



CIVIL 3D 2018

Maryland Training Session #3

*Working with Points and
Point Groups*

Maryland Field Codes - **SurvCE** Instructions

Maryland Field Codes - **MAGNET** Instructions

Converting/Exporting points to an ASCII(text) file in **SurvCE**

Converting/Exporting points to a text file in **MAGNET**

Uploading Points into Civil 3D 2018

Working with Point Groups

Changing point sizes

Printing out Points/Points Groups

Exporting points from Civil 3D (Stakeout) and adding them into

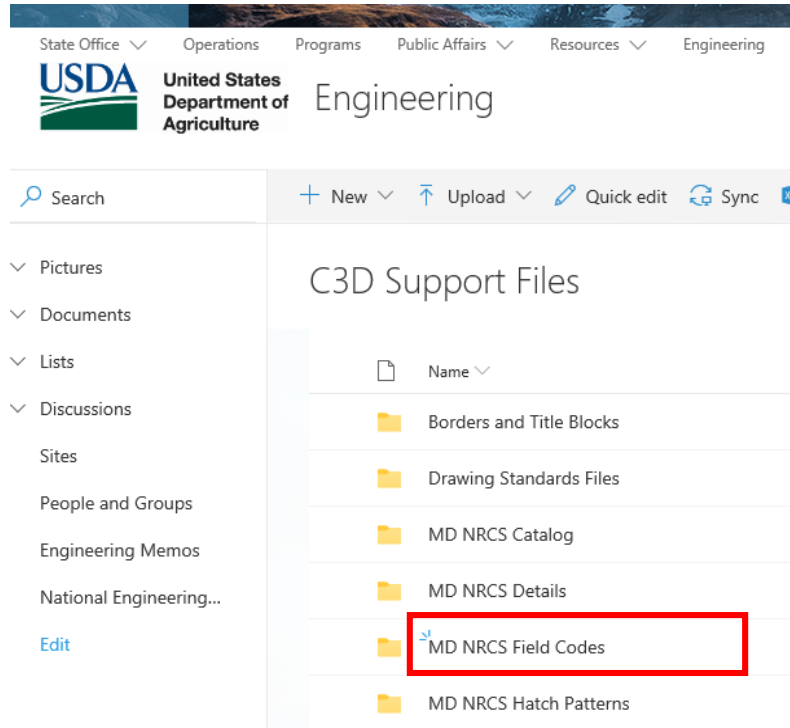
Magnet Software

Using the NRCS MD Field Codes

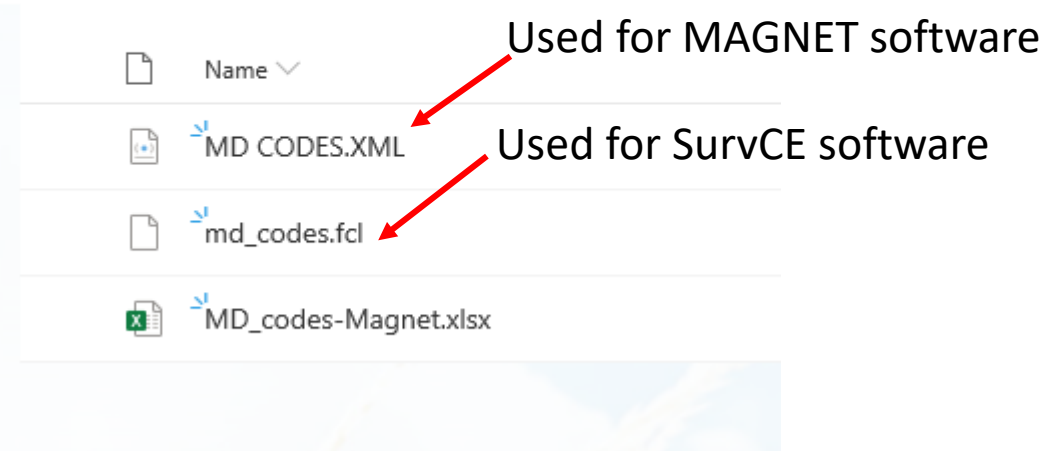
Where to find the field codes

Under the **NRCS Sharepoint site**: ENGINEERING>Documents>C3D Support Documents>MD NRCS Field Codes

MDA users: S:\RC\Engineering\C3D Support Files\MD NRCS Field Codes



C3D Support Files > MD NRCS Field Codes



Control Points 1-99

Existing Ground 100-2999

Staking 3000-4999

As Built 5000-9999

NRCS MD Field Code Library

Category	Code	Full Name	Symbol	Line Type	Point Group Name	Prefixes	Point range	Description
Control/Ground Shots	TBM	Temporary Benchmark	SPT10	BYLAYER	EX-Survey Control EX-Geology	TBM*, BM*, IP*, TP*, RP*, PPIN*, EPIN*, TH*	1-99	Permanent and temporary benchmarks, instrument points, turning points, and property or easement pins or markers. Geology bore hole locations
	BM	Permanent Benchmark	SPT10	BYLAYER				
	IP	Instrument Point	SPT10	BYLAYER				
	TP	Turning Point	SPT10	BYLAYER				
	RP	Reference Point	SPT10	BYLAYER				
	PPIN	Property Pin or Marker	SPT10	BYLAYER				
	EPIN	Easement Pin or Marker	SPT10	BYLAYER				
	GS	Ground Shot	SPT10	BYLAYER				
TH	Soil Boring (Test Hole)	SPT10	BYLAYER					
Structures	CONC	Concrete Corner	SPT10	BYLAYER	EX-Structure	BLD*, BLDC*, CON*, CONC*, BIT*, CLDAM*, EDAM*, WELL*, WALL*, STRUC*	All	Buildings, concrete, bituminous pavement, dams, wells, walls, and other structures
	BLD	Building	SPT10	BYLAYER				
	BLDC	Building Corner	SPT10	BYLAYER				
	CON	Concrete	SPT10	BYLAYER				
	BIT	Bituminous Pavement	SPT10	BYLAYER				
	CLDAM	Centerline of Dam	SPT10	BYLAYER				
	EDAM	Top Edge of Dam	SPT10	BYLAYER				
	WELL	Well	SPT10	BYLAYER				
	WALL	Retaining Wall	SPT10	BYLAYER				
STRUC	Other Structure	SPT10	BYLAYER					
Boundary Shots	FX	Fence	SPT10	BYLAYER	EX-Boundary EX-Fence	PL*, EL*, ROW*, EFLD*, EWET*, FX*, FC*, FJ*, FE*, FG*	All	Estimated property lines and easement lines, right of way, and edges of fields and wetlands. Fence lines, gates and fence corners
	FC	Fence Corner	SPT10	BYLAYER				
	FJ	Fence Junction	SPT10	BYLAYER				
	FE	Fence End	SPT10	BYLAYER				
	FG	Fence Gate	SPT10	BYLAYER				
	PL	Property Line	SPT10	BYLAYER				
	EL	Easement Line	SPT10	BYLAYER				
	ROW	Right-of-Way Line	SPT10	BYLAYER				
	EFLD	Edge of Field	SPT10	BYLAYER				
	EWET	Edge of Wetland	SPT10	BYLAYER				
Water Features	CLW	Centerline of Watercourse	SPT10	BYLAYER	EX-Water EX-Centerline	CLW*, CLDRAW*, CLDITCH*, EBL*, EBR*, BNKL*, BNKR*, WL*, GSWET*, H20*, CLDAM*, CLW*, CLDRAW*, CLDITCH*, CLR*, CLFR*, CLD*, RD*, CLRR*	All	Centerline of waterways, draws and ditches, water lines, water surfaces, and ground shots in water. Centerlines of structures and features such as roads
	CLDRAW	Centerline of Draw	SPT10	BYLAYER				
	CLDITCH	Centerline of Ditch	SPT10	BYLAYER				
	EBL	Edge of Bottom LDS	SPT10	BYLAYER				
	BNKL	Bank LDS	SPT10	BYLAYER				
	BNKA	Bank RDS	SPT10	BYLAYER				
	EBR	Edge of Bottom RDS	SPT10	BYLAYER				
	WL	Water Line (Edge)	SPT10	BYLAYER				
	GSWET	Ground Shot in Water	SPT10	BYLAYER				
	H20	Water Surface Elevation	SPT10	BYLAYER				

NRCS MD Field Code Library

Category	Code	Full Name	Symbol	Line Type	Point Group Name	Prefixes	Point range	Description
Roads	CLR	Centerline of Road	SPT10	BYLAYER				
	ER	Edge of Road	SPT10	BYLAYER				
	CLFR	Centerline of Field Road	SPT10	BYLAYER				
	EFR	Edge of Field Rode	SPT10	BYLAYER				
	CLD	Centerline of Driveway	SPT10	BYLAYER	EX-Roads	ER*, EFR*, ED*, FLDA*, ERR*, CLDAM*, CLW*, CLDRAW*, CLDITCH*, CLR*, CLFR*, CLD*, RD*, CLRR*	All	Edge and centerline of roadways and railroads. Centerlines of structures and features such as roads
	ED	Edge of Driveway	SPT10	BYLAYER	EX-Centerline			
	RD	Road Ditch Centerline	SPT10	BYLAYER				
	FLDA	Field Approach	SPT10	BYLAYER				
	CLRR	Centerline of Railroad	SPT10	BYLAYER				
	ERR	Edge of Railroad	SPT10	BYLAYER				
Pipes/Culverts	APRON	Pipe Apron	SPT10	BYLAYER				
	INTAKE	Tile Intake	SPT10	BYLAYER				
	RCPINV	Reinforced Concrete Pipe Invert	SPT10	BYLAYER				
	RCPTOP	Reinforced Concrete Pipe Top	SPT10	BYLAYER				
	CMPINV	Corrugated Metal Pipe Invert	SPT10	BYLAYER	EX-Pipe	RCPINV*, RCPTOP*, CMPINV*, CMPTOP*, PVC*, HDPE*, APRON*, INTAKE*, OUTLET*, TILEFL*	All	Pipes, conduit, tile lines and culverts. Flowlines of pipes, conduits and tile lines
	CMPTOP	Corrugated Metal Pipe Top	SPT10	BYLAYER	EX-Flowline			
	PVC	PVC Pipe	SPT10	BYLAYER				
	HDPE	HDPE Pipe	SPT10	BYLAYER				
	OUTLET	Tile Outlet	SPT10	BYLAYER				
	TILEFL	Tile Flowline	SPT10	BYLAYER				
Vegetation	CC	Cropping Change	SPT10	BYLAYER				
	VC	Vegetation Change	SPT10	BYLAYER				
	TREEL	Tree Line	SPT10	BYLAYER				
	CTREE	Coniferous Tree	SPT10	BYLAYER				
	EWOOD	Edge of Woods	SPT10	BYLAYER	EX-Vegetation	CC*, VC*, EWOOD*, TREEL*, CTREE*, DTREE*, SHRUB*, BRUSH*, ROCK*	All	Cropping or vegetation changes, edge of woods, tree lines, trees, shrubs, brush and rock piles
	DTREE	Deciduous Tree	SPT10	BYLAYER				
	SHRUB	Shrub	SPT10	BYLAYER				
	BRUSH	Brush	SPT10	BYLAYER				
		ROCK	Rock or Rock Pile	SPT10	BYLAYER			
Utilites	PP	Power Pole	SPT10	BYLAYER				
	PLO	Overhead Power Line	SPT10	BYLAYER				
	PLB	Buried Power Line	SPT10	BYLAYER				
	TEL	Telephone Line	SPT10	BYLAYER				
	GAS	Gas Line	SPT10	BYLAYER	EX-Utilities	PP*, PLO*, PLB*, TEL*, GAS*, WATER*, FIBER*, UTIL*, PED*, GW*	All	Buried and above ground utilities
	WATER	Water Line (Pipe)	SPT10	BYLAYER				
	UTIL	Other Utility Line	SPT10	BYLAYER				
	PED	Pedestal (phone, electric, etc.)	SPT10	BYLAYER				
		FIBER	Fiber Optic Line	SPT10	BYLAYER			
	GW	Guy Wire	SPT10	BYLAYER				

NRCS MD Field Code Library

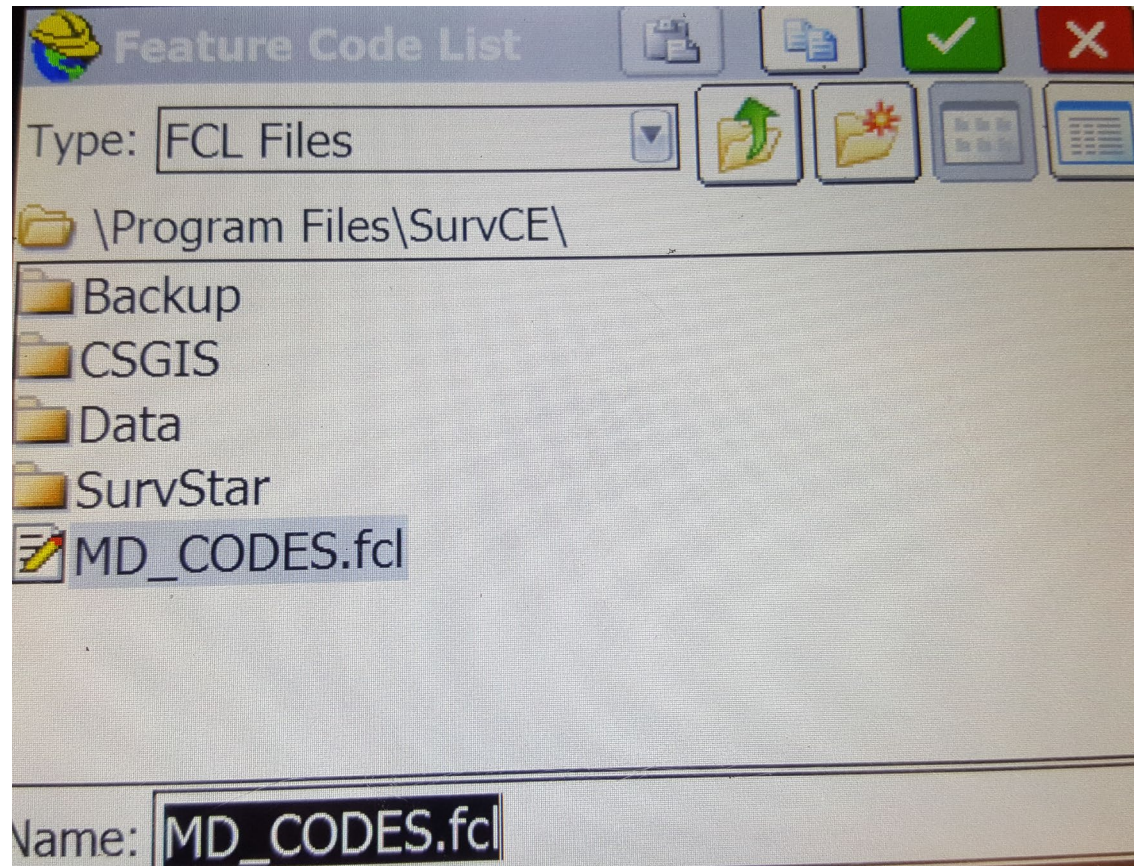
Category	Code	Full Name	Symbol	Line Type	Point Group Name	Prefixes	Point range	Description
Terrain	WD	Watershed Divide	SPT10	BYLAYER				
	TS	Top of Slope	SPT10	BYLAYER				
	BS	Bottom of Slope	SPT10	BYLAYER	EX-Bottom of Banks	EBL*, EBR*, WL*, TS*, BS*BNKL*, BNKR*, WL*, TS*, BS*	All	Bottom of bank lines and slopes
	LS	Low Spot	SPT10	BYLAYER	EX-Top of Banks			Top of bank lines and slopes
	HS	High Spot	SPT10	BYLAYER				
	SB	Slope Break	SPT10	BYLAYER				
Ground			SPT10	BYLAYER	EX-Existing Ground	Prefixes EXCLUDED TBM*, BM*, IP*, TP*, RP*, PPIN*, EPIN*, WELL*, WALL*, STRUC*, H2O*, RCPINV*, RCPTOP*, CMPINV*, CMPTOP*, PVC*, HDPE*, INTAKE*, OUTLET*, TILEFL*, PED*	Points EXCLUDED 3000-9999	Point group used to develop the Existing Ground surface. Shots that may not have been taken on the ground surface, such as benchmarks, well casings, and shots taken on pipe or conduits, are automatically removed from the point group.
As Built			SPT10	BYLAYER	PR-As-Built		5000-9999	As-built survey points on constructed structures
Staking			SPT10	BYLAYER	PR-Staking	TBM*, BM*, IP*, TP*, RP*, PPIN*, EPIN*	3000-4999	Point group that can be used to export to a data collector for stakeout



Maryland Field Codes
SurvCE Instructions

Place MD_CODES.fcl file into data collector

Program Files/SurvCE/MD_CODES.fcl

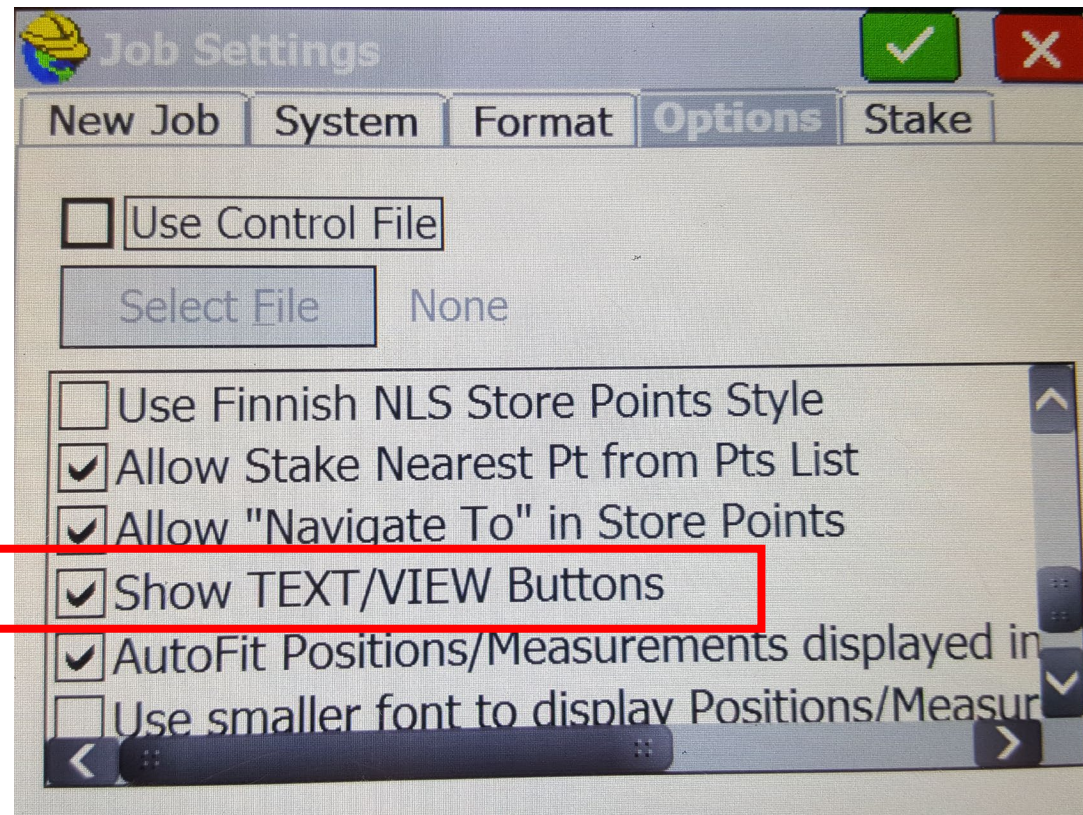


Open up a survey...Goto FILE Tab > Job Settings

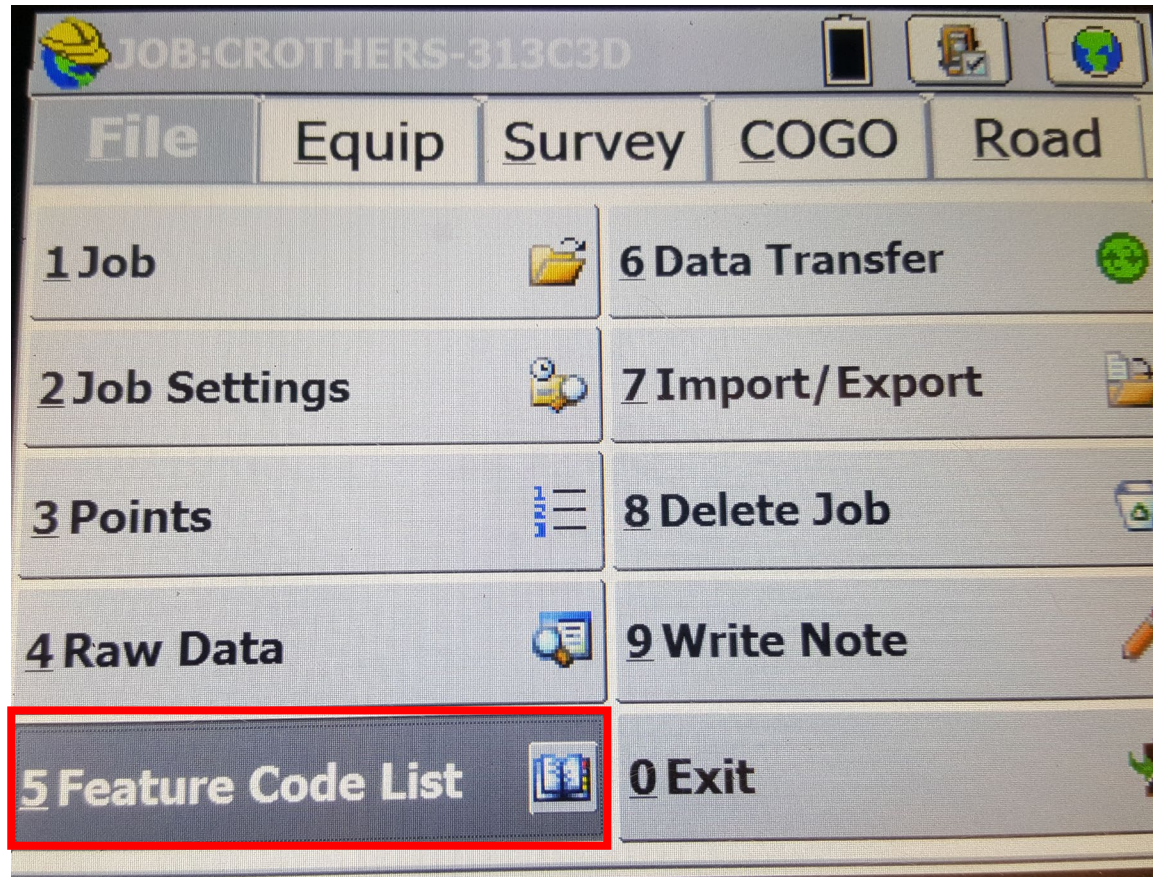
OPTIONS tab

Scroll down to "Show TEXT/VIEW Buttons and make sure that is checked

Close that window



FILE Tab > Feature Codes List



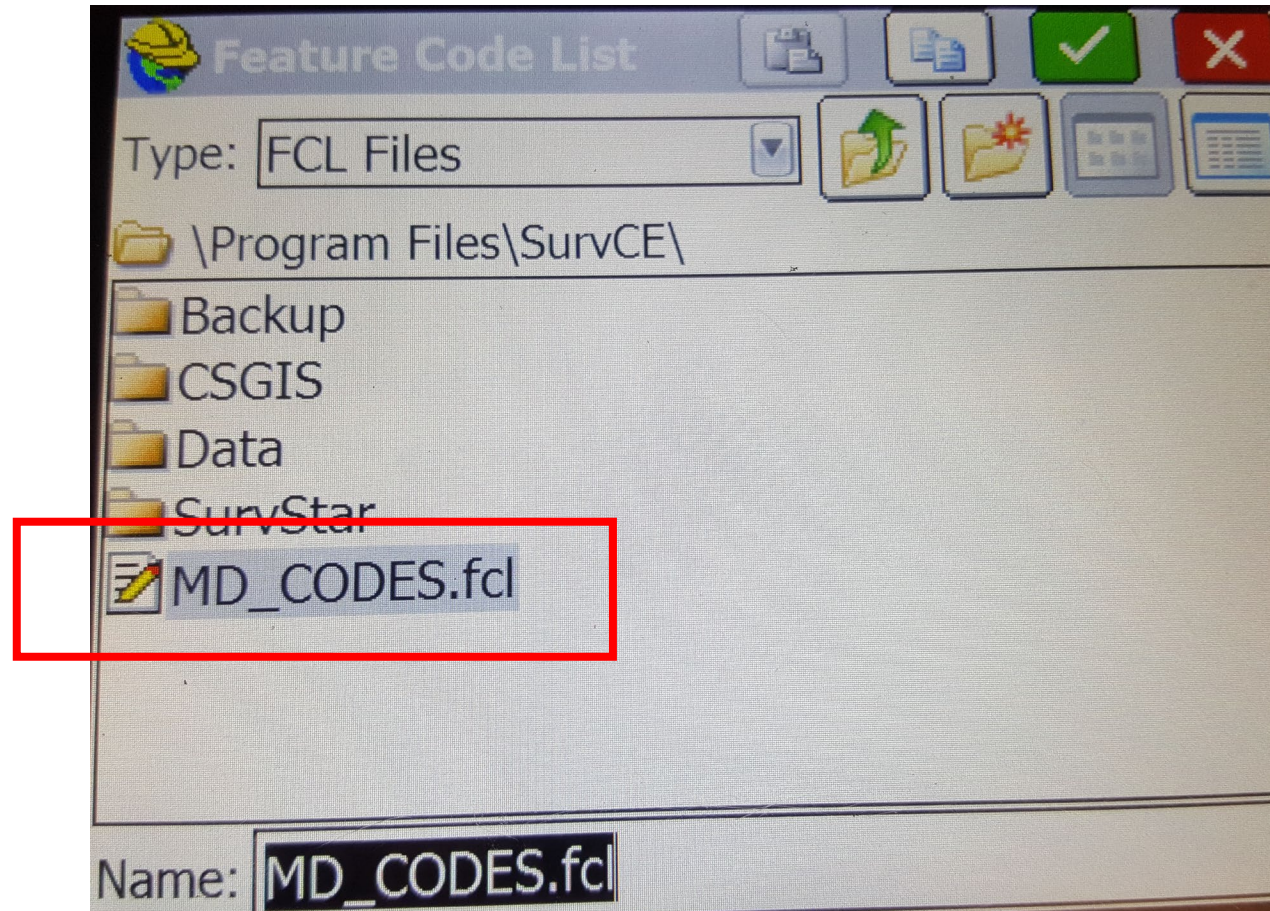
Click LOAD

The screenshot shows a software interface titled "Code List: MD_CODES". At the top, there is a category dropdown menu set to "ALL" and a "Set" button. Below this is a table with four columns: "Code", "Linework", "Line Type", and "Layer Name". The table contains six rows of data. At the bottom of the interface, there are six buttons: "Add", "Edit", "Remove", "Load", "Save As", and "Special Codes". The "Load" button is highlighted with a red rectangular box.

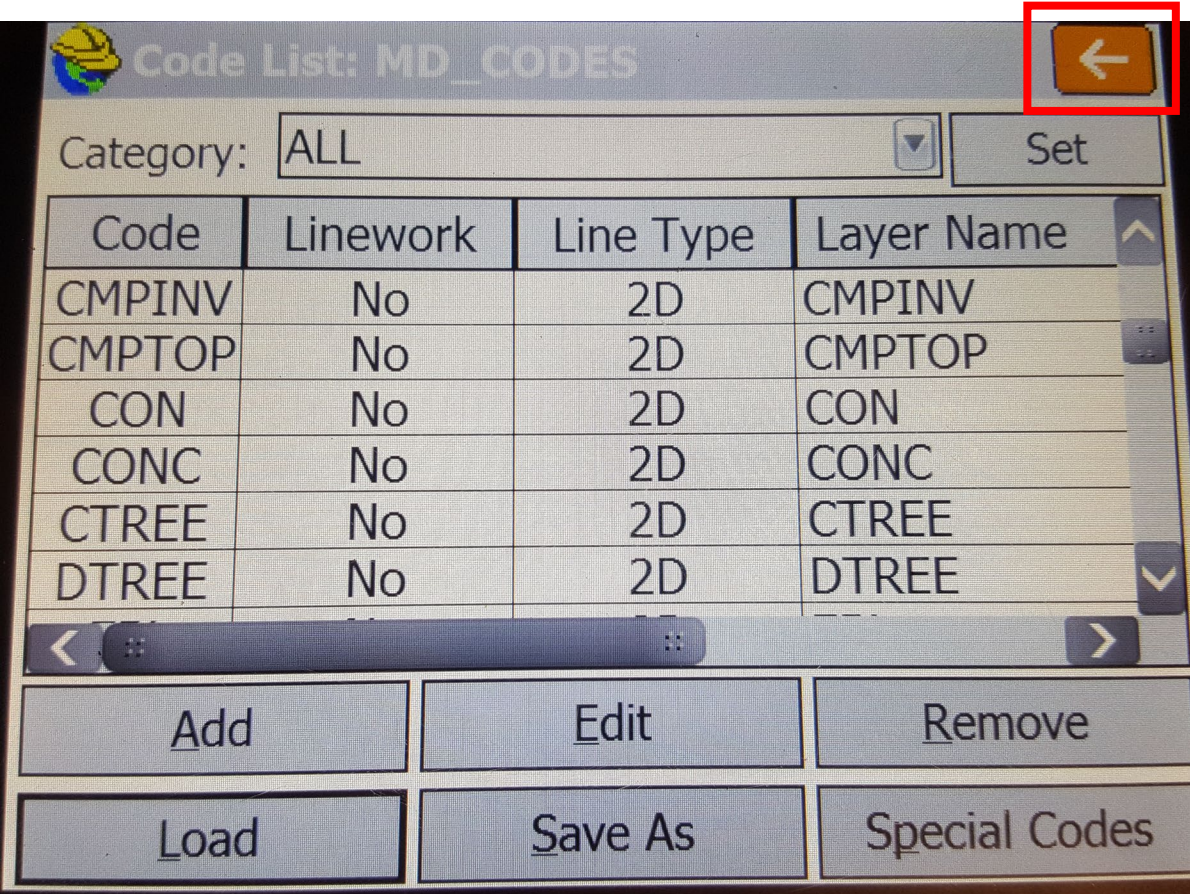
Code	Linework	Line Type	Layer Name
CMPINV	No	2D	CMPINV
CMPTOP	No	2D	CMPTOP
CON	No	2D	CON
CONC	No	2D	CONC
CTREE	No	2D	CTREE
DTREE	No	2D	DTREE

Select the MD_CODES.fcl file

Click the Green Check



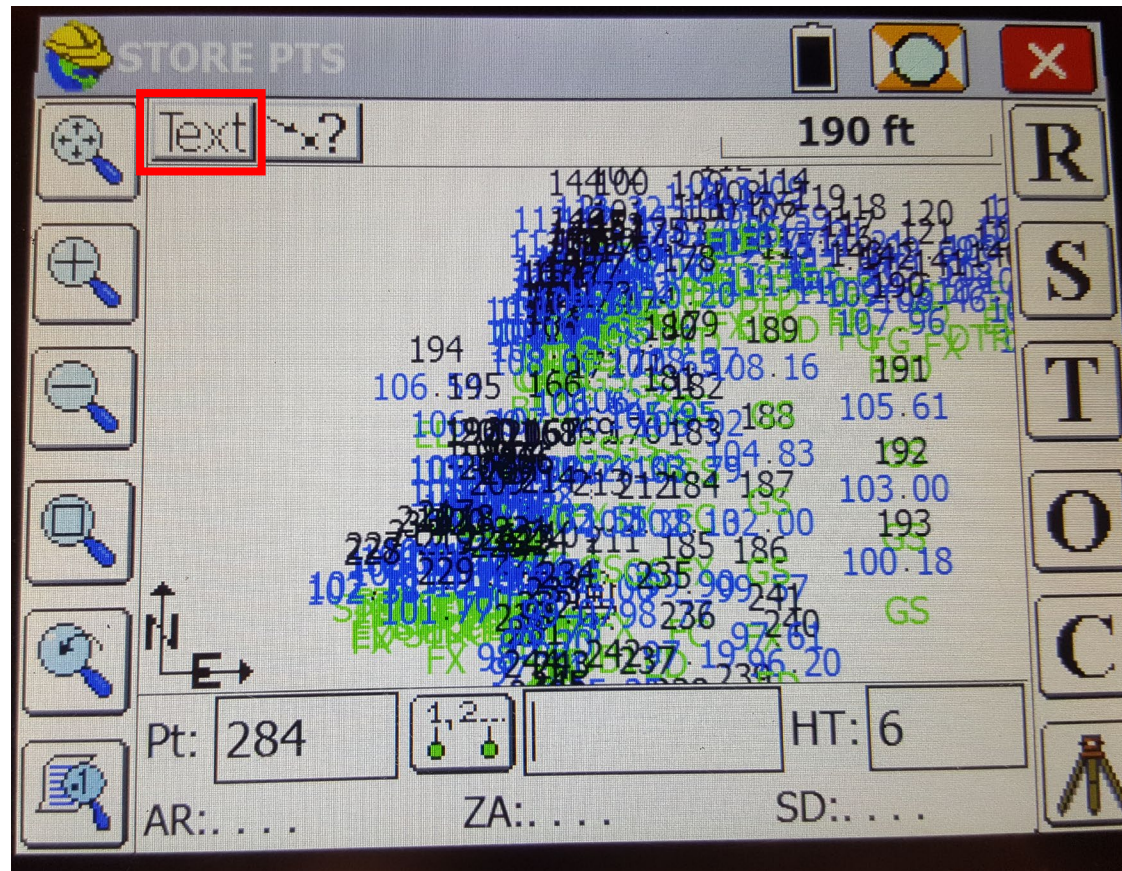
Click back after you load the file code







Now the field code file is loaded

You can now start your survey

To have the drop down for points, select the TEXT button



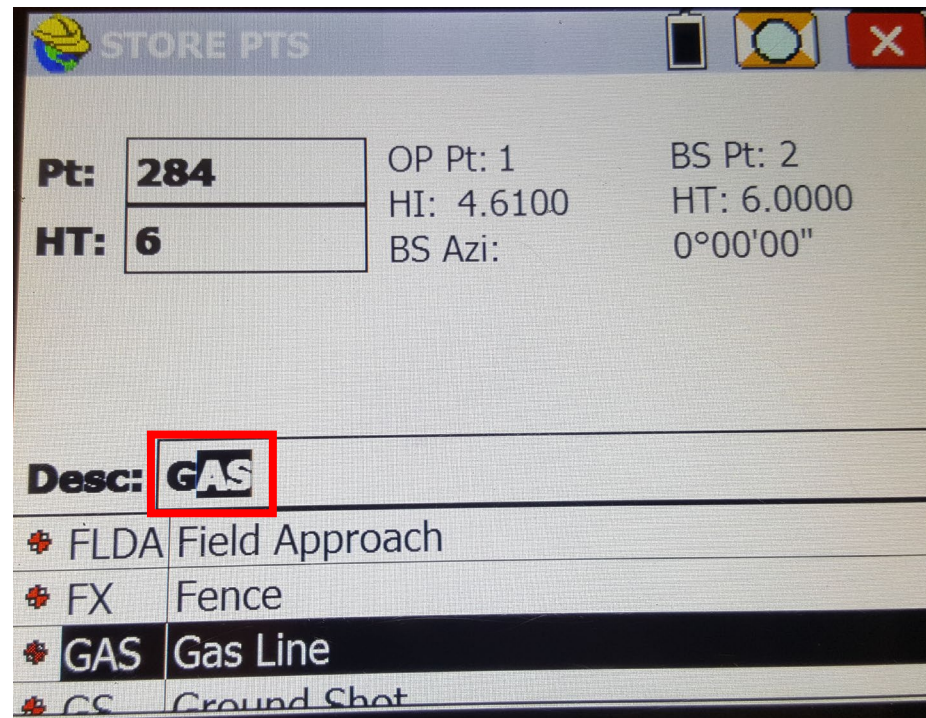
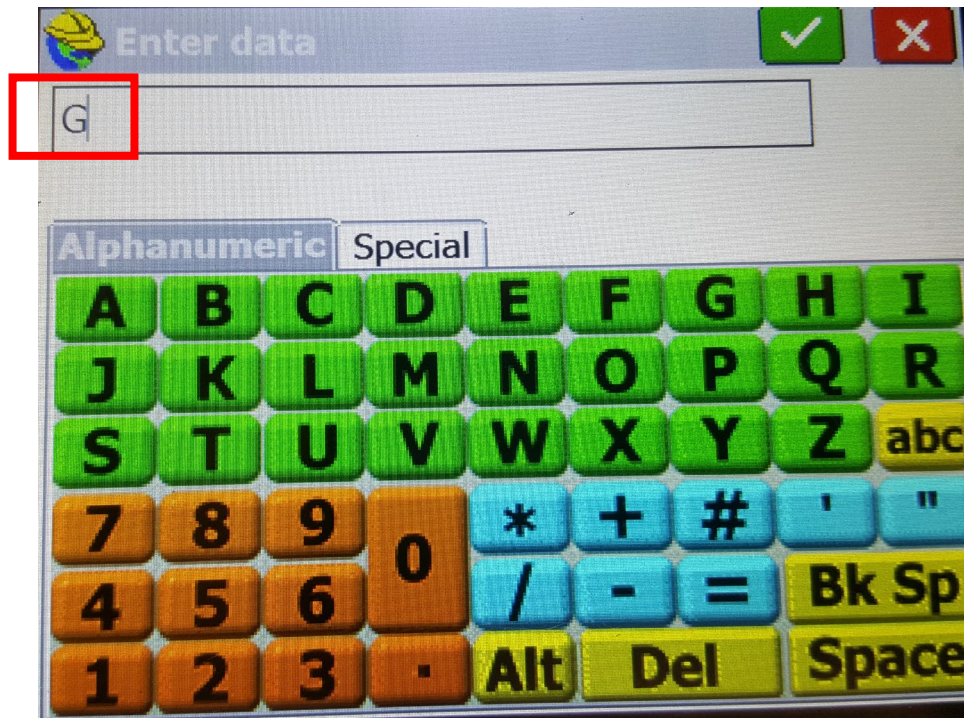
 **STORE PTS**   

Pt:	284	OP Pt: 1	BS Pt: 2
HT:	6	HI: 4.6100	HT: 6.0000
AR:.. . . .		BS Azi:	0°00'00"
ZA:.. . . .		N:	
SD:.. . . .		E:	
Desc:	<input type="text"/>		

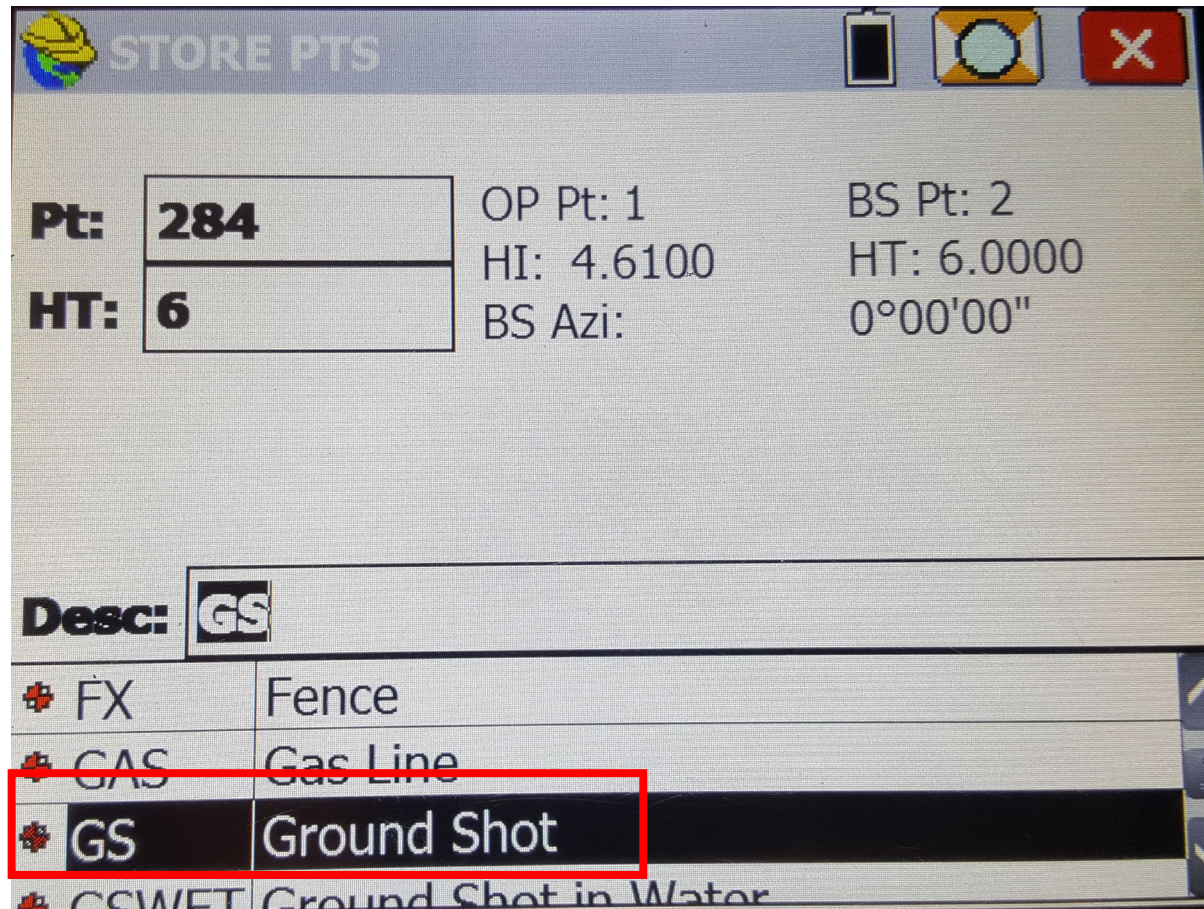
CONFIGURE	TRAVERSE	READ
BS/SET	OFFSET	STORE

Select the description...Type first letter of the shot and hit enter

It brings you back to the screen to allow you to select from the drop down list of field codes



Select you point description and hit enter



The screenshot shows a software window titled "STORE PTS" with a yellow hard hat icon. The window contains several data fields and a list of point descriptions. The fields are:

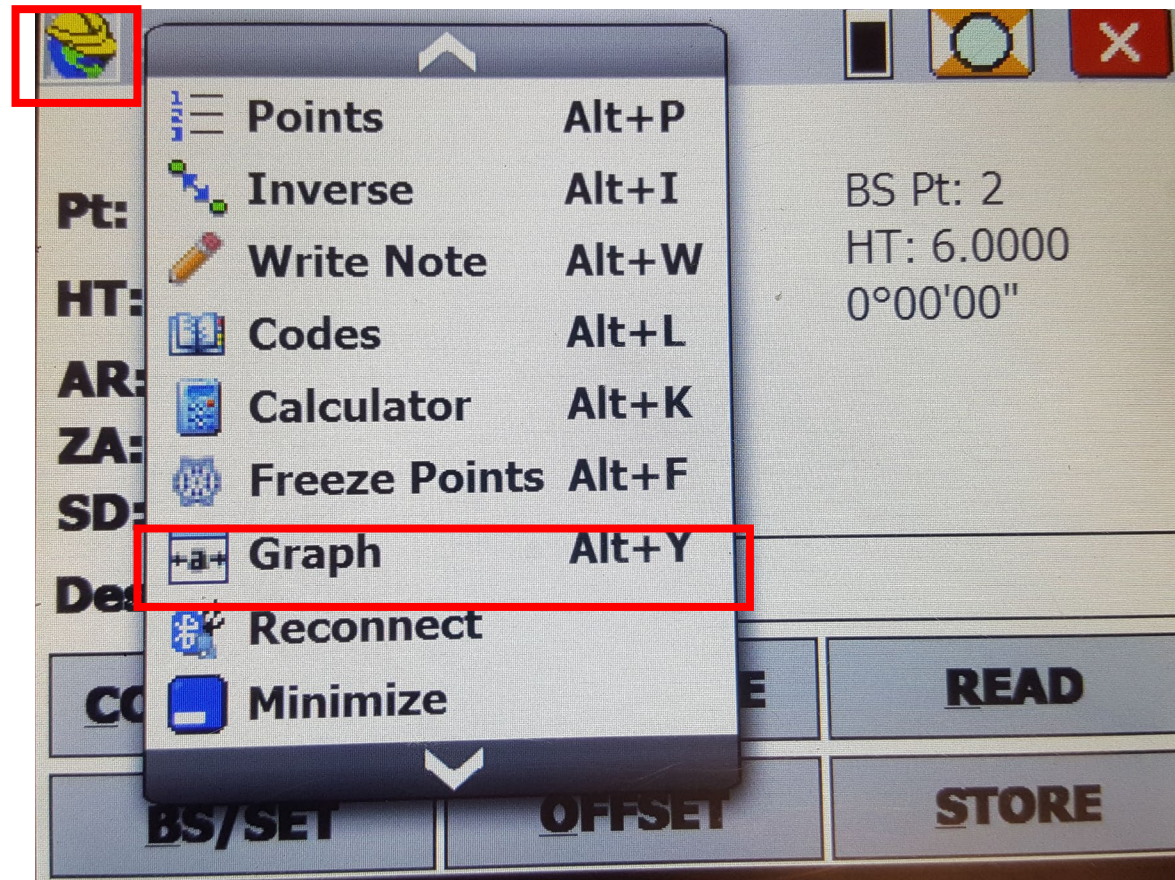
Pt:	284	OP Pt: 1	BS Pt: 2
HT:	6	HI: 4.6100	HT: 6.0000
		BS Azi:	0°00'00"

Below the fields is a "Desc:" label followed by a text input field containing "GS". Below that is a list of point descriptions, each with a small icon to its left:

- FX Fence
- GAS Gas Line
- GS Ground Shot** (highlighted with a red box)
- CSWET Ground Shot in Water

You will have to load the field codes for each job

If you want to go back to the original type screen without the TEXT...Click on SurvCE Icon on top left of screen...Then goto Graph



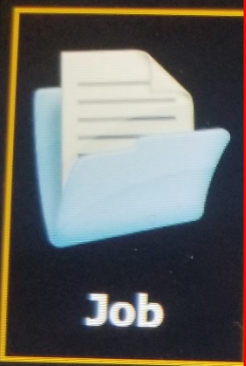


Maryland Field Codes
MAGNET Instructions

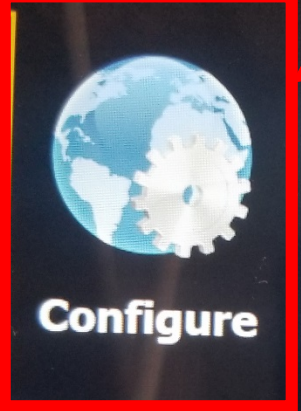
Add **MD CODES.xml** to the following location on the data collector:

c:\Program Files (x86)\MAGNET Field PC\tpsdata

M TEST

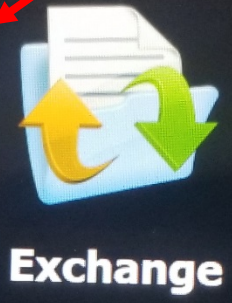


Job

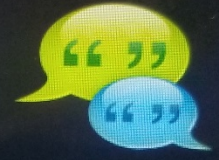


Configure

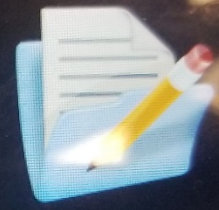
Select Configure



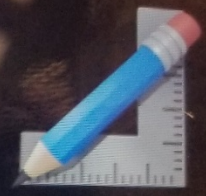
Exchange



Chat



Edit



Calculate



Map



Connect



Setup



Survey

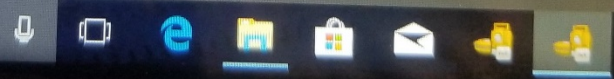


Stake



Apps

Type here to search



3:39 PM
11/14/2017

FC-5000

M TEST



Survey

Coord Sys

Global

Backup

Units

Display

Alarms

Codes

Stake Reports

Enterprise

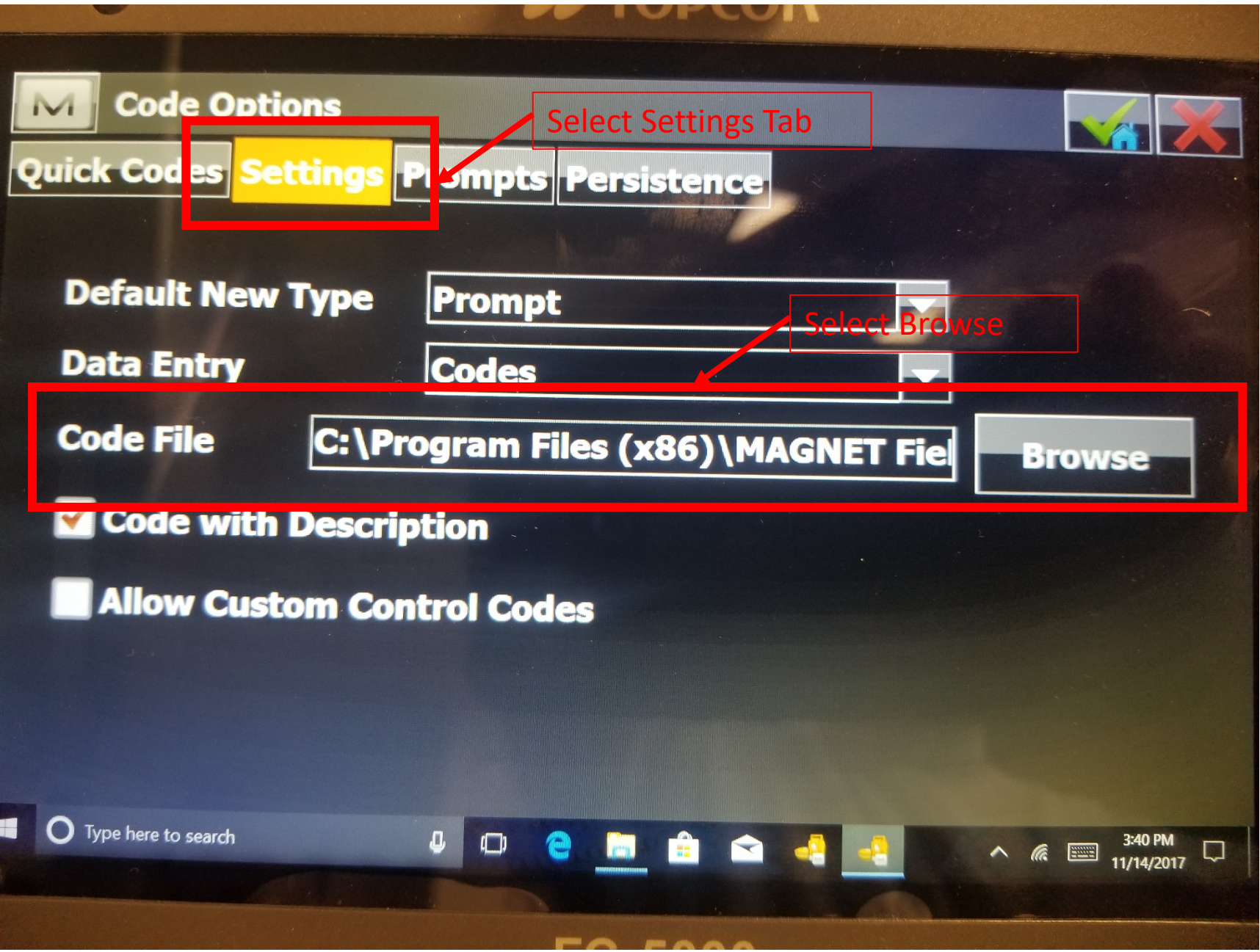
Select Codes

Type here to search



3:40 PM
11/14/2017

FC-5000



M Code Options

Quick Codes **Settings** Prompts Persistence

Select Settings Tab

Default New Type Prompt

Select Browse

Data Entry Codes

Code File C:\Program Files (x86)\MAGNET File Browse

Code with Description

Allow Custom Control Codes

Type here to search

3:40 PM
11/14/2017

M Select Global Data Dictionary

Type XML Files (*.xml)



C:\Program Files (x86)\MAGNET Field PC\tpsdata


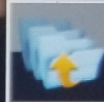

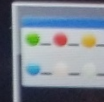
- images
- sounds
- DefMenu.xml
- EnterpriseRPC.xml
- MAGNETDefCodeLib.xml
- MD CODES.xml
- PredefinedClasses.xml
- ProviderInfo.xml

Name

Make sure .xml is selected

Select MD CODES.xml

M Select Global Data Dictionary  

Type XML Files (*.xml)    

C:\Program Files (x86)\MAGNET Field PC\tpsdata

- images
- sounds
- DefMenu.xml
- EnterpriseRPC.xml
- MAGNETDefCodeLib.xml
- MD CODES.xml**
- PredefinedClasses.xml
- ProviderInfo.xml

Select MD CODES.xml

Name MD CODES.xml

Default New Type

Data Entry

Code File

Code with Description

Allow Custom Control Codes

This should show the MD CODES.xml that you loaded

M Code Options

Quick Codes Settings Prompts Persistence



Click the Checkmark

Default New Type Prompt

Data Entry Codes

Code File IET Field PC\tpsdata\MD CODES.xml Browse

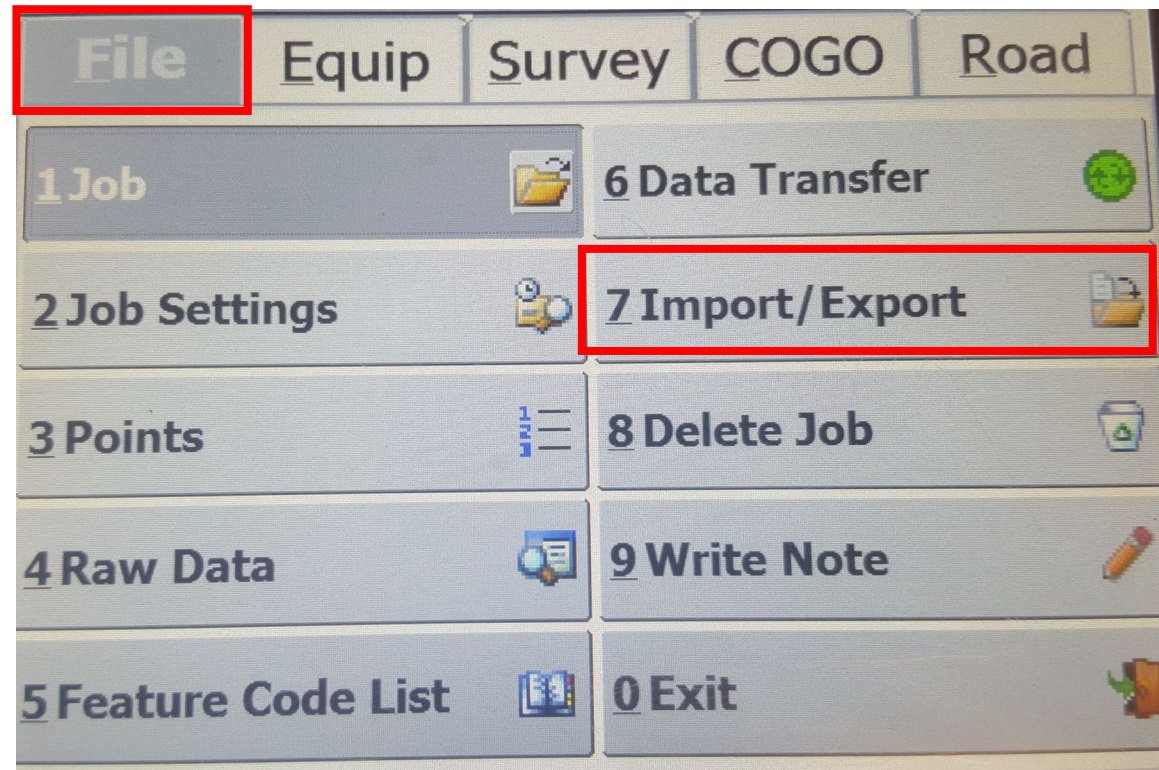
Code with Description

Allow Custom Control Codes

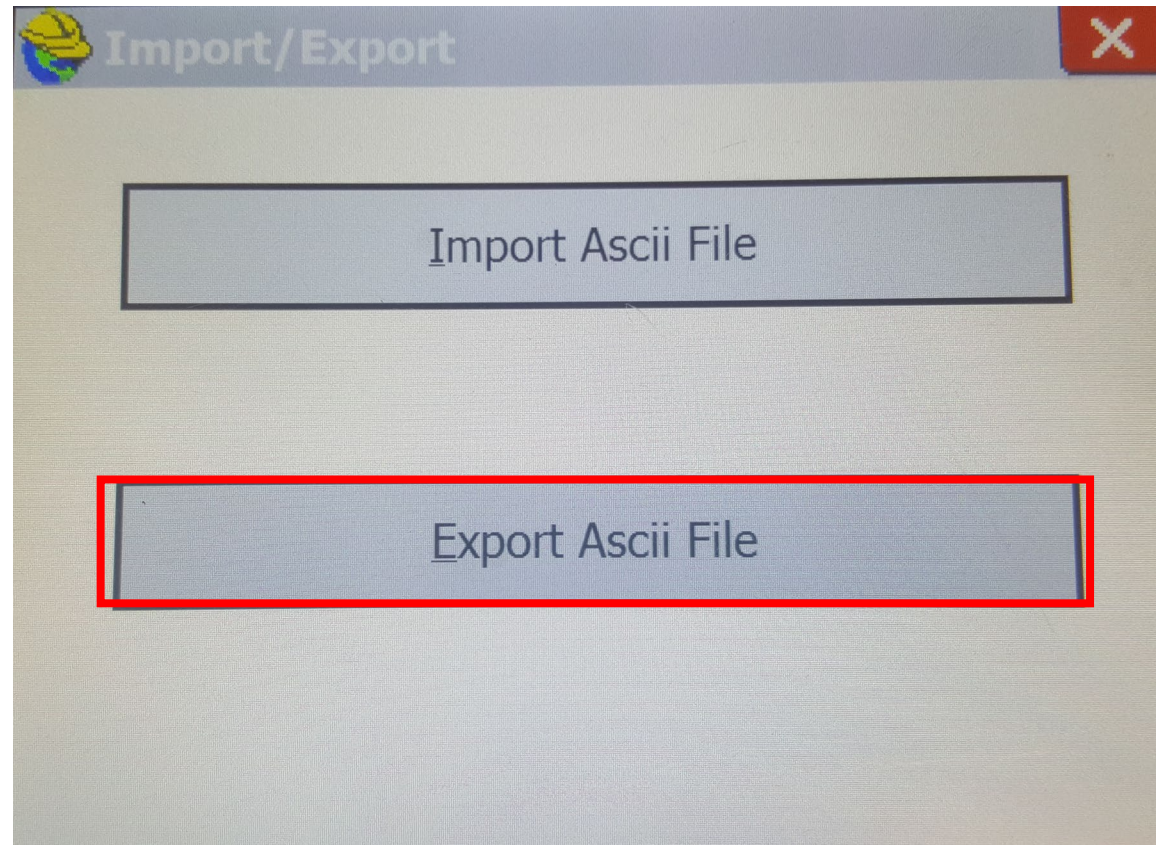
Converting/Exporting
points to an ASCII(text)
file in **SurvCE**

Once you have completed your survey, you must now convert the .crd file that was created into an ASCII file.

Click on File Tab....Then click on Import/Export Tab



Click on Export Ascii File Tab





Export Ascii



File Type:

User Defined

Coordinate Order:

PT_ID, North, East, Elev, Desc

Delimiter



Coordinate



Other



Comma



Space



Tab



Other

,

Range:

1-5037

Export



Point Notes

Precision:

0.0000

Other:



Point Info



Attributes



Export GPS Pts Only/Add Before Desc



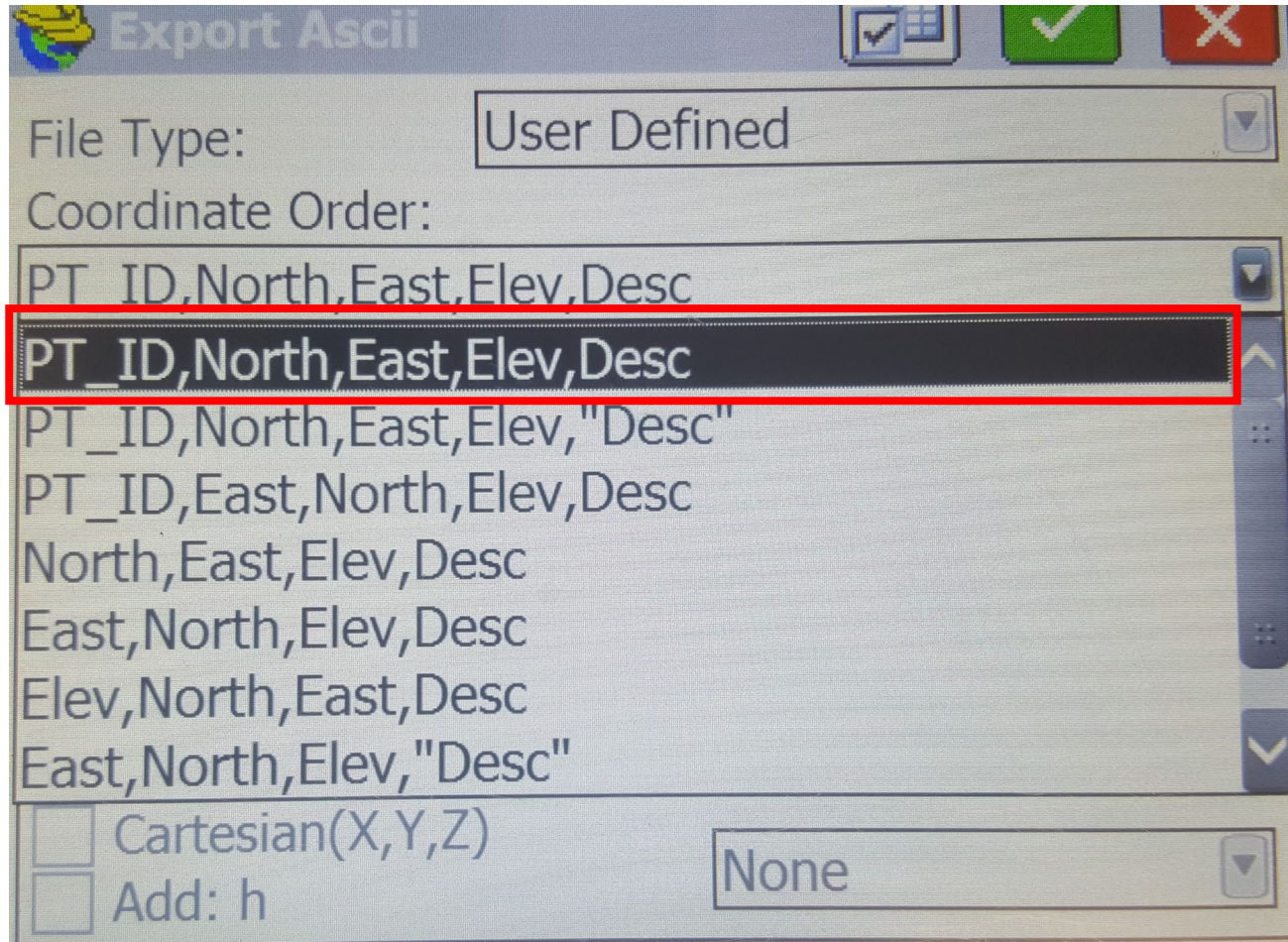
Cartesian(X,Y,Z)



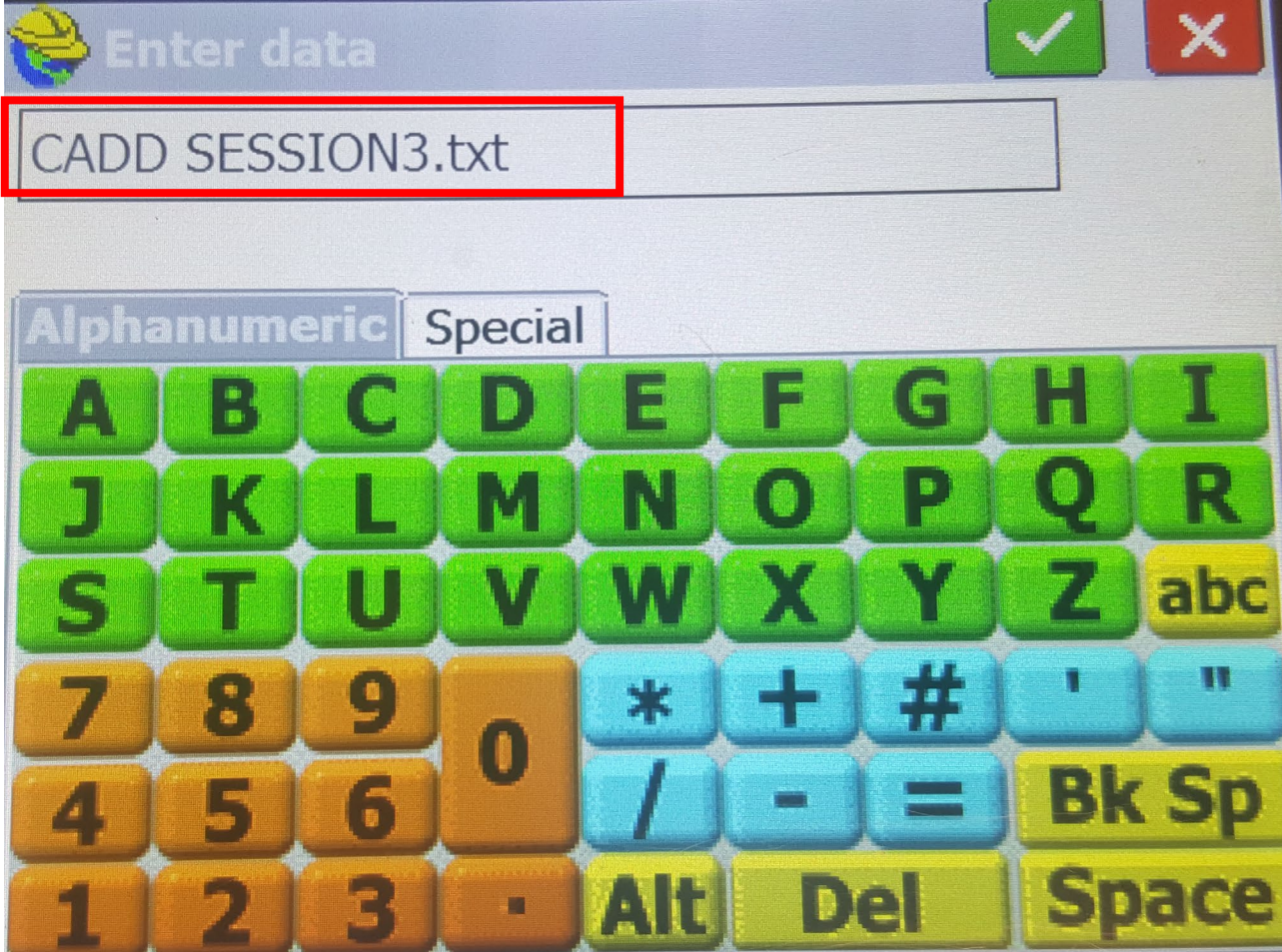
Add: h

None

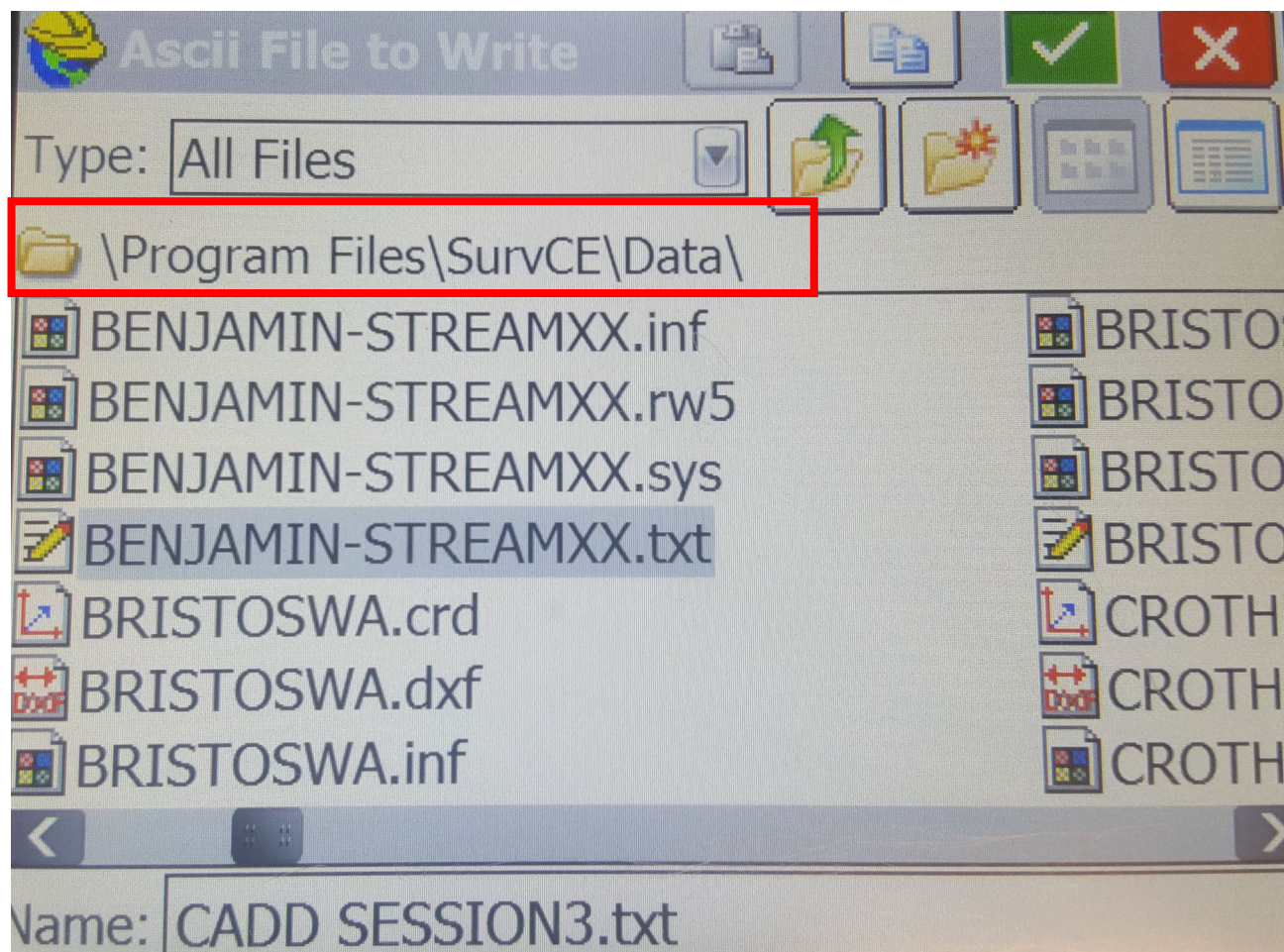
Make sure you use the below format to make the Ascii file...This is **VERY IMPORTANT** when importing points into Civil 3D.



Name your job...You will notice that it will be saved as a text file (.txt)



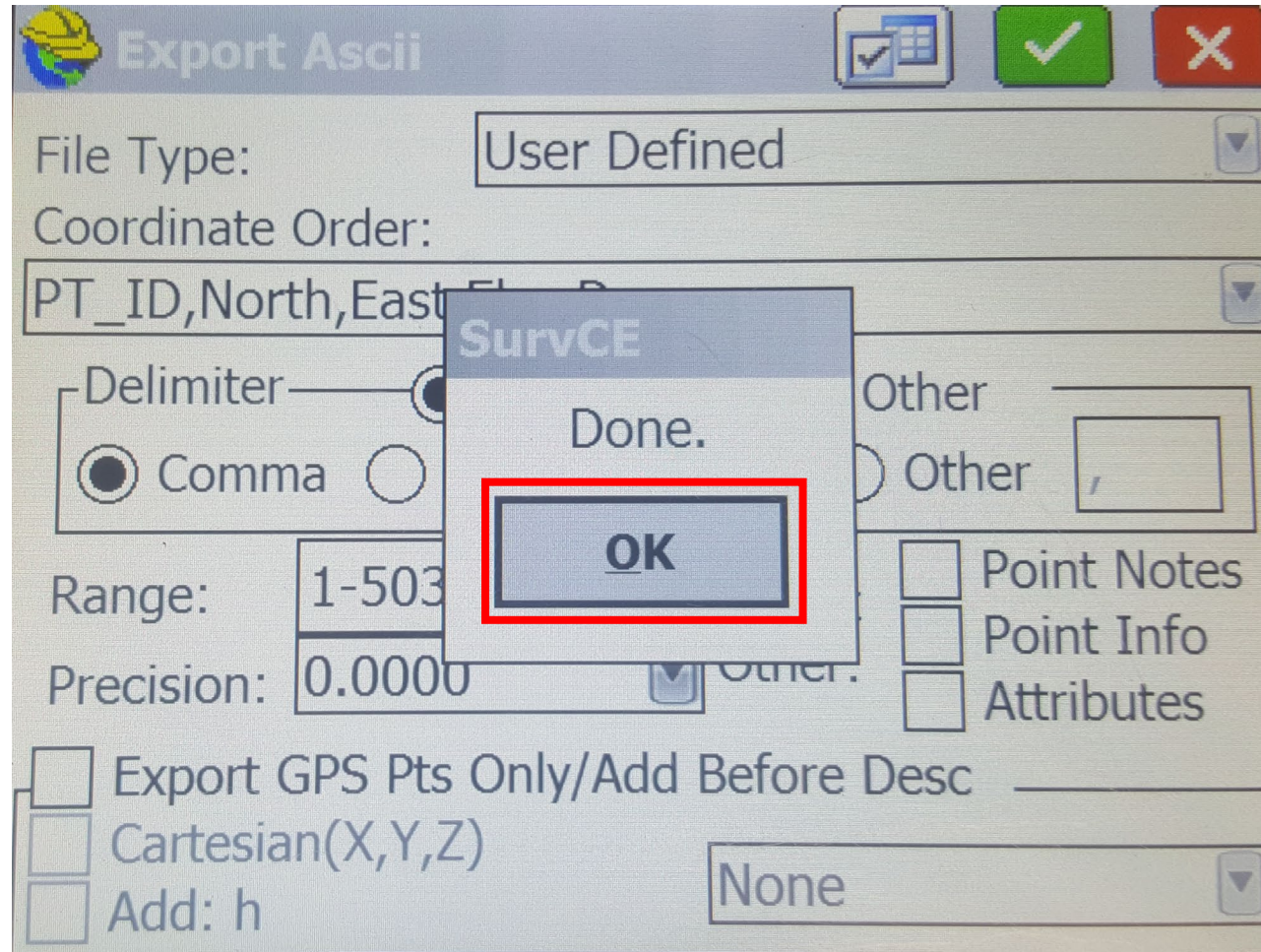
Save in the file location that your .crd files are normally saved in



Click **OK**

Your Ascii file has now been created

To export your point file, insert USB drive and select the file you need. Copy and paste it onto the USB drive.



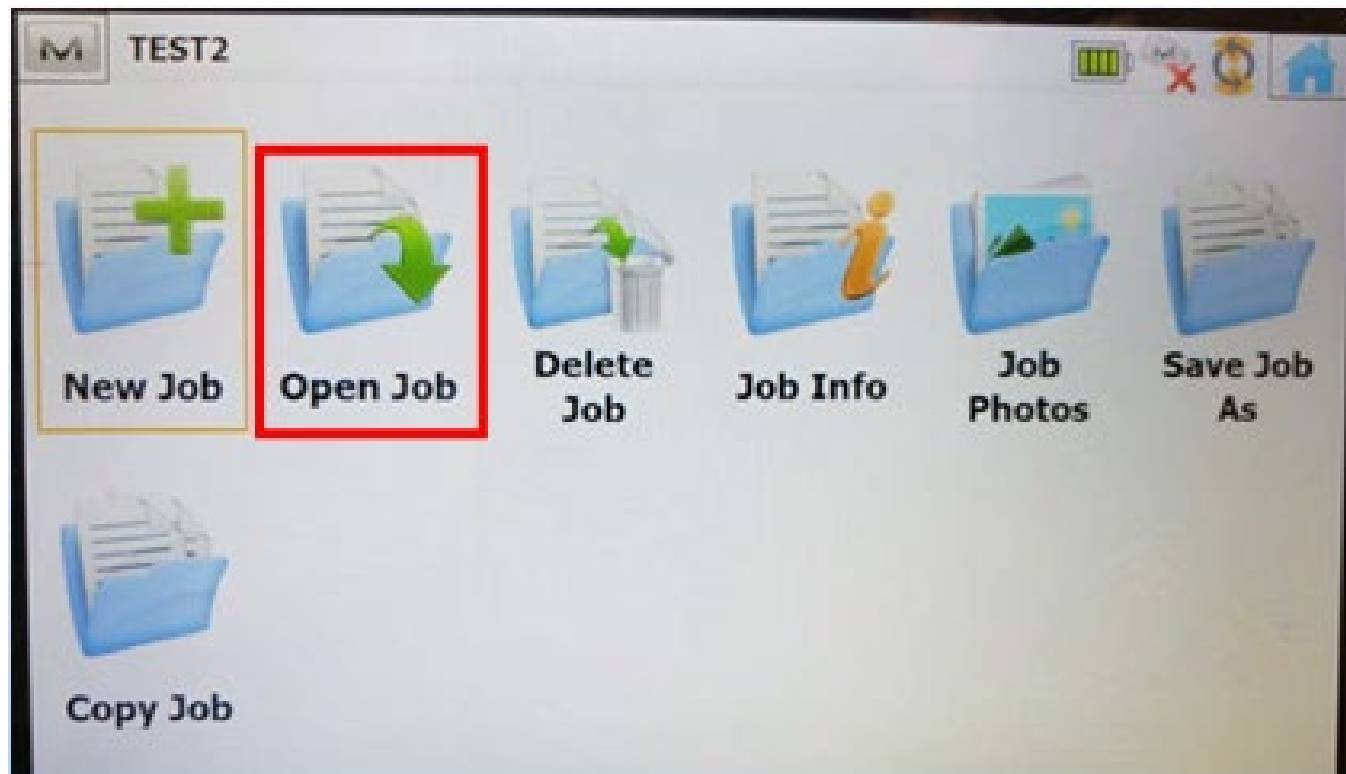
Converting/Exporting
points to a text file in
MAGNET

These directions are used **AFTER** you have completed your survey and want to take the survey job off of the data collector to plot the points into Civil 3D

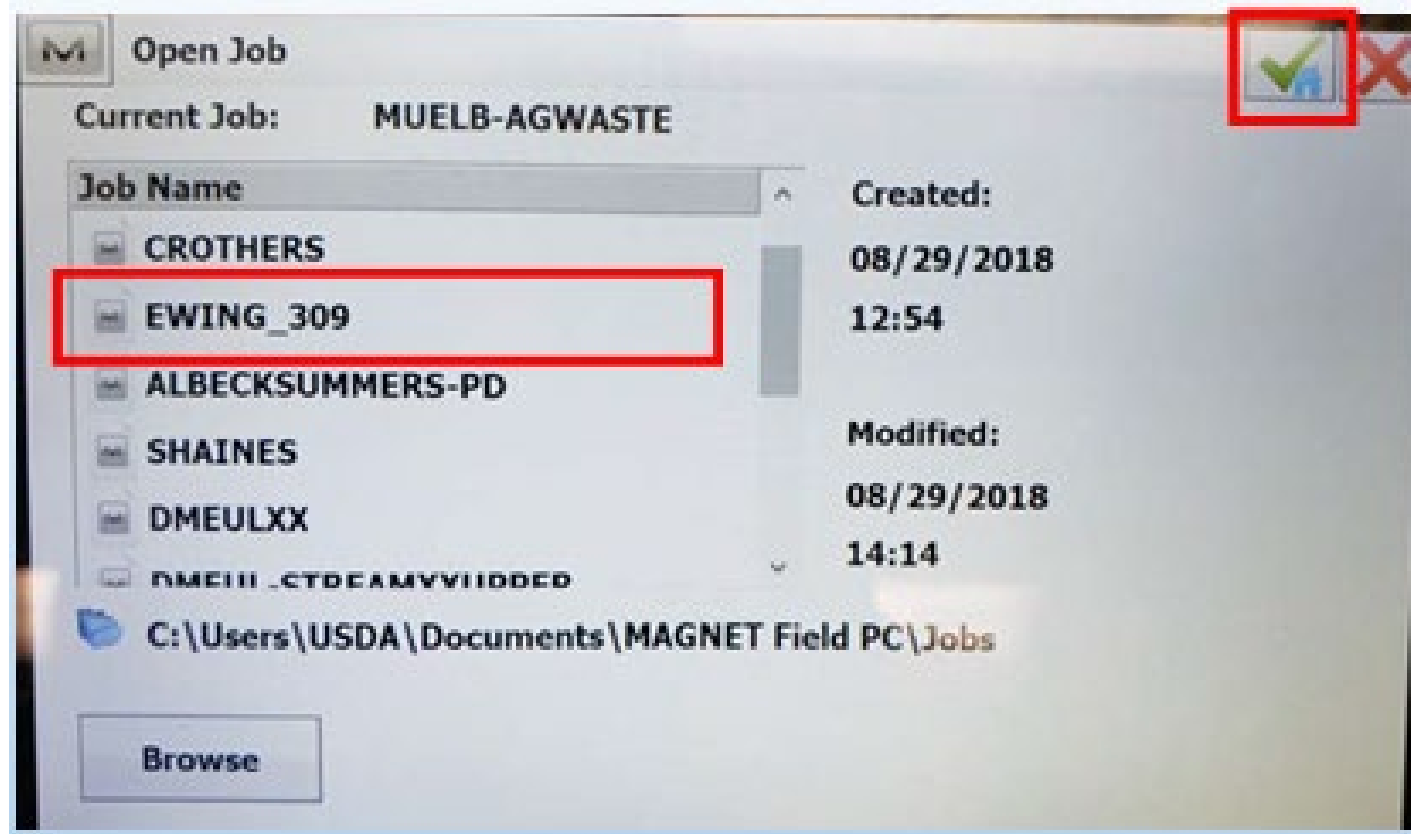
Open up **MAGNET** on the data collector

Goto **JOB** tab

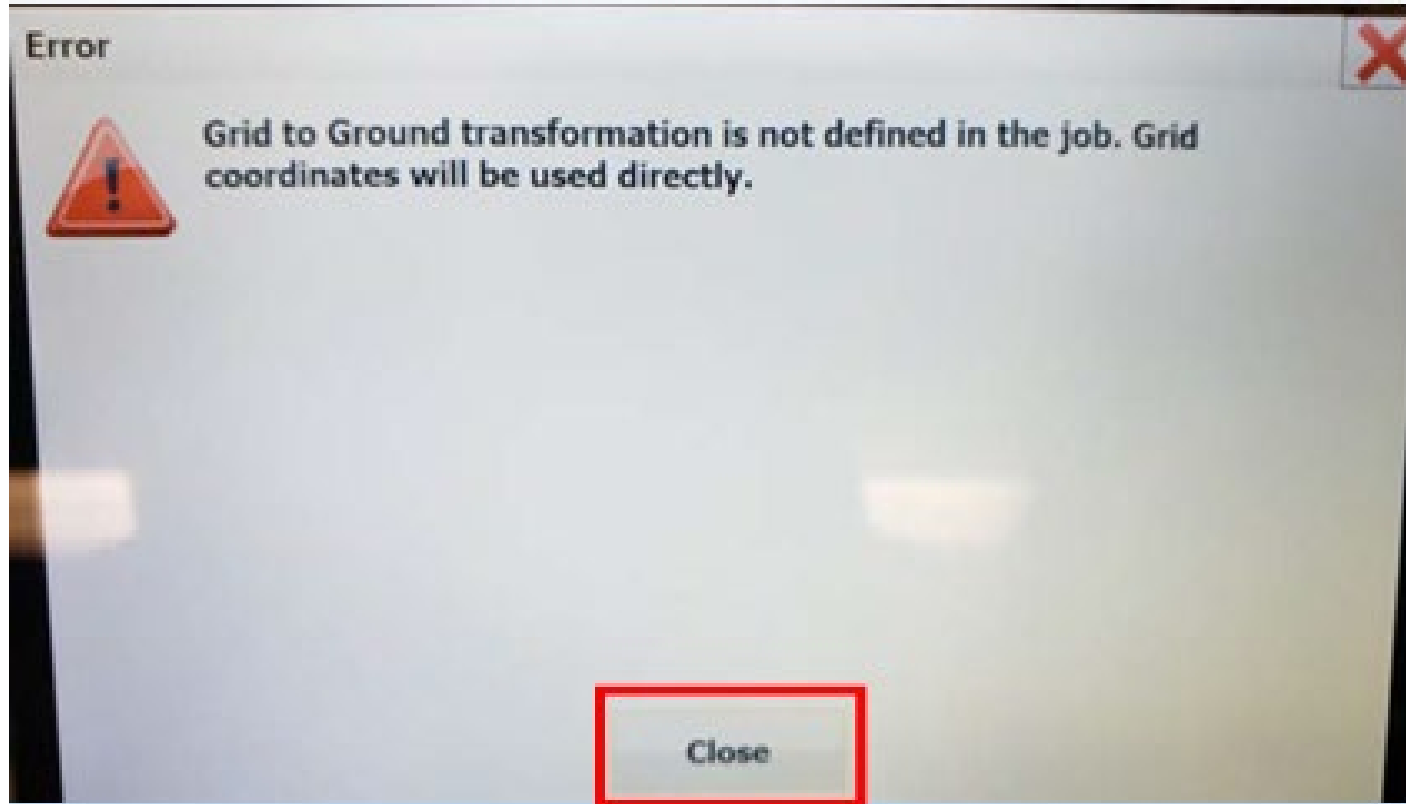
Open Job



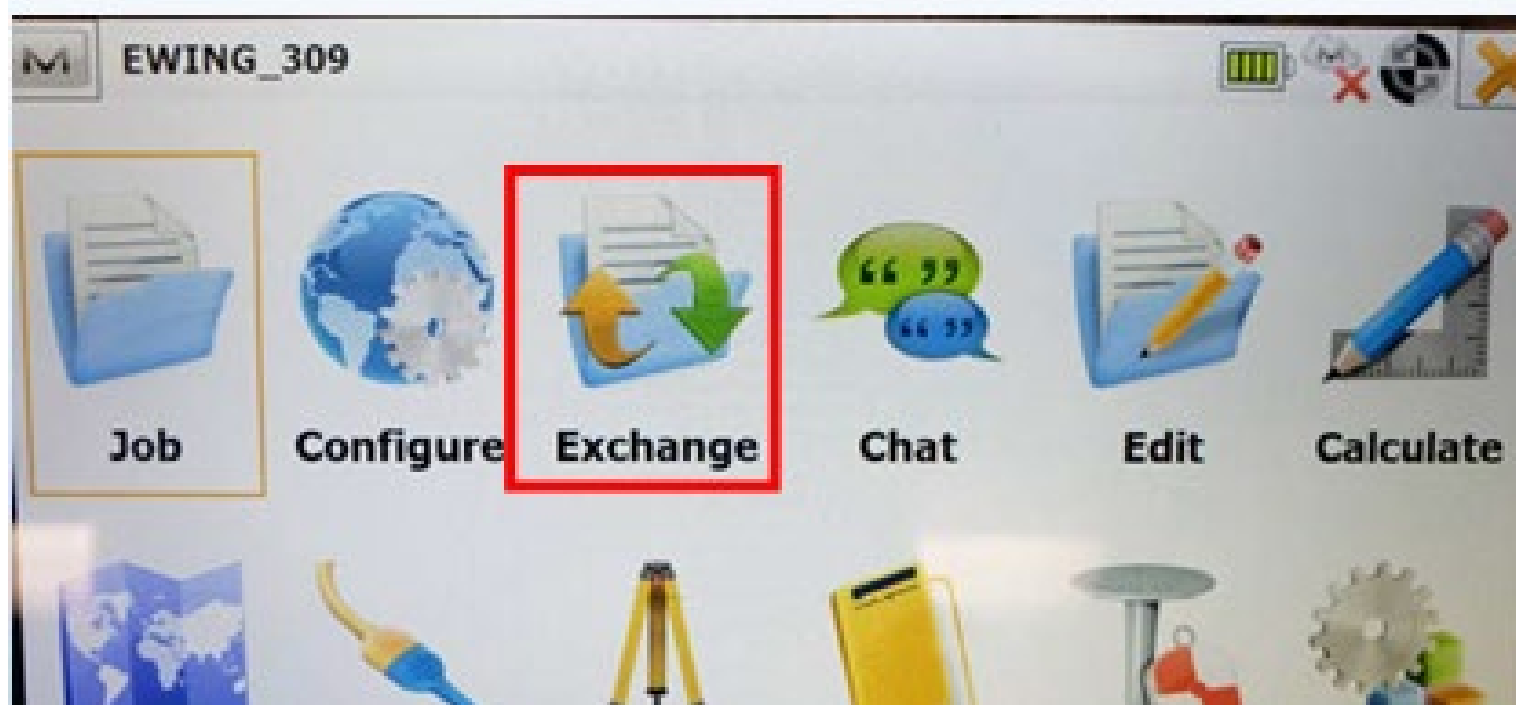
Select the job you want to export from
Click **GREEN CHECK**



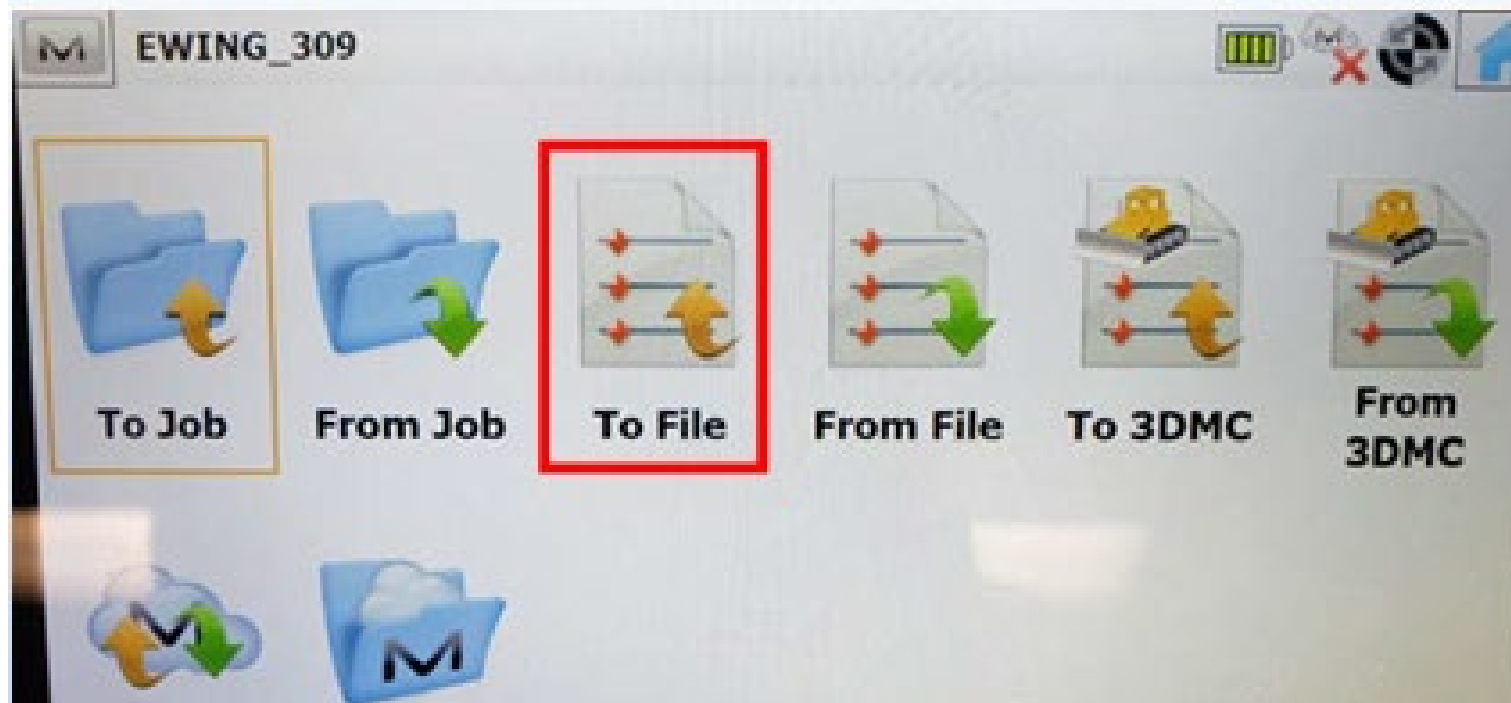
If the above Error Message appears, just Click **CLOSE**



Once the job is open
Click **EXCHANGE**



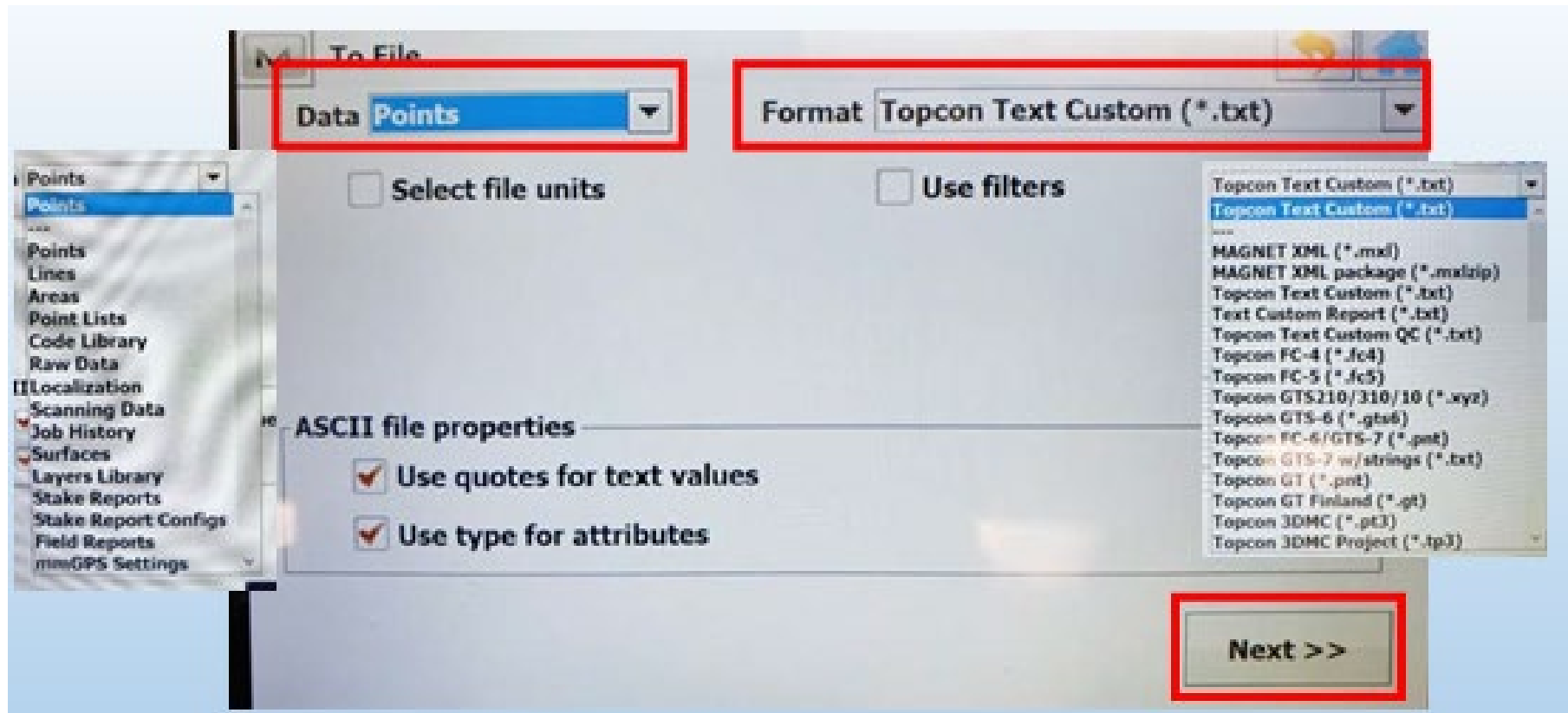
Click To File



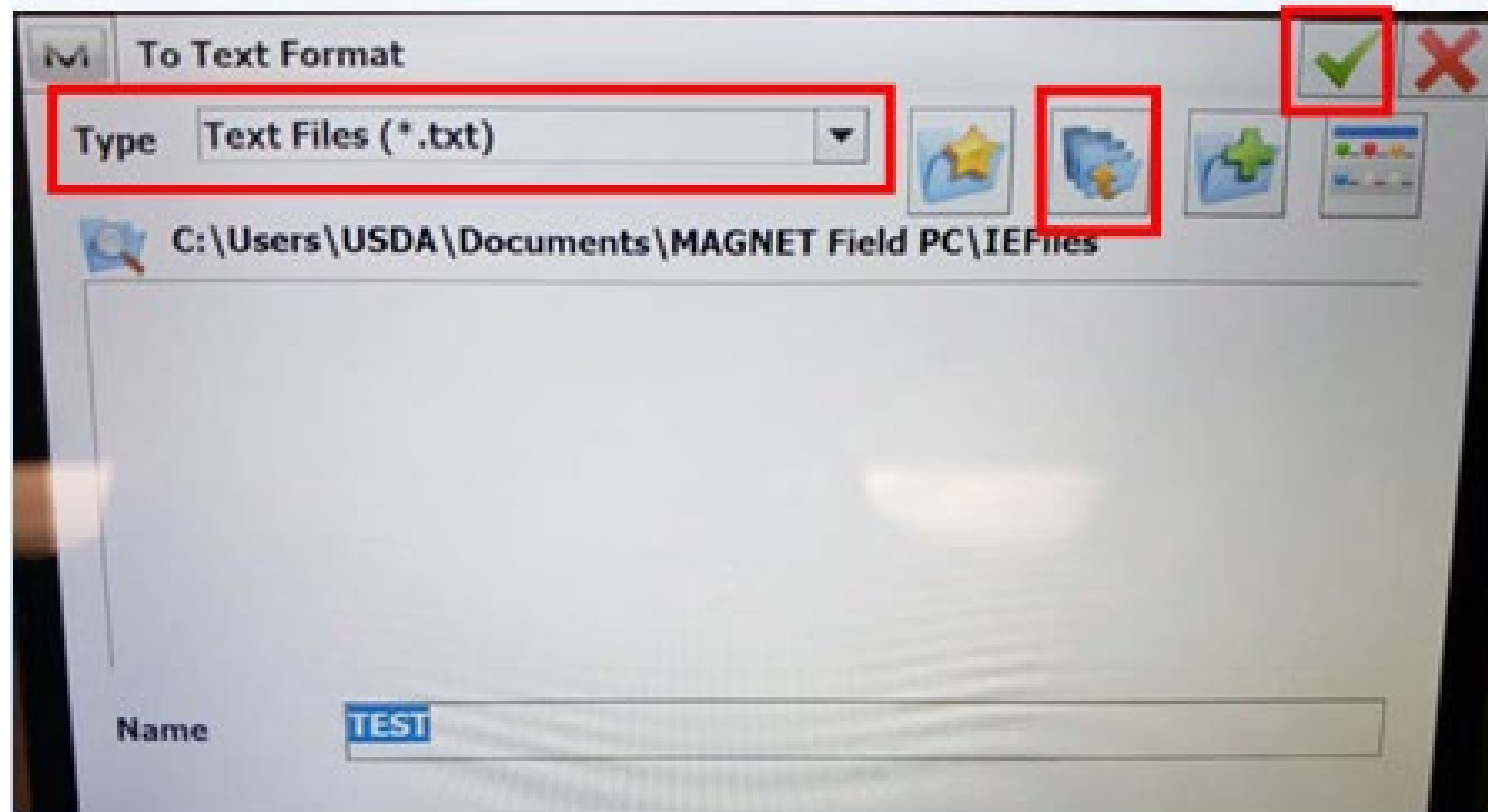
DATA <POINTS>

FORMAT <TOPCON TEXT CUSTOM (*.txt)>

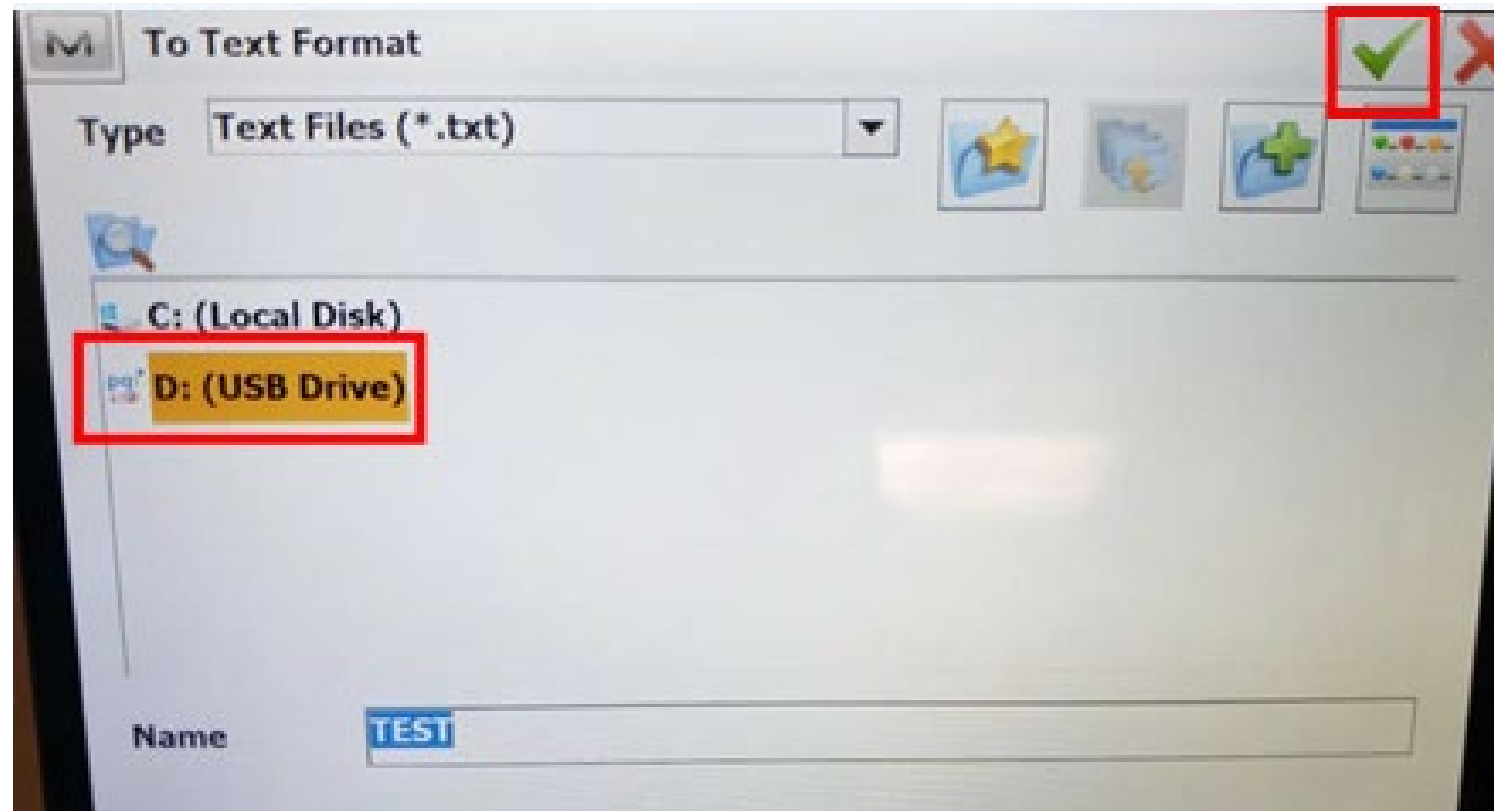
Click NEXT



Insert the USB Flash Drive into the data collector
Search the USB folder

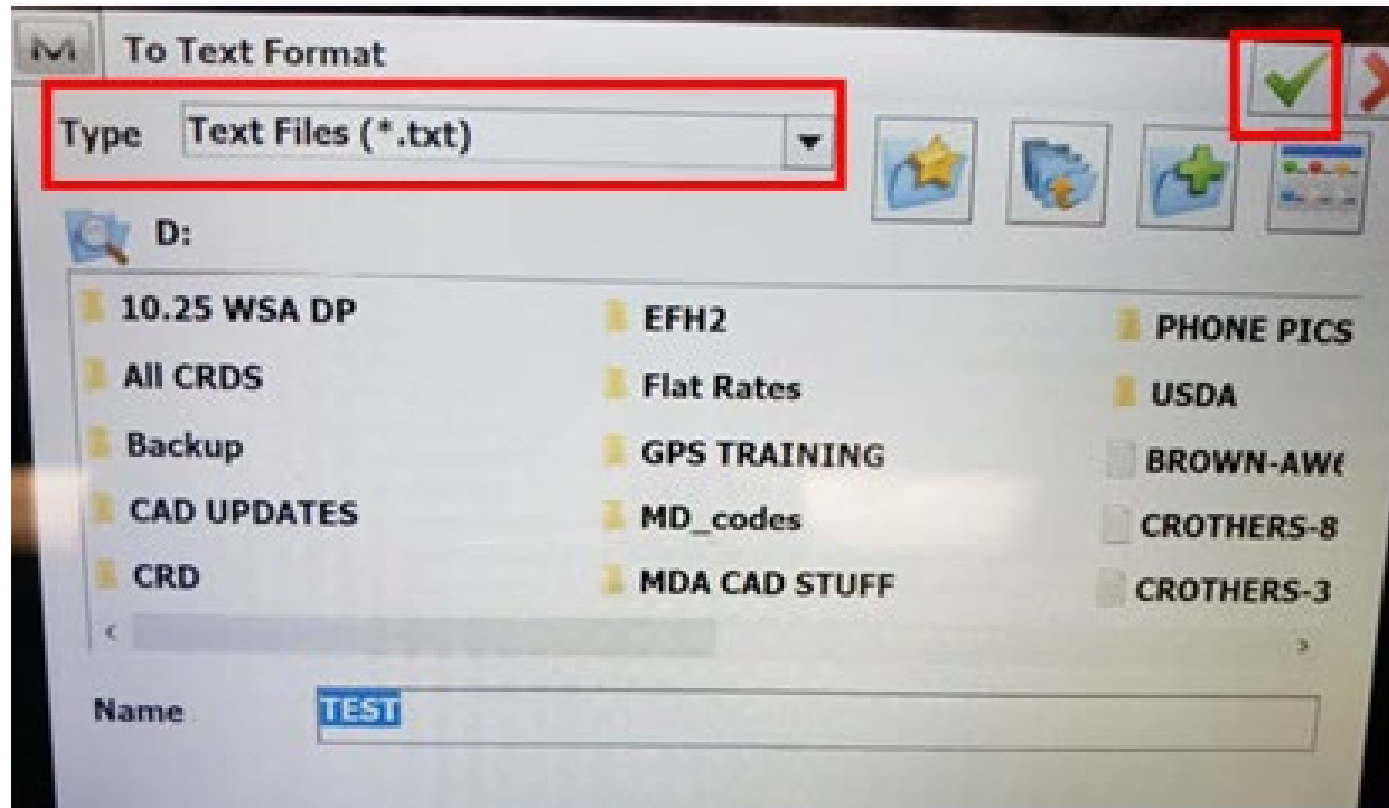


Select the USB Drive
Click **Green Checkmark**



Name the File

Click **Green Checkmark**

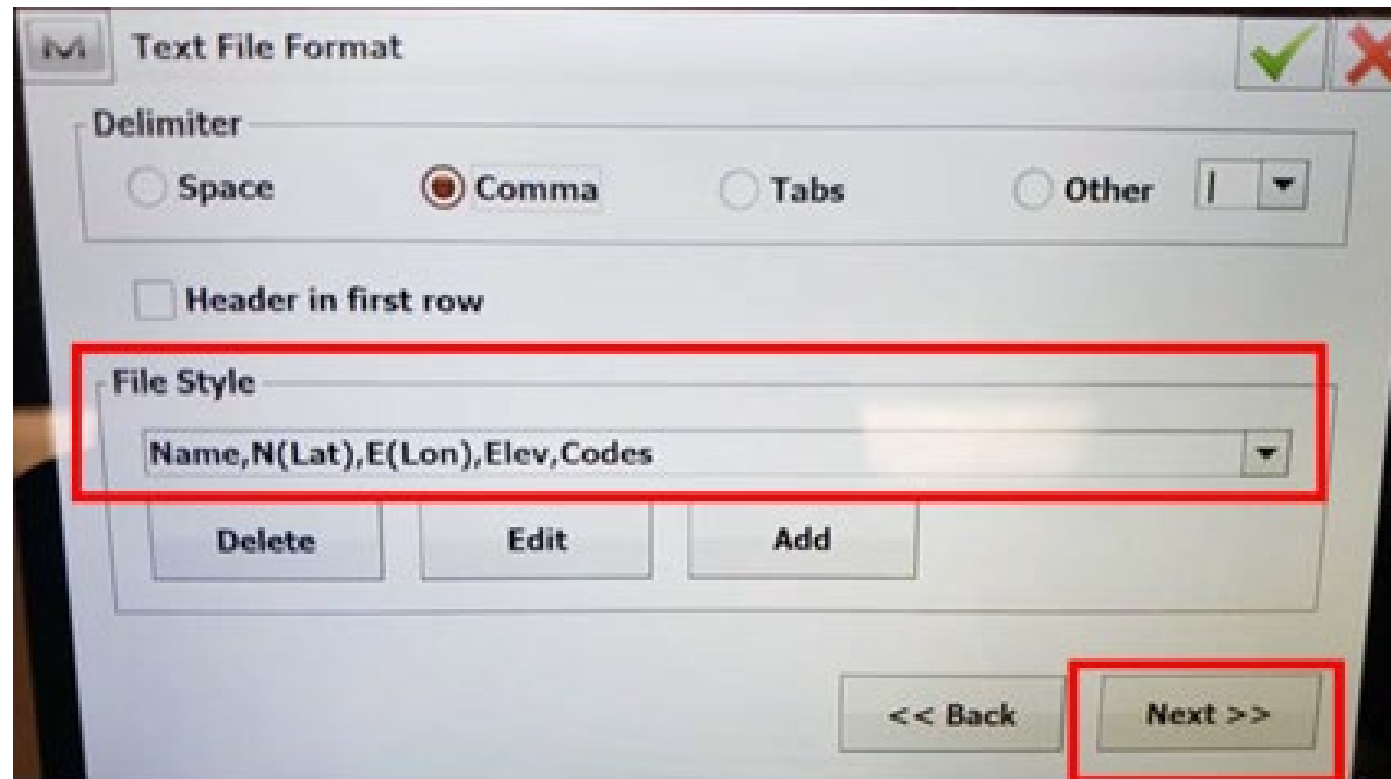


Select <COMMA>

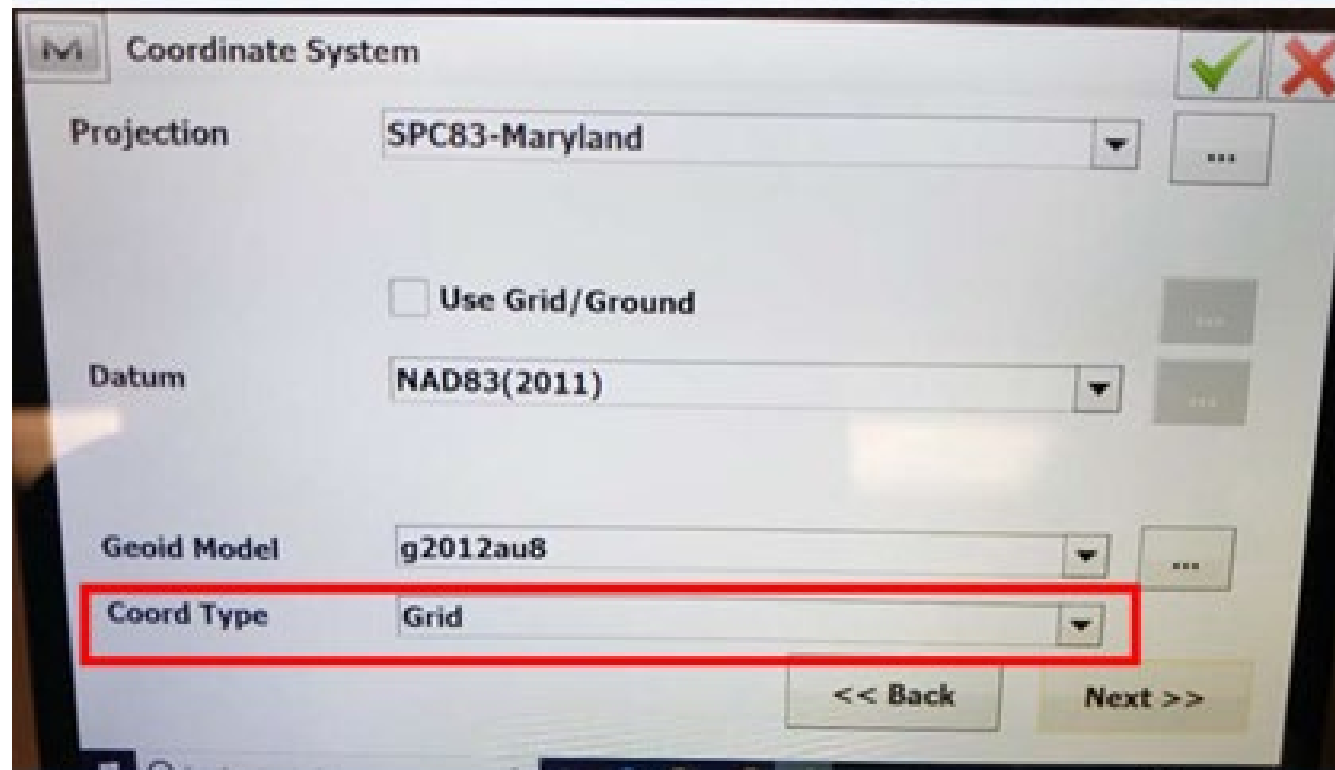
Uncheck Header in first row

File Style <PNEZD> *Z=ELEV and D=CODES*

Click **NEXT**



Make sure Coord Type is **GRID**
Click **Green Checkmark**

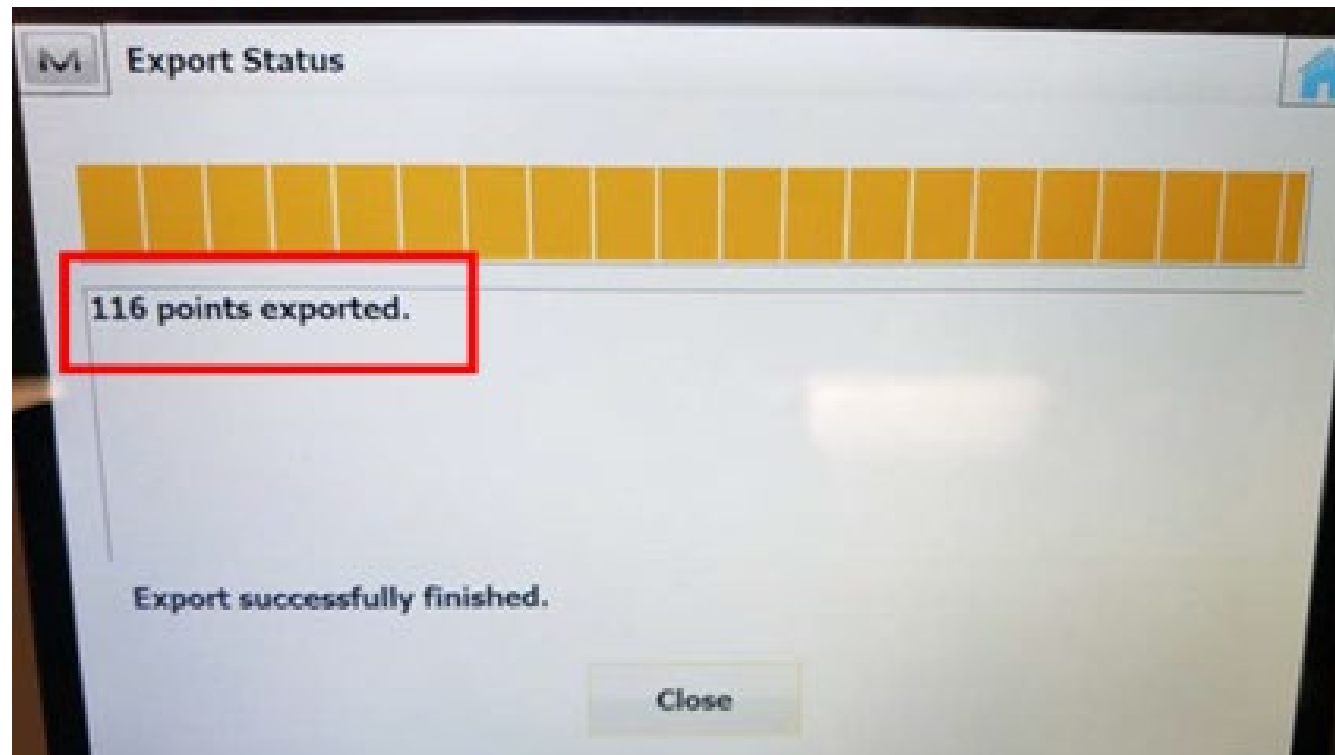


The image shows a software dialog box titled "Coordinate System". It contains several configuration options:

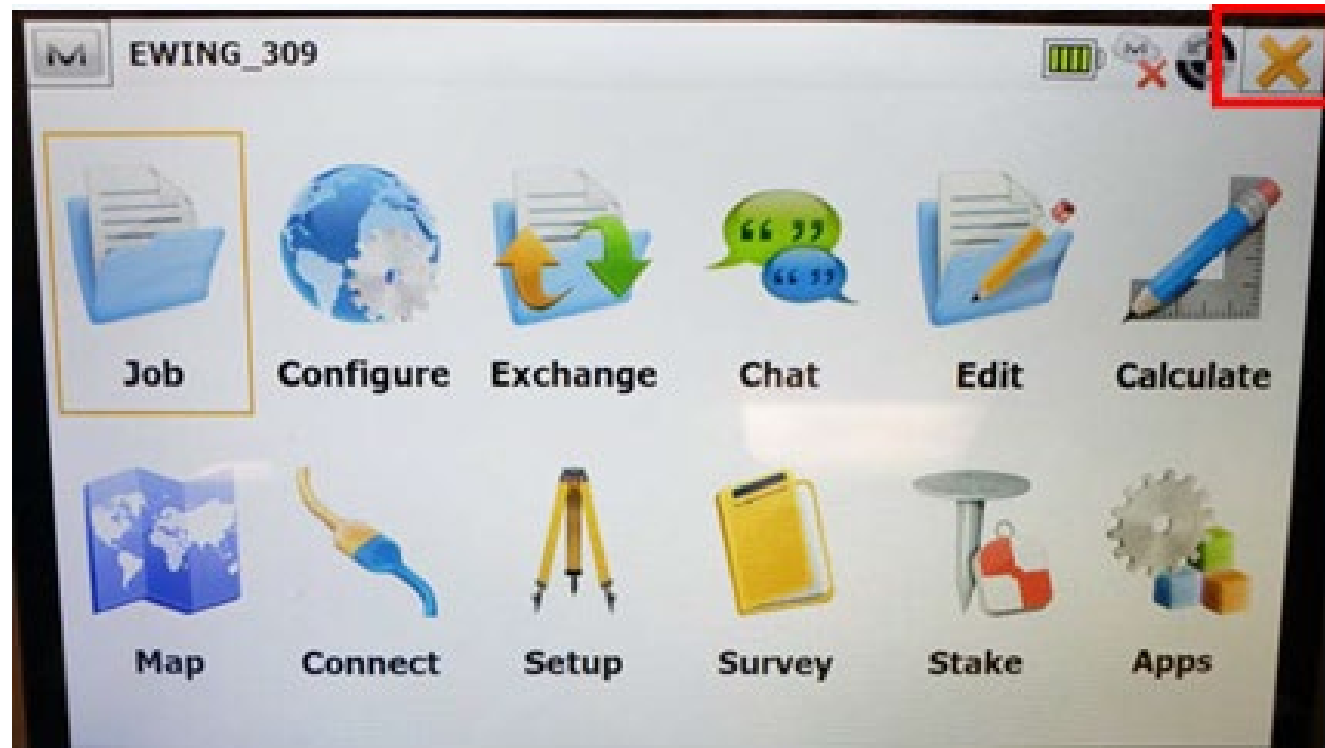
- Projection:** SPC83-Maryland
- Use Grid/Ground**
- Datum:** NAD83(2011)
- Geoid Model:** g2012au8
- Coord Type:** Grid (highlighted with a red box)

At the bottom of the dialog are two buttons: "<< Back" and "Next >>". In the top right corner, there are two icons: a green checkmark and a red X.

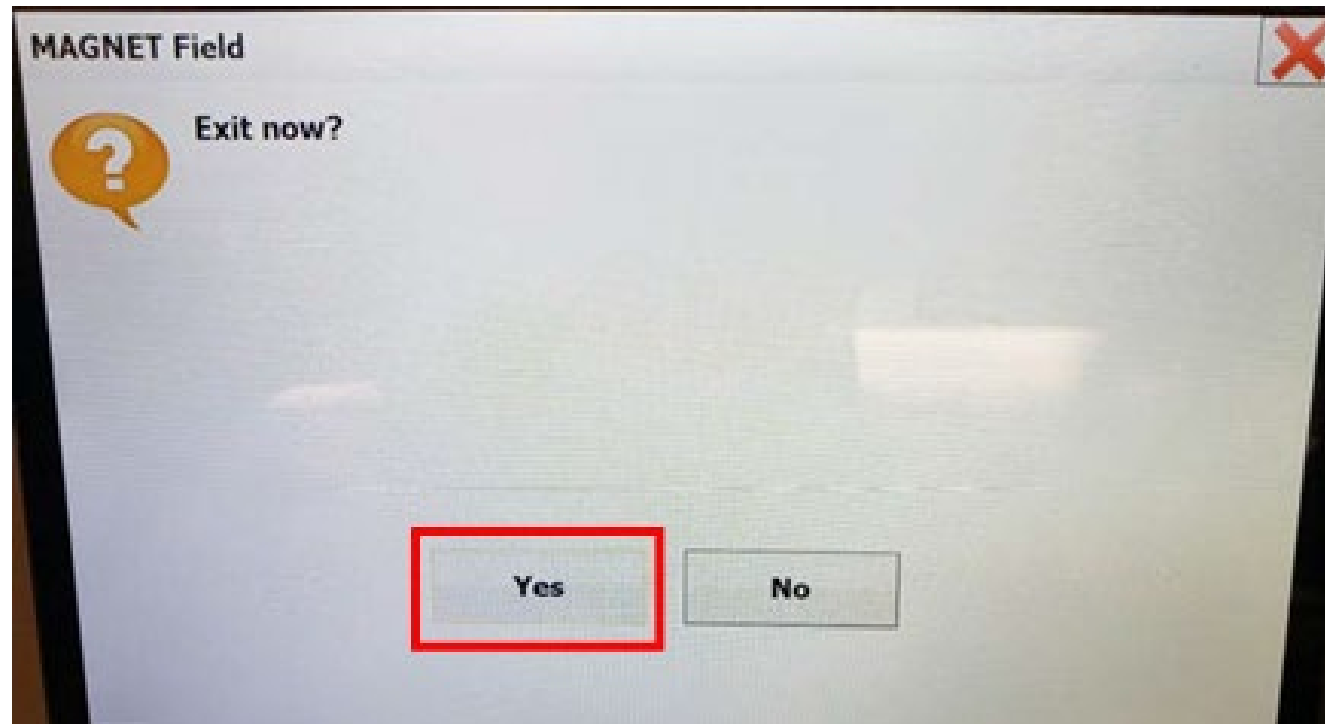
If the export was done correctly it will show you how many points were exported
Click **CLOSE**



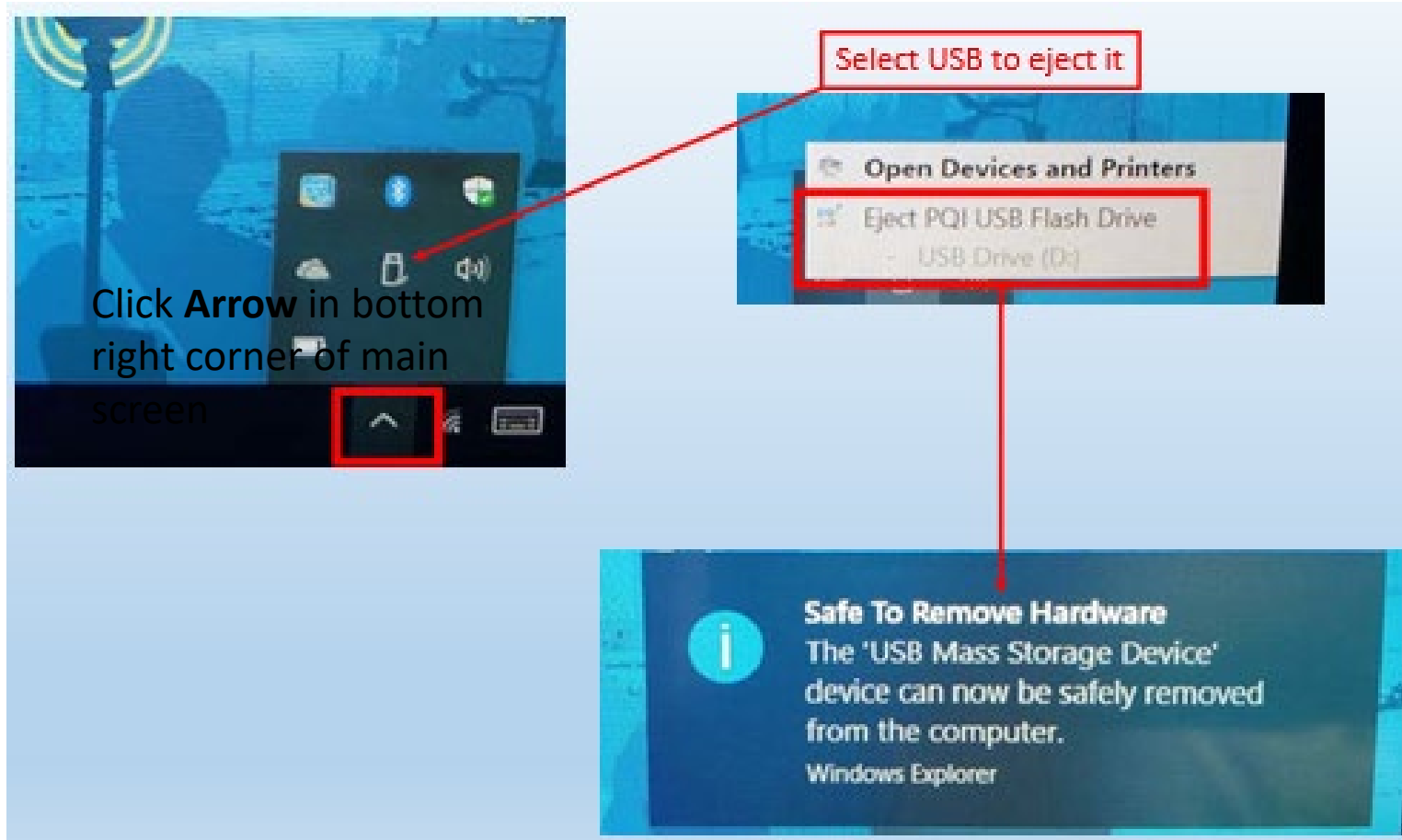
Close **MAGNET**



Click **YES**



Now you can go and save the text file into your working folder.
Just make sure when saving it that you select **PNEZD format** (make sure that this is the same format that you exported in the data collector)

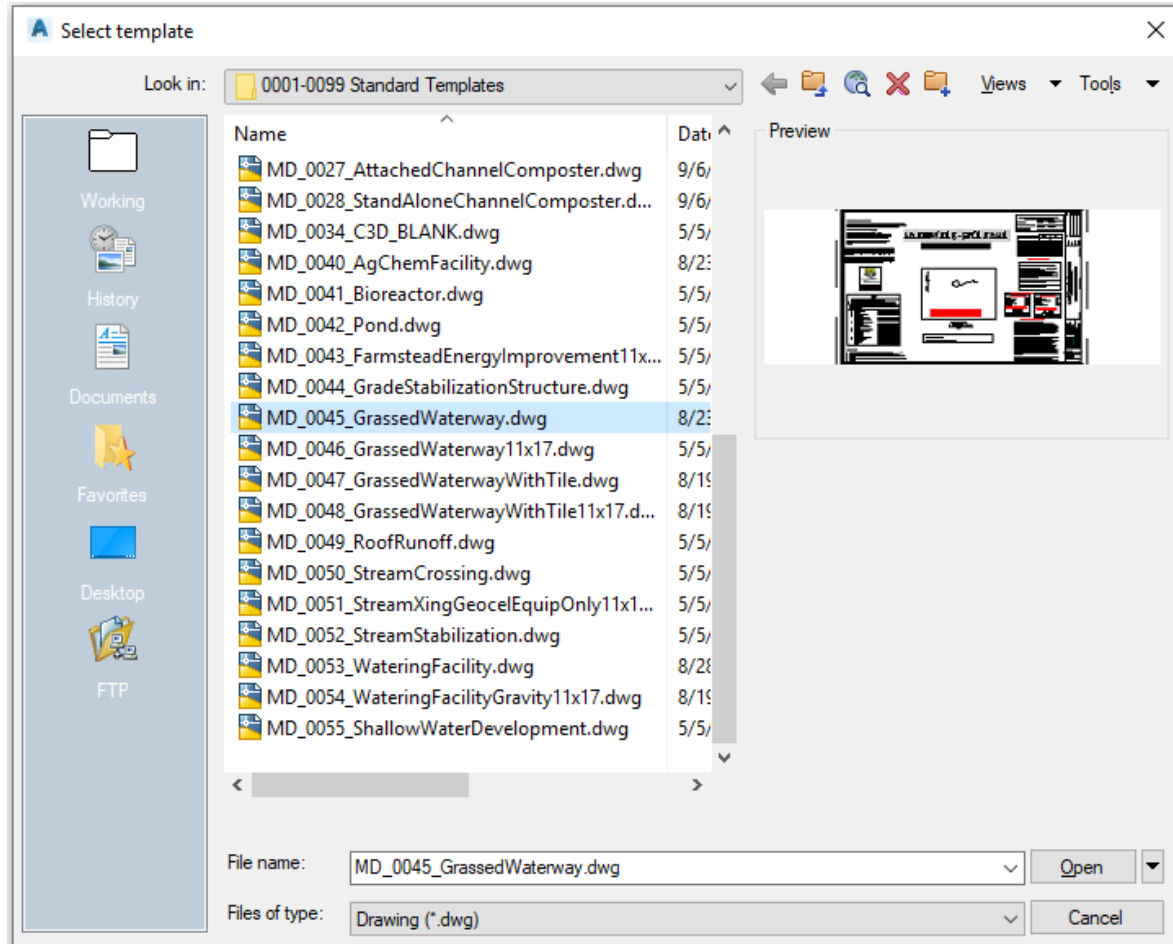
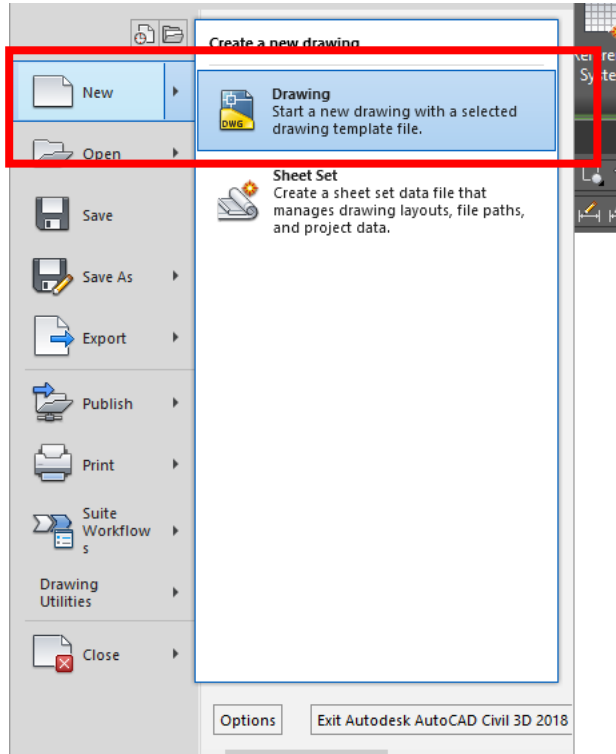


Uploading Points into Civil 3D 2018

Open Civil 3D 2018

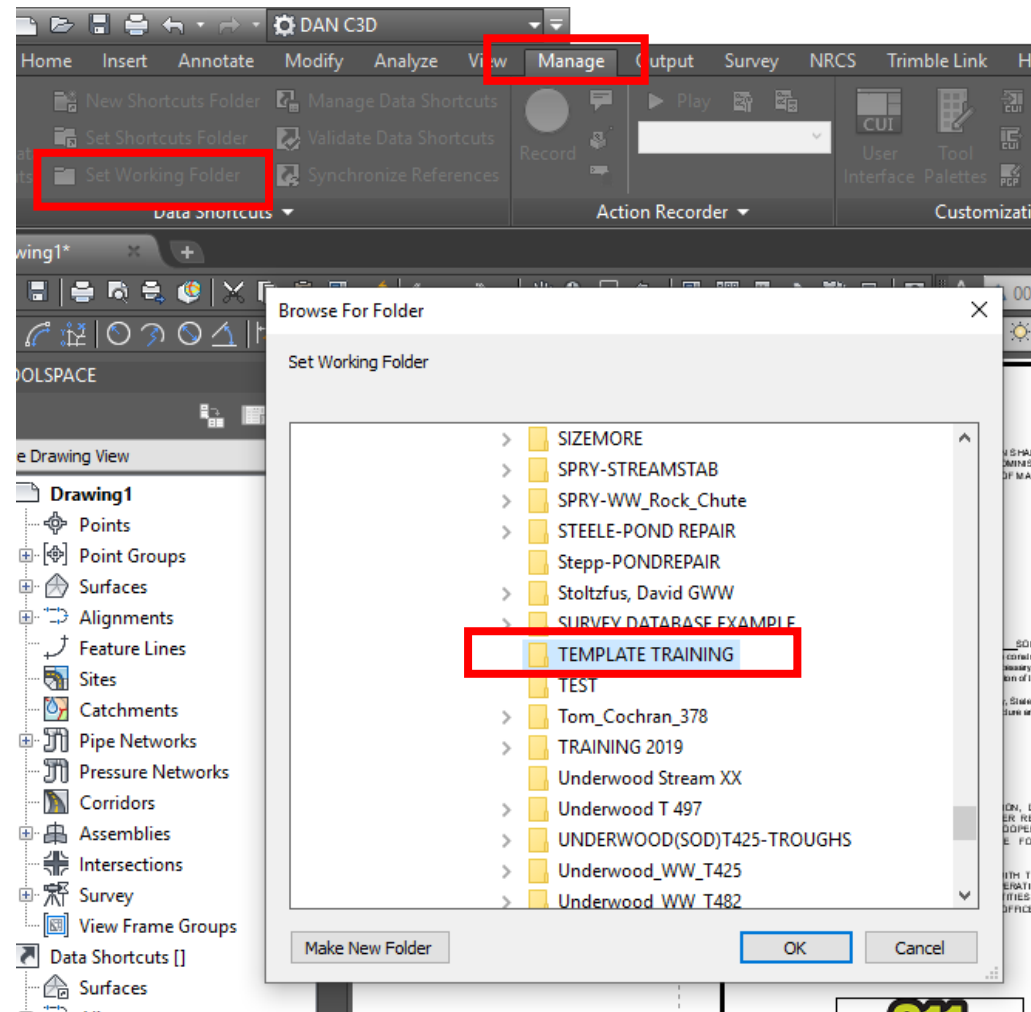
Select the template that you will be using

New>Drawing>Select the template you will be using



Select your working folder

Manage>Select Working Folder.....Select the Design Folder you are working in...Click OK



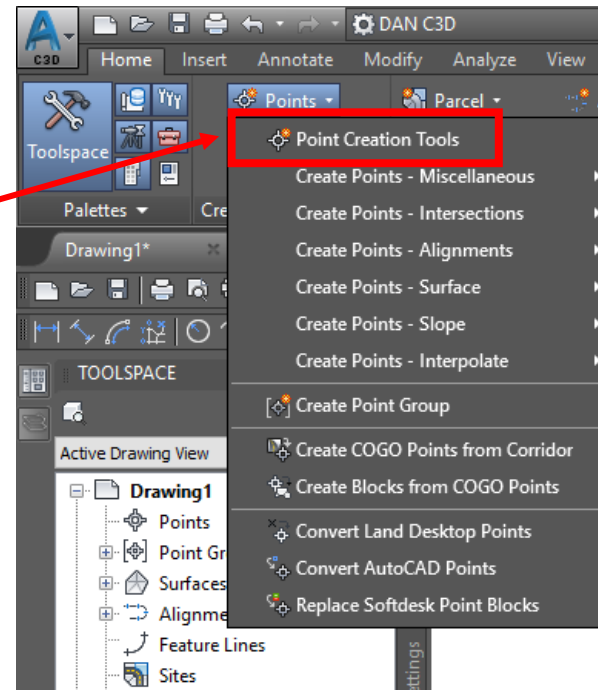
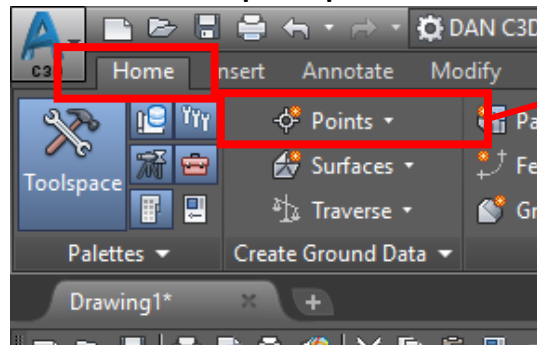
Points are basic building blocks in AutoCAD Civil 3D.

Points are numbered and named uniquely. Each point has properties that can include information such as northing, easting, elevation, and description. A point that is displayed in a drawing can have additional properties that control its appearance, such as a point style, a point label style, and a layer.

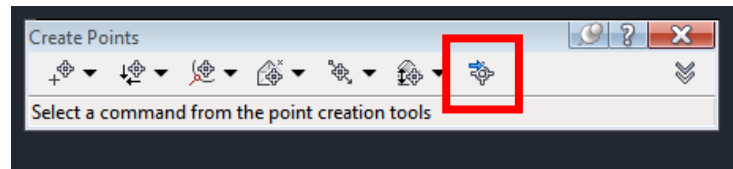
To Add the points into your drawing:

Home Tab>Points drop down>Point Creation Tools

Command Line....Importpoints

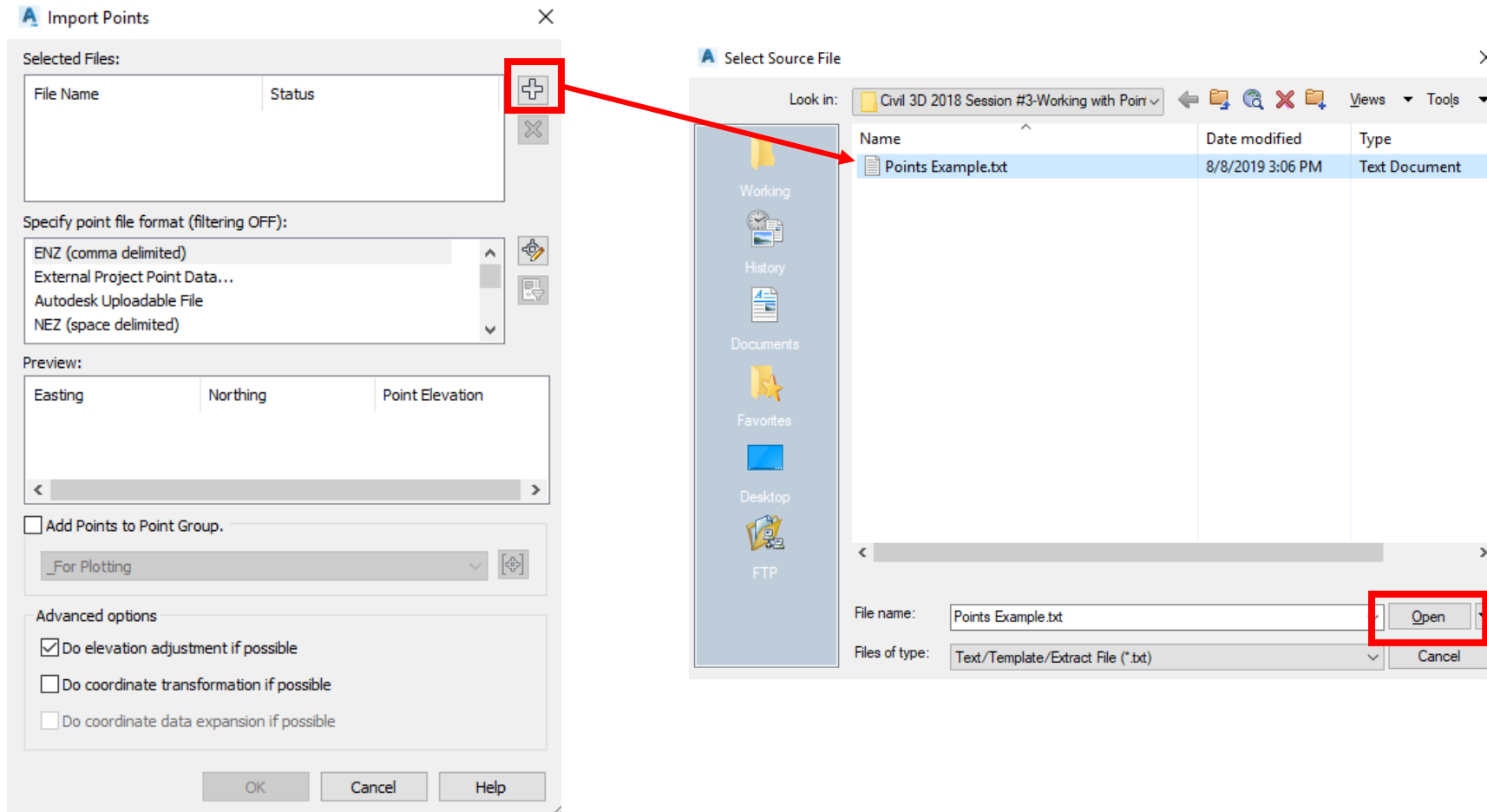


Click the Import Points Icon



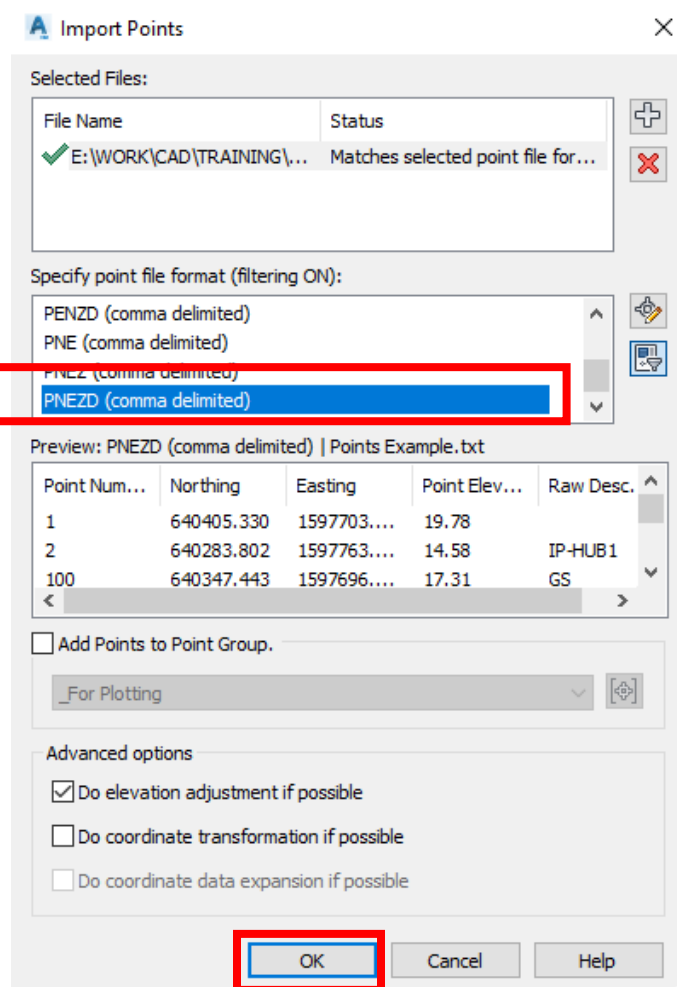
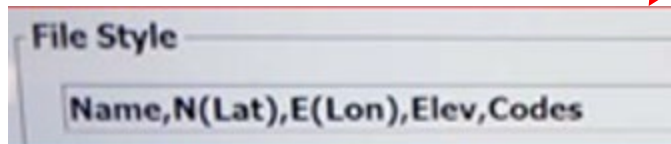
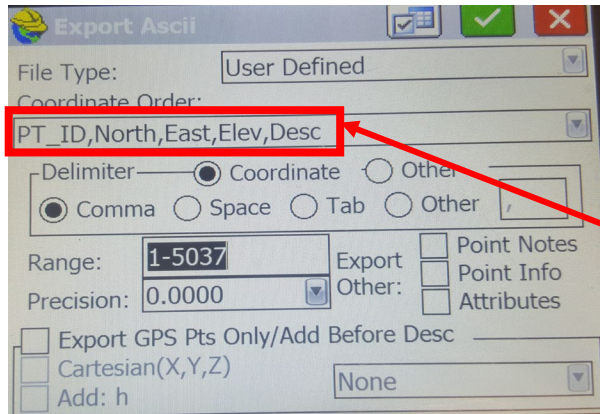
Click the “Plus” sign to add your point file (this is the Ascii/text file that you made)

Click Open



Specify point file format – **PNEZD** (this is the format that was made when creating the Ascii/text file on the data collector and should match)

Click **OK**

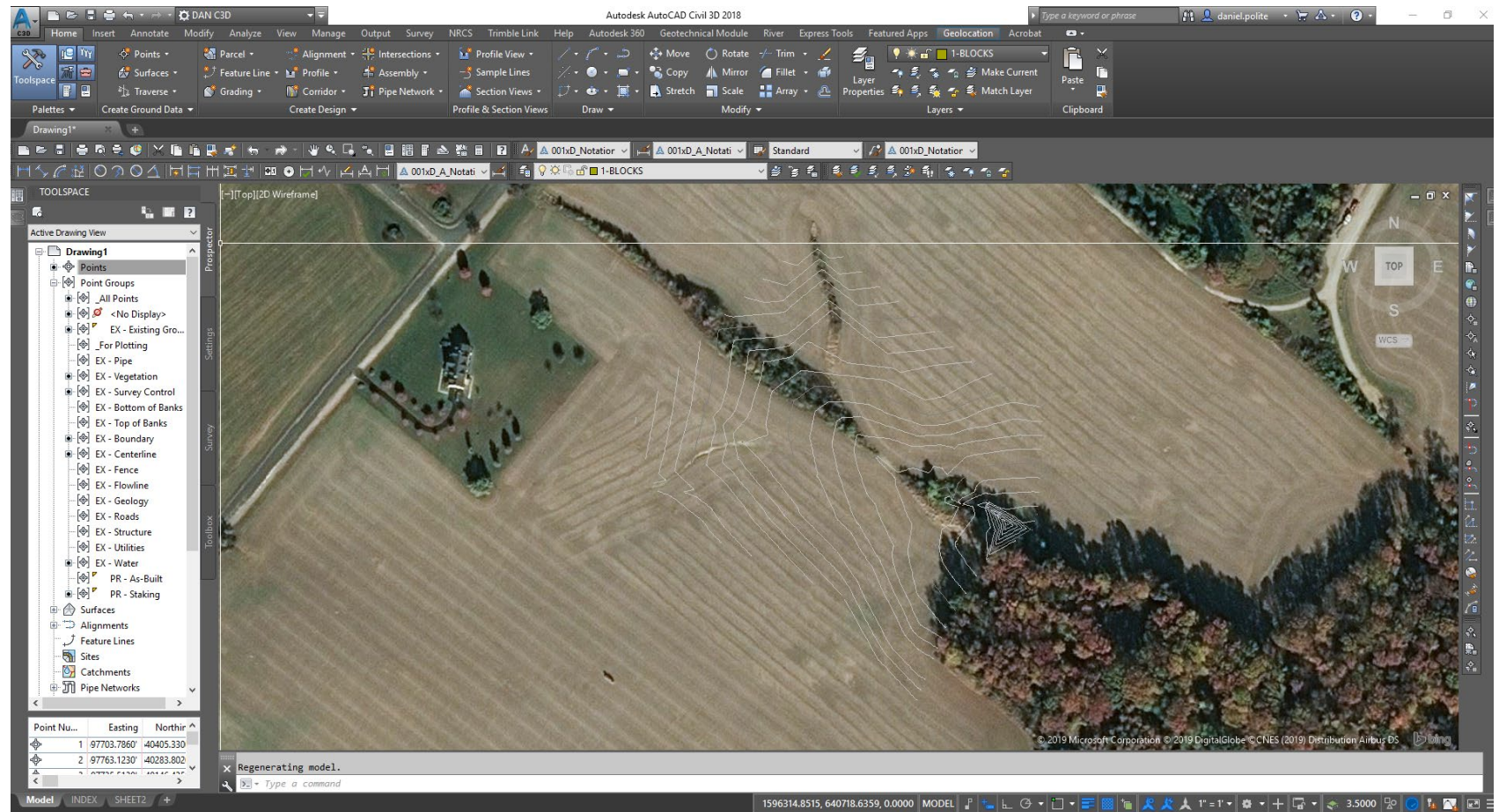
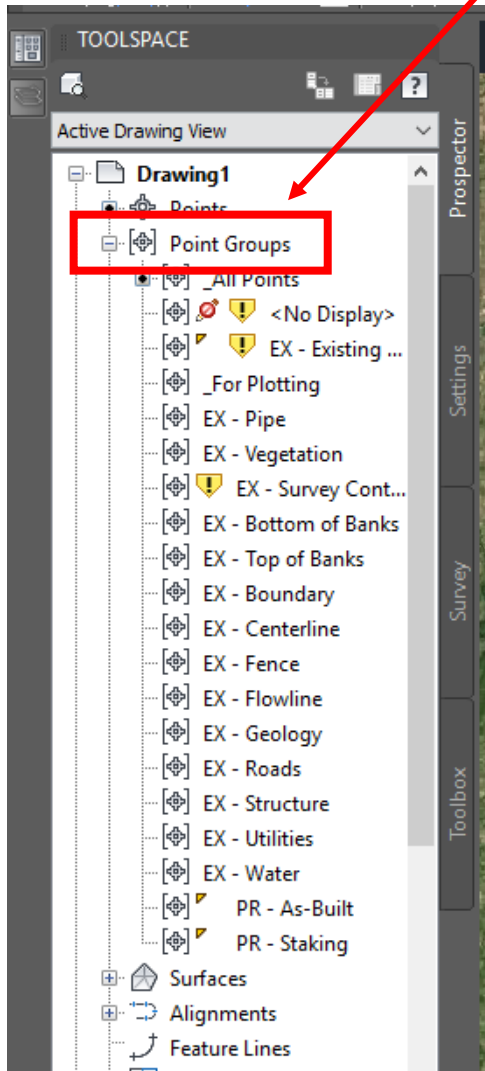


Once you click OK...You must next goto the PROSPECTOR Tab on the TOOLSPACE

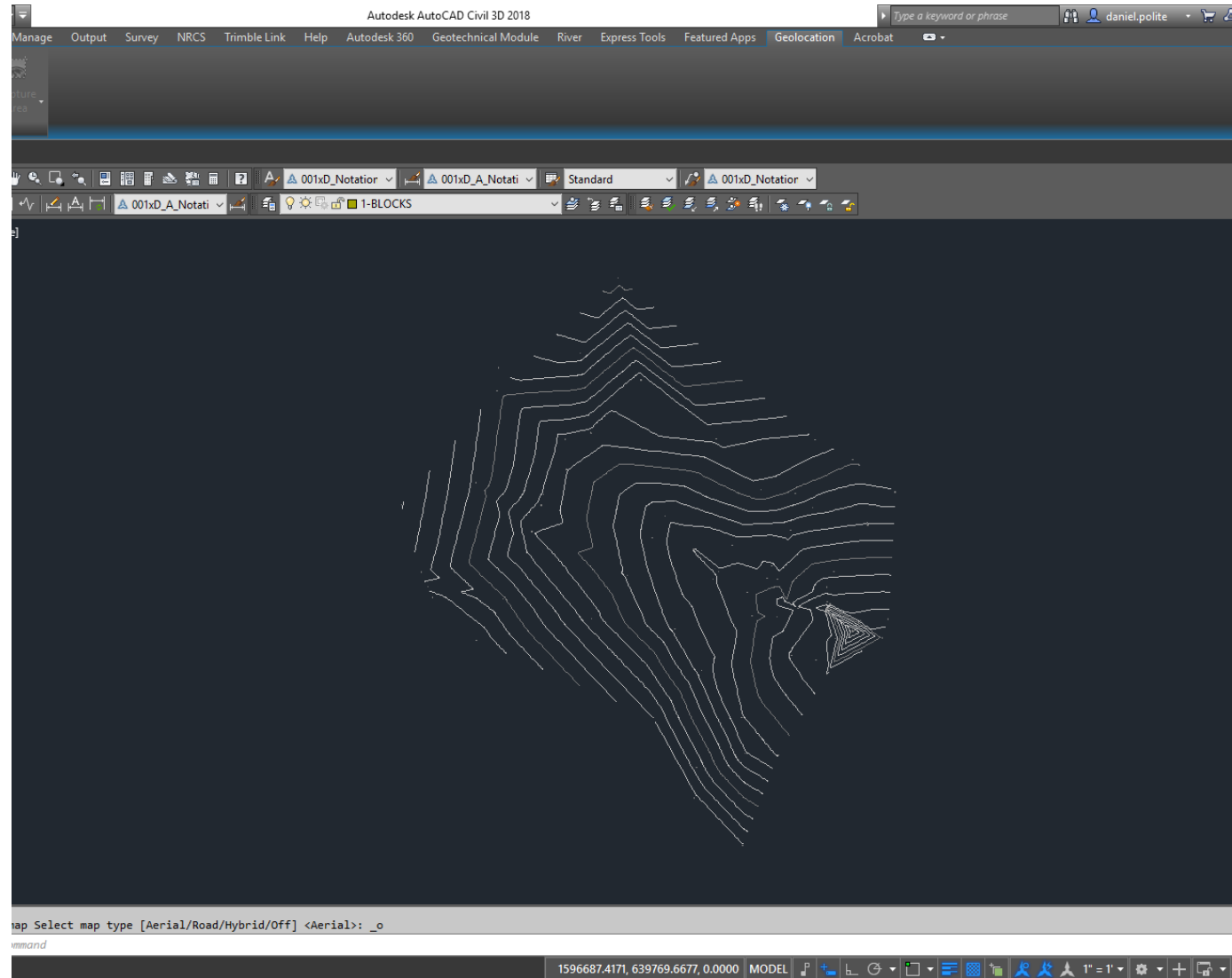
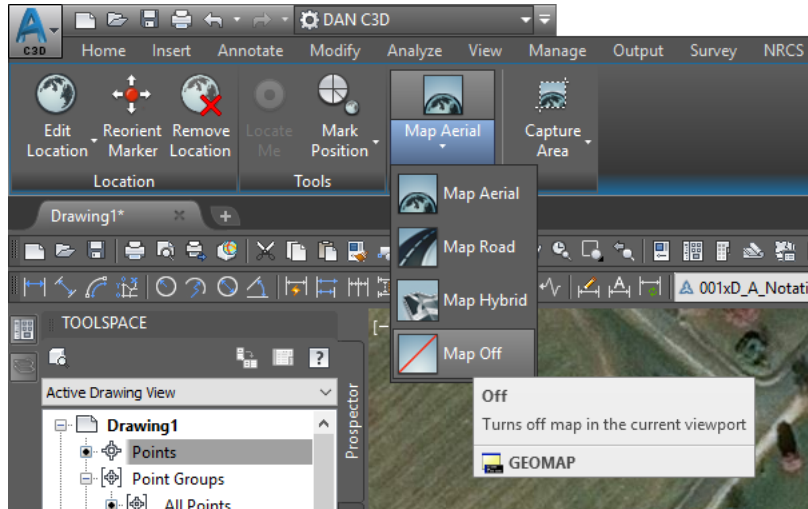
Right Click on Point Groups>Update

Once the '!' goes away your points will now be displayed. If you still don't see them in the window

Right click on Points>Zoom to

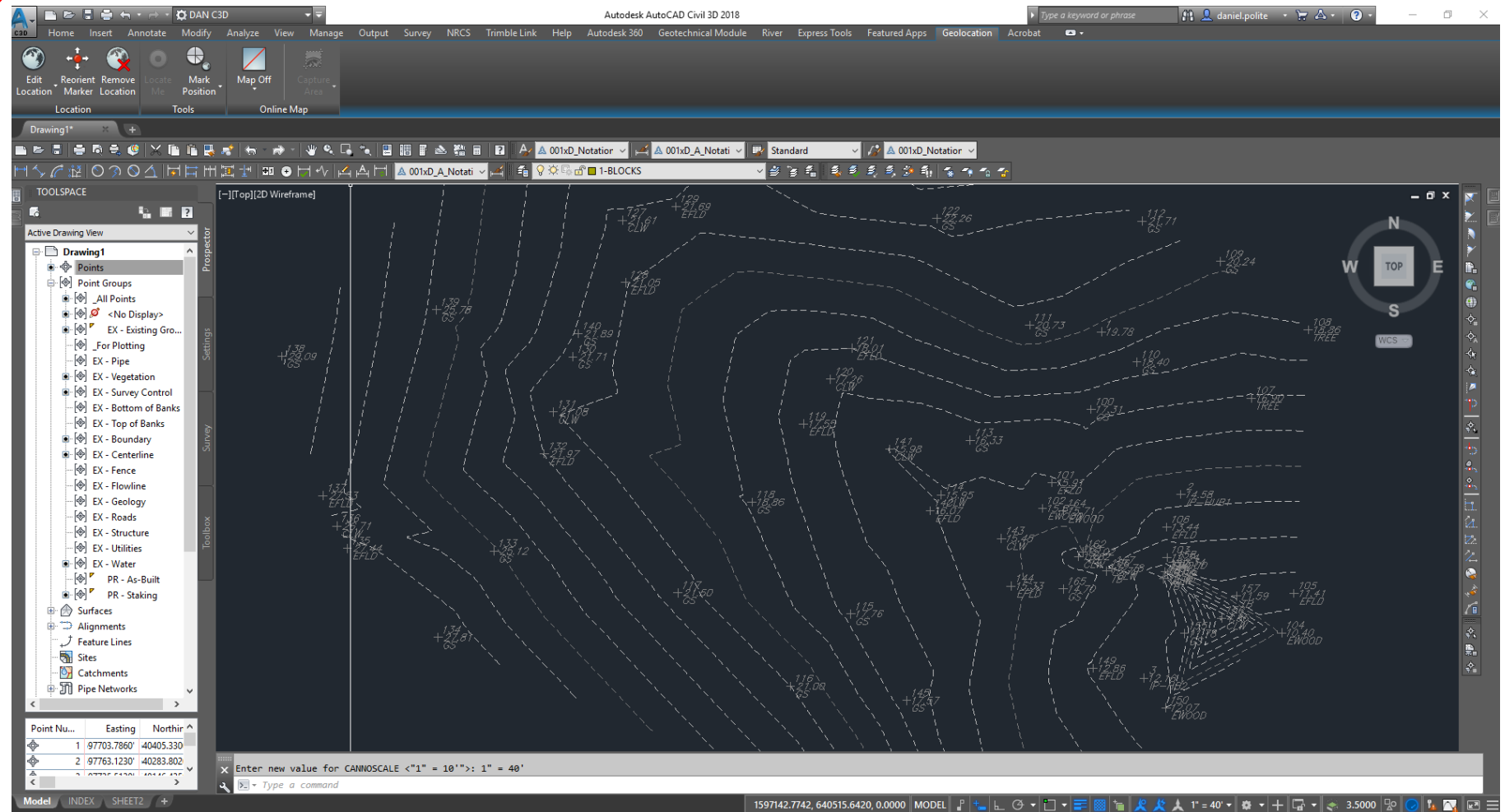
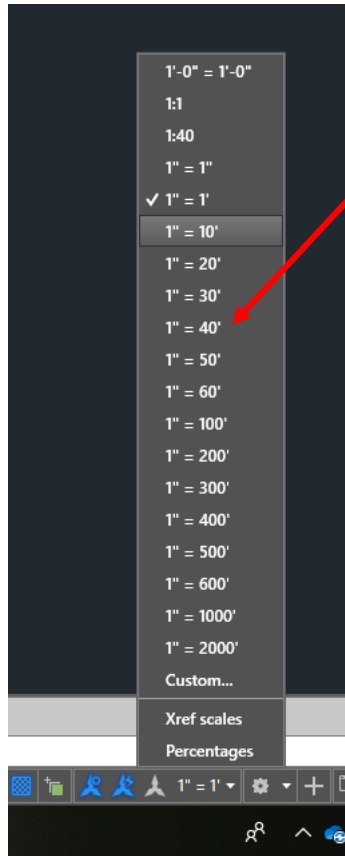


To turn off the image>Geolocation>Map Aerial>Map Off



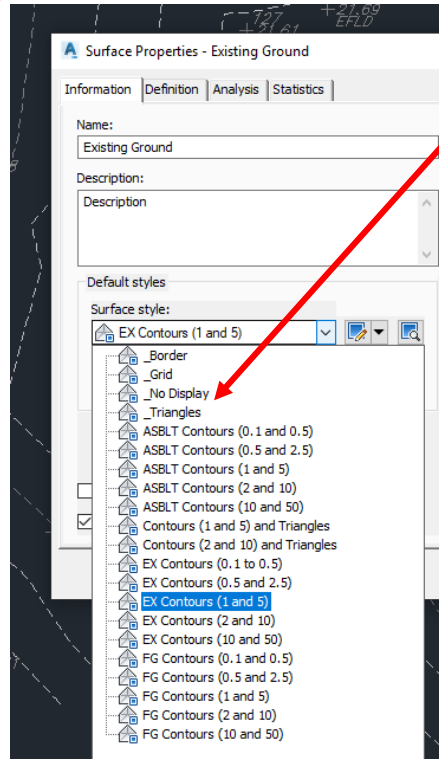
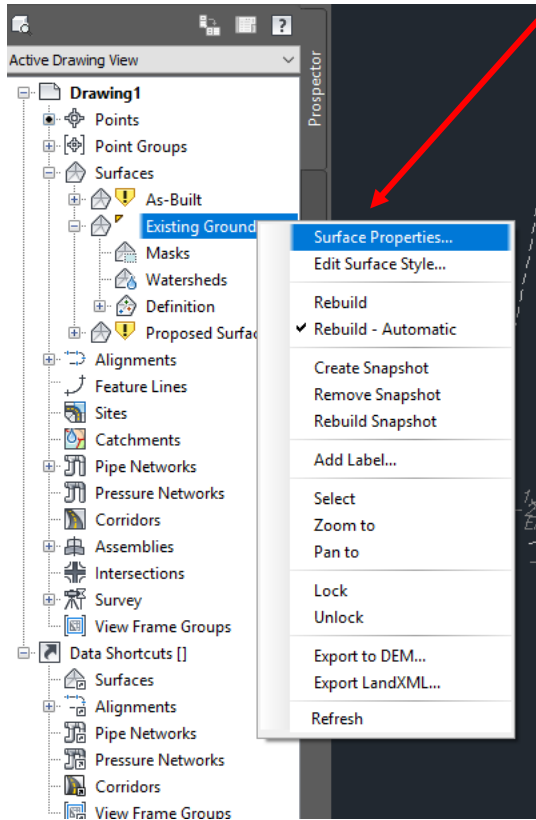
To show the text to a size that you can read (default is 1" = 1')

Select 1" = 40' to start out for the scale. You may adjust this at anytime

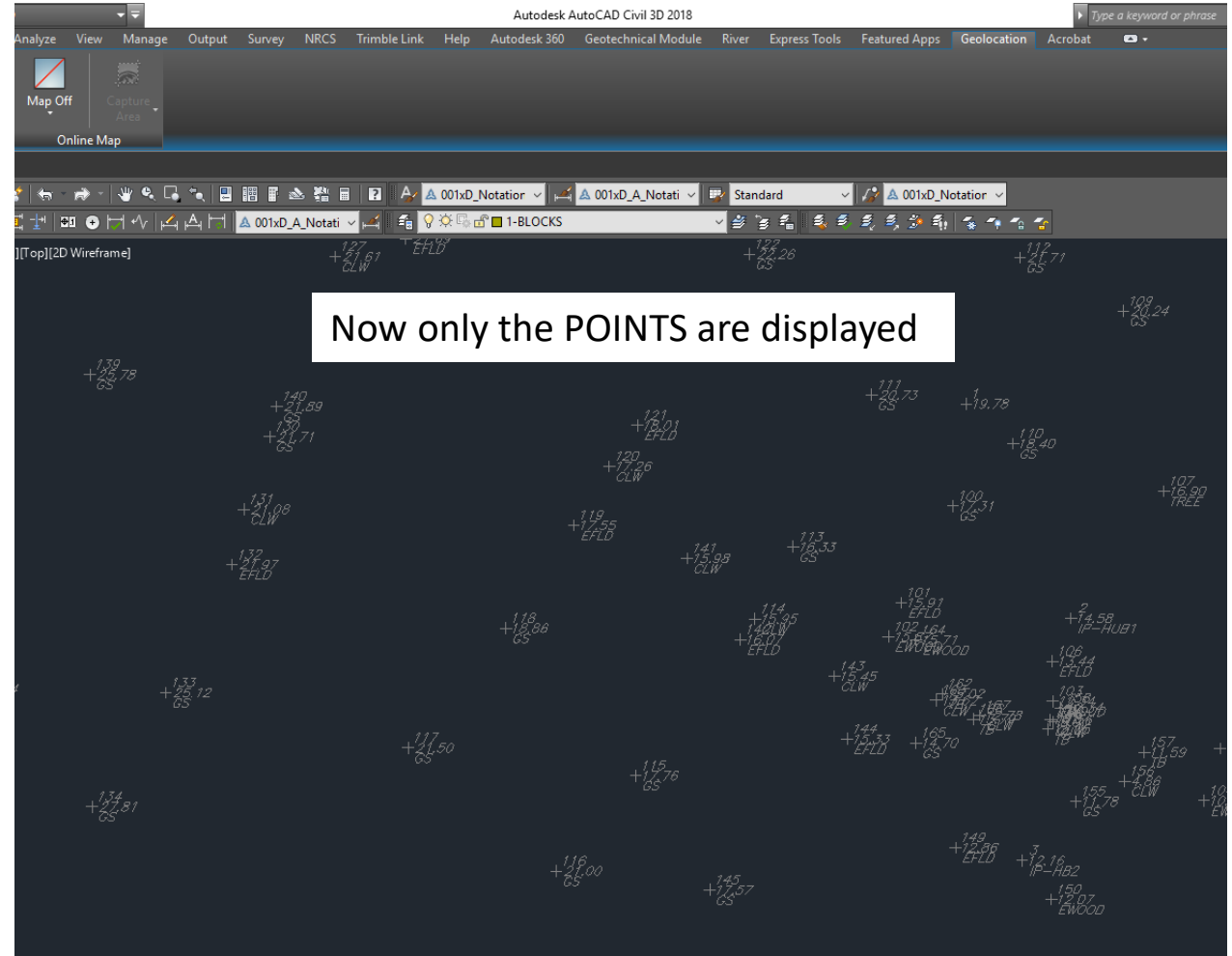


To remove Existing Ground surface display.

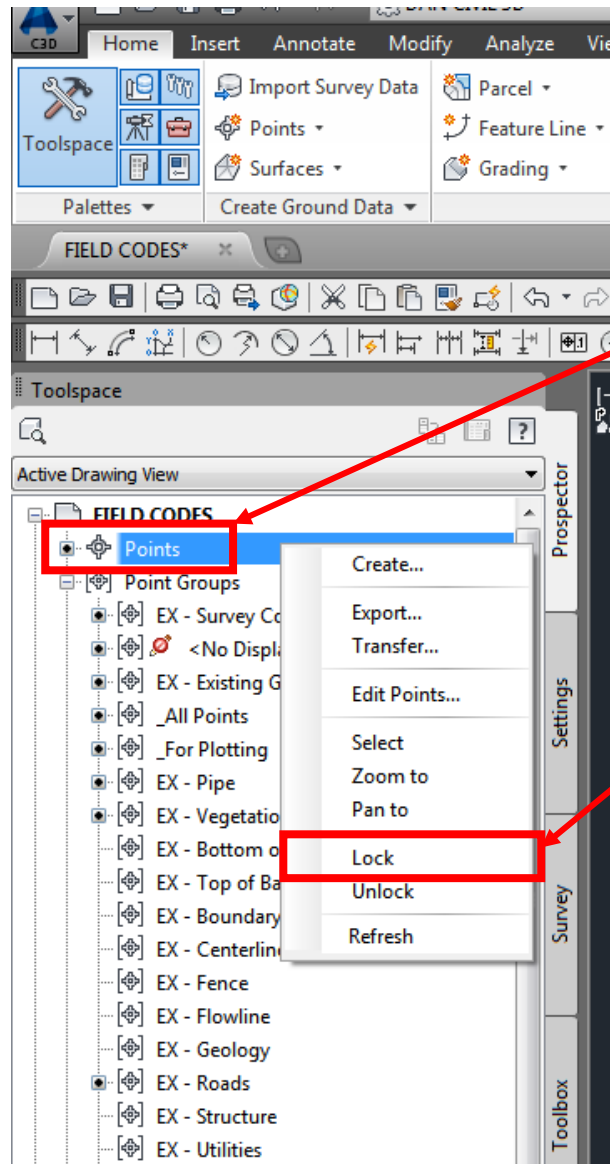
Right click on Existing Ground Surface>Surface Properties



Select the Surface Style as “_No Display”

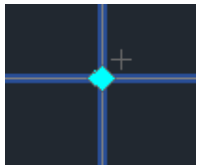
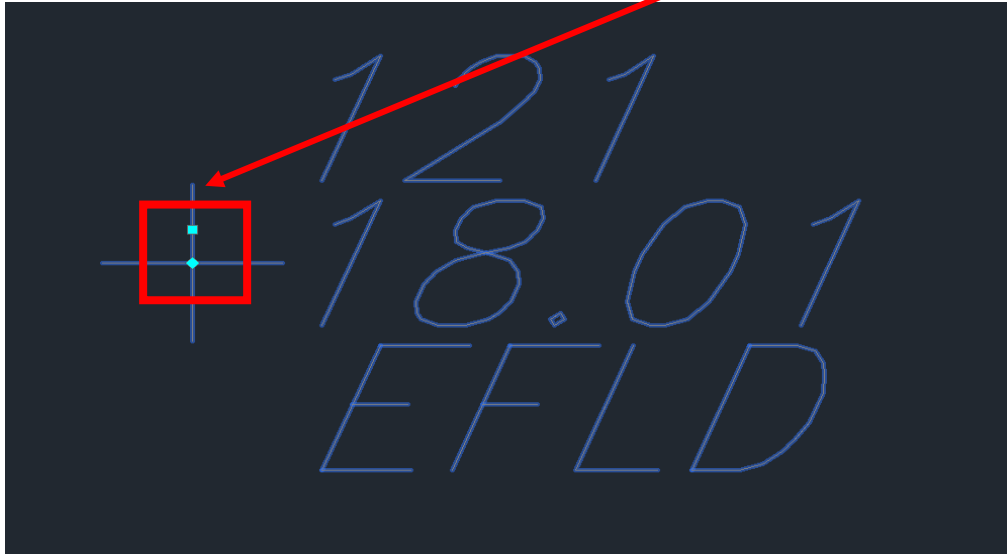


Once your points are in your drawing, I would recommend to **LOCK** the points



Right click on Point ...Select **Lock**

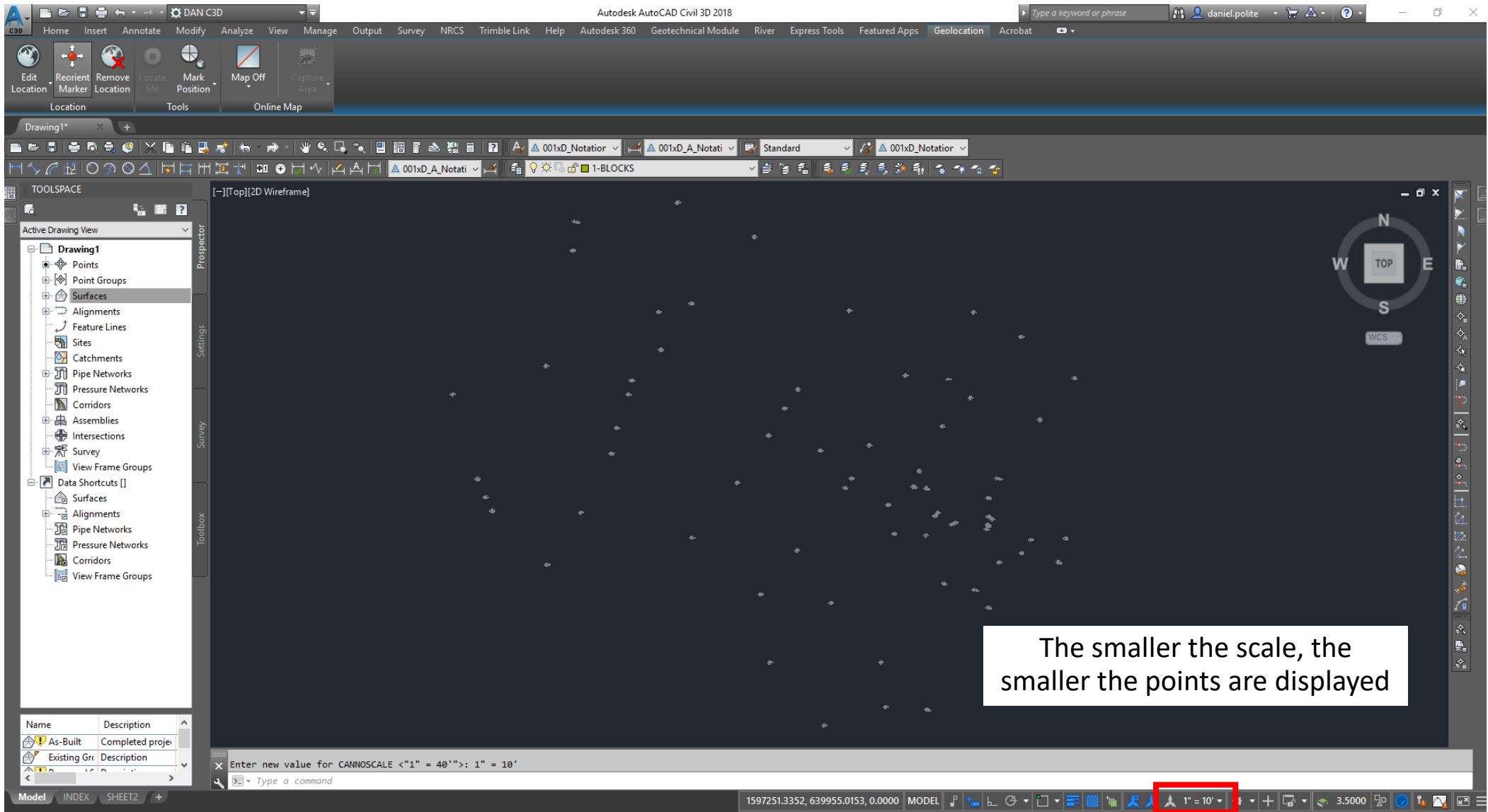
When you select a point, you will see 2 nodes displayed



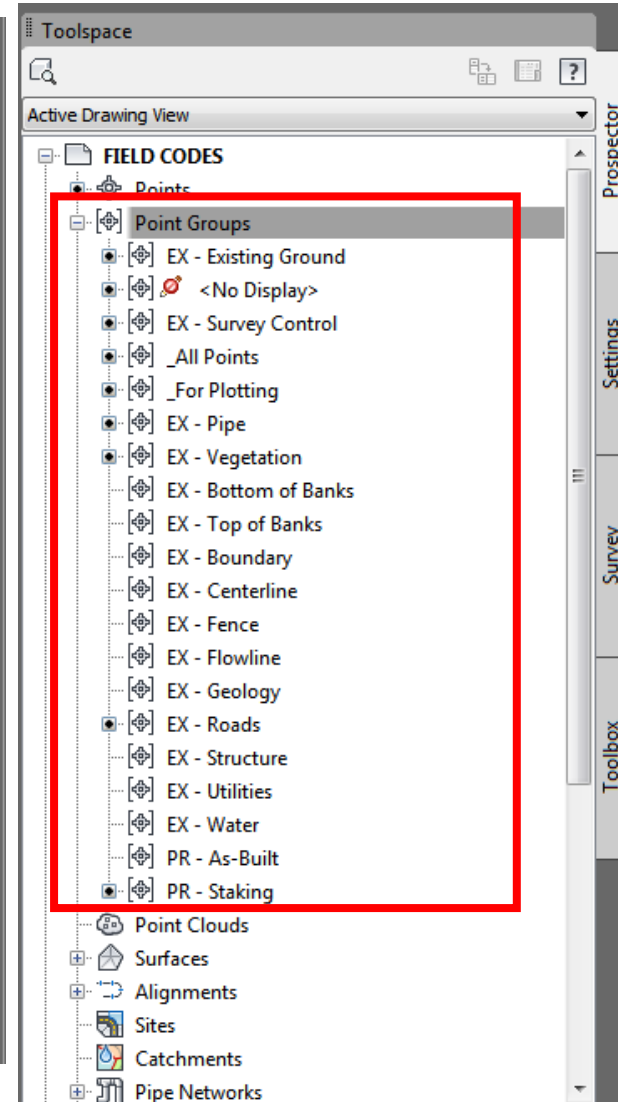
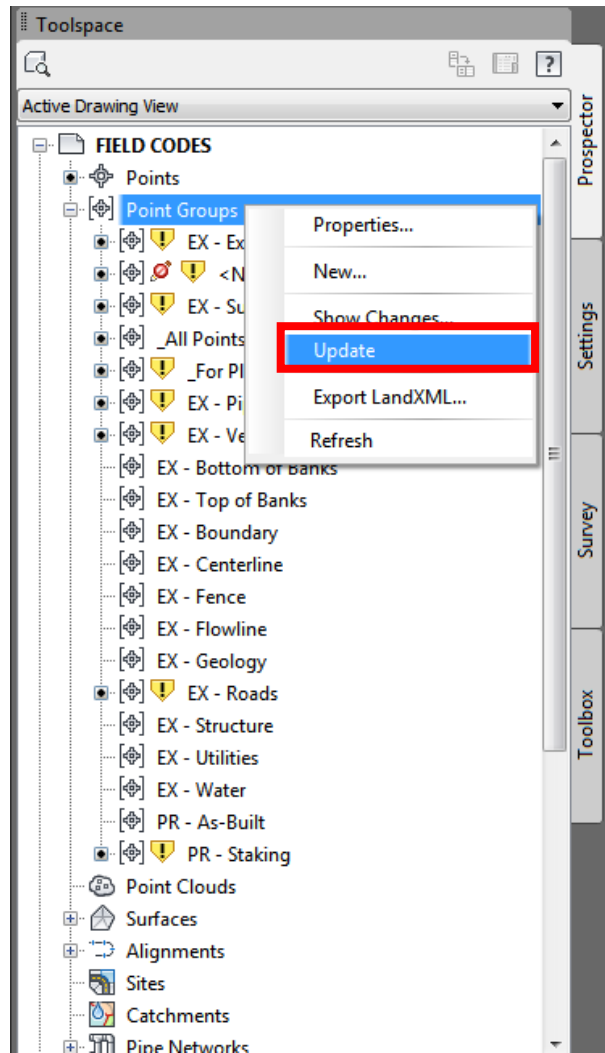
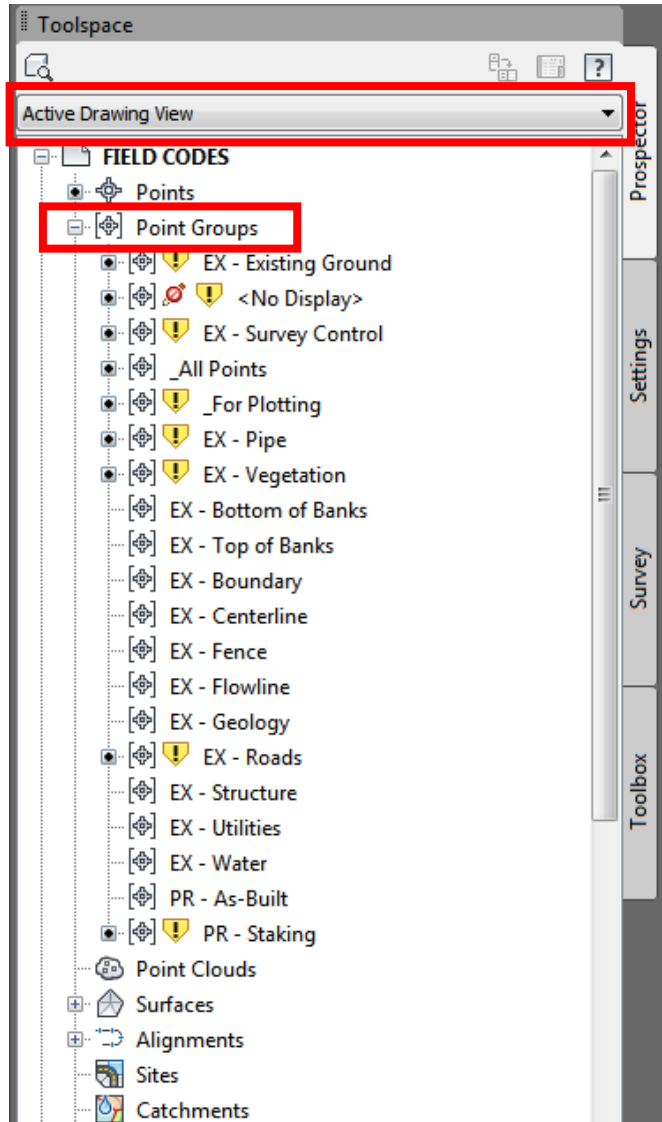
This node will move the point (this is why it's recommended to lock your points first....just in case you move the point accidentally)



This node will allow you to place a leader to the actual point



Anytime you make changes to the surface and or points, you must make sure you are in **Active Drawing View** Go into **TOOLSPACE**...Expand **Point Groups**...Right Click **Update**





Use the Prospector context menus or the List Points command to open the Point Editor.

The points that are displayed when you open the Point Editor are determined by the item or items that are selected before you display the context menu. You can edit either all the points in a drawing, all the points in a point group, or selected points in a list view or drawing.

Each row in the Point Editor Vista displays the properties for a single point. To edit, click a cell and enter new values.

To open the **Point Editor**

In Toolspace, on the Prospector tab, do one of the following:


To include all the points in a drawing in the Point Editor, right-click the Points collection Edit Points or click Points menu List Points.

To include all the points in a point group in the Point Editor, right-click the point group.

To include selected points, click the Points collection. Select the points in the list view and right-click.

To include selected points in a drawing, select the points and right-click.

Click Edit Points on the context menu.



The Point Editor is opened. If you cannot see the Point Editor, click at the top of the Prospector tab to display the Panorama window.

Use the Point Editor to edit or view the points.

Ribbon

Click COGO Point tab Modify panel Edit/List Points

Menu

Click Points menu Edit Points Points.

Toolspace Context Menu

Prospector tab: right-click Points collection Edit Points

OR

Prospector tab: Points collection right-click points in List View Edit Points

Object Context menu

Edit Points

Dialog Box

Point Editor

C3D2018 Training

TOOLSSPACE

Active Drawing View

- [☒] _All Points
- [☒] <No Display>
- [☒] EX - Existing Ground
- [☒] _For Plotting
- [☒] EX - Pipe
- [☒] EX - Vegetation
- [☒] **EX - Survey Control**
- [☒] EX - Bottom of Banks
- [☒] EX - Top of Banks
- [☒] EX - Boundary

Point Nu...	Easting	Northing	Point Elevati...	Name	Raw Descripti.	Full Descript...	Description l
1	97703.7860'	40405.3300'	19.780'				
2	97763.1230'	40283.8020'	14.580'	IP-HUB1		IP-HUB1	
3	97735.5130'	40146.4350'	12.160'	IP-HB2		IP-HB2	
4	97241.9990'	40600.1910'	26.450'	IP-HUB3		IP-HUB3	

Click on the Point Groups and you will see a summary below

Summary of the points you have selected above

This shows you the description of what you put in the data collector and then places into the correct point group

Working with Point Groups

Point Group Name

Descriptions of Point Groups

Point Groups [X]

Name	Description
[Icon] _All Points	Use this point group to control which points are displayed. Using point group sort order (right click on Point Groups collection and click Properties), position this point group relative to the point cloud.
[Icon] <No Display >	Point group used to develop the Existing Ground surface. Shots that may not have been taken on the ground surface, such as benchmarks, well casings, and shots taken on p...
[Icon] EX - Existing Ground	Displays only point specific symbols for trees, culverts, tile intakes and wells
[Icon] _For Plotting	Pipes, conduit, tile lines and culverts
[Icon] EX - Pipe	Cropping or vegetation changes, edge of woods, tree lines, trees, shrubs, brush and rock piles
[Icon] EX - Vegetation	Permanent and temporary benchmarks, instrument points, turning points, and property or easement pins or markers
[Icon] EX - Survey Control	Bottom of bank lines and slopes
[Icon] EX - Bottom of Banks	Top of bank lines and slopes
[Icon] EX - Top of Banks	Estimated property lines and easement lines, right of way, and edges of fields and wetlands.
[Icon] EX - Boundary	Centerlines of structures and features such as roads
[Icon] EX - Centerline	Fence lines, gates and fence corners
[Icon] EX - Fence	Flowlines of pipes, conduits and tile lines
[Icon] EX - Flowline	Geology bore hole locations
[Icon] EX - Geology	Edge and centerline of roadways and railroads
[Icon] EX - Roads	Buildings, concrete, bituminous pavement, dams, wells, walls, and other structures
[Icon] EX - Structure	Buried and above ground utilities
[Icon] EX - Utilities	Centerline of waterways, draws and ditches, water lines, water surfaces, and ground shots in water
[Icon] EX - Water	As-built survey points on constructed structures
[Icon] PR - As-Built	Point group that can be used to export to a data collector for stakeout
[Icon] PR - Staking	

< [Progress Bar] >

OK Cancel **Apply** Help

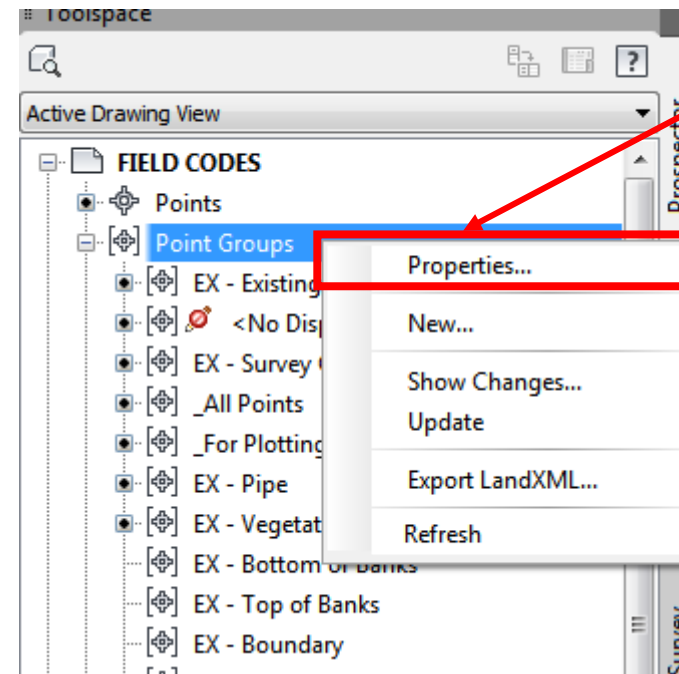
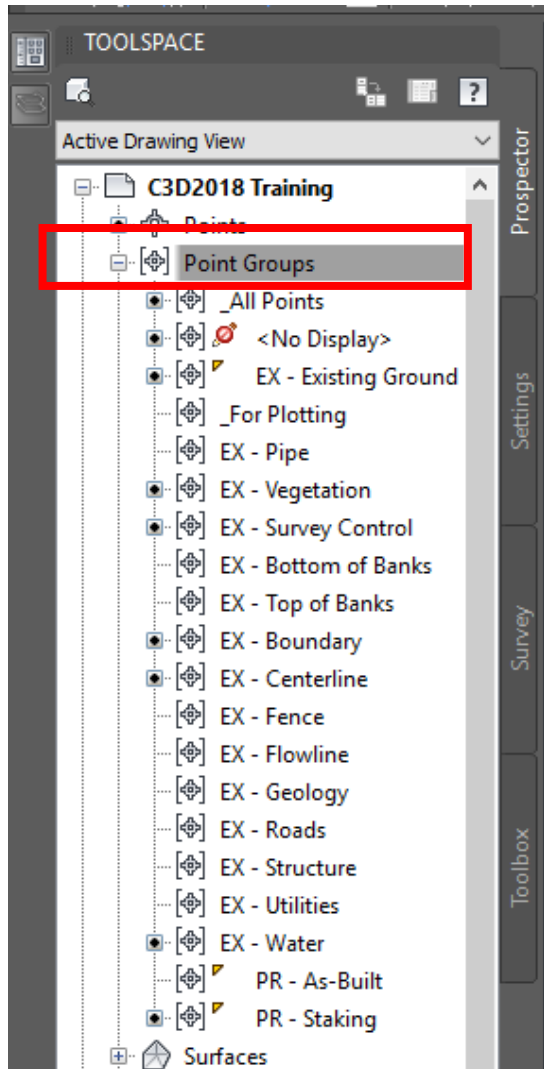
POINT GROUP DISPLAY ORDER

The point group display order for a drawing determines the order in which the point groups are drawn when a drawing is opened or graphics are regenerated. The first (highest) point group in the list is drawn last.

A point is drawn only once each time drawing graphics are regenerated. A point that belongs to more than one point group is drawn by the point group that is highest in the display order, and it is unaffected by the point groups that are lower in the display order. This can determine the point style, point label style, and the layer used to display the point.

The point group display order is also used to display override values for elevation and description in labels. If a point belongs to more than one point group, the first point group in the display order that draws the point will determine whether override values are used. If the point group has an override for elevation or description, the label is displayed using the override value. If the point group does not have an override, the label is displayed without the override.

To display a certain point group(s) you must move the point group above the rest of the point groups.



Right click on Point Groups...Select **Properties**

Show Differences

Displays the Point Groups changes dialog box

Updates all point groups

The screenshot shows the 'Point Groups' dialog box with a list of point groups. The '<No Display>' group is highlighted with a green box. A red box highlights the entire list of point groups. Another red box highlights the navigation buttons (up and down arrows) on the right side of the list. Two red arrows point to the 'Show Differences' and 'Updates all point groups' buttons at the top left of the dialog box.

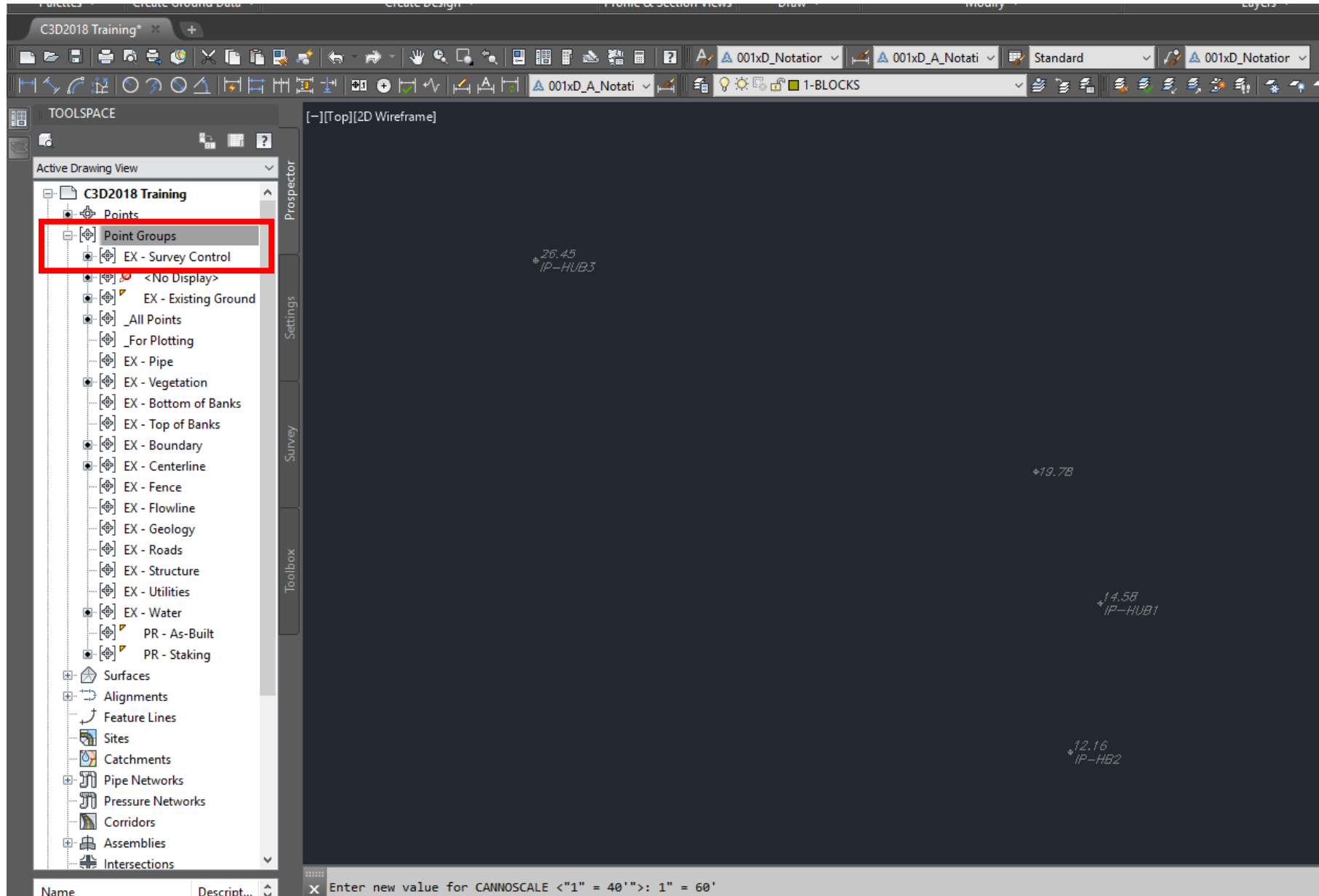
Name	Description
All Points	
<No Display>	Use this point group to con
EX - Existing Ground	Point group used to develo
_For Plotting	Displays only point specific
EX - Pipe	Pipes, conduit, tile lines and
EX - Vegetation	Cropping or vegetation cha
EX - Survey Control	Permanent and temporary
EX - Bottom of Banks	Bottom of bank lines and slc
EX - Top of Banks	Top of bank lines and slope
EX - Boundary	Estimated property lines an
EX - Centerline	Centerlines of structures ar
EX - Fence	Fence lines, gates and fenc
EX - Flowline	Flowlines of pipes, conduits
EX - Geology	Geology bore hole locations
EX - Roads	Edge and centerline of road
EX - Structure	Buildings, concrete, bitumin
EX - Utilities	Buried and above ground u
EX - Water	Centerline of waterways, d
PR - As-Built	As-built survey points on cc
PR - Staking	Point group that can be use

Moves the selected point group up or down in the display order

Point groups you want to display must be above the **<No Display>** point group

Only **Survey Control** Point Group is shown

Please note that **Points Styles** will override when placed above the other groups



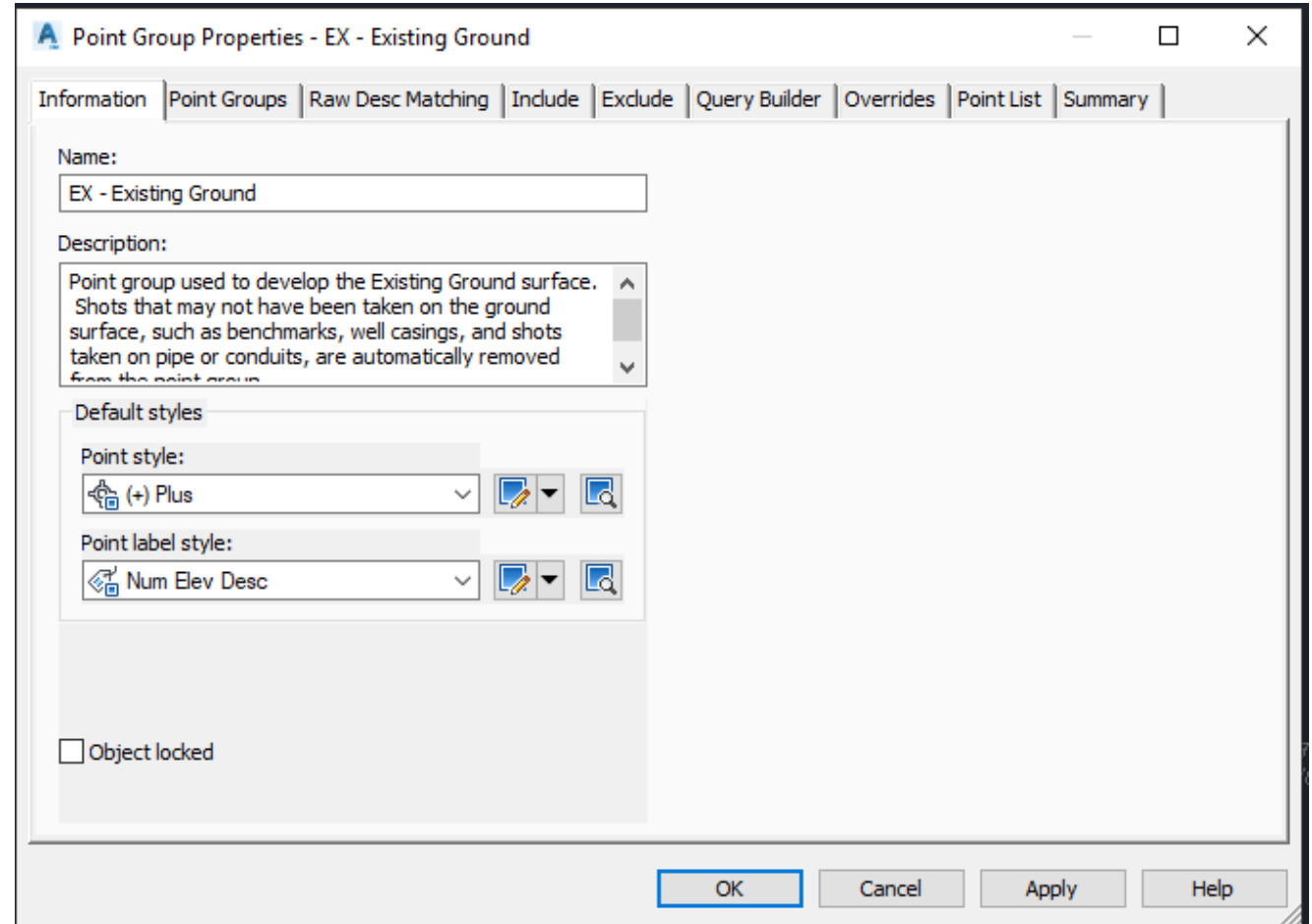
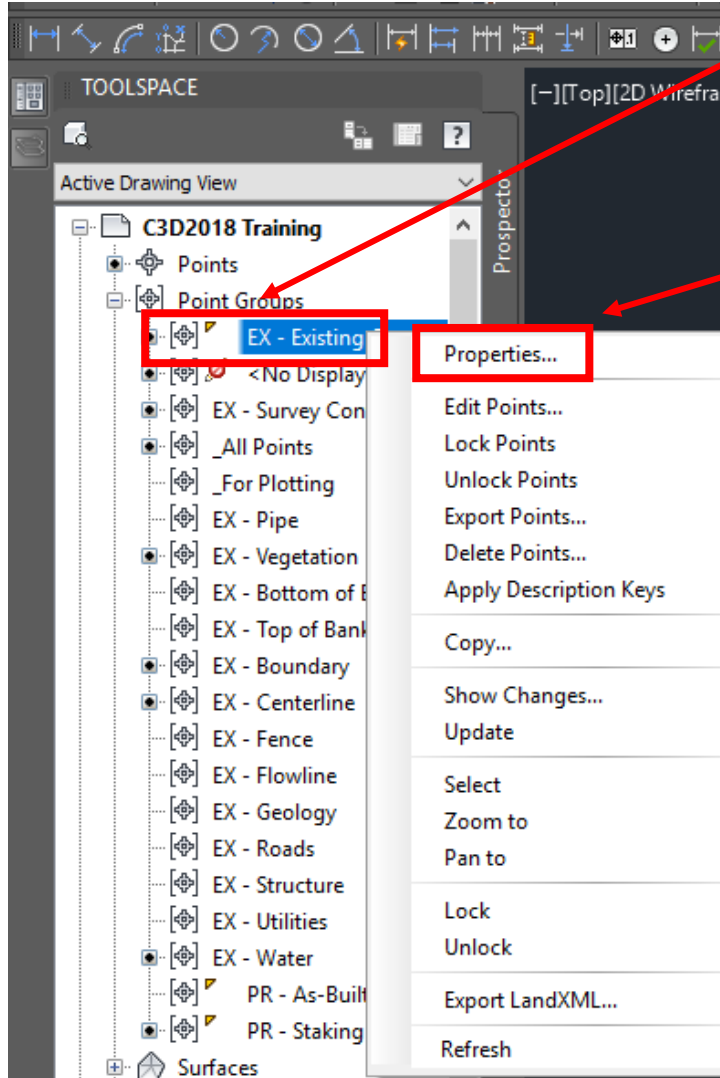
To look and change specific properties with the point group follow these steps:

1

Right click on Point Group you want to look at

2

Click on Properties



Information Tab – General information about the point group

Point Group Properties - EX - Survey Control

Information | Point Groups | Raw Desc Matching | Include | Exclude | Query Builder | Overrides | Point List | Summary

Name:
EX - Survey Control

Description:
Permanent and temporary benchmarks, instrument points, turning points, and property or easement pins or markers

Default styles

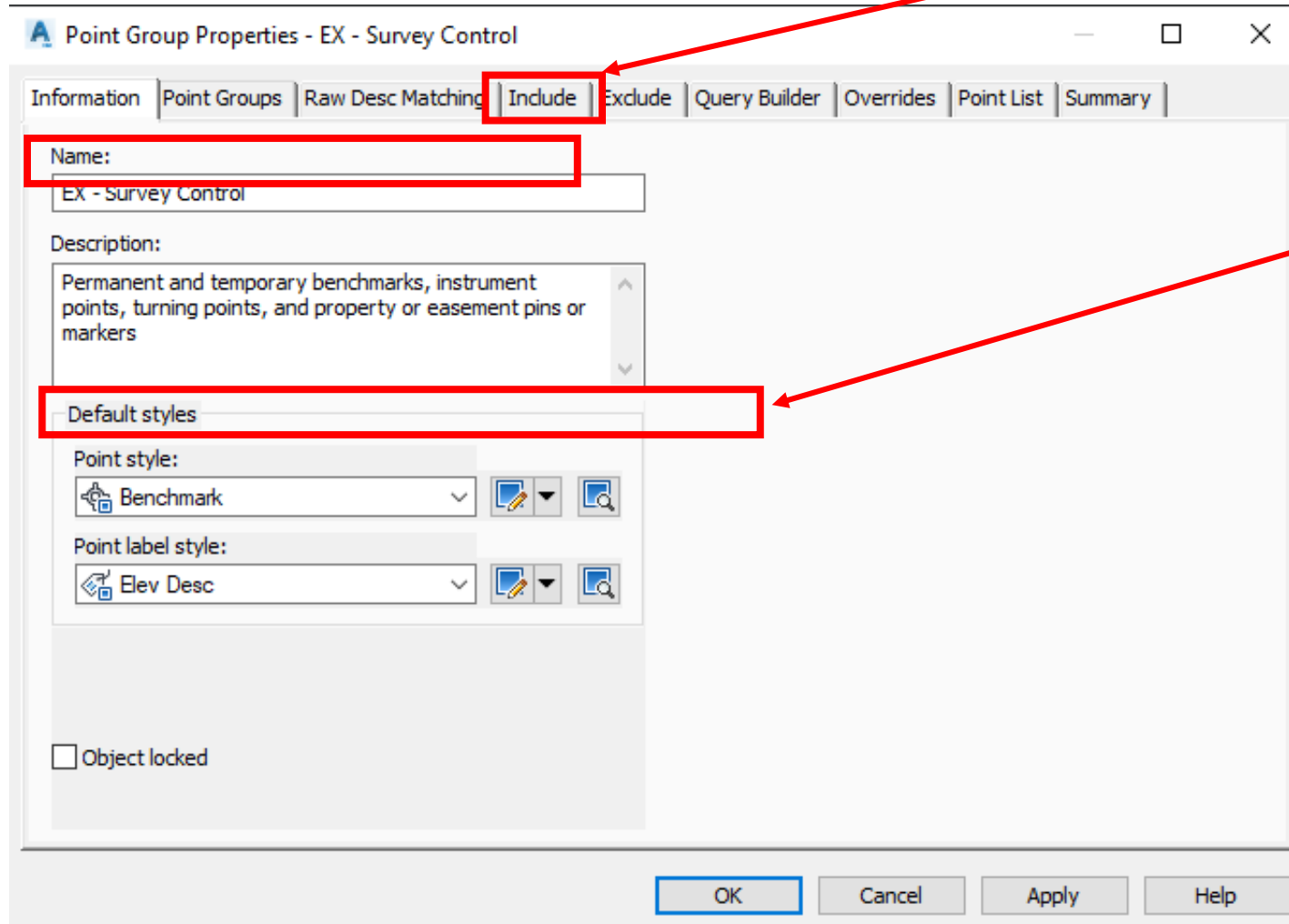
Point style:
Benchmark

Point label style:
Elev Desc

Object locked

OK Cancel Apply Help

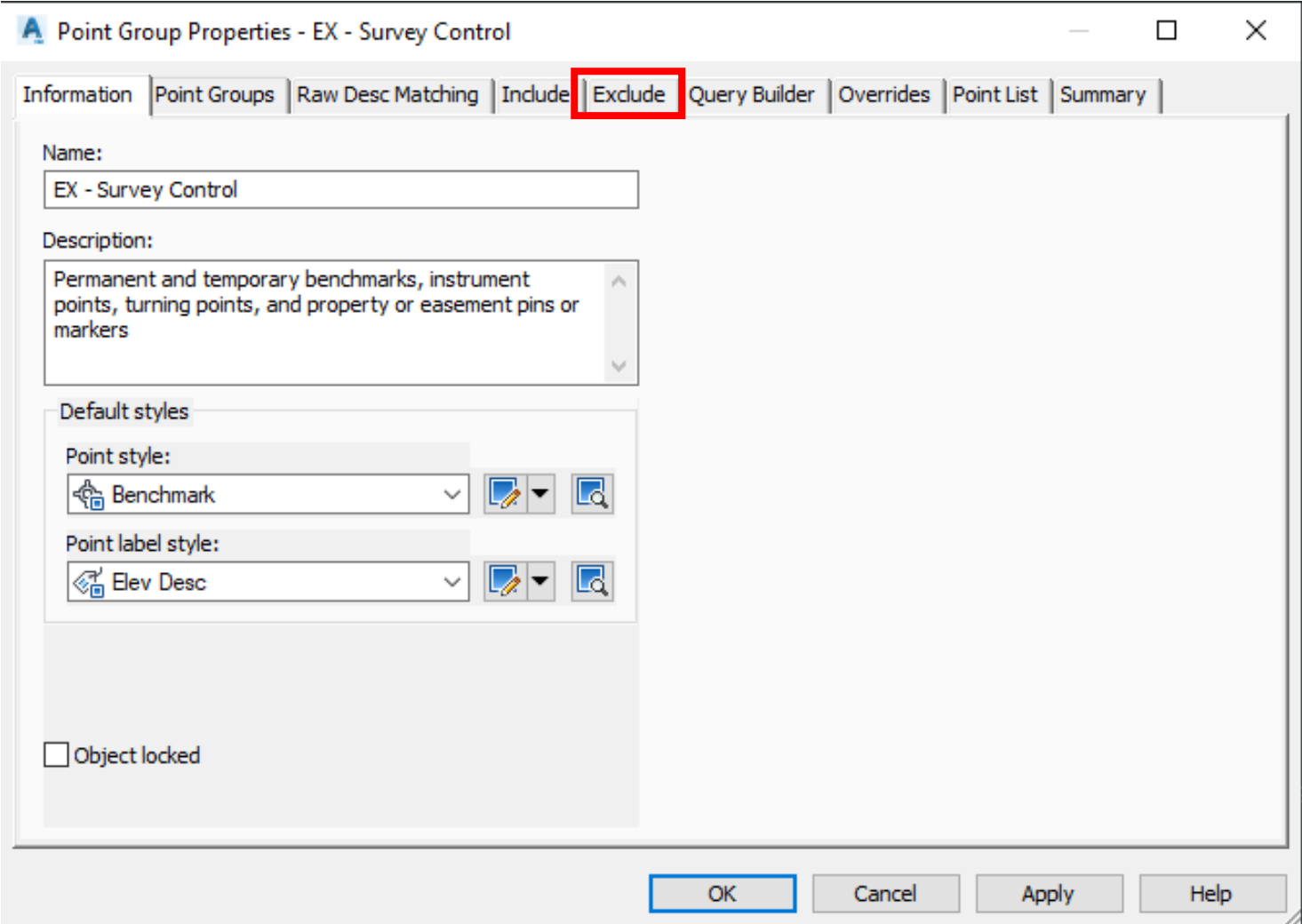
Include Tab – This shows the points included in that point group



It will included all points numbered 1-99 is this point group

Descriptions of the points will be displayed if they match. Since there is an * after the prefix, as long as you put in the prefix it will capture anything with that prefix and put it in that point group
Ex. TBM-Hub set#1

Exclude Tab – This shows the points Excluded in that point group



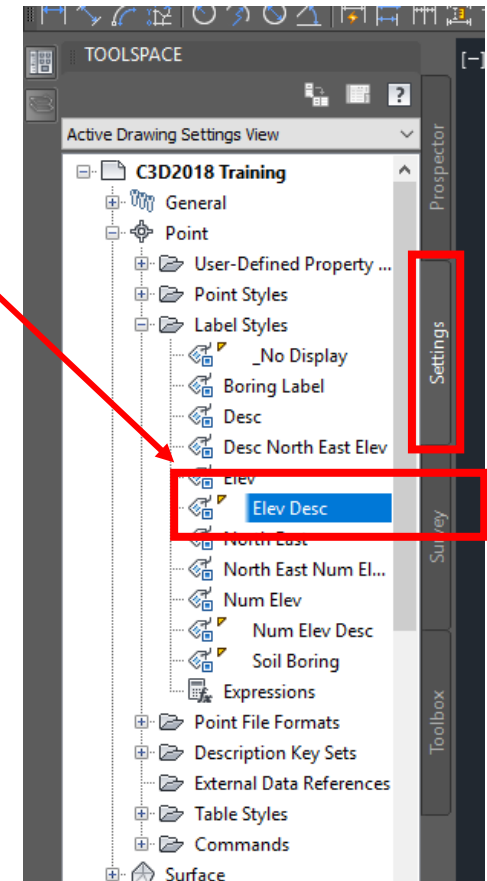
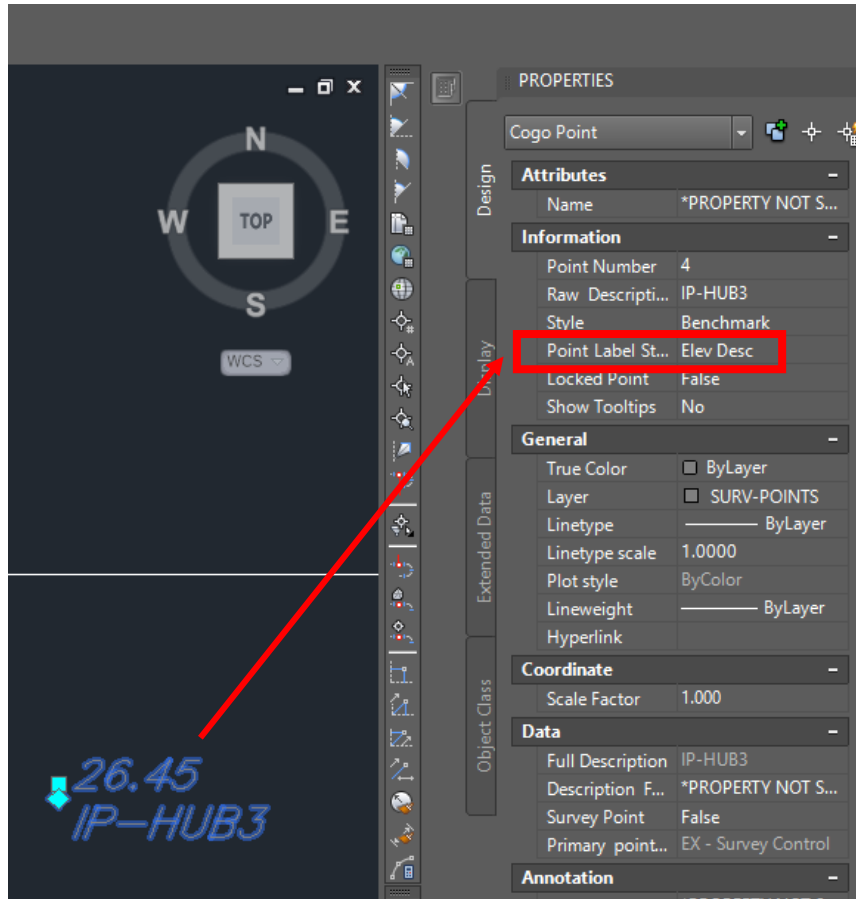


Changing point sizes

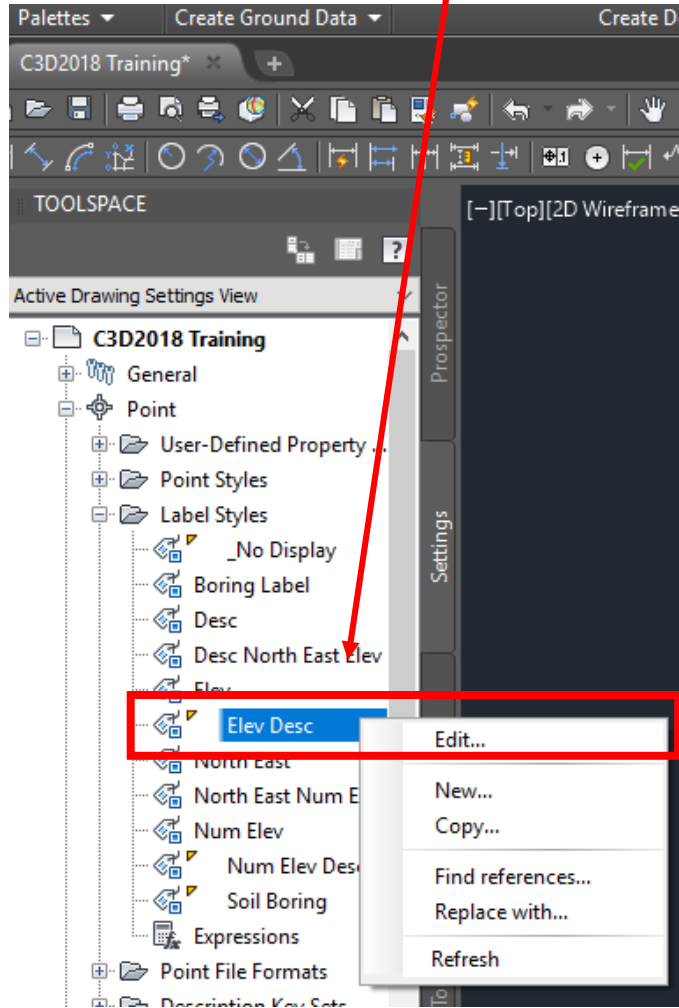
If you want to change the size of the text for a point style, follow these steps:

Make sure you select the point style that you want to increase in size. You can do this by selecting the point and looking at the properties to see which style it is assigned to.

Now select the SETTINGS tab in TOOLSPACE and select ElevDesc (this is the label style that you want to change the size of)



Right click in the **SETTINGS** tab on the point style you want to edit and select **EDIT**

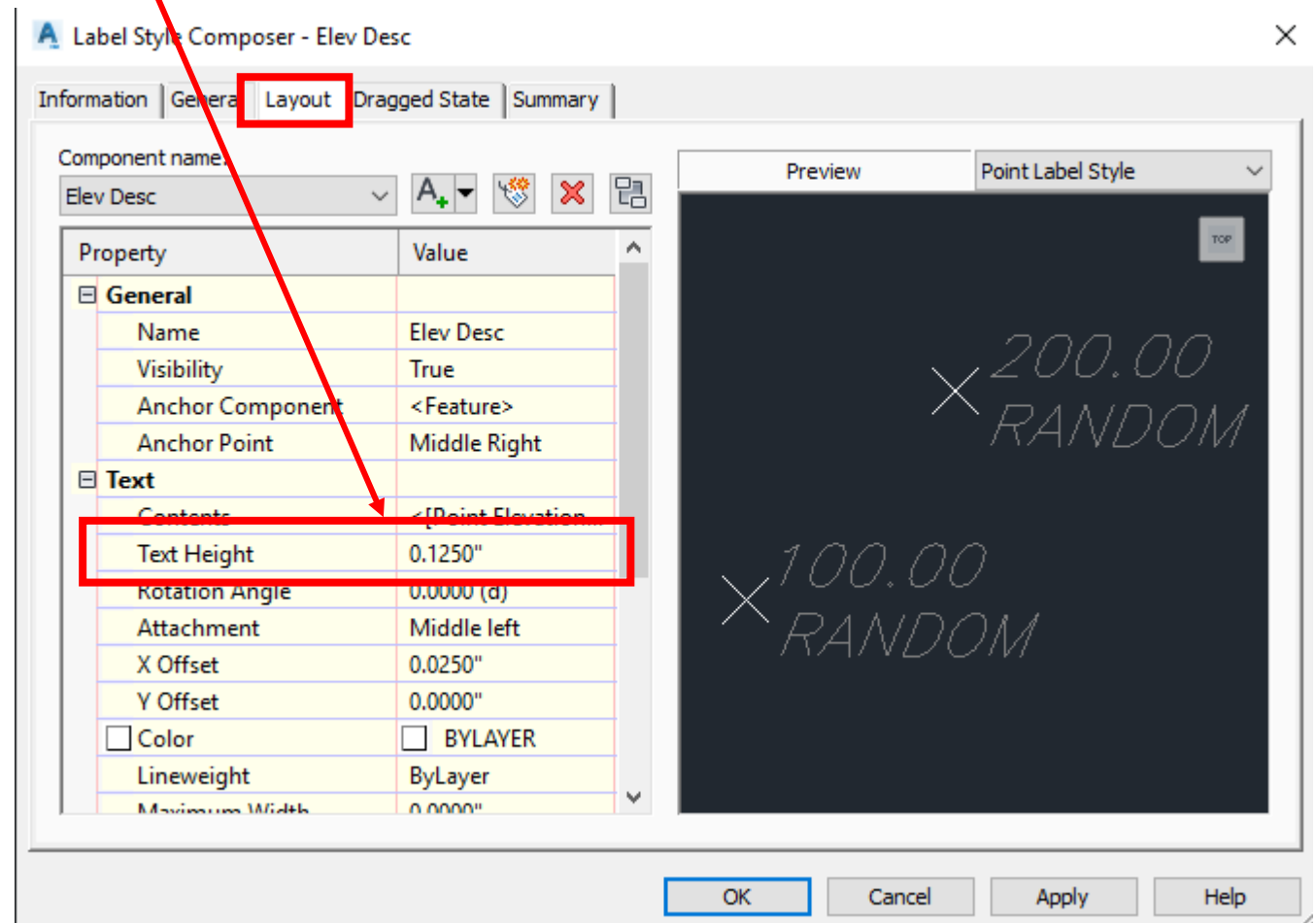


In the **Label Style Composer** window

Select the **LAYOUT** tab

Go down to **Text>Text Height**

This is what you want to change to make the text smaller or larger (keep in mind that this only changes that specific label style)





**Printing Out Points
and/or Point Groups**

To print out your points or point groups...follow these steps

1
Make sure the TOOLBOX is on

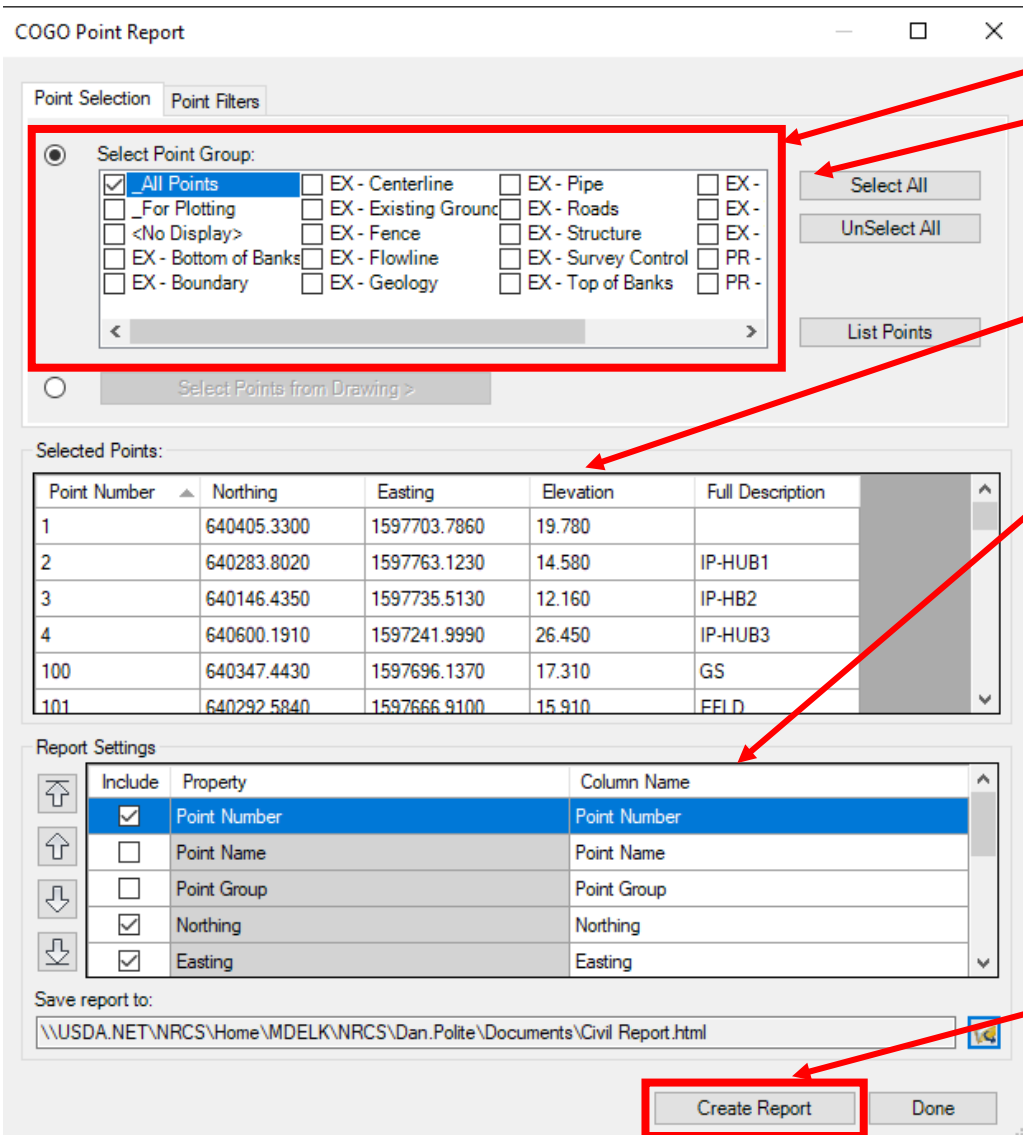
2
Click on the **TOOLBOX** tab

3
Expand **MISCELLANEOUS MANAGER**

4
Expand **REPORTS**

5
Expand **POINT**

6
Right click on Point List....EXECUTE

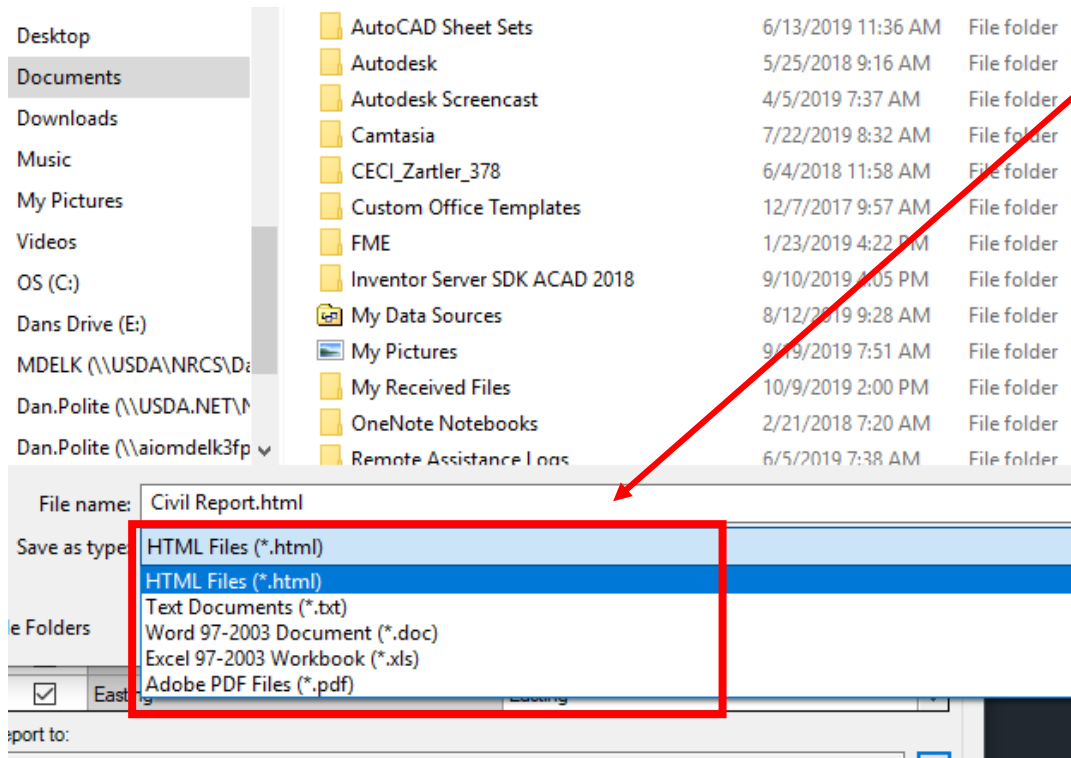


Select the point groups to be printed
Click **List Points**

The selected points will be previewed here

Select the Columns you want to show in the report:
Point Number
Northing
Easting
Elevation
Full Description

Select **Create Report** once the correct file type is selected



There are 5 types of files that you can save it as...I will show you the Excel File type. Save the point list the same as the Drawing File. (It should be saved in the same folder as your drawing and all other supporting documents)
Click **Save**

John Farmer	
Client:	Prepared by:
Client	Preparer
Client Company	Your Company Name
Address 1	123 Main Street

Enter the correct information

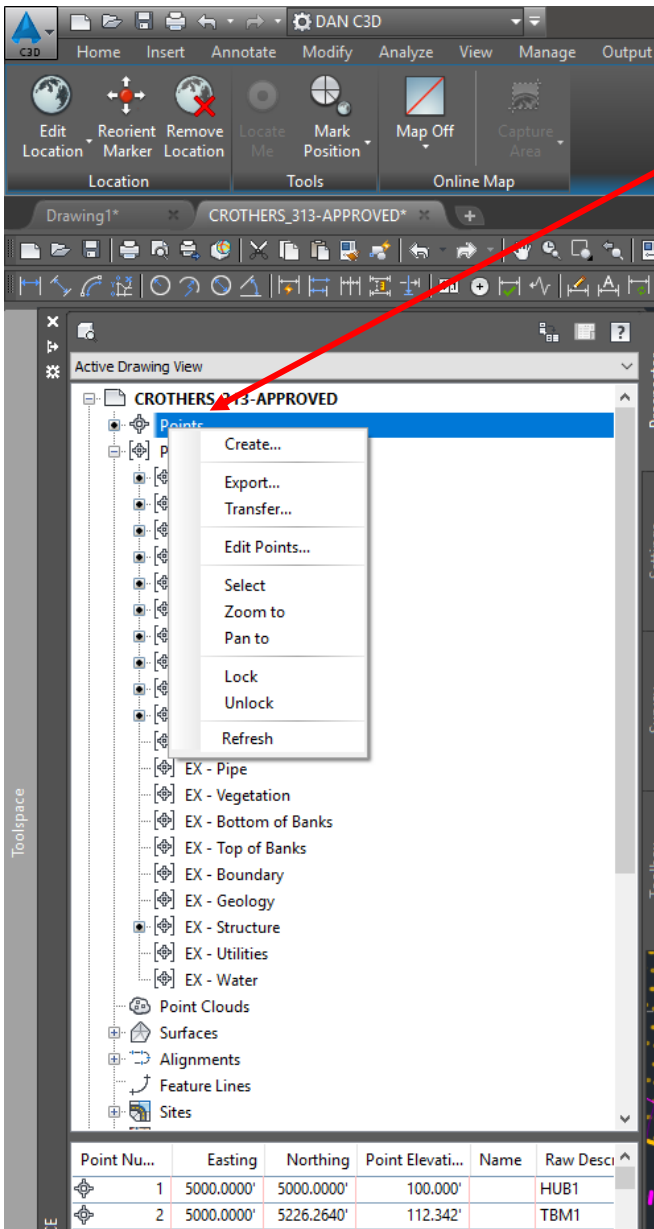
Point Number	Northing	Easting	Elevation	Full Description
1	640405.33	1597703.786	19.78	
2	640283.802	1597763.123	14.58	IP-HUB1
3	640146.435	1597735.513	12.16	IP-HB2
4	640600.191	1597241.999	26.45	IP-HUB3
100	640347.443	1597696.137	17.31	GS
101	640292.584	1597666.91	15.91	EFLD
102	640273.322	1597659.705	15.87	EWOOD
103	640236.63	1597752.799	12.34	EWOOD
104	640180.358	1597838.578	10.4	EWOOD
105	640209.87	1597847.772	11.41	EFLD
106	640259.406	1597752.649	13.44	EFLD
107	640355.855	1597815.908	16.9	TREE
108	640406.946	1597858.463	18.86	TREE
109	640457.948	1597792.803	20.24	GS
110	640382.706	1597730.36	18.4	GS
111	640410.431	1597650.216	20.73	GS
112	640488.142	1597734.244	21.71	GS
113	640324.3	1597605.709	16.33	GS
114	640283.386	1597584.005	15.95	CLW
115	640194.563	1597516.44	17.76	GS
116	640140.437	1597471.348	21	GS
117	640210.308	1597387.192	21.5	GS
118	640278.123	1597442.672	18.86	GS
119	640336.523	1597481.196	17.55	EFLD
120	640369.926	1597501.347	17.26	CLW
121	640393.145	1597517.299	18.01	EFLD
122	640490.155	1597580.747	22.26	GS
123	640581.253	1597463.638	22.43	CLW

Exporting points from
Civil 3D (Stakeout) and
adding them into
Magnet Software

These directions are used **AFTER** you have completed adding your points needed for stakeout.

Remember that all **STAKEOUT** points should be numbered from **3000-4999**

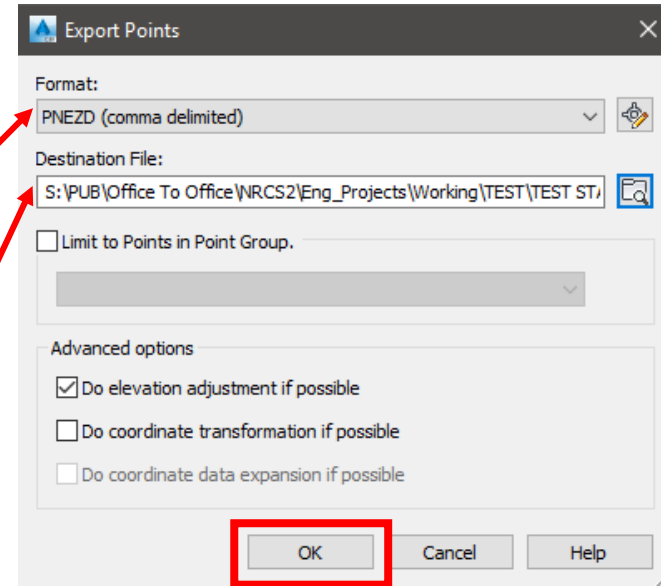
This will place all the points into the *PR – Staking* point group



From the Toolspace,
Prospector Tab,
RIGHT CLICK
<POINTS>, EXPORT

Select the correct
Format **<PNEZD**
(Comma delimited)>

Select location to
save the file (Working
File of the Project)



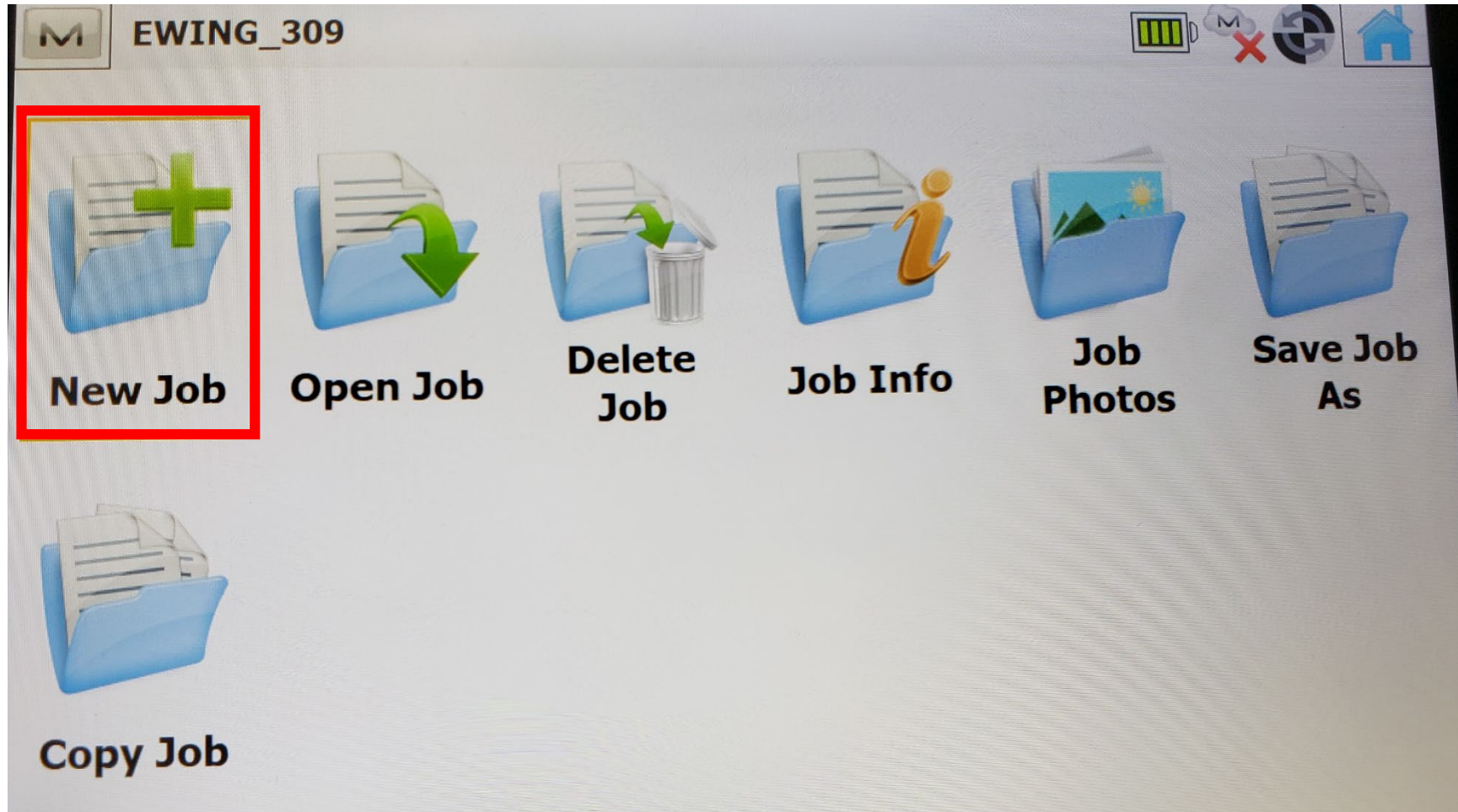
Click **OK**

```
348.4666.9070.4718.1050.81.8230.GS  
3000,5168.2820,5321.2780,0.0000,SF  
3001,5087.7500,5339.1410,0.0000,SF  
3002,4995.2150,5359.6650,0.0000,SF  
3003,4984.0230,5348.8910,0.0000,SF  
3004,4978.1220,5330.9260,0.0000,SF  
3005,4986.6720,5301.8890,0.0000,SF  
3006,4983.5700,5291.7210,0.0000,SF  
3007,4994.2520,5202.6620,0.0000,SF  
3008,4991.2990,5081.4590,0.0000,SF  
3009,4998.6400,5056.4860,0.0000,SF  
3010,4781.2530,4696.5020,0.0000,SF  
3011,4754.9090,4704.4130,0.0000,SF  
3012,4723.6740,4709.0690,0.0000,SF  
3013,4701.3840,4730.6920,0.0000,SF  
3014,4702.4690,4758.0040,0.0000,SF  
3015,4511.7930,4814.0260,0.0000,SF  
3016,4490.2610,4942.4090,0.0000,SF  
3017,4484.5380,5096.6900,0.0000,SF  
3018,4497.6520,5221.5510,0.0000,SF  
3019,5185.7550,5017.6260,106.1000,CB-SUB  
3020,5171.3980,5142.8060,106.1000,MID-SUB  
3021,5157.0420,5267.9850,106.1000,CB-SUB  
3022,5111.3420,5262.7440,106.1000,CB-SUB  
3023,5125.6980,5137.5640,106.1000,MID-SUB  
3024,5140.0550,5012.3850,106.1000,CB-SUB  
3025,5153.0560,5010.1960,106.2000,top stone 8ft footer  
3026,5152.2210,5017.4730,106.2000,top stone 8ft footer  
3027,5181.3730,5020.8160,106.2000,top stone 8ft footer  
3028,5189.4990,5014.3760,106.2000,top stone 8ft footer  
3029,5184.5250,5057.7510,106.2000,top stone 8ft footer  
3030,5178.0690,5049.6220,106.2000,top stone 8ft footer  
3031,5148.9170,5046.2790,106.2000,top stone 8ft footer  
3032,5148.0810,5053.5710,106.2000,top stone 8ft footer  
3033,5176.1610,5053.0970,106.2000,top stone 4ft footer  
3034,5165.0440,5142.1800,106.2000,top stone 4ft footer
```

Open the .txt file where you saved to make sure that all the points that you created are located in the text file

Copy the file onto a USB Flash Drive

Open up **MAGNET Software** on the data collector



If you don't have the job on the data collector, you must make a new job

If you already have the job on the data collector, open that job and merge the points into the existing job