VDOT – Carlson SurvCE or PC

Revision Date: April 2016   **Current Version: 4.05CE .07PC (May 2015 Release)**

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Print pages 2-3 for data collector settings only.

Job Settings — New Job

- ☑ Prompt for First Pt
- ☑ Prompt for Units
- ☐ Use Last Job Localization
- ☐ Use Last Control File

Pt ID: S1
North: 5000
East: 5000
Elev: 100
Desc: CS

Cutsheets:
Manual

- ☐ Use Template .dxf
  - Select File
  - None

Define Job Attributes

Job Settings — System

Distance:
US Survey Feet   Decimal Feet
Angle: Degrees, Minutes, Seconds
Lat/Lon: Degrees, Minutes, Seconds
Zero Azimuth Setting: North
Projection: Edit Projection List
USA/NAD83/VA South
USA/NAD83/VA North
USA/NAD83/VA South

Job Settings — Format

Coordinate Display Order:	North,East
Angle Entry and Display:	Azimuth
Horizontal Observation Display:	Angle Right
Vertical Observation Display:	Zenith Angle
Distance Observation Display:	Slope
Slope Entry and Display:	Percent
Station Display: (e.g. 1+00.000)	+00.000

Job Settings — Options

- ☑ Use Control File
  - Select File   None
- ☐ Time Stamp Each Point
- ☑ Store GPS Accuracy in Raw File
- ☐ Store GPS Vectors in Raw File
- ☑ Use Code Table for Descriptions
- ☑ Recall Job Road Files
- ☑ Auto Load Map
- ☑ Auto Save Map
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- ☐ Use smaller font to display Positions/Measurements in the bottom bar
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- ☑ Auto Store Pick Points
- ☐ Store Rod Height as Notes
- ☐ Show Code List when DESC used
- ☐ Include Pt blocks in the crt DXF, on Save
- ☐ Allow GIS Data prompting for STK Pts
- ☑ Tag Photo Info(Pts) in RW5
- ☑ Allow GIS Data to be Skipped(Hgt/Desc)
- ☑ Write MO(Units Record) to RW5 As a Note

Job Settings — Stake

- ☑ Limited to Instrument Precision
- Precision: 0.000
- ☐ Store Data to Note File
- ☐ Control File Points have Priority for Stakeout
- ☑ Use Automatic Descriptions
- ◉ Increment ID UP   ○ Increment ID Down

Stake Offset Desc   Alignment Settings
Auto Descriptions   Cutsheets

Select the "Use Template.dxf"

Select the VDOT.dxf file under the data folder.
Line work features will be colorized.
Files is located in Data folder of the installation.

Job Settings — New Job

- ☑ Prompt for First Pt
- ☑ Prompt for Units
- ☐ Use Last Job Localization
- ☐ Use Last Control File

Pt ID: 1

Cutsheets:
Manual

- ☑ Use Template .dxf
  - Select File
  - C:\Pro...m Files\SurvCEDemo\Data\vdot.dxf
- Define Job Attributes

Elev: 100
Desc: Start

Special Codes Settings - ALT + L – Special Codes – Settings 🖳 See ①

Code List: VDOT

Category: ALL   [Set]

Code	Linework	Line Type	Layer Name
ACP	Yes	3D	SURVEY_PLAN_CONC
AST	Yes	2D	SURVEY_PLAN_TANK
BB	Yes	2D	SURVEY_PLAN_MISC
BBB	Yes	2D	SURVEY_PLAN_BRIDGE
BCL	Yes	3D	SURVEY_PLAN_BRIDGE
BDK	Yes	3D	SURVEY_PLAN_BRIDGE

[Add] [Edit] [Remove]

[Load] [Save As] [Special Codes] ➡

Special Codes

Code	Action
Space	Code Separator
None	String Designator
ST	Begin Line
EL	End Line
PC	Arc PC
PT	Arc PT
CLO	Close Figure
RECT	Close Rectangular
JPT	Join Point
NE	No Elevation

PowerS (VA DOT) ▼ Code: [   ] [Accept]

Code	Action
Space	Code Separator
None	String Designator
ST	Begin Line
EL	End Line
PC	Arc PC
PT	Arc PT
CLO	Close Figure
RECT	Close Rectangular
JPT	Join Point
NE	No Elevation
JOG	Extend by Distance
CD	Circular By Diameter
CR	Circular By Radius
NTC	Arc PC/PT(Non-Tangent Arc)
CC	Arc to Arc
NTT	Non-Tangent PT
DS	Terrain Spot
DX	Terrain No Spot
DB	Terrain Break

Settings

☑ Use FCL Path to Store *.GIS Files

☐ Store GIS Line Data to All Vertices

Prompt At: Start ▼

☐ Use FCL Only
☐ Save Only One GIS Feature to the Stored Pt
☑ Store Attribute(AT) to RW5 File
☐ Use Code Notes Only, when Storing Points
☐ Use Unique COLORs for Linework
☐ Use Unique LAYERs for Linework
☑ Use Last Point Note
☑ Save Last Point Note
☑ Use Code Categories
☐ Linework Layer: <CODE>_<LAYER>
☐ Force Code Separator before numerical value
☑ Allow Carlson FLD File Import
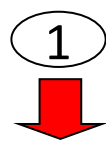☑ Use Single Carlson GIS Features File
☑ Store GIS Line to RW5 (First Vertex Only)
☐ Store GIS Line to RW5 as FC (Feature Name)
☐ Force single linework if only OVs are used
☐ Automatic Recall Last GIS Values

① ⬇

**You will need to load the VDOT.fcl file after program installation.
To load, press load then select the VDOT.fcl file.**

Configure Settings – Equip - Config

Configure

[General] [View] [Sets]

☑ Store Fixed Only (GPS)
☑ Prompt for Total Station Setup
☑ Prompt for Height & Description
☐ Prompt for Point Notes
☑ 3D Mode

No. of Readings to Avg - TS: [1] GPS: [1]

Enter/Store Icon - TS: [Read & Store ▼]

Enter/Store Icon - RTS/GPS: [Read & Store ▼]

➡

☑ Store Fixed Only (GPS)
☑ Prompt for Total Station Setup
☑ Prompt for Height & Description
☐ Prompt for Point Notes
☑ 3D Mode
☐ Use Virtual Keyboard
☐ Use Graphic Icons in Survey
☑ Use Audible Alerts
☑ New Job Use Alphanumeric Format
☑ Use Point Symbols
☑ Use Line Details
☐ Use Unique IDs for Linework
☐ Show Continuous Total Station Angles
☑ Attach Photographs to Points/Lines
☐ Show Advanced Backsight
☑ Always Display Average Statistics
☐ Show Slope Info in STK Points

5

Program Changes/Updates

-4.05

Complete Carlson Release Notes -

http://filesnj.carlsonsw.com/mirror/support/SurvCE/4.0/SurvCE%204.0%20Release%20Notes.pdf

-4.03

All Bluetooth Radios -- Interface to Bluetooth radios has been improved to allow more user interaction and cancel. User is now given an error when BT connection to radio fails.

In Log Raw, it is no longer possible to create a new site name that collides with the name of an existing site name. This prevents user from accidentally overwriting data.

Win 32 (Carlson SurvCE PC Demo/Carlson SurvPC) -- Edit Rw5 now correctly finds values using the radio buttons Up/Down.

Program Changes/Updates-4.02

Changes to Store Point

A no GIS button has been added to bypass prompted GIS attributes.

The following icons on Feature Codes indicate that a GIS attribute is available.
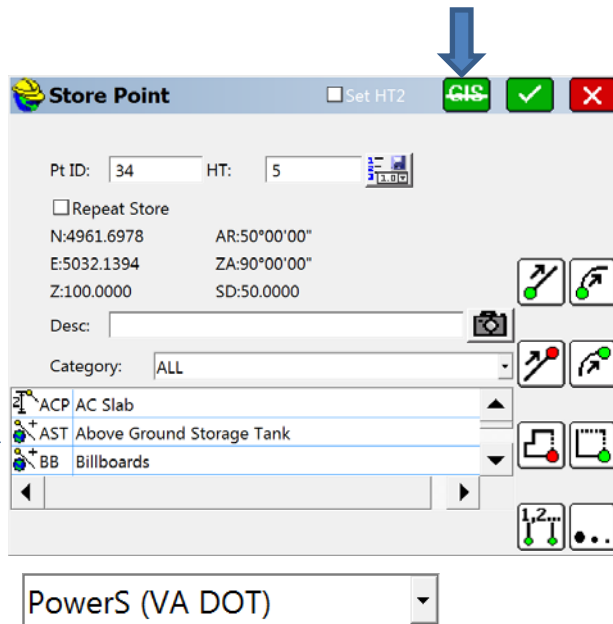
Virginia Specific Special Code List

PowerS (VA DOT) has been added to the Special Code Library. This will be used as the VDOT standard. Additional documentation will be provided at a later date on NTC, NTT, DS, DX, CC, and DZ. CD & CR can be used now.

Store Point Screen Icons   Special Codes   Store Point Screen Icons

Code	Action
Space	Code Separator
None	String Designator
ST	Begin Line
EL	End Line
PC	Arc PC
PT	Arc PT
CLO	Close Figure
RECT	Close Rectangular
JPT	Join Point
NE	No Elevation
JOG	Extend by Distance
CD	Circular By Diameter
CR	Circular By Radius
NTC	Arc PC/PT(Non-Tangent Arc)
CC	Arc to Arc
NTT	Non-Tangent PT
DS	Terrain Spot
DX	Terrain No Spot
DZ	Terrain Break

Special Codes examples:

    CONC CD5 – Draws 5' diameter circle
    CONC CR10 – Draws 10' radius circle

Feature Code Additions or Changes

Code Additions

June-2015 – Added per comments received from SUE and Survey – Miss Utility features will be placed on CD levels.

Code	Description	Type
CP	Camera Pole	Point
CSK	Control Check	Point
CTVMP	CTV Marker Post	Point
CTVVLT	Cable TV Vault	Line
EGL	Electric Ground Light	Point
EICW	End of Information Chilled Water	Point
EIST	End of Information Steam	Point
EVLT	Electric Vault	Line
FOB	Fiber Optic Box	Line
FOVLT	Fiber Optic Vault	Line
GVLT	Gas Vault	Line
IRV	Irrigation Valve	Point
MB	Mailbox	Point
MBL	Mailbox Linework	Line
MCML	Miss Utility Chemical Line	Line
MCTV	Miss Utility CTV Line	Line
MCTVFO	Miss Utility CTV Fiber Optic	Line
MFM	Miss Utility Force Main	Line
MFODCT	Miss Utility Fiber Duct	Line
MFUL	Miss Utility Fuel	Line
MGL	Miss Utility Gas Line	Line
MGLD	Miss Utility Gas Duct	Line
MSL	Miss Utility Sewer Line	Line
MTCDCT	Miss Utility Traffic	Line
MTCFO	Miss Utility Traffic Control Fiber Optic	Line
MTCL	Miss Utility Traffic Control	Line
MTDCT	Miss Utility Telephone Duct	Line
MUEDUCT	Miss Utility Electric Duct	Line
MUEL	Miss Utility Electric	Line
MUFO	Miss Utility Fiber Optic	Line
MUKU	Miss Utility Unknown	Line
MUTL	Miss Utility U/G Telephone	Line
MWL	Miss Utility Water Line	Line
PIV	Post Inspection Valve	Point
SMP	Sanitary Marker Post	Point
STMH	Steam Manhole	Point
STVT	Steam Vent Pipe	Point
TEVLT	Telephone Vault	Line
TRVLT	Traffic Vault	Line

UMH	Unknown Manhole	Point
UNVLT	Unknown Vault	Line
WBO	Water Blow Off Valve	Point
WMP	Water Marker Post	Point
WSC	Water Siamese Connection	Point
WVLT	Water Vault	Line

January-2015

Code	Description	Template:
EIC	End of Information Communications	
EIE	End of Information Electric	
EIFU	End of Information Fuel	
EIFO	End of Information Fiber Optic	
EIG	End of Information Gas	
EIS	End of Information Sanitary Sewer	
EITR	End of Information Traffic	
EICTV	End of Information Television	
EIU	End of Information Unknown	
EIW	End of Information Water	
GTT	Gas Test Station	
SVT	Sewer Vent	
UCO	Unknown Clean Out	
UHH	Unknown Hand Hole	
GUT	Gutter Pan Non-standard	
GUT12L	Gutter Pan 1' Left	TMPLGUT12L
GUT12R	Gutter Pan 1' Right	TMPLGUT12R
GUT18L	Gutter Pan 1.5' Left	TMPLGUT18L
GUT18R	Gutter Pan 1.5' Right	TMPLGUT18R
GUT24L	Gutter Pan 2' Left	TMPLGUT24L
GUT24R	Gutter Pan 2' Right	TMPLGUT24R

November 1, 2014

Code	Description
SE	Ground Spot Elevation-Plan only

Bentley will place an "X" on the location with elevation text next to it.

Code Changes

In SurvCE, the WTL code has been changed to a point feature. This will allow the user the option to annotate each flag number. If the user wants to connect the flags, the shot should be collected like a line feature (ST, EL, etc.):

Example

Linear feature collection:

WTL ST   Will Prompt for Flag #
WTL   Bentley will do linework and place annotation on each point.
WTL EL

Point feature collection:

WTL   Will Prompt for the Flag # only. Other WTL line features must be closed.

Frequently Asked Questions

How often do we need to update the data collector FCL?

The FCL load is updated on the server as additions or changes are requested. Internal users should check the following link at least on a monthly basis and note the date on the FCL file.   \\coapp52\survey_Carlson\Data-Collector-Installs\Data

External users should check the FTP site at least on a monthly basis and look at the date on the FCL file stored under the Data folder.

Will SurvCE program updates affect any existing jobs on the collector?

No, updating the SurvCE program will not affect any job files loaded on the collector. Users should update the collector once a job has been completed and it's a good practice to download the all job files to a PC prior to installation.
The most critical part of updating is reviewing and verifying that all settings outlined on pages 2-3 of this document are correct on the collector.

How do you do an Offset?

From the Store PTS screen

Select the O button,

The offset dialog shown below will be available.
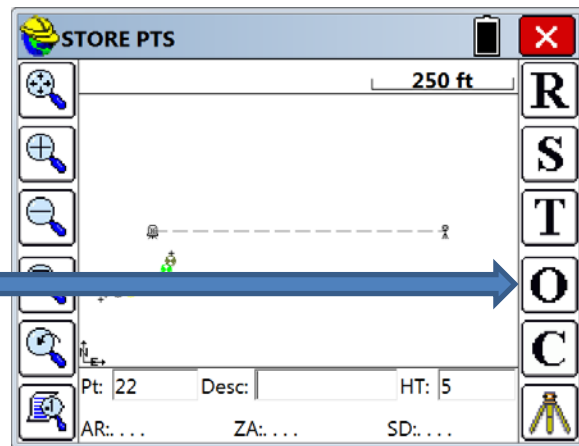
Most Commonly used Distance/Angle or Point.

Store Points Menu - Questions

What is an easy way to duplicate a Point?

Repeat Store is used to duplicate shots. Select Repeat Store, once selected, the check box becomes a Save Disk.
This can be used instead of double coding.
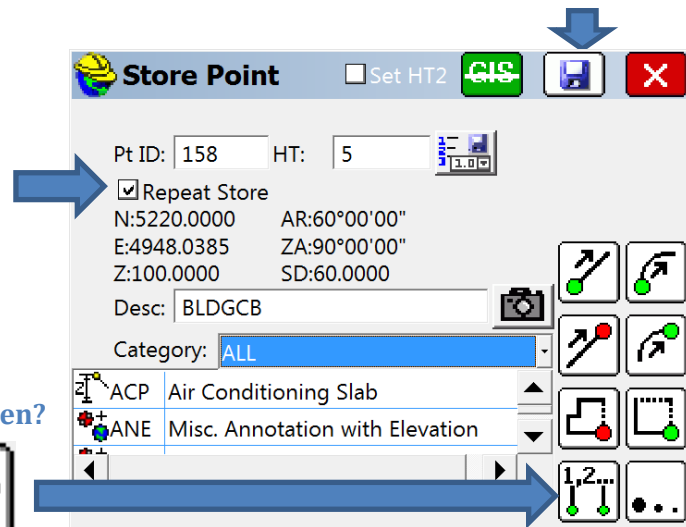
What does this button do on the Store Point screen?

This allows the user to see open/active linework.
It should be used as a quick select list when
running multiple line features.
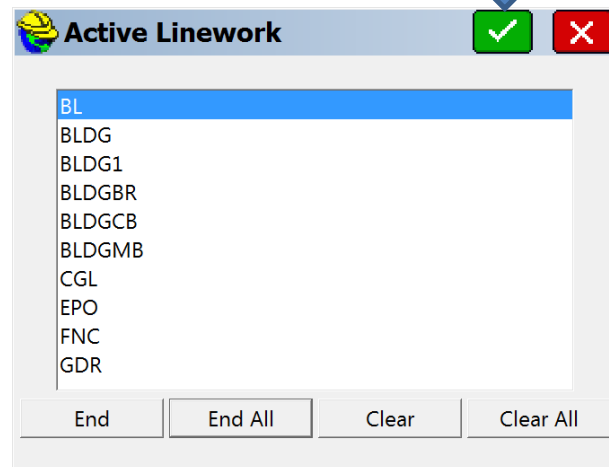
Can the USER ENTERED category be prepopulated?

No, this populates on a per job basis as codes are used.
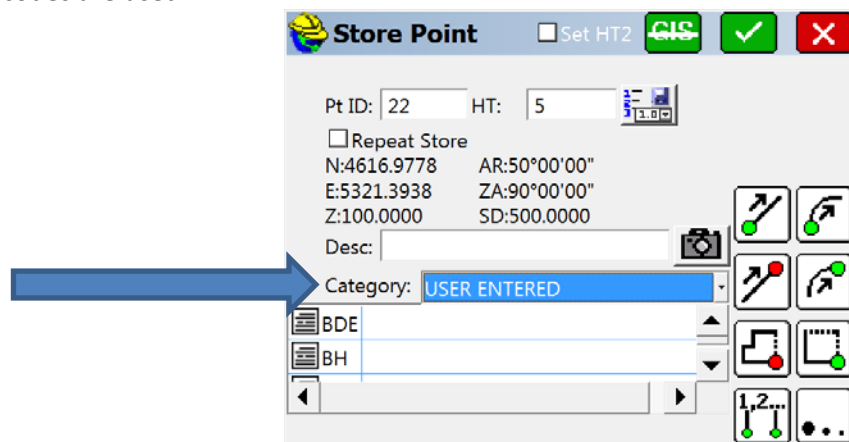
How do you update the FCL files on the data collector and on the PC?

Copy the DATA and SURVSTAR folders located on the internal server or the FTP site to the following folders:

Data collector: SYSTEMCF

PC: C:\Program Files (x86)\SurvCEDemo

How do you delete points in the RW5 file?

A. Go to the **helmet** in SurvCE. Select **View Data**
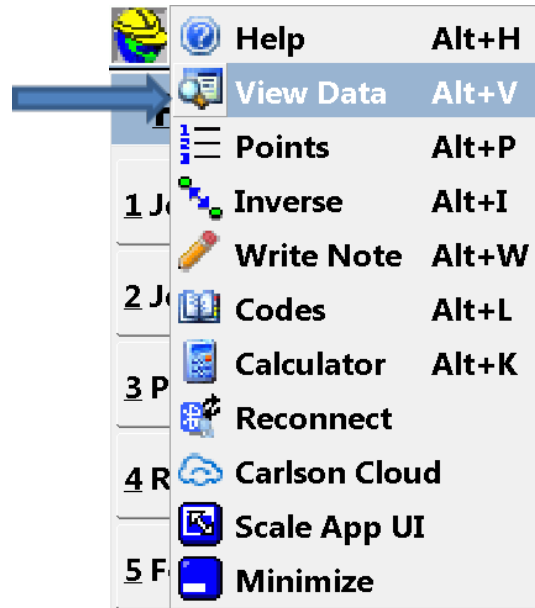
B. Select **RAW Data** in the View/Edit dialog box.
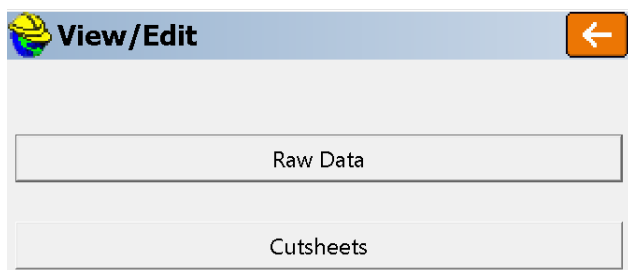
C. Select the shot to be deleted, then select **Remove**. Select **Yes** to delete the record.
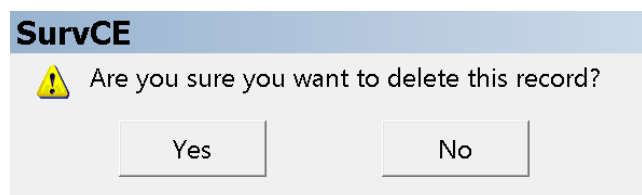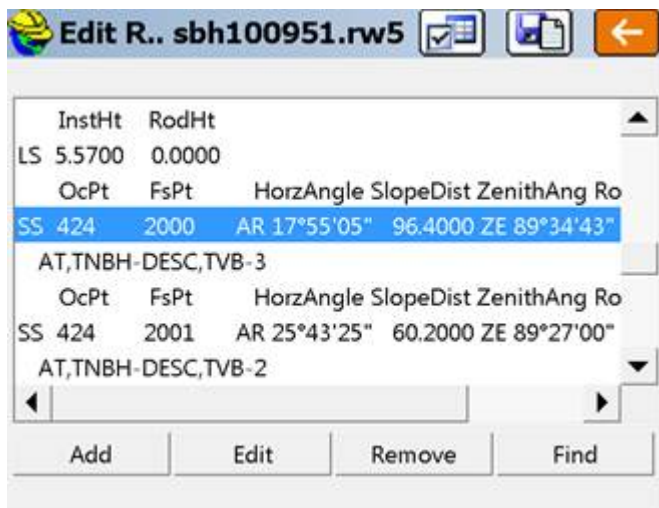
D. The record is marked as removed in the file and looks like this.
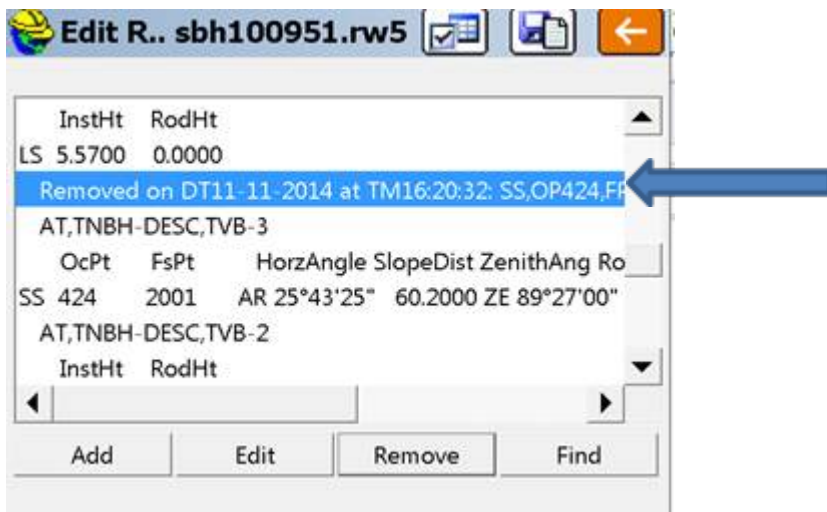
E. Select the orange button then select Yes to save now.

At the Raw Files screen, select the Green Check.
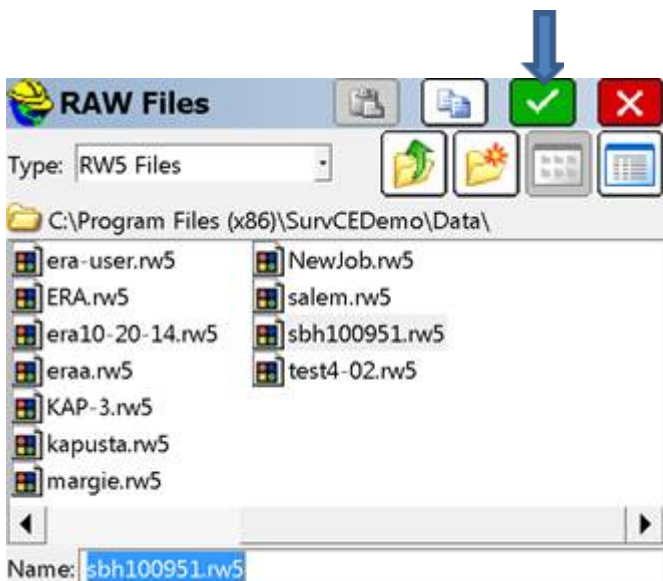
F. Go to the **Store Points** screen enter the deleted point number and reshoot.
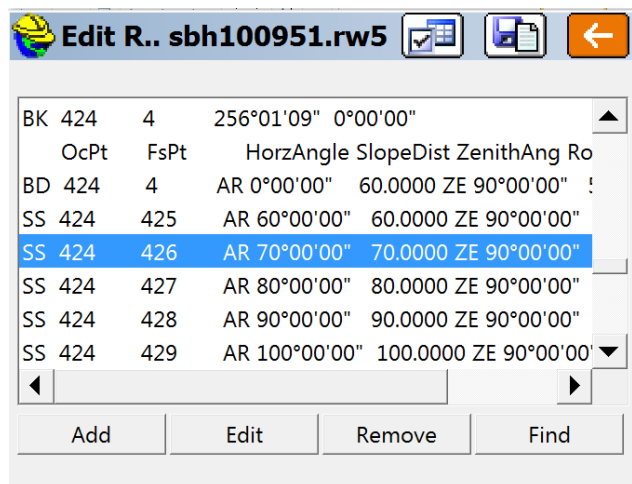
How do you add or edit a Rod Height in the RW5 file?

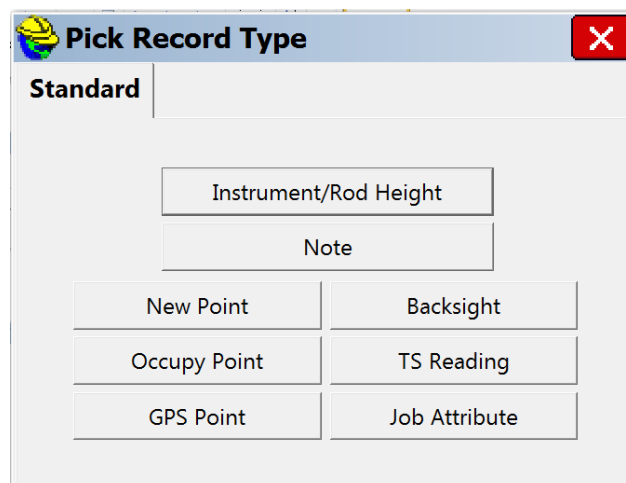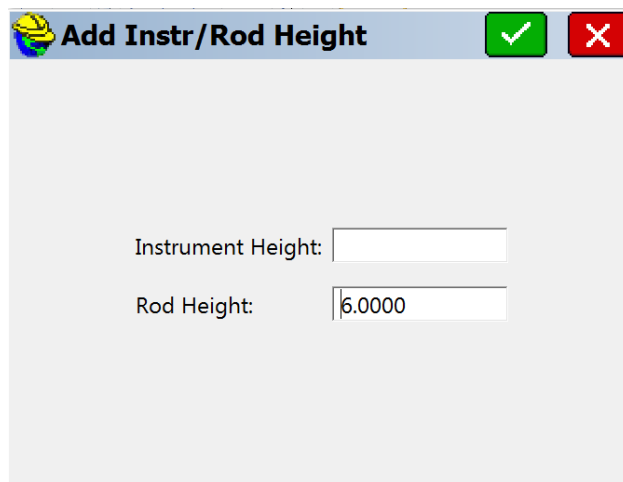A. Go to the **Helmet** in SurvCE. Select **View Data**

Help	Alt+H
View Data	Alt+V
Points	Alt+P
Inverse	Alt+I
Write Note	Alt+W
Codes	Alt+L
Calculator	Alt+K
Reconnect	
Carlson Cloud	
Scale App UI	
Minimize	

B. Select **RAW Data** in the View/Edit dialog box.

View/Edit

Raw Data

Cutsheets
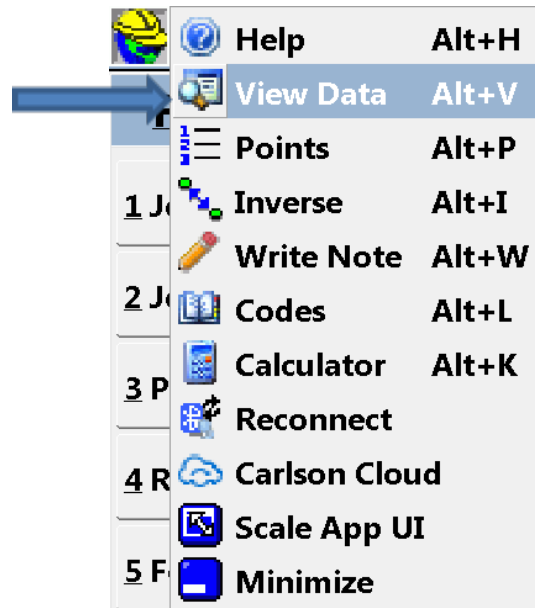
C. Example: The rod height should be 6.00 on 427 but was not changed.
To add the rod change, select the shot prior 427 as shown below then **Add**.

Edit R.. sbh100951.rw5

```
BK  424     4        256°01'09"  0°00'00"
      OcPt    FsPt        HorzAngle SlopeDist ZenithAng Ro
BD  424     4       AR 0°00'00"   60.0000 ZE 90°00'00"
SS  424     425     AR 60°00'00"  60.0000 ZE 90°00'00"
SS  424     426     AR 70°00'00"  70.0000 ZE 90°00'00"
SS  424     427     AR 80°00'00"  80.0000 ZE 90°00'00"
SS  424     428     AR 90°00'00"  90.0000 ZE 90°00'00"
SS  424     429     AR 100°00'00" 100.0000 ZE 90°00'00"
```

| Add | Edit | Remove | Find |
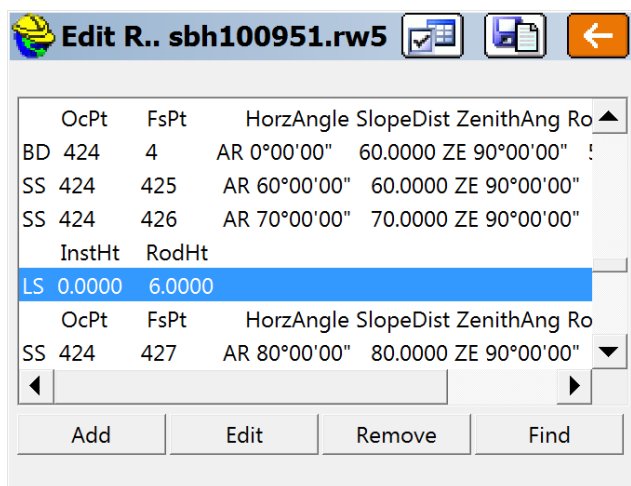
D. Select **Instrument/Rod Height**.

Pick Record Type

Standard

Instrument/Rod Height

Note

New Point	Backsight
Occupy Point	TS Reading
GPS Point	Job Attribute

E. Enter the correct rod height in the **Add Instr/Rod Height** dialog, then select the Green check.
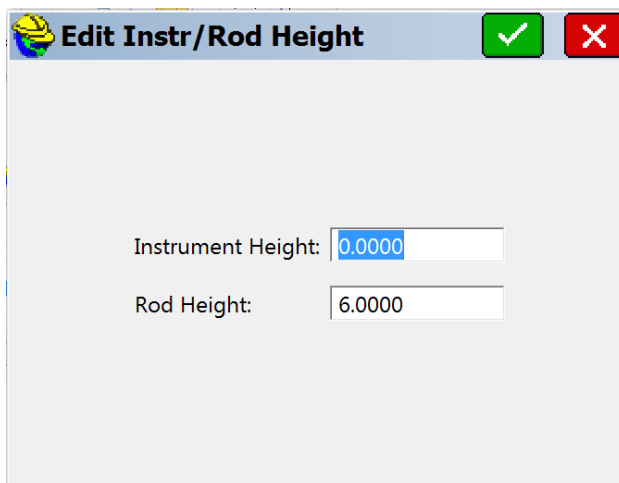

F. The Edit Raw dialog should look like this: A LS record has been added with the new rod height.
    Note: This will change the rod height for all shots AFTER 426. This has NOT changed the coordinates or elevations in the CRD file yet. The job will need to be reprocessed to correct the CRD values.

G. To edit an Instrument or Rod Height, select the LS record then **Edit**. This will bring the Edit Instr/Rod Height box up for editing purposes.

H. All edits or deletions are noted in the file as shown below.
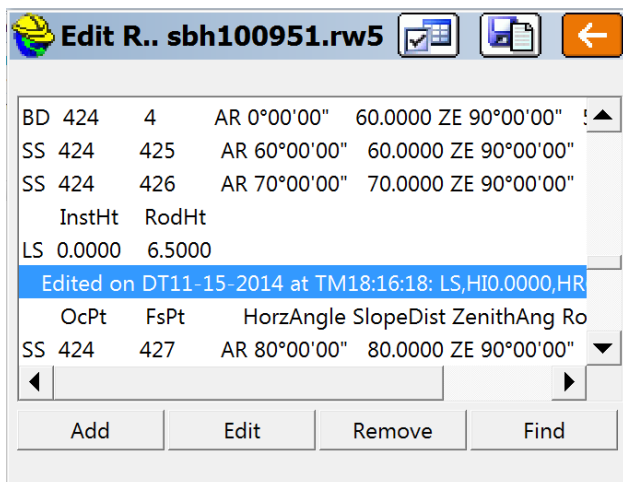
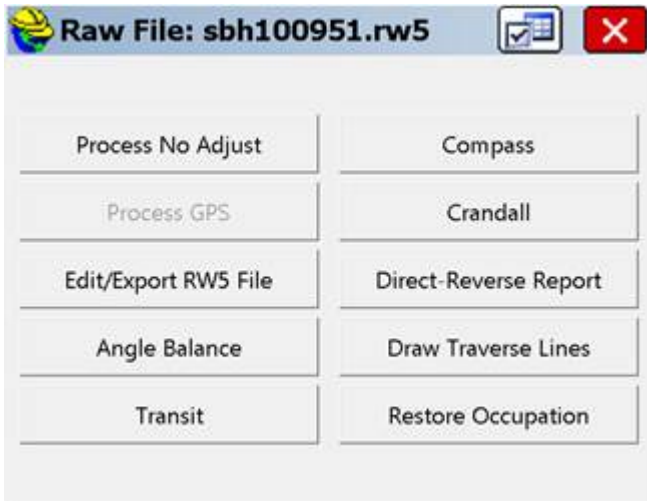## How do you update the CRD file after edits to the RW5?
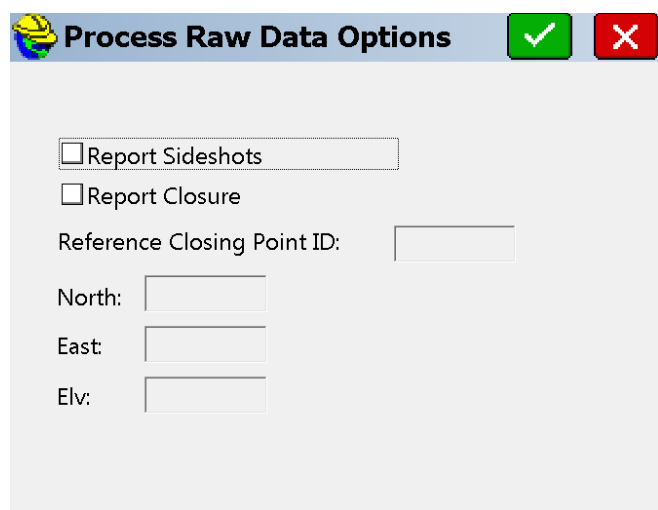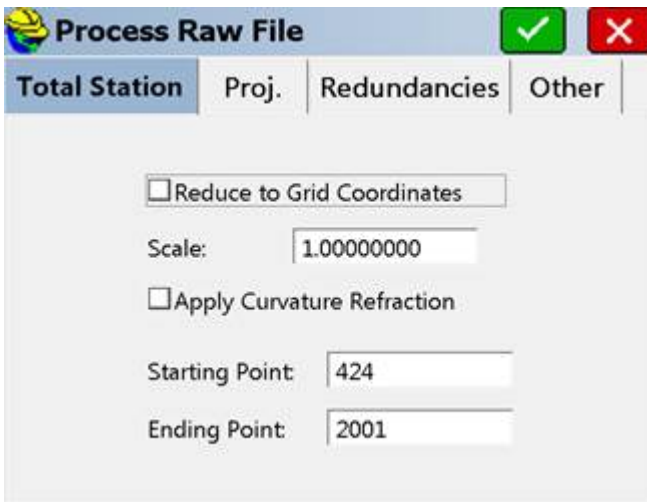
1. From the Main menu, Select **Raw Data**
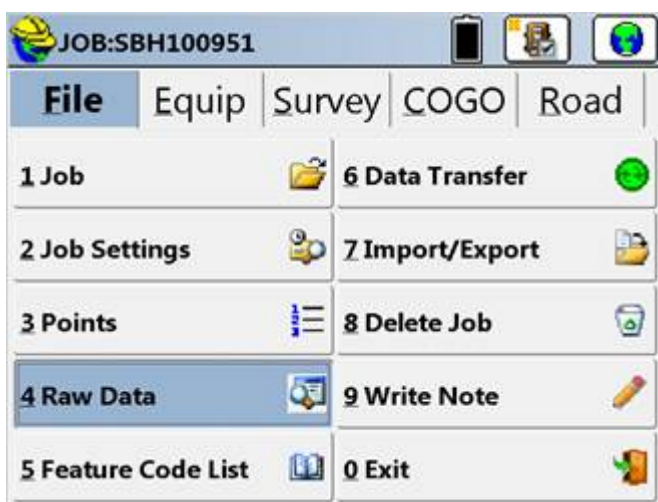
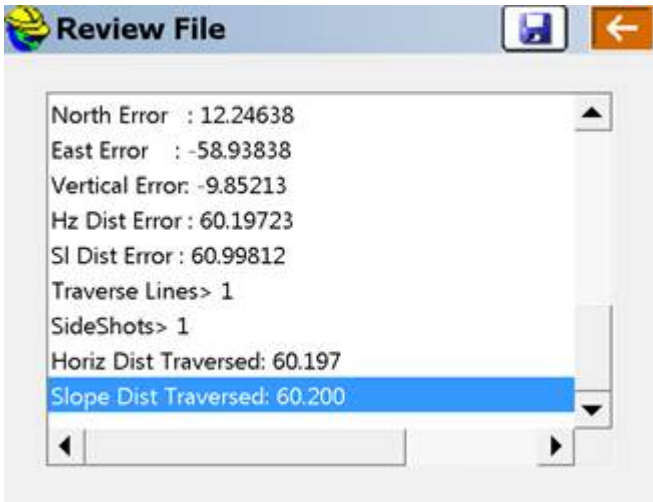2. Select the rw5 file for the job then the Green Check box.
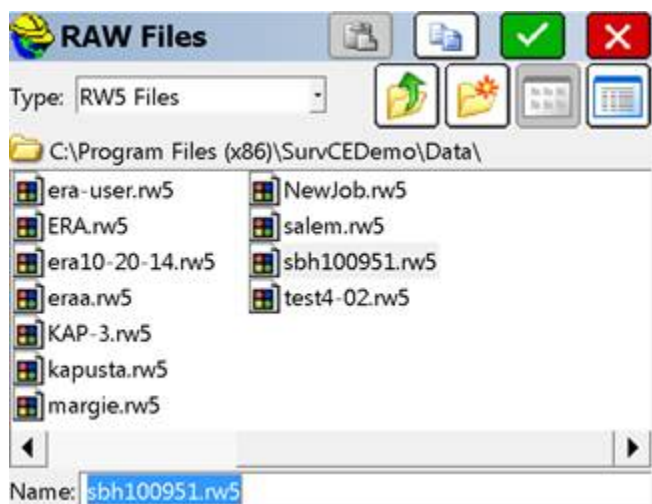
3. Select **Process No Adjust**

Raw File: sbh100951.rw5

Process No Adjust	Compass
Process GPS	Crandall
Edit/Export RW5 File	Direct-Reverse Report
Angle Balance	Draw Traverse Lines
Transit	Restore Occupation

4. Select the Green check box on the Process Raw file and the Process Raw Data Options screens .

Process Raw File

Total Station | Proj. | Redundancies | Other

☐ Reduce to Grid Coordinates

Scale: 1.00000000

☐ Apply Curvature Refraction

Starting Point: 424

Ending Point: 2001

Process Raw Data Options

☐ Report Sideshots
☐ Report Closure

Reference Closing Point ID: [   ]

North: [   ]

East: [   ]

Elv: [   ]

5. Select the Orange arrow at the Review File screen, then select the RED X.
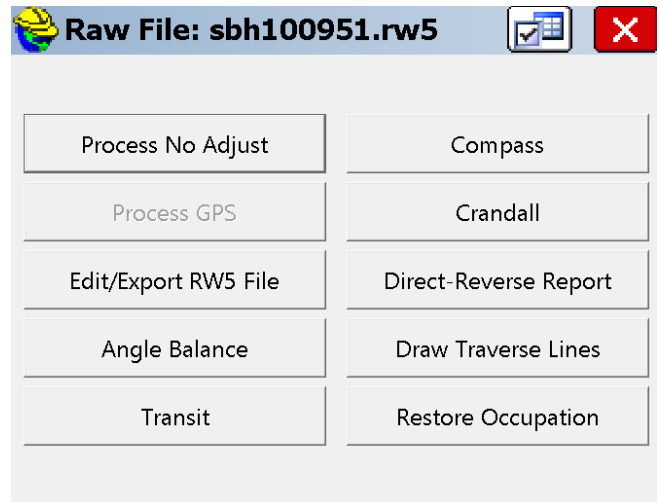
6. When requested to Save Coordinate File changes, select **YES**
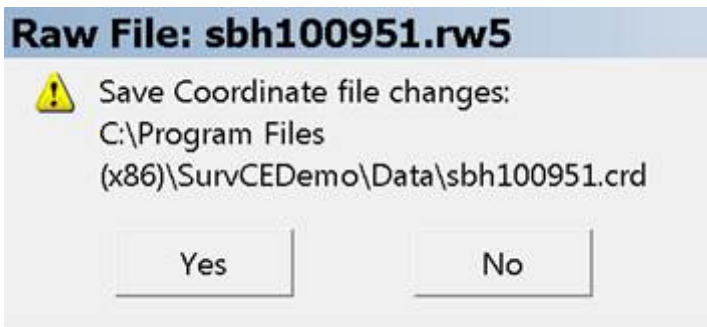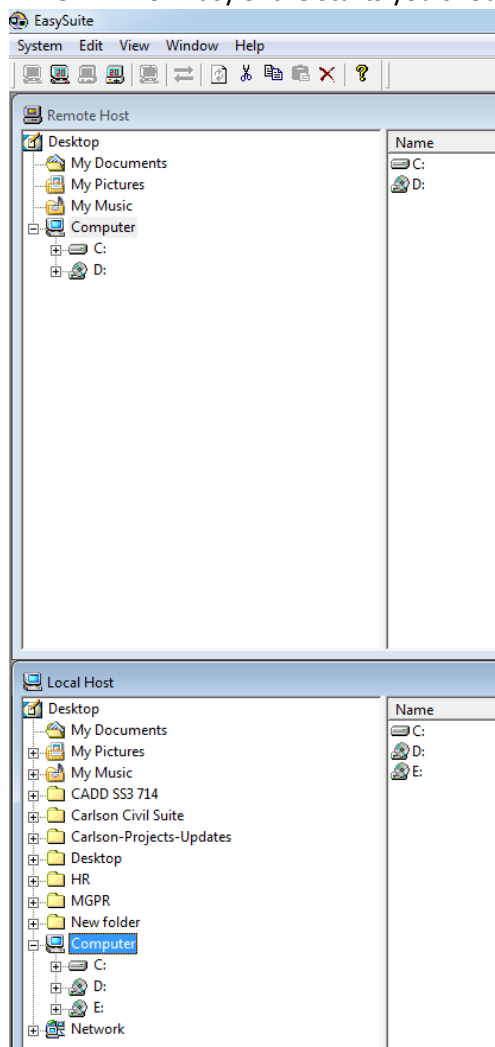
SurvPC

Transfer Setup files to Data Collector

1. Create a folder on your desktop called: SURVPC
2. Copy the latest data collector setup folders located in the SurvPC directory from the server into the desktop SurvPC Folder: \\coapp52\survey_Carlson\Data-Collector-Installs\SurvPC
3. Connect the collector to the PC using the USB cord.
4. On the PC and the Collector, Start Easy Share using the shortcut created using windows explorer, navigate to the drive that says EasySuite, then double click on the Easy Suite.exe. Say yes at the next dialog box.
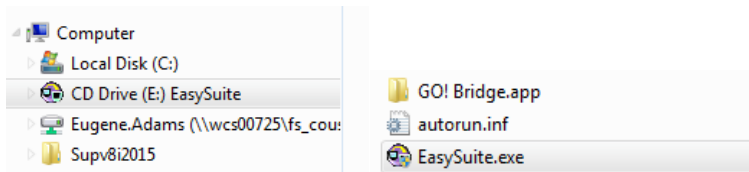
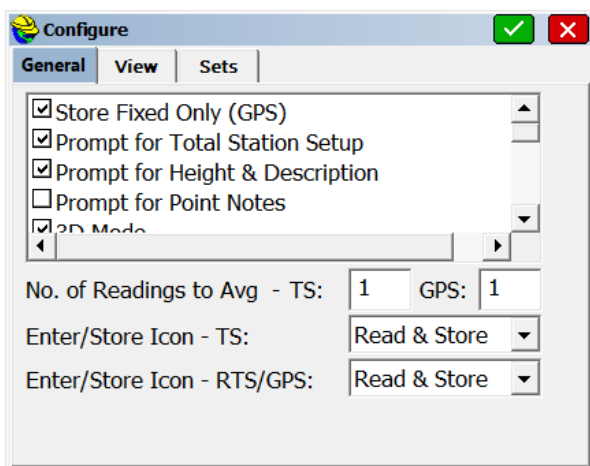5. When Easy Share starts you should have two screens titled Remote and Local.

6. Local is the PC and Remote is the Collector. It's easier to use your PC to transfer files.
7. Copy the two folders from the SurvPC folder on your desktop to the C drive in the remote window.

Transfer Data files from or to Data Collector to PC

1. Follow steps 3- 6 from above.
2. Carlson project data files are stored under c:\Carlson Projects\Data on the data collector.
3. Select the data files you would like to copy from the data collector in the remote host window.
4. Right click on them in the then copy.
5. Paste the files to your hard drive(local host) then move them to the server for permanent storage.
6. When copying to the data collector, select files on your hard drive(local host) then past to the remote host c:\Carlson Projects\Data folder.

Settings

Use the same setting outlined on pages 2 & 3 for SurvCE except turn on Use Virtual Keyboard under configure.

Links

Internal Staff only:

Code Sheet –   \\coapp52\survey_Carlson\Field Code Cheat Sheets(Master).xlsx

Program Installs -   \\coapp52\survey_Carlson\Data-Collector-Installs\Data_Collector_Install_Programs

External Consultants:

Field Code Cheat Sheets

Code Sheet -

Installs: http://www.carlsonsw.com/support/software-downloads/?product=SurvCE