

GROUND CONTROL SURVEY REPORT

GROUND TRUTH SURVEY FOR LIDAR CONTROL

Professional Management and LiDAR Data Collection and Processing Services

Block 8

PROJECT TITLE:	Professional Management and LiDAR Data Collection and Processing Services
WORK ORDER NAME:	Task Order A
WORK ORDER NUMBER:	2007058492720
CONSULTANT NAME:	3001, Inc., CH2M Hill, Inc.
PROJECT MANAGERS:	Jeremy Conner, 3001 Project Manager JoLee Gardner, CH2M Hill Project Manager

Services provided by:



3001, INC. THE GEOSPATIAL COMPANY
501 Robert Blvd. 2nd Floor
Slidell, Louisiana 70458



November 2008

Florida Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Re: Professional Management and LiDAR Data Collection and Processing Services,
Block 8

This photogrammetric mapping ground control survey is certified as meeting or exceeding, in quality and precision, the standards applicable for this work as set forth in Chapter 61G17-6, Florida Administrative Code.

Dean T. Epling, PSM
Florida Professional Surveyor and Mapper
License # 5417
401 Dividend Drive, Suite K
Peachtree City, GA 30269
(770) 631-0903

Signed: _____ Date: _____

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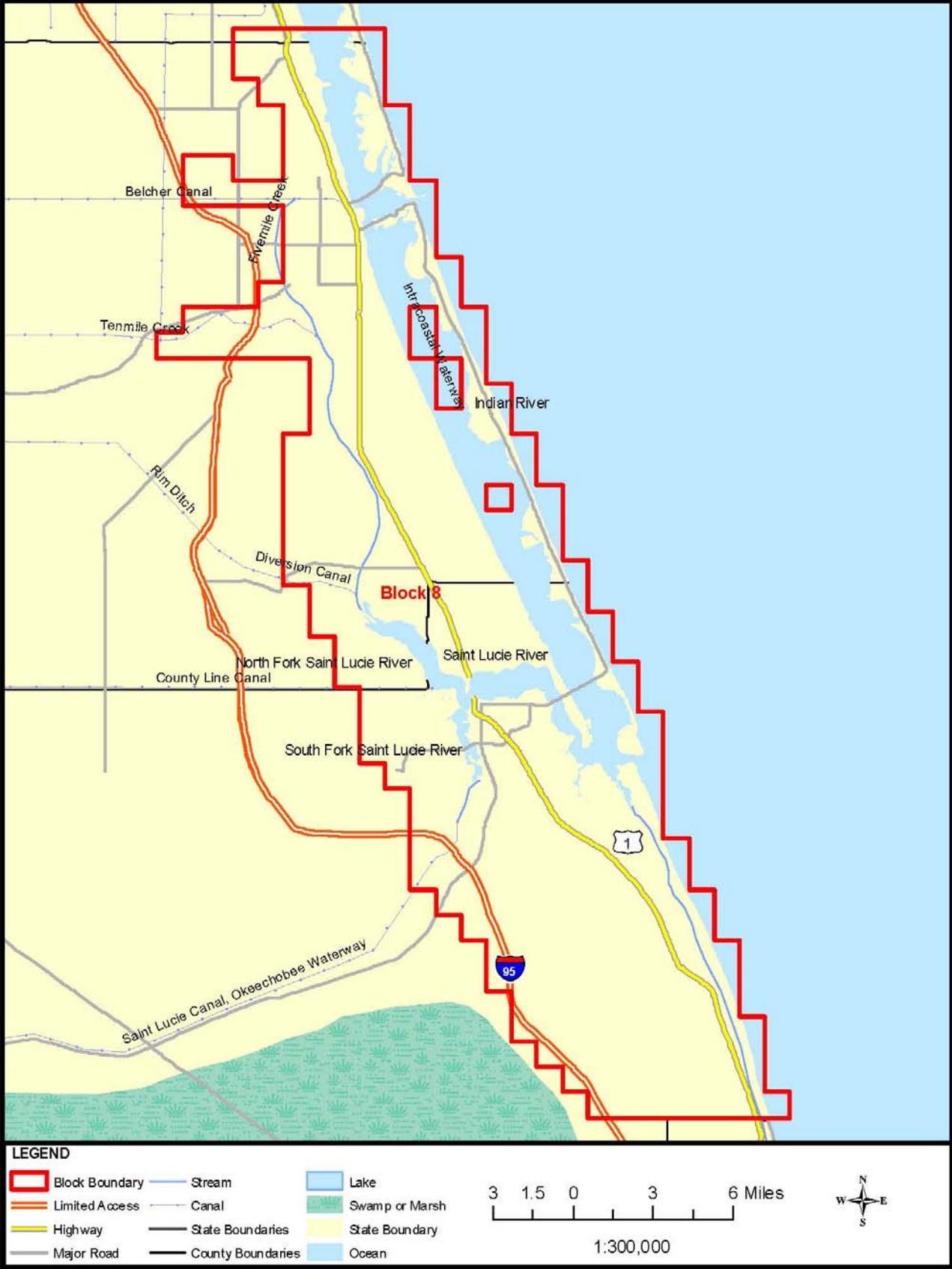
ABSTRACT

ABSTRACT

This report documents the GPS ground surveys conducted in support of LIDAR data collection for the Professional Management and LiDAR Data Collection and Processing Services project, Block 8. The data was collected between August 5 and August 10, 2007. Additional survey data was collected between December 10 and December 12, 2007. The ground control stations were established utilizing six Trimble 4000 series receivers, two Trimble 4700 GPS receivers, six Trimble Compact L1/L2 antennas with ground plane, one Trimble microcentered L1/L2 antenna with ground plane, and one Trimble microcentered L1/L2 antenna without ground plane. There were no problems encountered during this survey.

Following the control network surveys, surveys were conducted at 12 sites utilizing the base stations established in the static network. These surveys established "Ground Truth" data at each site on different surface types, including bare-earth / low grass, brush lands / low trees, forested areas fully covered by trees, and urban areas.

BLOCK 8 SITE MAP



SURVEY METHODOLOGY

SURVEY METHODOLOGY

Prior to beginning the survey collection, a reconnaissance was done of the existing control in the project area, and surrounding areas. Based on the results of the findings, the controls to be included in the network were selected based on their locations, horizontal and vertical orders, and their accessibility. In addition to the survey control, several Continuously Operating Reference Stations (CORS) were included into the GPS network. All control monuments and CORS can be found in the Fully-Constrained Adjustment table, found in Section 4-B, and can also be seen on the GPS Network Map shown in Section 4-A.

The GPS network was then planned to coincide with the following set of standards:

- FGCC, GEOMETRIC GEODETIC ACCURACY STANDARDS AND SPECIFICATIONS FOR USING GPS RELATIVE POSITIONING TECHNIQUES, VERSION 5.0, AUGUST 1989
- FGDC, GEOSPATIAL POSITIONING ACCURACY STANDARDS, NATIONAL STANDARD FOR SPATIAL DATA ACCURACY (NSSDA)
- NGS-58, GUIDELINES FOR ESTABLISHING GPS-DERIVED ELLIPSOID HEIGHTS (2CM AND 5CM)
- NGS-59, GUIDELINES FOR ESTABLISHING GPS-DERIVED ORTHOMETRIC HEIGHTS (2CM AND 5CM)
- FGCC STANDARDS AND SPECIFICATIONS FOR GEODETIC CONTROL NETWORKS, 1984
- FEMA FLOOD HAZARD MAPPING PROGRAM, GUIDELINES AND SPECIFICATIONS FOR FLOOD HAZARD MAPPING PARTNERS, APPENDIX A

Control monuments were tied together with four hour occupations. These monuments were then tied to newly established monuments, or secondary control monuments, with multiple one hour occupations.

After the static GPS network was completed, the ground truth data points were collected using a total station and data collector. This data was collected from base stations tied into the static GPS network, and additional “check-in” points were collected and compared to positions established in the static network. The ground truth data was then processed and used to verify the LIDAR positions.

The horizontal and vertical datums used for this project are listed below:

Coordinate System: US State Plane
Zone: Florida East 0901
Horizontal Datum: NAD83 (1999) / HARN Adjustment
Vertical Datum: NAVD88
Geoid Model: Geoid03
Units: US Survey Feet

MAIN REPORT

STATIC GPS SUMMARY

The Standard Operating Procedure for the data collection includes a geodetic control network plan designed to maximize the use of the highest order control points in the area of interest, and to optimize the spatial distribution of geodetic control across the network. Also included is the simultaneous occupation of points designed to provide redundant vectors and loop closures, as well as a collection of a superfluity of points to compare observed values against published values of geodetic control points.

In addition, the static GPS network was established to verify the compatibility and correlation of existing published NGS controls in the project area. Horizontal and vertical constraints were selected based on the order of accuracy and correlation of the controls selected.

PRELIMINARY ANALYSIS

The baselines were processed using Trimble Geomatics Offices's baseline processing module, WAVE (*Weighted Ambiguity Vector Estimator*). Ionosphere-free fixed solutions were found to provide the best results. Preliminary blunder detections were undertaken using "Redundant Vectors" and Global Network Closures and any extremely large errors were eliminated.

MINIMALLY CONSTRAINED ADJUSTMENT

The data are then processed using a minimally constrained geodetic control network to test the network internally, without external constraints, and produce a statistical summary. The statistics from this process are required to be within the tolerance outlined in the Geometric Geodetic Accuracy Standards and Specifications for using GPS Relative Positioning Techniques, published by the FGCC. These tolerances are represented as ellipsoids showing the margin of error value on a graph of the theoretical points, covariance values that indicate the degree of error of the vectors relative to the other vectors in the network, and a chi-squared test that compares the predicted variance determined through a least-squares analysis to the observed variance. The summary is evaluated to eliminate vectors that are outside of the error tolerances to be replaced with redundant vectors that are within the tolerances until all tolerances are met.

FULLY CONSTRAINED ADJUSTMENT

The quality of the existing horizontal controls is assessed before undertaking the constrained adjustment. Geodetic inverses between the published NAD83 (1999) coordinates of existing stations were compared with the geodetic inverses derived from the minimally constrained least square adjustment results. This distance analysis is especially useful, since it provides a datum invariant means of comparison.

Once the minimally constrained network satisfies the requirements of the above tests, the highest order control points in the control network are selected with an optimum spatial relationship to fully constrain the network to known control points, and have their published values entered as the position for those points and the network re-adjusted. The fully constrained positions are given in Section 4-B. The same statistical tests are rerun on the adjusted network, as well as visually comparing adjusted values of geodetic control points to published values of control points not used as constraints. Again, the summary is evaluated to identify vectors outside of the tolerances and constraining points reselected to obtain the best fit to the geoid where all vectors are within the prescribed tolerances.

ERROR ELLIPSES

The adjustment results show that the a posteriori variance factor of the network was close to 1.0, as should be desired, and passed the χ^2 test. None of the residual components in the network were flagged for possible rejection under the τ -max test at the 0.05 level of significance. The relative confidence ellipses reveal that the horizontal positional accuracy between all directly connected pairs of stations in the network were better than (1:100,000) at the 95% level of confidence. The horizontal and vertical Error ellipses are included in this report in Section 4-D.

GROUND TRUTH SUMMARY

Surveys were conducted to establish ground truth data at representative sites throughout the project area. These sites were selected on the basis of the various types of ground surfaces and vegetation covers that would be encountered by the LIDAR surveys. As a quality control measure, a number of “check-in” points consisted of published horizontal and vertical control points within the area. The base stations used to collect survey data were included in the static GPS network, and were selected on the basis of their having an unobstructed view of the sky, as well as being in a location considered favorable for collecting ground truth data. The vertical and horizontal accuracy of each base station was determined by the statistical tests performed in the least squares adjustment process.

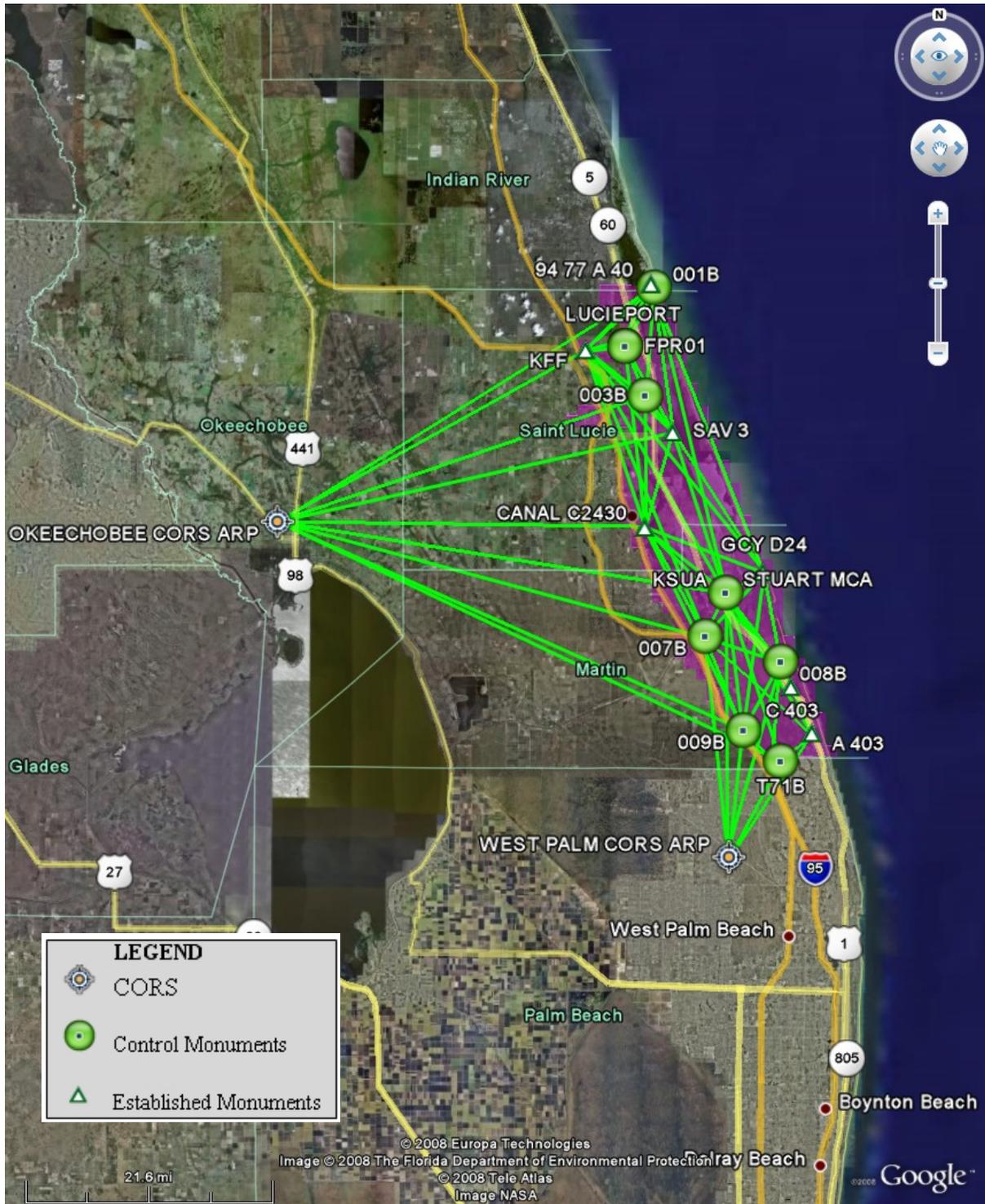
SAMPLE POINTS / TEST POINTS

The test points were distributed and categorized into sites as shown in the Map of Ground Truth Locations attached in this report (Section 5-A). These sites were selected on the basis of various types of ground surfaces and vegetation covers. At the time of LIDAR data acquisition, checkpoints were collected on surfaces with bare-earth / low grass, brush lands / low trees, forested areas fully covered by trees, and urban areas.

GPS NETWORK

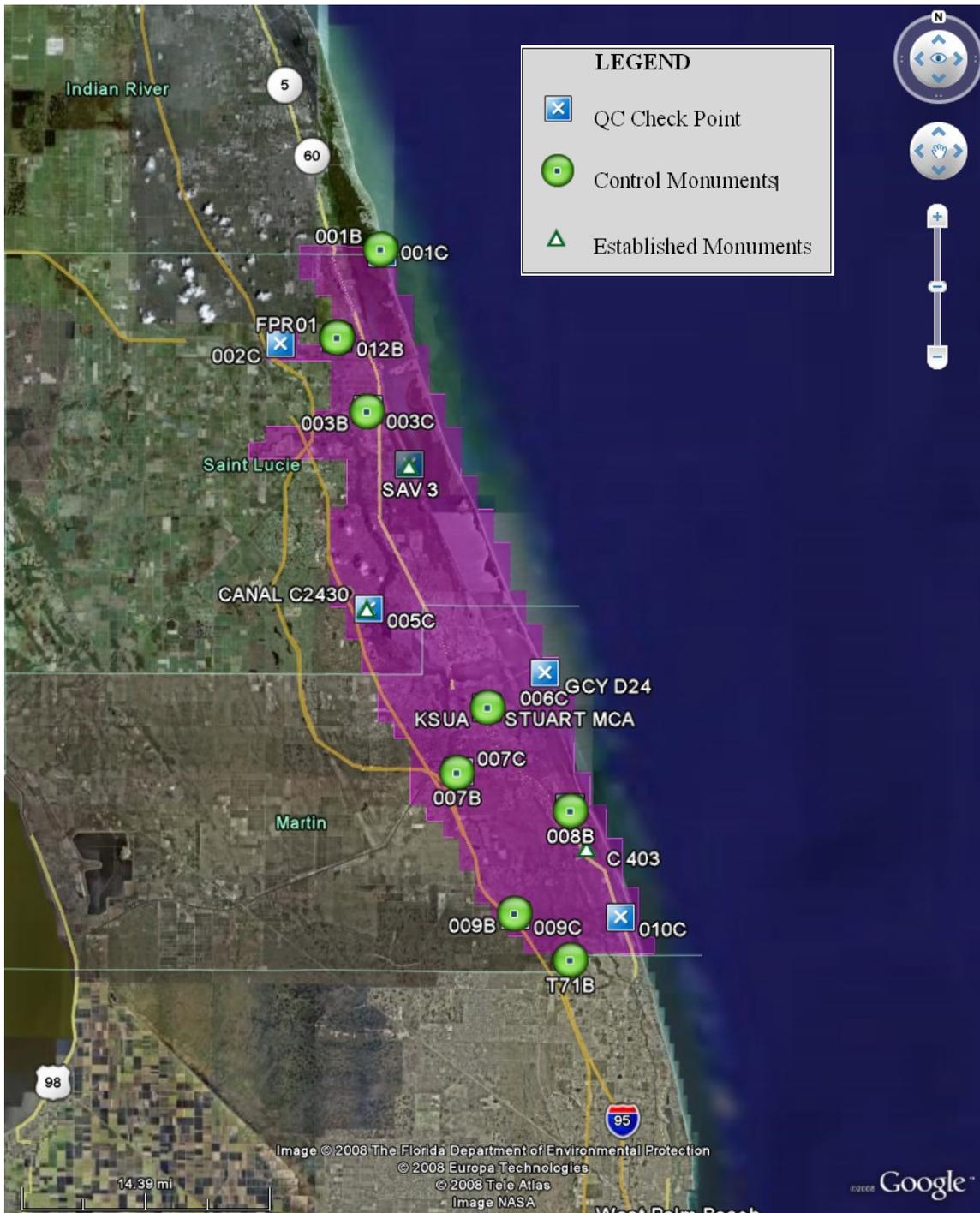
A. GPS Network Map

GPS Network Map



This map shows the GPS baselines processed for this network. The CORS and control monuments can be distinguished from the newly established monuments (see the legend above).

QC Check Points



The QC check points can be seen in the above map. The QC procedures are described in Section 3, in the Ground Truth Summary. The individual check sites can be seen in detail in Section 5-B.

B. Fully Constrained

**GPS Control Network
Fully-Constrained Adjustment**

Coordinate System: US State Plane
 Zone: Florida East 0901
 Horizontal Datum: NAD83 (1999)
 HARN Adjustment
 Vertical Datum: NAVD88
 Geoid Model: Geoid03
 Units: US Survey Feet

Name	Latitude	Longitude	Northing	Easting	Elev	Ellip Ht	North error	East error	Ellip error	Fix
OKCB	27°15'57.71572	80°51'19.18214	1065904.89	703163.25	42.12	-45.13	0.00	0.00	0.00	LLh
PBCH	26°50'46.63829	80°13'09.30061	914080.24	910743.56	36.67	-50.23	0.00	0.00	0.00	LLh
9477	27°34'02.80179	80°19'37.81994	1176042.06	874145.08	2.46	-88.41	0.00	0.00	0.00	LLh
C403	27°03'42.15174	80°07'48.11935	992581.07	939296.55	18.00	-72.63	0.02	0.02	0.00	h
A 403	27°00'13.69262	80°06'01.84948	971597.99	949054.29	16.87	-73.54	0.02	0.02	0.02	
CANAL C 2430	27°15'42.53111	80°20'10.14048	1064916.70	871829.15	3.98	-85.74	0.01	0.01	0.02	
GCY D24	27°12'21.47346	80°10'10.00933	1044936.71	926122.07	6.01	-85.02	0.01	0.01	0.02	
KFF	27°29'03.60348	80°25'10.74344	1145676.00	844325.21	19.68	-70.17	0.01	0.01	0.01	
LUCI	27°29'41.79798	80°22'06.16784	1149614.20	860928.85	19.95	-70.23	0.01	0.01	0.02	
SAV3	27°22'52.87018	80°17'47.58815	1108443.98	884448.63	28.50	-61.76	0.01	0.01	0.02	
STUART MCA	27°10'42.55383	80°13'32.51486	1034830.51	907899.60	14.30	-76.04	0.01	0.01	0.03	
FPR01	27°29'15.05833	80°21'56.42665	1146918.38	861819.88	20.87	-69.30	0.01	0.01	0.02	
KSUA	27°10'41.62444	80°13'26.20335	1034740.18	908470.18	12.62	-77.73	0.01	0.01	0.02	
001B	27°33'41.84761	80°19'28.89835	1173930.35	874959.52	14.46	-76.39	0.01	0.01	0.02	
003B	27°25'32.50258	80°20'14.23933	1124491.77	871142.72	16.70	-73.43	0.01	0.01	0.02	
007B	27°07'25.41764	80°15'09.75177	1014870.18	899236.50	11.46	-78.31	0.01	0.01	0.02	
008B	27°05'29.86207	80°08'46.66559	1003421.63	933929.82	19.86	-70.83	0.01	0.01	0.02	
009B	27°00'20.66437	80°11'55.57106	972086.37	917054.73	13.75	-75.49	0.01	0.01	0.02	
012B	27°29'16.95869	80°21'55.08403	1147110.90	861939.81	21.18	-68.99	0.01	0.01	0.02	
T71B	26°58'00.19452	80°08'47.51450	958013.20	934160.49	12.82	-76.53	0.01	0.01	0.02	
001C	27°33'29.92038	80°19'24.89491	1172727.83	875326.41	18.13	-72.71	0.02	0.02	0.03	
002C	27°28'56.37977	80°25'10.88088	1144946.46	844316.25	20.17	-69.68	0.03	0.04	0.08	
003C	27°25'38.49695	80°20'13.86265	1125097.29	871173.44	17.56	-72.57	0.03	0.03	0.05	
004C	27°22'52.40086	80°17'52.98301	1108393.84	883962.57	29.68	-60.57	0.02	0.02	0.03	

005C	27°15'38.05623	80°20'09.97323	1064464.89	871846.64	13.41	-76.32	0.02	0.02	0.04	
006C	27°12'24.76452	80°10'15.21689	1045265.94	925649.68	4.59	-86.42	0.02	0.02	0.04	
007C	27°07'27.60702	80°15'05.44041	1015093.59	899624.73	9.83	-79.96	0.03	0.03	0.04	
008C	27°05'39.67129	80°08'50.94763	1004409.56	933536.08	20.13	-70.57	0.03	0.03	0.04	
009C	27°00'14.60656	80°11'55.70497	971474.57	917046.50	13.93	-75.28	0.03	0.03	0.04	
010C	27°00'08.79450	80°05'59.30113	971105.01	949288.32	22.57	-67.83	0.03	0.03	0.04	
011C	27°10'40.77721	80°13'31.63928	1034651.59	907979.78	13.66	-76.68	0.03	0.03	0.04	
012C	27°29'13.31831	80°21'57.97763	1146741.95	861681.10	20.03	-70.13	0.02	0.02	0.03	

ERRORS ARE REPORTED AT THE 95% CONFIDENCE LEVEL.

C. NGS Published Positions vs GPS Derived Positions

NGS Positions vs GPS Derived Positions

Coordinate System: US State Plane

Zone: Florida East 0901

Horizontal Datum: NAD83 (1999)

Vertical Datum: NAVD88

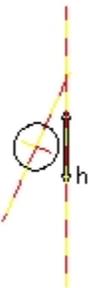
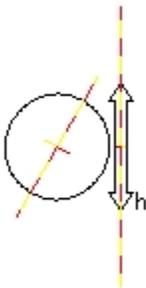
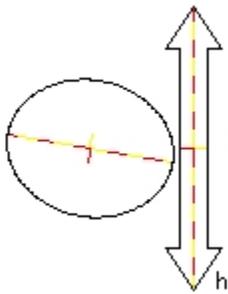
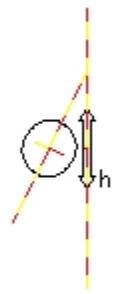
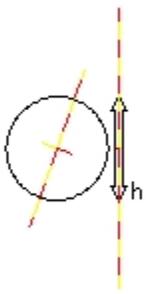
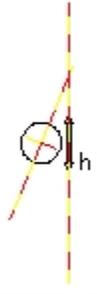
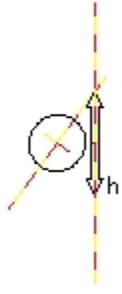
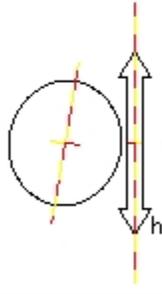
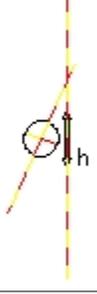
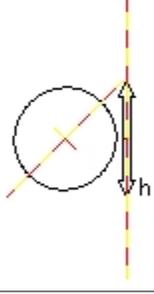
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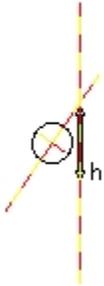
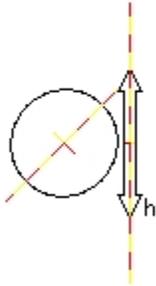
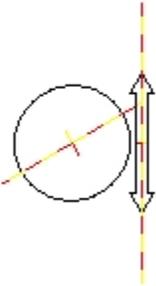
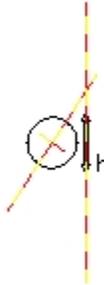
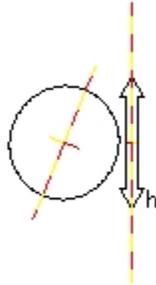
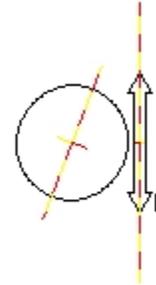
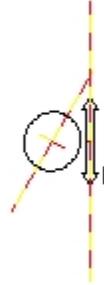
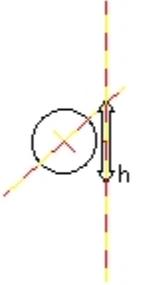
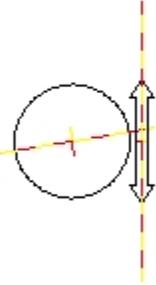
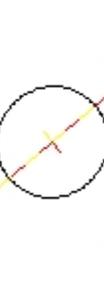
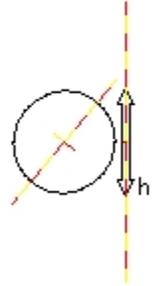
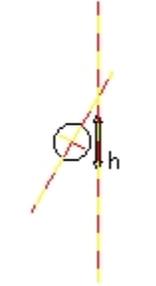
Units: US Survey Feet

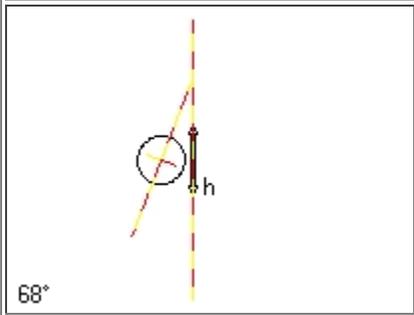
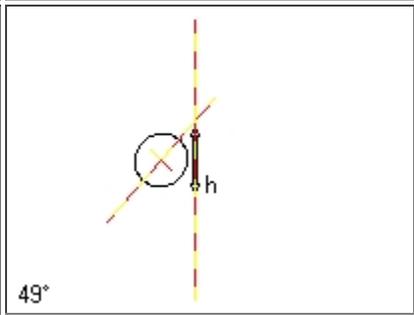
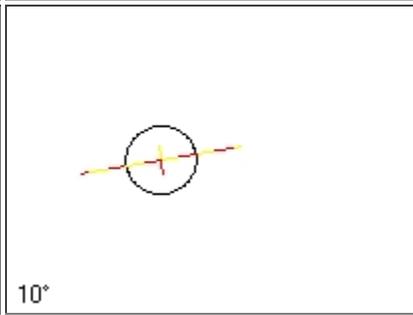
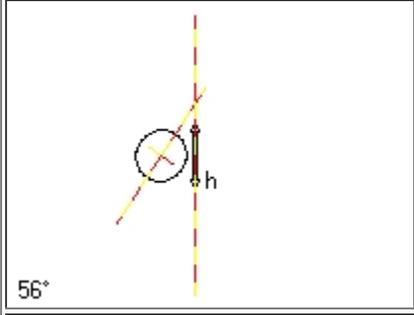
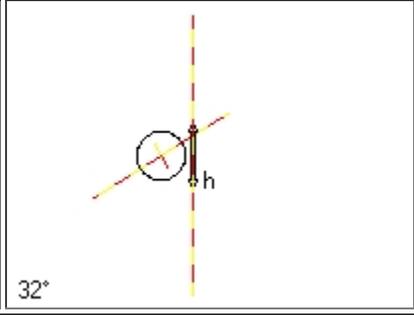
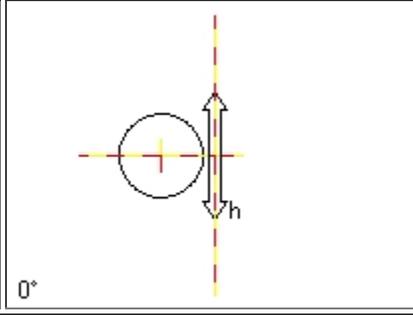
Name	Northing	Easting	Elev	Ellip Ht	Horiz Order	Vert Order	Ellip Order	Northing	Easting	Elev	Ellip Ht	delta North	delta East	delta Elev	delta Ellip
okcb	1065904.88	703163.25		-	CORS	CORS	CORS	1065904.89	703163.25	42.12	-	0.00	0.00		0.00
pbch	914080.24	910743.56		-	CORS	CORS	CORS	914080.24	910743.56	36.67	-	0.00	0.00		0.00
94 77 A 40	1176042.06	874145.08	2.457	-	1	2	4	1176042.06	874145.08	2.46	-	0.00	0.00	0.00	-0.02
KFF	1145676.01	844325.23	19.7	-	1	-	4	1145675.99	844325.21	19.69	-	0.02	0.03	0.00	-0.02
A 403	971597.97	949054.21	16.903	-	1	1	4	971597.97	949054.21	16.90	-	0.00	0.00	0.00	0.01
CANAL C2430	1064916.68	871829.09	3.9	-	1	-	4	1064916.69	871829.14	3.99	-	-0.01	-0.05	-0.05	0.19
LUCIEPORT	1149614.19	860928.84	19.895	-	A	1	4	1149614.19	860928.84	19.95	-	0.00	0.00	-0.05	-0.09
SAV3	1108443.96	884448.60	28.5	-	1	-	4	1108443.96	884448.60	28.51	-	0.00	0.00	0.04	0.06
STUART MCA	1034830.50	907899.52	14.30	-	1	-	4	1034830.50	907899.58	14.31	-	-0.01	-0.06	-0.01	-0.01
GCY D24	1044936.71	926122.08	5.9	-	1	-	4	1044936.72	926122.08	6.01	-	0.00	0.00	-0.11	0.13
C 403	992581.02	939296.52	18.00	-	-	1	-	992581.06	939296.52	18.00	-	-0.04	0.00	0.00	-0.04

D. Error Ellipses

Point Error Ellipses

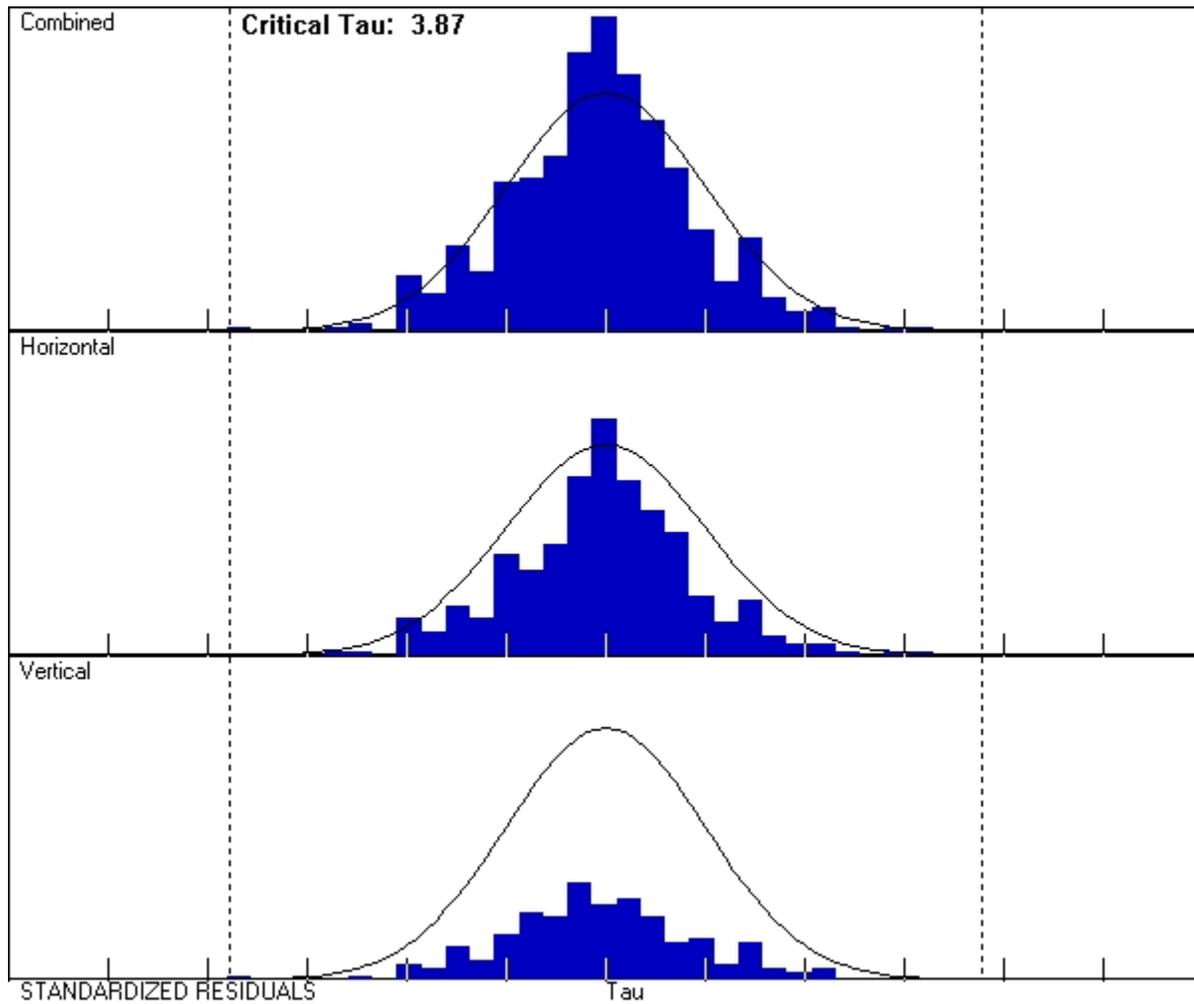
GCY D24	006C	KFF
 <p style="text-align: center;">66°</p>	 <p style="text-align: center;">60°</p>	 <p style="text-align: center;">64°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
002C	007B	001C
 <p style="text-align: center;">-11°</p>	 <p style="text-align: center;">63°</p>	 <p style="text-align: center;">70°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
001B	STUART MCA	003C
 <p style="text-align: center;">68°</p>	 <p style="text-align: center;">53°</p>	 <p style="text-align: center;">80°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		
003B	004C	SAV3
 <p style="text-align: center;">65°</p>	 <p style="text-align: center;">45°</p>	 <p style="text-align: center;">67°</p>
Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ		

CANAL C 2430	005C	007C
 <p>55°</p>	 <p>45°</p>	 <p>30°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		
008B	008C	009C
 <p>56°</p>	 <p>68°</p>	 <p>69°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		
009B	A 403	010C
 <p>60°</p>	 <p>43°</p>	 <p>10°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		
011C	012C	012B
 <p>41°</p>	 <p>49°</p>	 <p>59°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		

LUCI	T71B	C403
 <p>68°</p>	 <p>49°</p>	 <p>10°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		
FPR01	KSUA	0F45
 <p>56°</p>	 <p>32°</p>	 <p>0°</p>
<p>Tick Size: 0.0100sft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ</p>		

E. Histograms of Standardized Residuals

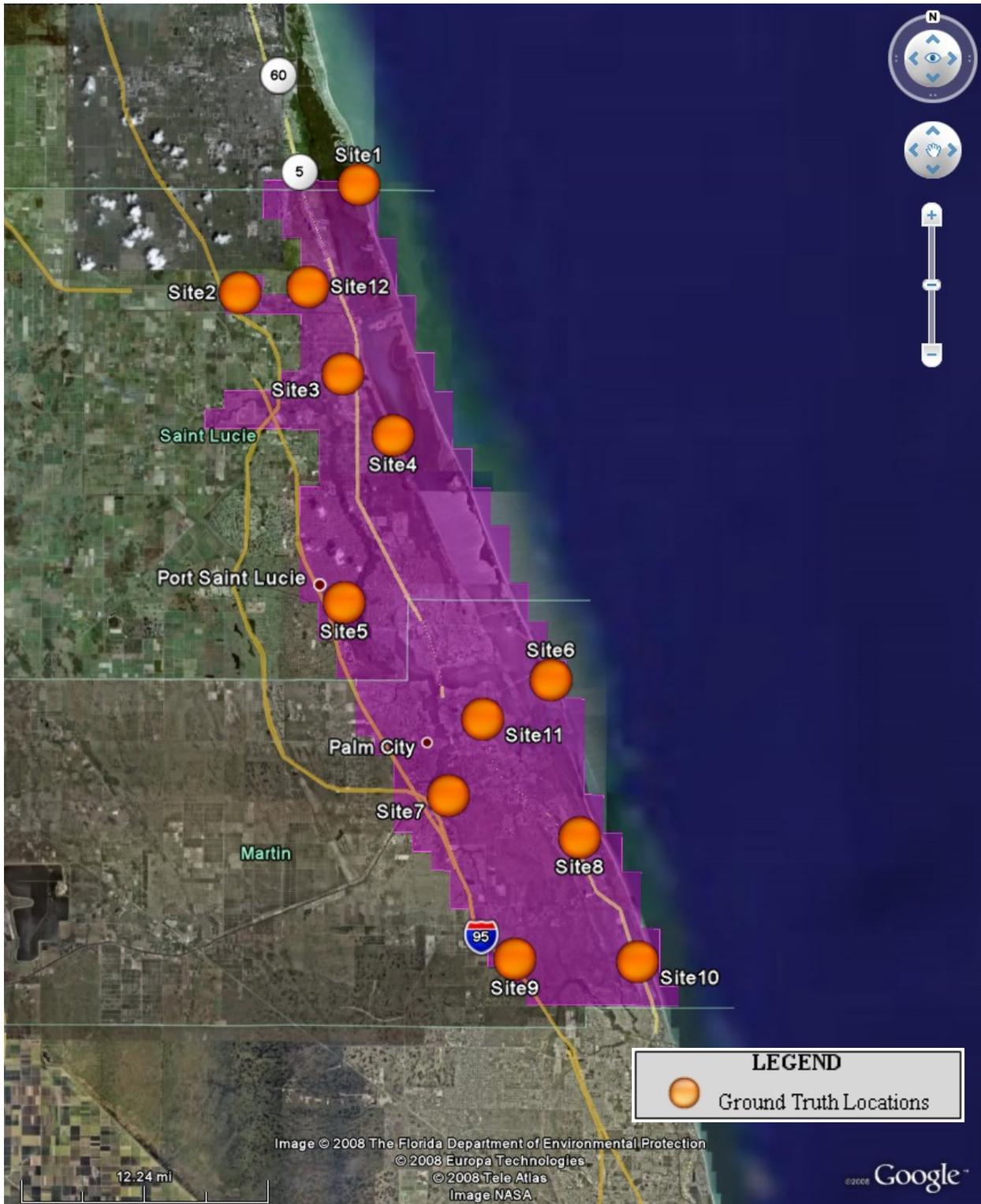
Histograms of Standardized Residuals



GROUND TRUTH SURVEY

A. Map of Ground Truth Locations

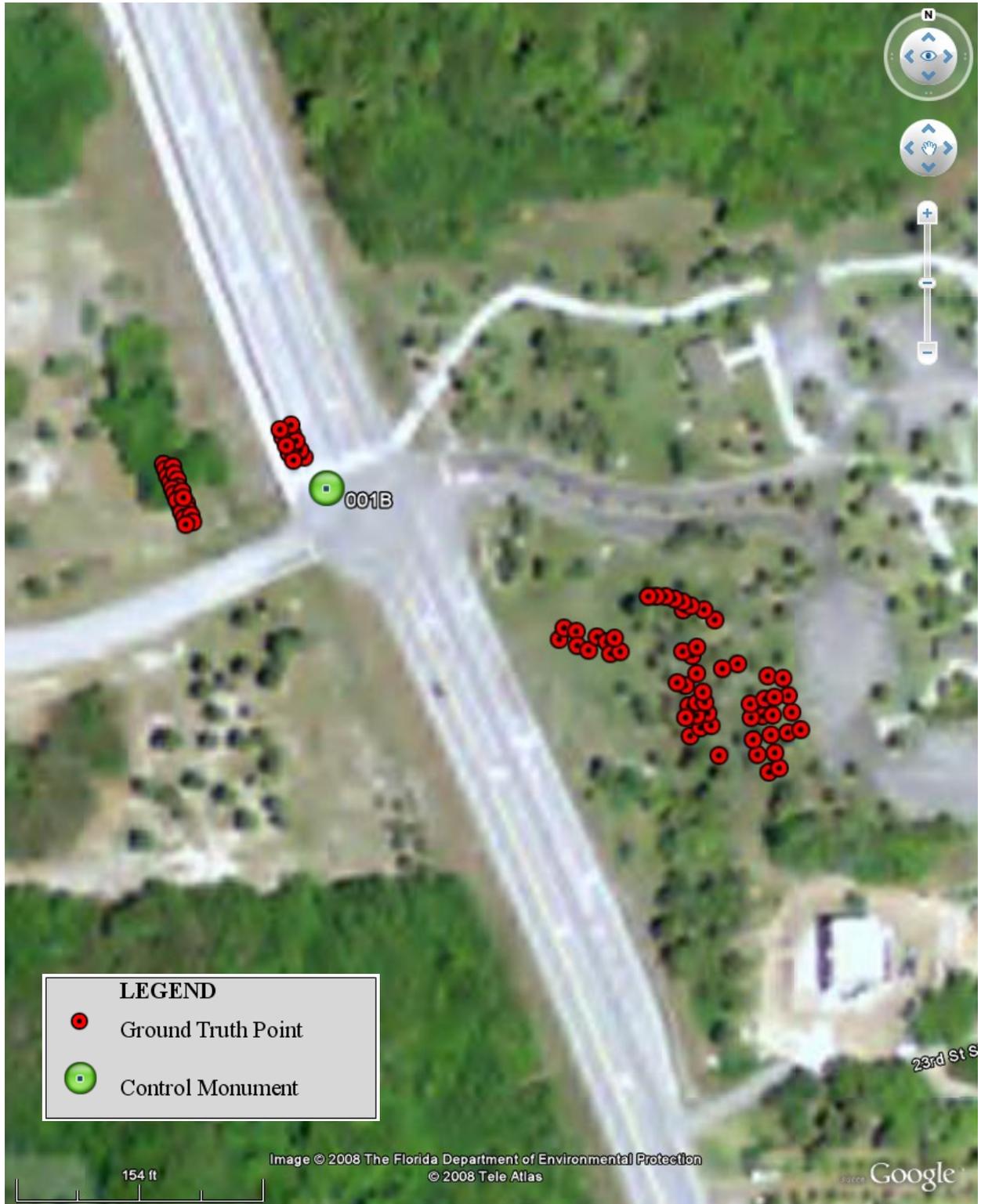
Ground Control Areas



The individual check sites can be seen in detail on the following pages.

B. Ground Truth Site Maps

SITE 1 - Ground Truth Points



SITE 2 - Ground Truth Points



SITE 3 - Ground Truth Points



SITE 4 - Ground Truth Points



SITE 5 - Ground Truth Points



SITE 6 - Ground Truth Points



SITE 7 - Ground Truth Points



SITE 8 - Ground Truth Points



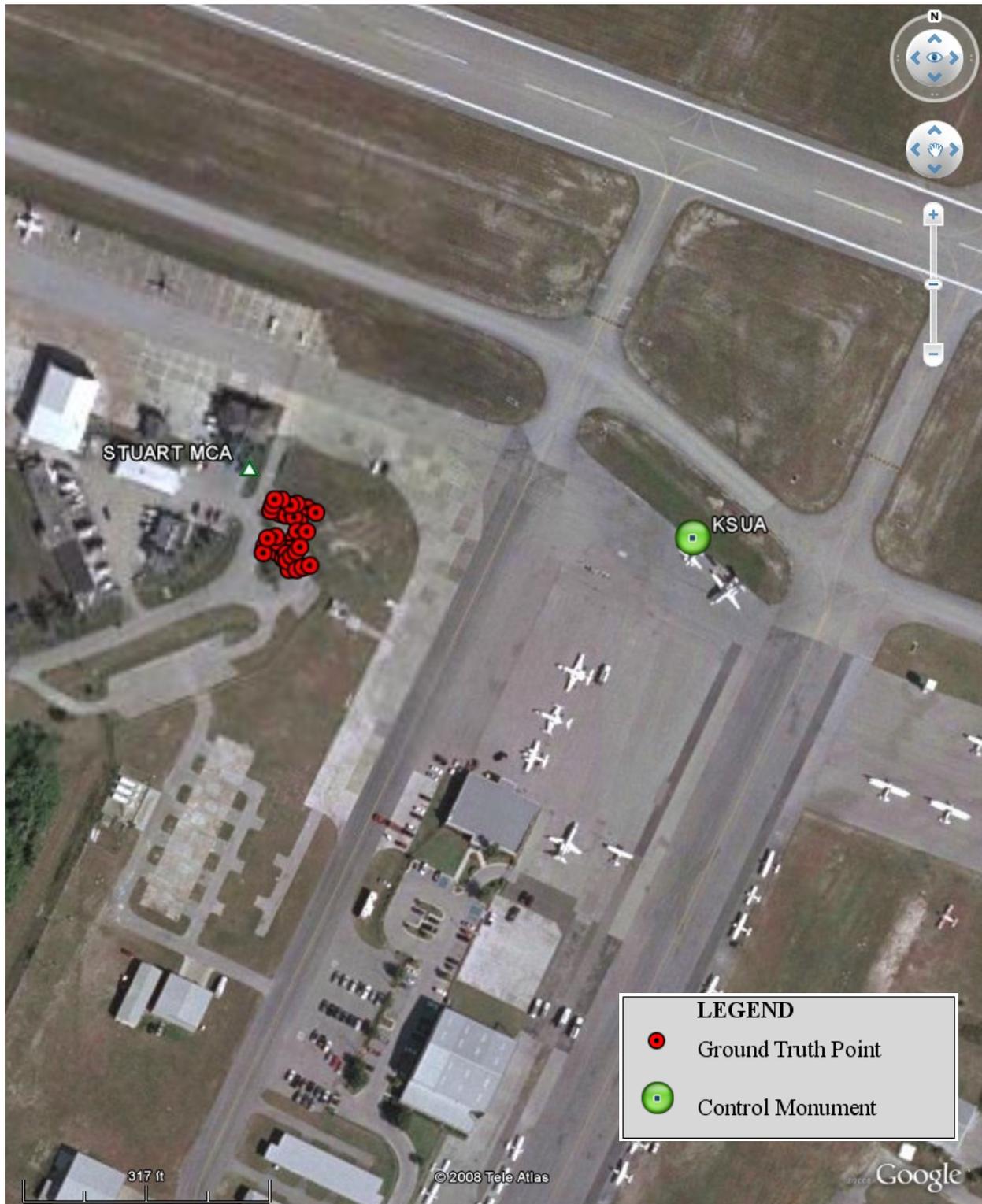
SITE 9 - Ground Truth Points



SITE 10 - Ground Truth Points



SITE 11 - Ground Truth Points



SITE 12 - Ground Truth Points



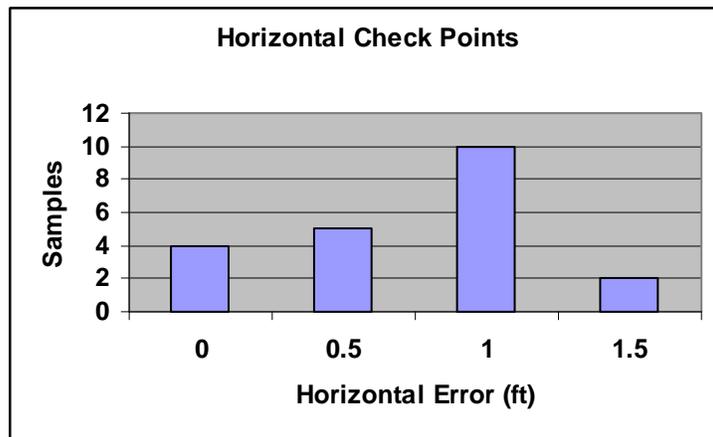
C. Horizontal Accuracy Assessment

HORIZONTAL ACCURACY CHECK POINTS

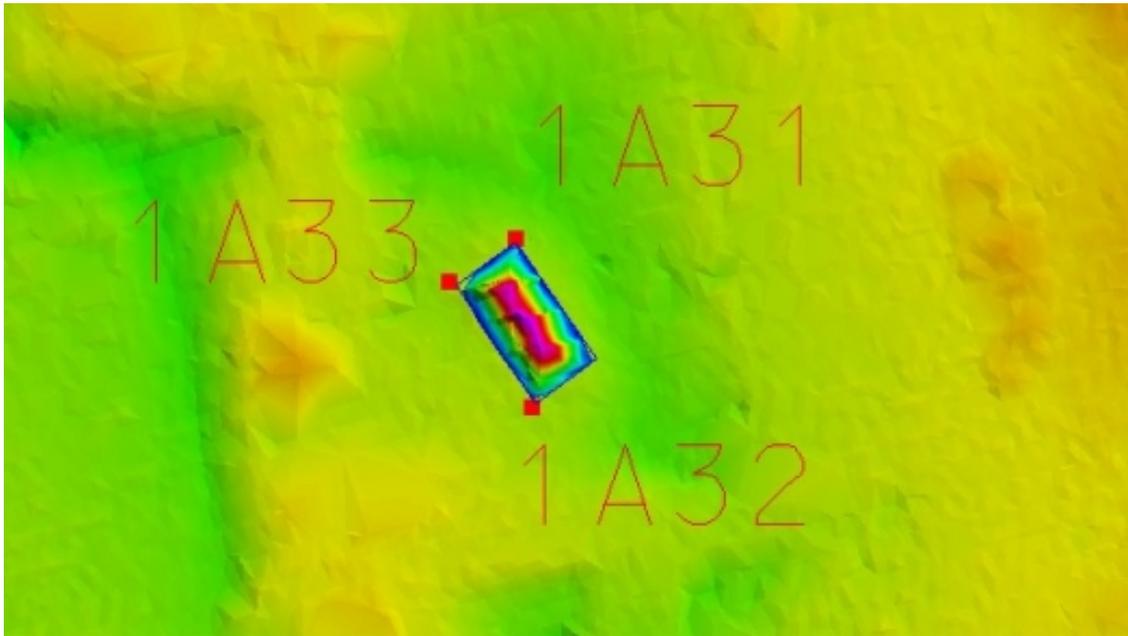
Horizontal check points were collected at several sites within the project area, in order to verify the horizontal accuracy of the LiDAR data. These check points are collected in the same locations as the vertical ground truth data, from base stations that were established in the static GPS network. The horizontal check points were collected with a total station and data collector.

After the LiDAR data has been processed these horizontal check points are plotted and compared to the approximate positions from the LiDAR data set. For this purpose building corners are most often used, because they can be identified from the LiDAR data and the corners can be estimated. Distances are measured from the estimated LiDAR positions to the surveyed positions. The statistics are shown below, and screen captures of the LiDAR derived features are shown on the following pages.

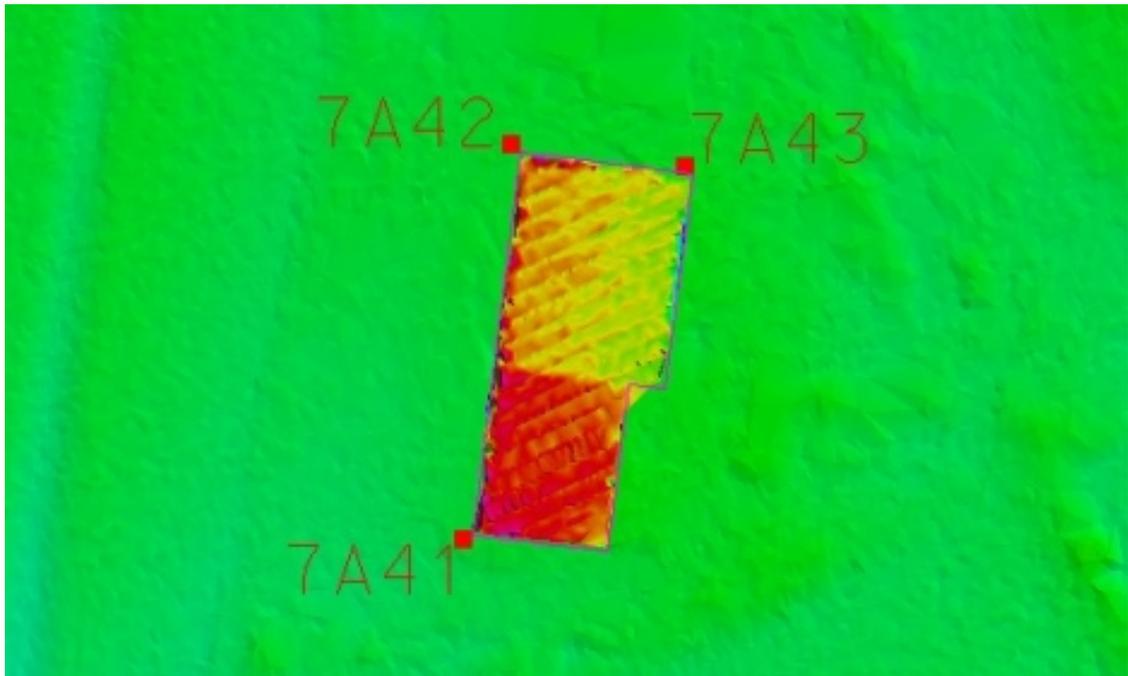
Horizontal Check Points (ft)	
RMSEr	0.92
Mean	0.83
Standard Error	0.09
Median	0.98
Mode	0.24
Standard Deviation	0.42
Sample Variance	0.18
Kurtosis	-0.88
Skewness	0.02
Range	1.44
Minimum	0.22
Maximum	1.66
Count	21



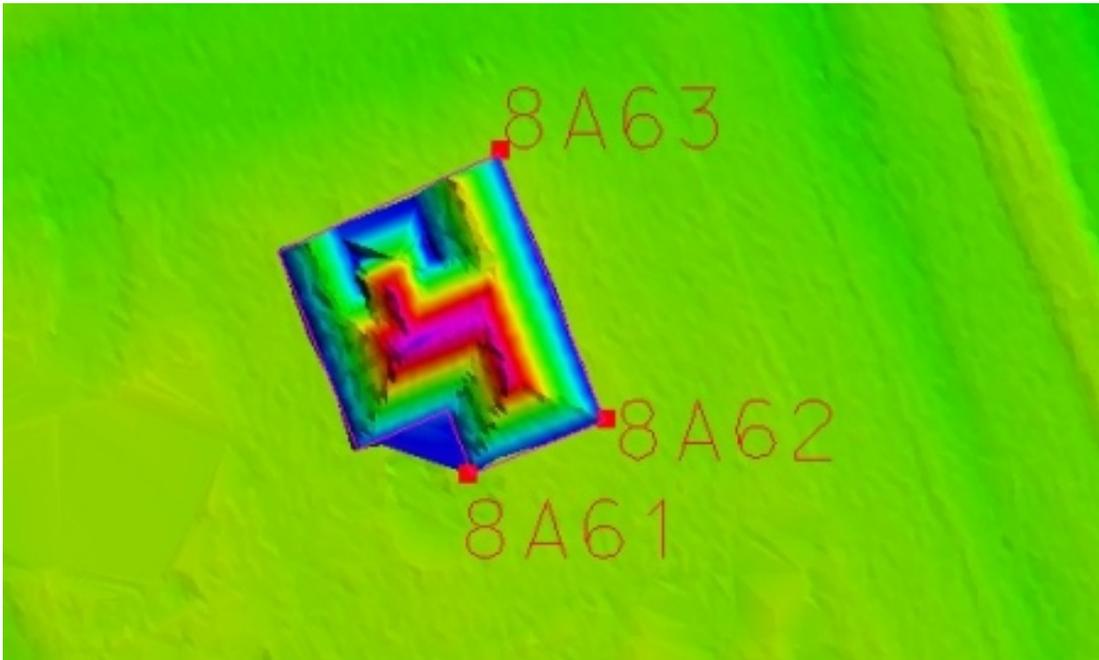
Site 1 – Horizontal Check Point



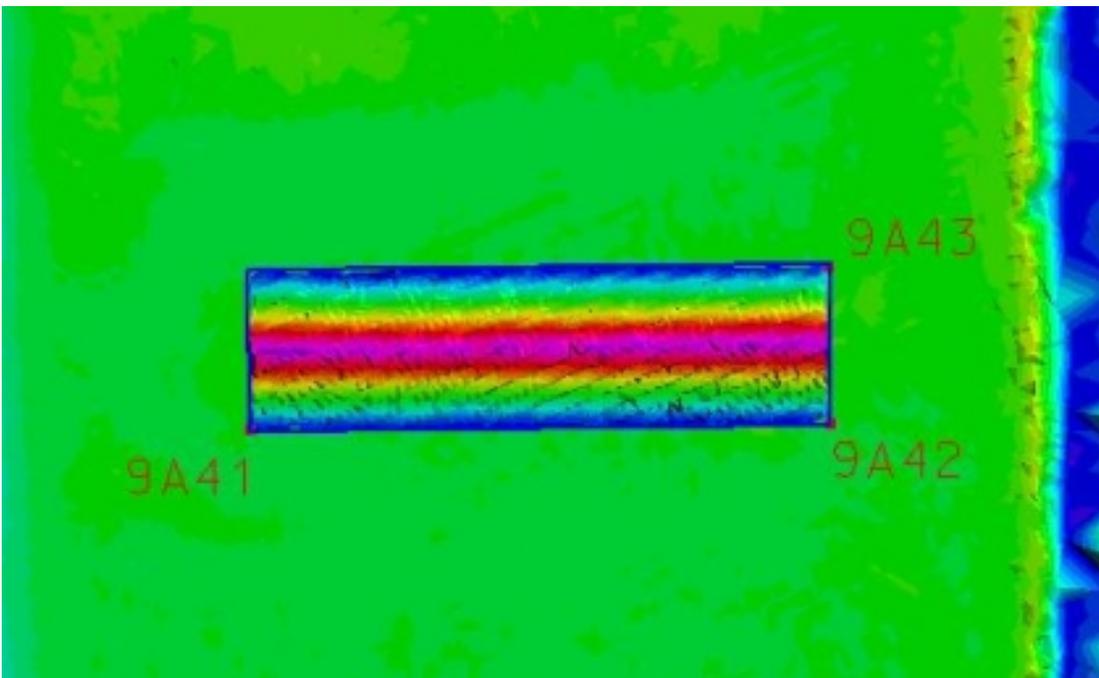
Site 7 – Horizontal Check Point



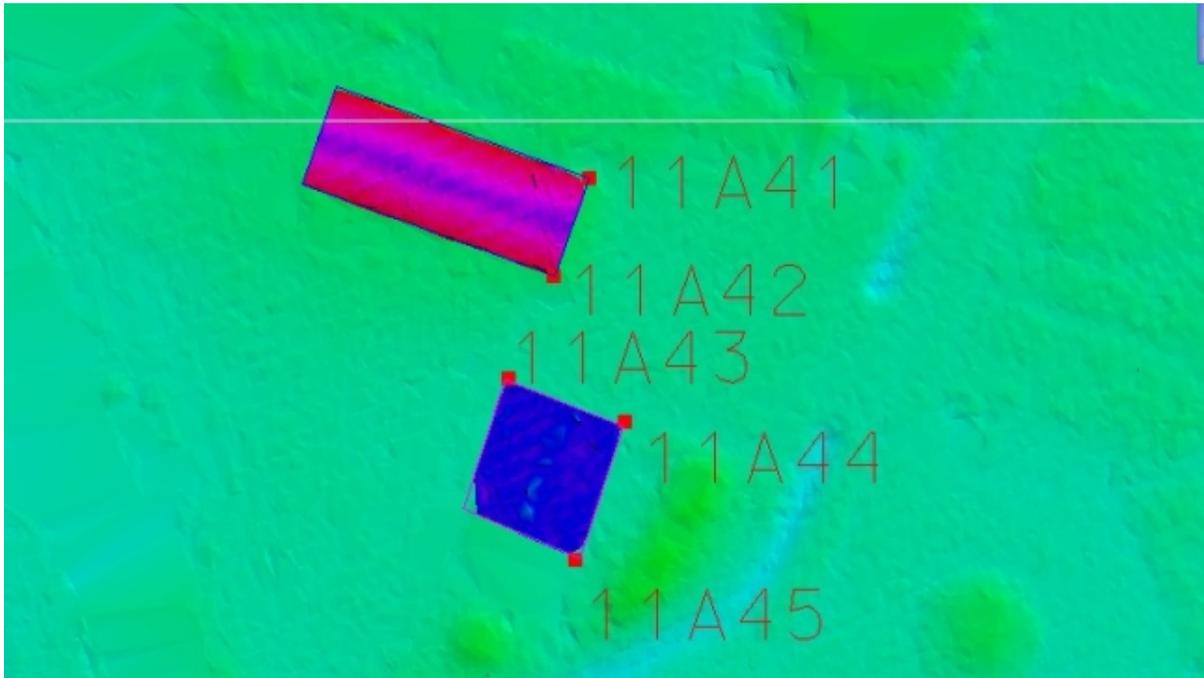
Site 8 – Horizontal Check Point



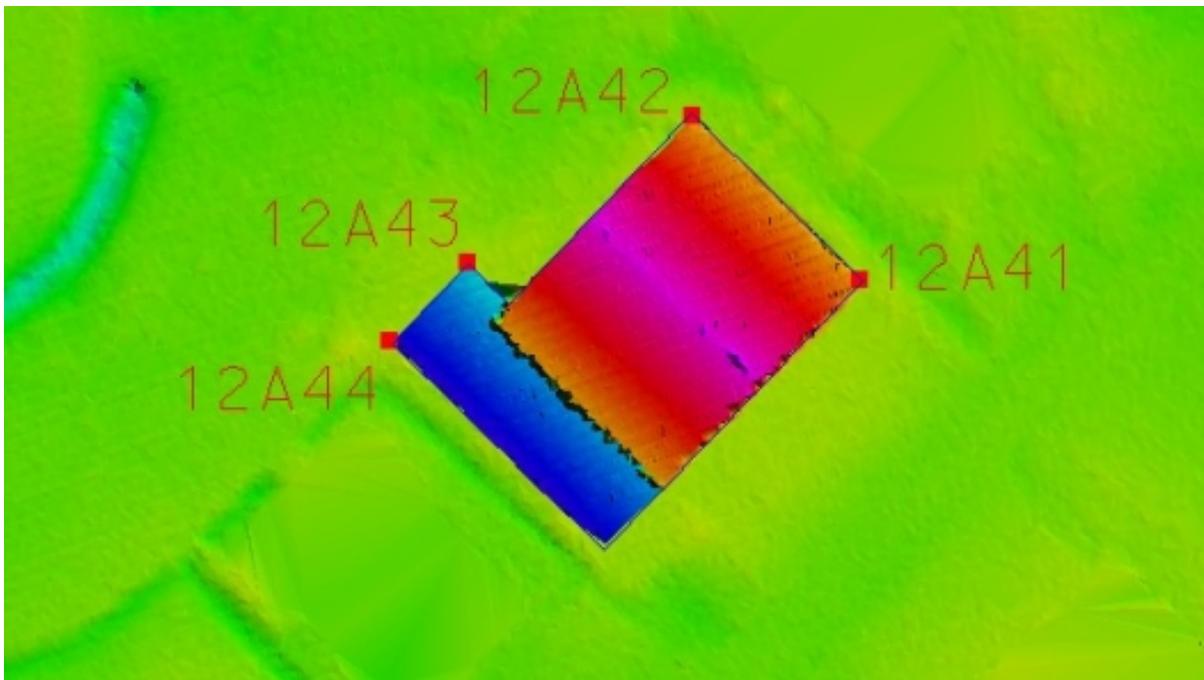
Site 9 – Horizontal Check Point



Site 11 – Horizontal Check Point



Site 12 – Horizontal Check Point



CONTROL MARK DATA SHEETS

DE8830 *****

DE8830 HT_MOD - This is a Height Modernization Survey Station.

DE8830 DESIGNATION - STUART MCA

DE8830 PID - DE8830

DE8830 STATE/COUNTY- FL/MARTIN

DE8830 USGS QUAD - ST LUCIE INLET (1983)

DE8830

DE8830 *CURRENT SURVEY CONTROL

DE8830* NAD 83(1999)- 27 10 42.55374(N) 080 13 32.51577(W) ADJUSTED

DE8830* NAVD 88 - 4.36 (meters) 14.3 (feet) GPS OBS

DE8830 X - 963,916.013 (meters) COMP

DE8830 Y - -5,595,440.573 (meters) COMP

DE8830 Z - 2,895,812.641 (meters) COMP

DE8830 LAPLACE CORR- -2.95 (seconds) DEFLEC99

DE8830 ELLIP HEIGHT- -23.176 (meters) (12/12/02) GPS OBS

DE8830 GEOID HEIGHT- -27.54 (meters) GEOID03

DE8830

DE8830 HORZ ORDER - FIRST

DE8830 ELLP ORDER - FOURTH CLASS I

DE8830

DE8830.The horizontal coordinates were established by GPS observations
 DE8830.and adjusted by the National Geodetic Survey in December 2002.

DE8830

DE8830.The orthometric height was determined by GPS observations and a
 DE8830.high-resolution geoid model using precise GPS observation and
 DE8830.processing techniques.

DE8830

DE8830.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DE8830

DE8830.The Laplace correction was computed from DEFLEC99 derived deflections.

DE8830

DE8830.The ellipsoidal height was determined by GPS observations
 DE8830.and is referenced to NAD 83.

DE8830

DE8830.The geoid height was determined by GEOID03.

DE8830

DE8830;	North	East	Units	Scale	Factor	Converg.
DE8830;SPC FL E	- 315,416.966	276,728.326	MT	1.00001383	+0 21	13.3
DE8830;SPC FL E	- 1,034,830.50	907,899.52	sFT	1.00001383	+0 21	13.3
DE8830;UTM 17	- 3,006,441.328	576,702.146	MT	0.99967262	+0 21	13.3

DE8830

DE8830! - Elev Factor x Scale Factor = Combined Factor

DE8830!SPC FL E - 1.00000364 x 1.00001383 = 1.00001747

DE8830!UTM 17 - 1.00000364 x 0.99967262 = 0.99967626

DE8830

DE8830 -----			
DE8830 PID	Reference Object	Distance	Geod. Az
DE8830		dddmss.s	
DE8830 AF7426	WITPORT	141.428 METERS	05558
DE8830 -----			

DE8830

DE8830 SUPERSEDED SURVEY CONTROL

DE8830

DE8830.No superseded survey control is available for this station.

DE8830

DE8830_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL7670206441(NAD 83)

DE8830_MARKER: DG = GRAVITY STATION DISK

DE8830_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.

DE8830_SP_SET: SIDEWALK

DE8830_STAMPING: STUART MCA 2002

DE8830_MARK LOGO: NGS

DE8830_MAGNETIC: N = NO MAGNETIC MATERIAL

DE8830_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

DE8830_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

DE8830+SATELLITE: SATELLITE OBSERVATIONS - May 13, 2002

DE8830

DE8830 HISTORY	- Date	Condition	Report By
DE8830 HISTORY	- 2002	MONUMENTED	MAPTEC
DE8830 HISTORY	- 20020321	GOOD	NGS
DE8830 HISTORY	- 20020513	GOOD	MAPTEC

DE8830

STATION DESCRIPTION

DE8830

DE8830'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002 (DW)

DE8830'THE STATION IS LOCATED AT MARTIN COUNTY AIRPORT (WHITMAN FIELD),

DE8830'AIRPORT DIRECTOR'S OFFICE AND ADMINISTRATION BLDG (NO 1871, BUILT

DE8830'1994), STUART, FL. TO ACCESS FROM EXIT 61 OF I-95, GO NE ON FL 76 =

DE8830'KANNER HWY FOR 3.6 MI. TURN E (RIGHT) ONTO SE INDIAN STREET AND GO

DE8830'1.6 MI. TURN NNW (LEFT) ONTO FL A1A = SE DIXIE HWY AND GO 0.8 MI.

DE8830'TURN NE (RIGHT) ON SE AIRPORT ROAD AND GO 0.4 MI TO ADMINISTRATION

DE8830'BLDG AND STATION ON LEFT. STATION IS AT E CORNER OF SIDEWALK, 12.1 M

DE8830'SSW OF SSE CORNER OF BLDG, 20.8 M SSE OF WSW CORNER OF BLDG, 1.05 M

DE8830'WNW OF WNW END OF FENCE WITH VEHICLE GATE AND 16.8 M NNW OF RED

DE8830'HYDRANT. DISK IS LIQUID STEEL SOLDERED TO SIDEWALK. NN 938.

DE8830

STATION RECOVERY (2002)

DE8830

DE8830'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)

DE8830'THE STATION IS LOCATED IN MARTIN COUNTY, STUART, FLORIDA AT THE

DE8830'WHITMAN FIELD AIRPORT

DE8830'(MARTIN COUNTY AIRPORT).

DE8830'

DE8830'TO REACH THE STATION FROM THE INTERSECTION OF SOUTHEAST MONTEREY ROAD

DE8830'AND

DE8830'HIGHWAY 1 (SOUTH FEDERAL HIGHWAY) GO NORTH-NORTHEAST ALONG SOUTHEAST

DE8830'MONTEREY

DE8830'ROAD FOR 0.20 MILE TO HIGHWAY A1A (SOUTHEAST DIXIE HIGHWAY) THEN SOUTH

DE8830'-SOUTHEAST

DE8830'ALONG HIGHWAY A1A FOR 0.50 MILE TO SOUTHEAST AIRPORT ROAD, THEN GO

DE8830'EAST ALONG

DE8830'SOUTHEAST AIRPORT ROAD FOR 0.40 MILE TO MARK ON THE LEFT AT THE MARTIN

DE8830'COUNTY AIRPORT

DE8830'ADMIN BUILDING.

DE8830'

DE8830'THE STATION IS 55.0 FEET NORTH-NORTHWEST OF RED FIRE HYDRANT, 0.75

DE8830'FEET WEST-NORTHWEST

DE8830'OF FENCE WITH VEHICLE GATE, 39.6 FEET SOUTH-SOUTHWEST OF SOUTHEASTERLY

DE8830'CORNER OF

DE8830'MARTIN COUNTY AIRPORT ADMIN BUILDING, AND 68.1 FEET SOUTH-SOUTHEAST OF

DE8830'THE WESTERLY

DE8830'CORNER OF THE MARTIN COUNTY AIRPORT ADMIN BUILDING. MARK IS A NGS

DE8830'DISK STAMPED STUART

DE8830'MCA 2002 SET FLUSH ON THE EASTERLY CORNER OF THE SIDEWALK IN FRONT OF

DE8830'THE MARTIN

DE8830'COUNTY AIRPORT ADMIN BUILDING.

DE8830'

DG7244 *****

DG7244 DESIGNATION - KFF

DG7244 PID - DG7244

DG7244 STATE/COUNTY- FL/ST LUCIE

DG7244 USGS QUAD - FORT PIERCE NW (1983)

DG7244

DG7244 *CURRENT SURVEY CONTROL

DG7244* NAD 83(1999)- 27 29 03.60336(N) 080 25 10.74322(W) ADJUSTED

DG7244* NAVD 88 - 6.0 (meters) 20. (feet) GPS OBS

DG7244 X - 942,379.940 (meters) COMP

DG7244 Y - -5,583,329.726 (meters) COMP

DG7244 Z - 2,925,920.509 (meters) COMP

DG7244 LAPLACE CORR- -1.45 (seconds) DEFLEC99

DG7244 ELLIP HEIGHT- -21.392 (meters) (08/23/04) GPS OBS

DG7244 GEOID HEIGHT- -27.39 (meters) GEOID03

DG7244

DG7244 HORZ ORDER - FIRST

DG7244 ELLP ORDER - FOURTH CLASS I

DG7244

DG7244.The horizontal coordinates were established by GPS observations
 DG7244.and adjusted by the G.C.Y., INCORPORATED in August 2004.

DG7244

DG7244.The orthometric height was determined by GPS observations and a
 DG7244.high-resolution geoid model.

DG7244

DG7244.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DG7244

DG7244.The Laplace correction was computed from DEFLEC99 derived deflections.

DG7244

DG7244.The ellipsoidal height was determined by GPS observations
 DG7244.and is referenced to NAD 83.

DG7244

DG7244.The geoid height was determined by GEOID03.

DG7244

DG7244;	North	East	Units	Scale	Factor	Converg.
DG7244;SPC FL E	- 349,202.738	257,350.846	MT	0.99998176	+0 16	04.2
DG7244;SPC FL E	- 1,145,675.98	844,325.23	sFT	0.99998176	+0 16	04.2
DG7244;UTM 17	- 3,040,215.573	557,331.278	MT	0.99964057	+0 16	04.2

DG7244

DG7244! - Elev Factor x Scale Factor = Combined Factor

DG7244!SPC FL E - 1.00000336 x 0.99998176 = 0.99998512

DG7244!UTM 17 - 1.00000336 x 0.99964057 = 0.99964393

DG7244

DG7244 SUPERSEDED SURVEY CONTROL

DG7244

DG7244.No superseded survey control is available for this station.

DG7244

DG7244 _U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL5733140216(NAD 83)

DG7244 _MARKER: DD = SURVEY DISK

DG7244 _SETTING: 4 = OBJECT SURROUNDED BY MASS OF CONCRETE

DG7244 _STAMPING: KFF

DG7244 _MAGNETIC: N = NO MAGNETIC MATERIAL

DG7244 _STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

DG7244 _SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

DG7244+SATELLITE: SATELLITE OBSERVATIONS - September 08, 2003

DG7244

DG7244 HISTORY	- Date	Condition	Report By
DG7244 HISTORY	- 1993	MONUMENTED	LBFH
DG7244 HISTORY	- 20030908	GOOD	GCVI

DG7244

DG7244

STATION DESCRIPTION

DG7244

DG7244'DESCRIBED BY G.C.Y., INCORPORATED 2003 (MRW)

DG7244'TO REACH THE POINT, START AT THE INTERSECTION OF JOHNSTON ROAD AND

DG7244'ANGLE ROAD IN FT. PIERCE, RUN NORTH ON JOHNSTON ROAD APPROXIMATELY 1

DG7244'ML. THE POINT CAN BE FOUND 10.5 FT (3.2 M) EAST OF THE EAST EDGE OF

DG7244'PAVEMENT OF JOHNSTON ROAD AND HAVING A METAL WITNESS POST 1.5 FT (0.5

DG7244'M) EAST OF CONTROL STATION, LYING APPROXIMATELY 2 FT (0.6 M) WESTERLY

DG7244'OF A METAL GUARD RAIL RUNNING NORTH AND SOUTH AND LYING APPROXIMATELY

DG7244'20 FT (6.1 M) NORTH OF A DIRT DRIVE ENTERING A GROVE.

DG7244'

DG7244'SET P.K. NAIL AND TIN TAB ON THE EAST EDGE OF PAVEMENT OF JOHNSTON

DG7244'ROAD WITH A MAGNETIC AZIMUTH OF 190 DEGREES AT A DISTANCE OF 139.56

DG7244'FT (42.54 M). ALSO SET P.K. NAIL AND TIN TAB IN THE TOP OF A GATE

DG7244'POST WITH A MAGNETIC AZIMUTH OF 112 DEGREES AT THE DISTANCE OF 17.74

DG7244'FT (5.41 M). ALSO SET A P.K. NAIL AND IN TAB ON THE TOP OF A METAL

DG7244'GUARD POST ON THE WEST SIDE OF JOHNSTON ROAD WITH A MAGNETIC AZIMUTH

DG7244'OF 252 DEGREES AT A DISTANCE OF 51.26 FT (15.62 M) . ALSO SET A P.K.

DG7244'NAIL AND TIN TAB ON THE EAST EDGE OF PAVEMENT OF JOHNSTON ROAD WITH A

DG7244'MAGNETIC AZIMUTH OF 02 DEGREES AT A DISTANCE OF 143.95 FT (43.88 M).

AF7419 *****

AF7419 CBN - This is a Cooperative Base Network Control Station.

AF7419 PACS - This is a Primary Airport Control Station.

AF7419 DESIGNATION - LUCIEPORT

AF7419 PID - AF7419

AF7419 STATE/COUNTY- FL/ST LUCIE

AF7419 USGS QUAD - FORT PIERCE (1983)

AF7419

AF7419 *CURRENT SURVEY CONTROL

AF7419

AF7419* NAD 83(1999)- 27 29 41.79788(N) 080 22 06.16792(W) ADJUSTED

AF7419* NAVD 88 - 6.064 (meters) 19.89 (feet) ADJUSTED

AF7419 X - 947,284.981 (meters) COMP

AF7419 Y - -5,581,949.147 (meters) COMP

AF7419 Z - 2,926,963.408 (meters) COMP

AF7419 LAPLACE CORR- -1.98 (seconds) DEFLEC99

AF7419 ELLIP HEIGHT- -21.436 (meters) (04/12/01) GPS OBS

AF7419 GEOID HEIGHT- -27.49 (meters) GEOID03

AF7419 DYNAMIC HT - 6.055 (meters) 19.87 (feet) COMP

AF7419 MODELED GRAV- 979,151.2 (mgal) NAVD 88

AF7419

AF7419 HORZ ORDER - A

AF7419 VERT ORDER - FIRST CLASS II

AF7419 ELLP ORDER - FOURTH CLASS I

AF7419

AF7419.This mark is at St Lucie Co Intl Airport (FPR)

AF7419

AF7419.The horizontal coordinates were established by GPS observations

AF7419.and adjusted by the National Geodetic Survey in April 2001.

AF7419

AF7419.The orthometric height was determined by differential leveling

AF7419.and adjusted by the NATIONAL GEODETIC SURVEY in May 1994.

AF7419

AF7419.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AF7419

AF7419.The Laplace correction was computed from DEFLEC99 derived deflections.

AF7419

AF7419.The ellipsoidal height was determined by GPS observations

AF7419.and is referenced to NAD 83.

AF7419

AF7419.The geoid height was determined by GEOID03.

AF7419

AF7419.The dynamic height is computed by dividing the NAVD 88

AF7419.geopotential number by the normal gravity value computed on the

AF7419.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AF7419.degrees latitude (g = 980.6199 gals.).

AF7419

AF7419.The modeled gravity was interpolated from observed gravity values.

AF7419

AF7419;	North	East	Units	Scale	Factor	Converg.
AF7419;SPC FL E	- 350,403.105	262,411.635	MT	0.99998924	+0 17 29.8	
AF7419;SPC FL E	- 1,149,614.19	860,928.84	sFT	0.99998924	+0 17 29.8	
AF7419;UTM 17	- 3,041,415.530	562,390.341	MT	0.99964805	+0 17 29.8	

AF7419

AF7419! - Elev Factor x Scale Factor = Combined Factor

AF7419!SPC FL E - 1.00000337 x 0.99998924 = 0.99999261

AF7419!UTM 17 - 1.00000337 x 0.99964805 = 0.99965142

AF7419

AF7419:	Primary Azimuth Mark	Grid Az
AF7419:SPC FL E	- LUCIEPORT AZ MK	135 55 36.3
AF7419:UTM 17	- LUCIEPORT AZ MK	135 55 36.3

AF7419
 AF7419|-----|
 AF7419| PID Reference Object Distance Geod. Az |
 AF7419| dddmmss.s |
 AF7419| AF7453 LUCIEPORT AZ MK APPROX. 1.0 KM 1361306.1 |
 AF7419|-----|

AF7419
 AF7419 SUPERSEDED SURVEY CONTROL

AF7419
 AF7419 NAD 83(1990)- 27 29 41.79682(N) 080 22 06.16756(W) AD() B
 AF7419 ELLIP H (09/13/90) -21.348 (m) GP() 4 1
 AF7419 NAVD 88 (03/12/98) 6.06 (m) 19.9 (f) LEVELING 3
 AF7419 NAVD 88 (06/02/94) 6.06 (m) 19.9 (f) LEVELING 3
 AF7419 NGVD 29 (09/01/92) 6.523 (m) 21.40 (f) ADJUSTED 1 2

AF7419
 AF7419.Superseded values are not recommended for survey control.
 AF7419.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AF7419.See file dsdata.txt to determine how the superseded data were derived.

AF7419
 AF7419_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL6239041416(NAD 83)
 AF7419_MARKER: DD = SURVEY DISK
 AF7419_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
 AF7419_SP_SET: STAINLESS STEEL ROD IN SLEEVE
 AF7419_STAMPING: LUCIEPORT 1989
 AF7419_MARK LOGO: NGS
 AF7419_PROJECTION: FLUSH
 AF7419_MAGNETIC: N = NO MAGNETIC MATERIAL
 AF7419_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
 AF7419+STABILITY: POSITION/ELEVATION WELL
 AF7419_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AF7419+SATELLITE: SATELLITE OBSERVATIONS - February 14, 2007
 AF7419_ROD/PIPE-DEPTH: 29.6 meters
 AF7419_SLEEVE-DEPTH : .91 meters

AF7419
 AF7419 HISTORY - Date Condition Report By
 AF7419 HISTORY - 1989 MONUMENTED NGS
 AF7419 HISTORY - 19910205 GOOD NGS
 AF7419 HISTORY - 19920827 GOOD GENGRP
 AF7419 HISTORY - 19930107 GOOD KEISCH
 AF7419 HISTORY - 19930913 GOOD GENGRP
 AF7419 HISTORY - 19940105 GOOD CGS
 AF7419 HISTORY - 19940930 GOOD GCYI
 AF7419 HISTORY - 19950214 GOOD SFLWMD
 AF7419 HISTORY - 19960124 GOOD NGS
 AF7419 HISTORY - 19980624 GOOD GCYI
 AF7419 HISTORY - 19990405 GOOD FLDT
 AF7419 HISTORY - 20030908 GOOD GCYI
 AF7419 HISTORY - 20031106 MARK NOT FOUND USPSQD
 AF7419 HISTORY - 20050817 GOOD GCYI
 AF7419 HISTORY - 20070214 GOOD GREOMA

AF7419
 AF7419 STATION DESCRIPTION

AF7419
 AF7419'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989
 AF7419'THE STATION IS LOCATED ABOUT 6.44 KM (4.00 MI) NORTHWEST OF FORT
 AF7419'PIERCE, AT THE ST. LUCIE COUNTY INTERNATIONAL AIRPORT, IN SECTION 30,
 AF7419'T 34 S, R 40 E, BETWEEN RUNWAY 14-32 AND THE NORTHEAST PARALLEL
 AF7419'TAXIWAY. OWNERSHIP--FORT PIERCE PORT AUTHORITY, 2300 VIRGINIA AVENUE,
 AF7419'FORT PIERCE FL 34982, CURTIS KING - AIRPORT MANAGER, PHONE
 AF7419'407-461-7899. NOTE--PERMISSION MUST BE OBTAINED BEFORE ENTERING
 AF7419'AIRPORT.
 AF7419'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND STATE

AF7419'ROAD 68 (AVENUE A) IN FORT PIERCE, GO NORTH-NORTHWEST FOR 4.31 KM
AF7419'(2.70 MI) ON HIGHWAY 1 TO A CROSSROAD. TURN LEFT AND GO WEST FOR 2.51
AF7419'KM (1.55 MI) ON ST. LUCIE BLVD (STATE ROAD 608, THEN COUNTY ROAD 608)
AF7419'TO A PAVED ROAD RIGHT. TURN RIGHT AND GO NORTH FOR 0.25 KM (0.15 MI)
AF7419'ON AVIATION WAY TO A DIRT ROAD LEFT. TURN LEFT AND GO WESTERLY FOR
AF7419'ABOUT 30 M (98.4 FT) ON THE DIRT ROAD TO A CURVE RIGHT. BEAR RIGHT
AF7419'AND GO NORTHERLY FOR 0.18 KM (0.10 MI) ON THE DIRT ROAD TO THE
AF7419'SOUTHEAST EDGE OF AN ASPHALT APRON. TURN RIGHT AND GO 0.22 KM
AF7419'(0.15 MI) ACROSS APRON TO A TAXIWAY. TURN RIGHT AND GO SOUTHEAST,
AF7419'THEN NORTHEAST FOR 0.53 KM (0.35 MI) ON THE TAXIWAY TO THE SOUTHWEST
AF7419'EDGE OF RUNWAY 14-32. CONTINUE STRAIGHT AHEAD AND GO NORTHEAST FOR
AF7419'0.13 KM (0.10 MI) ACROSS RUNWAY AND ON TAXIWAY TO A CURVE LEFT. BEAR
AF7419'LEFT AND GO NORTHWEST FOR 1.06 KM (0.65 MI) ON THE TAXIWAY TO THE
AF7419'STATION ON LEFT.

AF7419'THE STATION IS RECESSED 12 CM BELOW GROUND. LOCATED 105.10 M
AF7419'(344.8 FT) NORTHEAST FROM THE APPROXIMATE CENTER OF RUNWAY 14-32,
AF7419'68.61 M (225.1 FT) SOUTHEAST FROM THE EASTERN CORNER OF A 1.37 M
AF7419'(4.5 FT) BY 2.74 M (9.0 FT) CONCRETE CATCH BASIN, 62.91 M (206.4 FT)
AF7419'SOUTH-SOUTHEAST FROM THE SOUTHWESTERN CORNER OF A 1.52 M (5.0 FT) BY
AF7419'1.98 M (6.5 FT) CONCRETE BASE FOR SIGN (A), 47.64 M (156.3 FT)
AF7419'SOUTHWEST FROM THE APPROXIMATE CENTER OF TAXIWAY AND 25.09 M
AF7419'(82.3 FT) NORTH-NORTHWEST FROM THE NORTHEASTERN CORNER OF A 1.37 M
AF7419'(4.5 FT) BY 2.74 M (9.0 FT) CONCRETE CATCH BASIN. NOTE--ACCESS TO
AF7419'DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
AF7419'DESCRIBED BY D.F. CALLAHAN.

AF7419

STATION RECOVERY (1991)

AF7419

AF7419'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991

AF7419'RECOVERED IN GOOD CONDITION.

AF7419

AF7419 STATION RECOVERY (1992)

AF7419

AF7419'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SE 1992 (JEL)

AF7419'RECOVERED AS DESCRIBED.

AF7419

AF7419 STATION RECOVERY (1993)

AF7419

AF7419'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1993

AF7419'RECOVERED IN GOOD CONDITION.

AF7419

AF7419 STATION RECOVERY (1993)

AF7419

AF7419'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SE 1993 (JEL)

AF7419'RECOVERED AS DESCRIBED.

AF7419

AF7419 STATION RECOVERY (1994)

AF7419

AF7419'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1994 (JDR)

AF7419'RECOVERED AS DESCRIBED. ACCESS TO AIRFIELD CAN BE GAINED BY CONTACTING

AF7419'THE AIRPORT DIRECTORS OFFICE AT (407)468-1732.

AF7419

AF7419 STATION RECOVERY (1994)

AF7419

AF7419'RECOVERY NOTE BY G.C.Y., INCORPORATED 1994 (MRL)

AF7419'RECOVERED AS DESCRIBED.

AF7419

AF7419 STATION RECOVERY (1995)

AF7419

AF7419'RECOVERY NOTE BY S FL WATER MGMT DIST 1995 (MEH)

AF7419'RECOVERED AS DESCRIBED.

AF7419

AF7419 STATION RECOVERY (1996)
AF7419
AF7419'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (CFS)
AF7419'THE STATION IS LOCATED ABOUT 3.0 MI (4.8 KM) NORTHWEST OF FORT PIERCE
AF7419'AT THE ST LUCIE COUNTY INTERNATIONAL AIRPORT, IN THE CENTER OF THE
AF7419'AIRFIELD ABOUT 0.2 MI (0.3 KM) WEST OF THE WIND SOCK IN A GRASSY AREA
AF7419'BORDERED BY RUNWAY 14-32, AND TAXIWAYS ALPHA AND BRAVO. OWNERSHIP --
AF7419'ST LUCIE COUNTY PORT AND AIRPORT AUTHORITY, 2300 VIRGINIA AVE, FORT
AF7419'PIERCE, FL 34982-5652. AIRPORT DIRECTOR - CURTIS KING, TELEPHONE
AF7419'(407) 462-1732. PERMISSION NEEDED TO ENTER AIRPORT. TO REACH THE
AF7419'STATION FROM THE JUNCTION OF U.S. HIGHWAY 1 AND STATE HIGHWAY 68
AF7419'(EAST) IN FORT PIERCE, GO NORTH-NORTHWEST ON U.S. HIGHWAY 1 FOR 2.7
AF7419'MI (4.3 KM) TO ST LUCIE BLVD ON THE LEFT. TURN LEFT ON ST LUCIE BLVD
AF7419'(WHICH IS STATE HIGHWAY 608, THEN BECOMES ST LUCIE COUNTY 608) , AND
AF7419'GO WEST FOR 1.55 MI (2.49 KM) TO AIRPORT ENTRANCE (AVIATION WAY) ON
AF7419'THE RIGHT. TURN RIGHT ON AVIATION WAY AND GO NORTH FOR 0.3 MI (0.5
AF7419'KM) TO A SIDE ROAD ON THE RIGHT JUST BEFORE GETTING TO THE AIR
AF7419'TERMINAL BUILDING. TURN RIGHT AND GO EAST AND NORTHEAST FOR 0.05 MI
AF7419'(0.08 KM) TO ENTRANCE TO AIRPORT APRON. GO NORTHWEST ACROSS THE APRON
AF7419'FOR 0.05 MI (0.08 KM) TO TAXIWAY DELTA. TURN RIGHT AND GO SOUTHEAST
AF7419'FOR 0.15 MI (0.24 KM) TO WHERE TAXIWAY TURNS LEFT. CONTINUE LEFT AND
AF7419'GO NORTHWEST FOR 0.15 MI (0.24 KM) CROSSING SOUTHEAST END OF RUNWAY
AF7419'14-32 TO HOLDBACK LINES ON TAXIWAY BRAVO. CONTINUE NORTHWEST AND
AF7419'NORTHEAST ON TAXIWAY BRAVO FOR 0.6 MI (1.0 KM) CROSSING TAXIWAY
AF7419'CHARLIE AND ABANDONED RUNWAY TO THE STATION ON THE LEFT. THE STATION
AF7419'IS LOCATED 105.1 M (344.8 FT) NORTHEAST FROM THE APPROXIMATE CENTER OF
AF7419'RUNWAY 14-32, 68.15 M (223.59 FT) SOUTHEAST FROM THE EASTERN CORNER OF
AF7419'A 7-FOOT BY 12-FOOT CONCRETE SKIRT AROUND A CATCH BASIN WHICH IS EAST
AF7419'OF A WEATHER TOWER, 62.9 M (206.4 FT) SOUTH FROM THE SOUTHERN CORNER
AF7419'OF A 5-FOOT BY 13-FOOT CONCRETE BASE FOR TAXIWAY SIGN ALPHA AND RUNWAY
AF7419'9-14, 47.64 M (156.30 FT) SOUTHWEST FROM THE APPROXIMATE CENTER OF
AF7419'TAXIWAY BRAVO, 25.54 M (83.79 FT) NORTH-NORTHWEST FROM THE NORTHERN
AF7419'CORNER OF A 7.5-FOOT BY 12-FOOT CONCRETE SKIRT AROUND A CATCH BASIN,
AF7419'AND 0.28 M (0.92 FT) SOUTH OF A WITNESS POST. THIS IS THE PRIMARY
AF7419'AIRPORT CONTROL STATION. WJR

AF7419
AF7419 STATION RECOVERY (1998)

AF7419
AF7419'RECOVERY NOTE BY G.C.Y., INCORPORATED 1998 (PA)
AF7419'RECOVERED AS DESCRIBED.

AF7419
AF7419 STATION RECOVERY (1999)

AF7419
AF7419'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1999
AF7419'RECOVERED AS DESCRIBED.

AF7419
AF7419 STATION RECOVERY (2003)

AF7419
AF7419'RECOVERY NOTE BY G.C.Y., INCORPORATED 2003 (MRW)
AF7419'RECOVERED AS DESCRIBED

AF7419
AF7419 STATION RECOVERY (2003)

AF7419
AF7419'RECOVERY NOTE BY US POWER SQUADRON 2003 (JCK)
AF7419'AIRPORT DOMAIN IS NOT ACCESSIBLE FOR NON AUTHORIZED PERSONS.
AF7419'NO SEARCH COULD BE PERFORMED

AF7419
AF7419 STATION RECOVERY (2005)

AF7419
AF7419'RECOVERY NOTE BY G.C.Y., INCORPORATED 2005 (JES)
AF7419'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989 THE STATION IS LOCATED
AF7419'ABOUT 6.44 KM (4.00 MI) NORTHWEST OF FORT PIERCE, AT THE ST. LUCIE

AF7419'COUNTY INTERNATIONAL AIRPORT, IN SECTION 30, T 34 S, R 40 E, BETWEEN AF7419'RUNWAY 14-32 AND THE NORTHEAST PARALLEL TAXIWAY. OWNERSHIP--FORT AF7419'PIERCE PORT AUTHORITY, 2300 VIRGINIA AVENUE, FORT PIERCE FL 34982, AF7419'CURTIS KING - AIRPORT MANAGER, PHONE 407-461-7899. NOTE--PERMISSION AF7419'MUST BE OBTAINED BEFORE ENTERING AIRPORT. TO REACH THE STATION FROM AF7419'THE INTERSECTION OF U.S. HIGHWAY 1 AND STATE ROAD 68 (AVENUE A) IN AF7419'FORT PIERCE, GO NORTH-NORTHWEST FOR 4.31 KM (2.70 MI) ON HIGHWAY 1 TO AF7419'A CROSSROAD. TURN LEFT AND GO WEST FOR 2.51 KM (1.55 MI) ON ST. AF7419'LUCIE BLVD (STATE ROAD 608, THEN COUNTY ROAD 608) TO A PAVED ROAD AF7419'RIGHT. TURN RIGHT AND GO NORTH FOR 0.25 KM (0.15 MI) ON AVIATION WAY AF7419'TO A DIRT ROAD LEFT. TURN LEFT AND GO WESTERLY FOR ABOUT 30 M (98.4 AF7419'FT) ON THE DIRT ROAD TO A CURVE RIGHT. BEAR RIGHT AND GO NORTHERLY AF7419'FOR 0.18 KM (0.10 MI) ON THE DIRT ROAD TO THE SOUTHEAST EDGE OF AN AF7419'ASPHALT APRON. TURN RIGHT AND GO 0.22 KM (0.15 MI) ACROSS APRON TO A AF7419'TAXIWAY. TURN RIGHT AND GO SOUTHEAST, THEN NORTHEAST FOR 0.53 KM AF7419'(0.35 MI) ON THE TAXIWAY TO THE SOUTHWEST EDGE OF RUNWAY 14-32. AF7419'CONTINUE STRAIGHT AHEAD AND GO NORTHEAST FOR 0.13 KM (0.10 MI) ACROSS AF7419'RUNWAY AND ON TAXIWAY TO A CURVE LEFT. BEAR LEFT AND GO NORTHWEST FOR AF7419'1.06 KM (0.65 MI) ON THE TAXIWAY TO THE STATION ON LEFT. THE STATION AF7419'IS RECESSED 12 CM (5 INCH) BELOW GROUND. LOCATED 105.10 M (344.8 FT) AF7419'NORTHEAST FROM THE APPROXIMATE CENTER OF RUNWAY 14-32, 68.61 M (225.1 AF7419'FT) SOUTHEAST FROM THE EASTERN CORNER OF A 1.37 M (4.5 FT) BY 2.74 M AF7419'(9.0 FT) CONCRETE CATCH BASIN, 62.91 M (206.4 FT) SOUTH-SOUTHEAST FROM AF7419'THE SOUTHWESTERN CORNER OF A 1.52 M (5.0 FT) BY 1.98 M (6.5 FT) AF7419'CONCRETE BASE FOR SIGN (A), 47.64 M (156.3 FT) SOUTHWEST FROM THE AF7419'APPROXIMATE CENTER OF TAXIWAY AND 25.09 M (82.3 FT) NORTH-NORTHWEST AF7419'FROM THE NORTHEASTERN CORNER OF A 1.37 M (4.5 FT) BY 2.74 M (9.0 FT) AF7419'CONCRETE CATCH BASIN. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A AF7419'5-INCH (13 CM) LOGO CAP. DESCRIBED BY D.F. CALLAHAN.

AF7419'
AF7419'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991 RECOVERED IN GOOD AF7419'CONDITION.

AF7419'
AF7419'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SOUTHEAST 1992 (JEL) AF7419'RECOVERED AS DESCRIBED.

AF7419'
AF7419'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1993 RECOVERED IN GOOD AF7419'CONDITION.

AF7419'
AF7419'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SOUTHEAST 1993 (JEL) AF7419'RECOVERED AS DESCRIBED.

AF7419'
AF7419'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1994 (JDR) RECOVERED AS AF7419'DESCRIBED. ACCESS TO AIRFIELD CAN BE GAINED BY CONTACTING THE AIRPORT AF7419'DIRECTORS OFFICE AT (407)468-1732.

AF7419'
AF7419'RECOVERY NOTE BY G.C.Y., INCORPORATED 1994 (MRL) RECOVERED AS AF7419'DESCRIBED.

AF7419'
AF7419'RECOVERY NOTE BY SOUTH FL WATER MGMT DIST 1995 (MEH) RECOVERED AS AF7419'DESCRIBED.

AF7419'
AF7419'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (CFS) THE STATION IS AF7419'LOCATED ABOUT 3.0 MI (4.8 KM) NORTHWEST OF FORT PIERCE AT THE ST LUCIE AF7419'COUNTY INTERNATIONAL AIRPORT, IN THE CENTER OF THE AIRFIELD ABOUT 0.2 AF7419'MI (0.3 KM) WEST OF THE WIND SOCK IN A GRASSY AREA BORDERED BY RUNWAY AF7419'14-32, AND TAXIWAYS ALPHA AND BRAVO. OWNERSHIP -- ST LUCIE COUNTY AF7419'PORT AND AIRPORT AUTHORITY, 2300 VIRGINIA AVE, FORT PIERCE, FL AF7419'34982-5652. AIRPORT DIRECTOR - CURTIS KING, TELEPHONE (407) 462-1732. AF7419'PERMISSION NEEDED TO ENTER AIRPORT. TO REACH THE STATION FROM THE AF7419'JUNCTION OF U.S. HIGHWAY 1 AND STATE HIGHWAY 68 (EAST) IN FORT PIERCE, AF7419'GO NORTH-NORTHWEST ON U.S. HIGHWAY 1 FOR 2.7 MI (4.3 KM) TO ST LUCIE

AF7419'BLVD ON THE LEFT. TURN LEFT ON ST LUCIE BLVD (WHICH IS STATE HIGHWAY AF7419'608, THEN BECOMES ST LUCIE COUNTY 608) , AND GO WEST FOR 1.55 MI (2.49 AF7419'KM) TO AIRPORT ENTRANCE (AVIATION WAY) ON THE RIGHT. TURN RIGHT ON AF7419'AVIATION WAY AND GO NORTH FOR 0.3 MI (0.5 KM) TO A SIDE ROAD ON THE AF7419'RIGHT JUST BEFORE GETTING TO THE AIR TERMINAL BUILDING. TURN RIGHT AF7419'AND GO EAST AND NORTHEAST FOR 0.05 MI (0.08 KM) TO ENTRANCE TO AIRPORT AF7419'APRON. GO NORTHWEST ACROSS THE APRON FOR 0.05 MI (0.08 KM) TO TAXIWAY AF7419'DELTA. TURN RIGHT AND GO SOUTHEAST FOR 0.15 MI (0.24 KM) TO WHERE AF7419'TAXIWAY TURNS LEFT. CONTINUE LEFT AND GO NORTHWEST FOR 0.15 MI (0.24 AF7419'KM) CROSSING SOUTHEAST END OF RUNWAY 14-32 TO HOLDBACK LINES ON AF7419'TAXIWAY BRAVO. CONTINUE NORTHWEST AND NORTHEAST ON TAXIWAY BRAVO FOR AF7419'0.6 MI (1.0 KM) CROSSING TAXIWAY CHARLIE AND ABANDONED RUNWAY TO THE AF7419'STATION ON THE LEFT. THE STATION IS LOCATED 105.1 M (344.8 FT) AF7419'NORTHEAST FROM THE APPROXIMATE CENTER OF RUNWAY 14-32, 68.15 M (223.59 AF7419'FT) SOUTHEAST FROM THE EASTERN CORNER OF A 7-FOOT BY 12-FOOT CONCRETE AF7419'SKIRT AROUND A CATCH BASIN WHICH IS EAST OF A WEATHER TOWER, 62.9 M AF7419'(206.4 FT) SOUTH FROM THE SOUTHERN CORNER OF A 5-FOOT BY 13-FOOT AF7419'CONCRETE BASE FOR TAXIWAY SIGN ALPHA AND RUNWAY 9-14, 47.64 M (156.30 AF7419'FT) SOUTHWEST FROM THE APPROXIMATE CENTER OF TAXIWAY BRAVO, 25.54 M AF7419'(83.79 FT) NORTH-NORTHWEST FROM THE NORTHERN CORNER OF A 7.5-FOOT BY AF7419'12-FOOT CONCRETE SKI

AF7419
AF7419 STATION RECOVERY (2007)
AF7419
AF7419'RECOVERY NOTE BY GREENHORNE-OMARA 2007 (TDT)
AF7419'RECOVERED IN GOOD CONDITION.

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AF6562 *****
AF6562 DESIGNATION - 94 77 A 40
AF6562 PID - AF6562
AF6562 STATE/COUNTY- FL/INDIAN RIVER
AF6562 USGS QUAD - INDRIO (1983)
AF6562
AF6562 *CURRENT SURVEY CONTROL
AF6562
AF6562* NAD 83(1999)- 27 34 02.80179(N) 080 19 37.81994(W) ADJUSTED
AF6562* NAVD 88 - 0.749 (meters) 2.46 (feet) ADJUSTED
AF6562
AF6562 X - 950,674.558 (meters) COMP
AF6562 Y - -5,577,600.831 (meters) COMP
AF6562 Z - 2,934,085.042 (meters) COMP
AF6562 LAPLACE CORR- -2.30 (seconds) DEFLEC99
AF6562 ELLIP HEIGHT- -26.953 (meters) (05/31/01) GPS OBS
AF6562 GEOID HEIGHT- -27.70 (meters) GEOID03
AF6562 DYNAMIC HT - 0.748 (meters) 2.45 (feet) COMP
AF6562 MODELED GRAV- 979,154.9 (mgal) NAVD 88
AF6562
AF6562 HORZ ORDER - FIRST
AF6562 VERT ORDER - SECOND CLASS I
AF6562 ELLP ORDER - FOURTH CLASS I
AF6562
AF6562.The horizontal coordinates were established by GPS observations
AF6562.and adjusted by the National Geodetic Survey in May 2001.
AF6562
AF6562.The orthometric height was determined by differential leveling
AF6562.and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.
AF6562
AF6562.Photographs are available for this station.
AF6562
AF6562.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AF6562
AF6562.The Laplace correction was computed from DEFLEC99 derived deflections.
AF6562
AF6562.The ellipsoidal height was determined by GPS observations
AF6562.and is referenced to NAD 83.
AF6562
AF6562.The geoid height was determined by GEOID03.
AF6562
AF6562.The dynamic height is computed by dividing the NAVD 88
AF6562.geopotential number by the normal gravity value computed on the
AF6562.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AF6562.degrees latitude (g = 980.6199 gals.).
AF6562
AF6562.The modeled gravity was interpolated from observed gravity values.
AF6562
AF6562; North East Units Scale Factor Converg.
AF6562;SPC FL E - 358,458.338 266,439.953 MT 0.99999564 +0 18 41.0
AF6562;SPC FL E - 1,176,042.06 874,145.08 sFT 0.99999564 +0 18 41.0
AF6562;UTM 17 - 3,049,468.015 566,417.284 MT 0.99965445 +0 18 41.0
AF6562
AF6562! - Elev Factor x Scale Factor = Combined Factor
AF6562!SPC FL E - 1.00000423 x 0.99999564 = 0.99999987
AF6562!UTM 17 - 1.00000423 x 0.99965445 = 0.99965868
AF6562
AF6562: Primary Azimuth Mark Grid Az
AF6562:SPC FL E - 94 77 A 39 160 00 45.2
AF6562:UTM 17 - 94 77 A 39 160 00 45.2
AF6562
AF6562|-----|

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AF6562| PID Reference Object Distance Geod. Az |
 AF6562| dddmmss.s |
 AF6562| AF6558 94 77 A 39 APPROX. 0.8 KM 1601926.2 |
 AF6562|-----|

AF6562
 AF6562 SUPERSEDED SURVEY CONTROL
 AF6562

AF6562 NAD 83(1990)- 27 34 02.80089(N) 080 19 37.82055(W) AD() 1
 AF6562 ELLIP H (06/26/95) -26.898 (m) GP() 3 1
 AF6562 NAVD 88 (06/26/95) 0.75 (m) 2.5 (f) LEVELING 3
 AF6562 NGVD 29 (??/??/92) 1.198 (m) 3.93 (f) ADJ UNCH 2 1
 AF6562

AF6562.Superseded values are not recommended for survey control.
 AF6562.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AF6562.See file dsdata.txt to determine how the superseded data were derived.
 AF6562

AF6562_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL6641749468(NAD 83)
 AF6562_MARKER: DD = SURVEY DISK
 AF6562_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AF6562_SP_SET: CONCRETE POST
 AF6562_STAMPING: 94 77 A 40
 AF6562_MARK LOGO: FLDNR
 AF6562_PROJECTION: RECESSED 20 CENTIMETERS
 AF6562_MAGNETIC: N = NO MAGNETIC MATERIAL
 AF6562_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AF6562+STABILITY: SURFACE MOTION
 AF6562_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AF6562+SATELLITE: SATELLITE OBSERVATIONS - August 17, 2005
 AF6562

AF6562 HISTORY	- Date	Condition	Report By
AF6562 HISTORY	- 1978	MONUMENTED	FLDT
AF6562 HISTORY	- 1988	GOOD	USPSQD
AF6562 HISTORY	- 1989	GOOD	USPSQD
AF6562 HISTORY	- 19940930	GOOD	GCYI
AF6562 HISTORY	- 19980624	GOOD	GCYI
AF6562 HISTORY	- 20050817	GOOD	FLDEP

AF6562
 AF6562 STATION DESCRIPTION
 AF6562

AF6562'DESCRIBED BY FLORIDA DEPARTMENT OF TRANSPORTATION 1978
 AF6562'7.7 MI NORTH FROM FORT PIERCE.
 AF6562'BEGINNING AT THE EAST END OF THE NORTH BEACH CAUSEWAY BRIDGE OVER
 AF6562'INDIAN RIVER IN FORT PIERCE, GO NORTHEASTERLY ON STATE ROAD A1A FOR
 AF6562'7 MILES TO THE ST LUCIE/INDIAN RIVER COUNTY LINE. CONTINUE NORTHERLY
 AF6562'ON STATE ROAD A1A FOR 0.7 MILE. THE MARK BEARS 45.8 FEET NORTHWEST OF
 AF6562'THE CENTERLINE OF THE JUNCTION OF STATE ROAD A1A AND A SAND DRIVE
 AF6562'LEADING EAST, 34 FEET WEST OF THE CENTERLINE OF STATE ROAD A1A, AND
 AF6562'12.2 FEET EAST OF A POWER POLE.
 AF6562'A FLORIDA DEPARTMENT OF NATURAL RESOURCES DISK ESTABLISHED BY FLORIDA
 AF6562'DEPARTMENT OF TRANSPORTATION.
 AF6562

AF6562 STATION RECOVERY (1988)
 AF6562
 AF6562'RECOVERY NOTE BY US POWER SQUADRON 1988 (AG)
 AF6562'RECOVERED IN GOOD CONDITION.
 AF6562

AF6562 STATION RECOVERY (1989)
 AF6562
 AF6562'RECOVERY NOTE BY US POWER SQUADRON 1989 (AG)
 AF6562'RECOVERED IN GOOD CONDITION.
 AF6562

AF6562 STATION RECOVERY (1994)
 AF6562

AF6562

AF6562'RECOVERY NOTE BY G.C.Y., INCORPORATED 1994 (MRL)

AF6562'RECOVERED AS DESCRIBED.

AF6562

STATION RECOVERY (1998)

AF6562

AF6562'RECOVERY NOTE BY G.C.Y., INCORPORATED 1998 (PA)

AF6562'RECOVERED AS DESCRIBED.

AF6562

STATION RECOVERY (2005)

AF6562

AF6562'RECOVERY NOTE BY FL DEPT OF ENV PRO 2005 (JLM)

AF6562'THE MARK IS ABOUT 8.6 MI NORTH OF FORT PIERCE, 6.5 MI SOUTH OF VERO

AF6562'BEACH, IN SECTION 34, TOWNSHIP 33 SOUTH, RANGE 40 EAST.

AF6562'

AF6562'TO REACH THE MARK FROM THE INTERSECTION OF STATE HIGHWAY 60 WEST

AF6562'(BEACHLAND BOULEVARD) AND STATE HIGHWAY A1A, GO SOUTH ON STATE

AF6562'HIGHWAY A1A FOR 1.5 MI TO THE JUNCTION OF STATE HIGHWAY 656 (EAST

AF6562'CAUSEWAY BOULEVARD, 17TH STREET), CONTINUE SOUTHEAST ON STATE HIGHWAY

AF6562'A1A FOR 2.5 MI TO THE JUNCTION OF EDWARDS SCHOOL ROAD (ST EDWARDS DR)

AF6562'ON THE RIGHT, CONTINUE SOUTHEAST ON STATE HIGHWAY A1A FOR 2.45 MI TO

AF6562'THE MARK ON THE RIGHT, SET IN THE TOP OF A CONCRETE MONUMENT RECESSED

AF6562'0.8 FT BELOW THE LEVEL OF THE GROUND AND 2.0 FT BELOW THE LEVEL OF

AF6562'STATE HIGHWAY A1A.

AF6562'

AF6562'LOCATED 75.0 FT NORTH OF A ROUND CONCRETE POWER POLE, 34.0 FT WEST OF

AF6562'THE CENTERLINE OF STATE HIGHWAY A1A, 30.0 FT NORTH OF THE EXTENDED

AF6562'CENTERLINE OF A DRIVE AT 1940, 12.2 FT EAST OF A POWER POLE NUMBER

AF6562'9CVB156 WITH TWO GUY WIRES ATTACHED AND 4.0 FT WEST OF THE WEST EDGE

AF6562'OF THE SIDEWALK.

AJ5277 *****

AJ5277 DESIGNATION - GCY D24
 AJ5277 PID - AJ5277
 AJ5277 STATE/COUNTY- FL/MARTIN
 AJ5277 USGS QUAD - ST LUCIE INLET (1983)
 AJ5277
 AJ5277 *CURRENT SURVEY CONTROL
 AJ5277

AJ5277* NAD 83(1999)- 27 12 21.47354(N) 080 10 10.00924(W) ADJUSTED
 AJ5277* NAVD 88 - 1.8 (meters) 6. (feet) GPS OBS
 AJ5277

AJ5277 X - 969,171.072 (meters) COMP
 AJ5277 Y - -5,593,118.232 (meters) COMP
 AJ5277 Z - 2,898,519.603 (meters) COMP
 AJ5277 LAPLACE CORR- -3.50 (seconds) DEFLEC99
 AJ5277 ELLIP HEIGHT- -25.872 (meters) (09/27/01) GPS OBS
 AJ5277 GEOID HEIGHT- -27.75 (meters) GEOID03
 AJ5277

AJ5277 HORZ ORDER - FIRST
 AJ5277 ELLP ORDER - FOURTH CLASS II
 AJ5277

AJ5277.The horizontal coordinates were established by GPS observations
 AJ5277.and adjusted by the National Geodetic Survey in September 2001.
 AJ5277

AJ5277.The orthometric height was determined by GPS observations and a
 AJ5277.high-resolution geoid model.
 AJ5277

AJ5277.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AJ5277

AJ5277.The Laplace correction was computed from DEFLEC99 derived deflections.
 AJ5277

AJ5277.The ellipsoidal height was determined by GPS observations
 AJ5277.and is referenced to NAD 83.
 AJ5277

AJ5277.The geoid height was determined by GEOID03.
 AJ5277

AJ5277;	North	East	Units	Scale	Factor	Converg.
AJ5277;SPC FL E	- 318,497.348	282,282.574	MT	1.00002472	+0 22	47.1
AJ5277;SPC FL E	- 1,044,936.72	926,122.08	sFT	1.00002472	+0 22	47.1
AJ5277;UTM 17	- 3,009,520.659	582,254.499	MT	0.99968352	+0 22	47.1

AJ5277

AJ5277! - Elev Factor x Scale Factor = Combined Factor
 AJ5277!SPC FL E - 1.00000406 x 1.00002472 = 1.00002878
 AJ5277!UTM 17 - 1.00000406 x 0.99968352 = 0.99968758
 AJ5277

AJ5277 SUPERSEDED SURVEY CONTROL
 AJ5277

AJ5277.No superseded survey control is available for this station.
 AJ5277

AJ5277_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL8225409521(NAD 83)
 AJ5277_MARKER: DH = HORIZONTAL CONTROL DISK
 AJ5277_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AJ5277_STAMPING: GCY D24 2001
 AJ5277_MARK LOGO: FL-085
 AJ5277_PROJECTION: FLUSH
 AJ5277_MAGNETIC: N = NO MAGNETIC MATERIAL
 AJ5277_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AJ5277+STABILITY: SURFACE MOTION
 AJ5277_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AJ5277+SATELLITE: SATELLITE OBSERVATIONS - May 09, 2001
 AJ5277

AJ5277 HISTORY - Date Condition Report By

AJ5277 HISTORY - 20010509 MONUMENTED GCYI

AJ5277 HISTORY - 20010509 GOOD GCYI

AJ5277

AJ5277 STATION DESCRIPTION

AJ5277

AJ5277'DESCRIBED BY G.C.Y., INCORPORATED 2001 (MDL)

AJ5277'THE STATION IS LOCATED 7.4 KM (4.6 MI) SOUTHEAST OF JENSEN BEACH AND

AJ5277'8.1 KM

AJ5277'(5.1 MI) EAST OF STUART NEAR THE EAST RIGHT OF WAY OF MACARTHUR

AJ5277'BOULEVARD IN SECTION 32, TOWNSHIP 37 SOUTH, RANGE 42 EAST, MARTIN

AJ5277'COUNTY, FLORIDA.

AJ5277'

AJ5277'TO REACH THE STATION FROM THE INTERSECTION OF MACARTHUR BOULEVARD

AJ5277'AND A1A, GO SOUTHERLY ON MACARTHUR BOULEVARD 1.5 KM (0.9 MI) TO THE

AJ5277'STATION ON THE LEFT.

AJ5277'

AJ5277'STATION IS LOCATED 1.64 M (5.4 FT) EAST OF THE EAST EDGE OF PAVEMENT

AJ5277'OF

AJ5277'MACARTHUR BOULEVARD, 14.7 M (48.1 FT) SOUTHEAST OF A WOOD POWER POLE

AJ5277'AND 0.50 M (1.65 FT) WEST OF A CARSONITE WITNESS POST.

AJ5277'REFERENCES -

AJ5277'GCY, INC. MAG NAIL AND WASHER IN EASTERLY EDGE OF PAVEMENT MACARTHUR

AJ5277'BOULEVARD - 290 DEG. MAG. AZ. - 15.33 M (50.28 FT)

AJ5277'GCY, INC. MAG NAIL AND WASHER IN WOOD POWER POLE - 100 DEG. MAG. AZ. -

AJ5277'5.24 M

AJ5277'(17.18 FT)

AJ5277'GCY, INC. MAG NAIL AND WASHER IN WOOD POWER POLE - 216 DEG. MAG. AZ. -

AJ5277'14.57 M

AJ5277'(47.80 FT)

AJ5277'

AJ5277'NOTE-

AJ5277'DEEP ONE MAGNET BURIED AT NORTH SIDE OF MONUMENT.

AJ5277'

AJ5277'

AJ5277'

AJ5277

AJ5277 STATION RECOVERY (2001)

AJ5277

AJ5277'RECOVERY NOTE BY G.C.Y., INCORPORATED 2001 (DI)

AJ5277'RECOVERY NOTE BY CREECH ENGINEERS, INCORPORATED. - MELBOURNE 2004

AJ5277'(DTB) RECOVERED AS DESCRIBED.

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AF7533 *****
AF7533 DESIGNATION - A 403
AF7533 PID - AF7533
AF7533 STATE/COUNTY- FL/MARTIN
AF7533 USGS QUAD - HOBE SOUND (1983)
AF7533
AF7533 *CURRENT SURVEY CONTROL
AF7533
AF7533* NAD 83(1999)- 27 00 13.69246(N) 080 06 01.85031(W) ADJUSTED
AF7533* NAVD 88 - 5.152 (meters) 16.90 (feet) ADJUSTED
AF7533
AF7533 X - 977,654.664 (meters) COMP
AF7533 Y - -5,602,005.354 (meters) COMP
AF7533 Z - 2,878,580.902 (meters) COMP
AF7533 LAPLACE CORR- -4.41 (seconds) DEFLEC99
AF7533 ELLIP HEIGHT- -22.401 (meters) (12/12/02) GPS OBS
AF7533 GEOID HEIGHT- -27.56 (meters) GEOID03
AF7533 DYNAMIC HT - 5.144 (meters) 16.88 (feet) COMP
AF7533 MODELED GRAV- 979,094.5 (mgal) NAVD 88
AF7533
AF7533 HORZ ORDER - FIRST
AF7533 VERT ORDER - FIRST CLASS II
AF7533 ELLP ORDER - FOURTH CLASS I
AF7533
AF7533.The horizontal coordinates were established by GPS observations
AF7533.and adjusted by the National Geodetic Survey in December 2002.
AF7533
AF7533.The orthometric height was determined by differential leveling
AF7533.and adjusted by the NATIONAL GEODETIC SURVEY in May 1994.
AF7533
AF7533.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AF7533
AF7533.The Laplace correction was computed from DEFLEC99 derived deflections.
AF7533
AF7533.The ellipsoidal height was determined by GPS observations
AF7533.and is referenced to NAD 83.
AF7533
AF7533.The geoid height was determined by GEOID03.
AF7533
AF7533.The dynamic height is computed by dividing the NAVD 88
AF7533.geopotential number by the normal gravity value computed on the
AF7533.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AF7533.degrees latitude (g = 980.6199 gals.).
AF7533
AF7533.The modeled gravity was interpolated from observed gravity values.
AF7533
AF7533; North East Units Scale Factor Converg.
AF7533;SPC FL E - 296,143.653 289,272.302 MT 1.00003952 +0 24 30.4
AF7533;SPC FL E - 971,597.97 949,054.21 sFT 1.00003952 +0 24 30.4
AF7533;UTM 17 - 2,987,174.591 589,241.842 MT 0.99969831 +0 24 30.4
AF7533
AF7533! - Elev Factor x Scale Factor = Combined Factor
AF7533!SPC FL E - 1.00000352 x 1.00003952 = 1.00004304
AF7533!UTM 17 - 1.00000352 x 0.99969831 = 0.99970183
AF7533
AF7533 SUPERSEDED SURVEY CONTROL
AF7533
AF7533 NAVD 88 (12/12/02) 5.15 (m) 16.9 (f) LEVELING 3
AF7533 NGVD 29 (09/01/92) 5.605 (m) 18.39 (f) ADJUSTED 1 2
AF7533
AF7533.Superseded values are not recommended for survey control.
AF7533.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

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AF7533. See file dsdata.txt to determine how the superseded data were derived.

AF7533

AF7533_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNK8924287175(NAD 83)

AF7533_MARKER: F = FLANGE-ENCASED ROD

AF7533_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

AF7533_SP_SET: STAINLESS STEEL ROD

AF7533_STAMPING: A 403 1991

AF7533_MARK LOGO: NGS

AF7533_PROJECTION: FLUSH

AF7533_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET

AF7533_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD

AF7533+STABILITY: POSITION/ELEVATION WELL

AF7533_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AF7533+SATELLITE: SATELLITE OBSERVATIONS - November 10, 2003

AF7533_ROD/PIPE-DEPTH: 24.0 meters

AF7533

AF7533 HISTORY - Date Condition Report By

AF7533 HISTORY - 1991 MONUMENTED NGS

AF7533 HISTORY - 20020514 GOOD MAPTEC

AF7533 HISTORY - 20031110 GOOD USPSQD

AF7533

AF7533 STATION DESCRIPTION

AF7533

AF7533'DESCRIBED BY NATIONAL GEODETIC SURVEY 1991

AF7533'3.9 KM (2.4 MI) NORTHWESTERLY ALONG U.S. HIGHWAY 1 FROM THE JUNCTION

AF7533'OF COUNTY LINE ROAD IN TEQUESTA, 22.9 M (75.1 FT) NORTHWEST OF THE

AF7533'CENTERLINE OF THE JONATHAN DICKINSON STATE PARK ENTRANCE ROAD, 20.5 M

AF7533'(67.3 FT) SOUTHWEST OF THE CENTERLINE OF THE SOUTHBOUND LANES OF THE

AF7533'HIGHWAY, 19.7 M (64.6 FT) NORTH OF THE MOST NORTHERLY FLAG POLE, 0.8

AF7533'M (2.6 FT) SOUTHEAST OF THE NORTHWEST END OF A FENCE, AND 0.3 M (1.0

AF7533'FT) NORTHEAST OF A WITNESS POST AND FENCE. NOTE--ACCESS TO THE DATUM

AF7533'POINT IS THROUGH A 5-INCH LOGO CAP.

AF7533

AF7533 STATION RECOVERY (2002)

AF7533

AF7533'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)

AF7533'RECOVERED AS DESCRIBED.

AF7533'

AF7533

AF7533 STATION RECOVERY (2003)

AF7533

AF7533'RECOVERY NOTE BY US POWER SQUADRON 2003 (AEP)

AF7533'RECOVERED IN GOOD CONDITION.

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AA5085 *****
AA5085 DESIGNATION - SAV 3
AA5085 PID - AA5085
AA5085 STATE/COUNTY- FL/ST LUCIE
AA5085 USGS QUAD - FORT PIERCE (1983)
AA5085
AA5085 *CURRENT SURVEY CONTROL
AA5085
AA5085* NAD 83(1999)- 27 22 52.87000(N) 080 17 47.58850(W) ADJUSTED
AA5085* NAVD 88 - 8.7 (meters) 29. (feet) GPS OBS
AA5085
AA5085 X - 955,259.900 (meters) COMP
AA5085 Y - -5,586,476.533 (meters) COMP
AA5085 Z - 2,915,793.515 (meters) COMP
AA5085 LAPLACE CORR- -2.14 (seconds) DEFLEC99
AA5085 ELLIP HEIGHT- -18.804 (meters) (06/19/01) GPS OBS
AA5085 GEOID HEIGHT- -27.51 (meters) GEOID03
AA5085
AA5085 HORZ ORDER - FIRST
AA5085 ELLP ORDER - FOURTH CLASS I
AA5085
AA5085.The horizontal coordinates were established by GPS observations
AA5085.and adjusted by the National Geodetic Survey in June 2001.
AA5085
AA5085.The orthometric height was determined by GPS observations and a
AA5085.high-resolution geoid model.
AA5085
AA5085.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA5085
AA5085.The Laplace correction was computed from DEFLEC99 derived deflections.
AA5085
AA5085.The ellipsoidal height was determined by GPS observations
AA5085.and is referenced to NAD 83.
AA5085
AA5085.The geoid height was determined by GEOID03.
AA5085
AA5085; North East Units Scale Factor Converg.
AA5085;SPC FL E - 337,854.395 269,580.473 MT 1.00000092 +0 19 24.7
AA5085;SPC FL E - 1,108,443.96 884,448.60 sFT 1.00000092 +0 19 24.7
AA5085;UTM 17 - 3,028,871.102 569,556.733 MT 0.99965972 +0 19 24.7
AA5085
AA5085! - Elev Factor x Scale Factor = Combined Factor
AA5085!SPC FL E - 1.00000295 x 1.00000092 = 1.00000387
AA5085!UTM 17 - 1.00000295 x 0.99965972 = 0.99966267
AA5085
AA5085 SUPERSEDED SURVEY CONTROL
AA5085
AA5085 NAD 83(1990)- 27 22 52.86926(N) 080 17 47.58709(W) AD( ) 1
AA5085 NAD 83(1990)- 27 22 52.86926(N) 080 17 47.58709(W) AD( ) 2
AA5085 ELLIP H (03/31/95) -18.759 (m) GP( ) 4 1
AA5085
AA5085.Superseded values are not recommended for survey control.
AA5085.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA5085.See file dsdata.txt to determine how the superseded data were derived.
AA5085
AA5085_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL6955728871(NAD 83)
AA5085_MARKER: DD = SURVEY DISK
AA5085_SETTING: 4 = OBJECT SURROUNDED BY MASS OF CONCRETE
AA5085_STAMPING: GCY INC GPS SAV 3
AA5085_MARK LOGO: GCYI
AA5085_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
AA5085_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

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AA5085_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA5085+SATELLITE: SATELLITE OBSERVATIONS - August 17, 2005

AA5085

AA5085 HISTORY	- Date	Condition	Report By
AA5085 HISTORY	- 1992	MONUMENTED	GCYI
AA5085 HISTORY	- 19930913	GOOD	GENGRP
AA5085 HISTORY	- 20050817	GOOD	GCYI

AA5085

AA5085 STATION DESCRIPTION

AA5085

AA5085'DESCRIBED BY G.C.Y., INCORPORATED 1992 (GCY)
AA5085'IN ST. LUCIE COUNTY, SOUTH ON MIDPORT ROAD FROM THE U.S. POST OFFICE
AA5085'0.15 MI (0.24 KM) TO PORT ST. LUCIE BLVD. EAST ON PORT ST. LUCIE BLVD.
AA5085'1.65 MI (2.66 KM) TO U.S. HIGHWAY NO. 1, NORTH ON U.S. HIGHWAY NO. 1,
AA5085'2.0 MI (3.2 KM) TO WALTON RD., EAST ON WALTON RD. 2.90 MI (4.67 KM) TO
AA5085'THE F.E.C. RAILROAD. NORTH ALONG SAID RAILROAD 6.0 MI (9.7 KM) TO
AA5085'MIDWAY RD. AND GPS MARK SAV 3. THE MARK IS LOCATED 9.9 FT (3.0 M)
AA5085'NORTH OF THE NORTH EDGE OF PAVEMENT OF MIDWAY RD. AND 15.3 FT (4.7 M)
AA5085'WEST OF THE WEST RAIL OF THE TRACKS, 64.76 FT (19.74 M) WEST OF A
AA5085'REFERENCE MARK IN A WOOD POWER POLE (NO NUMBER) JUST NORTH OF MIDWAY
AA5085'RD. AND EAST OF THE TRACKS, 96.8 FT (29.5 M) NORTHWESTERLY OF A
AA5085'REFERENCE MARK IN A SECOND WOOD POWER POLE (POLE NO.
AA5085'6-6571-6665-0-1)JUST SOUTH OF MIDWAY RD. AND EAST OF THE TRACKS, 69.66
AA5085'FT (21.23 M) NORTHWESTERLY OF A REFERENCE MARK IN A THIRD WOOD POWER
AA5085'POLE (NO NUMBER) JUST SOUTH OF MIDWAY RD. AND WEST OF THE TRACKS 175.0
AA5085'FT (53.3 M) MORE OR LESS, SOUTHERLY OF A 6' X 6' F.E.C. RAILROAD
AA5085'JUNCTION BOX ON THE WEST SIDE OF THE TRACKS AND NEAR A 2 1/2" DIAMETER
AA5085'GALVANIZED METAL WITNESS POST. ALL REFERENCE MARKS ARE P.K. NAIL AND
AA5085'DISKS STAMPED W.E.S. TRAVERSE PT. THERE IS A SECONDARY MARK LOCATED
AA5085'APPROXIMATELY 3.0 FT (0.9 M) BELOW SAID MARK, SAID MARK BEING A 1/2"
AA5085'IRON ROD WITH CAP MARKED GCY, INC. TRAVERSE PT.

AA5085

AA5085 STATION RECOVERY (1993)

AA5085

AA5085'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SE 1993 (JEL)
AA5085'RECOVERED AS DESCRIBED.

AA5085

AA5085 STATION RECOVERY (2005)

AA5085

AA5085'RECOVERY NOTE BY G.C.Y., INCORPORATED 2005 (JES)
AA5085'DESCRIBED BY G.C.Y., INCORPORATED 1992 (GCY) IN ST. LUCIE COUNTY,
AA5085'SOUTH ON MIDPORT ROAD FROM THE U.S. POST OFFICE 0.15 MI (0.24 KM) TO
AA5085'PORT ST. LUCIE BLVD. EAST ON PORT ST. LUCIE BLVD. 1.65 MI (2.66
AA5085'KM) TO U.S. HIGHWAY NO. 1, NORTH ON U.S. HIGHWAY NO. 1, 2.0 MI (3.2
AA5085'KM) TO WALTON RD., EAST ON WALTON RD. 2.90 MI (4.67 KM) TO THE F.E.C.
AA5085'RAILROAD. NORTH ALONG SAID RAILROAD 6.0 MI (9.7 KM) TO MIDWAY RD.
AA5085'AND GPS MARK SAV 3. THE MARK IS LOCATED 9.9 FT (3.0 M) NORTH OF THE
AA5085'NORTH EDGE OF PAVEMENT OF MIDWAY RD. AND 15.3 FT (4.7 M) WEST OF THE
AA5085'WEST RAIL OF THE TRACKS, 64.76 FT (19.74 M) WEST OF A REFERENCE MARK
AA5085'IN A WOOD POWER POLE (NO NUMBER) JUST NORTH OF MIDWAY RD. AND EAST OF
AA5085'THE TRACKS, 96.8 FT (29.5 M) NORTHWESTERLY OF A REFERENCE MARK IN A
AA5085'SECOND WOOD POWER POLE (POLE NO. 6-6571-6665-0-1)JUST SOUTH OF MIDWAY
AA5085'RD. AND EAST OF THE TRACKS, 69.66 FT (21.23 M) NORTHWESTERLY OF A
AA5085'REFERENCE MARK IN A THIRD WOOD POWER POLE (NO NUMBER) JUST SOUTH OF
AA5085'MIDWAY RD. AND WEST OF THE TRACKS 175.0 FT (53.3 M) MORE OR LESS,
AA5085'SOUTHERLY OF A 6' X 6' F.E.C. RAILROAD JUNCTION BOX ON THE WEST SIDE
AA5085'OF THE TRACKS AND NEAR A 2 1/2" DIAMETER GALVANIZED METAL WITNESS
AA5085'POST. ALL REFERENCE MARKS ARE P.K. NAIL AND DISKS STAMPED W.E.S.
AA5085'TRAVERSE PT. THERE IS A SECONDARY MARK LOCATED APPROXIMATELY 3.0 FT
AA5085'(0.9 M) BELOW SAID MARK, SAID MARK BEING A 1/2" IRON ROD WITH CAP
AA5085'MARKED GCY, INC. TRAVERSE PT.

AA5085'

AA5085'RECOVERY NOTE BY GENESIS GROUP INCORPORATED SOUTHEAST 1993 (JEL)
AA5085'RECOVERED AS DESCRIBED.

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AB2491 *****
AB2491 DESIGNATION - CANAL C2430
AB2491 PID - AB2491
AB2491 STATE/COUNTY- FL/ST LUCIE
AB2491 USGS QUAD - ANKONA (1983)
AB2491
AB2491 *CURRENT SURVEY CONTROL
AB2491
AB2491* NAD 83(1999)- 27 15 42.53101(N) 080 20 10.14115(W) ADJUSTED
AB2491* NAVD 88 - 1.2 (meters) 4. (feet) GPS OBS
AB2491
AB2491 X - 952,418.265 (meters) COMP
AB2491 Y - -5,593,122.392 (meters) COMP
AB2491 Z - 2,904,021.971 (meters) COMP
AB2491 LAPLACE CORR- -1.99 (seconds) DEFLEC99
AB2491 ELLIP HEIGHT- -26.074 (meters) (06/19/01) GPS OBS
AB2491 GEOID HEIGHT- -27.35 (meters) GEOID03
AB2491
AB2491 HORZ ORDER - FIRST
AB2491 ELLP ORDER - FOURTH CLASS I
AB2491
AB2491.The horizontal coordinates were established by GPS observations
AB2491.and adjusted by the National Geodetic Survey in June 2001.
AB2491
AB2491.The orthometric height was determined by GPS observations and a
AB2491.high-resolution geoid model.
AB2491
AB2491.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AB2491
AB2491.The Laplace correction was computed from DEFLEC99 derived deflections.
AB2491
AB2491.The ellipsoidal height was determined by GPS observations
AB2491.and is referenced to NAD 83.
AB2491
AB2491.The geoid height was determined by GEOID03.
AB2491
AB2491; North East Units Scale Factor Converg.
AB2491;SPC FL E - 324,587.255 265,734.038 MT 0.99999450 +0 18 14.7
AB2491;SPC FL E - 1,064,916.69 871,829.09 sFT 0.99999450 +0 18 14.7
AB2491;UTM 17 - 3,015,608.488 565,711.610 MT 0.99965330 +0 18 14.7
AB2491
AB2491! - Elev Factor x Scale Factor = Combined Factor
AB2491!SPC FL E - 1.00000410 x 0.99999450 = 0.99999860
AB2491!UTM 17 - 1.00000410 x 0.99965330 = 0.99965739
AB2491
AB2491|-----|
AB2491| PID Reference Object Distance Geod. Az |
AB2491| | dddmmss.s |
AB2491| AB2492 CANAL C2429 377.906 METERS 28129 |
AB2491|-----|
AB2491
AB2491 SUPERSEDED SURVEY CONTROL
AB2491
AB2491 NAD 83(1990)- 27 15 42.52978(N) 080 20 10.14016(W) AD( ) 1
AB2491 ELLIP H (03/26/96) -26.047 (m) GP( ) 3 2
AB2491
AB2491.Superseded values are not recommended for survey control.
AB2491.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AB2491.See file dsdata.txt to determine how the superseded data were derived.
AB2491
AB2491_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNL6571215608(NAD 83)
AB2491_MARKER: DH = HORIZONTAL CONTROL DISK

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AB2491_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

AB2491_STAMPING: CANAL C2430

AB2491_MARK LOGO: SFLWMD

AB2491_MAGNETIC: N = NO MAGNETIC MATERIAL

AB2491_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

AB2491+STABILITY: SURFACE MOTION

AB2491_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AB2491+SATELLITE: SATELLITE OBSERVATIONS - 1994

AB2491

AB2491 HISTORY - Date Condition Report By

AB2491 HISTORY - 1994 MONUMENTED SFLWMD

AB2491

AB2491 STATION DESCRIPTION

AB2491

AB2491'DESCRIBED BY S FL WATER MGMT DIST 1994

AB2491'THE STATION IS IN PORT ST LUCIE IN SECTION 16, TOWNSHIP 37 SOUTH,

AB2491'RANGE 40 EAST. TO REACH THE STATION FROM THE INTERSECTION OF BAYSHORE

AB2491'BOULEVARD AND PORT ST LUCIE BOULEVARD NEAR THE ENTRANCE TO THE FLORIDA

AB2491'TURNPIKE IN PORT ST. LUCIE, GO SOUTHERLY AND EASTERLY ON BAYSHORE

AB2491'BOULEVARD FOR 1.65 MI (2.66 KM) TO THE JUNCTION OF SOUTHBEND BOULEVARD

AB2491'ON THE RIGHT, TURN RIGHT ON SOUTHBEND BOULEVARD AND GO SOUTH FOR 0.2

AB2491'MI (0.3 KM) TO THE INTERSECTION OF EAGLE DRIVE, TURN RIGHT ON EAGLE

AB2491'DRIVE AND GO 30.0 FT (9.1 M) TO A DIM ROAD ON THE RIGHT, TURN RIGHT ON

AB2491'THE DIM ROAD AND GO NORTH TO A LOCKED GATE, PASSING THROUGH THE GATE

AB2491'FOR 45.4 FT (13.8 M) TO THE STATION ON THE RIGHT. LOCATED 61.0 FT

AB2491'(18.6 M) WEST OF A 2.0 FT (0.6 M) BY 2.0 FT (0.6 M) CONCRETE BRIDGE

AB2491'COLUMN, 51.0 FT (15.5 M) WEST-NORTHWEST OF A WOOD POWER POLE, 49.3 FT

AB2491'(15.0 M) WEST-NORTHWEST OF AN IRON ROD WITH PLASTIC CAP NUMBER WEH

AB2491'4416, 45.4 FT (13.8 M) NORTH OF THE METAL GATE AND 9.2 FT (2.8 M)

AB2491'SOUTH OF A METAL WITNESS POST. NOTE FOR KEY CONTACT RUTH ANN

AB2491'KATILIUS, SOUTH FLORIDA WATER MANAGEMENT DISTRICT, WEST PALM BEACH,

AB2491'FL. PHONE NUMBER (407) 686-8800.

SURVEY INFORMATION

A. Field Personnel

The following field personnel worked on this GPS network, and related survey collection:

Field Supervisor: J. Purpera
Party Chief: M. Havard
Instrument Man: V. McNeal
Instrument Man: C. LaPrarie

The point of contact for survey related questions is:

Josh Hardy
Operations Supervisor
(985) 661-3001

B. GPS Logsheets