

# **SURVEYOR'S REPORT**

**Specific Purpose Survey of the Stilling Well(s)**

**L31NN Site.**

**Dade County, Florida**

**South Florida Water Management District's**

**Purchase Order number 4500001526**

**Keith and Schnars project number 16434.00,**

**Task 22164**

**Report Date: October 14, 2006**

**Submittal: First**

**Prepared for:**

**South Florida Water Management District**

**Prepared by:**



**KEITH and SCHNARS, P.A.**  
ENGINEERS, PLANNERS, SURVEYORS

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**Licensed Business (L.B.) 1337**

## SURVEYOR'S REPORT

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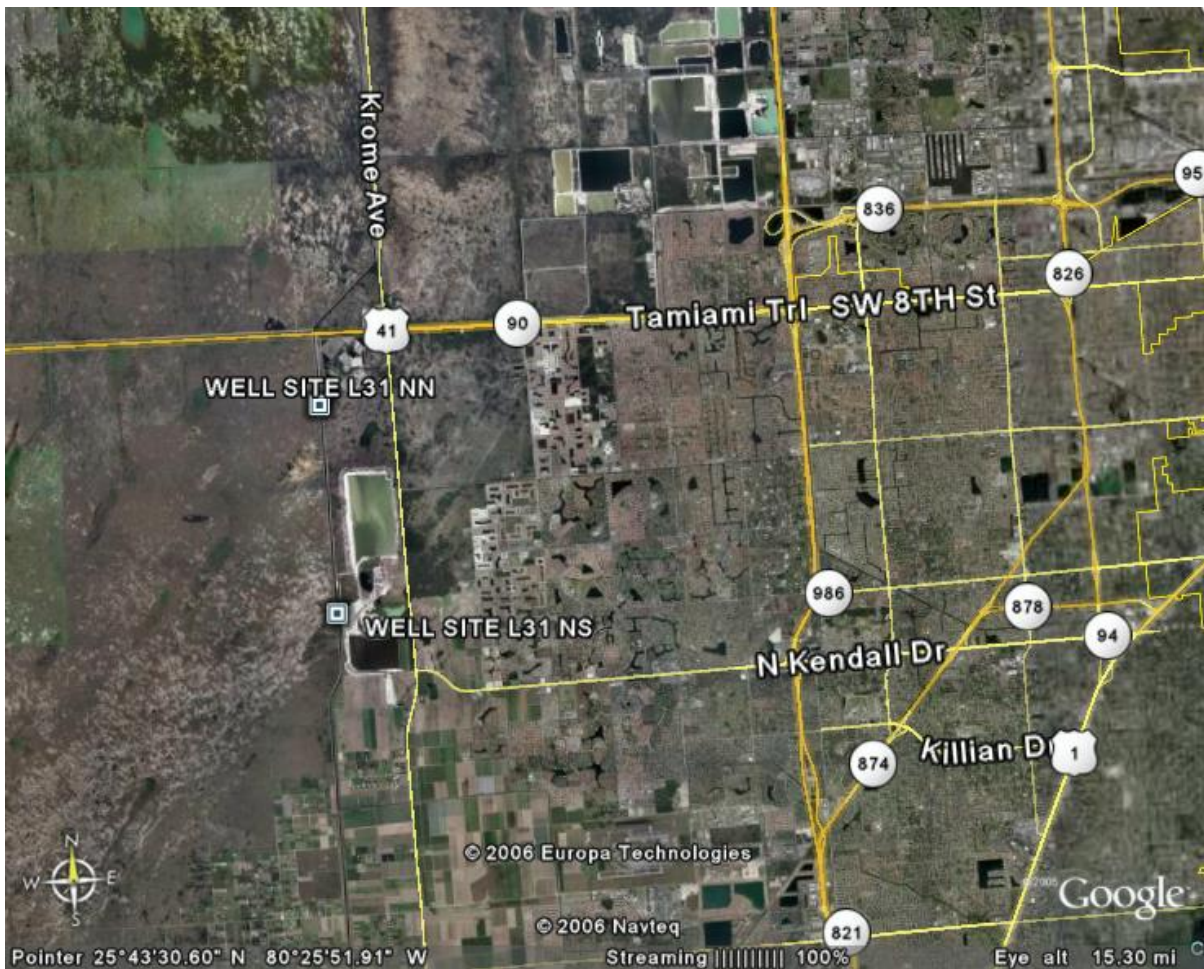
## SURVEYOR'S REPORT

### PURPOSE

To establish vertical data (NAVD 1988 and NGVD 1929) on the Stilling Wells at the structure. Verify or establish an onsite benchmark.

### LOCATION OF PROJECT

The project is located in Dade County, Florida.



## **SURVEYOR'S REPORT**

### **ITEMS DELIVERED TO THE DISTRICT**

1. Electronic copy of field notes.
2. Electronic copy of all computation sheets.
3. CORPSMET 95 file.
4. Site photographs.
5. Surveyor's Report.

### **DATUM FOR THE PROJECT**

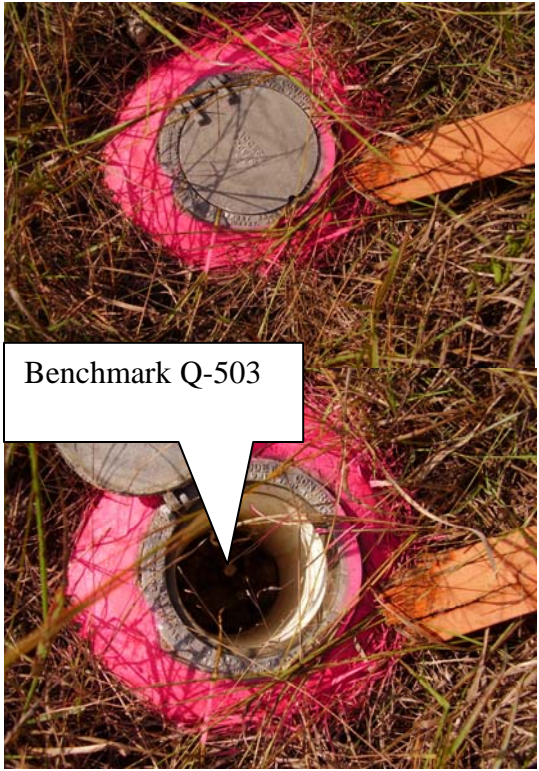
The elevation data was computed in North American Vertical Datum (NAVD) of 1988. Elevations in National Geodetic Vertical Datum (NGVD) of 1929 in this report were derived using data provided by the South Florida Water Management District in a file named NGVD29.txt" when applicable, otherwise NGS superseded values were used. The NGS offset value for this report was derived using Benchmark Q-503, having a NAVD 1988 value of 5.74' and a NGVD 1929.txt file value of 7.305'. The SFWMD offset value for this report was derived using the published elevations for Benchmark JBA 33, NAVD 1988 value of 6.440' and a NGVD 1929.txt file value of 7.996'.

### **LEVELING METHODS**

A level loop was run starting at Benchmark Q-503 running through benchmark JBA 33 and back to Q-503. The level run and elevations were established using a Leica NA2 conventional level and three-wire observation method.

# SURVEYOR'S REPORT

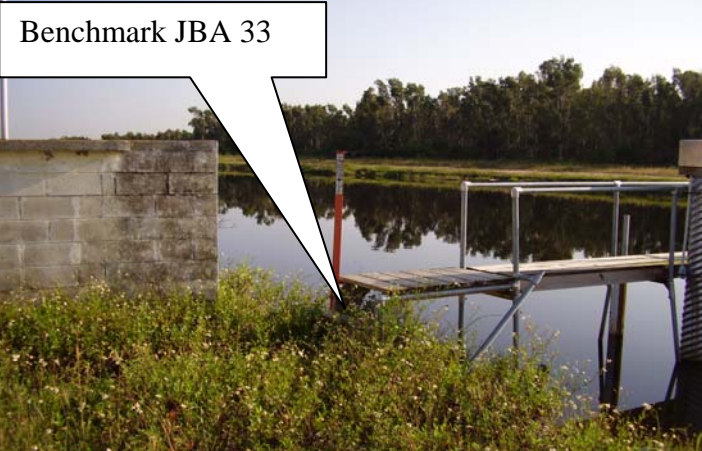

## VERTICAL CONTROL

<b>BM Q-503</b>	Elevation:	<b>NAVD 1988</b>	<b>5.74'</b>	<b>NGVD 1929</b>	<b>7.305'</b>
PID AJ8371	Latitude	25°44'25" Scaled			
State/County FL/Dade	Longitude	-80°29'51" Scaled			
USGS QUAD South Miami NW (1988)					
Vert. Order First Class II					
		<p>The mark is about 16.0 mi (25.7 km) North of Homestead, 8.5 mi (13.7 km) Northwest of Kendall, in Section 14, Township 54 South, Range 38 East. To reach the mark from the junction of State Road 997 (Krome Avenue SW 177 Avenue) and U.S. Highway 41 (Tamiami Trail SW 8th St) about 10.0 mi (16.1 km) Southwest of Hialeah, go West on U.S. Highway 41 (Tamiami Trail SW 8th St) for 1.0 mi (1.6 km) to the West end of bridge number 8705851979 and the junction of a levee road (L-31N) on the West side of the canal, turn left on levee road (L-31N) and go South for 1.45 mi (2.33 km) to the mark on the left, a stainless steel rod driven to refusal at a depth of 28.6 ft (8.7 m) with a NGS logo cap flush with the ground, the datum point is recessed 0.8 ft (24.4 cm) below the level of the NGS logo cap. Located 39.6 ft (12.1 m) East of the approximate centerline of the levee road, 30.0 ft (9.1 m) West of the approximate edge of the canal and 2.0 ft (0.6 m) East of a carsonite witness post. Note bar magnet was placed inside the NGS logo cap. Note access to the datum point is had through a 5-inch NGS logo cap.</p>			



# SURVEYOR'S REPORT

## VERTICAL CONTROL

<b>JBA 33</b>		Elevation:	NAVD 1988	6.440'	NGVD 1929	7.996'
PID AJ8370	Latitude		25°44'42" (Scaled)			
State/County FL/Dade	Longitude		-80°29'52" (Scaled)			
USGS QUAD South Miami NW (1988)						
Vert. Order First Class II			<p>The mark is about 18.2 mi (29.3 km) North of Homestead, 9.0 mi (14.5 km) Northwest of Kendall, in Section 11, Township 54 South, Range 38 East. To reach the mark from the junction of State Road 997 (Krome Avenue SW 177 Avenue) and U.S. Highway 41 (Tamiami Trail SW 8th St) about 10.0 mi (16.1 km) Southwest of Hialeah, go West on U.S. Highway 41 (Tamiami Trail SW 8th St) for 1.0 mi (1.6 km) to the West end of bridge number 8705851979 and the junction of a levee road (L-31N) on the West side of the canal, turn left on levee road (L-31N) and go South for 1.1 mi (1.8 km) to the mark on the left, a 5/8-inch stainless steel rod set in concrete encased in a 4-inch PVC pipe projecting 0.5 ft (15.2 cm) above the level of the ground and above the level of the levee road. Located 65.6 ft (20.0 m) East of the approximate centerline of the levee road, 23.5 ft (7.2 m) East of the approximate centerline of a turnout, 12.0 ft (3.7 m) West of a U.S. Geological survey storm gage in the water, 2.7 ft (0.8 m) East of the Southeast corner of a 4.0 ft (1.2 m) x 7.0 ft (2.1 m) block building and 1.0 ft (0.3 m) West of a carsonite witness post.</p>			
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Benchmark JBA 33</div> 						
						

**SURVEYOR'S REPORT**

**PROJECT RESULTS**

<b>Northerly Well:</b>	<b>Southwesterly Well:</b>	<b>Southeasterly Well:</b>	<b>Easterly Well:</b>
<p>Reference mark: <b><u>Found X mark on wood platform over well.</u></b></p> <p>New Reference Mark El. <b><u>8.90'</u></b> (NGVD '29) (<b><u>Wrote -1.56' to NAVD 1988.</u></b>)</p> <p>Initials: <b><u>K&amp;S D.F., J.L.</u></b></p> <p>Date: <b><u>9/12/06</u></b></p> <p>written at the mark: El. <b><u>8.883'</u></b> Date: <b><u>05/19/95</u></b> By: <b><u>XO/EF</u></b> Reference Mark location: <b><u>Same mark as above.</u></b></p>	<p>Reference mark: <b><u>Found X mark on metal platform over well.</u></b></p> <p>New Reference Mark El. <b><u>13.004'</u></b> (NGVD '29) (<b><u>Wrote -1.56' to NAVD 1988.</u></b>)</p> <p>Initials: <b><u>K&amp;S D.F., J.L.</u></b></p> <p>Date: <b><u>9/12/06</u></b></p> <p>written at the mark: El. <b><u>12.931'</u></b> Date: <b><u>None</u></b> By: <b><u>None</u></b> Reference Mark location: <b><u>Same mark as above.</u></b></p>	<p>Reference mark: <b><u>Set X mark on metal platform over well.</u></b></p> <p>New Reference Mark El. <b><u>12.879'</u></b> (NGVD '29) (<b><u>Wrote -1.56' to NAVD 1988.</u></b>)</p> <p>Initials: <b><u>K&amp;S D.F., J.L.</u></b></p> <p>Date: <b><u>9/12/06</u></b></p> <p>written at the mark: El. <b><u>12.806'</u></b> Date: <b><u>Unable to read</u></b> By: <b><u>Crossroads</u></b> Reference Mark location: <b><u>Previous mark covered by equipment.</u></b></p>	<p>Reference mark: <b><u>Found mark on wood platform over well.</u></b></p> <p>New Reference Mark El. <b><u>10.96'</u></b> (NGVD '29) (<b><u>Wrote -1.56' to NAVD 1988.</u></b>)</p> <p>Initials: <b><u>K&amp;S D.F., J.L.</u></b></p> <p>Date: <b><u>9/12/06</u></b></p> <p>written at the mark: El. <b><u>13.31'</u></b> Date: <b><u>04/30/04</u></b> By: <b><u>M.O./S.B.</u></b> Reference Mark location: <b><u>Same mark as above.</u></b></p>
<p>Staff Gage at Southwest Well: Reading: <b><u>9.00</u></b> (ft) NGVD 1929 Actual: <b><u>7.48</u></b> (ft) NAVD 1988</p>			

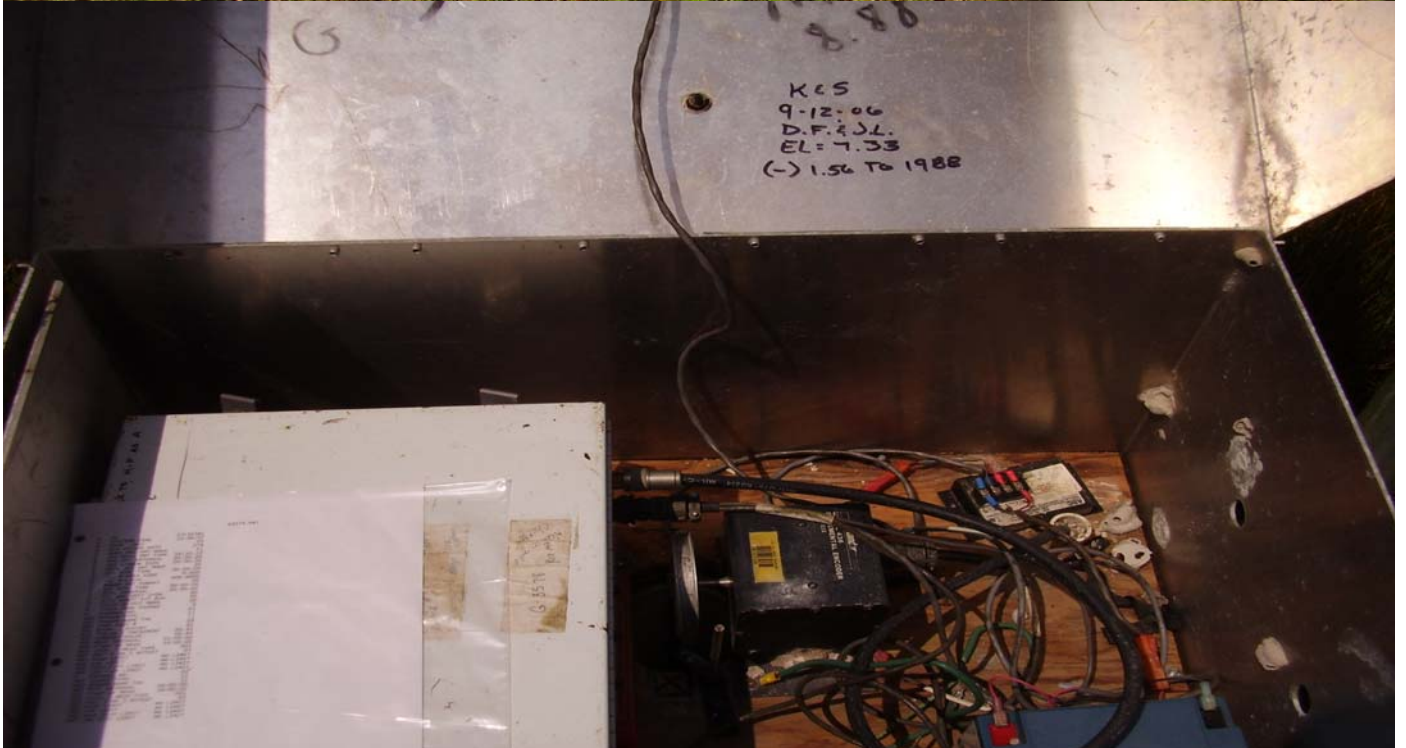
**SURVEYOR'S REPORT**

**PROJECT RESULTS**

<b>GW1</b>	<b>GW2</b>	<b>GW3</b>	<b>GW4</b>
<b>Northerly Manhole:</b>	<b>2<sup>nd</sup> Manhole heading South:</b>	<b>3<sup>rd</sup> Manhole heading South:</b>	<b>South Manhole:</b>
Reference mark: <b><u>Set marker mark on PVC pipe.</u></b>	Reference mark: <b><u>Set marker mark on PVC pipe.</u></b>	Reference mark: <b><u>Set marker mark on PVC pipe.</u></b>	Reference mark: <b><u>Set marker mark on PVC pipe.</u></b>
New Reference Mark El. <b><u>15.63'</u></b> (NGVD '29) ( <b><u>Wrote -1.56' to NAVD 1988.</u></b> )	New Reference Mark El. <b><u>15.704'</u></b> (NGVD '29) ( <b><u>Wrote -1.56' to NAVD 1988.</u></b> )	New Reference Mark El. <b><u>15.679'</u></b> (NGVD '29) ( <b><u>Wrote -1.56' to NAVD 1988.</u></b> )	New Reference Mark El. <b><u>16.00'</u></b> (NGVD '29) ( <b><u>Wrote -1.56' to NAVD 1988.</u></b> )
Initials: <b><u>K&amp;S D.F., J.L.</u></b>	Initials: <b><u>K&amp;S D.F., J.L.</u></b>	Initials: <b><u>K&amp;S D.F., J.L.</u></b>	Initials: <b><u>K&amp;S D.F., J.L.</u></b>
Date: <b><u>9/12/06</u></b>	Date: <b><u>9/12/06</u></b>	Date: <b><u>9/12/06</u></b>	Date: <b><u>9/12/06</u></b>
<b>written at the mark:</b>	<b>written at the mark:</b>	<b>written at the mark:</b>	<b>written at the mark:</b>
El. <b><u>None</u></b> Date: <b><u>None</u></b> By: <b><u>None</u></b>	El. <b><u>None</u></b> Date: <b><u>None</u></b> By: <b><u>None</u></b>	El. <b><u>None</u></b> Date: <b><u>None</u></b> By: <b><u>None</u></b>	El. <b><u>None</u></b> Date: <b><u>None</u></b> By: <b><u>None</u></b>
Reference Mark location: <b><u>Same mark as above.</u></b>	Reference Mark location: <b><u>Same mark as above.</u></b>	Reference Mark location: <b><u>Same mark as above.</u></b>	Reference Mark location: <b><u>Same mark as above.</u></b>



# L31 NN



09/12/06

Keith and Schnars, P.A.

Northerly Well



# L31 NN

SOUTHWESTERLY  
WELL



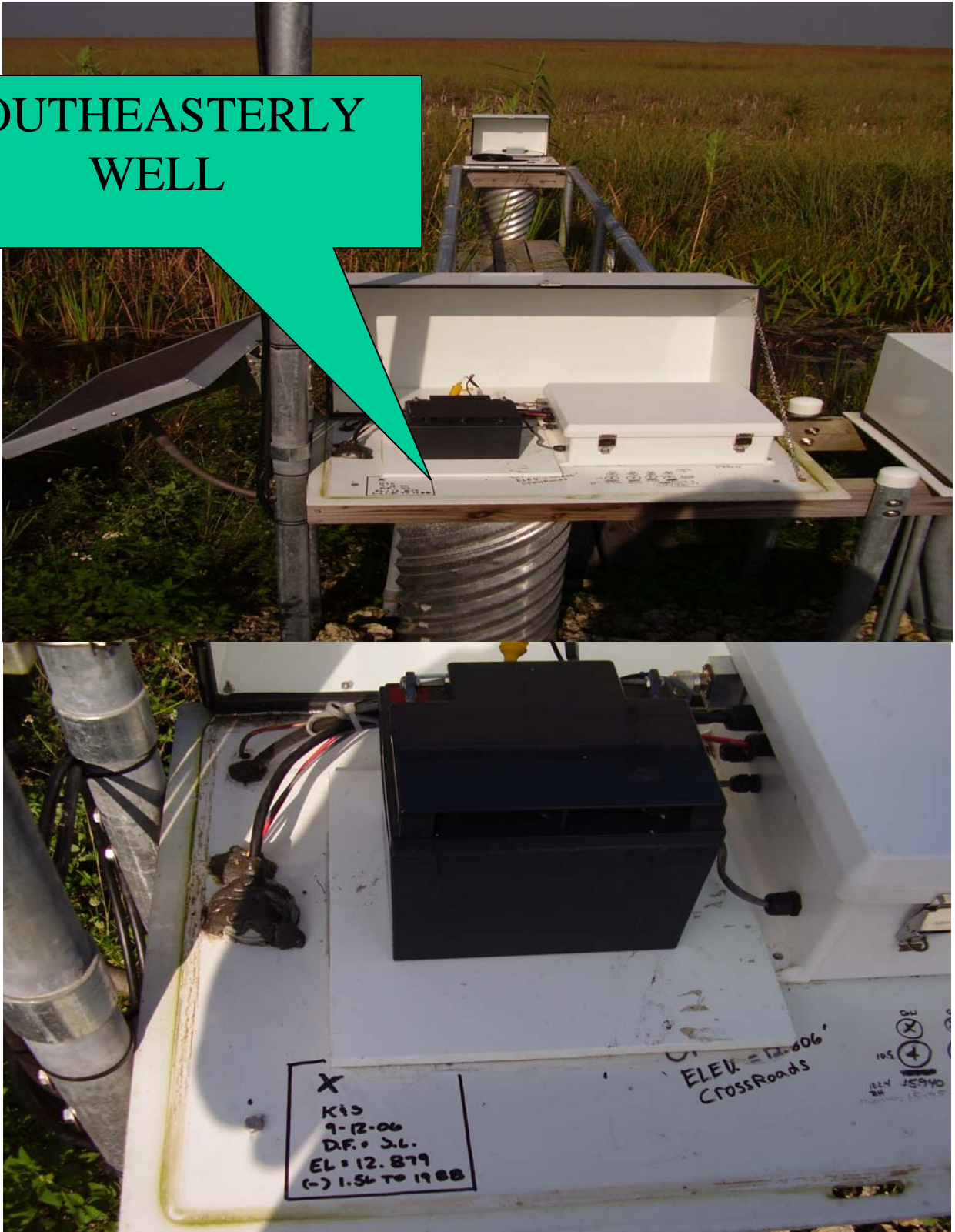
09/12/06

Keith and Schnars, P.A.

Southwesterly Well

# L31 NN

SOUTHEASTERLY  
WELL



09/12/06

Keith and Schnars, P.A.

Southeasterly Well



# L31 NN



09/12/06

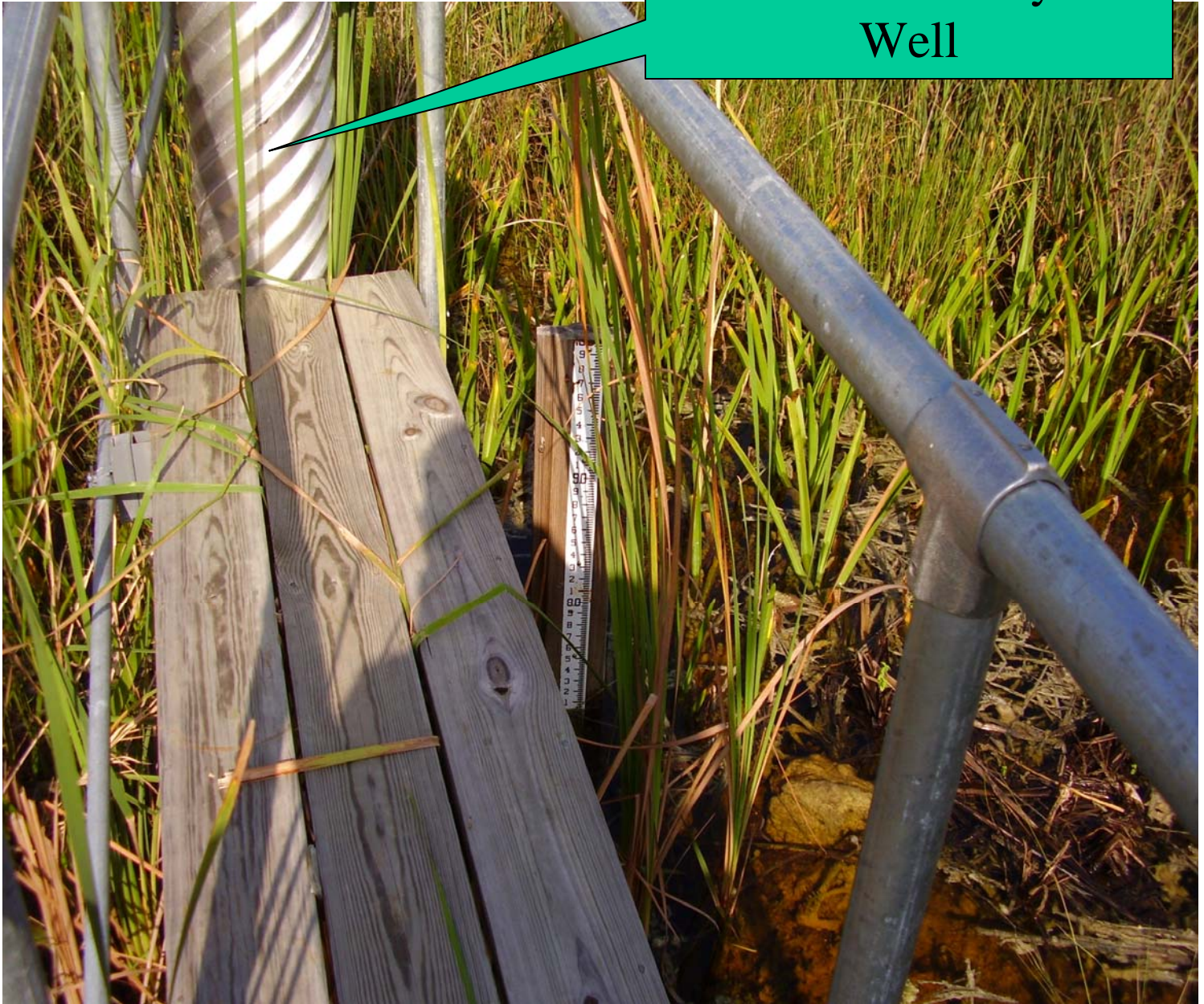
Keith and Schnars, P.A.

Easterly Well



# L31 NN

Southwesterly  
Well



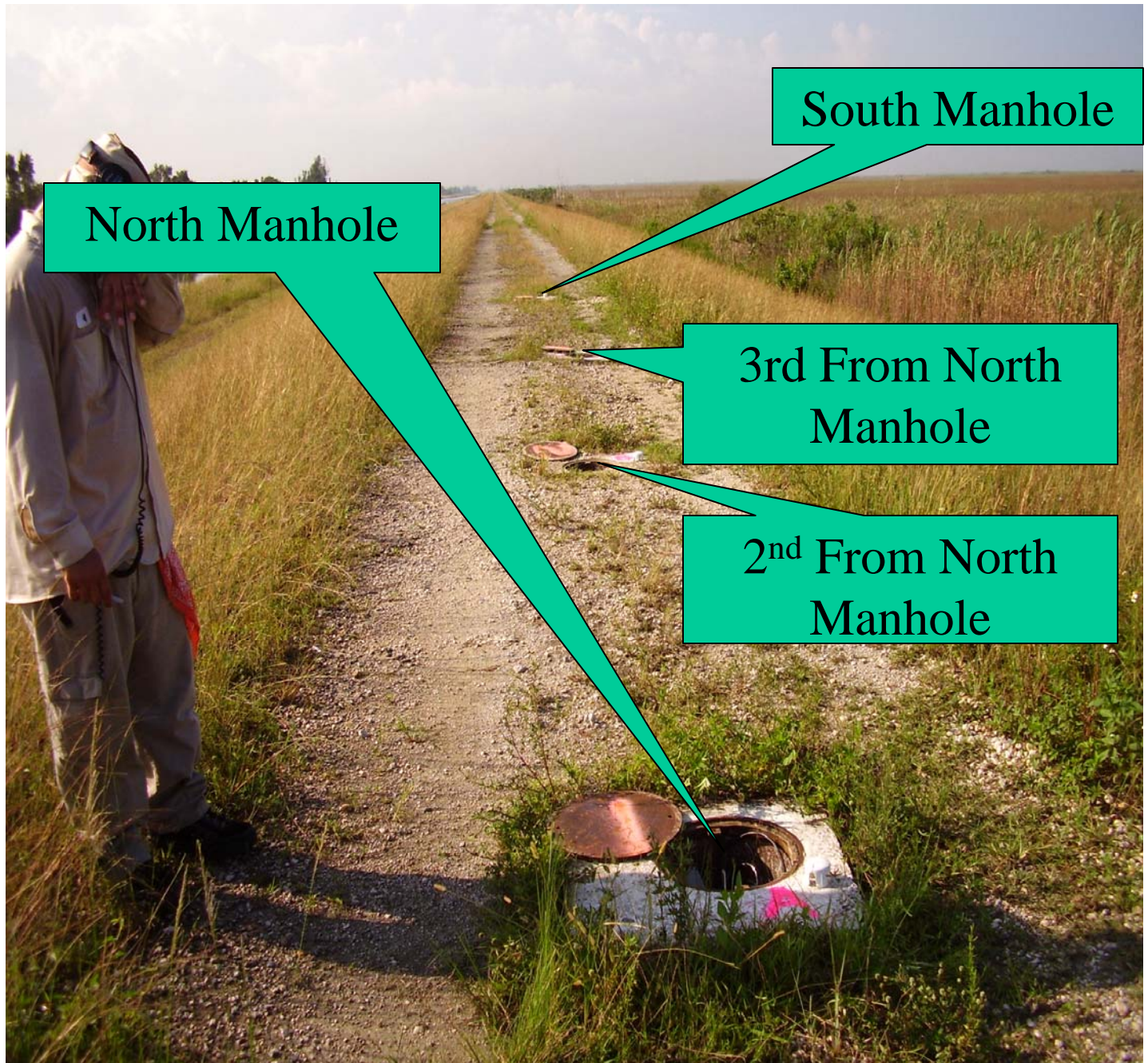
09/12/06

Keith and Schnars, P.A.

Staff Gage



# L31 NN



09/12/06

Keith and Schnars, P.A.

Manhole Locations



# L31 NN

PVC Pipe Reference Mark



PK Nail and Disk Elevation  
= 14.903' NAVD 1988  
(16.468' NGVD 1929)

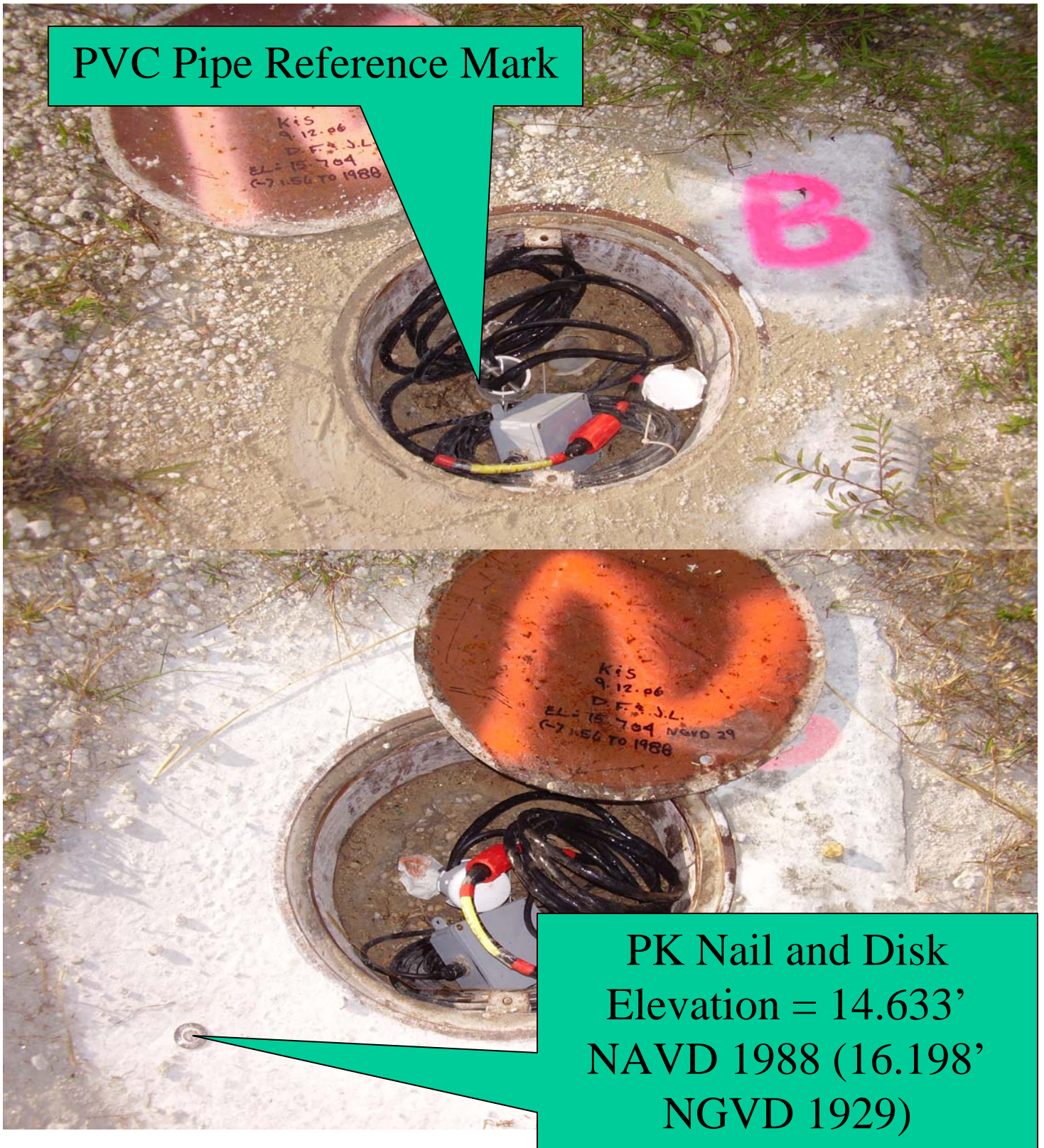
09/12/06

Keith and Schnars, P.A.

North Manhole



# L31 NN



PVC Pipe Reference Mark

PK Nail and Disk  
Elevation = 14.633'  
NAVD 1988 (16.198'  
NGVD 1929)

09/12/06

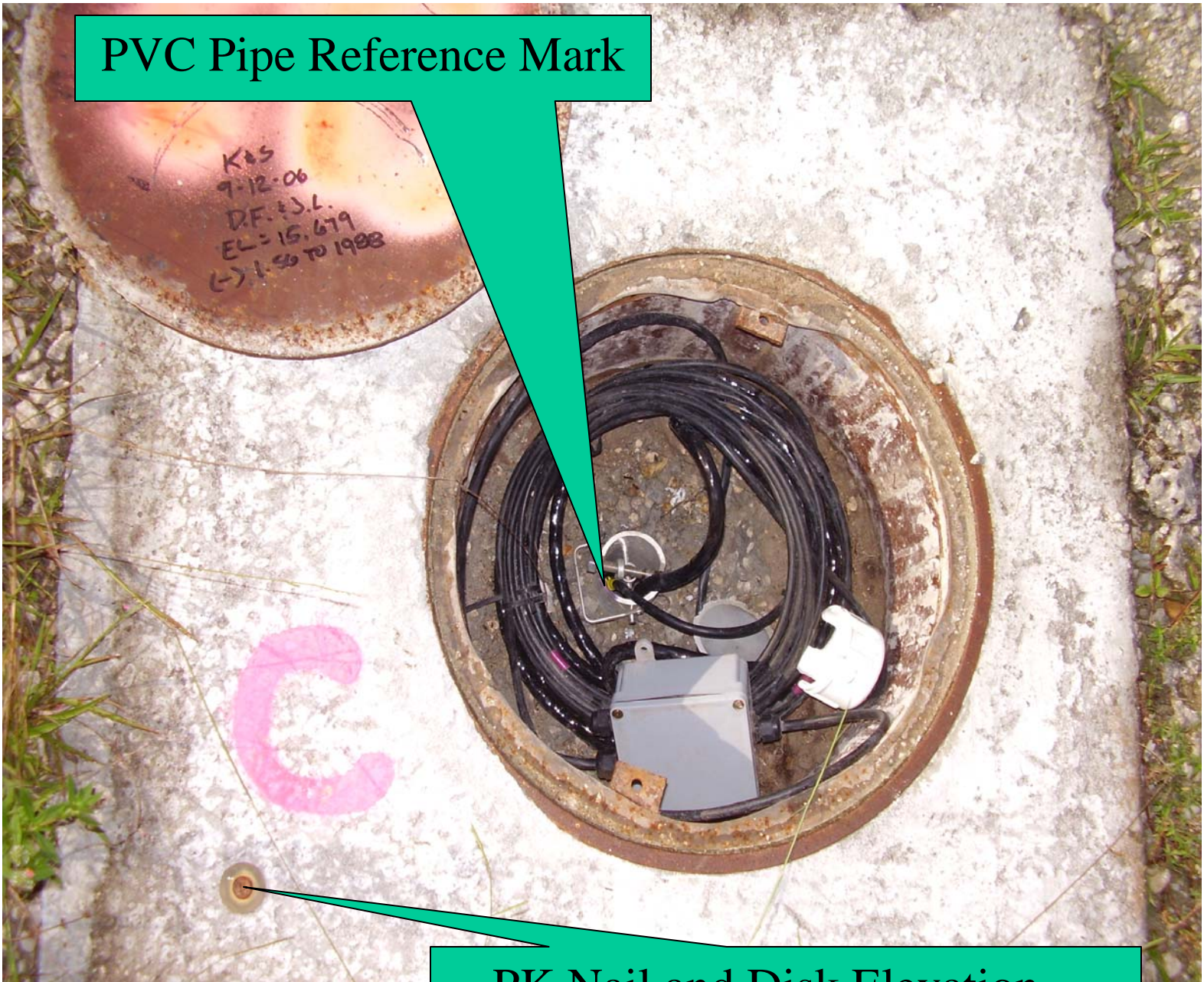
Keith and Schnars, P.A.  
2nd From North Manhole



# L31 NN

PVC Pipe Reference Mark

K&S  
9-12-06  
D.F. & J.L.  
EL = 15.679  
(-) 1.50 TO 1988



PK Nail and Disk Elevation =  
14.853' NAVD 1988 (16.418'  
NGVD 1929)

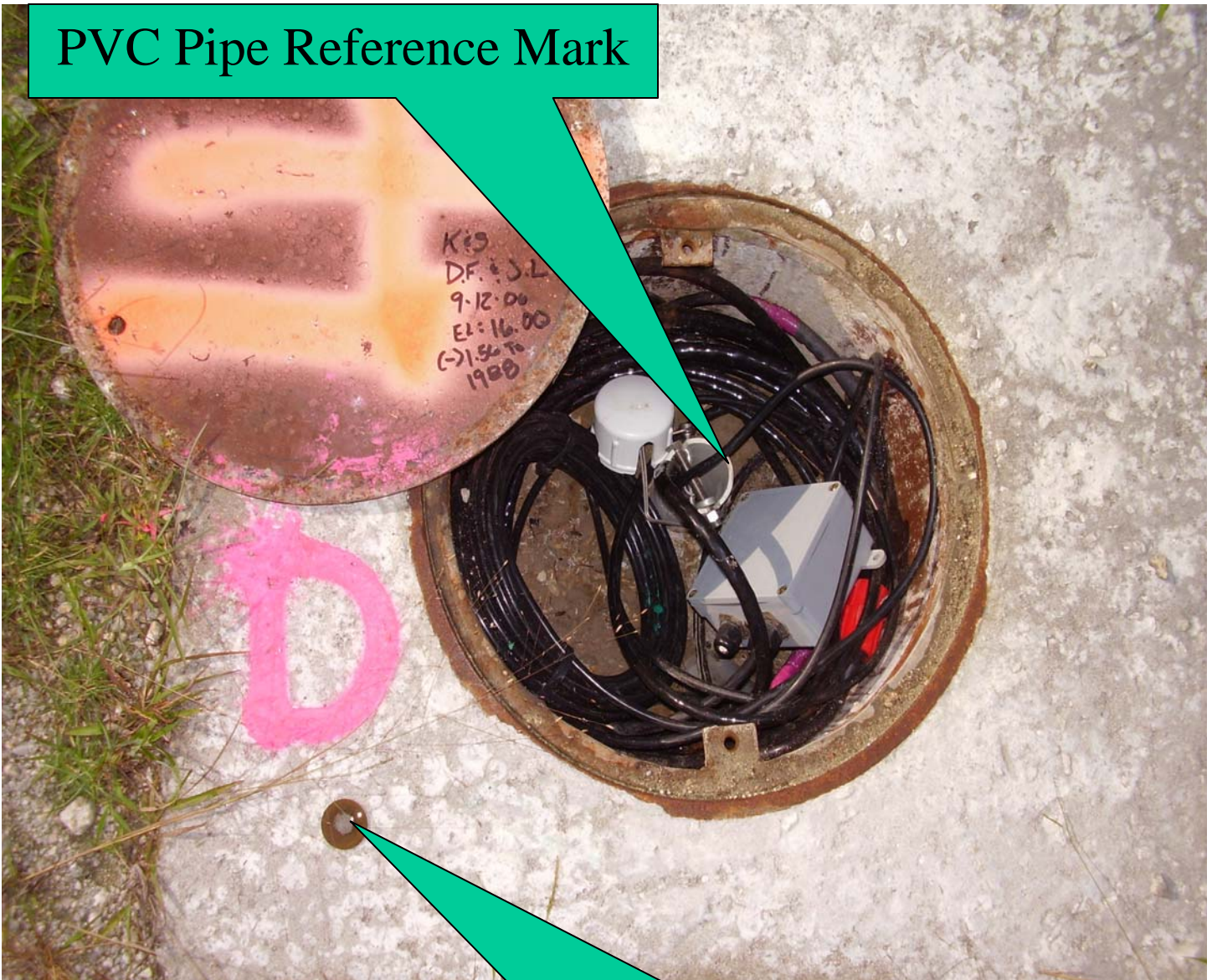
09/12/06

Keith and Schnars, P.A.  
3rd From North Manhole



# L31 NN

PVC Pipe Reference Mark



PK Nail and Disk Elevation =  
14.973' NAVD 1988 (16.538'  
NGVD 1929)

09/12/06

Keith and Schnars, P.A.

South Manhole

## SURVEYOR'S REPORT

Comments:

Party Chief: D. Ferels Field Book: 1224 Page 26-29

Bench Mark: "JBA 33" El. 6.433', Vertical Datum: NAVD1988

El. 7.998', Vertical Datum: NGVD1929

Offset: 1.556' SFWMD VALUE (From previous elevations on SFWMD data sheet for Benchmark JBA 33), subtract this value to convert to NAVD 1988

Offset: 1.565' NGS VALUE (using NGVD 1929 TXT file and NAVD 1988 value from data sheet at Benchmark Q-503), subtract this value to convert to NAVD 1988

NAVD 88 - North American Vertical Datum of 1988

NGVD29 -National Geodetic Vertical Datum of 1929

NAD 83-99 (Horizontal Datum) North American Datum

NGS- National Geodetic Survey

SFWMD- South Florida Water Management District

PVC- Polyvinyl Chloride

## SURVEYOR'S CERTIFICATION

I hereby certify that this Specific Purpose Survey meets applicable portions of the Minimum Technical Standards set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61-G17, Florida Administrative Code. This report is prepared for the sole and specific use of the South Florida Water Management District and is not assignable.

**KEITH and SCHNARS, PA.**

**L.B. number 1337**

By:

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**Date of Survey**  
**September 12, 2006**

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**Michael M. Mossey, PSM**  
**Professional Surveyor and Mapper**  
**State of Florida**  
**Certificate No. 5660**

9-11-06  
FERELS  
LALONDE

SFWM  
L31 NN

	+	MI	-	ELEV	BM EL
BM	7.300				5.74
	6.030				
	4.770				
	6.033 ✓	11.773 ✓			
TP 1				6.440	
	6.330			5.190	
	5.110			3.935 ✓	
	3.880			5.188 ✓	6.585 ✓
	5.107 ✓	11.692 ✓			
TP 2				6.120	
	6.410			4.885	
	5.190			3.650	
	3.970 ✓			4.885 ✓	6.807 ✓
	5.190 ✓	11.997 ✓			
TP 3				6.645	
	6.730			5.420	
	5.480			4.190	
	4.230 ✓			5.418 ✓	6.579 <sup>8</sup> ✓
	5.480 ✓	12.059 <sup>8</sup> ✓			
TP 4				6.580	
	5.740			5.340	
	5.155			4.100	
	4.570 ✓			5.340 ✓	6.719 <sup>8</sup> ✓
	5.155 ✓	11.874 <sup>3</sup> ✓			

122A/20

NAVD 88 (Q503) STEEL ROD IN PVC PIPE w/ LID  
END AS DESC ON NIG.S. DATA SHEET  
7.305 NGVD 1929 FROM S.F.W.M.D. NGVD 1929.TXT FILE

60d NL

SET 60d NL

SET 60d NL

SET 60d NL  
250' +/- SOUTH OF SOUTH FACE OF CONC BLOCK  
STRUCTURE



7-11-06

FERELS

LALONDE

S F W M

L 31 W N

	+	HI	-	ELEV	BMEL	
BM				6.020	6.44	NAVD 85
T.P. 5	13.360			5.440		
	13.020			4.860		
	12.680			5.440	6.434 <sup>3</sup>	
	13.020	19.454 <sup>3</sup>				
A				4.550	14.904 <sup>3</sup>	
B				4.820	14.634 <sup>3</sup>	
C				4.600	14.854 <sup>3</sup>	
T.P.						
D				4.870		
T.P. 6	5.030			4.480		
	4.805			4.090		
	4.580			4.480	14.974 <sup>3</sup>	
	4.805	19.774 <sup>3</sup>				
T.P. 5				13.400		
7	6.680			13.200		
	5.460			13.000		
	4.240			13.200	6.574 <sup>3</sup>	
	5.460	12.034 <sup>3</sup>				
TP 4				6.660		
8	6.550			5.440		
	5.330			4.220		
	4.110			5.440	6.594 <sup>3</sup>	
	5.330	11.974 <sup>3</sup>				

1224/27

SEA33 ALUM DISC IN CONC MOM IN PVC  
 NAVD 29 = 7.996 FND AS DESC. ON DATA  
 SHEET OBTAINED FROM SEWMD BENCHMARK  
 DATA BASE.

FND NL-DISC LB 4207 IN CONC AROUND  
 SMALL MANHOLE (NORTHERN MOST)  
 FND NL-DISC LB 4207 IN CONC AROUND  
 SMALL MANHOLE (2nd ONE SOUTH FROM (A))  
 FND NL-DISC LB 4207 IN CONC AROUND  
 SMALL M.H. (3rd ONE SOUTH OF (A))  
 FND NL-DISC LB 4207 IN CONC AROUND  
 SMALL M.H. (SOUTHERN MOST)

SET 60d NL 105'± SOUTH OF SOUTH FACE  
 OF CONC BLOCK STRUCTURE

SET 60d NL

STATION	T	HI	-	ELEV	BMEL
FEELS				2.31	NN
LALONDE					
TP79				6.490	
	6.410			5.250	
	5.180			4.010	
	3.950			5.250	6.67 <sup>8</sup> ✓
	5.180	11.85 <sup>8</sup> ✓			
TP810				6.560	
	6.740			5.340	
	5.480			4.120	
	4.210			5.340	6.51 <sup>8</sup> ✓
	5.477	11.99 <sup>6</sup> ✓			
TP811				6.320	
	5.220			5.080	
	4.870			3.840	
	4.520			5.080	6.91 <sup>5</sup> ✓
	4.870	11.78 <sup>6</sup> ✓			
BM				6.435	5.74
				6.045	
				5.655	
				6.045	5.74 <sup>0</sup> ✓

122A/28

SET 60d NL

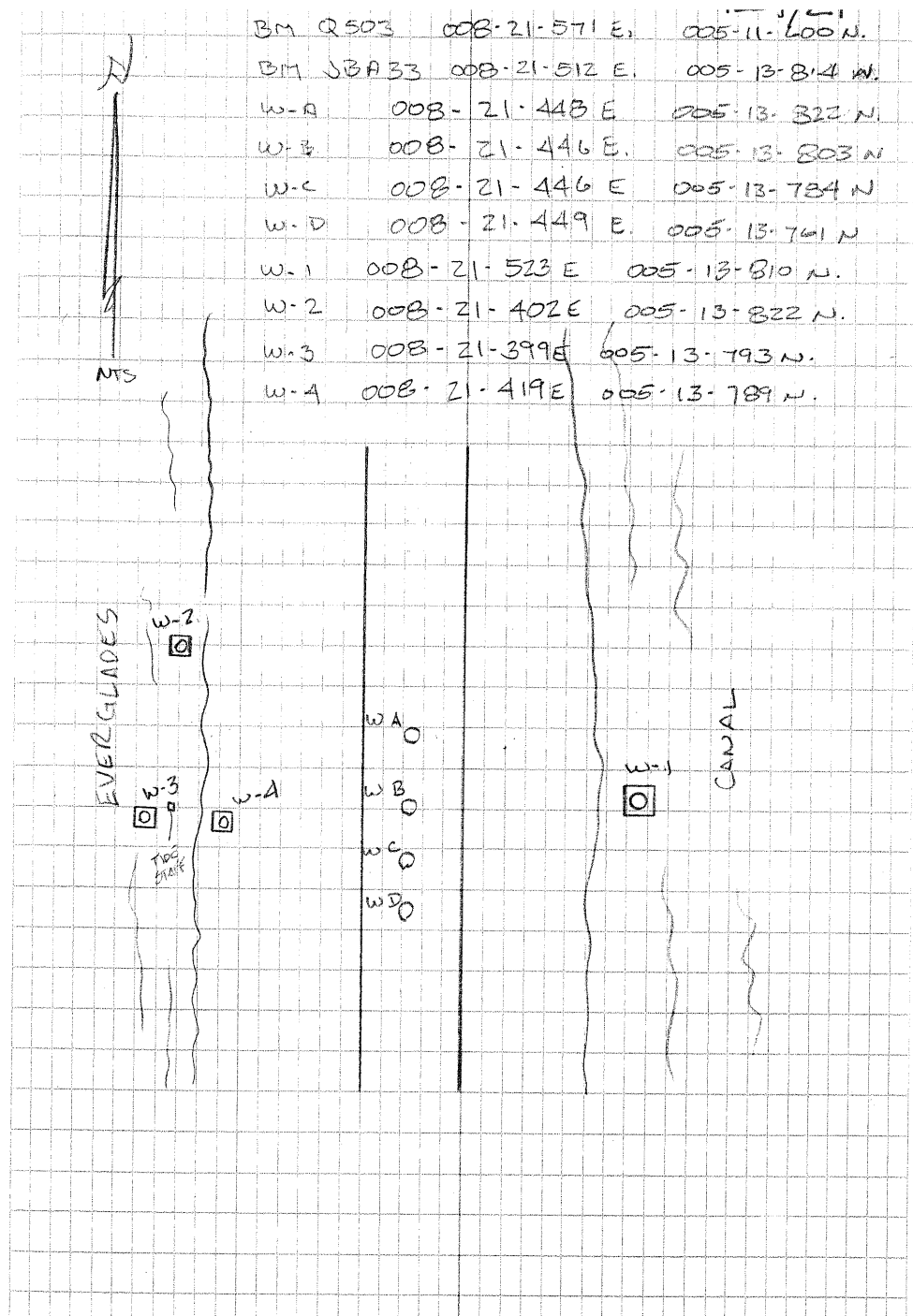
SET 60d NL

SET 60d NL

ERROR 0.00'  
 ALLOWABLE ERROR 0.028 (0.03'√MILES)

9-12-06		S F W M				
FERELS		L 31 NN				
LALONOE						
	+	H1	-	ELEV	BM EL	
BM	13.500				6.434 <sup>3</sup>	NAVD 88
JBA33		19.933				(+ 1.56 TO NGVD 29)
				NAVD 88	NGVD 29	
W-A		5.860	14.07 <sup>3</sup>	15.634 <sup>3</sup>		BLACK MARK ATOP PVC
W-B		5.790	14.144 <sup>3</sup>	15.704 <sup>3</sup>		" " " "
W-C		5.815	14.119 <sup>0</sup>	15.679 <sup>3</sup>		" " " "
W-D		5.495	14.439 <sup>3</sup>	15.999 <sup>3</sup>		" " " "
W-3		8.490	11.444 <sup>3</sup>	13.004 <sup>3</sup>		X-MARK
W-4		8.615	11.319 <sup>3</sup>	12.879 <sup>3</sup>		X-MARK
T.S.		12.450	7.484 <sup>3</sup>			9.0' MARK
TP D		4.955	14.974 <sup>3</sup>			REF. PG. 273 14.974

BM	13.610	20.044 <sup>3</sup>		6.434 <sup>3</sup>	
JBA33					
			NAVD 88	NGVD 29	
W-1		8.385	11.659 <sup>3</sup>	13.223	
W-2		12.710	7.334 <sup>3</sup>	8.894 <sup>3</sup>	
TP D		5.065	14.979 <sup>3</sup>		14.974 <sup>3</sup> REF PG. 273



BM Q503	008-21-571 E.	005-11-600 N.
BM JBA33	008-21-512 E.	005-13-814 W.
W-A	008-21-448 E.	005-13-322 N.
W-B	008-21-446 E.	005-13-803 N.
W-C	008-21-446 E.	005-13-724 N.
W-D	008-21-449 E.	005-13-761 N.
W-1	008-21-523 E.	005-13-810 N.
W-2	008-21-402 E.	005-13-822 N.
W-3	008-21-399 E.	005-13-793 N.
W-4	008-21-419 E.	005-13-789 N.

L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006	Datum:	NAVD88	FIELD BOOK 1224	PAGES 26-28				
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	7.300												
BM	6.030	6.033	11.773			5.740	5.740						NGS BM Q-503
	4.770												
STADIA		253.000											
	6.330			6.440									
TP1	5.110	5.107	11.692	5.190	5.188	6.585		503.50	0.000000000	0.000000000	6.585	2.007	
	3.880			3.935				2.50					
	15.320			3.935				2.50					
STADIA		245.000			250.500								
	6.410			6.120									
TP2	5.190	5.190	11.997	4.885	4.885	6.807		492.00	0.000000000	0.000000000	6.807	2.075	
	3.970			3.650				-2.00					
	15.570			14.655				0.50					
STADIA		244.000			247.000								
	6.730			6.645									
TP3	5.480	5.480	12.058	5.420	5.418	6.578		489.50	0.000000000	0.000000000	6.578	2.005	
	4.230			4.190				-1.50					
	16.440			16.255				-1.00					
STADIA		250.000			245.500								
	5.740			6.580									
TP4	5.155	5.155	11.873	5.340	5.340	6.718		498.00	0.000000000	0.000000000	6.718	2.048	
	4.570			4.100				2.00					
	15.465			16.020				1.00					
STADIA		117.000			248.000								

L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006			Datum:	NAVD88	FIELD BOOK 1224	PAGES 26-28		
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	13.360			6.020									
TP5	13.020	13.020	19.453	5.440	5.440	6.433		233.00	0.000000000	0.000000000	6.433	1.961	SITE BM JBA 33 AT L31 NN
	12.680			4.860				1.00					
	39.060			16.320				2.00					
STADIA		68.000			116.000								
	5.030			4.870									
TP6	4.805	4.805	19.778	4.480	4.480	14.973		146.00	0.000000000	0.000000000	14.973	4.564	
	4.580			4.090				-10.00					
	14.415			13.440				-8.00					
STADIA		45.000			78.000								
	6.680			13.400									
TP7	5.460	5.460	12.038	13.200	13.200	6.578		85.00	0.000000000	0.000000000	6.578	2.005	
	4.240			13.000				5.00					
	16.380			39.600				-3.00					
STADIA		244.000			40.000								
	6.550			6.660									
TP8	5.330	5.330	11.928	5.440	5.440	6.598		488.00	0.000000000	0.000000000	6.598	2.011	
	4.110			4.220				0.00					
	15.990			16.320				-3.00					
STADIA		244.000			244.000								
	6.410			6.490									
TP9	5.180	5.180	11.858	5.250	5.250	6.678		492.00	0.000000000	0.000000000	6.678	2.036	
	3.950			4.010				-4.00					
	15.540			15.750				-7.00					
STADIA		246.000			248.000								

L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006			Datum:	NAVD88	FIELD BOOK 1224	PAGES 26-28		
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	6.740			6.560									
TP10	5.480	5.477	11.995	5.340	5.340	6.518		490.00	0.000000000	0.000000000	6.518	1.987	
	4.210			4.120				2.00					
	16.430			16.020				-5.00					
STADIA		253.000			244.000								
	5.220			6.320									
TP11	4.870	4.870	11.785	5.080	5.080	6.915		248.00	0.000000000	0.000000000	6.915	2.108	
	4.520			3.840				-248.00					
	14.610			15.240				0.00					
STADIA		70.000			248.000								
				6.435									
BM				6.045	6.045	5.740	5.740	148.00	0.000000000	0.000000000	5.740	1.750	BM CHECK @ Q-503
				5.655				-8.00					
				18.135				-8.00					
					78.000								
							LOR=	4566.00	CHECK VALUES TO VERIFY SAME				
									OR TO SEE THEY ARE WITHIN				
	TOTAL +=	2279.000		TOTAL -=	2287.000			4566.00	THIRD ORDER SPECS( MAX DIFF. 33 FT.)				
					-8.00								
					RAW CLOSURE=			0.000					
					ERROR PER FOOT=			0.000					
					MTS ALLOWABLE ERROR FOR THIRD ORDER=			0.028					
					ACTUAL ERROR=			0.000	RED IF BAD-----GREEN IF GOOD				

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L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006	Datum:	NGVD29	FIELD BOOK 1224	PAGES 26-28				
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	7.300												
BM	6.030	6.033	13.338			7.305	7.305						NGS BM Q-503
	4.770												
STADIA		253.000											
	6.330			6.440									
TP1	5.110	5.107	13.257	5.190	5.188	8.150		503.50	0.000000000	0.000000000	8.150	2.484	
	3.880			3.935				2.50					
	15.320			3.935				2.50					
STADIA		245.000			250.500								
	6.410			6.120									
TP2	5.190	5.190	13.562	4.885	4.885	8.372		492.00	0.000000000	0.000000000	8.372	2.552	
	3.970			3.650				-2.00					
	15.570			14.655				0.50					
STADIA		244.000			247.000								
	6.730			6.645									
TP3	5.480	5.480	13.623	5.420	5.418	8.143		489.50	0.000000000	0.000000000	8.143	2.482	
	4.230			4.190				-1.50					
	16.440			16.255				-1.00					
STADIA		250.000			245.500								
	5.740			6.580									
TP4	5.155	5.155	13.438	5.340	5.340	8.283		498.00	0.000000000	0.000000000	8.283	2.525	
	4.570			4.100				2.00					
	15.465			16.020				1.00					
STADIA		117.000			248.000								

L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006	Datum:	NGVD29	FIELD BOOK 1224	PAGES 26-28				
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	13.360			6.020									
TP5	13.020	13.020	21.018	5.440	5.440	7.998		233.00	0.000000000	0.000000000	7.998	2.438	SITE BM JBA 33 AT L31 NN
	12.680			4.860				1.00					
	39.060			16.320				2.00					
STADIA		68.000			116.000								
	5.030			4.870									
TP6	4.805	4.805	21.343	4.480	4.480	16.538		146.00	0.000000000	0.000000000	16.538	5.041	
	4.580			4.090				-10.00					
	14.415			13.440				-8.00					
STADIA		45.000			78.000								
	6.680			13.400									
TP7	5.460	5.460	13.603	13.200	13.200	8.143		85.00	0.000000000	0.000000000	8.143	2.482	
	4.240			13.000				5.00					
	16.380			39.600				-3.00					
STADIA		244.000			40.000								
	6.550			6.660									
TP8	5.330	5.330	13.493	5.440	5.440	8.163		488.00	0.000000000	0.000000000	8.163	2.488	
	4.110			4.220				0.00					
	15.990			16.320				-3.00					
STADIA		244.000			244.000								
	6.410			6.490									
TP9	5.180	5.180	13.423	5.250	5.250	8.243		492.00	0.000000000	0.000000000	8.243	2.513	
	3.950			4.010				-4.00					
	15.540			15.750				-7.00					
STADIA		246.000			248.000								

L31NN	16434.00	PARTY CHIEF	D. FERELS	DATE:	September 11, 2006	Datum:	NGVD29	FIELD BOOK 1224	PAGES 26-28				
STATION	3 WIRE	AVG.(ENG)	HI	3 WIRE	AVG.(ENG)	ELEV.	BM EL.	DIST.	ERROR	ACCUM.	ADJ. ELEV.	METRIC	DESCRIPTION
	6.740			6.560									
TP10	5.480	5.477	13.560	5.340	5.340	8.083		490.00	0.000000000	0.000000000	8.083	2.464	
	4.210			4.120				2.00					
	16.430			16.020				-5.00					
STADIA		253.000			244.000								
	5.220			6.320									
TP11	4.870	4.870	13.350	5.080	5.080	8.480		248.00	0.000000000	0.000000000	8.480	2.585	
	4.520			3.840				-248.00					
	14.610			15.240				0.00					
STADIA		70.000			248.000								
				6.435									
BM				6.045	6.045	7.305	7.305	148.00	0.000000000	0.000000000	7.305	2.227	BM CHECK @ Q-503
				5.655				-8.00					
				18.135				-8.00					
					78.000								
							LOR=	4566.00	CHECK VALUES TO VERIFY SAME				
									OR TO SEE THEY ARE WITHIN				
	TOTAL +=	2279.000		TOTAL -=	2287.000			4566.00	THIRD ORDER SPECS( MAX DIFF. 33 FT.)				
					-8.00								
					RAW CLOSURE=		0.000						
					ERROR PER FOOT=		0.000						
					MTS ALLOWABLE ERROR FOR THIRD ORDER=		0.028						
					ACTUAL ERROR=		0.000		RED IF BAD-----GREEN IF GOOD				

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