
SURVEYOR'S REPORT

CENTRAL FLORIDA WATER INITIATIVE (CFWI) SURVEYS

CAMP LONESOME EAST TRANSECTS & SEASONAL HIGH-WATER MARKS SURVEY

**County: Osceola
Location Name: CAMPLOE**

Prepared for:

**South Florida Water Management District
WORK ORDER NO. 4600003702-WO2**

Prepared by:



**P&A PROJECT NO.: 18996
FIELD DATES: 5/17-5/22/2019
DATE OF THIS REPORT: 06/20/2019**

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PROJECT DESCRIPTION

This survey was prepared to document the horizontal and vertical location of a new monitoring well (OSS-2) and benchmark established by District's Data, Monitoring, and Investigations Team (DMIT), establish an additional benchmark near the associated wetlands to be monitored, and locate transects and seasonal high water markers at the wetland site. At the time of survey, the OSS-2 well had not been installed so a benchmark was established in close proximity to the proposed well to allow for a transfer of an elevation to the well after installation.

The benchmark set near the proposed well is a standard SFWMD 2" survey marker disk set in the top of a 1 ¼ " iron pipe in concrete stamped "OSS-2A". The second benchmark was set near the wetlands to be monitored and is a standard SFWMD 2" survey marker disk set in the top of a 1 ¼ " iron pipe in concrete stamped "OSS-2B"

LOCATION:

The Camp Lonesome Ranch Conservation Area (Camp Lonesome) lies approximately two miles east of Canoe Creek Road and the Florida Turnpike, 18 miles southeast of Kissimmee 18 miles northwest of Kenansville, in Sections 1, 2, 11 and 14; Township 28 South; Range 31 East, and Sections 5 and 6; Township 28 South; Range 32 East, in Osceola County. Accesses to the site currently exists via an unnamed road/drive running east/west from Canoe Creek Road and under the Florida Turnpike

HORIZONTAL DATUM:

The horizontal position of mark OSS-2A was determined by a 4-hour static GPS derived NGS OPUS Solution. As a redundant check on the position OSS-2A, the mark was observed by two RTK-GPS observations from a base located at OSS-1A that was also determined by an OPUS Solution. (See Surveyor's Report for Camp Lonesome West). The resulting measure confirmed the OPUS solutions agreed with a horizontal difference of 0.01' North and 0.02' East. The values determined by the OPUS Solution was held. All other locations were determined by base-rover RTK-GPS using OSS-1A as the base.

Horizontal coordinate values are referenced to the East Zone of the Florida State Plane Coordinate System, North American Datum of 1983, Adjustment of 2011 (Epoch 2010.0000), US Survey Feet. (sFT)

VERTICAL DATUM:

Due to the distance to NGS published vertical control, it was approved by the District to determine the elevation of OSS-2A by a 4-hour static GPS NGS OPUS Solution as noted above. As a redundant check on the vertical for OSS-2A, the mark was observed by two RTK GPS observations from a base located at OSS-1A that was also determined by an OPUS Solution. (See Surveyor's Report for Camp Lonesome West). The RTK-GPS measured difference was 0.16 feet The NGS OPUS derived elevation was held. The elevation of OSS-2B was determined by double run differential leveling from OSS-2A.

Vertical elevations were established in the North American Vertical Datum of 1988 (NAVD 88). Units are in feet.

OSS-2A Benchmark Summary
Elevations are NAVD 88 (feet)

Latitude: 28° 04' 58.91205" Longitude: 81° 09' 43.63076"
Northing: 1,362,925.709 sFT Easting: 603,892.362 sFT
BM Elevation: 78.97'

OSS-2B Benchmark Summary

Latitude: 28° 04' 49.87372" Longitude: 81° 09' 43.61847"
Northing: 1,362,012.889 sFT Easting: 603,892.289 sFT
BM Elevation: 78.59'

Proposed Well OSS-2 Summary

Latitude: 28° 04' 59.47555" Longitude: 81° 09' 43.33005"
Northing: 1,362,982.543 sFT Easting: 603,919.4 sFT
Ground Elevation: 79.1'

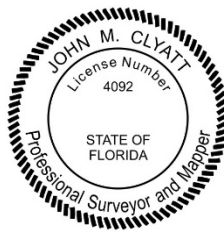
EQUIPMENT USED

- Trimble DiNi 22 Level Serial Number 772842 (digital level)
- Trimble GPS unit R-10, Serial Number 0079 (RTK)
- Trimble GPS unit R-10, Serial Number 2948 (RTK)
- Trimble Total Station, Serial Number 36820056 (optical)
- Trimble GPS unit R-8, Serial Number 1560865887910

See attached following documents:

- NGS OPUS Solution Report
- SFWMD Benchmark forms
- Survey Maps

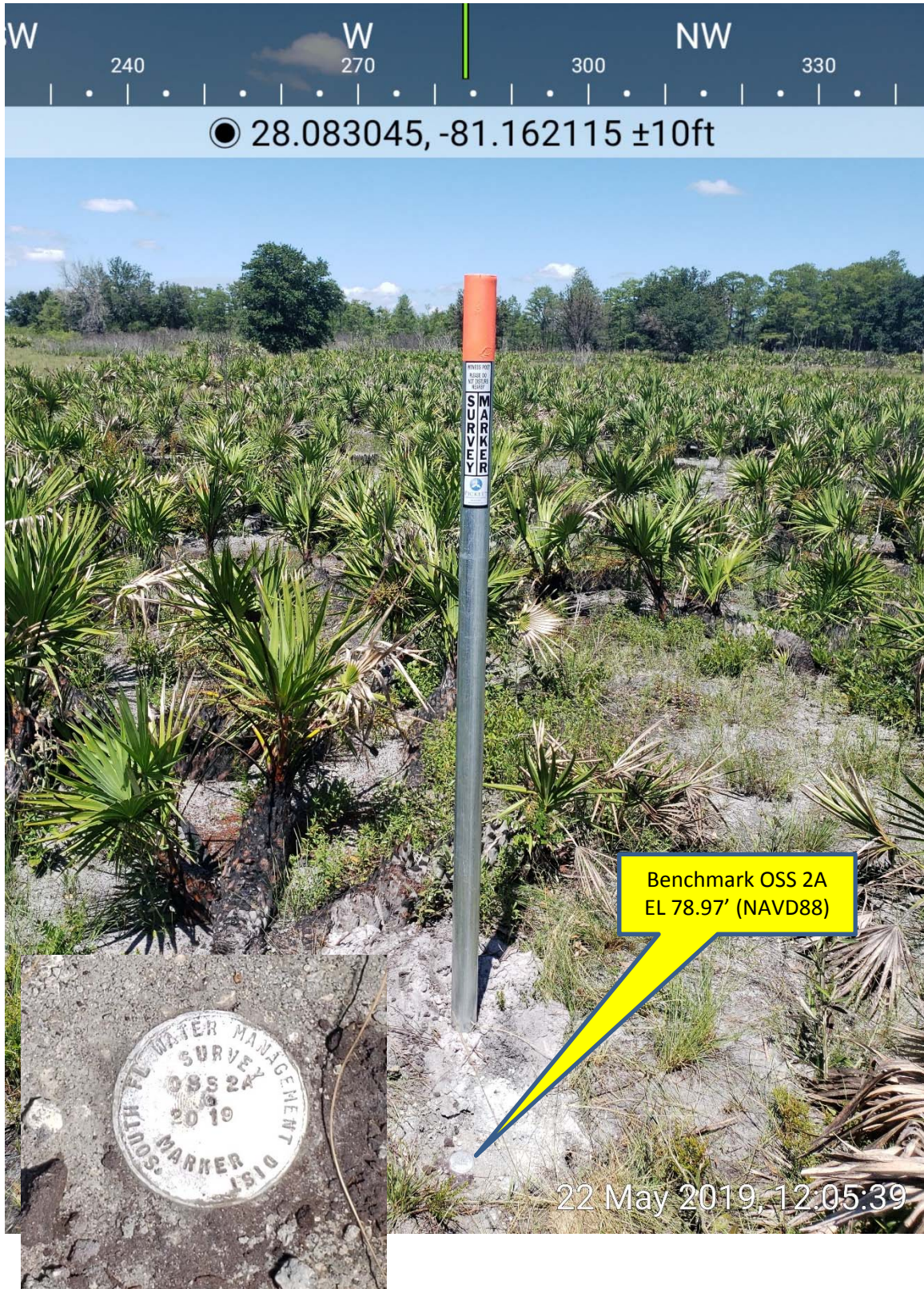
John M. Clyatt P.S.M.
Florida Registration No. 4092
Pickett & Associates, Inc.
Florida Registration No. LB 364



June 5, 2019

Survey Date

OSS-2A BENCHMARK PHOTOS



OSS-2B BENCHMARK PHOTOS



**CAMPLOE
TRANSECT POINTS AND SEASONAL HIGH-WATER MARKS
SUMMARY TABLE**

Transect	Point ID	Attribute	Elevation	LAT - LONG	SPC Coord
1	CL1 1.1	Wetland boundary	78.9'	28° 04' 57.51747" 81° 09' 41.61872"	N 1362784.593 E 604072.431
	CL1 1.2	Hydric at surface	77.8'	28° 04' 50.81283" 81° 09' 40.92479"	N 1362107.409 E 604133.687
	CL1 1.3	Muck at surface	77.1'	28° 04' 50.33093" 81° 09' 41.15230"	N 1362058.769 E 604113.244
2	CL1 2.1	Wetland boundary	79.0'	28° 04' 53.63932" 81° 09' 38.37036"	N 1362392.554 E 604362.862
	CL1 2.2	Hydric at surface	78.7'	28° 04' 51.36636" 81° 0'9' 39.50974"	N 1362163.142 E 604260.506
	CL1 2.3	Muck at surface	76.6'	28° 04' 50.19837" 81° 09' 41.06273"	N 1362045.371 E 604121.249
3	CL1 3.1	Wetland boundary	78.9'	28° 04' 47.96017" 81° 09' 38.89344"	N 1361819.079 E 604315.253
	CL1 3.2	Hydric at surface	78.3'	28° 04' 48.14254" 81° 09' 39.16614"	N 1361837.528 E 604290.852
	CL1 3.3	Muck at surface	78.1'	28° 04' 48.27727" 81° 09' 39.48541"	N 1361851.173 E 604262.273
High Water Marks	CL1 SH 1	Seasonal HW elevation	78.87'	28° 04' 50.39708" 81° 09' 41.69387"	N 1362065.514 E 604064.745
	CL1 SH 2	Seasonal HW elevation	79.04'	28° 04' 50.35703" 81° 09' 41.65739"	N 1362061.465 E 604068.007
	CL1 SH 3	Seasonal HW elevation	78.75'	28° 04' 49.98656" 81° 09' 41.88673"	N 1362024.079 E 604047.416
Water Level	CL1 WL	Water level auger hole	75.6'	28° 04' 50.28154" 81° 09' 41.41501"	N 1362053.813 E 604089.707

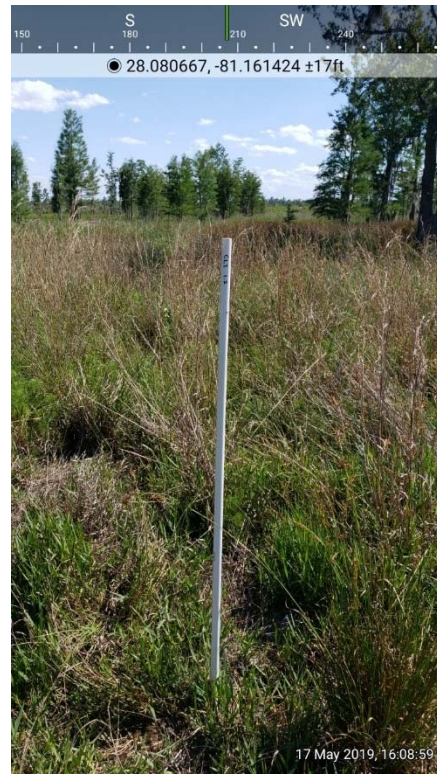
NOTE:

The horizontal locations of all the above points were determined by base-rover RTK-GPS with an estimated horizontal accuracy of +/- 0.10 feet.

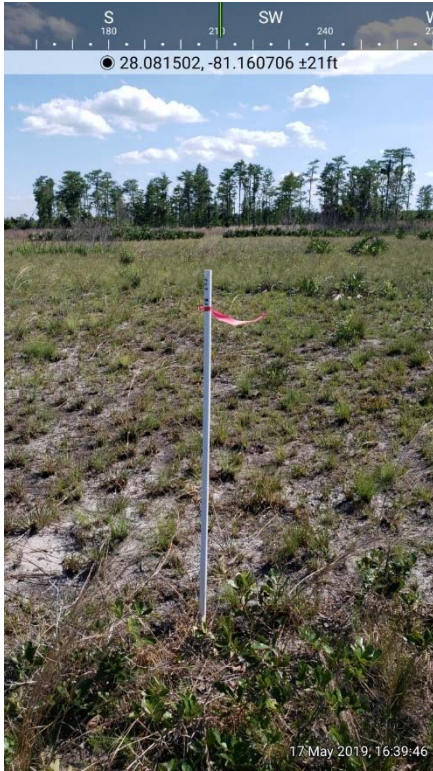
The estimated vertical accuracy of all transect points is +/- 0.10 '. Seasonal High-Water marks were determined by differential leveling and have an estimated vertical accuracy of +/- .01'.

See General Location Map and Transects & Seasonal High-Water Marks Map included herein.

TRANSECT 1 PHOTOS



TRANSECT 2 PHOTOS



TRANSECT 3 PHOTOS



SEASONAL HIGH-WATER MARKS



CL1 SH 1

SEASONAL HIGH-WATER MARKS



CL1 SH 2

SEASONAL HIGH-WATER MARKS



CL1 SH 3

WATER LEVEL MARKER



CL1 WL



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

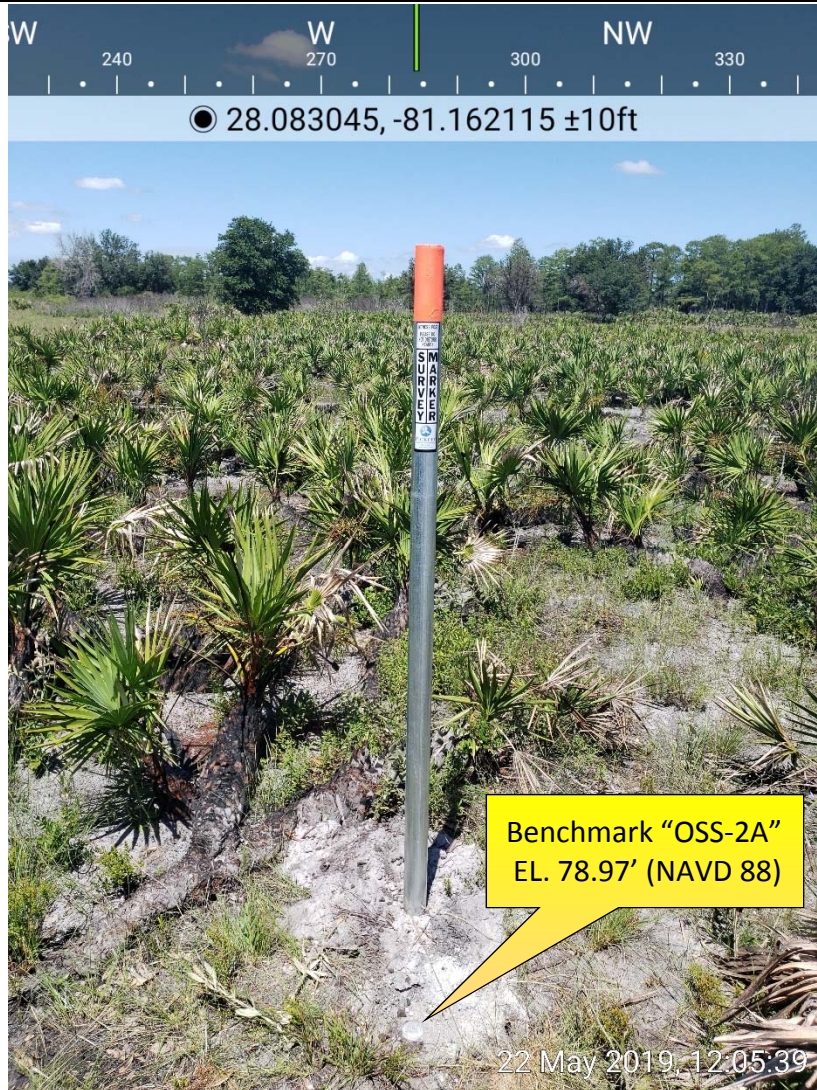
Rev. 1/16

DESIGNATION: OSS-2A		PROJECT: CFWI CAMP LONESOME EAST	
ESTABLISHED BY: PICKETT AND ASSOCIATES, INC		SURVEYOR: John M. Clyatt	
RECOVERED BY:		DATE: May 16, 2019	
GEOGRAPHIC POSITION			
SECTION 6	TOWNSHIP 28 SOUTH	RANGE 32 EAST	
COUNTY: OSCEOLA	NAME OF QUADRANGLE: HOLOPAW SW		
	GEOGRAPHIC INDEX OF QUAD: 3310		
HORIZONTAL DATUM: 1927 (1983) 2022 Other ___ (circle one) ZONE (E) or W			
VERTICAL DATUM: MSL 1929 (1988) 2022 Other ___ (circle one)			
VERTICAL ACCURACY: 1 2 (3)			
STATE PLANE COORDINATE	(N) Y= 1,362,925.671	(E) X= 603,892.404	NAVD 88 EL. 78.97' NGVD 29 EL. 80.08'
CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): 1.112' <small>(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.) ACTUAL NGS or (ngvd29.txt file) OPUS Ortho Height = 23.355 meters</small>			
LATITUDE: 28° 04' 58.91205" (N)		LONGITUDE: 81° 09' 43.63076" (W)	(NAD_83 (2011) EPOCH:2010.0000)
RECOVERY DATA			
Stamping: OSS-2A 2019			
<p>To Reach: From St. Cloud, travel south on Canoe Creek Road approximately 16 miles to an unpaved road drive running east from Canoe Creek Road and under the Florida Turnpike. Go easterly along dirt road 2 entrance to Camp Lonesome Conservation Area. Enter and go northerly .4 miles to locked access gate. Go through gate and go west and follow marked trail road approximately 3.5 miles to area known as Piss-Pot Hammock, go NNW .4 miles to north line of Conservation area; go east along trail road .6 miles to trail leading south; go south 0.1 miles to mark on the right. Mark is a standard SFWMD aluminum disk set in a 1-1/4" pipe with a concrete collar 3" below ground surface, 1' east of a metal post with survey marker decal. SFWMD key is required for gate into property.</p>			
NOTABLE LAND MARKS: Camp Lonesome Conservation Area ; Piss Pot Hammock			
NGS-SOURCE BENCHMARK: N/A Determined by OPUS Solution			
FIELD BOOK 972 PAGE 37			
PICTURES			
Aerial Overall Site From: Google Earth Imagery Date: 2/11/17			



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16



Top View



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DESIGNATION: OSS-2B		PROJECT: CFWI CAMP LONESOME EAST	
ESTABLISHED BY: PICKETT AND ASSOCIATES, INC		SURVEYOR: John M. Clyatt	
RECOVERED BY:		DATE: May 16, 2019	
GEOGRAPHIC POSITION			
SECTION 6	TOWNSHIP 28 SOUTH	RANGE 32 EAST	
COUNTY: OSCEOLA	NAME OF QUADRANGLE: HOLOPAW SW		
	GEOGRAPHIC INDEX OF QUAD: 3310		
HORIZONTAL DATUM: 1927 (1983) 2022 Other ____ (circle one) ZONE (E) or W			
VERTICAL DATUM: MSL 1929 (1988) 2022 Other ____ (circle one)			
VERTICAL ACCURACY: 1 2 (3)			
STATE PLANE COORDINATE	(N) Y= 1,362,012.889	(E) X= 603,892.289	NAVD 88 EL. 78.59' NGVD 29 EL. 79.70'
CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): + 1.112' <small>(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.) ACTUAL NGS or (ngvd29.txt file) OPUS Ortho Height = 23.355 meters</small>			
LATITUDE: 28° 04' 49.87372" (N)		LONGITUDE: 81° 09' 43.61847" (W) (NAD_83 (2011) EPOCH:2010.0000)	
RECOVERY DATA			
Stamping: OSS-2B 2019			
<p>To Reach: From St. Cloud, travel south on Canoe Creek Road approximately 16 miles to an unpaved road drive running east from Canoe Creek Road and under the Florida Turnpike. Go easterly along dirt road 2 entrance to Camp Lonesome Conservation Area. Enter and go northerly .4 miles to locked access gate. Go through gate and go west and follow marked trail road approximately 3.5 miles to area known as Piss-Pot Hammock, go NNW .4 miles to north line of Conservation area; go east along trail road .6 miles to trail leading south; go south 0.25 miles to mark on the right. Mark is a standard SFWMD aluminum disk set in a 1-1/4" pipe with a concrete collar 3" below ground surface, 1' east of a metal post with survey marker decal. SFWMD key is required for gate into property.</p>			
NOTABLE LAND MARKS: Camp Lonesome Conservation Area ; Piss Pot Hammock			
NGS-SOURCE BENCHMARK: N/A Determined by OPUS Solution			
FIELD BOOK 972 PAGE 37			
PICTURES			
<p>Aerial Overall Site From: Google Earth Imagery Date:2/11/17</p>			



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16



Top View

FILE: 69161410.DAT OP1560865887910

NGS OPUS SOLUTION REPORT
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All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <https://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: gprather@pickettusa.com DATE: June 18, 2019
RINEX FILE: 6916141r.19o TIME: 13:52:11 UTC

SOFTWARE: page5 1603.24 master74.pl 160321 START: 2019/05/21 17:24:00
EPHEMERIS: igs20542.eph [precise] STOP: 2019/05/21 21:42:00
NAV FILE: brdc1410.19n OBS USED: 12018 / 12787 : 94%
ANT NAME: TRM5800 NONE # FIXED AMB: 57 / 70 : 81%
ARP HEIGHT: 2.000 OVERALL RMS: 0.023(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2019.3858)

X:	865202.133(m)	0.008(m)	865201.307(m)	0.008(m)
Y:	-5564529.488(m)	0.024(m)	-5564527.923(m)	0.024(m)
Z:	2984624.861(m)	0.027(m)	2984624.702(m)	0.027(m)

LAT:	28 4 58.91243	0.014(m)	28 4 58.93345	0.014(m)
E LON:	278 50 16.36876	0.011(m)	278 50 16.34770	0.011(m)
W LON:	81 9 43.63124	0.011(m)	81 9 43.65230	0.011(m)
EL HGT:	-3.724(m)	0.030(m)	-5.275(m)	0.030(m)
ORTHO HGT:	24.070(m)	0.038(m)	[NAVD88 (Computed using GEOID12B)]	78.970(ft)

	UTM COORDINATES	STATE PLANE COORDINATES	
	UTM (Zone 17)	SPC (0901 FL E)	
Northing (Y) [meters]	3106410.829	415420.587	1,362,925.709(sft)
Easting (X) [meters]	484072.196	184066.760	603,892.362(sft)
Convergence [degrees]	-0.07631944	-0.07631944	
Point Scale	0.99960313	0.99994431	
Combined Factor	0.99960371	0.99994489	

US NATIONAL GRID DESIGNATOR: 17RMM8407206410(NAD 83)

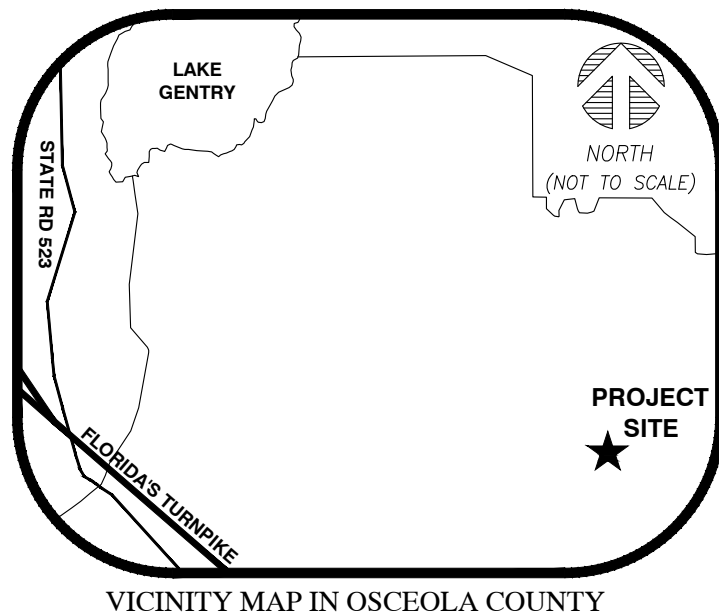
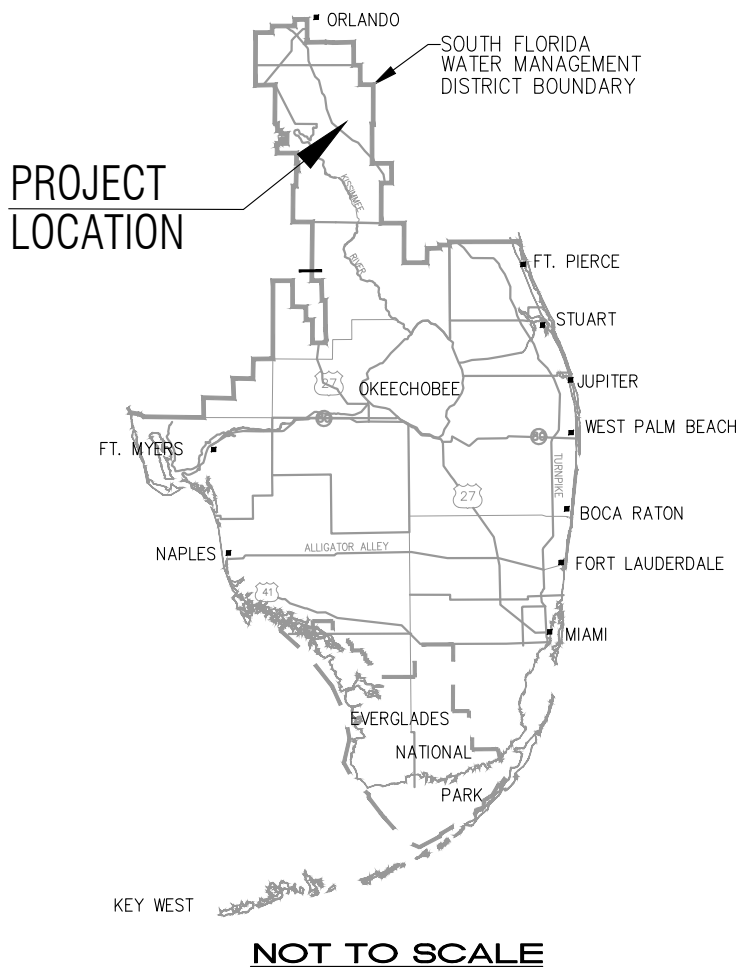
BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DE9138	OKCB OKEECHOBEE CORS ARP	N271557.715	W0805119.181	95459.2
DQ7965	FLWE WEDGEFIELD FL CORS ARP	N282626.477	W0810533.176	40220.3
DF7046	BRTW BARTOW CORS ARP	N275658.642	W0814658.200	62809.8

NEAREST NGS PUBLISHED CONTROL POINT

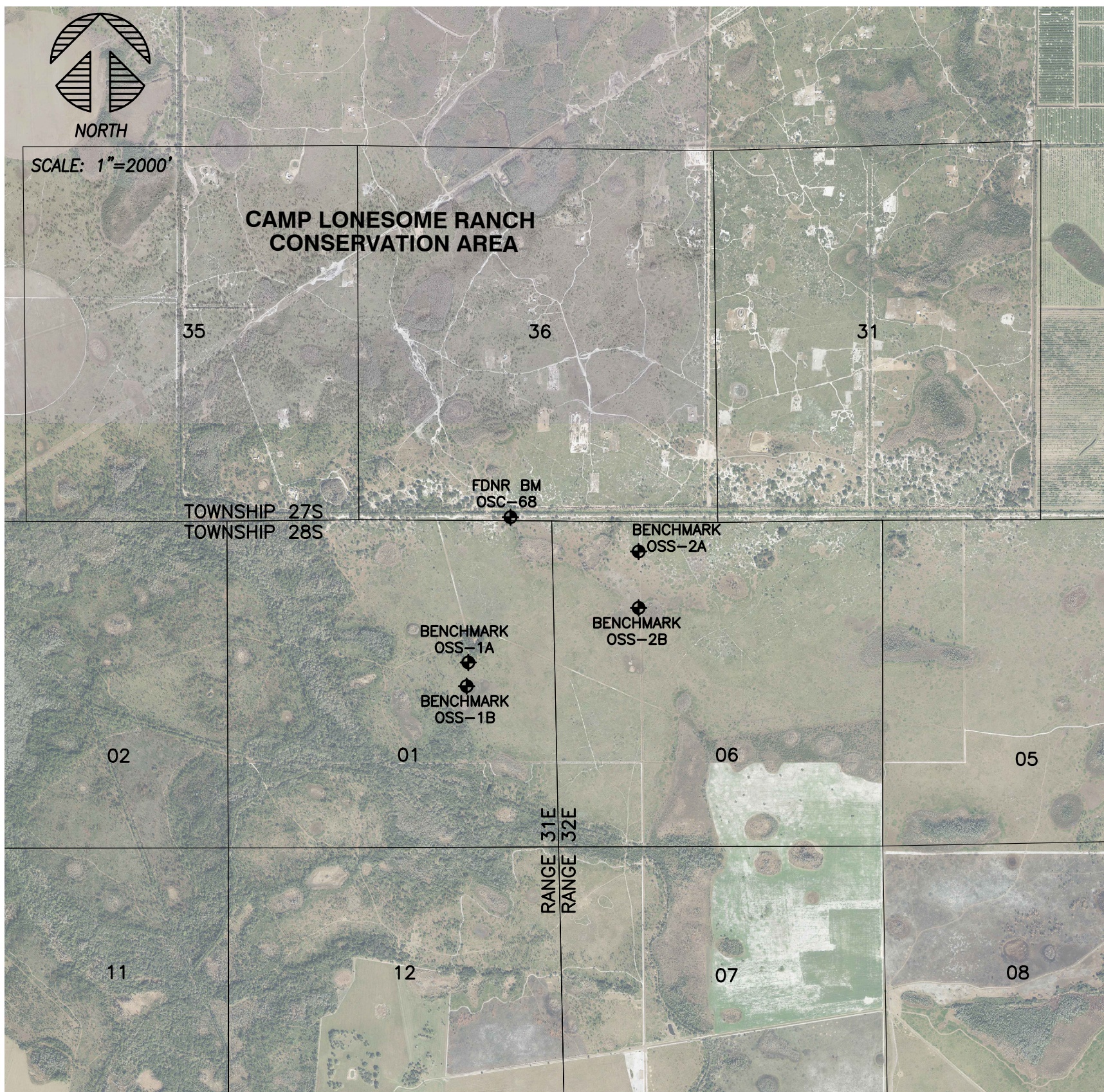
AK6744	HATCH RESET	N280240.956	W0811318.578	7244.7
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LOCATION MAP
 CENTRAL FLORIDA WATER INITIATIVE (CFWI) SURVEYS
CAMP LONESOME EAST
 SECTION 06, TOWNSHIP 28 S, RANGE 32 E,
 OSCEOLA COUNTY, FL



LEGEND:

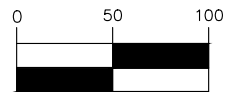
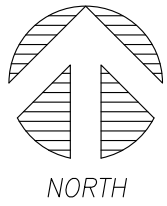
- FDNR FLORIDA DEPT. OF NATURAL RESOURCES
- BM BENCHMARK
- ◆ BENCHMARK



DRAWN	CHECKED	DATE	REVISIONS

CENTRAL FLORIDA WATER INITIATIVE (CFWI)
 CAMP LONESOME EAST
 WELL, TRANSECTS & SEASONAL
 HIGH-WATER MARKS SURVEY

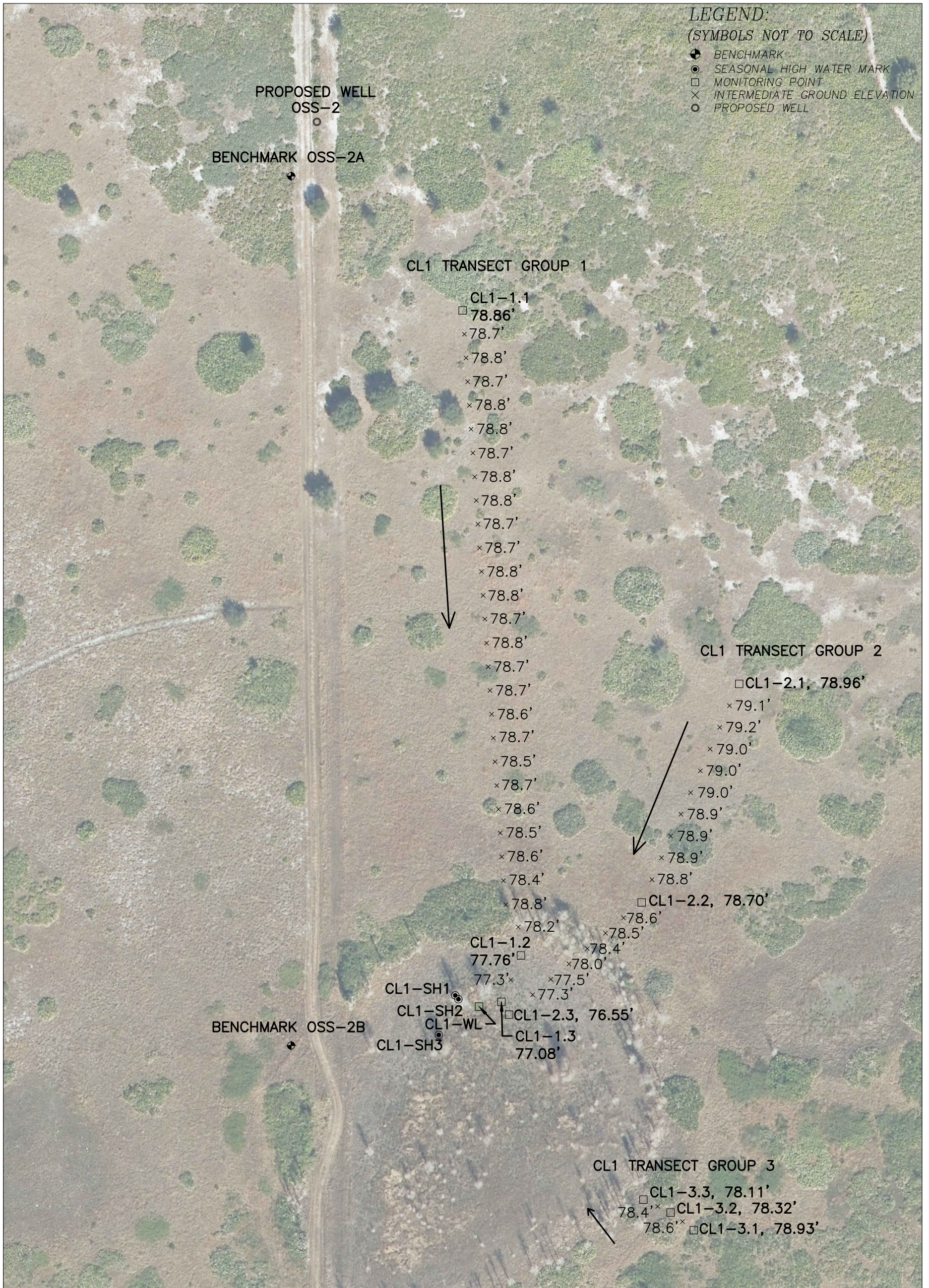
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 INFRASTRUCTURE MANAGEMENT BUREAU-SURVEY & MAPPING SECTION
 P.O. BOX 24680, 3301 GUN CLUB ROAD
 WEST PALM BEACH, FLORIDA 33416-4680



(IN FEET)
1 inch = 100 ft.

GRAPHIC & INTENDED DISPLAY SCALE

CENTRAL FLORIDA WATER INITIATIVE (CFWI) SURVEYS
CAMP LONESOME EAST
TRANSECTS & SEASONAL HIGH WATER MARKS



SHEET 2 OF 2

DRAWN	CHECKED	DATE	REVISIONS

CENTRAL FLORIDA WATER INITIATIVE (CFWI)
CAMP LONESOME EAST
WELL, TRANSECTS & SEASONAL
HIGH-WATER MARKS SURVEY

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
INFRASTRUCTURE MANAGEMENT BUREAU-SURVEY & MAPPING SECTION
P.O. BOX 24680, 3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33416-4680