

**Appendix 5. GPS Procedures and Data (File Names and
UTM Coordinates**

MORRISTOWN NATIONAL HISTORICAL PARK

Jockey Hollow Invasive Plant Species Study - Global Positioning System (GPS) Procedures

September 24, 1996

Morristown National Historic Park was divided into sections for the purpose of an invasive plant study in which study plots were laid out along transect lines. The Jockey Hollow section of the park consists of sections 'A' through 'F' and the New Jersey Brigade 'A' through 'C'. A Global Positioning System (GPS) was used to collect geographic coordinates along each transect. The locational information collected was then processed and is capable of being exported to and displayed on a Geographic Information System (GIS). Therefore, the data collected by the GPS makes it possible to map the transects and invasive plant species study plots on the Geographic Information System.

The GPS receivers used for the study were the *Trimble Pathfinder Pro XL* and the *Trimble Pathfinder Basic Plus*. It was necessary to enter into the GPS receiver the manufactures recommended **critical settings** prior to data collection. The position mode was set at '3D Manual' which requires the reception of four satellites and automatically calculates the elevation. All of the other critical settings as well as the non-critical settings used in this study are explained in the **GPS Critical and Non-Critical Settings** sections attached at the end of the procedures description. The critical settings listings are guidelines for use with any *Trimble Pathfinder* GPS receiver.

Geographic coordinates were collected on opposing ends of a minimum of two sites on each transect. This makes it possible to on-screen digitize a straight line representing the transect location on a GIS and to determine the locations of the study plots along the course of the transect through interpolation. A retractable, *Trimble* antenna, measuring 15 feet, was employed to improve reception in conditions of dense canopy cover or steep slopes. For each site, 60 to 75 coordinate readings were collected (lower in cases of extreme reception difficulty) for post-process averaging. Whenever possible, the flags marking the transects, which were placed while the study was being conducted, were GPSed to record the particular transect. Otherwise the transect locations were remeasured using the pre-established compass bearings and measurement spacing. Transects were 150 meters apart while compass bearings vary according to the section. Sometimes it was difficult finding old flag markers and, and identifying them with a transect number, so therefore it may be necessary to make visual adjustments when the data is viewed on the screen. The adjustments

may be as simple as correcting a transect number the was mislabeled when it was recorded.

The software used was *Trimble Pathfinder 3.0*. A project called *jockeyhollow* was created and the daily rover files collected were downloaded into this directory. The the output port of the GPS receiver was connected to the serial port of the computer. The receiver setting must be changed from 'RTCM' to 'Xmodem' under *set up or rover options*. In the *Pathfinder* software under the 'Comm' menu 'Data Files to PC' was selected. All the rover files for the day will the show up on the screen. After selecting the desired files the downloading process takes place.

A positional error is generated by the United States Department of Defense for security reasons, therefore corrections may be necessary to offset this error . Expensive, real-time GPS receivers are capable of on-site positional accuracy, but work poorly under dense canopy such as found at Jockey Hollow. Therefore the data had to go through differential correction to compensate for the positional error. Base stations were established to record the margin of error generated by the DOD so true readings would be available during post-processing of GPS data. The base stations at the New Jersey Department of Environmental Protection in Trenton and the Environmental Protection Agency in Edison were used in this study. The date and hour of each rover file was matched with the corresponding base file. Then, the appropriate base files were downloaded over the internet from Trenton or Edison. The base files are hourly files and come in compressed form and need to be inflated in *DOS*. In the project directory, the files are inflated automatically by typing the file name without the suffix. This essentially turns a 'EXE' file received from the base station, to a 'SSF' file usable in *Pathfinder* functions. When the base files were ready 'Differential Corrections' was selected under the 'Utilities' menu in the *Pathfinder* software, '. After clicking on 'Rover File', the appropriate file was entered followed in the same manner by the base file. The correction is performed as long as the date and hour of the rover and base file correspond. The base stations operate on Greenwich Mean Time so it is recommended to set the GPS receiver accordingly. Hourly base files were combined using the 'Combine SSF Files' under the 'Utility' menu to increase the frequency of hourly time matching.

When acquiring data at a given site, a series of points were taken to increase positional accuracy. Each point a GPS collects is slightly different resulting in a file showing up as a spread. For this reason, each file requires averaging after, and always after it is corrected. One rover file at a time was corrected and then averaged. *Pathfinder* transfer the file name from the corrections function over to the averaging

function so there is no need to re-type the filename. Under the 'Utilities' menu 'Calculating Statistics' was used to produce the final output of a single mean Universal Transverse Mercator (UTM) coordinate for each file. The final corrected and averaged coordinate has an accuracy of 2 to 5 meters.

The *DOS-based Pathfinder* software denotes rover files (files collected in the field) and base files as SSF files. After a file has been corrected it is a COR file, and the final averaged or statistics file is a STS file. After a file was corrected and averaged, the pair of mean coordinates, standard deviation, minimum and maximum coordinates, elevation, and datum were printed out for every file. The STS files have the coordinates needed to complete the GIS mapping. In several instances the ADJ files have the final coordinates. These are files that needed the elevation to be adjusted from Mean Sea Level (MSL) to Height Above Ellipsoid (HAE - refer to **critical settings**). A formula was devised to convert MSL to HAE based on known MSL elevations and HAE elevations (calculated by the GPS receiver) for the same location. The corrected HAE elevations were then imputed into the *Pathfinder* function 'Adjust 2D Position' under the 'Utilities' menu which adjusted the x,y coordinates according to the new elevation.

The data required for the mapping of the invasive plant species study were recorded manually on a spreadsheet. The **Transect Name- Section Name-** road, trail or boundary, the **Filename-** STS or ADJ, the **X,Y UTM Coordinates-** northing and easting, and the **HAE Elevation**. These records were **compiled in the same order in which the GPS data were** collected and are organized by hour and date. The actual print outs of each file are organized by **section name** and chronological **transect number**. Both versions of the report differentiate the Jockey Hollow and 6New Jersey Brigade areas of Morristown National Historic Park.

GPS Critical Settings

Set or check critical settings each day before beginning data acquisition.

PDOP (Position Dilution of Precision) - Quality rating of satellite configurations. Lower ratings are better.

- Default - 6 Settings of 4 - 8 are acceptable.

PDOP Switch - Used only when GPS receiver is in Auto 2D/3D position mode. Sets the PDOP to determine when receiver begins collecting 3D positions.

Default - 6 Settings of 4 - 8 are acceptable.

SNR (Sound to Noise Ratio) - Quality rating of satellite signal strength. GPS receiver stops accepting signal below a specified setting. Lower numbers are weaker.

Default - 6 Settings down to 4 are acceptable.

Elevation Mask - Specifies the minimum elevation above the horizon a satellite must be in order for the GPS receiver to accept the signal.

Default - 15 Lower slightly, if necessary, as long as SNR setting stays at acceptable setting.

Position Mode - Lets you chose a position fix mode.

Height Above Ellipsoid (HAE) - Elevation above the WGS-84 ellipsoid (an idealized perfect sphere of the earth). Created ultimately by flattening the mountains and raising the sea level. The HAE is calculated automatically in 3D mode.

Default - 3D Manual - Requires four satellites for receiver activation. The **recommended setting**. Altitude is automatically calculated.

Overdetermined 3D - Uses four, five, or six satellites to determine 3D positions. Increases accuracy under certain circumstances. Increase time required for satellite tracking. Not recommended for base data acquisition (real time).

Auto 2D/3D - Records 2D positions using three satellites and switches to 3D when four satellites become available.

Manual 2D - Requires only three satellites. Altitude input is required. It is difficult to determine HAE for a ~~sign~~ ^{line} and the slightest error causes significant position inaccuracies, therefore this mode is **not recommended**.

Feature Logging Rate, Points - Determines how often point features are stored.

Default - 1 second.

Feature Logging, Line/Area - Determines how often line/area positions are stored.

- - Default - 5 seconds.

Feature Logging, Min Posm - Lets you set minimum number of positions you want to collect for a point feature. Recommended value is 120 although this may be unnecessarily high. At least 60 points should be collected.

Not in Feature Rate - default all.

Noncritical Parameters

Dynamics - choose accordingly: Land, Sea, or Air.

File Prefix - default "R". Change code according to user or other differentiation.

Antenna Height - set according to the height receiver antenna is held above the ground surface.

Log DOPs - 'On' unless DOP records not desired in rover file.

Velocity - 'off' unless in the case of line data collection (refer to manual).

Coordinates - coordinate system - UTM, Lat-Long etc.

Units - Metric, English, or Custom.

Datum - WGS-84, compatible with NAD-84. Datums can be converted later in pathfinder.

Date and Time - Date Format - MM/DD/YY

Set Local Time - specify offset to Greenwich Mean Time - 4 hours or 5 hours (daylight savings time).

Time Display - 24 hour format.

Sat Health - Enable all.

Morristown National Historic Park
Invasive Plant Species Study

Global Positioning System Mapping
UTM Coordinates, Transect Numbers and
Filenames

Anthony C. Pasquini
September 24, 1996

Morristown Nat. Historic Park - Invasive Plant			
Transect Name	Rover (JH)	Coordinates	Study Site Local Elevation
Current	Filename		
		10 May 28	Added non-adjusted paper work
A 4, Twrd	BO52817C Adj	4512495.41 538881.1309	190
A 5, Twrd	BO52817D Adj	4512366.5481 538834.8342	190
B 2, JH Rd	BO52816A STS	4512642.6520 538879.9075	193
A 2, Twrd	BO52816B STS	4512741.1906 538386.884	187
A 1, Twrd	BO52817A STS	4512632.2866 538538.1455	191
A 3, Twrd	BO52817B STS	4512567.1311 538694.0180	179
B 1, Twrd	BO52818A Adj	4512044.4368 539165.1947	188
B 1, Bound	BO52818B Adj	4512035.6732 1378 539382.1135 1678	161
B 2, Bound	BO52818C Adj	4512157.7828 539623.2597	141
B 6 on B7 last transect of B7	BO52819A Adj	4512376.3028 540171.8068	147
B 7, JH Rd	(old) BO52819B Adj	4513215.7418 539358.347	155
E 7, JH Rd	BO52820A Adj	4513458.1160 539256.2944	170
opposite to B7			

Morristown Nat. Historic Park - Invasive Plant

Transect Name Rover (JH)

Coordinates

Study Site Local Elevation

	Filename		
	June 3/1996		
E-1 ^{km} SL Rd	R060318A.STS	4513256.542 538632.2654	172
	18B not used		
C3 Qm Rd	R060318C.STS	4514288.8682 539154.0383	187
D6 SL Rd	R060319A.STS	4514184.5755 539769.3796	194
D5, JH Rd	missing 19B.STS		
D4, JH Rd	R060319C.STS	4513714.760969846 539907.29846	185
C-3 rd Rd	R060319D.STS	4513722.4587 539912.3574	193
D-4, SL Rd	R060320a.STS	4514553.3287 539323.35	187
D-3, SL Rd	R060320B.STS	4514307.0140 539156.8256	157
D-1 - Goodford Rd	R060320C.STS	451364.9117 539346.2272	175

removed 2A position

Morristown Nat. Historic Park - Invasive Plant

Transect Name Rover (JH) Study Site Local

Filename

Coordinates

Elevation

June 4 1996 Adjusted

A2, 6PRd	R060416A Adj	4513416.9203 539594.7613	175 186
C, JHRd	R060416B Adj	4513549.8003 539688.7663	198
JH Rd	R060417A Adj	4513464.3020 539567.3873	196
J, JH Rd	R060417B Adj	4513322.2564 539448.8942	171
58, J-H Rd	R060417C Adj	4513291.9415 539417.9270	169
33, JH Rd	R060417E Adj	4512863.9412 539132.2456	194
21? Circle Loop	R060419A Adj	45131620373 539869.2049	152
33, JH Rd	R060417D Adj	4512913.0568 539203.2822	208
34 JU Rd	R060417F Adj	4512754.8024 539604.4586	181
35, JH Rd	R060417G Adj	4512707.3059 538971.7108	181
37, JH Rd	R060418A Adj	4512400.5575 539661.6602	203
A1	R060418B Adj	4512089.6628 538709.1986	176

Morristown Nat. Historic Park - Invasive Plant		Study Site	Local
Transect Name	Rover (JH)	Coordinates	Elevation
	Filename	R1106	rally June 11
B6 Border	R1106/5A.STS	4512123.0750 540012.4417	174
B5 Border	R1106/5B.STS	451204.3850 539872.4774	172
B4 Border	R1106/6A.STS	4512246.67284 540090.4957	
B3 Border	R1106/6B.STS	4511995.5129 539695.1314	170
C1, Trail	R1106/6C.STS	4512591.0904 540252.8638	175
C2, Trail	R1106/7A.STS	4513056.6486 540123.5719	178
C3, Trail	R1106/7B.STS	4513188.5679 540206.9042	188
C5, Trail	R1106/7C.STS	4513301.9289 540513.4400	183
C4, Trail	R1106/7D.STS	4513261.7390 540343.5440	170
C6, Bound	R1106/7E.STS	4513323.6579 540712.4543	177
C7, Bound	R1106/8A.STS	4513433.4800 540814.0608	200
C8, Bound	R1106/8B.STS	4513441.3645 541031.7349	200
C9, Bound	R1106/8C	(county, correct) R1106 T6006-9	
C9, Bound	R1106 T6006-9		
C9, Bound	R1106 T6006-9		

Morristown Nat. Historic Park - Invasive Plant

Transect Name Rover (JH)

Coordinates

Study Site Loca es	Elevation
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Filename

RC 701

July 11

54, Bound

R070120A

45' 41.26 - 245 4

538758.36.05

18-

23 Trail

Re 701706

45/4066, 8337

5386 6252

169

F1, Brand

R070120C

4513985-3864

538414 7720

155

F3 - rad

Re 701215

4513463.7744

538482, 5394

182

F3 Trail

R070122A

4513346.00 US

538548. 9628

192

F2 Trans

R070122B

4513189.9232

538470.2433

212

5, Cem Rd

R070122C

4513814.7634

538845-4679

187

Merristown Nat. Historic Park - Invasive Plant			
Transect Name	Rover (JH)	Coordinates	Study Site Location Elevation
	Filename		
		July 2, 1996	
41, JH Rd	R070216A	4512797.409 538246.8554	162
45? JH Rd - Trail	R070216B	4512054.7075 538714.3585	144
44? Trail - in woods - stream	R070216C	4511932.6867 538657.3979	145
A5 42 off-trail - in woods	R070218A	4511909.5568 538569.45733	164
44? off-trail	R070218B	4511975.6723 538435.9100	173
45 off-trail - near brook	R070218C	4512098.3154 538759.5112	158
A2 in woods behind parking	R070220A	4512350.4340 538807.9057	175
D6 Querein House	R070221A	4513897.5345 540152.2104	182
D5 trail	R070221B	4513897.2392 539963.1722	201
D3 behind parking lot	R070222A	(redone) Aug 14 [B081920A STS]	
D2 off-trail - in woods	R070222B	B081920B. STS	

Morristown Nat. Historic Park - Invasive Plant
Study Site

Transect Name	Coordinates	Study Site Location	Elevation
Rover (JH)			

Filename

July 8, 1996

E15LRd

R070818A

redone Aug. 19

Bu819200.578

3 SLR

R070820A

451 3337.7366

538626.7734

Reg

4 Basic
Filtering

Rc 70820B

same as (see this)

BO71519A

Morristown Nat. Historic Park - Invasive Plant Study Site Location

Transect Name Rover (JH) Coordinates Elevation

Transect Name	Filename	Coordinates	Elevation
E7 JH Rd Park Maintenance	B071516D	4513424.6634 539546.9897 ~~need to be 1516~~	15
E6 JH Rd	B071516C	4513335.0805 539443.5626	14 168
E5 JH Rd	B071517A	4513219.9550 539251.1370	12
E4 JH Rd	B071517B	4513042.7030 539266.9019	14
E3 JH Rd	B071518A	4512896.4749 539168.2843	18
E1? JH Rd	B071518B	4512697.4000 538912.9703	19
E0 JH Rd picnic table	B071518C	4512637.6916195 538836.1741	19
E1 SL Road	B071518D	4513836.9795 539123.5810	16
E4 SL Rd.	B071519A	4513737.1421 not correct 538634.0403 E of B071520B	17
E5 SL Rd	B071520A	4513718.9326 538772.7798	17
E6 SL Rd	B071520B	4513860.0243 538932.9043	17

Marriestown Nat. Historic Park - Invasive Plant			
Transect Name	Rover (JH)	Coordinates	Study Site Local Elevation
	Filename	July 16, 1996	
C4, Rt 202	BO71614A	4512667.5923 540947.5601	13
E5	BO71615A	4513163.7135 540677.4577	19.5
~~E7, Camp~~ ~~1, Grand~~	BO71616A	(X)	
~~E6, Grand~~ ~~Trail~~	BO71616B	4513450.6452 540602.1556	19.4
~~E2, JHRd~~			
C5	BO71617B	4513302.8770 540510.1007	18.2
C6 Near Path 202	BO71618A	4512629.5523 540741.7692	16.1
E2 JHRd	BO71619A	4512811.3952 539034.9702	18.7
E1 SL Rd	BO71620A	4513063.5379 538613.7439	22.1
E0, Field off SL Rd	BO71620B	4512998.2314 538556.4372	20.9
opposite picnic table transect			

Merristown Nat. Historic Park - Invasive Plant
Transect Name Rover (JH) Study Site Location
Coordinates Elevation

[illegible]

Morristown Nat. Historic Park - Invasive Plant			
Transect Name	Rover (JH)	Coordinates	Study Site Local Elevation
	Filename	August 19, 1996	
D5, JHRd	B081920CSTS	4513580.5246 539990.5918	181
D3, JHRd	B081920DSTS	4513345.6581 539810.81948	169
D2 Left off Ruts off SL Rd	B081920BSTS	4513762.7583 539127.6472	193
E1, SL Rd	B081920ASTS	4512840.2626 538591.2736	195
A1, TW Rd	B081919ASTS	4512576.5675 538208.19355	185
A2 nearest cross Estate	B081916BSTS	4510541.0409 537171.0920	196
A1, near entrance	B081917ASTS	4510957.2735 537378.2438	198
B2, JHRd	B081921ASTS	4512521.8357 538827.4052	196
B9, Board 1	B081922CSTS	4513497.8468 540897.1612	220
B4, Board 2	B081922BSTS	4513628.3740 540789.2086	209
B8, Board 2	B081922ASTS	4513523.7747 540675.2300	224

Jockey Hollow- Section A

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	56	4512632.28604050	7.8067542	4512622.94975279	4512681.06326760
Easting	56	538534.14546388	10.280876	538513.44786136	538594.36004222
Altitude	56	199.22731963	15.790089	105.22890118	218.94943261
East Vel	1	-0.12568353	0.0000000	-0.12568353	-0.12568353
North Vel	1	0.05355276	0.0000000	0.05355276	0.05355276
Up Vel	1	0.20969942	0.0000000	0.20969942	0.20969942
Velocity	1	0.25027604	0.0000000	0.25027604	0.25027604

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 17:17:11

End GPS Week #855 on 05/28/96 at 17:25:10

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A 1

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	64	4512088.06284194	15.254568	4511986.26072505	4512146.71010615
Easting	64	538769.19861883	4.9845116	538734.32069563	538773.02945877
Altitude	64	206.10297411	0.0000000	206.10294646	206.10294011

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 16:49:25

End GPS Week #856 on 06/04/96 at 16:52:48

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Al, Th' Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	53	4512576.56758351	4.3544354	4512571.60117992	4512588.68147873
Easting	53	538208.93555307	15.253306	538179.29772525	538251.58348984
Altitude	53	183.06469812	30.760110	104.65481322	238.97869045

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 19:45:27

End GPS Week #867 on 08/19/96 at 19:46:25

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

At, JH Rd

C:\JOCKEYHOLLOW\R070216A.COR

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512797.41199059	0.6023182	4512795.80835600	4512798.21011701
Easting	77	538246.85541335	0.8571012	538244.86556949	538248.09780393
Altitude	77	162.64691057	2.1798297	159.36884573	167.66125637

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 14:15:18

End GPS Week #860 on 07/02/96 at 14:16:34

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C:\JOCKEYHOLLOW\B052816B.COR

A2, TWRd

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	53	4512741.19062206	5.6169104	4512725.97115642	4512750.35020764
Easting	53	538386.85543258	12.885480	538358.96594844	538403.61070661
Altitude	53	187.72401814	30.355365	134.65197972	239.22440103

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 16:26:09

End GPS Week #855 on 05/28/96 at 16:28:20

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

*A2 in woods parking
behind*

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4512350.43400720	3.1178800	4512340.91827537	4512356.72158072
Easting	79	538807.90579715	1.1034934	538805.89507125	538810.39490067
Altitude	79	176.39814387	7.3830664	163.21937934	197.13588085

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 18:30:00

End GPS Week #860 on 07/02/96 at 18:32:13

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A3, TWRd

C:\JOCKEYHOLLOW\B052817B.COR

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	54	4512567.13111367	3.3582877	4512560.16394943	4512574.69549003
Easting	54	538694.01795340	4.4679087	538686.13043769	538702.38505721
Altitude	54	178.80227657	8.4921524	157.91455444	198.17025002

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 17:32:14

End GPS Week #855 on 05/28/96 at 17:33:05

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	152	4512402.55708265	21.844212	4512386.12451142	4512462.77550453
Easting	152	538661.09978697	14.168455	538638.07074757	538674.12767692
Altitude	152	237.10239704	0.0000000	237.10233934	237.10238987

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 16:37:33

End GPS Week #856 on 06/04/96 at 16:40:42

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A 3 ?

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4511909.55686155	3.2061353	4511903.69424782	4511913.83804696
Easting	79	538569.45733127	0.9029153	538567.77724130	538571.51844868
Altitude	79	164.28175278	9.0705740	150.80757923	182.06534574

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 16:11:27

End GPS Week #860 on 07/02/96 at 16:13:43

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A4 off trail ?

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	73	4511995.67233322	1.8805586	4511991.34599922	4512000.20293264
Easting	73	538435.91007179	4.5540003	538432.05080669	538448.82497308
Altitude	73	173.20185062	5.6302585	165.37142748	187.92603749

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 16:24:29

End GPS Week #860 on 07/02/96 at 16:26:28

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A-4, TWRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	55	4512495.41601722	8.6379155	4512483.41471552	4512511.42031585
Easting	55	538831.13097928	34.239031	538807.43896950	538905.54290834
Altitude	55	152.06663617	0.0088151	152.04723638	152.11481557

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 17:37:51

End GPS Week #855 on 05/28/96 at 17:38:26

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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A4, trail just over stream?
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4511932.68674460	0.7441481	4511931.27189757	4511934.00260447
Easting	76	538657.39798513	1.3057414	538654.25133466	538659.31493543
Altitude	76	145.61927380	2.5926029	139.55655206	150.34992427

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 14:47:24

End GPS Week #860 on 07/02/96 at 14:48:45

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

A 5, TWR

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	91	4512366.54813769	9.5892944	4512350.73583597	4512387.71974895
Easting	91	538836.83423930	6.5730575	538817.03982522	538846.26200687
Altitude	91	228.10296498	0.0000023	228.10291673	228.10297728

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 17:45:13
End GPS Week #855 on 05/28/96 at 17:46:00

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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AS off main land
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512098.31545749	1.2884961	4512096.19033654	4512102.54975936
Easting	77	538759.51123399	0.8110386	538757.82475727	538760.65789333
Altitude	77	155.35729037	2.6431158	146.98015945	158.11716040

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 16:59:29

End GPS Week #860 on 07/02/96 at 17:00:45

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512054.70759381	10.948677	4512047.37815565	4512126.81291488
Easting	77	538714.35856856	1.2917000	538712.02240486	538719.12202362
Altitude	77	144.26565908	8.8497151	85.62868195	150.92120622

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 14:31:05

End GPS Week #860 on 07/02/96 at 14:33:03

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Jockey Hollow- Section B

B.1. Beamed

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	53	4512035.13784023	10.782428	4512015.58865473	4512058.38863907
Easting	53	539382.16780108	14.798082	539361.75538456	539447.82366759
Altitude	53	195.10489499	0.0000000	195.10484777	195.10507799

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 18:18:56

End GPS Week #855 on 05/28/96 at 18:19:33

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B1, Tw Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4512044.43683306	20.558806	4511932.80365669	4512140.81753497
Easting	76	539165.19476741	12.454268	539138.22429875	539231.98197158
Altitude	76	180.06706616	0.0834205	179.70801581	180.46142301

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 18:06:29

End GPS Week #855 on 05/28/96 at 18:07:20

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

BOS 28

16-20

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	59	4512642.65697149	6.1982802	4512628.22206375	4512656.49786959
Easting	59	538829.90754403	6.1464099	538818.91832335	538843.03604536
Altitude	59	193.49451609	19.150827	136.30515679	228.21252651

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 16:02:23
End GPS Week #855 on 05/28/96 at 16:05:01

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B2-JHRd

B2, Bound

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	69	4512157.78281396	15.682605	4512139.74828576	4512187.61243849
Easting	69	539623.25979288	3.7874170	539613.92661901	539631.07097872
Altitude	69	175.10553703	0.0000000	175.10552266	175.10553742

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 18:47:43

End GPS Week #855 on 05/28/96 at 18:48:27

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B2JHRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	78	4512913.05640671	8.1824356	4512898.08574942	4512925.59650456
Easting	78	539203.28274308	18.130608	539186.27758207	539234.21105420
Altitude	78	242.10365596	0.0000000	242.10361583	242.10374058

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:39:10

End GPS Week #856 on 06/04/96 at 15:40:34

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4512421.83573718	4.5809060	4512413.58620182	4512428.34096917
Easting	61	538827.40526108	3.1842677	538821.83484108	538834.18018773
Altitude	61	196.12680317	2.5775623	190.00290649	200.74857629

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 21:09:54

End GPS Week #867 on 08/19/96 at 21:11:48

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B3 JHRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512863.94178529	6.0435359	4512854.87152735	4512873.87162262
Easting	77	539137.24564122	1.9692082	539133.55971667	539140.70286377
Altitude	77	228.10349387	0.0000020	228.10348977	228.10349659

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:48:46

End GPS Week #856 on 06/04/96 at 15:50:06

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	78	4511995.51290782	2.1569017	4511988.69029306	4511998.08854550
Easting	78	539695.12147109	0.9990848	539693.58277008	539697.86920888
Altitude	78	132.18351879	3.2920658	126.94970032	140.17641351

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 16:08:11

End GPS Week #857 on 06/11/96 at 16:10:18

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B4, JHRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	74	4512754.80246342	7.5288256	4512735.64586386	4512805.41499006
Easting	74	539004.45863211	6.8345391	538994.66877270	539016.86578083
Altitude	74	215.10317377	0.0000000	215.10315891	215.10317182

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:55:08

End GPS Week #856 on 06/04/96 at 15:57:00

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

B4, Bound

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	83	4512246.67284797	3.1279085	4512240.38583780	4512249.64292560
Easting	83	540090.49571769	3.1805350	540082.60135170	540094.34076373
Altitude	83	168.51822137	9.4461807	148.26376206	181.51432472

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 15:04:10

End GPS Week #857 on 06/11/96 at 15:06:48

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B5, JHRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4512707.30590588	18.009622	4512629.32821062	4512734.17948479
Easting	79	538971.71080496	25.470969	538846.50674349	538997.60956584
Altitude	79	185.19140246	0.9618934	184.94842517	190.00291563

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:58:42

End GPS Week #856 on 06/04/96 at 16:05:19

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B5, Bound

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4512041.38502141	3.4235292	4512036.97199954	4512051.52521610
Easting	79	539872.47742373	2.2580727	539867.71831635	539875.59466337
Altitude	79	172.83580702	4.4539873	160.11816474	183.48966022

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 15:45:34

End GPS Week #857 on 06/11/96 at 15:47:35

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Bl, board

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512123.07502644	4.1606275	4512108.25504333	4512131.14911781
Easting	77	540012.04417306	1.1727737	540010.27292703	540017.30326400
Altitude	77	171.53227952	9.5292275	166.64108165	216.58116759

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 15:25:12

End GPS Week #857 on 06/11/96 at 15:27:32

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	84	4513215.74182308	25.344312	4513110.98099664	4513244.61958381
Easting	84	539358.34716959	4.0416558	539348.06823581	539364.14615886
Altitude	84	189.10388894	0.0000000	189.10394084	189.10388366

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 19:51:58

End GPS Week #855 on 05/28/96 at 19:52:40

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

137 Pathpath

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	74	4512376.30282860	5.4721746	4512361.37858853	4512385.55409120
Easting	74	540171.80681314	10.508474	540153.86385958	540190.67847574
Altitude	74	181.10704579	0.0000000	181.10700274	181.10709619

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 19:29:51

End GPS Week #855 on 05/28/96 at 19:30:31

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B8, JHRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	78	4513291.94184575	10.399502	4513242.07032477	4513303.70254598
Easting	78	539417.92704856	13.416796	539343.56892837	539470.69790010
Altitude	78	203.10401082	0.0000000	203.10382352	203.10416254

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:28:51

End GPS Week #856 on 06/04/96 at 15:30:25

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

B8
X still need
another point,
or interpolate

Jockey Hollow- Section C

C1 JHed

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4513464.30709059	7.7715371	4513457.51045687	4513489.57412686
Easting	77	539567.38738361	5.2637261	539562.15076184	539583.40536899
Altitude	77	230.10433123	0.0000028	230.10432069	230.10435987

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:05:08

End GPS Week #856 on 06/04/96 at 15:06:24

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	74	4512591.09645674	6.4463830	4512585.38233899	4512603.64199100
Easting	74	540252.86382222	3.6826167	540248.37693173	540258.89657841
Altitude	74	195.32575379	14.732148	182.79191280	221.46348686

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 16:39:44

End GPS Week #857 on 06/11/96 at 16:41:16

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4513549.80038378	6.8722358	4513532.27377754	4513566.05368138
Easting	61	539688.76634791	6.9371412	539683.02312350	539715.09236242
Altitude	61	232.10463192	0.0000000	232.10462846	232.10469917

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:00:17

End GPS Week #856 on 06/04/96 at 15:01:20

Datum : NAD-83
 Coordinate System : Universal Transverse Mercator [18T]
 Altitude Mode : Mean Sea Level
 Altitude/Distance Units : Meters
 Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4513056.64868087	2.0854181	4513054.23181052	4513060.83219016
Easting	76	540123.57490674	1.2625682	540121.88500921	540126.24852863
Altitude	76	178.25044057	2.0503554	174.82851749	181.63126431

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 17:10:41
End GPS Week #857 on 06/11/96 at 17:12:29

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C 3, Cam Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	62	4514288.86821379	6.1277496	4514272.28569478	4514297.49841248
Easting	62	539154.03830731	7.2223941	539144.37402113	539165.97537534
Altitude	62	189.30407948	7.2178680	179.77433189	212.08474877

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 16:45:54

End GPS Week #856 on 06/03/96 at 16:53:21

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C 3, JH Rd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4513722.45878536	1.1948218	4513721.07992973	4513724.37377944
Easting	77	539912.35749675	1.4688317	539907.18935831	539914.94757455
Altitude	77	193.79368651	3.2672270	188.83410142	201.65837931

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 17:53:16

End GPS Week #856 on 06/03/96 at 17:55:06

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	90	4513188.56790566	0.9111570	4513187.22551497	4513190.94565944
Easting	90	540206.90424367	1.2541586	540204.40845617	540208.63390143
Altitude	90	184.39855830	1.2918022	181.94895559	187.29869122

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 17:17:28

End GPS Week #857 on 06/11/96 at 17:19:08

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C4, Trail

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	81	4513261.73908538	1.1437265	4513258.34011058	4513264.46613128
Easting	81	540343.54406263	2.1360996	540340.43477325	540348.50821839
Altitude	81	190.68280254	5.4887403	176.06921360	207.68340719

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 17:40:21

End GPS Week #857 on 06/11/96 at 17:42:40

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

C4, Rt 202

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4512667.59237017	4.3112790	4512641.77606748	4512674.17946615
Easting	76	540947.56013346	6.6309173	540899.41929748	540955.47421685
Altitude	76	130.09605738	16.472430	-0.59378734	142.84415545

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 14:41:41

End GPS Week #862 on 07/16/96 at 14:47:17

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C5, Trail

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	83	4513301.92899926	2.9037226	4513297.65588186	4513309.43803384
Easting	83	540513.64007707	3.6226775	540506.67847704	540524.70614980
Altitude	83	185.29428056	7.5659783	170.10872831	194.50952300

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 17:25:18

End GPS Week #857 on 06/11/96 at 17:26:59

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	39	4513302.87703791	8.3010029	4513288.59100707	4513321.22274534
Easting	39	540510.10077475	2.9224982	540502.20258078	540514.92101883
Altitude	39	182.91984950	11.001078	150.32031601	205.20085642

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 17:43:19

End GPS Week #862 on 07/16/96 at 17:47:57

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4513163.71359172	3.0460686	4513156.38936383	4513168.36751073
Easting	76	540677.45776472	5.1415396	540668.58316138	540687.22667270
Altitude	76	195.77184234	6.7699199	183.96312327	205.50617739

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 15:34:23

End GPS Week #862 on 07/16/96 at 15:35:41

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	70	4513323.65797861	3.6186576	4513316.52561415	4513327.52204035
Easting	70	540712.45435945	1.0254060	540710.17325555	540714.73999098
Altitude	70	197.44242186	10.163619	187.76723994	219.94938364

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 17:57:48

End GPS Week #857 on 06/11/96 at 18:03:55

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	55	4512629.55234934	5.5995431	4512620.15830595	4512640.03777193
Easting	55	540741.76925545	2.7180909	540737.53632396	540747.70281812
Altitude	55	161.25324607	8.7010338	145.86974570	176.23317937

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 18:20:18

End GPS Week #862 on 07/16/96 at 18:26:23

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Clc, Grand Loop Trail

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	108	4513450.64520748	5.7813443	4513440.20469149	4513463.69157414
Easting	108	540602.15566959	2.3541472	540598.09224741	540606.51445141
Altitude	108	194.50323771	12.502459	173.69248995	224.52625972

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 17:00:05

End GPS Week #862 on 07/16/96 at 17:02:19

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	98	4513433.48008866	6.5821760	4513423.18699112	4513455.79974191
Easting	98	540814.06081421	6.2334833	540806.76245244	540835.70804832
Altitude	98	202.59980316	9.3567936	196.13087919	235.30163053

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 18:09:55

End GPS Week #857 on 06/11/96 at 18:12:42

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	92	4513969.48128065	3.1641731	4513961.06282617	4513975.67256948
Easting	92	539049.75031952	2.3439382	539045.55278280	539054.92548752
Altitude	92	173.94903102	3.2719116	164.48147977	180.67749603

No velocity records in file.

No DOP records in file.

Start GPS Week #863 on 07/22/96 at 16:17:27
End GPS Week #863 on 07/22/96 at 16:18:22

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4513441.36458871	2.4590555	4513437.12354648	4513446.36596161
Easting	79	541031.73496414	1.0057392	541030.23549847	541033.47456261
Altitude	79	223.25475366	3.7386805	219.00877474	230.52086204

No velocity records in file.

No DOP records in file.

Start GPS Week #857 on 06/11/96 at 18:39:10

End GPS Week #857 on 06/11/96 at 18:41:13

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4513523.77470041	3.5897165	4513517.74679793	4513530.60387964
Easting	61	540675.23009948	5.7474350	540665.72415491	540683.46005155
Altitude	61	224.63426985	19.781741	179.20590495	257.19105403

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 22:26:30

End GPS Week #867 on 08/19/96 at 22:27:23

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C9, Brand 2

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	45	4513628.37400311	3.2136543	4513622.17917671	4513634.34779186
Easting	45	540789.70865181	1.0140422	540787.77231499	540791.74680273
Altitude	45	209.03723229	6.8816484	200.41049771	223.88402588

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 22:42:57

End GPS Week #867 on 08/19/96 at 22:43:33

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator { 18T }
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C 9 - Beend 1

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	67	4513497.84687700	1.1047074	4513495.34610478	4513499.84584507
Easting	67	540893.16125098	1.1730466	540891.30960748	540898.13834559
Altitude	67	220.43976683	4.9042282	212.18542977	230.49408738

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 22:52:00

End GPS Week #867 on 08/19/96 at 22:52:48

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Jockey Hollow- Section D

DI, Grand Pan Rd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	53	4513641.91172940	2.8131634	4513637.77910822	4513646.31616101
Easting	53	539346.22726174	1.0164028	539344.64617488	539348.55335946
Altitude	53	173.83079346	5.9842177	161.98515661	182.69065182

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 18:37:41

End GPS Week #856 on 06/03/96 at 18:39:06

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

DI, SL Rd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	74	4513830.97951487	2.5546827	4513815.37428802	4513840.75870582
Easting	74	539123.58107166	7.6142931	539112.17384669	539177.65788248
Altitude	74	167.44017889	12.371200	80.14292570	184.56502480

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 18:52:12

End GPS Week #862 on 07/15/96 at 18:53:55

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	60	4513762.75836686	5.5359262	4513750.47162467	4513780.00961648
Easting	60	539127.64728036	3.5767995	539119.68041463	539135.04140051
Altitude	60	193.95627077	15.303560	154.13905996	225.55846330

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 20:21:40

End GPS Week #867 on 08/19/96 at 20:23:51

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Matches w/
D2 Grand Parade Rd

RT 604 16.7 Adj

D3, SL Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	36	4514307.01409492	6.6463262	4514297.80592311	4514316.69320724
Easting	36	539156.82561566	3.9929143	539150.60327413	539165.12667518
Altitude	36	157.70245160	27.695802	119.87154279	188.07498138

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 18:21:11
End GPS Week #856 on 06/03/96 at 18:24:01

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

D3-JHRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	70	4513345.65819072	8.7871564	4513285.75076213	4513368.75521859
Easting	70	539810.21948317	6.0006604	539774.43337093	539840.61891966
Altitude	70	169.44076837	14.066672	105.55981057	194.41896975

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 20:55:00

End GPS Week #867 on 08/19/96 at 20:56:07

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

D4, J H Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	66	4513714.76096980	1.3866455	4513712.55615880	4513716.76075627
Easting	66	539907.98460671	4.9274932	539903.89027351	539918.12838298
Altitude	66	175.44912970	8.9790546	156.75158103	183.60631159

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 17:44:46

End GPS Week #856 on 06/03/96 at 17:45:58

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4514553.32870418	1.7984289	4514548.63633851	4514555.23374664
Easting	77	539323.35481591	1.3987048	539320.04969569	539324.97225847
Altitude	77	187.84692650	4.1510444	179.90215798	199.53455239

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 18:09:20

End GPS Week #856 on 06/03/96 at 18:12:38

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

D5-Trail

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	38	4513897.23927795	0.6824461	4513896.23507784	4513900.45885025
Easting	38	539963.17226695	0.8737092	539959.10174864	539964.37193115
Altitude	38	201.74416006	2.6925574	197.68020501	211.10396757

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 19:52:39

End GPS Week #860 on 07/02/96 at 19:55:44

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

D5, JHRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	66	4513580.52460779	3.4973942	4513565.38050208	4513586.48426813
Easting	66	539990.59318166	3.7708702	539981.83772920	539995.64036448
Altitude	66	181.75496425	9.6060041	166.26339532	217.50568412

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 20:43:12

End GPS Week #867 on 08/19/96 at 20:44:21

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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D 6, SL Rd
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	142	4514184.57552287	416.21883	4513796.19156663	4514640.82736479
Easting	142	539769.37965218	285.57843	539458.57601261	540030.82538817
Altitude	142	194.89392082	14.631135	174.57276278	218.01581570

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 17:24:57
End GPS Week #856 on 06/03/96 at 17:41:29

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	82	4513897.53459619	2.7047423	4513893.33310518	4513902.88668850
Easting	82	540152.21046725	2.2645251	540148.07764316	540156.81617360
Altitude	82	192.75912781	8.7993183	176.83726921	205.30773181

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/02/96 at 19:12:20

End GPS Week #860 on 07/02/96 at 19:13:45

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	110	4513655.50284495	6.9361414	4513645.08941894	4513671.92617415
Easting	110	539631.81383132	2.3538653	539627.19188171	539637.17898309
Altitude	110	25.00186432	0.0124058	24.96813035	25.12085298

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 19:40:47

End GPS Week #856 on 06/03/96 at 19:46:55

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Jockey Hollow- Section E

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Statistics Version 3.3

EO, JHRd Picnik
Table

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4512637.69116195	5.8960334	4512625.20124938	4512648.13910043
Easting	76	538836.17418538	6.0998473	538827.12114253	538850.50384342
Altitude	76	193.98355302	9.3813404	182.95900280	213.83175227

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 18:40:01

End GPS Week #862 on 07/15/96 at 18:40:52

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

EO, Fieldoff of SL Rd.

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512998.23145081	2.1498149	4512994.03351313	4513002.77910816
Easting	77	538556.43727125	2.2527350	538552.64509836	538560.64024600
Altitude	77	209.90431918	11.542831	187.17278868	230.49644517

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 20:37:24

End GPS Week #862 on 07/16/96 at 20:38:42

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E1, SL Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	175	4513256.54020185	1.5804024	4513253.36414006	4513258.77102434
Easting	175	538632.26546514	1.0192184	538629.75313739	538634.30343616
Altitude	175	193.81937344	4.2301991	183.71559041	203.37419227

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/03/96 at 16:10:00

End GPS Week #856 on 06/03/96 at 16:13:04

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E1, JH Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	87	4512697.40103560	5.8378929	4512673.79243649	4512703.81260680
Easting	87	538912.97033445	5.1268038	538904.77635341	538928.08400127
Altitude	87	191.99661552	10.124039	173.93968225	220.73313739

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 18:29:53

End GPS Week #862 on 07/15/96 at 18:31:11

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E1, SLRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	85	4513063.53796746	4.9378260	4513053.36644187	4513073.53452514
Easting	85	538613.74394384	2.7746474	538607.53154929	538618.63987450
Altitude	85	229.60529295	12.611609	202.15045904	255.68170614

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 20:23:28
End GPS Week #862 on 07/16/96 at 20:27:19

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

No sheet - Triple grouping

E7, Cem Rd, B072216A.STS *4513969.4812*
5390049.7503

E4, Cem Rd, B072216B.STS *4513918.4498*
538687.0256

E1, SL Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4512840.26265889	7.0287926	4512827.56661097	4512850.90643920
Easting	61	538591.27341130	3.6973016	538584.19967847	538597.86690655
Altitude	61	195.00466287	9.6708233	181.29745840	214.24061993

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 20:01:20
End GPS Week #867 on 08/19/96 at 20:03:13

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E2, JH Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4512811.39520901	5.2128837	4512802.47490796	4512822.57508881
Easting	77	539034.97021730	2.2459248	539030.15666810	539038.84441149
Altitude	77	187.16016071	6.9322777	178.68278617	203.37860529

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/16/96 at 19:27:29

End GPS Week #862 on 07/16/96 at 19:29:57

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

*E2, SL Rd
needs redoing*

E3, SL Rd.

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	74	4513337.73666968	17.309479	4513257.03266888	4513349.06402594
Easting	74	538626.77392549	5.3462465	538620.94734752	538650.50236012
Altitude	74	209.66183794	46.224139	179.44976464	430.96747008

No velocity records in file.

No DOP records in file.

Start GPS Week #861 on 07/08/96 at 18:10:27

End GPS Week #861 on 07/08/96 at 18:13:26

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E3, JHRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	79	4512896.47494682	7.4287615	4512874.66444654	4512910.71579344
Easting	79	539168.28431437	8.8185612	539153.25327195	539192.81685350
Altitude	79	184.67189181	17.550831	159.05894756	236.24271767

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 18:23:34

End GPS Week #862 on 07/15/96 at 18:25:29

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

E4, JHRd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	57	4513042.79497457	18.330112	4512995.06159877	4513127.36352744
Easting	57	539260.90199831	7.5867707	539251.57472521	539275.96700314
Altitude	57	144.03025617	41.501498	-76.71695431	223.28613568

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 17:12:59

End GPS Week #862 on 07/15/96 at 17:23:27

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

E4, SL Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	151	4513737.14214083	9.2311594	4513667.23255174	4513751.03166638
Easting	151	538634.04036788	4.9443684	538627.32176640	538674.33538772
Altitude	151	170.03107354	9.3381152	155.95410441	248.33719221

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 19:37:30

End GPS Week #862 on 07/15/96 at 19:39:39

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E5, JHR

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4513209.95505416	12.415245	4513190.10057099	4513232.70842515
Easting	77	539356.13243333	3.6780489	539351.55004787	539365.38602286
Altitude	77	123.45859917	15.305244	94.23887065	144.02621725

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 17:03:48

End GPS Week #862 on 07/15/96 at 17:04:56

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E5, SLRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	83	4513818.93263021	7.0673496	4513800.76742405	4513835.55368376
Easting	83	538772.77981315	2.3258563	538768.15733594	538777.38033014
Altitude	83	172.31792982	8.6892959	149.79188801	185.59622502

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 20:16:19

End GPS Week #862 on 07/15/96 at 20:19:22

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

EL, JH Rd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	143	4513335.08650198	25.725150	4513201.49198082	4513368.46004346
Easting	143	539443.56265010	10.819881	539391.46229960	539459.26495987
Altitude	143	168.36265849	21.184770	112.15605067	220.54119349

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 16:34:00

End GPS Week #862 on 07/15/96 at 16:38:30

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

EG, SL Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	81	4513860.02437996	4.6079931	4513841.56548465	4513867.00321309
Easting	81	538932.90431280	2.4275541	538926.45885231	538937.06174339
Altitude	81	176.73529364	10.164524	160.80821480	219.44775320

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 20:23:00

End GPS Week #862 on 07/15/96 at 20:24:31

Datum : NAD-83

Coordinate System : Universal Transverse Mercator [18T]

Altitude Mode : Mean Sea Level

Altitude/Distance Units : Meters

Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	70	4513058.11600980	21.403265	4513009.61218617	4513093.09097073
Easting	70	539251.29244911	13.883153	539224.51215292	539279.57309814
Altitude	70	211.10368648	0.0000000	211.10364310	211.10374513

No velocity records in file.

No DOP records in file.

Start GPS Week #855 on 05/28/96 at 20:02:05

End GPS Week #855 on 05/28/96 at 20:02:43

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

E7, JHRd

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4513322.25645351	5.1504032	4513307.02308274	4513333.29172582
Easting	76	539448.89422193	10.756781	539434.84523006	539463.86454632
Altitude	76	208.10407979	0.0000000	208.10404906	208.10411668

No velocity records in file.

No DOP records in file.

Start GPS Week #856 on 06/04/96 at 15:25:42

End GPS Week #856 on 06/04/96 at 15:27:16

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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E 7, JH Rd Park Maintenance
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	75	4513424.66348075	15.897253	4513297.80753618	4513443.29975114
Easting	75	539546.98979503	4.5039414	539532.89498836	539556.78359868
Altitude	75	175.35272831	26.784630	150.10442135	390.20929936

No velocity records in file.

No DOP records in file.

Start GPS Week #862 on 07/15/96 at 16:53:55
End GPS Week #862 on 07/15/96 at 16:55:03

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Jockey Hollow- Section F

F1, Trail

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	92	4513463.77448359	22.653105	4513451.97536053	4513570.89669233
Easting	92	538480.53948071	25.191251	538361.40836177	538492.28618006
Altitude	92	187.07887657	8.4164553	148.69439660	193.58580023

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 19:54:40

End GPS Week #860 on 07/01/96 at 19:56:32

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

F1, Bernd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4513985.38042121	2.6044414	4513979.88251111	4513989.65909829
Easting	76	538414.77202376	1.5860175	538411.61940555	538418.23905347
Altitude	76	187.47087813	7.1227103	174.25564172	202.75191383

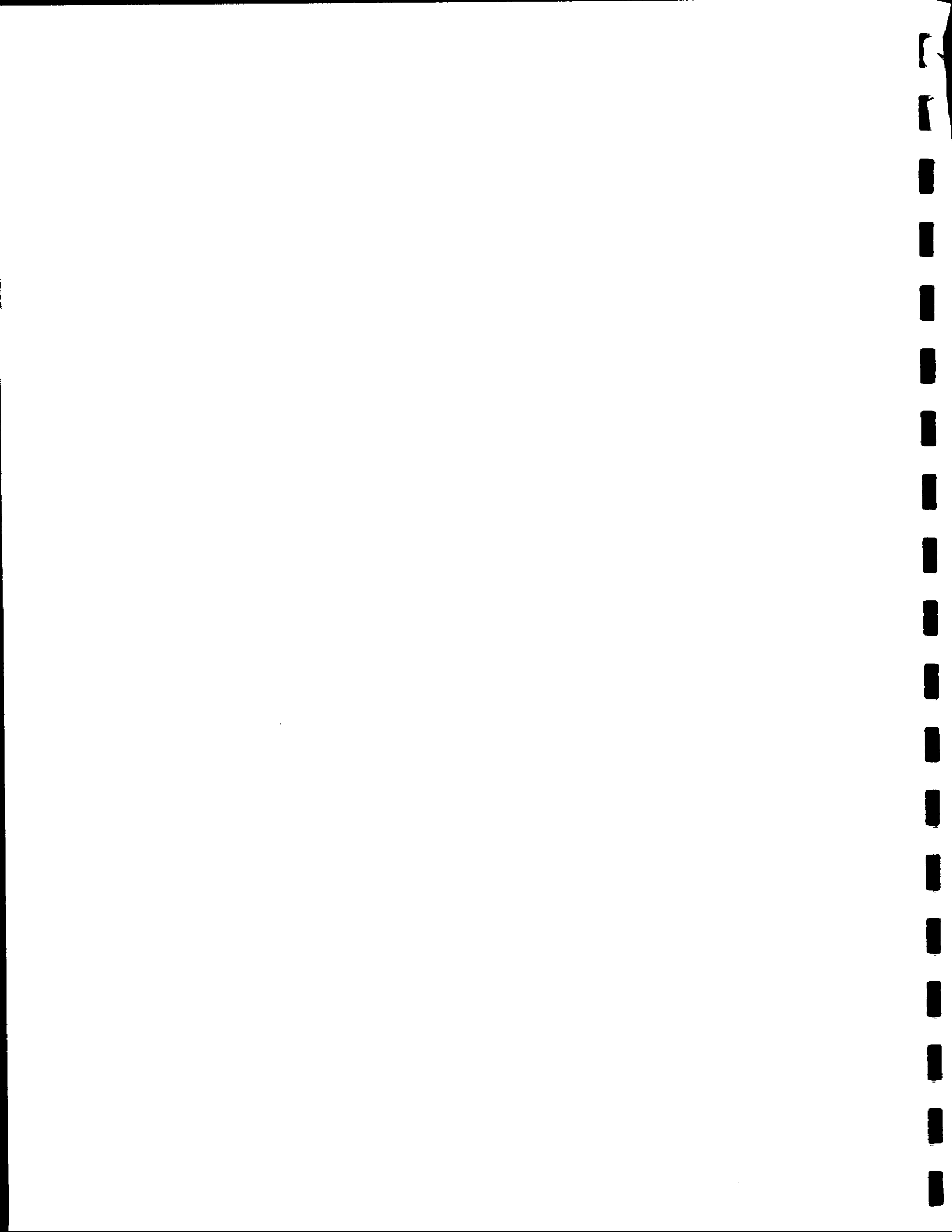
No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 19:07:45

End GPS Week #860 on 07/01/96 at 19:09:36

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second



F2 - Trail

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	73	4513189.92323655	0.8270674	4513185.69229898	4513190.98590703
Easting	73	538470.24335732	0.2790806	538468.99226041	538471.07826711
Altitude	73	212.85520909	1.7494557	206.48336497	216.87626955

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 20:22:02
End GPS Week #860 on 07/01/96 at 20:23:16

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	75	4514066.83376227	1.2499529	4514064.85701981	4514068.79032990
Easting	75	538611.62521358	0.5058814	538610.06131918	538612.79019797
Altitude	75	169.34356192	1.8953840	164.95371912	173.49207727

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 18:56:31
End GPS Week #860 on 07/01/96 at 18:57:46

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

F3, Trail

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4513346.00055304	6.5309619	4513337.94399422	4513390.88079167
Easting	61	538548.96281904	4.8427954	538514.83384749	538552.34194827
Altitude	61	197.94178196	14.190440	189.82488058	303.47786168

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 20:07:45

End GPS Week #860 on 07/01/96 at 20:10:58

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

F-3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	81	4513238.91286441	15.227039	4513159.15488294	4513327.36561655
Easting	81	538338.68347158	6.7175910	538291.00170790	538351.97542675
Altitude	81	227.05749267	42.452570	153.01874620	468.70600664

No velocity records in file.

No DOP records in file.

Start GPS Week #863 on 07/22/96 at 19:57:08

End GPS Week #863 on 07/22/96 at 20:02:28

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

F4, Bound

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	63	4514126.26544278	2.4376199	4514121.28763725	4514131.38501717
Easting	63	538758.36056170	0.5277462	538757.46232268	538759.69609881
Altitude	63	183.81574224	3.2503271	178.60919890	195.56822208

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 18:36:26

End GPS Week #860 on 07/01/96 at 18:38:07

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

F4 Gen Rd is

1B072216B. STS

4513818.4498
538687.0256

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	71	4513814.76344036	3.4517341	4513807.51319109	4513821.67976187
Easting	71	538845.46796003	1.5120959	538841.74321483	538848.41067653
Altitude	71	187.45180144	4.6987035	179.15751882	198.09692759

No velocity records in file.

No DOP records in file.

Start GPS Week #860 on 07/01/96 at 20:46:48

End GPS Week #860 on 07/01/96 at 20:49:01

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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F5- Bound

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	39	4514098.12279415	4.5015689	4514091.20050140	4514105.92923389
Easting	39	538903.81658297	2.6161242	538898.48361694	538908.53576672
Altitude	39	209.27048928	3.8502836	204.98643034	221.92067618

No velocity records in file.

No DOP records in file.

Start GPS Week #863 on 07/22/96 at 18:40:51

End GPS Week #863 on 07/22/96 at 18:41:22

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	78	4513832.39445586	5.4928656	4513820.95249891	4513842.93225793
Easting	78	538996.75597722	2.2383231	538992.10345518	539000.01266283
Altitude	78	158.04660678	13.051845	122.20431305	174.16943804

No velocity records in file.

No DOP records in file.

Start GPS Week #863 on 07/22/96 at 17:01:20

End GPS Week #863 on 07/22/96 at 17:05:37

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

FG, Trail is B072218B

maybe not corrected
Bob, .ssf file

New Jersey Brigade- Sections A, B, & C
UTM Coordinates, Transect Names, and
Filenames

Morristown Nat. Historic Park - Invasive Plant Transect Name Rover (JH) Study Site Log Coordinates Elevation

N.J. Brigade Filename

July 20 1996

B2 Parking lot	B072914A	4510897.8601 537212.3523	19
B1 along entry	B072915A	4511021.4597 537184.0051	2
A1, Old JHRd	B072915B	4510925.9623 536887.7069	18
A2, Old JHRd	B072915C	4510792.8482 536787.8502	16
A3, Old JHRd	B072915D	4510608.9157 536715.8345	15
A1 on trail second creek bed	B072917A	4510618.1688 537101.6100	18
A2 " "	B072917B	4510494.6079 537007.2296	18
A3, Trail	B072917C	4510395.6327 536873.4837	18
B3 bound	B072919A	4510988.5079 537689.7520	13
1/4 trail by river	B072920A	4511322.7498 537913.5814	17
C2, Trail	B072920B	4511297.2422 538078.9773	14

Morristown Nat. Historic Park - Invasive Plant

Transect Name Rover (JH) Study Site Local

NJ Brigade Filename Coordinates Elevation

August 20, 1996

C 3, Bound N	B082013C.STS	4511323.1819 538355.6190	17
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C 4, Bound N	B082013B.STS	4511439.8746 538428.3362	19
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C 4, Bound S	B082013A.STS	4511387.0988 538493.5574	17
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C 3, Bound S	B082013D.STS	4511192.4987 538457.5425	16
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C 2, Bound S	B082014B.STS	4510710.5406 538255.1354	18
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C 1, Bound S	B082014A.STS	4510649.9834 538132.5501	13
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A1, near entrance

Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	60	4510957.27352964	3.3396786	4510951.98605308	4510965.13866407
Easting	60	537378.24385371	1.5713005	537375.15797843	537380.81724885
Altitude	60	198.31819310	9.9040069	175.16778186	212.64801391

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 17:22:13

End GPS Week #867 on 08/19/96 at 17:23:23

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

NT Brag

A1, Old JH Rd

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	82	4510925.96234240	5.6795896	4510916.79995523	4510939.03297092
Easting	82	536887.70090972	1.8257076	536885.69495812	536892.30322205
Altitude	82	172.59779762	5.0366606	165.48583137	182.43246742

NT Bug

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 15:21:48

End GPS Week #864 on 07/29/96 at 15:22:45

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

*AI, on trail cross estate
behind*

NT Brigg

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	76	4510618.16889915	4.7260480	4510612.07058119	4510627.16217127
Easting	76	537101.61001573	3.1563431	537095.45045639	537105.50587320
Altitude	76	199.87276249	7.7589335	184.35420182	211.93086639

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 17:20:16

End GPS Week #864 on 07/29/96 at 17:21:19

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	71	4510792.84823362	7.5463675	4510734.42480789	4510799.89675996
Easting	71	536787.85028586	3.0408658	536779.90152397	536792.42423913
Altitude	71	161.24131214	10.477367	152.26261192	240.10596720

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 15:32:49

End GPS Week #864 on 07/29/96 at 15:35:42

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

A 2 - behind cross estate

NT Brigg

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	77	4510494.60799191	6.4494459	4510481.78788958	4510512.37345173
Easting	77	537007.22967497	5.7484981	536994.09762161	537015.64895324
Altitude	77	190.85423181	15.349239	166.88892669	237.15562906

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 17:29:26

End GPS Week #864 on 07/29/96 at 17:30:39

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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A 3, nearest Estate
Cross Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	33	4510541.04098776	1.8432037	4510538.07317011	4510544.47675558
Easting	33	537171.09200549	1.0723432	537169.59676688	537173.80725828
Altitude	33	196.58250242	6.0414916	187.03172400	206.59584100

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/19/96 at 16:56:00

End GPS Week #867 on 08/19/96 at 16:56:32

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

N.T. Bry

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Statistics Version 3.3

A 3,000 JHRd

NT Brig

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	86	4510608.91572120	14.877679	4510580.25770365	4510629.44496106
Easting	86	536715.83485752	7.3092375	536702.97175321	536729.18372219
Altitude	86	154.29481178	6.9310848	138.75091365	163.86769514

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 15:43:03

End GPS Week #864 on 07/29/96 at 15:44:22

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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A3, Trail - N-1 Bug
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	80	4510395.63272646	4.1822887	4510388.39143687	4510409.38872635
Easting	80	536873.48375366	5.1963876	536854.88401912	536888.74769345
Altitude	80	187.02976605	20.624569	130.12697812	219.45766767

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 17:37:21

End GPS Week #864 on 07/29/96 at 17:39:41

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	75	4511021.45972651	11.884682	4511008.77072080	4511085.71676147
Easting	75	537184.00514653	3.5093758	537176.66377319	537188.87747075
Altitude	75	203.91334799	10.754828	193.41846365	271.64469670

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 15:13:08

End GPS Week #864 on 07/29/96 at 15:15:54

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

Needed

B1 off Old JT Rd
B2 - along Passaic R
B3 on Patriots Path

B3 - found

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Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	75	4510988.50791899	19.152096	4510881.53550348	4511012.59382606
Easting	75	537689.75204474	7.3615884	537647.44728361	537697.57031941
Altitude	75	135.75581991	50.725732	84.86584103	488.19996804

NJ Brg

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 19:42:39

End GPS Week #864 on 07/29/96 at 19:44:38

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C1, Trail by River

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	40	4511322.74982170	6.2317253	4511308.35503578	4511336.12596424
Easting	40	537913.58914748	3.1003347	537908.02042263	537918.49323778
Altitude	40	117.70514454	51.872698	-57.83024605	356.31965201

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 20:07:13

End GPS Week #864 on 07/29/96 at 20:09:23

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

NT Brig

C1, Board - 5 *NJ B519*

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	37	4510649.98342225	9.4380066	4510630.83281435	4510668.59946278
Easting	37	538132.55016457	2.4413246	538127.73461919	538137.19151858
Altitude	37	138.48265703	22.208776	105.46616948	184.09972996

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 14:44:44

End GPS Week #867 on 08/20/96 at 14:45:58

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

C1, Bound-5 NJ Brig

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	24	4510710.54064493	24.223672	4510607.51729439	4510742.47271933
Easting	24	538255.13549350	4.8729075	538247.05123409	538274.92195069
Altitude	24	180.46174287	28.075296	95.74147980	223.11976215

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 15:05:51

End GPS Week #867 on 08/20/96 at 15:10:20

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	78	4511297.24222632	34.745696	4511276.16358690	4511445.04986832
Easting	78	538078.97739924	11.624802	538037.34992936	538096.63187483
Altitude	78	145.21621506	60.885777	78.37300266	554.08792024

No velocity records in file.

No DOP records in file.

Start GPS Week #864 on 07/29/96 at 20:32:08
End GPS Week #864 on 07/29/96 at 20:43:09

Datum : NAD-83
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

C3, Bound-N NT Brig

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4511323.18191813	5.6089755	4511314.34148743	4511337.27822803
Easting	61	538355.61909520	2.8479405	538348.50525652	538361.90631639
Altitude	61	176.89780259	10.504257	153.68169058	195.97749043

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 13:30:38

End GPS Week #867 on 08/20/96 at 13:31:40

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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Statistics Version 3.3

C4, Brand - N NJ Brig

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	59	4511439.87465929	14.085879	4511388.14683267	4511507.89894203
Easting	59	538428.33621594	6.7514441	538391.05077733	538450.99614634
Altitude	59	190.38732899	30.831302	42.33838921	359.47874715

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 13:17:58

End GPS Week #867 on 08/20/96 at 13:19:29

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

C4, Brand - 5 NJ Brig

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	61	4511387.09886126	2.3568033	4511383.43293720	4511390.79611527
Easting	61	538493.55743457	4.1336943	538484.49191365	538500.00932314
Altitude	61	172.32014470	5.3830058	163.81895240	183.95102103

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 13:08:13

End GPS Week #867 on 08/20/96 at 13:09:09

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second

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C3, Beamed - S *NT Brig*
Statistics Version 3.3

	Recs	Mean	Std Dev	Minimum	Maximum
Northing	47	4511192.49870473	3.8916907	4511185.56561605	4511197.37407205
Easting	47	538457.54253107	2.0118554	538454.49630286	538460.84304268
Altitude	47	162.42256041	4.9796872	153.69593688	168.63586293

No velocity records in file.

No DOP records in file.

Start GPS Week #867 on 08/20/96 at 13:50:01

End GPS Week #867 on 08/20/96 at 13:50:41

Datum : NAD-27 CONUS
Coordinate System : Universal Transverse Mercator [18T]
Altitude Mode : Mean Sea Level
Altitude/Distance Units : Meters
Velocity Units : Meters/Second