

Identification_Information:

Citation:

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Publication_Date: Unpublished material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. SOUTH COLLIER REGIONAL WATER RESOURCE FACILITY DEEP

WATER INJECTION WELL

Edition: 1
Publication_Information:
Publication_Place: Not published
Publisher: None
Online_Linkage: bbills@cte.cc

Description:

Abstract:

South Florida Water Management District
SOUTH COLLIER REGIONAL WATER RESOURCE
FACILITY DEEP WATER
INJECTION WELL

Purpose

Purpose:

To establish NAVD 88 elevation on the well and on the well reference benchmark.

Time_Period_of_Content:

Time_Period_Information:

Single_Date/Time:
Calendar_Date: 20050126
Time_of_Day: 17000000

Survey Date

Currentness_Reference: Date and time of field work

Status:

Progress: Complete
Maintenance_and_Update_Frequency: Unknown

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -081° 43' 24. 06"
East_Bounding_Coordinate: -081° 43' 24. 06"
North_Bounding_Coordinate: +26° 05' 43. 94"
South_Bounding_Coordinate: +26° 05' 43. 94"

Keywords:

Theme:

Theme_Keyword_Thesaurus: None
Theme_Keyword: Record Survey
Theme_Keyword: Well Site

Place:

Place_Keyword_Thesaurus: None
Place_Keyword: S. F. W. M. D. SOUTH COLLIER REGIONAL WATER RESOURCE FACILITY

DEEP WATER INJECTION WELL

Place_Keyword: Sec. 20, Twp. 50 S., Rge 26 E.
Place_Keyword: Collier County, Florida
Place_Keyword_Thesaurus: Geographic Names Information System
Place_Keyword: Florida
Place_Keyword: Collier County

Access_Constraints:

access to well and benchmark is through a locked gate at the South Collier Regional Water Resource Facility, John Pratt (239) 774-6886

Use_Constraints: None

Point_of_Contact:

Contact_Information:

Contact_Person_Primary:

Elvie D. Ebanks
SFWMD

Contact_Person: Elvie Ebanks
Contact_Organization: South Florida Water Management District

Contact_Address:

Address_Type: mailing and physical address
Address: 3301 Gun Club Road
City: West Palm Beach
State_or_Province: Florida
Postal_Code: 33406-4680
Country: USA

Contact_Voice_Telephone: (561) 753 2400 ex 4717
Hours_of_Service: 8:00 am to 5:00 pm EST

Data_Quality_Information:

Attribute_Accuracy:

Attribute_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. Elevations are based on NAVD 88.

Logical_Consistency_Report:

Horizontal data was established using sub-meter GPS equipment. Vertical data was established using control points M-250 and B-527.

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

Completeness_Report:

Horizontal location taken at the benchmark.

Lat. +26°05' 43.94"

Long. -081°43' 24.06"

N 641074'

E 418771'

Site Benchmark.

INJ BM 02 is a standard U.S. Army Corps of Engineers brass disc, bearing INJ BM 02 2004 JAX DIST SFWMD, set in a 10" round concrete monument (poured in place, with a magnet placed nearby).

To reach from the junction of I-75 and S.R. 951 (Collier Boulevard); go south along S.R. 951 to the intersection with U.S. 41; turn right and go northwest along U.S. 41, 2.5 miles to Saint Andrews Boulevard; turn right on Saint Andrews Boulevard and go to Warren Street; turn right and go to the South Collier Regional Water Facility at 5600 Warren Street; proceed into plant and follow road east past main office to a bend in the road to the north, the injection well is

located to the southeast from this point and monitoring well is 250 feet east. Benchmark INJ BM 02 is located 2 feet southwest of the southwest corner of the concrete pad for the monitoring well.

United States Department of the Interior Geologic Survey Quadrangle map -- BELLE MEADE (1991)

Benchmark INJ BM 02 - 7.87' NAVD 88; 9.17' NGVD 29

North bolt of monitoring well - 10.45' NAVD 88; 11.75' NGVD 29

Positional_Accuracy:

Horizontal_Positional_Accuracy:

Horizontal_Positional_Accuracy_Report:

The horizontal position of the benchmark INJ BM 02, 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).

Quantitative_Horizontal_Positional_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 "M-250" with an NAVD 88 elevation, running through BM "INJ BM 02" and the north bolt of the monitoring well and terminating on BM "B-527", 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.

Quantitative_Vertical_Positional_Accuracy_Assessment:

Vertical_Positional_Accuracy_Value: +0.009 meter

S COLLIER WWTP.met

Vertical_Positional_Accuracy_Explana tion: NAVD 88 level run, 0.009
meter closure in 13495 meters, max. allowed 0.044 meter (MTS)

Lineage:

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 methodology was used.

Process_Date: 20050126

Process_Time: 17000000

Metadata_Reference_Information:

Metadata_Date: 20050203

Metadata_Contact:

Contact_Information:

Contact_Person_Primary:

Joseph S. Boggs

Contact_Person: Joseph S. Boggs

Consul-Tech

Contact_Organization: Consul-Tech Surveying & Mapping

Surveying and

Contact_Position: Project Surveyor

Mapping

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_Voice_Telephone: (239) 947-0266

Contact_Facsimile_Telephone: (239) 947-1323

Contact_Electronic_Mail_Address: j.boggs@cte.cc

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

S.F.W.M.D. Injection Well – South Collier W.W.T.P.

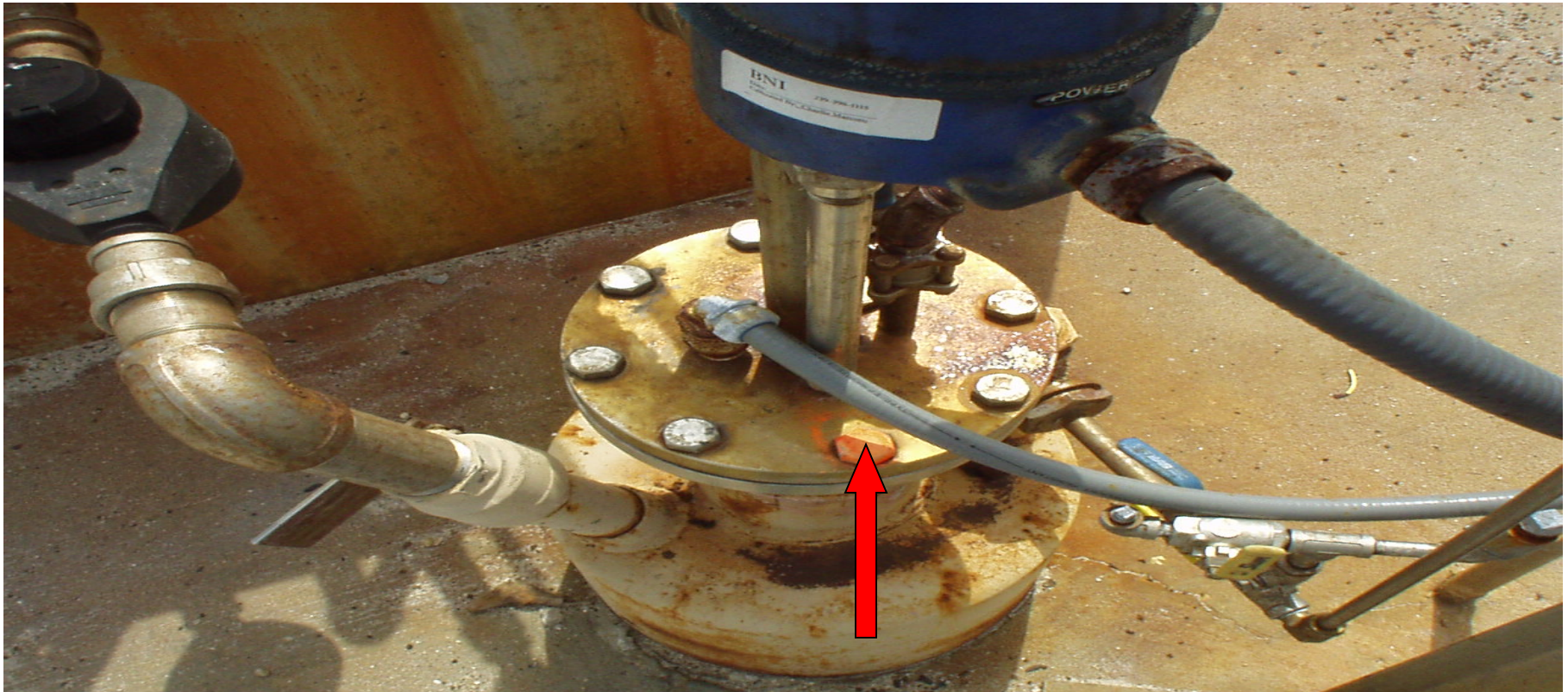


Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

Looking: Southwest

W.W.T.P S.F.W.M.D. Injection Well Reference Point – South Collier.



- Consul-Tech Surveying & Mapping, Inc.
- Date of Survey: March 16, 2005
- Looking: South At Monitoring Well

W.W.T.P S.F.W.M.D. Injection Well – South Collier.



Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

Looking: Northeast

S.F.W.M.D. Injection Well – South Collier W.W.T.P.



Consul-Tech Surveying & Mapping, Inc.

Date of Survey: January 25, 2005

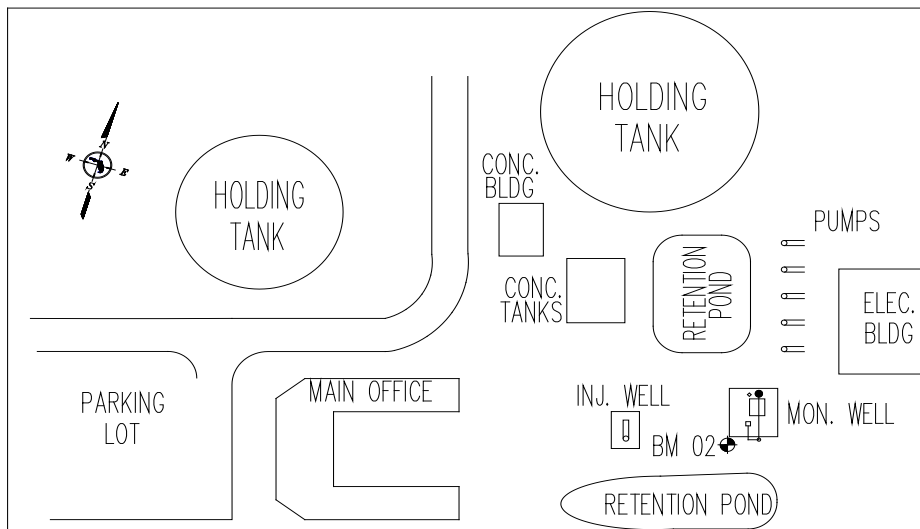
Looking: At “INJ BM 02 2004”



COUNTY COLLIER		PROJECT DEEP WATER INJECTION WELL SITE		DESIGNATION INJ BM O2 2004	
SECTION 20		TOWNSHIP 50 SOUTH		RANGE 26 EAST	
GEOGRAPHIC INDEX OF QUAD Florida					
Established by Consul-Tech Surveying and Mapping, inc.			NAME OF QUADRANGLE BELLE MEADE (1991)		
SURVEYOR <u>Joseph S. Boggs</u> DATE <u>1/26/05</u>			FIELD BOOK <u>516-7</u> PAGE <u>49</u>		
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 3rd Order					
STATE PLANE COORDINATES Feet		N=641074		E=418771	
				EL.=7.87 (NAVD 88)	
				EL.=9.17 (NGVD 29)	
LATITUDE 26°05'43.94" N			LONGITUDE 081°43'24.06" W		
DESCRIPTION					
To reach from the junction of I-75 and S.R. 951 (Collier Boulevard); go south along S.R. 951 to the					
Intersection with U.S. 41; turn right and go northwest along U.S. 41, 2.5 miles to Saint Andrews Boulevard;					
turn right on Saint Andrews Boulevard and go to Warren Street; turn right and go to the South Collier					
Regional Water Facility at 5600 Warren Street; proceed into plant and follow road east past main office to a					
bend in the road to the north, the injection well is located to the southeast from this point and monitoring					
Well is 250 feet east. Benchmark INJ BM O2 is located 2 feet southwest of the southwest corner of the					
concrete pad for the monitoring well.					

7.8707 NAVD88
9.1699 NGVD29

SKETCH



The NGS Data Sheet

See file [dsdata.txt](#) for more information about the datasheet.

DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.15

1 National Geodetic Survey, Retrieval Date = MARCH 14, 2005

AD1218 *****

AD1218 DESIGNATION - M 250
AD1218 PID - AD1218
AD1218 STATE/COUNTY- FL/COLLIER
AD1218 USGS QUAD - BELLE MEADE (1991)

AD1218
AD1218 *CURRENT SURVEY CONTROL

AD1218*	NAD 83(1999)-	26 03 16.50355(N)	081 41 10.33669(W)	ADJUSTED
AD1218*	NAVD 88	- 1.263 (meters)	4.14 (feet)	ADJUSTED

AD1218	X	-	829,053.820 (meters)	COMP
AD1218	Y	-	-5,673,394.100 (meters)	COMP
AD1218	Z	-	2,784,486.214 (meters)	COMP
AD1218	LAPLACE CORR-		-1.52 (seconds)	DEFLEC99
AD1218	ELLIP HEIGHT-		-22.21 (meters)	(12/12/02) GPS OBS
AD1218	GEOID HEIGHT-		-23.43 (meters)	GEOID03
AD1218	DYNAMIC HT -		1.261 (meters)	4.14 (feet) COMP
AD1218	MODELED GRAV-		979,041.7 (mgal)	NAVD 88

AD1218
AD1218 HORZ ORDER - FIRST
AD1218 VERT ORDER - FIRST CLASS II
AD1218 ELLP ORDER - FOURTH CLASS I

AD1218.The horizontal coordinates were established by GPS observations
AD1218.and adjusted by the National Geodetic Survey in December 2002.

AD1218.The orthometric height was determined by differential leveling
AD1218.and adjusted by the National Geodetic Survey in September 1992.

AD1218.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AD1218.The Laplace correction was computed from DEFLEC99 derived deflections.

AD1218.The ellipsoidal height was determined by GPS observations
AD1218.and is referenced to NAD 83.

AD1218.The geoid height was determined by GEOID03.

AD1218.The dynamic height is computed by dividing the NAVD 88
AD1218.geopotential number by the normal gravity value computed on the
AD1218.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AD1218.degrees latitude (g = 980.6199 gals.).

AD1218.The modeled gravity was interpolated from observed gravity values.

		North	East	Units	Scale	Factor	Converg.
AD1218;SPC	FL E	- 190,842.414	131,333.564	MT	0.99999937	-0 18 05.1	
AD1218;UTM	17	- 2,881,909.281	431,356.993	MT	0.99965818	-0 18 05.1	
AD1218!		Elev Factor	x	Scale Factor	=	Combined Factor	
AD1218!SPC	FL E	- 1.00000349	x	0.99999937	=	1.00000286	
AD1218!UTM	17	- 1.00000349	x	0.99965818	=	0.99966167	

AD1218
AD1218 SUPERSEDED SURVEY CONTROL

AD1218	NAVD 88 (06/15/91)	1.268 (m)	4.16 (f)	UNKNOWN	1 2
AD1218	NGVD 29 (09/01/92)	1.659 (m)	5.44 (f)	ADJUSTED	1 2

AD1218.Superseded values are not recommended for survey control.

AD1218.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AD1218.[See file dsdata.txt](#) to determine how the superseded data were derived.

AD1218
AD1218_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ3135781909(NAD 83)
AD1218_MARKER: DB = BENCH MARK DISK
AD1218_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AD1218_SP_SET: CONCRETE POST

AD1218_STAMPING: M 250 1965
 AD1218_MARK LOGO: CGS
 AD1218_PROJECTION: RECESSED 8 CENTIMETERS
 AD1218_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET
 AD1218_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AD1218+STABILITY: SURFACE MOTION
 AD1218_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AD1218+SATELLITE: SATELLITE OBSERVATIONS - 2002

AD1218	HISTORY	- Date	Condition	Report By
AD1218	HISTORY	- 1965	MONUMENTED	CGS
AD1218	HISTORY	- 1966	GOOD	NGS
AD1218	HISTORY	- 1984	GOOD	FLDNR
AD1218	HISTORY	- 1987	MARK NOT FOUND	USPSQD
AD1218	HISTORY	- 1988	MARK NOT FOUND	USPSQD
AD1218	HISTORY	- 1990	GOOD	USPSQD
AD1218	HISTORY	- 19920228	GOOD	NGS
AD1218	HISTORY	- 20010208	GOOD	USPSQD
AD1218	HISTORY	- 20010710	GOOD	LDBLS
AD1218	HISTORY	- 2002	GOOD	MAPTEC

AD1218
 AD1218 STATION DESCRIPTION

AD1218 DESCRIBED BY NATIONAL GEODETIC SURVEY 1966
 AD1218 7 MI SE FROM NAPLES.
 AD1218 ABOUT 6.95 MILES SOUTHEAST ALONG U.S. HIGHWAY 41 FROM THE
 AD1218 COURTHOUSE AT NAPLES, 1.05 MILES SOUTHEAST OF THE INTERSECTION
 AD1218 OF STATE HIGHWAY S-951, 150 FEET SOUTHWEST OF THE CENTER LINE OF
 AD1218 THE HIGHWAY, 2.7 FEET SOUTHEAST OF A CONCRETE RIGHT-OF-WAY
 AD1218 MARKER POST, 1.5 FEET NORTHWEST OF A METAL WITNESS POST, ABOUT
 AD1218 3 FEET BELOW THE LEVEL OF THE HIGHWAY AND SET IN THE TOP OF A
 AD1218 CONCRETE POST PROJECTING 0.7 FOOT.

AD1218 STATION RECOVERY (1984)

AD1218 RECOVERY NOTE BY FL DEPT OF NAT RES 1984
 AD1218 RECOVERED IN GOOD CONDITION.

AD1218 STATION RECOVERY (1987)

AD1218 RECOVERY NOTE BY US POWER SQUADRON 1987 (HEA)
 AD1218 MARK NOT FOUND.

AD1218 STATION RECOVERY (1988)

AD1218 RECOVERY NOTE BY US POWER SQUADRON 1988 (HEA)
 AD1218 MARK NOT FOUND.

AD1218 STATION RECOVERY (1990)

AD1218 RECOVERY NOTE BY US POWER SQUADRON 1990 (HEA)
 AD1218 RECOVERED IN GOOD CONDITION.

AD1218 STATION RECOVERY (1992)

AD1218 RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992
 AD1218 15.5 KM (9.65 MI) EASTERLY ALONG U.S. HIGHWAY 41 FROM THE JUNCTION
 AD1218 OF STATE HIGHWAY 84 IN NAPLES, 45.3 M (148.6 FT) SOUTHWEST OF THE
 AD1218 CENTERLINE OF THE HIGHWAY, 0.9 M (3.0 FT) SOUTHEAST OF A RIGHT-OF-WAY
 AD1218 MARKER, 0.6 M (2.0 FT) BELOW THE LEVEL OF THE HIGHWAY, 0.4 M (1.3 FT)
 AD1218 NORTHWEST OF A WITNESS POST, AND THE MONUMENT PROJECTS 0.1 M (0.3 FT)
 AD1218 ABOVE THE GROUND SURFACE.

AD1218 STATION RECOVERY (2001)

AD1218 RECOVERY NOTE BY US POWER SQUADRON 2001 (GG)
 AD1218 RECOVERED IN GOOD CONDITION.

AD1218 STATION RECOVERY (2001)

AD1218 RECOVERY NOTE BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
 AD1218 THE MARK IS ABOUT 13.4 KM (8.3 MI) SOUTHEAST OF NAPLES, IN SECTION 2,
 AD1218 TOWNSHIP
 AD1218 51 SOUTH, RANGE 26 EAST COLLIER COUNTY, FLORIDA OWNERSHIP - FLORIDA
 AD1218 DEPARTMENT
 AD1218 OF TRANSPORTATION
 AD1218
 AD1218 TO REACH THE MARK FROM THE INTERSECTION OF INTERSTATE HIGHWAY 75 AND
 AD1218 COUNTY
 AD1218 ROAD 951 (I-75 EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD 951 11.1
 AD1218 KM (6.9

AD1218' MI) TO THE INTERSECTION WITH U.S. HIGHWAY 41 (TAMIAMI TRAIL), GO
AD1218' SOUTHEAST ON
AD1218' U.S. HIGHWAY 41 1.6 KM (1.0 MI) TO THE MARK ON THE RIGHT.
AD1218'
AD1218' THE MARK A 111.98 M (367.4 FT) NORTHWEST OF THE CENTER OF AN ASPHALT
AD1218' DRIVEWAY
AD1218' LEADING INTO ST. FINBARR'S CATHOLIC COMMUNITY, 45.26 M (148.5 FT)
AD1218' SOUTHWEST OF
AD1218' THE CENTERLINE OF U.S. HIGHWAY 41, 33.68 M (110.5 FT) SOUTHWEST OF A
AD1218' STANDING
AD1218' PVC CABLE MARKER (NUMBER 594), 2.50 M (8.2 FT) SOUTHEAST OF A WOOD
AD1218' POWER POLE,
AD1218' AND 0.34 M (1.1 FT) NORTH OF A CARSONITE WITNESS POST. THE MARK IS A
AD1218' DISK SET
AD1218' FLUSH IN THE TOP OF A CONCRETE MONUMENT, RECESSED 8 CM (0.25 FT) BELOW
AD1218' THE
AD1218' LEVEL OF THE GROUND AND ABOUT 0.30 M (1.0 FT) BELOW THE LEVEL OF U.S.
AD1218' HIGHWAY
AD1218' 41.
AD1218'
AD1218' NOTE - A MAGNET IS BURIED 6 CM (0.2 FT) DEEP AT THE NORTH EDGE OF THE
AD1218' CONCRETE
AD1218' MONUMENT, ABOUT 0.15 M (0.5 FT) NORTH OF THE MARK.
AD1218'
AD1218'
AD1218'
AD1218'
AD1218'
AD1218'

STATION RECOVERY (2002)

AD1218' RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CDP)
AD1218' THE MARK IS ABOUT 13.4 KM (8.3 MI) SOUTHEAST OF NAPLES, IN SECTION 2,
AD1218' TOWNSHIP
AD1218' 51 SOUTH, RANGE 26 EAST COLLIER COUNTY, FLORIDA OWNERSHIP - FLORIDA
AD1218' DEPARTMENT
AD1218' OF TRANSPORTATION
AD1218'
AD1218' TO REACH THE MARK FROM THE INTERSECTION OF INTERSTATE HIGHWAY 75 AND
AD1218' COUNTY
AD1218' ROAD 951 (I-75 EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD 951 11.1
AD1218' KM (6.9
AD1218' MI) TO THE INTERSECTION WITH U.S. HIGHWAY 41 (TAMIAMI TRAIL), GO
AD1218' SOUTHEAST ON
AD1218' U.S. HIGHWAY 41 1.6 KM (1.0 MI) TO THE MARK ON THE RIGHT.
AD1218'
AD1218' THE MARK A 111.98 M (367.4 FT) NORTHWEST OF THE CENTER OF AN ASPHALT
AD1218' DRIVEWAY
AD1218' LEADING INTO ST. FINBARR'S CATHOLIC COMMUNITY, 45.26 M (148.5 FT)
AD1218' SOUTHWEST OF
AD1218' THE CENTERLINE OF U.S. HIGHWAY 41, 33.68 M (110.5 FT) SOUTHWEST OF A
AD1218' STANDING
AD1218' PVC CABLE MARKER (NUMBER 594), 2.50 M (8.2 FT) SOUTHEAST OF A WOOD
AD1218' POWER POLE,
AD1218' AND 0.34 M (1.1 FT) NORTH OF A CARSONITE WITNESS POST. THE MARK IS A
AD1218' DISK SET
AD1218' FLUSH IN THE TOP OF A CONCRETE MONUMENT, RECESSED 8 CM (0.25 FT) BELOW
AD1218' THE
AD1218' LEVEL OF THE GROUND AND ABOUT 0.30 M (1.0 FT) BELOW THE LEVEL OF U.S.
AD1218' HIGHWAY
AD1218' 41.
AD1218'
AD1218' NOTE - A MAGNET IS BURIED 6 CM (0.2 FT) DEEP AT THE NORTH EDGE OF THE
AD1218' CONCRETE
AD1218' MONUMENT, ABOUT 0.15 M (0.5 FT) NORTH OF THE MARK.
AD1218'
AD1218'

AD1218' STATION RECOVERY (2002)
AD1218' RECOVERY NOTE BY MAPTECH, INCORPORATED 2002 (CP)
AD1218' RECOVERED AS DESCRIBED.
AD1218'
AD1218'
AD1218'
AD1218'
AD1218'
AD1218'

*** 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
 1158 0596 AJ6603 B 527 2.4530 2.5030

The NGS Data Sheet

See file [dsdata.txt](#) for more information about the datasheet.

```
PROGRAM = datasheet95, VERSION = 8.11
1      National Geodetic Survey,  Retrieval Date = MARCH  3, 2017
AJ6603 *****
AJ6603 DESIGNATION - B 527
AJ6603 PID - AJ6603
AJ6603 STATE/COUNTY- FL/COLLIER
AJ6603 COUNTRY - US
AJ6603 USGS QUAD - BELLE MEADE (1991)
AJ6603
AJ6603 *CURRENT SURVEY CONTROL
AJ6603
AJ6603* NAD 83(2011) POSITION- 26 04 17.60891(N) 081 41 34.16943(W) ADJUSTED
AJ6603* NAD 83(2011) ELLIP HT- -21.351 (meters) (06/27/12) ADJUSTED
AJ6603* NAD 83(2011) EPOCH - 2010.00
AJ6603* NAVD 88 ORTHO HEIGHT - 2.107 (meters) 6.91 (feet) ADJUSTED
AJ6603
AJ6603 GEOID HEIGHT - -23.473 (meters) GEOID12B
AJ6603 NAD 83(2011) X - 828,279.026 (meters) COMP
AJ6603 NAD 83(2011) Y - -5,672,673.073 (meters) COMP
AJ6603 NAD 83(2011) Z - 2,786,175.859 (meters) COMP
AJ6603 LAPLACE CORR - -1.36 (seconds) DEFLEC12B
AJ6603 DYNAMIC HEIGHT - 2.104 (meters) 6.90 (feet) COMP
AJ6603 MODELED GRAVITY - 979,042.9 (mgal) NAVD 88
AJ6603
AJ6603 VERT ORDER - FIRST CLASS II
AJ6603
AJ6603 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AJ6603 Standards:
AJ6603 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
AJ6603 Horiz Ellip SD_N SD_E SD_h (unitless)
AJ6603 -----
AJ6603 NETWORK 1.07 1.92 0.42 0.45 0.98 -0.20959957
AJ6603 -----
AJ6603 Click here for local accuracies and other accuracy information.
AJ6603
AJ6603
AJ6603.The horizontal coordinates were established by GPS observations
AJ6603.and adjusted by the National Geodetic Survey in June 2012.
AJ6603
AJ6603.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
AJ6603.been affixed to the stable North American tectonic plate. See
AJ6603.NA2011 for more information.
AJ6603
AJ6603.The horizontal coordinates are valid at the epoch date displayed above
AJ6603.which is a decimal equivalence of Year/Month/Day.
AJ6603
AJ6603.The orthometric height was determined by differential leveling and
AJ6603.adjusted by the NATIONAL GEODETIC SURVEY
AJ6603.in January 2002.
AJ6603
AJ6603.Significant digits in the geoid height do not necessarily reflect accuracy.
```

AJ6603.GEOID12B height accuracy estimate available [here](#).

AJ6603

AJ6603.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AJ6603

AJ6603.The Laplace correction was computed from DEFLEC12B derived deflections.

AJ6603

AJ6603.The ellipsoidal height was determined by GPS observations

AJ6603.and is referenced to NAD 83.

AJ6603

AJ6603.The dynamic height is computed by dividing the NAVD 88

AJ6603.geopotential number by the normal gravity value computed on the

AJ6603.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AJ6603.degrees latitude (g = 980.6199 gals.).

AJ6603

AJ6603.The modeled gravity was interpolated from observed gravity values.

AJ6603

AJ6603. The following values were computed from the NAD 83(2011) position.

AJ6603

AJ6603;		North	East	Units	Scale Factor	Converg.
AJ6603;SPC FL E	-	192,726.390	130,681.071	MT	1.00000048	-0 18 16.2
AJ6603;SPC FL E	-	632,303.16	428,742.81	sFT	1.00000048	-0 18 16.2
AJ6603;UTM 17	-	2,883,792.614	430,704.723	MT	0.99965929	-0 18 16.2

AJ6603

AJ6603! - Elev Factor x Scale Factor = Combined Factor

AJ6603!SPC FL E - 1.00000335 x 1.00000048 = 1.00000383

AJ6603!UTM 17 - 1.00000335 x 0.99965929 = 0.99966264

AJ6603

AJ6603_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMJ3070483792 (NAD 83)

AJ6603

AJ6603 SUPERSEDED SURVEY CONTROL

AJ6603

AJ6603	NAD 83(2007)-	26 04 17.60909(N)	081 41 34.17007(W)	AD(2002.00)	0
AJ6603	ELLIP H (02/10/07)	-21.333 (m)		GP(2002.00)	
AJ6603	NAD 83(1999)-	26 04 17.60905(N)	081 41 34.17051(W)	AD()	1
AJ6603	ELLIP H (12/12/02)	-21.374 (m)		GP()	4 1
AJ6603	NAVD 88	2.11 (m)	6.9 (f)	LEVELING	3

AJ6603

AJ6603.Superseded values are not recommended for survey control.

AJ6603

AJ6603.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AJ6603.[See file dsdata.txt](#) to determine how the superseded data were derived.

AJ6603

AJ6603_MARKER: F = FLANGE-ENCASED ROD

AJ6603_SETTING: 15 = METAL ROD DRIVEN INTO GROUND. SEE TEXT FOR ADDITIONAL

AJ6603+WITH SETTING: INFORMATION.

AJ6603_STAMPING: B 527 2001 CERP

AJ6603_MARK LOGO: NONE

AJ6603_PROJECTION: RECESSED 9 CENTIMETERS

AJ6603_MAGNETIC: M = MARKER EQUIPPED WITH BAR MAGNET

AJ6603_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

AJ6603_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

AJ6603+SATELLITE: SATELLITE OBSERVATIONS - March 18, 2002

AJ6603_ROD/PIPE-DEPTH: 2.34 meters

AJ6603_SLEEVE-DEPTH : 0.46 meters

AJ6603

AJ6603	HISTORY	- Date	Condition	Report By
AJ6603	HISTORY	- 20010629	MONUMENTED	LDBLS
AJ6603	HISTORY	- 20020318	GOOD	MAPTEC
AJ6603	HISTORY	- 20120924	MARK NOT FOUND	FL-021

AJ6603

AJ6603 STATION DESCRIPTION
AJ6603
AJ6603'DESCRIBED BY LD BRADLEY LAND SURVEYORS 2001 (JCH)
AJ6603'THE MARK IS ABOUT 11.3 KM (7.0 MI) SOUTHEAST OF NAPLES, AND
AJ6603'APPROXIMATELY 12.1
AJ6603'KM (7.5 MI) NORTH OF MARCO ISLAND, IN SECTION 34, TOWNSHIP 50 SOUTH,
AJ6603'RANGE 26
AJ6603'EAST, COLLIER COUNTY FLORIDA. OWNERSHIP- COLLIER COUNTY
AJ6603'
AJ6603'TO REACH THE MARK FROM THE INTERSECTION OF I-75 AND COUNTY ROAD NO.
AJ6603'951 (I- 75
AJ6603'EXIT 15, NEAR NAPLES) GO SOUTH ON COUNTY ROAD NO. 951 10.0 KM (6.22
AJ6603'MI) TO THE
AJ6603'MARK ON THE LEFT IN THE MEDIAN, ALSO FROM THE INTERSECTION OF U.S.
AJ6603'HIGHWAY NO.
AJ6603'41 (TAMIAMI TRAIL) AND COUNTY ROAD NO. 951, (ABOUT 11.7 KM (7.3 MI)
AJ6603'SOUTHEAST
AJ6603'OF NAPLES), GO NORTH ON COUNTY ROAD NO. 951 1.1 KM (0.68 MI) TO THE
AJ6603'MARK ON
AJ6603'THE LEFT IN THE MEDIAN.
AJ6603'
AJ6603'THE MARK IS A STAINLESS STEEL ROD DRIVEN TO REFUSAL WITH A ACCESS CAP
AJ6603'RECESSED
AJ6603'0.09 M (0.3 FT) BELOW THE LEVEL OF THE GROUND. THE DATUM POINT IS
AJ6603'RECESSED
AJ6603'0.06 M (0.2 FT) BELOW THE LEVEL OF THE ACCESS CAP, ABOUT 0.61 M (2.0
AJ6603'FT) BELOW
AJ6603'THE LEVEL OF THE COUNTY ROAD NO. 951 TRAFFIC LANES, 11.64 M (38.2 FT)
AJ6603'EAST OF
AJ6603'THE CENTERLINE OF THE SOUTHBOUND LANES OF COUNTY ROAD NO. 951, 8.01 M
AJ6603'(26.3
AJ6603'FT) WEST OF THE CENTERLINE OF THE NORTH BOUND LANES OF COUNTY ROAD NO.
AJ6603'951,
AJ6603'15.70 M (51.5 FT) SOUTHWEST OF THE CENTER OF A STORM DRAIN INLET (IN
AJ6603'THE
AJ6603'MEDIAN) .
AJ6603'
AJ6603'NOTE - A MAGNET WAS PLACED INSIDE THE SLEEVE, BELOW THE ACCESS COVER.
AJ6603'
AJ6603'
AJ6603'
AJ6603'
AJ6603
AJ6603 STATION RECOVERY (2002)
AJ6603
AJ6603'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AJ6603'RECOVERED AS DESCRIBED.
AJ6603'
AJ6603
AJ6603 STATION RECOVERY (2012)
AJ6603
AJ6603'RECOVERY NOTE BY COLLIER COUNTY FLORIDA 2012 (MLB)
AJ6603'ASSUMED DESTROYED

*** retrieval complete.
Elapsed Time = 00:00:02

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	5.940 4.735 3.520	4.732	8.872			4.140	NAVD88			M 250 (AD1218)	1.210	242.0	-0.0007
1				6.410 5.170 3.925	5.168	3.704	248.5	-0.0003	3.704		1.243	248.5	-0.0002
	5.755 4.520 3.290	4.522	8.226				246.5				1.233	246.5	-0.0002
2				5.680 4.520 3.355	4.518	3.708	232.5	-0.0003	3.7085		1.163	232.5	-0.0002
	8.405 7.175 5.955	7.178	10.886				245.0				1.225	245.0	-0.0007
3				4.965 3.723 2.490	3.726	7.160	247.5	-0.0003	7.1608		1.238	247.5	-0.0005
	4.395 3.135 1.878	3.136	10.296				251.7				1.259	251.7	-0.0001
4				5.170 3.950 2.735	3.952	6.344	243.5	-0.0003	6.3451		1.218	243.5	-0.0002
	4.510 3.285 2.065	3.287	9.631				244.5				1.223	244.5	-0.0002
5				5.168 3.950 2.740	3.953	5.678	242.8	-0.0003	5.6793		1.214	242.8	-0.0004
	5.450 4.220 3.000	4.223	9.901				245.0				1.225	245.0	-0.0007
6				5.945 4.725 3.510	4.727	5.174	243.5	-0.0003	5.1756		1.218	243.5	-0.0002
	4.860 3.640 2.418	3.639	8.813				244.2				1.221	244.2	0.0000
7				3.465 2.230 1.005	2.233	6.580	246.0	-0.0003	6.5819		1.230	246.0	-0.0007
	4.700 3.460 2.220	3.460	10.040				248.0				1.240	248.0	0.0000
8				3.850 2.635 1.425	2.637	7.403	242.5	-0.0003	7.4051		1.213	242.5	-0.0002
	6.555 5.325 4.100	5.327	12.730				245.5				1.228	245.5	-0.0002

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	4.720 3.430	4.720	11.753				258.0				1.290	258.0	0.0000
18				6.090 4.840 3.600	4.843	6.910	249.0	-0.0003	6.9148		1.245	249.0	-0.0007
	6.350 5.110 3.860	5.107	12.017				249.0				1.245	249.0	-0.0007
19				6.740 5.510 4.280	5.510	6.507	246.0	-0.0003	6.5120		1.230	246.0	0.0000
	6.455 5.185 3.910	5.183	11.690				254.5				1.273	254.5	-0.0002
20				6.370 5.185 3.990	5.182	6.508	238.0	-0.0003	6.5133		1.190	238.0	-0.0007
	6.185 4.950 3.710	4.948	11.456				247.5				1.238	247.5	-0.0002
21				6.470 5.270 4.060	5.267	6.189	241.0	-0.0003	6.1945		1.205	241.0	-0.0007
	6.400 5.190 3.980	5.190	11.379				242.0				1.210	242.0	0.0000
22				6.240 5.035 3.830	5.035	6.344	241.0	-0.0003	6.3498		1.205	241.0	0.0000
	6.475 5.280 4.090	5.282	11.626				238.5				1.193	238.5	-0.0002
23				6.220 5.060 3.900	5.060	6.566	232.0	-0.0003	6.5721		1.160	232.0	0.0000
	6.225 5.020 3.810	5.018	11.584				241.5				1.208	241.5	-0.0002
24				6.510 5.300 4.090	5.300	6.284	242.0	-0.0003	6.2903		1.210	242.0	0.0000
	6.280 5.060 3.845	5.062	11.346				243.5				1.218	243.5	-0.0002
25				5.635 4.680 3.730	4.682	6.664	190.5	-0.0002	6.6706		0.953	190.5	-0.0002
	6.050 4.890 3.735	4.892	11.556				231.5				1.158	231.5	-0.0002
26				6.310 5.130	5.128	6.428	236.5	-0.0003	6.4348		1.183	236.5	-0.0002

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	6.225 5.040 3.855	5.040	11.468	3.945			237.0				1.185	237.0	0.0000
27				5.965 4.770 3.570	4.768	6.700	239.5	-0.0003	6.7071		1.198	239.5	-0.0002
	6.505 5.340 4.175	5.340	12.040				233.0				1.165	233.0	0.0000
28				6.270 5.075 3.870	5.072	6.968	240.0	-0.0003	6.9753		1.200	240.0	-0.0007
	6.265 5.050 3.830	5.048	12.016				243.5				1.218	243.5	-0.0002
29				6.200 5.000 3.795	4.998	7.018	240.5	-0.0003	7.0256		1.203	240.5	-0.0002
	6.050 4.815 3.570	4.812	11.830				248.0				1.240	248.0	-0.0007
30				5.970 4.785 3.595	4.783	7.047	237.5	-0.0003	7.0549		1.188	237.5	-0.0002
	6.110 4.900 3.700	4.903	11.950				241.0				1.205	241.0	-0.0007
31				6.465 5.280 4.095	5.280	6.670	237.0	-0.0003	6.6781		1.185	237.0	0.0000
	6.200 5.000 3.790	4.997	11.667				241.0				1.205	241.0	-0.0007
32				6.850 5.645 4.445	5.647	6.020	240.5	-0.0003	6.0284		1.203	240.5	-0.0002
	7.010 5.725 4.440	5.725	11.745				257.0				1.285	257.0	0.0000
33				6.490 5.250 4.010	5.250	6.495	248.0	-0.0003	6.5036		1.240	248.0	0.0000
	6.220 4.975 3.730	4.975	11.470				249.0				1.245	249.0	0.0000
34				5.950 4.695 3.440	4.695	6.775	251.0	-0.0003	6.7839		1.255	251.0	0.0000
	6.390 5.130 3.860	5.127	11.902				253.0				1.265	253.0	-0.0007

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	4.685 3.470	4.685	10.946				243.0				1.215	243.0	0.0000
44				5.800 4.605 3.410	4.605	6.341	239.0	-0.0003	6.3526		1.195	239.0	0.0000
	5.740 4.455 3.170	4.455	10.796				257.0				1.285	257.0	0.0000
45				5.815 4.585 3.350	4.583	6.213	246.5	-0.0003	6.2248		1.233	246.5	-0.0002
	5.580 4.430 3.275	4.428	10.641				230.5				1.153	230.5	-0.0002
46				5.675 4.520 3.365	4.520	6.121	231.0	-0.0002	6.1331		1.155	231.0	0.0000
	6.050 5.320 4.590	5.320	11.441				146.0				0.730	146.0	0.0000
47				4.080 3.370 2.665	3.372	8.069	141.5	-0.0002	8.0812		0.708	141.5	-0.0003
	5.940 4.770 3.610	4.773	12.842				233.0				1.165	233.0	-0.0007
48				6.185 4.990 3.790	4.988	7.854	239.5	-0.0003	7.8665	INJ BM 02	1.198	239.5	-0.0002
	6.230 4.985 3.745	4.987	12.841				248.5				1.243	248.5	-0.0002
49				6.010 4.840 3.670	4.840	8.001	234.0	-0.0003	8.0138		1.170	234.0	0.0000
	4.340 3.705 3.070	3.705	11.706				127.0				0.635	127.0	0.0000
50				5.985 5.110 4.240	5.112	6.594	174.5	-0.0002	6.6069		0.873	174.5	-0.0002
	5.300 4.040 2.775	4.038	10.632				252.5				1.263	252.5	-0.0002
51				5.605 4.355 3.110	4.357	6.275	249.5	-0.0003	6.2882		1.248	249.5	-0.0002
	6.440 5.190 3.940	5.190	11.465				250.0				1.250	250.0	0.0000
52				6.490 5.270	5.270	6.195	244.0	-0.0003	6.2085		1.220	244.0	0.0000

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	5.950 4.685 3.410	4.682	10.877	4.050			254.0				1.270	254.0	-0.0007
53				6.315 5.110 3.910	5.112	5.765	240.5	-0.0003	5.7787		1.203	240.5	-0.0002
	5.560 4.350 3.140	4.350	10.115				242.0				1.210	242.0	0.0000
54				6.025 4.820 3.610	4.818	5.297	241.5	-0.0003	5.3110		1.208	241.5	-0.0002
	6.150 4.885 3.610	4.882	10.179				254.0				1.270	254.0	-0.0007
55				5.995 5.100 4.200	5.098	5.081	179.5	-0.0002	5.0952		0.898	179.5	-0.0002
	7.340 6.025 4.700	6.022	11.103				264.0				1.320	264.0	-0.0006
56				5.505 4.105 2.710	4.107	6.996	279.5	-0.0003	7.0105		1.398	279.5	-0.0001
	5.870 4.570 3.270	4.570	11.566				260.0				1.300	260.0	0.0000
57				6.070 4.850 3.630	4.850	6.716	244.0	-0.0003	6.7308		1.220	244.0	0.0000
	6.225 4.840 3.455	4.840	11.556				277.0				1.385	277.0	0.0000
58				7.435 6.055 4.680	6.057	5.499	275.5	-0.0003	5.5141		1.378	275.5	-0.0002
	5.835 4.580 3.325	4.580	10.079				251.0				1.255	251.0	0.0000
59				6.735 5.530 4.330	5.532	4.547	240.5	-0.0003	4.5623		1.203	240.5	-0.0002
	6.265 5.040 3.810	5.038	9.585				245.5				1.228	245.5	-0.0002
60				6.545 5.335 4.120	5.333	4.252	242.5	-0.0003	4.2676		1.213	242.5	-0.0002
	6.110 4.875 3.640	4.875	9.127				247.0				1.235	247.0	0.0000

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
	5.195 3.940	5.195	10.474				251.0				1.255	251.0	0.0000
70				6.360 5.125 3.890	5.125	5.349	247.0	-0.0003	5.3672		1.235	247.0	0.0000
	7.430 6.180 4.935	6.182	11.531				249.5				1.248	249.5	-0.0002
71				6.230 4.970 3.710	4.970	6.561	252.0	-0.0003	6.5795		1.260	252.0	0.0000
	6.525 5.220 3.915	5.220	11.781				261.0				1.305	261.0	0.0000
72				6.795 5.385 3.980	5.387	6.394	281.5	-0.0003	6.4128		1.408	281.5	-0.0001
	6.570 5.320 4.070	5.320	11.714				250.0				1.250	250.0	0.0000
73				6.550 5.275 4.000	5.275	6.439	255.0	-0.0003	6.4581		1.275	255.0	0.0000
	6.480 5.220 3.950	5.217	11.656				253.0				1.265	253.0	-0.0007
74				6.615 5.350 4.085	5.350	6.306	253.0	-0.0003	6.3254		1.265	253.0	0.0000
	6.735 5.490 4.250	5.492	11.798				248.5				1.243	248.5	-0.0002
75				6.625 5.360 4.095	5.360	6.438	253.0	-0.0003	6.4576		1.265	253.0	0.0000
	6.565 5.305 4.045	5.305	11.743				252.0				1.260	252.0	0.0000
76				6.680 5.365 4.055	5.367	6.376	262.5	-0.0003	6.3959		1.313	262.5	-0.0002
	6.605 5.335 4.065	5.335	11.711				254.0				1.270	254.0	0.0000
77				6.520 5.300 4.085	5.302	6.409	243.5	-0.0003	6.4292		1.218	243.5	-0.0002
	6.815 5.565 4.325	5.568	11.977				249.0				1.245	249.0	-0.0007
78				6.880 5.645	5.645	6.332	247.0	-0.0003	6.3525		1.235	247.0	0.0000

sta	three wire +	mean	hi	three wire -	mean	elevation	distance	ADJ BY DIST	adjust elevation	description	std dev	stdev *2*100	variance
78				6.745 5.495 4.250	5.497	9.219	249.5	-0.0003	9.2419		1.248	249.5	-0.0002
	5.945 4.725 3.510	4.727	13.946				243.5				1.218	243.5	-0.0002
79				5.385 4.170 2.960	4.172	9.774	242.5	-0.0003	9.7972		1.213	242.5	-0.0002
	6.090 4.860 3.650	4.867	14.641				248.5				1.243	248.5	-0.0002
75				6.375 5.150 3.930	5.152	9.489	253.0	-0.0003	9.5125		1.265	253.0	0.0000
	6.750 5.530 4.310	5.530	15.019				252.0				1.260	252.0	0.0000
76				7.125 5.905 4.690	5.907	9.112	262.5	-0.0003	9.1357		1.313	262.5	-0.0002
	7.545 6.130 4.720	6.132	15.244				254.0				1.270	254.0	0.0000
77				9.680 8.310 6.940	8.310	6.934	243.5	-0.0003	6.9100	B 527	1.218	243.5	-0.0002
							44,320.5					44,320.5	0.00
							8.394						in feet
							0.145						in miles
							-0.024						allowable error
							0.169						field error
													WITHIN MTS

sq. rt. Of dist. In miles x 0.05' :