



## **SURVEYOR'S REPORT**

**Specific Purpose Survey of the  
United States Geological Survey  
Recorder Well G-2902  
in  
Broward County, Florida**

**Prepared for:**

### **South Florida Water Management District**

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West Palm Beach, Florida 33406  
Ph. (561) 686-8800 (ext. 2978)  
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**Prepared by:**

**William Donley, PSM**  
Florida Professional Surveyor and Mapper  
License Number 5381  
State of Florida

Dewberry Engineering, Inc. LB No 8011  
131 West Kaley Street, Orlando, FL. 32806  
Tel (321) 354-9826

Field Date: September 20, 2019  
Report Date: December 4, 2019  
PO NO: 9500008146

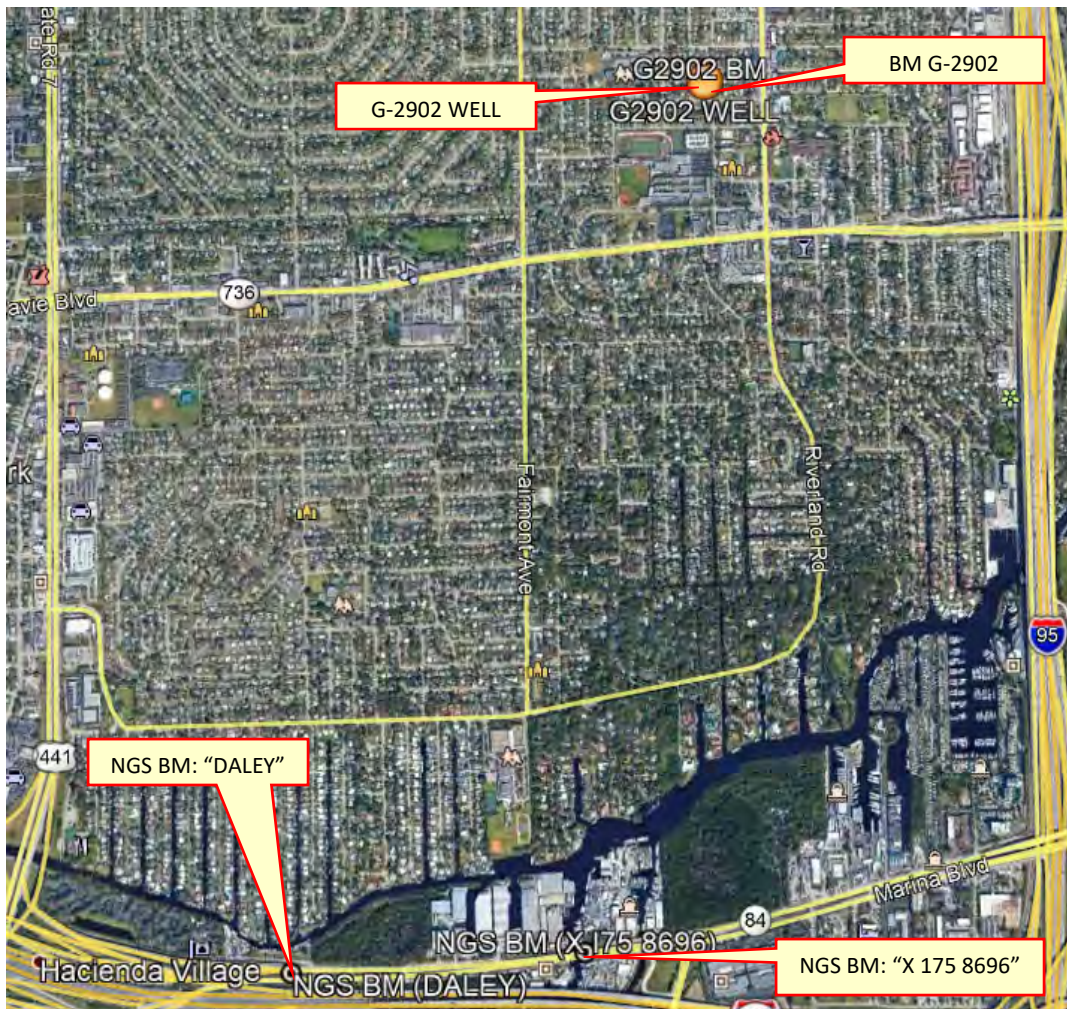
# SURVEYOR'S REPORT

## PURPOSE

The objective of this work order is to supply NAVD 88 elevations on the site benchmark, ground elevation at the site, well monitoring point and any USGS benchmarks at the site. In addition, horizontal positions of each well and benchmark need to be provided in the North American Datum of 1983.

## LOCATION OF PROJECT

The United States Geological Survey's Recorder Well **G-2902** is located in Section 8, Township 50 South, Range 42 East, Broward County, Florida.



**General Location (Intended Display scale is "Not to Scale")**

### **PROJECT VERTICAL DATUM**

The project vertical datum is the North American Vertical Datum (NAVD) of 1988.

To convert the NAVD 88 elevation to the National Geodetic Vertical Datum of 1929 at station **G-2902 (G2902 2019)**, add 1.59'. These values are based on Corpscon 6.0.1 a US. Army Corps of Engineers Engineering Research and Development Center Topographic Engineering Center Alexandria, Virginia Windows-based program to convert coordinates and elevations between datum's using vertcon05.txt and vertcon05.05 files supplied by the US. Army Corps of Engineers South Atlantic Division, Jacksonville, FL.

### **PROJECT HORIZONTAL DATUM**

All horizontal data shall be collected in and based on the North American Datum of 1983, 2011 adjustment (NAD 83/11). Horizontal coordinate control shall be established from existing National Geodetic Survey (NGS) 2<sup>nd</sup> Order control or higher in the area by using GPS, RTK GPS, network RTK GPS, or OPUS derived solutions.

### **LEVELING METHODS (Site Benchmark)**

The leveling for this project was performed in accordance with standard survey practice using conventional third order methods, techniques and equipment.

The allowable error (.02  $\sqrt{\text{miles}}$ ) on this project meets or exceeds third order closures as required by SFWMD for this project per executed SOW for 4600003706-WO03 and discussions with SFWMD.

A level loop was run from "TP19" (S.F.W.M.D. BM G-2904), through the Site BM **G-2902**, and closed on "TP19" (BM G-2904). G-2904 was established by running two (2) separate level loops:

- 1) The first level loop runs from NGS BM "Daley" (AJ8709), through "TP6" (Set Hub), and closes on NGS BM "X 175 8696" (AJ8700), verifying "TP6" (Set Hub).
- 2) The second level loop begins on "TP6" (Set Hub) from the previous level loop and runs through "TP19" (BM G-2904), then closes back on "TP6" (Set Hub), verifying the BM G-2904).

The measurements were collected using a Digital Level and were hand written in Whidden Surveying & Mapping, Inc. Field Book W 210 Pages 43-50, dated September 20, 2019 (G-2904 Field notes: Field Book 210, Pages 38-42 dated September 18, 2019), reduced and adjusted electronically. Additional data was manually recorded in the field book.

### **GPS METHODS (horizontal position of site benchmark)**

Latitude and Longitude for Benchmark G-2902 (G2902 2019) were established by observing a 3-minute session of GPS data on September 20, 2019 using a Trimble R-8-3 and The Florida Permanent Reference Network (FPRN). The FPRN network consists of nearly 100 Continuously Operating Reference Stations (CORS) located throughout Florida.

**EQUIPMENT USED**

- Trimble GPS unit R8-3 Serial #: 5213485282
- Trimble GPS unit R6-4 Serial #: 5307425789
- Dini Digital Level Serial #: 735642

**LEVELING METHODS (Site: ground elevation-well monitoring point- USGS benchmarks)**

A level loop was run from the previously established Site Benchmark G-2902 (G2902 2019), through USGS reference marks "RM 3" and "RM 1", through the ground shot north of the well casing (ground elevation), through the well monitoring point, and back to the Site Benchmark. The measurements were collected using an Automatic Level and were hand written in Dewberry Engineering, Inc. Field Book S.F.W.M.D. #1, Pages 29-32, dated September 20, 2019. Additional data was manually recorded.

**GPS METHODS (horizontal position of Well G-2904 monitoring point & USGS Benchmarks)**

Latitude and Longitude for Well G-2902 monitoring point (North edge of metal casing), USGS Benchmarks "RM 3" and "RM 1" were established by observing a 3-minute session of GPS data on September 20, 2019 using a Spectra SP-80 and The Florida Permanent Reference Network (FPRN). The FPRN network consists of nearly 100 Continuously Operating Reference Stations (CORS) located throughout Florida.

**EQUIPMENT USED**


- Spectra SP-80 Rover Serial #: 1165
- Topcon AT-G2 Serial #: 1439




**SURVEYOR'S REPORT**


**VERTICAL CONTROL POINT**

The Vertical Control point utilized and set as part of this survey is the:

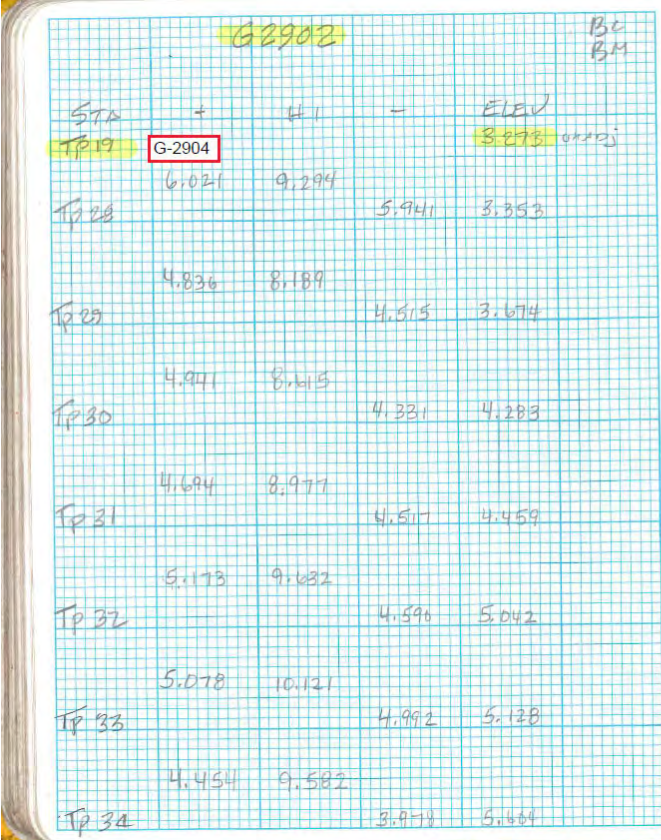
<b>NGS Benchmark "DALEY" (AJ8709)</b>						
26° 05' 4.77" (N)	80° 11' 35.43" (W)	Published	3.87 ft.	(NAVD88)	1.18 m	Published
			<p>THE MARK IS 198.5 FT WEST OF CENTERLINE OF ASPHALT CROSSOVER, 188.3 FT EAST OF A UPRIGHT SIGN SUPPORT FOR OVERHEAD SIGN ACROSS WESTBOUND LANES, 44 FT SOUTH OF CENTERLINE OF WESTBOUND LANES, 5.5 FT EAST OF THE WEST EDGE OF A CONCRETE DROP INLET APRON, 4.5 FT WEST OF THE EAST EDGE OF CONCRETE DROP INLET APRON, AND 1.1 FT SOUTH OF THE NORTH EDGE OF A CONCRETE DROP INLET APRON. THE DISC IS SET FLUSH IN NORTH SIDE OF CONCRETE DROP INLET BASIN.</p> <p>NGS BENCHMARK DISK, SET IN CONCRETE SLAB OF DRAIN BASIN STAMPING:DALEY 1996</p>			

<b>NGS Benchmark "X 175 8696" (AJ8700)</b>						
26° 05' 07.09" (N)	80° 11' 01.32" (W)	Published	24.65 ft.	(NAVD88)	7.51 m	Published
			<p>THE MARK IS 89 FT EAST OF THE EAST EDGE OF THE DRAW BRIDGE STEEL GRATING, 14.5 FT NORTH OF THE CENTERLINE OF THE WESTBOUND STATE ROAD 84 AND 0.9 FT WEST OF A EXPANSION JOINT</p> <p>NGS BENCHMARK DISK SET IN CONCRETE ON WALKWAY OF BRIDGE</p> <p>STAMPING: FLORIDA D.O.T. SURVEY MARKER 8696 X 175</p>			

**SURVEYOR'S REPORT**

<b>BM: G-2924 (Existing on site benchmark)</b>						
26° 06' 40.15" (N)	80° 10' 46.83" (W)		5.78 ft.	(NAVD88)	1.76 m	Level run
NAD_83(2011)			7.37 ft.	(NGVD29)	2.25 m	Converted
				1.59 ft.		Corpscon 6.0.1
				(conversion factor)		
<p>STATION IS A 2" S.F.W.M.D. BM STAMPED "G2902 2019" SET IN SW CORNER OF TRANSFORMER CONCRETE SLAB.</p> <p>LOCATED: AT THE INTERSECTION OF SW 8<sup>TH</sup> ST AND SW 28<sup>TH</sup> AVENUE, APPROXIMATELY 53 FT. SOUTH OF CENTERLINE OF SW 8<sup>TH</sup> STREET &amp; 37 FT. WEST OF CENTERLINE OF SW 28<sup>TH</sup> AVE.</p>						

Field Book W210, Page 43

		<p align="right">Bc BM</p>		
STA	+	H.I.	-	ELEV
TP 19	G-2904			3.273
	6.021	9.294		
TP 28			5.941	3.353
	4.836	8.189		
TP 29			4.515	3.674
	4.971	8.615		
TP 30			4.331	4.283
	4.694	8.977		
TP 31			4.511	4.459
	5.173	9.632		
TP 32			4.596	5.042
	5.078	10.121		
TP 33			4.992	5.128
	4.454	9.582		
TP 34			3.978	5.664

<p>G-2904 D.M. S/N 735642 W210/43</p> <p><b>(PART A)</b> FIELD BOOK W210, PAGES 43-50 STARTS ON "TP 19" (G-2904) AND CLOSSES ON "TP 19" (G-2904)</p> <p>SEE W210/41 G2904</p> <p><b>(PART B)</b> FIELD BOOK W210, PAGES 38-39 STARTS ON NGS "DALEY", RUNS THROUGH "TP1"-"TP9", AND CLOSSES ON NGS "X 175 8696"</p>
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SURVEYOR'S REPORT

Field Book W210 Page 44 & 45

62902 - CONT

B.C.  
B.M.

Sta	+	H.I.	-	ELEV
				5.609
	4.583	10.187		
TP 35			4.714	5.483
	4.995	10.478		
TP 36			4.888	5.590
	4.632	10.222		
TP 37			4.622	5.590
	4.666	10.196		
TP 38			4.202	5.394
	4.767	10.161		
TP 39			4.551	5.610
	4.786	10.396		
TP 40			4.609	5.787
	4.991	10.284		
TP 41			4.630	6.155

9-20-19

W210/44

62902 - CONT

B.C.  
B.M.

Sta	+	H.I.	-	ELEV
				6.155
	4.889	11.044		
TP 42			4.735	6.309
	5.812	12.121		
TP 43			5.601	6.519
	5.146	11.666		
TP 44			4.983	6.863
	4.762	11.625		
TP 45			4.495	7.129
	4.884	12.009		
TP 46			4.525	7.484
	4.608	12.092		
TP 47			4.437	7.655
	4.615	12.210		
TP 48			4.814	7.456

9-20-19

W210/45



SURVEYOR'S REPORT

Field Book W210 Pages 46 & 47

G2902 Cont'd

Sta	+ HI	-	Elev
			7.456
TP 49	4.379	11.835	4.472 7.363
	4.210	11.573	
TP 50			4.895 6.677
	4.632	11.309	
TP 51			5.154 6.205
	4.633	10.828	
TP 52			4.849 5.989
	4.592	10.581	
TP 53			4.806 5.775
	5.206	10.961	
TP 54			4.845 6.133
	4.919	11.057	
TP 55			4.461 6.596

9.20.19

W210/46

Found Disk in SW Cor Telephone Utility Slab  
Stamped "G2902 2019"

G2902 Cont'd

Sta	+ HI	-	Elev
			6.596
TP 60	4.898	11.493	4.368 7.126
	4.700	11.825	
TP 61			4.868 6.958
	4.453	11.441	
TP 62			4.237 7.174
	4.844	12.018	
TP 63			4.363 7.655
	4.816	12.471	
TP 64			4.661 7.810
	5.141	12.951	
TP 65			5.099 7.852
	5.914	13.766	
TP 66			5.959 7.808

9.20.19

W210/47



SURVEYOR'S REPORT

Field Book W210, Pages 48 & 49

**G28902 CONT**

32  
BM

STA	+	HI	-	ELEV
				7.808
TP 67	4.995	12.802	4.219	8.484
TP 68	3.995	12.479	5.214	7.264
TP 69	4.238	11.502	5.918	5.584
TP 70	5.395	10.479	5.936	5.042
TP 71	5.519	10.202	5.868	4.734
TP 72	6.943	10.277	5.690	4.647
TP 73	4.154	9.401	4.511	4.890

9-20-19  
WINDY 95"

W210/48

**G28902 CONT**

STA	+	HI	-	ELEV
TP 74	5.341	10.231	4.866	5.345
TP 75	5.910	11.255	5.551	5.704
TP 76	4.910	10.644	4.687	6.127
TP 77	5.870	10.029	5.005	5.013
TP 78	4.060	9.086	4.773	4.393
TP 79	4.900	9.093	5.000	4.093
TP 80	5.182	9.225	5.147	4.078

9-20-19

W210/49



SURVEYOR'S REPORT

Field Book W210 Page 50

STA	+	HI	-	ELEV
TP 81	5 205	9.121	5657	4.574
TP 82	5 205	9.140	5690	4.164
TP 83	5 466	9.130	5691	3.774
TP 19	5 245	9.168	5922	3.262

G-2904

SEE FIELD BOOK W210 PG 43 (PART C)

SEE W210/43 G-2904

W210/50



SURVEYOR'S REPORT

Field Book W210, Pages 38 & 39

G 2904

BC  
BM

STA	+	HI	-	ELEV
DALEY				8.87
	6.224	9.894		
TP1			3.209	6.045
	4.695	10.739		
TP2			4.215	6.404
	4.669	11.132		
TP3			3.207	7.265
	4.782	12.043		
TP4			3.897	8.114
	4.758	12.919		
TP5			3.832	9.081
	5.404	14.485		
TP6			5.055	9.092 X
	5.388	14.510		
TP7			1.680	12.637

9-18-19 D.I. 5/11.785.622 W210/38  
Rainy 91°

AJ8709 BRASS DISK @ COR STAMPED DALEY

(PART B)  
STARTS ON NGS "DALEY", RUNS THROUGH  
"TP1"-"TP9", AND CLOSSES ON NGS "X 175 8696"

turtle

turtle

turtle

turtle

turtle

turtle

turtle

turtle

G 2904 CONT

BC  
BM

STA	+	HI	-	ELEV
				12.637
	5.555	18.192		
TP8			1.548	16.644
	5.970	22.214		
TP9			1.595	20.616
	5.225	25.950		
X-175 8696			1.204	20.000 (24.69)

9-18-19 W210/39

turtle

turtle

AJ8708 BRASS DISK @ NE COR BR. D&E STAMPED 1758696



SURVEYOR'S REPORT

Field Book W210, Pages 40 & 41

G-2904 CONT

B.C.  
B.M.

STA	+	HT	-	ELEV
TP6				9.232
TP10	4.054	13.286	5.728	7.358
	4.314	11.672		
TP11			5.895	5.777
	4.378	10.156		
TP12			4.935	5.221
	4.410	9.631		
TP13			4.815	4.817
	4.643	9.460		
TP14			5.858	3.602
	4.753	8.355		
TP15			4.349	4.006
	4.506	8.512		
TP16			4.404	4.111

9-18-19

W210/40

SEE W210/38

(PART C)  
Starts at "TP6" as previously established in (PART B),  
RUNS TO "TP10" AND CONTINUES THROUGH  
"TP19" (G-2904), THROUGH "TP27", THEN CLOSES  
ON "TP6"

G-2904 CONT

B.C.  
B.M.

STA	+	HT	-	ELEV
				4.111
TP17	4.926	9.037	4.713	4.324
	5.666	9.991		
TP18			5.358	4.462
	5.362	9.994		
TP19			5.708	4.226
	4.857	9.143		
TP20			5.869	3.273
	5.818	9.091		
TP21			5.506	3.985
	4.782	8.368		
TP22			4.680	3.688
	5.241	8.929		
TP23			4.982	3.947

9-18-19

W210/41

IF WHITE DISK IN NEAR TOP CORNER OF "G-2904" 2019



SURVEYOR'S REPORT

Field Book W210 Page 42

02204 CONT

STA	+	121	-	ELEV 2.001
TP 24	6.076	10.023	5.320	4.703
TP 25	5.640	10.342	5.001	5.336
TP 26	5.937	11.273	5.039	6.234
TP 27	6.067	12.301	4.644	7.690
TP 6	5.441	13.182	2.153	9.022

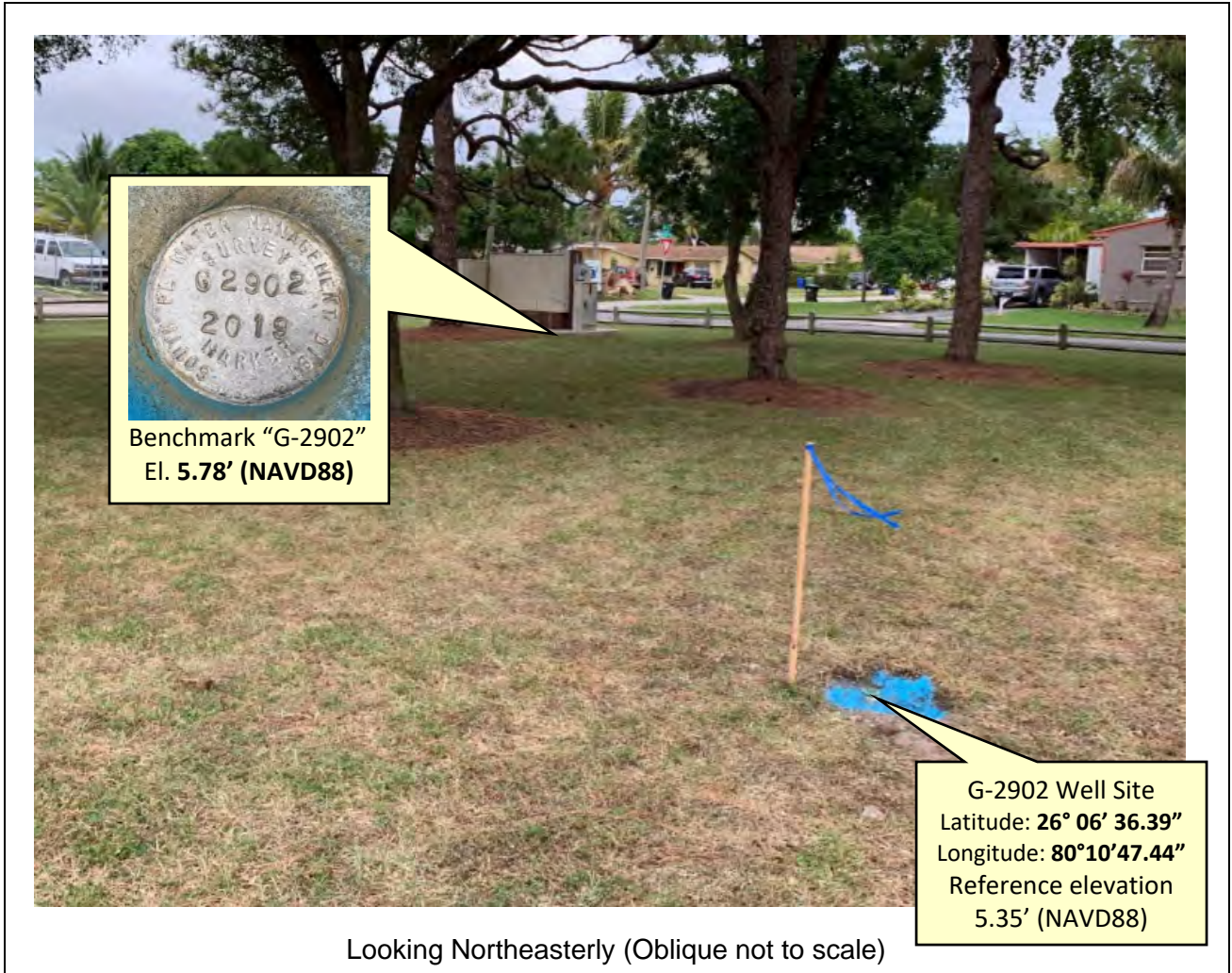
9-18-19 W210/42

SEE FIELD BOOK  
W210 PG 38  
(PART B)

SEE W210/38

**PROJECT RESULTS**

Overall Site





## SURVEYOR'S REPORT

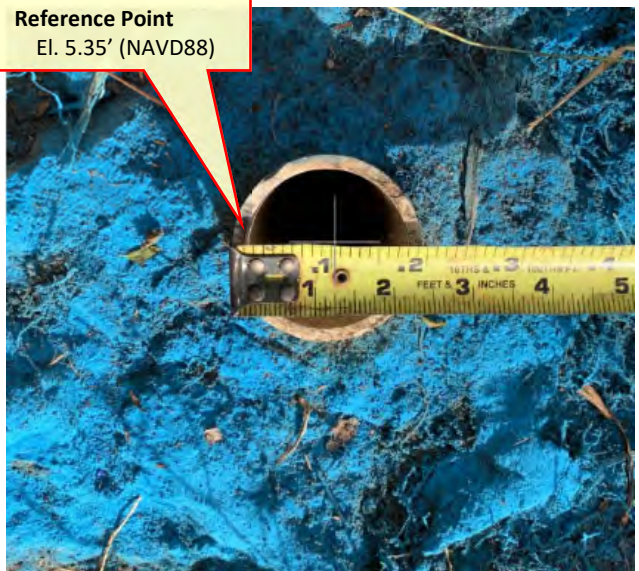
Tabular Form

Reference and Ground Elevations: NAVD88			
Well	Ground Elevation	Reference Elevation	Comments
G-2902	5.41 ft.	5.35 ft.	North edge, top of PVC well head
Offset to NGVD29: +1.59' (See Project Vertical Datum Notes in Page: 4)			
Well diameter		Casing material	DTW
2" PVC		PVC	-4.25 ft. (9/20/19 at 5:15 PM)

Source & Site Benchmark	NAVD88	NGVD29 (Published)	NGVD29 (Corpscon)
NGS "DALEY" (AJ8709)	3.87 ft. (Published)		
NGS "X 175 8696" (AJ8700)	24.65 ft. (Published)		
BM G-2902 (SFWMD)	5.78 ft. (Measured)		7.37 ft. (Converted)

### Well Photos and Diagrams (Continued)

**Reference Point**  
El. 5.35' (NAVD88)



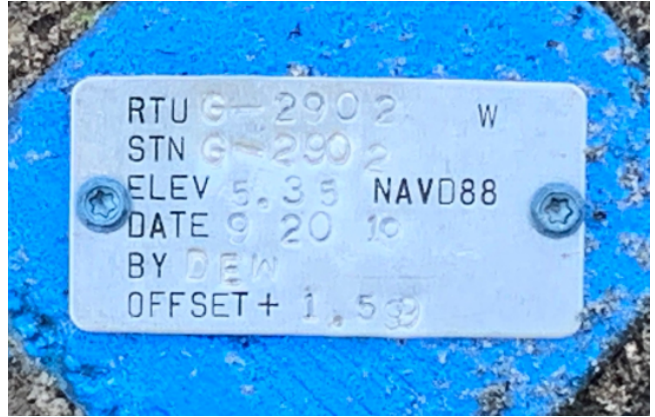
DATE	PT #	N	E	ELEV	ELEV	ELEV	PT #	DESCRIPTION
09/20/19								SEE PG. A-1
								S/O
								* LOCATED PT #S 12080-12082
								S/O
<p>* NOTE: UNABLE TO CHECK IN TO SITE BY W/ GPS DUE TO TREE CANOPY IN THIS AREA. WELL B REFERENCE MANUMENTATION WAS LOCATED W/ GPS. FOR THE SAKE OF REDUNDANCY, TAPEO MEASUREMENTS FROM THIS BENCHMARK TO REFERENCE MANUMENTATION HAS ALSO BEEN RECORDED. SEE PG.</p>								
PT #'S DESCRIPTIONS								
								12080 NORTH EDGE, TOP OF PVC WELL HEAD
								12081 EAST OF WATER VALVE CASING (BLUE PAINT)
								12082 SQ CUT IN CONC SIDEWALK MARKED W/ YELLOW PAINT
09/20/19								
TASK: MEASURE DISTANCE FROM WATER LINE TO TOP OF MEASURING POINT (N. EDGE OF PVC WELL HEAD)								
* TIME: 5:15 PM MEASUREMENT: 4.25'								
MATERIAL: 2" PVC PIPE								

## SURVEYOR'S REPORT

### Well Photos and Diagrams (Continued)



Overhead View (Oblique Not to scale)



Top view (Not to scale)

**SET IN TOP OF 4"X4" CONCRETE  
MONUMENT--OFFSET 1 FOOT WEST OF WELL**

### **Surveyors' Notes:**

1. All measurements herein are in United States Survey feet and decimal thereof, unless otherwise specified.
2. Underground utilities were not located as part of this survey.
3. This survey report or copies thereof are not valid without the original signature and seal of a Florida licensed Surveyor and Mapper.
4. Additions or deletions to this survey report by other than the signing party (or parties) is prohibited without written consent of the signing party (or parties).
5. To convert from NAVD 88 to NGVD 29 add 1.59 feet. This value is based on Corpscon 6.0.1 a U.S. Army Corps of Engineers Engineering Research and Development Center Topographic Engineering Center Alexandria, Virginia Windows-based program to convert coordinates and elevations between datum's using vertcon05.txt and vertcon05.05 files supplied by the U.S. Army Corps of Engineers South Atlantic Division, Jacksonville, FL.
6. Date of last field work: September 20, 2019, PO NO: 9500008146
7. SFWMD Data records (on file at the District's headquarters):
8. A. Electronic Data files:
  - Miscellaneous picture files
- B. Conventional reporting
  - Field Book: W210 page 38-42 and W210 pages 43-50



**SURVEYOR'S REPORT**

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**Abbreviations:**

- Elev.** - Elevation
- DTW** - Distance to the water table inside the well
- BroCo.** - Broward County
- NAVD88** - North American Vertical Datum of 1988
- NGVD29** - National Geodetic Vertical Datum of 1929
- NGS** - National Geodetic Survey
- PSM** - Professional Surveyor & Mapper
- PID** - Permanent Identifiers
- SFWMD** - South Florida Water Management District
- USGS** - United States Geological Survey
- MP** - Monitoring Point
- GS** - Ground Shot
- BM** - Benchmark
- RM** - Reference Monument

**SURVEYOR'S CERTIFICATION**

In my professional opinion this Specific Purpose Survey meets applicable portions of the Standards of Practice 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.

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Last date of Survey  
Sept. 20, 2019



*William D. Donley*

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William Donley, PSM  
Florida Professional Surveyor and Mapper  
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Dewberry Engineering, Inc. LB No 8011  
131 West Kaley Street, Orlando, FL. 32806  
Tel (321) 354-9826



### South Florida Water Management District Benchmark Datasheet

Designation: <b>G-2902</b>	Project Name: <b>USGS Ph 2, BROWARD</b>	Type: <b>V</b>	State Plane Zone: <b>FL East</b>
Stamping: <b>G2902 2019</b>	Field Book Name: <b>W210</b>	Field Book Page: <b>43-50</b>	
Established By: <b>DEWBERRY / WHIDDEN</b>	Recovered By: <b>N/A</b>	Recovery Date: <b>N/A</b>	
Surveyor: <b>WILLIAM D. DONLEY</b>	Established Date: <b>09/20/19</b>	Status: <b>New</b>	

#### GEOGRAPHIC POSITION INFORMATION

Section: <b>8</b>	Township: <b>50 SOUTH</b>	Range: <b>42 EAST</b>
County: <b>BROWARD</b>	Quadrangle: <b>FORT LAUDERDALE SOUTH</b>	Quad Index: <b>1702</b>
NAD83 Adj. Year: <b>2011</b>	Vertical Datum: <b>NAVD1988</b>	Horizontal Datum: <b>NAD1983</b>
NAVD88 Elevation (feet): <b>5.78</b>	NGVD29 Elevation (feet): <b>7.365</b>	2022 Elevation: <b>N/A</b>
NAVD88 Class: <b>N/A</b>	NGVD29 Class: <b>N/A</b>	Other Elevation: <b>N/A</b>
NAVD88 Order: <b>3</b>	NGVD29 Order: <b>N/A</b>	Other Elevation Type: <b>N/A</b>
		NGS Source BM(s): <b>DALEY/X 175 8696</b>
		NGS PID(s): <b>AJ8709/AJ8700</b>
		NGS NAVD88 Elev (ft): <b>3.87/24.65</b>
		NGS NAVD88 Elev (m): <b>1.180/7.512</b>
		NGS 2022 Elev (ft): <b>N/A</b>

CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): (A U.S. Army Corps of Engineers Engineering Research and Development Center Topographic Engineering Center Alexandria, Virginia Windows-based program to convert coordinates and elevations between datum's using vertcon06.txt and vertcon05.db files supplied by the U.S. Army Corps of Engineers South Atlantic Division, Jacksonville FL.)

Vertical Datum Offset: <b>+ 1.59</b>	Actual NGS Elevation or ngvd29.txt file: <b>N/A</b>	OPUS Ortho Height: <b>N/A</b>
Northing (Y) (feet): <b>646938.1</b>	Easting (X) (feet): <b>925354.1</b>	Source of Latitude & Longitude: <b>AVERAGED FPRN &amp; TRIMBLE VRSNOW RTK</b>
Latitude: <b>26</b>	<b>6</b>	<b>40.15</b>
DD°	MM'	SS"
Longitude (Decimal Degrees): <b>26.111153</b>		<b>-80.179675</b>
		DD°
		MM'
		SS"

#### RECOVERY DATA

- How to Reach:
1. FROM FL-736/DAVIE BLVD, HEAD NORTH ON RIVERLAND RD FOR 0.3 MI
  2. TURN LEFT ONTO SW 9TH STREET, CONTINUE 0.1 MI
  3. TURN RIGHT ONTO SW 28TH AVE, CONTINUE 230 FEET TO THE MARK ON THE LEFT

Description/Notes: **2" ALUMINUM SFWMD DISK SET IN SOUTHWEST CORNER OF TRANSFORMER CONCRETE SLAB**

Notable Landmarks:

Other Source Benchmarks: **N/A**

#### PICTURES

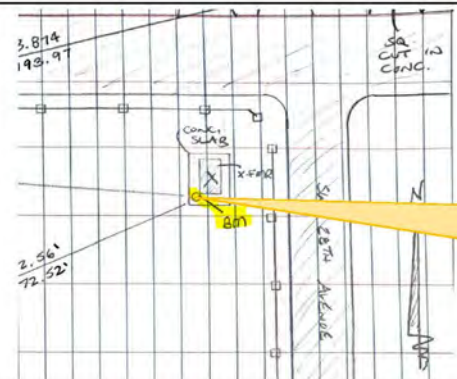
Aerial View of Overall Site



NOT TO SCALE. AERIAL FROM GOOGLE EARTH.

#### PICTURES

Site Sketch







# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

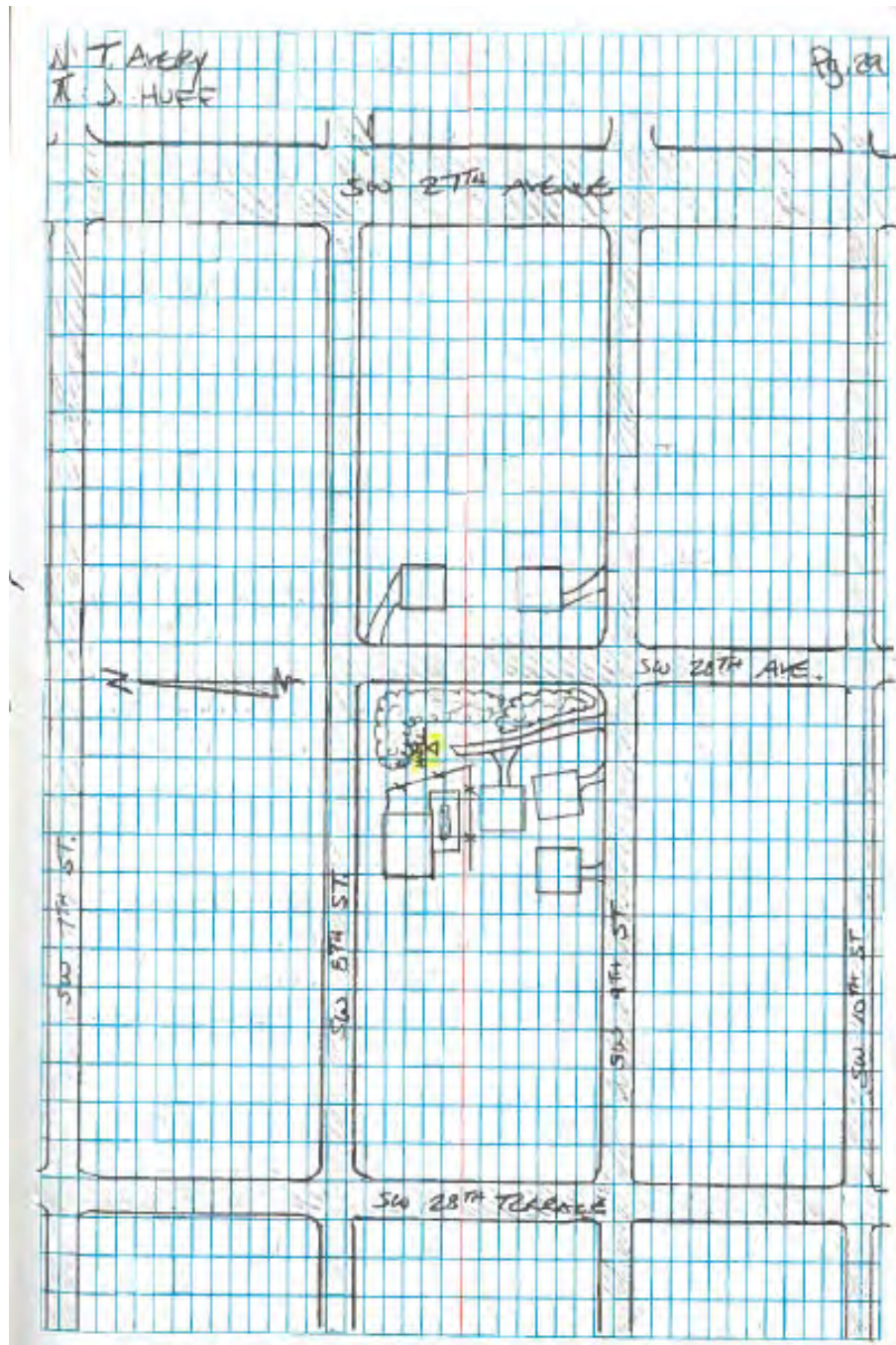




# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

## SKETCH

FIELD BOOK SFWMD #1, PAGES 29

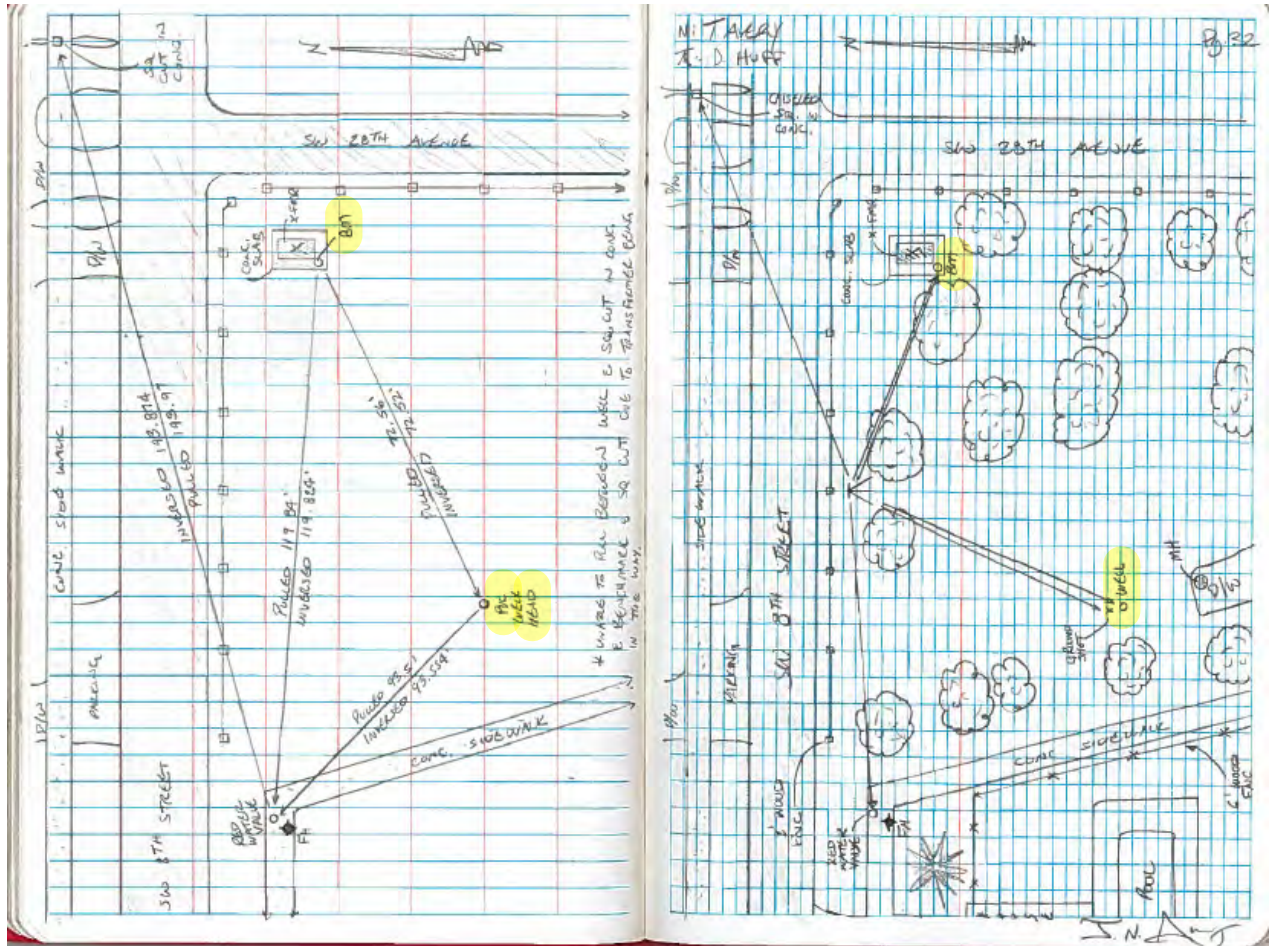






# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Sketch Cont'd Page 32



# Office

## Project

2 December 2019

### INPUT

State Plane, NAD83  
0901 - Florida East, U.S. Feet  
Vertical - NAVD88, U.S. Feet

### OUTPUT

Geographic, NAD83  
Vertical - NGVD29 (Vertcon94), U.S. Feet

---

## BM G2902

1/2

**Northing/Y:** 646938.1  
**Easting/X:** 925354.1  
**Elevation/Z:** 5.78  
**Convergence:** 0 21 39.80366  
**Scale Factor:** 1.000024266  
**Combined Factor:** 1.000027990

**Latitude:** 26 06 40.15001  
**Longitude:** 80 10 46.83108  
**Elevation/Z:** 7.365

---

## WELL G2902

2/2

**Northing/Y:** 646890.80'  
**Easting/X:** 925299.07'  
**Elevation/Z:** 5.35  
**Convergence:** 0 21 39.53052  
**Scale Factor:** 1.000024232  
**Combined Factor:** 1.000027977

**Latitude:** 26 06 39.68499  
**Longitude:** 80 10 47.43802  
**Elevation/Z:** 6.938



SPECTRA SP-80 SE WMD 9/20/19  
 EXER 411163 USGS WELLS E/BMS 9/27/19  
 TRUMPER NET VIZ # 30099949  
 TIME 6.56Z WELL SITE #: 2902

TASK: ESTABLISH HORIZONTAL LOCATIONS ON WELL MEASURING POINT & ANY REFERENCE MONUMENTATION

09/27/19 PT # (N) ERE (E) ERE (L) ERE PT # DESCRIPTION  
 S/O  
 \* LOCATED PT #S 12080-12082  
 S/O

\* NOTE: UNABLE TO CHECK IN TO SITE BY W/ GPS DUE TO TREE CANOPY IN THIS AREA. WELL & REFERENCE MONUMENTATION WAS LOCATED W/ GPS. FOR THE SAKE OF REDUNDANCY, TAPE MEASUREMENTS FROM THIS BENCHMARK TO REFERENCE MONUMENTATION HAS ALSO BEEN RECORDED. SEE PG

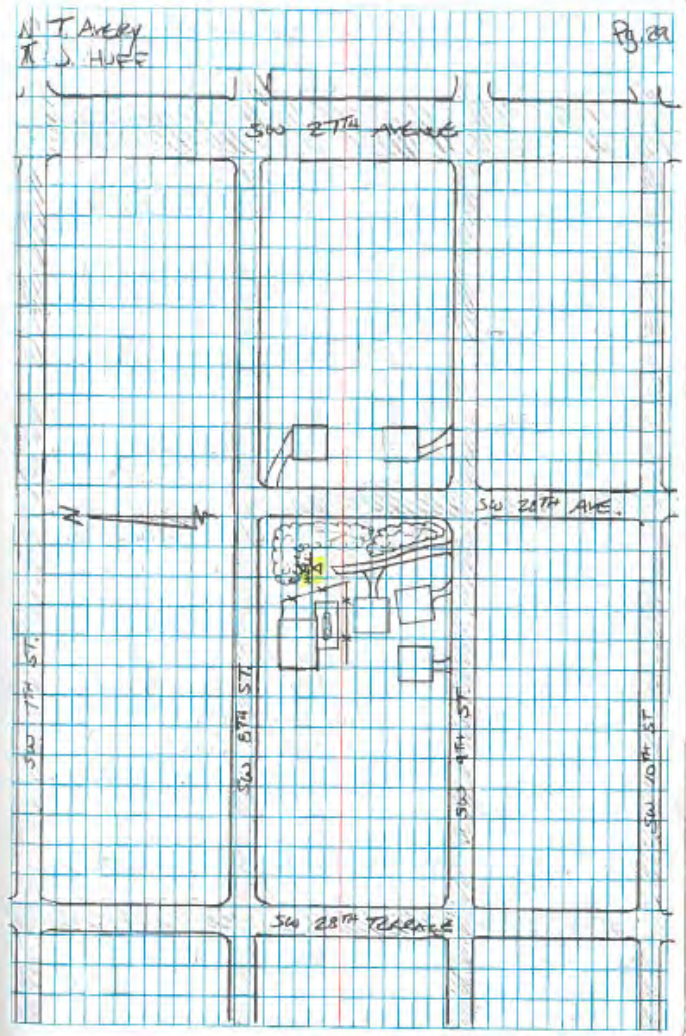
PT #'S DESCRIPTIONS

- 12080 NORTH EDGE, TOP OF PVC WELL HEAD
- 12081 EAST OF WATER VALVE CASING (BLUE PAINT)
- 12082 SQ CUT IN CONC. SIDEWALK MARKED W/ YELLOW PAINT

09/20/19  
 TASK: MEASURE DISTANCE FROM WATER LINE TO TOP OF MEASURING POINT (N. EDGE OF PVC WELL HEAD)

TIME: 5:15 PM MEASUREMENT: 4.25'

MATERIAL: 2" PVC PIPE



TIPSON SEWERS 09/20/19  
 AT-G7 USGS WELLS & CME  
 #N: 142A WGT# 5209999  
 WELL SITE: G-2902

TASK: ELEVATE MONITORING POINT, GROUND @ WELL SITE, & USGS REFERENCE MONUMENTATION

ELEVATION		DESCRIPTION	
REG. W.C.	<del>4.6500</del>	ALUMINUM DISC IN SW CORNER	
	5.78	BETWEEN SW 27TH TERRACE,	
(WHIDDEN) (NAVD 88)			
BACKSIGHT (+)	Σ	FORSIGHT (-)	AD)
STA ID	READING	MEAN ELEV	READING MEAN ELEV ELEV
			5.78
	4.81	5.82	
B.M.	4.85 4.5500 <del>4.6500</del>	5.15 5.1983 <del>4.9617</del>	5.182
	4.29	10.33 4.475	
	52'/52'	1845'/18.5'	
		5.325	
B.M.	"10.33" 4.99	4.9900 <del>4.5000</del>	5.340
		4.655	
		67'/119'	
		5.24	
B.M.	"10.33" 4.98	4.9850 <del>4.9850</del>	5.405
		4.61	
		63'/115'	
		5.30	
B.M.	"10.33" 4.98	4.9833 <del>4.5667</del>	5.317
		4.67	
		63'/115'	

N: T. AVERY  
 K. J. HUFF

GP TRANSFORMER PAD IN GRASS ISLAND SW 26TH AVE. & SW 8TH ST

FORSIGHT (-)  
 DESCRIPTIONS

RMB (SAVING CUT W/ REMAINT OF YELLOW PAINT, ACROSS STREET IN S/W)

RMB (EAST EDGE OF RED WATER VALVE CURB CASING)

GROUND (WEST OF WELL CASING) SHOT

MP (N. EDGE OF CASING)



Tolson SFWARD 09/20/10

AT-G2 USGS WEWS E BMS

SP: 167A JET# 5009999A

VIEW SITE: G-2902

BACKSIGHT (+)		FORESIGHT (-)		ADJ.			
STA ID	READING	MEAN	ELEV	READING	MEAN	ELEV	ELEV
* BREAK SETUP							
	5.15		4.665				
MP	4.84	4.52	<del>4.185</del>	4.400	4.400	<del>4.000</del>	5.784
		03°/170	10.437	4.185			
			10.184				
* END LEVEL LOOP							

N. T. Arvey Pg. 31

A. J. Huff

FORESIGHT (-)

DESCRIPTION

BACK @ STARTING POINT (SITE BENCHMARK)

CHECK IN = -0.0037 ✓





## The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

```

PROGRAM = datasheet95, VERSION = 8.12.5.4
1      National Geodetic Survey, Retrieval Date = OCTOBER 18, 2019
AJ8709 *****
AJ8709 DESIGNATION - DALEY
AJ8709 PID - AJ8709
AJ8709 STATE/COUNTY- FL/BROWARD
AJ8709 COUNTRY - US
AJ8709 USGS QUAD - FORT LAUDERDALE SOUT (1994)
AJ8709
AJ8709 *CURRENT SURVEY CONTROL
AJ8709
AJ8709* NAD 83(2011) POSITION- 26 05 04.76868(N) 080 11 35.43431(W) ADJUSTED
AJ8709* NAD 83(2011) ELLIP HT- -24.371 (meters) (06/27/12) ADJUSTED
AJ8709* NAD 83(2011) EPOCH - 2010.00
AJ8709* NAVD 88 ORTHO HEIGHT - 1.180 (meters) 3.87 (feet) ADJUSTED
AJ8709
AJ8709 GEOID HEIGHT - -25.502 (meters) GEOID18
AJ8709 NAD 83(2011) X - 976,344.693 (meters) COMP
AJ8709 NAD 83(2011) Y - -5,648,422.013 (meters) COMP
AJ8709 NAD 83(2011) Z - 2,787,478.106 (meters) COMP
AJ8709 LAPLACE CORR - -3.00 (seconds) DEFLEC18
AJ8709 DYNAMIC HEIGHT - 1.179 (meters) 3.87 (feet) COMP
AJ8709 MODELED GRAVITY - 979,056.7 (mgal) NAVD 88
AJ8709
AJ8709 VERT ORDER - FIRST CLASS II
AJ8709
AJ8709 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AJ8709 Standards:
AJ8709 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
AJ8709 Horiz Ellip SD_N SD_E SD_h (unitless)
AJ8709 -----
AJ8709 NETWORK 1.87 2.69 0.74 0.77 1.37 -0.28105523
AJ8709 -----
AJ8709 Click here for local accuracies and other accuracy information.
AJ8709
AJ8709
AJ8709.The horizontal coordinates were established by GPS observations
AJ8709.and adjusted by the National Geodetic Survey in June 2012.
AJ8709
AJ8709.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AJ8709.been affixed to the stable North American tectonic plate. See
AJ8709.NA2011 for more information.
AJ8709
AJ8709.The horizontal coordinates are valid at the epoch date displayed above
AJ8709.which is a decimal equivalence of Year/Month/Day.
AJ8709
AJ8709.The orthometric height was determined by differential leveling and
AJ8709.adjusted by the NATIONAL GEODETIC SURVEY
AJ8709.in May 2002.
AJ8709
AJ8709.Significant digits in the geoid height do not necessarily reflect accuracy.

```

"DALEY" NGS Benchmark Datasheet (2 of 5)

AJ8709.GEOID18 height accuracy estimate available [here](#).  
AJ8709  
AJ8709.Click [here](#) to see if photographs exist for this station.  
AJ8709  
AJ8709.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
AJ8709  
AJ8709.The Laplace correction was computed from DEFLEC18 derived deflections.  
AJ8709  
AJ8709.The ellipsoidal height was determined by GPS observations  
AJ8709.and is referenced to NAD 83.  
AJ8709  
AJ8709.The dynamic height is computed by dividing the NAVD 88  
AJ8709.geopotential number by the normal gravity value computed on the  
AJ8709.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
AJ8709.degrees latitude (g = 980.6199 gals.).  
AJ8709  
AJ8709.The modeled gravity was interpolated from observed gravity values.  
AJ8709  
AJ8709. The following values were computed from the NAD 83(2011) position.  
AJ8709  
AJ8709;  
AJ8709;SPC FL E - North East Units Scale Factor Converg.  
AJ8709;SPC FL E - 194,243.333 280,716.270 MT 1.00002159 +0 21 17.2  
AJ8709;SPC FL E - 637,280.00 920,983.30 sFT 1.00002159 +0 21 17.2  
AJ8709;UTM 17 - 2,885,309.040 580,688.729 MT 0.99968039 +0 21 17.2  
AJ8709  
AJ8709!  
AJ8709!SPC FL E - Elev Factor x Scale Factor = Combined Factor  
AJ8709!UTM 17 - 1.00000383 x 1.00002159 = 1.00002542  
AJ8709!UTM 17 - 1.00000383 x 0.99968039 = 0.99968422  
AJ8709  
AJ8709\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ8068885309(NAD 83)  
AJ8709  
AJ8709 SUPERSEDED SURVEY CONTROL  
AJ8709  
AJ8709  
AJ8709 NAD 83(2007)- 26 05 04.76876(N) 080 11 35.43492(W) AD(2002.00) 0  
AJ8709 ELLIP H (02/10/07) -24.354 (m) GP(2002.00)  
AJ8709 NAD 83(1999)- 26 05 04.76878(N) 080 11 35.43495(W) AD( ) 1  
AJ8709 ELLIP H (12/12/02) -24.352 (m) GP( ) 4 1  
AJ8709 NAVD 88 1.18 (m) 3.9 (f) LEVELING 3  
AJ8709  
AJ8709.Superseded values are not recommended for survey control.  
AJ8709  
AJ8709.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
AJ8709.See file [dsdata.pdf](#) to determine how the superseded data were derived.  
AJ8709  
AJ8709\_MARKER: DD = SURVEY DISK  
AJ8709\_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.  
AJ8709\_SP\_SET: DROP INLET  
AJ8709\_STAMPING: DALEY 1996  
AJ8709\_MARK LOGO: NGS  
AJ8709\_MAGNETIC: N = NO MAGNETIC MATERIAL  
AJ8709\_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY  
AJ8709\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
AJ8709+SATELLITE: SATELLITE OBSERVATIONS - July 01, 2014  
AJ8709  
AJ8709 HISTORY - Date Condition Report By  
AJ8709 HISTORY - UNK MONUMENTED NGS  
AJ8709 HISTORY - 20011017 GOOD LDBLS  
AJ8709 HISTORY - 20020512 GOOD MAPTEC  
AJ8709 HISTORY - 20060619 GOOD PB  
AJ8709 HISTORY - 20080512 GOOD FLDT



"DALEY" NGS Benchmark Datasheet (3 of 5)

AJ8709	HISTORY	- 20090527	GOOD	FLDT
AJ8709	HISTORY	- 20140701	GOOD	INDIV
AJ8709				
AJ8709				STATION DESCRIPTION
AJ8709				
AJ8709				'DESCRIBED BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
AJ8709				'THE MARK IS ABOUT 2.4 KM (1.51 MI) WEST OF FORT LAUDERDALE, ABOUT 6.0
AJ8709				'KM (3.74
AJ8709				'MI) WEST OF PORT EVERGLADES IN SECTION 19, TOWNSHIP 50 SOUTH, RANGE 42
AJ8709				'EAST,
AJ8709				'BROWARD COUNTY, FLORIDA. OWNERSHIP - FLORIDA DEPARTMENT OF
AJ8709				'TRANSPORTATION
AJ8709				'
AJ8709				'TO REACH THE MARK FROM THE INTERSECTION OF INTERSTATE HIGHWAY 75 AND
AJ8709				'U.S.
AJ8709				'HIGHWAY 27 (I-75 EXIT 13, NEAR ANDYTOWN) GO EAST ON INTERSTATE HIGHWAY
AJ8709				'75 8.1
AJ8709				'KM (5.04 MI) TO THE JUNCTION WITH INTERSTATE HIGHWAY 595 EAST, EXIT
AJ8709				'RIGHT ONTO
AJ8709				'INTERSTATE HIGHWAY 595 EAST, AND GO EAST ALONG INTERSTATE HIGHWAY 595
AJ8709				'16.3 KM
AJ8709				'(10.13 MI) TO THE JUNCTION WITH STATE ROAD 84, GO EAST ON STATE ROAD
AJ8709				'84 1.5 KM
AJ8709				'(0.92 MI) TO THE MARK IN THE MEDIAN ON THE LEFT. ALSO TO REACH THE
AJ8709				'MARK FROM
AJ8709				'THE INTERSECTION OF STATE ROAD 84 AND EISENHOWER BOULEVARD IN PORT
AJ8709				'EVERGLADES,
AJ8709				'GO WEST ON STATE ROAD 84 1.0 KM (0.62 MI) TO THE ENTRANCE-EXIT OF PORT
AJ8709				'EVERGLADES, CONTINUE WEST ON STATE ROAD 84 6.0 KM (3.74 MI) TO THE
AJ8709				'MARK IN THE
AJ8709				'MEDIAN ON THE LEFT.
AJ8709				'
AJ8709				'THE MARK IS 60.50 M (198.5 FT) WEST OF THE CENTERLINE OF AN ASPHALT
AJ8709				'CROSS-OVER
AJ8709				'(BETWEEN WESTBOUND AND EASTBOUND LANES), 57.39 M (188.3 FT) EAST OF A
AJ8709				'UPRIGHT
AJ8709				'SIGN SUPPORT FOR A OVERHEAD SIGN ACROSS WESTBOUND LANES, 18.29 M (60.0
AJ8709				'FT)
AJ8709				'NORTH OF THE CENTERLINE OF THE EASTBOUND LANES, 13.41 M (44.0 FT)
AJ8709				'SOUTH OF THE
AJ8709				'CENTERLINE OF THE WESTBOUND LANES, 1.68 M (5.5 FT) EAST OF THE WEST
AJ8709				'EDGE OF A
AJ8709				'CONCRETE DROP INLET APRON, 1.37 M (4.5 FT) WEST OF THE EAST EDGE OF A
AJ8709				'CONCRETE
AJ8709				'DROP INLET APRON, AND 0.33 M (1.1 FT) SOUTH OF THE NORTH EDGE OF A
AJ8709				'CONCRETE
AJ8709				'DROP INLET APRON. THE MARK IS A DISK SET FLUSH IN THE NORTH SIDE OF A
AJ8709				'CONCRETE
AJ8709				'DROP INLET APRON, FLUSH WITH THE LEVEL OF THE GROUND, ABOUT 1.00 M
AJ8709				'(3.3 FT)
AJ8709				'BELOW THE LEVEL OF THE HIGHWAY.
AJ8709				
AJ8709				STATION RECOVERY (2002)
AJ8709				
AJ8709				'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)
AJ8709				'THE MARK IS ABOUT 2.4 KM (1.51 MI) WEST OF FORT LAUDERDALE, ABOUT 6.0
AJ8709				'KM (3.74
AJ8709				'MI) WEST OF PORT EVERGLADES IN SECTION 19, TOWNSHIP 50 SOUTH, RANGE 42
AJ8709				'EAST,
AJ8709				'BROWARD COUNTY, FLORIDA. OWNERSHIP - FLORIDA DEPARTMENT OF

"DALEY" NGS Benchmark Datasheet (4 of 5)

AJ8709'TRANSPORTATION  
AJ8709'  
AJ8709'TO REACH THE MARK FROM THE INTERSECTION OF INTERSTATE HIGHWAY 75 AND  
AJ8709'U.S.  
AJ8709'HIGHWAY 27 (I-75 EXIT 13, NEAR ANDYTOWN) GO EAST ON INTERSTATE HIGHWAY  
AJ8709'75 8.1  
AJ8709'KM (5.04 MI) TO THE JUNCTION WITH INTERSTATE HIGHWAY 595 EAST, EXIT  
AJ8709'RIGHT ONTO  
AJ8709'INTERSTATE HIGHWAY 595 EAST, AND GO EAST ALONG INTERSTATE HIGHWAY 595  
AJ8709'16.3 KM  
AJ8709'(10.13 MI) TO THE JUNCTION WITH STATE ROAD 84, GO EAST ON STATE ROAD  
AJ8709'84 1.5 KM  
AJ8709'(0.92 MI) TO THE MARK IN THE MEDIAN ON THE LEFT. ALSO TO REACH THE  
AJ8709'MARK FROM  
AJ8709'THE INTERSECTION OF STATE ROAD 84 AND EISENHOWER BOULEVARD IN PORT  
AJ8709'EVERGLADES,  
AJ8709'GO WEST ON STATE ROAD 84 1.0 KM (0.62 MI) TO THE ENTRANCE-EXIT OF PORT  
AJ8709'EVERGLADES, CONTINUE WEST ON STATE ROAD 84 6.0 KM (3.74 MI) TO THE  
AJ8709'MARK IN THE  
AJ8709'MEDIAN ON THE LEFT.  
AJ8709'  
AJ8709'THE MARK IS 60.50 M (198.5 FT) WEST OF THE CENTERLINE OF AN ASPHALT  
AJ8709'CROSS-OVER  
AJ8709'(BETWEEN WESTBOUND AND EASTBOUND LANES), 57.39 M (188.3 FT) EAST OF A  
AJ8709'UPRIGHT  
AJ8709'SIGN SUPPORT FOR A OVERHEAD SIGN ACROSS WESTBOUND LANES, 18.29 M (60.0  
AJ8709'FT)  
AJ8709'NORTH OF THE CENTERLINE OF THE EASTBOUND LANES, 13.41 M (44.0 FT)  
AJ8709'SOUTH OF THE  
AJ8709'CENTERLINE OF THE WESTBOUND LANES, 1.68 M (5.5 FT) EAST OF THE WEST  
AJ8709'EDGE OF A  
AJ8709'CONCRETE DROP INLET APRON, 1.37 M (4.5 FT) WEST OF THE EAST EDGE OF A  
AJ8709'CONCRETE  
AJ8709'DROP INLET APRON, AND 0.33 M (1.1 FT) SOUTH OF THE NORTH EDGE OF A  
AJ8709'CONCRETE  
AJ8709'DROP INLET APRON. THE MARK IS A DISK SET FLUSH IN THE NORTH SIDE OF A  
AJ8709'CONCRETE  
AJ8709'DROP INLET APRON, FLUSH WITH THE LEVEL OF THE GROUND, ABOUT 1.00 M  
AJ8709'(3.3 FT)  
AJ8709'BELOW THE LEVEL OF THE HIGHWAY.  
AJ8709'  
AJ8709'STATION RECOVERY (2002)  
AJ8709'RECOVERY NOTE BY MAPTECH, INCORPORATED 2002 (CP)  
AJ8709'RECOVERED AS DESCRIBED.  
AJ8709  
AJ8709 STATION RECOVERY (2006)  
AJ8709  
AJ8709'RECOVERY NOTE BY PBS&J 2006 (DWD)  
AJ8709'RECOVERED IN GOOD CONDITION.  
AJ8709  
AJ8709 STATION RECOVERY (2008)  
AJ8709  
AJ8709'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2008 (PED)  
AJ8709'RECOVERED IN GOOD CONDITION.  
AJ8709  
AJ8709 STATION RECOVERY (2009)  
AJ8709  
AJ8709'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2009 (JS)  
AJ8709'RECOVERED AS DESCRIBED  
AJ8709'



"DALEY" NGS Benchmark Datasheet (5 of 5)

AJ8709'THIS MARK MAY BE DESTROYED IN THE NEXT COUPLE OF YEARS DUE TO MAJOR  
AJ8709'RECONSTRUCTION ON I-595.

AJ8709

AJ8709

STATION RECOVERY (2014)

AJ8709

AJ8709'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2014 (PED)

AJ8709'RECOVERD

\*\*\* retrieval complete.

Elapsed Time = 00:00:04

## The NGS Data Sheet

See file [dsdata.pdf](#) for more information about the datasheet.

```

PROGRAM = datasheet95, VERSION = 8.12.5.4
1      National Geodetic Survey,   Retrieval Date = OCTOBER 18, 2019
AJ8700 *****
AJ8700 DESIGNATION - X 175 8696
AJ8700 PID - AJ8700
AJ8700 STATE/COUNTY- FL/BROWARD
AJ8700 COUNTRY - US
AJ8700 USGS QUAD - FORT LAUDERDALE SOUT (1994)
AJ8700
AJ8700 *CURRENT SURVEY CONTROL
AJ8700
AJ8700* NAD 83(2011) POSITION- 26 05 07.08904(N) 080 11 01.32498(W) ADJUSTED
AJ8700* NAD 83(2011) ELLIP HT- -18.066 (meters) (06/27/12) ADJUSTED
AJ8700* NAD 83(2011) EPOCH - 2010.00
AJ8700* NAVD 88 ORTHO HEIGHT - 7.512 (meters) 24.65 (feet) ADJUSTED
AJ8700
AJ8700 GEOID HEIGHT - -25.532 (meters) GEOID18
AJ8700 NAD 83(2011) X - 977,274.353 (meters) COMP
AJ8700 NAD 83(2011) Y - -5,648,235.122 (meters) COMP
AJ8700 NAD 83(2011) Z - 2,787,545.013 (meters) COMP
AJ8700 LAPLACE CORR - -3.12 (seconds) DEFLEC18
AJ8700 DYNAMIC HEIGHT - 7.500 (meters) 24.61 (feet) COMP
AJ8700 MODELED GRAVITY - 979,056.6 (mgal) NAVD 88
AJ8700
AJ8700 VERT ORDER - FIRST CLASS II
AJ8700
AJ8700 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AJ8700 Standards:
AJ8700 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
AJ8700 Horiz Ellip SD_N SD_E SD_h (unitless)
AJ8700 -----
AJ8700 NETWORK 2.47 3.53 0.95 1.04 1.80 -0.31507982
AJ8700 -----
AJ8700 Click here for local accuracies and other accuracy information.
AJ8700
AJ8700
AJ8700.The horizontal coordinates were established by GPS observations
AJ8700.and adjusted by the National Geodetic Survey in June 2012.
AJ8700
AJ8700.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AJ8700.been affixed to the stable North American tectonic plate. See
AJ8700.NA2011 for more information.
AJ8700
AJ8700.The horizontal coordinates are valid at the epoch date displayed above
AJ8700.which is a decimal equivalence of Year/Month/Day.
AJ8700
AJ8700.The orthometric height was determined by differential leveling and
AJ8700.adjusted by the NATIONAL GEODETIC SURVEY
AJ8700.in May 2002.
AJ8700
AJ8700.Significant digits in the geoid height do not necessarily reflect accuracy.

```



"X 175 8696" NGS Benchmark Datasheet (2 of 4)

AJ8700.GEOID18 height accuracy estimate available [here](#).  
AJ8700  
AJ8700.Click [here](#) to see if photographs exist for this station.  
AJ8700  
AJ8700.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
AJ8700  
AJ8700.The Laplace correction was computed from DEFLEC18 derived deflections.  
AJ8700  
AJ8700.The ellipsoidal height was determined by GPS observations  
AJ8700.and is referenced to NAD 83.  
AJ8700  
AJ8700.The dynamic height is computed by dividing the NAVD 88  
AJ8700.geopotential number by the normal gravity value computed on the  
AJ8700.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
AJ8700.degrees latitude (g = 980.6199 gals.).  
AJ8700  
AJ8700.The modeled gravity was interpolated from observed gravity values.  
AJ8700  
AJ8700. The following values were computed from the NAD 83(2011) position.  
AJ8700  
AJ8700;  
AJ8700;SPC FL E - North East Units Scale Factor Converg.  
AJ8700;SPC FL E - 194,320.646 281,663.741 MT 1.00002349 +0 21 32.2  
AJ8700;SPC FL E - 637,533.65 924,091.79 sFT 1.00002349 +0 21 32.2  
AJ8700;UTM 17 - 2,885,386.327 581,635.878 MT 0.99968228 +0 21 32.2  
AJ8700  
AJ8700!  
AJ8700!SPC FL E - Elev Factor x Scale Factor = Combined Factor  
AJ8700!SPC FL E - 1.00000284 x 1.00002349 = 1.00002633  
AJ8700!UTM 17 - 1.00000284 x 0.99968228 = 0.99968512  
AJ8700  
AJ8700\_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ8163585386(NAD 83)  
AJ8700  
AJ8700 SUPERSEDED SURVEY CONTROL  
AJ8700  
AJ8700 NAD 83(2007)- 26 05 07.08912(N) 080 11 01.32559(W) AD(2002.00) 0  
AJ8700 ELLIP H (02/10/07) -18.048 (m) GP(2002.00)  
AJ8700 NAD 83(1999)- 26 05 07.08915(N) 080 11 01.32563(W) AD( ) 1  
AJ8700 ELLIP H (12/12/02) -18.045 (m) GP( ) 4 1  
AJ8700 NAVD 88 7.51 (m) 24.6 (f) LEVELING 3  
AJ8700  
AJ8700.Superseded values are not recommended for survey control.  
AJ8700  
AJ8700.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
AJ8700.See file [dsdata.pdf](#) to determine how the superseded data were derived.  
AJ8700  
AJ8700\_MARKER: DD = SURVEY DISK  
AJ8700\_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.  
AJ8700\_SP\_SET: CONCRETE WALK  
AJ8700\_STAMPING: 8696 X 175  
AJ8700\_MARK LOGO: FLDT  
AJ8700\_MAGNETIC: N = NO MAGNETIC MATERIAL  
AJ8700\_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY  
AJ8700\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
AJ8700+SATELLITE: SATELLITE OBSERVATIONS - November 19, 2012  
AJ8700  
AJ8700 HISTORY - Date Condition Report By  
AJ8700 HISTORY - UNK MONUMENTED FLDT  
AJ8700 HISTORY - 20011018 GOOD LDBLS  
AJ8700 HISTORY - 20020512 GOOD MAPTEC  
AJ8700 HISTORY - 20090527 GOOD FLDT  
AJ8700 HISTORY - 20121119 GOOD INDIV





"X 175 8696" NGS Benchmark Datasheet (4 of 4)

AJ8700'(10.13 MI) TO THE JUNCTION WITH STATE ROAD 84, GO EAST ON STATE ROAD  
AJ8700'84 2.4 KM  
AJ8700'(1.51 MI) TO THE EAST END OF A DRAW BRIDGE (BRIDGE NUMBER 860008) AND  
AJ8700'THE MARK  
AJ8700'ON THE LEFT. ALSO TO REACH THE MARK FROM THE INTERSECTION OF STATE  
AJ8700'ROAD 84 AND  
AJ8700'EISENHOWER BOULEVARD IN PORT EVERGLADES, GO WEST ON STATE ROAD 84 1.0  
AJ8700'KM (0.62  
AJ8700'MI) TO THE ENTRANCE-EXIT OF PORT EVERGLADES, CONTINUE WEST ON STATE  
AJ8700'ROAD 84  
AJ8700'5.1 KM (3.15 MI) TO THE EAST END OF A DRAW BRIDGE (BRIDGE NUMBER  
AJ8700'860008) AND  
AJ8700'THE MARK ON THE RIGHT.  
AJ8700'  
AJ8700'THE MARK IS 27.13 M (89.0 FT) EAST OF THE EAST EDGE OF THE DRAW BRIDGE  
AJ8700'STEEL  
AJ8700'GRATING, 4.42 M (14.5 FT) NORTH OF THE CENTERLINE OF THE WESTBOUND  
AJ8700'LANES OF  
AJ8700'STATE ROAD 84 AND 0.27 M (0.9 FT) WEST OF A EXPANSION JOINT (BETWEEN  
AJ8700'BRIDGE  
AJ8700'AND ABUTMENT). THE MARK IS A DISK SET FLUSH IN A CONCRETE WALK AT THE  
AJ8700'NORTHEAST CORNER OF A DRAW BRIDGE (BRIDGE NUMBER 860008).  
AJ8700'  
AJ8700'STATION RECOVERY (2002)  
AJ8700'RECOVERY NOTE BY MAPTECH, INCORPORATED 2002 ( CP)  
AJ8700'RECOVERD AS DESCRIBED.  
AJ8700'  
AJ8700'  
AJ8700' STATION RECOVERY (2009)  
AJ8700'  
AJ8700'  
AJ8700'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2009 (JS)  
AJ8700'RECOVERED AS DESCRIBED  
AJ8700'  
AJ8700'  
AJ8700'THIS MARK MAY BE DESTROYED IN THE NEXT COUPLE OF YEARS DUE TO MAJOR  
AJ8700'RECONSTRUCTION ON I-595.  
AJ8700'  
AJ8700'  
AJ8700' STATION RECOVERY (2012)  
AJ8700'  
AJ8700'  
AJ8700'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2012 (ADC)  
AJ8700'RECOVERED AS FOUND ON NORTHEAST CORNER OF DRAWBRIDGE IN GOOD  
AJ8700'CONDITION.

\*\*\* retrieval complete.  
Elapsed Time = 00:00:03