SURVEYOR'S REPORT

Specific Purpose Survey of the
United States Geological Survey
Recorder Well G-1260
in
Broward County, Florida

Prepared for:

South Florida Water Management District

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Prepared by:

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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 27, 2019
Report Date: November 30, 2019
PO NO: 9500008146

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-1260** is located in Section 1, Township 48 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-1260 (G1260 2019), add 1.56'**. 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) 2nd 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 √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 the NGS Benchmark "E 235" (AD2629), through the well site, and closed back on NGS Benchmark "E 235" (AD2629). "E 235" was verified by occupation with base receiver and check utilizing RTK to NGS "010" and was within tolerance. The measurements were collected using a Digital Level and were hand written in Whidden Surveying & Mapping, Inc. Field Book W 203 Page 69, dated September 17, 2019, and field book W212 Page 58, dated November 15th 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-1260 (G1260 2019) were established by observing a 3-minute session of GPS data on September 17, 2019 using a Trimble R-8-S 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-1260 (G1260 2019), through the well monitoring point, then though the ground shot north of the well casing (ground elevation), through the USGS benchmarks "RM 1", "RM 2", and "RM 3" 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. #2, Pages 1-3, dated September 27, 2019. Additional data was manually recorded.

GPS METHODS (horizontal position of Well G-1260 monitoring point & USGS Benchmarks)

Latitude and Longitude for Well G-1260 monitoring point (North corner of hole in base of well opening) and USGS RM 1 (nail in concrete curb inlet), USGS RM 2 (Nail in concrete sidewalk), and USGS RM 3 (Nail in concrete utility slab) were established by observing a 3-minute session of GPS data on September 27, 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

VERTICAL CONTROL POINT

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

NGS Benchmark "E 235" (AD2629)						
26° 19' 05.55" (N)	80° 06' 05.04" (W)	Published	13.67 ft.	(NAVD88)	4.17 m	Published
						

THE MARK IS LOCATED IN DEERFIELD BEACH, AT THE INTERSECTION OF DIXIE HWY AND HILLSBORO BLVD, 114.2 FT SOUTH OF THE CENTER OF THE EASTBOUND LANES OF THE BLVD, 100.7 FT SOUTH OF A UTILITY LIGHT POLE, 46.9 FT EAST OF AND LEVEL WITH THE HWY CENTER, 42.0 FT WEST OF A RAILROAD MILE POST 327, NEAR THE CENTER OF 2 VERTICAL RAILS, AND 1.0 FT WEST OF A WITNESS POST

NGS BENCHMARK DISK, SET IN GRASS AREA

STAMPING: U.S. COAST & GEODATIC SURVEY BENCHMARK E235 1965

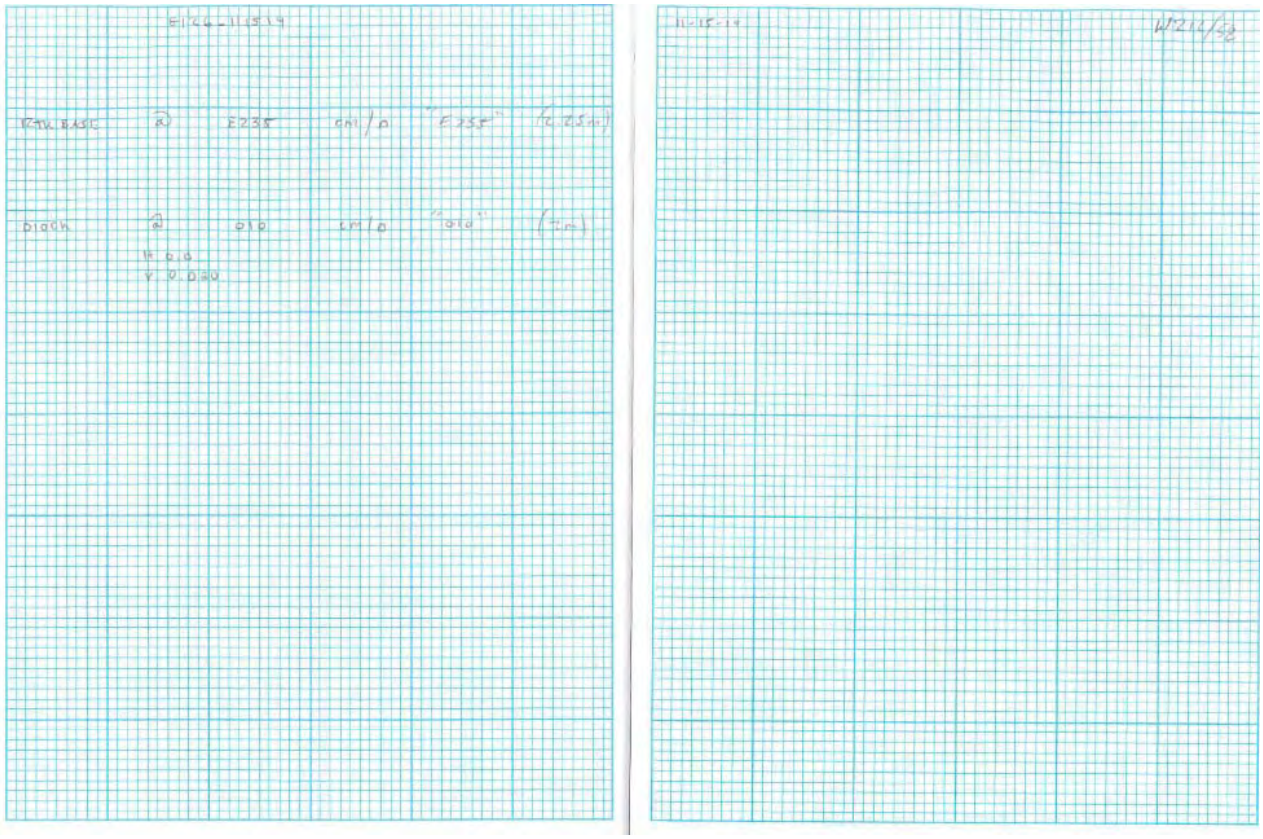
NGS Benchmark "010" (DO2649)						
26° 17' 03.88" (N)	80° 06' 39.54" (W)	Published	15.16 ft.	(NAVD88)	4.62 m	Published
						

THE MARK IS LOCATED 235 FT SOUTH OF THE INTERSECTION OF NORTH DIXIE HIGHWAY AND NORTHEAST 43RD COURT, 50 FT EAST OF THE CENTERLINE OF NORTH DIXIE HIGHWAY, 36.7 FT WEST OF THE WEST RAIL OF THE RAIL ROAD, 13.2 FT SOUTHWEST OF A 6-INCH BLACK OLIVE TREE, 12 FT EAST OF THE EAST EDGE OF A 2 FT WIDE CURB AND GUTTER AND 1.3 FT WEST OF A CARSONITE WITNESS POST

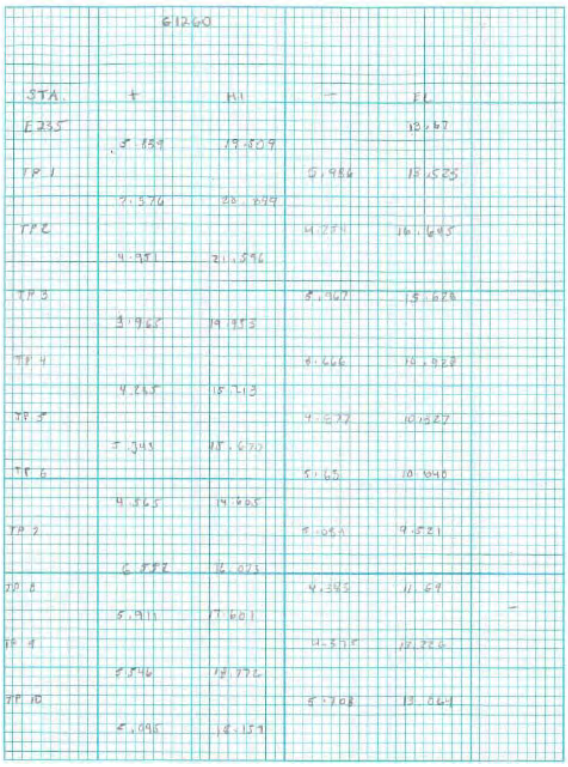
NGS BENCHMARK DISK SET IN GRASS AREA
STAMPING: CITY OF POMPANO BEACH 010 2011 BENCHMARK

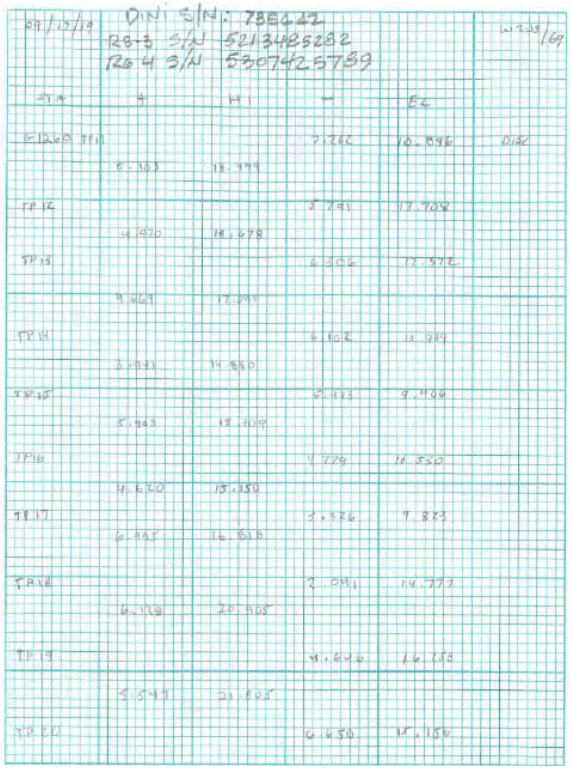
BM: G-1260 (Existing on site benchmark set by Dewberry Engineering, Inc.)						
26° 19' 4.50" (N)	80° 06' 54.99" (W)		10.89 ft.	(NAVD88)	3.32 m	Level run
NAD_83(2011)			12.45 ft.	(NGVD29)	3.79 m	Converted
				1.56 ft. (conversion factor)		Corpscon 6.0.1
			STATION IS A S.F.W.M.D. BM STAMPED "G1260 2019" SET IN THE SW CORNER OF A CONCRETE SLAB FOR A PEDESTRIAN CROSSING SIGN LOCATED: SOUTH OF I-95 ON RAMP AT PEDESTRIAN CROSS LIGHT			

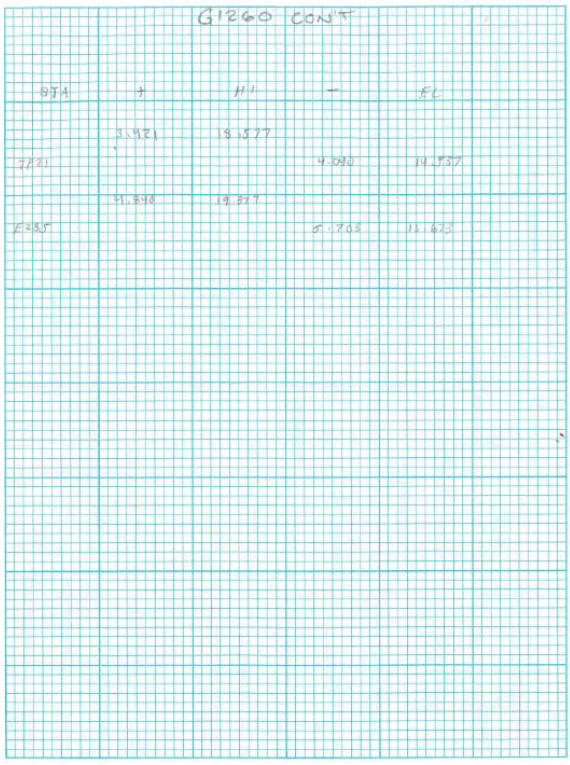
Field Book W212, Page 58

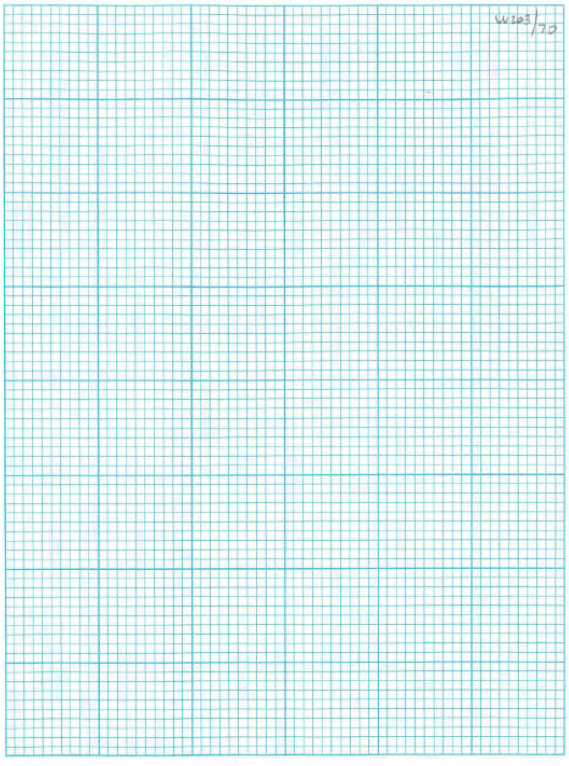


Field Book W203, Page 69-70



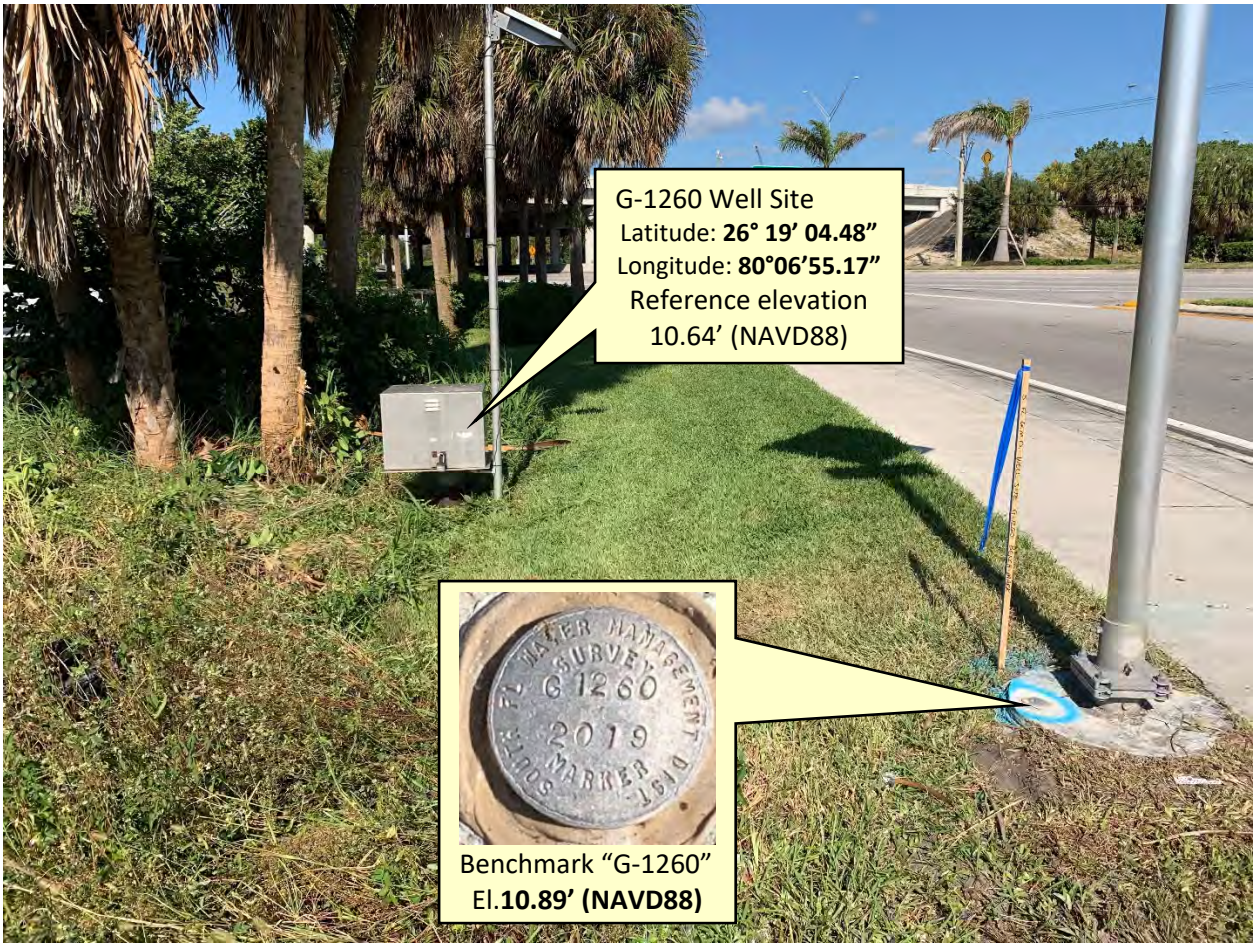






PROJECT RESULTS

Overall Site



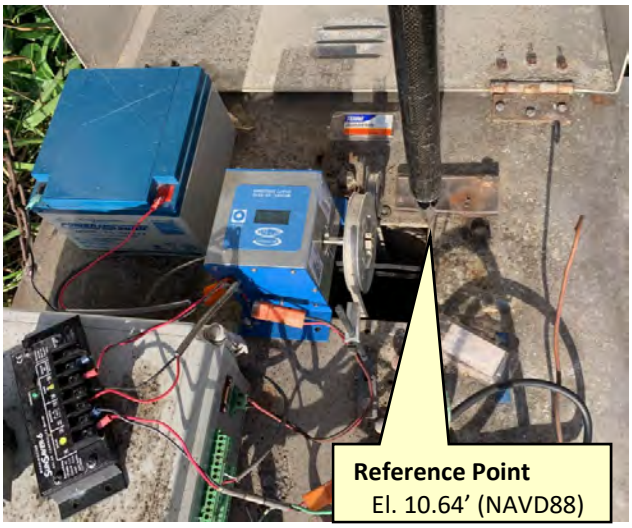
Looking West (Oblique not to scale)

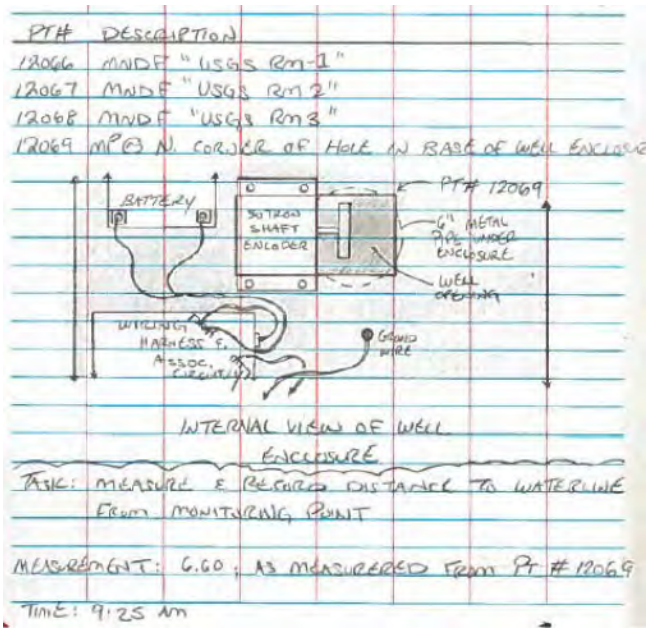
Tabular Form

Reference and Ground Elevations: NAVD88			
Well	Ground Elevation	Reference Elevation	Comments
G-1260	9.6 ft.	10.64 ft.	North corner of pipe opening
Offset to NGVD29: +1.56' (See Project Vertical Datum Notes in Page: 4)			
Well diameter		Casing material	DTW
6" Metal Pipe		Metal	-6.60 ft. (9/27/19 at 9:25 AM)

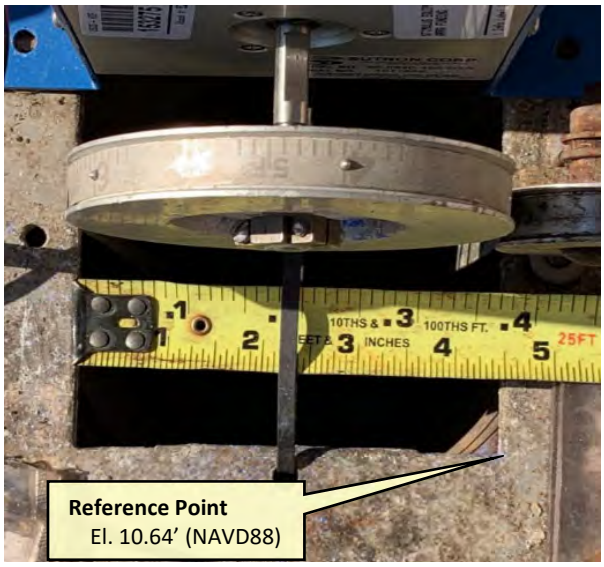
Source & Site Benchmark	NAVD88	NGVD29 (Published)	NGVD29 (Corpscon)
NGS "010" (DO2649)	15.16 ft. (Published)		
NGS "E235" (AD2629)	13.67 ft. (Published)		
BM G1260 (SFWMD)	10.89 ft. (Measured)		12.45 ft. (Converted)
RM-1	12.82 ft. (Measured)		
RM-2	12.57 ft. (Measured)		
RM-3	12.63 ft. (Measured)		

Well Photos and Diagrams (Continued)





Well Photos and Diagrams (Continued)



Overhead View (Oblique Not to scale)

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 1.56 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 27, 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: W203 pages 69-70 and W212 page 58

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.

Last date of Survey
Sept. 27, 2019

William Donley, PSM
Florida Professional Surveyor and Mapper
License Number 5381
State of Florida
Dewberry Engineering, LLC, Inc. LB No 8011
131 West Kaley Street, Orlando, FL. 32806
Tel (321) 354-9826

South Florida Water Management District Benchmark Datasheet

Designation: G-1260	Project Name: USGS Ph 2, BROWARD	Type: V	State Plane Zone: FL East
Stamping: G1260 2019	Field Book Name: W203/W212	Field Book Page: 69-70/58	
Established By: DEWBERRY / WHIDDEN	Recovered By: N/A	Recovery Date: N/A	
Surveyor: WILLIAM D. DONLEY	Established Date: 09/17/19 & 09/15/19	Status: New	

GEOGRAPHIC POSITION INFORMATION

Section: 1	Township: 48 SOUTH	Range: 42 EAST	
County: BROWARD	Quadrangle: BOCARATON	Quad Index: 1901	NGS Source BM(s): E 235
NAD83 Adj. Year: 2011	Vertical Datum: NAVD1988	Horizontal Datum: NAD1983	NGS PID(s): AD2629
NAVD88 Elevation (feet): 10.89	NGVD29 Elevation (feet): 12.45	2022 Elevation: N/A	NGS NAVD88 Elev (ft): 13.67
NAVD88 Class: N/A	NGVD29 Class: N/A	Other Elevation: N/A	NGS NAVD88 Elev (m): 4.168
NAVD88 Order: 3	NGVD29 Order: N/A	Other Elevation Type: N/A	NGS 2022 Elev (ft): N/A

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 vertcon05.txt and vertcon0..05 files supplied by the U.S. Army Corps of Engineers South Atlantic Division, Jacksonville FL):

Vertical Datum Offset: + 1.56 | Actual NGS Elevation or ngvd29.txt file: N/A | OPUS Ortho Height: N/A

Northing (Y) (feet): 722233.5 | Easting (X) (feet): 945974.7 | Source of Latitude & Longitude: AVERAGED FPRN & TRIMBLE VRSNOW RTK

	DD°	MM'	SS"		DD°	MM'	SS"
Latitude:	26	19	4.5	Longitude:	80	6	54.99

Latitude (Decimal Degrees): 26.317917 | Longitude (Decimal Degrees): -80.115275

RECOVERY DATA

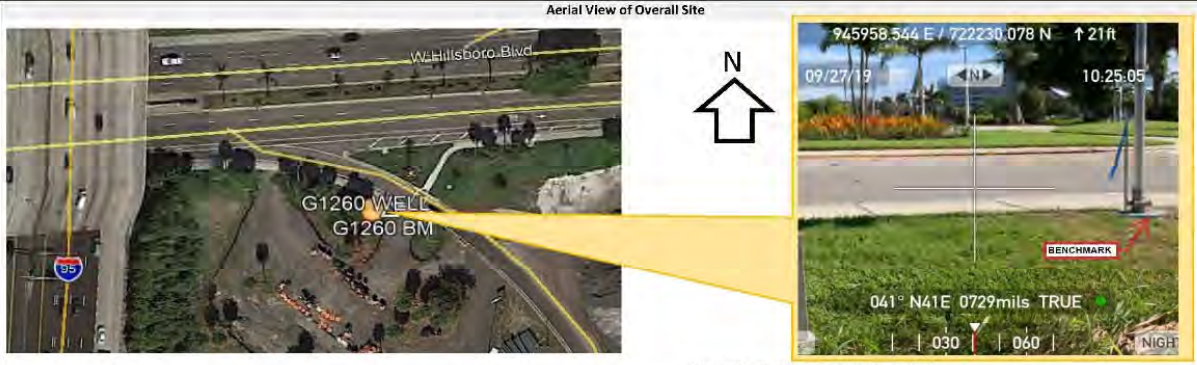
How to Reach:	1. FROM N MILITARY TRAIL, HEAD EAST ON FL-810/W HILLSBORO BLVD FOR 0.7 MI 2. MERGE INTO FAR RIGHT TURN LANE FOR THE ON-RAMP FOR I-95 NORTH, CONTINUE 515 FEET TO THE MARK ON THE RIGHT, LOCATED JUST BEFORE THE PEDESTRIAN CROSSWALK.
Description/Notes:	2" ALUMINUM SFWMD DISK SET IN CONCRETE BASE OF PEDESTRIAN CROSSING SIGN

Notable Landmarks:

Other Source Benchmarks: NGS "010" (DO2649)

PICTURES

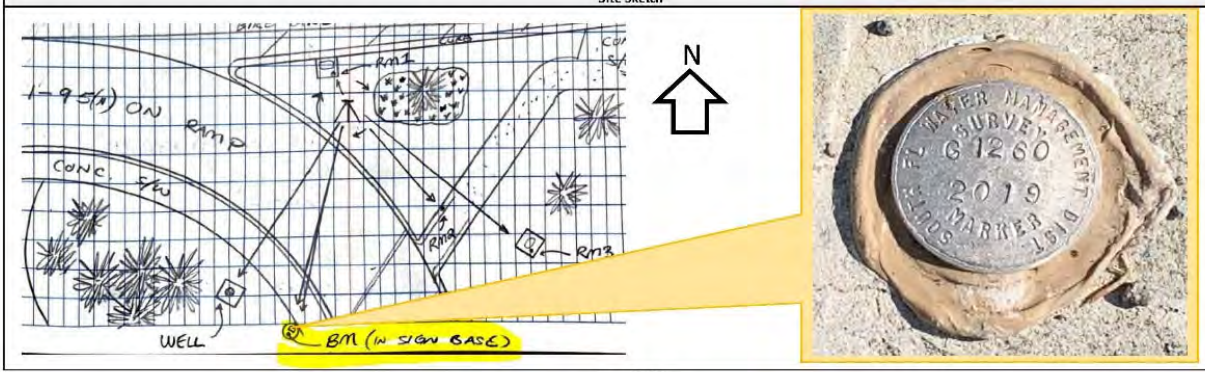
Aerial View of Overall Site



NOT TO SCALE. AERIAL FROM GOOGLEEARTH.

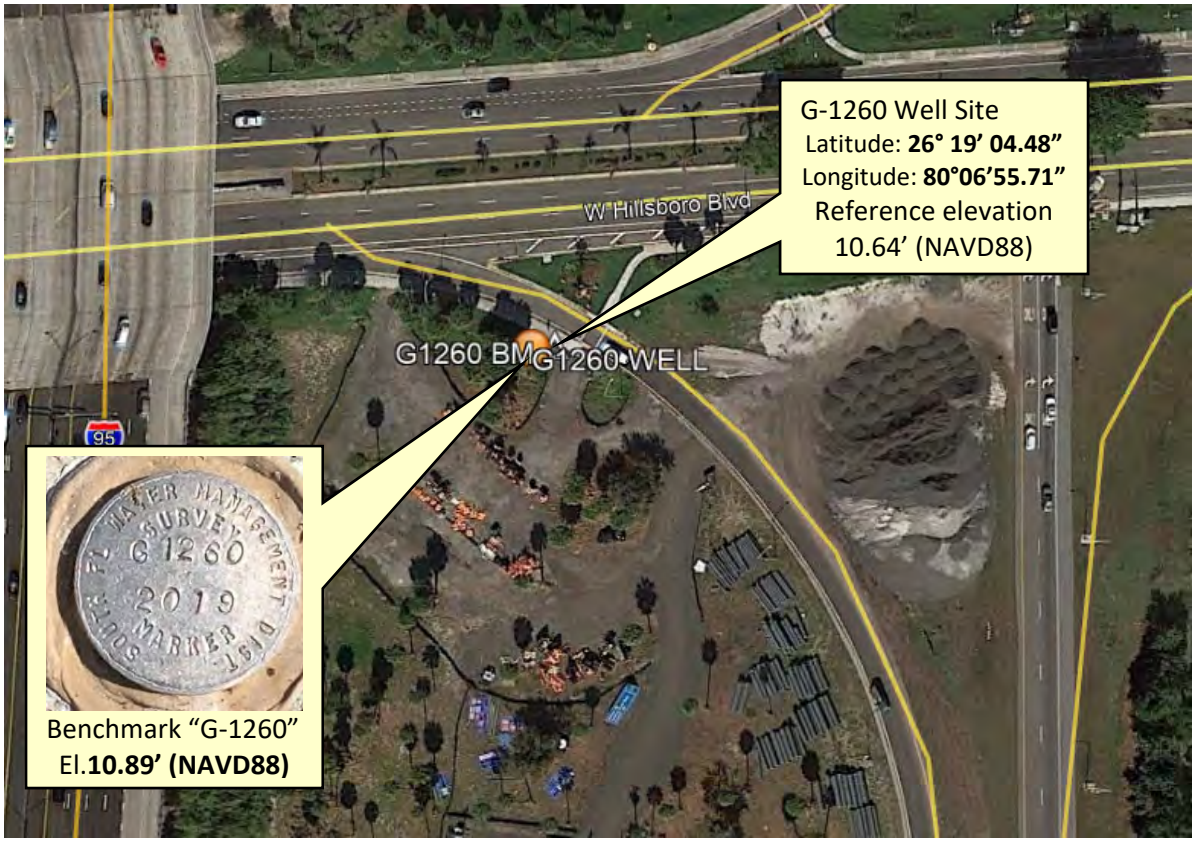
PICTURES

Site Sketch



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/18

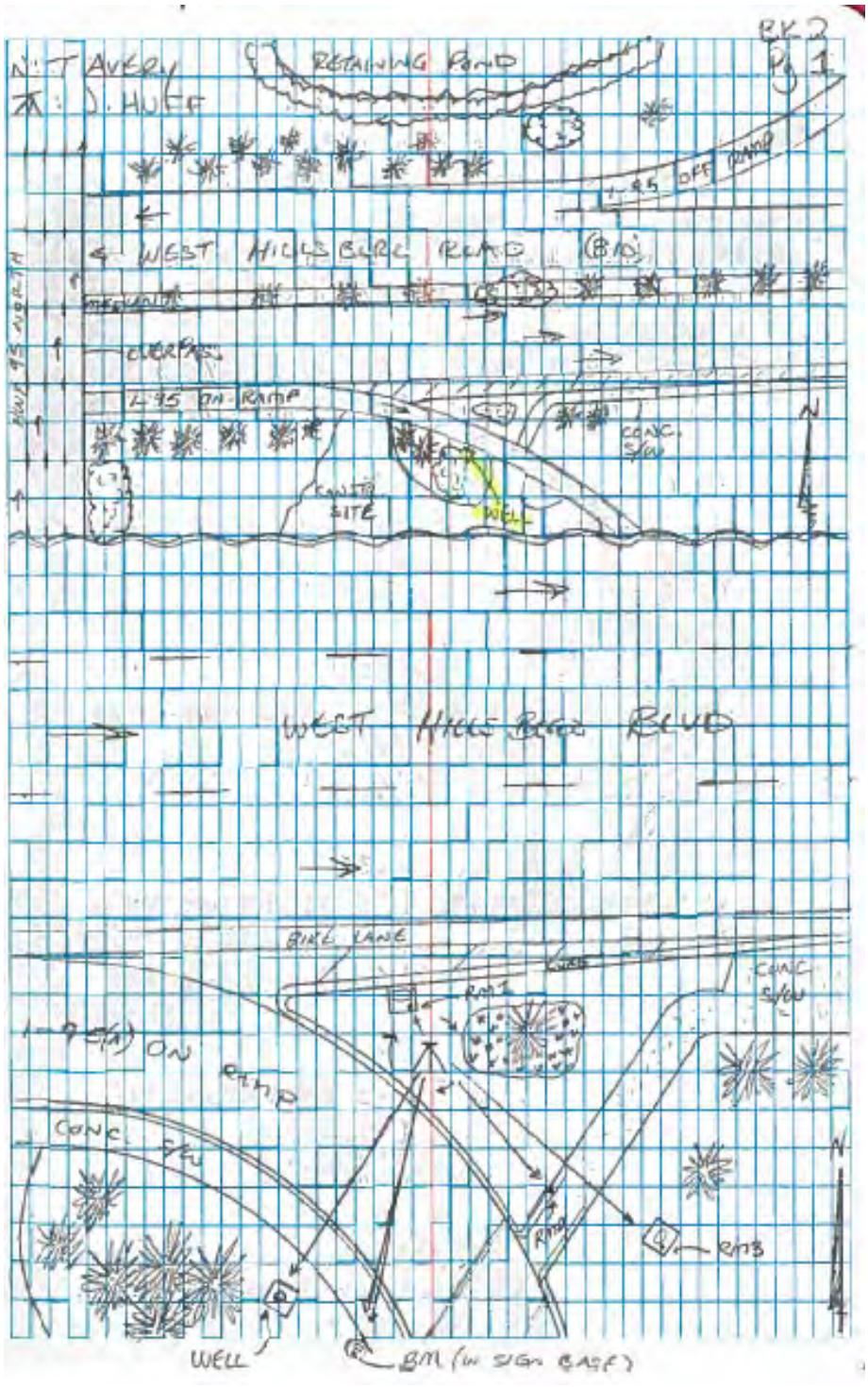


NOT TO SCALE (Google Earth product)

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/18

SKETCH



FIELD BOOK SFWMD #2, PAGE 1-3

Office

Project

1 December 2019

INPUT	OUTPUT
State Plane, NAD83	Geographic, NAD83
0901 - Florida East, U.S. Feet	Vertical - NGVD29 (Vertcon94), U.S. Feet
Vertical - NAVD88, U.S. Feet	

Well G-1260

1/2

Northing/Y: 722231.84
Easting/X: 945959.27
Elevation/Z: 10.64
Convergence: 0 23 32.09266
Scale Factor: 1.000037469
Combined Factor: 1.000041012

Latitude: 26 19 04.48236
Longitude: 80 06 55.16525
Elevation/Z: 12.208

BM G-1260

2/2

Northing/Y: 722233.5
Easting/X: 945974.7
Elevation/Z: 10.89
Convergence: 0 23 32.16812
Scale Factor: 1.000037480
Combined Factor: 1.000041010

Latitude: 26 19 04.49776
Longitude: 80 06 54.99557
Elevation/Z: 12.458

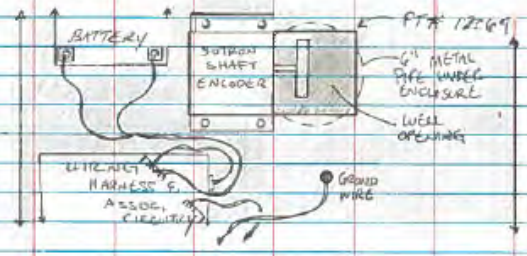
Remark:

SPECTRA SP-80 SFWMD 09/27/19
ROVER S/N: 1165 USGS WELLS & BMs
TRIMBLE NETWORK JOB # 50099949
HI: 6.502 WELL SITE G-1260

TASK: ESTABLISH HORIZONTAL LOCATIONS ON WELL MONITORING POINT & REFERENCE MONUMENTATION

	PT #	(N) ERR	(E) ERR	(Z) ERR	PT #	DESCRIPTION
S/O	5	0.083	-0.041	C0.166	5048	CHK-IN BM @ G-1260
* LOCATED PT #'s 12066 - 12069						
S/O	5	0.034	-0.043	C 0.172	5049	CHK-OUT BM @ G-1260

PT #	DESCRIPTION
12066	MNDF "USGS RM-1"
12067	MNDF "USGS RM 2"
12068	MNDF "USGS RM3"
12069	MP @ N. CORNER OF HOLE IN BASE OF WELL ENCLOSURE

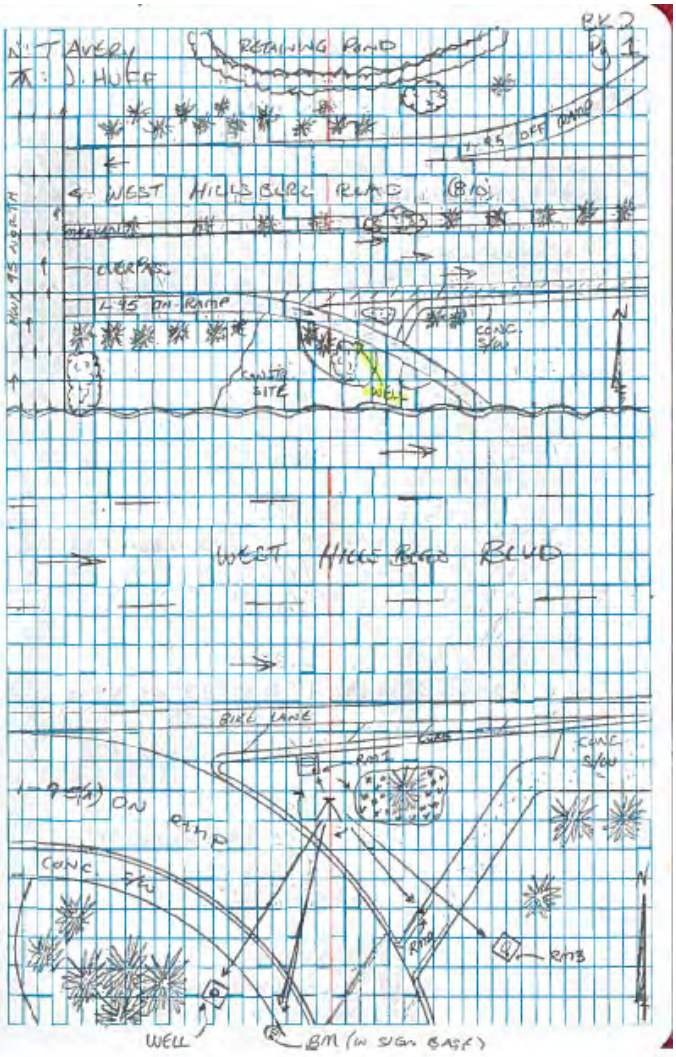


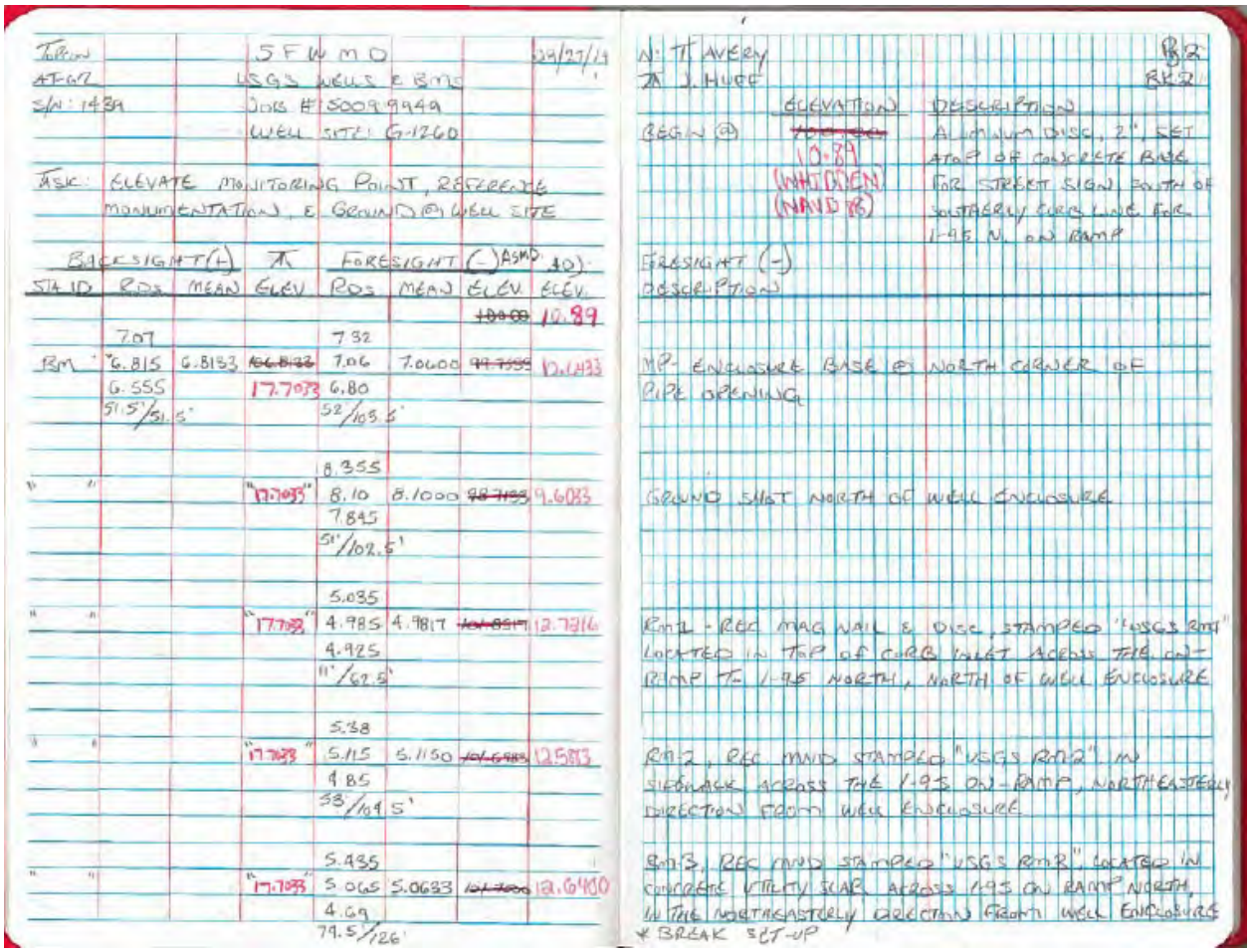
INTERNAL VIEW OF WELL ENCLOSURE

TASK: MEASURE & RECORD DISTANCE TO WATERLINE FROM MONITORING POINT

MEASUREMENT: 6.60 ; AS MEASURERED FROM PT # 12069

TIME: 9:25 AM





TRIMBLE
AT401
S/N: 1439

5 F W M D
USGS WELLS & BMs
JOB #: 5009 9949
WELL SITE: G-1260

5/29/19

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

STA ID	BACKSIGHT (+) RDG	MEAN	ELEV	FORESIGHT (-) RDG	MEAN	ELEV	ASMD 10) ELEV.
	7.07			7.32			10.89
BM	6.815	6.8133	~~16.8133~~	7.06	7.0600	~~97.7555~~	10.4433
	6.555		17.7033	6.80			
	51.5'/51.5'			52'/103.5'			
				8.355			
"	"		"17.7033"	8.10	8.1000	~~98.7555~~	9.6033
				7.845			
				51'/102.5'			
				5.035			
"	"		"17.7033"	4.985	4.9817	~~101.8517~~	12.7216
				4.925			
				11'/62.5'			
				5.38			
"	"		"17.7033"	5.115	5.1150	~~101.6483~~	12.5883
				4.85			
				53'/104.5'			
				5.435			
"	"		"17.7033"	5.065	5.0633	~~101.7500~~	12.6400
				4.69			
				79.5'/126'			

N: TT AVERY
A: J. HUGG

BS
BK1

	ELEVATION	DESCRIPTION
BEGIN @	~~100.7555~~ 10.89 (WHITTAKER) (NAVD 88)	ALUMINUM DISC, 2", SET ATOP OF CONCRETE BASE FOR STREET SIGN, SOUTH OF SOUTHERLY EDGE LANE FOR I-95 N. ON RAMP

FORESIGHT (-)
DESCRIPTION

MP - ENCLOSURE BASE @ NORTH CORNER OF PIPE OPENING

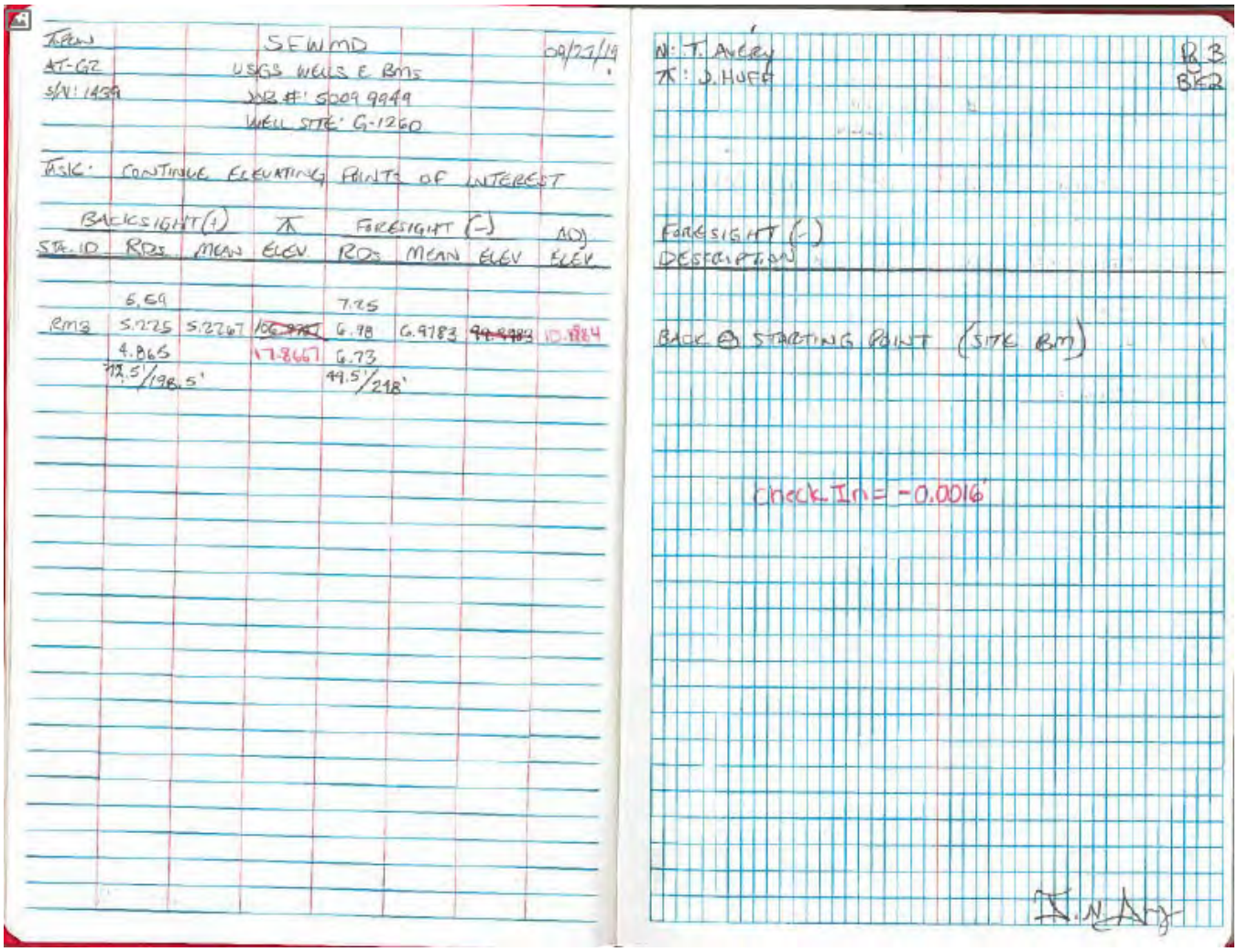
GROUND SHOT NORTH OF WELL ENCLOSURE

RM1 - REC MAG NAIL & DISC, STAMPED "USGS RM1" LOCATED IN TOP OF CURB INLET ACROSS THE ON-RAMP TO I-95 NORTH, NORTH OF WELL ENCLOSURE

RM2, REC MAG NAIL STAMPED "USGS RM2", IN SIDEWALK, ACROSS THE I-95 ON-RAMP, NORTHEASTERLY DIRECTION FROM WELL ENCLOSURE

RM3, REC MAG NAIL STAMPED "USGS RM3", LOCATED IN CONCRETE UTILITY SCAR, ACROSS I-95 ON RAMP NORTH, IN THE NORTHEASTERLY DIRECTION FROM WELL ENCLOSURE

* BREAK SET-UP



TEAM SFWMD 09/27/19
AT-G2 USGS WELLS & BMs
S/N: 1459 JOB #: 5009 9949
WELL SITE: G-1260

TASK: CONTINUE ELEVATING POINTS OF INTEREST

	BACKSIGHT (+)			FORESIGHT (-)			ADJ
STA. ID	RDs.	MEAN	ELEV	RDs.	MEAN	ELEV	ELEV
	6.69			7.95			
RM3	5.1225	5.2267	~~10.5~~ 17.8667	6.98	6.9783	~~99.9983~~ 10.7884	
	4.865			6.73			
	99.5'/198.5'			99.5'/218'			

N: T. AVERY
R: J. HUFF

RM3
BK2

FORESIGHT (-)
DESCRIPTION

BACK (+) STARTING POINT (SITE B.M.)

CHECK TIME = -0.0016'

T. N. Avery

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 = NOVEMBER 15, 2019
 DO2649 ***********************************************************************
 DO2649  DESIGNATION -  010
 DO2649  PID         -  DO2649
 DO2649  STATE/COUNTY-  FL/BROWARD
 DO2649  COUNTRY     -  US
 DO2649  USGS QUAD   -  BOCA RATON (1983)
 DO2649
 DO2649                         *CURRENT SURVEY CONTROL
 DO2649  ______________________________________________________________________
 DO2649* NAD 83(1986) POSITION- 26 17 03.      (N) 080 06 39.      (W)    SCALED
 DO2649* NAVD 88 ORTHO HEIGHT -      4.621 (meters)        15.16   (feet) ADJUSTED
 DO2649  ______________________________________________________________________
 DO2649  GEOID HEIGHT    -        -25.855 (meters)                        GEOID18
 DO2649  DYNAMIC HEIGHT  -          4.614 (meters)        15.14   (feet) COMP
 DO2649  MODELED GRAVITY -    979,075.7   (mgal)                          NAVD 88
 DO2649
 DO2649  VERT ORDER      -  SECOND    CLASS II
 DO2649
 DO2649.The horizontal coordinates were scaled from a map and have
 DO2649.an estimated accuracy of +/- 6 seconds.
 DO2649.
 DO2649.The orthometric height was determined by differential leveling and
 DO2649.adjusted by the NATIONAL GEODETIC SURVEY
 DO2649.in December 2012.
 DO2649
 DO2649.Significant digits in the geoid height do not necessarily reflect accuracy.
 DO2649.GEOID18 height accuracy estimate available here.
 DO2649
 DO2649.Click here to see if photographs exist for this station.
 DO2649
 DO2649.The dynamic height is computed by dividing the NAVD 88
 DO2649.geopotential number by the normal gravity value computed on the
 DO2649.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 DO2649.degrees latitude (g = 980.6199 gals.).
 DO2649
 DO2649.The modeled gravity was interpolated from observed gravity values.
 DO2649
 DO2649;                    North         East     Units  Estimated Accuracy
 DO2649;SPC FL E     -   216,400.      288,800.      MT   (+/- 180 meters Scaled)
 DO2649
 DO2649_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNK887074(NAD 83)
 DO2649
 DO2649                           SUPERSEDED SURVEY CONTROL
 DO2649
 DO2649.No superseded survey control is available for this station.
 DO2649
 DO2649_MARKER: DB = BENCH MARK DISK
 DO2649_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 DO2649_STAMPING: 010 2011
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“010” NGS Benchmark Datasheet (2 of 2)

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DO2649_MARK LOGO: FL2570
DO2649_PROJECTION: RECESSED 5 CENTIMETERS
DO2649_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
DO2649_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DO2649+STABILITY: SURFACE MOTION
DO2649_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DO2649+SATELLITE: SATELLITE OBSERVATIONS - December 22, 2011
DO2649
DO2649  HISTORY     - Date     Condition        Report By
DO2649  HISTORY     - 20111222 MONUMENTED       STONER
DO2649
DO2649                          STATION DESCRIPTION
DO2649
DO2649'DESCRIBED BY STONER AND ASSOCIATES INC 2011 (DWS)
DO2649'THE MARK IS ABOUT 6.0 MI (9.7 KM) EAST-SOUTHEAST OF WEST DIXIE BEND,
DO2649'5.4 MI (8.7 KM) SOUTH-SOUTHWEST OF BOCA RATON, 3.3 MI (5.4 KM)
DO2649'NORTH-NORTHEAST OF POMPANO BEACH, IN SECTION 13, TOWNSHIP 48 SOUTH,
DO2649'RANGE 42 EAST.  OWNERSHIP IS THE FLORIDA DEPARTMENT OF TRANSPORTATION.
DO2649'TO REACH THE MARK FROM THE INTERSECTION OF WEST ATLANTIC BOULEVARD AND
DO2649'NORTH DIXIE HIGHWAY IN POMPANO BEACH, GO NORTH ON NORTH DIXIE HIGHWAY
DO2649'FOR 3.8 MI (6.1 KM) TO THE MARK ON THE RIGHT, SET IN THE TOP OF A
DO2649'10-INCH (25 CM) ROUND CONCRETE MONUMENT RECESSED 0.2 FT (6 CM) BELOW
DO2649'THE LEVEL OF THE GROUND AND LEVEL WITH NORTH DIXIE HIGHWAY.
DO2649'
DO2649'LOCATED 235.0 FT (71.6 M) SOUTH OF THE INTERSECTION OF NORTH DIXIE
DO2649'HIGHWAY AND NORTHEAST 43RD COURT, 50.0 FT (15.2 M) EAST OF THE
DO2649'CENTERLINE OF NORTH DIXIE HIGHWAY, 36.7 FT (11.2 M) WEST OF THE WEST
DO2649'RAIL OF THE RAIL ROAD, 13.2 FT (4.0 M) SOUTHWEST OF A 6-INCH (15 CM)
DO2649'BLACK OLIVE TREE, 12.0 FT (3.7 M) EAST OF THE EAST EDGE OF A 2.0 FT
DO2649'(0.6 M) WIDE CURB AND GUTTER AND 1.3 FT (0.4 M) WEST OF A CARSONITE
DO2649'WITNESS POST.
DO2649'
DO2649'NOTE REBAR ROD IS IMBEDDED IN THE MONUMENT.

*** retrieval complete.
Elapsed Time = 00:00:02
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The NGS Data Sheet

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

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PROGRAM = datasheet95, VERSION = 8.12.5.2
1        National Geodetic Survey,   Retrieval Date = MAY 20, 2019
 AD2629 ***********************************************************************
 AD2629  DESIGNATION -  E 235
 AD2629  PID         -  AD2629
 AD2629  STATE/COUNTY-  FL/BROWARD
 AD2629  COUNTRY     -  US
 AD2629  USGS QUAD   -  BOCA RATON (1983)
 AD2629
 AD2629                        *CURRENT SURVEY CONTROL
 AD2629  ______________________________________________________________________
 AD2629* NAD 83(2011) POSITION- 26 19 05.55152(N) 080 06 05.04537(W)   ADJUSTED
 AD2629* NAD 83(2011) ELLIP HT-   -21.730 (meters)        (06/27/12)   ADJUSTED
 AD2629* NAD 83(2011) EPOCH    -  2010.00
 AD2629* NAVD 88 ORTHO HEIGHT -     4.168 (meters)       13.67  (feet) ADJUSTED
 AD2629  ______________________________________________________________________
 AD2629  GEOID HEIGHT    -        -25.897 (meters)                    GEOID12B
 AD2629  NAD 83(2011) X  -    983,427.367 (meters)                    COMP
 AD2629  NAD 83(2011) Y  - -5,635,598.646 (meters)                    COMP
 AD2629  NAD 83(2011) Z  -  2,810,695.757 (meters)                    COMP
 AD2629  LAPLACE CORR    -         -3.78  (seconds)                   DEFLEC12B
 AD2629  DYNAMIC HEIGHT  -          4.161 (meters)       13.65  (feet) COMP
 AD2629  MODELED GRAVITY -    979,078.7   (mgal)                      NAVD 88
 AD2629  OBS GRAVITY     -    979,077.4   (mgal)                      GRAV_OBS
 AD2629
 AD2629  VERT ORDER      -  FIRST     CLASS II
 AD2629
 AD2629  Network accuracy estimates per FGDC Geospatial Positioning Accuracy
 AD2629  Standards:
 AD2629         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 AD2629            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 AD2629  ----------------------------------------------------------------------
 AD2629  NETWORK    0.82   1.55           0.34   0.33   0.79     -0.08755831
 AD2629  ----------------------------------------------------------------------
 AD2629  Click here for local accuracies and other accuracy information.
 AD2629
 AD2629
 AD2629.The horizontal coordinates were established by GPS observations
 AD2629.and adjusted by the National Geodetic Survey in June 2012.
 AD2629
 AD2629.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
 AD2629.been affixed to the stable North American tectonic plate. See
 AD2629.NA2011 for more information.
 AD2629
 AD2629.The horizontal coordinates are valid at the epoch date displayed above
 AD2629.which is a decimal equivalence of Year/Month/Day.
 AD2629
 AD2629.The orthometric height was determined by differential leveling and
 AD2629.adjusted by the NATIONAL GEODETIC SURVEY
 AD2629.in May 2002.
 AD2629
 AD2629.WARNING-Repeat measurements at this control monument indicate possible
 AD2629.vertical movement.
 AD2629
 AD2629.Significant digits in the geoid height do not necessarily reflect accuracy.
 AD2629.GEOID12B height accuracy estimate available here.
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AD2629
AD2629.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AD2629
AD2629.The Laplace correction was computed from DEFLEC12B derived deflections.
AD2629
AD2629.The ellipsoidal height was determined by GPS observations
AD2629.and is referenced to NAD 83.
AD2629
AD2629.The dynamic height is computed by dividing the NAVD 88
AD2629.geopotential number by the normal gravity value computed on the
AD2629.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AD2629.degrees latitude (g = 980.6199 gals.).
AD2629
AD2629.The modeled gravity was interpolated from observed gravity values.
AD2629
AD2629.The observed gravity was obtained from relative gravimeter ties
AD2629.to the IGSN71 gravity network.
AD2629
AD2629. The following values were computed from the NAD 83(2011) position.
AD2629
AD2629;                    North         East     Units Scale Factor Converg.
AD2629;SPC FL E     -   220,179.202   289,718.839   MT  1.00004052   +0 23 54.3
AD2629;SPC FL E     -   722,371.27    950,519.22    sFT  1.00004052   +0 23 54.3
AD2629;UTM  17      - 2,911,236.059   589,688.227   MT  0.99969931   +0 23 54.3
AD2629
AD2629!             -  Elev Factor  x  Scale Factor =   Combined Factor
AD2629!SPC FL E     -   1.00000341  x   1.00004052  =   1.00004393
AD2629!UTM  17      -   1.00000341  x   0.99969931  =   0.99970272
AD2629
AD2629_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNK8968811236(NAD 83)
AD2629
AD2629                           SUPERSEDED SURVEY CONTROL
AD2629
AD2629  NAD 83(2007)-  26 19 05.55172(N)    080 06 05.04606(W) AD(2002.00) 0
AD2629  ELLIP H (02/10/07)  -21.717  (m)                       GP(2002.00)
AD2629  NAD 83(1999)-  26 19 05.55176(N)    080 06 05.04605(W) AD(       ) 1
AD2629  ELLIP H (12/12/02)  -21.710  (m)                       GP(       ) 3 1
AD2629  NAVD 88               4.17   (m)           13.7    (f) LEVELING    3
AD2629  NAVD 88 (06/15/91)    4.162  (m)           13.65   (f) SUPERSEDED  1 2
AD2629  NGVD 29 (??/??/92)    4.643  (m)           15.23   (f) SUPERSEDED  1 2
AD2629  NGVD 29 (09/01/92)    4.643  (m)           15.23   (f) ADJUSTED    1 2
AD2629
AD2629.Superseded values are not recommended for survey control.
AD2629
AD2629.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AD2629.See file dsdata.pdf to determine how the superseded data were derived.
AD2629
AD2629_MARKER: DB = BENCH MARK DISK
AD2629_SETTING: 46 = COPPER-CLAD STEEL ROD W/O SLEEVE (10 FT.+)
AD2629_STAMPING: E 235 1965
AD2629_MARK LOGO: CGS
AD2629_PROJECTION: FLUSH
AD2629_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET
AD2629_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AD2629_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AD2629+SATELLITE: SATELLITE OBSERVATIONS - January 14, 2008
AD2629_ROD/PIPE-DEPTH: 13.1 meters
AD2629
AD2629  HISTORY     - Date     Condition        Report By
AD2629  HISTORY     - 1965     MONUMENTED       CGS
AD2629  HISTORY     - 1973     GOOD             NGS
AD2629  HISTORY     - 1981     GOOD             FLDNR
AD2629  HISTORY     - 1982     GOOD             USPSQD
AD2629  HISTORY     - 1985     GOOD             USPSQD
AD2629  HISTORY     - 1987     GOOD             USPSQD
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AD2629  HISTORY     - 1989     GOOD             USPSQD
AD2629  HISTORY     - 1989     GOOD             USPSQD
AD2629  HISTORY     - 1990     GOOD             USPSQD
AD2629  HISTORY     - 19910102 GOOD             NGS
AD2629  HISTORY     - 19910615 GOOD             USPSQD
AD2629  HISTORY     - 20011020 GOOD             USPSQD
AD2629  HISTORY     - 20020521 GOOD             MAPTEC
AD2629  HISTORY     - 20080114 GOOD             MAPTEC
AD2629  HISTORY     - 20110124 POOR             FLDT
AD2629  HISTORY     - 20120925 GOOD             AMEC
AD2629
AD2629                          STATION DESCRIPTION
AD2629
AD2629'DESCRIBED BY COAST AND GEODETIC SURVEY 1965
AD2629'1.9 MI S FROM BOCA RATON.
AD2629'ABOUT 1.9 MILES SOUTH ALONG THE FLORIDA EAST COAST RAILWAY FROM
AD2629'THE STATION AT BOCA RATON, AT DEERFIELD BEACH, 107.5 FEET SOUTH
AD2629'OF THE SOUTH CURB OF EAST HILLSBORO BLVD, IN SECTION 6, R 42 E,
AD2629'T 48 S, 29.5 FEET WEST OF THE WEST RAIL OF THE SOUTHBOUND TRACK,
AD2629'1.7 FEET WEST OF MILEPOST 327, 1.9 FEET NORTH OF A VERTICAL RAIL
AD2629'IN GROUND WHICH PROJECTS 4 FEET ABOVE THE GROUND, 2.0 FEET SOUTH
AD2629'OF ANOTHER VERTICAL RAIL WHICH PROJECTS 4 FEET ABOVE GROUND, 43
AD2629'FEET EAST OF THE CENTER LINE OF THE OLD DIXIE HIGHWAY, 1.5 FEET
AD2629'EAST OF A METAL WITNESS POST, ABOUT LEVEL WITH THE TOP OF RAIL,
AD2629'AND IS A DISK SET ON THE TOP OF A COPPER COATED STEEL ROD WHICH
AD2629'PROJECTS 1 INCH ABOVE THE LEVEL OF THE GROUND AND PROTECTED BY
AD2629'A 4 INCH IRON PIPE WHICH PROJECTS ONE INCH.  THE ROD WAS DRIVEN
AD2629'TO REFUSAL AT A DEPTH OF 43 FEET.
AD2629
AD2629                          STATION RECOVERY (1973)
AD2629
AD2629'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1973
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1981)
AD2629
AD2629'RECOVERY NOTE BY FL DEPT OF NAT RES 1981
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1982)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1982
AD2629'CHANGE DESC:LOCATION SHOULD READ 'SECTION 6, R 43' NOT R 42.
AD2629
AD2629                          STATION RECOVERY (1985)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1985
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1987)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1987 (JHH)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1989)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1989 (JHF)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1989)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1989 (JHH)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1990)
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AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1990 (JHH)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (1991)
AD2629
AD2629'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991
AD2629'IN DEERFIELD BEACH, AT THE INTERSECTION OF DIXIE HIGHWAY AND
AD2629'HILLSBORO BOULEVARD, 34.8 M (114.2 FT) SOUTH OF THE CENTER OF THE
AD2629'EASTBOUND LANES OF THE BOULEVARD, 30.7 M (100.7 FT) SOUTH OF A
AD2629'UTILITY LIGHT POLE, 14.3 M (46.9 FT) EAST OF AND LEVEL WITH THE
AD2629'HIGHWAY CENTER, 12.8 M (42.0 FT) WEST OF THE NEAR RAIL OF THE FLORIDA
AD2629'EAST COAST RAILROAD, 9.0 M (29.5 FT) WEST OF RAILROAD MILE POST 327,
AD2629'NEAR THE CENTER OF 2 VERTICAL RAILS, AND 0.3 M (1.0 FT) WEST OF A
AD2629'WITNESS POST.  N0TE--THE DISK IS ENCASED IN A 4-INCH IRON PIPE THAT
AD2629'IS FLUSH WITH THE GROUND SURFACE.
AD2629
AD2629                          STATION RECOVERY (1991)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 1991 (RCW)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (2001)
AD2629
AD2629'RECOVERY NOTE BY US POWER SQUADRON 2001 (RWL)
AD2629'RECOVERED IN GOOD CONDITION.
AD2629
AD2629                          STATION RECOVERY (2002)
AD2629
AD2629'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)
AD2629'RECOVERED AS DESCRIBED.
AD2629'
AD2629
AD2629                          STATION RECOVERY (2008)
AD2629
AD2629'RECOVERY NOTE BY MAPTECH INCORPORATED 2008 (CN)
AD2629'RECOVERED AS DESCRIBED
AD2629
AD2629                          STATION RECOVERY (2011)
AD2629
AD2629'RECOVERY NOTE BY FLORIDA DEPARTMENT OF TRANSPORTATION 2011 (PED)
AD2629'MARK RECOVERED IN POOR CONDITION.
AD2629
AD2629                          STATION RECOVERY (2012)
AD2629
AD2629'RECOVERY NOTE BY AMEC EARTH & ENVIRONMENTAL 2012 (RLE)
AD2629'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:05
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