

SURVEYOR'S REPORT

Specific Purpose Survey of the United States Geological Survey Recorder Well G-3700 in Miami-Dade County, Florida

Prepared for:

South Florida Water Management District

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Prepared by:

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> Field Date: March 28, 2019 Report Date: April 24, 2019 BEC Order #: 03-86445

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PURPOSE

The purpose of this survey is to set an Elevation Reference Mark (Benchmark) consisting of a mag nail and washer and to establish a North American Vertical Datum of 1988 (NAVD 88) elevation on said Benchmark and on an additional Reference Point with a Brass plate, both at United States Geological Survey Well **G-3700**.

LOCATION OF PROJECT

The United States Geological Survey's Recorder Well **G-3700** is located in Section 35, Township 56 South, Range 39 East, Miami-Dade County, Florida.





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-3700 add 1.52**'. 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

The project horizontal datum is the North American Datum 83 (NAD 83(2011)) (EPOCH:2010.0000).

LEVELING METHODS

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

The allowable error (.05 \checkmark miles) on this project meets or exceeds third order closures as required by SFWMD for this project per executed SOW for 4600003705-WO04 and discussions with SFWMD.

A level loop was run from the Miami-Dade County Benchmark BB-7-RA, through the well site, and to the Miami-Dade County Benchmark HAF-28. The measurements were collected using a Digital Level and were hand written in Biscayne Engineering Co, Inc. Field Book 2995 pages 01-05, dated March 28, 2019, reduced and adjusted electronically. Additional data was manually recorded in the field book.

GPS METHODS

Latitude and Longitude for Benchmark G-3700 were established by observing a 3-minute session of GPS data on March 28 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 R-8-S, Serial Number 5625R066188.
- TOPCON DL-500 digital level Serial Number 512386 and a folding bar code rod.
- TOPCON Total Station GM-103, Serial Number ZQ000748.
- TOPCON Auto-level DL-500, Serial Number 512386.

VERTICAL CONTROL POINT

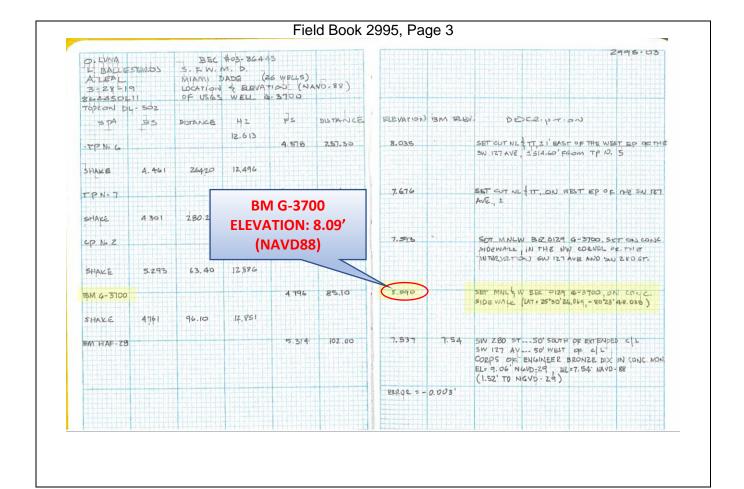
The Vertical Control point utilized and set as part of this survey is the:

M-DC BM BB-7-RA				
25° 31' 06.13" (N) 80° 23' 47.00" (W)	8.69 ft.	(NAVD88)	2.65 m	Published
	10.21ft.	(NGVD29)	3.11m	Published
BDADER	THE MA NORTH SW 127 PK AND SIDEWA	RK IS LOCA ⁻ OF C/L AVE 66' W BRASS WAS	3.11m FED: SW 268 /EST OF C/L SHER IN CON T OF TRAFFI	ST 49'
COUNTY	POLE.			

M-DC BM HAF-28				
25° 30' 25.24" (N) 80° 23' 46.50" (W)	7.54 ft.	(NAVD88)	2.30 m	Published
	9.06 ft.	(NGVD29)	2.76 m	Published
	THE MA SOUTH SW 127	ARK IS LOCA OF EXTENE AVE 50' \	TED: SW 280) ST 50'

SURVEYOR'S REPORT

BM: G-3700 (Set as p					
25° 30' 26.07" (N)	80° 23' 48.04" (W)	8.09 ft.	(NAVD88)	2.47 m	Level run
		9.61 ft.	(NGVD29)	2.93 m	Converted
	The second s		1.52 ft.		Corpscon
ALC: NOT ALL ALC: NOT ALL ALC: NOT ALL ALC: NOT			(conversion		6.0.1
STATE AND SH	the second s		factor)		
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		CONCR	ETE SIDEW	ALK	
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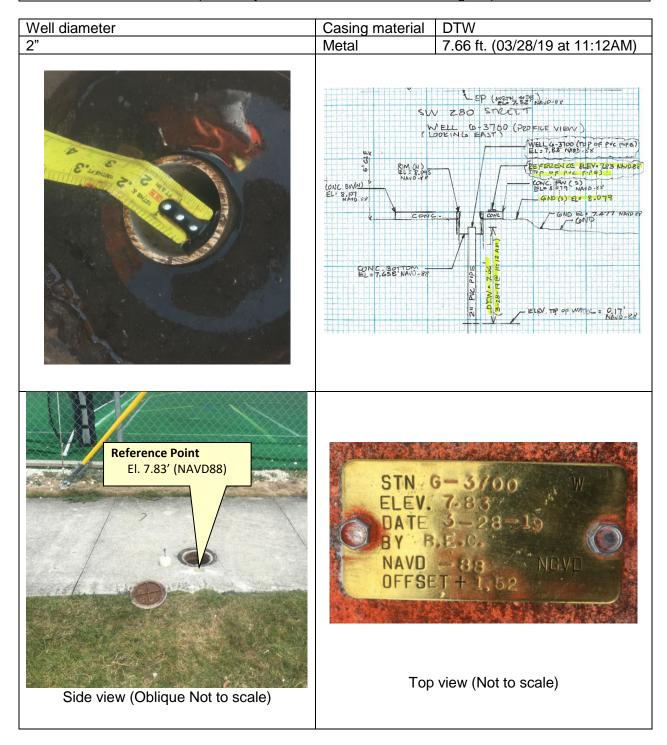
PROJECT RESULTS

Overall Site



Tabular Form

Reference and Ground Elevations: (NAVD88)							
Well	Well Ground Elevation Reference Elevation Comments						
G-3700	7.94 ft.	Top of 2" PVC pipe					
Offset to NGVD29: +1.52' (See Project Vertical Datum Notes in Page: 4)							



Source & Site	NAVD88	NGVD29 (Published)	NGVD29 (Corpscon)
Benchmark			
BB-7-RA (M-DC)	8.69 ft. (Published)	10.21 ft.	
HAF-28 (M-DC)	7.54 ft. (Published)	9.06 ft.	
G-3700 (SFWMD)	8.09 ft. (Measured)		9.61 ft. (Converted)

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 1.52 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: March 28, 2019, BEC job No. 03-86445.

- 7. SFWMD Data records (on file at the District's headquarters):
- A. Electronic Data files:

Miscellaneous picture files

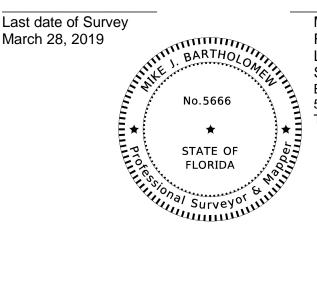
B. Conventional reporting Field Book: 2995 pages 01-05

Abbreviations:

- **EI.** Elevation
- **DTW** Distance to the water table inside the well
- M-DC Miami-Dade 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
- **BEC** Biscayne Engineering Company, Inc.

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.



Mike Bartholomew, PSM, President Florida Professional Surveyor and Mapper License Number 5666 State of Florida Biscayne Engineering Company, Inc. LB No 0129 529 West Flagler Street, Miami, FL. 33130 Tel (305) 324-7671



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

			Rev. 4/18		
DESIGNATION: G-3700		PROJECT: G-3700			
ESTABLISHED BY: SOUTH FLORIDA DISTRICT		SURVEYOR: Mike Bartholomew DATE: 03/28/19			
RECOVERED BY: BISCAYNE ENG					
	GEUGRAPH				
SECTION 35	TOWNSHIP 56 SOUTH	RANGE 39 EAST			
COUNTY:MIAMI-DADE	NAME OF QUADRANG				
HORIZONTAL DATUM: 1927	2022 Other	(circle one) ZONE 🕑 or W			
VERTICAL DATUM: MSL 1929		(circle one)			
VERTICAL ACCURACY: 1 2					
	2		NAVD 88 EL.8.09'		
STATE PLANE COORDINATE	(N) Y= 427051.95	(E) X= 855149.89	NGVD 29 EL. 9.61'		
CORPSCON 6.0.1 CONVERSION F Development Center Topographic Engineering Ce vertcon05.txt and vertcon05.05 files supplied by ACTUAL NGS or (ngvd29.txt file) OPUS Ortho Height	enter Alexandria, Virginia Windov	vs-based program to convert coordinates	eers Engineering Research and		
LATITUDE: 25 ° 30' 26.07 " (N)	LONGITUDE: 80° 23'	48.04" (W) (Source) GPS F	RTK (FPRN)		
	RECOVE	RY DATA			
Stamping: G-3700 BEC 0129					
To Reach: STATION IS A MAG NAI SIDEWALK. LOCATED: SW 280 ST NOTABLE LAND MARKS: AIRPOR	Г 30' NORTH OF C/L,				
MDC-SOURCE BENCHMARKS: BE					
FIELD BOOK PAGE <u>2995-3</u>	DIOT				
		URES /erall Site			
G-3700 Well Sit Latitude: 25° 30 Longitude: 80° 2	y 26.07" 3' 48.11"	Arrow Benchmark "G-3700" E. 8.09' (NAVD88) ONOT TO SCALE	E (Google Earth product)		



SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Looking Easterly (Oblique not to scale)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/18 SKETCH # 03 86 445 BEZ O.LUNA S. F.W.M.D. - BALLESTEROU (ZG WELLS) A-LEAL MIAMI DADE & EUCLATIONS 3/27/19 (NAV0-88) LOCATION - 3700 wai 6 USGS GPS TRIMBLE R-8-5 DE LAT = 25°30' 24.067 (N) LONG 3 60'23' 48.106 (W) * WELL G - 370C (ZINCHES PVC PIPE) (REPEVENTE EUTOP) ELEV = 7.83 NAVO - 88 +1.52 TO NEVD -29 FILD (MNI SOLCOL) 69 N. 2 SET MINILW BEL DIZO 0-3700 E-7 593 NAVO-22 LAT -25'30'24 1810 LONG 80 23'44413 GELF WITH A 10'3 (AIC)H) 10 WELL 6-3700 [2-PV 6 PIPS] 1 NO. 1 5 N 5' CONC. SIDEWALLS 0 N BM 6-3700 SMNV 0127 F1:8 07 NAND-88 LAT = 25° 30' 26 069 LAT = 80° 23' 98 038 3 (N) VI PEFERENCE PT. NAVD-82 ((DP OF PIPE) STRAT SW ZBO R X X BM HAF-28 BEPHZE DISC IN CAL EL= 7.54 NAYS-88 6 CLF (+1.52') TO N (N 24) (N)

FIELD BOOK 2995, PAGE 1

Office

Project

16 May 2019

INPUT

Geographic, NAD83 Vertical - NAVD88, U.S. Feet

OUTPUT

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

BM G3700

Latitude: 25 30 26.07 Longitude: 80 23 48.04 Elevation/Z: 8.09 1/1

Latitude: 25 30 26.07000 Longitude: 80 23 48.04000 Elevation/Z: 9.612

Office

Project

16 May 2019

INPUT

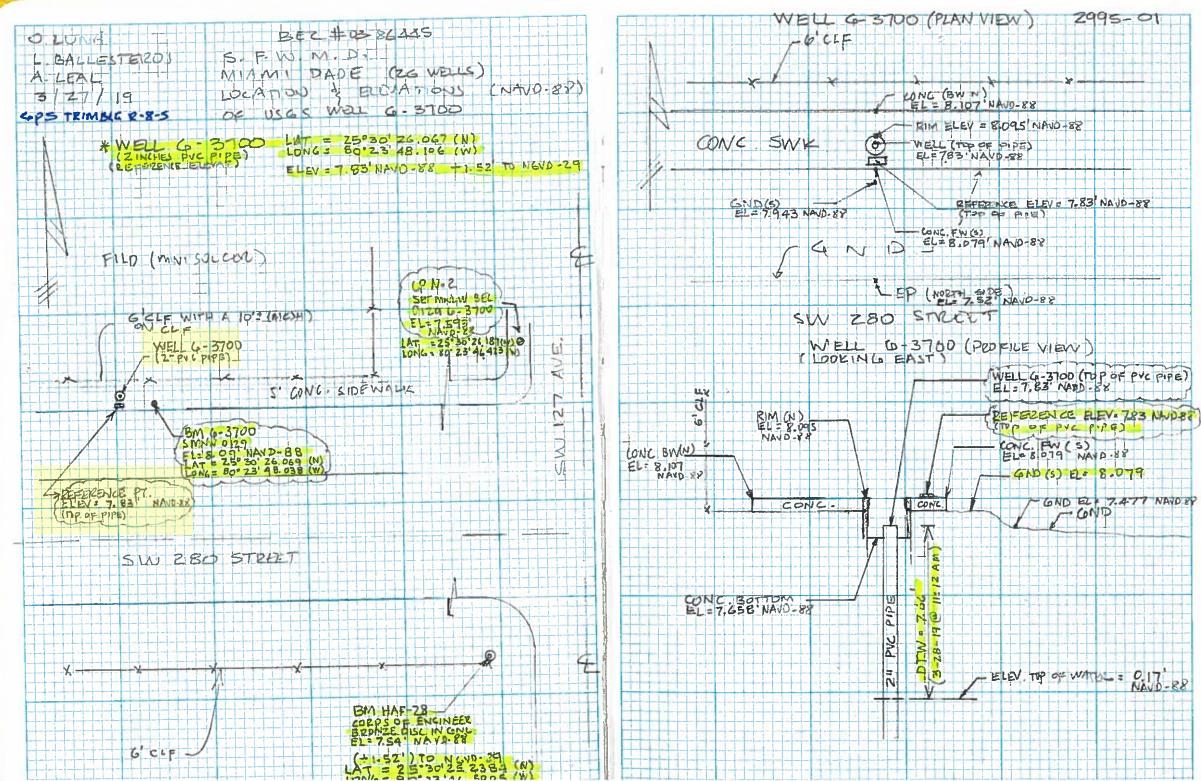
Geographic, NAD83 Vertical - NAVD88, U.S. Feet

OUTPUT

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

WELL G3700

Latitude: 25 30 26.07 Longitude: 80 23 48.11 Elevation/Z: 7.83 1/1 Latitude: 25 30 26.07000 Longitude: 80 23 48.11000 Elevation/Z: 9.352



-4

0. LUNA L BALLES A. LEAL 3 2 B / 2		SFW	DE (26 MJO ELEVA	WBLES)	400-88)		2995-02
BB-7 NAVD88	502 84 4.2.75	DISTANCE 243.90	HI 12.965	*3	DOTANIKS	ELENATION BIM ELEN. 8.69	DECRIPTION SW 258 ST 49' NOLTH CEC/L SW 127 AV 66' WEST OF 9/2 DND PK ANT BLASS MASTER IN CONS. SODMATIC
				A. 682	244.10	\$-2.83	IN FRANT DE TURPERE POLS EL FIQ.21' NOVD-29, ELEN - 8-69 NAVD-58 (+152 SEC CUT NL & TT, 21' EAST OF THE WEST ED OF SW 12T AVE 2488' SOUTH OF TEM BE-T-RA
SHAKE	4.861	253.40	13.144	-3-874	253.59	9.21	SET OUT NEST & 0.50'EAST OF THE WEST EF OF SW 127 AVE, & 506 20' SOUTH ERDM NON 1
SHAVE TP Nº 3	3.995	256.70	3.265	5 437.	256 90	7.833	SET OF NL TT + 1 GAST PETTE WITH EP OF SW 127 AVE, + 5136' SOUTH ELONI TE NJ, Z
SHAKE TP N. 4	4 266	254 50	12.079	5201	254.90	6-87.8	SET OUTNL IT, I' LAST OF THE WEST EP OF THE SWIDT AVE, 1508.40' FROM TP N.3
SHAKE	5 184	257.00	12.062	5264	2.52,20	6.:98	SET OF NL + IT + 2' EAST OF THE WEST EP OF THE SKY 127 AVE, 1 509.20 = 20 M TP N. 4
SHAKE	5815	257.30	12.613				

DI LUNA	20.05	S.F.W.	#03-864- M. D. ADG (2				2995.03
A-LEAL 3-28-10 364450L		LOCATION	2 BEVA	TION (NA	ND-88)		
ropeon DL							
STA	35	DISTANCE	H 2	- FS	DISTANCE	ELEVATION BM	ELW. DECZ.p.T.ON
TPN.G			12.613	4.578	257.30	8.035	SET OUT NL ? TT, + 1' EAST OF THE WEST EP OFT SW 127 AVE, + 514.60' FROM TP D. 5
SHAKE	A. 461	264.20	12.496				
-PN.7				4.820	264.60	7.676	SET OUT NL (IT, ON WEST EP OF OR SW 12 AVE., ±
SHAKE	4 301	280.20	11.977				
CP No Z				4.384	207,100	7.593	SOT MNLW BEZOIZA G-3700, SET ON CON SIDEWALL IN THE NW COENCL DE THE
SHAKE	5.293	63.40	12,886				IN RESTERION SW 127 AVE AND SW 280 ST.
ам 4-3100				4 796	85.10	8.090	SET MNL & W BEC 0129 4-3700, ONI CANC. SIDE WALK (LAT = 25°30'26.069, - 80°23'48.038)
SHAXE	4761	96.10	12.851				
M FIAF - 29 NAVD88				5.314	10'2.20	7.537	54 SW 280 ST 50' SOUTH OF EXTENDED CIL SW 127 AV 50' WEST OF CIL COEPS OF ENGINEER BRONZE DIC IN CONC. MC EL= 9.06' NGVD-29, EL=7.54' NAVD-88 (1.52' TO NGVD-29)
						ER202 = -0.003	

1 ...

O.LUNA SALLESTERDS A LEAL SIZSTIN 26445 OLIL G-3100-24 COLORATION COLORA			
102105) DL 502 STA BS DIST 1AF-28 4.246 89.50	1-1-1-2 PIS _11.9.86	STT. ЦЕМТОЙ ВМ ЕСТ. 7.541	SW 2BO SP 50' SOUTH OF EURNOOD C/L SW 1271 AV 50' WEST OF C/L CORPS, OF ENGINEEING BEDNLE DUG IN CONC.
enp (5)	4.043	7,94-3	ELEV = 7.54" NAUD - 88, ELEV 9.06 NGVD-29 (DIF. 7152
CONC FW (S)	3.907	8.079	
10 NG BITT	4.328	7.658	ON TOP OF 2 INCHES PUC PIPET
RIM (N)	31841	8.095	top DR CASE (NORTH EIM).
B ³ 1 (q-37.00	3.893	8.093 8.090	SEE PAGE N. 03 + 1.52 TO NGVD-29

										2	995.0
LUNA		362 423.8	445								
BALLESTER	205	5. F.W. M.D.									
LEAL			(26 WELLS)								
28/19			MATION (NA	10 88)							
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PGN ZOC	007-4-8							+ $+$ $+$ $+$ $+$ $+$ $+$			
		INST @ BM 4-37	0 (322-345								
		₩⊼=5.13									
ST7A		HORIZ & YERT	SLOPE DIDT	DESC.							
2 = Z	-1.73	00'00' 00" 90'20'	1" 148.38 N	NN UZA							
			<u> </u>								
3	4.73	3522'28' 90'9'5	7" 63.94- E	BUT HVE -58							
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100ft -80.396 25.519 Degrees

Survey Control Point	s Horizontal
+ Find address or place	ABout
HAF-28 - EXISTING	
	MIAMIDADE
Name: HAF-28	COUNTY
Elev(NGVD29): 9.06 Elev(NAVD88): 7.54 Northing: 426,968.61	Public Works Survey Control Point
Easting: 855,290.67	Welcome to Miami-Dade County Survey Control Points.
<u>Location1:</u> SW 280 ST 50' SOUTH O <u>Location2:</u> SW 127 AVE 50' WEST OF	
	that displays the Horizontal and Vertical Control Points DNZE DISC IN CONC. layers as well as street maintenance layer and Municipality
Eield Book:	for Miami-Dade County. It is being used by Public Works Department in Miami-Dade County.
Zones: VII	Department in Miami-Dade County.
Circuit: 530 Set Date: 12701	The information available in this search has been assembled
Locator: 7910ALDIN DR	for the use of Miami-Dade County Public Works for the
Last Check: 12-02-2009	design and development of Public Works projects. No
Adjustment: Adjustment-Date: 03-09-2011	degree or order of accuracy has been assigned to data in
Status: EXISTING	this package unless specifically stated.
	Although this package has been prepared from the best available information, Miami-Dade County assumes no responsibility for the accuracy or completeness of the information or any errors or omission and makes no warranties, expressed or implied, concerning accuracy, completeness, reliability or suitability of this data.
	This data should not be relied upon as the sole basis for solving a problem whose incorrect solution could result in injury to person or property. Elevations must be verified
	consistent with procedures established by Chapter 472 Florida Statutes "Land Surveying and Mapping" and the Florida Administrative Code Chapter 61G17-6 "Minimum Technical Standards".
Zoom to	Some of the GIS datasets presented in this website are available for free download. Please visit our <u>Open</u> <u>Data</u> website for more information.
	For questions, comments or to report a problem with this website, please email Miami-Dade County GIS.
	website, prease email <u>mann-bade county Gis</u> .

100ft -80.397 25.508 Degrees