



# Geodetic Control Survey Report

11103U Hooper Island

Project Number: 2011-103U  
Project: Hooper Island  
Client: Dewberry & Davis LLC

Prepared by: Adrian Camungol  
Date: 29 April 2011

Control Source: National Geodetic Survey  
Horizontal Datum: NAD83  
Vertical Datum: NAVD88  
Units: Meters  
Geoid: Geoid09

Published Control Station:

AJ8043

**Latitude:** N 38 35 29.27204  
**Longitude:** W 76 08 27.47026  
**Ellipsoid Height:** -30.283m  
**Orthometric Height:** 4.567m

HNPT

**Latitude:** N36 35 19.71067  
**Longitude:** W76 07 49.33296  
**Ellipsoid Height:** -26.645m  
**Orthometric Height:** 8.235m

HV8917

**Latitude:** N38 26 45.17621  
**Longitude:** W76 07 09.84459  
**Ellipsoid Height:** -33.976m  
**Orthometric Height:** 1.164m

New Control Stations:

1110303

**Latitude:** N 38 32 25.67787

**Longitude:** W 76 01 59.97232

**Ellipsoid Height:** -29.9559m

**Orthometric Height:** 5.1833m

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## *Requirements for LiDAR Control Points*

Final control used for flight data processing should:

- 1) Be tied to geodetic control stations.
  - a. Geodetic control stations should be first order or better (unless otherwise specified by client). Preference shall be given to nationally maintained control points before provincial/state level.
  - b. All final flight & ground truthing control (published and/or new) should be tied to these geodetic points by two or more occupations (prove or disprove HI errors).
  - c. All new points used in final flight & ground truthing control require a tie to two AGREEING 3-D geodetic control stations (alternatively any combination of horizontal and vertical control such that both are represented twice). If disagreement is found (i.e. exceeding the tolerance required to meet project specifications), sufficient additional control points must be included in the survey to clearly identify the erroneous monument.
  - d. Final adjusted coordinates of published geodetic control stations should agree to +/- 1/3<sup>rd</sup> the required RMSE of the project or better. In cases where this is not achieved, additional control will be required to establish the error in the geodetic control point(s). When insufficient control can be found to agree to this standard, the issue must be taken to Operations Manager and the client.
- 2) Geodetic control stations may be used as final control for data processing if they meet the standards described in point 1d. In this case, the published coordinates shall be used unless special circumstances dictate otherwise.
- 3) Where projects use multiple control points for flight data processing, in addition to meeting the requirements of point 1, the flight control points must also be shown to tie to each other within the same specification (1d).

Note: Even if all control stations are published, they must still be tied in order to validate the coordinates.

Typical collection parameters are defined as 6 satellites, PDOP of less than 4 and low geomagnetic activity. Under these conditions, the formula of 20 minutes plus 3 minutes per baseline kilometre shall be set as the

minimum for each observation. Additional time shall be observed where the collection requirements cannot be met and/or obstructions are present.

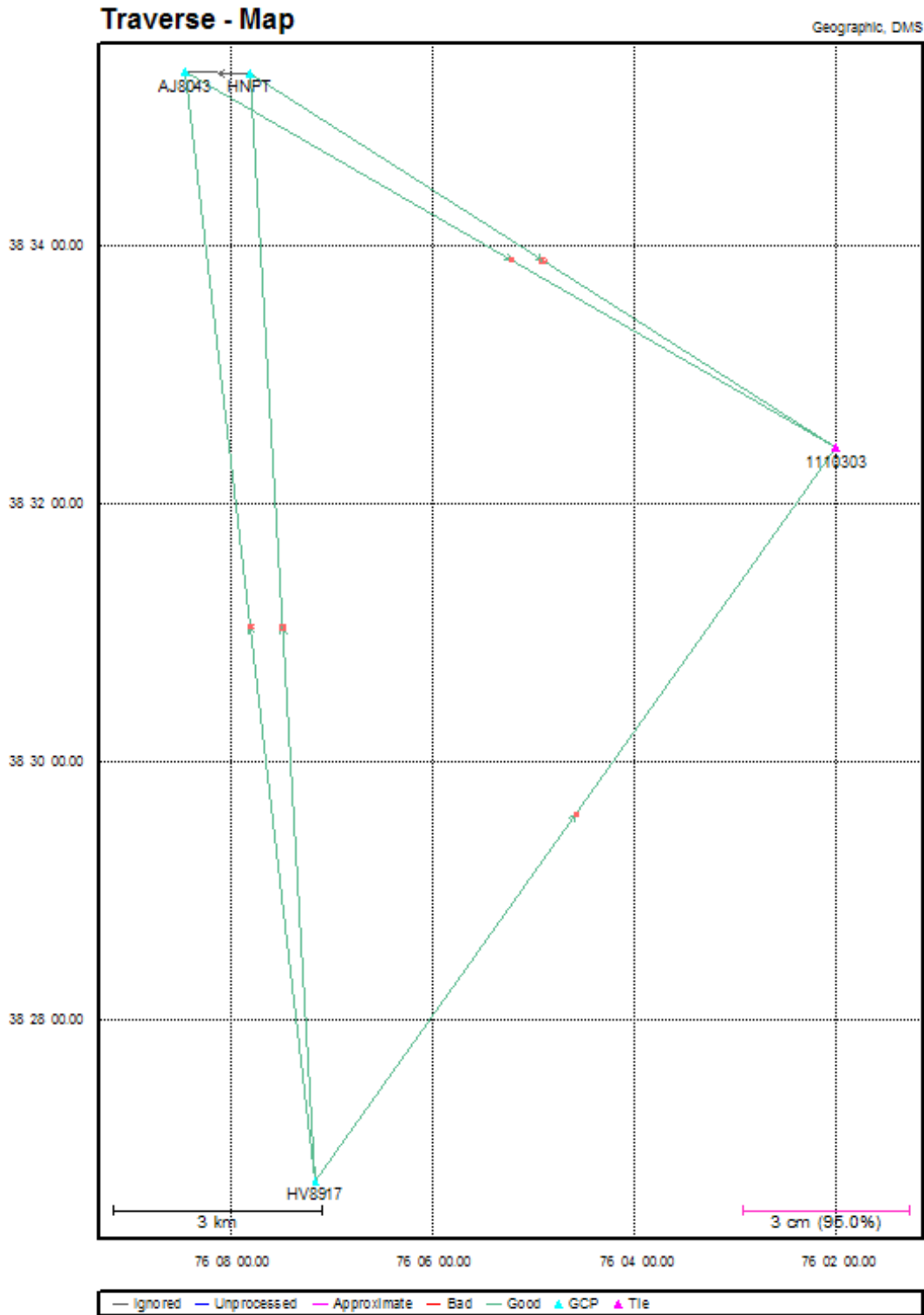
#### CORS for GPS Control Network Observations

COR Stations may be used to supplement ground-based control but shall not be used exclusively. CORS shall not be relied upon to provide flight control (even if they do log at 1 second) since there is no guarantee that the station(s) are operational.

# Map of Control Network

Project: 11103U\_fully\_constrained Hooper Island

GrafNetv7.80.2517



# Fully Constrained GPS Network

File: 11103U\_fully\_constrainedHooperIsland.net

GrafNetv7.80.2517

```

*****
+ NETWORK - WEIGHTED GPS NETWORK ADJUSTMENT +
+
+ (c) Copyright NovAtel Inc., (2007) +
+
+ Version: 7.80.2517 +
+
+ FILE: E:\hoopersIsland MD\Control\Processed\11103U_fully_constrained H
ooper Island.net
*****

```

DATE(m/d/y): Sat. 4/23/11 TIME: 19:40:29

```

*****
DATUM: 'NAD83'
GRID: UTM, Zone 18
SCALE FACTOR: 34.8970
CONFIDENCE LEVEL: 95.00 % (Scale factor is 2.4479)
*****

```

## INPUT CONTROL/CHECK POINTS

```

*****
STA_ID TYPE -- LATITUDE -- -- LONGITUDE -- ELLHGT - HZ-SD V-SD
AJ8043 GCP-3D 38 35 20.27204 -76 08 27.47026 -30.283 0.00500 0.00500
HNPT GCP-3D 38 35 19.71067 -76 07 49.33296 -26.645 0.00500 0.00500
HV8917 GCP-3D 38 26 45.17621 -76 07 09.84459 -33.976 0.00500 0.00500
*****

```

## INPUT VECTORS

```

*****
SESSION NAME VECTOR(m) ----- Covariance (m) [unscaled] -----
DX/DY/DZ standard deviations in brackets
AJ8043 to 1110303 (1) 9912.9433 1.2048e-007 (0.0003)
-1002.2659 -1.2246e-007 3.2098e-007 (0.0006)
-4209.2779 5.3787e-008 -1.4573e-007 1.7501e-007 (0.0004)
HNPT to 1110303 (1) 9013.5843 2.5890e-007 (0.0005)
-1210.2069 -1.7312e-007 9.5581e-007 (0.0010)
-4198.0181 7.4034e-008 -4.6774e-007 7.6443e-007 (0.0009)
HNPT to 1110303 (2) 9013.5816 2.2720e-007 (0.0005)
-1210.2032 -1.7713e-007 6.5691e-007 (0.0008)
-4198.0206 8.7230e-008 -3.2606e-007 4.6764e-007 (0.0007)
HV8917 to AJ8043 (1) -4196.0291 2.4709e-007 (0.0005)
9149.1072 -2.4341e-007 5.0110e-007 (0.0007)
12429.3749 1.1624e-007 -2.1524e-007 2.3782e-007 (0.0005)
HV8917 to 1110303 (1) 5716.9126 5.8132e-008 (0.0002)
8146.8407 -3.8140e-008 1.4586e-007 (0.0004)
8220.0952 2.8811e-008 -7.8335e-008 1.1351e-007 (0.0003)
HV8917 to AJ8043 (2) -4196.0285 1.1057e-007 (0.0003)
9149.0955 -7.5260e-008 3.4286e-007 (0.0006)
12429.3771 6.1824e-008 -2.2684e-007 3.6777e-007 (0.0006)
*****

```



```

HV8917 to HNPT (1)    -3296.6735  2.7407e-006 (0.0017)
                      9357.0530  -3.3147e-006  7.3659e-006 (0.0027)
                      12418.1141  1.5172e-006  -2.7862e-006  2.2390e-006 (0.0015)

HV8917 to HNPT (2)    -3296.6658  3.8338e-007 (0.0006)
                      9357.0409  -2.6951e-007  9.1409e-007 (0.0010)
                      12418.1178  1.9840e-007  -4.8986e-007  7.0734e-007 (0.0008)

```

```

*****
          OUTPUT VECTOR RESIDUALS (East, North, Height - Local Level)
*****

```

SESSION NAME	-- RE -- (m)	-- RN -- (m)	-- RH -- (m)	- PPM -	DIST - (km)	STD - (m)
AJ8043 to 1110303 (1)	-0.0003	0.0000	-0.0013	0.120	10.8	0.0046
HNPT to 1110303 (1)	-0.0005	-0.0009	-0.0035	0.360	10.0	0.0083
HNPT to 1110303 (2)	0.0012	-0.0015	0.0014	0.243	10.0	0.0069
HV8917 to AJ8043 (1)	-0.0015	-0.0011	0.0012	0.138	16.0	0.0059
HV8917 to 1110303 (1)	0.0000	0.0005	0.0010	0.083	12.9	0.0033
HV8917 to AJ8043 (2)	0.0007	0.0043	-0.0091	0.634	16.0	0.0054
HV8917 to HNPT (1)	0.0009	-0.0028	0.0084	0.558	15.9	0.0208
HV8917 to HNPT (2)	-0.0036	0.0028	-0.0046	0.410	15.9	0.0084
	-----					
RMS	0.0015	0.0022	0.0049			

\$ - This session is flagged as a 3-sigma outlier

```

*****
          CONTROL POINT RESIDUALS (ADJUSTMENT MADE)
*****

```

STA. NAME	-- RE -- (m)	-- RN -- (m)	-- RH -- (m)
AJ8043	0.0023	-0.0227	0.0087
HNPT	0.0108	-0.0112	-0.0004
HV8917	-0.0131	0.0340	-0.0083
	-----		
RMS	0.0099	0.0245	0.0070

```

*****
          OUTPUT STATION COORDINATES (LAT/LONG/HT)
*****

```

STA_ID	-- LATITUDE --	-- LONGITUDE --	- ELLHGT -	ORTHOHGT
1110303	38 32 25.67787	-76 01 59.97232	-29.9559	5.1833
AJ8043	38 35 20.27130	-76 08 27.47016	-30.2744	4.5788
HNPT	38 35 19.71030	-76 07 49.33252	-26.6455	8.2302
HV8917	38 26 45.17731	-76 07 09.84513	-33.9844	1.1581

```

*****
          OUTPUT STATION COORDINATES (GRID)
*****

```

STA_ID	- EASTING -	- NORTHING -	- ELLHGT -	ORTHOHGT
1110303	409945.5318	4266289.6219	-29.9559	5.1833
AJ8043	400631.3917	4271782.2722	-30.2744	4.5788
HNPT	401553.8382	4271753.5714	-26.6455	8.2302

HV8917            402316.1620   4255881.8651   -33.9844        1.1581

\*\*\*\*\*  
 OUTPUT VARIANCE/ COVARIANCE  
 \*\*\*\*\*

STA_ID	SE/SN/SUP (95.00 %) (m)	----- CX matrix (m )----- (not scaled by confidence level) (ECEF, XYZ cartesian)			
1110303	0.0074	9.3971e-006			
	0.0075	-8.3697e-007	1.1268e-005		
	0.0087	4.6052e-007	-1.4550e-006	1.0384e-005	
AJ8043	0.0074	9.2548e-006			
	0.0074	-6.5783e-007	1.0519e-005		
	0.0083	3.3227e-007	-9.8237e-007	9.8944e-006	
HNPT	0.0075	9.8049e-006			
	0.0077	-8.9614e-007	1.1843e-005		
	0.0089	4.6544e-007	-1.5059e-006	1.0900e-005	
HV8917	0.0073	8.9902e-006			
	0.0073	-4.4407e-007	9.9138e-006		
	0.0080	2.6778e-007	-7.4460e-007	9.4942e-006	

\*\*\*\*\*  
 VARIANCE FACTOR = 1.0006  
 \*\*\*\*\*

Note: Values < 1.0 indicate statistics are pessimistic, while  
 values > 1.0 indicate optimistic statistics. Entering this  
 value as the network adjustment scale factor will bring  
 variance factor to one.  
 \*\*\*\*\*

```

*****
* GrafNet - GRAPHIC GPS NETWORK PROCESSING *
*          SOFTWARE PACKAGE                *
*          *                               *
* TRAVERSE SOLUTION:                      *
*          *                               *
* Copyright NovAtel Inc. (2007)           *
*          *                               *
* Version: 7.80.2517                      *
*          *                               *
* PROJECT: 11103U_fully_constrained Hooper Island *
*****
    
```

DATE: 4/29/2011 (m/d/y)  
 TIME: 18:59:18

DATUM: NAD83  
 GRID: UTM, Zone 18  
 UNITS: metres (see preferences to change)  
 GEOID: C:\Documents and Settings\adrian.camungol\Desktop\Operations\_DVD\Software\Geoids\USA\Geoid09\Geoid09\_CONUS.wpg

\*\*\*\*\*  
 STATIONS (STATUS):  
 \*\*\*\*\*

Station	Type	HgtStatus	Result	Coordinates derived from...
1110303	Loop Tie	OK	Good	AJ8043
AJ8043	Control-3D	OK	Pub(3D)	(-)
HNPT	Control-3D	OK	Pub(3D)	(-)
HV8917	Control-3D	OK	Pub(3D)	(-)

\*\*\*\*\*  
 STATIONS (COORDINATES):  
 \*\*\*\*\*

Station	Latitude	Longitude	Grid-E	Grid-N	EllHgt	OrthoH
gt	(D M S)	(D M S)	(m)	(m)	(m)	(
m)						(
1110303	38 32 25.67860	-76 01 59.97241	409945.530	4266289.645	-29.963	5.1
76						
AJ8043	38 35 20.27204	-76 08 27.47026	400631.390	4271782.295	-30.283	4.5
70						
HNPT	38 35 19.71067	-76 07 49.33296	401553.828	4271753.583	-26.645	8.2
31						
HV8917	38 26 45.17621	-76 07 09.84459	402316.175	4255881.831	-33.976	1.1
67						

\*\*\*\*\*  
 LOOP, CHECK & DUPLICATE TIES:  
 \*\*\*\*\*

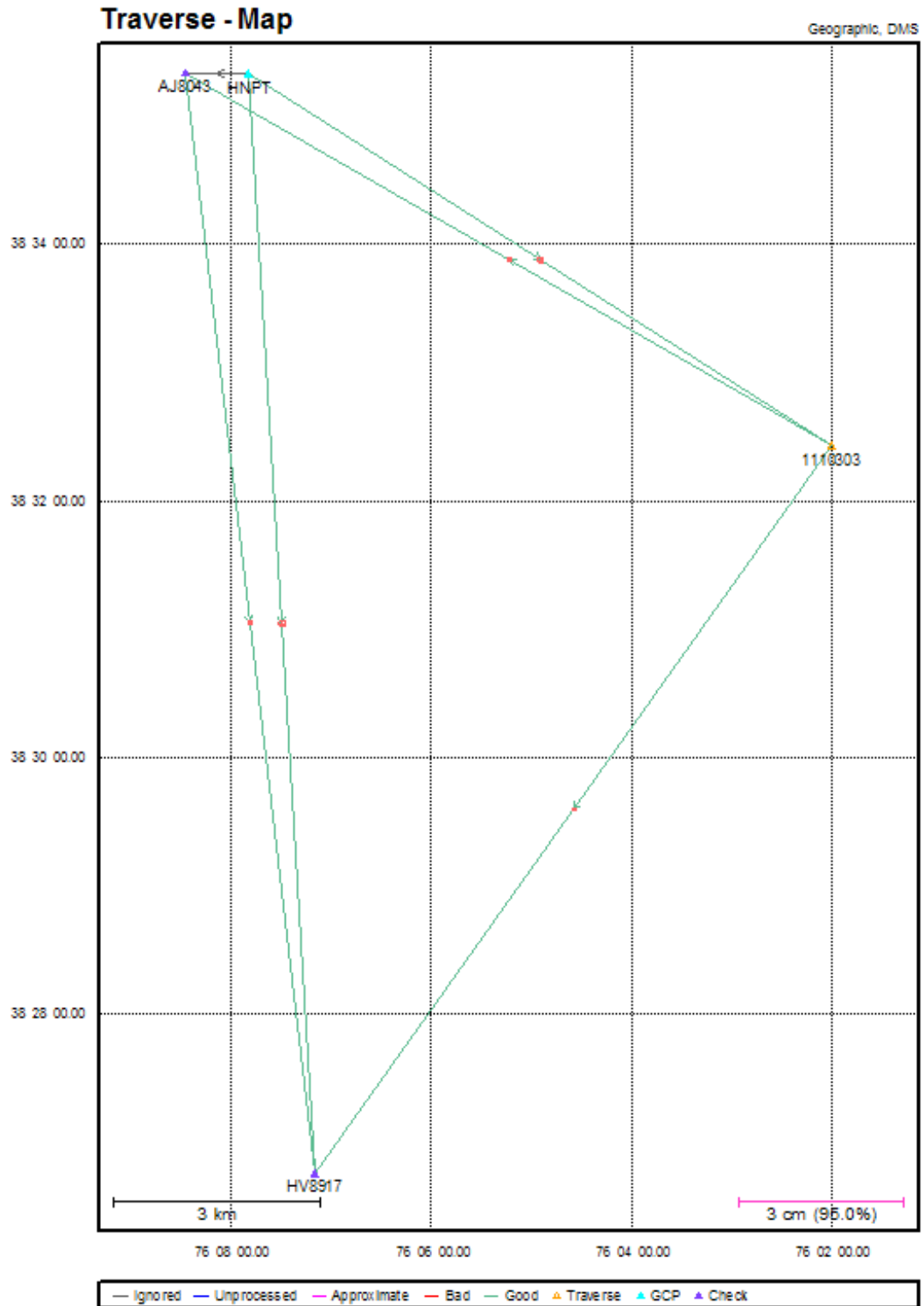
Name/Session	Type	Result	DEast	DNorth	DHeight
			(m)	(m)	(m)
HNPT to 1110303	LoopTie	Good	0.0082	0.0106	-0.0113
HNPT to 1110303 (2)	Duplicate	Good	0.0099	0.0100	-0.0064
HV8917 to 1110303	LoopTie	Good	-0.0150	0.0573	-0.0148
RMS (tie points)			0.0114	0.0341	0.0113
RMS (check points)					

=====

# Minimally Constrained GPS Network

Project: 11103U\_minimally\_constrained Hooper Island

GrafNet v7.80.2517



```

*****
* NETWORK - WEIGHTED GPS NETWORK ADJUSTMENT *
* *
* (c) Copyright NovAtel Inc., (2007) *
* *
* Version: 7.80.2517 *
* *
* FILE: E:\hoopersIsland MD\Control\Processed\11103U_minimaly_constrained
d Hooper Island.net
*****

```

DATE(m/d/y): Sat. 4/23/11 TIME: 19:46:08

```

*****
DATUM: 'NAD83'
GRID: UTM, Zone 18
SCALE FACTOR: 21.9980
CONFIDENCE LEVEL: 95.00 % (Scale factor is 2.4479)

```

\*\*\*\*\*  
INPUT CONTROL/CHECK POINTS  
\*\*\*\*\*

STA_ID	TYPE	-- LATITUDE --	-- LONGITUDE --	ELLHGT -	HZ-SD	V-SD
AJ8043	CHR-3D	38 35 20.27204	-76 08 27.47026	-30.283		
HNPT	GCP-3D	38 35 19.71067	-76 07 49.33296	-26.645	0.00500	0.00500
HV8917	CHR-3D	38 26 45.17621	-76 07 09.84459	-33.976		

\*\*\*\*\*  
INPUT VECTORS  
\*\*\*\*\*

SESSION NAME	VECTOR(m)	----- Covariance (m) [unscaled] ----- standard deviations in brackets				
	DX/DY/DZ					
1110303 to AJ8043 (1)	-9912.9423 1002.2609 4209.2813	1.1230e-007 -1.1018e-007 4.6093e-008	(0.0003)	2.7336e-007	(0.0005)	-1.1552e-007 1.3577e-007 (0.0004)
1110303 to HV8917 (1)	-5716.9118 -8146.8435 -8220.0932	5.8153e-008 -3.8151e-008 2.8842e-008	(0.0002)	1.4584e-007	(0.0004)	-7.8350e-008 1.1355e-007 (0.0003)
AJ8043 to HV8917 (1)	4196.0304 -9149.1106 -12429.3724	2.3275e-007 -2.2411e-007 1.0437e-007	(0.0005)	4.5393e-007	(0.0007)	-1.9000e-007 2.1088e-007 (0.0005)
AJ8043 to HV8917 (2)	4196.0291 -9149.0970 -12429.3744	1.1058e-007 -7.5255e-008 6.1868e-008	(0.0003)	3.4279e-007	(0.0006)	-2.2690e-007 3.6797e-007 (0.0006)
HNPT to 1110303 (1)	9013.5843 -1210.2069 -4198.0181	2.5890e-007 -1.7312e-007 7.4034e-008	(0.0005)	9.5581e-007	(0.0010)	-4.6774e-007 7.6443e-007 (0.0009)
HNPT to 1110303 (2)	9013.5816 -1210.2032 -4198.0206	2.2720e-007 -1.7713e-007 8.7230e-008	(0.0005)	6.5691e-007	(0.0008)	-3.2606e-007 4.6764e-007 (0.0007)

```

HNPT to HV8917 (1)      3296.6736  2.2781e-006 (0.0015)
                        -9257.0540 -1.6318e-006 5.2888e-006 (0.0023)
                        -12418.1126 4.8319e-007 -2.0483e-006 2.5009e-006 (0.0016)

HNPT to HV8917 (2)      3296.6669  3.8217e-007 (0.0006)
                        -9257.0424 -2.6919e-007 9.1354e-007 (0.0010)
                        -12418.1170 1.9838e-007 -4.8990e-007 7.0758e-007 (0.0008)
    
```

\*\*\*\*\*  
 OUTPUT VECTOR RESIDUALS (East, North, Height - Local Level)  
 \*\*\*\*\*

SESSION NAME	-- RE -- (m)	-- RN -- (m)	-- RH -- (m)	- PPM -	DIST - (km)	STD - (m)
1110303 to AJ8043 (1)	0.0005	-0.0008	0.0003	0.092	10.8	0.0034
1110303 to HV8917 (1)	-0.0005	0.0004	-0.0005	0.066	12.9	0.0026
AJ8043 to HV8917 (1)	0.0005	0.0033	-0.0069	0.480	16.0	0.0044
AJ8043 to HV8917 (2)	-0.0015	-0.0035	0.0049	0.390	16.0	0.0043
HNPT to 1110303 (1)	-0.0014	0.0004	-0.0044	0.461	10.0	0.0066
HNPT to 1110303 (2)	0.0003	-0.0003	0.0005	0.069	10.0	0.0055
HNPT to HV8917 (1)	-0.0021	0.0042	-0.0070	0.532	15.9	0.0149
HNPT to HV8917 (2)	0.0022	-0.0005	0.0059	0.400	15.9	0.0066
-----						
RMS	0.0013	0.0023	0.0047			

⚡ - This session is flagged as a 3-sigma outlier

\*\*\*\*\*  
 CHECK POINT RESIDUALS (East, North, Height - Local Level)  
 \*\*\*\*\*

STA. NAME	-- RE -- (m)	-- RN -- (m)	-- RH -- (m)
AJ8043	-0.0093	-0.0116	0.0133
HV8917	-0.0252	0.0471	-0.0049
-----			
RMS	0.0190	0.0343	0.0100

\*\*\*\*\*  
 OUTPUT STATION COORDINATES (LAT/LONG/HT)  
 \*\*\*\*\*

STA_ID	-- LATITUDE --	-- LONGITUDE --	- ELLHGT -	ORTHOGT
1110303	38 32 25.67827	-76 01 59.97280	-29.9564	5.1628
AJ8043	38 35 20.27166	-76 08 27.47064	-30.2698	4.5835
HNPT	38 35 19.71067	-76 07 49.33296	-26.6451	8.2307
HV8917	38 26 45.17773	-76 07 09.84563	-33.9810	1.1615

```

*****
      OUTPUT STATION COORDINATES (GRID)
*****
STA_ID      - EASTING - - NORTHING - - ELLHGT -   ORTHOHT
              (m)      (m)          (m)         (m)
1110303     409945.5203  4266289.6345  -29.9564   5.1828
AJ8043      400631.3802  4271782.2835  -30.2698   4.5835
HNPT        401553.8276  4271753.5828  -26.6451   8.2307
HV8917      402316.1500  4255881.8783  -33.9810   1.1615

```

```

*****
      OUTPUT VARIANCE/COVARIANCE
*****
                2
STA_ID      SE/SN/SUP ----- CX matrix (m )-----
              (95.00 %) (not scaled by confidence level)
              (m)      (ECEF, XYZ cartesian)
1110303     0.0126  2.6995e-005
              0.0128  -1.4509e-006  3.0894e-005
              0.0142  7.6525e-007  -2.9210e-006  2.9319e-005
AJ8043      0.0128  2.7987e-005
              0.0129  -2.3369e-006  3.3152e-005
              0.0148  1.2174e-006  -3.9597e-006  3.0619e-005
HNPT        0.0122  2.5000e-005
              0.0122  -4.5427e-020  2.5000e-005
              0.0122  -8.3631e-021  -3.4810e-020  2.5000e-005
HV8917      0.0127  2.7395e-005
              0.0128  -1.7270e-006  3.1627e-005
              0.0144  9.8662e-007  -3.3128e-006  2.9819e-005

```

```

*****
      VARIANCE FACTOR = 1.0038
*****
      Note: Values < 1.0 indicate statistics are pessimistic, while
            values > 1.0 indicate optimistic statistics. Entering this
            value as the network adjustment scale factor will bring
            variance factor to one.
*****

```

```

*****
* GrafNet - GRAPHIC GPS NETWORK PROCESSING      *
*                SOFTWARE PACKAGE              *
*                *                             *
* TRAVERSE SOLUTION:                          *
*                *                             *
* Copyright NovAtel Inc. (2007)               *
*                *                             *
* Version: 7.80.2517                          *
*                *                             *
* PROJECT: 11103U_minimally_constrained Hooper Island *
*****

```

DATE: 4/29/2011 (m/d/y)  
TIME: 19:03:46

DATUM: NAD83  
GRID: UTM, Zone 18  
UNITS: metres (see preferences to change)  
GEOID: C:\Documents and Settings\adrian.camungol\Desktop\Operations\_DVD\Software\Geo  
ids\USA\Geoid09\Geoid09\_CONUS.wpg

\*\*\*\*\*  
STATIONS (STATUS):  
\*\*\*\*\*

Station	Type	HgtStatus	Result	Coordinates derived from...
1110303	Traverse	OK	Good	HNPT
AJ8043	Check-3D	OK	Good	1110303 HNPT
HNPT	Control-3D	OK	Pub(3D)	(-)
HV8917	Check-3D	OK	Good	HNPT

\*\*\*\*\*  
STATIONS (COORDINATES):  
\*\*\*\*\*

Station gt	Latitude (D M S)	Longitude (D M S)	Grid-E (m)	Grid-N (m)	EllHgt (m)	OrthoH (
1110303	38 32 25.67828	-76 01 59.97281	409945.520	4266289.635	-29.957	5.1
82						
AJ8043	38 35 20.27170	-76 08 27.47068	400631.379	4271782.285	-30.271	4.5
83						
HNPT	38 35 19.71067	-76 07 49.33296	401553.828	4271753.583	-26.645	8.2
31						
HV8917	38 26 45.17775	-76 07 09.84572	402316.148	4255881.879	-33.987	1.1
56						

\*\*\*\*\*  
LOOP, CHECK & DUPLICATE TIES:  
\*\*\*\*\*

Name/Session	Type	Result	DEast (m)	DNorth (m)	DHeight (m)
HNPT to 1110303 (1)	Duplicate	Good	-0.0017	0.0007	-0.0049
POINT AJ8043	CheckPnt	Good	-0.0101	-0.0106	0.0124
POINT HV8917	CheckPnt	Good	-0.0273	0.0476	-0.0110
HNPT to HV8917 (1)	Duplicate	Good	-0.0043	0.0047	-0.0130
1110303 to HV8917	LoopTie	Good	-0.0024	0.0006	-0.0059
AJ8043 to HV8917	LoopTie	Good	-0.0009	0.0027	-0.0120
AJ8043 to HV8917 (2)	Duplicate	Good	-0.0028	-0.0041	-0.0002



## Station Description and Photos:

1110303

**Latitude:** N 38 32 25.67787  
**Longitude:** W 76 01 59.97232  
**Ellipsoid Height:** -29.9559m  
**Orthometric Height:** 5.1833m

Final STATION COORDINATES (GRID)

**Easting:** 409945.5318  
**Northing:** 4266289.6219  
**Ellipsoid Height:** -29.9559m  
**Orthometric Height:** 5.1833m





**STATION DESCRIPTION FORM**

PROJECT No.: 1110303  
 PROJECT NAME: Hooper Island  
 LOCATION: Cambridge/Hooper IS

PHOTOS TAKEN:

STATION NAME: <u>1110303</u>	MARKER TYPE: <u>Rebar</u>	DATE: <u>23/4/2011</u>
STATION NUMBER: <u>1110303</u>	STATION LOCALITY: <u>Cambridge MD</u>	LEGAL DESCRIPTION:
DATUM: <u>NAD 83</u>	CENTRAL MERIDIAN:	UTM ZONE: <u>18</u>
LATITUDE: <u>38 32 25.67787</u>	LONGITUDE: <u>76 01 59.97232</u>	ELLIPSOID HEIGHT metres (h): <u>-29.9559 m</u>
UTM NORTHING metres: <u>4266289.6219</u>	UTM EASTING metres: <u>409945.5318</u>	GEOID HEIGHT metres (MSL): <u>5.1833m</u>
MONUMENT IS: <input checked="" type="checkbox"/> FLUSH WITH GROUND <input type="checkbox"/> ABOVE GROUND <u>   </u> C/M <input type="checkbox"/> BELOW GROUND <u>   </u> C/M		
MARKER LOCATION: <u>At Cambridge Airport, 11.9m SE of helicopter pad 356m from driveway.</u>		



**AJ8043**

**Latitude:** N 38 35 29.27204  
**Longitude:** W 76 08 27.47026  
**Ellipsoid Height:** -30.283m  
**Orthometric Height:** 4.567m





**STATION DESCRIPTION FORM**

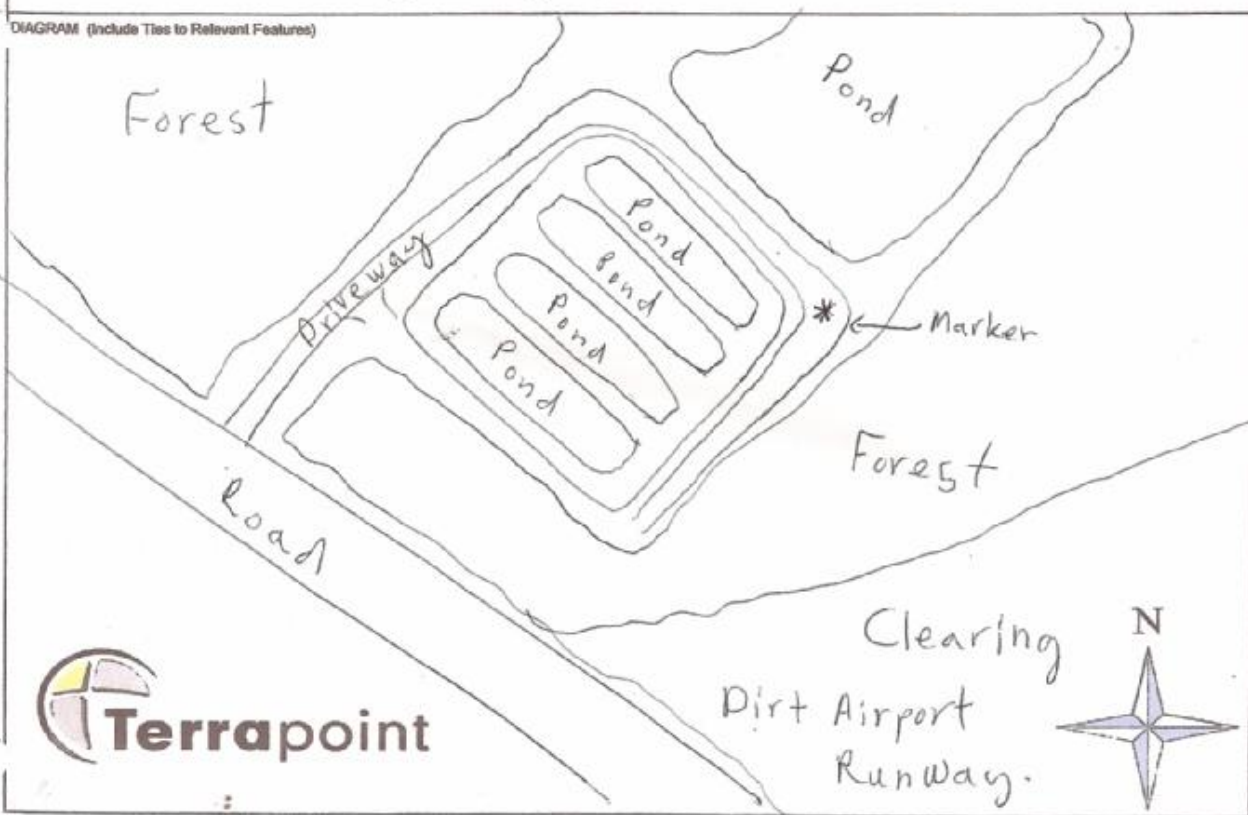
PROJECT No.: 111030  
 PROJECT NAME: Hooper Island  
 LOCATION: Cambridge

PHOTOS TAKEN:

STATION NAME: <b>AJ 8043</b>	MARKER TYPE: <b>Rebar/Steel Rod</b>	DATE: <b>23 / 04 / 2011</b>
STATION NUMBER: <b>AJ 8043</b>	STATION LOCALITY:	LEGAL DESCRIPTION:
DATUM: <b>NAD83</b>	CENTRAL MERIDIAN:	UTM ZONE: <b>18</b>
LATITUDE: <b>38 35 29.27204</b>	LONGITUDE: <b>76 08 27.47026</b>	ELLIPSOID HEIGHT metres (ft): <b>-30.283m</b>
UTM NORTHING metres: <b>4271782.2722</b>	UTM EASTING metres: <b>400631.3917</b>	GEOID HEIGHT metres (MSL): <b>4.567m</b>

MONUMENT IS:  FLUSH WITH GROUND  ABOVE GROUND      CM  BELOW GROUND 10 CM

MARKER LOCATION: *Stainless steel rod below ground within a concrete pipe. Located at Uni of Maryland by 4 ponds. It is at the NE corner.*



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AJ8043 *****
AJ8043 CBN - This is a Cooperative Base Network Control Station.
AJ8043 DESIGNATION - HNPT B
AJ8043 PID - AJ8043
AJ8043 STATE/COUNTY- MD/DORCHESTER
AJ8043 USGS QUAD - CHURCH CREEK (1982)
AJ8043
AJ8043 *CURRENT SURVEY CONTROL
AJ8043
AJ8043* NAD 83(2007)- 38 35 20.27204(N) 076 08 27.47026(W) ADJUSTED
AJ8043* NAVD 88 - 4.5 (meters) 15. (feet) GPS OBS
AJ8043
AJ8043 EPOCH DATE - 2002.00
AJ8043 X - 1,195,727.649 (meters) COMP
AJ8043 Y - -4,846,567.899 (meters) COMP
AJ8043 Z - 3,956,734.502 (meters) COMP
AJ8043 LAPLACE CORR- -4.07 (seconds) DEFLEC09
AJ8043 ELLIP HEIGHT- -30.283 (meters) (02/10/07) ADJUSTED
AJ8043 GEOID HEIGHT- -34.85 (meters) GEOID09
AJ8043
AJ8043 ----- Accuracy Estimates (at 95% Confidence Level in cm) -----
AJ8043 Type PID Designation North East Ellip
AJ8043 -----
AJ8043 NETWORK AJ8043 HNPT B 0.39 0.41 0.88
AJ8043 -----
AJ8043
AJ8043.This is a reference station for the HORN POINT ENVIRO
AJ8043.National Continuously Operating Reference Station (HNPT).
AJ8043
AJ8043.The horizontal coordinates were established by GPS observations
AJ8043.and adjusted by the National Geodetic Survey in February 2007.
AJ8043
AJ8043.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
AJ8043.See National Readjustment for more information.
AJ8043.The horizontal coordinates are valid at the epoch date displayed above.
AJ8043.The epoch date for horizontal control is a decimal equivalence
AJ8043.of Year/Month/Day.
AJ8043
AJ8043.The orthometric height was determined by GPS observations and a
AJ8043.high-resolution geoid model.
AJ8043
AJ8043.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AJ8043
AJ8043.The Laplace correction was computed from DEFLEC09 derived deflections.
AJ8043
AJ8043.The ellipsoidal height was determined by GPS observations
AJ8043.and is referenced to NAD 83.
AJ8043
AJ8043.The geoid height was determined by GEOID09.
AJ8043
AJ8043; North East Units Scale Factor Converg.
AJ8043;SPC MD - 102,730.784 474,839.901 MT 0.99996231 +0 32 21.0
AJ8043;SPC MD - 337,042.58 1,557,870.58 sFT 0.99996231 +0 32 21.0
AJ8043;UTM 18 - 4,271,782.295 400,631.390 MT 0.99972159 -0 42 42.2
AJ8043
AJ8043! - Elev Factor x Scale Factor = Combined Factor
AJ8043!SPC MD - 1.00000475 x 0.99996231 = 0.99996706
AJ8043!UTM 18 - 1.00000475 x 0.99972159 = 0.99972634
AJ8043
AJ8043 SUPERSEDED SURVEY CONTROL
AJ8043
AJ8043 NAD 83(1991)- 38 35 20.27145(N) 076 08 27.47040(W) AD( ) A
AJ8043 ELLIP H (02/12/02) -30.278 (m) GP( ) 4 1
AJ8043
AJ8043.Superseded values are not recommended for survey control.
AJ8043.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

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AJ8043. [See file dsdata.txt](#) to determine how the superseded data were derived.

AJ8043

AJ8043\_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVH0063171782(NAD 83)

AJ8043\_MARKER: I = METAL ROD

AJ8043\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

AJ8043\_STAMPING: HNPT B 2000

AJ8043\_MARK LOGO: NGS

AJ8043\_PROJECTION: FLUSH

AJ8043\_MAGNETIC: N = NO MAGNETIC MATERIAL

AJ8043\_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

AJ8043+STABILITY: POSITION/ELEVATION WELL

AJ8043\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AJ8043+SATELLITE: SATELLITE OBSERVATIONS - March 30, 2007

AJ8043\_ROD/PIPE-DEPTH: 19.8 meters

AJ8043\_SLEEVE-DEPTH : 0.9 meters

AJ8043

AJ8043	HISTORY	- Date	Condition	Report By
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AJ8043	HISTORY	- 2000	MONUMENTED	NGS
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AJ8043	HISTORY	- 20060325	GOOD	USPSQD
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AJ8043	HISTORY	- 20070330	GOOD	USPSQD
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AJ8043

AJ8043

STATION DESCRIPTION

AJ8043

AJ8043'DESCRIBED BY NATIONAL GEODETIC SURVEY 2000 (MLM)

AJ8043'THE STATION IS LOCATED ABOUT 6.44 KM (4.00 MI) NORTHWEST OF CAMBRIDGE

AJ8043'AT HORN POINT ON THE PROPERTY OF THE UNIVERSITY OF THE MARYLAND CENTER

AJ8043'FOR ENVIRONMENTAL SCIENCE ON THE NORTHWEST SIDE OF THE PROPERTY AND

AJ8043'THE AIR FIELD, AT THE EAST CORNER OF A MOUND OF EARTH ENCLOSING FOUR

AJ8043'RECTANGULAR FISH PONDS. OWNERSHIP--UNIVERSITY OF MARYLAND.

AJ8043'NOTE--CONTACT MR. GREG MANN (ASSISTANT DIRECTOR) ONE DAY IN ADVANCE

AJ8043'BEFORE OCCUPYING THIS STATION , PHONE (410) 221-8403. TO REACH THE

AJ8043'STATION FROM THE SOUTH END OF THE US HIGHWAY 50 BRIDGE OVER THE

AJ8043'CHOPTANK RIVER IN CAMBRIDGE, GO SOUTH ON HIGHWAY 50 FOR 1.45 KM (0.90

AJ8043'MI) TO THE JUNCTION OF STATE HIGHWAY 343 (WASHINGTON STREET) ON THE

AJ8043'RIGHT, TURN RIGHT, WEST ON HIGHWAY 343 FOR 5.15 KM (3.20 MI) TO THE

AJ8043'JUNCTION OF HORN POINT ROAD ON THE RIGHT, TURN RIGHT, NORTHWEST ON

AJ8043'HORN POINT ROAD FOR 2.49 KM (1.55 MI) TO THE ENTRANCE DRIVE OF THE

AJ8043'UNIVERSITY OF MARYLAND CENTER OF ENVIRONMENTAL SCIENCE HORN POINT

AJ8043'LABORATORY ON THE RIGHT, CONTINUE AHEAD, NORTHWEST ON HORN POINT ROAD

AJ8043'FOR 0.56 M (1.84 FT) PASSING THE DORCHESTER HERITAGE MUSEUM TO THE

AJ8043'JUNCTION OF A GRAVEL ROAD ON THE RIGHT, TURN RIGHT, NORTHEAST ON THE

AJ8043'GRAVEL ROAD FOR 0.16 KM (0.10 MI) TO A FORK OF A GRAVEL ROAD ENCLOSING

AJ8043'FOUR RECTANGULAR FISH PONDS, BEAR RIGHT, SOUTHEAST ON THE POND ROAD

AJ8043'FOR ABOUT 0.08 KM (0.05 MI) TO THE SOUTH CORNER OF THE MOUND, BEAR

AJ8043'LEFT, NORTHEAST ON THE ROAD ALONG THE SOUTHEAST EDGE OF THE PONDS FOR

AJ8043'ABOUT 0.08 KM (0.05 MI) TO IS EAST CORNER AND TO THE STATION ON THE

AJ8043'RIGHT. THE STATION IS AN NGS 3D STATION, A PUNCH MARK ON THE TOP OF A

AJ8043'STAINLESS STEEL ROD IN A GREASE-FILLED SLEEVE, ENCASED IN A 13 CM PVC

AJ8043'PIPE WITH A LOGO CAP SURROUNDED BY CONCRETE AND FLUSH WITH THE GROUND.

AJ8043'LOCATED 12.95 M (42.49 FT) NORTH-NORTHEAST OF A LIGHT POLE, THE

AJ8043'NORTHEAST ONE OF FOUR ON THE SOUTHEAST SIDE OF THE PONDS, 3.35 M

AJ8043'(10.99 FT) WEST OF THE CENTER OF THE ROAD AND 0.49 M (1.61 FT)

AJ8043'NORTHWEST OF A FIBERGLASS WITNESS POST.

AJ8043

AJ8043

STATION RECOVERY (2006)

AJ8043

AJ8043'RECOVERY NOTE BY US POWER SQUADRON 2006 (JCH)

AJ8043'WITNESS POST IS DESTROYED. COVER IS BROKEN.

AJ8043

AJ8043

STATION RECOVERY (2007)

AJ8043

AJ8043

AJ8043'RECOVERY NOTE BY US POWER SQUADRON 2007 (NLH)

AJ8043'RECOVERED IN GOOD CONDITION.

HV8917

**Latitude:** N38 26 45.17621  
**Longitude:** W76 07 09.84459  
**Ellipsoid Height:** -33.976m  
**Orthometric Height:** 1.164m



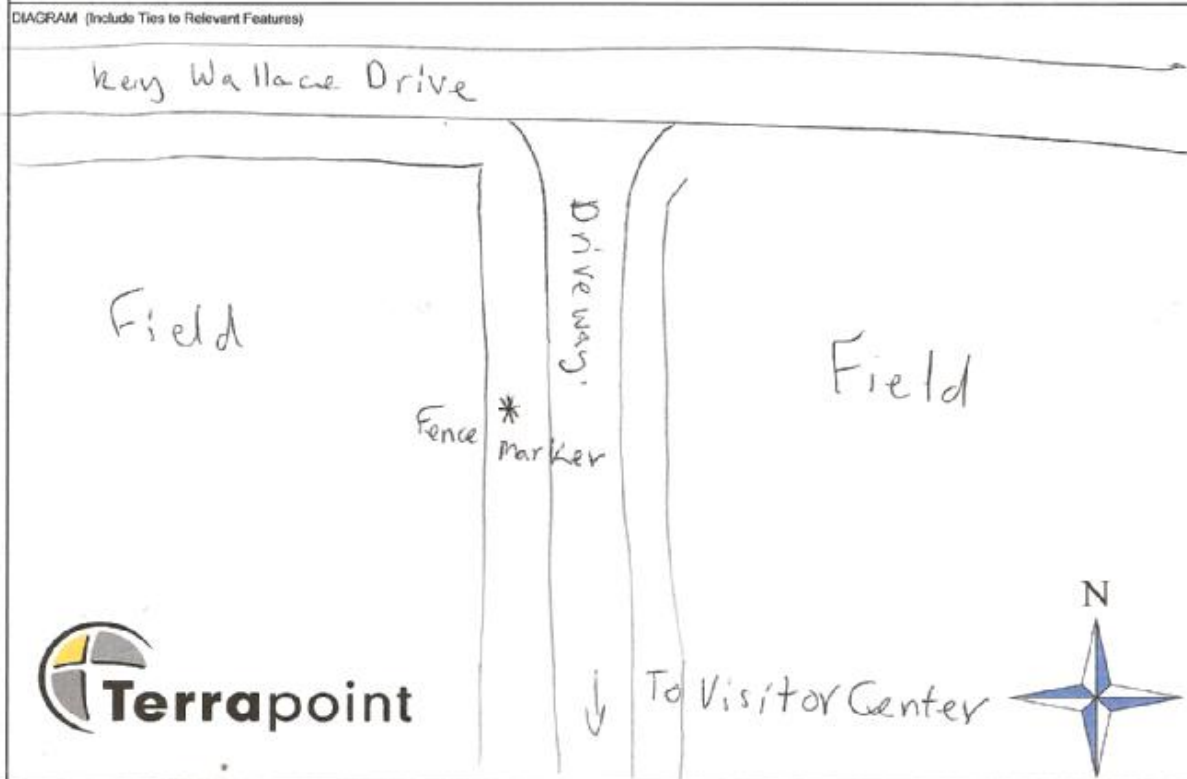


**STATION DESCRIPTION FORM**

PROJECT No.: 111030  
 PROJECT NAME: Hooper Island  
 LOCATION: Hooper Island

PHOTOS TAKEN:

STATION NAME: <b>HV8917</b>	MARKER TYPE: <b>Stainless Steel Rod</b>	DATE: <b>23/4/2011</b>
STATION NUMBER: <b>HV8917</b>	STATION LOCALITY: <b>8.7 miles South Cambridge</b>	LEGAL DESCRIPTION:
DATUM: <b>NAD83</b>	CENTRAL MERIDIAN:	UTM ZONE: <b>18</b>
LATITUDE: <b>38 26 45.1721</b>	LONGITUDE: <b>76 07 09.84959</b>	ELLIPSOID HEIGHT metres (ft): <b>-33.976m</b>
UTM NORTHING metres: <b>4271753.5714</b>	UTM EASTING metres: <b>401553.8382</b>	GEOID HEIGHT metres (MSL): <b>1.16m</b>
MONUMENT IS: <input type="checkbox"/> FLUSH WITH GROUND <input type="checkbox"/> ABOVE GROUND <u>    </u> cm <input checked="" type="checkbox"/> BELOW GROUND <u>10</u> cm		
MARKER LOCATION: <b>Socated in Black water Refuge. On a grass strip along Entrance to visitor center on Right side.</b>		





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HV8917 *****
HV8917 CBN - This is a Cooperative Base Network Control Station.
HV8917 DESIGNATION - REFUGE 2
HV8917 PID - HV8917
HV8917 STATE/COUNTY- MD/DORCHESTER
HV8917 USGS QUAD - BLACKWATER RIVER (1982)
HV8917
HV8917 *CURRENT SURVEY CONTROL
HV8917
HV8917* NAD 83(2007)- 38 26 45.17621(N) 076 07 09.84459(W) ADJUSTED
HV8917* NAVD 88 - 1.154 (meters) 3.79 (feet) ADJUSTED
HV8917
HV8917 EPOCH DATE - 2002.00
HV8917 X - 1,199,923.706 (meters) COMP
HV8917 Y - -4,855,717.047 (meters) COMP
HV8917 Z - 3,944,305.093 (meters) COMP
HV8917 LAPLACE CORR- -3.35 (seconds) DEFLECO9
HV8917 ELLIP HEIGHT- -33.976 (meters) (02/10/07) ADJUSTED
HV8917 GEOID HEIGHT- -35.14 (meters) GEOID09
HV8917 DYNAMIC HT - 1.153 (meters) 3.78 (feet) COMP
HV8917
HV8917 ----- Accuracy Estimates (at 95% Confidence Level in cm) -----
HV8917 Type PID Designation North East Ellip
HV8917 -----
HV8917 NETWORK HV8917 REFUGE 2 0.71 0.61 1.47
HV8917 -----
HV8917 MODELED GRAV- 980,005.9 (mgal) NAVD 88
HV8917
HV8917 VERT ORDER - SECOND CLASS I
HV8917
HV8917.The horizontal coordinates were established by GPS observations
HV8917.and adjusted by the National Geodetic Survey in February 2007.
HV8917
HV8917.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
HV8917.See National Readjustment for more information.
HV8917.The horizontal coordinates are valid at the epoch date displayed above.
HV8917.The epoch date for horizontal control is a decimal equivalence
HV8917.of Year/Month/Day.
HV8917
HV8917.The orthometric height was determined by differential leveling and
HV8917.adjusted in August 1994.
HV8917
HV8917.The X, Y, and Z were computed from the position and the ellipsoidal ht.
HV8917
HV8917.The Laplace correction was computed from DEFLECO9 derived deflections.
HV8917
HV8917.The ellipsoidal height was determined by GPS observations
HV8917.and is referenced to NAD 83.
HV8917
HV8917.The geoid height was determined by GEOID09.
HV8917
HV8917.The dynamic height is computed by dividing the NAVD 88
HV8917.geopotential number by the normal gravity value computed on the
HV8917.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
HV8917.degrees latitude (g = 980.6199 gals.).
HV8917
HV8917.The modeled gravity was interpolated from observed gravity values.
HV8917
HV8917; North East Units Scale Factor Converg.
HV8917;SPC MD - 86,866.884 476,871.608 MT 0.99997782 +0 33 09.7
HV8917;SPC MD - 284,995.77 1,564,536.27 sFT 0.99997782 +0 33 09.7
HV8917;UTM 18 - 4,255,881.831 402,316.175 MT 0.99971751 -0 41 45.9
HV8917
HV8917! - Elev Factor x Scale Factor = Combined Factor
HV8917!SPC MD - 1.00000533 x 0.99997782 = 0.99998315
HV8917!UTM 18 - 1.00000533 x 0.99971751 = 0.99972284
HV8917
HV8917 SUPERSEDED SURVEY CONTROL
HV8917

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HV8917 ELLIP H (02/12/02) -33.995 (m) GP( ) 4 1  
 HV8917 NAD 83(1986)- 38 26 45.17388(N) 076 07 09.86135(W) AD( ) 2  
 HV8917 NAD 83(1991)- 38 26 45.17713(N) 076 07 09.84371(W) AD( ) B  
 HV8917 ELLIP H (10/23/91) -33.964 (m) GP( ) 4 1  
 HV8917 NAVD 88 (02/12/02) 1.15 (m) 3.8 (f) LEVELING 3  
 HV8917 NGVD 29 (10/23/91) 1.39 (m) 4.6 (f) LEVELING 3

HV8917  
 HV8917.Superseded values are not recommended for survey control.  
 HV8917.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 HV8917.[See file dsdata.txt](#) to determine how the superseded data were derived.

HV8917  
 HV8917\_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVH0231655881(NAD 83)  
 HV8917\_MARKER: I = METAL ROD  
 HV8917\_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)  
 HV8917\_SP\_SET: STAINLESS STEEL ROD IN SLEEVE  
 HV8917\_STAMPING: REFUGE 2 1990  
 HV8917\_MARK LOGO: NGS  
 HV8917\_PROJECTION: FLUSH  
 HV8917\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 HV8917\_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD  
 HV8917+STABILITY: POSITION/ELEVATION WELL  
 HV8917\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 HV8917+SATELLITE: SATELLITE OBSERVATIONS - June 29, 2010  
 HV8917\_ROD/PIPE-DEPTH: 19.5 meters  
 HV8917\_SLEEVE-DEPTH : 1.00 meters

HV8917

HV8917	HISTORY	- Date	Condition	Report By
HV8917	HISTORY	- 1990	MONUMENTED	NGS
HV8917	HISTORY	- 19910102	GOOD	NGS
HV8917	HISTORY	- 19990803	GOOD	GEOMET
HV8917	HISTORY	- 20000216	GOOD	NGS
HV8917	HISTORY	- 20000918	GOOD	GEOMET
HV8917	HISTORY	- 20050920	GOOD	NGS
HV8917	HISTORY	- 20060105	GOOD	USPSQD
HV8917	HISTORY	- 20070130	GOOD	USPSQD
HV8917	HISTORY	- 20100629	GOOD	NGS

HV8917  
 HV8917  
 HV8917 STATION DESCRIPTION

HV8917'DESCRIBED BY NATIONAL GEODETIC SURVEY 1990  
 HV8917'THE MARK IS LOCATED ABOUT 14.45 KM (8.98 MI) SOUTH OF CAMBRIDGE AND  
 HV8917'7.0 KM (4.3 MI) SOUTHEAST OF CHURCH CREEK AT THE BLACKWATER WILDLIFE  
 HV8917'VISITORS CENTER. OWNERSHIP--U.S. GOVERNMENT.  
 HV8917'TO REACH THE MARK FROM THE INTERSECTION OF STATE HIGHWAYS 16 AND 335  
 HV8917'IN CHURCH CREEK, GO SOUTH ON STATE HIGHWAY 335 FOR 6.35 KM (3.95 MI)  
 HV8917'TO A PAVED ROAD LEFT. TURN LEFT AND GO EAST ON KEY WALLACE DRIVE FOR  
 HV8917'1.65 KM (1.03 MI) TO A PAVED ROAD RIGHT. TURN RIGHT AND GO SOUTH ON  
 HV8917'THE PAVED ROAD FOR 0.15 KM (0.09 MI) TO THE MARK ON THE RIGHT.  
 HV8917'IT IS 19.8 FT (6.0 M) WEST OF THE CENTERLINE OF THE PAVED ROAD, 138.7  
 HV8917'FT (42.3 M) NORTH OF THE NORTH END OF A CURB, 9.0 FT (2.7 M) EAST OF  
 HV8917'A WOODEN FENCE, AND 9.5 FT (2.9 M) EAST-SOUTHEAST OF A WITNESS POST.  
 HV8917'NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.

HV8917  
 HV8917  
 HV8917 STATION RECOVERY (1991)

HV8917  
 HV8917 RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991  
 HV8917 STATION IS LOCATED ABOUT 14 KM (8.7 MI) SOUTH OF CAMBRIDGE, 7 KM  
 HV8917 (4.3 MI) SOUTHEAST OF CHURCH CREEK, AT THE BLACKWATER NATIONAL  
 HV8917 WILDLIFE REFUGE, AND IN A GRASS STRIP ALONG THE ENTRANCE ROAD TO THE  
 HV8917 VISITORS CENTER. OWNERSHIP--US DEPARTMENT OF THE INTERIOR, C/O  
 HV8917 MANAGER GLENN CAROWAN, PHONE 301-228-2692. VISITOR CENTER MANAGER IS  
 HV8917 MAGGIE BRIGGS, PHONE 301-228-2677. CONTACT THE REFUGE MANAGER FOR  
 HV8917 KEY TO LOCKED GATE AT VISITOR CENTER.  
 HV8917 TO REACH FROM THE JUNCTION OF US HIGHWAY 50 AND STATE HIGHWAY 16  
 HV8917 (ABOUT 2 KM (1.2 MI) EAST OF CAMBRIDGE), GO SOUTH AND WEST ON HIGHWAY  
 HV8917 16 FOR 11.64 KM (7.23 MI) TO ITS JUNCTION WITH STATE HIGHWAY 335 ON  
 HV8917 THE SOUTHWEST SIDE OF CHURCH CREEK. TURN LEFT, SOUTH, ON HIGHWAY 335  
 HV8917 FOR 6.17 KM (3.83 MI) TO A PAVED ROAD LEFT. TURN LEFT, EAST, ON KEY  
 HV8917 WALLACE DRIVE FOR 1.63 KM (1.01 MI) TO A PAVED ROAD RIGHT. TURN  
 HV8917 RIGHT, SOUTH, PASSING THROUGH GATE (LOCKED AFTER BUSINESS HOURS) ON  
 HV8917 THE PAVED ROAD FOR 0.14 KM (0.09 MI) TO THE STATION ON THE RIGHT.



## HNPT

**Latitude:** N36 35 19.71067  
**Longitude:** W76 07 49.33296  
**Ellipsoid Height:** -26.645m  
**Orthometric Height:** 8.235m



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AI3494 *****
AI3494 CORS - This is a GPS Continuously Operating Reference Station.
AI3494 DESIGNATION - HORN POINT ENVIRO CORS ARP
AI3494 CORS_ID - HNPT
AI3494 PID - AI3494
AI3494 STATE/COUNTY- MD/DORCHESTER
AI3494 USGS QUAD - CHURCH CREEK (1982)
AI3494
AI3494 *CURRENT SURVEY CONTROL
AI3494
AI3494* NAD 83(CORS)- 38 35 19.71067(N) 076 07 49.33296(W) ADJUSTED
AI3494* NAVD 88 - *(meters) *(feet)
AI3494
AI3494 EPOCH DATE - 2002.00
AI3494 X - 1,196,627.004 (meters) COMP
AI3494 Y - -4,846,359.975 (meters) COMP
AI3494 Z - 3,956,723.241 (meters) COMP
AI3494 ELLIP HEIGHT- -26.645 (meters) (03/??/02) ADJUSTED
AI3494 GEOID HEIGHT- -34.88 (meters) GEOID09
AI3494 HORZ ORDER - SPECIAL (CORS)
AI3494 ELLP ORDER - SPECIAL (CORS)
AI3494
AI3494 ITRF positions are available for this station.
AI3494.The coordinates were established by GPS observations
AI3494.and adjusted by the National Geodetic Survey in March 2002.
AI3494.The coordinates are valid at the epoch date displayed above.
AI3494.The epoch date for horizontal control is a decimal equivalence
AI3494.of Year/Month/Day.
AI3494
AI3494
AI3494.The PID for the CORS L1 Phase Center is DI8696.
AI3494
AI3494.The XYZ, and position/ellipsoidal ht. are equivalent.
AI3494
AI3494.The ellipsoidal height was determined by GPS observations
AI3494.and is referenced to NAD 83.
AI3494
AI3494.The geoid height was determined by GEOID09.
AI3494
AI3494; North East Units Scale Factor Converg.
AI3494:SPC MD - 102,722.214 475,762.970 MT 0.99996232 +0 32 44.9
AI3494:SPC MD - 337,014.46 1,560,899.01 sFT 0.99996232 +0 32 44.9
AI3494
AI3494! - Elev Factor x Scale Factor = Combined Factor
AI3494!SPC MD - 1.00000418 x 0.99996232 = 0.99996650
AI3494
AI3494 SUPERSEDED SURVEY CONTROL
AI3494
AI3494 NAD 83(CORS)- 38 35 19.71008(N) 076 07 49.33310(W) AD(1997.00) c
AI3494 ELLIP H (01/??/00) -26.640 (m) GP(1997.00) c c
AI3494
AI3494.Superseded values are not recommended for survey control.
AI3494.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AI3494.See file dsdata.txt to determine how the superseded data were derived.
AI3494
AI3494_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVH0155371753(NAD 83)
AI3494_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
AI3494
AI3494 STATION DESCRIPTION
AI3494
AI3494'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
AI3494'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
AI3494'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
AI3494'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
AI3494' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
AI3494' HTTP://WWW.NGS.NOAA.GOV/CORS.

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