```
Identification_Information:
           Ci tati on:
                      Citation_Information:
                                Originator: Robert J. Bills(comp.)
                                Originator: U.S. Army Engineer District, Jacksonville (ed.)
Publication_Date: Unpublished material
Publication_Time: Unknown
Title: S.F.W.M.D. MARCO ISLAND DEEP WATER INJECTION WELL
                                Edition: 1
                                 Seri es_Information:
                                Publication Information:
                                           Publication_Place: Not published
                                           Publisher: None
                                Online_Linkage: bbills@cte.cc
Larger_Work_Citation:
                                           Citation_Information:
Series_Information:
                                                      Publication_Information:
           Description:
                      Abstract:
                                 South Florida Water Management District
 Purpose
                                MARCO ISLAND DEEP WATER INJECTION WELL
                      Purpose:
                                 To establish NAVD 88 and NVGD 29 elevations on the
                                well and on the
                                well reference benchmark.
           Time_Period_of_Content:
                      Time_Period_Information:
                                Si ngl e_Date/Ti me:
 Survey Date
                                           Calendar_Date: 20050126
Time_of_Day: 17000000
                                Range_of_Dates/Times:
Multiple_Dates/Times:
                      Currentness_Reference: Date and time of field work
           Status:
                      Progress: Complete
                      Maintenance_and_Update_Frequency: Unknown
           Spati al _Domai n:
                      Boundi ng_Coordi nates:
                                 West_Boundi ng_Coordi nate: -081°43' 24. 25"
                                East_Boundi ng_Coordi nate: -081° 43' 24. 25"
North_Boundi ng_Coordi nate: +25° 57' 33. 81"
South_Boundi ng_Coordi nate: +25° 57' 33. 81"
           Keywords:
                      Theme:
                                 Theme_Keyword_Thesaurus: None
                                Theme_Keyword: Record Survey
                                Theme_Keyword: Well Site
                      PI ace:
                                Place_Keyword_Thesaurus: None
Place_Keyword: S.F.W.M.D. MARCO ISLAND DEEP WATER INJECTION WELL
Place_Keyword: Sec. 08, Twp. 52 S., Rge 26 E.
Place_Keyword: Collier County, Florida
                                Place_Keyword_Thesaurus: Geographic Names Information System
                                 Place_Keyword: Florida
                                Place_Keyword: Collier County
                      Stratum:
                      Temporal:
           Access_Constraints: None
           Use_Constraints: None
           Point_of_Contact:
                      Contact_Information:
Elvie Ebanks
                                Contact_Person_Pri mary:
                                           Contact_Person: Elbia Ebanks
SFWMD
                                           Contact_Organization: South Florida Water Management
District
                                Contact_Organi zati on_Pri mary:
                                Contact_Address:
                                           Address_Type: mailing and physical address
Address: 3301 Gun Club Road
```

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MARCO. gen

City: West Palm Beach State_or_Province: Florida Postal _Code: 33406-4680

Country: USA Contact_Voi ce_Tel ephone: (561) 753 2400 ex 4717 Hours_of_Servi ce: 8:00 am to 5:00 pm EST

Securi ty_Information: Cross_Reference:

Ci tati on_Informati on:

Series_Information: Publication Information:

Data_Quality_Information:

Attri bute_Accuracy:
Attri bute_Accuracy_Report:

Equipment Used

This survey was prepared using GPS and Leveling instruments. The horizontal location of the benchmark was

performed using GPS.

The vertical data was collected using a Topcon DL

102 Level.

Coordinates are based on the Florida State Plane Coordinate System, East Zone, NAD 83/90. El evations are based on NAVD 88.

Logical_Consistency_Report:
 Horizontal data was established using sub-meter GPS
 equipment. Vertical data was established using control
 points COL-15 and 872 4991 D Tidal.

Coordinates are based on the Florida State Plane Coordinate System, East Zone, NAD 83/90. Elevations are based on NAVD 88.

Compl eteness_Report:

Project Results

Horizontal location taken at the benchmark. Lat. +25°57'33.81" Long. -081°43'24.25" N 591588'

E 418479'

Site Benchmark.

INJ BM 01 is a standard U.S. Army Corps of Engineers brass disc, bearing INJ BM 01 2004 JAX DIST SFWMD, set in a 10" round concrete monument (poured in place,

with a magnet placed nearby).
To reach from the South end of the Marco
Island bridge on CR951; Go south 1 mile along CR951 to
the intersection with Bald Eagle Drive; Turn right

(North) and go to the intersection with

Windward Drive; turn right (East) and follow into Marco Island Utilities plant, Inside plant, follow

paved and then gravel road, east and north to Injection Well on the West side of the gravel road. United States Department of the Interior Geologic Survey

Quadrangle map -- MARCO ISLAND 1995 Benchmark INJ BM 01 - 5.20' NAVD 88; 6.54 NGVD 29 North bolt of well casing - 9.19' NAVD 88; 10.53 NGVD 29

Horizontal

Horizontal_Positional_Accuracy_Report:
The horizontal position of the benchmark INJ BM 01, was established using a differential, submeter, wide area augmentation system, GPS, using Coast Guard and FAA beacons for corrected positioning (Trimble Geoexplorer CE with Beacon on a Belt) in accordance with the Florida Minimum Technical Standards (Chapter 61G17-6)

Quanti tati ve_Hori zontal _Posi ti onal _Accuracy_Assessment:

Horizontal_Positional_Accuracy_Value: 1 meter Horizontal_Positional_Accuracy_Explanation: The intended

positional accuracy for this survey is 1 meter.

Vertical_Positional_Accuracy:

Vertical_Positional_Accuracy_Report:

A level line was run originating on BM "COL-15" with an NAVD 88 elevation, running through BM "INJ BM 01" and

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MARCO. gen
                                        terminating on BM "872 4991 D TIDAL". A level line
                                        was then run originating on BM "INJ BM 01" with an
                                        NAVD 88 elevation, running through the North bolt on the injection well casing terminating on BM "INJ BM 01", in accordance with Florida Minimum Technical Standards
                                        (Chapter 61G17-6).
The level line was also readjusted using the values from the NGS NGVD 29 adjustment of the CERP vertical
                                        network.
                              Quanti tati ve_Verti cal _Posi ti onal _Accuracy_Assessment:
                                        Vertical_Positional_Accuracy_Value: -0.004 meter
                                        Vertical_Positional_Accuracy_Explanation: NAVD 88 level
run, 0.004 meter closure in 1311 meters, max. allowed 0.014 meter (MTS)
          Li neage:
                    Source Information:
                              Source_Ci tati on:
                                        Ci tati on_I nformati on:
                                                  Series_Information:
                                                  Publication_Information:
                                                  Larger_Work_Ci tati on:
                                                            Ci tati on_Informati on:
                                                                      Seri es_I nformati on:
                                                                      Publication_Information:
                              Source_Time_Period_of_Content:
Time_Period_Information:
                                                  Single_Date/Time:
                                                  Range_of_Dates/Times:
                                                  Mul tiple_Dates/Times:
                    Process_Step:
                              Process_Description:
                                        The horizontal work was performed using Trimble Geoexplorer CE with Beacon on a Belt GPS.
                                        The level line was performed using a Topcon DL 102 level.
                                        Three wire methodogy was used.
                              Process_Date: 20050126
                              Process_Time: 17000000
                              Process_Contact:
                                        Contact_Information:
                                                  Contact_Person_Pri mary:
                                                  Contact_Organi zati on_Pri mary:
                                                  Contact_Address:
Spatial_Data_Organization_Information:
          Spati al _Reference_I nformati on:

Hori zontal _Coordi nate_System_Defi ni ti on:
                              Geographic:
                              Pl anar:
                                        Map_Projection:
                                                  Al bers_Coni cal _Equal _Area:
                                                  Azi muthal _Equi di stant:
                                                  Equi di stant_Coni c:
                                                  Equi rectangul ar:
General _Verti cal _Near-si ded_Perspecti ve:
                                                  Gnomoni c:
                                                  Lambert_Azi muthal _Equal _Area:
                                                  Lambert_Conformal_Conic:
                                                  Mercator:
                                                  Modi fi ed_Stereographi c_for_Al aska:
                                                  Miller_Cylindrical:
                                                  Oblique_Mercator:
                                                            Oblique_Line_Point:
                                                  Orthographi c:
                                                  Pol ar_Stereographi c:
                                                  Pol yconi c:
                                                  Robi nson:
                                                  Si nusoi dal:
                                                  van_der_Gri nten:
                                                  Space_Obl i que_Mercator_(Landsat):
                                                  Stereographic:
                                                  Transverse_Mercator:
                                                  van_der_Grinten:
                                                     Page 3
```

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MARCO. gen
                                          Gri d_Coordi nate_System:
Uni versal _Transverse_Mercator:
                                                                Transverse_Mercator:
                                                     Uni versal _Pol ar_Stereographi c:
Pol ar_Stereographi c:
State_Pl ane_Coordi nate_System:
                                                               Lambert_Conformal_Conic:
Transverse_Mercator:
                                                               Oblique_Mercator:
                                                                          Oblique_Line_Point:
                                                                Pol yconi c:
                                                     ARC_Coordinate_System:
                                                                Equi rectangul ar:
                                                               Azi muthal _Ĕqui di stant:
                                          Local _Pl anar:
                                          PI anar_Coordi nate_I nformati on:
                                                     Coordi nate_Representati on:
                                                     Di stance_and_Beari ng_Representati on:
                                Local:
                                Geodetic_Model:
                     Vertical_Coordinate_System_Definition:
                                Al ti tude_System_Defi ni ti on:
                                Depth_System_Definition:
Entity_and_Attribute_Information:
          Detailed_Description:
                     Enti ty_Type:
                     Attri bute:
                                Attribute_Domain_Values:
                                Attri bute_Val ue_Accuracy_I nformati on:
          Overvi ew_Description:
Di stri buti on_I nformati on:
          Di stri butor:
                     Contact_Information:
                                Contact_Person_Pri mary:
Contact_Organi zati on_Pri mary:
                                Contact Address:
          Standard_Order_Process:
                     Di qi tal _Form:
                                Di gi tal _Transfer_I nformati on:
Di gi tal _Transfer_Opti on:
                                          Online_Option:
                                                     Computer_Contact_Information:
                                                                Network_Address:
                                                                Di al up_l nstructi ons:
                                          OffLi ne_Opti on:
                                                     Recording_Capacity:
          Available_Time_Period:
                     Time_Period_Information:
                                Si ngl e_Date/Ti me:
                                Range_of_Dates/Times:
Multiple_Dates/Times:
Metadata_Reference_Information:
          Metadata_Date: 20050202
          Metadata_Contact:
                     Contact_Information:
                                Contact_Person_Pri mary:
Joseph S. Boggs
                                          Contact_Person: Joseph S. Boggs
                                          Contact_Organization: Consul-Tech Surveying & Mapping
Consul-Tech
                                Contact_Organization_Primary:
Contact_Position: Project Surveyor
                                Contact_Address:
                                          Address_Type: mailing and physical address
Address: 24831 Old 41 Road
                                          City: Bonita Springs
                                          State_or_Province: Florida
                                          Postal_Code: 34135
                               Country: USA
Contact_Voi ce_Tel ephone: (239) 947-0266
Contact_Facsi mile_Tel ephone: (239) 947-1323
Contact_El ectroni c_Mail_Address: j boggs@cte.cc
                                                       Page 4
```

MARCO.gen
Hours_of_Service: 8:00 am to 5:00 pm EST
Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial Metadata
Metadata_Standard_Version: FGDC-STD-001-1998
Metadata_Time_Convention: Local time
Metadata_Security_Information:

S.F.W.M.D. Injection Well – Marco Island Utilities

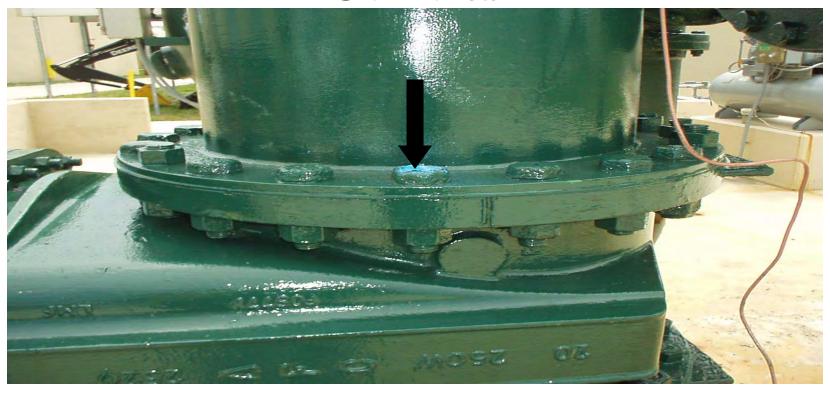


Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

Looking: Southeast

S.F.W.M.D. Injection Well Reference Point – Marco Island Utilities



- Consul-Tech Surveying & Mapping, Inc.
- Date of Picture: March 16, 2005
- Looking: South at Injection Well

S.F.W.M.D. Injection Well – Marco Island Utilities



Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

Looking: Northwest

S.F.W.M.D. Injection Well – Marco Island Utilities



Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

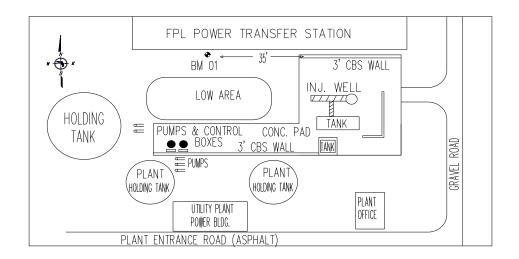
Looking: At "INJ BM 01 2004"



SOUTH FLORIDA WATER MANAGEMENT DISTRICT Rev. 4/01

COUNTY COLLIER	PROJECT DEI		DESIGNATION INJ BM 01 2004								
SECTION 08	TOWNSHI	IP 52 SOUTH RANGE 26 EAST									
GEOGRAPHIC INDEX OF QUAD Florida											
Established by Consul-Tech Surv Mapping, inc.	eying and	NAME OF QUADRANGLE MARCO ISLAND 1995									
SURVEYOR Joseph S. Boggs DATE 1/26/05 FIELD BOOK 516-7 PAGE 47											
HORIZONTAL DATUM: 83/90 ZONE EAST											
VERTICAL DATUM: NAVD 88 & NGVD 29 (Based on NGS adjustment of CERP vertical network)											
CONTROL ACCURACY: HORIZONTAL SUB-METER VERTICAL 3 rd Order											
STATE PLANE COORDINATES Feet	N=591588	E=4184	179	EL.=5.20 (NAVD 88)							
1 000				EL.=6.54 (NGVD 29)							
LATITUDE 25°57'33.81" N		LONGITUDE 081°43'24.25" W									
	DESC	RIPTION									
To reach from the South end of the	Marco Island brid	ge on CR951; Go so	uth 1 mile	along CR951 to the							
intersection with Bald Eagle Drive; T	urn right (North)	and go to the interse	ction with	Windward Drive; turn							
right (East) and follow into Marco Island Utilities plant; Inside plant, follow paved and then gravel road, east											
and north to Injection Well on the W	est side of the gra	avel road. Benchmar	k is 35' we	est of the northwest							
corner of the well concrete pad.											
Notable Land marks:											
OVETOLI											

SKETCH



The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
AC3384 DESIGNATION - COL 15
AC3384 PID - AC3384
AC3384 STATE/COUNTY- FL/COLLIER
         USGS QUAD - MARCO ISLAND (1995)
 AC3384
 AC3384
 AC3384
                                     *CURRENT SURVEY CONTROL
 AC3384
AC3384* NAD 83(1986) - 25 57 14.7
AC3384* NAVD 88 - 0.78
AC3384
                                            (N)
                                                    081 43 29.2
                                                                      (W)
                                                                               HD HELD2
                                    0.787
                                            (meters)
                                                              2.58
                                                                               ADJUSTED
                                                                      (feet)
         GEOID HEIGHT-
 AC3384
                                    -23.21
                                             (meters)
                                                                               GEOID03
 AC3384
          DYNAMIC HT -
                                     0.786 (meters)
                                                               2.58
                                                                      (feet)
                                                                               COMP
         MODELED GRAV-
                               979,037.7
 AC3384
                                                                               NAVD 88
                                             (mgal)
 AC3384
         VERT ORDER - FIRST
 AC3384
                                       CLASS II
 AC3384
 AC3384. The horizontal coordinates were established by autonomous hand held GPS
 AC3384.observations and have an estimated accuracy of +/- 10 meters.
 AC3384
 AC3384. The orthometric height was determined by differential leveling
 AC3384.and adjusted by the National Geodetic Survey in January 2002.
 AC3384
 AC3384. The geoid height was determined by GEOID03.
 AC3384
AC3384. The dynamic height is computed by dividing the NAVD 88 AC3384. geopotential number by the normal gravity value computed on the AC3384. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AC3384.degrees latitude (g = 980.6199 \text{ gals.}).
 AC3384
 AC3384. The modeled gravity was interpolated from observed gravity values.
 AC3384
                                                          Units Estimated Accuracy MT (+/- 10 meters HH2 GPS)
 AC3384;
                                North
                                                 East
 AC3384; SPC FL E
                             179,729.
                                             127,412.
 AC3384
 AC3384
                                      SUPERSEDED SURVEY CONTROL
 AC3384
                                    0.795
 AC3384
          NAVD 88 (06/15/91)
                                                              2.61
                                                                      (f) UNKNOWN
                                            (m)
                                   1.194 (m)
 AC3384 NGVD 29 (09/01/92)
                                                              3.92
 AC3384
 AC3384. Superseded values are not recommended for survey control.
 AC3384.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AC3384. See file dsdata.txt to determine how the superseded data were derived.
 AC3384
 AC3384 U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ2743770800(NAD 83)
 AC3384_MARKER: DB = BENCH MARK DISK
 AC3384_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC. AC3384_SP_SET: DROP INLET APRON
 AC3384_STAMPING: COL 15 1984 BSM
 AC3384_MARK LOGO: FLDNR
AC3384_MAGNETIC: N = NO MAGNETIC MATERIAL
 AC3384 STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
 AC3384_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR AC3384+SATELLITE: SATELLITE OBSERVATIONS - March 18, 2002
 AC3384
 AC3384 HISTORY
                        - Date
                                     Condition
                                                         Report By
 AC3384 HISTORY
AC3384 HISTORY
                        - 1984
                                     MONUMENTED
                                                         FLDNR
                        - 1990
                                                         USPSQD
                                     GOOD
 AC3384 HISTORY
                        - 19900509 GOOD
         HISTORY
                        - 20010701 GOOD
- 20020318 GOOD
 AC3384
                                                         LDBLS
 AC3384
          HISTORY
                                                         MAPTEC
 AC3384
 AC3384
                                      STATION DESCRIPTION
 AC3384
 AC3384'DESCRIBED BY FL DEPT OF NAT RES 1984
 AC3384'IN MARCO ISLAND.
 AC3384'BEGIN AT THE JUNCTION OF STATE ROAD 92 WITH STATE ROAD 951 (COLLIER
```

```
AC3384'BOULEVARD), GO 1.5 MILES NORTHERLY ON STATE ROAD 951 TO THE
AC3384'INTERSECTION OF BALD EAGLE DRIVE (COUNTY ROAD C 953).
                                                                 THE MARK BEARS
AC3384'26.7 FEET SOUTHEAST OF THE CENTERLINE OF STATE ROAD 951, 39 FEET
AC3384'SOUTHWEST OF THE CENTERLINE OF C 953, AND 4.1 FEET NORTH OF A CONCRETE AC3384'POWER POLE WITH PEDESTRIAN CROSSWALK SIGNALS.
AC3384'THE MARK IS 1 FT BELOW ROAD.
AC3384
AC3384
                                  STATION RECOVERY (1990)
AC3384
AC3384'RECOVERY NOTE BY US POWER SQUADRON 1990 (HEA)
AC3384'RECOVERED IN GOOD CONDITION.
AC3384
AC3384
                                  STATION RECOVERY (1990)
AC3384
AC3384'RECOVERY NOTE BY FL DEPT OF NAT RES 1990 (VAC)
AC3384'RECOVERED AS DESCRIBED.
AC3384
AC3384
                                  STATION RECOVERY (2001)
AC3384
AC3384'RECOVERY NOTE BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
AC3384'THE MARK IS ABOUT 24.9 KM (15.5 MI) SOUTHEAST OF NAPLES, ON MARCO
AC3384'ISLAND, IN
AC3384'SECTION 8, TOWNSHIP 52 SOUTH, RANGE 26 EAST, COLLIER COUNTY FLORIDA.
AC3384'OWNERSHIP-
AC3384'FLORIDA DEPARTMENT OF TRANSPORTATION
AC3384'
AC3384'TO REACH THE MARK FROM THE INTERSECTION OF I-75 AND COUNTY ROAD NO.
AC3384'951 (I-75
AC3384'EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD NO. 951 11.1 KM (6.9 MI)
AC3384'TO THE
AC3384'INTERSECTION WITH U.S. NO. 41 (TAMIAMI TRAIL) PROCEED SOUTH ON STATE
AC3384'ROAD NO.
AC3384'951 11.2 KM (6.95 MI) TO THE CENTER OF THE MARCO PASS BRIDGE NO.
AC3384'030148 (JUDGE
AC3384'S.S. JOLLEY BRIDGE, OVER MARCO RIVER), CONTINUE SOUTH-SOUTHWEST ALONG
AC3384'STATE
AC3384'ROAD 951 (COLLIER BLVD) 2.0 KM (1.25 MI) TO THE INTERSECTION WITH BALD
AC3384 'EAGLE
AC3384'DRIVE AND THE MARK IN THE SOUTHEAST CORNER OF THE INTERSECTION.
AC3384'
AC3384'THE MARK IS SET FLUSH ON A 0.46 M (1.5 FT) WIDE CONCRETE APRON ON THE
AC3384'SOUTHEAST SIDE OF A CONCRETE DROP INLET, ABOUT 0.30 M (1.0 FT) BELOW
AC3384 'THE
AC3384'LEVEL OF THE NORTHBOUND LANES OF STATE ROAD NO. 951 (COLLIER BLVD),
AC3384'8.05 M
AC3384'(26.4 FT) SOUTHEAST OF THE CENTERLINE OF THE NORTHBOUND LANES OF STATE
AC3384'ROAD
AC3384'951 (COLLIER BLVD.), 11.80 M (38.7 FT) SOUTHWEST OF THE CENTERLINE OF
AC3384'BALD
AC3384'EAGLE DRIVE, AND 1.25 M (4.1 FT) NORTH OF THE NORTH CORNER OF A 0.61
AC3384'M (2.0
AC3384'FT) SQUARE CONCRETE POWER POLE WITH PEDESTRIAN CROSSWALK SIGNALS.
AC3384'
AC3384'
AC3384'
AC3384
AC3384
AC3384
                                  STATION RECOVERY (2002)
AC3384
AC3384'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AC3384'RECOVERED AS DESCRIBED.
AC3384 '
*** retrieval complete.
Elapsed Time = 00:00:00
```

From the "ngvd29.txt" file provided by NGS for the CERP Geodetic Vertical Control Project.

Line/Part: L26216 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID SSN PID Designation Geopotential Elevation Codes 1170 0608 AA7625 872 4991 D TIDAL 1.0382 1.0594

The NGS Data Sheet

See file dsdata.txt for more information about the datasheet.

```
DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.15

National Geodetic Survey, Retrieval Date = MARCH 14, 2005
AA7625
        TIDAL BM - This is a Tidal Bench Mark.
DESIGNATION - 872 4991 D TIDAL
PID - AA7625
        TIDAL BM
 AA7625
 AA7625
 AA7625
 AA7625
         STATE/COUNTY- FL/COLLIER
 AA7625
         USGS QUAD
                    - MARCO ISLAND (1995)
 AA7625
 AA7625
                                  *CURRENT SURVEY CONTROL
 AA7625
 AA7625* NAD 83(1999) - 25 57 35.11914(N)
                                             081 43 37.95029(W)
                                                                        ADJUSTED
AA7625* NAVD 88
                                0.653 (meters)
                                                        2.14
                                                                        ADJUSTED
                                                                (feet)
 AA7625
                                                                        COMP
 AA7625
                            825,656.230 (meters)
 AA7625
                         -5,678,544.381 (meters)
                                                                        COMP
         V
 AA7625
                          2,775,044.012 (meters)
                                                                        COMP
 AA7625
        LAPLACE CORR-
                                 -1.47
                                         (seconds)
                                                                        DEFLEC99
 AA7625
        ELLIP HEIGHT-
                                -22.55
                                         (meters)
                                                            (12/09/02) GPS OBS
         GEOID HEIGHT-
 AA7625
                                -23.22
                                                                        GEOID03
                                         (meters)
 AA7625
        DYNAMIC HT -
                                  0.652 (meters)
                                                                        COMP
                                                         2.14 (feet)
                                                                        NAVD 88
 AA7625
         MODELED GRAV-
                            979,038.1
                                         (mgal)
 AA7625
 AA7625
         HORZ ORDER
                         Α
 AA7625
         VERT ORDER
                         FIRST
                                    CLASS II
                                    CLASS I
 AA7625
        ELLP ORDER
                         FOURTH
 AA7625
 AA7625. The horizontal coordinates were established by GPS observations
 AA7625.and adjusted by the National Geodetic Survey in December 2002.
 AA7625
 AA7625. The orthometric height was determined by differential leveling
 AA7625.and adjusted by the National Geodetic Survey in January 2002.
 AA7625
 AA7625. This Tidal Bench Mark is designated as VM 9761
 AA7625.by the Center for Operational Oceanographic Products and Services.
 AA7625
 AA7625. The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AA7625
 AA7625. The Laplace correction was computed from DEFLEC99 derived deflections.
 AA7625
 AA7625. The ellipsoidal height was determined by GPS observations
 AA7625.and is referenced to NAD 83.
 AA7625
 AA7625. The geoid height was determined by GEOID03.
 AA7625
 AA7625. The dynamic height is computed by dividing the NAVD 88
 AA7625.geopotential number by the normal gravity value computed on the
 AA7625.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AA7625.degrees latitude (g = 980.6199 \text{ gals.}).
 AA7625
 AA7625. The modeled gravity was interpolated from observed gravity values.
 AA7625
 AA7625;
                             North
                                                      Units Scale Factor Converg.
                                            East
 AA7625;SPC FL E
                          180,358.813
                                         127,171.836
                                                      MT 1.00000664
                                                                        -0 19 06.0
                      - 2,871,429.257
 AA7625;UTM 17
                                         427,196.684
                                                       МТ
                                                           0.99966544
                                                                          -0 19 06.0
 AA7625
 AA7625!
                        Elev Factor
                                       x Scale Factor =
                                                            Combined Factor
                                           1.00000664 =
 AA7625!SPC FL E
                         1.00000354
                                       Х
                                                            1.00001018
 AA7625!UTM 17
                          1.00000354
                                           0.99966544
                                                            0.99966898
                                       х
 AA7625
 AA7625
                                   SUPERSEDED SURVEY CONTROL
 AA7625
 AA7625
         NAVD 88 (12/19/96)
                                0.672 (m)
                                                        2.20
                                                                (f) UNKNOWN
                                                                                 2 1
 AA7625
 AA7625.Superseded values are not recommended for survey control.
 AA7625.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AA7625. See file dsdata.txt to determine how the superseded data were derived.
 AA7625
 AA7625_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ2719771429(NAD 83)
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AA7625 MARKER: DJ = TIDAL STATION DISK
AA7625_SETTING: 31 = SET IN A PAVEMENT SUCH AS STREET, SIDEWALK, CURB, ETC.
AA7625_SP_SET: DROP INLET
AA7625_STAMPING: 4991 D 1989
AA7625_MARK LOGO: NOS
AA7625 MAGNETIC: N = NO MAGNETIC MATERIAL
AA7625_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY
AA7625_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA7625+SATELLITE: SATELLITE OBSERVATIONS - March 18, 2002
AA7625
AA7625
        HISTORY
                     - Date
                                 Condition
                                                   Report By
                    - 1989
AA7625 HISTORY
                                MONUMENTED
                                                  FIDNR
                    - 19900801 GOOD
AA7625 HISTORY
                    - 20010701 GOOD
AA7625 HISTORY
                                                  LDBLS
                    - 20020228 GOOD
AA7625
        HISTORY
                                                   MAPTEC
                    - 20020318 GOOD
AA7625
       HISTORY
                                                  MAPTEC
AA7625
                                  STATION DESCRIPTION
AA7625
AA7625
AA7625'DESCRIBED BY FL DEPT OF NAT RES 1990 (RLM)
AA7625'THE BENCHMARK IS LOCATED AT THE NORTHERN END OF MARCO ISLAND, NEAR THE
AA7625'INTERSECTION OF BALD EAGLE DRIVE AND BARFIELD DRIVE, IN SECTION 8,
AA7625 TOWNSHIP 52 S, RANGE 26 E. TO REACH THE BENCHMARK FROM THE
AA7625'INTERSECTION OF STATE ROAD 92 AND STATE ROAD 951 (COLLIER BOULEVARD)
AA7625'ON MARCO ISLAND, GO NORTH THEN NORTHEAST ON STATE ROAD 951 (COLLIER
AA7625'BOULEVARD) FOR 1.5 MI (2.4 KM) TO THE INTERSECTION OF STATE ROAD 951
AA7625'(COLLIER BOULEVARD) AND COUNTY ROAD C-953 (BALD EAGLE DRIVE), TURN
AA7625 LEFT AND GO NORTH ON COUNTY ROAD C-953 (BALD EAGLE DRIVE) FOR 0.4 MI
AA7625'(0.6 KM) TO THE INTERSECTION OF BALD EAGLE DRIVE AND BARFIELD DRIVE
AA7625'AND THE MARK ON THE LEFT. THE MARK IS 122.7 FT (37.4 M) NORTH OF THE
AA7625'CENTERLINE OF LAWAL PLAZA DRIVEWAY, 42.5 FT (13.0 M) WEST OF THE AA7625'CENTERLINE OF BALD EAGLE DRIVE AND 26.2 FT (8.0 M) SOUTH OF THE
AA7625'EXTENDED CENTERLINE OF BARFIELD DRIVE.
AA7625
AA7625
                                  STATION RECOVERY (2001)
AA7625
AA7625'RECOVERY NOTE BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
AA7625'THE MARK IS ABOUT 25.6 KM (15.9 MI) SOUTHEAST OF NAPLES, ON MARCO
AA7625'ISLAND, IN
AA7625'SECTION 8, TOWNSHIP 52 SOUTH, RANGE 26 EAST COLLIER COUNTY FLORIDA.
AA7625'OWNERSHIP-
AA7625'COLLIER COUNTY
AA7625
AA7625'TO REACH THE MARK FROM THE INTERSECTION OF I-75 AND COUNTY ROAD NO.
AA7625'951 (I- 75
AA7625'EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD NO. 951 11.1 KM (6.9 MI)
AA7625'TO THE
AA7625'INTERSECTION WITH U.S. NO. 41 (TAMIAMI TRAIL) PROCEED SOUTH ON STATE
AA7625'ROAD NO.
AA7625'951 11.2 KM (6.95 MI) TO THE CENTER OF THE MARCO PASS BRIDGE NO.
AA7625'030148 (JUDGE
AA7625'S.S. JOLLEY BRIDGE, OVER MARCO RIVER), CONTINUE SOUTH-SOUTHWEST ALONG
AA7625'STATE
AA7625'ROAD 951 (COLLIER BLVD) 2.0 KM (1.25 MI) TO THE INTERSECTION WITH BALD
AA7625'EAGLE
AA7625'DRIVE,
              TURN RIGHT AND GO NORTHWEST 0.6 KM (0.4 MI) ALONG BALD EAGLE
AA7625'DRIVE TO
AA7625'THE INTERSECTION WITH NORTH BARFIELD DRIVE ON THE RIGHT AND THE MARK
AA7625'ON THE
AA7625'LEFT.
AA7625'
AA7625'THE MARK IS SET FLUSH ON TOP OF THE NORTHEAST CORNER OF A DROP INLET,
AA7625'ABOUT
AA7625'0.30 M (1.0 FT) BELOW THE LEVEL OF BALD EAGLE DRIVE, 12.92 M (42.4 FT)
AA7625'SOUTHWEST OF THE CENTERLINE OF BALD EAGLE DRIVE, 7.80 M (25.6 FT) AA7625'SOUTHEAST OF
AA7625'AND EXTENDED CENTERLINE OF NORTH BARFIELD DRIVE, 0.70 M (2.3 FT)
AA7625'SOUTHWEST OF
AA7625'THE WESTERLY SIDE OF A 1.22 M (4 FT) WIDE CONCRETE SIDEWALK, 37.55 M
AA7625'(123.2 FT)
AA7625 NORTHWEST OF THE CENTER OF THE NORTHERN ASPHALT DRIVEWAY ENTRANCE INTO
AA7625'LANAI
AA7625'PLAZA, AND 44.71 M (146.7 FT) EAST OF THE SOUTHERN ASPHALT DRIVEWAY
AA7625'EXITING
AA7625'ANGLERS PLAZA.
AA7625'
AA7625'
AA7625
AA7625'
AA7625
AA7625
                                  STATION RECOVERY (2002)
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DATASHEETS

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AA7625
AA7625'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (RLT)
AA7625'RECOVERED AS DESCRIBED
AA7625'
AA7625'
AA7625'
AA7625'
AA7625
AA7625
AA7625
AA7625
AA7625
AA7625
AA7625
AA7625'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AA7625'RECOVERED AS DESCRIBED
AA7625'
*** retrieval complete.
Elapsed Time = 00:00:00
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sta pob	three wire +	mean	hi	three wire -	mean	elevation 2.580	distance NAVD88	ADJ BY DIST	adjust elevation	description COL15	std dev	stdev *2*100	variance
	7.230 6.230 5.230	6.230	8.810				200.0				1.000	200.0	0.0000
1				5.325 4.335 3.350	4.337	4.473	197.5	0.0013	4.474		0.988	197.5	-0.0002
	5.830 4.705 3.590	4.708	9.181				224.0				1.120	224.0	-0.0007
2				6.200 4.860 3.515	4.858	4.323	268.5	0.0016	4.326		1.343	268.5	-0.0002
	6.400 5.250 4.110	5.253	9.576				229.0				1.145	229.0	-0.0007
3				6.360 5.220 4.080	5.220	4.356	228.0	0.0015	4.360		1.140	228.0	0.0000
	5.300 4.155 3.010	4.155	8.511				229.0				1.145	229.0	0.0000
4				6.060 4.985 3.895	4.980	3.531	216.5	0.0014	3.537		1.083	216.5	-0.0017
	5.950 4.735 3.515	4.733	8.264				243.5				1.218	243.5	-0.0002
5				5.020 4.450 3.880	4.450	3.814	114.0	0.0012	3.821		0.570	114.0	0.0000
	7.135 6.115 5.095	6.115	9.929				204.0				1.020	204.0	0.0000
6				5.760 4.735 3.710	4.735	5.194	205.0	0.0013	5.202	INJ BM 01 @ MARCO ISLAND UTILITIES	1.025	205.0	0.0000
	5.450 4.420 3.400	4.423	9.617				205.0				1.025	205.0	-0.0008
7				6.830 5.800 4.785	5.805	3.812	204.5	0.0013	3.822		1.023	204.5	-0.0018
	5.965												

	three wire			hree wire				ADJ	adjust		std	stdev	
sta	+	mean	hi	-	mean	elevation	distance	BY DIST	elevation de	escription	dev	*2*100	variance
	4.860 3.758	4.861	8.673				220.7				1.104	220.7	-0.0001
8				6.070 4.890 3.710	4.890	3.783	236.0	0.0015	3.794		1.180	236.0	0.0000
	5.290 4.170 3.055	4.172	7.955				223.5				1.118	223.5	-0.0002
9				5.570 4.528 3.490	4.529	3.426	208.0	0.0014	3.439		1.040	208.0	-0.0001
	5.150 4.080 3.010	4.080	7.506				214.0				1.070	214.0	0.0000
10				6.545 5.380 4.215	5.380	2.126	233.0	0.0015	2.140	72 4991 D TIDAL (2.14')	1.165	233.0	0.0000
				sq. rt. Of	f dist. In m	iles x 0.05' :	4,303.7 0.815 0.045 0.014		in feet in miles allowable erro field error	ror		4,303.7	-0.01 in feet

sta pob	three wire +	mean	hi	three wire -	mean	elevation 3.917	distance NAVD88	ADJ BY DIST	adjust elevation	description COL15	std dev	stdev *2*100	variance
	7.230 6.230 5.230	6.230	10.147				200.0				1.000	200.0	0.0000
1				5.325 4.335 3.350	4.337	5.810	197.5	0.0011	5.811		0.988	197.5	-0.0002
	5.830 4.705 3.590	4.708	10.518				224.0				1.120	224.0	-0.0007
2				6.200 4.860 3.515	4.858	5.660	268.5	0.0014	5.663		1.343	268.5	-0.0002
	6.400 5.250 4.110	5.253	10.913				229.0				1.145	229.0	-0.0007
3				6.360 5.220 4.080	5.220	5.693	228.0	0.0013	5.697		1.140	228.0	0.0000
	5.300 4.155 3.010	4.155	9.848				229.0				1.145	229.0	0.0000
4				6.060 4.985 3.895	4.980	4.868	216.5	0.0013	4.873		1.083	216.5	-0.0017
	5.950 4.735 3.515	4.733	9.601				243.5				1.218	243.5	-0.0002
5				5.020 4.450 3.880	4.450	5.151	114.0	0.0010	5.158		0.570	114.0	0.0000
	7.135 6.115 5.095	6.115	11.266				204.0				1.020	204.0	0.0000
6				5.760 4.735 3.710	4.735	6.531	205.0	0.0012	6.539	INJ BM 01 @ MARCO ISLAND UTILITIES	1.025	205.0	0.0000
	5.450 4.420 3.400	4.423	10.954				205.0				1.025	205.0	-0.0008
7				6.830 5.800 4.785	5.805	5.149	204.5	0.0012	5.158		1.023	204.5	-0.0018
	5.965												

	three wire			hree wire				ADJ	adjust		std	stdev	
sta	+	mean	hi	-	mean	elevation	distance	BY DIST	elevation de	scription	dev	*2*100	variance
	4.860 3.758	4.861	10.010				220.7				1.104	220.7	-0.0001
8				6.070 4.890 3.710	4.890	5.120	236.0	0.0013	5.130		1.180	236.0	0.0000
	5.290 4.170 3.055	4.172	9.292				223.5				1.118	223.5	-0.0002
9				5.570 4.528 3.490	4.529	4.763	208.0	0.0012	4.774		1.040	208.0	-0.0001
	5.150 4.080 3.010	4.080	8.843				214.0				1.070	214.0	0.0000
10				6.545 5.380 4.215	5.380	3.463	233.0	0.0013	3.476	2 4991 D TIDAL (2.14')	1.165	233.0	0.0000
				sq. rt. Of	f dist. In m	iles x 0.05' :	4,303.7 0.815 0.045 0.012		in feet in miles allowable erro field error	or		4,303.7	-0.01 in feet