

# Surveyor's Report

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## Reference Elevation Audit Project Lee, Monroe and Collier Counties, Florida

Cooner & Associates Project No. 070603.01

SFWMD Contract No. 4600000941 Work Order No. 1

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Submittal: Final

Prepared for:

**South Florida Water Management District**

***COONER & ASSOCIATES, INC.***

***SURVEYING AND MAPPING***

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**TABLE OF CONTENTS**

Overview of The Project.....4  
 Purpose.....4  
 Location of Project.....4-6  
 Items Delivered to The Client.....7  
 Leveling Methods.....8  
 Configuration of Level Runs.....8  
 Equipment Used.....8  
 Vertical Datum For The Project.....8  
 Expected Accuracy.....8  
 Horizontal Methods.....9  
 Equipment Used.....9  
 Horizontal Datum For The Project.....9  
 Expected Accuracy.....9  
 Project Results.....10  
 Result layout example.....10  
 Sites with existing Benchmarks:  
 6MIDR.....12  
 6MII75.....14  
 6MIPR.....15  
 BARW4.....16  
 BARW6A.....17  
 BCA1.....18  
 BCA2.....19  
 BCA3.....20  
 BCA4.....21  
 BCA5.....22  
 BCA10.....23  
 BCA11.....24  
 BCA12.....25  
 BCA13.....26  
 BCA15.....27  
 BCYP7.....28  
 BICY.....29  
 COC951.....30  
 COCO3.....31  
 COCOPR.....34  
 CORK2A.....35  
 CORK3-SCA.....38  
 D28.....39  
 FAKI75.....40  
 FU1.....41  
 FU4.....42  
 FU5.....43  
 GOL846.....45  
 GOL951.....46  
 GOLD4A.....47

CONTINUED ON NEXT PAGE

CONTINUED FROM PREVIOUS PAGE

|  |     |
|--|-----|
| GOLDW3.....  | 48  |
| GOLDW4.....  | 50  |
| GOLDW5.....  | 51  |
| HALDEM.....  | 53  |
| HC1.....   | 55  |
| HEND84.....  | 57  |
| HF1.....   | 58  |
| HF2.....   | 60  |
| HF3.....   | 62  |
| HF4.....   | 64  |
| HF7.....   | 66  |
| I75W1.....   | 67  |
| KEA846.....  | 69  |
| MLRI75.....  | 70  |
| WF1.....   | 71  |
| WF2.....   | 72  |
| WF3.....   | 74  |
| WF4.....   | 76  |
| WF5.....   | 78  |
| WF6.....   | 80  |
| WF7.....   | 82  |
| Sites at which Benchmarks were Set:  |     |
| ECOCO.....   | 86  |
| FU4S.....  | 89  |
| I75MZ.....   | 93  |
| IWSD.....  | 96  |
| Sites found to be previously surveyed:   |     |
| 6MI82.....   | 100 |
| CORK-SCA.....  | 101 |
| GOLDW1.....  | 102 |
| GRDN.....  | 103 |
| HENDSG.....  | 104 |
| Surveyor's Certification.....  | 105 |
| Appendix "A" – Level run information.....  | 106 |
| Appendix "B" – Adjusted level run elevation compared to published elevation..... | 107 |
| Appendix "C" – Task breakdown by company.....                                    | 106 |
| Appendix "D" – Survey Report by Pickett & Associates.....                        | 108 |

**LEGEND:**

- BM = benchmark**
- Elev. = elevation**
- Info = information**
- n/a = not applicable**
- Ref. = reference**
- HW = headwater**
- TW = tailwater**
- STG = stage**
- SUB-CM = sub-centimeter**
- SUB-M = sub-meter**

## **OVERVIEW OF THE PROJECT**

### **PURPOSE**

The purpose of this survey is to establish or verify elevations to third order National Geodetic Survey (NGS) standards at sixty-three (63) South Florida Water Management District (SFWMD) Recorder Well Sites. This survey is associated with the District's Vertical Datum Upgrade Project (VDUP). Another objective of this Work Order is to establish NGS third order elevations referring to both the North American Vertical Datum of 1988 (NAVD 1988) and the National Geodetic Vertical Datum of 1929 (NGVD 1929) at each of the sites.

Elevations were established or verified using existing Recorder Well Site vertical control marks where possible. These vertical control marks are published in the South Florida Water Management District's ATLAS database as assigned by the District. Recorder Well reference elevations and staff gauges were also verified. Field measured NGVD 1929 reference elevations were posted on brass tags and left at each Recorder Well Site for mounting by the SFWMD.

Where existing monumentation was found to be disturbed or destroyed new vertical control points were established at Recorder Well Sites. All set monuments were constructed in accordance with the NGS, Class C, Pour-In-Place Concrete Monument standards and were referenced by a Carsonite witness post.

In some cases elevations of exiting vertical control points found to be in good condition were verified by ties to posted NGS benchmarks.

It was also the purpose of this project to establish GPS horizontal positions referring to North American Datum 1983 (NAD 1983), Florida East Zone, State Plane Coordinate System each site's vertical control point.

Also included in this report is summary methods used to establish NAVD 1988 and NGVD 1929 elevations established on vertical control point "CORK2A" at Recorder Well Site CORK2.

Note: Of the sixty-three (63) District Recorder Well sites identified by the SFWMD for this Work Order. Five (5) were found to have already been surveyed and did not require reference elevations. These sites were not resurveyed.

These sites are:

- 6MI82
- CORK-SCA
- GRDN
- GOLD-W1
- HENDSG

Pictures of existing brass tags have been included in the results section of this report. Two sites (FMBMW & BCA7) were removed from the scope during the course of this project by the SFWMD.

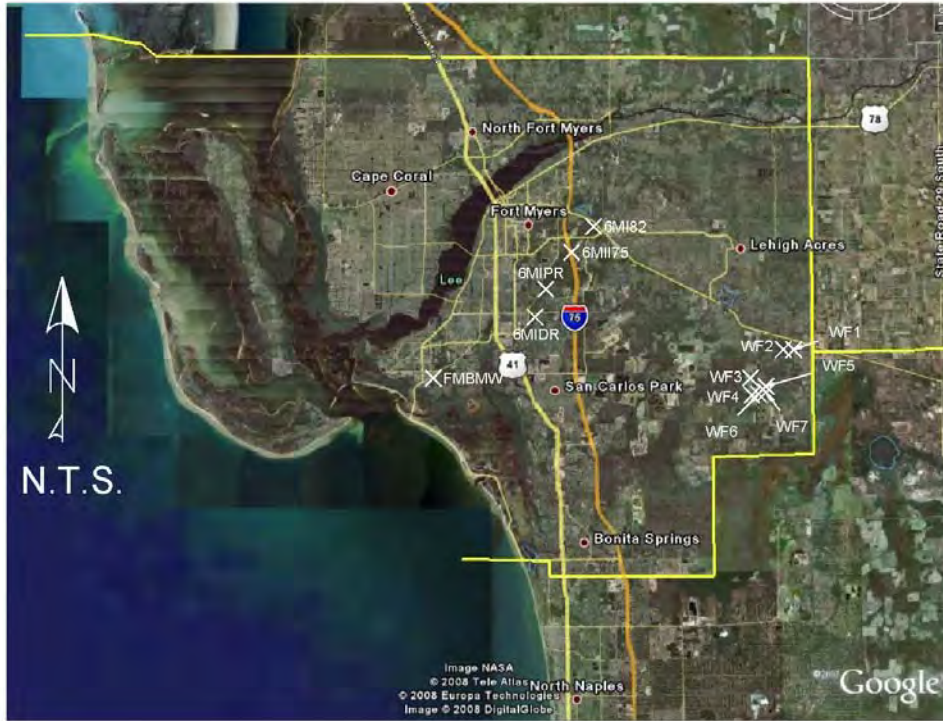
Site BCA14 was not resurveyed during this project due to access issues.

Pickett & Associates, Inc. was subcontracted by Cooner & Associates to complete this project. Please see report of survey by Pickett & Associates in Appendix "D". For a summary of tasks completed for each site, please refer to Appendix "C".

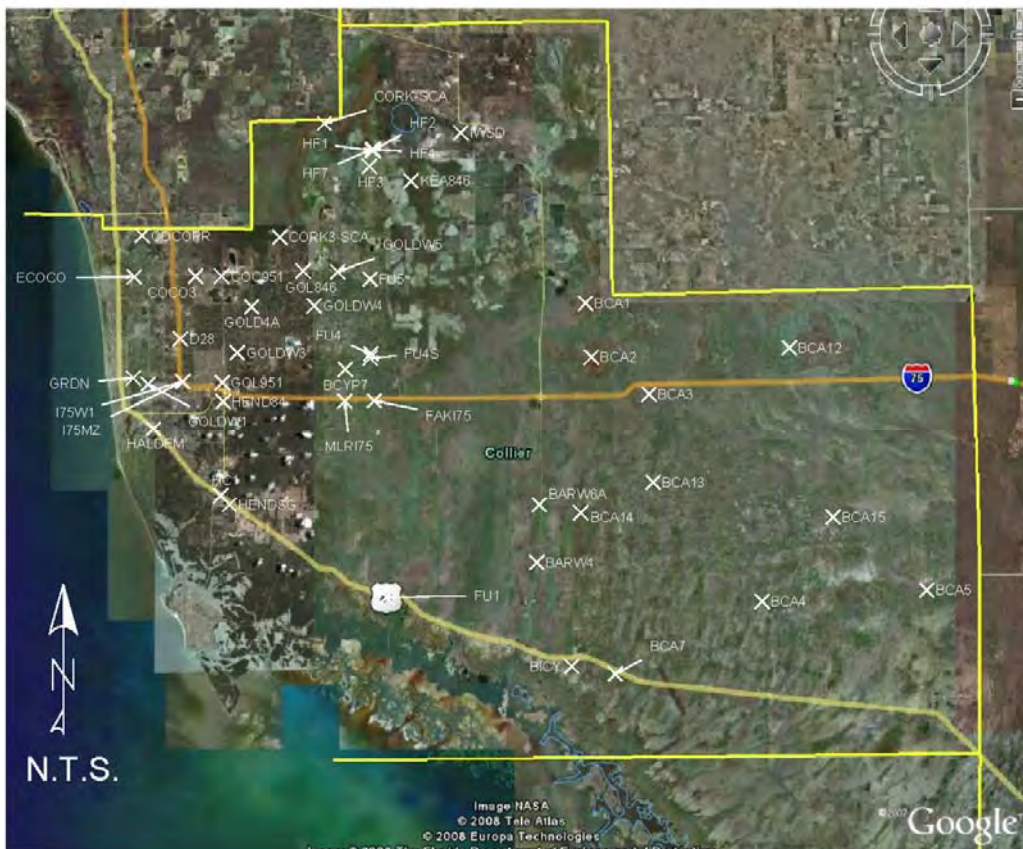
### **LOCATION OF PROJECT**

The Recorder Well Sites surveyed for this project are located in Lee, Monroe and Collier counties in the

state of Florida. The following vicinity maps depict the project Recorder Well Sites:

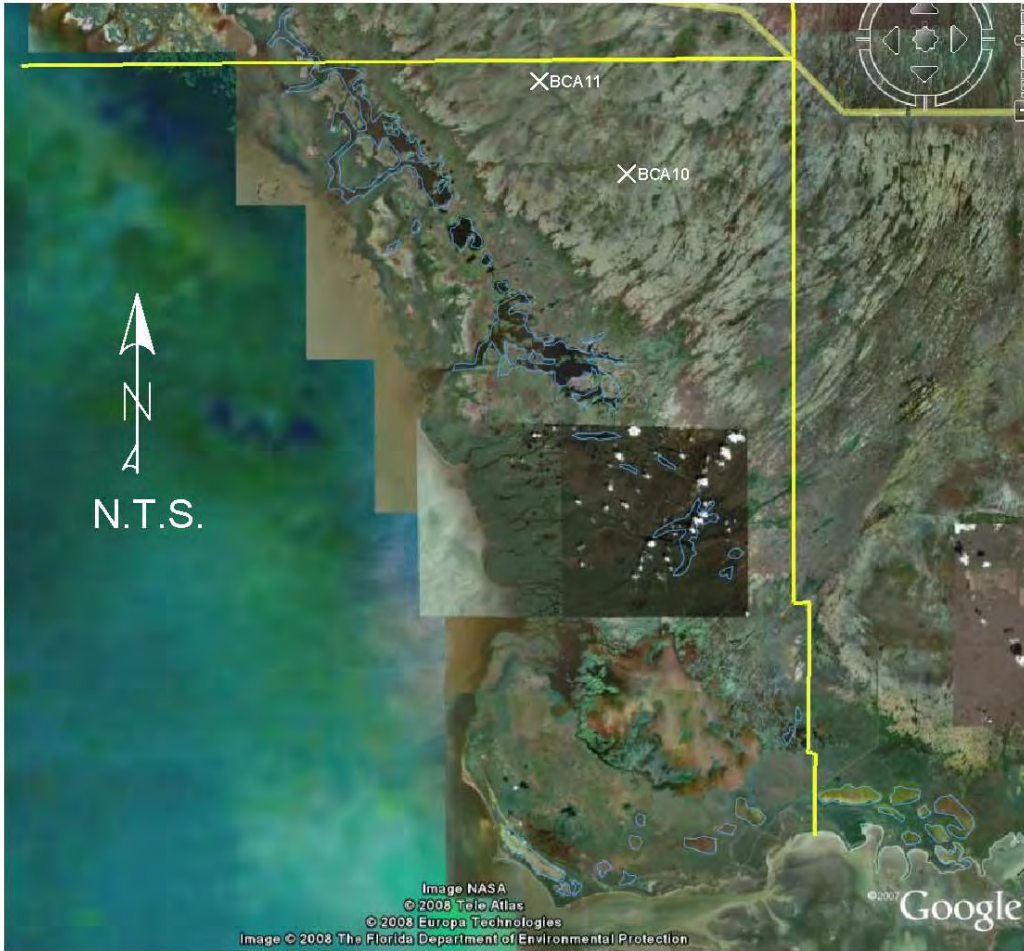


LEE COUNTY VICINITY MAP





COLLIER COUNTY VICINITY MAP



MONROE COUNTY VICINITY MAP

## **ITEMS DELIVERED TO THE CLIENT**

The following items are delivered to the client in the CD accompanying this report. Neither the report nor the items listed below and copies thereof are complete without the other.

1. This Surveyor's Report in Adobe Acrobat format
2. Digital photos named by site
3. Digital copy of scanned field notes and files associated with this survey
4. Completed District benchmark description sheet for all set benchmarks
5. Updated SFWMD Registration Worksheets in Microsoft Excel format

Carsonite Witness Posts were installed at each set benchmark.

## **LEVELING METHODS**

### **CONFIGURATION OF LEVEL RUNS**

A total of ten level lines were run for this project to newly set vertical control points or to verify existing site control. For each level line, two existing NGS vertical marks were used. Each run was started at one of the NGS marks and continued through recovered or established benchmarks and closed on the second NGS mark. All runs were configured to be closed level loops. Appendix A contains a summary of each level run, control points used, length of loop and misclosure information, based on field notes. Appendix B contains the results of level runs made to verify existing control points.

### **EQUIPMENT USED**

All leveling to newly set or existing vertical marks during the project was performed with a Leica NA3003 or DNA03 digital level and Leica two-section, fiberglass bar-code level rods. Information and technical specifications for these digital levels are available at <http://www.leica-geosystems.com>.

All leveling to establish reference elevations was performed using a Leica NA2 three-wire optical level.

### **VERTICAL DATUM FOR THE PROJECT**

The vertical datum utilized for all level runs for the project is the North American Vertical Datum of 1988 (NAVD'88). For correlation with older data sets, the elevations of the benchmarks and reference tags are shown in NGVD'29. The NGVD'29 elevations were derived by one of the following methods. The methods are listed in order of priority:

1. Elevations posted in NGS or SFWMD benchmark recovery forms
2. Elevations posted in the file "NGVD29.txt" as provided by the SFWMD
3. Converted NAVD 1988 elevations using CORPSCON version 6.0.1

### **EXPECTED ACCURACY**

The maximum allowable misclosure as specified in the project scope is 0.03 feet multiplied by the square root of the length of the level line in miles. Elevations derived from the methods outlined above meet Third-Order Accuracy Standards.

**Note:** See Appendix "D" for Pickett & Associates Leveling Methods.



## **HORIZONTAL METHODS**

### **EQUIPMENT USED**

Wherever possible, horizontal locations were performed with a Trimble 5800, dual-frequency Global Positioning Service (GPS) receiver. Control point positions were established by Real-Time Kinematic (RTK) GPS, or by Static GPS observations. Static GPS observations were post-processed using the Online Positional User Service (OPUS) provided by NGS. For areas where limited satellite accessibility was an issue, a Trimble mapping grade GPS receiver was used to establish GPS horizontal locations.

### **HORIZONTAL DATUM FOR THE PROJECT**

The horizontal datum for the project is the Florida State Plane Coordinate System, East Zone, North American Datum of 1983 as verified by ties to the following National Geodetic Survey (NGS) high precision points:

“H 534”  
“B 249”  
“I75 U 32”  
“M 250”  
“X 534”  
“F 533”  
“E 533”

### **EXPECTED ACCURACY**

Survey grade (RTK and Static) GPS methods outlined above have been tested and found by Cooner & Associates, Inc. to have a relative positional accuracy of less than 0.05 feet (SUB-CM). The expected accuracy for the mapping grade GPS method is at less than 3.28 feet (SUB-M).

**Note:** See Appendix “D” for Pickett & Associates Horizontal Methods.

**PROJECT RESULTS**

The following tables list the elevations established / verified at each Recorder Well Site in NAVD'88 and NGVD'29, the published elevations from the SFWMD or NGS Benchmark Databases, the Northing and Easting of the benchmarks (obtained from GPS observations), water elevations / staff gauge verification, observed staff gauge reading and photos of structures / reference marks/posted brass reference tags / benchmarks/staff gauges. Where applicable, we have also included benchmark recovery forms and site sketches for each set benchmark. Elevations and coordinates are in US Survey Feet and decimals thereof.

**"RESULT LAYOUT EXAMPLE"**

**KEA846** 1

|  |  |           |  |       |          |
|--|--|-----------|--|-------|----------|
| <b>BM INFO</b>   |  |           |  |       |          |
| <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">2</span> COLL32 | Field Measured Elevation - if applicable | n/a       | <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">3</span> (NAVD88) | n/a   | (NGVD29) |
|  | SFWMD Database Elevation                 | 22.60     | (NAVD88)   | 23.91 | (NGVD29) |
| <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">5</span> SUB-CM | Northing                                 | 739198.14 | Monument found as described in the SFWMD Database.                                       |       |          |
|  | Easting                                  | 497671.62 |  |       |          |

**BENCHMARK COLL32** 6 **BM AREA LOOKING SOUTH**  
**(PICTURES SHOWN IN ACTUAL RESULT PAGES)**

7

|  |  |       |          |              |          |
|--|--|-------|----------|--------------|----------|
| <b>HW</b>  |  |       |          |              |          |
| <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">8</span> HW | Tip of black marker arrow on well platform | 26.63 | (NAVD88) | <b>27.64</b> | (NGVD29) |

**HW AREA LOOKING EAST** 9 **HW BRASS TAG AT REF. MARK**  
**(PICTURES SHOWN IN ACTUAL RESULT PAGES)**

|                         |   |  |  |       |          |
|-------------------------|---|--|--|-------|----------|
| <b>STAFF GAUGE INFO</b> |   |  |  |       |          |
| HW                      | Staff gauge was dry at 3:30pm, 03/10/08. Measured elevation at 22.50 mark on staff gauge. |  |  | 22.58 | (NGVD29) |

**HW STAFF GAUGE LOOKING SOUTH** 10  
**(PICTURES SHOWN IN ACTUAL RESULT PAGES)**

1. Well name
2. Site Benchmark
3. Elevation of benchmark derived from this survey
4. Published elevation of benchmark based on SFWMD or NGS database
5. GPS method used Well type
6. Observed GPS coordinates of site benchmark
7. Reference mark
8. Well type
9. Observed conditions of staff gauge
10. Field measured water elevation or elevation of mark on staff gauge.

## **SITES WITH EXISTING BENCHMARKS**

**HF1**

| <b>BM INFO</b> |  |           |  |          |       |          |
|----------------|--|-----------|--|----------|-------|----------|
| COLL46         | Field Measured Elevation - if applicable |           | n/a  | (NAVD88) | n/a   | (NGVD29) |
|                | SFWMD Database Elevation                 |           | 20.80  | (NAVD88) | 22.11 | (NGVD29) |
| SUB-CM         | Northing                                 | 749943.80 | Monument found as described in the SFWMD Database. |          |       |          |
|                | Easting                                  | 483916.43 |  |          |       |          |

**BENCHMARK COLL46**



**BENCHMARK AREA LOOKING EAST**



| <b>STG</b> |  |  |       |          |              |          |
|------------|--|--|-------|----------|--------------|----------|
| STG        | Black mark at notch on southeast rim of 2 inch PVC pipe.                                   |  | 23.90 | (NAVD88) | <b>25.21</b> | (NGVD29) |
|            | Staff gauge was dry at 10:45am, 03/12/08. Measured elevation at 23.00 mark on staff gauge. |  |       |          | 23.02        | (NGVD29) |

**STG BRASS TAG AT REF. MARK**



**STG AREA LOOKING WEST**



**HF6**

|            |  |       |          |              |          |
|------------|--|-------|----------|--------------|----------|
| <b>GW2</b> |  |       |          |              |          |
| GW2        | Black mark at notch on southeast rim of 2 inch PVC pipe. | 22.99 | (NAVD88) | <b>24.30</b> | (NGVD29) |

**GW2 BRASS TAG AT REF. MARK**



**GW2 AREA LOOKING WEST**



|            |  |       |          |              |          |
|------------|--|-------|----------|--------------|----------|
| <b>GW1</b> |  |       |          |              |          |
| GW1        | Black mark at notch on northwest rim of 2 inch PVC pipe. | 20.86 | (NAVD88) | <b>22.17</b> | (NGVD29) |

**GW1 BRASS TAG AT REF. MARK**



**GW1 AREA LOOKING WEST**



| <b>STAFF GAUGE INFO</b> |  |  |  |       |          |
|-------------------------|--|--|--|-------|----------|
| STG                     | Staff gauge was dry at 10:45am, 03/12/08. Measured elevation at 23.00 mark on staff gauge. |  |  | 23.02 | (NGVD29) |

**STG STAFF GAUGE**





**HF2**

| <b>BM INFO</b> |  |           |  |       |          |
|----------------|--|-----------|--|-------|----------|
| COLL46         | Field Measured Elevation - if applicable | n/a       | (NAVD88)   | n/a   | (NGVD29) |
|                | SFWMD Database Elevation                 | 20.80     | (NAVD88)   | 22.11 | (NGVD29) |
| SUB-CM         | Northing                                 | 794943.80 | Monument found as described in the SFWMD Database. |       |          |
|                | Easting                                  | 483916.43 |  |       |          |

**BENCHMARK COLL46**



**BENCHMARK AREA LOOKING EAST**



| <b>STG</b> |  |       |          |              |          |
|------------|--|-------|----------|--------------|----------|
| STG        | Black marker "X" inside of a square on well platform.                                      | 25.44 | (NAVD88) | <b>26.75</b> | (NGVD29) |
|            | Staff gauge was dry at 12:53pm, 03/12/08. Measured elevation at 25.00 mark on staff gauge. |       |          | 25.02        | (NGVD29) |

**STG BRASS TAG AT REF. MARK**



**STG AREA LOOKING SOUTH**





|                   |   |       |          |              |          |
|-------------------|---|-------|----------|--------------|----------|
| <b><i>GW1</i></b> |   |       |          |              |          |
| GW1               | Orange mark at notch on north rim of 2 inch PVC pipe. | 22.79 | (NAVD88) | <b>24.10</b> | (NGVD29) |

**GW1 BRASS TAG AT REF. MARK**



**GW1 AREA LOOKING SOUTH**



|                                |  |  |  |       |          |
|--------------------------------|--|--|--|-------|----------|
| <b><i>STAFF GAUGE INFO</i></b> |  |  |  |       |          |
| STG                            | Staff gauge was dry at 12:53pm, 03/12/08. Measured elevation at 25.00 mark on staff gauge. |  |  | 25.02 | (NGVD29) |

**STG STAFF GAUGE**



**HF3**

| <b>BM INFO</b> |  |           |  |          |                |
|----------------|--|-----------|--|----------|----------------|
| COLL49         | Field Measured Elevation - if applicable |           | n/a  | (NAVD88) | n/a (NGVD29)   |
|                | SFWMD Database Elevation                 |           | 21.19  | (NAVD88) | 22.50 (NGVD29) |
| SUB-CM         | Northing                                 | 744575.70 | Monument found as described in the SFWMD Database. |          |                |
|                | Easting                                  | 482811.93 |  |          |                |

**BENCHMARK COLL49**



**BENCHMARK AREA LOOKING NORTH**



| <b>STG</b> |   |  |       |          |                |
|------------|---|--|-------|----------|----------------|
| STG        | Black marker "X" inside of a square on well platform. |  | 26.47 | (NAVD88) | 27.78 (NGVD29) |

**STG BRASS TAG AT REF. MARK**



**STG AREA LOOKING NORTH**



|            |  |       |          |              |          |
|------------|--|-------|----------|--------------|----------|
| <b>GW1</b> |  |       |          |              |          |
| GW1        | Black mark at notch on northeast rim of 2 inch PVC pipe. | 24.19 | (NAVD88) | <b>25.50</b> | (NGVD29) |

**GW1 BRASS TAG AT REF. MARK**



**GW1 AREA LOOKING NORTH**



|                         |  |  |  |       |          |
|-------------------------|--|--|--|-------|----------|
| <b>STAFF GAUGE INFO</b> |  |  |  |       |          |
| STG                     | Staff gauge was dry at 3:00pm, 03/14/08.<br>Measured elevation at 26.00 mark on staff gauge. |  |  | 25.86 | (NGVD29) |

**STG STAFF GAUGE**





**HF4**

| <b>BM INFO</b> |  |           |  |       |          |
|----------------|--|-----------|--|-------|----------|
| COLL45         | Field Measured Elevation - if applicable | n/a       | (NAVD88)   | n/a   | (NGVD29) |
|                | SFWMD Database Elevation                 | 20.49     | (NAVD88)   | 21.80 | (NGVD29) |
| SUB-CM         | Northing                                 | 750383.97 | Monument found as described in the SFWMD Database. |       |          |
|                | Easting                                  | 483871.80 |  |       |          |

**BENCHMARK COLL45**



**BENCHMARK AREA LOOKING WEST**



| <b>STG</b> |   |       |          |              |          |
|------------|---|-------|----------|--------------|----------|
| STG        | Black marker "X" inside of a square on well platform. | 24.95 | (NAVD88) | <b>26.26</b> | (NGVD29) |

**STG BRASS TAG AT REF. MARK**



**STG AREA LOOKING WEST**



|                   |  |       |          |              |          |
|-------------------|--|-------|----------|--------------|----------|
| <b><i>GW1</i></b> |  |       |          |              |          |
| GW1               | Orange mark at notch on east rim of 2 inch PVC pipe. | 22.37 | (NAVD88) | <b>23.68</b> | (NGVD29) |

**GW1 BRASS TAG AT REF. MARK**



**GW1 AREA LOOKING WEST**



| <b><i>STAFF GAUGE INFO</i></b> |  |  |  |       |          |
|--------------------------------|--|--|--|-------|----------|
| STG                            | Staff gauge was dry at 3:30pm, 03/13/08.<br>Measured elevation at 25.00 mark on staff gauge. |  |  | 25.01 | (NGVD29) |

**STG STAFF GAUGE LOOKING WEST**





**HF7**

| <b>BM INFO</b> |  |           |  |       |          |
|----------------|--|-----------|--|-------|----------|
| COLL45         | Field Measured Elevation - if applicable | n/a       | (NAVD88)   | n/a   | (NGVD29) |
|                | SFWMD Database Elevation                 | 20.49     | (NAVD88)   | 21.80 | (NGVD29) |
| SUB-CM         | Northing                                 | 750383.97 | Monument found as described in the SFWMD Database. |       |          |
|                | Easting                                  | 483871.80 |  |       |          |

**BENCHMARK COLL45**



**BENCHMARK AREA LOOKING WEST**



| <b>GW</b> |  |       |          |              |          |
|-----------|--|-------|----------|--------------|----------|
| GW        | Black mark at notch on north rim of 2 inch PVC pipe. | 23.58 | (NAVD88) | <b>24.89</b> | (NGVD29) |

**GW AREA LOOKING WEST**



**GW BRASS TAG AT REF. MARK**





**SURVEYOR'S CERTIFICATION**

In my professional opinion, this report of 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 not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to this report by anyone, other than the signing party, are prohibited without written consent of the signing party.

5/29/08  
Date of Survey

By:

*COONER & ASSOCIATES, INC.*  
DEPR Authorization Number 6773

*[Signature]*  
Darren Townsend, PSM  
Professional Surveyor and Mapper  
State of Florida  
Certificate Number 6476



**APPENDIX “A”**

Level run information

| SITE NAME | SITE BM | NGS BM(S)                         | LINE LENGTH | MISCLOSURE | ALLOWABLE MISCLOSURE |
|-----------|---------|-----------------------------------|-------------|------------|----------------------|
| BCA3      | EC2     | I75 90 A74<br>I75 90 A73          | 1.6 MILES   | 0.03'      | 0.04'                |
| BCA4      | MR "A"  | CATHAM3 AZ MK<br>CATHAM3<br>S 248 | 24.0 MILES  | 0.01'      | 0.15'                |
| BCA5      | RP12    | N248<br>X527                      | 11.4 MILES  | 0.03'      | 0.07'                |
| BCA12     | KB4     | I75 J 35<br>I17 40 A 89           | 6.6 MILES   | 0.08'      | 0.08'                |
| CORK2     | CORK2A  | Q 534                             | 2.4 MILES   | 0.03'      | 0.05'                |
| ECOCO     | ECOCO   | 872 5222 A TIDAL<br>2604          | 5.5 MILES   | 0.03'      | 0.07'                |
| FU4S      | FU4S    | A584<br>B584                      | 5.1 MILES   | 0.02'      | 0.07'                |
| BICY      | DONA    | OCHOBEE RMS<br>B249               | 2.1 MILES   | 0.00'      | 0.04'                |
| IWSD      | IWSD    | F533<br>E533                      | 2.8 MILES   | 0.02'      | 0.05'                |
| I75MZ *   | I75MZ   | COLL36<br>D27                     | 0.1 MILES   | 0.00'      | 0.01'                |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |
|           |         |                                   |             |            |                      |

\* I75MZ was elevated using benchmarks provided by SFWMD.



APPENDIX “C”  
Task Breakdown by company

**COONER & ASSOCIATES, TASKS COMPLETED**

| NO.    | SITE NAME | SET MONUMENT | LEVEL RUNS | PROCESS RUNS | REF. & TAG | STAFF GAUGE | COORDINATES | REPORT   |
|--------|-----------|--------------|------------|--------------|------------|-------------|-------------|----------|
|        |           | per mon      | per mile   | per site     | per site   | per site    | per site    | per site |
| 7      | BCA1      | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 8      | BCA2      | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 9      | BCA3      | 0            | 1.6        | 1            | 1          | 1           | 1           | 1        |
| 10     | BCA4      | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 11     | BCA5      | 0            | 11.4       | 1            | 1          | 1           | 1           | 1        |
| 13     | BCA10     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 14     | BCA11     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 15     | BCA12     | 0            | 6.6        | 1            | 1          | 1           | 1           | 1        |
| 16     | BCA13     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 18     | BCA15     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 19     | BCYP7     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 20     | BICY      | 0            | 2.1        | 1            | 0          | 0           | 1           | 1        |
| 21     | COC951    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 22     | COCO3     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 23     | COCOPR    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 27     | D2-8      | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 28     | ECOCO     | 1            | 6.0        | 1            | 1          | 1           | 1           | 1        |
| 29     | FAKI75    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 32     | FU4       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 33     | FU4S      | 1            | 5.1        | 1            | 1          | 1           | 1           | 1        |
| 34     | FU5       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 36     | GOL951    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 37     | GOLD4A    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 39     | GOLDW3    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 40     | GOLDW4    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 43     | HALDEM    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 44     | HC1       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 45     | HEND84    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 47     | HF1       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 48     | HF2       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 49     | HF3       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 50     | HF4       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 51     | HF7       | 0            | 0.0        | 0            | 1          | 0           | 1           | 1        |
| 52     | I75MZ     | 1            | 0.1        | 1            | 0          | 0           | 1           | 1        |
| 53     | I75W1     | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 54     | IWSD      | 1            | 2.8        | 1            | 0          | 0           | 1           | 1        |
| 55     | KEA846    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 56     | MLR175    | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 57     | WF1       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 58     | WF2       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 59     | WF3       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 60     | WF4       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 61     | WF5       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 62     | WF6       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| 63     | WF7       | 0            | 0.0        | 0            | 1          | 1           | 1           | 1        |
| NUMBER |           | 4            | 35.7       | 8            | 42         | 41          | 45          | 45       |

**PICKETT & ASSOCIATES - TASKS COMPLETED**

| NO.    | SITE NAME | SET MONUMENT | LEVEL RUNS | PROCESS LEVELS | REF. & TAG | STAFF GAUGE | COORDINATES | PORT - BY COON |
|--------|-----------|--------------|------------|----------------|------------|-------------|-------------|----------------|
|        |           | per mon      | per mile   | per site       | per site   | per site    | per site    | per site       |
| 2      | 6MIDR     | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 3      | 6MII75    | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 4      | 6MIPR     | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 5      | BARW4     | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 6      | BARW6A    | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 24     | CORK3-SCA | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 31     | FU1       | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 35     | GOL846    | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 41     | GOLDW5    | 0            | 0.0        | 0              | 1          | 1           | 1           | 1              |
| 25     | CORK2     | 0            | 2.4        | 1              | 0          | 0           | 1           | 1              |
|        | BCA4      | 0            | 24.0       | 1              | 0          | 0           | 0           | 0              |
| NUMBER |           | 0            | 26.43      | 2              | 9          | 9           | 10          | 10             |