, OV, OFL, OFB

The codes "OH" and "OV" stand for offset horizontal and offset vertical. These offset codes apply to 2D and 3D polylines. A single set of offset codes can be used to offset the polyline a set amount. For example,

10, 500, 500, 100, EP OH2.5 OV-.5

11, 525, 527, 101, EP

12, 531, 533, 103, EP

This would create a polyline connecting points 10,11 and 12 and an offset polyline with a 2.5 horizontal and -0.5 vertical offset. The direction of the horizontal offset is determined by the direction of the polyline. A positive horizontal offset goes right from the polyline direction and a negative goes left. The horizontal and vertical offset amounts apply starting at the point with the offset codes until a new offset code or the end of the polyline. Only one horizontal and vertical offset can be applied to 2D polylines. For 3D polylines, multiple offset codes can be used to make a variable offset. For example,

10, 500, 500, 100, EP OH2.5 OV-.5

11, 525, 527, 101, EP OH5.5 OV-.75

12, 531, 533, 103, EP OH7.5

This would offset the first point horizontal 2.5 and vertical -0.5, the second point horizontal 5.5 and vertical -0.75 and the third point horizontal 7.5 and vertical -0.75.

When there are multiple "OH" codes for the same point, the polyline is offset multiple times.

The "OFL" code stands for offset left horizontal. The only difference with the "OH" code is that you don't have to enter the "-" to go left.

The "OFB" code stands for offset both left and right horizontal. For example, if the points follow the center of a ROW, the OFB code can be used to create the left and right edges of the ROW. There is a setting for Offset Both for whether the offset value is for the full or half width between the two offset lines.

SZ: Symbol Size

This code is used to set a different symbol size. There are several ways to use this code. It can take multiple scale factors for different dimensions by putting an ID character after the factor.

SZ: If nothing follows the SZ code, then the next point with the same field code as the current point will be used to determine the size.

SZ#: The value of the new symbol size is specified after the SZ. This value is the actual size in drawing units. For example, SZ2.

SZ#X: The value after the SZ is used to scale the symbol in the X dimension. For example, SZ2X.

SZ#Y: The value after the SZ is used to scale the symbol in the Y dimension. For example, SZ2Y.

SZ#Z or SZ#V: The value after the SZ is used to scale the symbol in the Z (Vertical) dimension. For example, SZ2Z.

SZ#H: The value after the SZ is used to scale the symbol in the X,Y (Horizontal) dimensions. For example, SZ2H.

SZ#S: The value after the SZ is a symbol size scaler that get multiplied by the drawing horizontal scale to determine the actual drawing units. For example, SZ0.2S.

The X, Y, Z, V and H can be combined. For example, to scale a symbol by 10 horizontally and 25 vertically, use SZ10H25Z. Or to scale a symbol by 2 in the X direction and 4 in the Y direction, use SZ2X4Y.

When multiple SZ codes are used in the same point description, the symbol is drawn multiple times at the different sizes. For example, a point description of "TREE SZ5 SZ10" will draw the tree symbol twice. One symbol will be size 5 and the other size 10.

ROT: Rotate

This code is used to set the rotation of the point symbol. If a point number follows the ROT code, then angle from the current point to this point number is used for the rotation. For example, "ROT45" would rotate the symbol towards point number 45. If there is no point number after the ROT code, then the rotation point is the next point number with the same code as the current point or a companion code for the current code. ROT can also be used to rotate towards an angle clockwise from north by using '+' or '-' in front of the number. For example ROT+45 rotates the point symbol to the northeast and ROT-90 rotates the point symbol to the west.

SMO: Smooth

This code is used to smooth the polyline.

AZI & DIST

The AZI and DIST codes are used together to locate an offset point. The AZI sets the offset azimuth and DIST sets the distance. The values should directly follow the code. For example, AZI25 DIST4.2 would draw the point offset 4.2 at an azimuth of 25 degrees.

JOG: Extend By Distance

The "JOG" special code allows for additional points to be inserted into the line work at perpendicular or straight offsets. Only offsets should follow the JOG code. Positive numbers indicate a jog to the right and negative numbers indicate a jog to the left. Alternatively, "R#" and "L#" can be used where # is the distance to either the right or the left. Finally, "S#" can be used to make an offset straight ahead by using a positive # or behind by using a negative #. For example, "BLDG JOG S10.1 R5 L12.2 L5 L12.2" or equivalently "BLDG JOG S10.1 5 -12.2 -5 -12.2" advances 10.1 units and then draws a closed rectangle on the right hand side of an existing line. The offsets are always done in the X-Y plane. If the current line is vertical, an offset to the right is along the positive X-axis.

JPN: Join to Point Name

The "JPN" (Join to Point Name) special code joins to the point named immediately after the code. For example, "JPN205" causes a line to be drawn from the current point to the point "205". JPN is designed to work for adding a segment at the start of linework. So the point with the JPN code should be at first segment of the linework.

NEAR: Nearest Found

This special code sets the current polyline to Nearest Found connection order. This applies to codes that have the Connection Order set to Sequential and you want to override this setting to Nearest Found for the current polyline.

RECT: Close Rectangular

The "RECT" special code causes a rectangle to be formed on a 2D or 3D polyline using one of two different methods. If a number follows "RECT" (e.g., "RECT10"), a rectangle will be drawn 10 units to the right of the last two points ending on the point with the "RECT" code. Use a negative offset to place the rectangle on the left side (e.g., "RECT-2.5"). For example if locating the left side of a 10' rectangular concrete pad using the code conc for concrete, the description of the two left points would be (conc) for the first point and (conc rect10) for the second. If no number follows "RECT", then the polyline will be closed by shooting right angles from the first point of the polyline and the current point and creating a new point where those two lines cross. This method requires three points be established on the pad.

LTF: Linetype Flip

This special code switches the side for the linetype. This option applies to non-symmetrical linetypes like the treeline or guard rail for when you want the linetype to face the other way.

LTW: Line Width

This special code sets the line width. The width value is entered after the LTW code. This width is applied to lines and 2D polylines.

CIR: Circle

The "CIR" special code causes the point to create a circle in one of three different ways. The first way uses just the current point as the center with the CIR special code followed immediately by the radius. For example "CIR7.5" will create a circle centered on this point with radius 7.5 and at the elevation of the current point. The second method uses two points, the first point specifying the center and the elevation, and the second point specifying the radius. Only the first point has the "CIR" special code and the second point is the next point with a matching field code. The third method uses 3 or more points that specify the perimeter of the circle in 2D with the first point specifying the elevation. For this method, the "CIR" special code is only on the first point and the rest of the points are the next points with matching field codes.

The "CIR" code can be used with all of the linetypes including "points only". The circles are always parallel to the X-Y plane. Any active linework for the code is ended before processing the "CIR" special code.

PointNo. Description

Method 1 (Single point at center with radius value)

82 PP CIR7.5

Method 2 (Point at center plus point at perimeter)

83 PP CIR

84 PP

Method 3 (Points on perimeter)

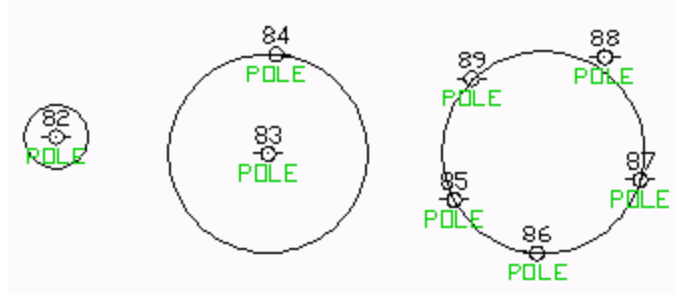
85 PP CIR

86 PP

EASY START GUIDE FIELD TO FINISH



87 PP
88 PP
89 PP



EASY START GUIDE FIELD TO FINISH



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