GROUND CONTROL SURVEY REPORT

GROUND TRUTH SURVEY
FOR LIDAR CONTROL

Professional Management
and LiDAR Data Collection
and Processing Services

Block 1

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:

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June 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 1

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 Adminstrative Code.

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CONTENTS

ABSTRACT

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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 1. The data was collected between June 27 and June 30, 2007. The ground control stations were established utilizing four Trimble 4000 series receivers, one Trimble 4700 GPS receiver, one Trimble 5700 GPS receiver, one Leica SR530 GPS receiver, four Trimble Compact L1/L2 antennas with ground plane, one Trimble microcentered L1/L2 antenna with ground plane, one Trimble Zephyr antenna, and one Leica AT502 antenna. There were no problems encountered during this survey.

Following the control network surveys, surveys were conducted at 9 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.

SURVEY METHODOLOGY

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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
- 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 five 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.

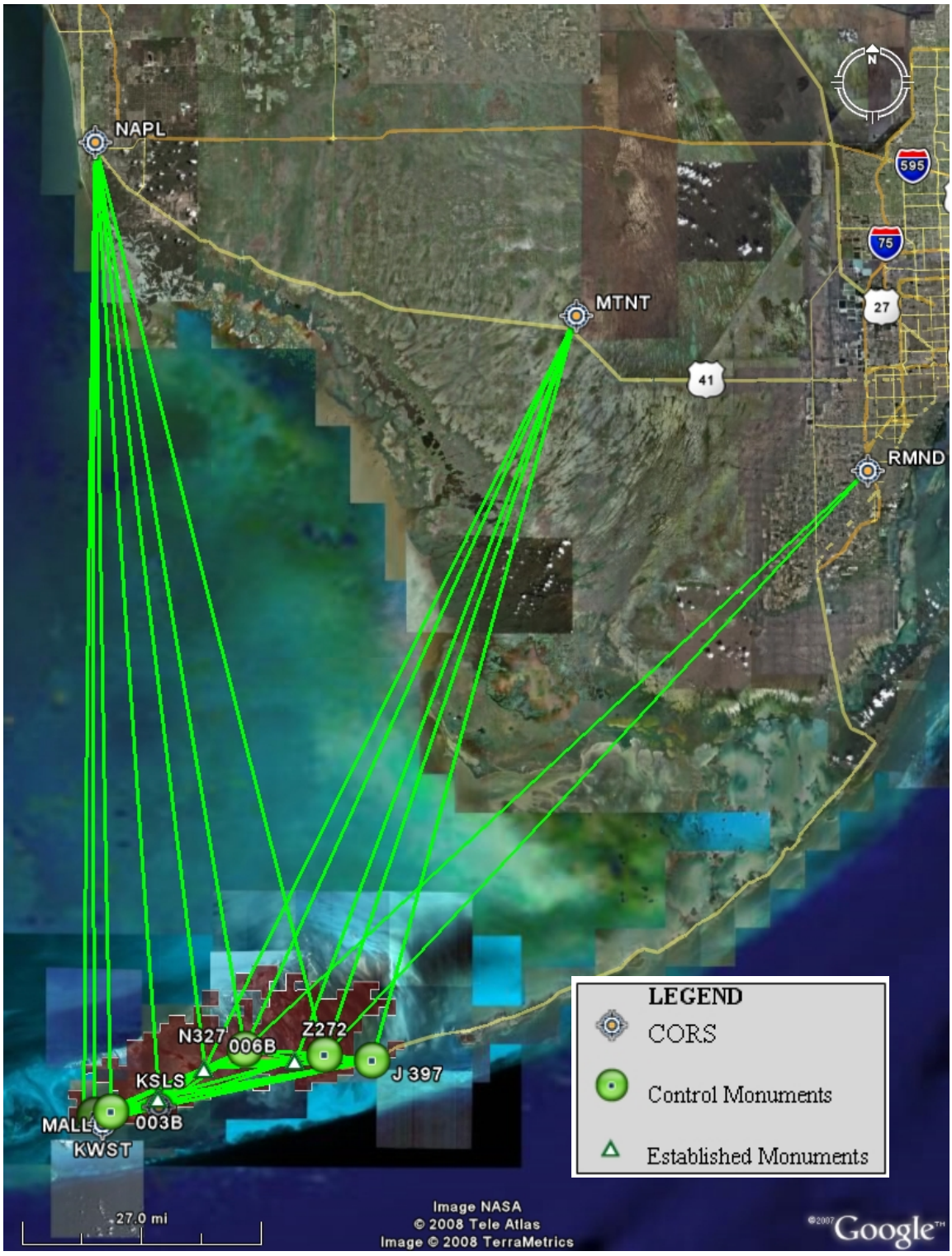
SAMPLE POINTS / TEST POINTS

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

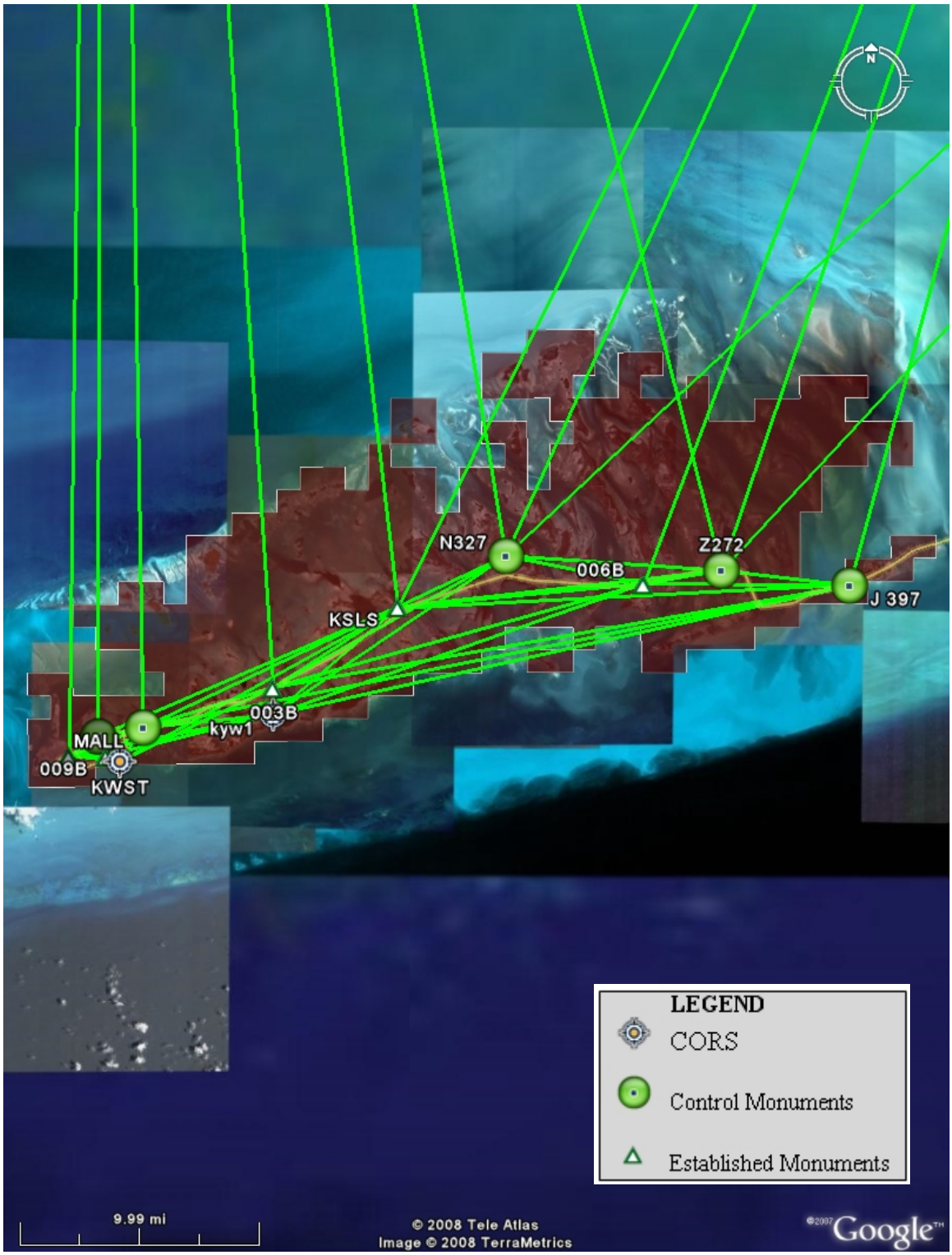
A. GPS Network Map

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). The project area can be seen more closely on the next page.

GPS Network Map – project area



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 Adjusment
Vertical Datum: NAVD88
Geoid Model: Geoid03
Units: US Survey Feet

Name	Latitude	Longitude	Northing	Easting	Elevation	Ellip Ht	Northing error	Easting error	Ellip error	Fix
KWST	24 33 13.26749	81 45 15.40020	80757.09	405464.64	38.03	-33.35	0.00	0.00	0.00	LLh
KYW1	24 34 56.16457	81 39 10.90470	90972.24	439167.31	31.52	-39.84	0.00	0.00	0.00	LLh
MTNT	25 51 56.76081	80 54 25.18701	556914.06	686748.36	17.53	-62.15	0.00	0.00	0.00	LLh
NAPL	26 08 55.10356	81 46 34.62742	660475.38	401512.49	19.92	-57.21	0.00	0.00	0.00	LLh
RMND	25 36 49.58921	80 23 02.14117	465790.41	859175.16	35.96	-46.22	0.00	0.00	0.00	LLh
J 397	24 39 38.94748	81 16 20.06492	119091.80	565759.72	8.06	-64.15	0.00	0.00	0.00	LLh
BAYOU	24 34 07.15557	81 46 06.51361	86222.95	400775.69	2.86	-68.41	0.02	0.02	0.05	
FLGPS MALLOY	24 34 26.95499	81 44 19.85118	88167.76	410633.33	5.27	-66.00	0.02	0.01	0.04	
KSLS	24 38 51.90937	81 34 13.30618	114647.30	466736.34	0.94	-70.20	0.01	0.01	0.05	
N327	24 40 41.35845	81 29 58.30343	125603.93	490302.55	2.77	-68.43	0.02	0.02	0.09	
Z272	24 40 11.25909	81 21 25.65771	122418.03	537578.32	4.42	-67.38	0.02	0.02	0.08	
001B	24 33 26.13753	81 47 14.80545	82117.91	394447.41	0.90	-70.42	0.02	0.02	0.04	
003B	24 35 56.43521	81 39 09.53110	97055.65	439322.94	5.40	-65.86	0.02	0.02	0.06	
006B	24 39 43.00783	81 24 29.24860	119613.46	520635.35	3.94	-67.69	0.03	0.02	0.07	
009B	24 33 26.40417	81 45 45.84076	82098.65	402661.42	3.14	-68.20	0.02	0.01	0.03	
001C	24 33 22.45891	81 47 12.36110	81745.28	394670.97	1.90	-69.43	0.05	0.05	0.13	
002C	24 34 25.16988	81 44 24.24611	87989.74	410226.65	4.07	-67.21	0.03	0.04	0.08	
003C	24 35 57.60534	81 39 05.68750	97172.09	439678.25	5.97	-65.29	0.05	0.04	0.09	
004C	24 38 50.26422	81 34 11.96608	114480.72	466859.29	1.46	-69.69	0.03	0.03	0.08	
005C	24 40 43.47588	81 29 58.88959	125817.87	490249.27	1.75	-69.46	0.04	0.04	0.12	
006C	24 39 43.94398	81 24 25.03205	119706.80	521024.59	3.62	-68.01	0.04	0.04	0.10	
007C	24 40 10.13266	81 21 21.73114	122303.38	537940.22	3.82	-67.99	0.04	0.03	0.09	
008C	24 39 39.79289	81 16 16.59945	119176.50	566079.57	8.53	-63.67	0.03	0.02	0.05	
009C	24 33 26.35705	81 45 48.96992	82095.49	402372.48	2.41	-68.93	0.03	0.03	0.07	

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) / HARN Adjustment
Vertical Datum: NAVD88
Geoid Model: Geoid03
Units: US Survey Feet

NGS Positions

Name	Northing	Easting	Elev	Ellip Ht	Horiz Order	Vert Order	Ellip Order
kwst	80757.09	405464.64		-33.35	CORS	CORS	CORS
kyw1	90972.24	439167.31		-39.84	CORS	CORS	CORS
mtnt	556914.06	686748.36		-62.15	CORS	CORS	CORS
napl	660475.38	401512.49		-57.21	CORS	CORS	CORS
rmnd	465790.41	859175.16		-46.22	CORS	CORS	CORS
Bayou	86223.02	400775.69	2.88	-68.40	B	1	5
FLGPS MALLOY	88167.81	410633.35	5.25	-65.88	B	-	3
J 397	119091.80	565759.72	8.06	-63.75	2	1	4
N 327			2.83		-	1	-
Z 272			4.50		-	1	-

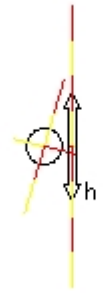
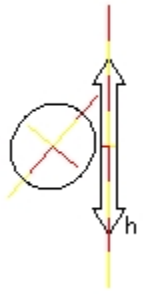
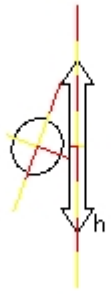
GPS Derived Positions

Northing	Easting	Elev	Ellip Ht
80757.09	405464.64	38.03	-33.35
90972.24	439167.31	31.52	-39.84
556914.06	686748.36	17.53	-62.15
660475.38	401512.49	19.92	-57.21
465790.41	859175.16	35.96	-46.22
86222.95	400775.69	2.86	-68.41
88167.76	410633.33	5.27	-66.00
119091.80	565759.72	8.06	-64.15
125603.93	490302.55	2.77	-68.43
122418.03	537578.32	4.42	-67.38

delta North	delta East	delta Elev	delta Ellip
0.00	0.00		0.00
0.00	0.00		0.00
0.00	0.00		0.00
0.00	0.00		0.00
0.00	0.00		0.00
0.07	0.00	0.02	0.01
0.06	0.02	-0.02	0.12
0.00	0.00	0.01	0.40
		0.06	
		0.08	

D. Error Ellipses

Point Error Ellipses

KSLS	004C	Z272
		
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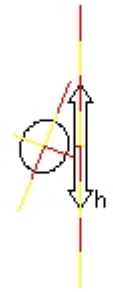
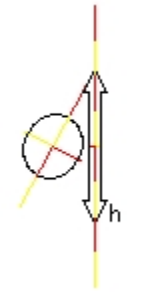
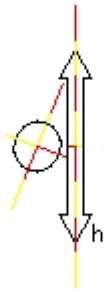
003B	**006B**	**N327**
		
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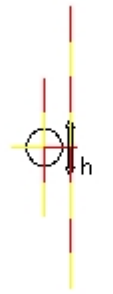
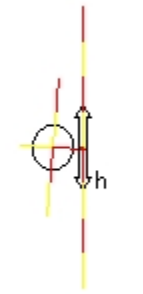
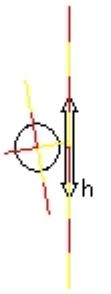
009B	**001B**	**BAYOU**
		
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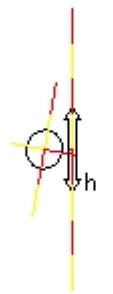
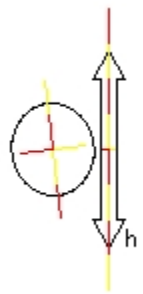
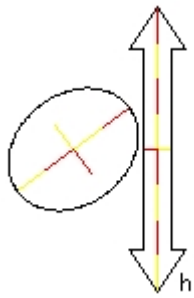
FLGPS MALLOY	**007C**	**001C**
		
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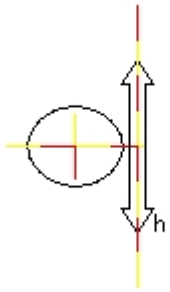
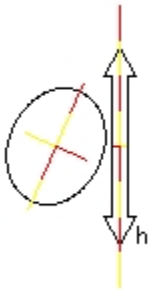
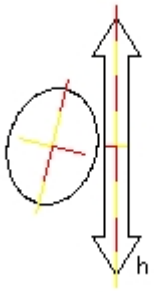
002C	003C	005C
 -1°	 66°	 76°
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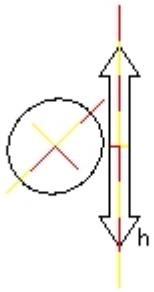
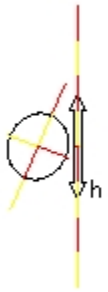
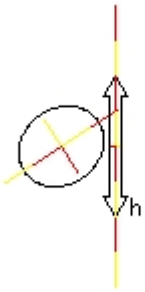
 44°	 67°	 34°
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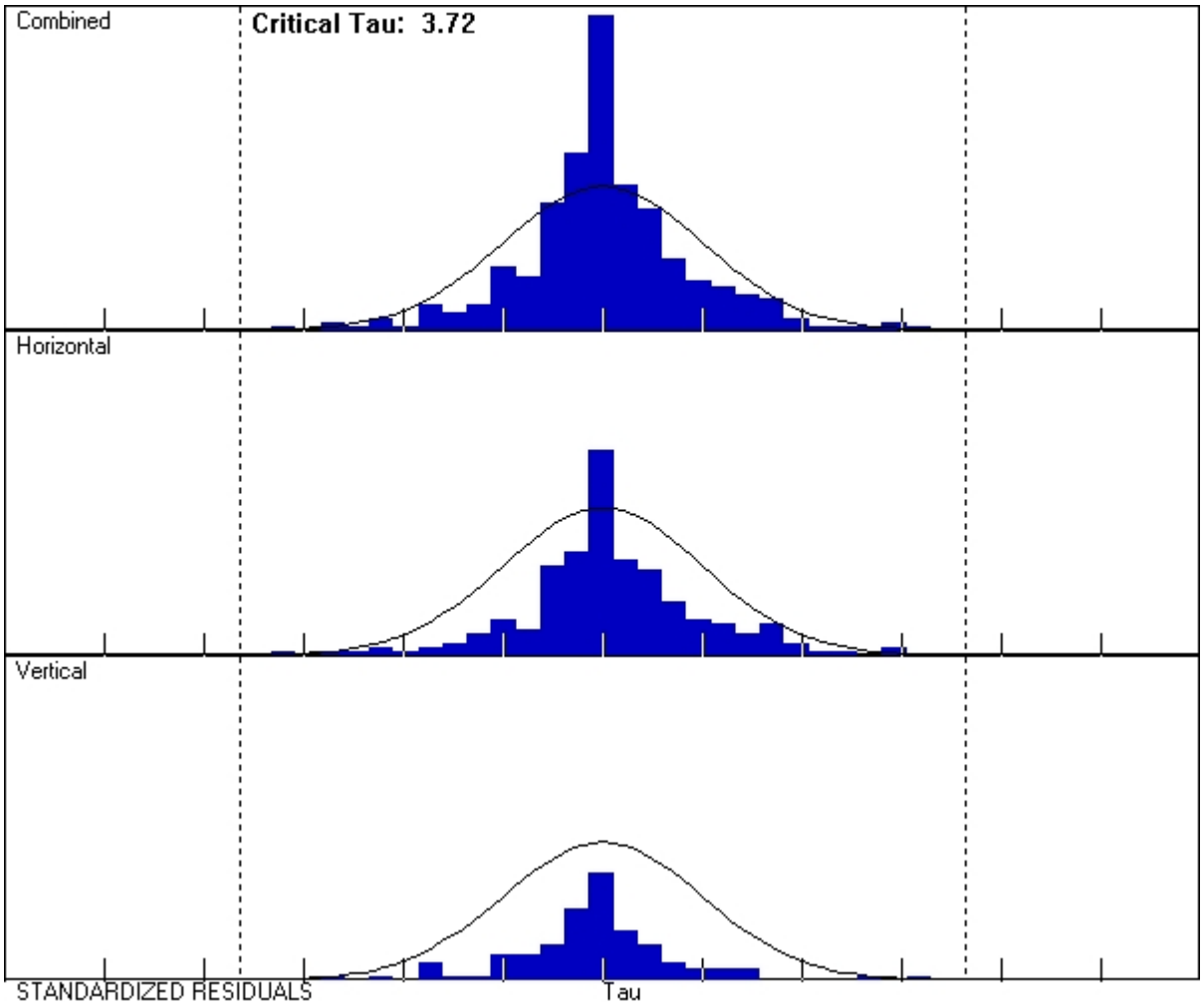
E. Histograms of Standardized Residuals

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

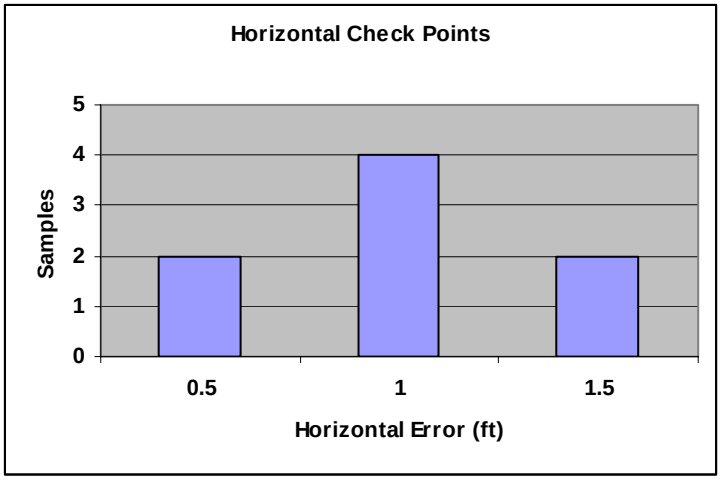
C. Horizontal Accuracy Assessment

HORIZONTAL ACCURACY CHECK POINTS

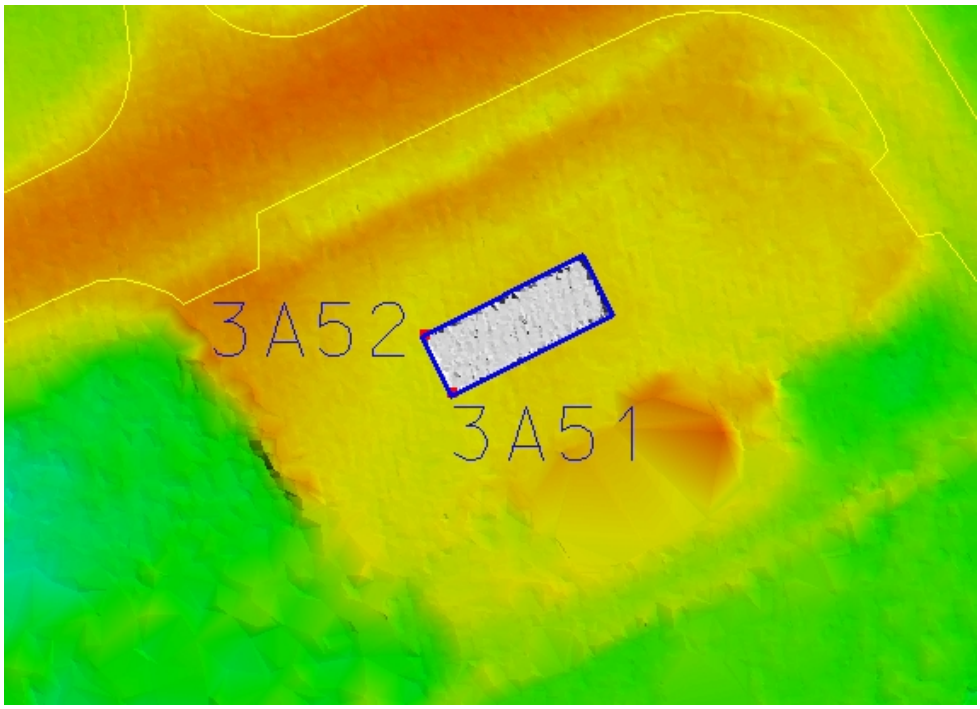
Horizontal check points were collected at several sites within the project area, in order to verify the horizontal accuracy of the LiDAR data. These check points are collected in the same locations as the vertical ground truth data, from base stations that were established in the static GPS network.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

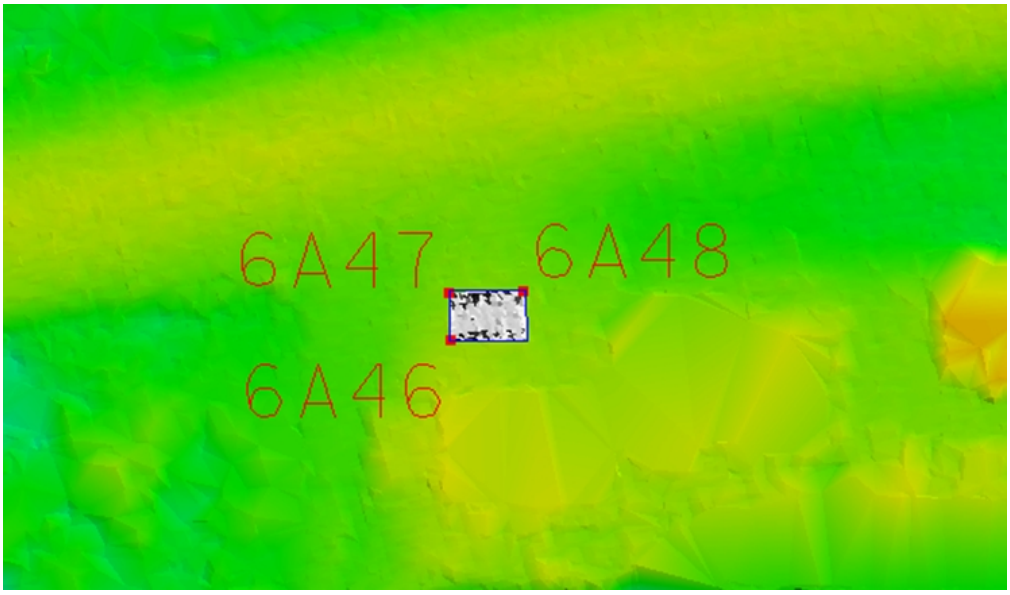
Horizontal Check Points (ft)	
RMSEr	0.94
Mean	0.87
Standard Error	0.13
Median	0.84
Standard Deviation	0.38
Sample Variance	0.14
Kurtosis	-0.90
Skewness	0.13
Range	1.05
Minimum	0.38
Maximum	1.43



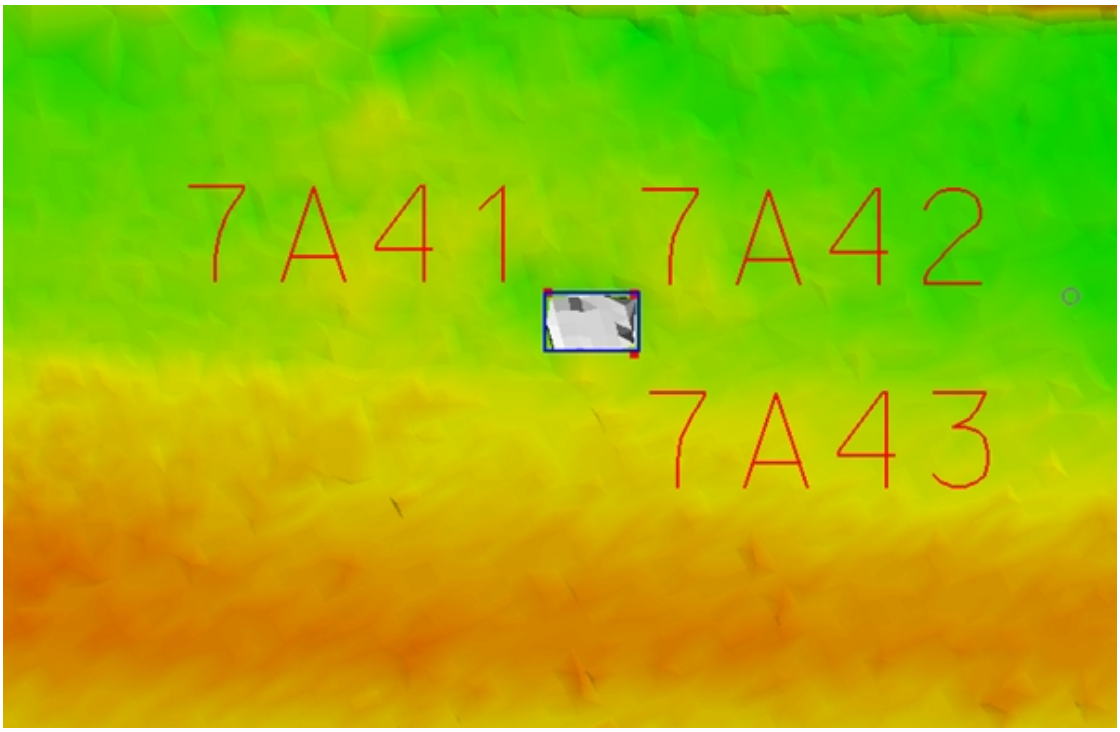
Site 3 – Horizontal Check Point



Site 6 – Horizontal Check Point



Site 7 – Horizontal Check Points



CONTROL MARK DATA SHEETS

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DE9146 ***********************************************************************
DE9146  CORS       -  This is a GPS Continuously Operating Reference Station.
DE9146  DESIGNATION -  KEY WEST CORS ARP
DE9146  CORS_ID    -  KWST
DE9146  PID        -  DE9146
DE9146  STATE/COUNTY-  FL/MONROE
DE9146  USGS QUAD   -  KEY WEST (1971)
DE9146
DE9146                    *CURRENT SURVEY CONTROL
DE9146 _____________________________________________________________________
DE9146* NAD 83(CORS)-  24 33 13.26749(N)    081 45 15.40020(W)     ADJUSTED
DE9146* NAVD 88     -
DE9146 _____________________________________________________________________
DE9146  EPOCH DATE  -       2002.00
DE9146  X           -     832,506.096 (meters)                 COMP
DE9146  Y           -  -5,744,714.917 (meters)                 COMP
DE9146  Z           -   2,634,183.202 (meters)                 COMP
DE9146  ELLIP HEIGHT-         -10.164 (meters)          (12/??/02) GPS OBS
DE9146  GEOID HEIGHT-          -21.75  (meters)                 GEOID03
DE9146
DE9146  HORZ ORDER  -  SPECIAL (CORS)
DE9146  ELLP ORDER  -  SPECIAL (CORS)
DE9146
DE9146.ITRF positions are available for this station.
DE9146.The coordinates were established by GPS observations
DE9146.and adjusted by the National Geodetic Survey in December 2002.
DE9146.The coordinates are valid at the epoch date displayed above.
DE9146.The epoch date for horizontal control is a decimal equivalence
DE9146.of Year/Month/Day.
DE9146
DE9146
DE9146.The PID for the CORS L1 Phase Center is DE9147.
DE9146
DE9146.The XYZ, and position/ellipsoidal ht. are equivalent.
DE9146
DE9146.The ellipsoidal height was determined by GPS observations
DE9146.and is referenced to NAD 83.
DE9146
DE9146.The geoid height was determined by GEOID03.
DE9146
DE9146;                North         East      Units Scale Factor Converg.
DE9146;SPC FL E     -    24,614.810   123,585.870   MT  1.00001327   -0 18 48.4
DE9146;SPC FL E     -    80,757.09    405,464.64    sFT  1.00001327   -0 18 48.4
DE9146
DE9146!           -  Elev Factor  x  Scale Factor =   Combined Factor
DE9146!SPC FL E     -   1.00000160  x   1.00001327  =   1.00001487
DE9146
DE9146                     SUPERSEDED SURVEY CONTROL
DE9146
DE9146.No superseded survey control is available for this station.
DE9146
DE9146_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH2361215738(NAD 83)
DE9146_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DE9146
DE9146                     STATION DESCRIPTION
DE9146
```

DE9146'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
DE9146'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
DE9146'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DE9146'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DE9146'   FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
DE9146'   HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

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AF9578 ***********************************************************************
AF9578  CORS       -  This is a GPS Continuously Operating Reference Station.
AF9578  DESIGNATION -  KEY WEST 1 CORS ARP
AF9578  CORS_ID    -  KYW1
AF9578  PID        -  AF9578
AF9578  STATE/COUNTY-  FL/MONROE
AF9578  USGS QUAD   -  BOCA CHICA KEY (1971)
AF9578
AF9578                    *CURRENT SURVEY CONTROL
AF9578  ______________________________________________________________________
AF9578* NAD 83(CORS)-  24 34 56.16457(N)    081 39 10.90470(W)     ADJUSTED
AF9578* NAVD 88     -
AF9578  ______________________________________________________________________
AF9578  EPOCH DATE  -        2002.00
AF9578  X           -     842,465.065 (meters)                 COMP
AF9578  Y           -  -5,741,930.642 (meters)                 COMP
AF9578  Z           -   2,637,061.739 (meters)                 COMP
AF9578  ELLIP HEIGHT-         -12.143 (meters)          (03/??/02) GPS OBS
AF9578  GEOID HEIGHT-          -21.75  (meters)                 GEOID03
AF9578
AF9578  HORZ ORDER  -  SPECIAL (CORS)
AF9578  ELLP ORDER  -  SPECIAL (CORS)
AF9578
AF9578.ITRF positions are available for this station.
AF9578.The coordinates were established by GPS observations
AF9578.and adjusted by the National Geodetic Survey in March 2002.
AF9578.The coordinates are valid at the epoch date displayed above.
AF9578.The epoch date for horizontal control is a decimal equivalence
AF9578.of Year/Month/Day.
AF9578
AF9578
AF9578.The PID for the CORS L1 Phase Center is AJ7905.
AF9578
AF9578.The XYZ, and position/ellipsoidal ht. are equivalent.
AF9578
AF9578.The ellipsoidal height was determined by GPS observations
AF9578.and is referenced to NAD 83.
AF9578
AF9578.The geoid height was determined by GEOID03.
AF9578
AF9578;                North         East     Units Scale Factor Converg.
AF9578;SPC FL E     -    27,728.394   133,858.464   MT  0.99999519   -0 16 18.0
AF9578;SPC FL E     -    90,972.24    439,167.31   sFT  0.99999519   -0 16 18.0
AF9578
AF9578!           -  Elev Factor  x  Scale Factor =   Combined Factor
AF9578!SPC FL E     -  1.00000191  x   0.99999519  =   0.99999710
AF9578
AF9578                     SUPERSEDED SURVEY CONTROL
AF9578
AF9578  NAD 83(CORS)-  24 34 56.16457(N)    081 39 10.90497(W) AD(1997.00) c
AF9578  ELLIP H (07/??/98)  -12.165  (m)                    GP(1997.00) c c
AF9578  NAD 83(CORS)-  24 34 56.16450(N)    081 39 10.90475(W) AD(1996.00) c
AF9578  ELLIP H (12/??/96)  -12.108  (m)                    GP(1996.00) c c
AF9578
AF9578.Superseded values are not recommended for survey control.
AF9578.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
```

AF9578.See file dsdata.txt to determine how the superseded data were derived.
AF9578
AF9578_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH3388118851(NAD 83)
AF9578_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
AF9578
AF9578 STATION DESCRIPTION
AF9578
AF9578'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
AF9578'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
AF9578'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
AF9578'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
AF9578' FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
AF9578' HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

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DF7050 ************************************************************************
DF7050  CORS        -  This is a GPS Continuously Operating Reference Station.
DF7050  DESIGNATION -  MIAMI TNT CORS ARP
DF7050  CORS_ID     -  MTNT
DF7050  PID         -  DF7050
DF7050  STATE/COUNTY-  FL/COLLIER
DF7050  USGS QUAD   -  FIFTYMILE BEND (1995)
DF7050
DF7050                    *CURRENT SURVEY CONTROL
DF7050 ______________________________________________________________________
DF7050* NAD 83(CORS)-  25 51 56.76081(N)    080 54 25.18701(W)     ADJUSTED
DF7050* NAVD 88     -
DF7050 ______________________________________________________________________
DF7050  EPOCH DATE  -        2002.00
DF7050  X           -     907,579.127 (meters)                 COMP
DF7050  Y           -  -5,670,639.703 (meters)                 COMP
DF7050  Z           -   2,765,679.841 (meters)                 COMP
DF7050  ELLIP HEIGHT-         -18.942 (meters)          (08/??/03) ADJUSTED
DF7050  GEOID HEIGHT-         -24.29  (meters)                 GEOID03
DF7050  HORZ ORDER  -  SPECIAL (CORS)
DF7050  ELLP ORDER  -  SPECIAL (CORS)
DF7050
DF7050.ITRF positions are available for this station.
DF7050.The coordinates were established by GPS observations
DF7050.and adjusted by the National Geodetic Survey in August 2003.
DF7050.The coordinates are valid at the epoch date displayed above.
DF7050.The epoch date for horizontal control is a decimal equivalence
DF7050.of Year/Month/Day.
DF7050
DF7050
DF7050.The PID for the CORS L1 Phase Center is DF7051.
DF7050
DF7050.The XYZ, and position/ellipsoidal ht. are equivalent.
DF7050
DF7050.The ellipsoidal height was determined by GPS observations
DF7050.and is referenced to NAD 83.
DF7050
DF7050.The geoid height was determined by GEOID03.
DF7050
DF7050;                 North         East      Units Scale Factor Converg.
DF7050;SPC FL E     -   169,747.743   209,321.320   MT  0.99994225   +0 02 26.1
DF7050;SPC FL E     -   556,914.05    686,748.36    sFT  0.99994225   +0 02 26.1
DF7050
DF7050!           -  Elev Factor  x  Scale Factor =   Combined Factor
DF7050!SPC FL E     -  1.00000298  x   0.99994225  =   0.99994523
DF7050
DF7050                    SUPERSEDED SURVEY CONTROL
DF7050
DF7050.No superseded survey control is available for this station.
DF7050
DF7050_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ0931860822(NAD 83)
DF7050_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DF7050
DF7050                    STATION DESCRIPTION
DF7050
DF7050'DESCRIBED BY NATIONAL GEODETIC SURVEY 2003
```

DF7050'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
DF7050'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DF7050'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DF7050'   FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
DF7050'   HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

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DF7052 ***************************************************************************
DF7052  CORS        -  This is a GPS Continuously Operating Reference Station.
DF7052  DESIGNATION -  NAPLES CORS ARP
DF7052  CORS_ID     -  NAPL
DF7052  PID         -  DF7052
DF7052  STATE/COUNTY-  FL/COLLIER
DF7052  USGS QUAD   -  NAPLES NORTH (1987)
DF7052
DF7052                    *CURRENT SURVEY CONTROL
DF7052 ______________________________________________________________________________
DF7052* NAD 83(CORS)-  26 08 55.10356(N)    081 46 34.62742(W)     ADJUSTED
DF7052* NAVD 88     -        6.1    (meters)      20.     (feet)  GPS OBS
DF7052 ______________________________________________________________________________
DF7052  EPOCH DATE  -        2002.00
DF7052  X           -     819,477.897 (meters)                  COMP
DF7052  Y           -  -5,670,157.335 (meters)                  COMP
DF7052  Z           -   2,793,845.936 (meters)                  COMP
DF7052  ELLIP HEIGHT-         -17.439 (meters)          (08/??/03) ADJUSTED
DF7052  GEOID HEIGHT-         -23.51  (meters)                  GEOID03
DF7052  HORZ ORDER  -  SPECIAL (CORS)
DF7052  ELLP ORDER  -  SPECIAL (CORS)
DF7052
DF7052.ITRF positions are available for this station.
DF7052.The coordinates were established by GPS observations
DF7052.and adjusted by the National Geodetic Survey in August 2003.
DF7052.The coordinates are valid at the epoch date displayed above.
DF7052.The epoch date for horizontal control is a decimal equivalence
DF7052.of Year/Month/Day.
DF7052
DF7052.The orthometric height was determined by GPS observations and a
DF7052.high-resolution geoid model.
DF7052
DF7052.The PID for the CORS L1 Phase Center is DF7053.
DF7052
DF7052.The XYZ, and position/ellipsoidal ht. are equivalent.
DF7052
DF7052.The ellipsoidal height was determined by GPS observations
DF7052.and is referenced to NAD 83.
DF7052
DF7052.The geoid height was determined by GEOID03.
DF7052
DF7052;                North         East      Units Scale Factor Converg.
DF7052;SPC FL E     -   201,313.299   122,381.251   MT  1.00001554   -0 20 31.7
DF7052;SPC FL E     -   660,475.38    401,512.49    sFT  1.00001554   -0 20 31.7
DF7052
DF7052!           -  Elev Factor  x  Scale Factor =   Combined Factor
DF7052!SPC FL E     -   1.00000274  x   1.00001554  =   1.00001828
DF7052
DF7052                     SUPERSEDED SURVEY CONTROL
DF7052
DF7052.No superseded survey control is available for this station.
DF7052
DF7052_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ2240892377(NAD 83)
DF7052_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DF7052
DF7052                     STATION DESCRIPTION
```

DF7052
DF7052'DESCRIBED BY NATIONAL GEODETIC SURVEY 2003
DF7052'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
DF7052'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DF7052'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DF7052'   FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
DF7052'   HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

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DF7988 ***********************************************************************
DF7988  CORS        -  This is a GPS Continuously Operating Reference Station.
DF7988  DESIGNATION -  RICHMOND CORS ARP
DF7988  CORS_ID     -  RMND
DF7988  PID         -  DF7988
DF7988  STATE/COUNTY-  FL/MIAMI-DADE
DF7988  USGS QUAD   -  GOULDS (1994)
DF7988
DF7988                    *CURRENT SURVEY CONTROL
DF7988 _______________________________________________________________________
DF7988* NAD 83(CORS)-  25 36 49.58921(N)    080 23 02.14117(W)     ADJUSTED
DF7988* NAVD 88     -
DF7988 _______________________________________________________________________
DF7988  EPOCH DATE  -        2002.00
DF7988  X           -     961,335.300 (meters)                 COMP
DF7988  Y           -  -5,674,075.696 (meters)                 COMP
DF7988  Z           -   2,740,535.349 (meters)                 COMP
DF7988  ELLIP HEIGHT-         -14.088 (meters)          (09/??/03) ADJUSTED
DF7988  GEOID HEIGHT-         -25.05  (meters)                 GEOID03
DF7988  HORZ ORDER  -  SPECIAL (CORS)
DF7988  ELLP ORDER  -  SPECIAL (CORS)
DF7988
DF7988.ITRF positions are available for this station.
DF7988.The coordinates were established by GPS observations
DF7988.and adjusted by the National Geodetic Survey in September 2003.
DF7988.The coordinates are valid at the epoch date displayed above.
DF7988.The epoch date for horizontal control is a decimal equivalence
DF7988.of Year/Month/Day.
DF7988
DF7988
DF7988.The PID for the CORS L1 Phase Center is DF7989.
DF7988
DF7988.The XYZ, and position/ellipsoidal ht. are equivalent.
DF7988
DF7988.The ellipsoidal height was determined by GPS observations
DF7988.and is referenced to NAD 83.
DF7988
DF7988.The geoid height was determined by GEOID03.
DF7988
DF7988;                North         East      Units Scale Factor Converg.
DF7988;SPC FL E     -  141,973.202   261,877.112   MT  0.99998844   +0 15 58.8
DF7988;SPC FL E     -  465,790.41    859,175.16    sFT  0.99998844   +0 15 58.8
DF7988
DF7988!           -  Elev Factor  x  Scale Factor =   Combined Factor
DF7988!SPC FL E     -  1.00000221  x   0.99998844  =   0.99999065
DF7988
DF7988                    SUPERSEDED SURVEY CONTROL
DF7988
DF7988.No superseded survey control is available for this station.
DF7988
DF7988_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ6185633057(NAD 83)
DF7988_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DF7988
DF7988                    STATION DESCRIPTION
DF7988
DF7988'DESCRIBED BY NATIONAL GEODETIC SURVEY 2003
```

DF7988'STATION IS A GPS CORS. LATEST INFORMATION INCLUDING POSITIONS AND
DF7988'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DF7988'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DF7988'   FTP CORS.NGS.NOAA.GOV: CORS/COORD AND CORS/STATION_LOG
DF7988'   HTTP://WWW.NGS.NOAA.GOV UNDER PRODUCTS AND SERVICES.

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AA0028 ***********************************************************************
AA0028  CBN        -  This is a Cooperative Base Network Control Station.
AA0028  DESIGNATION -  BAYOU
AA0028  PID        -  AA0028
AA0028  STATE/COUNTY-  FL/MONROE
AA0028  USGS QUAD   -  KEY WEST (1971)
AA0028
AA0028                    *CURRENT SURVEY CONTROL
AA0028 _____________________________________________________________________
AA0028* NAD 83(1999)-  24 34 07.15627(N)    081 46 06.51362(W)     ADJUSTED
AA0028* NAVD 88     -        0.879  (meters)      2.88   (feet)  ADJUSTED
AA0028 _____________________________________________________________________
AA0028  X          -     830,982.435 (meters)                  COMP
AA0028  Y          -  -5,744,229.322 (meters)                  COMP
AA0028  Z          -   2,635,686.805 (meters)                  COMP
AA0028  LAPLACE CORR-          -0.25  (seconds)                 DEFLEC99
AA0028  ELLIP HEIGHT-         -20.849 (meters)          (05/31/01) GPS OBS
AA0028  GEOID HEIGHT-         -21.72  (meters)                  GEOID03
AA0028  DYNAMIC HT  -          0.877 (meters)       2.88  (feet)  COMP
AA0028  MODELED GRAV-      978,955.2   (mgal)                    NAVD 88
AA0028
AA0028  HORZ ORDER  -  B
AA0028  VERT ORDER  -  FIRST     CLASS II
AA0028  ELLP ORDER  -  FIFTH     CLASS I
AA0028
AA0028.The horizontal coordinates were established by GPS observations
AA0028.and adjusted by the National Geodetic Survey in May 2001.
AA0028
AA0028.The orthometric height was determined by differential leveling
AA0028.and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.
AA0028.WARNING-GPS observations at this control monument resulted in a GPS
AA0028.derived orthometric height which differed from the leveled height by
AA0028.more than one decimeter (0.1 meter).
AA0028
AA0028.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA0028
AA0028.The Laplace correction was computed from DEFLEC99 derived deflections.
AA0028
AA0028.The ellipsoidal height was determined by GPS observations
AA0028.and is referenced to NAD 83.
AA0028
AA0028.The geoid height was determined by GEOID03.
AA0028
AA0028.The dynamic height is computed by dividing the NAVD 88
AA0028.geopotential number by the normal gravity value computed on the
AA0028.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AA0028.degrees latitude (g = 980.6199 gals.).
AA0028
AA0028.The modeled gravity was interpolated from observed gravity values.
AA0028
AA0028;                North         East      Units Scale Factor Converg.
AA0028;SPC FL E     -    26,280.828   122,156.675   MT  1.00001599   -0 19 10.3
AA0028;SPC FL E     -    86,223.02    400,775.69   sFT  1.00001599   -0 19 10.3
AA0028;UTM  17      - 2,717,403.843   422,183.235   MT  0.99967479   -0 19 10.3
AA0028
AA0028!           -  Elev Factor  x  Scale Factor =   Combined Factor
```

AA0028!SPC FL E - 1.00000328 x 1.00001599 = 1.00001927
AA0028!UTM 17 - 1.00000328 x 0.99967479 = 0.99967806
AA0028
AA0028|---|
AA0028| PID Reference Object Distance Geod. Az |
AA0028| dddmmss.s |
AA0028| AA0029 BAYOU RM 1 20.974 METERS 14631 |
AA0028| AA1176 KEY WEST DOC E RADIO MAST APPROX. 2.9 KM 2173228.2 |
AA0028| AA1182 KEY WEST DOC S RADIO MAST APPROX. 3.0 KM 2181114.2 |
AA0028| AA1181 KEY WEST DOC CEN RADIO MAST APPROX. 2.9 KM 2185320.0 |
AA0028| AA1180 KEY WEST DOC N RADIO MAST APPROX. 2.8 KM 2193727.7 |
AA0028| AA1184 KEY WEST DOC W RADIO MAST APPROX. 2.9 KM 2201208.0 |
AA0028| AA0027 BAYOU RM 2 32.975 METERS 23758 |
AA0028| AA1202 FLEMING KEY 2 APPROX. 3.1 KM 2861713.4 |
AA0028|---|
AA0028
AA0028 SUPERSEDED SURVEY CONTROL
AA0028
AA0028 NAD 83(1990)- 24 34 07.15445(N) 081 46 06.51366(W) AD( ) B
AA0028 ELLIP H (09/13/90) -20.649 (m) GP( ) 4 1
AA0028 NAD 83(1986)- 24 34 07.16083(N) 081 46 06.50343(W) AD( ) 2
AA0028 NAD 27 - 24 34 05.63501(N) 081 46 07.17515(W) AD( ) 2
AA0028 NAVD 88 (07/31/95) 0.88 (m) 2.9 (f) LEVELING 3
AA0028 NGVD 29 (09/01/92) 1.289 (m) 4.23 (f) ADJUSTED 1 2
AA0028
AA0028.Superseded values are not recommended for survey control.
AA0028.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA0028.See file dsdata.txt to determine how the superseded data were derived.
AA0028
AA0028_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH2218317404(NAD 83)
AA0028_MARKER: DS = TRIANGULATION STATION DISK
AA0028_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
AA0028_SP_SET: CONCRETE SIDEWALK
AA0028_STAMPING: BAYOU 1934
AA0028_MARK LOGO: CGS
AA0028_MAGNETIC: N = NO MAGNETIC MATERIAL
AA0028_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AA0028_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA0028+SATELLITE: SATELLITE OBSERVATIONS - February 16, 1994
AA0028
AA0028 HISTORY - Date Condition Report By
AA0028 HISTORY - 1934 MONUMENTED CGS
AA0028 HISTORY - 1936 GOOD CGS
AA0028 HISTORY - 1943 GOOD CGS
AA0028 HISTORY - 1943 GOOD CGS
AA0028 HISTORY - 1956 GOOD CGS
AA0028 HISTORY - 1966 GOOD CGS
AA0028 HISTORY - 1966 GOOD NGS
AA0028 HISTORY - 1968 GOOD NGS
AA0028 HISTORY - 1976 GOOD NGS
AA0028 HISTORY - 1978 GOOD NGS
AA0028 HISTORY - 1982 GOOD FLDNR
AA0028 HISTORY - 1984 GOOD USPSQD
AA0028 HISTORY - 1986 GOOD USPSQD
AA0028 HISTORY - 1988 GOOD USPSQD
AA0028 HISTORY - 1989 GOOD USPSQD

AA0028 HISTORY - 19890406 GOOD NGS
AA0028 HISTORY - 19911220 GOOD NOS
AA0028 HISTORY - 19940216 GOOD KEISCH
AA0028
AA0028 STATION DESCRIPTION
AA0028
AA0028'DESCRIBED BY COAST AND GEODETIC SURVEY 1934 (WHB)
AA0028'THE STATION IS ON THE NORTHEASTERN PART OF THE ISLAND OF KEY
AA0028'WEST, ABOUT 1.7 MILES ALONG THE BOULEVARD FROM THE INTERSECTION
AA0028'OF DIVISION STREET AND POND ROAD, ABOUT 650 METERS NE OF THE
AA0028'CENTER OF THE ONLY BRIDGE BETWEEN THE POINTS WHERE THE RAILROAD
AA0028'CROSSES THE HIGHWAY, IN THE EDGE OF THE CONCRETE SIDEWALK WHERE
AA0028'IT MEETS THE BACK FACE OF THE SEAWALL.
AA0028'
AA0028'REFERENCE MARK NO. 1 IS ACROSS THE BOULEVARD FROM THE STATION,
AA0028'SET ON TOP OF THE CONCRETE CURB WALL.
AA0028'
AA0028'REFERENCE MARK NO. 2 IS SW OF THE STATION, SET IN THE TOP OF
AA0028'THE CONCRETE SEAWALL.
AA0028'
AA0028'A 10-METER POLE SIGNAL WITH TARGET WAS ERECTED OVER THE STATION.
AA0028
AA0028 STATION RECOVERY (1936)
AA0028
AA0028'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1936 (ERM)
AA0028'STATION RECOVERED WITH ALL MARKS IN GOOD CONDITION. SUPPLEMENTAL
AA0028'DESCRIPTION BELOW--
AA0028'
AA0028'LOCATED ON THE NORTHEASTERN PART OF THE ISLAND OF KEY WEST ABOUT
AA0028'1.7 MILES EASTERLY ALONG ROOSEVELT BOULEVARD FROM THE INTERSECTION
AA0028'OF DIVISION STREET AND N BEACH. LOCATED ALMOST DIRECTLY INSHORE
AA0028'FROM THE MANGROVE KEYS ON THE BAY SIDE KNOWN LOCALLY AS THE
AA0028'SALT POND KEYS, ON THE N EDGE OF THE SIDEWALK, AT THE POINT WHERE
AA0028'THE BOULEVARD BEGINS TO CURVE TO THE EASTWARD.
AA0028
AA0028 STATION RECOVERY (1943)
AA0028
AA0028'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1943 (HCA)
AA0028'STATION RECOVERED AS DESCRIBED. THE STATION IS ON THE
AA0028'NORTHEASTERN PART OF THE KEY WEST ISLAND. IT IS ABOUT 450 YARDS
AA0028'EAST OF THE NEW CAUSEWAY TO SALT POND KEYS AND DIRECTLY INSHORE
AA0028'FROM A SMALL MANGROVE COVERED ISLAND OF THE SALT POND KEYS
AA0028'GROUP. THE STATION IS IN THE SIDEWALK ABOUT SIX INCHES FROM THE
AA0028'EDGE OF THE SEAWALL. IT IS ABOUT IN THE CENTER OF A CURVE OF
AA0028'THE ROAD.
AA0028'
AA0028'REFERENCE MARK NO. 1 IS A STANDARD DISC STAMPED BAYOU R.M. NO. 1
AA0028'1934 CEMENTED IN A DRILL HOLE IN TOP OF THE CURB ACROSS THE
AA0028'BOULEVARD FROM THE STATION.
AA0028'
AA0028'REFERENCE MARK NO. 2 IS A STANDARD DISC STAMPED BAYOU R.M. NO. 2
AA0028'1934 CEMENTED IN A DRILL HOLE IN THE CONCRETE SEAWALL SOUTHWEST
AA0028'OF THE STATION.
AA0028'
AA0028'TO REACH THE STATION FROM THE POST OFFICE IN KEY WEST GO SOUTH
AA0028'ON SIMONTON STREET FOR 0.5 MILES, TURN LEFT ONTO DIVISION STREET

AA0028'AND FOLLOW FOR 2.2 MILES TO STATION ON LEFT. DIVISION STREET
AA0028'RUNS INTO AND BECOMES ROOSEVELT BLVD. THE STATION IS 0.4 MILES
AA0028'BEYOND A SMALL BRIDGE.
AA0028'
AA0028'NOTE--THE DIRECTION TO R.M. NO. 2 FAILED TO CHECK THE 1934
AA0028'DIRECTION BY 27 MIN.
AA0028
AA0028 STATION RECOVERY (1943)
AA0028
AA0028'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1943 (GCM)
AA0028'THE STATION WAS RECOVERED IN GOOD CONDITION. THE DESCRIPTION BY
AA0028'H.C. APPLEQUIST IN 1943 IS ADEQUATE.
AA0028
AA0028 STATION RECOVERY (1956)
AA0028
AA0028'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1956 (JCP)
AA0028'STATION AND REFERENCE MARKS FOUND IN GOOD CONDITION.
AA0028'
AA0028'PREVIOUS DESCRIPTION ADEQUATE, EXCEPT DIVISION STREET IS NOW
AA0028'TRUMAN AVENUE.
AA0028
AA0028 STATION RECOVERY (1966)
AA0028
AA0028'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1966 (RRG)
AA0028'THE STATION AND REFERENCE MARK NO. 1 AND NO. 2 WAS RECOVERED AND
AA0028'ALL IN GOOD CONDITION.
AA0028'
AA0028'THE STATION IS LOCATED ABOUT 1.95 MILES NORTHEAST ALONG
AA0028'U.S. HIGHWAY 1 FROM THE CATHOLIC CHURCH AT KEY WEST. THE STATION
AA0028'IS 378 FEET NORTHEAST OF THE CENTER LINE OF KENNEDY DRIVE, 18.6
AA0028'FEET NORTHWEST OF THE NORTHWEST CURB OF THE HIGHWAY AND SET IN
AA0028'TOP OF CONCRETE SIDEWALK 1/2 FOOT SOUTHEAST OF A CONCRETE SEA
AA0028'WALL. IT IS STAMPED BAYOU 1934.
AA0028'
AA0028'REFERENCE MARK NO. 1 IS 68.9 FEET SOUTHEAST OF AND ACROSS
AA0028'U.S. HIGHWAY 1 FROM THE STATION, SET ON THE TOP OF THE SOUTHEAST
AA0028'CURB OF THE HIGHWAY. IT IS STAMPED BAYOU RM NO 1 1934.
AA0028'
AA0028'REFERENCE MARK NO. 2 IS 108.3 FEET SOUTHWEST OF THE STATION,
AA0028'19.5 FEET NORTHWEST OF THE NORTHWEST CURB OF THE HIGHWAY, SET IN
AA0028'THE TOP OF CONCRETE SEA WALL. IT IS STAMPED BAYOU RM NO 2 1934.
AA0028
AA0028 STATION RECOVERY (1966)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1966
AA0028'2 MI NE FROM KEY WEST.
AA0028'1.95 MILES NORTHEAST ALONG U.S. HIGHWAY 1 FROM THE CATHOLIC
AA0028'CHURCH AT KEY WEST, 378 FEET NORTHEAST OF THE CENTER LINE
AA0028'OF KENNEDY DRIVE, 18.6 FEET NORTHWEST OF THE NORTHWEST CURB
AA0028'OF THE HIGHWAY, SET IN TOP OF CONCRETE SIDEWALK AND 1/2 FOOT
AA0028'SOUTHEAST OF THE SOUTHEAST SIDE OF A CONCRETE SEA WALL.
AA0028
AA0028 STATION RECOVERY (1968)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1968
AA0028'RECOVERED IN GOOD CONDITION.

AA0028
AA0028 STATION RECOVERY (1976)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976 (CLN)
AA0028'STATION NOT OCCUPIED AT THIS TIME.
AA0028'
AA0028'THE STATION MARK, REFERENCE MARKS 1 AND 2 WERE RECOVERED AND
AA0028'FOUND IN GOOD CONDITION. NO AZIMUTH MARK AT THIS STATION.
AA0028'
AA0028'THE STATION IS LOCATED IN THE NORTHEASTERN PART OF KEY WEST KEY,
AA0028'ABOUT 2 MILES NORTHEAST FROM THE CATHOLIC CHURCH IN KEY WEST
AA0028'AND ON THE NORTH SIDE OF U.S. HIGHWAY 1.
AA0028'
AA0028'TO REACH THE STATION FROM THE CATHOLIC CHURCH IN KEY WEST, GO
AA0028'NORTHEASTERLY ON U.S. HIGHWAY 1 FOR 1.9 MILES TO THE JUNCTION OF
AA0028'KENNEDY DRIVE, CONTINUE AHEAD FOR 0.05 MILE TO THE STATION ON THE
AA0028'LEFT IN THE CONCRETE SIDE WALK.
AA0028'
AA0028'STATION MARK IS A STANDARD DISK SET IN A DRILL HOLE IN THE
AA0028'CONCRETE SIDE WALK AND IS STAMPED BAYOU 1934. IT IS 378 FEET
AA0028'NORTHEAST OF THE CENTER OF KENNEDY DRIVE, 18.5 FEET NORTHWEST OF
AA0028'THE NORTH CURB OF U.S. HIGHWAY 1 AND 0.6 FOOT SOUTH OF A CONCRETE
AA0028'SEAWALL.
AA0028'
AA0028'REFERENCE MARK 1 IS A STANDARD DISK SET IN DRILL HOLE IN THE
AA0028'SOUTH CURB OF U.S. HIGHWAY 1 AND IS STAMPED BAYOU 1934 NO 1. IT
AA0028'IS ABOUT 200 FEET WEST OF THE KENTUCKY FRIED CHICKEN RESTAURANT,
AA0028'ABOUT 375 FEET NORTHEAST OF KENNEDY DRIVE, 31 FEET NORTH-NORTHEAST
AA0028'OF THE NORTHEAST CORNER OF A LITTLE LEAGUES BASEBALL FIELD
AA0028'FENCE CORNER AND 26 FEET SOUTH OF THE CENTER OF U.S. HIGHWAY 1.
AA0028'
AA0028'REFERENCE MARK 2 IS A STANDARD DISK SET IN A DRILL HOLE IN THE
AA0028'TOP OF A CONCRETE SEAWALL AND IS STAMPED BAYOU 1934 NO 2. IT IS
AA0028'270 FEET NORTHEAST OF THE CENTER OF KENNEDY DRIVE, AND 19.5 FEET
AA0028'NORTHWEST OF THE NORTH CURB OF U.S. HIGHWAY 1.
AA0028'
AA0028'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN
AA0028'AT KEY WEST.
AA0028
AA0028 STATION RECOVERY (1978)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1978
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1982)
AA0028
AA0028'RECOVERY NOTE BY FL DEPT OF NAT RES 1982
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1984)
AA0028
AA0028'RECOVERY NOTE BY US POWER SQUADRON 1984
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1986)
AA0028

AA0028'RECOVERY NOTE BY US POWER SQUADRON 1986 (JHF)
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1988)
AA0028
AA0028'RECOVERY NOTE BY US POWER SQUADRON 1988 (JHF)
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1989)
AA0028
AA0028'RECOVERY NOTE BY US POWER SQUADRON 1989 (HGB)
AA0028'RECOVERED IN GOOD CONDITION.
AA0028
AA0028 STATION RECOVERY (1989)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1989
AA0028'THE STATION IS LOCATED IN THE NORTHEAST PART OF KEY WEST, ON THE NORTH
AA0028'SIDE OF U.S. HIGHWAY 1 AND 1.8 KM (1.10 MI) WEST-SOUTHWEST OF THE
AA0028'JUNCTION OF U.S. HIGHWAY 1 AND STATE ROUTE A1A, LOCATED AT THE EAST
AA0028'EDGE OF KEY WEST. OWNERSHIP--CITY OF KEY WEST.
AA0028'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 1 AND STATE
AA0028'ROUTE A1A, LOCATED AT THE EAST EDGE OF KEY WEST, GO WEST-SOUTHWEST
AA0028'ALONG U.S. HIGHWAY 1 FOR 1.8 KM (1.10 MI) TO THE STATION ON THE RIGHT,
AA0028'0.08 KM (0.05 MI) EAST OF KENNEDY DRIVE AND 0.48 KM (0.30 MI)
AA0028'WEST-SOUTHWEST OF A WENDYS RESTAURANT.
AA0028'THE STATION IS SET IN THE TOP OF A CONCRETE SIDEWALK, NORTH AND ACROSS
AA0028'THE HIGHWAY FROM THE NORTHEAST CORNER OF A LITTLE LEAGUE BASEBALL
AA0028'FIELD. LOCATED 115.2 M (378.0 FT) EAST-NORTHEAST OF CENTER OF KENNEDY
AA0028'DRIVE, 5.6 M (18.4 FT) NORTHWEST OF THE NORTHWEST CURB OF U.S. HIGHWAY
AA0028'1, 60.1 M (197.2 FT) NORTHEAST OF THE ENTRANCE TO THE BLUE LAGOON
AA0028'MOTEL, 42.7 M (140.1 FT) NORTHWEST AND ACROSS HIGHWAY FROM A SOUTHEAST
AA0028'BANK SIGN POST, 0.31 M (1.0 FT) SOUTH OF THE SEAWALL CURB, 9.1 M
AA0028'(29.9 FT) NORTHEAST OF A HOSPITAL HIGHWAY SIGN POST AND ABOUT 0.15 M
AA0028'(0.5 FT) ABOVE THE LEVEL OF THE HIGHWAY.
AA0028'DESCRIBED BY G.F. SMITH.
AA0028
AA0028 STATION RECOVERY (1991)
AA0028
AA0028'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1991
AA0028'THE STATION IS LOCATED IN THE NORTHEAST PART OF KEY WEST, ON THE NORTH
AA0028'SIDE OF US HIGHWAY 1 AND 1.10 MI (1.77 KM) WEST SOUTHWEST OF THE
AA0028'JUNCTION OF US HWY 1 AND STATE ROUTE A1A, LOCATED AT THE EAST EDGE OF
AA0028'KEY WEST.
AA0028'TO REACH THE STATION FROM THE JUNCTION OF US HIGHWAY 1 AND
AA0028'STATE ROUTE A1A, LOCATED AT THE EAST EDGE OF KEY WEST, HEAD WEST
AA0028'SOUTHWEST ALONG US HIGHWAY 1 FOR 1.10 MI (1.77 KM) TO THE STATION ON
AA0028'THE RIGHT,0.05 MI (0.08 KM) EAST OF KENNEDY DRIVE AND 0.30 MI (0.48
AA0028'KM) WEST SOUTHWEST OF A WENDYS RESTAURANT.
AA0028'THE STATION IS SET IN THE
AA0028'TOP OF A CONCRETE SIDEWALK, NORTH AND ACROSS THE HIGHWAY FROM THE
AA0028'NORTHEAST CORNER OF A LITTLE LEAGUE BASEBALL FIELD.IT IS LOCATED 378.0
AA0028'FT (115.21 M) EAST NORTHEAST OF CENTER OF KENNEDY DRIVE ,18.4 FT (0.12
AA0028'M) NORTHWEST OF THE NORTHWEST CURB OF US HIGHWAY 1, 140.1 FT (42.70 M)
AA0028'NORTHWEST AND ACROSS HIGHWAY FROM A SOUTHEAST BANK SIGN POST, 1.0 FT
AA0028'(0.30 M) SOUTH OF THE SEAWALL CURB, AND ABOUT 0.5 FT (0.15 M) ABOVE
AA0028'THE LEVEL OF THE HIGHWAY.

AA0028
AA0028 STATION RECOVERY (1994)
AA0028
AA0028'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1994 (RTS)
AA0028'RECOVERED AS DESCRIBED. REFERENCES-- X-CUT, SET IN A CONCRETE
AA0028'SIDEWALK, MAGNETIC AZIMUTH OF 220 DEGREES AT 22.00 FT (6.71 M) .
AA0028'X-CUT, SET IN A CONCRETE SIDEWALK, MAGNETIC AZIMUTH OF 104 DEGREES AT
AA0028'11.23 FT (3.42 M) . FOUND A P.K. NAIL IN THE SOUTH SIDE OF CURB,
AA0028'MAGNETIC AZIMUTH OF 56 DEGREES AT 8.92 FT (2.72 M) . SET CARSONITE
AA0028'WITNESS POST, MAGNETIC AZIMUTH OF 114 DEGREES AT 18.2 FT (5.5 M) .

AA1702 **********
AA1702 DESIGNATION - J 397
AA1702 PID   - AA1702
AA1702 STATE/COUNTY- FL/MONROE
AA1702 USGS QUAD   - BIG PINE KEY (1972)
AA1702
AA1702   *CURRENT SURVEY CONTROL
AA1702 _____
AA1702* NAD 83(1990)- 24 39 38.94748(N)   081 16 20.06492(W)   ADJUSTED
AA1702* NAVD 88   -   2.457 (meters)   8.06   (feet) ADJUSTED
AA1702 _____
AA1702 X   -   880,056.101 (meters)   COMP
AA1702 Y   - -5,732,615.296 (meters)   COMP
AA1702 Z   -   2,644,968.455 (meters)   COMP
AA1702 LAPLACE CORR-   -1.44 (seconds)   DEFLEC99
AA1702 ELLIP HEIGHT-   -19.432 (meters)   (09/10/92) GPS OBS
AA1702 GEOID HEIGHT-   -22.01 (meters)   GEOID03
AA1702 DYNAMIC HT -   2.453 (meters)   8.05 (feet) COMP
AA1702 MODELED GRAV-   978,965.4   (mgal)   NAVD 88
AA1702
AA1702 HORZ ORDER - SECOND
AA1702 VERT ORDER - FIRST   CLASS II
AA1702 ELLP ORDER - FOURTH   CLASS II
AA1702
AA1702.The horizontal coordinates were established by GPS observations
AA1702.and adjusted by the National Geodetic Survey in September 1992.
AA1702
AA1702.The orthometric height was determined by differential leveling
AA1702.and adjusted by the NATIONAL GEODETIC SURVEY in May 1994.
AA1702
AA1702.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA1702
AA1702.The Laplace correction was computed from DEFLEC99 derived deflections.
AA1702
AA1702.The ellipsoidal height was determined by GPS observations
AA1702.and is referenced to NAD 83.
AA1702
AA1702.The geoid height was determined by GEOID03.
AA1702
AA1702.The dynamic height is computed by dividing the NAVD 88
AA1702.geopotential number by the normal gravity value computed on the
AA1702.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AA1702.degrees latitude (g = 980.6199 gals.).
AA1702
AA1702.The modeled gravity was interpolated from observed gravity values.
AA1702
AA1702;   North   East   Units Scale Factor Converg.
AA1702;SPC FL E   -   36,299.253   172,443.908   MT 0.99995055   -0 06 48.9
AA1702;SPC FL E   -   119,091.80   565,759.72   sFT 0.99995055   -0 06 48.9
AA1702;UTM 17   - 2,727,418.849   472,453.310   MT 0.99960937   -0 06 48.9
AA1702
AA1702!   - Elev Factor x Scale Factor =   Combined Factor
AA1702!SPC FL E   -   1.00000305 x   0.99995055 =   0.99995360
AA1702!UTM 17   -   1.00000305 x   0.99960937 =   0.99961242
AA1702
AA1702   SUPERSEDED SURVEY CONTROL

AA1702
AA1702 NGVD 29 (09/01/92)   2.880 (m)   9.45   (f) ADJUSTED   1 2
AA1702
AA1702.Superseded values are not recommended for survey control.
AA1702.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA1702.See file dsdata.txt to determine how the superseded data were derived.
AA1702
AA1702_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH7245327419(NAD 83)
AA1702_MARKER: DB = BENCH MARK DISK
AA1702_SETTING: 34 = SET IN THE FOOTINGS OF SMALL/MEDIUM STRUCTURES
AA1702_SP_SET: CONCRETE BASE FOR MANHOLE
AA1702_STAMPING: J 397 1988
AA1702_MARK LOGO: NGS
AA1702_MAGNETIC: N = NO MAGNETIC MATERIAL
AA1702_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AA1702+STABILITY: SURFACE MOTION
AA1702_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA1702+SATELLITE: SATELLITE OBSERVATIONS - January 30, 1992
AA1702
AA1702 HISTORY   - Date   Condition   Report By
AA1702 HISTORY   - 1988   MONUMENTED   FLDNR
AA1702 HISTORY   - 19911125 GOOD
AA1702 HISTORY   - 19920130 GOOD   NOS
AA1702 HISTORY   - 20050407 GOOD   USPSQD
AA1702
AA1702   STATION DESCRIPTION
AA1702
AA1702'DESCRIBED BY FL DEPT OF NAT RES 1988
AA1702'TO REACH THE MARK FROM THE POST OFFICE IN BIG PINE KEY, GO NORTH AND
AA1702'EAST ON U.S. HIGHWAY 1 FOR 6.9 MI (11.1 KM) TO THE MARK IN THE
AA1702'MEDIAN ON THE NORTH SIDE OF THE HIGHWAY, THE MARK IS IN THE SOUTHEAST
AA1702'CORNER OF THE 8 X 9 MANHOLE COVER, LEVEL WITH THE SURFACE OF THE
AA1702'GROUND. LOCATED 35.0 FT (10.7 M) SOUTH OF THE CENTERLINE OF THE
AA1702'WESTBOUND LANE, 22.0 FT (6.7 M) NORTH OF THE CENTERLINE OF THE
AA1702'EASTBOUND LANE AND 430.0 FT (131.1 M) EAST OF THE EAST EDGE OF MEDIAN
AA1702'CROSSING ENTRANCE TO THE BAHIA HONDA STATE PARK.
AA1702
AA1702   STATION RECOVERY (1991)
AA1702
AA1702'RECOVERED 1991
AA1702'RECOVERED IN GOOD CONDITION.
AA1702
AA1702   STATION RECOVERY (1992)
AA1702
AA1702'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1992
AA1702'STATION J39 IS LOCATED ON BAHIA HONDA KEY AT THE WESTERN PART OF THE
AA1702'KEY IN THE MEDIAN STRIP OF US HIGHWAY 1.
AA1702'TO REACH THE STATION FROM
AA1702'THE ENTRANCE TO THE BAHIA HONDA STATE PARK HEAD EAST FOR 0.1 MI (0.16
AA1702'KM) TO THE STATION IN THE SOUTH EAST CORNER OF A 10 FT (3.05 M) BY 10
AA1702'FT (3.05 M) CONCRETE SLAB. STATION IS STAMPED J39 1988.
AA1702
AA1702   STATION RECOVERY (2005)
AA1702
AA1702'RECOVERY NOTE BY US POWER SQUADRON 2005 (JLS)
AA1702'RECOVERED IN GOOD CONDITION.

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AA0168 *********************************************************************
AA0168  DESIGNATION -  N 327
AA0168  PID         -  AA0168
AA0168  STATE/COUNTY-  FL/MONROE
AA0168  USGS QUAD   -  SUMMERLAND KEY (1972)
AA0168
AA0168                     *CURRENT SURVEY CONTROL
AA0168 ______________________________________________________________________
AA0168* NAD 83(1986)-  24 40 40.     (N)    081 29 57.     (W)     SCALED
AA0168* NAVD 88     -         0.863  (meters)       2.83   (feet)  ADJUSTED
AA0168 ______________________________________________________________________
AA0168  GEOID HEIGHT-         -21.70  (meters)                  GEOID03
AA0168  DYNAMIC HT  -          0.861 (meters)       2.82  (feet)  COMP
AA0168  MODELED GRAV-     978,969.6   (mgal)                     NAVD 88
AA0168
AA0168  VERT ORDER  -  FIRST     CLASS II
AA0168
AA0168.The horizontal coordinates were scaled from a topographic map and have
AA0168.an estimated accuracy of +/- 6 seconds.
AA0168
AA0168.The orthometric height was determined by differential leveling
AA0168.and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.
AA0168
AA0168.The geoid height was determined by GEOID03.
AA0168
AA0168.The dynamic height is computed by dividing the NAVD 88
AA0168.geopotential number by the normal gravity value computed on the
AA0168.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AA0168.degrees latitude (g = 980.6199 gals.).
AA0168
AA0168.The modeled gravity was interpolated from observed gravity values.
AA0168
AA0168;                North         East     Units  Estimated Accuracy
AA0168;SPC FL E     -    38,240.      149,480.      MT  (+/- 180 meters Scaled)
AA0168
AA0168                       SUPERSEDED SURVEY CONTROL
AA0168
AA0168  NGVD 29 (09/01/92)    1.279  (m)           4.20   (f) ADJUSTED    1 2
AA0168
AA0168.Superseded values are not recommended for survey control.
AA0168.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA0168.See file dsdata.txt to determine how the superseded data were derived.
AA0168
AA0168_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH494293(NAD 83)
AA0168_MARKER: DB = BENCH MARK DISK
AA0168_SETTING: 66 = SET IN ROCK OUTCROP
AA0168_SP_SET: IN A DRILL HOLE IN BEDROCK
AA0168_STAMPING: N 327 1970
AA0168_MARK LOGO: CGS
AA0168_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
AA0168+STABILITY: POSITION/ELEVATION WELL
AA0168
AA0168  HISTORY     - Date     Condition        Report By
AA0168  HISTORY     - 1970     MONUMENTED       NGS
AA0168  HISTORY     - 1982     GOOD             LOCSUR
AA0168  HISTORY     - 19881108 GOOD             FLDNR
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AA0168
AA0168 STATION DESCRIPTION
AA0168
AA0168'DESCRIBED BY NATIONAL GEODETIC SURVEY 1970
AA0168'21.4 MI NE FROM KEY WEST.
AA0168'ABOUT 20.65 MILES NORTHEAST ALONG U.S. HIGHWAY 1 FROM THE
AA0168'CATHOLIC CHURCH AT KEY WEST, THENCE 0.8 MILE NORTH ALONG A
AA0168'BLACK TOPPED ROAD, ON CUDJOE KEY, 35.2 FEET EAST OF THE CENTER
AA0168'LINE OF THE ROAD, 29 FEET NORTH OF THE CENTER LINE OF A DRIVEWAY
AA0168'LEADING EAST TO THE CITY ELECTRIC SYSTEM OF KEY WEST BLDG, 19.6
AA0168'FEET SOUTHWEST OF THE NORTHWEST CORNER OF THE HIGH FENCE AROUND
AA0168'THE BLDG, 31 FEET NORTHWEST OF THE CENTER OF A LARGE STEEL
AA0168'GATE IN FENCE LINE, SET IN THE TOP OF A LARGE MASS OF
AA0168'OUTCROPPING BEDROCK WHICH IS FLUSH WITH THE GROUND AND ABOUT
AA0168'1/2 FOOT BELOW THE LEVEL OF THE ROAD.
AA0168
AA0168 STATION RECOVERY (1982)
AA0168
AA0168'RECOVERY NOTE BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1982
AA0168'ABOUT 20.65 MILES NORTHEAST ALONG US HWY. 1, FROM THE CATHOLIC CHURCH
AA0168'AT KEY WEST, THENCE 0.8 MILE NORTH ALONG A BLACK TOPPED ROAD ON
AA0168'CUDJOE KEY, 35.2 FEET EAST OF THE CENTERLINE OF THE ROAD, 29 FEET
AA0168'NORTH OF THE CENTERLINE OF A DRIVEWAY LEADING EAST TO THE CITY
AA0168'ELECTRIC SYSTEM OF KEY WEST BUILDING. SET IN THE TOP OF A LARGE MASS
AA0168'OF OUTCROPPING ROCK.
AA0168
AA0168 STATION RECOVERY (1988)
AA0168
AA0168'RECOVERY NOTE BY FL DEPT OF NAT RES 1988
AA0168'RECOVERED IN GOOD CONDITION.

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AA0236 ***********************************************************************
AA0236  DESIGNATION -  Z 272
AA0236  PID         -  AA0236
AA0236  STATE/COUNTY-  FL/MONROE
AA0236  USGS QUAD   -  BIG PINE KEY (1972)
AA0236
AA0236                      *CURRENT SURVEY CONTROL
AA0236 _____________________________________________________________________
AA0236* NAD 83(1986)-  24 40 12.     (N)    081 21 25.     (W)     SCALED
AA0236* NAVD 88     -         1.371  (meters)       4.50   (feet)  ADJUSTED
AA0236 _____________________________________________________________________
AA0236  GEOID HEIGHT-         -21.88  (meters)                  GEOID03
AA0236  DYNAMIC HT  -          1.368 (meters)       4.49  (feet)  COMP
AA0236  MODELED GRAV-     978,967.6   (mgal)                     NAVD 88
AA0236
AA0236  VERT ORDER  -  FIRST     CLASS II
AA0236
AA0236.The horizontal coordinates were scaled from a topographic map and have
AA0236.an estimated accuracy of +/- 6 seconds.
AA0236
AA0236.The orthometric height was determined by differential leveling
AA0236.and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.
AA0236
AA0236.The geoid height was determined by GEOID03.
AA0236
AA0236.The dynamic height is computed by dividing the NAVD 88
AA0236.geopotential number by the normal gravity value computed on the
AA0236.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AA0236.degrees latitude (g = 980.6199 gals.).
AA0236
AA0236.The modeled gravity was interpolated from observed gravity values.
AA0236
AA0236;                North         East     Units  Estimated Accuracy
AA0236;SPC FL E     -    37,340.      163,870.      MT  (+/- 180 meters Scaled)
AA0236
AA0236                       SUPERSEDED SURVEY CONTROL
AA0236
AA0236  NGVD 29 (09/01/92)    1.793  (m)           5.88   (f) ADJUSTED    1 2
AA0236
AA0236.Superseded values are not recommended for survey control.
AA0236.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA0236.See file dsdata.txt to determine how the superseded data were derived.
AA0236
AA0236_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH638284(NAD 83)
AA0236_MARKER: DB = BENCH MARK DISK
AA0236_SETTING: 34 = SET IN THE FOOTINGS OF SMALL/MEDIUM STRUCTURES
AA0236_SP_SET: CONCRETE MANHOLE BASE
AA0236_STAMPING: Z 272 1966
AA0236_MARK LOGO: CGS
AA0236_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AA0236+STABILITY: SURFACE MOTION
AA0236
AA0236  HISTORY     - Date     Condition        Report By
AA0236  HISTORY     - 1966     MONUMENTED       CGS
AA0236  HISTORY     - 1970     GOOD             NGS
AA0236  HISTORY     - 1978     GOOD             NGS
```

AA0236 HISTORY - 1982 GOOD LOCSUR
AA0236 HISTORY - 1984 GOOD USPSQD
AA0236 HISTORY - 1987 GOOD USPSQD
AA0236 HISTORY - 1988 GOOD USPSQD
AA0236 HISTORY - 19901026 GOOD FLDNR
AA0236
AA0236 STATION DESCRIPTION
AA0236
AA0236'DESCRIBED BY COAST AND GEODETIC SURVEY 1966
AA0236'19.2 MI SW FROM MARATHON.
AA0236'ABOUT 19.15 MILES SOUTHWEST ALONG U.S. HIGHWAY 1 FROM THE
AA0236'POST OFFICE AT MARATHON, ON BIG PINE KEY, ABOUT 285 FEET
AA0236'WEST-NORTHWEST OF THE JUNCTION OF U.S. HIGHWAY 1 AND STATE
AA0236'HIGHWAY 940, SET ON THE TOP OF THE NORTHWEST CORNER OF A
AA0236'10-BY-9-FOOT CONCRETE BASE WITH MANHOLE COVER, 52 FEET NORTH
AA0236'OF THE CENTER LINE OF U.S. HIGHWAY 1, 21.7 FEET EAST OF THE
AA0236'NORTHEAST CORNER OF A CONCRETE BUILDING NO. K 10, 1 FOOT
AA0236'ABOVE THE LEVEL OF THE GROUND AND ABOUT 1 FOOT ABOVE THE LEVEL
AA0236'OF THE HIGHWAY.
AA0236
AA0236 STATION RECOVERY (1970)
AA0236
AA0236'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1970
AA0236'RECOVERED IN GOOD CONDITION.
AA0236
AA0236 STATION RECOVERY (1978)
AA0236
AA0236'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1978
AA0236'RECOVERED IN GOOD CONDITION.
AA0236
AA0236 STATION RECOVERY (1982)
AA0236
AA0236'RECOVERY NOTE BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1982
AA0236'19.1 MILE SOUTHWEST ON HIGHWAY 1 FROM MARATHON POST OFFICE TOP OF 10
AA0236'X 9 CONCRETE BASE WITH MANHOLE COVER 22' E OF A CONCRETE BLDG NO K
AA0236'10, FLA. KEY AQUADUCT PUMPING STA.
AA0236
AA0236 STATION RECOVERY (1984)
AA0236
AA0236'RECOVERY NOTE BY US POWER SQUADRON 1984
AA0236'ADDITIONAL INFORMATION: MARK IS LOCATED BETWEEN U.S. 1 AND NEWLY
AA0236'CONSTRUCTED BLACK TOP BICYCLE PATH: STATE HIGHWAY 940 IS NOW KNOWN AS
AA0236'KEY DEER BLVD AND COUNTY ROAD 940 (C-940).
AA0236
AA0236 STATION RECOVERY (1987)
AA0236
AA0236'RECOVERY NOTE BY US POWER SQUADRON 1987 (HGB)
AA0236'RECOVERED IN GOOD CONDITION.
AA0236
AA0236 STATION RECOVERY (1988)
AA0236
AA0236'RECOVERY NOTE BY US POWER SQUADRON 1988 (HGB)
AA0236'RECOVERED IN GOOD CONDITION.
AA0236
AA0236 STATION RECOVERY (1990)
AA0236

AA0236'RECOVERY NOTE BY FL DEPT OF NAT RES 1990
AA0236'RECOVERED IN GOOD CONDITION.

```
AA1644 **********************************************************************
AA1644  CBN        -  This is a Cooperative Base Network Control Station.
AA1644  DESIGNATION -  FLGPS MALLOY
AA1644  PID        -  AA1644
AA1644  STATE/COUNTY-  FL/MONROE
AA1644  USGS QUAD   -  BOCA CHICA KEY (1971)
AA1644
AA1644                    *CURRENT SURVEY CONTROL
AA1644 ______________________________________________________________________
AA1644* NAD 83(1999)-  24 34 26.95555(N)    081 44 19.85093(W)     ADJUSTED
AA1644* NAVD 88     -        1.6    (meters)       5.     (feet)  GPS OBS
AA1644 ______________________________________________________________________
AA1644  X          -     833,916.455 (meters)                  COMP
AA1644  Y          -  -5,743,548.841 (meters)                   COMP
AA1644  Z          -   2,636,241.150 (meters)                   COMP
AA1644  LAPLACE CORR-          -0.31  (seconds)                 DEFLEC99
AA1644  ELLIP HEIGHT-         -20.081 (meters)          (05/11/01) GPS OBS
AA1644  GEOID HEIGHT-          -21.73  (meters)                 GEOID03
AA1644
AA1644  HORZ ORDER  -  B
AA1644  ELLP ORDER  -  THIRD     CLASS I
AA1644
AA1644.The horizontal coordinates were established by GPS observations
AA1644.and adjusted by the National Geodetic Survey in May 2001.
AA1644
AA1644.The orthometric height was determined by GPS observations and a
AA1644.high-resolution geoid model.
AA1644
AA1644.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AA1644
AA1644.The Laplace correction was computed from DEFLEC99 derived deflections.
AA1644
AA1644.The ellipsoidal height was determined by GPS observations
AA1644.and is referenced to NAD 83.
AA1644
AA1644.The geoid height was determined by GEOID03.
AA1644
AA1644;                North         East     Units Scale Factor Converg.
AA1644;SPC FL E     -    26,873.603   125,161.296   MT  1.00001032   -0 18 26.2
AA1644;SPC FL E     -    88,167.81    410,633.35   sFT  1.00001032   -0 18 26.2
AA1644;UTM  17      - 2,717,996.416   425,186.831   MT  0.99966912   -0 18 26.2
AA1644
AA1644!            -  Elev Factor  x  Scale Factor =   Combined Factor
AA1644!SPC FL E     -   1.00000316  x   1.00001032  =   1.00001348
AA1644!UTM  17      -   1.00000316  x   0.99966912  =   0.99967227
AA1644
AA1644:              Primary Azimuth Mark                  Grid Az
AA1644:SPC FL E     -  FLGPS MALLOY AZ MK                    251 50 56.8
AA1644:UTM  17      -  FLGPS MALLOY AZ MK                   251 50 56.8
AA1644
AA1644|----------------------------------------------------------------------|
AA1644| PID    Reference Object                 Distance      Geod. Az  |
AA1644|                                        dddmmss.s |
AA1644| AA1648 FLGPS MALLOY AZ MK               APPROX. 1.1 KM 2513230.6 |
AA1644|----------------------------------------------------------------------|
AA1644
```

AA1644 SUPERSEDED SURVEY CONTROL
AA1644
AA1644 NAD 83(1990)- 24 34 26.95409(N) 081 44 19.85091(W) AD( ) B
AA1644 ELLIP H (09/13/90) -19.916 (m) GP( ) 4 1
AA1644 NGVD 29 (09/13/90) 2.0 (m) 7. (f) GPS OBS
AA1644
AA1644.Superseded values are not recommended for survey control.
AA1644.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA1644.See file dsdata.txt to determine how the superseded data were derived.
AA1644
AA1644_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMH2518717996(NAD 83)
AA1644_MARKER: I = METAL ROD
AA1644_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
AA1644_SP_SET: STAINLESS STEEL ROD IN SLEEVE
AA1644_STAMPING: FLGPS MALLOY 1989
AA1644_MARK LOGO: NGS
AA1644_PROJECTION: FLUSH
AA1644_MAGNETIC: I = MARKER IS A STEEL ROD
AA1644_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AA1644_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA1644+SATELLITE: SATELLITE OBSERVATIONS - April 07, 1998
AA1644_ROD/PIPE-DEPTH: 12.0 meters
AA1644_SLEEVE-DEPTH : 0.91 meters
AA1644
AA1644 HISTORY - Date Condition Report By
AA1644 HISTORY - 1989 MONUMENTED NGS
AA1644 HISTORY - 19911218 GOOD NOS
AA1644 HISTORY - 19931116 GOOD NOS
AA1644 HISTORY - 19940210 GOOD KEISCH
AA1644 HISTORY - 19980407 GOOD NGS
AA1644
AA1644 STATION DESCRIPTION
AA1644
AA1644'DESCRIBED BY NATIONAL GEODETIC SURVEY 1989
AA1644'THE STATION IS LOCATED ON STOCK ISLAND IN THE FLORIDA KEYS, IN THE
AA1644'MEDIAN OF U.S. HIGHWAY 1. OWNERSHIP--HIGHWAY RIGHT-OF-WAY.
AA1644'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND COW
AA1644'KEY CHANNEL, GO NORTHEAST FOR 1.12 KM (0.70 MI) ON HIGHWAY 1 TO THE
AA1644'STATION ON LEFT, IN THE MEDIAN OF HIGHWAY, IN FRONT OF THE DOOR TO
AA1644'CORAL ISLE BAR.
AA1644'THE STATION IS RECESSED 2 CM BELOW GROUND. LOCATED 25.91 M (85.0 FT)
AA1644'EAST FROM A KEEP OFF MEDIAN SIGN, 8.17 M (26.8 FT) NORTH FROM THE
AA1644'CENTERLINE OF THE NORTHBOUND LANES OF HIGHWAY, 4.79 M (15.7 FT) SOUTH
AA1644'FROM THE CENTERLINE OF THE SOUTHBOUND LANES OF HIGHWAY AND 0.06 M
AA1644'(0.2 FT) EAST FROM A CARSONITE WITNESS POST. NOTE--ACCESS TO DATUM
AA1644'POINT IS HAD THROUGH A 5-INCH LOGO CAP.
AA1644'DESCRIBED BY R.L. MALLOY.
AA1644
AA1644 STATION RECOVERY (1991)
AA1644
AA1644'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1991
AA1644'THE STATION IS LOCATED ON STOCK ISLAND IN THE FLORIDA KEYS, IN THE
AA1644'MEDIAN OF U.S. HIGHWAY 1.
AA1644'TO REACH THE STATION FROM THE INTERSECTION
AA1644'OF U.S. HIGHWAY 1 AND COW KEY CHANNEL, GO NORTHEAST FOR 0.70 MI (1.13
AA1644'KM) ON HWY 1 TO THE STATION ON LEFT, IN MEDIAN OF HIGHWAY, IN FRONT OF

AA1644'THE DOOR TO CORAL ISLE BAR.
AA1644'THE STATION IS RECESSED 2 CM BELOW
AA1644'GROUND. LOCATED 85.0 FT (25.91 M) EAST FROM A KEEP OFF MEDIAN SIGN
AA1644'26.8 FT (8.17 M) NORTH FROM THE CENTERLINE OF THE NORTHBOUND LANES OF
AA1644'HIGHWAY, 15.7 FT (4.79 M) SOUTH FROM THE CENTERLINE OF THE SOUTHBOUND
AA1644'LANES OF HIGHWAY AND 0.2 FT (0.06 M) EAST FROM A WITNESS POST. ACCESS
AA1644'TO DATUM POINT IS THROUGH A 5-INCH LOGO CAP WITH THE CAP STAMPED
AA1644'FLGPS MALLOY.
AA1644
AA1644 STATION RECOVERY (1993)
AA1644
AA1644'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1993 (RAH)
AA1644'RECOVERED AS DESCRIBED.
AA1644
AA1644 STATION RECOVERY (1994)
AA1644
AA1644'RECOVERY NOTE BY KEITH AND SCHNARS - LAKELAND 1994 (RTS)
AA1644'RECOVERED AS DESCRIBED.
AA1644
AA1644 STATION RECOVERY (1998)
AA1644
AA1644'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (ALG)
AA1644'RECOVERED AS DESCRIBED USING THE 1991 DESCRIPTION.

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

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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the spatial data company

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	1B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.12N		HGT. MTS
LONGITUDE	081 47 14.87W		

SESSION	DATE:	06/28/07	START TIME	11:03	X	U.T.C.
001B-179-1	DAY OF YEAR	179	END TIME	12:36		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:1B IS A SPIKE NAIL SET FLUSH W/GRD ON THE EAST SIDE OF JOSE MARTI DR AND THE GRASSY MEDIAN AREA CLOSS TO A STOP SIGN AND POWERPOLE AND N/W OF A SCHOOL. POINT IS 5.3FT W OF THE CONC OF THE BASE OF A LIGHTPOLE-- 28FT E OF THE C/L OF JOSE MARTI DR-- 18FT N TO N/W OF A POWER/LIFHT POLE.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

the spatial data company

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	1B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.12N		HGT. MTS
LONGITUDE	081 47 14.87W		

SESSION	DATE:	06/28/07	START TIME	12:41	X	U.T.C.
001B-179-2	DAY OF YEAR	179	END TIME	14:12		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:1B IS A SPIKE NAIL SET FLUSH W/GRD ON THE EAST SIDE OF JOSE MARTI DR AND THE GRASSY MEDIAN AREA CLOSS TO A STOP SIGN AND POWERPOLE AND N/W OF A SCHOOL. POINT IS 5.3FT W OF THE CONC OF THE BASE OF A LIGHTPOLE-- 28FT E OF THE C/L OF JOSE MARTI DR-- 18FT N TO N/W OF A POWER/LIFHT POLE.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

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501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	1B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.12N		HGT. MTS
LONGITUDE	081 47 14.87W		

SESSION	DATE:	06/29/07	START TIME	14:16	X	U.T.C.
001B 180 1	DAY OF YEAR	180	END TIME	15:31		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	50496		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:1B IS A SPIKE NAIL SET FLUSH W/GRD ON THE EAST SIDE OF JOSE MARTI DR AND THE GRASSY MEDIAN AREA CLOSS TO A STOP SIGN AND POWERPOLE AND N/W OF A SCHOOL. POINT IS 5.3FT W OF THE CONC OF THE BASE OF A LIGHTPOLE-- 28FT E OF THE C/L OF JOSE MARTI DR-- 18FT N TO N/W OF A POWER/LIFHT POLE.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	1C
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 22.55N		HGT. MTS
LONGITUDE	081 47 12.26W		

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

SESSION	DATE:	06/29/07	START TIME	14:22	X	U.T.C.
001C 180 1	DAY OF YEAR	180	END TIME	14:53		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:1C IS A SPIKE NAIL DRIVEN FLUSH WITH THE GROUND IN A SMALL STRIP OF GROUND BETWEEN A CONCRETE SIDEWALK AND AN ELEVATED ASPHALT PARKING LOT AT HORACE O'BRYANT SCHOOL.1C IS 10 WEST OF THE EXTENDED C/L OF LEON ST. AND 7' NORTH OF THE NORTH EDGE OF CATHERINE ST. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	1C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 22.55N		HGT. MTS
LONGITUDE	081 47 12.26W		

SESSION	DATE:	06/29/07	START TIME	14:58	X	U.T.C.
001C 180 2	DAY OF YEAR	180	END TIME	15:29		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:1C IS A SPIKE NAIL DRIVEN FLUSH WITH THE GROUND IN A SMALL STRIP OF GROUND BETWEEN A CONCRETE SIDEWALK AND AN ELEVATED ASPHALT PARKING LOT AT HORACE O'BRYANT SCHOOL.1C IS 10 WEST OF THE EXTENDED C/L OF LEON ST. AND 7' NORTH OF THE NORTH EDGE OF CATHERINE ST. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	2C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 34 25.25N		HGT. MTS
LONGITUDE	081 44 24.29W		

SESSION	DATE:	06/29/07	START TIME	18:23	X	U.T.C.
002C 180 1	DAY OF YEAR	180	END TIME	18:54		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:2C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 8' SOUTH OF THE SOUTH EDGE OF THE NORTH BOUND LANE OF HWY 1. 4' NORTH OF A CHAIN LINK FENCE AND 5.8' SE OF THE NORTH END OF A CONCRETE CURB. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	2C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 34 25.25N		HGT. MTS
LONGITUDE	081 44 24.29W		

SESSION	DATE:	06/29/07	START TIME	18:59	X	U.T.C.
002C 180 2	DAY OF YEAR	180	END TIME	19:30		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:2C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 8' SOUTH OF THE SOUTH EDGE OF THE NORTH BOUND LANE OF HWY 1. 4' NORTH OF A CHAIN LINK FENCE AND 5.8' SE OF THE NORTH END OF A CONCRETE CURB. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	3B=SPIKE NAIL
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 35 56.48N		HGT. MTS
LONGITUDE	081 39 09.57W		

SESSION	DATE:	06/28/07	START TIME	14:58	X	U.T.C.
003B 179 3	DAY OF YEAR	179	END TIME	16:52		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:3B= SPIKE NAIL SET FLUSH WITH THE LIMESTONE. 6' SOUTH OF THE NORTH EDGE OF HWY 1 AND 6' SOUTH OF THE SOUTH EDGE OF AN ASPHALT BIKE PATH. 25.6' SE OF THE FACE OF A CONCRETE POWER POLE NUMBER BC12_33. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	3B=SPIKE NAIL
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 35 56.48N		HGT. MTS
LONGITUDE	081 39 09.57W		

SESSION	DATE:	06/28/07	START TIME	16:57	X	U.T.C.
003B 179 4	DAY OF YEAR	179	END TIME	18:28		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:3B= SPIKE NAIL SET FLUSH WITH THE LIMESTONE. 6' SOUTH OF THE NORTH EDGE OF HWY 1 AND 6' SOUTH OF THE SOUTH EDGE OF AN ASPHALT BIKE PATH. 25.6' SE OF THE FACE OF A CONCRETE POWER POLE NUMBER BC12_33. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	3B=SPIKE NAIL
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 35 56.48N		HGT. MTS
LONGITUDE	081 39 09.57W		

SESSION	DATE:	06/29/07	START TIME	19:49	X	U.T.C.
003B 180 1	DAY OF YEAR	180	END TIME	21:03		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:3B= SPIKE NAIL SET FLUSH WITH THE LIMESTONE. 6' SOUTH OF THE NORTH EDGE OF HWY 1 AND 6' SOUTH OF THE SOUTH EDGE OF AN ASPHALT BIKE PATH. 25.6' SE OF THE FACE OF A CONCRETE POWER POLE NUMBER BC12_33. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	3C
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 35 57.66N		HGT. MTS
LONGITUDE	081 39 05.68W		

SESSION	DATE:	06/29/07	START TIME	19:54	X	U.T.C.
003C 180 1	DAY OF YEAR	180	END TIME	20:25		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:3C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 6' SOUTH OF THE SOUTH EDGE OF HWY 1 AND 6' NE OF AN ALUMINUM NO PARKING SIGN POLE. APPROX. 100' NORTH OF THE C/L OF BOCA CHICA RD. PICTURE TAKEN LOOKING SOUTH

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	3C
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 35 57.66N		HGT. MTS
LONGITUDE	081 39 05.68W		

SESSION	DATE:	06/29/07	START TIME	20:30	X	U.T.C.
003C 180 2	DAY OF YEAR	180	END TIME	21:01		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:3C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 6' SOUTH OF THE SOUTH EDGE OF HWY 1 AND 6' NE OF AN ALUMINUM NO PARKING SIGN POLE. APPROX. 100' NORTH OF THE C/L OF BOCA CHICA RD. PICTURE TAKEN LOOKING SOUTH

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
Florida Keys LIDAR

POINT ID:	4C
Proj. No.:	02030.18.005.CWJ

STATE	Florida	COUNTY	Monroe	QUAD:	

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 38 50.28N		HGT. MTS
LONGITUDE	081 34 12.02W		

SESSION	DATE:	06/28/07	START TIME	19:20	X	U.T.C.
004C 179 1	DAY OF YEAR	179	END TIME	19:51		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 METERS UNCORRECTED			
	MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:4C IS A SPIKE NAIL SET FLUSH WITH THE GROUND. 11' SW OF THE C/L OF AN ASPHALT RD. LEADING TO THE SUGARLOAF AIRPORT. 132' SE OF A POWER POLE AND108' NW OF A POWER POLE. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET
	PUB. BENCH MARK
	PUB. CONTROL

	PHOTO I.D.
X	NEW CONTROL
	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
Florida Keys LIDAR

POINT ID:	4C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	Florida	COUNTY	Monroe	QUAD:	

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 38 50.28N		HGT. MTS
LONGITUDE	081 34 12.02W		

SESSION	DATE:	06/28/07	START TIME	19:56	X	U.T.C.
004C 179 2	DAY OF YEAR	179	END TIME	20:27		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 METERS UNCORRECTED			
	MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:4C IS A SPIKE NAIL SET FLUSH WITH THE GROUND. 11' SW OF THE C/L OF AN ASPHALT RD. LEADING TO THE SUGARLOAF AIRPORT. 132' SE OF A POWER POLE AND108' NW OF A POWER POLE. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET
	PUB. BENCH MARK
	PUB. CONTROL

	PHOTO I.D.
X	NEW CONTROL
	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	5C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 22.55N		HGT. MTS
LONGITUDE	081 47 12.26W		

SESSION	DATE:	06/29/07	START TIME	16:34	X	U.T.C.
005C 180 1	DAY OF YEAR	180	END TIME	17:05		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:5C IS A SPIKE NAIL DRIVEN FLUSH WITH TH E GROUND 6' WEST OF THE WEST EDGE OF BLIMP RD. AND 8' EAST OF A BRUSH LINE.PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	5C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 22.55N		HGT. MTS
LONGITUDE	081 47 12.26W		

SESSION	DATE:	06/29/07	START TIME	17:10	X	U.T.C.
005C 180 2	DAY OF YEAR	180	END TIME	17:41		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:5C IS A SPIKE NAIL DRIVEN FLUSH WITH TH E GROUND 6' WEST OF THE WEST EDGE OF BLIMP RD. AND 8' EAST OF A BRUSH LINE.PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	6B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 43.05N		HGT. MTS
LONGITUDE	081 24 29.30W		

SESSION	DATE:	06/28/07	START TIME	14:59	X	U.T.C.
006B-179-3	DAY OF YEAR	179	END TIME	16:53		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

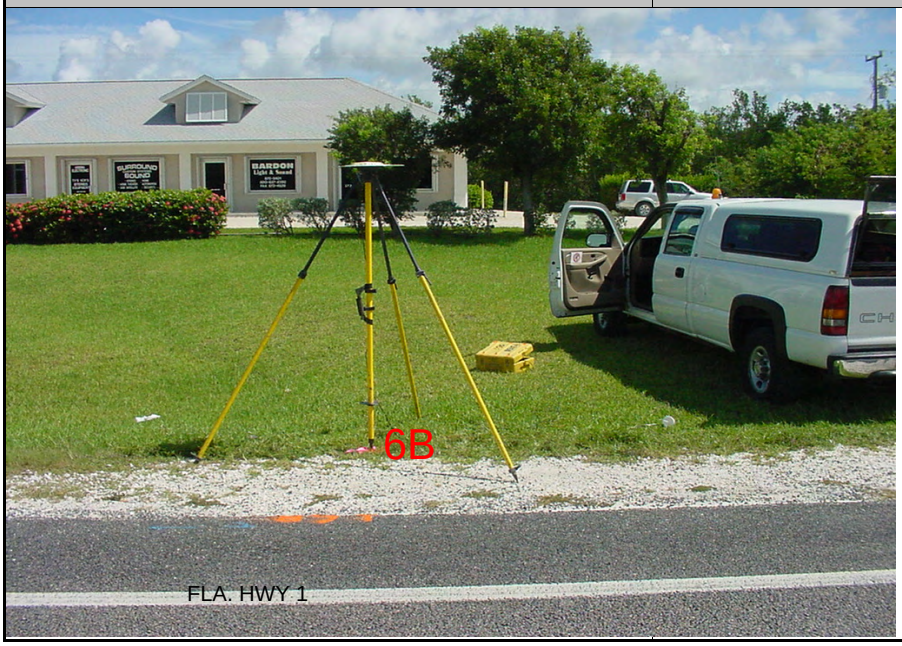
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:6B IS A SPIKE NAIL SET FLUSH W/GRD ON THE NORTH SIDE OF FLA. HWY 1 AN IS EAST OF THE BOONDOCKS GRILLE & DRAFT HOUSE. POINT IS 24FT N 0F THE C/L OF FLA HWY 1-- 52FT S/W OF THE SOUTHERN MOST ROUND WATERMAIN ACCESS-- 180FT E OF C/L OF THE DRIVEWAY.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	6B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 43.05N		HGT. MTS
LONGITUDE	081 24 29.30W		

SESSION	DATE:	06/28/07	START TIME	16:58	X	U.T.C.
007B-179-4	DAY OF YEAR	179	END TIME	18:29		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

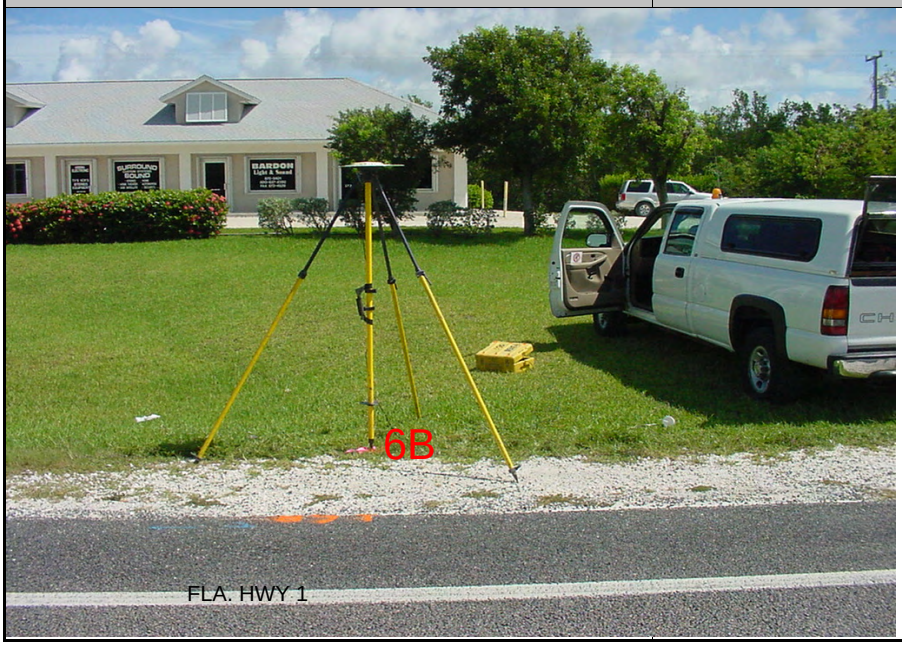
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:6B IS A SPIKE NAIL SET FLUSH W/GRD ON THE NORTH SIDE OF FLA. HWY 1 AN IS EAST OF THE BOONDOCKS GRILLE & DRAFT HOUSE. POINT IS 24FT N 0F THE C/L OF FLA HWY 1-- 52FT S/W OF THE SOUTHERN MOST ROUND WATERMAIN ACCESS-- 180FT E OF C/L OF THE DRIVEWAY.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

GPS CONTROL SURVEY
FIELD DATA SHEET

JOB REFERENCE	POINT ID:	6B
FLA. KEYS LIDAR	Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	PURPERA

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 43.05N		HGT. MTS
LONGITUDE	081 24 29.30W		

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	4652

SESSION	DATE:	06/29/07	START TIME	21:28	X	U.T.C.
006B-180 1	DAY OF YEAR	180	END TIME	22:42		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	50496		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

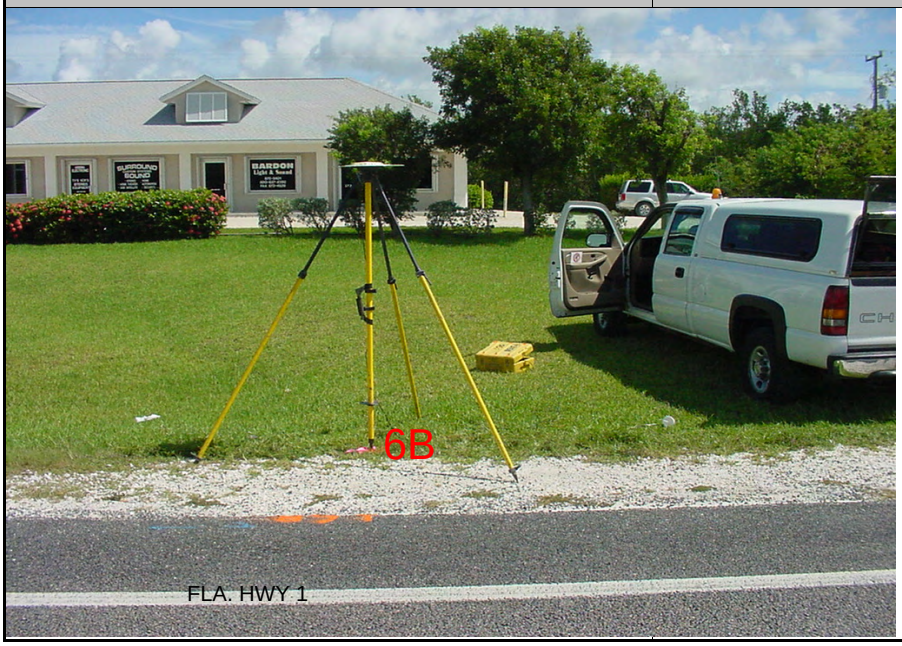
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:6B IS A SPIKE NAIL SET FLUSH W/GRD ON THE NORTH SIDE OF FLA. HWY 1 AN IS EAST OF THE BOONDOCKS GRILLE & DRAFT HOUSE. POINT IS 24FT N 0F THE C/L OF FLA HWY 1-- 52FT S/W OF THE SOUTHERN MOST ROUND WATERMAIN ACCESS-- 180FT E OF C/L OF THE DRIVEWAY.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	6C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 35 57.66N	HGT. MTS
LONGITUDE	081 39 05.68W	

SESSION	DATE:	06/29/07	START TIME	21:32	X	U.T.C.
006C 180 1	DAY OF YEAR	180	END TIME	22:03		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:6C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 2' NORTH OF THE NORTH EDGE OF HWY 1 AND ACROSS THE HWY FROM THE LOOE KEY DIVE CENTER. PICTURE TAKEN LOOKING SOUTH

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	6C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 35 57.66N	HGT. MTS
LONGITUDE	081 39 05.68W	

SESSION	DATE:	06/29/07	START TIME	22:08	X	U.T.C.
006C 180 2	DAY OF YEAR	180	END TIME	22:39		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:6C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 2' NORTH OF THE NORTH EDGE OF HWY 1 AND ACROSS THE HWY FROM THE LOOE KEY DIVE CENTER. PICTURE TAKEN LOOKING SOUTH

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	7C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 40 10.23N		HGT. MTS
LONGITUDE	081 21 21.76W		

SESSION	DATE:	06/29/07	START TIME	11:54	X	U.T.C.
007C 180 1	DAY OF YEAR	180	END TIME	12:25		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:7C IS A PK NAIL SET FLUSH WITH THE ASPHALT IN AN ABANDONED ASPHALT PARKING AREA IN THE SW QUARTER OF THE INTERSECTION OF CHAPMAN ST. AND HWY 1. 1.2' SOUTH OF THE NORTH EDGE OF THE ASPHALT PARKING AREA AND 21.2' SOUTH OF THE SOUTH EDGE OF HWY 1. 44' SE OF AN ALUMINUM POST HOLDING A STOP LIGHT . PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	7C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 40 10.23N		HGT. MTS
LONGITUDE	081 21 21.76W		

SESSION	DATE:	06/29/07	START TIME	12:30	X	U.T.C.
007C 180 2	DAY OF YEAR	180	END TIME	13:01		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:7C IS A PK NAIL SET FLUSH WITH THE ASPHALT IN AN ABANDONED ASPHALT PARKING AREA IN THE SW QUARTER OF THE INTERSECTION OF CHAPMAN ST. AND HWY 1. 1.2' SOUTH OF THE NORTH EDGE OF THE ASPHALT PARKING AREA AND 21.2' SOUTH OF THE SOUTH EDGE OF HWY 1. 44' SE OF AN ALUMINUM POST HOLDING A STOP LIGHT . PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	8C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 39.82N		HGT. MTS
LONGITUDE	081 16 16.67W		

SESSION	DATE:	06/29/07	START TIME	10:25	X	U.T.C.
008C 180 1	DAY OF YEAR	180	END TIME	10:56		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:8C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 3.8' SOUTH OF THE SOUTH EDGE OF HWY 1 (NORTH BOUND LANE). 16.7' NW OF A NO PARKING SIGN AND APPROX 100' WEST OF MILE MARKER 37. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	8C
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 39.82N		HGT. MTS
LONGITUDE	081 16 16.67W		

SESSION	DATE:	06/29/07	START TIME	11:01	X	U.T.C.
008C 180 2	DAY OF YEAR	180	END TIME	11:32		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:8C IS A SPIKE NAIL SET FLUSH WITH THE GROUND 3.8' SOUTH OF THE SOUTH EDGE OF HWY 1 (NORTH BOUND LANE). 16.7' NW OF A NO PARKING SIGN AND APPROX 100' WEST OF MILE MARKER 37. PICTURE TAKEN LOOKING SOUTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL		BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	9B
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.38N		HGT. MTS
LONGITUDE	081 45 45.90W		

SESSION	DATE:	06/28/07	START TIME	10:59	X	U.T.C.
009B 179 1	DAY OF YEAR	179	END TIME	12:36		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:9B IS A SPIKE NAIL SET FLUSH WITH THE GROUND. 2.9' NORTH OF THE WOODEN PILLING GUARDRAIL AND 6' NORTH OF THE NORTH EDGE OF GOVERNEMNT RD. APPROX. 150' WEST OF A CURVE TO THE NORTH IN GOVERNMENT RD. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	9B
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	Purpera

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.38N		HGT. MTS
LONGITUDE	081 45 45.90W		

SESSION	DATE:	06/28/07	START TIME	12:41	X	U.T.C.
009B 179 2	DAY OF YEAR	179	END TIME	14:12		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:9B IS A SPIKE NAIL SET FLUSH WITH THE GROUND. 2.9' NORTH OF THE WOODEN PILLING GUARDRAIL AND 6' NORTH OF THE NORTH EDGE OF GOVERNEMNT RD. APPROX. 150' WEST OF A CURVE TO THE NORTH IN GOVERNMENT RD. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	9B
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4302

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.38N		HGT. MTS
LONGITUDE	081 45 45.90W		

SESSION	DATE:	06/29/07	START TIME	14:02	X	U.T.C.
009B-180-1	DAY OF YEAR	180	END TIME	15:15		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10019		
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE		

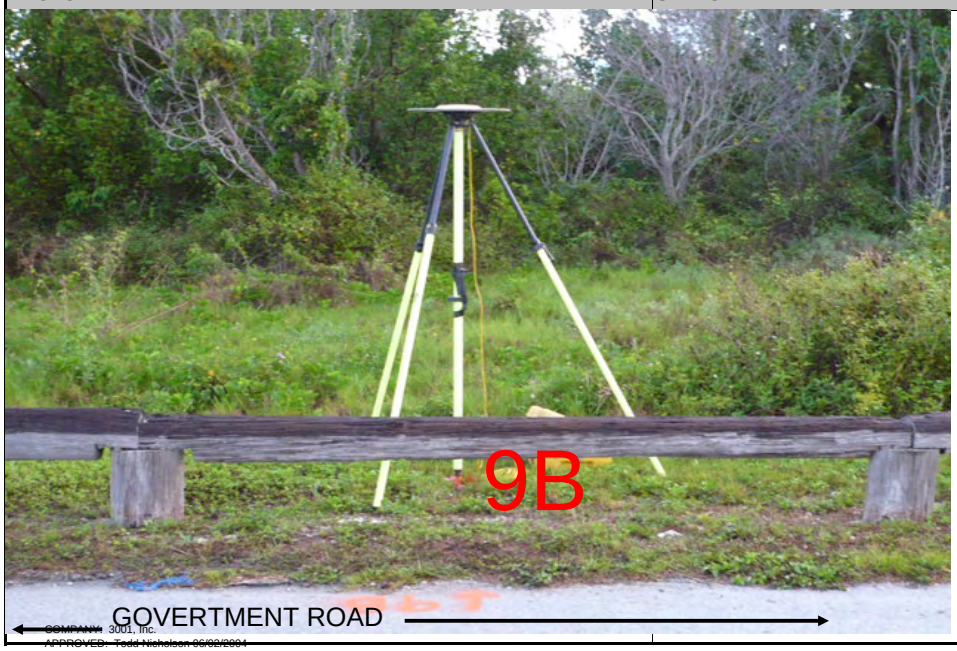
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:9B IS A SPIKE NAIL SET FLUSH WITH THE GROUND. 2.9' NORTH OF THE WOODEN PILLING GUARDRAIL AND 6' NORTH OF THE NORTH EDGE OF GOVERNEMNT RD. APPROX. 150' WEST OF A CURVE TO THE NORTH IN GOVERNMENT RD. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

GPS CONTROL SURVEY
FIELD DATA SHEET

JOB REFERENCE	POINT ID:	9C
FLA. KEYS LIDAR	Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.42N		HGT. MTS
LONGITUDE	081 45 48.93W		

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

SESSION	DATE:	06/29/07	START TIME	14:08	X	U.T.C.
009C-180-1	DAY OF YEAR	180	END TIME	14:39		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

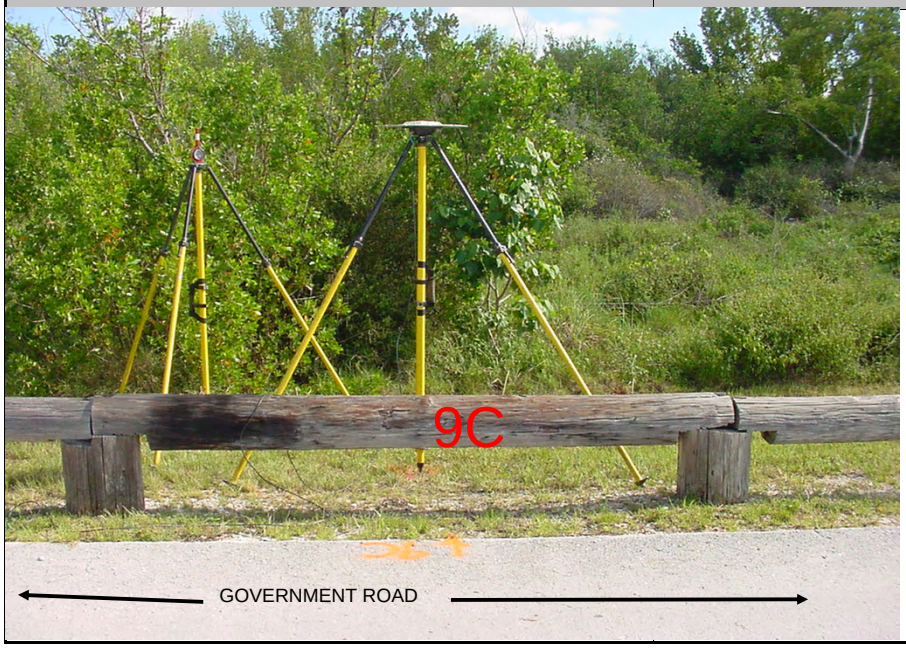
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:9C IS A SPIKE NAIL SET FLUSH W/GRD ON THE NORTH SIDE OF GOV'T ROAD. POINT IS 13FT N OF THE C/L OF GOV'T RD- 44FT N OF A HURRICANE FENCELINE FOR AIRPORT PROPERTY.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

the spatial data company

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

GPS CONTROL SURVEY
FIELD DATA SHEET

JOB REFERENCE
FLA. KEYS LIDAR

POINT ID:	9C
Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	

OPERATOR	V. MCNEAL

RECEIVER MODEL	TRIMBLE 4000 SSi
RECEIVER S/N	3158

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 33 26.42N		HGT. MTS
LONGITUDE	081 45 48.93W		

SESSION	DATE:	06/29/07	START TIME	14:44	X	U.T.C.
009C-180-2	DAY OF YEAR	180	END TIME	15:15		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			
S/N NUMBER	10018		
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE		

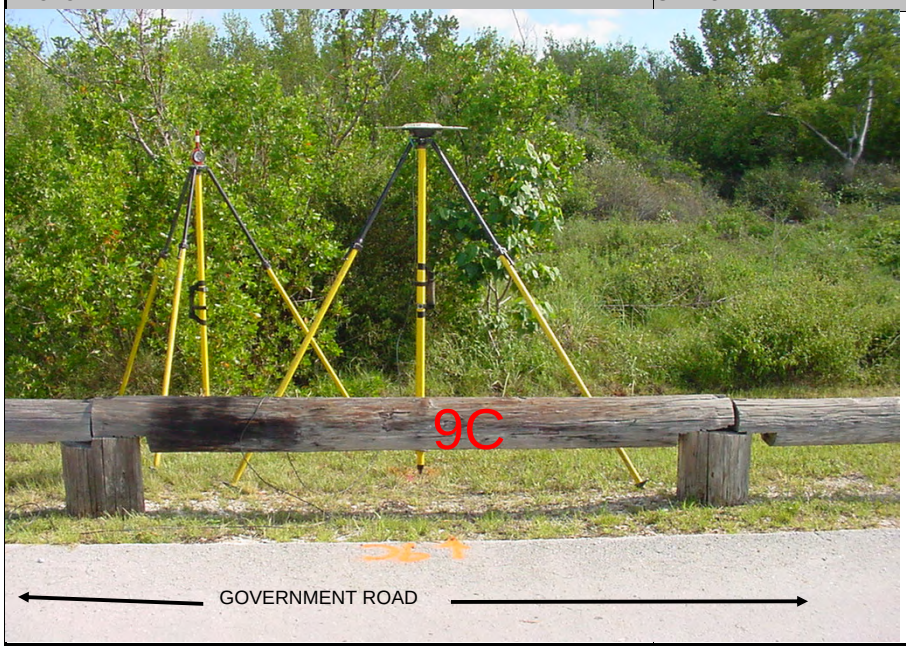
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION:9C IS A SPIKE NAIL SET FLUSH W/GRD ON THE NORTH SIDE OF GOV'T ROAD. POINT IS 13FT N OF THE C/L OF GOV'T RD- 44FT N OF A HURRICANE FENCELINE FOR AIRPORT PROPERTY.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

3001® the geospatial company

GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE
Florida Keys

POINT ID:	90 97 GPS21
Proj. No.:	02030.18.005.LA4

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	Florida	COUNTY	Monroe	QUAD:	

OPERATOR	Travis

RECEIVER MODEL	Leica SR530
RECEIVER S/N	130665

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 46 37.35		HGT. MTS
LONGITUDE	080 55 24.78		

SESSION	DATE:	06/28/07	START TIME		X	U.T.C.
GP211781	DAY OF YEAR	178	END TIME			LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	1.8			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	12399	0.000
ANTENNA TYPE	Leica AT502	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
Florida Keys

POINT ID:	KSLS
Proj. No.:	02030.18.005.LA4

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	Florida	COUNTY	Monroe	QUAD:	

OPERATOR	Travis

RECEIVER MODEL	Trimbl 5700
RECEIVER S/N	220320068

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N24 38 51.90		HGT. MTS
LONGITUDE	W081 34 13.40		

SESSION	DATE:	06/28/07	START TIME		X	U.T.C.
KSLS179A	DAY OF YEAR	179	END TIME			LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	1.8		
	MEASURED	X	FIXED HGT

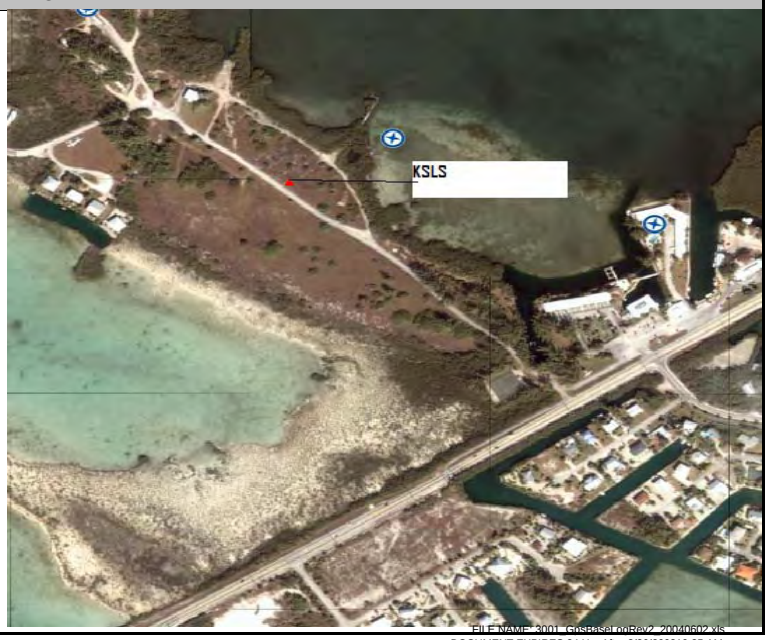
ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	12560393	0.000
ANTENNA TYPE	Trimble Zephyr	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:



GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	BAYOU (AA0028)
Proj. No.:	020130.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	KEY WEST (1971)

OPERATOR	C. LAPRARIE

RECEIVER MODEL	TRIMBLE 4700
RECEIVER S/N	3112

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 34 07.15627 (N)	HGT. MTS
LONGITUDE	081 46 06.51362 (W)	0.879

SESSION	DATE:	06/28/07	START TIME	11:05	X	U.T.C.
BAYO-179-1	DAY OF YEAR	179	END TIME	12:36		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	76678	0.000
ANTENNA TYPE	MICRO CENTERED L1/L2 W/GRD PLANE	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION: SEE NGS DATA SHEET (AA0028)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	BAYOU (AA0028)
Proj. No.:	020130.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	KEY WEST (1971)

OPERATOR	C. LAPRARIE

RECEIVER MODEL	TRIMBLE 4700
RECEIVER S/N	3112

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 34 07.15627 (N)	HGT. MTS
LONGITUDE	081 46 06.51362 (W)	0.879

SESSION	DATE:	06/28/07	START TIME	12:41	X	U.T.C.
BAYO-179-2	DAY OF YEAR	179	END TIME	14:12		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	76678	0.000
ANTENNA TYPE	MICRO CENTERED L1/L2 W/GRD PLANE	

TOP OF MONUMENT IS:		X	FLUSH
METERS/FEET			ABOVE GROUND
METERS/FEET			BELOW GROUND

3001 DESCRIPTION: SEE NGS DATA SHEET (AA0028)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	J 397=8B (AA1702)
Proj. No.:	020130.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BIG PINE KEY (1972)

OPERATOR	C. LAPRARIE

RECEIVER MODEL	TRIMBLE 4700
RECEIVER S/N	3112

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 39 38.94748 (N)	HGT. MTS
LONGITUDE	081 16 20.06492 (W)	2.457

SESSION	DATE:	06/28/07	START TIME	15:21	X	U.T.C.
J397-179-3	DAY OF YEAR	179	END TIME	18:29		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	76678	0.000
ANTENNA TYPE	MICRO CENTERED L1/L2 W/GRD PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION: SEE NGS DATA SHEET (AA1702)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	J 397=8B (AA1702)
Proj. No.:	020130.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BIG PINE KEY (1972)

OPERATOR	PURPERA

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 39 38.94748 (N)		HGT. MTS
LONGITUDE	081 16 20.06492 (W)		2.457

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

SESSION	DATE:	06/29/07	START TIME	10:19	X	U.T.C.
J397-180-1	DAY OF YEAR	180	END TIME	11:34		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION: SEE NGS DATA SHEET (AA1702)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
Florida Keys LIDAR

POINT ID:	KSLS=4B
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	Florida	COUNTY	Monroe	QUAD:	

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N24 38 51.90		HGT. MTS
LONGITUDE	W081 34 13.40		

SESSION	DATE:	06/28/07	START TIME	19:13	X	U.T.C.
KSLS 179 1	DAY OF YEAR	179	END TIME	20:27		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 METERS UNCORRECTED			
	MEASURED		X	FIXED HGT

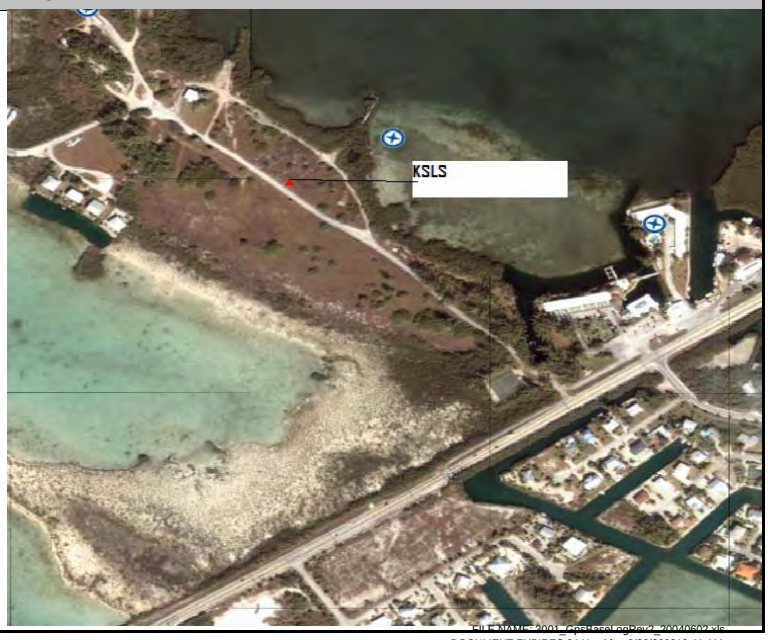
TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:KSLS IS A PK NAIL AND A WASHER IN A OIECE OF CONCRETE 35' NE OF THE C/L OF AN ASPHALT RD. LEADING TO THE SUGARLOAF AIRPORT. 181' SE OF A POWER POLE. 86' NORTH OF A POWER POLE. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK	X	NEW CONTROL
	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:



GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	FLGPS MALLOY=2B
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BOCA CHICA KEY 1971

OPERATOR	Purpera

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 34 26.9555N		HGT. MTS
LONGITUDE	081 44 19.85093W		

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4300

SESSION	DATE:	06/28/07	START TIME	10:37	X	U.T.C.
MALL 179 1	DAY OF YEAR	179	END TIME	18:40		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10011	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

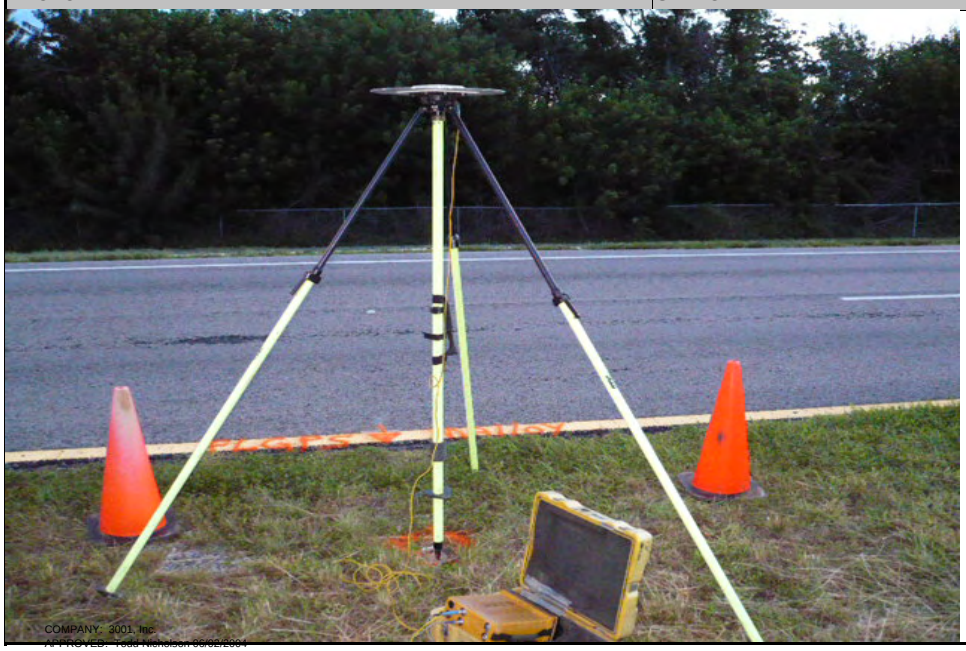
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:		FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:REF NGS DATASHEET PID AA1644. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	FLGPS MALLOY=2B
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BOCA CHICA KEY 1971

OPERATOR	Purpera

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 34 26.9555N		HGT. MTS
LONGITUDE	081 44 19.85093W		

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

SESSION	DATE:	06/29/07	START TIME	18:17	X	U.T.C.
MALL 180 1	DAY OF YEAR	180	END TIME	19:32		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

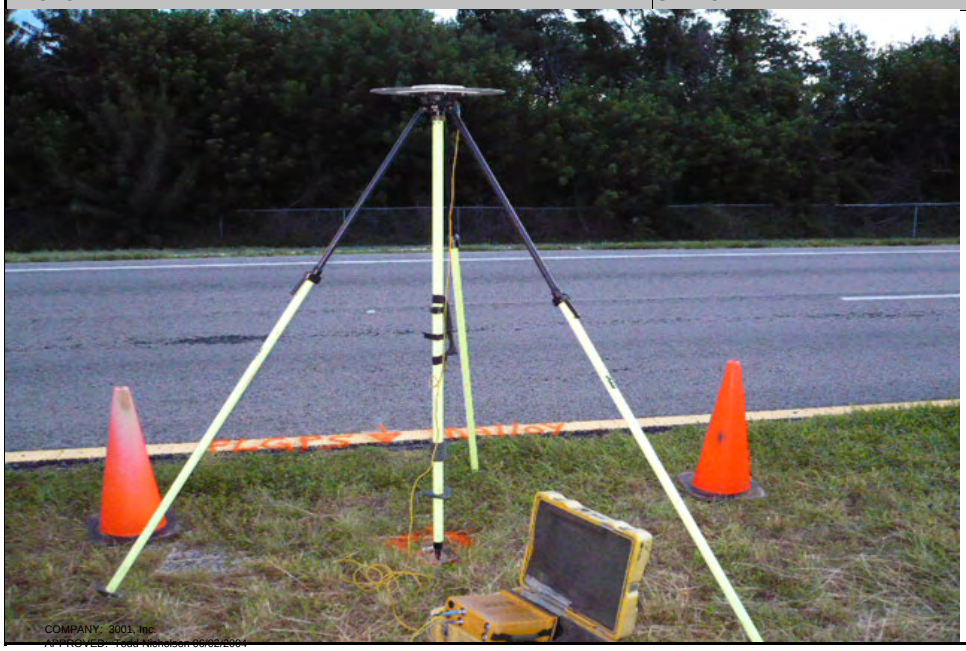
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

TOP OF MONUMENT IS:		FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:REF NGS DATASHEET PID AA1644. PICTURE TAKEN LOOKING NORTH.

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:



SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	N 327=5B (AA0168)
Proj. No.:	02030.18.005.CWJ

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	SUMMERLAND KEY (1972)

OPERATOR	C. LAPRARIE

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4302

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 40 41.42 N	HGT. MTS
LONGITUDE	081 26 58.35 W	0.863

SESSION	DATE:	06/28/07	START TIME	10:20	X	U.T.C.
N327-179-1	DAY OF YEAR	179	END TIME	18:50		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	10019	0.000
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
MEASURED		X	FIXED HGT

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:SEE NGS DATA SHEET PID (AA0168)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

501 ROBERT BLVD. 2nd. FLOOR
SLIDELL,LA. 70458
703-574-2336 voice 985-649-5082 fax

GPS CONTROL SURVEY
FIELD DATA SHEET

JOB REFERENCE	POINT ID:	N 327=5B (AA0168)
FLORIDA KEYS LIDAR	Proj. No.:	02030.18.005.CWJ

STATE	FLORIDA	COUNTY	MONROE	QUAD:	SUMMERLAND KEY (1972)

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 40 41.42 N	HGT. MTS
LONGITUDE	081 26 58.35 W	0.863

SESSION	DATE:	06/29/07	START TIME	16:26	X	U.T.C.
N327 180 1	DAY OF YEAR	180	END TIME			LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	TRIMBLE COMPAC L1/L2 W/GRD PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DESCRIPTION:SEE NGS DATA SHEET PID (AA0168)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	Z 272=7B (AA0236)
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BIG PINE (1972)

OPERATOR	C. LAPRARIE

RECEIVER MODEL	TRIMBLE 4000 SE
RECEIVER S/N	4305

APPROXIMATE POSITION (C/A/CODE)		
LATITUDE	24 40 12.0 N	HGT. MTS
LONGITUDE	081 21 25.0 W	1.371

SESSION	DATE:	06/28/07	START TIME	15:05	X	U.T.C.
Z272-179-3	DAY OF YEAR	179	END TIME	18:43		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000 M. UNCORRECTED		
	MEASURED	X	FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	24415	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DECCRIPTION:SEE NGS DATASHEET PID (AA0236)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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JOB REFERENCE
FLORIDA KEYS LIDAR

POINT ID:	Z 272=7B (AA0236)
Proj. No.:	02030.18.005.CWJ

501 Robert Blvd 2nd Floor
Slidell, LA 70458
703-574-2336 voice 985-649-5082 fax

STATE	FLORIDA	COUNTY	MONROE	QUAD:	BIG PINE (1972)

OPERATOR	PURPERA

RECEIVER MODEL	TRIMBLE 4000 SSI
RECEIVER S/N	4652

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	24 40 12.0 N		HGT. MTS
LONGITUDE	081 21 25.0 W		1.371

SESSION	DATE:	06/29/07	START TIME	11:49	X	U.T.C.
Z272-180-1	DAY OF YEAR	180	END TIME	13:04		LOCAL

ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED			FIXED HGT.

ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000 M. UNCORRECTED			
	MEASURED	X		FIXED HGT

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER	50496	0.000
ANTENNA TYPE	COMPAC L1/L2 WITH GROUND PLANE	

TOP OF MONUMENT IS:	X	FLUSH
METERS/FEET		ABOVE GROUND
METERS/FEET		BELOW GROUND

3001 DECCRIPTION:SEE NGS DATASHEET PID (AA0236)

	AERIAL TARGET		PHOTO I.D.
	PUB. BENCH MARK		NEW CONTROL
X	PUB. CONTROL	X	BASE STATION

PHOTO:

SKETCH:

RTK-TOPO Log

Project Name: FLORIDA KEYS LIDAR
Project No: 02030.18.005.CWJ
Project Location: MONROE COUNTY

Date	Site	Ref. Station	Ant. Hgt	Ant. Type	Start Point	End Point	Ant. Hgt	Ant. Type	Point Code
06/28/07	4	4B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	4C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4A1	4A20	1.86M	FIBER ROD W/PRISM	3111
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4A21	4A40	1.86M	FIBER ROD W/PRISM	6111
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4A41	4A60	1.86M	FIBER ROD W/PRISM	C111
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4A61	4A90	1.86M	FIBER ROD W/PRISM	A111
06/28/07	4	4B	1.598M	SOKKIA SET 3B INSTR.	4C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	1	1B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	1C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1A1	1A15	1.860M	FIBER ROD W/PRISM	3111
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1A16	1A30	1.860M	FIBER ROD W/PRISM	6111
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1A31	1A70	1.860M	FIBER ROD W/PRISM	D211
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1A71	1A100	1.860M	FIBER ROD W/PRISM	4111
06/29/07	1	1B	1.629M	SOKKIA SET 3B INSTR.	1C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	9	9B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	9C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	9	9B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	9A1	9A20	2.063M	TRIMBLE MICRO-CENTERED L1/L2	C111
06/29/07	9	9B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	9C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	9	9B	1.670M	SOKKIA SET 3B INSTR.	9C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	9	9B	1.670M	SOKKIA SET 3B INSTR.	9A21	9A40	1.860M	FIBER ROD W/PRISM	6111
06/29/07	9	9B	1.670M	SOKKIA SET 3B INSTR.	9A41	9A60	1.860M	FIBER ROD W/PRISM	3111
06/29/07	9	9B	1.670M	SOKKIA SET 3B INSTR.	9C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	2	FLGPS MALLOY=2E	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	2C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	2	FLGPS MALLOY=2E	1.723M	SOKKIA SET 3B INSTR.	2C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	2	FLGPS MALLOY=2E	1.723M	SOKKIA SET 3B INSTR.	2A1	2A10	1.860M	FIBER ROD W/PRISM	C111
06/29/07	2	FLGPS MALLOY=2E	1.723M	SOKKIA SET 3B INSTR.	2A11	2A25	1.860M	FIBER ROD W/PRISM	3111
06/29/07	2	FLGPS MALLOY=2E	1.723M	SOKKIA SET 3B INSTR.	2A26	2A45	1.860M	FIBER ROD W/PRISM	6111
06/29/07	2	FLGPS MALLOY=2E	1.723M	SOKKIA SET 3B INSTR.	2C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	3	3B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	3C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	3	3B	2.063M	SOKKIA SET 3B INSTR.	3C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3A1	3A15	1.860M	FIBER ROD W/PRISM	C111
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3A16	3A30	1.860M	FIBER ROD W/PRISM	3111
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3A31	3A40	1.860M	FIBER ROD W/PRISM	6111
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3A41	3A50	1.860M	FIBER ROD W/PRISM	4111
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3A51	3A52	0.000M	FIBER ROD W/PRISM	BLDG ROOF CORNERS-HORZ
06/29/07	3	3B	1.703M	SOKKIA SET 3B INSTR.	3C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	5	N 327=5B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	5C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	5	N 327=5B	2.063M	SOKKIA SET 3B INSTR.	5C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	5	N 327=5B	1.655M	SOKKIA SET 3B INSTR.	5A1	5A10	1.860M	FIBER ROD W/PRISM	D211
06/29/07	5	N 327=5B	1.655M	SOKKIA SET 3B INSTR.	5A11	5A25	1.860M	FIBER ROD W/PRISM	3111
06/29/07	5	N 327=5B	1.655M	SOKKIA SET 3B INSTR.	5A26	5A40	1.860M	FIBER ROD W/PRISM	C111
06/29/07	5	N 327=5B	1.655M	SOKKIA SET 3B INSTR.	3C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	6	6B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	6C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	6	6B	2.063M	SOKKIA SET 3B INSTR.	6C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	6	6B	1.644M	SOKKIA SET 3B INSTR.	6A1	6A15	1.860M	FIBER ROD W/PRISM	3111
06/29/07	6	6B	1.644M	SOKKIA SET 3B INSTR.	6A16	6A30	1.860M	FIBER ROD W/PRISM	6111
06/29/07	6	6B	1.644M	SOKKIA SET 3B INSTR.	6A31	6A45	1.860M	FIBER ROD W/PRISM	C111
06/29/07	6	6B	1.644M	SOKKIA SET 3B INSTR.	6A46	6A48	0.000M	FIBER ROD W/PRISM	BLDG ROOF CORNERS-HORZ
06/29/07	6	6B	1.644M	SOKKIA SET 3B INSTR.	6C CHK		2.860M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	7	Z 272=7B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	7C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	7	Z 272=7B	2.063M	SOKKIA SET 3B INSTR.	7C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	7	Z 272=7B	1.365M	SOKKIA SET 3B INSTR.	7A1	7A10	1.860M	FIBER ROD W/PRISM	A111
06/29/07	7	Z 272=7B	1.365M	SOKKIA SET 3B INSTR.	7A11	7A30	1.860M	FIBER ROD W/PRISM	C111
06/29/07	7	Z 272=7B	1.365M	SOKKIA SET 3B INSTR.	7A31	7A40	1.860M	FIBER ROD W/PRISM	3111
06/29/07	7	Z 272=7B	1.365M	SOKKIA SET 3B INSTR.	7A41	7A43	0.000M	FIBER ROD W/PRISM	BLDG ROOF CORNERS-HORZ
06/29/07	7	Z 272=7B	1.365M	SOKKIA SET 3B INSTR.	7C CHK		2.860M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK
06/29/07	8	J 397=8B	2.063M	TRIMBLE COMP. L1/L2 W/GRD. PLANE	8C CHK		2.063M	TRIMBLE MICRO-CENTERED L1/L2	SPIKE NAIL-RTK
06/29/07	8	J 397=8B	2.063M	SOKKIA SET 3B INSTR.	8C CHK		2.063M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL
06/29/07	8	J 397=8B	1.647M	SOKKIA SET 3B INSTR.	8A1	8A20	1.860M	FIBER ROD W/PRISM	3111
06/29/07	8	J 397=8B	1.647M	SOKKIA SET 3B INSTR.	8A21	8A40	1.860M	FIBER ROD W/PRISM	6111
06/29/07	8	J 397=8B	1.647M	SOKKIA SET 3B INSTR.	8C CHK		2.860M	SECO FIXED-HGT. TRIPOD W/PRISM	SPIKE NAIL-CHK

Ground Check-Point Descriptive Codes

Surface Type		Sky Visibility		Surface Slope		Confidence	
1	Dirt	1	Open	1	Flat	1	Good
2	Sand	2	Part open	2	Slight Slope	2	Fair
3	Asphalt	3	Covered	3	Slope	3	Bad
4	Concrete						
5	Tall Grass						
6	Mowed Grass						
7	Trees and Brush						
8	Weeds and short grass						
9	Thick brush						
A	Thich cut grass						
B	Cultivated field - unplowed						
C	Limestone						
D	Trees and grass						
E	Gravel						
F	Brush and grass						