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# **SURVEYOR'S REPORT**

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**CENTRAL FLORIDA WATER INITIATIVE (CFWI) SURVEYS**

## **CAMP LONESOME WEST TRANSECTS & SEASONAL HIGH-WATER MARKS SURVEY**

**County: Osceola  
Location Name: CAMPLOW**

**Prepared for:**

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

**Prepared by:**



**P&A PROJECT NO.: 18997  
FIELD DATES: 5/17-5/22/2019  
DATE OF THIS REPORT: 6/20/2019**

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**PROJECT DESCRIPTION**

This survey was prepared to document the horizontal and vertical location of a new monitoring well (OSS-1) 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-1 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-1A". 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-1B"

**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-1A was determined by a 4-hour static GPS derived NGS OPUS Solution. As a redundant check on the position OSS-1A, the mark was observed by two separate observations of 180 epochs with a Trimble R-10 receiver using a subscription-based Network Real Time Kinematic GPS solution (NRTK-GPS). The resulting measure confirmed the OPUS solution with a resulting horizontal difference of 0.02' North and .01' East. The value 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-1A by the same 4-hour static GPS NGS OPUS Solution noted above. As a redundant check on vertical, the mark was observed by two separate observations of 180 epochs with a Trimble R-10 receiver using a subscription-based Network Real Time Kinematic GPS solution (NRTK-GPS) with a resulting difference of 0.21 feet. The NGS OPUS derived elevation was held. The elevation of OSS-1B was determined by double run differential leveling from OSS-1A.

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

**OSS-1A Benchmark Summary**  
**Elevations are NAVD 88 (feet)**

Latitude: 28° 04' 41.09255"                      Longitude: 81° 10' 14.38944"  
Northing: 1,361,129.834 sFT                      Easting: 601,134.887 sFT  
BM Elevation: 76.62'

**OSS-1B Benchmark Summary**

Latitude: 28° 04' 37.29022"                      Longitude: 81° 10' 14.68644"  
Northing: 1,360,745.887 sFT                      Easting: 601,107.762 sFT  
BM Elevation: 76.12'

**Proposed Well OSS-1 Summary**

Latitude: 28° 04' 41.74372"                      Longitude: 81° 10' 14.53671"  
Northing: 1,361,195.627 sFT                      Easting: 601,121.804 sFT  
Ground Elevation: 76.8'

**EQUIPMENT USED**

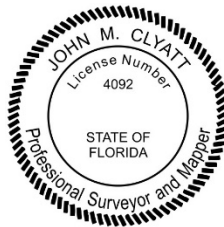
- Trimble DiNi 22 Level Serial Number 772842 (digital level)
- Trimble GPS unit R-10, Serial Number 0079 (RTK)
- Trimble GPS unit R-10, Serial Number 2948 (RTK)
- Trimble Total Station, Serial Number 36820056 (optical)
- Trimble GPS unit R-8, Serial Number 1560866033523

See attached following documents:

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

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



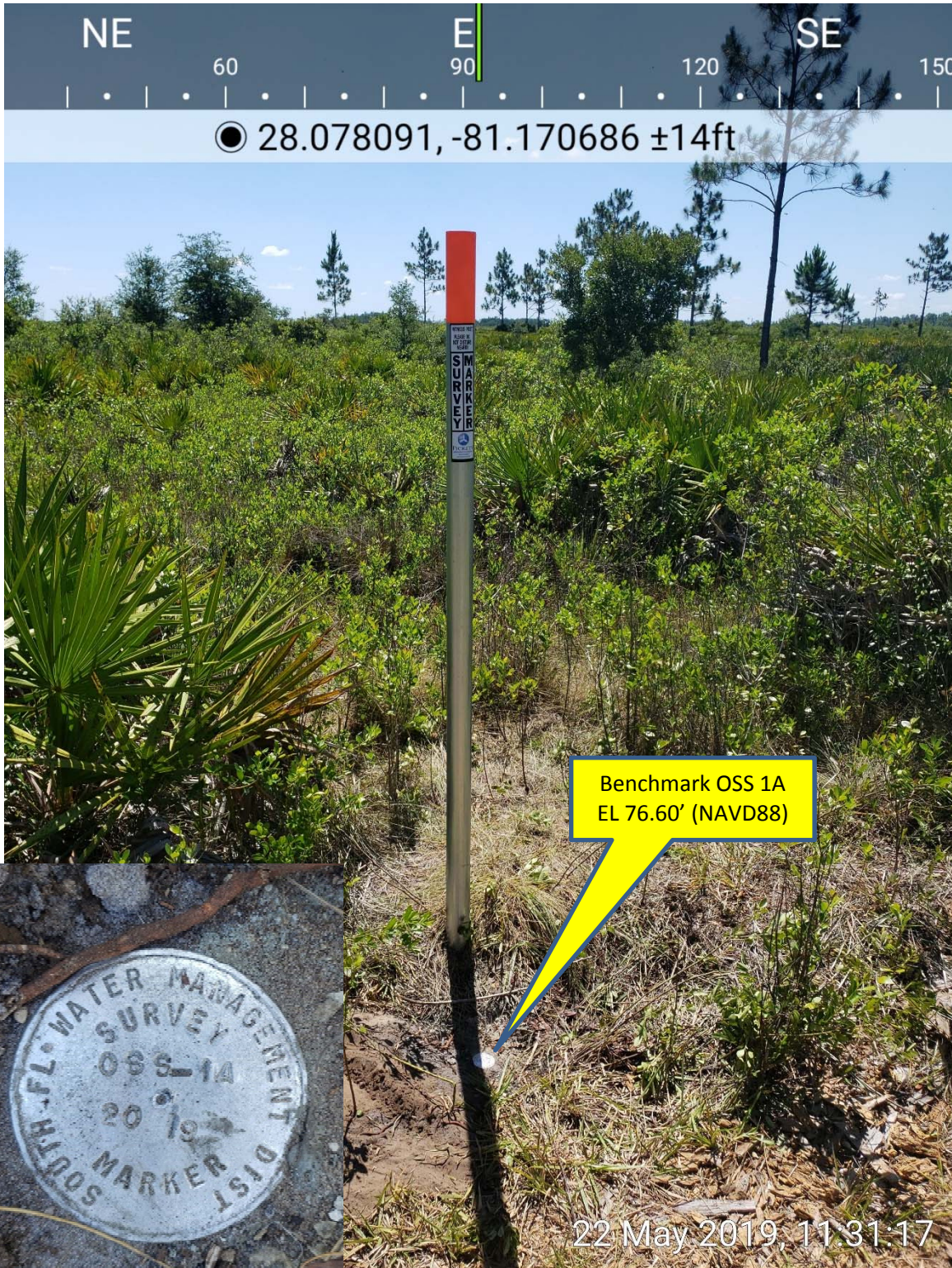
June 5, 2019

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Survey Date



OSS-1A BENCHMARK PHOTOS





OSS-1B BENCHMARK PHOTOS



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

Transect	Point ID	Attribute	Elevation	LAT - LONG	SPC Coord
1	CL2 1.1	Wetland boundary	76.2'	28° 04' 36.92508" 81° 10' 15.11071"	N 1360709.065 E 601069.707
	CL2 1.2	Hydric at surface	75.6'	28° 04' 36.59392" 81° 10' 14.97423"	N 1360675.604 E 601081.885
	CL2 1.3	Muck at surface	77.2'	28° 04' 35.98861" 81° 10' 14.83714"	N 1360614.456 E 601094.079
2	CL2 2.1	Wetland boundary	76.2'	28° 04' 34.01752" 81° 10' 16.54738"	N 1360415.611 E 600940.608
	CL2 2.2	Hydric at surface	75.7'	28° 04' 34.08961" 81° 10' 16.24112"	N 1360422.853 E 600968.051
	CL2 2.3	Muck at surface	75.6'	28° 04' 34.15124" 81° 10' 16.12070"	N 1360429.062 E 600978.846
3	CL2 3.1	Wetland boundary	76.7'	28° 04' 38.40258" 81° 10' 10.83743"	N 1360857.742 E601452.684
	CL2 3.2	Hydric at surface	76.4'	28° 04' 38.23669" 81° 10' 11.02102"	N 1360841.012 E 601436.216
	CL2 3.3	Muck at surface	74.7'	28° 04' 34.99353" 81° 10' 14.56214"	N 1360513.929 E 601118.570
High Water Marks	CL2 SH 1	Seasonal HW elevation	77.06'	28° 04' 35.17938" 81° 10' 15.07926"	N 1360532.763 E 601072.277
	CL2 SH 2	Seasonal HW elevation	77.06'	28° 04' 35.01404" 81° 10' 14.68440"	N 1360516.016 E 601107.622
	CL2 SH 3	Seasonal HW elevation	76.80'	28° 04' 34.78651" 81° 10' 15.71051"	N 1360493.166 E 601015.678
Water Level	CL2 WL	Water level auger hole	73.5'	28° 04' 34.48785" 81° 10' 14.89724"	N 1360462.902 E 601088.483

**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



CL2 SH 1



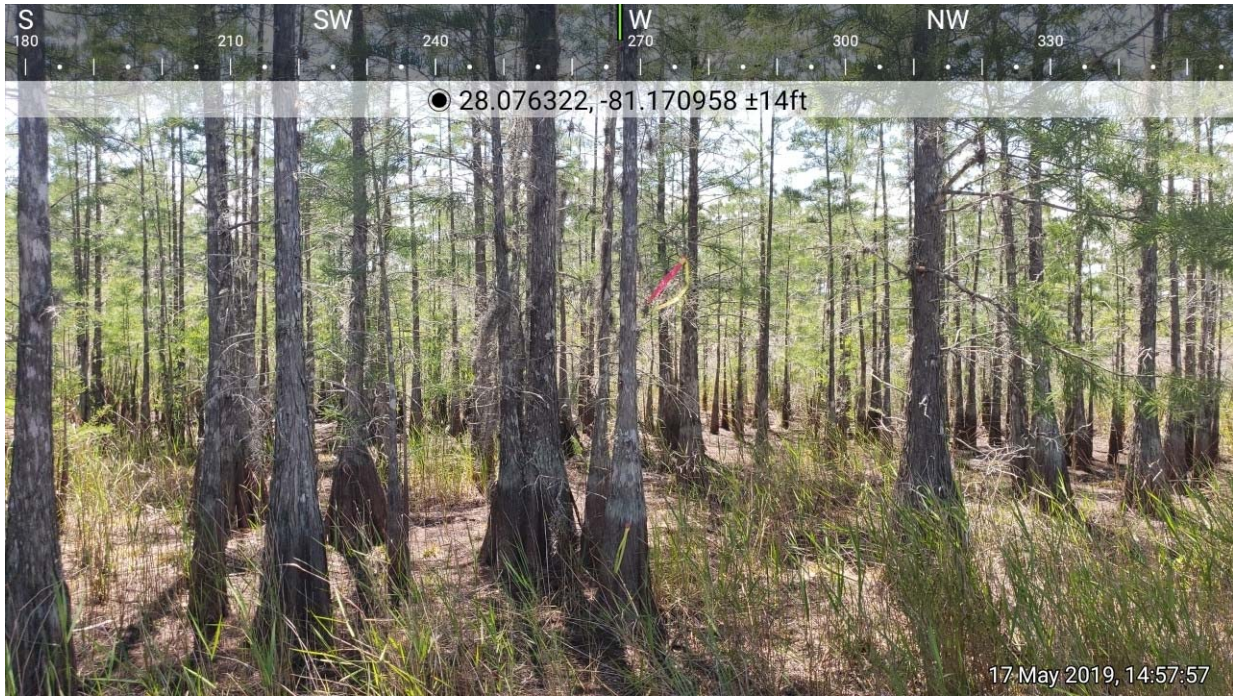
### SEASONAL HIGH-WATER MARKS



CL2 SH 2



### SEASONAL HIGH-WATER MARKS



CL2 SH 3



**WATER LEVEL MARKER**



CL2 WL



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DESIGNATION: <b>OSS-1A</b>	PROJECT: <b>CFWI CAMP LONESOME WEST</b>
ESTABLISHED BY: <b>PICKETT AND ASSOCIATES, INC</b>	SURVEYOR: <b>John M. Clyatt</b>
RECOVERED BY:	DATE: <b>May 16, 2019</b>

### GEOGRAPHIC POSITION

SECTION 1	TOWNSHIP <b>28</b> SOUTH	RANGE <b>31</b> EAST
COUNTY: <b>OSCEOLA</b>	NAME OF QUADRANGLE: <b>HOLOPAW SW</b> GEOGRAPHIC INDEX OF QUAD: <b>3310</b>	
HORIZONTAL DATUM: 1927 <b>(1983)</b> 2022 Other ___ (circle one) ZONE <b>(E)</b> or W		
VERTICAL DATUM: MSL 1929 <b>(1988)</b> 2022 Other ___ (circle one)		
VERTICAL ACCURACY: 1 2 <b>(3)</b>		
STATE PLANE COORDINATE	(N) Y= <b>1,361,129.833</b>	(E) X= <b>601,134.890</b>
		NAVD 88 EL. <b>76.60'</b> NGVD 29 EL. <b>77.72'</b>

### CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): + 1.115'

(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

LATITUDE: <b>28° 04' 41.09243" (N)</b>	LONGITUDE: <b>81° 10' 14.38957" (W)</b>	(NAD_83 (2011) EPOCH:2010.0000)
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### RECOVERY DATA

Stamping: **OSS-1A 2019**

**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, turn southerly and go along a trail road 400 feet to mark on the left. Mark is a standard SFWMD aluminum disk set in a 1-1/4" pipe with a concrete collar 3" below ground surface, 1' west of metal post with survey marker decal. SFWMD key is required for gate into property.

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



**OSS-1A  
Benchmark**







# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16



Top View



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 1/16

DESIGNATION: <b>OSS-1B</b>		PROJECT: <b>CFWI CAMP LONESOME WEST</b>	
ESTABLISHED BY: <b>PICKETT AND ASSOCIATES, INC</b>		SURVEYOR: <b>John M. Clyatt</b>	
RECOVERED BY:		DATE: <b>May 16, 2019</b>	
GEOGRAPHIC POSITION			
SECTION 1	TOWNSHIP <b>28</b> SOUTH	RANGE <b>31</b> EAST	
COUNTY: <b>OSCEOLA</b>	NAME OF QUADRANGLE: <b>HOLOPAW SW</b>		
	GEOGRAPHIC INDEX OF QUAD: <b>3310</b>		
HORIZONTAL DATUM: 1927 <b>(1983)</b> 2022 Other___ (circle one) ZONE <b>(E)</b> or W			
VERTICAL DATUM: MSL 1929 <b>(1988)</b> 2022 Other___ (circle one)			
VERTICAL ACCURACY: 1 2 <b>(3)</b>			
STATE PLANE COORDINATE	(N) Y= <b>1,360,745.887</b>	(E) X= <b>601,107.762</b>	NAVD 88 EL. <b>76.10'</b> NGVD 29 EL. <b>77.21'</b>
CORPSCON 6.0.1 CONVERSION FACTOR (NAVD88 TO NGVD29): <b>+ 1.115'</b> <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.)</small> ACTUAL NGS or (ngvd29.txt file) OPUS Ortho Height = 23.355 meters			
LATITUDE: <b>28° 04' 37.29022" (N)</b>		LONGITUDE: <b>81° 10' 14.53671" (W)</b>	(NAD_83 (2011) EPOCH:2010.0000)
RECOVERY DATA			
Stamping: <b>OSS-1B 2019</b>			
<p><b>To Reach:</b> 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, turn southerly and go along a trail road 800 feet past mark OSS-1A to mark at the opening of the wetland. Mark is a standard SFWMD aluminum disk set in a 1-1/4" pipe with a concrete collar 3" below ground surface, 1' west of 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 <b>972 PAGE 37</b>			
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: 76041410.DAT OP1560866033523

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](mailto:gprather@pickettusa.com) DATE: June 18, 2019  
RINEX FILE: 7604141q.19o TIME: 13:54:37 UTC

SOFTWARE: page5 1603.24 master53.pl 160321 START: 2019/05/21 16:12:00  
EPHEMERIS: igs20542.eph [precise] STOP: 2019/05/21 21:04:00  
NAV FILE: brdc1410.19n OBS USED: 13001 / 14518 : 90%  
ANT NAME: TRM5800 NONE # FIXED AMB: 68 / 73 : 93%  
ARP HEIGHT: 2.000 OVERALL RMS: 0.020(m)

REF FRAME: NAD\_83(2011)(EPOCH:2010.0000) IGS08 (EPOCH:2019.3857)

X:	864411.875(m)	0.004(m)	864411.049(m)	0.004(m)
Y:	-5564912.988(m)	0.005(m)	-5564911.423(m)	0.005(m)
Z:	2984140.541(m)	0.010(m)	2984140.382(m)	0.010(m)

LAT:	28 4 41.09243	0.011(m)	28 4 41.11345	0.011(m)
E LON:	278 49 45.61039	0.004(m)	278 49 45.58930	0.004(m)
W LON:	81 10 14.38961	0.004(m)	81 10 14.41070	0.004(m)
EL HGT:	-4.427(m)	0.006(m)	-5.978(m)	0.006(m)
ORTHO HGT:	23.348(m)	0.024(m)	[NAVD88 (Computed using GEOID12B)]	76.601(ft)

	UTM COORDINATES	STATE PLANE COORDINATES	
	UTM (Zone 17)	SPC (0901 FL E)	
Northing (Y) [meters]	3105863.632	414873.203	1,361,129.834 (sft)
Easting (X) [meters]	483232.003	183226.280	601,134.887 (sft)
Convergence [degrees]	-0.08032778	-0.08032778	
Point Scale	0.99960347	0.99994465	
Combined Factor	0.99960417	0.99994535	

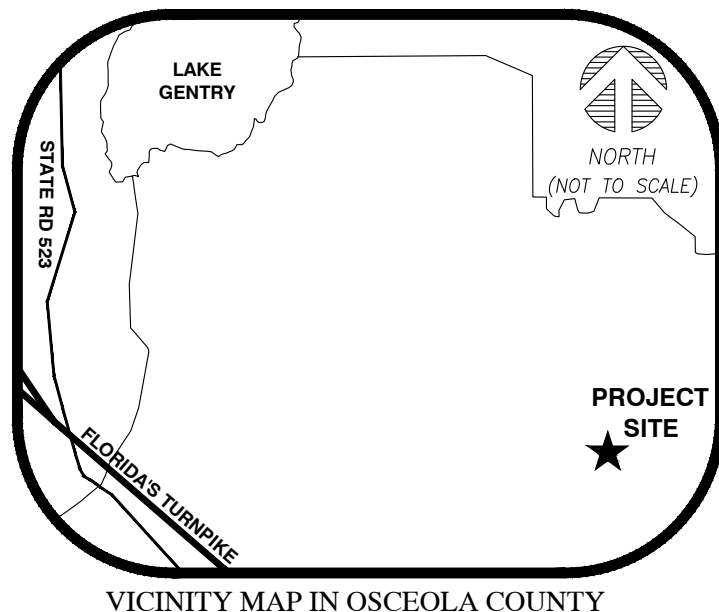
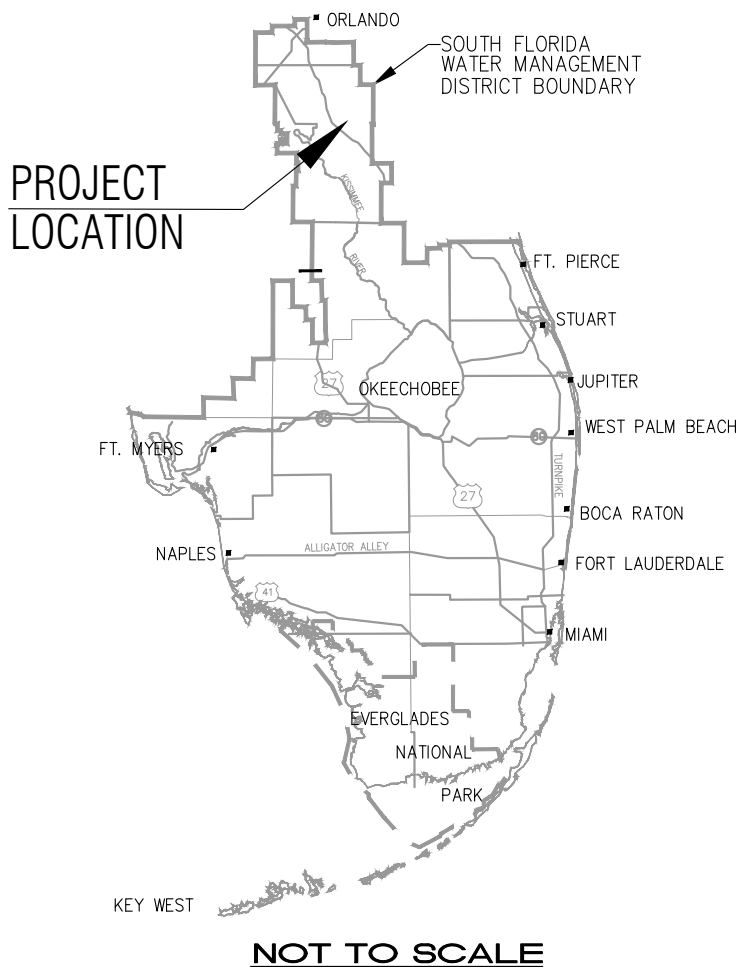
US NATIONAL GRID DESIGNATOR: 17RMM8323205863(NAD 83)

BASE STATIONS USED				
PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DQ7965	FLWE WEDGEFIELD FL CORS ARP	N282626.477	W0810533.176	40909.8
DI3564	CCV6 CAPE CANAVERAL 6 CORS ARP	N282735.827	W0803243.702	74523.0
DE9138	OKCB OKEECHOBEE CORS ARP	N271557.715	W0805119.181	95211.4

NEAREST NGS PUBLISHED CONTROL POINT		
AK6744	HATCH RESET	N280240.956 W0811318.578 6243.0

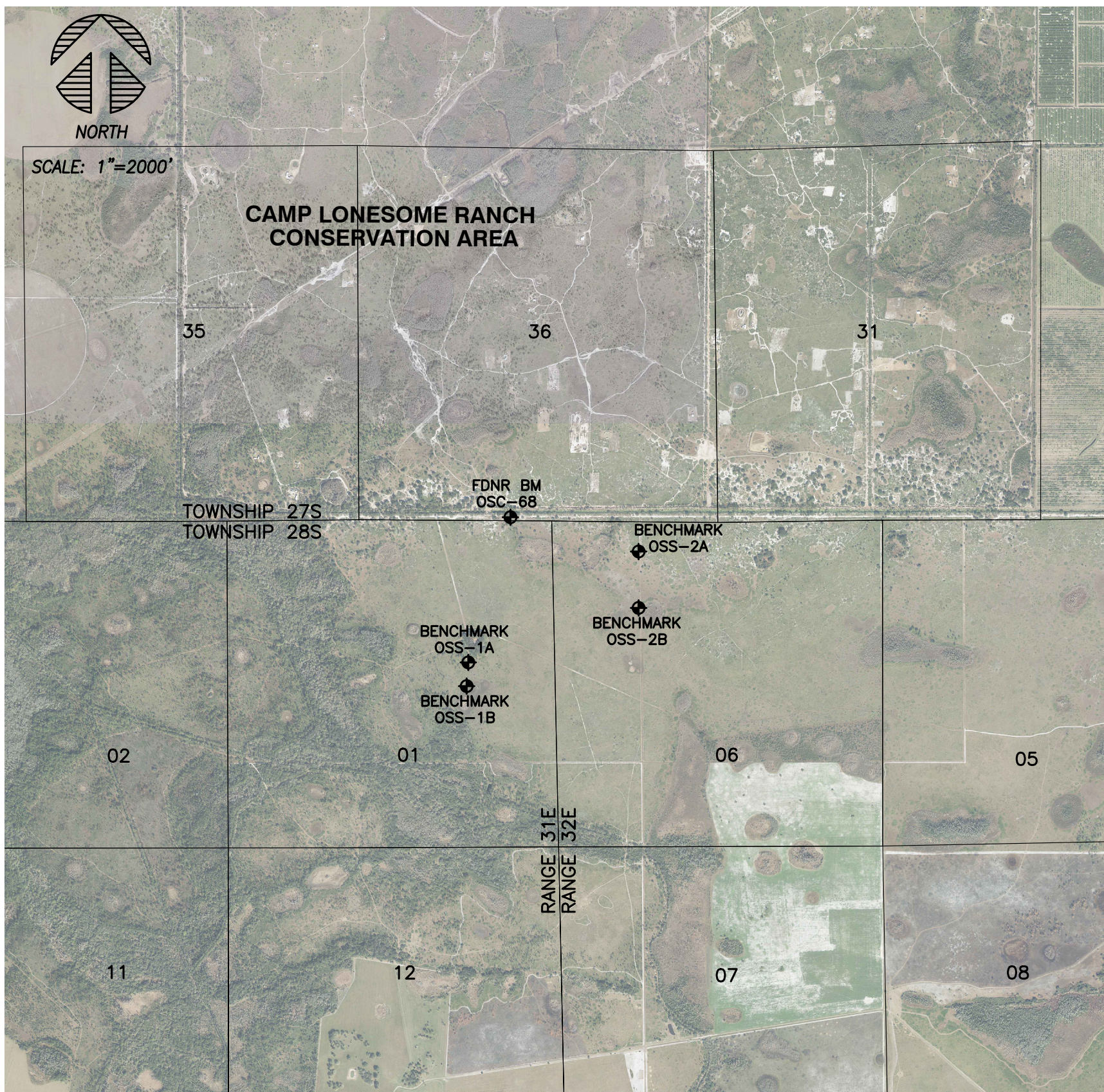


LOCATION MAP  
 CENTRAL FLORIDA WATER INITIATIVE (CFWI) SURVEYS  
**CAMP LONESOME WEST**  
 SECTION 01, TOWNSHIP 28 S, RANGE 31 E,  
 OSCEOLA COUNTY, FL



**LEGEND:**

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

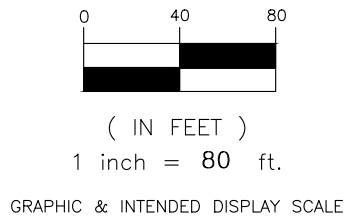


DRAWN	CHECKED	DATE	REVISIONS

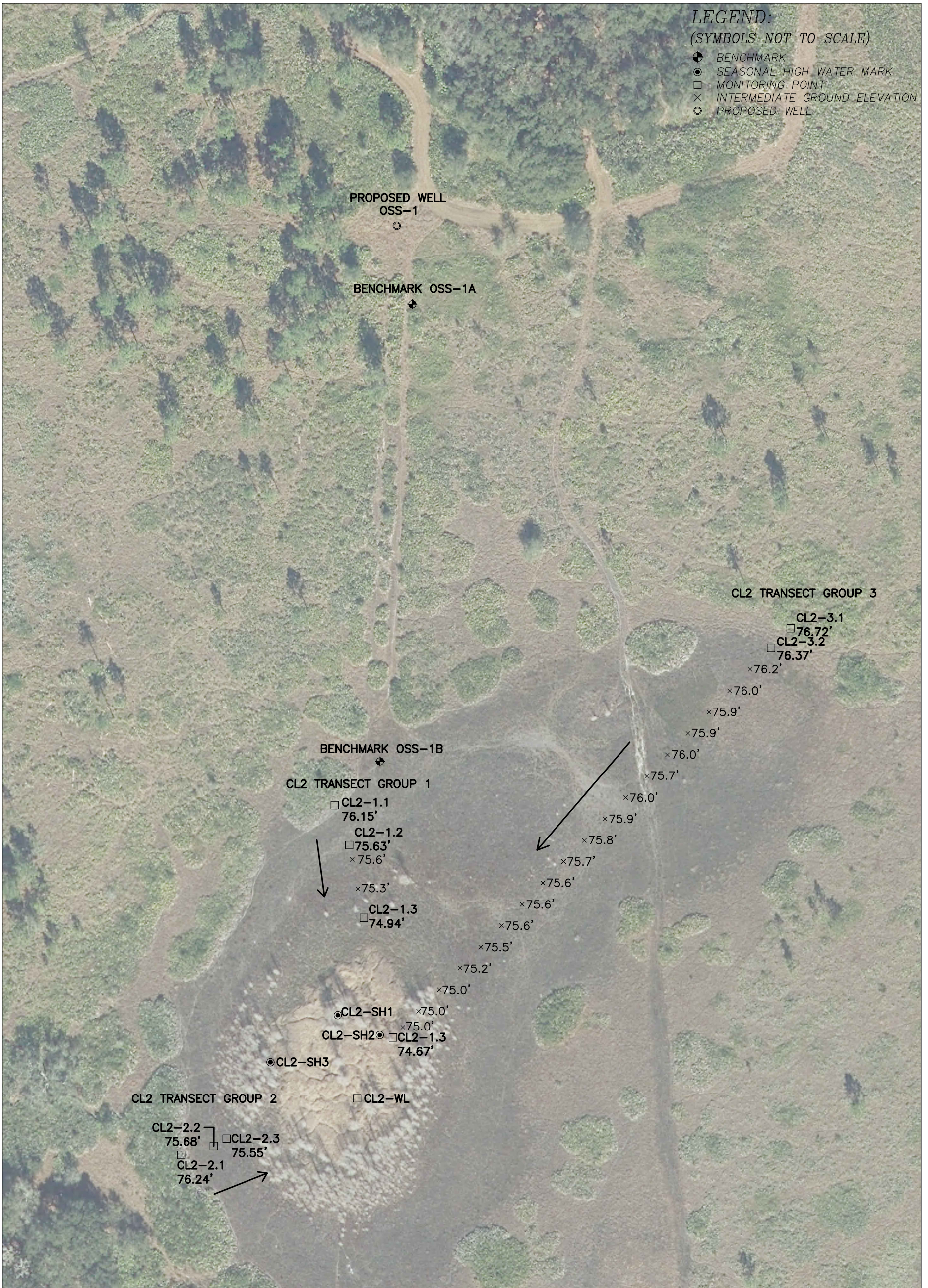
CENTRAL FLORIDA WATER INITIATIVE (CFWI)  
 CAMP LONESOME WEST  
 WELL, TRANSECTS & SEASONAL  
 HIGH-WATER MARKS SURVEY

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





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



SHEET 2 OF 2

DRAWN	CHECKED	DATE	REVISIONS

CENTRAL FLORIDA WATER INITIATIVE (CFWI)  
 CAMP LONESOME WEST  
 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