Minimum Technical Standards Report
Control Survey &
Specific Purpose Survey for LiDAR

PREPARED FOR:
UNITED STATES GEOLOGICAL SURVEY
& DIGITAL AERIAL SOLUTIONS

PREPARED BY:
NORTHROP GRUMMAN CORPORATION

2011 SUWANNEE RIVER SURVEY REPORT

CONTRACT # G10PC00093

TASK ORDER: G10PD02794

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Technical Standards Report
Control Survey & Specific Purpose Survey for LiDAR

2011 Florida Three Area LiDAR ARRA
Suwannee River

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Introduction & Specifications

The purpose of this project was to provide ground truth data which will be used to validate LiDAR data of the Suwannee River area located in and around Suwannee county Florida. The ground surveys were conducted utilizing the Trimble VRS Now network to collect checkpoints of (20) check points in each of three major land cover classes dispersed within the AOI. The vertical accuracy requirements are required to meet or exceed an RMSEz of 12.5cm and the vertical accuracy and 24.5cm at the 95% confidence level as specified by the SOW using NSSDA Guidelines, Vertical accuracy reporting for LiDAR Data.

Datum & Coordinate Systems

The LiDAR data and coordinate values associated with this project are referenced to the North American Datum of 1983, State Plane Coordinate System, Zone Florida North 0903, in units of US Survey Feet. The vertical datum is North America Vertical Datum of 1988, in units of US Survey Feet. Geoid09 was used in the translation of elevations from ellipsoid to orthometric heights.

Survey Area

The project area is approximately 1,151 square miles and covers the site of interest: Suwannee River located in Madison, Suwannee, Hamilton, and Columbia Counties in Florida.

Control Survey

The GPS survey was tied into the Trimble VRS Now Network located in Florida. The Trimble VRS Now network is a network of continuously operating GPS reference stations that provides Real Time Kinematic (RTK) capabilities within a Real Time Network (RTN). This allows corrections to be applied to the points as they are being collected, eliminating the need for an adjustment.

As a quality control measure several "check-in" points consisting of NSRS published horizontal and vertical control points were used as checks within the Trimble VRS Now network. The survey crew checked into these published points daily to validate the consistency of the network. Also to confirm that the project will meet the 5cm local network accuracy at the 95% confidence level.

Survey field work was performed on 1.30.2011-2.11.2011 by Northrop Grumman field crews using a Trimble 5700 Global Positioning System with a Zephyr Geodetic Antenna.

Additionally when VRS service was unavailable some points had to be collected through multiple static sessions. 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.

Local Network Accuracy

Several existing control monuments listed in the NSRS database were used as checks within the Gulf-Net VRS Now Network. This confirmed network accuracies were being met during the field survey as well as providing a redundancy check on the Gulf-Net VRS network. The Specified local network accuracy of 5cm at the 95% confidence level was met or exceeded. The results and NSRS published point information are listed on the following page.

Name	Published			Surveyed			Differences		
	Northing	Easting	Elev.	Northing	Easting	Elev.	ΔNorth	ΔEast	ΔElev
FLGPS 25 (DJ5328)	518872.20	2555911.52	108.45	518872.38	2555911.54	108.54	.18	.02	.09
FLGPS 71 (AJ7266)	568616.54	2325338.58	94.99	568616.56	2325338.57	95.03	.02	.01	.04
I10 71 B09 (AD7907)	457359.33	2577717.40	167.01	457359.36	2577717.42	166.94	.03	.02	.07
LAKEPORT (BD2712)	435187.07	2574022.51	196.6	435187.09	2574022.53	196.72	.02	.02	.12
LAKEPORT AZ (BD2726)	434816.67	2577825.63	192.6	434816.69	2577825.64	192.46	.02	.01	.14
U 151 (BD0832)	468148.59	2460262.36	107.40	468148.69	2460262.40	107.28	.1	.04	.12

Ground Truth Survey

Ground Truth data was collected of the three major land cover classes dispersed within the area of interest. 20 points were collected in each of the three predominate vegetation classes low vegetation, medium vegetation, and high vegetation, points collected in high vegetation were collected with a Total Station. Pair of points was surveyed using the VRS network once completed the total station is used to collect the high vegetation ground class. A Topcon 7000 total station was used to collect all the shots collected in the high vegetation class, due to the limited GPS signal when working in and around tree canopy.

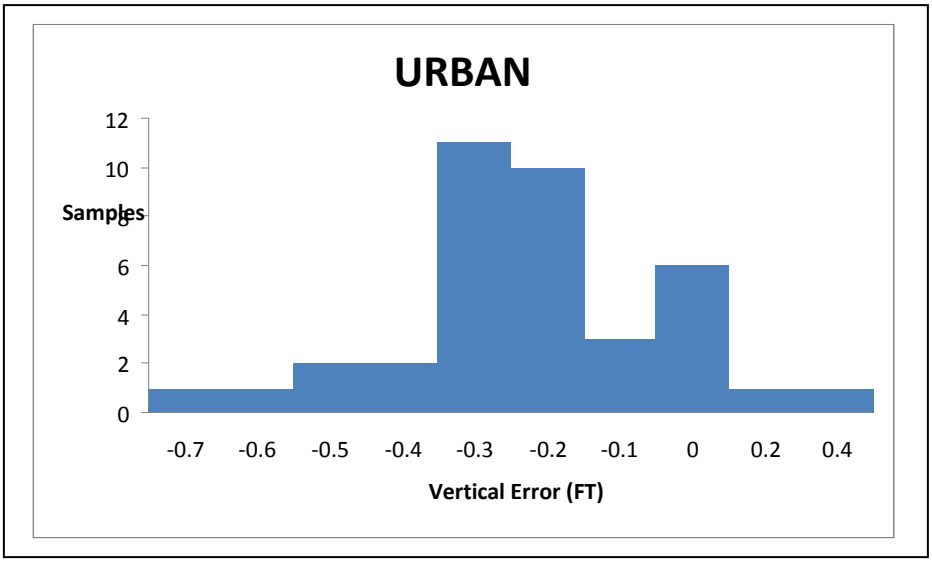
Data Analysis

Data analysis was accomplished by comparing ground truth checkpoints with LIDAR points from the edited data set, which were within 3.3 feet horizontally from the ground truth points. Based on the number of returns and the density of points in this project, it was not necessary to compare to anything further away than 3.3 feet horizontally from the ground truth points. Note that the edited LIDAR points are simply a subset of the raw LIDAR points. The points that fell above the ground surface on vegetation canopies, buildings, or other obstructions were removed from the data set. Comparisons were also made between the survey points and the LIDAR derived terrain surface. These comparisons provide an additional verification of the LIDAR data against the survey data.

Fundamental Vertical Accuracy Results

The Urban class results are based on the Open Terrain class and were used to determine the FVA accuracy requirements. Based on the Urban class results the FVA accuracy is 16.76cm (0.55 ft) at the 95% confidence level. This met the required vertical accuracy of the 12.5cm RMSEz and 24.5cm vertical accuracy at the 95% confidence level.

URBAN (FT)	
RMSEz	0.28
Mean	-0.21
Standard Error	0.03
Median	-0.24
Mode	-0.27
Standard Deviation	0.19
Sample Variance	0.04
Kurtosis	1.37
Skewness	0.37
95% Confidence	0.55
Range	1.01
Minimum	-0.66
Maximum	0.35
Count	38

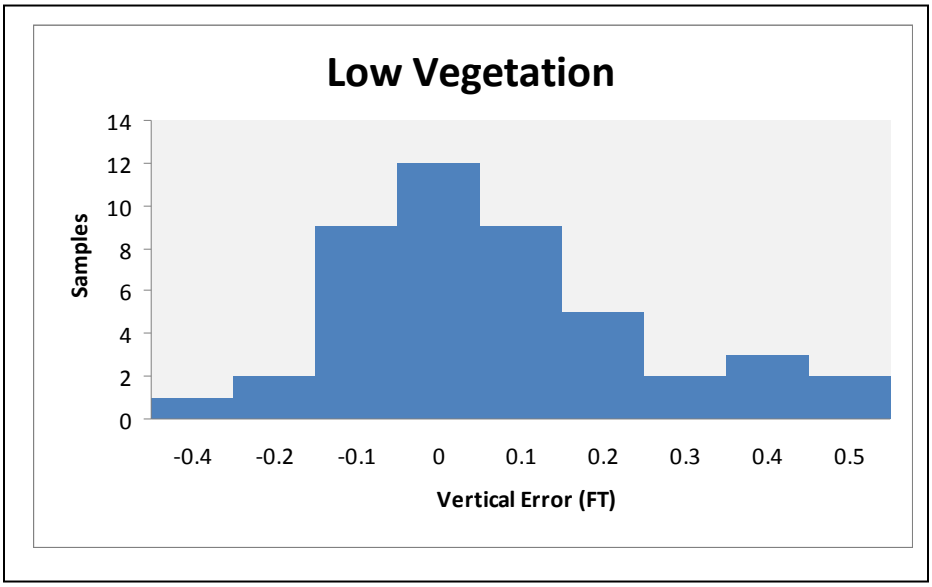


Supplemental Vertical Accuracy Results

Supplemental Accuracy is comprised of all classes of data collected solved individually based on vegetation type. All vegetation classes met or exceeded the required RMSEz of 18.5cm and a vertical accuracy of 36.3cm at the 95th percentile level.

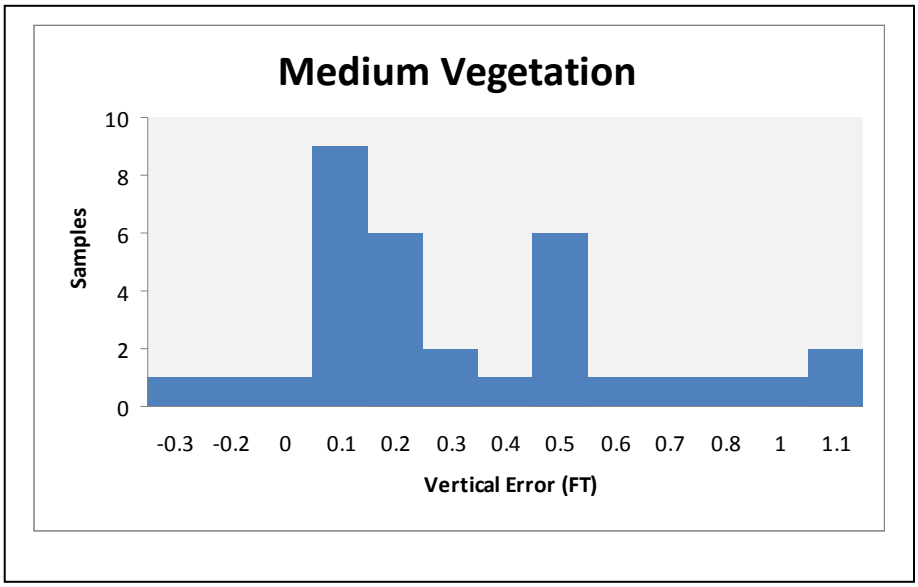
Low Vegetation Class

Low Vegetation (FT)	
RMSEz	0.20
Mean	0.07
Standard Error	0.03
Median	0.04
Mode	0.04
Standard Deviation	0.19
Sample Variance	0.03
Kurtosis	0.76
Skewness	0.37
95th Percentile	0.42
Range	0.94
Minimum	-0.43
Maximum	0.51
Count	45



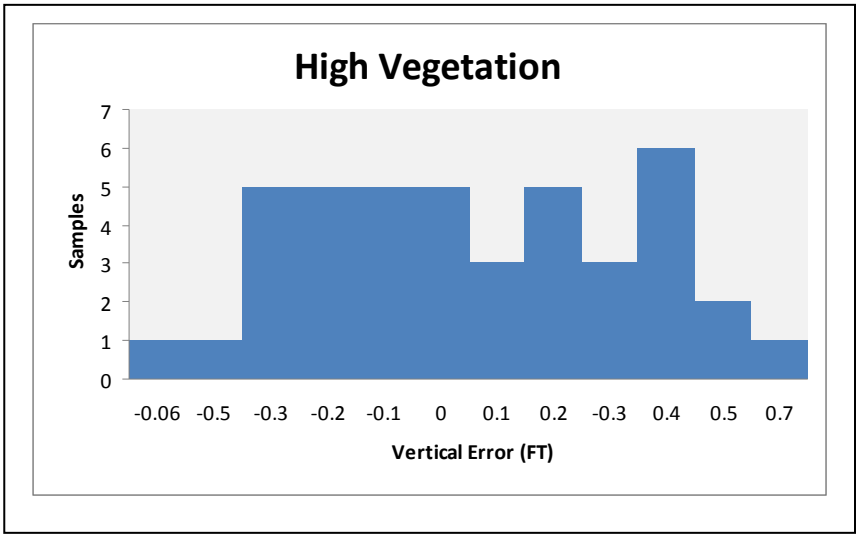
Medium Vegetation Class

Medium Vegetation (FT)	
RMSEz	0.46
Mean	0.32
Standard Error	0.06
Median	0.22
Mode	0.05
Standard Deviation	0.33
Sample Variance	0.11
Kurtosis	0.40
Skewness	0.75
95th Percentile	1.03
Range	1.42
Minimum	-0.31
Maximum	1.11
Count	33



High Vegetation Class

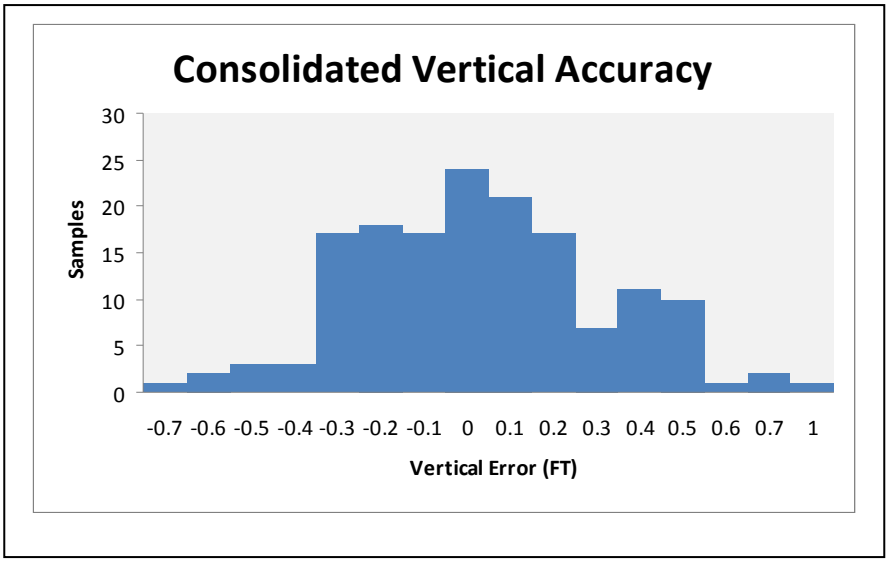
High Vegetation (FT)	
RMSEz	3.83
Mean	0.06
Standard Error	0.05
Median	0.03
Mode	-0.33
Standard Deviation	0.30
Sample Variance	0.09
Kurtosis	-0.46
Skewness	0.06
95th Percentile	0.54
Range	1.35
Minimum	-0.61
Maximum	0.74
Count	42



Consolidated Vertical Accuracy Results

The Consolidated Vertical Accuracy, based on the 95th percentile error in all land cover categories combined, met and exceeded the required accuracy requirements of 36.3cm at the 95% confidence level.

Consolidated Vertical Accuracy (FT)	
RMSEz	0.31
Mean	0.05
Standard Error	0.02
Median	0.03
Mode	0.11
Standard Deviation	0.31
Sample Variance	0.10
Kurtosis	1.00
Skewness	0.66
95th Percentile	0.59
Range	1.77
Minimum	-0.66
Maximum	1.11
Count	158



Appendix A

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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DL2076 ***********************************************************************
 DL2076  CORS         -  This is a GPS Continuously Operating Reference Station.
 DL2076  DESIGNATION  -  TIFTON CORS ARP
 DL2076  CORS_ID      -  GATF
 DL2076  PID          -  DL2076
 DL2076  STATE/COUNTY-  GA/TIFT
 DL2076  USGS QUAD    -  TIFTON WEST (1988)
 DL2076
 DL2076                         *CURRENT SURVEY CONTROL
 DL2076  ______________________________________________________________________
 DL2076* NAD 83(CORS)-  31 27 06.86565(N)    083 30 32.83130(W)     ADJUSTED
 DL2076* NAVD 88     -              **(meters)            **(feet)
 DL2076  ______________________________________________________________________
 DL2076  EPOCH DATE  -        2002.00
 DL2076  X           -     615,654.676 (meters)                     COMP
 DL2076  Y           -  -5,411,189.287 (meters)                     COMP
 DL2076  Z           -   3,308,790.090 (meters)                     COMP
 DL2076  ELLIP HEIGHT-          97.516 (meters)          (04/??/09) ADJUSTED
 DL2076  GEOID HEIGHT-         -26.62  (meters)                     GEOID09
 DL2076  HORZ ORDER  -  SPECIAL (CORS)
 DL2076  ELLP ORDER  -  SPECIAL (CORS)
 DL2076
 DL2076.ITRF positions are available for this station.
 DL2076.The coordinates were established by GPS observations
 DL2076.and adjusted by the National Geodetic Survey in April 2009.
 DL2076.The coordinates are valid at the epoch date displayed above.
 DL2076.The epoch date for horizontal control is a decimal equivalence
 DL2076.of Year/Month/Day.
 DL2076
 DL2076
 DL2076.The PID for the CORS L1 Phase Center is DL2077.
 DL2076
 DL2076.The XYZ, and position/ellipsoidal ht. are equivalent.
 DL2076
 DL2076.The ellipsoidal height was determined by GPS observations
 DL2076.and is referenced to NAD 83.
 DL2076
 DL2076.The geoid height was determined by GEOID09.
 DL2076
 DL2076;                    North         East     Units Scale Factor Converg.
 DL2076;SPC GA W     -   161,136.409   762,494.811   MT  0.99994816   +0 20 35.2
 DL2076;SPC GA W     -   528,661.70  2,501,618.39   sFT  0.99994816   +0 20 35.2
 DL2076
 DL2076!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DL2076!SPC GA W     -   0.99998469  x   0.99994816  =   0.99993285
 DL2076
 DL2076                           SUPERSEDED SURVEY CONTROL
 DL2076
 DL2076.No superseded survey control is available for this station.
 DL2076
 DL2076_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RKQ6156682411(NAD 83)
 DL2076_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DL2076
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DL2076                          STATION DESCRIPTION
DL2076
DL2076'DESCRIBED BY NATIONAL GEODETIC SURVEY 2009
DL2076'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL2076'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL2076'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL2076'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DL2076'   HTTP://WWW.NGS.NOAA.GOV/CORS.
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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DE6005 ***********************************************************************
 DE6005  CORS         -  This is a GPS Continuously Operating Reference Station.
 DE6005  DESIGNATION -  GAINESVILLE CORS ARP
 DE6005  CORS_ID      -  GNVL
 DE6005  PID          -  DE6005
 DE6005  STATE/COUNTY-  FL/ALACHUA
 DE6005  USGS QUAD    -  GAINESVILLE EAST (1988)
 DE6005
 DE6005                         *CURRENT SURVEY CONTROL
 DE6005  ______________________________________________________________________
 DE6005* NAD 83(CORS)-  29 41 11.55714(N)    082 16 36.73662(W)     ADJUSTED
 DE6005* NAVD 88     -        51.824  (meters)     170.03   (feet)  ADJUSTED
 DE6005  ______________________________________________________________________
 DE6005  EPOCH DATE  -        2002.00
 DE6005  X           -     745,247.891 (meters)                     COMP
 DE6005  Y           -  -5,495,264.641 (meters)                     COMP
 DE6005  Z           -   3,140,246.793 (meters)                     COMP
 DE6005  ELLIP HEIGHT-          23.923 (meters)          (07/??/02) ADJUSTED
 DE6005  GEOID HEIGHT-         -27.85  (meters)                     GEOID09
 DE6005  HORZ ORDER  -  SPECIAL (CORS)
 DE6005  VERT ORDER  -  FIRST     CLASS II
 DE6005  ELLP ORDER  -  SPECIAL (CORS)
 DE6005
 DE6005.ITRF positions are available for this station.
 DE6005.The coordinates were established by GPS observations
 DE6005.and adjusted by the National Geodetic Survey in July 2002.
 DE6005.The coordinates are valid at the epoch date displayed above.
 DE6005.The epoch date for horizontal control is a decimal equivalence
 DE6005.of Year/Month/Day.
 DE6005
 DE6005.The orthometric height was determined by differential leveling and
 DE6005.adjusted in August 2010.
 DE6005
 DE6005.The PID for the CORS L1 Phase Center is DI1670.
 DE6005
 DE6005.The XYZ, and position/ellipsoidal ht. are equivalent.
 DE6005
 DE6005.The ellipsoidal height was determined by GPS observations
 DE6005.and is referenced to NAD 83.
 DE6005
 DE6005.The geoid height was determined by GEOID09.
 DE6005
 DE6005;                    North         East     Units Scale Factor Converg.
 DE6005;SPC FL N      -    78,199.495   815,155.116   MT  0.99998339   +1 07 01.8
 DE6005;SPC FL N      -   256,559.51  2,674,388.08   sFT  0.99998339   +1 07 01.8
 DE6005
 DE6005!              -  Elev Factor  x  Scale Factor =   Combined Factor
 DE6005!SPC FL N      -   0.99999624  x   0.99998339  =   0.99997963
 DE6005
 DE6005                          SUPERSEDED SURVEY CONTROL
 DE6005
 DE6005  NAD 83(CORS)-  29 41 11.57726(N)    082 16 36.74889(W) AD(2002.00) c
 DE6005  ELLIP H (07/??/02)   22.422  (m)                        GP(2002.00) c c
 DE6005  NAVD 88 (02/17/10)   51.83   (m)          170.0    (f) LEVELING    3
 DE6005
 DE6005.Superseded values are not recommended for survey control.
 DE6005.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DE6005.See file dsdata.txt to determine how the superseded data were derived.
 DE6005
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DE6005_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLN7645884734(NAD 83)
DE6005_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DE6005_MAGNETIC: N = NO MAGNETIC MATERIAL
DE6005
DE6005                          STATION DESCRIPTION
DE6005
DE6005'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
DE6005'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DE6005'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DE6005'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DE6005'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DE6005'   HTTP://WWW.NGS.NOAA.GOV/CORS.
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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DE6007 ***********************************************************************
 DE6007  CORS         -  This is a GPS Continuously Operating Reference Station.
 DE6007  DESIGNATION -   JACKSONVILLE CORS ARP
 DE6007  CORS_ID      -  JXVL
 DE6007  PID          -  DE6007
 DE6007  STATE/COUNTY-   FL/DUVAL
 DE6007  USGS QUAD    -  TROUT RIVER (1992)
 DE6007
 DE6007                         *CURRENT SURVEY CONTROL
 DE6007  ______________________________________________________________________
 DE6007* NAD 83(CORS)-  30 29 02.51505(N)    081 42 05.33022(W)     ADJUSTED
 DE6007* NAVD 88     -              **(meters)            **(feet)
 DE6007  ______________________________________________________________________
 DE6007  EPOCH DATE  -        2002.00
 DE6007  X           -     793,994.020 (meters)                    COMP
 DE6007  Y           -  -5,443,615.959 (meters)                    COMP
 DE6007  Z           -   3,216,720.144 (meters)                    COMP
 DE6007  ELLIP HEIGHT-         -17.731 (meters)          (07/??/02) ADJUSTED
 DE6007  GEOID HEIGHT-         -28.24  (meters)                    GEOID09
 DE6007  HORZ ORDER  -   SPECIAL (CORS)
 DE6007  ELLP ORDER  -   SPECIAL (CORS)
 DE6007
 DE6007.ITRF positions  are available for this station.
 DE6007.The coordinates were established by GPS observations
 DE6007.and adjusted by the National Geodetic Survey in July 2002.
 DE6007.The coordinates are valid at the epoch date displayed above.
 DE6007.The epoch date for horizontal control is a decimal equivalence
 DE6007.of Year/Month/Day.
 DE6007
 DE6007
 DE6007.The PID for the CORS L1 Phase Center is DE6008.
 DE6007
 DE6007.The XYZ, and position/ellipsoidal ht. are equivalent.
 DE6007
 DE6007.The ellipsoidal height was determined by GPS observations
 DE6007.and is referenced to NAD 83.
 DE6007
 DE6007.The geoid height was determined by GEOID09.
 DE6007
 DE6007;                    North         East     Units Scale Factor Converg.
 DE6007;SPC FL E     -   681,731.703   132,650.755   MT  0.99999711   -0 21 21.1
 DE6007;SPC FL E     - 2,236,648.10    435,205.02   sFT  0.99999711   -0 21 21.1
 DE6007
 DE6007!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DE6007!SPC FL E     -   1.00000278  x   0.99999711  =   0.99999989
 DE6007
 DE6007                          SUPERSEDED SURVEY CONTROL
 DE6007
 DE6007  NAD 83(CORS)-  30 29 02.53591(N)    081 42 05.34201(W) AD(2002.00) c
 DE6007  ELLIP H (07/??/02)  -19.218  (m)                      GP(2002.00) c c
 DE6007
 DE6007.Superseded values are not recommended for survey control.
 DE6007.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DE6007.See file dsdata.txt  to determine how the superseded data were derived.
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 DE6007_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DE6007
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DE6007                          STATION DESCRIPTION
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DE6007'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
DE6007'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DE6007'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DE6007'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DE6007'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DE6007'   HTTP://WWW.NGS.NOAA.GOV/CORS.
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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DE9140 ***********************************************************************
 DE9140  CORS         -  This is a GPS Continuously Operating Reference Station.
 DE9140  DESIGNATION -  PERRY CORS ARP
 DE9140  CORS_ID      -  PRRY
 DE9140  PID          -  DE9140
 DE9140  STATE/COUNTY-  FL/TAYLOR
 DE9140  USGS QUAD    -  PERRY (1993)
 DE9140
 DE9140                         *CURRENT SURVEY CONTROL
 DE9140  ______________________________________________________________________
 DE9140* NAD 83(CORS)-  30 04 40.11920(N)    083 34 28.60998(W)     ADJUSTED
 DE9140* NAVD 88     -              **(meters)            **(feet)
 DE9140  ______________________________________________________________________
 DE9140  EPOCH DATE  -        2002.00
 DE9140  X           -     618,178.488 (meters)                     COMP
 DE9140  Y           -  -5,489,228.651 (meters)                     COMP
 DE9140  Z           -   3,177,834.284 (meters)                     COMP
 DE9140  ELLIP HEIGHT-         -12.951 (meters)          (12/??/02) ADJUSTED
 DE9140  GEOID HEIGHT-         -27.75  (meters)                     GEOID09
 DE9140  HORZ ORDER  -  SPECIAL (CORS)
 DE9140  ELLP ORDER  -  SPECIAL (CORS)
 DE9140
 DE9140.ITRF positions are available for this station.
 DE9140.The coordinates were established by GPS observations
 DE9140.and adjusted by the National Geodetic Survey in December 2002.
 DE9140.The coordinates are valid at the epoch date displayed above.
 DE9140.The epoch date for horizontal control is a decimal equivalence
 DE9140.of Year/Month/Day.
 DE9140
 DE9140
 DE9140.The PID for the CORS L1 Phase Center is DI6490.
 DE9140
 DE9140.The XYZ, and position/ellipsoidal ht. are equivalent.
 DE9140
 DE9140.The ellipsoidal height was determined by GPS observations
 DE9140.and is referenced to NAD 83.
 DE9140
 DE9140.The geoid height was determined by GEOID09.
 DE9140
 DE9140;                    North         East     Units Scale Factor Converg.
 DE9140;SPC FL N     -   119,834.404   689,211.854   MT  0.99994964   +0 27 54.1
 DE9140;SPC FL N     -   393,156.71  2,261,189.22   sFT  0.99994964   +0 27 54.1
 DE9140
 DE9140!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DE9140!SPC FL N     -   1.00000203  x   0.99994964  =   0.99995167
 DE9140
 DE9140                          SUPERSEDED SURVEY CONTROL
 DE9140
 DE9140.No superseded survey control is available for this station.
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 DE9140_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RKP5183630203(NAD 83)
 DE9140_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
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DE9140                          STATION DESCRIPTION
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DE9140'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
DE9140'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DE9140'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DE9140'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DE9140'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DE9140'   HTTP://WWW.NGS.NOAA.GOV/CORS
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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DG4685 ***********************************************************************
 DG4685  CORS         -  This is a GPS Continuously Operating Reference Station.
 DG4685  DESIGNATION -  CROSS CITY CORS ARP
 DG4685  CORS_ID      -  XCTY
 DG4685  PID          -  DG4685
 DG4685  STATE/COUNTY-  FL/DIXIE
 DG4685  USGS QUAD    -  CROSS CITY EAST (1993)
 DG4685
 DG4685                         *CURRENT SURVEY CONTROL
 DG4685  ______________________________________________________________________
 DG4685* NAD 83(CORS)-  29 37 51.61310(N)    083 06 29.33781(W)     ADJUSTED
 DG4685* NAVD 88     -         13.948  (meters)      45.76   (feet)  ADJUSTED
 DG4685  ______________________________________________________________________
 DG4685  EPOCH DATE  -         2002.00
 DG4685  X           -     665,805.607 (meters)                     COMP
 DG4685  Y           -  -5,508,490.204 (meters)                     COMP
 DG4685  Z           -   3,134,878.257 (meters)                     COMP
 DG4685  ELLIP HEIGHT-          -13.811 (meters)          (03/??/04) ADJUSTED
 DG4685  GEOID HEIGHT-          -27.71  (meters)                     GEOID09
 DG4685  HORZ ORDER  -  SPECIAL (CORS)
 DG4685  VERT ORDER  -  FIRST     CLASS II
 DG4685  ELLP ORDER  -  SPECIAL (CORS)
 DG4685
 DG4685.ITRF positions are available for this station.
 DG4685.The coordinates were established by GPS observations
 DG4685.and adjusted by the National Geodetic Survey in March 2004.
 DG4685.The coordinates are valid at the epoch date displayed above.
 DG4685.The epoch date for horizontal control is a decimal equivalence
 DG4685.of Year/Month/Day.
 DG4685
 DG4685.The orthometric height was determined by differential leveling and
 DG4685.adjusted in August 2010.
 DG4685.No vertical observational check was made to the station.
 DG4685
 DG4685.The PID for the CORS L1 Phase Center is DG4686.
 DG4685
 DG4685.The XYZ, and position/ellipsoidal ht. are equivalent.
 DG4685
 DG4685.The ellipsoidal height was determined by GPS observations
 DG4685.and is referenced to NAD 83.
 DG4685
 DG4685.The geoid height was determined by GEOID09.
 DG4685
 DG4685;                    North         East     Units Scale Factor Converg.
 DG4685;SPC FL N      -    70,768.182   734,784.094   MT  0.99999193   +0 41 58.0
 DG4685;SPC FL N      -   232,178.61  2,410,704.15   sFT  0.99999193   +0 41 58.0
 DG4685
 DG4685!              -  Elev Factor  x  Scale Factor =   Combined Factor
 DG4685!SPC FL N      -   1.00000217  x   0.99999193  =   0.99999410
 DG4685
 DG4685                          SUPERSEDED SURVEY CONTROL
 DG4685
 DG4685  NAVD 88 (02/17/10)   13.96   (m)           45.8    (f) LEVELING    3
 DG4685
 DG4685.Superseded values are not recommended for survey control.
 DG4685.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 DG4685.See file dsdata.txt to determine how the superseded data were derived.
 DG4685
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DG4685_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RKN9590279755(NAD 83)
DG4685_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DG4685_MAGNETIC: O = OTHER; SEE DESCRIPTION
DG4685
DG4685                          STATION DESCRIPTION
DG4685
DG4685'DESCRIBED BY NATIONAL GEODETIC SURVEY 2004
DG4685'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DG4685'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DG4685'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DG4685'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DG4685'   HTTP://WWW.NGS.NOAA.GOV/CORS.
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1        National Geodetic Survey,   Retrieval Date = APRIL 12, 2011
 DE6352 ***********************************************************************
 DE6352  CORS         -  This is a GPS Continuously Operating Reference Station.
 DE6352  DESIGNATION -  JACKSONVILLE 1 CORS ARP
 DE6352  CORS_ID      -  ZJX1
 DE6352  PID          -  DE6352
 DE6352  STATE/COUNTY-  FL/NASSAU
 DE6352  USGS QUAD    -  HILLIARD (1992)
 DE6352
 DE6352                         *CURRENT SURVEY CONTROL
 DE6352  ______________________________________________________________________
 DE6352* NAD 83(CORS)-  30 41 55.87216(N)    081 54 29.44648(W)     ADJUSTED
 DE6352* NAVD 88     -              **(meters)            **(feet)
 DE6352  ______________________________________________________________________
 DE6352  EPOCH DATE  -        2002.00
 DE6352  X           -     772,647.142 (meters)                    COMP
 DE6352  Y           -  -5,434,463.336 (meters)                    COMP
 DE6352  Z           -   3,237,231.666 (meters)                    COMP
 DE6352  ELLIP HEIGHT-           3.158 (meters)          (08/??/02) ADJUSTED
 DE6352  GEOID HEIGHT-         -28.29  (meters)                    GEOID09
 DE6352  HORZ ORDER  -  SPECIAL (CORS)
 DE6352  ELLP ORDER  -  SPECIAL (CORS)
 DE6352
 DE6352.ITRF positions are available for this station.
 DE6352.The coordinates were established by GPS observations
 DE6352.and adjusted by the National Geodetic Survey in August 2002.
 DE6352.The coordinates are valid at the epoch date displayed above.
 DE6352.The epoch date for horizontal control is a decimal equivalence
 DE6352.of Year/Month/Day.
 DE6352
 DE6352
 DE6352.The PID for the CORS L1 Phase Center is DI4051.
 DE6352
 DE6352.The XYZ, and position/ellipsoidal ht. are equivalent.
 DE6352
 DE6352.The ellipsoidal height was determined by GPS observations
 DE6352.and is referenced to NAD 83.
 DE6352
 DE6352.The geoid height was determined by GEOID09.
 DE6352
 DE6352;                    North         East     Units Scale Factor Converg.
 DE6352;SPC FL E     -   705,688.820   112,996.969   MT  1.00003452   -0 27 49.2
 DE6352;SPC FL E     - 2,315,247.40    370,724.22   sFT  1.00003452   -0 27 49.2
 DE6352
 DE6352!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DE6352!SPC FL E     -   0.99999950  x   1.00003452  =   1.00003402
 DE6352
 DE6352                          SUPERSEDED SURVEY CONTROL
 DE6352
 DE6352.No superseded survey control is available for this station.
 DE6352
 DE6352_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMP1302696580(NAD 83)
 DE6352_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
 DE6352
 DE6352
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STATION DESCRIPTION

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DE6352
DE6352'DESCRIBED BY NATIONAL GEODETIC SURVEY 2002
DE6352'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DE6352'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DE6352'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DE6352'   FTP CORS.NGS.NOAA.GOV: CORS/COORD  AND  CORS/STATION_LOG
DE6352'   HTTP://WWW.NGS.NOAA.GOV/CORS.
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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 11, 2011
 BD2753 ***********************************************************************
 BD2753  DESIGNATION -  FLGPS 71
 BD2753  PID         -  BD2753
 BD2753  STATE/COUNTY-  FL/MADISON
 BD2753  USGS QUAD   -  PINETTA (1993)
 BD2753
 BD2753                        *CURRENT SURVEY CONTROL
 BD2753  ______________________________________________________________________
 BD2753* NAD 83(2007)-  30 33 31.11334(N)    083 21 58.64803(W)     ADJUSTED
 BD2753* NAVD 88     -        28.952  (meters)      94.99   (feet)  ADJUSTED
 BD2753  ______________________________________________________________________
 BD2753  EPOCH DATE  -        2002.00
 BD2753  X           -     635,025.695 (meters)                     COMP
 BD2753  Y           -  -5,460,228.954 (meters)                     COMP
 BD2753  Z           -   3,223,854.973 (meters)                     COMP
 BD2753  LAPLACE CORR-          -1.05  (seconds)                    DEFLEC09
 BD2753  ELLIP HEIGHT-           0.969 (meters)          (02/10/07) ADJUSTED
 BD2753  GEOID HEIGHT-         -27.98  (meters)                     GEOID09
 BD2753  DYNAMIC HT  -          28.914 (meters)      94.86  (feet)  COMP
 BD2753
 BD2753  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD2753  Type    PID    Designation                       North   East  Ellip
 BD2753  ----------------------------------------------------------------------
 BD2753  NETWORK BD2753 FLGPS 71                           0.47   0.45   1.12
 BD2753  ----------------------------------------------------------------------
 BD2753  MODELED GRAV-     979,344.6   (mgal)                      NAVD 88
 BD2753
 BD2753  VERT ORDER  -  SECOND    CLASS I
 BD2753
 BD2753.The horizontal coordinates were established by GPS observations
 BD2753.and adjusted by the National Geodetic Survey in February 2007.
 BD2753
 BD2753.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD2753.See National Readjustment for more information.
 BD2753.The horizontal coordinates are valid at the epoch date displayed above.
 BD2753.The epoch date for horizontal control is a decimal equivalence
 BD2753.of Year/Month/Day.
 BD2753
 BD2753.The orthometric height was determined by differential leveling and
 BD2753.adjusted in May 2001.
 BD2753.No vertical observational check was made to the station.
 BD2753
 BD2753.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD2753
 BD2753.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD2753
 BD2753.The ellipsoidal height was determined by GPS observations
 BD2753.and is referenced to NAD 83.
 BD2753
 BD2753.The geoid height was determined by GEOID09.
 BD2753
 BD2753.The dynamic height is computed by dividing the NAVD 88
 BD2753.geopotential number by the normal gravity value computed on the
 BD2753.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 BD2753.degrees latitude (g = 980.6199 gals.).
 BD2753
 BD2753.The modeled gravity was interpolated from observed gravity values.
 BD2753
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BD2753;                      North         East      Units Scale Factor Converg.
BD2753;SPC FL N      -   173,314.667   708,764.618   MT  0.99997168   +0 34 11.0
BD2753;SPC FL N      -   568,616.54  2,325,338.58   sFT  0.99997168   +0 34 11.0
BD2753;UTM  17       - 3,383,073.825   273,034.396   MT  1.00023553   -1 12 12.9
BD2753
BD2753!              -  Elev Factor  x  Scale Factor =   Combined Factor
BD2753!SPC FL N      -   0.99999985  x   0.99997168  =   0.99997153
BD2753!UTM  17       -   0.99999985  x   1.00023553  =   1.00023538
BD2753
BD2753                          SUPERSEDED SURVEY CONTROL
BD2753
BD2753  NAD 83(1999)-  30 33 31.11285(N)    083 21 58.64685(W) AD(       ) B
BD2753  ELLIP H (05/31/01)    0.909  (m)                        GP(       ) 5 1
BD2753  NAD 83(1994)-  30 33 31.11262(N)    083 21 58.64588(W) AD(       ) B
BD2753  ELLIP H (03/09/95)    0.972  (m)                        GP(       ) 1 1
BD2753  NAD 83(1990)-  30 33 31.11196(N)    083 21 58.64674(W) AD(       ) B
BD2753  ELLIP H (06/02/94)    0.954  (m)                        GP(       ) 3 1
BD2753
BD2753.Superseded values are not recommended for survey control.
BD2753.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD2753.See file dsdata.txt to determine how the superseded data were derived.
BD2753
BD2753_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RKP7303483073(NAD 83)
BD2753_MARKER: I = METAL ROD
BD2753_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
BD2753_SP_SET: STAINLESS STEEL ROD IN SLEEVE
BD2753_STAMPING: FLGPS 71 1993
BD2753_MARK LOGO: NGS
BD2753_PROJECTION: FLUSH
BD2753_MAGNETIC: O = OTHER; SEE DESCRIPTION
BD2753_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
BD2753+STABILITY: POSITION/ELEVATION WELL
BD2753_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD2753+SATELLITE: SATELLITE OBSERVATIONS - January 15, 1999
BD2753_ROD/PIPE-DEPTH: 30.2 meters
BD2753_SLEEVE-DEPTH  :  1.6 meters
BD2753
BD2753  HISTORY      - Date     Condition        Report By
BD2753  HISTORY      - 1993     MONUMENTED       NGS
BD2753  HISTORY      - 19930313 GOOD             FLDEP
BD2753  HISTORY      - 19940415 GOOD             NGS
BD2753  HISTORY      - 19971120 GOOD             DCJOHN
BD2753  HISTORY      - 19990115 GOOD             DCJOHN
BD2753  HISTORY      - 20090728 GOOD             FLDT
BD2753
BD2753                          STATION DESCRIPTION
BD2753
BD2753'DESCRIBED BY NATIONAL GEODETIC SURVEY 1993
BD2753'THE STATION IS LOCATED ABOUT 9.25 KM (5.75 MI) NORTHEAST OF MADISON,
BD2753'6.52 KM (4.05 MI) SOUTHWEST OF PINETTA ALONG STATE HIGHWAY 145, IN
BD2753'SECTION 12, T 1 N, R 9 E.  OWNERSHIP--HIGHWAY RIGHT-OF-WAY.
BD2753'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (BASE
BD2753'STREET) AND STATE HIGHWAY 145 (DUVAL STREET) IN MADISON, GO NORTH
BD2753'0.30 KM (0.20 MI) ON STATE HIGHWAY 145 TO A STOP SIGN AND A
BD2753'CROSSROAD, TURN RIGHT AND CONTINUE NORTHEAST ALONG STATE HIGHWAY 145
BD2753'FOR FOR 11.91 KM (7.40 MI) TO A DIRT ROAD WEST AND THE STATION ON THE
BD2753'LEFT.
```

BD2753'THE STATION IS LOCATED 34.4 M (112.9 FT) WEST-NORTHWEST OF THE
BD2753'CENTERLINE OF THE HIGHWAY, 18.6 M (61.0 FT) WEST-NORTHWEST OF A STOP
BD2753'SIGN, 10.9 M (35.8 FT) SOUTHWEST OF THE APPROXIMATE CENTER OF THE
BD2753'DIRT ROAD, 6.2 M (20.3 FT) SOUTH-SOUTHWEST OF A FENCE CORNER, 0.5 M
BD2753'(1.6 FT) EAST-SOUTHEAST OF THE FENCELINE AND 0.5 M (1.6 FT)
BD2753'EAST-SOUTHEAST OF A CARSONITE WITNESS POST.
BD2753
BD2753 STATION RECOVERY (1993)
BD2753
BD2753'RECOVERY NOTE BY FL DEPT OF ENV PRO 1993 (PBM)
BD2753'THE STATION IS ABOUT 5.75 MI (9.25 KM) NORTH OF MADISON, 4.05 MI (6.52
BD2753'KM) SOUTH OF PILNETTA ON STATE HIGHWAY 145 IN SECTION 12, T 1 N, R 9
BD2753'E. TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (BASE
BD2753'STREET) AND STATE HIGHWAY 145 (DUVAL STREET) IN MADISON, GO NORTH ON
BD2753'STATE HIGHWAY 145 FOR 0.2 MI (0.3 KM) TO A SHARP RIGHT TURN, TURN
BD2753'RIGHT AND CONTINUE AHEAD ON STATE HIGHWAY 145 FOR 7.20 MI (11.59 KM)
BD2753'TO A DIRT ROAD WEST AND THE STATION ON THE LEFT. LOCATED 113.0 FT
BD2753'(34.4 M) WEST-NORTHWEST OF THE CENTERLINE OF STATE ROAD 145, 61.0 FT
BD2753'(18.6 M) WEST-NORTHWEST OF A STOP SIGN, 35.7 FT (10.9 M) SOUTHWEST OF
BD2753'THE CENTERLINE OF A DIRT ROAD, 20.4 FT (6.2 M) SOUTH-SOUTHWEST OF A
BD2753'FENCE CORNER, 1.8 FT (0.5 M) EAST-SOUTHEAST OF THE FENCE LINE AND 1.8
BD2753'FT (0.5 M) EAST-SOUTHEAST OF A CARSONITE WITNESS POST. NOTE ACCESS
BD2753'TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
BD2753
BD2753 STATION RECOVERY (1994)
BD2753
BD2753'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1994 (CFS)
BD2753'THE STATION IS LOCATED ABOUT 9.25 KM (5.75 MI) NORTHEAST OF MADISON,
BD2753'6.52 KM (4.05 MI) SOUTHWEST OF PINETTA ALONG STATE HIGHWAY 145, IN
BD2753'SECTION 12, T 1 N, R 9 E. OWNERSHIP--HIGHWAY RIGHT-OF-WAY. TO REACH
BD2753'THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (BASE STREET) AND
BD2753'STATE HIGHWAY 145 (DUVAL STREET) IN MADISON, GO NORTH 0.30 KM (0.20
BD2753'MI) ON STATE HIGHWAY 145 TO A STOP SIGN AND A CROSSROAD, TURN RIGHT
BD2753'AND CONTINUE NORTHEAST ALONG STATE HIGHWAY 145 FOR FOR 11.91 KM (7.40
BD2753'MI) TO A DIRT ROAD WEST AND THE STATION ON THE LEFT. THE STATION IS
BD2753'LOCATED 34.4 M (112.9 FT) WEST-NORTHWEST OF THE CENTERLINE OF THE
BD2753'HIGHWAY, 18.6 M (61.0 FT) WEST-NORTHWEST OF A STOP SIGN, 10.9 M (35.8
BD2753'FT) SOUTHWEST OF THE APPROXIMATE CENTER OF THE DIRT ROAD, 6.2 M (20.3
BD2753'FT) SOUTH-SOUTHWEST OF A FENCE CORNER, 0.5 M (1.6 FT) EAST-SOUTHEAST
BD2753'OF THE FENCELINE AND 0.5 M (1.6 FT) EAST-SOUTHEAST OF A CARSONITE
BD2753'WITNESS POST.
BD2753
BD2753 STATION RECOVERY (1997)
BD2753
BD2753'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD2753'RECOVERY NOTE BY DC JOHNSON AND ASSOC (CHX) .-- THE STATION WAS
BD2753'RECOVERED AS PREVIOUSLY DESCRIBED.
BD2753
BD2753 STATION RECOVERY (1999)
BD2753
BD2753'RECOVERY NOTE BY DC JOHNSON ASSOC 1999 (DS)
BD2753'RECOVERED AS DESCRIBED (AG) .
BD2753
BD2753 STATION RECOVERY (2009)
BD2753
BD2753'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2009 (JDO)
BD2753'RECOVERED IN GOOD CONDITION.

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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 11, 2011
 BD0832 ***********************************************************************
 BD0832  CBN         -  This is a Cooperative Base Network Control Station.
 BD0832  DESIGNATION -  U 151
 BD0832  PID         -  BD0832
 BD0832  STATE/COUNTY-  FL/SUWANNEE
 BD0832  USGS QUAD   -  LIVE OAK EAST (1993)
 BD0832
 BD0832                        *CURRENT SURVEY CONTROL
 BD0832  ______________________________________________________________________
 BD0832* NAD 83(2007)-  30 16 40.94914(N)    082 56 31.32049(W)     ADJUSTED
 BD0832* NAVD 88     -        32.735  (meters)     107.40   (feet)  ADJUSTED
 BD0832  ______________________________________________________________________
 BD0832  EPOCH DATE  -        2002.00
 BD0832  X           -     677,374.877 (meters)                     COMP
 BD0832  Y           -  -5,471,010.899 (meters)                     COMP
 BD0832  Z           -   3,197,031.428 (meters)                     COMP
 BD0832  LAPLACE CORR-           -0.51  (seconds)                   DEFLEC09
 BD0832  ELLIP HEIGHT-            4.684 (meters)          (02/10/07) ADJUSTED
 BD0832  GEOID HEIGHT-          -28.05  (meters)                     GEOID09
 BD0832  DYNAMIC HT  -           32.692 (meters)     107.26  (feet)  COMP
 BD0832
 BD0832  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD0832  Type    PID    Designation                      North   East  Ellip
 BD0832  ----------------------------------------------------------------------
 BD0832  NETWORK BD0832 U 151                             0.43   0.39   1.00
 BD0832  ----------------------------------------------------------------------
 BD0832  MODELED GRAV-     979,329.8   (mgal)                       NAVD 88
 BD0832
 BD0832  VERT ORDER  -  FIRST     CLASS II
 BD0832
 BD0832.The horizontal coordinates were established by GPS observations
 BD0832.and adjusted by the National Geodetic Survey in February 2007.
 BD0832
 BD0832.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD0832.See National Readjustment for more information.
 BD0832.The horizontal coordinates are valid at the epoch date displayed above.
 BD0832.The epoch date for horizontal control is a decimal equivalence
 BD0832.of Year/Month/Day.
 BD0832
 BD0832.The orthometric height was determined by differential leveling and
 BD0832.adjusted in June 1991.
 BD0832
 BD0832.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD0832
 BD0832.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD0832
 BD0832.The ellipsoidal height was determined by GPS observations
 BD0832.and is referenced to NAD 83.
 BD0832
 BD0832.The geoid height was determined by GEOID09.
 BD0832
 BD0832.The dynamic height is computed by dividing the NAVD 88
 BD0832.geopotential number by the normal gravity value computed on the
 BD0832.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 BD0832.degrees latitude (g = 980.6199 gals.).
 BD0832
 BD0832.The modeled gravity was interpolated from observed gravity values.
 BD0832
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BD0832;                      North         East      Units Scale Factor Converg.
BD0832;SPC FL N      -   142,691.977   749,889.467   MT  0.99995029   +0 46 58.5
BD0832;SPC FL N      -   468,148.59  2,460,262.36   sFT  0.99995029   +0 46 58.5
BD0832;UTM  17       - 3,351,191.792   313,201.994   MT  1.00003050   -0 58 46.0
BD0832
BD0832!              -  Elev Factor  x  Scale Factor =   Combined Factor
BD0832!SPC FL N      -   0.99999926  x   0.99995029  =   0.99994955
BD0832!UTM  17       -   0.99999926  x   1.00003050  =   1.00002976
BD0832
BD0832                           SUPERSEDED SURVEY CONTROL
BD0832
BD0832  NAD 83(1999)-  30 16 40.94951(N)    082 56 31.32005(W) AD(       ) B
BD0832  ELLIP H (05/31/01)    4.563  (m)                       GP(       ) 5 1
BD0832  ELLIP H (06/02/94)    4.585  (m)                       GP(       ) 3 1
BD0832  NAD 83(1990)-  30 16 40.94818(N)    082 56 31.31980(W) AD(       ) B
BD0832  ELLIP H (09/13/90)    4.548  (m)                       GP(       ) 4 1
BD0832  NAVD 88 (06/02/94)   32.74   (m)          107.4    (f) LEVELING    3
BD0832  NGVD 29 (??/??/92)   32.951  (m)          108.11   (f) ADJ UNCH    1 2
BD0832
BD0832.Superseded values are not recommended for survey control.
BD0832.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD0832.See file dsdata.txt to determine how the superseded data were derived.
BD0832
BD0832_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLP1320151191(NAD 83)
BD0832_MARKER: DB = BENCH MARK DISK
BD0832_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
BD0832_SP_SET: CONCRETE POST
BD0832_STAMPING: U 151 1954
BD0832_MARK LOGO: CGS
BD0832_PROJECTION: FLUSH
BD0832_MAGNETIC: O = OTHER; SEE DESCRIPTION
BD0832_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
BD0832+STABILITY: SURFACE MOTION
BD0832_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD0832+SATELLITE: SATELLITE OBSERVATIONS - November 20, 1997
BD0832
BD0832  HISTORY      - Date     Condition        Report By
BD0832  HISTORY      - 1954     MONUMENTED       CGS
BD0832  HISTORY      - 1958     GOOD             NGS
BD0832  HISTORY      - 1969     GOOD             NGS
BD0832  HISTORY      - 1979     GOOD             NGS
BD0832  HISTORY      - 1988     GOOD             NGS
BD0832  HISTORY      - 19890421 GOOD
BD0832  HISTORY      - 19930403 GOOD             NGS
BD0832  HISTORY      - 19971120 GOOD             DCJOHN
BD0832
BD0832                           STATION DESCRIPTION
BD0832
BD0832'DESCRIBED BY NATIONAL GEODETIC SURVEY 1958
BD0832'2.8 MI SE FROM LIVE OAK.
BD0832'2.75 MILES SOUTHEAST ALONG THE SEABOARD AIR LINE RAILROAD FROM
BD0832'THE STATION AT LIVE OAK, 150 YARDS NORTHWEST OF A POWER LINE
BD0832'CROSSING, 100 YARDS NORTH OF A FARMHOUSE, 71 FT. NORTHWEST OF
BD0832'THE CENTER LINE OF A PRIVATE DRIVEWAY LEADING TO THE FARMHOUSE,
BD0832'91 FT. SOUTHWEST OF THE CENTER LINE OF U.S. HIGHWAY 90, 179
BD0832'FT. SOUTHWEST OF THE SOUTHWEST RAIL, 10 FT. NORTHEAST OF A
BD0832'POWER POLE, 0.8 FT. NORTHEAST OF A FENCE, 14 POLES SOUTHEAST
BD0832'OF MILEPOST 713, SET IN THE TOP OF A CONCRETE POST WHICH PROJECTS
BD0832'0.1 FT. ABOVE THE GROUND.  NOTE-- A STEEL WITNESS POST WAS
BD0832'SET 1.4 FT. NW OF THE MARK.
BD0832
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BD0832                          STATION RECOVERY (1969)
BD0832
BD0832'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1969
BD0832'RECOVERED IN GOOD CONDITION.
BD0832
BD0832                          STATION RECOVERY (1979)
BD0832
BD0832'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1979
BD0832'RECOVERED IN GOOD CONDITION.
BD0832
BD0832                          STATION RECOVERY (1988)
BD0832
BD0832'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988
BD0832'THE STATION IS LOCATED ABOUT 15.37 KM (9.55 MI) NORTH OF MCALPIN,
BD0832'13.04 KM (8.10 MI) WEST OF WELLBORN, 4.51 KM (2.80 MI) EAST OF LIVE
BD0832'OAK AND 0.56 KM (0.35 MI) WEST OF A MICROWAVE TOWER.
BD0832'OWNERSHIP--HIGHWAY RIGHT-OF-WAY.
BD0832'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 129 AND 90 IN
BD0832'LIVE OAK, GO EAST FOR 0.56 KM (0.35 MI) ON HIGHWAY 90 TO THE RAILROAD
BD0832'CROSSING.  CONTINUE AHEAD FOR 2.09 KM (1.30 MI) ON HIGHWAY 90 TO A
BD0832'REVERSE FORK, COUNTY ROAD 10.  CONTINUE AHEAD FOR 1.77 KM (1.10 MI) ON
BD0832'HIGHWAY 90 TO THE OPPORTUNITY STORE ON LEFT.  CONTINUE AHEAD FOR 0.80
BD0832'KM (0.50 MI) ON HIGHWAY 90 TO THE STATION ON RIGHT, IN THE FENCE LINE,
BD0832'BETWEEN TWO POWERLINES PARALLEL TO HIGHWAY.
BD0832'LOCATED 25.60 M (84.0 FT) WEST FROM UTILITY POLE NUMBER 2 3883 3960 04
BD0832'WITH TRANSFORMER, 25.15 M (82.5 FT) WEST FROM TELEPHONE CABLE PEDESTAL
BD0832'NUMBER 001, 22.74 M (74.6 FT) SOUTH-SOUTHWEST FROM THE APPROXIMATE
BD0832'CENTER OF HIGHWAY 90, 3.35 M (11.0 FT) NORTH FROM A UTILITY POLE ON
BD0832'SOUTH SIDE OF FENCE LINE AND 0.37 M (1.2 FT) SOUTHEAST FROM A METAL
BD0832'WITNESS POST.
BD0832'DESCRIBED BY R.W. MCALLISTER.
BD0832
BD0832                          STATION RECOVERY (1989)
BD0832
BD0832'RECOVERED 1989
BD0832'RECOVERED IN GOOD CONDITION.
BD0832
BD0832                          STATION RECOVERY (1993)
BD0832
BD0832'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993
BD0832'THE STATION IS LOCATED ABOUT 15.37 KM (9.55 MI) NORTH OF MCALPIN,
BD0832'13.04 KM (8.10 MI) WEST OF WELLBORN, 4.51 KM (2.80 MI) EAST OF LIVE
BD0832'OAK AND 0.56 KM (0.35 MI) WEST OF A MICROWAVE TOWER.
BD0832'OWNERSHIP--HIGHWAY RIGHT-OF-WAY.
BD0832'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 90 AND 129 IN
BD0832'LIVE OAK, GO EAST FOR 2.75 KM (1.70 MI) ON U.S. HIGHWAY 90 TO A
BD0832'REVERSE FORK, COUNTY ROAD 10 A, CONTINUE EAST 0.50 KM (0.30 MI) ALONG
BD0832'U.S. HIGHWAY 90 TO THE JUNCTION OF COUNTY ROAD 49, CONTINUE EAST 0.57
BD0832'KM (0.35 MI) ALONG U.S. HIGHWAY 90 TO THE OPPORTUNITY STORE ON THE
BD0832'LEFT, CONTINUE AHEAD FOR 0.80 KM (0.50 MI) ALONG U.S. HIGHWAY 90 TO
BD0832'THE STATION ON THE RIGHT IN A FENCE LINE BETWEEN TWO POWERLINES
BD0832'PARALLEL TO HIGHWAY AND NORTH OF A UTILITY POLE.
BD0832'LOCATED 25.15 M (82.51 FT) WEST FROM UTILITY POLE NUMBER 2 3883 3960
BD0832'04 WITH A TRANSFORMER, 25.60 M (83.99 FT) WEST FROM TELEPHONE CABLE
BD0832'PEDESTAL NUMBER 001, 22.74 M (74.61 FT) SOUTH-SOUTHWEST FROM THE
BD0832'APPROXIMATE CENTERLINE OF U.S. HIGHWAY 90, 3.35 M (10.99 FT) NORTH
BD0832'FROM A UTILITY POLE ON SOUTH SIDE OF FENCE LINE AND 0.37 M (1.21 FT)
BD0832'EAST-SOUTHEAST FROM A METAL WITNESS POST.
BD0832'DESCRIBED BY RONNIE L. TAYLOR.
BD0832
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BD0832                          STATION RECOVERY (1997)
BD0832
BD0832'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD0832'RECOVERY NOTE BY DC JOHNSON AND ASSOC (CHX) .--  THE STATION WAS
BD0832'RECOVERED AS PREVIOUSLY DESCRIBED.
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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 11, 2011
 BD1065 ***********************************************************************
 BD1065  DESIGNATION -  I 10 71 B09
 BD1065  PID         -  BD1065
 BD1065  STATE/COUNTY-  FL/COLUMBIA
 BD1065  USGS QUAD   -  LAKE CITY EAST (1993)
 BD1065
 BD1065                         *CURRENT SURVEY CONTROL
 BD1065  ______________________________________________________________________
 BD1065* NAD 83(2007)-  30 14 36.38160(N)    082 34 14.02806(W)     ADJUSTED
 BD1065* NAVD 88     -        50.906  (meters)     167.01   (feet)  ADJUSTED
 BD1065  ______________________________________________________________________
 BD1065  EPOCH DATE  -        2002.00
 BD1065  X           -     713,082.985 (meters)                     COMP
 BD1065  Y           -  -5,468,436.552 (meters)                     COMP
 BD1065  Z           -   3,193,727.317 (meters)                     COMP
 BD1065  LAPLACE CORR-          -0.49  (seconds)                    DEFLEC09
 BD1065  ELLIP HEIGHT-          22.746 (meters)          (02/10/07) ADJUSTED
 BD1065  GEOID HEIGHT-         -28.15  (meters)                     GEOID09
 BD1065  DYNAMIC HT  -          50.839 (meters)     166.79  (feet)  COMP
 BD1065
 BD1065  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD1065  Type    PID    Designation                       North   East  Ellip
 BD1065  ----------------------------------------------------------------------
 BD1065  NETWORK BD1065 I 10 71 B09                         0.41   0.39   1.16
 BD1065  ----------------------------------------------------------------------
 BD1065  MODELED GRAV-     979,324.3   (mgal)                      NAVD 88
 BD1065
 BD1065  VERT ORDER  -  SECOND    CLASS 0
 BD1065
 BD1065.The horizontal coordinates were established by GPS observations
 BD1065.and adjusted by the National Geodetic Survey in February 2007.
 BD1065
 BD1065.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD1065.See National Readjustment for more information.
 BD1065.The horizontal coordinates are valid at the epoch date displayed above.
 BD1065.The epoch date for horizontal control is a decimal equivalence
 BD1065.of Year/Month/Day.
 BD1065
 BD1065.The orthometric height was determined by differential leveling and
 BD1065.adjusted in June 1991.
 BD1065
 BD1065.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD1065
 BD1065.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD1065
 BD1065.The ellipsoidal height was determined by GPS observations
 BD1065.and is referenced to NAD 83.
 BD1065
 BD1065.The geoid height was determined by GEOID09.
 BD1065
 BD1065.The dynamic height is computed by dividing the NAVD 88
 BD1065.geopotential number by the normal gravity value computed on the
 BD1065.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 BD1065.degrees latitude (g = 980.6199 gals.).
 BD1065
 BD1065.The modeled gravity was interpolated from observed gravity values.
 BD1065
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BD1065;                    North         East     Units Scale Factor Converg.
BD1065;SPC FL N     -   139,403.404   785,689.836   MT  0.99994931   +0 58 10.5
BD1065;SPC FL N     -   457,359.33  2,577,717.40   sFT  0.99994931   +0 58 10.5
BD1065;UTM  17      - 3,346,804.255   348,884.486   MT  0.99988173   -0 47 28.3
BD1065
BD1065!             -  Elev Factor  x  Scale Factor =   Combined Factor
BD1065!SPC FL N     -   0.99999643  x   0.99994931  =   0.99994574
BD1065!UTM  17      -   0.99999643  x   0.99988173  =   0.99987816
BD1065
BD1065:                Primary Azimuth Mark                    Grid Az
BD1065:SPC FL N     -  I10 71 B09 AZ MK                       182 37 04.9
BD1065:UTM  17      -  I10 71 B09 AZ MK                       184 22 43.7
BD1065
BD1065|--------------------------------------------------------------------|
BD1065| PID    Reference Object                    Distance      Geod. Az  |
BD1065|                                                          dddmmss.s |
BD1065| CW5879 I10 71 B09 RM 2                      7.574 METERS 11321     |
BD1065| BD1080 I10 71 B09 AZ MK                                  1833515.4 |
BD1065| BD1066 I10 71 B09 RM 1                     13.457 METERS 35807     |
BD1065|--------------------------------------------------------------------|
BD1065
BD1065                          SUPERSEDED SURVEY CONTROL
BD1065
BD1065  NAD 83(1999)-  30 14 36.38165(N)    082 34 14.02822(W) AD(       ) 1
BD1065  ELLIP H (05/31/01)   22.752  (m)                        GP(       ) 4 1
BD1065  NAD 83(1990)-  30 14 36.38067(N)    082 34 14.02806(W) AD(       ) 1
BD1065  ELLIP H (03/20/98)   22.711  (m)                        GP(       ) 3 1
BD1065  NAD 83(1990)-  30 14 36.38060(N)    082 34 14.02949(W) AD(       ) 2
BD1065  NAD 83(1986)-  30 14 36.39011(N)    082 34 14.03533(W) AD(       ) 2
BD1065  NAD 27      -  30 14 35.55922(N)    082 34 14.59355(W) AD(       ) 2
BD1065  NAVD 88 (03/20/98)   50.91   (m)          167.0    (f) LEVELING    3
BD1065  NGVD 29 (??/??/92)   51.165  (m)          167.86   (f) ADJ UNCH    2 0
BD1065
BD1065.Superseded values are not recommended for survey control.
BD1065.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD1065.See file dsdata.txt to determine how the superseded data were derived.
BD1065
BD1065_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLP4888446804(NAD 83)
BD1065_MARKER: DD = SURVEY DISK
BD1065_SETTING: 36 = SET IN A MASSIVE STRUCTURE
BD1065_SP_SET: BRIDGE
BD1065_STAMPING: I10 71 B09
BD1065_MARK LOGO: FLDT
BD1065_MAGNETIC: N = NO MAGNETIC MATERIAL
BD1065_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
BD1065_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD1065+SATELLITE: SATELLITE OBSERVATIONS - June 01, 2002
BD1065
BD1065  HISTORY     - Date     Condition        Report By
BD1065  HISTORY     - 1971     MONUMENTED       FLDT
BD1065  HISTORY     - 1971     GOOD             FLDT
BD1065  HISTORY     - 19970502 GOOD             DCJOHN
BD1065  HISTORY     - 20020601 GOOD             DCJOHN
BD1065
BD1065                          STATION DESCRIPTION
BD1065
BD1065'DESCRIBED BY FLORIDA DEPARTMENT OF TRANSPORTATION 1971 (CBM)
BD1065'STATION IS LOCATED ABOUT 5-1/2 MILES NORTHEAST OF LAKE CITY,
BD1065'ON THE FOREST ROAD 236 BRIDGE OVER INTERSTATE ROUTE 10.
BD1065'
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BD1065'TO REACH STATION FROM THE POST OFFICE AT LAKE CITY, GO SOUTH
BD1065'FOR 0.05 MILE TO U.S. ROUTE 90. TURN RIGHT AND GO WEST ON
BD1065'U.S. 90 FOR 0.05 MILE TO INTERSECTION OF U.S. ROUTES 90 AND
BD1065'441. TURN RIGHT AND GO NORTH ON U.S. 441 FOR 4.0 MILES TO THE
BD1065'INTERSECTION OF U.S. 441 AND I-10. TURN RIGHT AND GO EAST ON
BD1065'I-10 FOR 4.5 MILES TO FOREST ROAD 236 BRIDGE OVER I-10 AND
BD1065'STATION ON BRIDGE, AS DESCRIBED.

BD1065'
BD1065'AZIMUTH MARK IS REACHED FROM STATION BY GOING SOUTH ON FOREST
BD1065'ROAD 236 FOR 0.35 MILE TO MARK ON RIGHT, WEST SIDE OF THE ROAD.
BD1065'
BD1065'STATION MARK IS A STANDARD D.O.T. BRASS DISK, STAMPED I 10 71
BD1065'B09, SET IN A DRILL HOLE IN DRIVING SURFACE OF THE BRIDGE. IT
BD1065'IS 2.9 FEET EAST OF INSIDE BASE OF HEADWALL OF BRIDGE, 23.2
BD1065'FEET NORTH-NORTHEAST OF SOUTHWEST END OF CONCRETE HEADWALL, 9.5
BD1065'FEET WEST OF THE CENTERLINE OF FOREST ROAD 236 AND 23.5 FEET
BD1065'NORTH-NORTHEAST OF A FENCE POST.
BD1065'
BD1065'REFERENCE MARK NUMBER 1 IS A STANDARD D.O.T. BRASS DISK, STAMPED
BD1065'I 10 71 B09 R.M. NO. 1, SET IN A DRILL HOLE IN BASE OF CONCRETE
BD1065'HEADWALL OF BRIDGE. IT IS 0.8 FOOT WEST OF INSIDE BASE OF
BD1065'CONCRETE HEADWALL, 13.0 FEET WEST OF THE CENTERLINE OF FOREST
BD1065'ROAD 236 AND 68.2 FEET NORTH OF SOUTHWEST END OF CONCRETE
BD1065'HEADWALL.
BD1065'
BD1065'REFERENCE MARK NUMBER 2 IS A STANDARD S.R.D. BRASS DISK, STAMPED
BD1065'I 10 D2, PRESET IN TOP OF THE CONCRETE HEADWALL OF BRIDGE. IT
BD1065'IS 2.0 FEET EAST OF INSIDE BASE OF CONCRETE HEADWALL, 7.6 FEET
BD1065'NORTH-NORTHEAST OF A FENCE POST AND 13.9 FEET EAST OF THE
BD1065'CENTERLINE OF FOREST ROAD 236.
BD1065'
BD1065'AZIMUTH MARK IS A STANDARD D.O.T. BRASS DISK, STAMPED I 10 71
BD1065'B09 AZ. MK., SET IN THE TOP OF A ROUND CONCRETE MONUMENT THAT
BD1065'PROJECTS 1 INCH ABOVE THE GROUND. IT IS 1.3 FEET EAST OF A
BD1065'METAL WITNESS POST, 13.0 FEET NORTH-NORTHEAST OF A 6 INCH PINE
BD1065'TREE, 20.0 FEET SOUTHEAST OF A 10 INCH PINE TREE AND 37 FEET
BD1065'WEST OF THE CENTERLINE OF GRADED FOREST ROAD 236.
BD1065'
BD1065'DISTANCE BETWEEN REFERENCE MARK NUMBER 1 AND REFERENCE MARK
BD1065'NUMBER 2 IS 59.20 FEET, OR 18.045 METERS.
BD1065'
BD1065'HEIGHT OF LIGHT ABOVE STATION MARK 1.6 METERS.
BD1065
BD1065   STATION RECOVERY (1971)
BD1065
BD1065'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1971
BD1065'5.5 MI NE FROM LAKE CITY.
BD1065'ABOUT 4.1 MILES EAST ALONG INTERSTATE ROUTE 10 FROM THE
BD1065'INTERSECTION OF U.S. ROUTE 441 AND INTERSTATE ROUTE 10, ABOUT
BD1065'4 MILES NORTH OF LAKE CITY, ON THE FOREST ROAD 236 BRIDGE OVER
BD1065'I-10. 2.9 FEET EAST OF INSIDE BASE OF CONCRETE GUARDRAIL OF
BD1065'BRIDGE, 9.5 FEET WEST OF CENTERLINE OF FOREST ROAD 236, 23.2
BD1065'FEET NORTH-NORTHEAST OF SOUTHWEST END OF CONCRETE GUARDRAIL AND
BD1065'23.5 FEET NORTH-NORTHEAST OF A FENCE POST. A BRASS DISK, SET
BD1065'IN THE CONCRETE DRIVING SURFACE OF THE BRIDGE. THIS MARKER IS
BD1065'A TRAVERSE STATION. SECTION 12, T 3S, R 17E
BD1065

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BD1065                          STATION RECOVERY (1997)
BD1065
BD1065'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD1065'RECOVERY NOTE BY DC JOHNSON ASSOC (CHX) THE STATION WAS RECOVERED AS
BD1065'PREVIOUSLY DESCRIBED.
BD1065
BD1065                          STATION RECOVERY (2002)
BD1065
BD1065'RECOVERY NOTE BY DC JOHNSON ASSOC 2002 (ARG)
BD1065'RECOVERED AS DESCRIBED. (ARG)
BD1065'
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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 11, 2011
 BD2709 ***********************************************************************
 BD2709  CBN         -  This is a Cooperative Base Network Control Station.
 BD2709  DESIGNATION -  FLGPS 25
 BD2709  PID         -  BD2709
 BD2709  STATE/COUNTY-  FL/COLUMBIA
 BD2709  USGS QUAD   -  BENTON (1993)
 BD2709
 BD2709                        *CURRENT SURVEY CONTROL
 BD2709  ______________________________________________________________________
 BD2709* NAD 83(2007)-  30 24 48.77603(N)    082 38 11.13979(W)     ADJUSTED
 BD2709* NAVD 88     -        33.055  (meters)     108.45   (feet)  ADJUSTED
 BD2709  ______________________________________________________________________
 BD2709  EPOCH DATE  -        2002.00
 BD2709  X           -     705,573.846 (meters)                     COMP
 BD2709  Y           -  -5,459,793.406 (meters)                     COMP
 BD2709  Z           -   3,209,995.509 (meters)                     COMP
 BD2709  LAPLACE CORR-           -0.31  (seconds)                   DEFLEC09
 BD2709  ELLIP HEIGHT-            4.881 (meters)          (02/10/07) ADJUSTED
 BD2709  GEOID HEIGHT-          -28.17  (meters)                     GEOID09
 BD2709  DYNAMIC HT  -           33.012 (meters)     108.31  (feet)  COMP
 BD2709
 BD2709  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD2709  Type    PID    Designation                      North   East  Ellip
 BD2709  ----------------------------------------------------------------------
 BD2709  NETWORK BD2709 FLGPS 25                          0.41   0.37   1.00
 BD2709  ----------------------------------------------------------------------
 BD2709  MODELED GRAV-     979,343.6   (mgal)                       NAVD 88
 BD2709
 BD2709  VERT ORDER  -  SECOND    CLASS I
 BD2709
 BD2709.The horizontal coordinates were established by GPS observations
 BD2709.and adjusted by the National Geodetic Survey in February 2007.
 BD2709
 BD2709.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD2709.See National Readjustment for more information.
 BD2709.The horizontal coordinates are valid at the epoch date displayed above.
 BD2709.The epoch date for horizontal control is a decimal equivalence
 BD2709.of Year/Month/Day.
 BD2709
 BD2709.The orthometric height was determined by differential leveling and
 BD2709.adjusted in July 2004.
 BD2709.No vertical observational check was made to the station.
 BD2709
 BD2709.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD2709
 BD2709.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD2709
 BD2709.The ellipsoidal height was determined by GPS observations
 BD2709.and is referenced to NAD 83.
 BD2709
 BD2709.The geoid height was determined by GEOID09.
 BD2709
 BD2709.The dynamic height is computed by dividing the NAVD 88
 BD2709.geopotential number by the normal gravity value computed on the
 BD2709.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 BD2709.degrees latitude (g = 980.6199 gals.).
 BD2709
 BD2709.The modeled gravity was interpolated from observed gravity values.
 BD2709
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BD2709;                    North         East     Units Scale Factor Converg.
BD2709;SPC FL N     -   158,152.562   779,043.390   MT  0.99995763   +0 56 11.4
BD2709;SPC FL N     -   518,872.20  2,555,911.52   sFT  0.99995763   +0 56 11.4
BD2709;UTM  17      - 3,365,747.879   342,818.343   MT  0.99990479   -0 49 42.9
BD2709
BD2709!             -  Elev Factor  x  Scale Factor =   Combined Factor
BD2709!SPC FL N     -   0.99999923  x   0.99995763  =   0.99995686
BD2709!UTM  17      -   0.99999923  x   0.99990479  =   0.99990402
BD2709
BD2709:                Primary Azimuth Mark                    Grid Az
BD2709:SPC FL N     -  FLGPS 25 AZ MK 2                       342 54 50.9
BD2709:UTM  17      -  FLGPS 25 AZ MK 2                       344 40 45.2
BD2709
BD2709|---------------------------------------------------------------------|
BD2709| PID    Reference Object                    Distance      Geod. Az  |
BD2709|                                                          dddmmss.s |
BD2709| DE6138 FLGPS 25 AZ MK 2                  APPROX. 0.9 KM 3435102.3 |
BD2709| BD2719 FLGPS 25 AZ MK                    APPROX. 0.7 KM 3435916.1 |
BD2709|---------------------------------------------------------------------|
BD2709
BD2709                          SUPERSEDED SURVEY CONTROL
BD2709
BD2709  NAD 83(1999)-  30 24 48.77606(N)    082 38 11.13983(W) AD(       ) B
BD2709  ELLIP H (05/31/01)    4.902  (m)                        GP(       ) 5 1
BD2709  NAD 83(1990)-  30 24 48.77511(N)    082 38 11.13982(W) AD(       ) B
BD2709  ELLIP H (09/13/90)    4.878  (m)                        GP(       ) 4 1
BD2709  NAVD 88 (03/20/98)   33.05   (m)          108.4    (f) LEVELING    3
BD2709  NGVD 29 (09/13/90)   33.5    (m)          110.     (f) GPS OBS
BD2709
BD2709.Superseded values are not recommended for survey control.
BD2709.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD2709.See file dsdata.txt to determine how the superseded data were derived.
BD2709
BD2709_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLP4281865747(NAD 83)
BD2709_MARKER: F = FLANGE-ENCASED ROD
BD2709_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
BD2709_SP_SET: STAINLESS STEEL ROD IN SLEEVE
BD2709_STAMPING: FLGPS 25 1988
BD2709_MARK LOGO: NGS
BD2709_PROJECTION: FLUSH
BD2709_MAGNETIC: N = NO MAGNETIC MATERIAL
BD2709_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
BD2709_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD2709+SATELLITE: SATELLITE OBSERVATIONS - June 01, 2002
BD2709_ROD/PIPE-DEPTH: 19.3 meters
BD2709_SLEEVE-DEPTH  :  0.9 meters
BD2709
BD2709  HISTORY     - Date     Condition        Report By
BD2709  HISTORY     - 1988     MONUMENTED       NGS
BD2709  HISTORY     - 19890410 GOOD
BD2709  HISTORY     - 19890510 GOOD
BD2709  HISTORY     - 19920126 GOOD             FLDNR
BD2709  HISTORY     - 19970502 GOOD             DCJOHN
BD2709  HISTORY     - 19971120 GOOD             DCJOHN
BD2709  HISTORY     - 20020601 GOOD             DCJOHN
BD2709
BD2709                          STATION DESCRIPTION
BD2709
BD2709'DESCRIBED BY NATIONAL GEODETIC SURVEY 1988
BD2709'THE STATION IS LOCATED ABOUT 33.96 KM (21.10 MI) SOUTHEAST OF JASPER,
BD2709'24.30 KM (15.10 MI) NORTH OF LAKE CITY, ALONG U.S. HIGHWAY 441.
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BD2709'OWNERSHIP--HIGHWAY RIGHT-OF-WAY.
BD2709'TO REACH THE STATION FROM THE INTERSECTION OF INTERSTATE HIGHWAY 10
BD2709'AND U.S. HIGHWAY 441 NEAR LAKE CITY, GO NORTH FOR 17.78 KM (11.05 MI)
BD2709'ON HIGHWAY 441 TO A CROSSROAD, NEEDMORE ROAD ON RIGHT AND RIVER ROAD
BD2709'ON LEFT.  CONTINUE AHEAD FOR 0.80 KM (0.50 MI) ON HIGHWAY 441 TO A
BD2709'BRIDGE OVER A SMALL CREEK.  CONTINUE AHEAD FOR 0.40 KM (0.25 MI) ON
BD2709'HIGHWAY 441 TO THE STATION ON LEFT.
BD2709'THE STATION IS RECESSED 12 CM BELOW GROUND.  LOCATED 57.61 M
BD2709'(189.0 FT) SOUTH FROM UTILITY POLE NUMBER D8-08-15-30, 11.98 M
BD2709'(39.3 FT) WEST-SOUTHWEST FROM THE APPROXIMATE CENTER OF HIGHWAY, 9.05
BD2709'M (29.7 FT) NORTH-NORTHEAST FROM A 6 INCH BY 6 INCH BRACE POST IN
BD2709'FENCE LINE, 3.47 M (11.4 FT) EAST-NORTHEAST FROM A NORTH-SOUTH FENCE
BD2709'LINE AND 3.26 M (10.7 FT) EAST FROM A CARSONITE WITNESS POST.
BD2709'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
BD2709'DESCRIBED BY R.L. MALLOY.
BD2709
BD2709                          STATION RECOVERY (1989)
BD2709
BD2709'RECOVERED 1989
BD2709'RECOVERED IN GOOD CONDITION.
BD2709
BD2709                          STATION RECOVERY (1989)
BD2709
BD2709'RECOVERED 1989
BD2709'RECOVERED IN GOOD CONDITION.
BD2709
BD2709                          STATION RECOVERY (1992)
BD2709
BD2709'RECOVERY NOTE BY FL DEPT OF NAT RES 1992 (PBM)
BD2709'THE STATION IS ABOUT 21.1 MI (34.0 KM) SOUTHEAST OF JASPER, 15.1 MI
BD2709'(24.3 KM) NORTH OF LAKE CITY, IN SECTION 8, T 1 S, R 17 E.
BD2709'OWNERSHIP--HIGHWAY RIGHT-OF-WAY. TO REACH THE STATION FROM THE
BD2709'INTERSECTION OF U.S. HIGHWAY 441 AND INTERSTATE 10 (EXIT 44), GO NORTH
BD2709'ON U.S. HIGHWAY 441 FOR 11.65 MI (18.75 KM) TO A CROSSROAD, NEEDMORE
BD2709'ROAD ON THE RIGHT AND RIVER ROAD ON THE LEFT, CONTINUE AHEAD ON U.S.
BD2709'HIGHWAY 441 FOR 0.45 MI (0.72 KM) TO A BRIDGE OVER A SMALL CREEK,
BD2709'CONTINUE AHEAD ON U.S. HIGHWAY 441 FOR 0.30 MI (0.48 KM) TO THE
BD2709'STATION ON THE LEFT. LOCATED 189.0 FT (57.6 M) SOUTH OF A POWER POLE
BD2709'NUMBER D8-08-15-30, 39.3 FT (12.0 M) WEST-SOUTHWEST OF THE CENTERLINE
BD2709'OF THE HIGHWAY, 29.7 FT (9.1 M) NORTH-NOTHWEST OF A 6-INCH BRACE POST
BD2709'IN THE FENCE LINE, 11.4 FT (3.5 M) EAST-NORTHEAST OF A NORTH-SOUTH
BD2709'FENCE AND 10.7 FT (3.3 M) EAST OF A CARSONITE WITNESS POST. NOTE
BD2709'ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
BD2709
BD2709                          STATION RECOVERY (1997)
BD2709
BD2709'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD2709'RECOVERY NOTE BY DC JOHNSON ASSOC (CHX) THE STATION WAS RECOVERED AS
BD2709'PREVIOUSLY DESCRIBED.
BD2709
BD2709                          STATION RECOVERY (1997)
BD2709
BD2709'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD2709'RECOVERY NOTE BY DC JOHNSON AND ASSOC (CHX) .-- THE STATION WAS
BD2709'RECOVERED AS PREVIOUSLY DESCRIBED.
BD2709
BD2709                          STATION RECOVERY (2002)
BD2709
BD2709'RECOVERY NOTE BY DC JOHNSON ASSOC 2002 (ARG)
BD2709'RECOVERED AS DESCRIBED. (ARG)
BD2709'
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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 15, 2011
 BD2712 ***********************************************************************
 BD2712  FBN          -  This is a Federal Base Network Control Station.
 BD2712  PACS         -  This is a Primary Airport Control Station.
 BD2712  DESIGNATION  -  LAKEPORT
 BD2712  PID          -  BD2712
 BD2712  STATE/COUNTY-   FL/COLUMBIA
 BD2712  USGS QUAD    -  LAKE CITY EAST (1993)
 BD2712
 BD2712                        *CURRENT SURVEY CONTROL
 BD2712  ______________________________________________________________________
 BD2712* NAD 83(2007)-  30 10 57.55155(N)    082 35 00.39635(W)     ADJUSTED
 BD2712* NAVD 88      -        59.91   (meters)     196.6    (feet)  GPS OBS
 BD2712  ______________________________________________________________________
 BD2712  EPOCH DATE   -        2002.00
 BD2712  X            -     712,292.383 (meters)                    COMP
 BD2712  Y            -  -5,471,967.040 (meters)                    COMP
 BD2712  Z            -   3,187,908.691 (meters)                    COMP
 BD2712  LAPLACE CORR-           -0.54  (seconds)                   DEFLEC09
 BD2712  ELLIP HEIGHT-           31.789 (meters)          (02/10/07) ADJUSTED
 BD2712  GEOID HEIGHT-          -28.12  (meters)                    GEOID09
 BD2712
 BD2712  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD2712  Type    PID    Designation                       North   East  Ellip
 BD2712  ----------------------------------------------------------------------
 BD2712  NETWORK BD2712 LAKEPORT                           0.27   0.25   0.86
 BD2712  ----------------------------------------------------------------------
 BD2712
 BD2712.This mark is at Lake City Airport (31J)
 BD2712
 BD2712.The horizontal coordinates were established by GPS observations
 BD2712.and adjusted by the National Geodetic Survey in February 2007.
 BD2712
 BD2712.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD2712.See National Readjustment for more information.
 BD2712.The horizontal coordinates are valid at the epoch date displayed above.
 BD2712.The epoch date for horizontal control is a decimal equivalence
 BD2712.of Year/Month/Day.
 BD2712
 BD2712.The orthometric height was determined by GPS observations and a
 BD2712.high-resolution geoid model.
 BD2712
 BD2712.GPS derived orthometric heights for airport stations designated as
 BD2712.PACS or SACS are published to 2 decimal places.  This maintains
 BD2712.centimeter relative accuracy between the PACS and SACS.  It does
 BD2712.not indicate centimeter accuracy relative to other marks which are
 BD2712.part of the NAVD 88 network.
 BD2712
 BD2712.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD2712
 BD2712.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD2712
 BD2712.The ellipsoidal height was determined by GPS observations
 BD2712.and is referenced to NAD 83.
 BD2712
 BD2712.The geoid height was determined by GEOID09.
 BD2712
 BD2712;                    North         East     Units Scale Factor Converg.
 BD2712;SPC FL N      -   132,645.285   784,563.629   MT  0.99994847   +0 57 47.2
 BD2712;SPC FL N      -   435,187.07  2,574,022.51   sFT  0.99994847   +0 57 47.2
 BD2712;UTM  17       - 3,340,084.349   347,551.325   MT  0.99988673   -0 47 46.5
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BD2712
BD2712!             -  Elev Factor  x  Scale Factor =   Combined Factor
BD2712!SPC FL N     -   0.99999501  x   0.99994847  =   0.99994348
BD2712!UTM  17      -   0.99999501  x   0.99988673  =   0.99988174
BD2712
BD2712:                Primary Azimuth Mark                    Grid Az
BD2712:SPC FL N     -  LAKEPORT AZ MK                          095 33 45.8
BD2712:UTM  17      -  LAKEPORT AZ MK                          097 19 19.5
BD2712
BD2712|---------------------------------------------------------------------|
BD2712| PID    Reference Object                    Distance      Geod. Az  |
BD2712|                                                          dddmmss.s |
BD2712| BD2726 LAKEPORT AZ MK                    APPROX. 1.2 KM 0963133.0 |
BD2712|---------------------------------------------------------------------|
BD2712
BD2712                          SUPERSEDED SURVEY CONTROL
BD2712
BD2712  NAD 83(1999)-  30 10 57.55174(N)    082 35 00.39649(W) AD(       ) A
BD2712  ELLIP H (04/12/01)   31.811  (m)                        GP(       ) 4 1
BD2712  NAD 83(1990)-  30 10 57.55079(N)    082 35 00.39622(W) AD(       ) B
BD2712  ELLIP H (09/13/90)   31.752  (m)                        GP(       ) 4 1
BD2712  NGVD 29 (09/13/90)   60.2    (m)          198.     (f) GPS OBS
BD2712
BD2712.Superseded values are not recommended for survey control.
BD2712.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD2712.See file dsdata.txt to determine how the superseded data were derived.
BD2712
BD2712_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLP4755140084(NAD 83)
BD2712_MARKER: F = FLANGE-ENCASED ROD
BD2712_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
BD2712_SP_SET: STAINLESS STEEL ROD IN SLEEVE
BD2712_STAMPING: LAKEPORT 1988
BD2712_MARK LOGO: NGS
BD2712_PROJECTION: RECESSED 15 CENTIMETERS
BD2712_MAGNETIC: N = NO MAGNETIC MATERIAL
BD2712_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
BD2712+STABILITY: POSITION/ELEVATION WELL
BD2712_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD2712+SATELLITE: SATELLITE OBSERVATIONS - June 01, 2002
BD2712_ROD/PIPE-DEPTH: 15.7 meters
BD2712_SLEEVE-DEPTH  : 0.9 meters
BD2712
BD2712  HISTORY     - Date     Condition        Report By
BD2712  HISTORY     - 1988     MONUMENTED       NGS
BD2712  HISTORY     - 19890410 GOOD
BD2712  HISTORY     - 19890510 GOOD
BD2712  HISTORY     - 19951129 GOOD             NGS
BD2712  HISTORY     - 19951129 GOOD             NGS
BD2712  HISTORY     - 19970502 GOOD             DCJOHN
BD2712  HISTORY     - 19990405 GOOD             FLDT
BD2712  HISTORY     - 20020601 GOOD             DCJOHN
BD2712
BD2712                           STATION DESCRIPTION
BD2712
BD2712'DESCRIBED BY NATIONAL GEODETIC SURVEY 1988
BD2712'THE STATION IS LOCATED ABOUT 4.99 KM (3.10 MI) EAST OF LAKE CITY, AT
BD2712'THE LAKE CITY MUNICIPAL AIRPORT, IN SECTION 35, T 3 S, R 17 E, AT THE
BD2712'WEST CORNER OF A TRIANGLE FORMED BY RUNWAY 10-28, RUNWAY 05-23 AND A
BD2712'TAXIWAY.  OWNERSHIP--CITY OF LAKE CITY, P.O. BOX 1687, LAKE CITY FL
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BD2712'32056-1687, MRS. BARBARA K. MOORE - AIRPORT AND DOWNTOWN MANAGER,
BD2712'PHONE 904-752-2031. NOTE--PERMISSION MUST BE OBTAINED BEFORE ENTERING
BD2712'AIRPORT.
BD2712'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (DUVAL
BD2712'ST) AND U.S. HIGHWAY 441 (MARION ST) IN LAKE CITY, GO EASTERLY FOR
BD2712'3.22 KM (2.00 MI) ON HIGHWAY 90 TO A FORK. FOLLOW THE LEFT FORK AND
BD2712'GO EAST FOR 2.25 KM (1.40 MI) ON HIGHWAY 90 TO A PAVED DRIVE RIGHT.
BD2712'TURN RIGHT AND GO SOUTH FOR 0.08 KM (0.05 MI) ON THE PAVED DRIVE TO A
BD2712'LOCKED GATE ON THE EAST SIDE OF THE TERMINAL BUILDING. PASS THROUGH
BD2712'GATE, TURN RIGHT AND GO SOUTHWEST FOR 0.56 KM (0.35 MI) ON THE TAXIWAY
BD2712'TO RUNWAY 10-28. CONTINUE AHEAD AND GO SOUTHWEST FOR ABOUT 100 M
BD2712'(328.1 FT) TO THE STATION ON LEFT.
BD2712'THE STATION IS RECESSED 10 CM BELOW GROUND. LOCATED 75.90 M
BD2712'(249.0 FT) SOUTH-SOUTHWEST FROM THE APPROXIMATE CENTER OF RUNWAY
BD2712'10-28, 71.08 M (233.2 FT) NORTHEAST FROM THE APPROXIMATE CENTER OF
BD2712'TAXIWAY, 37.19 M (122.0 FT) SOUTH FROM THE CENTER OF A BLACK
BD2712'TRIANGULAR METAL SIGN NUMBERED 2 ON EAST SIDE AND 6 ON WEST SIDE,
BD2712'18.23 M (59.8 FT) NORTHEAST FROM THE NORTHEAST CORNER OF A LARGE
BD2712'CONCRETE PAD AND 1.83 M (6.0 FT) NORTH FROM A CARSONITE WITNESS POST.
BD2712'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
BD2712'DESCRIBED BY D.F. CALLAHAN.
BD2712
BD2712   STATION RECOVERY (1989)
BD2712
BD2712'RECOVERED 1989
BD2712'RECOVERED IN GOOD CONDITION.
BD2712
BD2712   STATION RECOVERY (1989)
BD2712
BD2712'RECOVERED 1989
BD2712'RECOVERED IN GOOD CONDITION.
BD2712
BD2712   STATION RECOVERY (1995)
BD2712
BD2712'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (CFS)
BD2712'THE STATION IS LOCATED ABOUT 3.10 MI (4.99 KM) EAST OF LAKE CITY, AT
BD2712'THE LAKE CITY MUNICIPAL AIRPORT, AT THE WEST CORNER OF A TRIANGLE
BD2712'FORMED BY RUNWAY 10-28, RUNWAY 05-23, AND A TAXIWAY. OWNERSHIP --
BD2712'CITY OF LAKE CITY, P.O. BOX 1687, LAKE CITY, FL 32056-1687. AIRPORT
BD2712'MANAGER IS FAYE BOWLING, PHONE 904-752-2031, ALSO -- EARL LEVERS,
BD2712'FIXED BASE OPERATIONS MANAGER, PHONE 904-752-1066, ROUTE 7, BOX 375,
BD2712'LAKE CITY, FL 32056. NOTE -- PERMISSION MUST BE OBTAINED BEFORE
BD2712'ENTERING AIRPORT. TO REACH THE STATION FROM THE INTERSECTION OF U.S.
BD2712'HIGHWAY 90 (DUVAL ST) AND U.S. HIGHWAY 441 (MARION ST) IN LAKE CITY,
BD2712'GO EASTERLY FOR 2.00 MI (3.22 KM) ON HIGHWAY 90 TO A FORK. FOLLOW THE
BD2712'LEFT FORK AND GO EAST FOR 1.40 MI (2.25 KM) ON HIGHWAY 90 TO A PAVED
BD2712'DRIVE RIGHT. TURN RIGHT AND GO SOUTH FOR 0.05 MI (0.08 KM) ON PAVED
BD2712'DRIVE TO A LOCKED GATE ON THE EAST SIDE OF THE TERMINAL BUILDING.
BD2712'PASS THROUGH GATE, TURN RIGHT, AND GO SOUTHWEST FOR 0.35 MI (0.56 KM)
BD2712'ON THE TAXIWAY TO RUNWAY 10-28. CONTINUE AHEAD ACROSS RUNWAY FOR 0.05
BD2712'MI (0.08 KM) TO THE STATION IN THE GRASS ON THE LEFT. THE STATION IS
BD2712'249.0 FT (75.9 M) SOUTH-SOUTHWEST OF THE APPROXIMATE CENTER OF RUNWAY
BD2712'10-28, 233.2 FT (71.1 M) NORTHEAST OF THE APPROXIMATE CENTER OF
BD2712'TAXIWAY, 122.0 FT (37.2 M) SOUTH OF A BLACK TRIANGULAR METAL SIGN
BD2712'NUMBERED 2 ON THE EAST SIDE AND 6 ON THE WEST SIDE, 59.8 FT (18.2 M)
BD2712'NORTHEAST OF THE NORTHEAST CORNER OF A LARGE CONCRETE PAD, AND 6.0 FT
BD2712'(1.8 M) NORTH OF A WITNESS POST. NOTE -- ACCESS TO DATUM POINT IS HAD
BD2712'THROUGH A 5-INCH LOGO CAP. A SHORT SECTION OF REBAR HAS BEEN PLACED
BD2712'INSIDE THE PVC PIPE. THE STATION IS AN AREA NAVIGATION APPROACH
BD2712'PRIMARY AIRPORT CONTROL STATION.
BD2712

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BD2712                          STATION RECOVERY (1995)
BD2712
BD2712'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (MLB)
BD2712'RECOVERED AS DESCRIBED.
BD2712
BD2712                          STATION RECOVERY (1997)
BD2712
BD2712'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD2712'RECOVERY NOTE BY DC JOHNSON ASSOC (CHX) THE STATION WAS RECOVERED AS
BD2712'PREVIOUSLY DESCRIBED.
BD2712
BD2712                          STATION RECOVERY (1999)
BD2712
BD2712'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1999
BD2712'RECOVERED AS DESCRIBED.
BD2712
BD2712                          STATION RECOVERY (2002)
BD2712
BD2712'RECOVERY NOTE BY DC JOHNSON ASSOC 2002 (ARG)
BD2712'RECOVERED AS DESCRIBED. (ARG)
BD2712'
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1        National Geodetic Survey,   Retrieval Date = FEBRUARY 15, 2011
 BD2726 ***********************************************************************
 BD2726  SACS        -  This is a Secondary Airport Control Station.
 BD2726  DESIGNATION -  LAKEPORT AZ MK
 BD2726  PID         -  BD2726
 BD2726  STATE/COUNTY-  FL/COLUMBIA
 BD2726  USGS QUAD   -  LAKE CITY EAST (1993)
 BD2726
 BD2726                        *CURRENT SURVEY CONTROL
 BD2726  ______________________________________________________________________
 BD2726* NAD 83(2007)-  30 10 53.25076(N)    082 34 17.14145(W)     ADJUSTED
 BD2726* NAVD 88     -        58.70   (meters)     192.6    (feet)  GPS OBS
 BD2726  ______________________________________________________________________
 BD2726  EPOCH DATE  -        2002.00
 BD2726  X           -     713,448.338 (meters)                     COMP
 BD2726  Y           -  -5,471,882.495 (meters)                     COMP
 BD2726  Z           -   3,187,793.578 (meters)                     COMP
 BD2726  LAPLACE CORR-          -0.58  (seconds)                    DEFLEC09
 BD2726  ELLIP HEIGHT-          30.534 (meters)          (02/10/07) ADJUSTED
 BD2726  GEOID HEIGHT-         -28.12  (meters)                     GEOID09
 BD2726
 BD2726  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 BD2726  Type    PID    Designation                      North   East  Ellip
 BD2726  ----------------------------------------------------------------------
 BD2726  NETWORK BD2726 LAKEPORT AZ MK                    0.35   0.31   0.98
 BD2726  ----------------------------------------------------------------------
 BD2726
 BD2726.This mark is at Lake City Airport (31J)
 BD2726
 BD2726.The horizontal coordinates were established by GPS observations
 BD2726.and adjusted by the National Geodetic Survey in February 2007.
 BD2726
 BD2726.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 BD2726.See National Readjustment for more information.
 BD2726.The horizontal coordinates are valid at the epoch date displayed above.
 BD2726.The epoch date for horizontal control is a decimal equivalence
 BD2726.of Year/Month/Day.
 BD2726
 BD2726.The orthometric height was determined by GPS observations and a
 BD2726.high-resolution geoid model.
 BD2726
 BD2726.GPS derived orthometric heights for airport stations designated as
 BD2726.PACS or SACS are published to 2 decimal places.  This maintains
 BD2726.centimeter relative accuracy between the PACS and SACS.  It does
 BD2726.not indicate centimeter accuracy relative to other marks which are
 BD2726.part of the NAVD 88 network.
 BD2726
 BD2726.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 BD2726
 BD2726.The Laplace correction was computed from DEFLEC09 derived deflections.
 BD2726
 BD2726.The ellipsoidal height was determined by GPS observations
 BD2726.and is referenced to NAD 83.
 BD2726
 BD2726.The geoid height was determined by GEOID09.
 BD2726
 BD2726;                    North         East     Units Scale Factor Converg.
 BD2726;SPC FL N     -   132,532.387   785,722.822   MT  0.99994846   +0 58 09.0
 BD2726;SPC FL N     -   434,816.67  2,577,825.63   sFT  0.99994846   +0 58 09.0
 BD2726;UTM  17      - 3,339,935.924   348,706.433   MT  0.99988240   -0 47 24.6
 BD2726
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BD2726!             -  Elev Factor  x  Scale Factor =   Combined Factor
BD2726!SPC FL N     -   0.99999520  x   0.99994846  =   0.99994366
BD2726!UTM  17      -   0.99999520  x   0.99988240  =   0.99987761
BD2726
BD2726:                Primary Azimuth Mark                    Grid Az
BD2726:SPC FL N     -  LAKEPORT                                275 33 45.8
BD2726:UTM  17      -  LAKEPORT                                277 19 19.4
BD2726
BD2726|---------------------------------------------------------------------|
BD2726| PID    Reference Object                    Distance      Geod. Az  |
BD2726|                                                          dddmmss.s |
BD2726| BD2712 LAKEPORT                          APPROX. 1.2 KM 2763154.8 |
BD2726|---------------------------------------------------------------------|
BD2726
BD2726                          SUPERSEDED SURVEY CONTROL
BD2726
BD2726  NAD 83(1999)-  30 10 53.25096(N)    082 34 17.14154(W) AD(       ) 1
BD2726  ELLIP H (05/31/01)   30.542  (m)                        GP(       ) 4 1
BD2726  ELLIP H (03/27/98)   30.488  (m)                        GP(       ) 4 2
BD2726  ELLIP H (03/20/98)   30.503  (m)                        GP(       ) 3 1
BD2726  NAD 83(1990)-  30 10 53.24993(N)    082 34 17.14170(W) AD(       ) 1
BD2726  NGVD 29 (02/04/91)   59.0    (m)          194.     (f) GPS OBS
BD2726
BD2726.Superseded values are not recommended for survey control.
BD2726.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BD2726.See file dsdata.txt to determine how the superseded data were derived.
BD2726
BD2726_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLP4870639935(NAD 83)
BD2726_MARKER: I = METAL ROD
BD2726_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
BD2726_SP_SET: STAINLESS STEEL ROD IN SLEEVE
BD2726_STAMPING: LAKEPORT AZ MK 1988
BD2726_MARK LOGO: NGS
BD2726_PROJECTION: FLUSH
BD2726_MAGNETIC: I = MARKER IS A STEEL ROD
BD2726_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
BD2726_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BD2726+SATELLITE: SATELLITE OBSERVATIONS - May 02, 1997
BD2726_ROD/PIPE-DEPTH: 17.1 meters
BD2726_SLEEVE-DEPTH  :  0.9 meters
BD2726
BD2726  HISTORY     - Date     Condition        Report By
BD2726  HISTORY     - 1988     MONUMENTED       NGS
BD2726  HISTORY     - 19890510 GOOD
BD2726  HISTORY     - 19951129 GOOD             NGS
BD2726  HISTORY     - 19970502 GOOD             DCJOHN
BD2726
BD2726                          STATION DESCRIPTION
BD2726
BD2726'DESCRIBED BY NATIONAL GEODETIC SURVEY 1988
BD2726'THE STATION IS LOCATED ABOUT 6.12 KM (3.80 MI) EAST OF LAKE CITY, AT
BD2726'THE LAKE CITY MUNICIPAL AIRPORT, IN SECTION 36, T 3 S, R 17 E, ON THE
BD2726'SOUTH SIDE OF RUNWAY 10-28, IN THE GRASS MEDIAN BETWEEN RUNWAY 05-23
BD2726'AND AN OLD TAXIWAY.  OWNERSHIP--CITY OF LAKE CITY, P.O. BOX 1687, LAKE
BD2726'CITY FL 32056-1687, MRS. BARBARA K. MOORE - AIRPORT AND DOWNTOWN
BD2726'MANAGER, PHONE 904-752-2031.  NOTE--PERMISSION MUST BE OBTAINED BEFORE
BD2726'ENTERING AIRPORT.
BD2726'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (DUVAL
BD2726'ST) AND U.S. HIGHWAY 441 (MARION ST) IN LAKE CITY, GO EASTERLY FOR
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BD2726'3.22 KM (2.00 MI) ON HIGHWAY 90 TO A FORK. FOLLOW THE LEFT FORK AND
BD2726'GO EAST FOR 2.25 KM (1.40 MI) ON HIGHWAY 90 TO A PAVED DRIVE RIGHT.
BD2726'TURN RIGHT AND GO SOUTH FOR 0.08 KM (0.05 MI) ON THE PAVED DRIVE TO A
BD2726'LOCKED GATE ON THE EAST SIDE OF THE TERMINAL BUILDING. PASS THROUGH
BD2726'GATE, TURN RIGHT AND GO SOUTHWEST FOR 0.56 KM (0.35 MI) ON THE TAXIWAY
BD2726'TO RUNWAY 10-28. CROSS RUNWAY, TURN LEFT AND GO EAST FOR 0.97 KM
BD2726'(0.60 MI) ALONG EDGE OF RUNWAY TO THE NORTHWEST EDGE OF RUNWAY 05-23.
BD2726'CONTINUE STRAIGHT AHEAD AND GO EAST FOR 0.24 KM (0.15 MI) ALONG EDGE
BD2726'OF RUNWAY TO THE STATION ON RIGHT, JUST BEFORE AN OLD TAXIWAY.
BD2726'THE STATION IS RECESSED 11 CM BELOW GROUND. LOCATED 65.23 M
BD2726'(214.0 FT) SOUTH-SOUTHWEST FROM THE APPROXIMATE CENTER OF RUNWAY
BD2726'10-28, 53.74 M (176.3 FT) SOUTHWEST FROM A WHITE RUNWAY LIGHT ON THE
BD2726'WEST SIDE OF OLD TAXIWAY, 44.65 M (146.5 FT) EAST-SOUTHEAST FROM THE
BD2726'SOUTHEAST CORNER OF THE SOUTH ONE OF TWO 1.98 M (6.5 FT) BY 2.74 M
BD2726'(9.0 FT) CONCRETE SLABS FLUSH WITH GROUND, 44.20 M (145.0 FT)
BD2726'SOUTH-SOUTHEAST FROM THE THIRD WHITE RUNWAY LIGHT THAT IS EAST FROM
BD2726'RUNWAY 05-23, 34.50 M (113.2 FT) NORTH-NORTHWEST FROM THE APPROXIMATE
BD2726'CENTER OF OLD TAXIWAY, 28.65 M (94.0 FT) SOUTH-SOUTHWEST FROM A BLACK
BD2726'TRIANGULAR METAL SIGN NUMBERED 2 ON THE WEST SIDE AND 6 ON THE EAST
BD2726'SIDE AND 1.83 M (6.0 FT) NORTH FROM A CARSONITE WITNESS POST.
BD2726'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP.
BD2726'DESCRIBED BY D.F. CALLAHAN.
BD2726
BD2726   STATION RECOVERY (1989)
BD2726
BD2726'RECOVERED 1989
BD2726'RECOVERED IN GOOD CONDITION.
BD2726
BD2726   STATION RECOVERY (1995)
BD2726
BD2726'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1995 (MLB)
BD2726'THE STATION IS LOCATED ABOUT 3.10 MI (4.99 KM) EAST OF LAKE CITY, AT
BD2726'THE LAKE CITY MUNICIPAL AIRPORT, ON THE SOUTH SIDE OF RUNWAY 10-28, IN
BD2726'THE GRASS MEDIAN BETWEEN RUNWAY 05-23 AND AN OLD TAXIWAY.
BD2726'OWNERSHIP--CITY OF LAKE CITY, P.O. BOX 1687, LAKE CITY, FL
BD2726'32056-1687. AIRPORT MANAGER IS FAYE BOWLING, PHONE 904-752-2031.
BD2726'NOTE--PERMISSION MUST BE OBTAINED BEFORE ENTERING AIRPORT. TO REACH
BD2726'THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 90 (DUVAL ST) AND
BD2726'U.S. HIGHWAY 441 (MARION ST) IN LAKE CITY, GO EASTERLY FOR 2.00 MI
BD2726'(3.22 KM) ON HIGHWAY 90 TO A FORK. FOLLOW THE LEFT FORK AND GO EAST
BD2726'FOR 1.40 MI (2.25 KM) ON HIGHWAY 90 TO A PAVED DRIVE RIGHT. TURN
BD2726'RIGHT AND GO SOUTH FOR 0.05 MI (0.08 KM) ON PAVED DRIVE TO A LOCKED
BD2726'GATE ON THE EAST SIDE OF THE TERMINAL BUILDING. PASS THROUGH GATE,
BD2726'TURN RIGHT, AND GO SOUTHWEST FOR 0.35 MI (0.56 KM) ON THE TAXIWAY TO
BD2726'RUNWAY 10-28. CROSS RUNWAY, TURN LEFT AND GO EAST FOR 0.60 MI (0.97
BD2726'KM) PARALLEL WITH RUNWAY 10-28 TO THE NORTHWEST EDGE OF RUNWAY 05-23.
BD2726'CONTINUE AHEAD, CROSSING RUNWAY 05-23, AND GO EAST FOR 0.15 MI, (0.24
BD2726'KM) PARALLELING RUNWAY 10-28, TO THE STATION JUST BEFORE AN OLD
BD2726'TAXIWAY. THE STATION IS 214.0 FT (65.2 M) SOUTH-SOUTHWEST OF THE
BD2726'APPROXIMATE CENTER OF RUNWAY 10-28, 176.3 FT (53.7 M) SOUTHWEST OF A
BD2726'RUNWAY LIGHT ON THE WEST SIDE OF OLD TAXIWAY, 146.5 FT (44.7 M)
BD2726'EAST-SOUTHEAST OF THE SOUTHEAST CORNER OF THE SOUTH ONE OF TWO 6.5 FT
BD2726'(2.0 M) BY 9.0 FT (2.7 M) CONCRETE SLABS FLUSH WITH THE GROUND, 145.0
BD2726'FT (44.2 M) SOUTH-SOUTHEAST OF THE THIRD RUNWAY LIGHT THAT IS EAST OF
BD2726'RUNWAY 05-23, 113.2 FT (34.5 M) NORTH-NORTHWEST OF THE APPROXIMATE
BD2726'CENTER OF OLD TAXIWAY, 94.0 FT (28.7 M) SOUTH-SOUTHWEST OF A BLACK
BD2726'TRIANGULAR METAL SIGN NUMBERED 2 ON THE WEST SIDE AND 6 ON THE EAST
BD2726'SIDE, AND 6.0 FT (1.8 M) NORTH OF A WITNESS POST. NOTE--ACCESS TO
BD2726'DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. THE STATION IS A

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BD2726'SECONDARY AIRPORT CONTROL STATION.
BD2726
BD2726                          STATION RECOVERY (1997)
BD2726
BD2726'RECOVERY NOTE BY DC JOHNSON ASSOC 1997 (CHX)
BD2726'RECOVERY NOTE BY DC JOHNSON ASSOC (CHX) THE STATION WAS RECOVERED
BD2726'ASPREVIOUSLY DESCRIBED.
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Appendix B

Fundamental Vertical Accuracy Point List

State Plane NAD83 Florida North Zone 0903

Point ID	LAT	LONG	Easting	Northing	Elevation	Ellipsoid	Feature Code
902	30°33'31.121306702"	-83°21'57.856803140"	2325407.751	568618.031	95.036	3.222	FVA
903	30°33'31.082389839"	-83°21'57.732477432"	2325418.659	568614.208	95.01	3.196	FVA
917	30°34'45.126513754"	-83°10'05.955883859"	2387560.344	576767.313	151.401	59.327	FVA
918	30°34'45.083575974"	-83°10'05.814117717"	2387572.786	576763.12	151.583	59.509	FVA
938	30°33'13.917457586"	-83°16'59.351269897"	2351524.119	567149.073	114.021	22.022	FVA
939	30°33'13.790027502"	-83°16'59.349891882"	2351524.377	567136.201	113.716	21.717	FVA
963	30°28'30.454386390"	-82°59'49.878859503"	2441909.275	539587.075	146.375	54.322	FVA
974	30°23'30.657433637"	-83°07'23.489940326"	2402584.071	508800.408	84.42	-7.597	FVA
975	30°23'30.660933046"	-83°07'23.293308336"	2402601.287	508800.97	84.846	-7.17	FVA
987	30°27'01.705119586"	-83°09'25.251615966"	2391669.718	529993.219	75.923	-16.11	FVA
988	30°27'01.601442371"	-83°09'25.306643682"	2391665.025	529982.688	75.931	-16.102	FVA
994	30°25'01.692172542"	-83°17'33.540619016"	2349061.454	517391.342	87.558	-4.318	FVA
995	30°25'01.562943361"	-83°17'33.380315358"	2349075.627	517378.436	87.378	-4.498	FVA
1005	30°24'58.138174471"	-83°22'25.246810487"	2323525.042	516770.926	95.682	3.993	FVA
1006	30°24'58.001358861"	-83°22'25.447243253"	2323507.63	516756.931	95.556	3.868	FVA
1025	30°19'29.767452246"	-82°51'19.655717434"	2487340.924	485585.344	132.957	40.747	FVA
1034	30°20'39.598096240"	-82°45'57.466882444"	2515467.162	493057.511	124.16	31.864	FVA
1035	30°23'58.329136849"	-82°50'05.407343441"	2493451.131	512808.476	142.396	50.166	FVA
1040	30°18'47.253933228"	-82°54'14.873437630"	2472046.509	481072.645	165.983	73.865	FVA
1044	30°10'35.580151568"	-82°40'25.367668225"	2545540.448	432499.639	162.791	70.666	FVA
1045	30°06'51.165497422"	-82°41'30.003894082"	2540227.504	409741.343	77.703	-14.267	FVA
1050	30°04'20.105810684"	-82°38'21.820191597"	2557001.936	394749.106	160.271	68.366	FVA
1053	30°06'01.635663994"	-82°34'41.819833004"	2576156.495	405324.884	143.293	51.177	FVA
1060	30°09'05.185505632"	-82°33'25.539979494"	2582539.91	423978.187	182.213	89.951	FVA
1065	30°09'40.680008219"	-82°47'27.141759425"	2508608.303	426380.209	107.856	15.894	FVA
2010	30°14'10.734924989"	-82°30'05.898365398"	2599523.584	455143.69	156.341	63.888	FVA
900	30°33'30.796556074"	-83°21'58.569951328"	2325345.727	568584.603	94.646	2.833	FVA
904	30°34'42.285811887"	-83°24'44.108429095"	2310803.986	575665.877	137.755	46.055	FVA
911	30°35'45.591915462"	-83°16'24.317627963"	2354422.334	582504.797	92.758	0.758	FVA
915	30°34'44.904481644"	-83°10'06.069611507"	2387550.665	576744.766	150.874	58.8	FVA
919	30°35'34.223260199"	-83°07'23.471452716"	2401702.97	581895.951	151.276	59.204	FVA
923	30°36'52.213917246"	-83°01'22.825609429"	2433119.816	590169.289	141.002	48.932	FVA
925	30°32'09.970359351"	-83°02'50.791273054"	2425796.985	561557.563	130.059	37.979	FVA
955	30°29'48.743157348"	-83°05'00.902543543"	2414596.529	547147.439	85.315	-6.767	FVA

977	30°24'02.553858411"	-83°12'03.159733666"	2378055.366	511735.15	67.977	-23.978	FVA
985	30°27'01.898750617"	-83°09'25.162711740"	2391677.268	530012.871	75.913	-16.12	FVA
992	30°25'01.907716894"	-83°17'33.429832184"	2349070.923	517413.22	87.836	-4.041	FVA
996	30°28'09.926176590"	-83°22'33.406012436"	2322619.645	536138.766	135.062	43.345	FVA
1000	30°28'22.010244336"	-83°24'58.115992717"	2309944.779	537236.925	188.01	96.411	FVA
1036	30°23'58.138382133"	-82°50'05.481813078"	2493444.891	512789.112	142.476	50.247	FVA
1038	30°18'40.190933516"	-82°56'12.244900978"	2461769.617	480216.656	163.271	71.198	FVA
1046	30°06'51.283837473"	-82°41'30.242260270"	2540206.382	409752.964	78.199	-13.771	FVA
1063	30°10'29.472937837"	-82°42'39.738191306"	2533757.712	431695.777	153.067	60.986	FVA
1084	30°24'50.448660093"	-82°47'12.168380656"	2508541.555	518298.099	118.21	25.918	FVA
1087	30°26'29.994482445"	-82°44'24.801429631"	2523039.467	528576.91	136.29	43.933	FVA
1079	30°22'33.609811847"	-82°37'25.561995679"	2560126.547	505284.162	111.968	19.57	FVA
1085	30°24'50.597177414"	-82°47'12.238890364"	2508535.157	518313.009	118.198	25.906	FVA
1093	30°26'47.522303726"	-82°56'00.968320302"	2462081.576	529458.662	160.091	68.012	FVA
1001	30°28'22.110072514"	-83°24'58.237889517"	2309934.017	537246.908	187.804	96.205	FVA
1007	30°21'10.871032326"	-82°56'45.927486322"	2458610.082	495397.324	129.784	37.702	FVA
1010	30°16'41.012188796"	-82°56'31.144865519"	2460277.669	468155.176	106.784	14.767	FVA
1037	30°23'57.986558105"	-82°50'05.378942720"	2493454.123	512773.907	142.467	50.238	FVA
1015	30°12'38.793608112"	-82°37'46.637701222"	2559266.395	445171.12	165.865	73.632	FVA
1016	30°11'10.375418966"	-82°35'51.148385152"	2569547.208	436407.793	194.116	101.872	FVA
1057	30°05'32.463858044"	-82°28'08.376040032"	2610763.461	402977.421	136.468	44.049	FVA
1066	30°09'40.708395077"	-82°47'27.520238999"	2508575.039	426382.579	108.55	16.588	FVA
928	30°32'09.995036504"	-83°02'50.710650198"	2425804.004	561560.146	130.312	38.232	FVA
937	30°28'19.750601931"	-83°17'25.593486115"	2349544.983	537406.917	92.161	0.242	FVA
1075B	30°30'31.500570927"	-82°40'06.286412799"	2545274.24	553329.059	123.044	30.604	FVA
1081	30°23'46.593086799"	-82°41'00.172311886"	2541212.804	512352.013	133.231	40.856	FVA
1014	30°14'29.980287676"	-82°34'14.291925802"	2577705.204	456712.357	147.476	55.122	FVA
1070	30°18'25.721491694"	-82°37'51.176579462"	2558293.67	480207.739	126.176	33.838	FVA
1071	30°18'44.215541893"	-82°42'51.212559647"	2531967.907	481654.343	121.561	29.272	FVA
1074	30°35'01.203274370"	-82°43'36.202064329"	2526489.948	580283.545	118.172	25.901	FVA
2001	30°09'42.776768918"	-82°45'01.694159663"	2521371.698	426785.656	111.449	19.438	FVA

Appendix C

Ground Truth Point Comparisons

Ground Truth point comparisons: Horizontal =US Survey Feet [State Plane Zone North 0903, NAD83]
Vertical units = US Survey Feet [NAVD88]

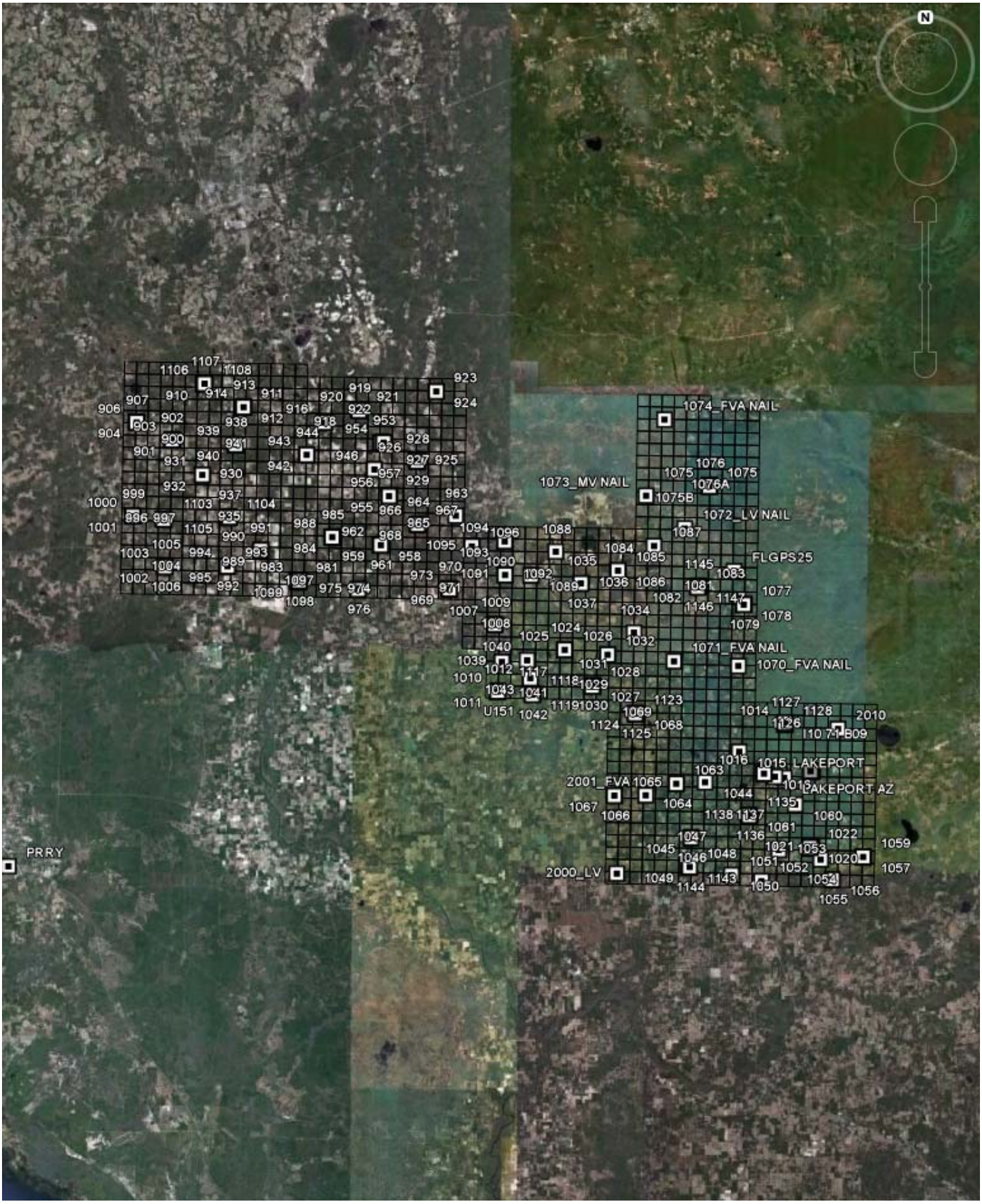
Point ID	Survey X	Survey Y	Survey Z	LiDAR Z	dz	FeatureCode
1004	2323515.125	516702.052	95.662	95	-0.66	Urban
944	2380628.813	563435.149	146.626	146.08	-0.61	Urban
927	2425810.529	561578.329	131.027	130.53	-0.55	Urban
981	2378099.371	511700.041	68.173	67.7	-0.5	Urban
922	2401701.077	581935.994	151.563	151.15	-0.47	Urban
921	2401693.27	581924.173	151.566	151.19	-0.46	Urban
976	2402595.824	508816.621	85.166	84.85	-0.43	Urban
1019	2588646.826	437659.833	185.277	184.98	-0.41	Urban
973	2439820.169	509580.514	129.352	129.06	-0.38	Urban
1080	2560156.859	505288.549	113.78	113.49	-0.33	Urban
1059	2610749.795	402952.287	137.244	136.96	-0.33	Urban
984	2391669.686	530031.937	76.688	76.42	-0.33	Urban
1039	2461778.439	480195.121	163.667	163.4	-0.32	Urban
1067	2508571.431	426410.234	109.699	109.43	-0.31	Urban
960	2411483.062	527050.001	62.779	62.52	-0.3	Urban
1009	2458594.234	495381.067	130.237	129.99	-0.29	Urban
1020	2588937.872	406551.568	147.417	147.17	-0.29	Urban
945	2408405.74	557915.793	92.713	92.47	-0.29	Urban
1056	2598243.718	393525.761	156.214	155.97	-0.28	Urban
907	2310820.92	575612.257	141	140.77	-0.27	Urban
906	2310807.522	575611.666	141.033	140.81	-0.27	Urban
989	2362535.938	524179.023	80.317	80.1	-0.27	Urban
1082	2541229.093	512346.711	133.472	133.25	-0.27	Urban
932	2338083.584	554568.606	93.662	93.47	-0.26	Urban
1047	2540201.996	409714.231	77.439	77.27	-0.25	Urban
1051	2557004.16	394726.812	160.904	160.74	-0.25	Urban
954	2411980.6	568934.997	144.503	144.35	-0.24	Urban
999	2309977.042	537239.57	188.046	187.93	-0.24	Urban
998	2322617.414	536113.732	133.779	133.69	-0.23	Urban
1028	2498755.062	471145.729	143.871	143.79	-0.22	Urban
1033	2504823.102	483923.716	85.451	85.41	-0.22	Urban
1089	2473038.679	515754.115	143.243	143.2	-0.22	Urban
1026	2487299.802	485570.024	132.584	132.59	-0.2	Urban
1096	2448690.707	527197.259	150.518	150.53	-0.2	Urban
1094	2462080.935	529429.865	159.641	159.66	-0.19	Urban
964	2426474.602	535786.839	85.762	85.8	-0.19	Urban
1086	2508494.834	518289.38	120.284	120.47	-0.18	Urban
935	2349083.93	537418.364	92.184	92.53	-0.17	Urban
1021	2588924.057	406514.538	147.52	147.09	-0.43	LOW VEG

991	2362502.912	524173.356	79.131	78.95	-0.18	LOW VEG
943	2380597.732	563408.768	145.996	145.84	-0.16	LOW VEG
946	2408400.622	557901.777	92.63	92.5	-0.13	LOW VEG
993	2349059.81	517418.172	87.983	87.86	-0.12	LOW VEG
947	2408389.272	557902.682	92.553	92.44	-0.11	LOW VEG
990	2362512.281	524169.023	79.058	78.96	-0.1	LOW VEG
1029	2498731.292	471157.136	143.575	143.48	-0.09	LOW VEG
1030	2498730.955	471170.189	143.608	143.53	-0.08	LOW VEG
942	2380598.942	563418.926	145.948	145.88	-0.07	LOW VEG
1002	2323524.063	516722.806	95.144	95.08	-0.06	LOW VEG
1003	2323530.896	516712.65	94.938	94.88	-0.06	LOW VEG
912	2354418.969	582511.197	93.214	93.17	-0.04	LOW VEG
1055	2598219.697	393524.349	156.248	156.23	-0.02	LOW VEG
905	2310791.462	575668.973	137.602	137.59	-0.01	LOW VEG
1011	2460285.064	468150.041	106.82	106.81	-0.01	LOW VEG
901	2325341.919	568575.151	94.411	94.41	0	LOW VEG
950	2410961.392	568777.744	143.521	143.53	0.01	LOW VEG
924	2433122.229	590179.465	141.134	141.14	0.01	LOW VEG
920	2401711.986	581903.13	150.926	150.95	0.02	LOW VEG
930	2338094.203	554539.675	91.17	91.19	0.02	LOW VEG
916	2387556.532	576735.735	150.576	150.62	0.04	LOW VEG
908	2338244.779	591912.843	94.372	94.41	0.04	LOW VEG
986	2391680.068	530005.758	75.944	75.98	0.04	LOW VEG
951	2410963.975	568783.964	143.37	143.42	0.05	LOW VEG
1032	2504824.985	483875.623	84.001	84.07	0.07	LOW VEG
1024	2487340.547	485568.954	132.879	132.96	0.08	LOW VEG
978	2378068.006	511741.812	68.28	68.37	0.09	LOW VEG
931	2338104.501	554546.386	91.072	91.17	0.1	LOW VEG
926	2425791.613	561565.136	130.279	130.39	0.11	LOW VEG
956	2414600.367	547137.934	85.614	85.72	0.11	LOW VEG
1052	2569289.879	392449.422	131.902	132.01	0.11	LOW VEG
959	2411499.814	527058.438	61.826	61.97	0.14	LOW VEG
970	2439831.762	509632.91	128.168	128.32	0.15	LOW VEG
958	2411503.492	527049.67	61.795	61.96	0.16	LOW VEG
1008	2458597.764	495405.808	129.362	129.54	0.18	LOW VEG
969	2439834.05	509622.538	128.157	128.37	0.21	LOW VEG
997	2322633.913	536139.899	135.324	135.54	0.22	LOW VEG
1088	2482977.828	525603.769	140.418	140.74	0.32	LOW VEG
933	2349076.721	537398.482	90.825	91.17	0.34	LOW VEG
934	2349063.84	537398.348	90.849	91.21	0.36	LOW VEG
965	2426444.327	535826.663	83.605	83.99	0.38	LOW VEG
1091	2462464.027	515722.833	116.111	116.49	0.38	LOW VEG
1095	2448695.736	527160.882	149.861	150.35	0.49	LOW VEG
966	2426454.56	535828.612	83.027	83.54	0.51	LOW VEG
1135	2563826.197	419142.564	109.516	109.21	-0.31	MED VEG
913	2354474.495	582494.69	92.461	92.3	-0.16	MED VEG

1136	2563830.333	419131.607	109.463	109.43	-0.03	MED VEG
1078	2560085.622	505270.766	112.184	112.23	0.05	MED VEG
962	2411551.472	527046.268	62.224	62.27	0.05	MED VEG
961	2411542.867	527048.865	62.201	62.26	0.06	MED VEG
1110	2338260.849	591962.92	93.004	93.07	0.07	MED VEG
1134	2563878.138	419099.573	108.772	108.84	0.07	MED VEG
914	2354481.057	582494.311	92.182	92.29	0.11	MED VEG
1077	2560097.701	505271.454	112.129	112.24	0.11	MED VEG
1064	2533790.733	431685.681	154.92	155.05	0.13	MED VEG
979	2378086.369	511801.296	69.035	69.17	0.14	MED VEG
1054	2593387.328	401658.575	131.627	131.8	0.17	MED VEG
980	2378094.636	511806.948	69.231	69.42	0.19	MED VEG
1102	2378056.185	511793.527	68.286	68.5	0.21	MED VEG
940	2351493.191	567134.556	113.607	113.82	0.21	MED VEG
1043	2473475.359	473739.044	154.286	154.51	0.22	MED VEG
1101	2378068.787	511793.671	68.868	69.09	0.22	MED VEG
1109	2338267.087	591951.909	92.73	93.01	0.28	MED VEG
1133	2588651.049	437576.505	183.278	183.6	0.32	MED VEG
948	2410981.387	568817.54	142.318	142.69	0.37	MED VEG
1132	2588678.634	437588.557	182.997	183.46	0.46	MED VEG
949	2410988.798	568823.544	142.236	142.71	0.47	MED VEG
968	2426465.76	535856.549	82.667	83.15	0.48	MED VEG
967	2426459.608	535851.637	82.667	83.18	0.51	MED VEG
971	2439848.409	509654.082	127.526	128.06	0.53	MED VEG
1058	2610805.82	402992.986	136.795	137.33	0.54	MED VEG
941	2351491.85	567142.618	113.618	114.21	0.59	MED VEG
972	2439854.391	509648.899	127.413	128.1	0.69	MED VEG
1092	2462516.272	515715.781	115.494	116.24	0.75	MED VEG
1012	2460247.999	468154.69	107.151	108.17	1.02	MED VEG
1013	2460239.814	468158.847	107.504	108.55	1.05	MED VEG
1090	2473071.212	515787.777	142.936	144.05	1.11	MED VEG
1097	2378134.03	511623.341	70.324	70.28	-0.04	TALL VEG
1098	2378146.762	511626.522	70.463	70.4	-0.06	TALL VEG
1099	2378161.531	511628.893	70.59	70.26	-0.33	TALL VEG
1100	2378068.78	511793.649	68.872	69.09	0.22	TALL VEG
1103	2349146.801	537279.904	88.238	88.51	0.27	TALL VEG
1104	2349152.551	537296.542	88.757	89.3	0.54	TALL VEG
1105	2349143.58	537320.22	88.298	88.46	0.16	TALL VEG
1106	2338330.942	591875.731	94.294	94.73	0.44	TALL VEG
1107	2338342.309	591882.024	93.097	93.54	0.44	TALL VEG
1108	2338354.384	591895.638	92.546	92.58	0.03	TALL VEG
1111	2410958.851	568702.37	141.737	142.14	0.4	TALL VEG
1112	2410982.096	568701.612	141.958	142.05	0.09	TALL VEG
1113	2411001.147	568702.716	141.698	141.67	-0.03	TALL VEG
1114	2425640.443	561908.697	130.515	130.99	0.48	TALL VEG
1115	2425597.135	561972.032	131.205	131.51	0.3	TALL VEG

1116	2425578.746	562009.444	131.335	131.68	0.34	TALL VEG
1117	2474413.602	467313.624	160.692	160.74	0.05	TALL VEG
1118	2474432.927	467295.934	160.63	160.44	-0.19	TALL VEG
1119	2474423.721	467271.514	160.42	160.13	-0.29	TALL VEG
1120	2498849.367	471152.812	140.892	140.69	-0.2	TALL VEG
1121	2498866.893	471098.295	140.462	140.38	-0.08	TALL VEG
1122	2498874.727	471064.553	139.183	139.1	-0.08	TALL VEG
1123	2516531.44	460010.484	152.384	152.05	-0.33	TALL VEG
1124	2516554.066	460045.227	151.283	150.82	-0.46	TALL VEG
1125	2516572.737	460068.293	150.448	150.18	-0.27	TALL VEG
1126	2577805.075	456715.81	145.494	145.63	0.14	TALL VEG
1127	2577797.625	456681.291	145.478	145.88	0.4	TALL VEG
1128	2577790.2	456645.392	145.659	145.57	-0.09	TALL VEG
1129	2588649.882	437733.682	182.703	183.44	0.74	TALL VEG
1130	2588625.839	437742.021	183.209	183.56	0.35	TALL VEG
1131	2588597.952	437740.773	183.271	183.69	0.42	TALL VEG
1137	2563848.321	419126.006	109.408	109.64	0.23	TALL VEG
1138	2563851.516	419118.282	109.429	109.27	-0.16	TALL VEG
1139	2589381.907	406292.112	144.829	144.5	-0.33	TALL VEG
1140	2589363.655	406295.327	145.605	145.6	0	TALL VEG
1141	2589320.042	406312.441	145.806	145.61	-0.2	TALL VEG
1142	2539784.611	397569.503	73.229	73.38	0.15	TALL VEG
1143	2539822.276	397618.497	73.798	73.83	0.03	TALL VEG
1144	2539838.146	397663.874	75.143	74.97	-0.17	TALL VEG
1145	2541290.739	512274.548	132.549	132.49	-0.06	TALL VEG
1146	2541305.68	512245.75	132.446	132.6	0.15	TALL VEG
1147	2541280.988	512237.134	133.001	132.39	-0.61	TALL VEG

Appendix D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FLGPS25
1015_LAKEPORT
LAKEPORT AZ
2001_FVA
2000_LV
PRRY

Appendix E

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	LAKEPORT
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY	QUAD	LAKE CITY

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 10 57.55168	ELIP	31,840M
LONGITUDE	W 82 35 00.39604	EPOCH DATE	

SESSION	DATE:	02/11/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	42	END TIME	N/A			LOCAL

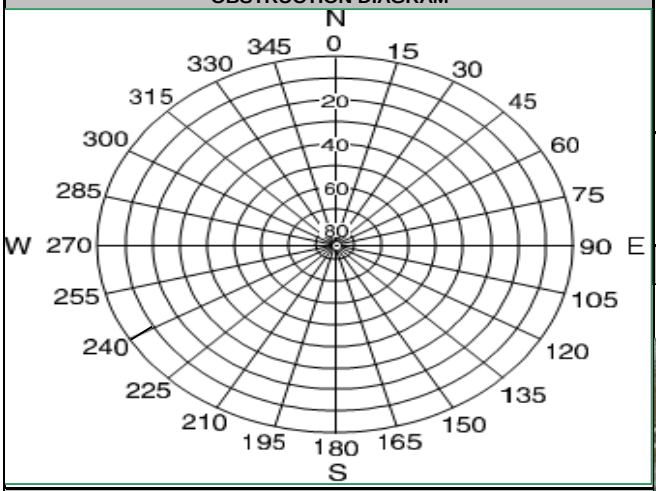
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

PID BD2712

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	LAKEPORT AZ MARK
USGS FLORIDA LDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY	QUAD	LAKE CITY

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 10 53.25097	ELIP	30.538
LONGITUDE	W 82 34 17.14133	EPOCH DATE	

SESSION	DATE:	02/11/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	42	END TIME	N/A			LOCAL

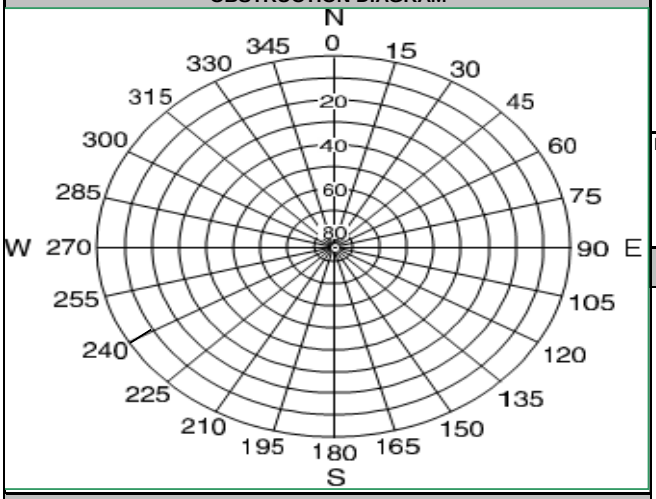
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

PID BD2726

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	FLGPS 71
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	MADISON	COUNTRY	QUAD	PINETTA

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 33 31.11383	ELIP	0.952
LONGITUDE	W 83 21 58.64798	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

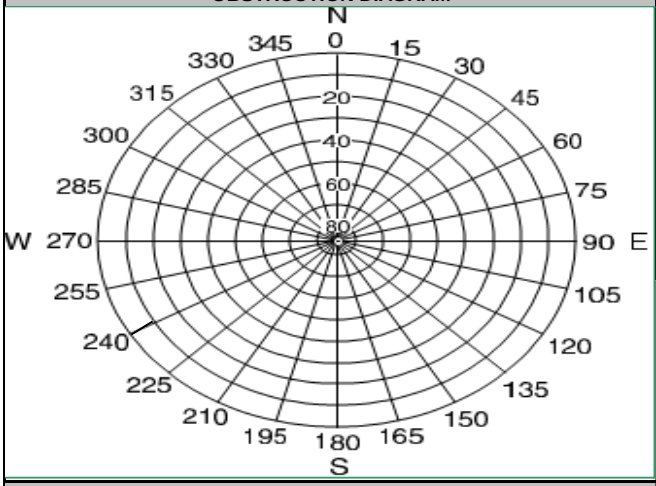
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

PID BD2753

Photo

SKETCH

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	FLGPS 25
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY	QUAD	BENTON

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N30 24 48.77786	ELIP	4.912
LONGITUDE	W 82 38 11.13958	EPOCH DATE	

SESSION	DATE:	02/02/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	33	END TIME	N/A			LOCAL

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

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

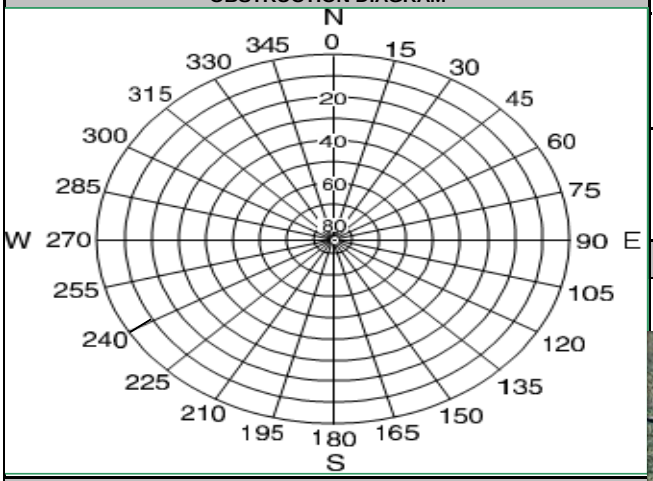
ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

PID BD2709

OBSTRUCTION DIAGRAM



SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	U151
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	SUWANNEE	COUNTRY	QUAD	LIVE OAK

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 16 40.95007	ELIP	4.653
LONGITUDE	W 82 56 31.31997	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

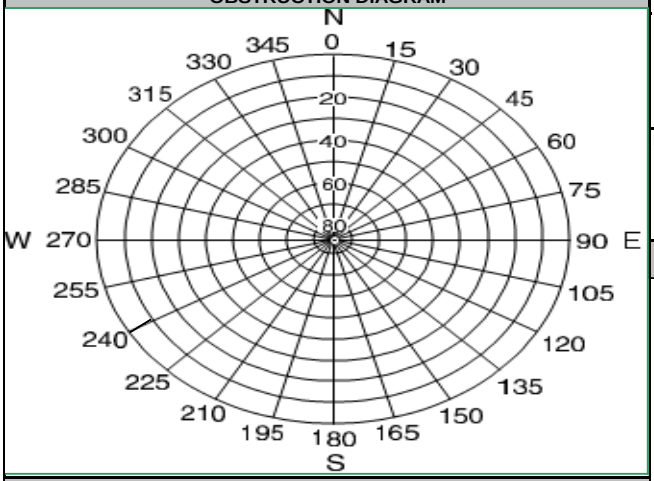
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

PID BD0832

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1 10 71 B09
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY	QUAD	BENTON

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITON			
LATITUDE	N 30 14 36.38184	ELIP	22.733
LONGITUDE	W 82 34 14.02792	EPOCH DATE	

SESSION	DATE:		START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR		END TIME	N/A			LOCAL

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

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

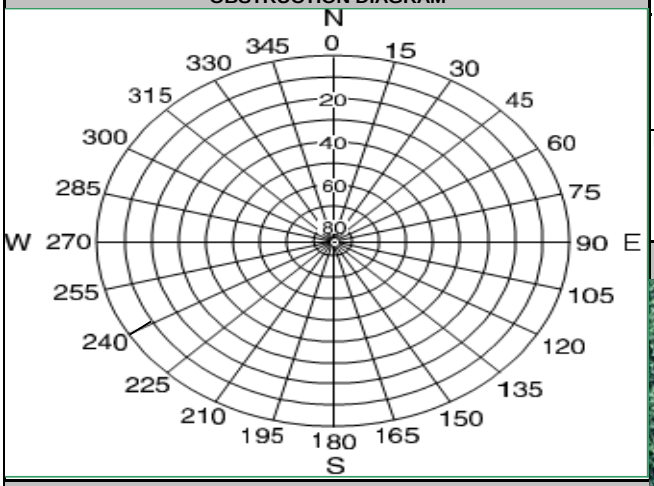
ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

PID BD1065

OBSTRUCTION DIAGRAM



SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	909
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	PINETTA	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 37 20.31980	ELIP	0.869
LONGITUDE	W 83 19 28.36056	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

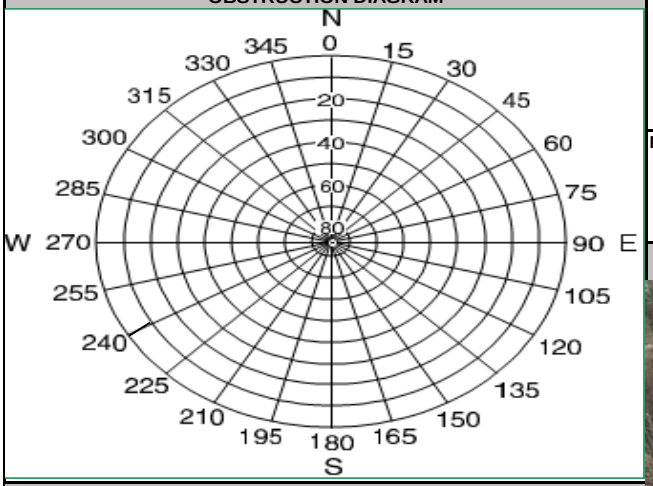
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	910
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	PINETTA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 37 17.33947	ELIP	3.251
LONGITUDE	W 83 19 30.79110	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

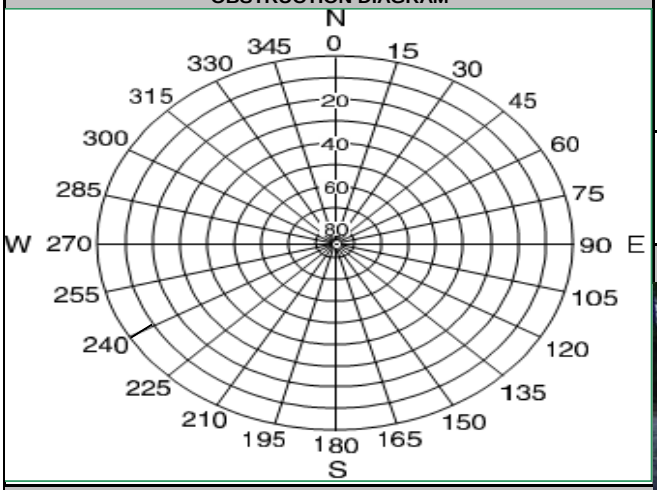
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	928
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 32 09.99504	ELIP	11.653
LONGITUDE	W 83 02 50.71065	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEOEDETIC		

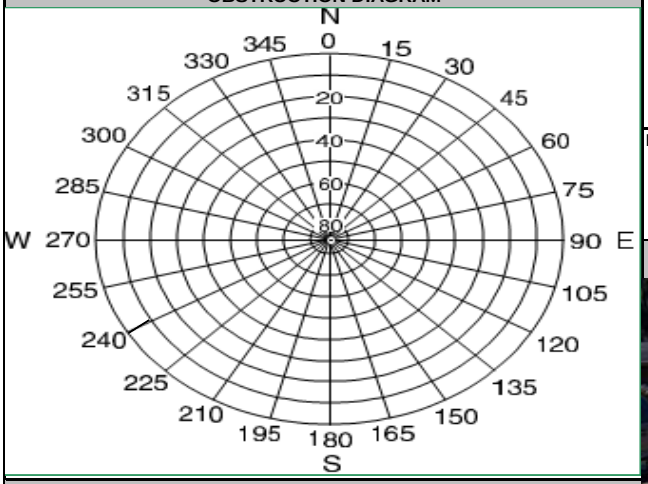
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

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

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

NAIL SET

OBSTRUCTION DIAGRAM



SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	929
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY	QUAD	

OPERATOR	REVEAL

VRS POSTION			
LATITUDE	N 30 32 12.28099	ELIP	11.836
LONGITUDE	W 83 02 52.71421	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

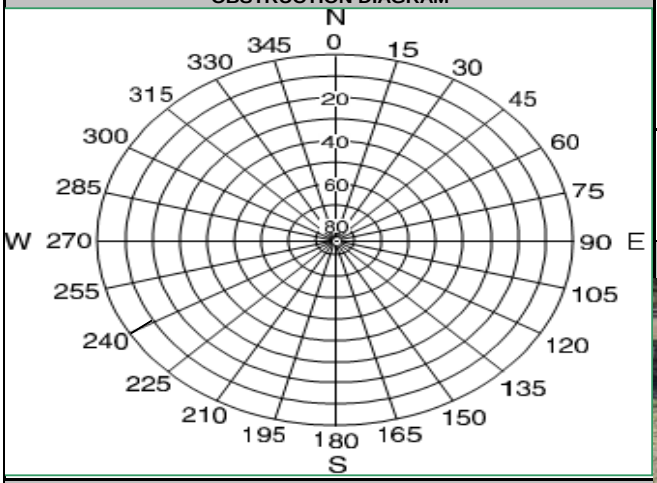
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	936
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	MADISON	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 28 19.72214	ELIP	-0.376
LONGITUDE	W 83 17 30.82628	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

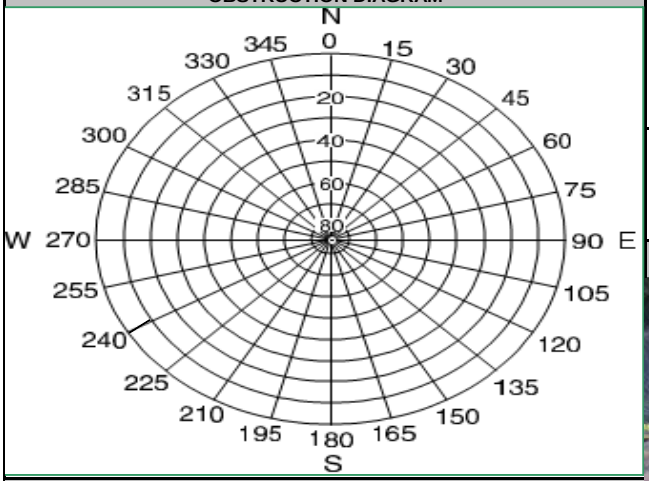
ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000M (UNCORRECTED)			
	MEASURED		FIXED HGT	

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

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

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

OBSTRUCTION DIAGRAM



SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	937
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	MADISON	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 28 19.75060	ELIP	0.074
LONGITUDE	W 83 17 25.59349	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

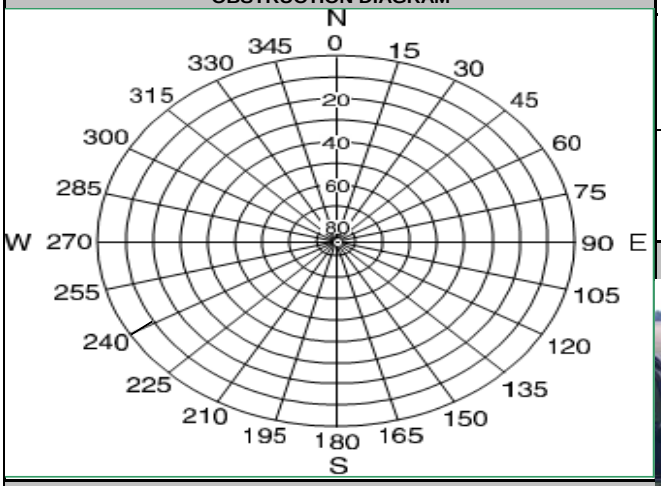
ANTENNA HEIGHT (VERTICAL)				
MTRS/FT	2.000M (UNCORRECTED)			
	MEASURED		FIXED HGT	

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	952
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 33 23.22933	ELIP	15.64
LONGITUDE	W 83 05 39.47177	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

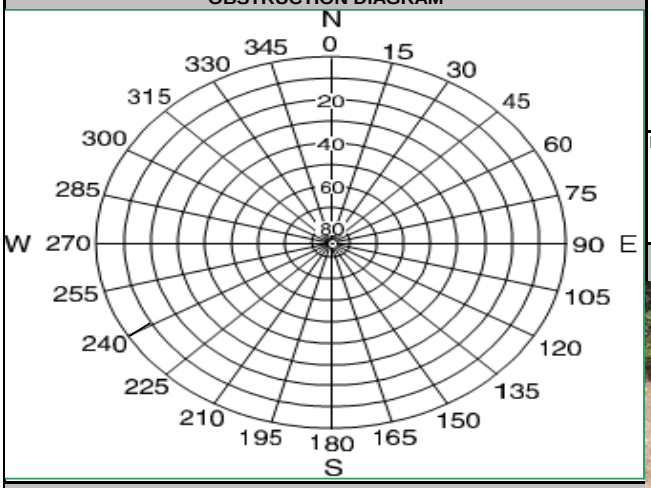
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

OBSTRUCTION DIAGRAM



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

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FIELD DATA SHEET

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JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	953
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 33 24.50041	ELIP	15.808
LONGITUDE	W 83 05 27.65013	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

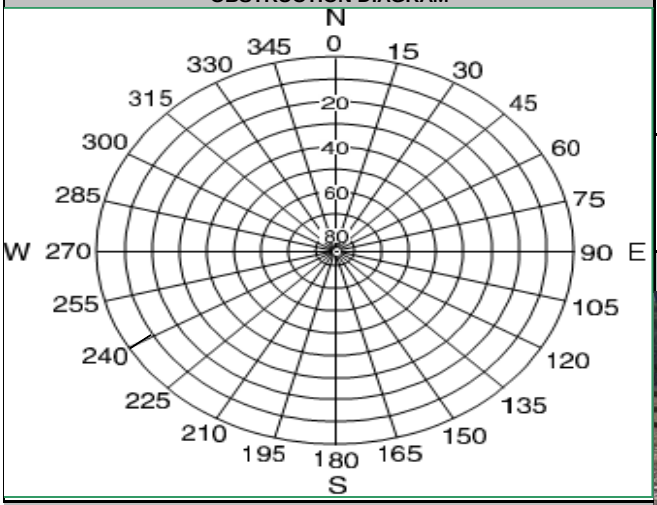
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	982
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	MADISON	COUNTRY		QUAD	

OPERATOR	REVEAL

VRS POSITION			
LATITUDE	N 30 24 02.38806	ELIP	-7.42
LONGITUDE	W 83 12 03.27707	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

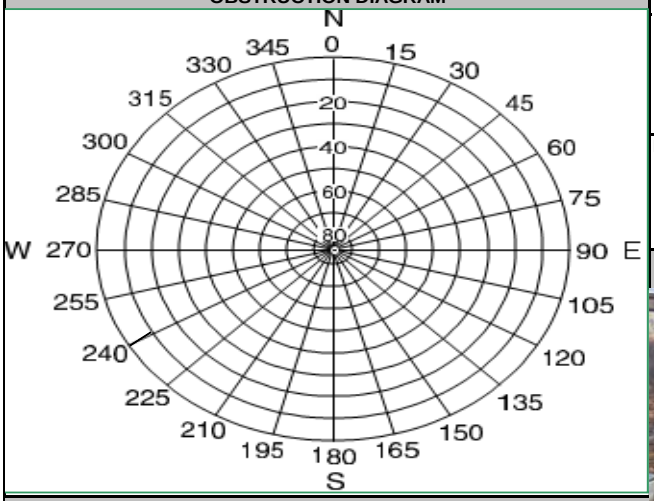
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	983
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	MADISON	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 24 04.02849	ELIP	-6.642
LONGITUDE	W 83 11 58.20878	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

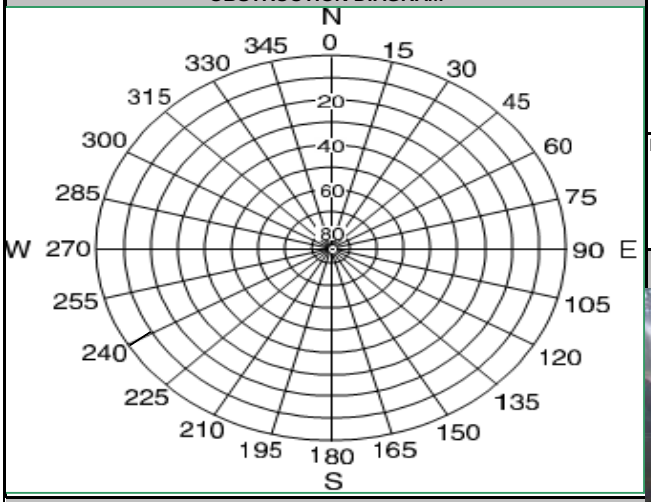
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	1017
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY	QUAD	

OPERATOR	REVEAL

VRS POSITION			
LATITUDE	N 30 11 20.85433	ELIP	27.701
LONGITUDE	W 82 32 05.62830	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

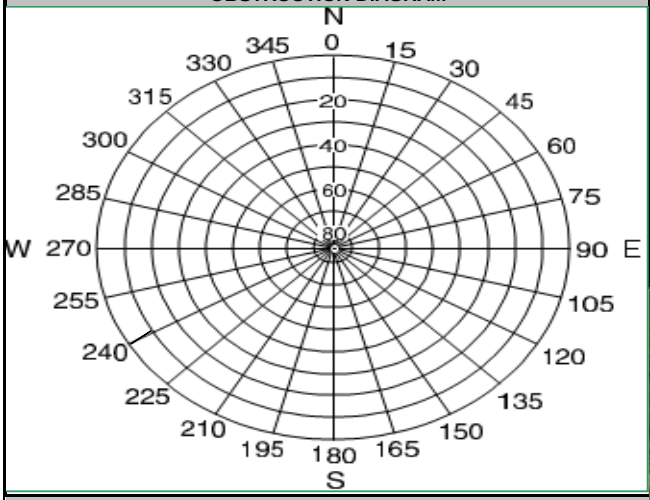
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	1018
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 11 19.42478	ELIP	27.924
LONGITUDE	W 82 32 13.27317	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

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

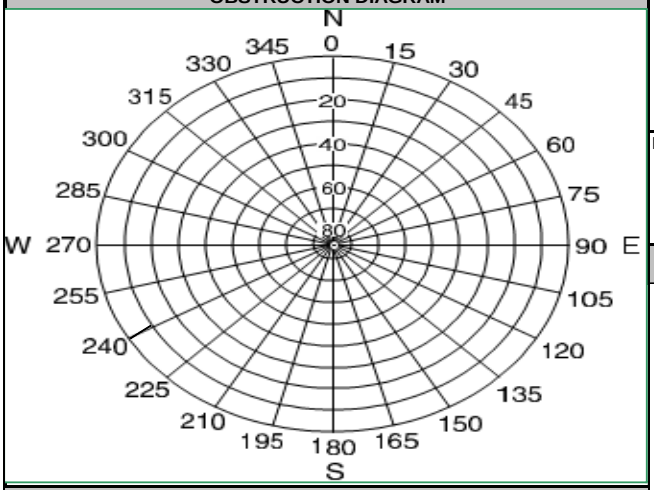
ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

NAIL SET

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	1022
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 06 11.45701	ELIP	16.749
LONGITUDE	W 82 32 16.18490	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

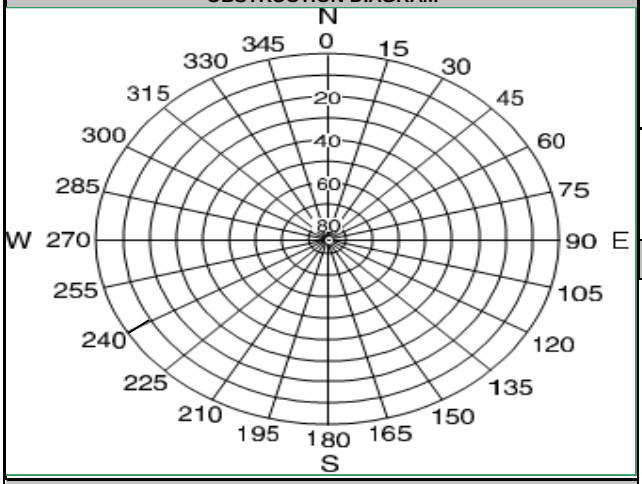
ANTENNA HEIGHT (VERTICAL)			
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	1023
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 06 09.55992	ELIP	15.911
LONGITUDE	W 82 32 10.96397	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

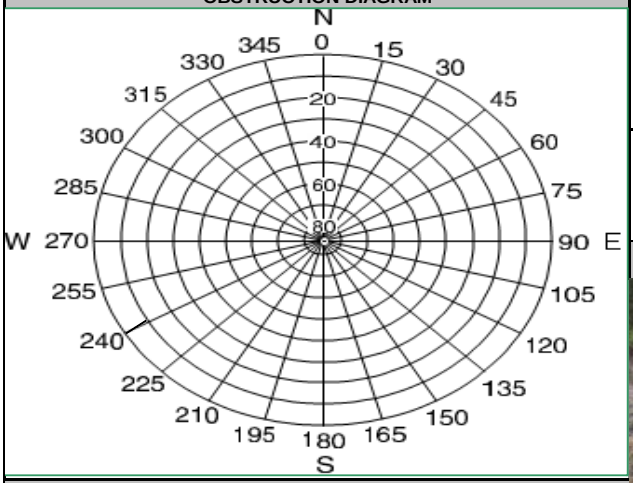
ANTENNA INFO

RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

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

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1027
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	SUWANNEE	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 17 05.21579	ELIP	15.488
LONGITUDE	W 82 49 11.66799	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

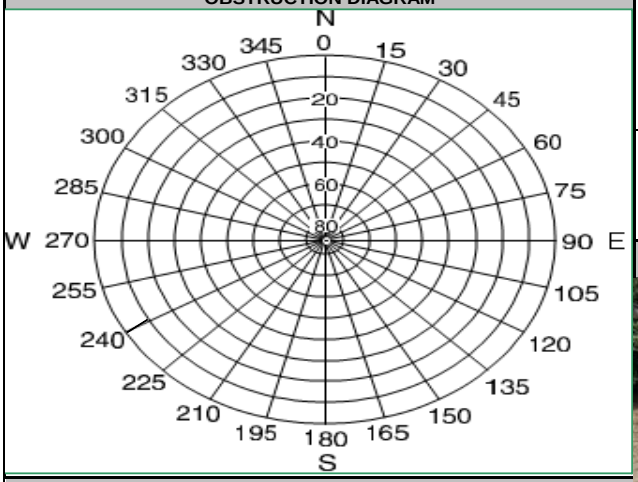
MTRS/FT	2.000M (UNCORRECTED)			
	MEASURED		FIXED HGT	

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
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JOB REFERENCE	POINT ID:	1031
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	SUWANNEE	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 17 02.24438	ELIP	15.785
LONGITUDE	W 82 49 11.68249	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

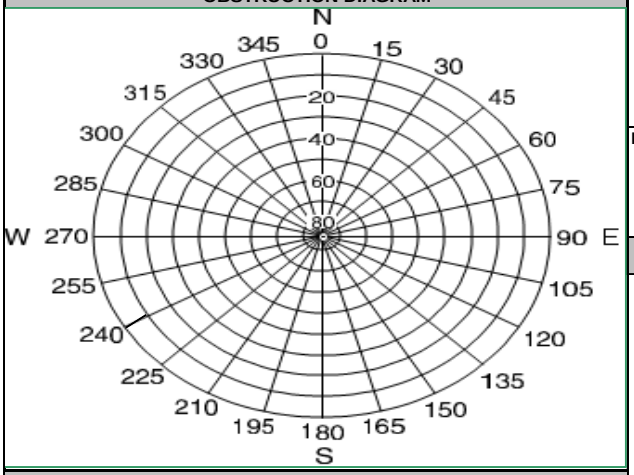
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY FIELD DATA SHEET

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JOB REFERENCE	POINT ID:	1041
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	SUWANNEE	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 16 31.42135	ELIP	20.687
LONGITUDE	W 82 53 51.11645	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

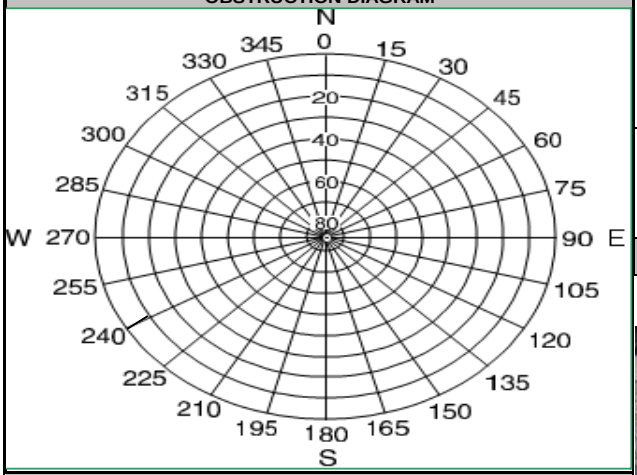
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY
FIELD DATA SHEET

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301 Voyager Way
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JOB REFERENCE	POINT ID:	1042
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	SUWANNEE	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 16 27.96177	ELIP	20.643
LONGITUDE	W 82 53 50.61166	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA HEIGHT (VERTICAL)

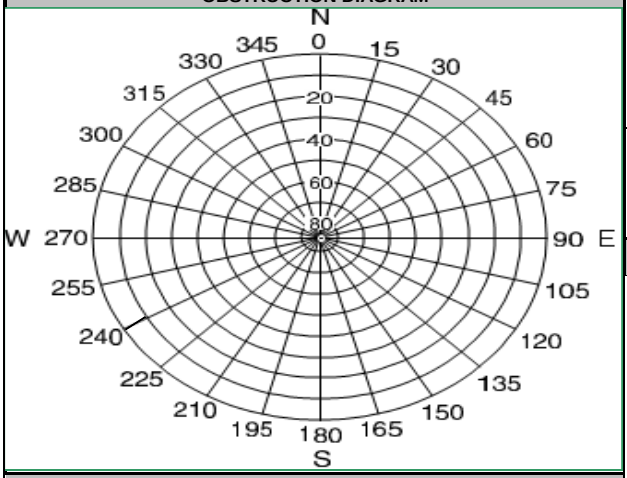
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

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GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
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256-830-3691 Office

JOB REFERENCE	POINT ID:	1048
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 04 51.15102	ELIP	-4.379
LONGITUDE	W 82 41 38.70457	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

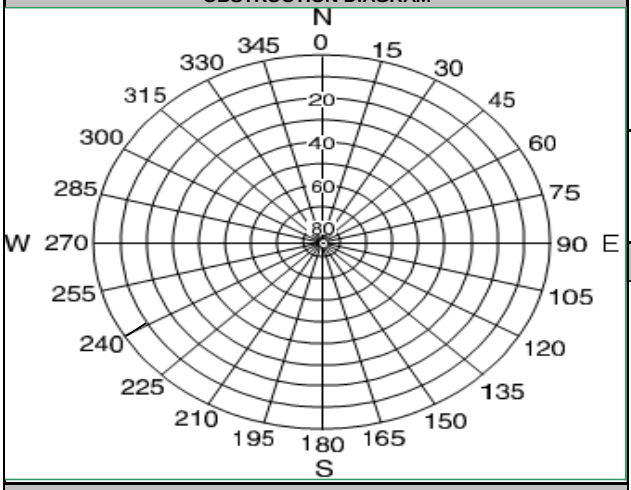
MTRS/FT	2.000M (UNCORRECTED)			
	MEASURED		FIXED HGT	

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

Photo

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1049
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 04 53.06089	ELIP	-4.406
LONGITUDE	W 82 41 36.82448	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

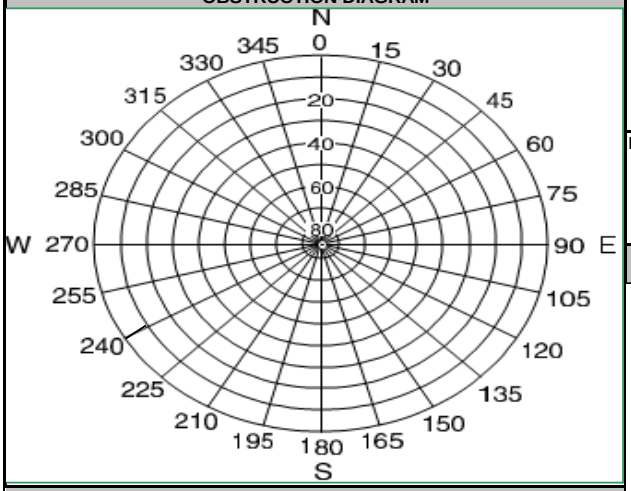
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

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GPS CONTROL SURVEY
FIELD DATA SHEET

PAGE:
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301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1061
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 08 19.91544	ELIP	5.114
LONGITUDE	W 82 36 59.93558	EPOCH DATE	

SESSION	DATE:	01/31/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

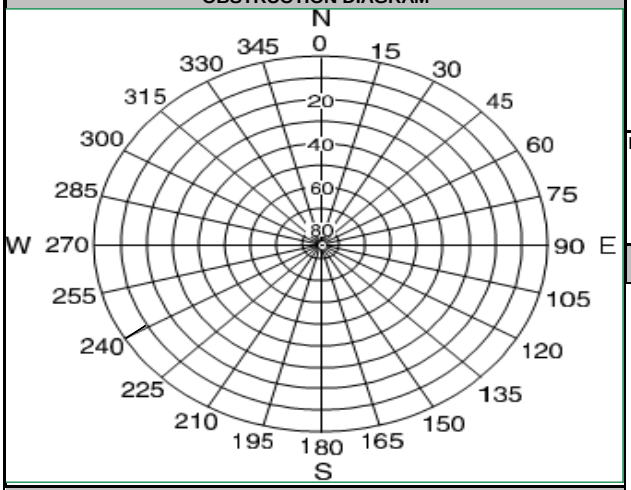
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

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GPS CONTROL SURVEY
FIELD DATA SHEET

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JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1062
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	N 30 08 18.62705	ELIP	3.906
LONGITUDE	W 82 36 56.24453	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

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

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

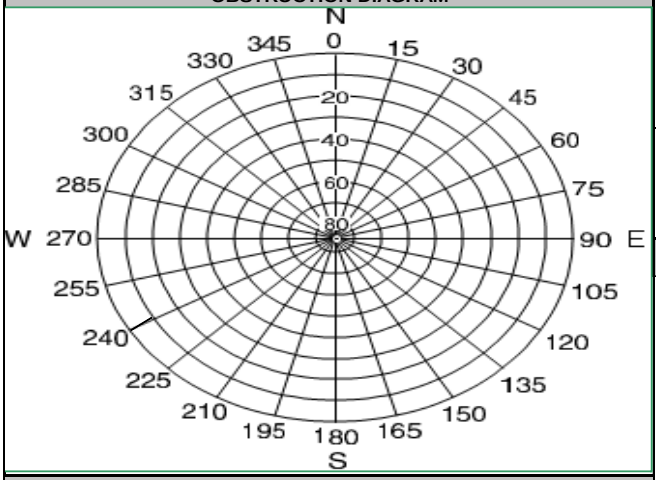
ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

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

NAIL SET

OBSTRUCTION DIAGRAM



SKETCH

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GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1068
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 15 11.82422	ELIP	18.118
LONGITUDE	W 82 45 50.31915	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

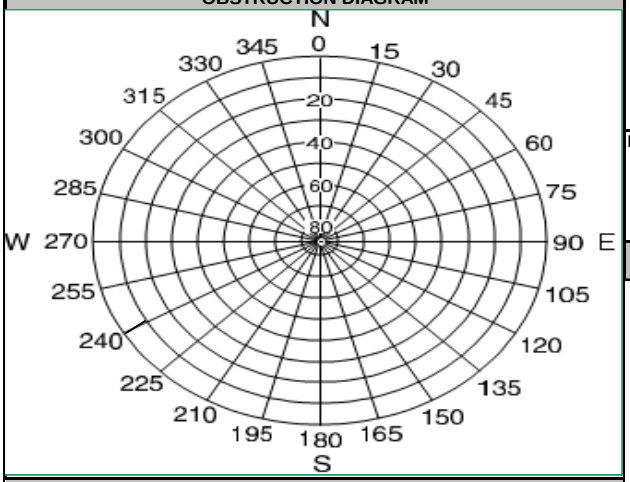
MTRS/FT	2.000M (UNCORRECTED)			
	MEASURED		FIXED HGT	

ANTENNA INFO

RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

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GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

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256-830-3691 Office

JOB REFERENCE	POINT ID:	1069
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	N 30 15 14.80065	ELIP	19.797
LONGITUDE	W 82 45 47.64032	EPOCH DATE	

SESSION	DATE:	01/30/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	30	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

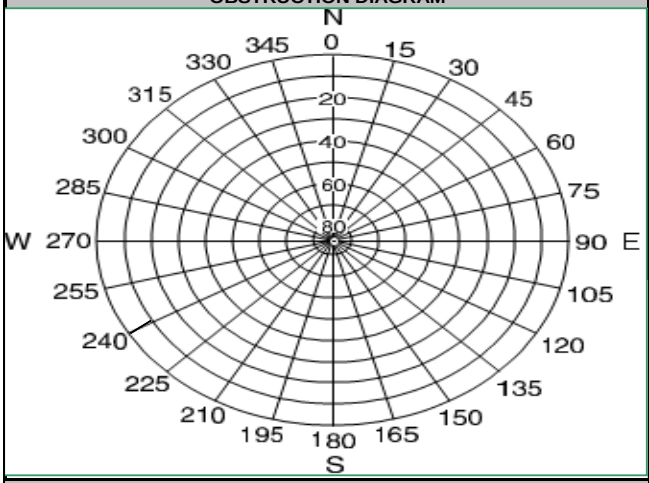
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

OBSTRUCTION DIAGRAM



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

NAIL SET

SKETCH

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GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
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301 Voyager Way
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256-830-3691 Office

JOB REFERENCE	POINT ID:	1070 FVA
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 18 25.7	HGT. MTS.	
LONGITUDE	W 82 37 51.2	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	11:44	Record Interval		U.T.C.
1070 041 1	DAY OF YEAR	41	END TIME	12:30	10 SEC	X	LOCAL

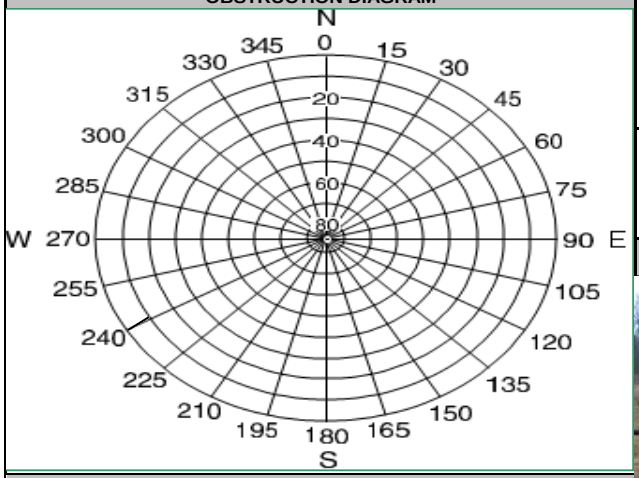
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR FVA SHOT

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NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

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301 Voyager Way
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JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1071 FVA
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 18 44.2	HGT. MTS.	
LONGITUDE	W 082 42 51.2	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	12:40	Record Interval		UTC
1071 041 1	DAY OF YEAR	41	END TIME	01:25		X	LOCAL

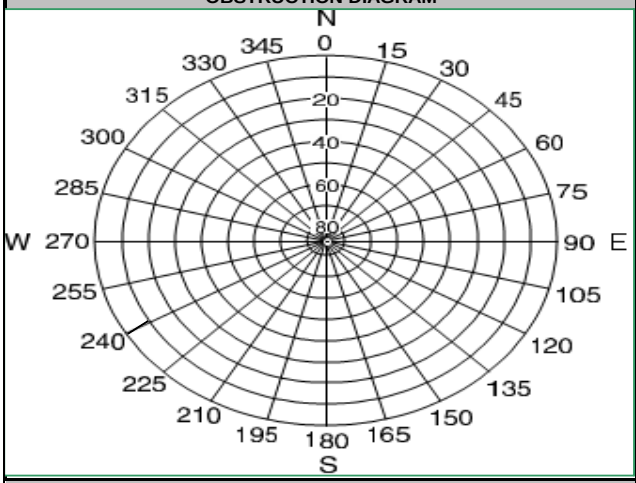
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR FVA SHOT

SKETCH

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GPS CONTROL SURVEY
FIELD DATA SHEET

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301 Voyager Way
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256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1072 LV
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 27 40.9	HGT. MTS.	
LONGITUDE	82 42 01.3	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	01:45	Record Interval		UTC
1072 041 1	DAY OF YEAR	41	END TIME	02:30	10 SEC	X	LOCAL

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

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

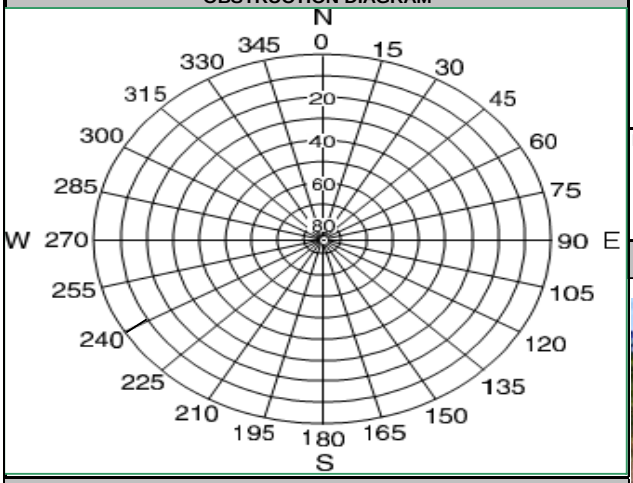
ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLEGEODETIC	

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

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

NAIL SET FOR LOW VEG

OBSTRUCTION DIAGRAM



SKETCH

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GPS CONTROL SURVEY FIELD DATA SHEET

PAGE: 1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1073 MV
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY	QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 29 53.2	HGT. MTS.	
LONGITUDE	W 082 45 01.9	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	02:40	Record Interval		UTC
1073 041 1	DAY OF YEAR	41	END TIME	03:30	10 SEC	X	LOCAL

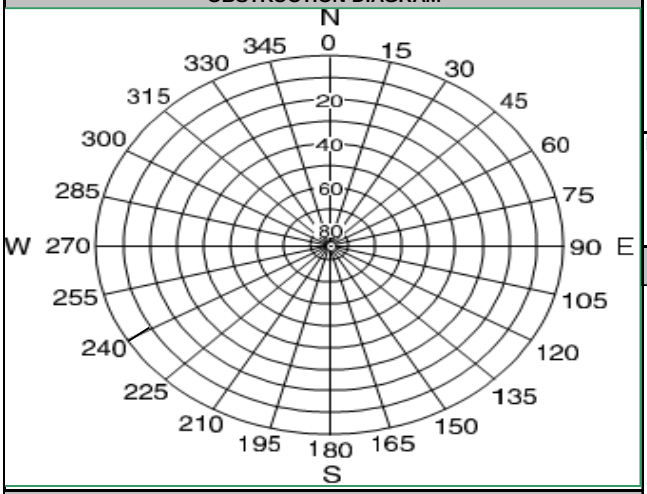
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR MED VEG SHOT

Photo

SKETCH

NORTHROP GRUMMAN

GPS CONTROL SURVEY
FIELD DATA SHEET

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301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE
USGS FLORIDA LIDAR

POINT ID:	1074 FVA
PROJ. NO.	B1N161001

STATE	FLA	COUNTY	HAMILTON	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 35 01.2	HGT. MTS.	
LONGITUDE	W 082 43 36.1	EPOCH DATE	

SESSION	DATE:	02/10/11	START TIME	03:45	Record Interval		U.T.C.
1074 041 1	DAY OF YEAR	41	END TIME	04:30		X	LOCAL

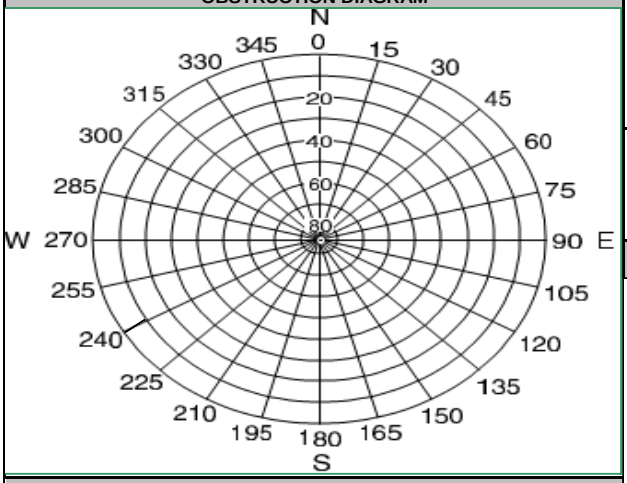
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

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

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR FVA SHOT

SKETCH

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NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1075B FVA
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION

LATITUDE	30 30 31.50057	ELIP	9.328
LONGITUDE	82 40 06.28641	EPOCH DATE	

SESSION	DATE:	02/08/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	39	END TIME	N/A			LOCAL

ANTENNA HEIGHT (SLANT)

MTRS/FT				
	MEASURED		FIXED HGT.	

ANTENNA HEIGHT (VERTICAL)

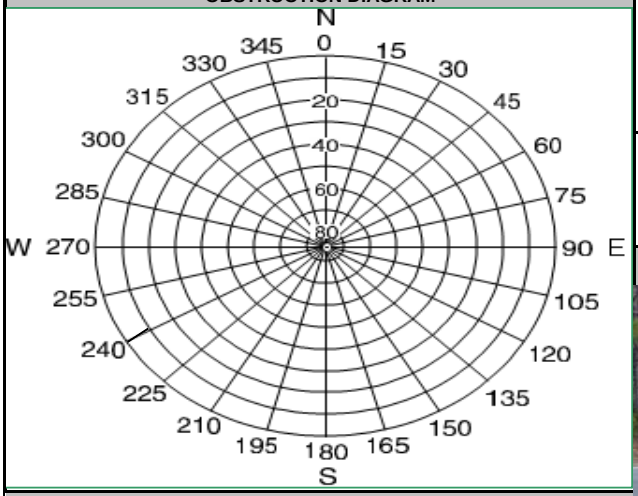
MTRS/FT	2.000M (UNCORRECTED)		
	MEASURED		FIXED HGT

ANTENNA INFO

RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR FVA SHOT RESHOT POINT 1075

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NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
Huntsville,Al. 35806
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JOB REFERENCE	POINT ID:	2000 LV
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 04 25.8	HGT. MTS.	
LONGITUDE	W 082 47 15.8	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	09:15	Record Interval		U.T.C.
2000 041 1	DAY OF YEAR	41	END TIME	10:00	10 SEC	X	LOCAL

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

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

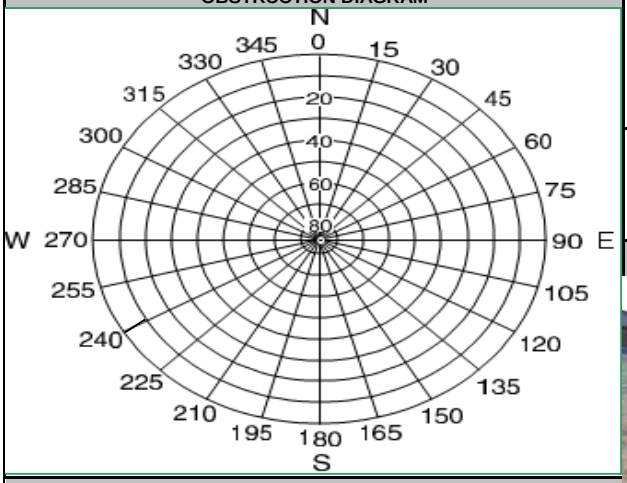
ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

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

NAIL SET FOR LOW VEG SHOT

OBSTRUCTION DIAGRAM



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GPS CONTROL SURVEY FIELD DATA SHEET

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301 Voyager Way
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256-830-3691 Office

JOB REFERENCE	POINT ID:	2001 FVA
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

APPROXIMATE POSITION (C/A/CODE)			
LATITUDE	N 30 09 42.8	HGT. MTS.	
LONGITUDE	W 082 45 01.7	EPOCH DATE	

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

SESSION	DATE:	02/10/11	START TIME	10:30	Record Interval		U.T.C.
2001 041 1	DAY OF YEAR	41	END TIME	11:15	10 SEC	X	LOCAL

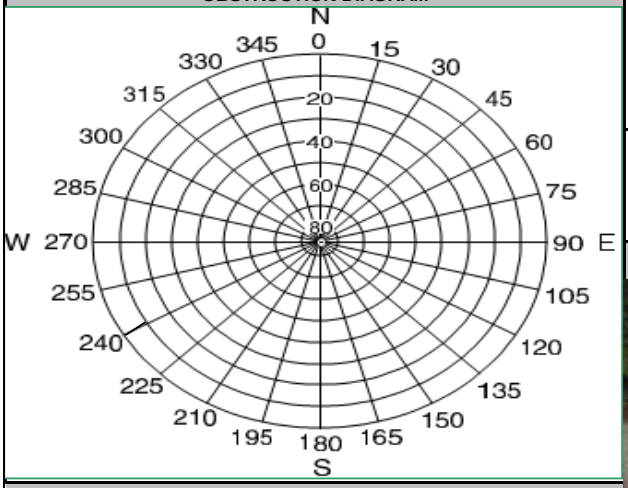
ANTENNA HEIGHT (SLANT)				
MTRS/FT				
	MEASURED		FIXED HGT.	

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

ANTENNA INFO			
RADIUS (M)			0.000
S/N NUMBER			0.000
ANTENNA TYPE	TRIMBLE GEODETIC		

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR FVA SHOT

Photo

SKETCH

NORTHROP GRUMMAN

GPS CONTROL SURVEY FIELD DATA SHEET

PAGE:
1

301 Voyager Way
Huntsville,Al. 35806
256-830-3691 Office

JOB REFERENCE	POINT ID:	1076A LV
USGS FLORIDA LIDAR	PROJ. NO.	B1N161001

STATE	FLA	COUNTY	COLUMBIA	COUNTRY		QUAD	

OPERATOR	REVEAL

RECEIVER MODEL	TRIMBLE 5700
RECEIVER S/N	3940

VRS POSITION			
LATITUDE	30 30 35.26482	ELIP	9.285
LONGITUDE	82 40 07.49833	EPOCH DATE	

SESSION	DATE:	02/09/11	START TIME	N/A	Record Interval	X	U.T.C.
VRS	DAY OF YEAR	39	END TIME	N/A			LOCAL

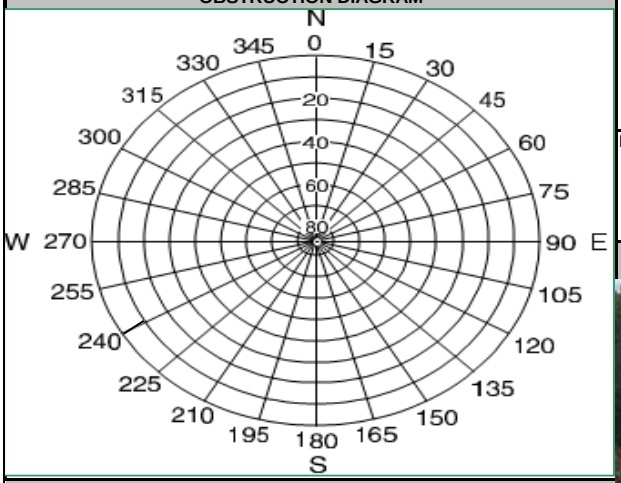
ANTENNA HEIGHT (SLANT)			
MTRS/FT			
	MEASURED		FIXED HGT.

ANTENNA INFO		
RADIUS (M)		0.000
S/N NUMBER		0.000
ANTENNA TYPE	TRIMBLE GEODETIC	

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

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

OBSTRUCTION DIAGRAM



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

NAIL SET FOR LOW VEG SHOT RESHOOT POINT 1076

SKETCH

Photo

Appendix F

Office Personnel

Northrop Grumman
Cody Richardson – Manager Field Engineering Services

Field Personnel

Northrop Grumman
Mike Reveal – Party Chief
Thomas Young – GPS Technician