

Reusing Jobs in One Projection in a New Job with a Different Projection

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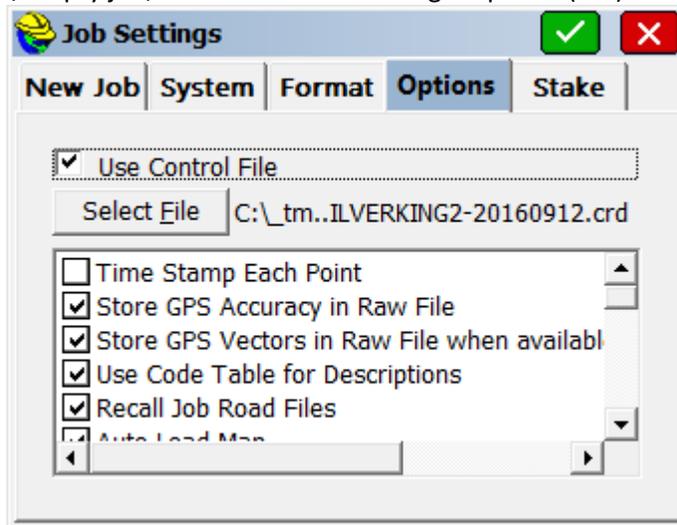
Let's assume that we have an .RW5 (Raw File) for a job in one projection (a custom projection) and we want to reuse 'SOME' of the coordinates and GPS shots in this job, in a completely NEW job with an alternate projection.

Thesis: I have hundreds of control points and boundary shots for a job that were taken in a custom LDP. Now I want to work on an adjoining site, but in a new projection (or perhaps a standard State Plane Projection.)

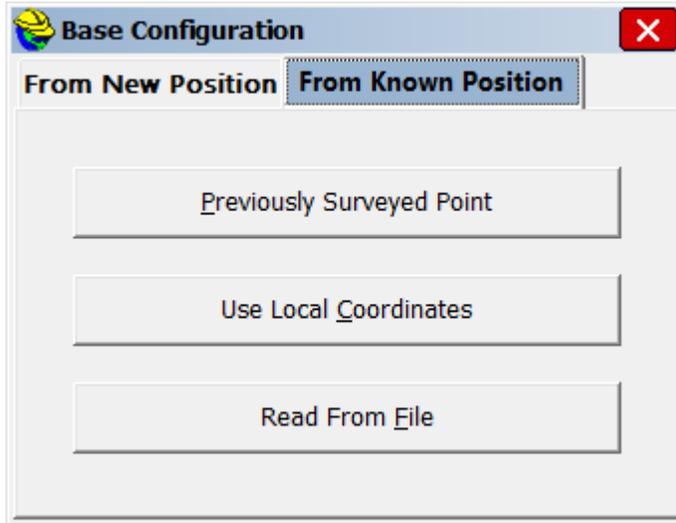
If we assign the previous file as the control file of new job with a completely different projection, then we can import the RAW GPS positions to set a base, and we can use the raw data as the GPS coordinates for a localization.

Here is an example:

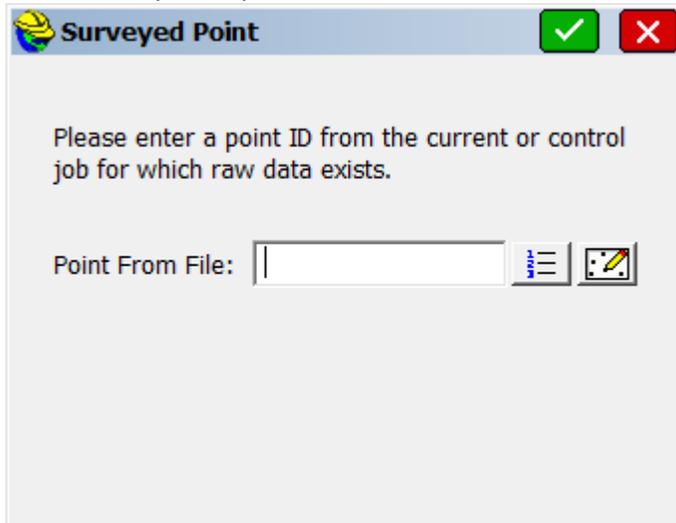
In a new, empty job; on the "File: Job Settings: Options (tab)":



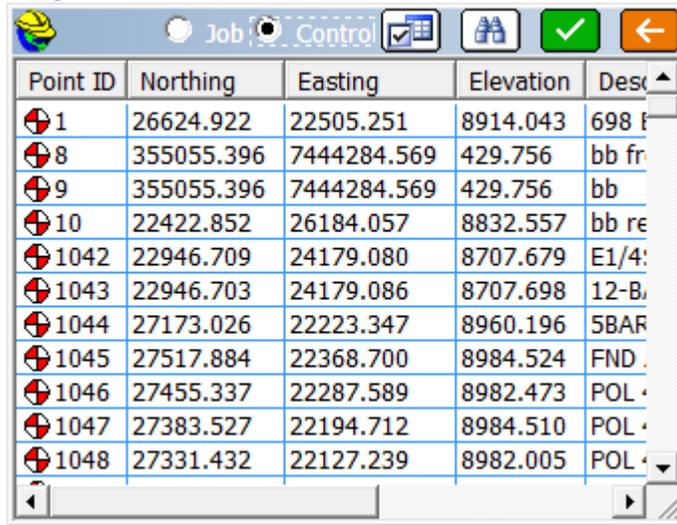
Check the 'Use Control File' checkbox and then select the file with the raw positions we want to use. Then, when we configure a base we can utilize them. From 'Equip: GPS Base: From New Position':



Clicking on Previously Surveyed Point:



Then clicking on the '1-2-3-' button:



Point ID	Northing	Easting	Elevation	Description
1	26624.922	22505.251	8914.043	698 f
8	355055.396	7444284.569	429.756	bb fr
9	355055.396	7444284.569	429.756	bb
10	22422.852	26184.057	8832.557	bb re
1042	22946.709	24179.080	8707.679	E1/4:
1043	22946.703	24179.086	8707.698	12-B:
1044	27173.026	22223.347	8960.196	5BAR
1045	27517.884	22368.700	8984.524	FND.
1046	27455.337	22287.589	8982.473	POL.
1047	27383.527	22194.712	8984.510	POL.
1048	27331.432	22127.239	8982.005	POL.

and then selecting the round radio button for 'Control' retrieves the coordinates from the control file.

In this case, the control file has a LDP (custom Low Distortion Projection) but my current job 'MARKTEST' is Utah Central NAD83.

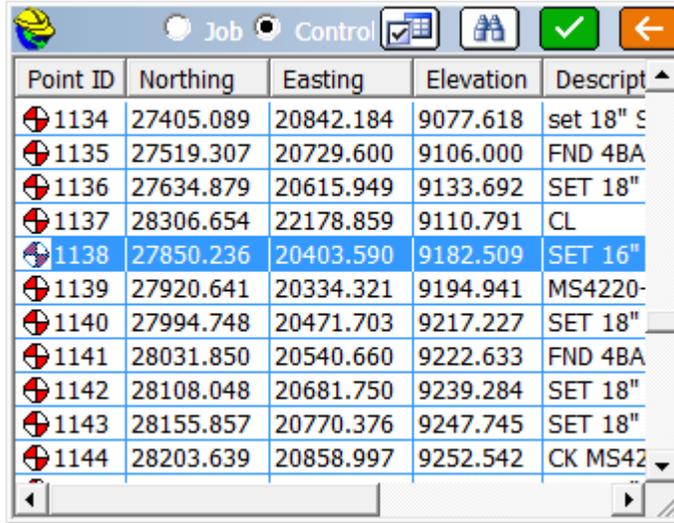
Here is the RW5 entry for 'stored point 1138' in the Control file:

```

GPS, PN1138, LA40.430318197394, LN-109.341644415047, EL2787.047667, --SET 16" AL
PEG 9-12-16
--GS, PN1138, N 27850.2362, E 20403.5897, EL9182.5086, --SET 16" AL PEG 9-12-16
--GT, PN1138, SW1914, ST241536000, EW1914, ET241542000
--Valid Readings: 5 of 5
--Fixed Readings: 5 of 5
--Nor Min: 27850.2295 Max: 27850.2483
--Eas Min: 20403.5803 Max: 20403.5968
--Elv Min: 9182.4559 Max: 9182.5909
--Nor Avg: 27850.2362 SD: 0.0072
--Eas Avg: 20403.5897 SD: 0.0056
--Elv Avg: 9182.5086 SD: 0.0459
--HSDV Avg: 0.0072 SD: 0.0001 Min: 0.0070 Max: 0.0073
--VSDV Avg: 0.0190 SD: 0.0002 Min: 0.0186 Max: 0.0192
--HDOP Avg: 0.7930 Min: 0.7930 Max: 0.7930
--VDOP Avg: 1.8622 Min: 1.8621 Max: 1.8624
--PDOP Avg: 2.0240 Min: 2.0239 Max: 2.0242
--Number of Satellites Avg: 13 Min: 13 Max: 13
  
```

I highlighted the Lat/Lon and the local LDP coordinates in Yellow above.

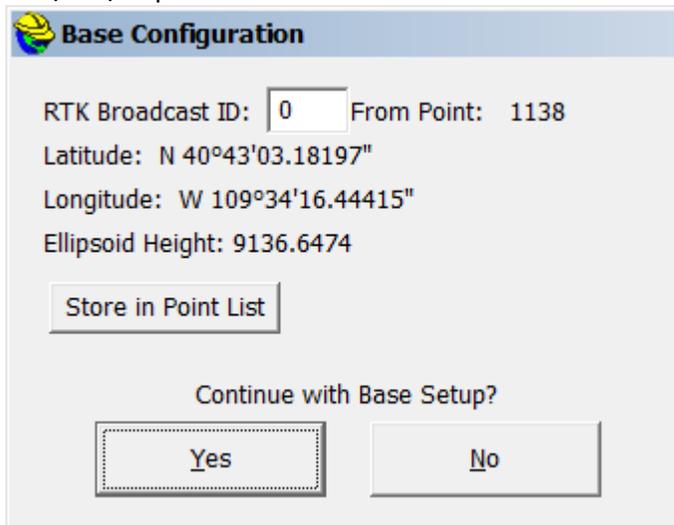
Now, in the new job, which is Utah Central, I choose point 1138:



Point ID	Northing	Easting	Elevation	Descript
1134	27405.089	20842.184	9077.618	set 18" S
1135	27519.307	20729.600	9106.000	FND 4BA
1136	27634.879	20615.949	9133.692	SET 18"
1137	28306.654	22178.859	9110.791	CL
1138	27850.236	20403.590	9182.509	SET 16"
1139	27920.641	20334.321	9194.941	MS4220-
1140	27994.748	20471.703	9217.227	SET 18"
1141	28031.850	20540.660	9222.633	FND 4BA
1142	28108.048	20681.750	9239.284	SET 18"
1143	28155.857	20770.376	9247.745	SET 18"
1144	28203.639	20858.997	9252.542	CK MS42

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(whose projected coordinates 27850,20403 are completely bogus in UT Central), but SurvCE correctly pulls the Lat/Lon/Ellipsoid:



Base Configuration

RTK Broadcast ID: From Point: 1138

Latitude: N 40°43'03.18197"

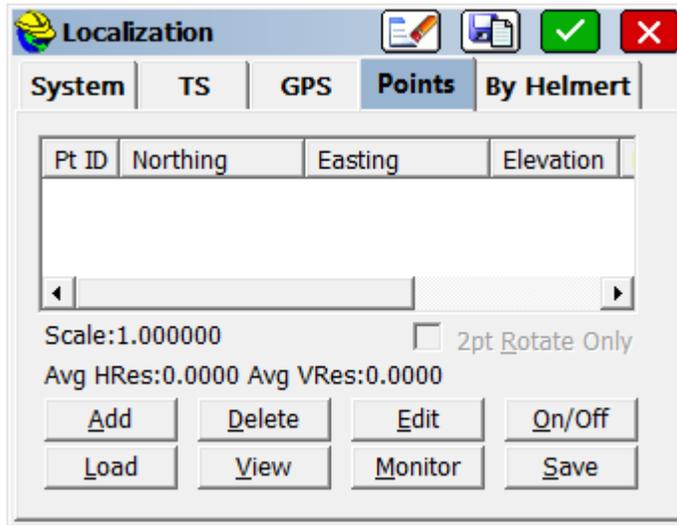
Longitude: W 109°34'16.44415"

Ellipsoid Height: 9136.6474

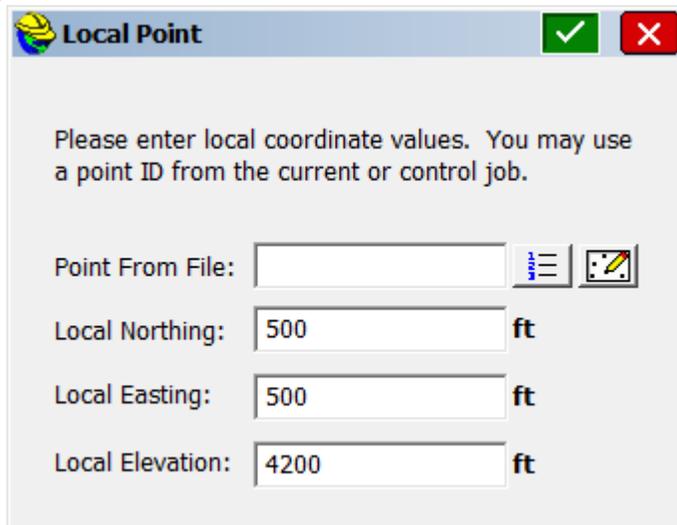
Continue with Base Setup?

For the base configuration.

This will also work for the GPS measurements for a calibration. From the Points tab of the 'Equip: Localization' screen:

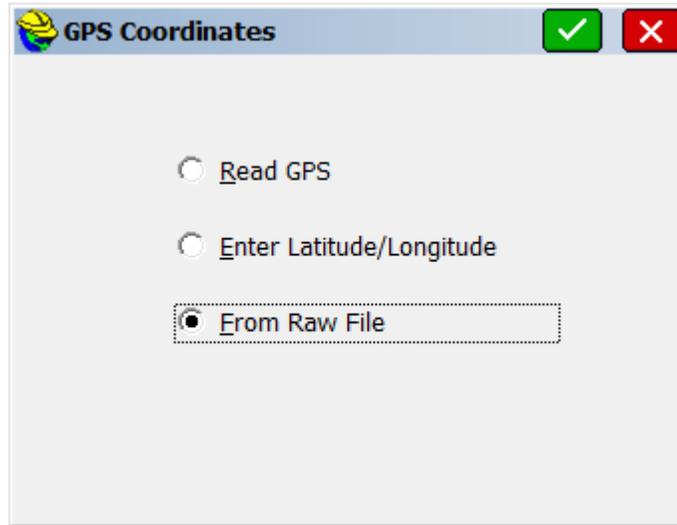


Clicking on 'Add':

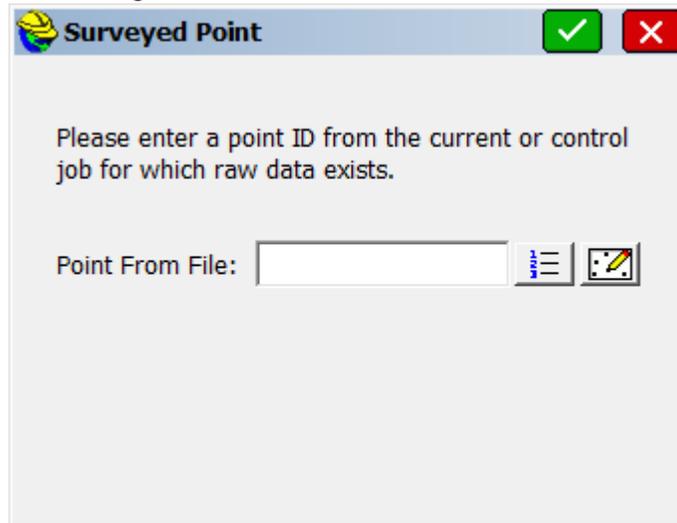


You can enter local coordinates by hand. (We should note here that if we click the '1-2-3-' button we can load projected coordinates from the control file too, but they are in a LDP so that won't make much sense or be of any value, however stored points (SP) like hand entered or imported projected points will be what they are so we can reuse them.)

Clicking OK, then:



We can choose to grab GPS coordinates 'From Raw File'; and then click Okay (the green check mark):



Clicking the '1-2-3-' button:

Point ID	Northing	Easting	Elevation	Descript
1131	28244.368	20812.913	9263.679	set al-pe
1132	27135.894	21107.345	9009.845	SET 18"
1133	27273.270	20972.134	9044.306	SET ALU
1134	27405.089	20842.184	9077.618	set 18" S
1135	27519.307	20729.600	9106.000	FND 4BA
1136	27634.879	20615.949	9133.692	SET 18"
1137	28306.654	22178.859	9110.791	CL
1138	27850.236	20403.590	9182.509	SET 16"
1139	27920.641	20334.321	9194.941	MS4220-
1140	27994.748	20471.703	9217.227	SET 18"
1141	28031.850	20540.660	9222.633	FND 4BA

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Highlighting 1138, then okay:

Surveyed Point

Please enter a point ID from the current or control job for which raw data exists.

Point From File:

Clicking okay (green check mark):

Localization

System | TS | GPS | **Points** | By Helmert

Pt ID	Northing	Easting	Elevation	H Res	V
500.0000	500.0000	4200.0000	0.000	0	

Scale:1.000000 2pt Rotate Only
Avg HRes:0.0000 Avg VRes:0.0000

Add Delete Edit On/Off
Load View Monitor Save

Localization

System | TS | GPS | **Points** | By Helmert

Pt ID	Latitude	Longitude	Elevation
40.430318197	-109.341644415	9136.6474	

Scale:1.000000 2pt Rotate Only
Avg HRes:0.0000 Avg VRes:0.0000

Add Delete Edit On/Off
Load View Monitor Save

(Click the View button to toggle between the local and GPS coordinates as shown in the two screens above.)

But Wait, there's More!

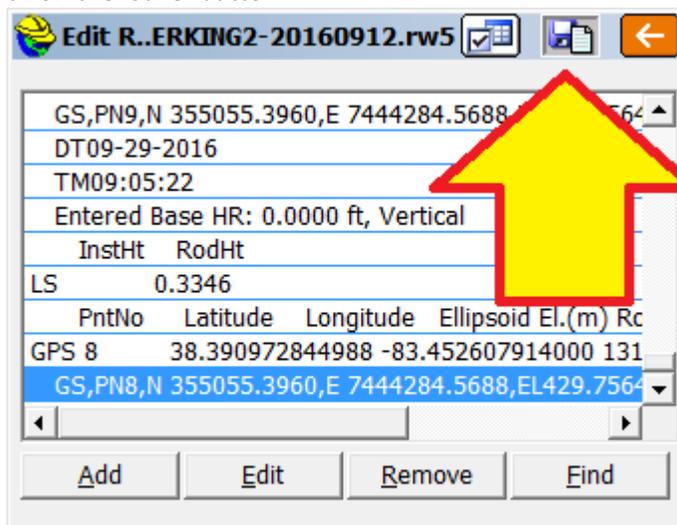
Now, if I want more functionality, I can reprocess the raw file on the original job, without screwing it up.

Here is how:

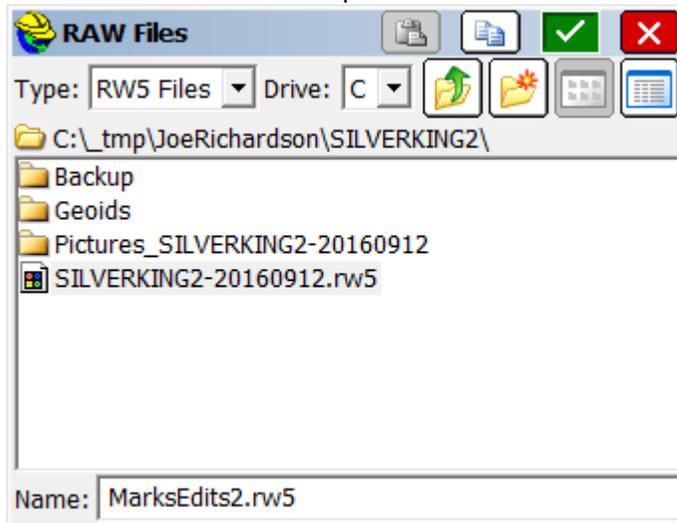
First open the original job.

Then click on 'File: Raw Data' chose the raw data file, then click on 'Edit/Export RW5 File':

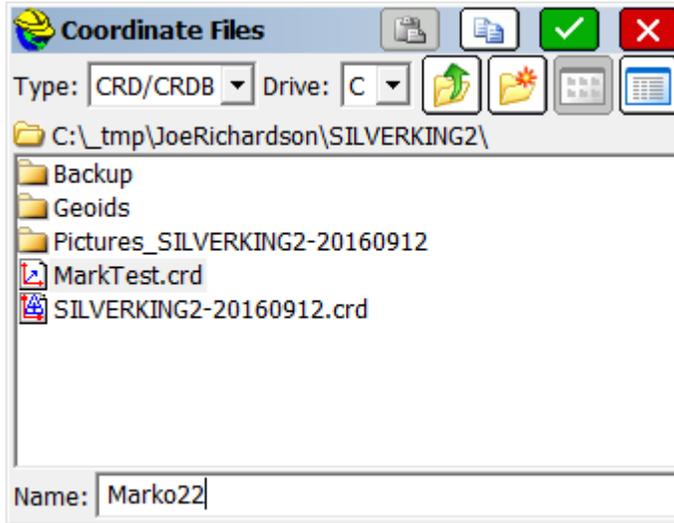
Now, click on the 'Save' button:



And enter a new raw file name to export to:

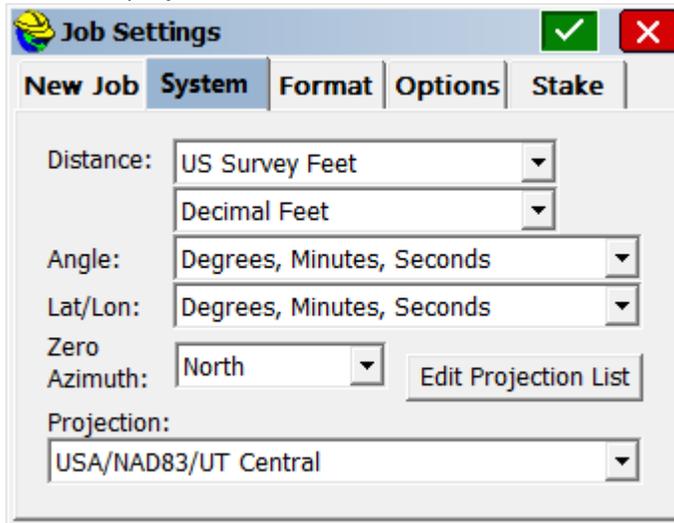


That will save a new RW5 file. Now, I can open a new Job file, say Marko22

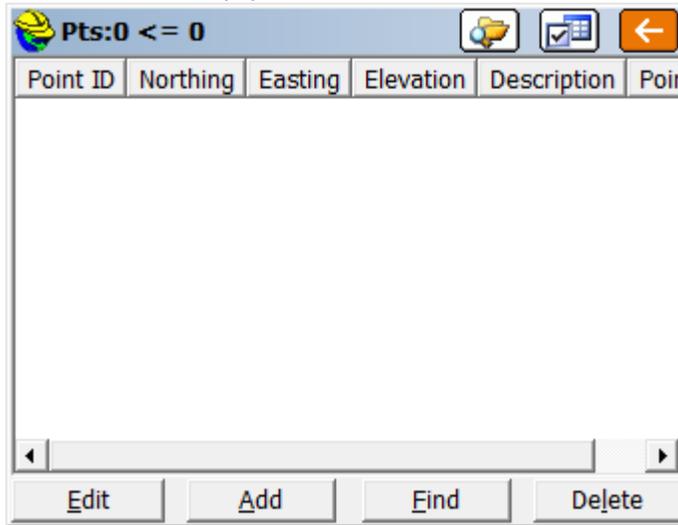


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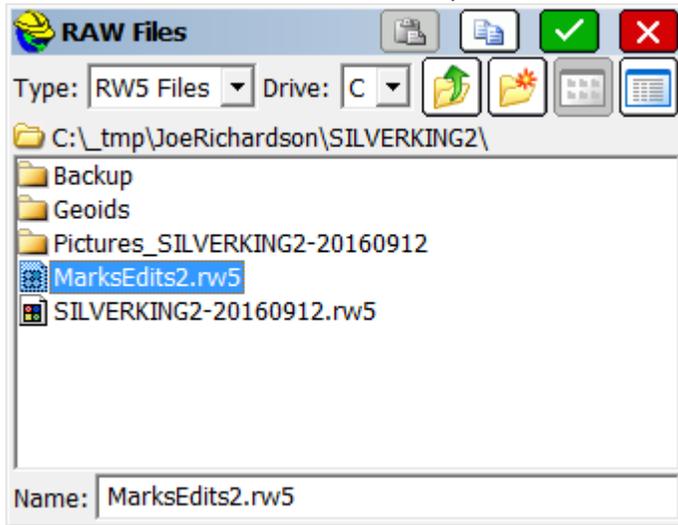
With an alternate projection:



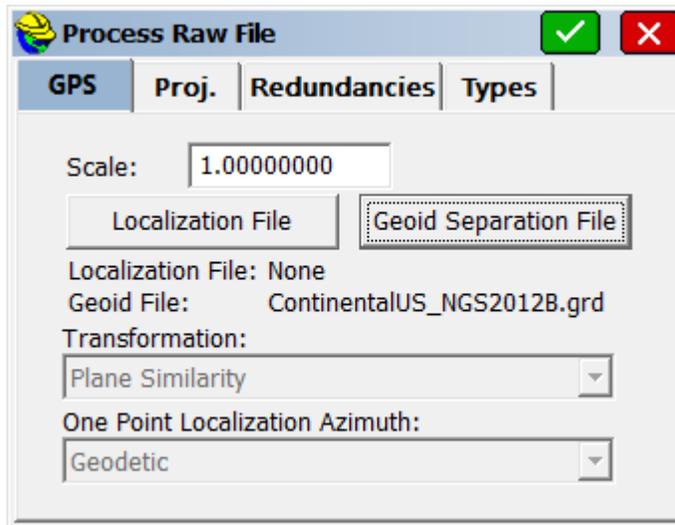
Which will be new and empty:



Now, I can use 'File: Raw Data', but choose my MarksEdits2.rw5 file:

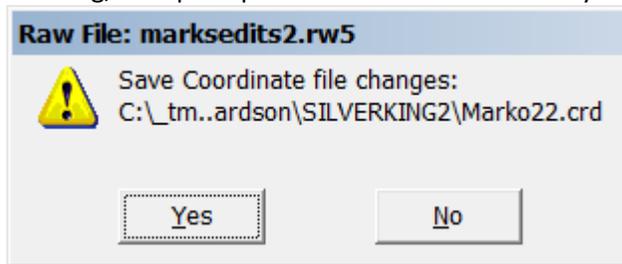


Then click Process GPS:

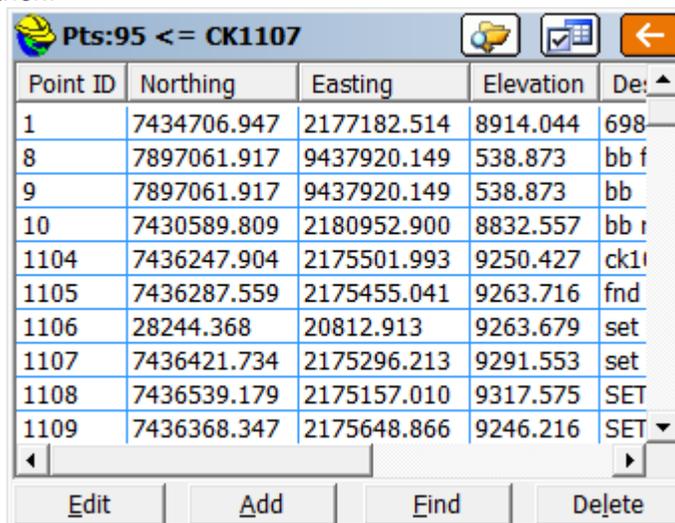


Choose a GEOID file (note there is not a localization in play...yet)

After processing, I am prompted to save the results to my Marko22.crd file:



If I do, then:



Point ID	Northing	Easting	Elevation	De:
1	7434706.947	2177182.514	8914.044	698
8	7897061.917	9437920.149	538.873	bb f
9	7897061.917	9437920.149	538.873	bb
10	7430589.809	2180952.900	8832.557	bb r
1104	7436247.904	2175501.993	9250.427	ck1
1105	7436287.559	2175455.041	9263.716	fnd
1106	28244.368	20812.913	9263.679	set
1107	7436421.734	2175296.213	9291.553	set
1108	7436539.179	2175157.010	9317.575	SET
1109	7436368.347	2175648.866	9246.216	SET

I end up with coordinates for EVERYTHING in the original RW5 that had raw GPS data.

Now, I can use Marko22 as a control file in a new project and have projected coordinates for anything I had previously shot.