SURVEYOR'S REPORT

Specific Purpose Survey of

Weather Tower Tall Cypress

Collier County, Florida

Prepared for:

South Florida Water Management District

Prepared by:

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South Florida Water Management District's

Purchase Order number 4500012430

Keith and Associates project number 07050.02,

Task 001

Report Date: June 28, 2007

Submittal: First

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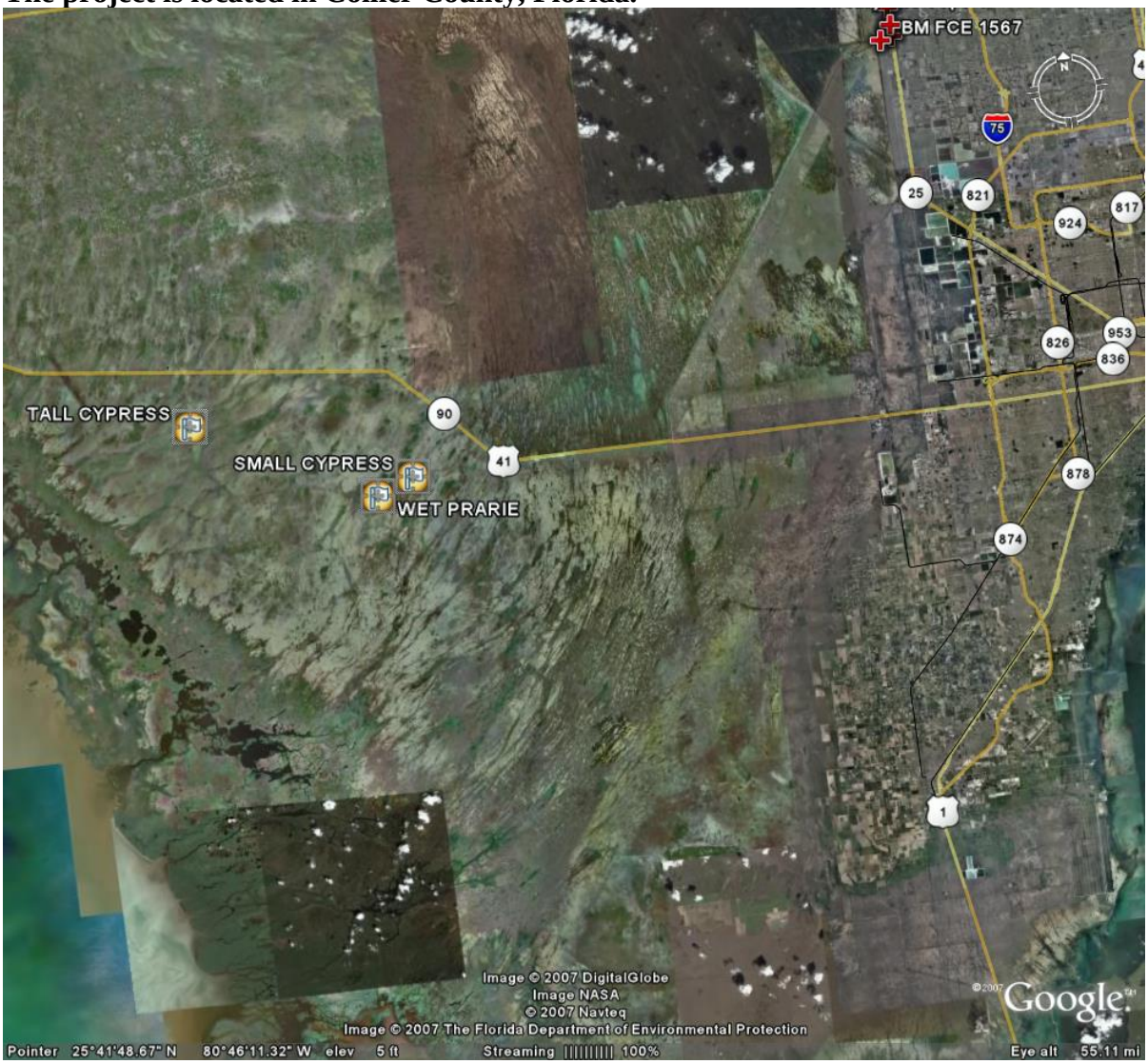
PURPOSE

To establish (NAVD 1988 and NGVD 1929) vertical data at the site.
Set a site benchmark and elevate the well.
Locate the antenna base and guy-wires.

LOCATION OF PROJECT

The project is located in Collier County, Florida.



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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.**
6. **District Benchmark Sheet.**
7. **AutoCad drawing.**

DATUM FOR THE PROJECT

The vertical datum for the project is National Geodetic Vertical Datum (NGVD) of 1929 and North American Vertical Datum (NAVD) of 1988. NGVD 1929 elevations and offset were derived using the NGVD 1929.txt file supplied by the South Florida Water Management District. Horizontal datum is NAD (North American Datum) 1983/03.

LEVELING METHODS

Site Benchmark "Tall 2007" is a 3-1/2" SFWMD brass disk set in the concrete base for the weather antenna at the Tall Cypress site. Due to the site being under water at the time of the main level run a PK nail was set in the headwall along Loop Road and at the entrance to the Tall Cypress site.
The level loop was run starting at NGS benchmark Catham 3, through the PK nail, through NGS Benchmark Catham 3 AZ MK and back to Catham 3. A second level loop to establish the elevations on site benchmark Tall 2007 was run from the PK nail to site benchmark Tall 2007 and back to the PK nail. Site benchmark Tall 2007 was used for the well and site as-builts. A Leica NA2 conventional level was used for the level run and the As-Builts. The level runs meet or exceed the closure requirement of "the square root of the level run in miles x 0.03'.

HORIZONTAL LOCATIONS

Horizontal locations were obtained using a Trimble 5800 receiver and RTK cellular link.

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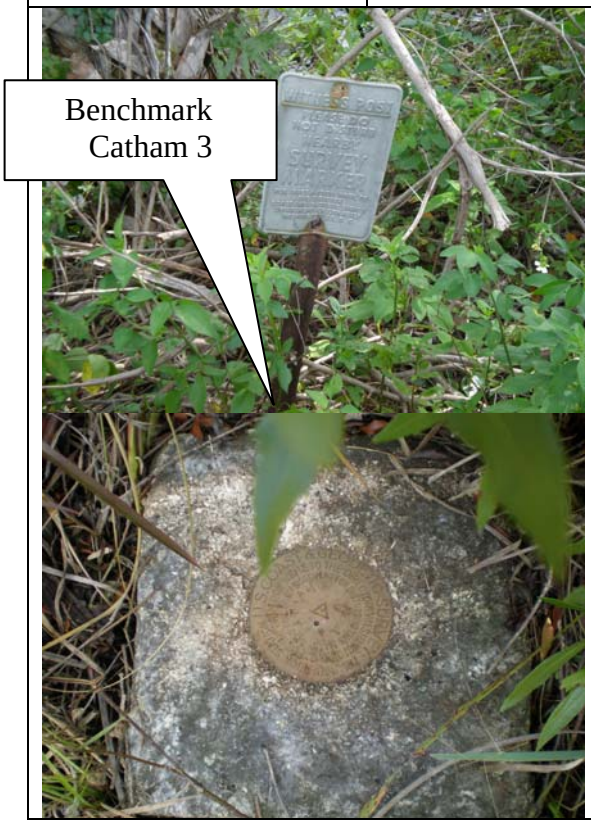
VERTICAL CONTROL

CATHAM 3	Elevation:	**NAVD 1988**	**5.400'**	**NGVD 1929**	**6.831'**
PID AC0569	Latitude	25°51'47.96810"		From NGVD 29.txt file	
State/County FL/Monroe	Longitude	-80°06'05.70748"			
USGS QUAD Monroe Station (1995)					
Vertical Order First Class I Horizontal Order First		The orthometric height was determined by differential leveling and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.To reach from the junction of U.S. Highway No. 41 and State Highway No. 27 which is about 20 miles north of Homestead, go west on U.S. Highway No. 41 for 21.8 miles to Forks at Forty Mile Bend. Continue northwest on U.S. Highway No. 41 for 20.4 miles to Monroe Station on left (south) side of highway. continue west on U.S. Highway No. 41 for 0.15 mile to station on left (south) side of highway as described. The mark is 51.02 m (167.4 ft) southwest of the centerline of U.S. Highway 41, 39.01 m (128.0 ft) northwest of (parallel to highway) the west end of the south concrete endwall of a box culvert (beneath U.S. Highway 41), 58.43 m (191.7 ft)southwest of the southwest corner of the south concrete endwall, and 0.30 m 1.0 ft) northeast of a carsonite witness post. The mark is a disk set flush in the top of a concrete monument, projecting 5 cm (0.17 ft) above the ground and about 0.61 m (2.0 ft) below the level of the highway.			



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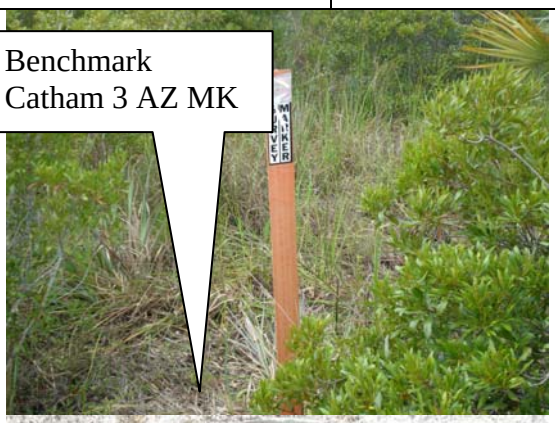
VERTICAL CONTROL (CONTINUED)

CATHAM 3 AZ MK	Elevation:	**NAVD 1988**	**8.521'**	**NGVD 1929**	**9.681'**
PID AC4758	Latitude	25°51'47.81223"		From NGVD 29.txt file	
State/County FL/Monroe	Longitude	-80°05'45.30285"			
USGS QUAD Monroe Station (1995)					
Vertical Order First Class I Horizontal Order First Class II		The orthometric height was determined by differential leveling and adjusted by the NATIONAL GEODETIC SURVEY in June 1991.To reach from the junction of U.S. Highway No. 41 and State Highway No. 27 which is about 20 miles north of Homestead, go west on U.S. Highway No. 41 for 21.8 miles to Forks at Forty Mile Bend. Continue northwest on U.S. Highway No. 41 for 20.4 miles to Monroe Station on left (south) side of highway. continue west on U.S. Highway No. 41 for 0.15 mile to station on left (south) side of highway as described. The mark is 51.02 m (167.4 ft) southwest of the centerline of U.S. Highway 41, 39.01 m (128.0 ft) northwest of (parallel to highway) the west end of the south concrete endwall of a box culvert (beneath U.S. Highway 41), 58.43 m (191.7 ft)southwest of the southwest corner of the south concrete endwall, and 0.30 m 1.0 ft) northeast of a carsonite witness post. The mark is a disk set flush in the top of a concrete monument, projecting 5 cm (0.17 ft) above the ground and about 0.61 m (2.0 ft) below the level of the highway.			



SURVEYOR'S REPORT

VERTICAL CONTROL (CONTINUED)

TALL 2007	Elevation:	**NAVD 1988**	**5.081'**	**NGVD 1929**	**6.512'**
	Latitude	25°49'20.4"	Elevation derived from the level run described above.		Elevation derived from the level run described above.
State/County FL/Collier	Longitude	-81°06'06.4"			
USGS QUAD Monroe Station (1995)					
Vertical Order Third Horizontal Order Third		To reach from the junction of U.S. Highway No. 41 and State Highway No. 27 which is about 20 miles north of Homestead, go west on U.S. Highway No. 41 for 21.8 miles to Forks at Forty Mile Bend. Continue northwest on U.S. Highway No. 41 for 20.4 miles to Monroe Station on left (south) side of highway. continue west on U.S. Highway No. 41 for 0.15 mile to the intersection of Highway 41 and county road 94 (Loop Road) turn left onto loop road and proceed approximately 2.86 miles to the tower site on the right. The tower is located approximately 400' west of Loop Road and must be accessed by foot. The benchmark is a 3-1/2" SFWMD brass disk located on the westerly side of the concrete pad supporting the weather tower.			

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SITE PHOTOS (CONTINUED)

Tall Cypress Tower

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SITE PHOTOS (CONTINUED)

Tall Cypress Well

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SITE PHOTOS (CONTINUED)

Tall Cypress Rain Gauge

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PROJECT RESULTS

Well Site Tall Cypress

Reference mark: **Fnd. X-Cut metal pipe.**

New Information at the site:

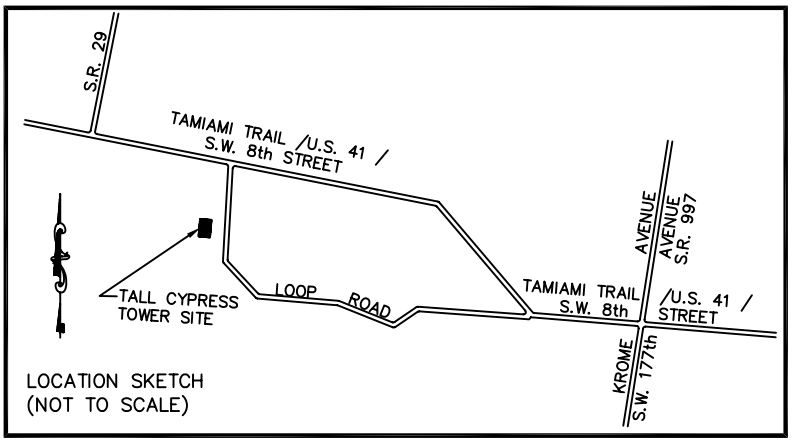
Mark El. **9.48'** (NGVD 29).
Mark El. **8.05'** (NAVD 88).

Initials: **K&A**
Date:**06/27/07**
Offset : **1.43'**

Previous Information at the site:
None
Reference Mark Elevation(s)
El. **N/A**
Date: **N/A**
Initals: **N/A**
Reference Mark location
N/A

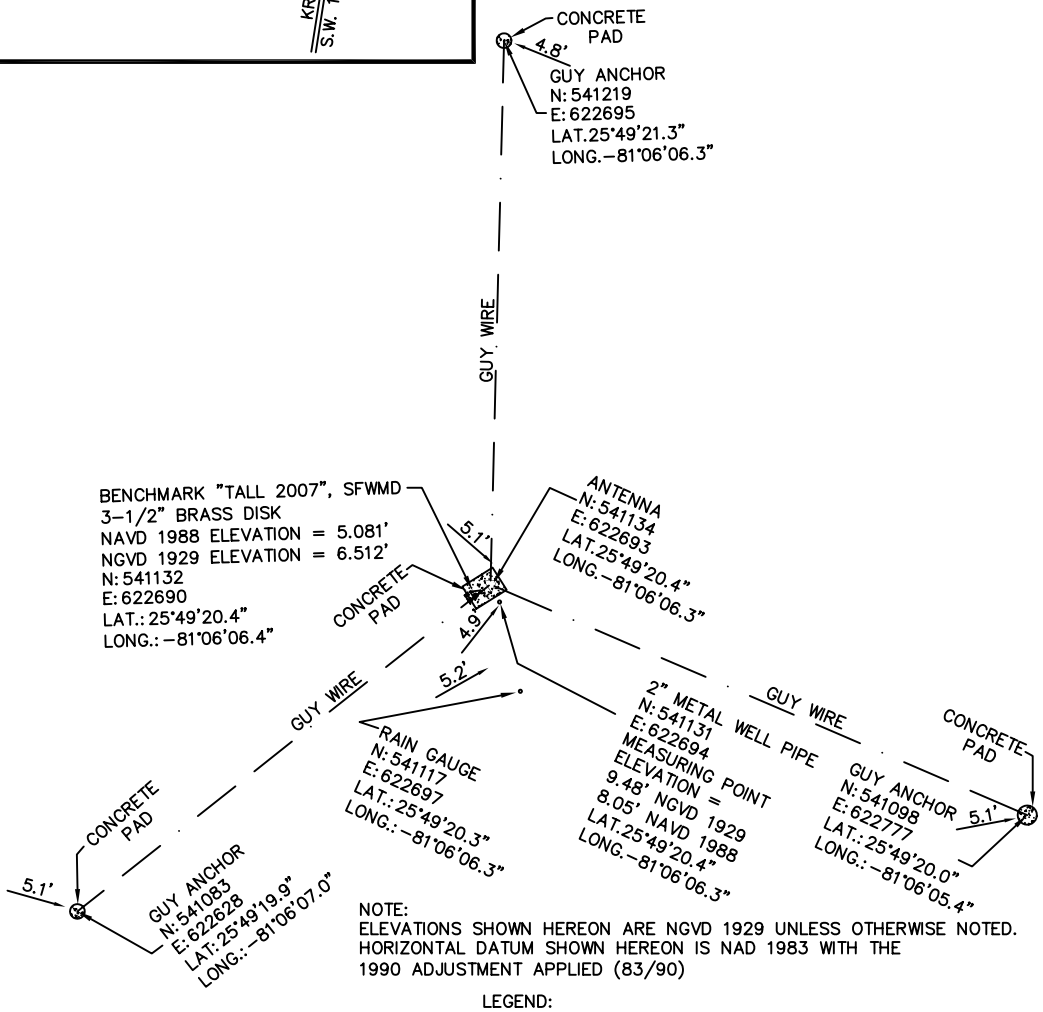
DTW (Distance to water inside well)

Reference mark:
Same as Fnd. Mark above
El. **5.4'** (NGVD 29)
Measurement to water: **4.10'**
Date: **06/27/07**
Time: **12:35 p.m.**



LOCATION SKETCH
(NOT TO SCALE)

SCALE: 1" = 30'



NOTE:
ELEVATIONS SHOWN HEREON ARE NGVD 1929 UNLESS OTHERWISE NOTED.
HORIZONTAL DATUM SHOWN HEREON IS NAD 1983 WITH THE 1990 ADJUSTMENT APPLIED (83/90)

LEGEND:

B.M.	= BENCHMARK
LAT.	= LATITUDE
LONG.	= LONGITUDE
NAD	= NORTH AMERICAN DATUM
NAVD	= NORTH AMERICAN VERTICAL DATUM
NGVD	= NATIONAL GEODETIC VERTICAL DATUM
SFWMD	
7.5'	= EXISTING ELEVATION

TALL CYPRESS TOWER SITE

TOWER AND EQUIPMENT LOCATIONS

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KEITH & ASSOCIATES INC.
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(954) 788-3400 FAX (954) 788-3500
EMAIL: mail@keith-associates.com LB NO. 6860

SHEET 1 OF 1
DRAWING NO. _____

DATE 6/27/07
SCALE 1"=30'
FIELD BK. 268
DWNG. BY MMM
CHK. BY AMK

DATE	REVISIONS

SURVEYOR'S REPORT

Comments

Elevations shown hereon are NGVD 1929 datum unless noted otherwise.
Party Chief: A. McKinney Field Book: 268 Pages 22-38
Bench Mark: "TALL 2007" El. 5.081', Vertical Datum: NAVD1988
El. 6.512', Vertical Datum: NGVD1929
Offset: 1.431' SFWMD VALUE (subtract this value to convert to NAVD 1988)
Offset: 1.431' NGS VALUE (subtract this value to convert to NAVD 1988)
The offset values referred to as "SFWMD VALUE" and "NGS VALUE" were derived by subtracting the published NAVD 1988 elevation from the NGVD 29.txt file value at Catham 3".
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
L.B. - Licensed Business

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 Associates, Inc.
L.B. number 6860

By: _____

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

Date of Survey
June 27, 2007