Surveyor's Project Report

South Florida Water Management District
C-111 Spreader Canal Western Project
Frog Pond
Vertical Control Survey

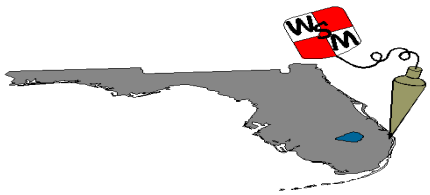
District Work Order Number: **4600000943-WO 16**

Prepared For:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

prepared by:

Thomas E. Whidden
Professional Surveyor and Mapper
Florida License Number LS-6225



WHIDDEN SURVEYING & MAPPING, INC.
9100 Belvedere Road, Suite 105
West Palm Beach, FL 33411
Certificate of Authorization Number LB7232

Publication Date: October 24, 2011
Revised Date: May 18, 2015

Table of Contents

OVERVIEW OF THE PROJECT

PURPOSE

The C-111 Spreader Canal Western project is one element of the Comprehensive Everglades Restoration Plan (CERP) authorized by the United States Congress as part of the 2000 Water Resources Development Act. This project is designed to restore the quantity, timing, and distribution of water delivered to Florida Bay via Taylor Slough and the area south of the C-111 canal known as the Southern Glades and Model Lands. This involves the use of structures (detention areas, canals, canal plugs, levees, gates and pump stations) and operational procedures to reduce seepage losses from Taylor Slough, the Southern Glades, and Model Lands.

A key component of the project is to ensure that impacts to Cape Sable Seaside Sparrow (CSSS) Designated Critical Habitat Units 2 and 3 (also referred to as subpopulations C and D, respectively) do not exceed that recognized in the United States Fish and Wildlife Service (USFWS's) Incidental Take Statement. That need was documented in the USFWS's Biological Opinion and Incidental Take Statement (ITS), both of which were issued on August 25, 2009, and required the SFWMD to conduct additional monitoring and reporting to meet the requirements of the Endangered Species Act. One of the Term and Conditions (#3) of the ITS requires that SFWMD conduct additional surveys to more accurately document existing topography in subpopulations C & D, and that the SFWMD provide a methodology to accomplish the foregoing within 6 month of issuance of the Incidental Take Statement. "The methodology was submitted to the USFWS on February 25, 2010. This scope of work defines the work outlined in the methodology."

The South Florida Water Management is requesting a Vertical Control Survey to set 1 benchmark at 4 monitoring sites and obtain the well reference marks set by SFWMD.

The project is located in the Frog Pond Area and in the C-111 Spreader Canal Western project, Miami- Dade County Florida.

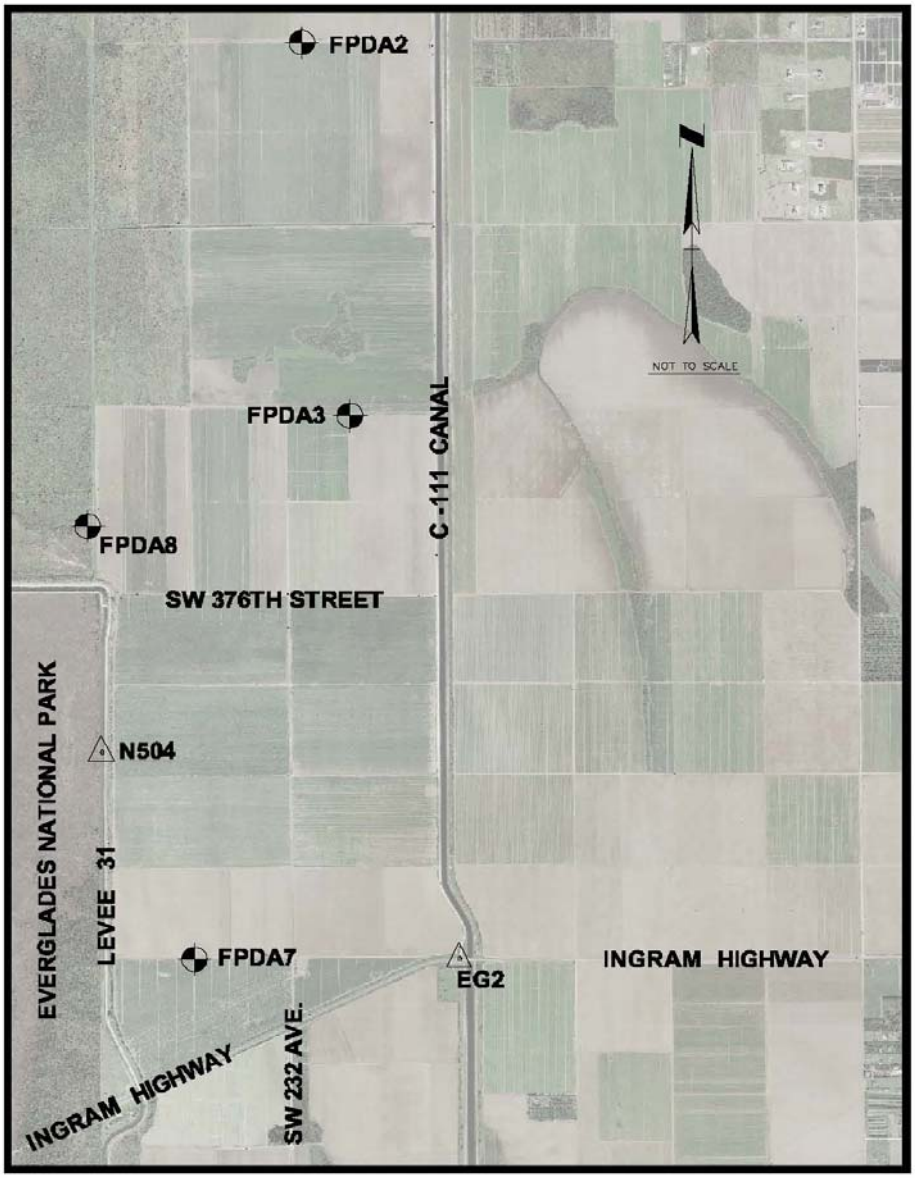
The Vertical Control Survey shall be in strict accordance with the Minimum Technical Standards (MTS) set forth in Chapter 5J of the Florida Administrative Code (FAC) and with the specifications outlined in Work Order. WSM shall set one bench mark at 4 monitoring sites.

All services were performed under the direction of a Professional Surveyor and Mapper (PSM) registered in the State of Florida in accordance with Chapter 472 of the Florida Statutes and 5J FAC.

LOCATION OF PROJECT

The project is located in Miami-Dade County. Below is a map depicting the location of the project well sites Located within the Frog Pond just East of the Eastern Boundary of

Everglades National Park.



ITEMS DELIVERED TO THE DISTRICT

The following items are delivered to the District with this report. Neither the report nor the items listed below are complete without the other.

1. Paper and electronic copy of field notes
2. Paper and electronic copy of computation sheets
3. Paper and electronic copy of site photographs
4. Paper and electronic copy of District Benchmark Description Sheets

VERTICAL DATUM FOR THE PROJECT

The vertical datum for the project is the North American Vertical Datum of 1988, and is based upon measurements to vertical control marks published by the NGS.

For correlation with older data sets, the elevations of the benchmarks derived for this project are also shown in the National Geodetic Vertical Datum (NGVD) of 1929. The file named "NGVD29.txt" provided by the SFWMD containing NGVD29 elevations for National Geodetic Survey (NGS) marks did not contain any benchmarks within the project area. Therefore the NGVD 1929 orthometric heights (elevations) established for this survey are based upon a calculated difference or shift between NAVD 1988 and NGVD 1929 that was derived by Corpscon version 6.0.1 and verified relying on published values on various benchmarks surrounding this project. An average differential of **1.59** was used to establish the NGVD 29 elevations.

EQUIPMENT USED

Trimble DiNi 22 Digital Level
Star*Lev, version 1.30

LEVELING METHODS

INTRODUCTION

The benchmarks listed below are located on roads and levees surrounding this project. The "two peg" method was utilized to check the level's accuracy prior to commencement of the level run on each day.

BENCHMARKS

N504	PID No. AJ8401	Elevation: 6.89 NAVD88
EG2	PID No. AB2362	Elevation: 9.11 NAVD88

Back shots and Fore shots were limited to 250 feet and a 15 pound steel turning point (Turtle) was used when permanent marks were not set.

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DATA PROCESSING

Data Acquisition

Data was downloaded from digital level using Trimble Geomatics Office software, version 1.60 (TGO), and transferred to our server through a Virtual Private Network.

Data Quality

Data was checked for sight imbalances and sights across areas with intense solar radiation. Collimation checks prior to commencement of work on each day ensured accurate raw data.

Adjustment

The adjustment software Star*Lev, version 1.30 was used for the level network adjustment. NGS control stations N504 and EG2 were used to constrain the adjustment. These two stations have published values that are relative to the North American Vertical Datum of 1988 (NAVD88). No apparent blunders were present in the adjustment, and all statistics were found to be acceptable.

A copy of the final adjustment can be found in Appendix B of this report.

PROJECT RESULTS

Once benchmarks were established at each well site, differential level observations were made to determine the elevation of the well reference mark (set by SFWMD) and the top of the bolt set in the concrete slab (set by others). Appendix A contains a section for each well site. Within each of these sections there is 1) a benchmark description sheet, 2) well site photographs, 3) level run adjustment computations, and 4) field notes.

The benchmark description sheet describes the well site benchmark that was found or set, lists the newly established coordinates and elevations of the benchmark, and how to reach the benchmark. The field notes contain the elevations of the well reference marks. The chart below also shows the elevations required to calibrate the recorders.

FPDA2	Benchmark Elevation	Well Reference Mark Elevation	Top of Bolt in concrete
NAVD88	4.66	7.88	4.65
NGVD29	6.25	9.47	6.24

FPDA3	Benchmark Elevation	Well Reference Mark Elevation	Top of Bolt in concrete
NAVD88	3.49	6.76	3.50
NGVD29	5.08	8.35	5.09

FPDA7	Benchmark Elevation	Well Reference Mark Elevation	Top of Bolt in concrete
NAVD88	3.09	6.42	3.19
NGVD29	4.68	8.01	4.78

FPDA8	Benchmark Elevation	Well Reference Mark Elevation	Top of Bolt in concrete
NAVD88	4.77	8.20	4.89
NGVD29	6.36	9.79	6.48

SURVEYOR'S CERTIFICATION

In my professional opinion, this report of survey meets applicable portions of the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code. This report is prepared for the sole and specific use of the South Florida Water Management District and is not assignable. This report is not valid without the signature and the original raised seal of a Florida licensed surveyor and mapper.

Whidden Surveying & Mapping, Inc.
Authorization Number LB-7232

10/24/2011
Date of Survey

By: _____
Thomas E. Whidden
Professional Surveyor and Mapper
State of Florida
License Number LS-6225

APPENDIX A

- Benchmark Description Sheets
- Site Photographs
- Field Notes

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY Miami-Dade	**PROJECT** Frog Pond Levels	**DESIGNATION** FPDA2
SECTION 30	**TOWNSHIP** 57 S	**RANGE** 38 E

GEOGRAPHIC INDEX OF QUAD

Established by Whidden Surveying & Mapping, Inc. _____ **Recovered by**	**NAME OF QUADRANGLE** ROYAL PALM RANGER STATION
SURVEYOR C. LINDSTEDT **DATE** 10/24/11	**FIELD BOOK** W109 **PAGES** 2-9

HORIZONTAL DATUM: **1927** (**1983**) **Other**_____ (circle one) ZONE (**E**) or **W**

VERTICAL DATUM: MSL (**1929**) (**1988**) **Other** _____ (circle one)

CONTROL ACCURACY: HORIZONTAL 1 2 (3) +/-3M (circle one) **VERTICAL 1 2 (3)**

STATE PLANE COORDINATES	**X 799619.28**	**Y 402478.84**	**EL. 6.19 FEET (29)** **EL 4.66FEET (88)**

LATITUDE N 25º26'24.810" **LONGITUDE W 80º 33'55.030"**

DESCRIPTION

To Reach:

THE MARK IS ABOUT 6 MILES SOUTHWEST OF FLORIDA CITY IN SECTION 30, TOWNSHIP 57 SOUTH, RANGE 38 EAST.

TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND PALM DRIVE (SW. 3 STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 27, SW. 3 STREET) FOR 1.7 MILES TO THE INTERSECTION OF TOWER ROAD (SW 192ND AVENUE), TURN LEFT ON TOWER ROAD (STATE ROAD 27, SW 192 AVENUE) AND GO SOUTH FOR 2.1 MILES TO THE JUNCTION OF SW. 376 STREET (STATE ROAD 27) ON THE RIGHT, TURN RIGHT ON SW. 376 STREET (STATE ROAD 27) AND GO WEST FOR 4.05 MILES TO A BRIDGE WITH A WATER CONTROL GATE (C-111 CANAL). TURN RIGHT ONTO THE SHELLROCK ROAD RUNNING ALONG THE WEST SIDE OF THE C-111 CANAL AND GO NORTH, THROUGH A SFWMD LOCKED GATE WITH A "D" LOCK, FOR 2.50 MILES TO A 10' TALL YELLOW STEEL "I" BEAM ON THE WEST MARKING A GRASS TRAIL LEADING WEST, FOLLOW TRAIL 0.34 MILE TO THE WELL SITE AND THE BENCHMARK:

THE MARK IS A STAINLESS STEEL ROD DRIVEN TO REFUSAL AND A 3" ALUMINUM SFWMD DISK STAMPED "FPDA 2 2011" AND A 4" PVC SLEEVE. LOCATED AT THE NW CORNER OF THE CONCRETE PAD ENCASING THE WELL. A CARSONITE STAKE WAS PLACED 1' NORTH.


SOUTH FLA. WATER MANAGEMENT DIST.
SURVEY
F 2011
FPDA 2
MARKER

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY Miami-Dade	**PROJECT** Frog Pond Levels	**DESIGNATION** FPDA3
SECTION 31	**TOWNSHIP** 57 S	**RANGE** 38 E

GEOGRAPHIC INDEX OF QUAD

Established by Whidden Surveying & Mapping, Inc. _____ **Recovered by**	**NAME OF QUADRANGLE** ROYAL PALM RANGER STATION
SURVEYOR C. LINDSTEDT **DATE** 10/24/11	**FIELD BOOK** W109 **PAGES** 2-9

HORIZONTAL DATUM: **1927** (**1983**) **Other**_____ (circle one) ZONE (**E**) or **W**

VERTICAL DATUM: MSL (**1929**) (**1988**) **Other** _____ (circle one)

CONTROL ACCURACY: HORIZONTAL 1 2 (3) +/-3M (circle one) **VERTICAL 1 2 (3)**

STATE PLANE COORDINATES	**X 800295.14**	**Y 397066.45**	**EL. 5.01 FEET (29)** **EL 3.49 FEET (88)**

LATITUDE N 25 º 25'31.176" **LONGITUDE W 80º33'47.850"**

DESCRIPTION

To Reach:

THE MARK IS ABOUT 6 MILES SOUTHWEST OF FLORIDA CITY IN SECTION 31, TOWNSHIP 57 SOUTH, RANGE 38 EAST.

TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND PALM DRIVE (SW. 3 STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 27, SW. 3 STREET) FOR 1.7 MILES TO THE INTERSECTION OF TOWER ROAD (SW 192ND AVENUE), TURN LEFT ON TOWER ROAD (STATE ROAD 27, SW 192 AVENUE) AND GO SOUTH FOR 2.1 MILES TO THE JUNCTION OF SW. 376 STREET (STATE ROAD 27) ON THE RIGHT, TURN RIGHT ON SW. 376 STREET (STATE ROAD 27) AND GO WEST FOR 4.05 MILES TO A BRIDGE WITH A WATER CONTROL GATE (C-111 CANAL). TURN RIGHT ONTO THE SHELLROCK ROAD RUNNING ALONG THE WEST SIDE OF THE C-111 CANAL AND GO NORTH, THROUGH A SFWMD LOCKED GATE WITH A "D" LOCK, FOR 1.48 MILES TO A 10' TALL YELLOW STEEL "I" BEAM ON THE WEST MARKING A GRASS TRAIL LEADING WEST, FOLLOW TRAIL 0.22 MILE TO THE WELL SITE AND THE BENCHMARK:

THE MARK IS A STAINLESS STEEL ROD DRIVEN TO REFUSAL AND A 3" ALUMINUM SFWMD DISK STAMPED "FPDA 3 2011" AND A 4" PVC SLEEVE. LOCATED AT THE NW CORNER OF THE CONCRETE PAD ENCASING THE WELL. A CARSONITE STAKE WAS PLACED 1' NORTH


FLA. WATER MANAGEMENT DIST
SURVEY
FPDA
2011
MARKER

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY Miami-Dade	**PROJECT** Frog Pond Levels	**DESIGNATION** FPDA7
SECTION 06	**TOWNSHIP** 58 S	**RANGE** 38 E

GEOGRAPHIC INDEX OF QUAD

Established by Whidden Surveying & Mapping, Inc. _____ **Recovered by**	**NAME OF QUADRANGLE** ROYAL PALM RANGER STATION
SURVEYOR C. LINDSTEDT **DATE** 10/24/11	**FIELD BOOK** W109 **PAGES** 2-9

HORIZONTAL DATUM: **1927** (**1983**) **Other**_____ (circle one) ZONE (**E**) or **W**

VERTICAL DATUM: MSL (**1929**) (**1988**) **Other** _____ (circle one)

CONTROL ACCURACY: HORIZONTAL 1 2 (3) +/-3M (circle one) **VERTICAL 1 2 (3)**

STATE PLANE COORDINATES	**X 798109.24**	**Y 389187.95**	**EL. 4.61 FEET (29)** **EL 3.09 FEET (88)**

LATITUDE N 25 º 24'13.207" **LONGITUDE W 80º34'11.970"**

DESCRIPTION

To Reach:

THE MARK IS ABOUT 6 MILES SOUTHWEST OF FLORIDA CITY IN SECTION 31, TOWNSHIP 57 SOUTH, RANGE 38 EAST.

TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND PALM DRIVE (SW. 3 STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 27, SW. 3 STREET) FOR 1.7 MILES TO THE INTERSECTION OF TOWER ROAD (SW 192ND AVENUE), TURN LEFT ON TOWER ROAD (STATE ROAD 27, SW 192 AVENUE) AND GO SOUTH FOR 2.1 MILES TO THE JUNCTION OF SW. 376 STREET (STATE ROAD 27) ON THE RIGHT, TURN RIGHT ON SW. 376 STREET (STATE ROAD 27) AND GO WEST FOR 4.50 MILES TO SOUTHWEST 232ND AVENUE (GRASS ROAD), GO NORTH THROUGH A SFWMD YELLOW GATE WITH A "D" LOCK FOR 0.18 MILE TO A 10' TALL YELLOW STEEL "I" BEAM ON THE EAST MARKING A GRASS TRAIL LEADING WEST, FOLLOW TRAIL 0.26 MILE TO THE WELL SITE AND THE BENCHMARK:

THE MARK IS A STAINLESS STEEL ROD DRIVEN TO REFUSAL AND A 3" ALUMINUM SFWMD DISK STAMPED "FPDA 7 2011" AND A 4" PVC SLEEVE. LOCATED AT THE NW CORNER OF THE CONCRETE PAD ENCASING THE WELL. A CARSONITE STAKE WAS PLACED 1' NORTH.


SO. FLA. WATER MANAGEMENT DIST.
SURVEY
EPDAE
2041
MARKED

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY Miami-Dade	**PROJECT** Frog Pond Levels	**DESIGNATION** FPDA8
SECTION 36	**TOWNSHIP** 57 S	**RANGE** 37 E

GEOGRAPHIC INDEX OF QUAD

Established by Whidden Surveying & Mapping, Inc. _____ **Recovered by**	**NAME OF QUADRANGLE** ROYAL PALM RANGER STATION
SURVEYOR C. LINDSTEDT **DATE** 10/24/11	**FIELD BOOK** W109 **PAGES** 2-9

HORIZONTAL DATUM: **1927** (**1983**) **Other**_____ (circle one) ZONE (**E**) or **W**

VERTICAL DATUM: MSL (**1929**) (**1988**) **Other** _____ (circle one)

CONTROL ACCURACY: HORIZONTAL 1 2 (3) +/-3M (circle one) **VERTICAL 1 2 (3)**

STATE PLANE COORDINATES	**X 796607.57**	**Y 395469.56**	**EL. 6.29 FEET (29)** **EL 4.77 FEET (88)**

LATITUDE N 25 º 25'15.477" **LONGITUDE W 80º34'28.129"**

DESCRIPTION

To Reach:

THE MARK IS ABOUT 6 MILES SOUTHWEST OF FLORIDA CITY IN SECTION 36, TOWNSHIP 57 SOUTH, RANGE 37 EAST.

TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 1 AND PALM DRIVE (SW. 3 STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 27, SW. 3 STREET) FOR 1.7 MILES TO THE INTERSECTION OF TOWER ROAD (SW 192ND AVENUE), TURN LEFT ON TOWER ROAD (STATE ROAD 27, SW 192 AVENUE) AND GO SOUTH FOR 2.1 MILES TO THE JUNCTION OF SW. 376 STREET (STATE ROAD 27) ON THE RIGHT, TURN RIGHT ON SW. 376 STREET (STATE ROAD 27) AND GO WEST FOR 4.05 MILES TO A BRIDGE WITH A WATER CONTROL GATE (C-111 CANAL). TURN RIGHT ONTO THE SHELLROCK ROAD RUNNING ALONG THE WEST SIDE OF THE C-111 CANAL AND GO NORTH, THROUGH A SFWMD LOCKED GATE WITH A "D" LOCK, FOR 1.02 MILES TO A SHELLROCK ROAD LEADING WEST (SW 376TH STREET) PROCEED WEST FOR 0.82 MILE CROSSING STRUCTURE S-201 TO A "Y" IN THE ROAD PROCEED NORTHERLY FOR 0.23 MILE TO THE MARK ON THE LEFT.

THE MARK IS A STAINLESS STEEL ROD DRIVEN TO REFUSAL AND A 3" ALUMINUM SFWMD DISK STAMPED "FPDA 8 2011" AND A 4" PVC SLEEVE. LOCATED AT THE NW CORNER OF THE CONCRETE PAD ENCASING THE WELL. A CARSONITE STAKE WAS PLACED 1' NORTH.


SO. FLA. WATER MANAGEMENT DIST.
SURVEY
MARKER


SO. FLA. WATER MANAGEMENT DIST.
SURVEY
PDA 2
2011
MARKER


BLS
BASE LINE LAND SURVEYORS


MARKER
WATER MANAGEMENT DIST. FLA.
SURVEY
FDOT A 8


S.F.W.M.D.
WATER MANAGEMENT DIST.
SURVEY
FF
FPDA2
MARKER


WATER MANAGEMENT DIST.
SO. FLA.
D A 3
T 3

FROG POND LEVELS

LEVEL RUN TO ESTABLISH NEW BENCHMARKS AT FOUR NEW MONITORING STATIONS IN FROG POND

EQUIPMENT: TRIMBLE DINI22 DIGITAL LEVEL

STA	(NAVD88) ELEV.	COMMENTS
1000 EG 2	9.11'	PID AB2362 F.D.O.T. IN BRIDGE
1001 TP 11	4.936'	SET 120D SPIKE IN SHELLROCK 150' +/- SOUTH OF SHELLROCK ROAD LEADING WEST.
1002 TP 14	4.912'	SET 5/8" IRON ROD
1003 TP 17	4.404'	SET 120D SPIKE 270' NO. OF GROSS ROAD LEADING TO FP 3
1004 TP 22	5.127'	SET 120 D SPIKE @ GROSS ROAD LEADING WEST TO FP 2

TW
CL
NC

9-26-11

W-109/2

FROG POND LEVELS

STA	ELEV	COMMENTS
1005 TP 25	4.603'	SET 5/8" IRON ROD 0.5MI SOUTH OF STRUCTURE S-200 ON W. EDGE OF C-111 ROAD
1004 TP 32	9.827'	2" ALUMINUM SFWMD DISK SET IN SW COR OF STRUCTURE S-200
1009 TP 39	4.639' ~~4.634~~	5/8 ROD DRIVEN TO REFUSAL WITH PVC COLLAR AT WELLSITE FPDA 2
1008 TP 66	4.166'	SET 120d SPIKE @ ROAD LEADING SOUTH TO FRA7
1010 TP 69	9.254 (1001) 8.326	SET 120d SPIKE
1004 TP 76	6.956	6.897

TWD
CL
NC

9-27-11

W-109/3

FROG POND LEVELS

TW
CL
NC

9-27-11

W-109/4

STA	ELEV	COMMENTS
1008 TP 16	4.166 (4.217)	120c SPIKE IN SHELL ROAD
1012 TP 15	3.932 (3.989)	SET SS ROD TO REFUSAL WITH 6FWMD ALUM DISK STAMPED FPDA7
1003 TP 17	4.404 ✓	
~~1003~~ 1003 TP 5	3.980 ✓	SET SS ROD TO REFUSAL W/ 6FWMD ALUM DISK STAMPED FPDA3

FROG POND LEVELS

LINE 1011

STA	ELEV	COMMENT
1010 TP 69	1000	(9.25 / 8.32 G)
1013	995.63 (4.88)	REF BOLT @ FPDA8
1014	999.086	SF WMD DISK IN NW COR HEADWALL FOR S-201 (8.31 NAVD88) Stamped 9.90 (NGVD29) S-201

TW
CL
NC

9-28-11

W-109/5

KB8962

4 KB8962

FROG POND LEVELS

SECTION 30 TWP 57S RGE 38E

FPDA 2

LINE 1008

STA	ELEV	COMMENT
1007	~~4.484~~ 4.61	SECOND BENCHMARK FPDA7.
~~100~~ 101	~~4.016~~ 4.65	REF BOLT IN CONC.
~~10~~ 100	~~7.855~~ 7.82	TOP OF PVC WELL

TW
CL
NE

9-22-11

W-109/6

6.13 (29 USING CORDSCON)

4.6465R

FROG POND LEVELS

SECTION 31 TWP 57 S RGE 38 E

FPDA3

10.5
10.8

~~3.480~~
3.49 SQUARE DISK

107 ~~6.785~~
6.73 TOP OF PVC WELL

103 ~~3.495~~
3.48 REF BOLT

TW
CL
NL

9-29-11

W-109/7

3.49337

5.00 (NGVD 29) CORPSCON

FROG POND LEVELS

SECTION 36 TWP 57 S RGE 37E

FPDA 8

LINE 1013

STA	ELEV	COMMENT
1013	~~4.88~~ ~~995.05~~ 4.89	REF BOLT
~~1015~~ HELD 1014	~~995.507~~ 4.77	STAMPED ALUM DISK ON SS ROD DRIVEN TO REFUSAL STAMPED "FPDA8"
1017 FOUND	~~998.745~~ 8.20	TOP OF WELL FPDA8

TW
CL
NC

9-29-11

W-109/B

4.88962

6.28 (NGVD 29) CORPSCON

FROG POND LEVELS

SECTION 6, TWP 58 S, RGE 32 E

FPDA7

STA	ELEV	COMMENT
		LINE 1014
1012	~~3.032~~ 3.09	SS ROD DRIVEN TO REFUSE W/ SEWMS ALUMINUM DISK STAMPED "FDPA7"
105	~~3.299~~ 3.19	BOLT IN CONC.
104	~~6.477~~ 6.42	TOP OF WELL

TW
CL
NC

9-29-11

W-109/9

4.60 (NGVD29)/CORPSCON)

3.09372

APPENDIX B

- GPS Network Adjustment Report
- NGS Data Sheets

STAR*LEV Adjustment Program

Licensed for Use by Harding ESE
Serial Number 21987

STAR*LEV Version 1.30
Run Date : Thu Sep 29 15:13:10 2011

Summary of Files Used

Input Data File	: c111bm.dat
Output Listing (This File)	: c111bm.lst
Adjusted Elevations	: c111bm.pts
Project Options	: c111bm.prj
Error Log	: c111bm.err

Summary of Options Used

Type of Run was Adjustment and Error Propagation

Print Input Data File	: Yes
Print Summary of All Input Observations	: Yes
Default Standard Error for Elevations	: FIXED
Section Length Units	: Feet
Default Std Error for Diff in Elevations	: 0.030000 Feet/Mile

Listing of Input Data File

```
[   1] # STAR*DINI Version 1.06
[   2] # Copyright STARPLUS SOFTWARE, INC. 1997-2000
[   3] # Raw Field File: C111.TXT
[   4] E 1000 9.11 ! EG2
[   5] E 1011 6.89 ! N504
[   6] # Elevation Difference Records
[   7] # Station                              Diff       Dist  Descriptor
[   8] V 1000-1001                          -4.17400    5336
[   9] V 1001-1002                          -0.02400    1502
[  10] V 1002-1003                          -0.50800    1500
[  11] V 1003-1004                           1.32400    2523
[  12] V 1004-1005                          -1.12400    1518
[  13] V 1005-29                             0.65600    1498
[  14] V 29-1006                             4.56700    1181
[  15] V 1006-1007                          -5.18700    3350
[  16] V 1007-1008                          -0.47200   12248
[  17] V 1008-1012                          -1.13500    7069
[  18] V 1012-1000                           6.00800    5059
[  19] V 1008-1010                           5.03900    2123
[  20] V 1010-1011                          -2.36600    2782
[  21] #SITE
[  22] V 1003-1015                          -0.92400    1460
[  23] V 1015-1003                           0.92400    1451
[  24] V 1007-100                            3.21400      33
[  25] V 1007-100                            3.21300      33
[  26] V 1007-101                           -0.02300      31
[  27] V 1007-101                           -0.02300      31
[  28] V 1015-102                            3.26300      31
[  29] V 1015-102                            3.26300      31
[  30] V 1015-103                            0.00500      32
[  31] V 1015-103                            0.00500      32
[  32] V 1010-1013                          -4.37000    1374
[  33] V 1013-1014                           3.45700    1206
[  34] V 1014-1010                           0.90600     148
[  35] V 1013-1016                          -0.12200      33
[  36] V 1016-1017                           3.43700      31
[  37] V 1017-1013                          -3.31500      34
[  38] V 1012-105                            3.44600      88
[  39] V 1012-106                            0.21800      86
```

Network has 2 fixed elevation stations

Note: Information in red is not part of the original report.
20-may-15 HJE

Summary of All Unadjusted Input Observations

Number of Stations with Elevations = 24

Station	Elevation	Std Error	Description
1000	9.11000	FIXED	
1011	6.89000	FIXED	
1001	4.93600	*	
1002	4.91200	*	
1003	4.40400	*	
1004	5.72800	*	
1005	4.60400	*	
29	5.26000	*	
1006	9.82700	*	
1007	4.64000	*	
1008	4.16800	*	
1012	3.03300	*	
1010	9.20700	*	
1015	3.48000	*	
100	7.85400	*	
101	4.61700	*	
102	6.74300	*	
103	3.48500	*	
1013	4.83700	*	
1014	8.29400	*	
1016	4.71500	*	
1017	8.15200	*	
105	6.47900	*	
106	3.25100	*	

Number of Differences in Elevation = 31

At	To	Elev Diff	Length Feet	StdErr
1000	1001	-4.17400	5336.00	0.03016
1001	1002	-0.02400	1502.00	0.01600
1002	1003	-0.50800	1500.00	0.01599
1003	1004	1.32400	2523.00	0.02074
1004	1005	-1.12400	1518.00	0.01609
1005	29	0.65600	1498.00	0.01598
29	1006	4.56700	1181.00	0.01419
1006	1007	-5.18700	3350.00	0.02390
1007	1008	-0.47200	12248.00	0.04569
1008	1012	-1.13500	7069.00	0.03471
1012	1000	6.00800	5059.00	0.02937
1008	1010	5.03900	2123.00	0.01902
1010	1011	-2.36600	2782.00	0.02178
1003	1015	-0.92400	1460.00	0.01578
1015	1003	0.92400	1451.00	0.01573
1007	100	3.21400	33.00	0.00237
1007	100	3.21300	33.00	0.00237

1007	101	-0.02300	31.00	0.00230
1007	101	-0.02300	31.00	0.00230
1015	102	3.26300	31.00	0.00230
1015	102	3.26300	31.00	0.00230
1015	103	0.00500	32.00	0.00234
1015	103	0.00500	32.00	0.00234
1010	1013	-4.37000	1374.00	0.01530
1013	1014	3.45700	1206.00	0.01434
1014	1010	0.90600	148.00	0.00502
1013	1016	-0.12200	33.00	0.00237
1016	1017	3.43700	31.00	0.00230
1017	1013	-3.31500	34.00	0.00241
1012	105	3.44600	88.00	0.00387
1012	106	0.21800	86.00	0.00383

Adjustment Results

Updated Elevations and Changes from Initial Estimates

Station		Elevation	Change	Description
1000	EG2	9.11000	-0.00000	
1011	N504	6.89000	0.00000	
1001		4.94456	0.00856	
1002		4.92297	0.01097	
1003		4.41737	0.01337	
1004		5.74542	0.01742	
1005		4.62385	0.01985	
29		5.28225	0.02225	
1006	S200	9.85115	0.02415	
1007	FPDA2	4.66952	0.02952	
1008		4.21716	0.04916	
1012	FPDA7	3.09372	0.06072	
1010		9.25609	0.04909	
1015	FPDA3	3.49337	0.01337	
100		7.88302	0.02902	
101		4.64652	0.02952	
102		6.75637	0.01337	
103		3.49837	0.01337	
1013	S201	4.88962	0.05262	
1014		8.34971	0.05571	
1016	FPDA8	4.76762	0.05262	
1017		8.20462	0.05262	
105		6.53972	0.06072	
106		3.31172	0.06072	

Statistical Summary

Number of Observations = 31
Number of Unknowns = 22
Degrees of Freedom = 9

Data Type	Count	Weighted Residuals	Error Factor
Stations	24	0.00	0.00
Diff Elev	31	0.85	0.31
Total	55	0.85	0.31

Adjustment passes the Chi Square test at 5% level

Note: Information in red is not part of the original report. 20-may-15 HJE

Adjusted Elevation Difference Observations and Residuals

At	To	Adjusted Obs	Residual	StdErr	StdRes
1000	1001	-4.16544	0.00856	0.03016	0.3
1001	1002	-0.02159	0.00241	0.01600	0.2
1002	1003	-0.50559	0.00241	0.01599	0.2
1003	1004	1.32805	0.00405	0.02074	0.2
1004	1005	-1.12157	0.00243	0.01609	0.2
1005	29	0.65840	0.00240	0.01598	0.2
29	1006	4.56889	0.00189	0.01419	0.1
1006	1007	-5.18163	0.00537	0.02390	0.2
1007	1008	-0.45236	0.01964	0.04569	0.4
1008	1012	-1.12344	0.01156	0.03471	0.3
1012	1000	6.01628	0.00828	0.02937	0.3
1008	1010	5.03893	-0.00007	0.01902	0.0
1010	1011	-2.36609	-0.00009	0.02178	0.0
1003	1015	-0.92400	0.00000	0.01578	0.0
1015	1003	0.92400	-0.00000	0.01573	0.0
1007	100	3.21350	-0.00050	0.00237	0.2
1007	100	3.21350	0.00050	0.00237	0.2
1007	101	-0.02300	0.00000	0.00230	0.0
1007	101	-0.02300	0.00000	0.00230	0.0
1015	102	3.26300	-0.00000	0.00230	0.0
1015	102	3.26300	-0.00000	0.00230	0.0
1015	103	0.00500	-0.00000	0.00234	0.0
1015	103	0.00500	-0.00000	0.00234	0.0
1010	1013	-4.36647	0.00353	0.01530	0.2

1013	1014	3.46009	0.00309	0.01434
0.2				
1014	1010	0.90638	0.00038	0.00502
0.1				
1013	1016	-0.12200	-0.00000	0.00237
0.0				
1016	1017	3.43700	0.00000	0.00230
0.0				
1017	1013	-3.31500	0.00000	0.00241
0.0				
1012	105	3.44600	-0.00000	0.00387
0.0				
1012	106	0.21800	-0.00000	0.00383
0.0				

Error Propagation

Station Elevation Standard Deviations

Station	Elevation	StdDev	Description
1000	9.11000	0.00000	
1011	6.89000	0.00000	
1001	4.94456	0.02770	
1002	4.92297	0.03053	
1003	4.41737	0.03278	
1004	5.74542	0.03553	
1005	4.62385	0.03668	
29	5.28225	0.03747	
1006	9.85115	0.03788	
1007	4.66952	0.03803	
1008	4.21716	0.02312	
1012	3.09372	0.02441	
1010	9.25609	0.01942	
1015	3.49337	0.03462	
100	7.88302	0.03807	
101	4.64652	0.03807	
102	6.75637	0.03465	
103	3.49837	0.03466	
1013	4.88962	0.02221	
1014	8.34971	0.02003	
1016	4.76762	0.02230	
1017	8.20462	0.02230	
105	6.53972	0.02471	
106	3.31172	0.02470	

Elapsed time = 00:00:00

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.87.4.2
1        National Geodetic Survey,   Retrieval Date = OCTOBER 26, 2011
 AB2362 ***********************************************************************
 AB2362  DESIGNATION -  EG 2
 AB2362  PID         -  AB2362
 AB2362  STATE/COUNTY-  FL/MIAMI-DADE
 AB2362  USGS QUAD   -  ROYAL PALM RANGER STATION (1979)
 AB2362
 AB2362                        *CURRENT SURVEY CONTROL
 AB2362  ______________________________________________________________________
 AB2362* NAD 83(2007)-  25 24 13.19515(N)    080 33 29.56550(W)     ADJUSTED
 AB2362* NAVD 88     -         2.777  (meters)       9.11   (feet)  ADJUSTED
 AB2362  ______________________________________________________________________
 AB2362  EPOCH DATE  -        2002.00
 AB2362  X           -     945,714.475 (meters)                     COMP
 AB2362  Y           -  -5,686,854.831 (meters)                     COMP
 AB2362  Z           -   2,719,525.050 (meters)                     COMP
 AB2362  LAPLACE CORR-          -2.84  (seconds)                    DEFLEC09
 AB2362  ELLIP HEIGHT-         -21.723 (meters)          (02/10/07) ADJUSTED
 AB2362  GEOID HEIGHT-         -24.50  (meters)                     GEOID09
 AB2362  DYNAMIC HT  -           2.773 (meters)       9.10  (feet)  COMP
 AB2362
 AB2362  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 AB2362  Type    PID    Designation                       North   East  Ellip
 AB2362  ----------------------------------------------------------------------
 AB2362  NETWORK AB2362 EG 2                               2.69   2.69   4.84
 AB2362  ----------------------------------------------------------------------
 AB2362  MODELED GRAV-     978,980.6   (mgal)                       NAVD 88
 AB2362
 AB2362  VERT ORDER  -  FIRST     CLASS II
 AB2362
 AB2362.The horizontal coordinates were established by GPS observations
 AB2362.and adjusted by the National Geodetic Survey in February 2007.
 AB2362
 AB2362.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AB2362.See National Readjustment for more information.
 AB2362.The horizontal coordinates are valid at the epoch date displayed above.
 AB2362.The epoch date for horizontal control is a decimal equivalence
 AB2362.of Year/Month/Day.
 AB2362
 AB2362.The orthometric height was determined by differential leveling and
 AB2362.adjusted in April 1996.
 AB2362
 AB2362.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AB2362
 AB2362.The Laplace correction was computed from DEFLEC09 derived deflections.
 AB2362
 AB2362.The ellipsoidal height was determined by GPS observations
 AB2362.and is referenced to NAD 83.
 AB2362
 AB2362.The geoid height was determined by GEOID09.
 AB2362
```

```
AB2362.The dynamic height is computed by dividing the NAVD 88
AB2362.geopotential number by the normal gravity value computed on the
AB2362.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AB2362.degrees latitude (g = 980.6199 gals.).
AB2362
AB2362.The modeled gravity was interpolated from observed gravity values.
AB2362
AB2362;                    North         East     Units Scale Factor Converg.
AB2362;SPC FL E     -   118,628.236   244,449.324   MT  0.99996557   +0 11 22.3
AB2362;SPC FL E     -   389,199.47    801,997.49   sFT  0.99996557   +0 11 22.3
AB2362;UTM  17      - 2,809,719.742   544,434.158   MT  0.99962438   +0 11 22.3
AB2362
AB2362!             -  Elev Factor  x  Scale Factor =   Combined Factor
AB2362!SPC FL E     -   1.00000341  x   0.99996557  =   0.99996898
AB2362!UTM  17      -   1.00000341  x   0.99962438  =   0.99962779
AB2362
AB2362                          SUPERSEDED SURVEY CONTROL
AB2362
AB2362  NAD 83(1999)-  25 24 13.19519(N)    080 33 29.56555(W) AD(       ) 1
AB2362  ELLIP H (12/12/02)  -21.711  (m)                       GP(       ) 4 1
AB2362  NAVD 88 (12/12/02)    2.78   (m)            9.1    (f) LEVELING    3
AB2362
AB2362.Superseded values are not recommended for survey control.
AB2362.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AB2362.See file dsdata.txt to determine how the superseded data were derived.
AB2362
AB2362_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ4443409719(NAD 83)
AB2362_MARKER: DD = SURVEY DISK
AB2362_SETTING: 36 = SET IN A MASSIVE STRUCTURE
AB2362_SP_SET: BRIDGE CURB
AB2362_STAMPING: EG 2
AB2362_MARK LOGO: FLDT
AB2362_MAGNETIC: N = NO MAGNETIC MATERIAL
AB2362_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AB2362_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AB2362+SATELLITE: SATELLITE OBSERVATIONS - December 09, 2009
AB2362
AB2362  HISTORY     - Date     Condition        Report By
AB2362  HISTORY     - UNK      MONUMENTED       FLDT
AB2362  HISTORY     - 19940916 GOOD             FLDEP
AB2362  HISTORY     - 20020523 GOOD             MAPTEC
AB2362  HISTORY     - 20030930 GOOD             WEIDEN
AB2362  HISTORY     - 20081002 GOOD             GCT
AB2362  HISTORY     - 20091209 GOOD             DCPWD
AB2362
AB2362                          STATION DESCRIPTION
AB2362
AB2362'DESCRIBED BY FL DEPT OF ENV PRO 1994 (LGB)
AB2362'THE MARK IS ABOUT 5.7 MI (9.2 KM) SOUTHWEST OF FLORIDA CITY IN SECTION
AB2362'6, TOWNSHIP 58 SOUTH, RANGE 38 EAST. TO REACH THE MARK FROM THE
AB2362'INTERSECTION OF U.S.  HIGHWAY 1 AND PALM DRIVE (SW.  3 STREET) IN
AB2362'FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 27, SW.  3 STREET) FOR
AB2362'1.7 MI (2.7 KM) TO THE INTERSECTION OF TOWER ROAD (SW.  192 AVENUE) ,
AB2362'TURN LEFT ON TOWER ROAD (STATE ROAD 27, SW 192 AVENUE) AND GO SOUTH
AB2362'FOR 2.1 MI (3.4 KM) TO THE JUNCTION OF SW.  376 STREET (STATE ROAD 27)
AB2362'ON THE RIGHT, TURN RIGHT ON SW. 376 STREET (STATE ROAD 27) AND GO WEST
AB2362'FOR 4.05 MI (6.52 KM) TO A BRIDGE WITH A WATER CONTROL GATE AND THE
AB2362'MARK ON THE RIGHT, SET FLUSH IN THE NORTHEAST CORNER OF THE BRIDGE
AB2362'CURB AND 1.2 FT (0.4 M) ABOVE THE LEVEL OF SW.  376 STREET (STATE ROAD
```

AB2362'27) . LOCATED 103.2 FT (31.5 M) EAST OF THE WEST END OF THE CONCRETE
AB2362'BRIDGE GAURDRAIL, 23.2 FT (7.1 M) NORTH OF THE APPROXIMATE CENTERLINE
AB2362'OF SW. 376 STREET (STATE ROAD 27) AND 4.5 FT (1.4 M) WEST OF THE EAST
AB2362'END OF THE CONCRETE BRIDGE GAURDRAIL.
AB2362
AB2362 STATION RECOVERY (2002)
AB2362
AB2362'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)
AB2362'RECOVERED AS DESCRIBED.
AB2362'
AB2362
AB2362 STATION RECOVERY (2003)
AB2362
AB2362'RECOVERY NOTE BY WEIDENER SURVEYING AND MAPPING 2003 (MM)
AB2362'RECOVERED AS DESCRIBED
AB2362
AB2362 STATION RECOVERY (2008)
AB2362
AB2362'RECOVERY NOTE BY GUSTIN, COTHERN, AND TUCKER, I 2008
AB2362'RECOVERED IN GOOD CONDITION.
AB2362
AB2362 STATION RECOVERY (2009)
AB2362
AB2362'RECOVERY NOTE BY DADE COUNTY PUBLIC WORKS DEPARTMENT 2009 (MJW)
AB2362'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:01

From the NGS Adjustment file "ngvd29.txt" for the CERP Geodetic Vertical Control Project.
Line/Part: L26195 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID	SSN	PID	Designation	Geopotential	Elevation	Codes
845	0065	AJ8401	N 504	2.5335	2.5852	

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE = NGSIDB , PROGRAM = datasheet95, VERSION = 7.87.4.2
1        National Geodetic Survey,   Retrieval Date = OCTOBER 26, 2011
 AJ8401 ***********************************************************************
 AJ8401  DESIGNATION -  N 504
 AJ8401  PID         -  AJ8401
 AJ8401  STATE/COUNTY-  FL/MIAMI-DADE
 AJ8401  USGS QUAD   -  ROYAL PALM RANGER STATION (1979)
 AJ8401
 AJ8401                          *CURRENT SURVEY CONTROL
 AJ8401  ______________________________________________________________________
 AJ8401* NAD 83(1986)-  25 24 43.     (N)    080 34 26.     (W)     SCALED
 AJ8401* NAVD 88     -         2.100  (meters)       6.89   (feet)  ADJUSTED
 AJ8401  ______________________________________________________________________
 AJ8401  GEOID HEIGHT-          -24.48  (meters)                     GEOID09
 AJ8401  DYNAMIC HT  -            2.096 (meters)       6.88  (feet)  COMP
 AJ8401  MODELED GRAV-      978,981.3   (mgal)                       NAVD 88
 AJ8401
 AJ8401  VERT ORDER  -  FIRST     CLASS II
 AJ8401
 AJ8401.The horizontal coordinates were scaled from a topographic map and have
 AJ8401.an estimated accuracy of +/- 6 seconds.
 AJ8401
 AJ8401.The orthometric height was determined by differential leveling and
 AJ8401.adjusted in June 2002.
 AJ8401
 AJ8401.The geoid height was determined by GEOID09.
 AJ8401
 AJ8401.The dynamic height is computed by dividing the NAVD 88
 AJ8401.geopotential number by the normal gravity value computed on the
 AJ8401.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AJ8401.degrees latitude (g = 980.6199 gals.).
 AJ8401
 AJ8401.The modeled gravity was interpolated from observed gravity values.
 AJ8401
 AJ8401;                    North         East     Units  Estimated Accuracy
 AJ8401;SPC FL E     -   119,540.      242,870.      MT  (+/- 180 meters Scaled)
 AJ8401
 AJ8401                          SUPERSEDED SURVEY CONTROL
 AJ8401
 AJ8401.No superseded survey control is available for this station.
 AJ8401
 AJ8401_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ428106(NAD 83)
 AJ8401_MARKER: F = FLANGE-ENCASED ROD
 AJ8401_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
 AJ8401_STAMPING: N 504 2000
 AJ8401_MARK LOGO: NGS
 AJ8401_PROJECTION: FLUSH
 AJ8401_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET
 AJ8401_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
 AJ8401_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AJ8401+SATELLITE: SATELLITE OBSERVATIONS - 2000
 AJ8401_ROD/PIPE-DEPTH:  7.0 meters
```

AJ8401
AJ8401 HISTORY - Date Condition Report By
AJ8401 HISTORY - 2000 MONUMENTED FLDEP
AJ8401
AJ8401 STATION DESCRIPTION
AJ8401
AJ8401'DESCRIBED BY FL DEPT OF ENV PRO 2000 (JLM)
AJ8401'THE MARK IS ABOUT 7.0 MI (11.3 KM) WEST OF FLORIDA CITY 6.9 MI (11.1
AJ8401'KM) WEST OF HOMESTEAD, IN SECTION 6, TOWNSHIP 58 SOUTH, RANGE 38 EAST.
AJ8401'TO REACH THE MARK FROM THE INTERSECTION OF U.S. HIGHWAY 1 (SOUTH
AJ8401'DIXIE HIGHWAY) AND PALM DRIVE (STATE ROAD 9336, SOUTHWEST 344TH
AJ8401'STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 9336,
AJ8401'SOUTHWEST 344TH STREET) FOR 1.7 MI (2.7 KM) TO THE JUNCTION OF
AJ8401'SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) TURN LEFT ON
AJ8401'SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) AND GO SOUTH FOR
AJ8401'2.1 MI (3.4 KM) TO THE JUNCTION OF SOUTHWEST 376TH STREET (STATE ROAD
AJ8401'9336, INGRAHAM HIGHWAY) ON THE RIGHT, TURN RIGHT ON SOUTHWEST 376TH
AJ8401'STREET (STATE ROAD 9336, INGRAHAM HIGHWAY) AND GO WEST FOR 4.95 MI
AJ8401'(7.97 KM) TO THE EAST END OF BRIDGE NUMBER 870081 1969 SPANNING CANAL
AJ8401'31, TURN RIGHT ON THE LEVEE ROAD ON THE EAST SIDE OF CANAL 31 AND GO
AJ8401'NORTH FOR 1.0 MI (1.6 KM) TO THE MARK ON THE LEFT, A STAINLESS STEEL
AJ8401'ROD DRIVEN TO REFUSAL AT A DEPTH OF 22.9 FT (7.0 M) WITH A NGS LOGO
AJ8401'CAP FLUSH WITH THE GROUND AND LEVEL WITH THE LEVEE ROAD, THE DATUM
AJ8401'POINT IS RECESSED 0.7 FT (21.3 CM) BELOW THE LEVEL OF THE NGS LOGO
AJ8401'CAP. LOCATED 63.0 FT (19.2 M) WEST OF THE APPROXIMATE CENTERLINE OF
AJ8401'THE UPPER LEVEE ROAD, 22.4 FT (6.8 M) WEST OF THE APPROXIMATE
AJ8401'CENTERLINE OF THE LOWER LEVEE ROAD, 3.0 FT (0.9 M) EAST OF THE TOP OF
AJ8401'THE BANK OF THE CANAL AND 1.8 FT (0.5 M) EAST OF A CARSONITE WITNESS
AJ8401'POST. NOTE ACCESS TO THE DATUM POINT IS HAD THROUGH A 5-INCH NGS LOGO
AJ8401'CAP. NOTE A BAR MAGNET WAS INBEDDED IN THE NORTH SIDE OF THE MONUMENT.
AJ8401'NOTE FOR KEY CONTACT SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT 2195
AJ8401'NORTHEAST 8TH STREET HOMESTEAD, FL 33033, PHONE 305-242-5955.

*** retrieval complete.
Elapsed Time = 00:00:02