

**MINIMUM TECHNICAL STANDARDS, VOL. 1
FINAL REPORT OF LIDAR CONTROL AND
QA/QC CHECKPOINT SURVEY**



PROJECT AREA B

**STATE OF FLORIDA
DIVISION OF EMERGENCY MANAGEMENT**

**TASK ORDER NO. 20070525-492720
CONTRACT NO. 07-HS-34-14-00-22-469**

**APRIL 13, 2009
REVISED**

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**PREPARED BY:
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**APRIL 13, 2009
REVISED**

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MINIMUM TECHNICAL STANDARDS REPORT OF LiDAR GROUND CONTROL SURVEY

Task Order No. 20070525-492720
Contract No. 07-HS-34-14-00-22-469

PROJECT AREA B

For:

State of Florida, Division of Emergency Management
“State Emergency Response Team”
2555 Shumard Oak Boulevard
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By:

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Prepared by:

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Florida Professional Surveyor and Mapper PSM 5670

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REPORT OF LiDAR GROUND CONTROL SURVEY PROJECT AREA B FOR THE FLORIDA DIVISION OF EMERGENCY MANGEMENT

Introduction

This report contains an outline of the QA/QC Survey that supported LiDAR Data Acquisition in the general area of:

- Project Area B - Pinellas County and a portion of Western Hillsborough County.

Project Area

Project Area B encompassed approximately +/-513 square miles of the approximately +/-3,774 square miles of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

Purpose

The purpose of this survey was to acquire a minimum of twenty (20) independently surveyed LiDAR Control Points and a minimum of one-hundred twenty (120) three-dimensional LiDAR QA/QC Checkpoints per 500 square miles of project area. To the extent allowed by the terrain, the LiDAR Control Points and Checkpoints were distributed so that points were spaced at intervals of at least 10% of the diagonal distance across the dataset and at least 20% of the points were located in each quadrant of the +/-513 square-mile project area. All field surveying and related activities conformed to the *FEMA Flood Hazard Mapping Program, Guidelines and Specifications for Flood Hazard Mapping Partners Appendix A*.

LiDAR Control Points were defined as observations made on unobstructed, relatively flat, light-colored, hard uniform surfaces. Three-dimensional coordinate values were calculated for these points and then incorporated in the initial processing of the LiDAR data to ensure the proper horizontal and vertical geographical location of the LiDAR data set.

LiDAR QA/QC Checkpoints were ground truth observations distributed within the land cover classes of urban, bare-earth/low grass, brush land/sparse trees and dense trees/forested. These QA/QC Checkpoints were used to verify the accuracy of the LiDAR missions for final DTM and contour deliverables.

Date of Survey

All LiDAR Control Point and LiDAR QA/QC Checkpoint field operations took place between Nov. 13, 2007 and Nov 18, 2007.

Map Reference

Maps illustrating project boundaries, LiDAR QA/QC Checkpoints, LiDAR Control Points, GPS control stations and the GPS Network Diagram for this project area can be found in Appendix E of this report.

Name of Responsible Surveyor

David Bruno, PSM
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Professional Surveyor and Mapper Number 5670

Name of Company

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Florida Certificate of Authorization No. LB-0006777

Field and Office Personnel

Brian Beckman
Matthew Brown
Dave Bruno
Jason Kail
Scott Lamb
Ben Messer
Wes Miller
Steve Roberts
Jim Speelman

Abbreviations

1-D – One-Dimensional
2-D – Two-Dimensional
3-D – Three-Dimensional
cm – Centimeter
CP – Certified Photogrammetrist
DOI – Digital Orthophoto Imagery
FAC – Florida Administrative Code
FDEM – Florida Division of Emergency Mapping
FGDC – Federal Geodetic Control Committee
FL – Florida
GPS – Global Positioning System
Inc. – Incorporated
LiDAR – Light Detecting and Ranging
MTS – Florida Minimum Technical Standards (FAC 61G17)
NAD 83/99-HARN – North American Datum 1983 High Accuracy Reference Network 1999 adjustment
NAVD 88 – North American Vertical Datum of 1988

NGS – National Geodetic Survey
NOAA – National Oceanic and Atmospheric Administration
NSSDA – National Standards for Spatial Data Accuracy
PID – Photo Identifiable Point (feature)
QC – Quality Control
RMSE – Root Mean Square Error
STD – Standard Deviations
TGO – Trimble Geomatics Office
TTC – Trimble Total Control
U.S. – United States
Woolpert – Woolpert, Inc

Data Sources

Existing Control Point Coordinates: NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282
Phone: (301) 713-3242
Fax: (301) 713-4172
[Email: info_center@ngs.noaa.gov](mailto:info_center@ngs.noaa.gov)
<http://www.ngs.noaa.gov/>

Monumentation

Woolpert field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) control stations. These existing control stations were utilized to insure that quality X, Y, and Z coordinate values were computed for each of the newly established QA/QC Checkpoints throughout the project area. During the field reconnaissance, field crews recovered and verified six (6) existing NGS control stations suitable for GPS observations: **BLIND, HOG ISLAND B, PCDSM GPS 36, SEVEN, SKIPPER RESET** and **X 108**. These NGS Data Sheets, which contain information such as coordinates, error estimates and to-reach descriptions, can be found in Appendix A of this report.

Woolpert installed two (2) new semi-permanent control stations in a pre-determined location for both GPS checkpoint observations and to ensure for a uniform GPS network triangulation consisting of a minimum of three (3) GPS base stations. This newly established geodetic control stations, **NEW BASE 4** and **NEW BASE 5**, consisted of an 18-inch long, 5/8-inch diameter rebar with a plastic Woolpert survey cap (LB6777) and was set flush with the ground.

Woolpert field crews also recovered and incorporated **NEW BASE 3**, a new control station established for Project Area C of this mapping project. The station recovery information sheets for these points can be found in Appendix B of this report.

Woolpert established a total of 19 LiDAR Control Points, 127 LiDAR QA/QC Checkpoints and 22 intermediate (traverse) control stations to be used for conventional surveying of the dense trees/forested LiDAR QA/QC Checkpoints. All of these stations consisted of one of the following: a PK Nail, 6” spike with a plastic washer, a paint mark, a railroad spike, a hub and tack or a scribe mark.

Methodology

All field reconnaissance, monumentation, observations, data adjustments, and final report development was performed under the direct supervision of David Bruno, PSM 5670, Professional Surveyor and Mapper in Charge. Two types of survey techniques, Rapid Static GPS and conventional survey methods were utilized in collecting the LiDAR Control Points and the LiDAR QA/QC Checkpoints for this project. Woolpert's ISO 9001 2000 certified QA/QC process for ground control and GPS surveys was used as a guideline for this project.

All surveying was performed in such a way as to conform to the *Standards and Specifications for Geodetic Control Networks (1984)*, published by the Federal Geodetic Control Committee (FGCC). All GPS measurements pertaining to horizontal photogrammetric ground control were performed to meet or exceed Second Order Horizontal Control as set forth by the FGCC, *Geometric Geodetic Accuracy Standards and Specifications for using GPS Relative Positioning Techniques*, Version 5.0, August 1989. All GPS measurements for establishing vertical control were performed to meet or exceed Third Order Vertical Control Accuracy Standards and Specifications. Furthermore, the procedures used for GPS-Derived elevation differences met or exceeded the *Guidelines for Establishing GPS-Derived Ellipsoidal Heights (Standards: 2 centimeters and 5 centimeters)*, NGS-58, November 1977, and/or *Guidelines for Establishing GPS-Derived Orthometric Heights (Standards: 2 centimeters and 5 centimeters)*, NGS-59, October 2005.

Rapid Static GPS

Woolpert field crews utilized Rapid Static GPS surveying techniques for measuring 99 of the 127 LiDAR QA/QC Checkpoints, all of the LiDAR Control Points and all of the intermediate (traverse) control stations [to be used for conventional surveying of the dense trees/forested LiDAR QA/QC Checkpoints]. Rapid Static GPS surveying required a minimum of two receivers to occupy NGS control stations and LiDAR QA/QC Checkpoints or LiDAR Control Points for a minimum of 30 minutes, depending upon baseline length, number of satellites, and satellite geometry. This method is comparable in accuracy to static surveying; however, shorter observation time is made possible due to advancements in hardware and software. The final coordinates for the LiDAR Control Points, LiDAR QA/QC Checkpoints and intermediate (traverse) control stations can be found in Appendix C of this report.

For this survey, Woolpert field crews utilized three (3) Woolpert-owned, Trimble Navigation R8 model 2 GNSS dual-frequency geodetic GPS receivers as base stations and up to four (4) Woolpert-owned, Trimble Navigation R8 model 2 GNSS dual-frequency geodetic GPS receivers as rovers. Each observation session utilized a 5-second sync rate, lasting between 30-45 minutes each depending on distance from the furthest base station.

Using rapid-static GPS techniques, the field crews also observed six (6) existing NGS control stations and three (3) newly established control stations in the GPS network in an effort to establish survey quality control coordinates throughout the project. The Rapid Static GPS control network consisted of the following NGS and newly established stations: **BLIND, HOG ISLAND B, NEW BASE 3, NEW BASE 4, NEW BASE 5, PCDSM GPS 36, SEVEN, SKIPPER RESET, and X 108.**

Conventional Surveying

Using the paired intermediate (traverse) control stations set with Rapid-Static GPS, Woolpert field crews used a Woolpert-owned Topcon GTS-701 Total Station or a Woolpert-owned Topcon GTS-711 Total Station to acquire twenty-eight (28) LiDAR QA/QC Checkpoints in obscured areas (dense trees/forested) where GPS observations were limited. The final coordinates for the LiDAR QA/QC Checkpoints can be found in Appendix C of this report.

Datum Reference and Final Coordinates

All horizontal GPS control was based on the Florida State Plane Coordinate System (West Zone), referenced to North American Datum 1983, adjustment of 1999 (NAD83/99) HARN, expressed in U.S. Survey Feet. All vertical control was based on the North American Vertical Datum of 1988 (NAVD88), also expressed in U.S. Survey Feet.

GPS Data Analysis and Processing

The field crew chief processed all session baselines each day using *Trimble Navigation's* Trimble Geomatics Office (TGO) Version 1.63 baseline processor with the broadcast ephemeris. *Trimble Navigation's* Trimble Geomatics Office (TGO) Wave Software User's Guide (November 1999) was used as a reference. The ratio and root-mean-square error (RMSE) criteria on pages 3-4 to 3-6 of the guide were followed. Other criteria used a maximum of 10.5 percent rejections, along with float-versus-fixed deltas of 10 cm. All cases that failed to meet any of these criteria were rejected and not used. Fixed solutions were obtained for all vector baselines.

Daily processing allowed the field crews to discover any weak links in the network and immediately schedule re-observations of the affected baselines. Once the fieldwork was complete, the processed baselines were then run through a rigorous loop closure analysis. Any baselines that failed this analysis were either reprocessed or removed from the network.

Rapid Static Adjustment

Upon completion of all field data processing, Woolpert performed a minimally constrained and fully constrained least-squares adjustments using *Trimble Navigation's* Trimble Total Control (TTC) version 2.73. After an acceptable minimally constrained least-squares adjustment was obtained, a fully constrained least-squares adjustment was performed by fixing the GPS networks to existing NGS/County control stations. Geoid 03 was used to convert ellipsoidal heights to orthometric heights. For this survey the following stations were held fixed:

DIMENSIONS	EXISTING NGS CONTROL STATIONS
3-D Control Stations	BLIND (AG0337), SEVEN (AG0907), SKIPPER RESET (AL6480), X 108 (AL6204)
2-D Control Stations	HOG ISLAND B (AL0220)

Accuracy Statement

The positional accuracy of the LiDAR Control Points was 0.06-feet (avg. 0.04-feet) horizontally and 0.14-feet (avg. 0.07-feet) vertically at the 95% confidence level. The positional accuracy of the LiDAR QA/QC Checkpoints was 0.06-feet (avg. 0.03-feet) horizontally and 0.13-feet (avg. 0.07-feet) vertically at the 95% confidence level.

The ground control survey meets positional accuracies necessary to support a DTM to meet or exceed a 3.8-foot horizontal accuracy and 0.6-foot fundamental vertical accuracy at the 95% confidence level.

The positional accuracies information can be found in Appendix D of this report.

Notes

1. THIS REPORT OF SURVEY IS PART OF THE LIDAR MAPPING QA/QC GROUND CONTROL SURVEY. SEVEN (7) GROUND CONTROL LAYOUT MAPS SHALL ACCOMPANY THE SURVEY REPORT. NEITHER THE MAPS NOR THIS REPORT OF SURVEY IS FULL AND COMPLETE WITHOUT THE OTHER. THIS REPORT OF SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER IN RESPONSIBLE CHARGE.
2. THIS REPORT OF SURVEY CONSISTS OF FIFTY-FOUR (54) PAGES AND EACH PAGE SHALL NOT BE CONSIDERED FULL OR COMPLETE UNLESS ATTACHED TO THE OTHER(S). ADDITIONS OR DELETIONS TO SURVEY MAPS AND REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
3. THIS LIDAR MAPPING QA/QC GROUND CONTROL SURVEY DATA AND REPORT IS CERTIFIED TO THE FLORIDA DIVISION OF EMERGENCY MANAGEMENT AS MEETING OR EXCEEDING, IN QUALITY AND PRECISION, THE STANDARDS APPLICABLE FOR THIS WORK, AS SET FORTH IN CHAPTER 61G17, FLORIDA ADMINISTRATIVE CODE & FEMA GUIDELINES AND SPECIFICATIONS FOR FLOOD HAZARD MAPPING PARTNERS.

Surveyor and Mapper in Responsible Charge:

David Bruno PSM

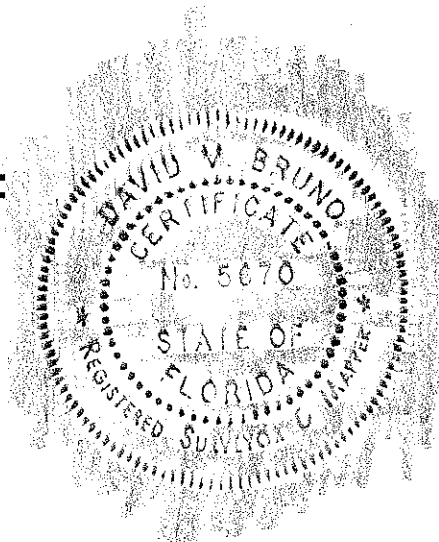
Professional Surveyor and Mapper

License Number: LS 5670

Signed:



Seal:



APPENDIX A: EXISTING GROUND CONTROL INFORMATION

This appendix contains the published National Geodetic Survey (NGS) data sheets for the control utilized for Project Area B of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

1 National Geodetic Survey, Retrieval Date = MAY 3, 2007

AG0337 *****

AG0337 TIDAL BM - This is a Tidal Bench Mark.

AG0337 DESIGNATION - BLIND

AG0337 PID - AG0337

AG0337 STATE/COUNTY- FL/PINELLAS

AG0337 USGS QUAD - EGMONT KEY (1981)

AG0337

AG0337 *CURRENT SURVEY CONTROL

AG0337

AG0337* NAD 83(1999)- 27 45 00.18482(N) 082 45 16.71266(W) ADJUSTED

AG0337* NAVD 88 - 0.994 (meters) 3.26 (feet) ADJUSTED

AG0337

AG0337 X - 712,399.729 (meters) COMP

AG0337 Y - -5,603,546.091 (meters) COMP

AG0337 Z - 2,952,009.644 (meters) COMP

AG0337 LAPLACE CORR- -1.52 (seconds) DEFLEC99

AG0337 ELLIP HEIGHT- -23.35 (meters) (05/29/03) GPS OBS

AG0337 GEOID HEIGHT- -24.33 (meters) GEOID03

AG0337 DYNAMIC HT - 0.993 (meters) 3.26 (feet) COMP

AG0337 MODELED GRAV- 979,174.8 (mgal) NAVD 88

AG0337

AG0337 HORZ ORDER - FIRST

AG0337 VERT ORDER - SECOND CLASS I

AG0337 ELLP ORDER - FOURTH CLASS II

AG0337

AG0337.The horizontal coordinates were established by GPS observations

AG0337.and adjusted by the National Geodetic Survey in May 2003..

AG0337

AG0337.The orthometric height was determined by differential leveling

AG0337.and adjusted by the National Geodetic Survey in June 1991..

AG0337

AG0337.This Tidal Bench Mark is designated as VM 6539

AG0337.by the Center for Operational Oceanographic Products and Services.

AG0337

AG0337.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AG0337

AG0337.The Laplace correction was computed from DEFLEC99 derived deflections.

AG0337

AG0337.The ellipsoidal height was determined by GPS observations

AG0337.and is referenced to NAD 83.

AG0337

AG0337.The geoid height was determined by GEOID03.

AG0337

AG0337.The dynamic height is computed by dividing the NAVD 88

AG0337.geopotential number by the normal gravity value computed on the

AG0337.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AG0337.degrees latitude (g = 980.6199 gals.).

AG0337

AG0337.The modeled gravity was interpolated from observed gravity values.

AG0337

AG0337; North East Units Scale Factor Converg.

AG0337;SPC FL W - 378,740.073 125,604.544 MT 1.00000947 -0 21 05.0

AG0337;SPC FL W - 1,242,583.06 412,087.57 sFT 1.00000947 -0 21 05.0

AG0337;UTM 17 - 3,070,747.965 327,067.274 MT 0.99996914 -0 49 01.9

AG0337

AG0337! - Elev Factor x Scale Factor = Combined Factor

AG0337!SPC FL W - 1.00000367 x 1.00000947 = 1.00001314

AG0337!UTM 17 - 1.00000367 x 0.99996914 = 0.99997281

AG0337

AG0337: Primary Azimuth Mark Grid Az

AG0337:SPC FL W - ST PETERSBURG BCH CABLE TV TWR 049 39 04.1

AG0337:UTM 17 - ST PETERSBURG BCH CABLE TV TWR 050 07 01.0
 AG0337
 AG0337|-----|
 AG0337| PID Reference Object Distance Geod. Az |
 AG0337| dddmmss.s |
 AG0337| AG2754 ST PETERSBURG BCH CABLE TV TWR APPROX. 0.5 KM 0491759.1 |
 AG0337| AG2564 ST PETERSBURG BCH ST JOHNS CH 203.657 METERS 17617 |
 AG0337| AG0354 BLIND RM 1 24.407 METERS 22942 |
 AG0337| AG0356 BLIND RM 3 3220735.2 |
 AG0337| AG2775 MADERIA BEACH COUNTY TANK APPROX. 7.3 KM 3222505.4 |
 AG0337| AG2767 ST PETERSBURG BCH COUNTY TANK APPROX. 0.9 KM 3292459.1 |
 AG0337| AG0355 BLIND RM 2 31.740 METERS 35257 |
 AG0337|-----|
 AG0337
 AG0337 SUPERSEDED SURVEY CONTROL
 AG0337
 AG0337 NAD 83(1990)- 27 45 00.18108(N) 082 45 16.71221(W) AD() 1
 AG0337 NAD 83(1986)- 27 45 00.18688(N) 082 45 16.72526(W) AD() 1
 AG0337 NAD 27 - 27 44 59.08704(N) 082 45 17.36094(W) AD() 1
 AG0337 NAVD 88 (05/29/03) 0.99 (m) 3.2 (f) LEVELING 3
 AG0337 NGVD 29 (??/??/92) 1.272 (m) 4.17 (f) ADJ UNCH 2 1
 AG0337
 AG0337.Superseded values are not recommended for survey control.
 AG0337.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AG0337.See file dsdata.txt to determine how the superseded data were derived.
 AG0337
 AG0337_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL2706770748(NAD 83)
 AG0337_MARKER: DS = TRIANGULATION STATION DISK
 AG0337_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AG0337_SP_SET: SET IN TOP OF CONCRETE MONUMENT
 AG0337_STAMPING: BLIND 1973
 AG0337_MARK LOGO: NGS
 AG0337_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AG0337+STABILITY: SURFACE MOTION
 AG0337_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AG0337+SATELLITE: SATELLITE OBSERVATIONS - January 19, 2007
 AG0337
 AG0337 HISTORY - Date Condition Report By
 AG0337 HISTORY - 1973 MONUMENTED NGS
 AG0337 HISTORY - 1975 GOOD NGS
 AG0337 HISTORY - 1975 GOOD FLDT
 AG0337 HISTORY - 1978 GOOD FL-103
 AG0337 HISTORY - 1982 GOOD FLDNR
 AG0337 HISTORY - 1986 GOOD USPSQD
 AG0337 HISTORY - 1988 GOOD USPSQD
 AG0337 HISTORY - 19910328 GOOD USPSQD
 AG0337 HISTORY - 20010208 GOOD USPSQD
 AG0337 HISTORY - 20070119 GOOD USPSQD
 AG0337
 AG0337 STATION DESCRIPTION
 AG0337
 AG0337'DESCRIBED BY NATIONAL GEODETIC SURVEY 1973 (JDS)
 AG0337'STATION IS ABOUT 4-1/2 MILES SOUTHWEST OF THE JUNCTION OF
 AG0337'U.S. HIGHWAY 19 AND CENTRAL AVENUE IN ST. PETERSBURG, 3 MILES
 AG0337'SOUTHEAST OF THE BRIDGE OVER JOHNS PASS INLET, 2-1/2 MILES WEST
 AG0337'OF THE CITY OF GULFPORT, 1-1/2 MILES SOUTH OF CENTER OF THE
 AG0337'TREASURE ISLAND CAUSEWAY, IN THE NORTH EDGE OF ST. PETERSBURG
 AG0337'BEACH, ALONG THE EAST SIDE OF BLIND PASS ROAD, AT AND ON
 AG0337'PROPERTY OF THE GULF BEACHES ELEMENTARY SCHOOL.
 AG0337'
 AG0337'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 19 AND
 AG0337'CENTRAL AVENUE IN ST. PETERSBURG, GO WEST ON CENTRAL AVENUE FOR
 AG0337'5.75 MILES TO THE JUNCTION OF GULF BLVD. (STATE HIGHWAY 699). TURN

AG0337'LEFT AND GO SOUTH ON GULF BLVD. (GULF BLVD. TURNS INTO BLIND PASS
AG0337'ROAD AT THE ST. PETERSBURG BEACH CITY LIMITS) FOR 1.85 MILES TO
AG0337'THE JUNCTION OF 85TH AVENUE AND THE STATION AS DESCRIBED.
AG0337'
AG0337'THE SURFACE MARK AND UNDERGROUND MARK ARE BOTH STANDARD DISKS
AG0337'STAMPED BLIND 1973. THE SURFACE MARK IS SET IN A ROUND CONCRETE
AG0337'POST FLUSH WITH THE GROUND. IT IS 202 FEET SOUTHEAST OF THE
AG0337'SOUTHWEST CORNER OF THE SCHOOL BUILDING, 175 FEET NORTHEAST OF
AG0337'CENTER OF BLIND PASS ROAD, 149 FEET SOUTHWEST OF THE SOUTHWEST
AG0337'CORNER OF THE MOST SOUTHERN EXTENSION OF THE SCHOOL BUILDING,
AG0337'106 FEET SOUTH OF A LIGHT POLE, 46 FEET NORTHWEST OF CENTER OF
AG0337'85TH AVENUE, 21.5 FEET SOUTHWEST OF THE SOUTH 1 OF 4 PALM TREES IN
AG0337'A GROUP AND 16 FEET NORTHWEST OF A FENCE LINE.
AG0337'
AG0337'REFERENCE MARK 1, STAMPED BLIND NO 1 1973, IS A STANDARD DISK
AG0337'SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 47
AG0337'FEET NORTHEAST OF THE SOUTHWEST CORNER OF THE FENCED SCHOOL
AG0337'GROUNDS, 31.5 FEET NORTHWEST OF CENTER OF 85TH AVENUE AND 3 FEET
AG0337'WEST OF THE WEST END OF A GATE.
AG0337'
AG0337'REFERENCE MARK 2, STAMPED BLIND NO 2 1973, IS A STANDARD DISK
AG0337'SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 130
AG0337'FEET WEST OF THE SOUTHWEST CORNER OF THE MOST SOUTHERN EXTENSION
AG0337'OF THE SCHOOL BUILDING, 112 FEET NORTHWEST OF A FENCE LINE, 111
AG0337'FEET SOUTHEAST OF THE SOUTHWEST CORNER OF THE SCHOOL BUILDING AND
AG0337'2 FEET SOUTH OF THE LIGHT POLE.
AG0337'
AG0337'REFERENCE MARK 3, STAMPED BLIND NO 3 1973, IS A STANDARD DISK
AG0337'SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 80
AG0337'FEET SOUTHEAST OF CENTER OF THE JUNCTION OF BLIND PASS ROAD AND
AG0337'90TH AVENUE, 23 FEET EAST OF CENTER OF BLIND PASS ROAD, 2.6 FEET
AG0337'SOUTHEAST OF A METAL WITNESS POST AND 2.4 FEET EAST OF A HIGHWAY
AG0337'SPEED LIMIT SIGN.
AG0337'
AG0337'TO REACH REFERENCE MARK 3 FROM THE STATION, GO NORTHERLY ON
AG0337'BLIND PASS ROAD FOR 0.2 MILE TO THE MARK ON THE RIGHT AS DESCRIBED.
AG0337'
AG0337'HEIGHT OF LIGHT ABOVE STATION MARK 22 METERS.
AG0337
AG0337 STATION RECOVERY (1975)
AG0337
AG0337'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1975 (CLN)
AG0337'STATION MARK, REFERENCE MARKS 1 AND 2 WERE RECOVERED AS DESCRIBED
AG0337'AND FOUND IN GOOD CONDITION. AZIMUTH MARK WAS FOUND HIT AND
AG0337'LEANING TO THE SOUTH. THE MARK WAS RESET IN AN UPRIGHT POSITION
AG0337'AND RESTAMPED. A POLARIS OBSERVATION WAS OBSERVED AT THIS
AG0337'TIME. DUE TO CHANGES, A COMPLETE NEW DESCRIPTION FOLLOWS.
AG0337'
AG0337'STATION IS ABOUT 4-1/2 MILES SOUTHWEST OF THE JUNCTION OF
AG0337'U.S. HIGHWAY 19 AND CENTRAL AVENUE IN ST. PETERSBURG, 3 MILES
AG0337'SOUTHEAST OF THE BRIDGE OVER JOHNS PASS INLET, 2-1/2 MILES WEST
AG0337'OF THE CITY OF GULFPORT, 1-1/2 MILES SOUTH OF CENTER OF THE
AG0337'TREASURE ISLAND CAUSEWAY, ALONG THE EAST SIDE OF BLIND PASS
AG0337'ROAD, AT AND ON PROPERTY OF THE GULF BEACHES ELEMENTARY SCHOOL.
AG0337'
AG0337'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 19 AND
AG0337'CENTRAL AVENUE IN ST. PETERSBURG, GO WEST ON CENTRAL AVENUE FOR
AG0337'5.75 MILES TO THE JUNCTION OF GULF BLVD. (STATE HIGHWAY
AG0337'699). TURN LEFT AND GO SOUTH ON GULF BLVD. (GULF BLVD. TURN
AG0337'INTO BLIND PASS ROAD AT THE ST. PETERSBURG BEACH CITY LIMITS)
AG0337'FOR 1.85 MILES TO THE JUNCTION OF 85TH AVENUE AND THE STATION
AG0337'AS DESCRIBED.
AG0337'

AG0337'THE SURFACE MARK AND UNDERGROUND MARK ARE BOTH STANDARD DISKS
AG0337'STAMPED BLIND 1973. THE SURFACE MARK IS SET IN A ROUND CONCRETE
AG0337'POST FLUSH WITH THE GROUND. IT IS 202 FEET SOUTHEAST OF THE
AG0337'SOUTHWEST CORNER OF THE SCHOOL BUILDING, 175 FEET NORTHEAST OF
AG0337'CENTER OF BLIND PASS ROAD, 149 FEET SOUTHWEST OF THE SOUTHWEST
AG0337'CORNER OF THE MOST SOUTHERN EXTENSION OF THE SCHOOL BUILDING,
AG0337'106 FEET SOUTH OF A LIGHT POLE, 46 FEET NORTHWEST OF CENTER OF
AG0337'85TH AVENUE, 21.5 FEET SOUTHWEST OF THE SOUTH 1 OF 4 PALM
AG0337'TREES AND 16 FEET NORTHWEST OF A FENCE LINE.
AG0337'
AG0337'REFERENCE MARK 1, STAMPED BLIND NO 1 1973, IS A STANDARD DISK
AG0337'SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 47
AG0337'FEET NORTHEAST OF THE SOUTHWEST CORNER OF THE FENCED SCHOOL
AG0337'GROUNDS, 31.5 FEET NORTHWEST OF CENTER OF 85TH AVENUE AND 3 FEET
AG0337'WEST OF THE WEST END OF A GATE.
AG0337'
AG0337'REFERENCE MARK 2, STAMPED BLIND NO 2 1973, IS A STANDARD DISK
AG0337'SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND. IT IS 130
AG0337'FEET WEST OF THE SOUTHWEST CORNER OF THE MOST SOUTHERN EXTENSION
AG0337'OF THE SCHOOL BUILDING, 112 FEET NORTHWEST OF A FENCE LINE, 111
AG0337'FEET SOUTHEAST OF THE SOUTHWEST CORNER OF THE SCHOOL BUILDING AND
AG0337'2 FEET SOUTH OF THE LIGHT POLE.
AG0337'
AG0337'AZIMUTH MARK RM 3, STAMPED BLIND NO 3 AZ 1973 1975, IS A
AG0337'STANDARD DISK SET IN A ROUND CONCRETE POST FLUSH WITH THE GROUND
AG0337'SURFACE. IT IS 80 FEET SOUTHEAST OF CENTER OF THE JUNCTION OF
AG0337'BLIND PASS ROAD AND 90TH AVENUE, 23 FEET EAST OF CENTER OF BLIND
AG0337'PASS ROAD, 19 PACES NORTHWEST OF THE WEST ENTRANCE TO APARTMENT
AG0337'BUILDING AT 8911 BLIND PASS ROAD, 2.6 FEET SOUTHEAST OF A METAL
AG0337'WITNESS POST AND 2.4 FEET EAST OF HIGHWAY SPEED LIMIT SIGN.
AG0337'
AG0337'TO REACH THE AZIMUTH MARK RM 3 FROM THE STATION, GO NORTHERLY
AG0337'ON BLIND PASS ROAD FOR 0.2 MILE TO THE MARK ON GRASSY AREA
AG0337'ON RIGHT AS DESCRIBED.
AG0337'
AG0337'HEIGHT OF LIGHT ABOVE STATION MARK 4 FEET.
AG0337'
AG0337'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN
AG0337'IN NORTH EDGE OF ST. PETERSBURG BEACH.
AG0337
AG0337 STATION RECOVERY (1975)
AG0337
AG0337'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1975
AG0337'AT ST PETERSBURG BCH.
AG0337'TO REACH FROM THE INTERSECTION OF GULF BLVD. (S.R. 699) AND 107TH
AG0337'AVE. (TREASURE ISLAND CAUSEWAY), RUN SOUTHERLY ALONG GULF BLVD.
AG0337'FOR 1.9 MILES TO THE INTERSECTION OF 85TH AVE. STATION ON
AG0337'LEFT, 175 FT. EAST FROM THE CENTERLINE OF GULF BLVD., 45 FT.
AG0337'NORTH OF THE CENTERLINE OF 85TH AVE., 202 FT. SE OF THE SW
AG0337'CORNER OF THE GULF BEACHES ELEMENTARY SCHOOL BLDG., 106 FT.
AG0337'SOUTH OF A LIGHT POLE (NO NUMBER), 21.5 FT. SW OF MOST SOUTHERLY
AG0337'PALM TREE OF A GROUP OF FOUR PALMS, 16 FT. NORTH OF A 6 IN
AG0337'CHAIN LINK FENCE. SET IN TOP OF A CONCRETE POST THAT IS FLUSH
AG0337'WITH THE GROUND. SECTION 25, T 31 S, R 15 E.
AG0337
AG0337 STATION RECOVERY (1978)
AG0337
AG0337'RECOVERY NOTE BY PINELLAS COUNTY FLORIDA 1978
AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (1982)
AG0337
AG0337'RECOVERY NOTE BY FL DEPT OF NAT RES 1982

AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (1986)
AG0337
AG0337'RECOVERY NOTE BY US POWER SQUADRON 1986 (AVD)
AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (1988)
AG0337
AG0337'RECOVERY NOTE BY US POWER SQUADRON 1988 (AVD)
AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (1991)
AG0337
AG0337'RECOVERY NOTE BY US POWER SQUADRON 1991 (AVD)
AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (2001)
AG0337
AG0337'RECOVERY NOTE BY US POWER SQUADRON 2001 (RLS)
AG0337'RECOVERED IN GOOD CONDITION.
AG0337
AG0337 STATION RECOVERY (2007)
AG0337
AG0337'RECOVERY NOTE BY US POWER SQUADRON 2007 (RLS)
AG0337'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = MAY 3, 2007

AL0220 *****

AL0220 DESIGNATION - HOG ISLAND B

AL0220 PID - AL0220

AL0220 STATE/COUNTY- FL/PINELLAS

AL0220 USGS QUAD - DUNEDIN (1987)

AL0220

AL0220 *CURRENT SURVEY CONTROL

AL0220

AL0220* NAD 83(1999)- 28 03 07.12291(N) 082 48 05.01475(W) ADJUSTED

AL0220* NAVD 88 - 1.706 (meters) 5.60 (feet) ADJUSTED

AL0220 X - 705,865.347 (meters) COMP

AL0220 Y - -5,588,592.251 (meters) COMP

AL0220 Z - 2,981,579.190 (meters) COMP

AL0220 LAPLACE CORR- -1.81 (seconds) DEFLEC99

AL0220 ELLIP HEIGHT- -23.11 (meters) (05/29/03) GPS OBS

AL0220 GEOID HEIGHT- -24.79 (meters) GEOID03

AL0220 DYNAMIC HT - 1.704 (meters) 5.59 (feet) COMP

AL0220 MODELED GRAV- 979,187.9 (mgal) NAVD 88

AL0220

AL0220 HORZ ORDER - FIRST

AL0220 VERT ORDER - SECOND CLASS I

AL0220 ELLP ORDER - FOURTH CLASS II

AL0220

AL0220.The horizontal coordinates were established by GPS observations

AL0220.and adjusted by the National Geodetic Survey in May 2003..

AL0220

AL0220.The orthometric height was determined by differential leveling

AL0220.and adjusted by the National Geodetic Survey in June 1991..

AL0220.WARNING-Repeat measurements at this control monument indicate possible

AL0220.vertical movement.

AL0220

AL0220.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AL0220

AL0220.The Laplace correction was computed from DEFLEC99 derived deflections.

AL0220

AL0220.The ellipsoidal height was determined by GPS observations

AL0220.and is referenced to NAD 83.

AL0220

AL0220.The geoid height was determined by GEOID03.

AL0220

AL0220.The dynamic height is computed by dividing the NAVD 88

AL0220.geopotential number by the normal gravity value computed on the

AL0220.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AL0220.degrees latitude (g = 980.6199 gals.).

AL0220

AL0220.The modeled gravity was interpolated from observed gravity values.

AL0220

AL0220; North East Units Scale Factor Converg.

AL0220;SPC FL W - 412,228.031 121,214.537 MT 1.00001776 -0 22 36.8

AL0220;SPC FL W - 1,352,451.47 397,684.69 sFT 1.00001776 -0 22 36.8

AL0220;UTM 17 - 3,104,269.481 322,951.173 MT 0.99998690 -0 50 50.5

AL0220

AL0220! - Elev Factor x Scale Factor = Combined Factor

AL0220!SPC FL W - 1.00000363 x 1.00001776 = 1.00002139

AL0220!UTM 17 - 1.00000363 x 0.99998690 = 0.99999053

AL0220

AL0220: Primary Azimuth Mark Grid Az

AL0220:SPC FL W - TARPON SPRINGS FLA PWR MW 029 54 01.9

AL0220:UTM 17 - TARPON SPRINGS FLA PWR MW 030 22 15.6

AL0220

AL0220|-----|

AL0220| PID Reference Object Distance Geod. Az |
 AL0220| dddmss.s |
 AL0220| AL0743 TARPON SPRINGS FLA PWR MW APPROX.12.2 KM 0293125.1 |
 AL0220| AL0895 DUNEDIN N MUN TANK APPROX. 2.4 KM 0991542.8 |
 AL0220| AL0888 DUNEDIN H P HOOD INC TANK APPROX. 3.6 KM 1553059.7 |
 AL0220|-----|
 AL0220
 AL0220 SUPERSEDED SURVEY CONTROL
 AL0220
 AL0220 NAD 83(1990)- 28 03 07.12035(N) 082 48 05.01466(W) AD() 1
 AL0220 NAD 83(1986)- 28 03 07.12750(N) 082 48 05.02555(W) AD() 1
 AL0220 NAD 27 - 28 03 06.06550(N) 082 48 05.65624(W) AD() 1
 AL0220 NAVD 88 (05/29/03) 1.71 (m) 5.6 (f) LEVELING 3
 AL0220 NGVD 29 (??/??/92) 1.975 (m) 6.48 (f) ADJ UNCH 2 1
 AL0220
 AL0220.Superseded values are not recommended for survey control.
 AL0220.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AL0220.See file dsdata.txt to determine how the superseded data were derived.
 AL0220
 AL0220_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLM2295104269(NAD 83)
 AL0220_MARKER: DD = SURVEY DISK
 AL0220_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AL0220_SP_SET: SET IN TOP OF CONCRETE MONUMENT
 AL0220_STAMPING: HOG ISLAND B
 AL0220_MARK LOGO: FL-103
 AL0220_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AL0220+STABILITY: SURFACE MOTION
 AL0220_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AL0220+SATELLITE: SATELLITE OBSERVATIONS - May 04, 2004
 AL0220
 AL0220 HISTORY - Date Condition Report By
 AL0220 HISTORY - 1973 MONUMENTED NGS
 AL0220 HISTORY - 1975 GOOD FLDT
 AL0220 HISTORY - 1983 GOOD FLDNR
 AL0220 HISTORY - 1989 GOOD USPSQD
 AL0220 HISTORY - 20040504 GOOD DEWDAV
 AL0220
 AL0220 STATION DESCRIPTION
 AL0220
 AL0220'DESCRIBED BY NATIONAL GEODETIC SURVEY 1973 (DFF)
 AL0220'THE STATION IS ON THE NORTH SIDE OF CAUSEWAY BOULEVARD, ABOUT
 AL0220'1 MILE NORTHWEST OF THE MAINLAND OF THE NORTHWEST SECTION
 AL0220'OF DUNEDIN.
 AL0220'
 AL0220'TO REACH FROM THE JUNCTION OF U.S. ALTERNATE HIGHWAY 19 AND
 AL0220'STATE ROUTE S-586 (CURLEW ROAD) AT THE NORTHWEST SECTION OF DUNEDIN,
 AL0220'GO NORTHWEST ON CAUSEWAY BOULEVARD FOR 1 MILE TO FIRST
 AL0220'BRIDGE. CONTINUE NORTHWEST ON CAUSEWAY BOULEVARD FOR 0.3 MILE TO
 AL0220'STATION ON RIGHT AS DESCRIBED.
 AL0220'
 AL0220'BRONZE DISK STAMPED HOG ISLAND-B SET IN A 12 INCH DIAMETER ROUND
 AL0220'CONCRETE MONUMENT THAT IS FLUSH WITH THE GROUND. THE UNDERGROUND
 AL0220'DISK IS SET IN AN IRREGULAR MASS OF CONCRETE 36 INCHES BELOW THE
 AL0220'GROUND SURFACE.
 AL0220'
 AL0220'IT IS 24 FEET NORTH OF CAUSEWAY BOULEVARD, 4.5 FEET NORTHEAST
 AL0220'OF CONCRETE LIGHT POLE NUMBER 2-10537, AND 7.0 FEET SOUTHWEST
 AL0220'OF THE FOOT OF A GUY WIRE.
 AL0220'
 AL0220'HEIGHT OF LIGHT ABOVE STATION MARK 1 METER.
 AL0220
 AL0220 STATION RECOVERY (1975)
 AL0220

AL0220'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1975
AL0220'AT N DUNEDIN.
AL0220'THE STATION IS ON THE NORTH SIDE OF CAUSEWAY BLVD., ABOUT 1 MILE
AL0220'NW OF THE MAINLAND ON THE NW SECTION OF DUNEDIN. TO REACH STATION
AL0220'FROM THE INTERSECTION OF U.S. ALT. 19 AND S.R. S-586 (CAUSEWAY
AL0220'BLVD.), RUN W. THEN SW ALONG CAUSEWAY BLVD. FOR 1.35 MILE TO STATION
AL0220'ON RIGHT, 24 FT. N. OF CAUSEWAY BLVD., 4.5 FT. NE OF CONCRETE LIGHT
AL0220'POLE NUMBER 2-10537, 7 FT. SW OF THE FOOT OF A GUY WIRE. SET IN
AL0220'TOP OF CONCRETE POST THAT IS FLUSH WITH THE GROUND. SECTION 16,
AL0220'T 28S, R 15E
AL0220
AL0220 STATION RECOVERY (1983)
AL0220
AL0220'RECOVERY NOTE BY FL DEPT OF NAT RES 1983
AL0220'RECOVERED IN GOOD CONDITION.
AL0220
AL0220 STATION RECOVERY (1989)
AL0220
AL0220'RECOVERY NOTE BY US POWER SQUADRON 1989 (JJC)
AL0220'RECOVERED IN GOOD CONDITION.
AL0220
AL0220 STATION RECOVERY (2004)
AL0220
AL0220'RECOVERY NOTE BY DEWBERRY DAVIS 2004 (KEC)
AL0220'RECOVERED IN GOOD CONDITION.

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1 National Geodetic Survey, Retrieval Date = MAY 3, 2007
AG0907 *****
AG0907 DESIGNATION - SEVEN
AG0907 PID - AG0907
AG0907 STATE/COUNTY- FL/PINELLAS
AG0907 USGS QUAD - ST PETERSBURG (1987)
AG0907
AG0907 *CURRENT SURVEY CONTROL
AG0907
AG0907* NAD 83(1999)- 27 48 23.82775(N) 082 44 26.80972(W) ADJUSTED
AG0907* NAVD 88 - 7.157 (meters) 23.48 (feet) ADJUSTED
AG0907
AG0907 X - 713,386.937 (meters) COMP
AG0907 Y - -5,600,480.869 (meters) COMP
AG0907 Z - 2,957,558.637 (meters) COMP
AG0907 LAPLACE CORR- -1.58 (seconds) DEFLEC99
AG0907 ELLIP HEIGHT- -17.25 (meters) (05/29/03) GPS OBS
AG0907 GEOID HEIGHT- -24.41 (meters) GEOID03
AG0907 DYNAMIC HT - 7.146 (meters) 23.44 (feet) COMP
AG0907 MODELED GRAV- 979,178.9 (mgal) NAVD 88
AG0907
AG0907 HORZ ORDER - FIRST
AG0907 VERT ORDER - SECOND CLASS II
AG0907 ELLP ORDER - FOURTH CLASS II
AG0907
AG0907.The horizontal coordinates were established by GPS observations
AG0907.and adjusted by the National Geodetic Survey in May 2003..
AG0907
AG0907.The orthometric height was determined by differential leveling
AG0907.and adjusted by the National Geodetic Survey in June 1991..
AG0907
AG0907.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AG0907
AG0907.The Laplace correction was computed from DEFLEC99 derived deflections.
AG0907
AG0907.The ellipsoidal height was determined by GPS observations
AG0907.and is referenced to NAD 83.
AG0907
AG0907.The geoid height was determined by GEOID03.
AG0907
AG0907.The dynamic height is computed by dividing the NAVD 88
AG0907.geopotential number by the normal gravity value computed on the
AG0907.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AG0907.degrees latitude (g = 980.6199 gals.).
AG0907
AG0907.The modeled gravity was interpolated from observed gravity values.
AG0907
AG0907; North East Units Scale Factor Converg.
AG0907;SPC FL W - 385,000.273 127,008.922 MT 1.00000691 -0 20 44.1
AG0907;SPC FL W - 1,263,121.73 416,695.10 sFT 1.00000691 -0 20 44.1
AG0907;UTM 17 - 3,076,996.268 328,522.485 MT 0.99996295 -0 48 44.1
AG0907
AG0907! - Elev Factor x Scale Factor = Combined Factor
AG0907!SPC FL W - 1.00000271 x 1.00000691 = 1.00000962
AG0907!UTM 17 - 1.00000271 x 0.99996295 = 0.99996566
AG0907
AG0907: Primary Azimuth Mark Grid Az
AG0907:SPC FL W - PINELLAS PARK LOT 007 03 19.1
AG0907:UTM 17 - PINELLAS PARK LOT 007 31 19.1
AG0907
AG0907|-----|
AG0907| PID Reference Object Distance Geod. Az |
AG0907| dddmmss.s |

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AG0907| AG2217 PINELLAS PARK LOT APPROX. 3.6 KM 0064235.0 |
 AG0907| CW7842 SEVEN RM 4 26.044 METERS 07305 |
 AG0907| AG2240 ST PETERSBURG CLEARVIEW BAP CH APPROX. 4.8 KM 0895324.8 |
 AG0907| AG2231 ST PETERSBURG NORTHSIDE BAP CH APPROX. 2.4 KM 0914838.6 |
 AG0907| AG0923 SEVEN RM 3 09453 |
 AG0907| AG2237 ST PETERSBURG LUTH CH SPIRE APPROX. 2.7 KM 1262515.2 |
 AG0907| AG2242 ST PETERSBURG EMMANUEL BAP CH APPROX. 5.1 KM 1285849.0 |
 AG0907| AG2245 ST PETERSBURG CENTRAL CHRIS CH APPROX. 5.8 KM 1354921.3 |
 AG0907| AG2238 ST PETERSBURG UNITED PRESB CH APPROX. 3.7 KM 1382102.4 |
 AG0907| AG2236 ST PETERSBURG ST JUDE CATH CH APPROX. 4.2 KM 1393958.9 |
 AG0907| AG2229 PASADENA PRESB CH SPIRE APPROX. 3.9 KM 1660743.3 |
 AG0907| AG2754 ST PETERSBURG BCH CABLE TV TWR APPROX. 6.0 KM 1892506.8 |
 AG0907| AG2564 ST PETERSBURG BCH ST JOHNS CH APPROX. 6.6 KM 1914843.0 |
 AG0907| AG2767 ST PETERSBURG BCH COUNTY TANK APPROX. 5.8 KM 1980638.2 |
 AG0907| AG2221 ST PETERSBURG AZALEA BAP CH APPROX. 1.8 KM 2031802.0 |
 AG0907| AG0921 SEVEN RM 1 24.095 METERS 24237 |
 AG0907| AG2753 BAY PINES VA HOSP TANK APPROX. 3.2 KM 2774600.2 |
 AG0907| AG2762 SEMINOLE COUNTY STANDPIPE APPROX. 6.6 KM 3042803.5 |
 AG0907| AG2770 PINELLAS PARK R STA WFSO S MST APPROX. 5.2 KM 3232922.6 |
 AG0907| AG2769 PINELLAS PARK RAD STA WGNB MST APPROX. 4.7 KM 3234552.3 |
 AG0907| AG2756 PINELLAS PARK R STA WFSO N MST APPROX. 5.5 KM 3252026.3 |
 AG0907| AG0961 STARKEY APPROX. 5.5 KM 3303946.6 |
 AG0907| AG2772 PINELLAS PARK RAD STA WQXM MST APPROX. 5.1 KM 3340528.5 |
 AG0907| AG0922 SEVEN RM 2 22.937 METERS 34922 |
 AG0907|-----|
 AG0907
 AG0907 SUPERSEDED SURVEY CONTROL
 AG0907
 AG0907 NAD 83(1990)- 27 48 23.82629(N) 082 44 26.80980(W) AD() 1
 AG0907 NAD 83(1986)- 27 48 23.83223(N) 082 44 26.82243(W) AD() 1
 AG0907 NAD 27 - 27 48 22.73963(N) 082 44 27.45888(W) AD() 1
 AG0907 NAVD 88 (05/29/03) 7.16 (m) 23.5 (f) LEVELING 3
 AG0907 NGVD 29 (??/??/92) 7.424 (m) 24.36 (f) ADJ UNCH 2 2
 AG0907
 AG0907.Superseded values are not recommended for survey control.
 AG0907.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AG0907.See file dsdata.txt to determine how the superseded data were derived.
 AG0907
 AG0907_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLL2852276996(NAD 83)
 AG0907_MARKER: DS = TRIANGULATION STATION DISK
 AG0907_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AG0907_SP_SET: SET IN TOP OF CONCRETE MONUMENT
 AG0907_STAMPING: SEVEN 1973
 AG0907_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AG0907+SATELLITE: SATELLITE OBSERVATIONS - May 07, 2004
 AG0907
 AG0907 HISTORY - Date Condition Report By
 AG0907 HISTORY - 1973 MONUMENTED NGS
 AG0907 HISTORY - 1976 GOOD NGS
 AG0907 HISTORY - 1977 GOOD FL-103
 AG0907 HISTORY - 1979 GOOD NGS
 AG0907 HISTORY - 19980422 GOOD USPSQD
 AG0907 HISTORY - 20040507 GOOD DEWDAV
 AG0907
 AG0907 STATION DESCRIPTION
 AG0907
 AG0907'DESCRIBED BY NATIONAL GEODETIC SURVEY 1973 (JDS)
 AG0907'THE STATION IS LOCATED ABOUT 5-1/2 MILES NORTHWEST OF
 AG0907'ST. PETERSBURG, 4 MILES SOUTHWEST OF PINELLAS PARK, IN THE
 AG0907'NORTHEAST ANGLE OF THE INTERSECTION OF 74 ST N AND 38 AVE N, AT
 AG0907'THE SOUTHWEST CORNER OF THE GROUNDS OF THE 74TH STREET
 AG0907'ELEMENTARY SCHOOL AND ON PROPERTY OF PINELLAS COUNTY.
 AG0907'

AG0907'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 694 AND
AG0907'STATE HIGHWAY A19A IN PINELLAS PARK, GO SOUTH ON STATE HIGHWAY
AG0907'A19A FOR 2.2 MILES TO THE JUNCTION OF 38 AVE N. TURN RIGHT
AG0907'AND GO WEST ON 38 AVE N FOR 0.45 MILE TO THE JUNCTION OF 71
AG0907'ST N AND REFERENCE MARK 3 IN THE SOUTHWEST ANGLE OF THE
AG0907'INTERSECTION. CONTINUE WEST ON 38 AVE N FOR 0.15 MILE TO THE
AG0907'JUNCTION OF 74 ST N AND THE STATION IN THE NORTHEAST ANGLE OF
AG0907'THE INTERSECTION.
AG0907'
AG0907'STATION MARKS ARE STANDARD DISK STAMPED SEVEN 1973. THE
AG0907'SURFACE DISK IS SET IN THE TOP OF A 12-INCH CYLINDRICAL
AG0907'CONCRETE MONUMENT FLUSH WITH THE GROUND SURFACE. IT IS 87 FEET
AG0907'WEST-SOUTHWEST OF THE SOUTHWEST CORNER OF THE MOST SOUTHERLY WING
AG0907'OF THE SCHOOL BUILDINGS, 59 FEET EAST OF THE CENTER OF 74 ST N,
AG0907'57 FEET NORTH OF THE WEST END OF A CHAIN LINK FENCE AND 13 FEET
AG0907'EAST OF THE EAST EDGE OF A CONCRETE SIDEWALK. THE UNDERGROUND
AG0907'DISK IS SET IN THE TOP OF AN IRREGULAR MASS OF CONCRETE 48
AG0907'INCHES BELOW THE GROUND SURFACE.
AG0907'
AG0907'REFERENCE MARK 1, A STANDARD DISK STAMPED SEVEN NO 1 1973, IS
AG0907'CEMENTED IN A DRILL HOLE IN A CONCRETE ROAD DRAIN. IT IS 50
AG0907'FEET NORTH OF THE CENTER OF 38 AVE N, 25 FEET NORTHEAST OF
AG0907'POWER POLE NUMBER 1-805416, 11 FEET WEST OF THE CENTER OF 74 ST
AG0907'N AND 3.4 FEET NORTHEAST OF A METAL WITNESS POST.
AG0907'
AG0907'REFERENCE MARK 2, A STANDARD DISK STAMPED SEVEN NO 2 1973, IS
AG0907'CEMENTED IN A DRILL HOLE IN A CONCRETE SIDEWALK. IT IS 45 FEET
AG0907'EAST OF THE CENTER OF 74 ST N, 9 FEET SOUTHWEST OF A PALM TREE
AG0907'AND 1.3 FEET WEST OF THE EAST EDGE OF THE CONCRETE SIDEWALK.
AG0907'
AG0907'REFERENCE MARK 3, A STANDARD DISK STAMPED SEVEN NO 3 1973, IS
AG0907'SET IN THE TOP OF A 12-INCH CYLINDRICAL CONCRETE MONUMENT FLUSH
AG0907'WITH THE GROUND SURFACE. IT IS 28 FEET WEST OF THE CENTER OF
AG0907'71 ST N, 17 FEET SOUTH OF THE CENTER OF 38 AVE N, 3.5 FEET WEST
AG0907'OF A METAL WITNESS POST AND 3 FEET SOUTH OF A POWER LINE GUY
AG0907'POLE.
AG0907'
AG0907'HEIGHT OF LIGHT ABOVE STATION MARK 26.3 METERS.
AG0907
AG0907 STATION RECOVERY (1976)
AG0907
AG0907'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976
AG0907'IN ST PETERSBURG.
AG0907'TO REACH THE STATION FROM THE INTERSECTION OF S.R. 595 (U.S. ALT. HWY.
AG0907'19, TYRONE BLVD.) AND S.R. 693 (66TH ST., U.S. ALT. HWY. 19A). RUN
AG0907'NORTHWESTERLY ON S.R. 595 FOR 1.65 MILES TO THE INTERSECTION OF 38TH
AG0907'AVE. N. TURN RIGHT ON 38TH AVE. N. AND RUN EASTERLY FOR 0.55 MI. TO
AG0907'74TH ST. N. STATION ON LEFT, IN THE N.E. CORNER, 85.5 FT. NORTH OF
AG0907'THE CENTERLINE OF 38TH AVE., 59.5 FT. EAST OF THE CENTERLINE OF 74TH
AG0907'ST. N., 87.5 FT. S.E. OF THE S.E. CORNER OF SCHOOL BUILDING (74TH
AG0907'STREET SCHOOL), 13.0 FT. EAST OF THE BACK OF SIDEWALK. SET IN THE TOP
AG0907'OF A CONCRETE POST THAT IS FLUSH WITH THE GROUND. SECTION 6, T 31, R
AG0907'16.
AG0907
AG0907 STATION RECOVERY (1977)
AG0907
AG0907'RECOVERY NOTE BY PINELLAS COUNTY FLORIDA 1977
AG0907'RECOVERED IN GOOD CONDITION.
AG0907
AG0907 STATION RECOVERY (1979)
AG0907
AG0907'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1979 (CLN)
AG0907'STATION MARK AND REFERENCE MARK 2 WERE RECOVERED AND FOUND IN GOOD

AG0907'CONDITION. REFERENCE MARK 1 AND AZIMUTH MARK WERE DESTROYED BY WATER
AG0907'MAIN AND GAS LINE CONSTRUCTION. REFERENCE MARK 4 WAS ESTABLISHED AT
AG0907'THIS TIME. THE DISTANCE TO REFERENCE MARK 2 CHECKED. DUE TO CHANGES,
AG0907'A COMPLETE NEW DESCRIPTION FOLLOWS.
AG0907'
AG0907'STATION IS ABOUT 5.5 MILES NORTHWEST OF ST. PETERSBURG, 4.0 MILES
AG0907'SOUTHWEST OF PINELLAS PARK, IN THE NORTHEAST ANGLE OF INTERSECTION OF
AG0907'74TH STREET N AND 38TH AVENUE N, AT THE SOUTHWEST CORNER OF THE
AG0907'GROUNDS OF THE 74TH STREET ELEMENTARY SCHOOL AND ON PROPERTY OF
AG0907'PINELLAS COUNTY.
AG0907'
AG0907'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 694 AND STATE
AG0907'HIGHWAY A19A (66TH STREET) IN PINELLAS PARK, GO SOUTH ON STATE HIGHWAY
AG0907'A19A FOR 2.2 MILES TO THE JUNCTION OF 38TH AVENUE N. TURN RIGHT AND
AG0907'GO WEST ON 38TH AVENUE N FOR 0.7 MILE TO 74TH STREET N AND THE STATION
AG0907'ON RIGHT.
AG0907'
AG0907'STATION MARK IS A STANDARD DISK STAMPED SEVEN 1973 IS SET IN THE TOP
AG0907'OF A 12-INCH ROUND CONCRETE MONUMENT THAT IS SET FLUSH WITH THE
AG0907'GROUND. IT IS 87.5 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF SCHOOL
AG0907'HOUSE, 85.5 FEET NORTH OF THE CENTER OF 38TH AVENUE N, 59.5 FEET EAST
AG0907'OF THE CENTER OF 74TH STREET N, 32.5 FEET NORTHEAST OF A FIRE HYDRANT,
AG0907'13.2 FEET EAST OF THE EAST EDGE OF SIDEWALK AND 1.5 FEET WEST OF A
AG0907'METAL WITNESS POST.
AG0907'
AG0907'REFERENCE MARK 2 IS A STANDARD DISK STAMPED SEVEN NO 2 1973, IS SET
AG0907'IN A DRILL HOLE ON SIDEWALK. IT IS 105.0 FEET NORTHWEST OF THE
AG0907'SOUTHWEST CORNER OF THE SCHOOL, 45.5 FEET EAST OF CENTER OF 74TH
AG0907'STREET N, 23.0 FEET NORTH OF A POWER LINE POLE BRACE POLE, AND 9.0
AG0907'FEET SOUTHWEST OF A 12-INCH PALM TREE.
AG0907'
AG0907'REFERENCE MARK 4 IS A STANDARD DISK STAMPED SEVEN 1973 NO 4 1979, IS
AG0907'SET ON TOP OF SIDEWALK AT THE SOUTHWEST CORNER OF SCHOOL BUILDING. IT
AG0907'IS 6.0 FEET SOUTH OF THE SOUTHWEST CORNER OF SCHOOL AND 1.0 FOOT
AG0907'NORTH OF THE SOUTH EDGE OF SIDEWALK.
AG0907
AG0907 STATION RECOVERY (1998)
AG0907
AG0907'RECOVERY NOTE BY US POWER SQUADRON 1998
AG0907'RECOVERED IN GOOD CONDITION.
AG0907
AG0907 STATION RECOVERY (2004)
AG0907
AG0907'RECOVERY NOTE BY DEWBERRY DAVIS 2004 (KEC)
AG0907'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = MAY 3, 2007

AL6480 *****

AL6480 DESIGNATION - SKIPPER RESET

AL6480 PID - AL6480

AL6480 STATE/COUNTY- FL/HILLSBOROUGH

AL6480 USGS QUAD - SULPHUR SPRINGS (1995)

AL6480

AL6480 *CURRENT SURVEY CONTROL

AL6480

AL6480* NAD 83(1999)- 28 04 49.16527(N) 082 26 59.28352(W) ADJUSTED

AL6480* NAVD 88 - 16.077 (meters) 52.75 (feet) ADJUSTED

AL6480 X - 739,953.319 (meters) COMP

AL6480 Y - -5,582,702.655 (meters) COMP

AL6480 Z - 2,984,357.568 (meters) COMP

AL6480 LAPLACE CORR- -1.58 (seconds) DEFLEC99

AL6480 ELLIP HEIGHT- -9.17 (meters) (12/06/04) GPS OBS

AL6480 GEOID HEIGHT- -25.24 (meters) GEOID03

AL6480 DYNAMIC HT - 16.054 (meters) 52.67 (feet) COMP

AL6480 MODELED GRAV- 979,190.8 (mgal) NAVD 88

AL6480

AL6480 HORZ ORDER - FIRST

AL6480 VERT ORDER - FIRST CLASS I

AL6480 ELLP ORDER - FOURTH CLASS I

AL6480

AL6480.The horizontal coordinates were established by GPS observations

AL6480.and adjusted by the DC JOHNSON ASSOC in December 2004..

AL6480

AL6480.The orthometric height was determined by differential leveling

AL6480.and adjusted by the National Geodetic Survey in June 1991..

AL6480

AL6480.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AL6480

AL6480.The Laplace correction was computed from DEFLEC99 derived deflections.

AL6480

AL6480.The ellipsoidal height was determined by GPS observations

AL6480.and is referenced to NAD 83.

AL6480

AL6480.The geoid height was determined by GEOID03.

AL6480

AL6480.The dynamic height is computed by dividing the NAVD 88

AL6480.geopotential number by the normal gravity value computed on the

AL6480.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AL6480.degrees latitude (g = 980.6199 gals.).

AL6480

AL6480.The modeled gravity was interpolated from observed gravity values.

AL6480

AL6480; North East Units Scale Factor Converg.

AL6480;SPC FL W - 415,191.623 155,791.932 MT 0.99996529 -0 12 42.2

AL6480;SPC FL W - 1,362,174.52 511,127.36 sFT 0.99996529 -0 12 42.2

AL6480;UTM 17 - 3,106,948.752 357,549.224 MT 0.99985046 -0 40 57.2

AL6480

AL6480! - Elev Factor x Scale Factor = Combined Factor

AL6480!SPC FL W - 1.00000144 x 0.99996529 = 0.99996673

AL6480!UTM 17 - 1.00000144 x 0.99985046 = 0.99985190

AL6480

AL6480|-----|

AL6480| PID Reference Object Distance Geod. Az |

AL6480| dddmmss.s |

AL6480| AL6479 SKIPPER RM 1 37.618 METERS 05042 |

AL6480| AL0497 TEMPLE TERRACE WATER TANK APPROX. 8.0 KM 1270644.1 |

AL6480| AL6478 SKIPPER RM 2 30.187 METERS 16103 |

AL6480| AL6481 SKIPPER RM 3 16.573 METERS 17936 |

AL6480| CW6367 SKIPPER AZ MK 1810319.9 |
 AL6480| AL0498 HAMNER FIRE LOOKOUT TOWER APPROX. 2.1 KM 2360450.7 |
 AL6480| AL6477 D 40 36.649 METERS 30954 |
 AL6480| AL6634 I75 73 C01 434.684 METERS 3534044.5 |
 AL6480|-----|
 AL6480
 AL6480 SUPERSEDED SURVEY CONTROL
 AL6480
 AL6480 NAD 83(1990)- 28 04 49.16418(N) 082 26 59.28200(W) AD() 2
 AL6480 NAD 83(1986)- 28 04 49.16968(N) 082 26 59.29144(W) AD() 2
 AL6480 NAD 27 - 28 04 48.10757(N) 082 26 59.95121(W) AD() 2
 AL6480 NGVD 29 (??/??/92) 16.321 (m) 53.55 (f) ADJ UNCH 1 1
 AL6480
 AL6480.Superseded values are not recommended for survey control.
 AL6480.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AL6480.See file dsdata.txt to determine how the superseded data were derived.
 AL6480
 AL6480_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLM5754906949(NAD 83)
 AL6480_MARKER: DD = SURVEY DISK
 AL6480_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AL6480_SP_SET: SET IN TOP OF CONCRETE MONUMENT
 AL6480_STAMPING: SKIPPER 1937 1958
 AL6480_MARK LOGO: CGS
 AL6480_PROJECTION: FLUSH
 AL6480_MAGNETIC: A = STEEL ROD ADJACENT TO MONUMENT
 AL6480_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AL6480+STABILITY: SURFACE MOTION
 AL6480_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AL6480+SATELLITE: SATELLITE OBSERVATIONS - February 21, 2006
 AL6480
 AL6480 HISTORY - Date Condition Report By
 AL6480 HISTORY - 1958 MONUMENTED CGS
 AL6480 HISTORY - 1974 GOOD FLDT
 AL6480 HISTORY - 1974 GOOD NGS
 AL6480 HISTORY - 1975 GOOD NGS
 AL6480 HISTORY - 1975 GOOD NGS
 AL6480 HISTORY - 1977 GOOD FLDT
 AL6480 HISTORY - 1981 GOOD FLDNR
 AL6480 HISTORY - 1981 GOOD FL-057
 AL6480 HISTORY - 1982 GOOD FL-057
 AL6480 HISTORY - 19910319 GOOD USPSQD
 AL6480 HISTORY - 20010328 GOOD FL-057
 AL6480 HISTORY - 20030221 GOOD AYRES
 AL6480 HISTORY - 20060221 GOOD POLASS
 AL6480
 AL6480 STATION DESCRIPTION
 AL6480
 AL6480'DESCRIBED BY COAST AND GEODETIC SURVEY 1958 (ALW)
 AL6480'THIS STATION WAS RECOVERED IN NOVEMBER, 1958. THE SURFACE MARK
 AL6480'WAS FOUND DESTROYED. THE POST WAS FOUND LYING ON TOP OF THE
 AL6480'GROUND. THE DISK WAS RECOVERED. THE UNDERGROUND MARK WAS
 AL6480'FOUND IN GOOD CONDITION. A NEW SURFACE MARK WAS SET DIRECTLY
 AL6480'OVER IT. REFERENCE MARKS 1 AND 2 AND BENCH MARK D 40 WERE
 AL6480'RECOVERED AND FOUND IN GOOD CONDITION.
 AL6480'
 AL6480'THE STATION IS LOCATED AT THE N EDGE OF SULPHUR SPRINGS, 3.5
 AL6480'MI. N OF THE SEABOARD AIR LINE RAILROAD STATION, 150 YD. E OF
 AL6480'U.S. HIGHWAY 41, AT THE CROSSING OF SKIPPER AVENUE AND THE
 AL6480'SEABOARD AIR LINE RAILROAD, 43 FT. S OF THE CENTERLINE OF
 AL6480'SKIPPER AVENUE, 58 FT. E OF THE E RAIL, 33 FT. E OF THE
 AL6480'CENTERLINE OF A TRACK ROAD LEADING S, 13.5 FT. SW OF A BLAZED
 AL6480'12-IN. PINE TREE, 21.5 FT. SE OF A TELEPHONE POLE AND 2 FT. E
 AL6480'OF A CONCRETE WITNESS POST. A TRIANGULATION-STATION DISK SET

AL6480'IN THE TOP OF A SQUARE CONCRETE POST WHICH PROJECTS 0.1 FT.
 AL6480'ABOVE THE GROUND, STAMPED SKIPPER 1937 1958.
 AL6480'
 AL6480'REFERENCE MARK 1 IS 123.41 FT. OR 37.615 M. NE OF THE STATION,
 AL6480'34 FT. N OF THE CENTERLINE OF SKIPPER AVENUE, 31 FT. S-SE OF THE
 AL6480'SE CORNER OF A WHITE FRAMEHOUSE, 6 FT. W OF THE CENTERLINE OF
 AL6480'A PRIVATE DRIVEWAY LEADING N AND 1.5 FT. NE OF AN 18-IN.
 AL6480'TREE. AN AZIMUTH-MARK DISK SET IN THE TOP OF A SQUARE CONCRETE
 AL6480'POST WHICH PROJECTS 0.1 FT. ABOVE THE GROUND, STAMPED SKIPPER
 AL6480'NO 1 1937.
 AL6480'
 AL6480'REFERENCE MARK 2 IS 99.04 FT. OF 30.187 M. S-SE OF THE STATION,
 AL6480'84 FT. E OF THE E RAIL, 57 FT. E OF THE CENTERLINE OF A TRACK
 AL6480'ROAD AND 2 FT. E OF A CONCRETE WITNESS POST. AN AZIMUTH-MARK DISK
 AL6480'SET IN THE TOP OF A SQUARE CONCRETE POST WHICH PROJECTS 0.1
 AL6480'FT. ABOVE THE GROUND, STAMPED SKIPPER NO 2 1937.
 AL6480'
 AL6480'BENCH MARK D 40 IS 120.43 FT. OR 36.707 M. NW OF THE STATION,
 AL6480'32.5 FT. N OF THE CENTERLINE OF SKIPPER AVENUE, 24 FT. W OF THE
 AL6480'W RAIL, 9 FT. N OF A TELEPHONE POLE AND 1.7 FT. S OF A CONCRETE
 AL6480'WITNESS POST. A BENCH-MARK DISK SET IN THE TOP OF A SQUARE
 AL6480'CONCRETE POST WHICH PROJECTS 0.4 FT. ABOVE THE GROUND, STAMPED
 AL6480'D 40 1933 51.319.
 AL6480'
 AL6480'THE AZIMUTH MARK IS 0.3 MI. S OF THE STATION, 142ND AVENUE
 AL6480'AND THE SEABOARD AIR LINE RAILROAD AT THE NE CORNER OF THE KUM
 AL6480'BACK TRAILER PARK, 77.5 FT. W OF THE W RAIL, 145 YD. E OF U.S.
 AL6480'HIGHWAY 41 AND 42 FT. S OF THE CENTERLINE OF 142ND AVENUE. AN
 AL6480'AZIMUTH MARK DISK SET IN THE TOP OF A SQUARE CONCRETE POST
 AL6480'WHICH PROJECTS 0.1 FT. ABOVE THE GROUND, STAMPED SKIPPER
 AL6480'AZIMUTH 1937. THE AZIMUTH MARK CANNOT BE SEEN FROM THE GROUND
 AL6480'AT THE STATION.
 AL6480'
 AL6480'TO REACH THE STATION, GO 3.5 MI. N ALONG THE SEABOARD AIR LINE
 AL6480'RAILROAD FROM THE STATION AT SULPHUR SPRINGS TO THE CROSSING
 AL6480'OF SKIPPER AVENUE AND THE STATION ON THE RIGHT.
 AL6480'
 AL6480'NOTE--THE DISTANCE TO BENCH MARK D 40 GIVEN IN THE ORIGINAL
 AL6480'DESCRIPTION IS NOT CORRECT. LOOKS LIKE A 3-FT. ERROR WAS MADE.
 AL6480
 AL6480 STATION RECOVERY (1974)
 AL6480
 AL6480'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1974 (RCB)
 AL6480'SKIPPER 1937 GOOD
 AL6480'
 AL6480'SKIPPER RM 1 GOOD DIST 123.385
 AL6480'
 AL6480'D-40 USC AND GS BM 1933 GOOD DIST. 120.421
 AL6480'
 AL6480'SKIPPER IS NOW FLUSH WITH THE GROUND
 AL6480'
 AL6480'SKIPPER RM 2 WAS NOT RECOVERED AFTER A THOROUGH SEARCH WAS MADE,
 AL6480'THE AREA WHERE THE RM 2 IS SUPPOSED TO BE HAS BEEN CLEARED.
 AL6480
 AL6480 STATION RECOVERY (1974)
 AL6480
 AL6480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974 (CLN)
 AL6480'STATION MARK, REFERENCE MARK 1 AND BENCH MARK D 40 WERE RECOVERED
 AL6480'AND FOUND IN GOOD CONDITION. THE DISTANCE TO REFERENCE MARK 1
 AL6480'AND BENCH MARK D 40 CHECKED THE 1958 RECOVERY. THE DIRECTION
 AL6480'BETWEEN REFERENCE MARK 1 AND BENCH MARK D 40 CHECKED WITHIN
 AL6480'01 MIN 22 SEC OF THE 1958 RECOVERY. REFERENCE MARK 2 AND THE
 AL6480'AZIMUTH MARK HAVE BEEN DESTROYED. A THOROUGH SEARCH WAS MADE

AL6480'FOR THE AZIMUTH MARK, BUT NOT FOUND. A MOBILE HOME PARK WAS
AL6480'BUILT IN THE AREA THE AZIMUTH MARK WAS LOCATED. ALL
AL6480'MEASUREMENT SHOW THE AZIMUTH MARK IS UNDER A CONCRETE PATIO.
AL6480'REFERENCE MARK 3 WAS ESTABLISHED AT THIS TIME. DUE TO CHANGES,
AL6480'A COMPLETE NEW DESCRIPTION FOLLOWS.
AL6480'
AL6480'THE STATION IS ABOUT 10 MILES NORTH OF TAMPA, 5 MILES NORTHWEST
AL6480'OF TEMPLE TERRACE, 3-1/2 MILES WEST-NORTHWEST OF THE UNIVERSITY
AL6480'OF SOUTH FLORIDA, 1 MILE NORTH OF THE JUNCTION OF U.S. HIGHWAY
AL6480'41 AND STATE HIGHWAY 582A IN FLORA, 1 MILE SOUTH OF WHERE
AL6480'INTERSTATE HIGHWAY 75 PASSES OVER U.S. HIGHWAY 41 IN NORTH
AL6480'TAMPA AND ON THE SOUTH SIDE OF SKIPPER ROAD JUST EAST OF THE
AL6480'RAILROAD TRACKS.
AL6480'
AL6480'TO REACH THE STATION FROM WHERE INTERSTATE HIGHWAY 75 PASSES
AL6480'OVER STATE HIGHWAY 582 IN NORTH TAMPA, GO EAST ON STATE HIGHWAY 582
AL6480'FOR 0.2 MILE TO THE JUNCTION OF U.S. HIGHWAY 41. TURN LEFT AND GO
AL6480'NORTH ON U.S. HIGHWAY 41 FOR 1.05 MILES TO STATE HIGHWAY
AL6480'582A. CONTINUE AHEAD NORTH ON U.S. HIGHWAY 41 FOR 0.75 MILE TO
AL6480'SKIPPER ROAD ON RIGHT. TURN RIGHT AND GO EAST ON SKIPPER ROAD
AL6480'FOR 0.1 MILE TO STATION ON RIGHT.
AL6480'
AL6480'STATION MARK, A STANDARD DISK STAMPED SKIPPER 1937 1958, IS
AL6480'SET IN THE TOP OF AN 8-INCH PRECAST CONCRETE MONUMENT THAT IS
AL6480'SET FLUSH WITH THE GROUND SURFACE. IT IS 58.4 FEET EAST OF
AL6480'THE EAST RAIL OF THE MAIN RAILROAD TRACK, 44.5 FEET SOUTH OF
AL6480'THE CENTER OF SKIPPER ROAD, 20.5 FEET SOUTHEAST OF A UTILITY
AL6480'POLE NUMBERED 240-33, 14 FEET SOUTHEAST OF A 15 INCH PINE TREE
AL6480'AND 1 FOOT NORTH OF A METAL WITNESS POST.
AL6480'
AL6480'REFERENCE MARK 1, A STANDARD DISK STAMPED SKIPPER NO 1 1937, IS
AL6480'SET IN THE TOP OF A 12-INCH SQUARE CONCRETE MONUMENT THAT
AL6480'PROJECTS 6-INCHES ABOVE THE GROUND SURFACE. IT IS 34 FEET NORTH
AL6480'OF THE CENTER OF SKIPPER ROAD, 6 FEET WEST OF THE CENTER OF A
AL6480'DRIVEWAY AND 3 FEET NORTHWEST OF A FERN TREE WITH 6
AL6480'TRUNKS.
AL6480'
AL6480'REFERENCE MARK 3, A STANDARD DISK STAMPED SKIPPER 1937 NO 3
AL6480'1974, IS SET IN THE TOP OF A 10-INCH CYLINDRICAL CONCRETE
AL6480'MONUMENT THAT IS SET FLUSH WITH THE GROUND SURFACE. IT IS 99.5
AL6480'FEET SOUTH OF THE CENTER OF SKIPPER ROAD, 55.4 FEET EAST OF
AL6480'THE EAST RAIL OF THE MAIN RAILROAD TRACK, 11.5 FEET SOUTH OF
AL6480'A 12-INCH PALM TREE, 2.9 FEET WEST OF A METAL WITNESS POST AND
AL6480'2.7 FEET NORTHWEST OF A FENCE CORNER AROUND THE VILLAGE MOBILE
AL6480'HOME COURT.
AL6480'
AL6480'D 40, A STANDARD BENCH MARK DISK STAMPED D 40 1933, IS SET IN
AL6480'THE TOP OF A 10-INCH SQUARE CONCRETE MONUMENT THAT PROJECTS
AL6480'4-INCHES ABOVE THE GROUND SURFACE. IT IS 35.5 FEET NORTH OF
AL6480'THE CENTER OF SKIPPER ROAD, 25 FEET NORTHEAST OF POWER LINE
AL6480'POLE 910, 24 FEET WEST OF THE WEST RAIL OF THE MAIN RAILROAD
AL6480'TRACK, 1.5 FEET SOUTH OF A 3-INCH SQUARE CONCRETE RIGHT-OF -WAY
AL6480'MARKER AND 1 FOOT EAST OF A METAL WITNESS POST.
AL6480'
AL6480'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN
AL6480'5 MILES NW OF TEMPLE TERRACE.
AL6480
AL6480 STATION RECOVERY (1975)
AL6480
AL6480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1975 (CBM)
AL6480'THE MOST RECENT DESCRIPTION AVAILABLE WAS BY A.L. WARDWELL,
AL6480'IN 1958. A DIFFERENCE WAS NOTED IN DISTANCE TO
AL6480'B.M. D40. A CHECK OF ANGLE BETWEEN REFERENCE MARK NUMBER 1 AND

AL6480'B.M. D40 FELL BETWEEN THE 1937 AND 1958 OBSERVATIONS. REFERENCE
AL6480'MARK NUMBER 3 WAS ESTABLISHED IN 1974, BUT NO DATA WAS
AL6480'AVAILABLE. DUE TO LOCAL CHANGES, A COMPLETE NEW DESCRIPTION OF
AL6480'STATION FOLLOWS.
AL6480'
AL6480'STATION IS LOCATED ABOUT 5 MILES NORTHWEST OF TEMPLE TERRACE
AL6480'AND 3-1/2 MILES NORTH OF THE TAMPA NORTHERN RAILROAD STATION AT
AL6480'SULPHUR SPRINGS AT THE CROSSING OF SKIPPER AVENUE AND THE
AL6480'SEABOARD COAST LINE RAILROAD.
AL6480'
AL6480'TO REACH STATION FROM THE INTERSTATE ROUTE 4 AND INTERSTATE
AL6480'ROUTE 75 OVERPASS OVER NEBRASKA AVENUE AT TAMPA. GO NORTH ON
AL6480'NEBRASKA AVENUE FOR 8.05 MILES TO THE INTERSECTION OF SKIPPER
AL6480'AVENUE. TURN RIGHT AND GO EAST ON SKIPPER AVENUE FOR 0.1 MILE
AL6480'TO THE CROSSING OF THE SEABOARD COAST LINE RAILROAD AND STATION
AL6480'AT SOUTHEAST CORNER OF THE CROSSING.
AL6480'
AL6480'STATION MARK IS A STANDARD DISK, STAMPED SKIPPER 1937 1958, SET
AL6480'IN THE TOP OF A SQUARE CONCRETE MONUMENT THAT IS 1 INCH BELOW
AL6480'THE GROUND. IT IS 0.7 FOOT NORTH OF A METAL WITNESS POST,
AL6480'13.5 FEET SOUTHWEST OF A 12 INCH PINE TREE, 20.4 FEET SOUTHEAST
AL6480'OF A UTILITY POLE, 44.1 FEET SOUTH OF CENTER OF SKIPPER ROAD
AL6480'AND 58.5 FEET EAST OF EAST RAIL OF MAIN RAILROAD TRACK.
AL6480'
AL6480'REFERENCE MARK NUMBER 1 IS A STANDARD DISK, STAMPED SKIPPER
AL6480'NO. 1 1937, SET IN THE TOP OF A SQUARE CONCRETE MONUMENT THAT
AL6480'PROJECTS 5 INCHES ABOVE THE GROUND. IT IS 11.4 FEET NORTH OF
AL6480'NORTH EDGE OF A SIDEWALK, 13.0 FEET WEST OF A 16 INCH OAK TREE
AL6480'AND 34.0 FEET NORTH OF CENTER OF SKIPPER ROAD.
AL6480'
AL6480'REFERENCE MARK NUMBER 3 IS A STANDARD DISK, STAMPED SKIPPER
AL6480'1937 NO. 3 1974, SET IN THE TOP OF A ROUND CONCRETE MONUMENT
AL6480'THAT PROJECTS 1 INCH ABOVE THE GROUND. IT IS 2.9 FEET WEST OF
AL6480'A METAL WITNESS POST, 11.2 FEET SOUTH OF A PALM TREE, 55.7 FEET
AL6480'EAST OF EAST RAIL OF THE MAIN RAILROAD TRACK AND 113.1 FEET
AL6480'SOUTH OF CENTER OF SKIPPER ROAD.
AL6480'
AL6480'BENCH MARK D40 IS A STANDARD DISK, STAMPED D40 1933 51.319,
AL6480'SET IN THE TOP OF A SQUARE CONCRETE MONUMENT THAT PROJECTS
AL6480'4 INCHES ABOVE THE GROUND.
AL6480'
AL6480'IT IS 0.7 FOOT WEST OF A METAL WITNESS POST, 0.8 FOOT SOUTH
AL6480'OF A CONCRETE WITNESS POST, 24.0 FEET WEST OF THE WEST RAIL OF
AL6480'MAIN RAILROAD TRACK AND 33.5 FEET NORTH OF CENTER OF SKIPPER ROAD.
AL6480'
AL6480'ALL MEASUREMENTS TO MARKS WERE MADE ELECTRONICALLY, DUE TO
AL6480'HEAVY TRAFFIC.
AL6480
AL6480 STATION RECOVERY (1975)
AL6480
AL6480'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1975
AL6480'5 MI NW FROM TEMPLE TERRACE.
AL6480'0.2 MILE EAST ALONG STATE HIGHWAY 582 FROM WHERE INTERSTATE
AL6480'HIGHWAY 75 PASSES OVER HIGHWAY 582 IN NORTH TAMPA, THENCE LEFT
AL6480'NORTH ALONG U.S. HIGHWAY 41 FOR 1.8 MILES TO SKIPPER ROAD ON
AL6480'RIGHT, THENCE RIGHT FOR 0.1 MILE, 58.4 FEET EAST OF THE EAST RAIL
AL6480'OF THE MAIN RAILROAD TRACK, 44.5 FEET SOUTH OF THE CENTER OF
AL6480'SKIPPER ROAD, 20.5 FEET SOUTHEAST OF A UTILITY POLE NUMBERED 240-33,
AL6480'14 FEET SOUTHWEST OF A 15-INCH PINE TREE, 1 FOOT NORTH OF A METAL
AL6480'WITNESS POST AND A DISK SET IN THE TOP OF AN 8-INCH PRECAST
AL6480'CONCRETE SQUARE MONUMENT THAT IS SET FLUSH WITH THE GROUND SURFACE.
AL6480
AL6480 STATION RECOVERY (1977)

AL6480
AL6480'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 1977 (CBM)
AL6480'STATION RECOVERED AS DESCRIBED BY G. FLAVIN IN 1975. A DIFFERENCE WAS
AL6480'NOTED IN DIRECTION BETWEEN REFERENCE MARKS 3 AND BENCHMARK D40 1933,
AL6480'NEW VALUE BEING SHOWN ABOVE. BENCHMARK D40 1933 IS LEANING TO THE
AL6480'SOUTH AND REFERENCE MARK NUMBER 1 IS DESTROYED.
AL6480
AL6480 STATION RECOVERY (1981)
AL6480
AL6480'RECOVERY NOTE BY FL DEPT OF NAT RES 1981 (JWM)
AL6480'SKIPPER 1937 RECOVERED GOOD.
AL6480'
AL6480'THE STATION, R.M. 3 AND BM D 40 WERE RECOVERED AS DESCRIBED. R.M. 1
AL6480'IS BELIEVED DESTROYED DUE TO CONSTRUCTION OF A PARKING LOT.
AL6480'
AL6480'DISTANCE AND DIRECTION FROM NEAREST TOWN--AT TAMPA.
AL6480
AL6480 STATION RECOVERY (1981)
AL6480
AL6480'RECOVERY NOTE BY HILLSBOROUGH COUNTY FLORIDA 1981 (SW)
AL6480'SKIPPER 1934 RECOVERED GOOD.
AL6480'
AL6480'DISTANCE AND DIRECTION FROM NEAREST TOWN--10 MILES NORTH OF TAMPA.
AL6480'5 MILES NORTHWEST OF TEMPLE TERRACE.
AL6480
AL6480 STATION RECOVERY (1982)
AL6480
AL6480'RECOVERY NOTE BY HILLSBOROUGH COUNTY FLORIDA 1982 (RSW)
AL6480'REFERENCE MARKS NO 3 AND D-40 WERE RECOVERED. D-40 WAS FOUND TO BE
AL6480'0.57 M SHORTER. RM 3 DISK WAS DEFACED BUT THE MEASUREMENT TO IT WAS
AL6480'GOOD. RMS 4 AND 5 WERE SET PREVIOUSLY. A NEW AZIMUTH MARK SET ALONG
AL6480'WITH THE NEW RMS.
AL6480'
AL6480'THE STATION IS A STANDARD U.S.C. + G.S. DISK STAMPED---SKIPPER 1937
AL6480'1958---THE SURFACE DISK IS SET INTO THE TOP OF A 10 INCH ROUND
AL6480'CONCRETE MONUMENT FLUSH WITH THE GROUND. LOCATED 58.4 FEET EAST OF
AL6480'EAST RAIL OF MAIN RAILROAD TRACK, 43.6 FEET SOUTH OF CENTERLINE OF
AL6480'SKIPPER AVENUE, 16.6 FEET SOUTHWEST OF RAILROAD WARNING LIGHT POLE,
AL6480'14.2 FEET SOUTHEAST OF CENTER OF 16 INCH PINE, AND 1.0 FEET NORTH
AL6480'OF A METAL WITNESS POST.
AL6480'
AL6480'REFERENCE MARK NO 3 IS A STANDARD NGS DEFACED DISK. THE SURFACE DISK
AL6480'IS SET INTO THE TOP OF A 10 INCH ROUND CONCRETE MONUMENT FLUSH WITH
AL6480'THE GROUND. LOCATED 55.4 FEET EAST OF EAST RAIL OF MAIN RAILROAD LINE,
AL6480'11.7 FEET SOUTH OF 10 INCH PALM TREE, AND 0.7 FEET WEST OF CORNER
AL6480'OF WOODEN FENCE.
AL6480'
AL6480'BENCH MARK D-40 IS A STANDARD USG+GS DISK STAMPED---D-40 1933---
AL6480'LOCATED 33.8 FEET NORTH OF CENTERLINE OF SKIPPER AVENUE, 23.9 FEET
AL6480'WEST OF WEST RAIL OF MAIN RAILROAD LINE, 7.0 FEET SOUTHWEST OF
AL6480'OF GUY POLE, AND 25.0 FEET NORTHEAST OF POWERLINE POLE NUMBER
AL6480'25481 46209.
AL6480
AL6480 STATION RECOVERY (1991)
AL6480
AL6480'RECOVERY NOTE BY US POWER SQUADRON 1991 (RF)
AL6480'RECOVERED IN GOOD CONDITION.
AL6480
AL6480 STATION RECOVERY (2001)
AL6480
AL6480'RECOVERY NOTE BY HILLSBOROUGH COUNTY FLORIDA 2001 (RJA)
AL6480'THE STATION IS LOCATED IN HILLSBOROUGH COUNTY, FLORIDA, ABOUT 9.0
AL6480'MILES NORTH OF THE CITY OF TAMPA AND 3.0 MILES NORTHWEST OF THE CITY

AL6480'OF TEMPLE TERRACE, IN SECTION 6 TOWNSHIP 28 SOUTH, RANGE 19 EAST.
AL6480'OWNERSHIP--BRAND-BROADWAY ASSOCIATES LP, 16255 VENTURA BLVD, ENCINO
AL6480'CA, 91436-2320 THE STATION IS A 8 INCH SQUARE CONCRETE MONUMENT. FLUSH
AL6480'WITH THE GROUND. TO REACH THE STATION FROM THE INTERSECTION OF
AL6480'NEBRASKA AVE. (U.S. HWY.41) AND SKIPPER RD., PROCEED EAST ON SKIPPER
AL6480'RD. FOR 0.1 MILES TO THE STATION ON THE RIGHT (SOUTH) SIDE OF THE
AL6480'ROAD. STATION IS 60.0 FT +/- EAST OF THE RAILROAD TRACKS.
AL6480'
AL6480'1.0 FT NORTH OF A CARSONITE WITNESS POST AND HILLSBOROUGH COUNTY
AL6480'STICKER. 32.9 FT SOUTH OF A NAIL AND HILLS COUNTY DISK IN THE SOUTH
AL6480'EDGE OF PAVEMENT OF SKIPPER RD. 58.0 FT EAST OF THE EAST RAIL OF THE
AL6480'RAILROAD TRACKS. 27.0 FT WEST-NORTHWEST OF WOOD LIGHT POLE
AL6480'25472/46201/A 16.8 FT SOUTHEAST OF AN OLD METAL WARNING LIGHT FOR
AL6480'NORTHBOUND RAILROAD TRACKS.
AL6480
AL6480 STATION RECOVERY (2003)
AL6480
AL6480'RECOVERY NOTE BY AYRES ASSOCIATES 2003
AL6480'RECOVERED IN GOOD CONDITION.
AL6480
AL6480 STATION RECOVERY (2006)
AL6480
AL6480'RECOVERY NOTE BY POLARIS ASSOCIATES 2006 (TME)
AL6480'MONUMENT UNDISTURBED. UNHINDERED GPS VIEW OF THE CONSTELLATION.

1 National Geodetic Survey, Retrieval Date = MAY 3, 2007
AL6204 *****
AL6204 DESIGNATION - X 108
AL6204 PID - AL6204
AL6204 STATE/COUNTY- FL/PASCO
AL6204 USGS QUAD - ELFERS (1987)
AL6204
AL6204 *CURRENT SURVEY CONTROL
AL6204
AL6204* NAD 83(1999)- 28 11 17.11839(N) 082 43 49.38973(W) ADJUSTED
AL6204* NAVD 88 - 3.700 (meters) 12.14 (feet) ADJUSTED
AL6204
AL6204 X - 711,891.346 (meters) COMP
AL6204 Y - -5,580,662.384 (meters) COMP
AL6204 Z - 2,994,883.293 (meters) COMP
AL6204 LAPLACE CORR- -1.54 (seconds) DEFLEC99
AL6204 ELLIP HEIGHT- -21.54 (meters) (07/06/01) GPS OBS
AL6204 GEOID HEIGHT- -25.23 (meters) GEOID03
AL6204 DYNAMIC HT - 3.694 (meters) 12.12 (feet) COMP
AL6204 MODELED GRAV- 979,197.2 (mgal) NAVD 88
AL6204
AL6204 HORZ ORDER - FIRST
AL6204 VERT ORDER - SECOND CLASS 0
AL6204 ELLP ORDER - FOURTH CLASS II
AL6204
AL6204.The horizontal coordinates were established by GPS observations
AL6204.and adjusted by the National Geodetic Survey in July 2001..
AL6204
AL6204.The orthometric height was determined by differential leveling
AL6204.and adjusted by the National Geodetic Survey in June 1991..
AL6204
AL6204.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AL6204
AL6204.The Laplace correction was computed from DEFLEC99 derived deflections.
AL6204
AL6204.The ellipsoidal height was determined by GPS observations
AL6204.and is referenced to NAD 83.
AL6204
AL6204.The geoid height was determined by GEOID03.
AL6204
AL6204.The dynamic height is computed by dividing the NAVD 88
AL6204.geopotential number by the normal gravity value computed on the
AL6204.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AL6204.degrees latitude (g = 980.6199 gals.).
AL6204
AL6204.The modeled gravity was interpolated from observed gravity values.
AL6204
AL6204; North East Units Scale Factor Converg.
AL6204;SPC FL W - 427,267.826 128,286.130 MT 1.00000463 -0 20 42.1
AL6204;SPC FL W - 1,401,794.53 420,885.41 sFT 1.00000463 -0 20 42.1
AL6204;UTM 17 - 3,119,249.978 330,146.009 MT 0.99995608 -0 49 03.3
AL6204
AL6204! - Elev Factor x Scale Factor = Combined Factor
AL6204!SPC FL W - 1.00000338 x 1.00000463 = 1.00000801
AL6204!UTM 17 - 1.00000338 x 0.99995608 = 0.99995946
AL6204
AL6204 SUPERSEDED SURVEY CONTROL
AL6204
AL6204 NAD 83(1990)- 28 11 17.11651(N) 082 43 49.39005(W) AD() 1
AL6204 ELLIP H (10/07/92) -21.55 (m) GP() 4 2
AL6204 NGVD 29 (??/??/92) 3.957 (m) 12.98 (f) ADJ UNCH 2 0
AL6204
AL6204.Superseded values are not recommended for survey control.

AL6204.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AL6204.See file dsdata.txt to determine how the superseded data were derived.
AL6204
AL6204_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RLM3014619250 (NAD 83)
AL6204_MARKER: DB = BENCH MARK DISK
AL6204_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AL6204_SP_SET: SQUARE CONCRETE MONUMENT
AL6204_STAMPING: X 108 1943
AL6204_MARK LOGO: CGS
AL6204_MAGNETIC: N = NO MAGNETIC MATERIAL
AL6204_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AL6204+STABILITY: SURFACE MOTION
AL6204_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AL6204+SATELLITE: SATELLITE OBSERVATIONS - December 22, 2003
AL6204
AL6204 HISTORY - Date Condition Report By
AL6204 HISTORY - 1943 MONUMENTED CGS
AL6204 HISTORY - 1958 GOOD NGS
AL6204 HISTORY - 1960 GOOD NGS
AL6204 HISTORY - 19910218 GOOD GEOBAS
AL6204 HISTORY - 20031222 GOOD INDIV
AL6204
AL6204 STATION DESCRIPTION
AL6204
AL6204'DESCRIBED BY NATIONAL GEODETIC SURVEY 1958
AL6204'2.4 MI S FROM ELFERS.
AL6204'2.35 MILES SOUTH ALONG STATE HIGHWAY 595 FROM THE SEABOARD AIR
AL6204'LINE RAILROAD STATION AT ELFERS, 139 YARDS EAST OF A JUNCTION
AL6204'WITH A DIRT ROAD LEADING NORTH 106 FT. EAST OF POWER POLE
AL6204'12A468R, 97 FT. WEST OF POWER POLE 14B228R, 0.3 MILE WEST OF A
AL6204'CURVE IN THE HIGHWAY, 28 FT. NORTH OF THE CENTER LINE OF THE
AL6204'HIGHWAY, 2 FT. SOUTH OF A WOODEN WITNESS POST, SET IN THE TOP
AL6204'OF A CONCRETE POST WHICH PROJECTS 0.1 FT. ABOVE THE GROUND.
AL6204
AL6204 STATION RECOVERY (1960)
AL6204
AL6204'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1960
AL6204'RECOVERED IN GOOD CONDITION.
AL6204
AL6204 STATION RECOVERY (1991)
AL6204
AL6204'RECOVERY NOTE BY GEOBASE CONTROL INCORPORATED 1991
AL6204'THE STATION IS LOCATED IN HOLIDAY AND 2 MI (3.22 KM) SOUTH-SOUTHWEST
AL6204'OF ELFERS.
AL6204'TO REACH THE STATION FROM THE INTERSECTION OF U.S. HIGHWAY 19 AND
AL6204'STATE ROAD 54 WEST OF ELFERS, GO SOUTHWEST THEN SOUTH ON U.S. HIGHWAY
AL6204'19 2.0 MI (3.22 KM) TO PASCO COUNTY ROAD 595 (MILE STRETCH ROAD),
AL6204'TURN LEFT AND GO EAST ON PASCO COUNTY ROAD 595 (MILE STRETCH ROAD)
AL6204'0.55 MI (0.89 KM) TO THE STATION ON THE LEFT.
AL6204'THE STATION IS A C.G.S. BENCH MARK DISK STAMPED ---X 108 1943--- SET
AL6204'IN A 5-INCH SQUARE CONCRETE POST THAT IS 12-INCHES BELOW THE GROUND.
AL6204'IT IS 28.0 FT (8.53 M) NORTH OF THE CENTER OF PASCO COUNTY ROAD 595,
AL6204'76.0 FT (23.16 M) WEST OF THE CENTER OF PATRICIA BLVD., 41.0 FT
AL6204'(12.50 M) WEST OF POWER POLE NUMBER 249285 AND 0.5 FT (0.15 M) EAST
AL6204'OF A METAL WITNESS POST.
AL6204
AL6204 STATION RECOVERY (2003)
AL6204
AL6204'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 (GSA)
AL6204'RECOVERED IN GOOD CONDITION.

APPENDIX B: NEW GROUND CONTROL STATION INFORMATION

This appendix contains the station recovery information sheets for the newly established GPS control stations set and utilized for Project Area B of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

GPS Station Recovery - GPS Log Sheet																
Project Name: <u>Florida Coastal Mapping Project</u>	Operator Name: <u>S. Roberts</u> Job No.: <u>66517</u>															
Station Name: <u>NEW BASE 3</u>	Date of Survey: <u>12 JAN 2008</u> Julian Day: <u>012</u>															
File Name: <u>AREA012SL</u> Session #: <u>BASE</u>																
Type of Receiver: <u>R-8</u>																
Type of Antenna: <u>TRIMBLE</u>																
Antenna Height: <u>8.562</u> Circle one <u>USFT</u> Circle one <u>ARP</u> Meters Phase Center																
Type of Mark: <u>SM. PIN W/CAP (F)</u>	Start Time (local): <u>9:35 AM</u>															
Stamping on Mark: <u>WOOLPERT</u>	Weather Condition: <u>74° ± CLOUDY</u>															
Location Description: <u>STA LOCATED 1.37 MI. S. OF EXIT 250 ON I-75 S. IN E ± OF GRASS MEDIAN. N. SIDE OF SYMMES RD OVER-PASS.</u>																
Witness Ties: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Reference Object</th> <th>Distance</th> <th>Azimuth</th> </tr> </thead> <tbody> <tr><td>1)</td><td></td><td></td></tr> <tr><td>2)</td><td></td><td></td></tr> <tr><td>3)</td><td></td><td></td></tr> <tr><td>4)</td><td></td><td></td></tr> </tbody> </table>		Reference Object	Distance	Azimuth	1)			2)			3)			4)		
Reference Object	Distance	Azimuth														
1)																
2)																
3)																
4)																
Sketch:																

GPS Station Recovery - GPS Log Sheet																
Project Name: <u>Florida Coastal Mapping Project</u>	Operator Name: <u>JM</u> Job No.: <u>66517</u>															
Station Name: <u>NEW BASE 4</u>	Date of Survey: <u>11-13-07</u> Julian Day: <u>317</u>															
WGS 84 Coordinates Latitude: <u>28° 14' 25.969"</u> Longitude: <u>82° 44' 15.361"</u> Ellip. Height: <u>-70.419 SFT</u>	File Name: _____ Session #: <u>A</u> Type of Receiver: <u>RB-2</u> Type of Antenna: <u>RB-2</u>															
Type of Mark: <u>IP - / cap</u>	Antenna Height: <u>2.000</u> ☐ USFT ☒ Meters															
Stamping on Mark: <u>WOOLPERT INC</u>	Start Time (local): <u>8:45</u> Weather Condition: <u>PC 70°</u>															
To-Reach Description: <u>@ Polish-American Club on</u> <u>Darlington RD #4616 DARLINGTON RD</u>	Witness Ties: <table border="1" style="width: 100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th>Reference Object</th> <th>Distance</th> <th>Azimuth</th> </tr> </thead> <tbody> <tr><td>1)</td><td></td><td></td></tr> <tr><td>2)</td><td></td><td></td></tr> <tr><td>3)</td><td></td><td></td></tr> <tr><td>4)</td><td></td><td></td></tr> </tbody> </table>	Reference Object	Distance	Azimuth	1)			2)			3)			4)		
Reference Object	Distance	Azimuth														
1)																
2)																
3)																
4)																
Sketch: 																

GPS Station Recovery - GPS Log Sheet																
Project Name: <u>Florida Coastal Mapping Project</u>	Operator Name: <u>W. MILLER</u> Job No.: <u>66517</u>															
Station Name: <u>NEW BASE 5</u>	Date of Survey: <u>NOV 14, 07</u> Julian Day: <u>318</u>															
WGS 84 Coordinates Latitude: <u>28 03 03.3</u> Longitude: <u>82 47 50.1</u> Ellip. Height: <u>-89.7</u>	File Name: _____ Session #: <u>BASE</u>															
Type of Mark: <u>PK NAIL</u>	Type of Receiver: <u>RB-2</u>															
Stamping on Mark: <u>N/A</u>	Type of Antenna: <u>"</u>															
To-Reach Description:	Antenna Height: <u>6.921</u> Circle one: Circle one: USFT Meters ARP Phase Center															
Witness Ties:	Start Time (local): <u>8:40</u> Weather Condition: <u>CLEAR</u>															
ON NORTH SIDE OF SEAWALL AT THE CORNER OF THE CAUSEWAY BRIDGE	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Reference Object</th> <th>Distance</th> <th>Azimuth</th> </tr> </thead> <tbody> <tr><td>1)</td><td></td><td></td></tr> <tr><td>2)</td><td></td><td></td></tr> <tr><td>3)</td><td></td><td></td></tr> <tr><td>4)</td><td></td><td></td></tr> </tbody> </table>	Reference Object	Distance	Azimuth	1)			2)			3)			4)		
Reference Object	Distance	Azimuth														
1)																
2)																
3)																
4)																
Sketch: North CAUSEWAY BLVD. BRIDGE PILLOW TOP CONCRETE EROSION PROTECTION SEA WALL WATER																

APPENDIX C: FINAL GROUND QA/QC AND GEODETIC CONTROL COORDINATE LISTING

This appendix contains the final coordinate listings for the LiDAR QA/QC Checkpoints, LiDAR Control Points and the geodetic control stations utilized in Project Area B of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

PROJECT AREA 'B'
HORIZONTAL DATUM: NAD83(1999)
VERTICAL DATUM: NAVD88
UNITS: US SURVEY FEET
STATE PLANE ZONE: FLORIDA WEST 0902
GEOID MODEL: GEOID03
COORDINATE SYSTEM: GRID

****NOTE: ALL ELEVATIONS ARE STATION ELEVATIONS****

STATIONS IN BLUE = CONVENTIONAL SURVEY METHODS
STATIONS IN RED = RAPID STATIC GPS METHODS

LIDAR QA/QC CHECKPOINTS AND LIDAR CONTROL POINTS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
2002-R	1395557.75	413527.76	10.09	0.02	0.02	0.05	URBAN AREAS
2003-R	1396363.30	414498.92	11.71	0.02	0.02	0.06	BARE EARTH AND LOW GRASS
2005-R	1227518.24	443056.81	15.59	0.02	0.02	0.06	URBAN AREAS
2006-R	1228245.96	435267.79	9.35	0.01	0.01	0.03	TRAVERSE POINT
2007-R	1236296.00	437140.61	19.21	0.04	0.02	0.08	BRUSH LANDS AND LOW TREES
2010-R	1237816.72	432562.87	2.53	0.02	0.01	0.04	BARE EARTH AND LOW GRASS
2011-R	1237814.80	433212.40	7.78	0.03	0.03	0.07	BRUSH LANDS AND LOW TREES
2012-R	1237709.52	434281.91	11.12	0.02	0.02	0.09	URBAN AREAS
2015-R	1214492.16	420928.38	4.69	0.02	0.02	0.04	URBAN AREAS
2016-R	1214186.18	421010.28	3.72	0.01	0.01	0.04	BARE EARTH AND LOW GRASS
2017-R	1214430.36	421096.71	3.14	0.02	0.02	0.05	BRUSH LANDS AND LOW TREES
2020-R	1203428.95	417968.98	6.33	0.02	0.02	0.05	URBAN AREAS
2021-R	1194879.58	417926.73	5.10	0.02	0.02	0.04	BARE EARTH AND LOW GRASS
2022-R	1203402.06	416946.75	5.57	0.01	0.02	0.04	BRUSH LANDS AND LOW TREES
2025-R	1230862.05	449123.35	9.66	0.02	0.03	0.07	URBAN AREAS
2026-R	1230032.79	449708.23	7.46	0.02	0.02	0.07	BRUSH LANDS AND LOW TREES
2027-R	1230671.43	450664.33	0.53	0.02	0.02	0.07	BRUSH LANDS AND LOW TREES
2030-R	1275297.56	396664.96	56.08	0.03	0.03	0.09	URBAN AREAS
2031-R	1272759.52	393823.36	6.18	0.02	0.02	0.07	BRUSH LANDS AND LOW TREES
2032-R	1272774.80	394552.27	13.45	0.02	0.03	0.08	BRUSH LANDS AND LOW TREES
2035-R	1288281.28	387188.94	47.05	0.02	0.02	0.05	URBAN AREAS
2036-R	1293319.07	385148.45	3.69	0.01	0.02	0.04	BARE EARTH AND LOW GRASS
2037-R	1290422.41	384404.47	14.53	0.03	0.03	0.09	BRUSH LANDS AND LOW TREES
2040-R	1288216.23	418463.70	13.25	0.03	0.03	0.08	URBAN AREAS
2041-R	1288222.83	418404.29	12.63	0.03	0.03	0.08	LOW GRASS OR BARE EARTH
2042-R	1288245.08	418433.32	12.99	0.02	0.02	0.05	BRUSH LANDS AND LOW TREES
2045-R	1278620.02	437291.21	12.78	0.02	0.02	0.06	BARE EARTH AND LOW GRASS
2046-R	1278993.38	437254.61	11.71	0.02	0.02	0.05	BRUSH LANDS AND LOW TREES
2050-R	1298104.24	436528.73	5.02	0.01	0.02	0.04	BARE EARTH AND LOW GRASS
2051-R	1298097.57	436550.37	5.75	0.02	0.02	0.04	URBAN AREAS
2052-R	1294869.31	422263.56	17.46	0.02	0.03	0.08	BRUSH LANDS AND LOW TREES
2056-R	1277699.68	452515.38	3.65	0.02	0.02	0.07	BARE EARTH AND LOW GRASS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
2057-R	1280623.53	454355.46	3.77	0.02	0.03	0.06	BRUSH LANDS AND LOW TREES
2060-R	1256329.96	449629.11	26.19	0.02	0.02	0.05	URBAN AREAS
2061-R	1256674.03	449312.74	26.21	0.01	0.02	0.04	BARE EARTH AND LOW GRASS
2062-R	1257305.30	448600.07	25.34	0.02	0.02	0.04	BARE EARTH AND LOW GRASS
2065-R	1282951.68	483881.37	3.15	0.04	0.03	0.09	URBAN AREAS
2067-R	1281066.12	483392.14	3.35	0.02	0.02	0.05	BRUSH LANDS AND LOW TREES
2070-R	1316083.21	484976.93	8.15	0.02	0.02	0.05	URBAN AREAS
2071A-R	1315860.17	484337.68	7.92	0.04	0.03	0.10	BARE EARTH AND LOW GRASS
2071-R	1315860.13	484337.68	7.99	0.03	0.02	0.09	BARE EARTH AND LOW GRASS
2072-R	1316140.58	484463.90	8.19	0.02	0.03	0.07	BRUSH LANDS AND LOW TREES
2075-R	1338488.01	476081.60	15.94	0.03	0.03	0.07	BARE EARTH AND LOW GRASS
2076A-R	1338376.70	476736.71	17.25	0.02	0.02	0.06	LIDAR CONTROL POINT
2076-R	1338376.71	476736.68	17.19	0.02	0.02	0.06	URBAN AREAS
2077-R	1339094.41	475456.73	16.36	0.03	0.03	0.07	BRUSH LANDS AND LOW TREES
2080-R	1339649.80	459374.30	7.94	0.02	0.03	0.08	URBAN AREAS
2081-R	1339055.66	458906.53	7.30	0.03	0.02	0.07	BARE EARTH AND LOW GRASS
2082-R	1340180.18	458270.78	7.26	0.02	0.03	0.06	BRUSH LANDS AND LOW TREES
2086-R	1342534.53	433086.43	14.98	0.03	0.02	0.08	BARE EARTH AND LOW GRASS
2087-R	1342385.59	432941.11	12.98	0.03	0.02	0.06	BRUSH LANDS AND LOW TREES
2090-R	1321479.88	424882.78	28.83	0.04	0.02	0.10	BRUSH LANDS AND LOW TREES
2091-R	1321854.44	425148.38	33.17	0.03	0.03	0.08	BARE EARTH AND LOW GRASS
2092-R	1321921.01	424676.56	35.56	0.03	0.03	0.06	URBAN AREAS
2095-R	1306498.68	408563.92	18.69	0.03	0.02	0.08	URBAN AREAS
2097-R	1307216.11	411225.05	11.17	0.02	0.03	0.08	BRUSH LANDS AND LOW TREES
2101-R	1317860.84	389468.10	7.46	0.04	0.07	0.15	URBAN AREAS
2102-R	1318244.91	390024.02	9.73	0.02	0.02	0.05	BRUSH LANDS AND LOW TREES
2105-R	1335179.67	410306.40	57.81	0.02	0.02	0.04	BRUSH LANDS AND LOW TREES
2106-R	1335201.11	409989.17	60.16	0.03	0.02	0.07	BARE EARTH AND LOW GRASS
2110-R	1355677.04	392190.39	3.11	0.01	0.02	0.04	URBAN AREAS
2111-R	1355435.33	393125.94	6.29	0.02	0.02	0.03	BARE EARTH AND LOW GRASS
2112-R	1355647.96	392305.92	2.91	0.02	0.03	0.06	BRUSH LANDS AND LOW TREES
2115-R	1363826.63	408408.80	6.68	0.01	0.02	0.05	BARE EARTH AND LOW GRASS
2116-R	1365654.49	407221.48	7.67	0.01	0.02	0.05	BRUSH LANDS AND LOW TREES
2117-R	1360150.19	408720.25	10.82	0.02	0.02	0.05	URBAN AREAS
2120-R	1381338.58	404294.91	2.81	0.02	0.03	0.05	BRUSH LANDS AND LOW TREES
2122-R	1383316.39	409985.80	6.54	0.02	0.02	0.05	BARE EARTH AND LOW GRASS
2126-R	1394254.11	431141.96	22.13	0.02	0.02	0.04	URBAN AREAS
2128-R	1394347.84	431124.29	21.19	0.03	0.02	0.05	BRUSH LANDS AND LOW TREES
2132-R	1398596.39	445012.99	32.28	0.03	0.02	0.06	BRUSH LANDS AND LOW TREES
2133-R	1398633.17	441420.27	29.62	0.02	0.02	0.08	URBAN AREAS
2136-R	1382147.32	428740.05	13.85	0.02	0.02	0.05	BARE EARTH AND LOW GRASS
2137-R	1381285.90	431614.78	18.29	0.02	0.02	0.06	BRUSH LANDS AND LOW TREES
2138-R	1382163.64	428860.12	16.15	0.02	0.02	0.05	URBAN AREAS
2141-R	1384508.48	449637.43	32.44	0.02	0.03	0.07	BARE EARTH AND LOW GRASS
2143-R	1384736.48	449526.01	29.85	0.05	0.03	0.11	BRUSH LANDS AND LOW TREES
2146-R	1363813.14	460487.13	36.75	0.02	0.03	0.09	BARE EARTH AND LOW GRASS
2148-R	1364446.28	459884.84	31.97	0.11	0.09	0.28	BRUSH LANDS AND LOW TREES
2151-R	1364657.74	479594.07	46.52	0.02	0.03	0.08	URBAN AREAS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
2152-R	1362731.18	480059.73	45.51	0.02	0.03	0.05	BARE EARTH AND LOW GRASS
2153-R	1364747.56	478111.31	46.39	0.03	0.03	0.06	BRUSH LANDS AND LOW TREES
2156-R	1354351.48	465687.04	24.22	0.03	0.03	0.06	URBAN AREAS
2157-R	1354848.08	465517.56	23.14	0.04	0.03	0.09	BRUSH LANDS AND LOW TREES
2159-R	1354318.61	465411.69	23.28	0.03	0.02	0.07	BARE EARTH AND LOW GRASS
2161-R	1357222.85	435975.94	11.15	0.03	0.03	0.05	BARE EARTH AND LOW GRASS
2162-R	1361054.17	436081.06	16.86	0.03	0.04	0.11	BRUSH LANDS AND LOW TREES
2170-N	1396256.54	413070.16	10.57	0.02	0.02	0.06	LIDAR CONTROL POINT
2171-N	1391190.97	431623.48	22.18	0.03	0.02	0.07	LIDAR CONTROL POINT
2172-N	1383322.71	409895.60	7.49	0.02	0.02	0.05	BARE EARTH AND LOW GRASS
2173-N	1203392.88	416718.54	3.95	0.01	0.01	0.03	LIDAR CONTROL POINT
2174-N	1226046.27	441983.27	14.26	0.03	0.02	0.06	LIDAR CONTROL POINT
2175	1214962.48	420716.67	5.48	0.00	0.00	0.01	BRUSH LANDS AND LOW TREES
2176-N	1214217.02	420964.95	4.03	0.01	0.02	0.05	BARE EARTH AND LOW GRASS
2177-N	1280917.06	388589.29	48.63	0.03	0.03	0.06	BARE EARTH AND LOW GRASS
2178-N	1214965.29	420851.83	5.80	0.01	0.01	0.04	LIDAR CONTROL POINT
2180-N	1363336.95	480795.94	46.45	0.02	0.03	0.06	LIDAR CONTROL POINT
2181-N	1363078.18	460787.16	38.38	0.02	0.02	0.07	LIDAR CONTROL POINT
2183-N	1255285.79	449662.27	28.69	0.03	0.02	0.09	LIDAR CONTROL POINT
2184-N	1237855.64	432984.14	5.71	0.03	0.02	0.08	LIDAR CONTROL POINT
2185-N	1259552.88	414403.58	18.35	0.01	0.02	0.04	URBAN AREAS
2186A-N	1266233.98	401892.32	3.92	0.02	0.02	0.04	BRUSH LANDS AND LOW TREES
2186-N	1264371.27	411991.16	8.19	0.03	0.02	0.08	BRUSH LANDS AND LOW TREES
2187-N	1258006.83	415867.46	20.11	0.01	0.02	0.04	BARE EARTH AND LOW GRASS
2189-N	1311118.79	409912.24	32.82	0.02	0.02	0.05	LIDAR CONTROL POINT
2190-N-NorthPT	1382887.72	433868.74	18.93	0.02	0.02	0.06	BRUSH LANDS AND LOW TREES
2190-N-SouthPT	1308466.00	411354.74	3.37	0.03	0.04	0.09	BRUSH LANDS AND LOW TREES
2191-N	1279568.55	437021.43	12.34	0.02	0.02	0.05	LIDAR CONTROL POINT
2192-N	1303062.38	419762.04	16.06	0.02	0.03	0.06	LIDAR CONTROL POINT
2193-N	1332900.68	409917.10	49.02	0.02	0.02	0.07	LIDAR CONTROL POINT
2201-N	1337377.70	476467.14	16.05	0.02	0.03	0.08	LIDAR CONTROL POINT
2202-N	1285154.20	488629.16	9.35	0.02	0.02	0.07	LIDAR CONTROL POINT
2203-N	1277817.99	450104.46	4.75	0.03	0.03	0.06	URBAN AREAS
2204-N	1316068.36	485344.84	9.03	0.02	0.03	0.05	BARE EARTH AND LOW GRASS
2205-N	1282850.84	481376.66	3.90	0.02	0.03	0.06	BRUSH LANDS AND LOW TREES
2206-N	1323458.30	427537.41	35.97	0.03	0.03	0.10	LIDAR CONTROL POINT
2207-N	1324866.19	427447.57	39.25	0.03	0.04	0.09	BARE EARTH AND LOW GRASS
2210-N	1364908.07	407583.76	3.81	0.02	0.02	0.05	LIDAR CONTROL POINT
2211-N	1351194.30	417185.74	59.85	0.03	0.02	0.07	LIDAR CONTROL POINT
2300	1361482.87	472939.37	38.45	0.03	0.03	0.07	TRAVERSE POINT
2301	1361587.99	473036.48	38.23	0.02	0.02	0.05	TRAVERSE POINT
2310	1331868.35	478520.53	11.00	0.01	0.02	0.06	TRAVERSE POINT
2311	1331889.45	478378.79	10.57	0.01	0.02	0.06	TRAVERSE POINT
2313	1331959.70	478381.48	10.20	N/A	N/A	N/A	FORESTED AREAS
2314	1331952.92	478408.19	10.07	N/A	N/A	N/A	FORESTED AREAS
2315	1331995.18	478429.44	10.58	N/A	N/A	N/A	FORESTED AREAS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
2316	1332043.58	478447.56	11.14	N/A	N/A	N/A	FORESTED AREAS
2320	1356704.86	417944.53	56.29	0.02	0.03	0.06	TRAVERSE POINT
2321	1356895.66	417946.36	59.55	0.02	0.03	0.06	TRAVERSE POINT
2330	1372092.63	432383.00	15.70	0.02	0.02	0.04	TRAVERSE POINT
2331	1372276.03	432422.24	16.34	0.02	0.02	0.04	TRAVERSE POINT
2341	1387244.34	416465.61	7.31	0.03	0.02	0.08	TRAVERSE POINT
2401	1204847.07	424308.02	3.85	0.02	0.01	0.04	TRAVERSE POINT
2402	1204678.56	424166.42	3.57	0.02	0.01	0.05	TRAVERSE POINT
2403	1204461.60	424188.25	4.65	N/A	N/A	N/A	FORESTED AREAS
2404	1204585.29	424314.53	3.65	N/A	N/A	N/A	FORESTED AREAS
2405	1204668.93	424372.91	4.42	N/A	N/A	N/A	FORESTED AREAS
2406	1204808.80	424463.75	4.14	N/A	N/A	N/A	FORESTED AREAS
2430	1295204.25	433868.82	10.70	0.02	0.02	0.04	TRAVERSE POINT
2431	1295180.52	433650.19	10.52	0.02	0.02	0.04	TRAVERSE POINT
2440	1290287.19	409942.55	15.69	0.02	0.02	0.06	TRAVERSE POINT
2441	1289835.21	409598.06	14.28	0.02	0.02	0.07	TRAVERSE POINT
2443	1289978.33	409757.67	15.15	N/A	N/A	N/A	FORESTED AREAS
2444	1289966.36	409544.38	15.81	N/A	N/A	N/A	FORESTED AREAS
2445	1289891.24	409467.56	14.69	N/A	N/A	N/A	FORESTED AREAS
2446	1289827.64	409405.34	14.30	N/A	N/A	N/A	FORESTED AREAS
2450	1284178.54	409599.13	11.82	0.02	0.02	0.05	TRAVERSE POINT
2451	1284429.74	409764.48	13.01	0.02	0.03	0.06	TRAVERSE POINT
2453	1284225.16	409527.78	11.92	N/A	N/A	N/A	FORESTED AREAS
2454	1284108.32	409525.96	11.91	N/A	N/A	N/A	FORESTED AREAS
2455	1283947.14	409525.65	12.12	N/A	N/A	N/A	FORESTED AREAS
2456	1283915.51	409671.52	11.77	N/A	N/A	N/A	FORESTED AREAS
2460	1265271.48	407774.92	6.46	0.02	0.01	0.04	TRAVERSE POINT
2461	1265089.04	407743.92	5.89	0.02	0.01	0.04	TRAVERSE POINT
2463	1265023.23	407658.53	5.18	N/A	N/A	N/A	FORESTED AREAS
2464	1265017.63	407573.79	3.93	N/A	N/A	N/A	FORESTED AREAS
2465	1265456.11	407559.41	4.69	N/A	N/A	N/A	FORESTED AREAS
2466	1265600.24	407601.95	5.13	N/A	N/A	N/A	FORESTED AREAS
2470	1298710.34	396566.98	40.06	0.02	0.02	0.07	TRAVERSE POINT
2471	1298022.79	395959.08	41.59	0.02	0.02	0.07	TRAVERSE POINT
2473	1298502.15	396528.42	40.92	N/A	N/A	N/A	FORESTED AREAS
2474	1298381.12	396626.68	42.05	N/A	N/A	N/A	FORESTED AREAS
2475	1298356.60	396765.52	45.11	N/A	N/A	N/A	FORESTED AREAS
2476	1298535.49	396788.22	44.06	N/A	N/A	N/A	FORESTED AREAS
8001	1228090.70	435473.99	6.12	N/A	N/A	N/A	FORESTED AREAS
8002	1228201.65	435572.14	6.12	N/A	N/A	N/A	FORESTED AREAS
8003	1228286.77	435651.62	6.04	N/A	N/A	N/A	FORESTED AREAS
8004	1228332.28	435576.41	5.39	N/A	N/A	N/A	FORESTED AREAS

EXISTING NGS CONTROL STATIONS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
BLIND	1242583.01	412087.63	3.18	0.00	0.00	0.00	NGS CONTROL
GPS36	1228217.94	435454.15	6.34	0.01	0.02	0.03	NGS CONTROL
HOG ISLAND B	1352451.47	397684.69	5.29	0.00	0.00	0.07	NGS CONTROL
SEVEN	1263121.75	416695.10	23.52	0.00	0.00	0.00	NGS CONTROL
SKIPPER RESET	1362174.44	511127.38	52.76	0.00	0.00	0.00	NGS CONTROL
X108	1401794.54	420885.36	12.10	0.00	0.00	0.00	NGS CONTROL

NEW WOOLPERT CONTROL STATIONS

GPS Station Name	Grid Northing (US FT)	Grid Easting (US FT)	Station Elevation (US FT)	Y Std. Dev. (US FT)	X Std. Dev. (US FT)	Z Std. Dev. (US FT)	Station Description
NEW BASE 3	1273031.65	543216.28	52.68	0.01	0.01	0.03	WOOLPERT IPC
NEW BASE 4	1403712.44	418572.97	12.38	0.00	0.00	0.02	WOOLPERT IPC
NEW BASE 5	1352050.25	399018.32	3.09	0.00	0.00	0.01	WOOLPERT IPC

APPENDIX D: POSITIONAL ACCURACIES

This appendix contains the final positional accuracies for the LiDAR QA/QC Checkpoints (except the forest points) and LiDAR Control Points for Project Area B of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

LiDAR QA/QA POINTS (NO FOREST POINTS)

CALCULATED ACCURACY:

0.01	Meters RMSE_x
0.01	Meters RMSE_y
0.01	Meters RMSE_{xy}
0.02	Meters at 95% C.I.
0.02	RMSE_z
0.04	Meters at 95% C.I.

CALCULATED ACCURACY:

0.03	Feet RMSE_x
0.03	Feet RMSE_y
0.04	Feet RMSE_{xy}
0.06	Feet at 95% C.I.
0.07	RMSE_z
0.14	Feet at 95% C.I.

METERS

STATION	<u>V_x</u>	<u>V_y</u>	<u>V_{xy}</u>	<u>V_z</u>
2002-R	0.005	0.005	0.01	0.015
2003-R	0.008	0.007	0.01	0.020
2005-R	0.005	0.006	0.01	0.018
2006-R	0.004	0.003	0.00	0.009
2007-R	0.007	0.011	0.01	0.026
2010-R	0.004	0.006	0.01	0.014
2011-R	0.009	0.009	0.01	0.023
2012-R	0.007	0.007	0.01	0.027
2015-R	0.006	0.005	0.01	0.012
2016-R	0.004	0.004	0.01	0.012
2017-R	0.006	0.005	0.01	0.015
2020-R	0.005	0.005	0.01	0.014
2021-R	0.006	0.005	0.01	0.012
2022-R	0.005	0.004	0.01	0.011
2025-R	0.009	0.006	0.01	0.021
2026-R	0.008	0.007	0.01	0.021
2027-R	0.007	0.005	0.01	0.021
2030-R	0.011	0.008	0.01	0.027
2031-R	0.007	0.007	0.01	0.021
2032-R	0.009	0.007	0.01	0.024
2035-R	0.008	0.006	0.01	0.016
2036-R	0.007	0.005	0.01	0.014
2037-R	0.009	0.010	0.01	0.028
2040-R	0.010	0.008	0.01	0.026
2041-R	0.010	0.008	0.01	0.023
2042-R	0.008	0.008	0.01	0.017
2045-R	0.006	0.006	0.01	0.017

US FEET

STATION	<u>V_x</u>	<u>V_y</u>	<u>V_{xy}</u>	<u>V_z</u>
2002-R	0.02	0.02	0.02	0.05
2003-R	0.02	0.02	0.03	0.06
2005-R	0.02	0.02	0.03	0.06
2006-R	0.01	0.01	0.02	0.03
2007-R	0.02	0.04	0.04	0.08
2010-R	0.01	0.02	0.02	0.04
2011-R	0.03	0.03	0.04	0.07
2012-R	0.02	0.02	0.03	0.09
2015-R	0.02	0.02	0.02	0.04
2016-R	0.01	0.01	0.02	0.04
2017-R	0.02	0.02	0.02	0.05
2020-R	0.02	0.02	0.02	0.05
2021-R	0.02	0.02	0.03	0.04
2022-R	0.02	0.01	0.02	0.04
2025-R	0.03	0.02	0.03	0.07
2026-R	0.02	0.02	0.03	0.07
2027-R	0.02	0.02	0.03	0.07
2030-R	0.03	0.03	0.04	0.09
2031-R	0.02	0.02	0.03	0.07
2032-R	0.03	0.02	0.04	0.08
2035-R	0.02	0.02	0.03	0.05
2036-R	0.02	0.01	0.03	0.04
2037-R	0.03	0.03	0.04	0.09
2040-R	0.03	0.03	0.04	0.08
2041-R	0.03	0.03	0.04	0.08
2042-R	0.02	0.02	0.04	0.05
2045-R	0.02	0.02	0.03	0.06

STATION	Vx	Vy	Vxy	Vz
2046-R	0.006	0.007	0.01	0.016
2050-R	0.006	0.004	0.01	0.013
2051-R	0.006	0.005	0.01	0.013
2052-R	0.008	0.008	0.01	0.025
2056-R	0.006	0.007	0.01	0.022
2057-R	0.009	0.007	0.01	0.017
2060-R	0.007	0.005	0.01	0.016
2061-R	0.006	0.004	0.01	0.012
2062-R	0.006	0.005	0.01	0.012
2065-R	0.009	0.011	0.01	0.027
2067-R	0.007	0.007	0.01	0.016
2070-R	0.007	0.006	0.01	0.015
2071-R	0.007	0.009	0.01	0.027
2071A-R	0.008	0.011	0.01	0.031
2072-R	0.008	0.007	0.01	0.022
2075-R	0.009	0.009	0.01	0.020
2076-R	0.006	0.006	0.01	0.020
2077-R	0.010	0.009	0.01	0.022
2080-R	0.009	0.007	0.01	0.025
2081-R	0.008	0.009	0.01	0.021
2082-R	0.009	0.007	0.01	0.018
2086-R	0.007	0.008	0.01	0.025
2087-R	0.006	0.008	0.01	0.019
2090-R	0.008	0.013	0.02	0.030
2091-R	0.008	0.010	0.01	0.024
2092-R	0.008	0.008	0.01	0.018
2095-R	0.006	0.009	0.01	0.024
2097-R	0.009	0.007	0.01	0.025
2101-R	0.022	0.011	0.02	0.044
2102-R	0.006	0.006	0.01	0.016
2105-R	0.006	0.006	0.01	0.014
2106-R	0.007	0.009	0.01	0.020
2110-R	0.006	0.004	0.01	0.012
2111-R	0.005	0.005	0.01	0.011
2112-R	0.009	0.007	0.01	0.019
2115-R	0.005	0.004	0.01	0.014
2116-R	0.006	0.004	0.01	0.015
2117-R	0.007	0.007	0.01	0.014
2120-R	0.008	0.006	0.01	0.016
2122-R	0.007	0.006	0.01	0.014
2126-R	0.006	0.006	0.01	0.012
2128-R	0.006	0.008	0.01	0.015
2132-R	0.007	0.008	0.01	0.018
2133-R	0.007	0.008	0.01	0.025
2136-R	0.007	0.006	0.01	0.015
2137-R	0.006	0.005	0.01	0.017
2138-R	0.007	0.007	0.01	0.015
2141-R	0.009	0.007	0.01	0.022

STATION	Vx	Vy	Vxy	Vz
2046-R	0.02	0.02	0.03	0.05
2050-R	0.02	0.01	0.02	0.04
2051-R	0.02	0.02	0.03	0.04
2052-R	0.03	0.02	0.04	0.08
2056-R	0.02	0.02	0.03	0.07
2057-R	0.03	0.02	0.04	0.06
2060-R	0.02	0.02	0.03	0.05
2061-R	0.02	0.01	0.02	0.04
2062-R	0.02	0.02	0.03	0.04
2065-R	0.03	0.04	0.05	0.09
2067-R	0.02	0.02	0.03	0.05
2070-R	0.02	0.02	0.03	0.05
2071-R	0.02	0.03	0.04	0.09
2071A-R	0.03	0.04	0.04	0.10
2072-R	0.03	0.02	0.04	0.07
2075-R	0.03	0.03	0.04	0.07
2076-R	0.02	0.02	0.03	0.06
2077-R	0.03	0.03	0.04	0.07
2080-R	0.03	0.02	0.04	0.08
2081-R	0.02	0.03	0.04	0.07
2082-R	0.03	0.02	0.04	0.06
2086-R	0.02	0.03	0.03	0.08
2087-R	0.02	0.03	0.03	0.06
2090-R	0.02	0.04	0.05	0.10
2091-R	0.03	0.03	0.04	0.08
2092-R	0.03	0.03	0.04	0.06
2095-R	0.02	0.03	0.04	0.08
2097-R	0.03	0.02	0.04	0.08
2101-R	0.07	0.04	0.08	0.15
2102-R	0.02	0.02	0.03	0.05
2105-R	0.02	0.02	0.03	0.04
2106-R	0.02	0.03	0.04	0.07
2110-R	0.02	0.01	0.02	0.04
2111-R	0.02	0.02	0.02	0.03
2112-R	0.03	0.02	0.04	0.06
2115-R	0.02	0.01	0.02	0.05
2116-R	0.02	0.01	0.02	0.05
2117-R	0.02	0.02	0.03	0.05
2120-R	0.03	0.02	0.03	0.05
2122-R	0.02	0.02	0.03	0.05
2126-R	0.02	0.02	0.03	0.04
2128-R	0.02	0.03	0.03	0.05
2132-R	0.02	0.03	0.03	0.06
2133-R	0.02	0.02	0.03	0.08
2136-R	0.02	0.02	0.03	0.05
2137-R	0.02	0.02	0.03	0.06
2138-R	0.02	0.02	0.03	0.05
2141-R	0.03	0.02	0.04	0.07

STATION	Vx	Vy	Vxy	Vz
2143-R	0.010	0.016	0.02	0.033
2146-R	0.010	0.008	0.01	0.027
2148-R	0.029	0.032	0.04	0.084
2151-R	0.008	0.007	0.01	0.025
2152-R	0.008	0.006	0.01	0.017
2153-R	0.008	0.008	0.01	0.017
2156-R	0.008	0.008	0.01	0.017
2157-R	0.009	0.011	0.01	0.026
2159-R	0.006	0.009	0.01	0.020
2161-R	0.008	0.009	0.01	0.016
2162-R	0.014	0.011	0.02	0.033
2172-N	0.007	0.006	0.01	0.014
2175	0.001	0.001	0.00	0.004
2176-N	0.005	0.004	0.01	0.014
2177-N	0.009	0.008	0.01	0.018
2185-N	0.006	0.004	0.01	0.011
2186-N	0.007	0.009	0.01	0.024
2186A-N	0.006	0.006	0.01	0.013
2187-N	0.005	0.004	0.01	0.011
2190-N-NorthPT	0.006	0.007	0.01	0.018
2190-N-SouthPT	0.012	0.009	0.01	0.028
2203-N	0.008	0.009	0.01	0.019
2204-N	0.008	0.006	0.01	0.015
2205-N	0.008	0.006	0.01	0.019
2207-N	0.011	0.009	0.01	0.027
2300	0.008	0.009	0.01	0.021
2301	0.006	0.007	0.01	0.016
2310	0.006	0.005	0.01	0.017
2311	0.006	0.005	0.01	0.017
2320	0.008	0.007	0.01	0.017
2321	0.008	0.007	0.01	0.018
2330	0.005	0.006	0.01	0.014
2331	0.005	0.006	0.01	0.014
2341	0.007	0.010	0.01	0.023
2401	0.004	0.005	0.01	0.013
2402	0.004	0.005	0.01	0.014
2430	0.005	0.006	0.01	0.012
2431	0.006	0.006	0.01	0.013
2440	0.006	0.005	0.01	0.017
2441	0.008	0.006	0.01	0.021
2450	0.007	0.006	0.01	0.016
2451	0.009	0.007	0.01	0.019
2460	0.004	0.005	0.01	0.013
2461	0.004	0.005	0.01	0.012
2470	0.006	0.007	0.01	0.021
2471	0.006	0.007	0.01	0.022

STATION	Vx	Vy	Vxy	Vz
2143-R	0.03	0.05	0.06	0.11
2146-R	0.03	0.02	0.04	0.09
2148-R	0.09	0.11	0.14	0.28
2151-R	0.03	0.02	0.04	0.08
2152-R	0.03	0.02	0.03	0.05
2153-R	0.03	0.03	0.04	0.06
2156-R	0.03	0.03	0.04	0.06
2157-R	0.03	0.04	0.05	0.09
2159-R	0.02	0.03	0.04	0.07
2161-R	0.03	0.03	0.04	0.05
2162-R	0.04	0.03	0.06	0.11
2172-N	0.02	0.02	0.03	0.05
2175	0.00	0.00	0.01	0.01
2176-N	0.02	0.01	0.02	0.05
2177-N	0.03	0.03	0.04	0.06
2185-N	0.02	0.01	0.02	0.04
2186-N	0.02	0.03	0.04	0.08
2186A-N	0.02	0.02	0.03	0.04
2187-N	0.02	0.01	0.02	0.04
2190-N-NorthPT	0.02	0.02	0.03	0.06
2190-N-SouthPT	0.04	0.03	0.05	0.09
2203-N	0.03	0.03	0.04	0.06
2204-N	0.03	0.02	0.03	0.05
2205-N	0.03	0.02	0.03	0.06
2207-N	0.04	0.03	0.05	0.09
2300	0.03	0.03	0.04	0.07
2301	0.02	0.02	0.03	0.05
2310	0.02	0.01	0.02	0.06
2311	0.02	0.01	0.02	0.06
2320	0.03	0.02	0.03	0.06
2321	0.03	0.02	0.04	0.06
2330	0.02	0.02	0.02	0.04
2331	0.02	0.02	0.02	0.04
2341	0.02	0.03	0.04	0.08
2401	0.01	0.02	0.02	0.04
2402	0.01	0.02	0.02	0.05
2430	0.02	0.02	0.02	0.04
2431	0.02	0.02	0.03	0.04
2440	0.02	0.02	0.03	0.06
2441	0.02	0.02	0.03	0.07
2450	0.02	0.02	0.03	0.05
2451	0.03	0.02	0.04	0.06
2460	0.01	0.02	0.02	0.04
2461	0.01	0.02	0.02	0.04
2470	0.02	0.02	0.03	0.07
2471	0.02	0.02	0.03	0.07

<u>STATION</u>	<u>Vx</u>	<u>Vy</u>	<u>Vxy</u>	<u>Vz</u>
SUMSQ	0.01	0.01	0.01	0.05
COUNT	121.00	121.00	121.00	121.00
AVG ERROR	0.01	0.01	0.01	0.02
MAX ERROR	0.03	0.03	0.04	0.08
MIN ERROR	0.00	0.00	0.00	0.00
RMSE	0.01	0.01	0.01	0.02

<u>STATION</u>	<u>Vx</u>	<u>Vy</u>	<u>Vxy</u>	<u>Vz</u>
SUMSQ	0.08	0.08	0.16	0.57
COUNT	121.00	121.00	121.00	121.00
AVG ERROR	0.02	0.02	0.03	0.06
MAX ERROR	0.11	0.09	0.14	0.28
MIN ERROR	0.00	0.00	0.01	0.01
RMSE	0.03	0.03	0.04	0.07

LIDAR CONTROL POINTS ONLY

CALCULATED ACCURACY:

0.01	Meters RMSE _x
0.01	Meters RMSE _y
0.01	Meters RMSE _{xy}
0.00	Meters at 95% C.I.
0.02	RMSE _z
0.04	Meters at 95% C.I.

CALCULATED ACCURACY:

0.02	Feet RMSE _x
0.02	Feet RMSE _y
0.03	Feet RMSE _{xy}
0.06	Feet at 95% C.I.
0.07	RMSE _z
0.13	Feet at 95% C.I.

METERS

STATION	V _x	V _y	V _{xy}	V _z
2076A-R	0.005	0.006	0.01	0.017
2170-N	0.007	0.006	0.01	0.018
2171-N	0.007	0.009	0.01	0.021
2173-N	0.004	0.003	0.01	0.009
2174-N	0.006	0.008	0.01	0.018
2178-N	0.004	0.004	0.01	0.012
2180-N	0.009	0.007	0.01	0.019
2181-N	0.007	0.006	0.01	0.022
2183-N	0.007	0.009	0.01	0.026
2184-N	0.007	0.009	0.01	0.025
2189-N	0.007	0.008	0.01	0.017
2191-N	0.007	0.005	0.01	0.014
2192-N	0.009	0.007	0.01	0.017
2193-N	0.007	0.008	0.01	0.022
2201-N	0.009	0.007	0.01	0.025
2202-N	0.006	0.005	0.01	0.020
2206-N	0.010	0.008	0.01	0.030
2210-N	0.006	0.005	0.01	0.014
2211-N	0.006	0.009	0.01	0.020
SUMSQ	0.00	0.00	0.00	0.01
COUNT	19.00	19.00	19.00	19.00
AVG ERROR	0.01	0.01	0.01	0.02
MAX ERROR	0.01	0.01	0.01	0.03
MIN ERROR	0.00	0.00	0.01	0.01
RMSE	0.01	0.01	0.01	0.02

US FEET

STATION	V _x	V _y	V _{xy}	V _z
2076A-R	0.02	0.02	0.03	0.06
2170-N	0.02	0.02	0.03	0.06
2171-N	0.02	0.03	0.04	0.07
2173-N	0.01	0.01	0.02	0.03
2174-N	0.02	0.03	0.03	0.06
2178-N	0.01	0.01	0.02	0.04
2180-N	0.03	0.02	0.04	0.06
2181-N	0.02	0.02	0.03	0.07
2183-N	0.02	0.03	0.04	0.09
2184-N	0.02	0.03	0.04	0.08
2189-N	0.02	0.02	0.03	0.05
2191-N	0.02	0.02	0.03	0.05
2192-N	0.03	0.02	0.04	0.06
2193-N	0.02	0.02	0.03	0.07
2201-N	0.03	0.02	0.04	0.08
2202-N	0.02	0.02	0.03	0.07
2206-N	0.03	0.03	0.04	0.10
2210-N	0.02	0.02	0.03	0.05
2211-N	0.02	0.03	0.03	0.07
SUMSQ	0.01	0.01	0.02	0.08
COUNT	19.00	19.00	19.00	19.00
AVG ERROR	0.02	0.02	0.03	0.06
MAX ERROR	0.03	0.03	0.04	0.10
MIN ERROR	0.01	0.01	0.02	0.03
RMSE	0.02	0.02	0.03	0.07

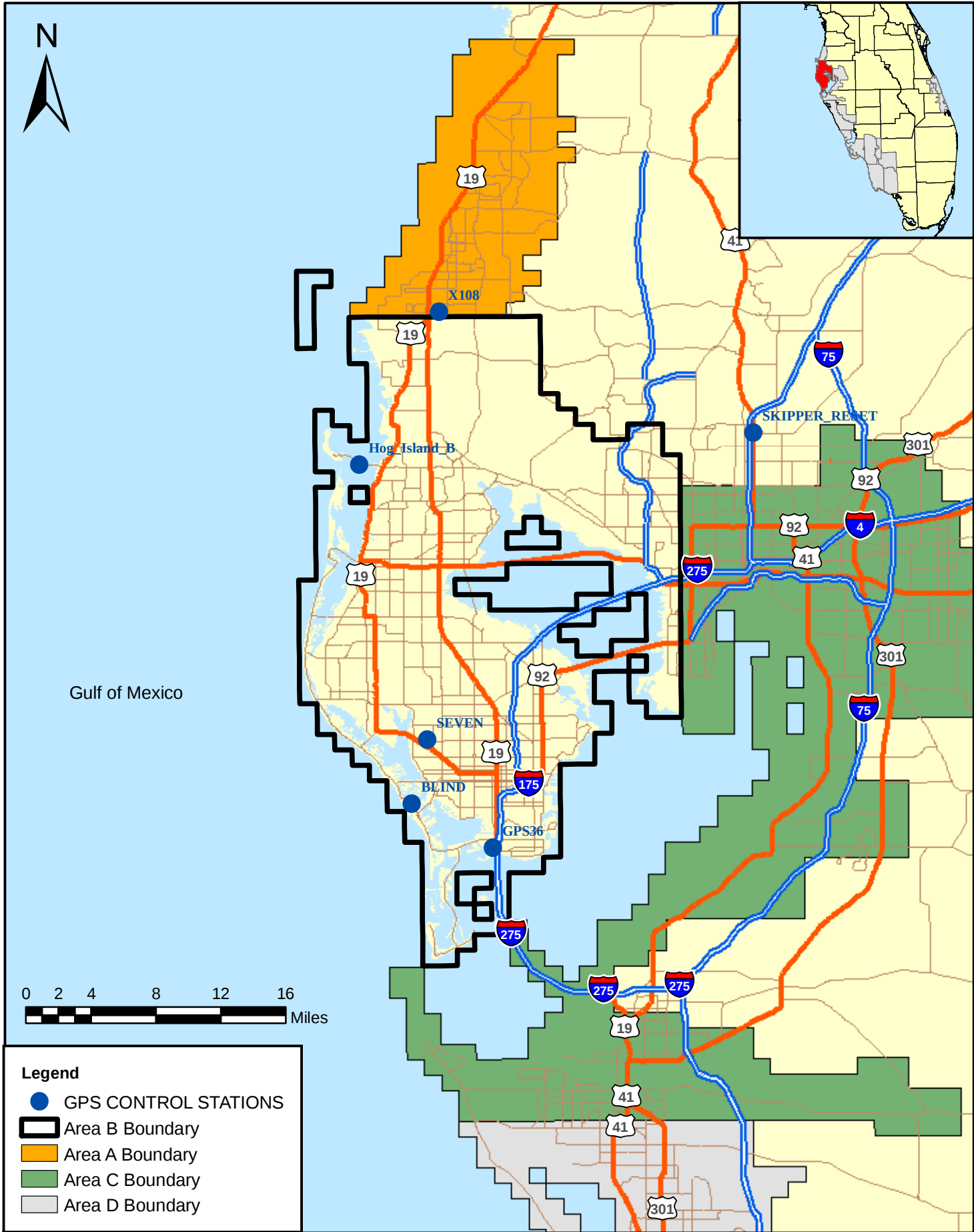
APPENDIX E: LAYOUT MAPS

This appendix contains layout maps of the GPS Ground Control Stations, Newly Established Control Stations, LiDAR Control Points, LiDAR QA/QC Checkpoints and a GPS Network Diagram for Project Area B of the FY2007 State of Florida Division of Emergency Management Ground Control QA/QC Survey Mapping Project.

- GPS Control Stations
- Newly Established Control Stations
- LiDAR Control Points
- Brush Lands and Low Trees Observations
- Forested Areas Observations
- Bare Earth and Low Grass Observations
- Urban Areas Observations
- GPS Network Diagram

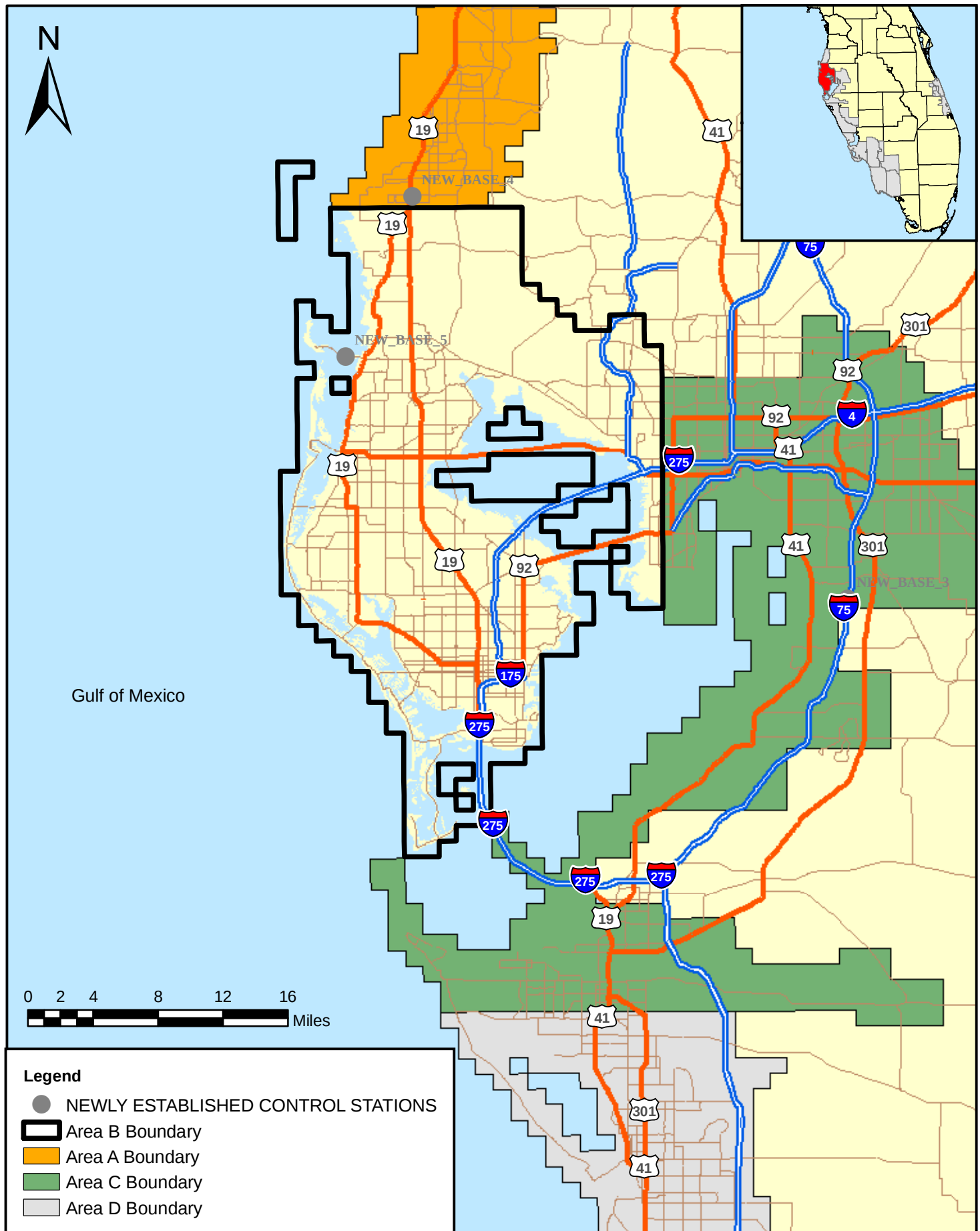


AREA B - GPS CONTROL STATIONS



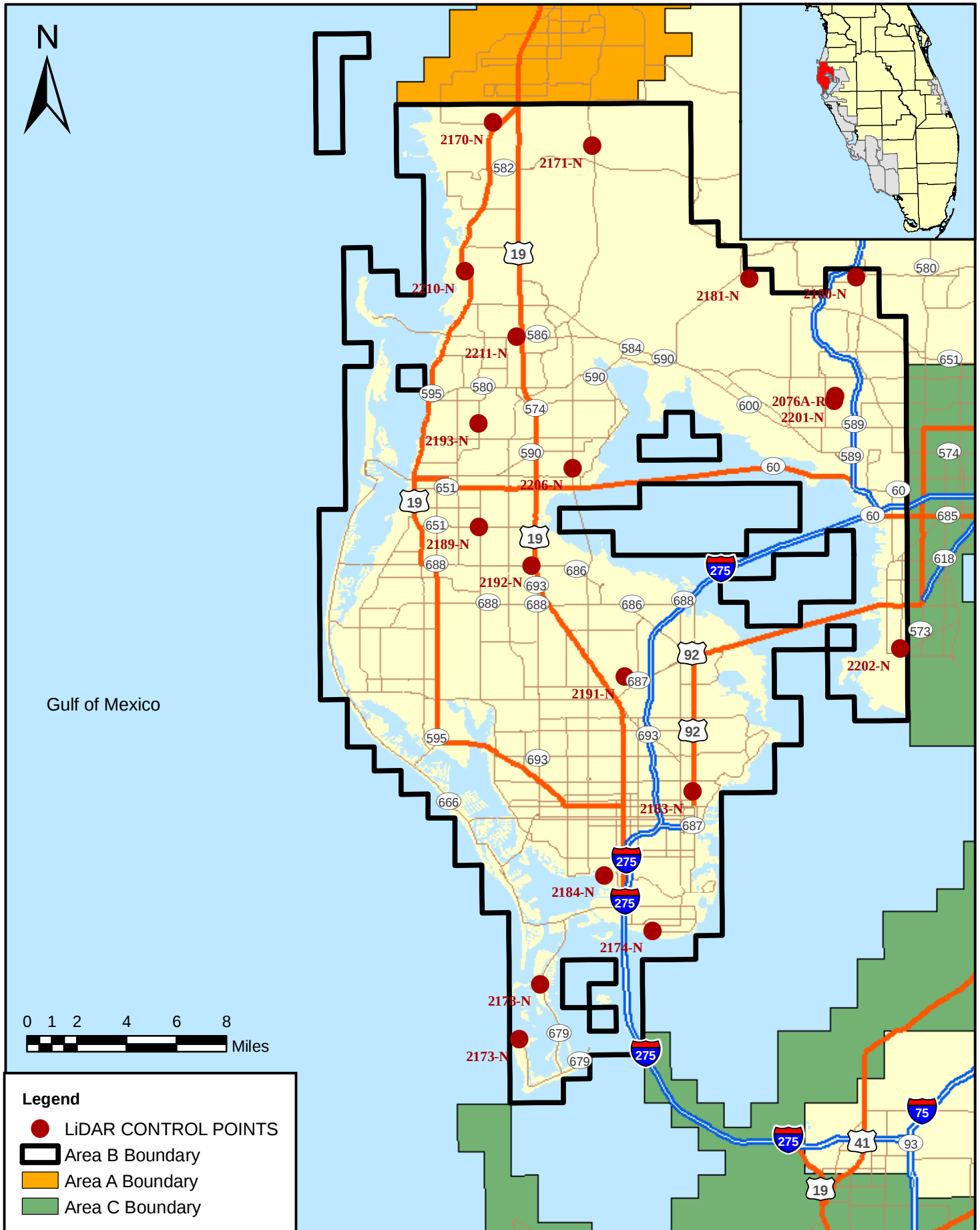


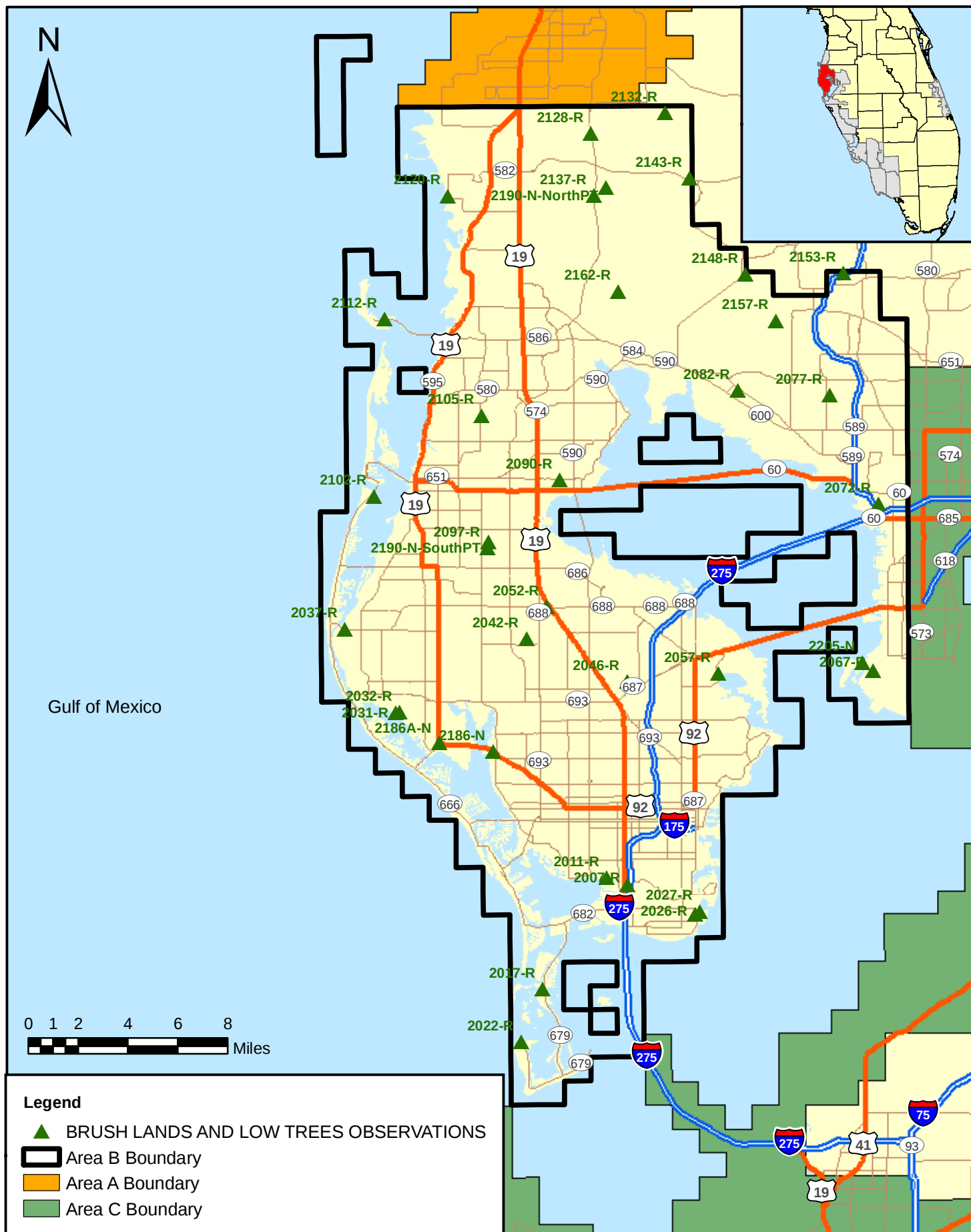
AREA B - NEWLY ESTABLISHED CONTROL STATIONS





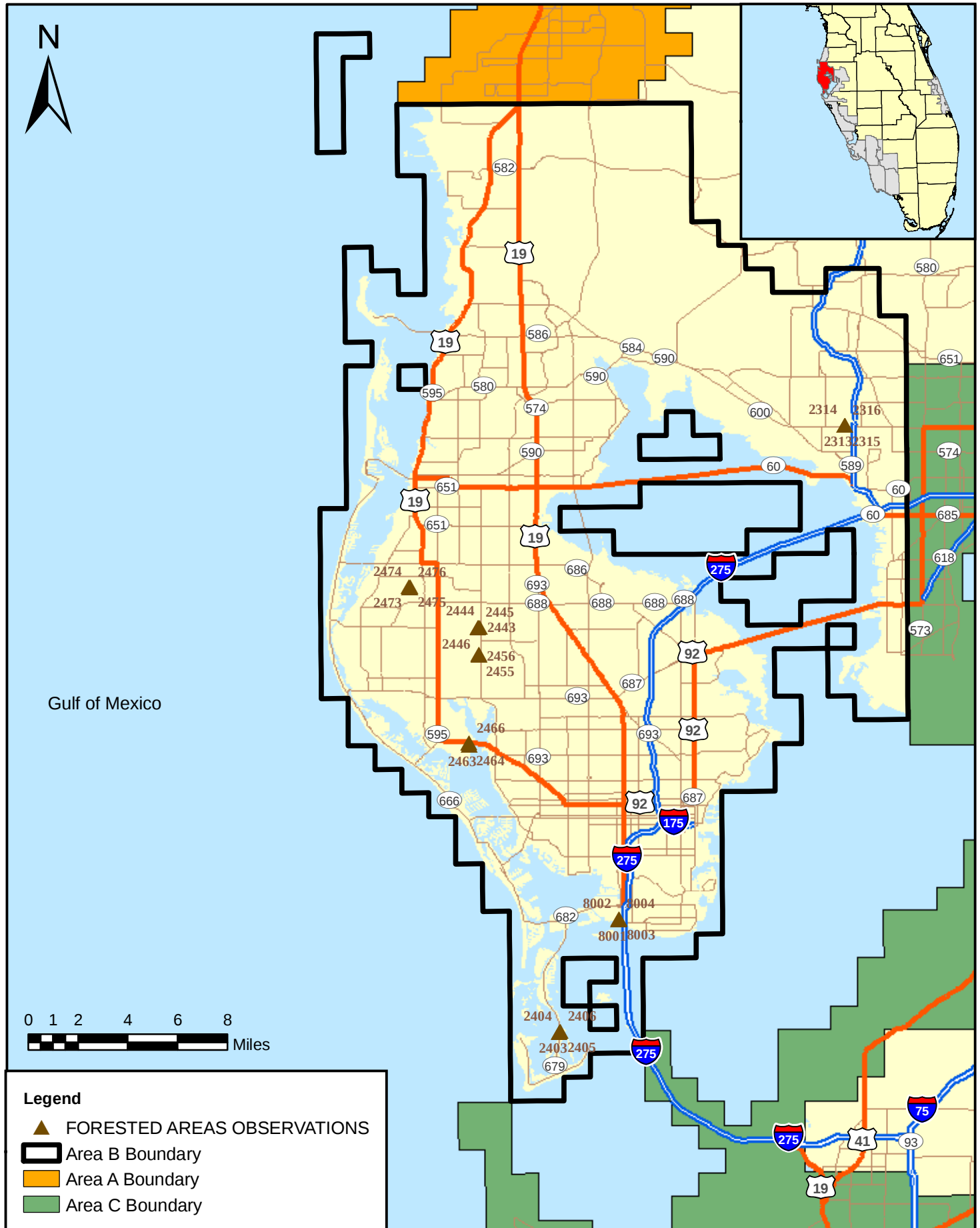
AREA B - LiDAR CONTROL POINTS





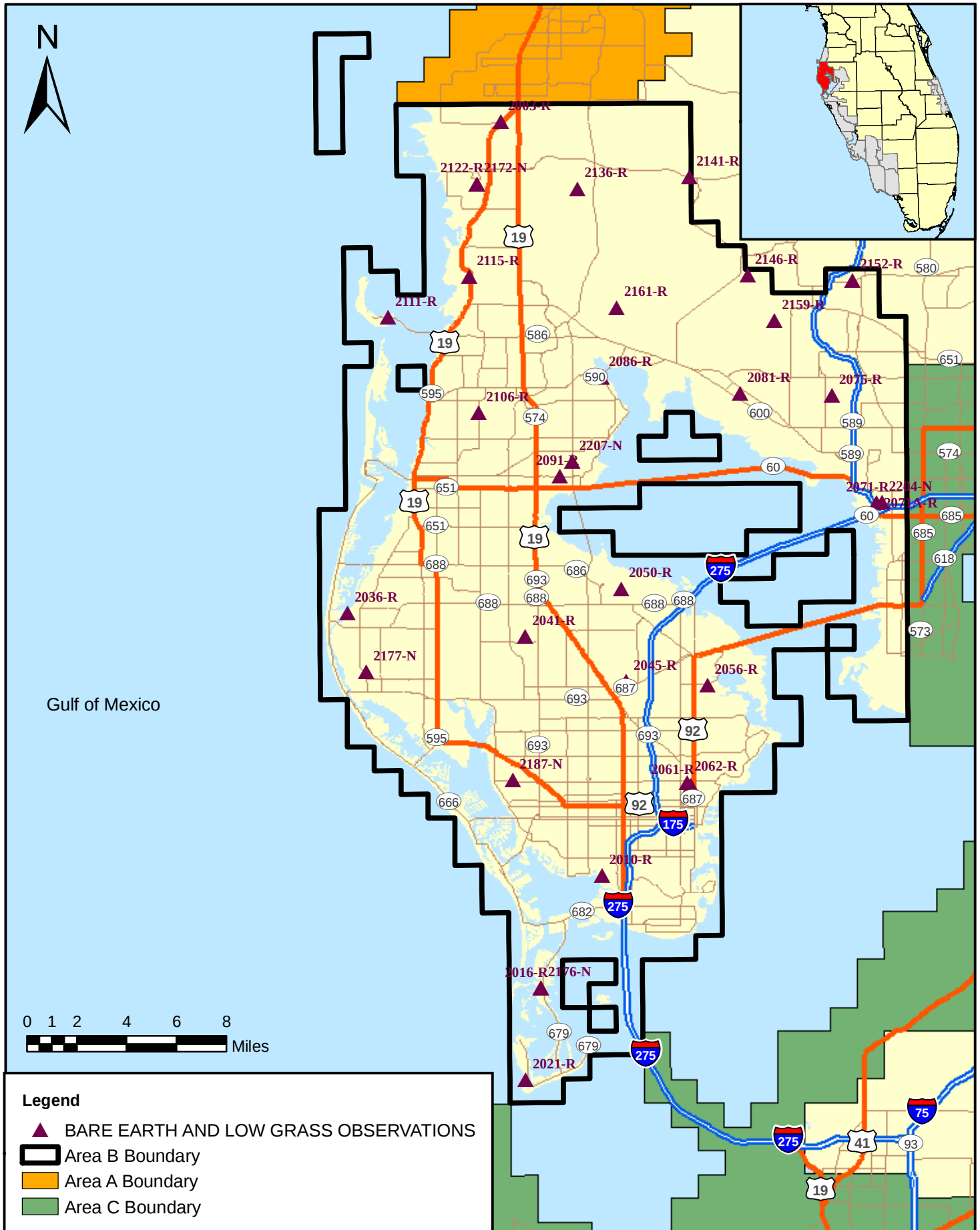


AREA B - FORESTED AREAS OBSERVATIONS



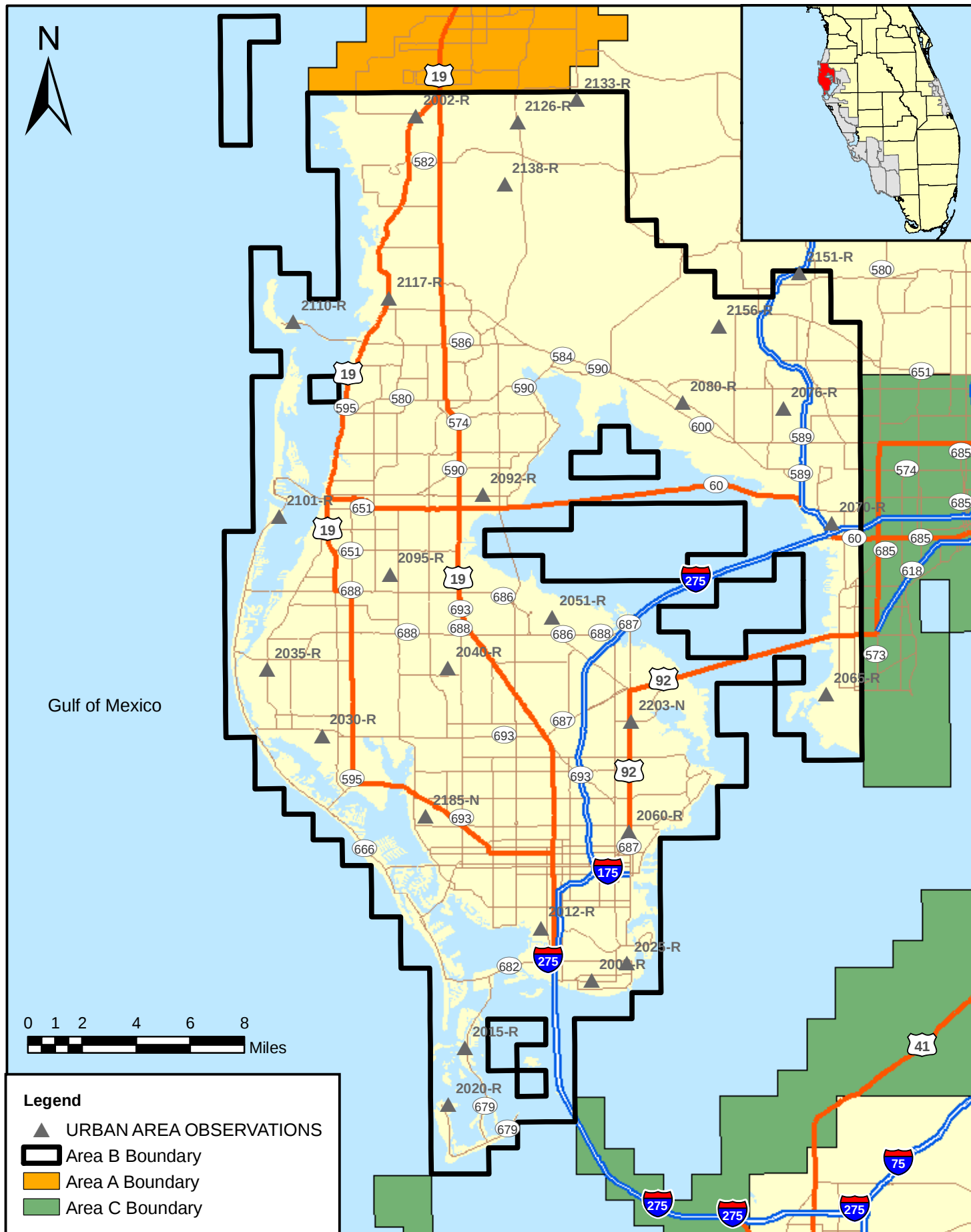


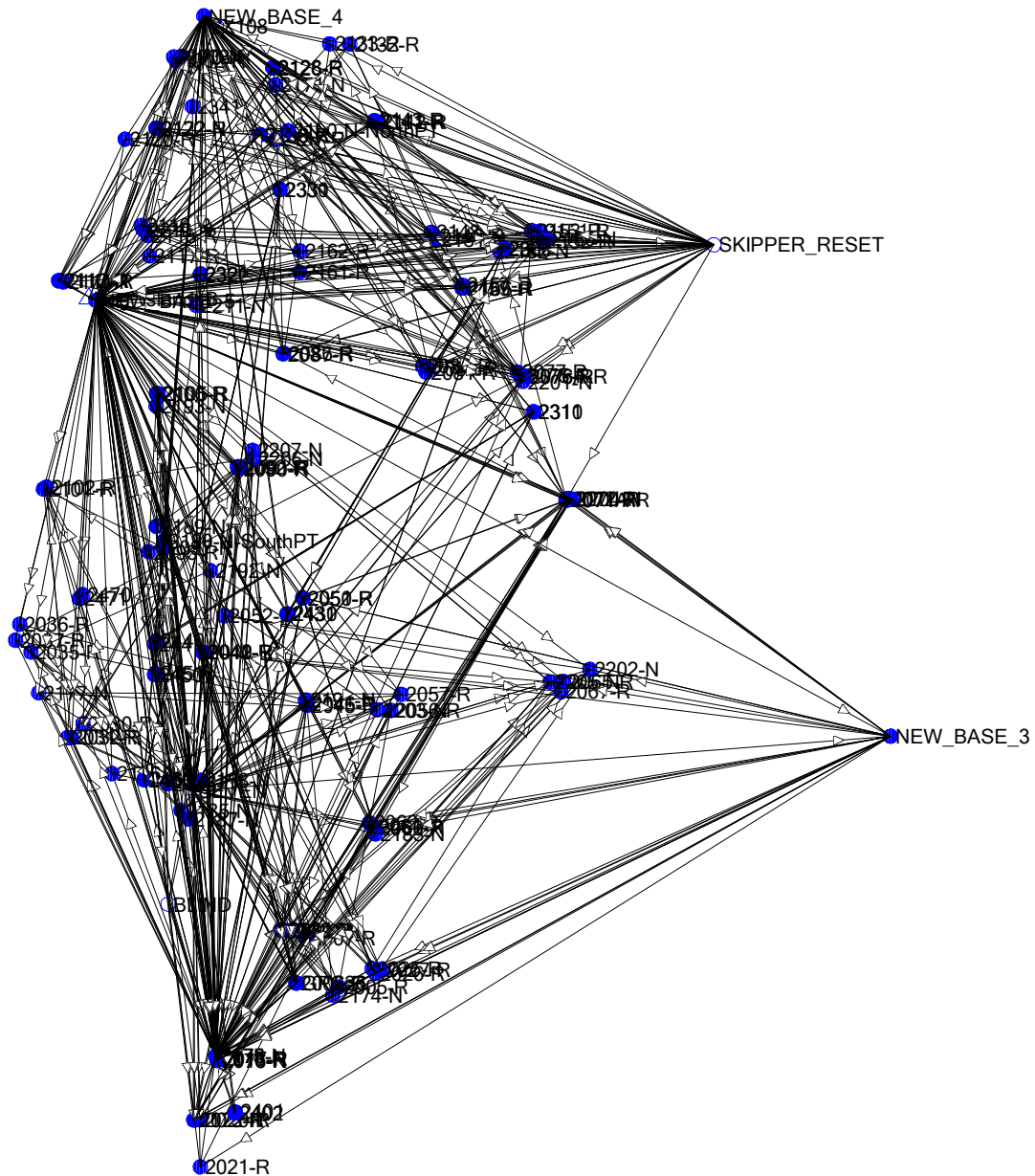
AREA B - BARE EARTH AND LOW GRASS OBSERVATIONS





AREA B - URBAN AREA OBSERVATIONS





Field surveyor:
Woolpert, Inc.
Computer operator:
MBrown
Reference:
FDEM

Scale 1:400000



0°00'00"

Plot Scale: 1:400000

Printed on 12/15/2008, at 7:35:29 AM

Printed from Trimble Geomatics Office

System: US State Plane 1983

Zone: Florida West 0902, Datum: NAD 1983 (Conus)

Project: Area B

USFeet Template