SURVEYOR'S REPORT

INTRODUCTION

Weidener Surveying & Mapping, P.A. (WSM), LB4207, operating under the authority of the **South Florida Water Management District (the "District")** as a consultant to the District by Purchase Order No. PC P501325 was tasked with the execution of this Specific Purpose Survey in support of the S-332C and Rutzke wells**.** The purpose of this survey was to provide elevations at monitoring wells and two Class "C" benchmarks at the S-332C Pump Station site and at the S-332C tail-water location site. **THIS IS NOT A BOUNDARY SURVEY**. This report was revised on 2 May 2005.

PROJECT LOCATION

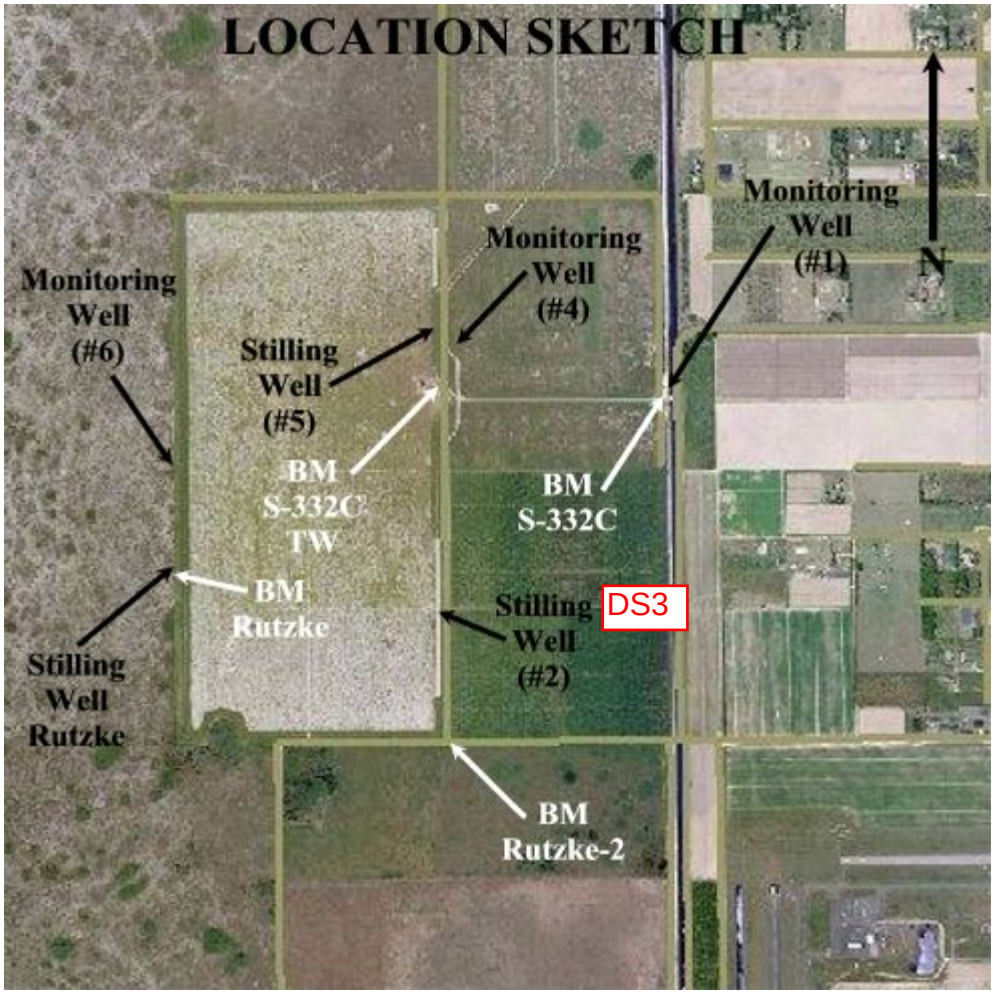
The project area is located in Section 31 of Township 56 South, Range 33 East, in south Miami-Dade County, Florida. The project site may be accessed by going west on a gravel road from the L-31N Canal access road (west side) at the S-332C Pump Station.

PROJECT APPROACH & EXECUTION

WSM received Notice to Proceed on 21 March 2005 from the District and began work on the project, on 7 April 2005. After some site reconnaissance, WSM recovered sufficient vertical control points adjacent to the existing L-31N Borrow Canal near the S-332C Pump Station. All control meets or exceeds the National Geodetic Survey (NGS) standards for Third Order accuracy and procedural methodology and complies with engineering manuals as specified in the Statement of Work issued by the District for this project.

WSM set two (2) benchmarks at the project site. The first one was at the S-332C Pump Station site and the other at the S-332C tail-water site. Benchmarks were set in existing concrete structures and were topped with South Florida Water Management

District 3-1/2” Brass Caps. Elevations at the benchmark were determined by a level run in a closed loop through these points. All field work was completed on 12 April 2005.



HORIZONTAL and VERTICAL CONTROL

Horizontal control is based on the State Plane Coordinate System, Florida East Zone, North American Datum of 1983. Handheld GPS coordinates readings were taken by WSM.

Vertical control is based on the North American Vertical Datum of 1988. All vertical control used was First Order, Class II or better. The offset to convert NAVD 88 elevations to NGVD 29 is 1.58’ based upon the offset at the National Geodetic Survey’s (NGS’s) “FCE4515” (PID AJ8390) monument published NAVD 88 elevation of 2.903m and the NGS adjustment of the Comprehensive Everglades Restoration Project (CERP) Elevation of 3.3852m (NGS file NGVD29.txt). A closed level run was executed from the NGS “F504” (PID AJ8389) monument to the NGS “FCE4515” (PID AJ8390) monument running through the set benchmarks “S-332C”, “S-332C TW”, and existing benchmarks

Rutzke, and Rutzke-2, closing to within .03 feet times the square root of the distance in miles (actual closure value was 1':825,272'), using NGS Third Order standards of closure and as specified in the Statement of Work. The values have been computed in both the NAVD 88 and NGVD 29 datums. Benchmark "S-332C" is a 3 ½" SFWMD Brass Disc stamped "S-332C" and is set at the northwest corner of at the concrete slab for the S-332C pump house fuel tanks. Benchmark "S-332C TW" is a 3 ½" SFWMD Brass Disc set in the northeast corner of a concrete headwall for the tail-water control valves for S-332C. Benchmark "Rutzke" is a found SFWMD benchmark in bedrock stamped "RUTZKE" that is 8.2 feet south of a well painted "Rutzke" and 150'+/- west of a levee. Benchmark "Rutzke-2" is a found US Army Corps of Engineers 3 ½" Brass Disc in asphalt pavement stamped "RUTZKE-2" and is 4' west of the east edge of pavement and 3' north of the south edge of pavement.

ISSUES AND PROBLEMS

There were no issues or problems for this project.

BENCHMARK ELEVATIONS

Designation	Latitude	Longitude	Northing[1] (Y)	Easting[1] (X)	BM Elev 88[2]	BM Elev 29[3]
S-332C	25 º 30' 55.5"	80 º 33' 37.0"	429,812	801,182	10.23'	11.74'
S-332C TW	25 º 30' 54.8"	80 º 33' 59.5"	429,734	799,121	11.79'	13.30'
RUTZKE	25 º 30' 46.5"	80 º 34' 29.4"	428,887	796,384	4.79'	6.36'
RUTZKE-2	25 º 30' 21.5"	80 º 33' 59.9"	426,372	799,095	5.25'	6.80'

[1] State Plane Coordinate System, Florida East Zone, North American Datum of 1983. At Benchmark – Using handheld GPS.
[2] North American Vertical Datum of 1988 (NAVD 88).
[3] National Geodetic Vertical datum of 1929 (NGVD 29).

MONITORING & STILLING WELL LOCATIONS & ELEVATIONS

Monitoring Well	Northing[1] (Y)	Easting[1] (X)	Ground Elev 88[2]	Ground Elev 29[3]	Top of Casing Elev 88[2]	Top of Casing Elev 29[3]
1A (north)	429,963	801,227	9.0'	10.6	12.11'	13.62'
1B (south)	429,963	801,227	9.0'	10.6'	12.16'	13.67'
4	429,855	799,130	4.5'	6.0'	9.12'	8.95'
5	429,955	798,909	9.94' (conc)	11.45' (conc)	12.74'	14.25'
6A (north)	429,614	796,382	4.7'	6.2'	7.50'	9.00'
6B (south)	429,614	796,382	4.7'	6.2'	7.13'	8.63'
Stilling Well	**Northing (Y)** [1]	**Easting (X)** [1]	**Ground Elev 88**[2]	**Ground Elev 29**[3]	**Mark on Encoder 88**[2]	**Mark on Encoder 29**[3]
5	429,955	798,909	9.94'(conc)	11.45' (Conc)	11.79'	13.31'
Rutzke	428,908	796,357	4.9'	6.42'	8.00'	9.50'
2	428,380	798,915	4.4'	5.9'	Inaccessible	Inaccessible

DS3

[1] State Plane Coordinate System, Florida East Zone, North American Datum of 1983. At Benchmark – Using handheld GPS.
[2] North American Vertical Datum of 1988 (NAVD 88).

[3] National Geodetic Vertical datum of 1929 (NGVD 29).

QA/QC

The project's progress was closely monitored throughout the period of work.

PROJECT DELIVERABLES

As specified and in consideration of the project's Statement of Work issued, the following items were generated by WSM as deliverables (in hardcopy and digital format on CD-ROM) to the District: (1) This Surveyor's Report (in PDF also); (2) Computation file with vertical extracts; (3) Copy of Field Book in digital form (in PDF); (4) Benchmark Form (in PDF also); (5) Metadata file using Corpsmet95.

CERTIFICATION

(1) This survey meets all applicable requirements of the Florida Minimum Technical Standards as contained in Chapter 61G17-6 FAC. (2) This report is not valid without the signature and the original raised seal of the Florida Surveyor and Mapper in responsible charge. (3) Additions or deletions to this data by anyone other than the signing party are prohibited without written consent of the signing party.

Surveyor and Mapper in Responsible Charge:
Jorge Fernandez, II
Florida Professional Land Surveyor
License No. 5103

For the Firm of:
Weidener Surveying & Mapping, P.A. (LB 4207)
10418 NW 31 Terrace
Miami, Florida 33172

Signed:_____ SEAL

Date:_____

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Monitoring Wells 1A and 1B

S-332C DS3

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Stilling Well 2 (not accessible)

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Monitoring Well 4

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Monitoring Well 4A

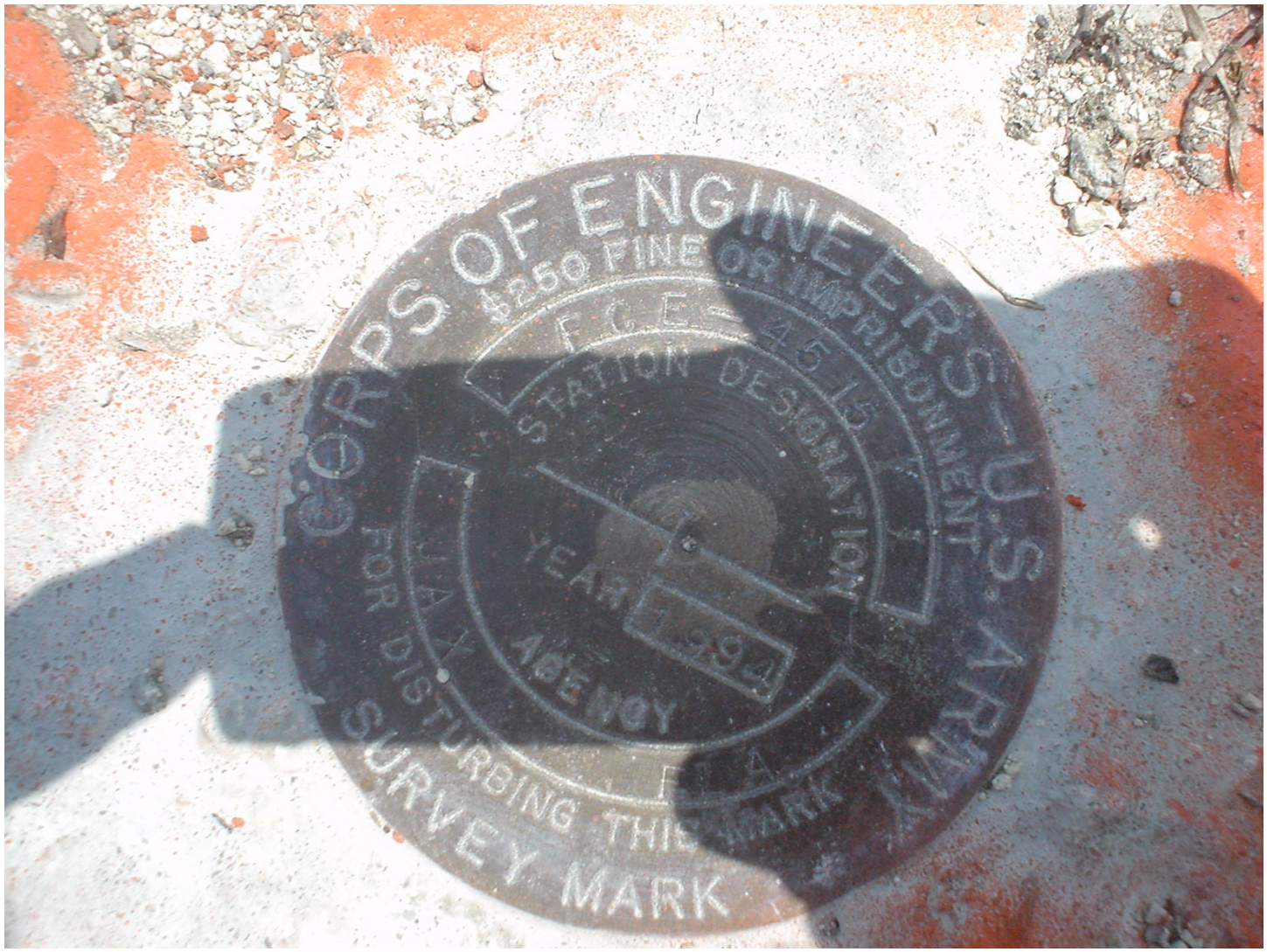
S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Stilling Well 5

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark “F 504”

S-332C



Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark "FCE 4515"

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Site Benchmark "S-332C"

S-332C

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Site Benchmark "S-332C TW"

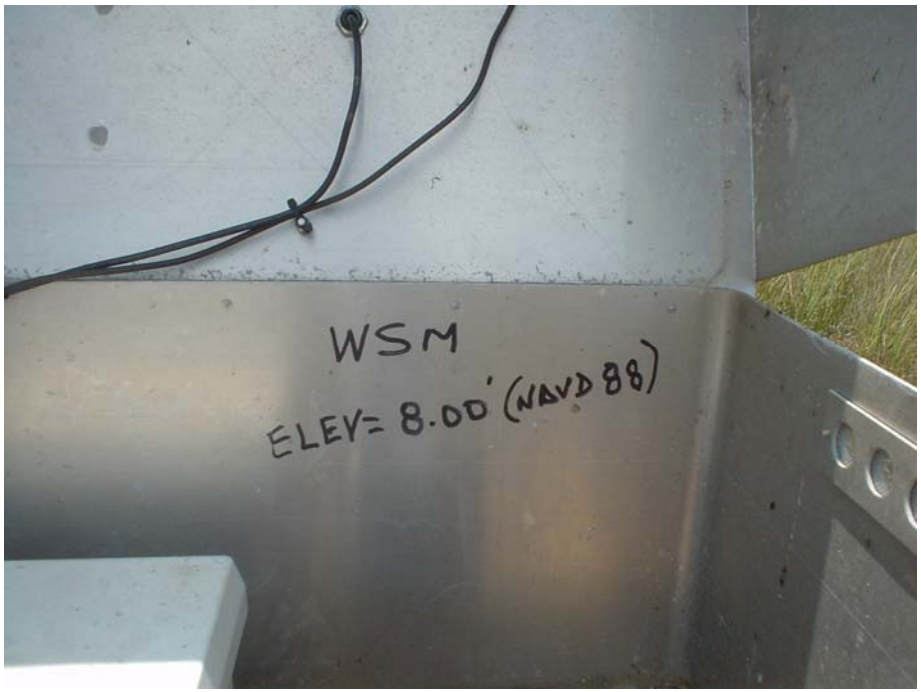
Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Monitoring Well 6A (north)

Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Monitoring Well 6B (south)

Rutzke Wells



Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Rutzke Stilling Well

Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark “F 504”

Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark "FCE 4515"

Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark "Rutzke"

Rutzke Wells

Weidener Surveying & Mapping, P.A.
Date of Photo: April 26, 2005
View: Existing Benchmark “Rutzke-2”

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J Gu[illegible]
G P[illegible]

4-7-05

85° Sun/Clouds

M 540 37

"SFWMD"
L 31 - "S332C Pump Station", "S332C Tail Water Site" - 1820A

Peg Test

A: 5.27 B: 4.531
C: 5.111 D: 4.376

"PEG TEST OK"

Note: Calculations referenced "NAVD88"

(IN RED) NGVD 29

Segment 1820A-

STA	BS(+)	ΔV	HI	FS(-)	ΔV	Elev.	Remarks:
TP1						9.112 (10.709)	BM F504, brass disc in concrete, USGS, on west side of Coral Road on L 31, 3.5' from mile marker 11 sign post. Good condition. TP1 is 60D nail set in east shoulder of levee road
TP2						9.684	60 D nail set in east shoulder of levee road
TP3						9.421	60D nail set in east shoulder levee road
TP4						9.677	" " " " " " " "
FCE 4515						9.524 ✓ (11.023)	BM FCE 4515 brass disc in concrete, US Army, on east shoulder of levee road @ channel iron, appx. 1/3 mi. N of pumping sta S332C. Check elevation, +.004 Good condition

Segment 1820B-

STA	BS(+)	HI	FS(-)	Elev.	Remarks
BM1-FCE4515				9.52	-
TP1				9.347	60 D nail set on east shoulder of levee road
TP2				4.749	60D nail set on east shoulder of levee road
TP3				9.582	60 D nail set on east shoulder of levee road
TP4				9.609	60D nail set on east shoulder of levee road +/-18' N of last road reflector N of Pump Sta S332C.

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G Ferrer

85° Sun/Clouds

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"SFWMD"
L 31 - "S332C Pump Station" "S332C"
TAIL WATER SITE ELEVATIONS
1820-Segment B

STA	BS(+)	HI	FS(-)	ELEV	
TP5				9.037	60D NAIL SET IN EAST SHOULDER OF LEVEE ROAD, +/- ' NORTH OF PUMP STATION CHAIN LINK FENCE.
TP6 (BM#5)				10.233 (11 742)	S.FLORIDA WATER MANAGEMENT DISTRICT BRASS DISK "S332C" SET IN NW CORNER OF CONCRETE SLAB @ PUMP HOUSE FUEL TANKS.
TP7				15.576	60D NAIL SET IN ℄ OF ROCK ROAD LEADING FROM PUMP HOUSE TO TAIL WATER SITE, +/- 300 FROM INTERSECTION W/LEVEE RD.
TP8				13.798	60D NAIL SET IN ℄ ROCK ROAD LEADING FROM PUMP HOUSE TO T/W SITE
TP9				13.897	" " " " " " " " " " " " " " " "
TP10				15.637	" " " " " " " " " " " " " " " "
TP11 (BM#4)				11.786 (13 300)	S.FLORIDA WATER MANAGEMENT DISTRICT BRASS DISK "S332C TW" SET IN CONCRETE HEAD WALL FOR TAIL WATER CONTROL VALVES. DISK SET @ NE CORNER OF WALL.
TP12				10.389	60D NAIL SET IN ℄ OF LEVEE ROAD LEADING NORTH FROM T/W SITE, +/- 100 N. OF WELL
TP13				10.202	60D NAIL SET IN WEST SHOULDER OF LEVEE ROAD LEADING FROM T/W SITE NORTH.
TP14				8.074	PK SET IN WEST TOP OF CONCRETE SPILLWAY +/- 50' FROM S END OF SPILLWAY

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1820 B[illegible]

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"SFWMD"
L31-S332C PUMP STATION, S332C TAIL WATER SITE ELEVATIONS

ELEVS. REFERENCED TO NAD88.

STA	BS(+)	HI	FS(-)	ELEV	
TP15				8.034	PK IN WEST TOP OF SPILLWAY, +/-70' SOUTH OF NORTH END OF SPILLWAY
TP16				10.589	60D NAIL SET IN ℄ TOP OF DIKE, +/-200 WEST OF FORK IN DIKE.
TP17				10.238	60D NAIL SET IN ℄ TOP OF WEST RUNNING DIKE.
TP18				10.594	" " " " " " " " " "
TP19				10.522	" " " " " " " " " "
TP20				10.321	" " " " " " " " " "
TP21				10.416	" " " " " " " " " ", +/-256' EAST DIKE CORNER
TP22				10.590	60D NAIL SET IN ℄ TOP OF SOUTH RUNNING DIKE, +/-200' SOUTH OF DIKE CORNER.
TP23				10.679	60D NAIL SET IN ℄ TOP OF WESTERN SOUTH RUNNING DIKE
TP24				11.044	" " " " " " " " " " "
TP25				10.580	" " " " " " " " " " "
TP26				10.773	" " " " " " " " " " " +/-100' SOUTH OF WELLS
TP27				10.895	" " " " " " " " " " " "
TP28				10.121	60D NAIL IN ℄ TOP OF WESTERN SOUTH RUNNING DIKE

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S332C Pump Station; Tail Water Sites

Elevations

1820B-

STA	BS	HI	FS	ELEV	
BM2-RUTZKE				4.792 (NAVD88) ✓ (6 298)	KUHL CAP IN BEDROCK, SFWMD BENCH MARK "RUTZKE" FOUND 8.2' S OF WELL PAINTED "RUTZKE," +/-150 WEST OF ℄ DIKE, PRELIMINARY CHECK. GOOD CONDITION.
TP29				10.601	60D NAIL SET IN ℄ TOP OF WESTERN SOUTH RUNNING DIKE
TP30				10.[illegible]	60 D NAIL SET IN ℄ TOP OF WESTERN SOUTH RUNNING DIKE
TP31				10.359	60D NAIL SET IN ℄ TOP OF WESTERN SOUTH RUNNING DIKE
TP32				10.580	" " " " " " " " " "
TP33				10.[illegible]44	60 D NAIL SET IN ℄ OF SAID DIKE +/-500' N OF DIKE CORNER
TP34				10.392	60D NAIL SET IN ℄ TOP OF DIKE @ MIDDLE OF CURVE RUNNING NE/SW, +/-500' EAST ALONG TOP OF DIKE FROM SW CORNER OF DIKE.
TP35				10.529	60D NAIL SET IN ℄ TOP OF SOUTH DIKE RUNNING EAST, +/-150' EAST OF 2ND DIKE CORNER.
TP36				10.558	60D NAIL SET IN ℄ TOP OF SOUTH DIKE RUNNING EAST
TP37				10.538	" " " " " " " " " "
TP38				10.671	" " " " " " " " " " " +/-500' WEST OF DIKE CORNER
TP39				10.442	60D NAIL SET @ DIKE CORNER RUNNING EAST-WEST/NORTH SOUTH
BM3				5.248 (NAVD88) (6 774)	BRASS DISK FOUND IN PAVEMENT, +/-8' WEST OF EAST EP, +/-3' N OF SOUTH EP MARKED "RUTZKE-2" ARMY CORPS OF ENGINEERS, GOOD CONDITION

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1820 B-

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SFWMD

S332C Pump Station, S332C Tail Water Site, Elevations

[illegible] M570-41

STA	BS	HI	FS	ELEV	
TP40				10.957	60D nail set in ℄ top of dike running N/S. +/-50' S of con spillway
TP41				8.579	PK set in east top of concrete spillway near midpoint of said spillway.
TP42				8.664	PK set in east top of concrete spillway +/-500' south of north end of said spillway.
TP43				8.687	PK set in east top of concrete spillway +/-100' south of north end of said spillway
TP44				10.431	60D nail set in ℄ top of dike running north, +/-225' north of end of spillway
TP45				10.682	60D nail set in ℄ top of dike running north
TP46				10.696	60D nail set in ℄ top of dike running north at bend NE around S332C tail water site. +/-200' south of BM S332C TW.
BM4-S332C TW				~~10~~ 11.828	Tie back to S332C TW to check level loop, +0.042'
TP47				13.780	60D nail set in north shoulder of levee road running from pump station to tail water site
TP48				13.974	
TP49				13.979	
TP50				13.710	, +/-250' west of int pump station road
BM5-S332C				10.275	Tie back to S332C, +0.042'
TP51				9.323	60D nail set in east shoulder of levee road.
TP52				10.124	" " " " " " " "

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SFWMD
S332C Pump Station & Tailwater
Site Elevations

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STA	BS	HI	FS	ELEV	
TP53				9.626	60D NAIL SET IN EAST SHOULDER L31 LEVEE ROAD
TP54				9.478	" " " " " " " " "
BM6-FCE4515				9.562 ✓	CLOSING POINT, +0.042

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11-12-05

85[?] Survey

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FIELD SUPERVISOR JGW ON SITE

SFWMD

S332C Pump STA : TAIL WA...

STILLS - ELEVATIONS

1820 -

STA	BS	Mean	HI	FS	Mean	Elevation	BM Elev	"Descriptions"
BM# 4	5.508 4.772 4.035	(4.772)	16.558 (18.072)				11.786 (13.300)	SEE PAGE# 38
WELL 4				~~2.80~~ 9.121			(8.95)	- TOP OF CASING, 6" PVC
Well 4-Conc				11.732			- (6.34)	- TAKEN ON TOP OF CONCRETE ~~CASING~~ BASE FOR WELL
GROUND				12.035			- (5.99)	- GROUND NEXT TO WELL
WELL 5				4.767	4.767	11.791	(13.31)	ON TOP OF THE BASE INSIDE THE STILLING WELL ON ☒ BLACK MARKER MARK 72" CMP
CATWALK				7.832	7.832	8.726	(10.24)	- WELL 5 - SHOT TAKEN ON WOODEN CAT WALK
Well 5A				3.751	3.751	12.807	(14.32)	- TAKEN ON METAL PIECE CENTER OF PVC - 14" PVC
Well 5A				3.823	3.823	12.735	(14.25)	- ON TOP OF PVC EDGE (INSIDE WELL)
CONC				6.621	6.621	9.937	(11.45)	- ON ~~GROUND~~ CONCRETE .5' EAST OF [illegible] (BASE SQUARE CONC. SLAB, FOR WELL)
TP12				7.278 6.158 5.045	6.160	10.398 (11.904)		SEE PAGE #38

	LAT	LONG
WELL 4	25° 30' 56.0"	80° 33' 54.4"
WELL 5	25° 30' 57"	80° 34' 01.8"
WELL 5A	25° 30' 57.1"	80° 34' 01.4"

NOTE
ALL GPS READING @ CENTER OF

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M570-45

FIELD SUPERVISOR JGM ON SITE
S F W M D
S 352C PUMP STA & TAIL WATER
SITES - ELEVATIONS

STA	BS	MEAN	HI	FS	MEAN	ELEV	BM ELEV	DESC.
TP26	6.264						10.773	SEE PAGE #39
	5.038	5.038	15.811				(12 $\frac{275}{}$)	
	3.812		(17 $\frac{313}{}$)					
WELL 6A(N)				8.311		7.500 (9 $\frac{00}{}$)		TOP OF CASING 6" PVC, SHOT @ BLACK MARKER MARK MADE
CONC				10.752		5.059 (6 $\frac{56}{}$)		TOP OF CONCRETE CASING
GROUND				11.152		4.659 (6 $\frac{16}{}$)		GROUND 2' EAST OF WELL
WELL 6B(S)				8.679		7.132 (8 $\frac{63}{}$)		SHOT @ BLACK MARKED MARK @ GROUND @ TOP OF 8" PVC CASING
CONC				10.708		5.103 (6 $\frac{61}{}$)		CONCRETE BASE OUT SIDE WELL
GROUND				11.157		4.654 (6 $\frac{16}{}$)		GROUND 2' EAST OF WELL
				5.650				
TP27				4.912	4.912	10.849 (12 $\frac{401}{}$)		SEE PAGE #39 (12 $\frac{399}{}$)
				4.167				

	LAT	LONG
WELL 6A	25°30' 53.7"	80° 34' 29.4"
WELL 6B	25° 30' 53.8"	80° 34' 29.4"

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FIELD SUPV. SGWM ON SITE

4-12-05

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5332C PUMP STN ! TAIL WATER SITE - ELEVS
1820

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M570-40

STA	SS	MEAN	HI	FS	MEAN	ELEV	BM. ELEV	DESC.
TP 28	5.735						10.121 (11 626)	SEE PAGE #40
	5.162	5.163	15.284					
	4.591							
RUTZKE WELL				7.287		7.997 (9 502)		- SHOT TAKEN @ BLACK MARKER MARK MADE ON TOP OF U JOHN IN BASE INSIDE STILLING WELL BOX, ELEV 9.575 ON TAG NEXT TO IT
GROUND				10.373		4.911 (6 92)		- GROUND TAKEN 2' EAST OF WELL
BM-2 RUTZKE				11.205				
				10.498	10.497	4.787 (6 79)		SEE PAGE #40
				9.788				

	LAT	LONG
RUTZKE	25°30'46.7"	80°34'29.7"

DS3 Well Site

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FIELD SUPV. JLM ON SITE

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S332C PUMP STA & TAIL WATER SITES - ELEVS

1820

4-12-05

SUNNY 85°

M570-47

STA	BS	MEAN	HI	FS	MEAN	ELEV	NGVD ELEV	DESC.
TP 43	6.495					8.687	(10 217)	-SEE PAGE #41
	5.248	5.249	13.936 (15 466)					
	4.004							
CATWALK				5.447		8.489	(10 019)	-CATWALK @ WELL #2, WEST END ON WOODEN TOP
GROUND				9.579		4.357	(5 887)	-GROUND @ WEST END OF WALK
STAFF GUGE				9.578		4.359	(5 888)	-BOTTOM OF STAFF GAUGE @ GROUND
STAFF GAUGE				3.905		10.031	(11 561)	-STAFF GUGE ON TOP OF NAIL
				4.768				
TP 44				3.518	3.517	10.419	(11 949)	-SEE PAGE #41
				2.265				

NOTE - STILLING WELL COULD NOT BE OPENED DUE TO COMBINATION LOCK.

	LAT	LONG
WELL #	25° 30' 41.4"	80° 34' 01.8"

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S T Hall
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FIELD SURV. JGM ON SITE — 4-12-05 — Sunny 85° — M570-48

SFWMD

5332C PUMP STA / TAIL WATER SITES - ELEVS

1820

STA	BS	MEAN	HI	FS	MEAN	ELEV	BM ELEV	DESC
BM-5	5.335						10.233 (11.742)	SEE PAGE # 38
	4.898	4.897	15.130	(16.639)				
	4.459							
H/W WELL #1B(S)				2.971		12.159 (13.67)		- SHOT ON TOP CASING, EDGE 10" PVC ON SQUARE BLACK MARKER MARK
H/W WELL#1A(N)				3.018		12.112 (13.62)		- SHOT ON TOP CASING, EDGE 10" PVC ON SQUARE BLACK MARKER MARK
CONC				5.602		9.528 (11.04)		- TOP OF CONCRETE BASE IN BETWEEN 2 WELLS
GROUND				6.084		9.071 (10.55)		-GROUND WEST OF CONC BASE
TP 5				6.918				
				6.092	6.094	9.036 (10.545)		SEE PAGE #38
				5.272				

	LAT	LONG
H/W WELL #1	25° 30' 57.0"	80° 33' 36.5"

ST Hall
T Blount
G Ferrer

4-12-05

FIELD SUPV. J&M ON SITE
SFWMD - S332C PUMP STA & TAILWATER

BM COORDINATES

-BM-	-LAT-	-LONG-
S332C	25°30' 55.5"	80° 33' 37.0"
RUTZKE 2	25°30' 21.5"	80°33' 59.9"
S332C TW	25°30' 54.8"	80°33' 59.5"
RUTZKE	25 30 40.5	80° 34' 29.9"

Survey 85

M570-19

- BRASS DISC, SOUTH FLORIDA WATER MANAGEMENT, SET ON CSL @ PUMP STATION

- BRASS DISC IN PAVEMENT, US ARMY CORPS ENGINEERS, "RUTZKE 2."

- BRASS DISK, SOUTH FLORIDA WATER MANAGEMENT, SET IN TOP NE CORNER OF TAIL WATER HEADWALL
- ALUM CAP IN BEDROCK SOUTH FLORIDA WATER MANAGEMENT SURVEY MARKER "RUTZKE"

South Florida Water Management District
Benchmark Database

Report run on: May 3, 2005 2:27 PM

Designation: RUTZKE
County: MIAMI-DADE
USGS Quad: GROSSMAN HAMMOCK
Project: RUTZKE WELL SITE

Sec: 31 Twp: 56 Rge: 33

Status: GOOD APR 2005

NAD 1927 Coordinates:
N =
E =
Adjustment:

NAD 1983 Coordinates:
X =
Y =
Adjustment:
Order:
Class:

Description:

Latitude: 253110.000 Scaled values only
Longitude: 803430.000
Monument By: SFWMD
Year: 2001
Type: V
Stamping: BM RUTZKE 2001
Party Chief: EBANKS
Field Book ESDA MISC 5
Page: 23

NGVD 1929
Elevation: 6.370
Order: 3
Class:

NAVD 1988
Elevation: 4.790
Order: 3
Class:

********** RECOVERY NOTE **********
4-11-2005 HULL, WEIDENER NAVD 88 PROJECT, FIEDL BOOK M570, PAGE 40
ALUMINUM CAP IN BEDROCK, SFWMD BENCHMKARK " RUTZKE, FOUND 8.2 FEET SOUTH OF THE WELL PAINTED "RUTZKE:, +/- 150 FEET WEST OF THE CENTERLINE OF THE DIKE, PRELIMINARY CHECK GOOD CONDITION EL. 4.792 NAVD 88 AND EL. 6.298 NGVD 1929 ADJUSTED EL. 4.79 NAVD 88 AND EL. 6.36 NGVD 1929
****

TO REACH: FROM UNITED STATES HIGHWAY 41 (US 41) AND KROME AVENUE (STATE ROAD 997) TAKE KROME AVENUE SOUTH TO SW 296TH STREET (AVOCADO). GO WEST ON SW 296TH STREET TO THE INTERSECTION WITH SW 217TH AVENUE. GO NORTH ON 217TH AVENUE TO THE NORTHEAST CORNER OF THE AIRPORT. GO WEST ON AN UNPAVED ROAD (PERIMETER OF THE AIRPORT) AROUND THE AIRPORT TO THE WEST SIDE OF THE AIRPORT AND A BRIDGE OVER SOUTH FLORIDA WATER MANAGEMENT DISTRICT'S (SFWMD'S) LEVEE 31 NORTH (L-31N) BORROW CANAL AT SW 288TH STREET. CONTINUE ACROSS THE BRIDGE (SW 288TH STREET) TO A PAVED ROAD. GO NORTH ON THE PAVED ROAD AND AFTER THE CURVE TO THE RIGHT ENTER THE FIRST GATE ON THE LEFT (RUTZKE GROVE # 4 GATE). FROM THE GATE GO NORTH 0.5 OF A MILE TO THE INTERSECTION OF A FARM FIELD ROAD. MAKE A LEFT (WEST) AND GO TO THE EAST BOUNDARY OF THE EVERGLADES NATIONAL PARK AND STATION LOCATION.

THE STATION IS LOCATED 8.2 FEET SOUTHEAST OF THE MONITORING WELL. STATION IS A SFWMD ALUMINUM CAP STAMPED "BM RUTZKE 2001" AND IS GROUTED INTO BEDROCK. MARK SET BY ELVIE EBANKS ON 9/21/2002

NOTABLE LANDMARKS: MONITORING WELL ON EAST BOUNDARY OF PARK.

South Florida Water Management District
Benchmark Database

Report run on: May 3, 2005 2:27 PM

Designation: RUTZKE2
County: MIAMI-DADE
USGS Quad: GROSSMAN HAMMOCK
Project:

Sec: 31 Twp: 56 Rge: 33

Status: GOOD APR 2005

NAD 1927 Coordinates:
N = 426192.793
E = 642860.408
Adjustment: PUBLISHED

NAD 1983 Coordinates:
X =
Y =
Adjustment:
Order: 3
Class:

Description:

Latitude:
Longitude:
Monument By: COE
Year: 1986
Type: H/V
Stamping:
Party Chief:
Field Book
Page:

NGVD 1929
Elevation: 6.830
Order: 3
Class:

NAVD 1988
Elevation: 5.250
Order: 3
Class:

Scaled values only

COE EL. 6.80 NGVD 1929
********** RECOVERY NOTE **********
4-11-2005 HULL, WEIDENER NAVD 88 PROJECT, FIEDL BOOK M570, PAGE 40
BRASS DISK FOUND IN PAVEMENT +/- 4 FEET WEST OF THE EAST EDGE OF PAVEMENT, +/- 3 FEET NORTH OF THE SOUTH EDGE OF PAVEMENT MARKED " RUTZKE 2" ARMY CORPS OF ENGINEERS, GOOD CONDITION
EL. 5.248 NAVD 88 AND EL. 6.774 NGVD 1929 ADJUSTED EL. 5.25 NAVD 88 AND EL. 6.80 NGVD 1929
****

THE CORPS OF ENGINEERS DATA SHEET
MONUMENT ID: DA RUTZKE 2

LOCALITY-PROJECT : HOMESTEAD, FLA. MONUMENT TYPE : DISK
LATITUDE : 0? 0' 0.00000" LONGITUDE : 0? 0' 0.00000"
X(E) : 642860.408 Y(N) : 426192.793
ZONE : FLE ELEVATION : 6.8000
HORIZONTAL DATUM : NAD-27 VERTICAL DATUM : NGVD-29
ORDER : THIRD LINEAR UNITS : FEET
STATE : FL DATE SET : 1986
MONUMENT SET BY : AME COUNTY : DADE

DATE ADDED : 881205 DATE CHANGED : 010731

RECOVERED BY :
COMPANY (1) (2)
PERSON (1) (2)
DATE (1) (2)
CONDITION (1) (2)

TO REACH FROM WEST SIDE OF HOMESTEAD GENERAL AIRPORT GO WEST FROM CANAL BRIDGE 8 MILES, THEN TURN NORTH FOR .5 MILES, THEN TURN EAST FOR. 4 MILES TO ROAD NORTH. SOUTHWEST 280TH STREET?WALDIN DRIVE TIES FOR MONUMENT "RUTZKE 2 USACOE BRONZE DISK IN 1-1/4 INCH BY 5 FEET I.P. AT THE SOUTHEAST CORNER OF RUTZKE 4 GROVE NEAR 31:31 T 56 N; R 33 E.

RM 1 CHISELED "X" IN BOTTOM GATE BOLT. 29.62
RM 2 P.K. IN NORTHEAST FACE FENCE POST. 33.75
RM 3 P.K. IN SOUTHWEST FACE FENCE POST. 40.70

Benchmark Form

SOUTH FLORIDA WATER MANAGEMENT DISTRICT Rev. 4/01

COUNTY Miami-Dade	**PROJECT** Rutzke	**DESIGNATION** S-332C
SECTION 31	**TOWNSHIP** 56 South	**RANGE** 33 East
GEOGRAPHIC INDEX OF QUAD		
Established by X **Recovered by**_____ **Weidener Surveying & Mapping, P.A.**	**NAME OF QUADRANGLE** **Hialeah SW**	
SURVEYOR Jorge Fernandez, II, PLS **DATE** 4/26/2005	**FIELD BOOK** M-540 **PAGE** 37-49	
HORIZONTAL DATUM: **1927** (**1983**) **Other** _____(circle one) ZONE (**E**) or **W**		
VERTICAL DATUM: MSL **1929** (**1988**) **Other** _____ (circle one)		
CONTROL ACCURACY: HORIZONTAL 1 2 (3) _____(circle one) **VERTICAL** 1 2 (3)		
STATE PLANE COORDINATES	**X** **429,812**	**Y** **801,182**	**EL.** **10.23' (88)** **11.74' (29)**
LATITUDE **25°30'55.5"**	LONGITUDE **80°33'37"**	

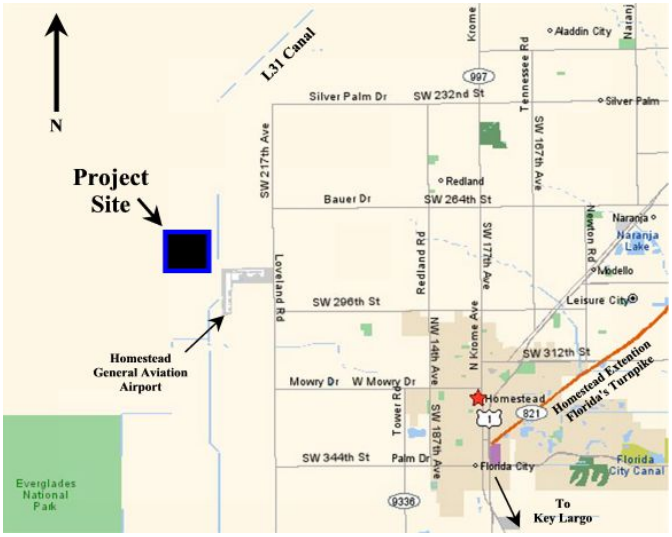
DESCRIPTION

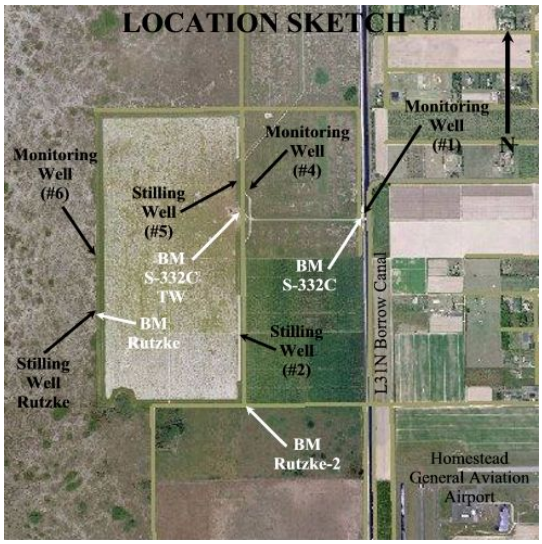
TO REACH: The project area is located in Section 31 of Township 56 South, Range 33 East, in in southern Miami-Dade County, Florida northwest of the Homestead General Aviation Airport at The S-332C Pump Station along the L-31N Borrow Canal. The disc is set at the northwest Corner of a concrete slab for the pump station's fuel tanks.

Mark is a SFWMD 3 1/2" brass disk stamped "S-332C".

Notable Land marks: South Florida Water Management District Pump Station S-332C

SKETCH






ELEVATION DESIGNATION
WATER MGT. DISTRICT
5332
YEAR 2005
DO NOT DISTURB
SURVEY MARKER

Benchmark Form

SOUTH FLORIDA WATER MANAGEMENT DISTRICT Rev. 4/01

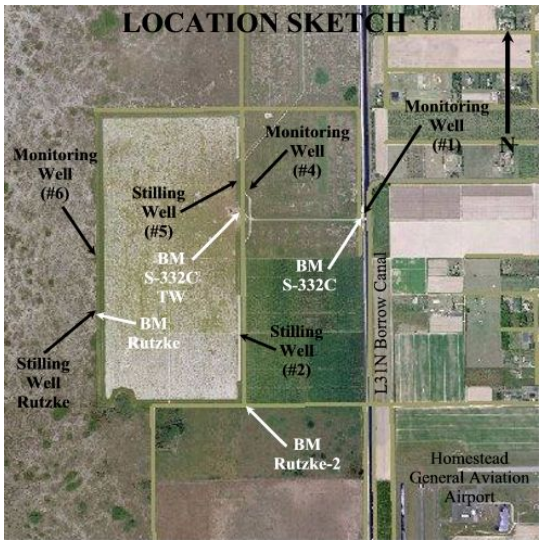
COUNTY Miami-Dade	**PROJECT** Rutzke	**DESIGNATION** S-332C TW
SECTION 31	**TOWNSHIP** 56 South	**RANGE** 33 East
GEOGRAPHIC INDEX OF QUAD		
Established by X **Recovered by**_____ **Weidener Surveying & Mapping, P.A.**	**NAME OF QUADRANGLE** **Hialeah SW**	
SURVEYOR Jorge Fernandez, II, PLS **DATE** 4/26/2005	**FIELD BOOK** M-540 **PAGE** 37-49	
HORIZONTAL DATUM: **1927** (**1983**) **Other** _____(circle one) ZONE (**E**) or **W**		
VERTICAL DATUM: MSL **1929** (**1988**) **Other** _____ (circle one)		
CONTROL ACCURACY: HORIZONTAL 1 2 (3) _____(circle one) **VERTICAL** 1 2 (3)		
STATE PLANE COORDINATES	**X** **429,734**	**Y** **799,121**
EL. 11.787 **(88)** **13.30' (29)**		
LATITUDE **25°30'54.8"**	LONGITUDE **80°33'59.5"**	

DESCRIPTION

TO REACH: The project area is located in Section 31 of Township 56 South, Range 33 East, in in southern Miami-Dade County, Florida northwest of the Homestead General Aviation Airport west of the S-332C Pump Station along the L-31N Borrow Canal at the tailwater headwall. The disc is set at the northwest . Corner of a concrete slab for the pump station's fuel tanks. Mark is a SFWMD 3 1/2" brass disk stamped "S-332C TW".

Notable Land marks: South Florida Water Management District Pump Station S-332C to the east

SKETCH



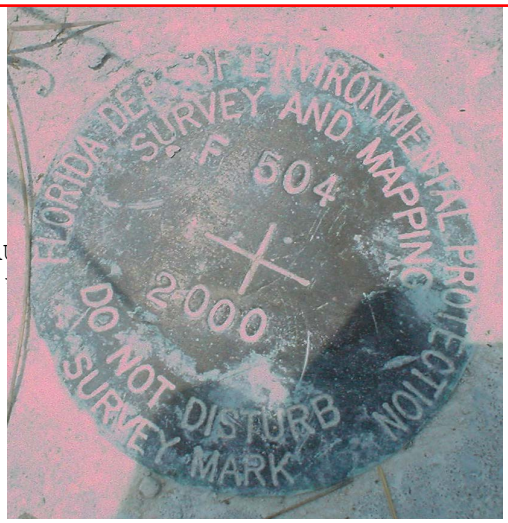
Benchmark Form

SOUTH FLORIDA WATER MANAGEMENT DISTRICT Rev. 4/01

From the "ngvd29.txt" file provided by NGS for the CERP Geodetic Vertical Control Project.
Line/Part: L26195 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID	SSN	PID	Designation	Geopotential	Elevation	Codes
833	0053	AJ8389	F 504	3.2248	3.2906	
834	0054	AJ8390	FCE 4515	3.3175	3.3852	

The NGS Data Sheet



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

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PROGRAM = datasheet95, VERSION = 8.8
1        National Geodetic Survey,   Retrieval Date = FEBRU
 AJ8389 ***********************************************
 AJ8389  DESIGNATION -  F 504
 AJ8389  PID         -  AJ8389
 AJ8389  STATE/COUNTY-  FL/MIAMI-DADE
 AJ8389  COUNTRY     -  US
 AJ8389  USGS QUAD   -  GROSSMAN HAMMOCK (1973)
 AJ8389
 AJ8389                         *CURRENT SURVEY CONTROL
 AJ8389  ______________________________________________________________________
 AJ8389* NAD 83(1986) POSITION- 25 31 35.     (N) 080 33 37.     (W)    SCALED
 AJ8389* NAVD 88 ORTHO HEIGHT -     2.809 (meters)        9.22   (feet) ADJUSTED
 AJ8389  ______________________________________________________________________
 AJ8389  GEOID HEIGHT    -        -24.620 (meters)                      GEOID12B
 AJ8389  DYNAMIC HEIGHT  -          2.804 (meters)        9.20   (feet) COMP
 AJ8389  MODELED GRAVITY -    978,990.5   (mgal)                        NAVD 88
 AJ8389
 AJ8389  VERT ORDER      -  FIRST     CLASS II
 AJ8389
 AJ8389.The horizontal coordinates were scaled from a topographic map and have
 AJ8389.an estimated accuracy of +/- 6 seconds.
 AJ8389.
 AJ8389.The orthometric height was determined by differential leveling and
 AJ8389.adjusted by the NATIONAL GEODETIC SURVEY
 AJ8389.in June 2002.
 AJ8389
 AJ8389.Significant digits in the geoid height do not necessarily reflect accuracy.
 AJ8389.GEOID12B height accuracy estimate available here.
 AJ8389
 AJ8389.The dynamic height is computed by dividing the NAVD 88
 AJ8389.geopotential number by the normal gravity value computed on the
 AJ8389.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AJ8389.degrees latitude (g = 980.6199 gals.).
 AJ8389
 AJ8389.The modeled gravity was interpolated from observed gravity values.
 AJ8389
 AJ8389;                     North         East     Units  Estimated Accuracy
 AJ8389;SPC FL E     -   132,220.      244,200.      MT   (+/- 180 meters Scaled)
 AJ8389
 AJ8389                            SUPERSEDED SURVEY CONTROL
 AJ8389
 AJ8389.No superseded survey control is available for this station.
 AJ8389
 AJ8389_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ441233(NAD 83)
 AJ8389
 AJ8389_MARKER: DD = SURVEY DISK
 AJ8389_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AJ8389_STAMPING: F 504 2000
 AJ8389_MARK LOGO: FLDEP
 AJ8389_MAGNETIC: B = BAR MAGNET IMBEDDED IN MONUMENT
```

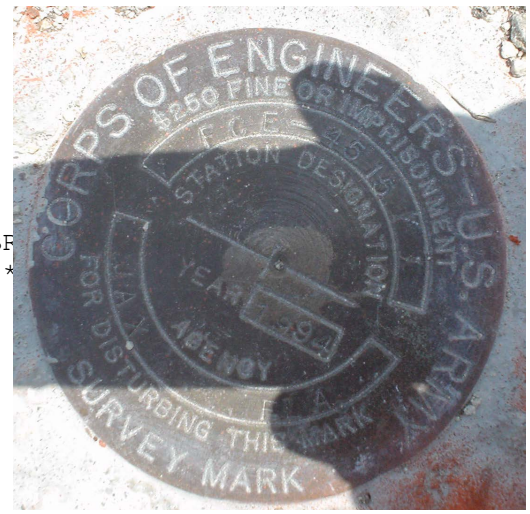
```
AJ8389_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AJ8389+STABILITY: SURFACE MOTION
AJ8389_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ8389+SATELLITE: SATELLITE OBSERVATIONS - 2000
AJ8389
AJ8389  HISTORY     - Date     Condition        Report By
AJ8389  HISTORY     - 2000     MONUMENTED       FLDEP
AJ8389
AJ8389                          STATION DESCRIPTION
AJ8389
AJ8389'DESCRIBED BY FL DEPT OF ENV PRO 2000 (JLM)
AJ8389'THE MARK IS ABOUT 5.0 MI (8.0 KM) NORTH OF HOMESTEAD, IN ESTIMATED
AJ8389'SECTION 30, TOWNSHIP 56 SOUTH, RANGE 38 EAST. TO REACH THE MARK FROM
AJ8389'THE JUNCTION OF STATE ROAD 997 (KROME AVENUE SW 177 AVENUE) AND U.S.
AJ8389'HIGHWAY 41 (TAMIAMI TRAIL SW 8TH ST) ABOUT 10.0 MI (16.1 KM) SOUTHWEST
AJ8389'OF HIALEAH, GO WEST ON U.S.  HIGHWAY 41 (TAMIAMI TRAIL SW 8TH ST) FOR
AJ8389'1.0 MI (1.6 KM) T0 THE WEST END OF BRIDGE NUMBER 8705851979 AND THE
AJ8389'JUNCTION OF A LEVEE ROAD (L-31N) ON THE WEST SIDE OF THE CANAL, TURN
AJ8389'LEFT ON LEVEE ROAD (L-31N) AND GO SOUTH FOR 8.6 MI (13.8 KM) TO THE
AJ8389'JUNCTION OF SW 136 ST, CONTINUE SOUTH ON THE WEST SIDE OF LEVEE ROAD
AJ8389'(L-31N) FOR 2.4 MI (3.9 KM) TO THE JUNCTION OF SW 168 ST (RICHMOND
AJ8389'DRIVE) , CONTINUE SOUTH ON THE WEST SIDE OF THE LEVEE ROAD (L-31N) FOR
AJ8389'6.9 MI (11.1 KM) TO MILE MARKER NUMBER 11 AND THE MARK ON THE RIGHT,
AJ8389'SET IN THE TOP OF A ROUND CONCRETE MONUMENT RECESSED 0.2 FT (6.1 CM)
AJ8389'BELOW THE LEVEL OF THE GROUND AND BELOW THE LEVEL OF THE LEVEE ROAD.
AJ8389'THE MARK CAN ALSO BE REACHED FROM THE INTERSECTION OF U.S.  HIGHWAY 1
AJ8389'(SOUTH DIXIE HIGHWAY) AND PALM DRIVE (STATE ROAD 9336, SOUTHWEST 344TH
AJ8389'STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE ROAD 9336,
AJ8389'SOUTHWEST 344TH STREET) FOR 1.7 MI (2.7 KM) TO THE JUNCTION OF
AJ8389'SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) TURN LEFT ON
AJ8389'SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) AND GO SOUTH FOR
AJ8389'2.1 MI (3.4 KM) TO THE JUNCTION OF SOUTHWEST 376TH STREET (STATE ROAD
AJ8389'9336, INGRAHAM HIGHWAY) ON THE RIGHT, TURN RIGHT ON SOUTHWEST 376TH
AJ8389'STREET (STATE ROAD 9336, INGRAHAM HIGHWAY) AND GO WEST FOR 4.95 MI
AJ8389'(7.97 KM) TO THE EAST END OF BRIDGE NUMBER 870081 1969 SPANNING CANAL
AJ8389'31, TURN RIGHT ON THE EAST SIDE OF LEVEE ROAD CANAL 31 AND GO NORTH
AJ8389'FOR 8.5 MI (13.7 KM) TO A PUMP HOUSE, TURN LEFT ON THE EAST SIDE OF
AJ8389'PUMP HOUSE AND GO NORTH FOR 0.1 MI (0.2 KM) TO A SET OF DOUBLE LOCKED
AJ8389'GATE, PASSING THROUGH THE GATES GO EAST THEN NORTH ON THE LEVEE ROAD
AJ8389'FOR 1.1 MI (1.8 KM) TO A LOCKED GATE AND THE INTERSECTION OF A PAVED
AJ8389'ROAD (AN OLD IRON BRIDGE SPANNING CANAL 31N) , CONTINUE NORTH ON THE
AJ8389'LEVEE ROAD FOR 0.1 MI (0.2 KM) TO A LOCKED GATE, CONTINUE NORTH ON THE
AJ8389'LEVEE ROAD FOR 2.0 MI (3.2 KM) TO MILE MARKER NUMBER 11 ON THE LEFT
AJ8389'AND THE MARK ON THE LEFT. LOCATED 29.5 FT (9.0 M) WEST OF THE
AJ8389'APPROXIMATE EDGE OF THE CANAL, 13.7 FT (4.2 M) WEST OF THE APPROXIMATE
AJ8389'CENTERLINE OF THE LEVEE ROAD, 4.2 FT (1.3 M) EAST OF MILE MARKER
AJ8389'NUMBER 11 AND 3.0 FT (0.9 M) EAST OF A CARSONITE WITNESS POST. NOTE A
AJ8389'BAR MAGNET WAS INBEDDED IN THE NORTH SIDE OF THE MONUMENT. NOTE FOR
AJ8389'KEY CONTACT SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT 2195 NORTHEAST
AJ8389'8TH STREET HOMESTEAD, FL 33033, PHONE 305-242-5955.

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

From the "ngvd29.txt" file provided by NGS for the CERP Geodetic Vertical Control Project.
Line/Part: L26195 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID	SSN	PID	Designation	Geopotential	Elevation	Codes
833	0053	AJ8389	F 504	3.2248	3.2906	
834	0054	AJ8390	FCE 4515	3.3175	3.3852	

The NGS Data Sheet



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

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PROGRAM = datasheet95, VERSION = 8.8
1         National Geodetic Survey,   Retrieval Date = FEBR
 AJ8390 ***********************************************
 AJ8390  DESIGNATION -  FCE 4515
 AJ8390  PID         -  AJ8390
 AJ8390  STATE/COUNTY-  FL/MIAMI-DADE
 AJ8390  COUNTRY     -  US
 AJ8390  USGS QUAD   -  GROSSMAN HAMMOCK (1973)
 AJ8390
 AJ8390                         *CURRENT SURVEY CONTROL
 AJ8390  ______________________________________________________________________
 AJ8390* NAD 83(1986) POSITION- 25 31 11.     (N) 080 33 37.     (W)    SCALED
 AJ8390* NAVD 88 ORTHO HEIGHT -     2.903 (meters)        9.52   (feet) ADJUSTED
 AJ8390  ______________________________________________________________________
 AJ8390  GEOID HEIGHT    -        -24.623 (meters)                      GEOID12B
 AJ8390  DYNAMIC HEIGHT  -          2.899 (meters)        9.51   (feet) COMP
 AJ8390  MODELED GRAVITY -    978,989.4   (mgal)                        NAVD 88
 AJ8390
 AJ8390  VERT ORDER      -  FIRST     CLASS II
 AJ8390
 AJ8390.The horizontal coordinates were scaled from a topographic map and have
 AJ8390.an estimated accuracy of +/- 6 seconds.
 AJ8390.
 AJ8390.The orthometric height was determined by differential leveling and
 AJ8390.adjusted by the NATIONAL GEODETIC SURVEY
 AJ8390.in June 2002.
 AJ8390
 AJ8390.Significant digits in the geoid height do not necessarily reflect accuracy.
 AJ8390.GEOID12B height accuracy estimate available here.
 AJ8390
 AJ8390.The dynamic height is computed by dividing the NAVD 88
 AJ8390.geopotential number by the normal gravity value computed on the
 AJ8390.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AJ8390.degrees latitude (g = 980.6199 gals.).
 AJ8390
 AJ8390.The modeled gravity was interpolated from observed gravity values.
 AJ8390
 AJ8390;                     North         East     Units  Estimated Accuracy
 AJ8390;SPC FL E     -   131,480.      244,200.      MT   (+/- 180 meters Scaled)
 AJ8390
 AJ8390                           SUPERSEDED SURVEY CONTROL
 AJ8390
 AJ8390.No superseded survey control is available for this station.
 AJ8390
 AJ8390_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RNJ441225(NAD 83)
 AJ8390
 AJ8390_MARKER: DD = SURVEY DISK
 AJ8390_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AJ8390_STAMPING: FCE 4515 JAX. FLA.
 AJ8390_MARK LOGO: USE
 AJ8390_MAGNETIC: B = BAR MAGNET IMBEDDED IN MONUMENT
```

```
AJ8390_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AJ8390+STABILITY: SURFACE MOTION
AJ8390_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ8390+SATELLITE: SATELLITE OBSERVATIONS - February 09, 2007
AJ8390
AJ8390  HISTORY     - Date     Condition        Report By
AJ8390  HISTORY     - UNK      MONUMENTED       USE
AJ8390  HISTORY     - 20010106 GOOD             FLDEP
AJ8390  HISTORY     - 20070209 GOOD             INDIV
AJ8390  HISTORY     - 20080131 GOOD             GCYI
AJ8390
AJ8390                          STATION DESCRIPTION
AJ8390
AJ8390'DESCRIBED BY FL DEPT OF ENV PRO 2001 (JLM)
AJ8390'THE MARK IS ABOUT 9.5 MI (15.3 KM) OF HOMESTEAD, 8.5 MI (13.7 KM)
AJ8390'SOUTHWEST OF FLORIDA CITY, IN ESTIMATED SECTION 30, TOWNSHIP 56 SOUTH,
AJ8390'RANGE 38 EAST. TO REACH THE MARK FROM THE INTERSECTION OF U.S.
AJ8390'HIGHWAY 1 (SOUTH DIXIE HIGHWAY) AND PALM DRIVE (STATE ROAD 9336,
AJ8390'SOUTHWEST 344TH STREET) IN FLORIDA CITY, GO WEST ON PALM DRIVE (STATE
AJ8390'ROAD 9336, SOUTHWEST 344TH STREET) FOR 1.7 MI (2.7 KM) TO THE JUNCTION
AJ8390'OF SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) TURN LEFT ON
AJ8390'SOUTHWEST 192TH AVENUE (TOWER ROAD, STATE ROAD 9336) AND GO SOUTH FOR
AJ8390'2.1 MI (3.4 KM) TO THE JUNCTION OF SOUTHWEST 376TH STREET (STATE ROAD
AJ8390'9336, INGRAHAM HIGHWAY) ON THE RIGHT, TURN RIGHT ON SOUTHWEST 376TH
AJ8390'STREET (STATE ROAD 9336, INGRAHAM HIGHWAY) AND GO WEST FOR 4.95 MI
AJ8390'(7.97 KM) TO THE EAST END OF BRIDGE NUMBER 870081 1969 SPANNING CANAL
AJ8390'31, TURN RIGHT ON THE LEVEE ROAD ON THE EAST SIDE OF CANAL 31 AND GO
AJ8390'NORTH FOR 8.5 MI (13.7 KM) TO A PUMP HOUSE, TURN LEFT ON THE EAST SIDE
AJ8390'OF THE PUMP HOUSE AND GO NORTH FOR 0.1 MI (0.2 KM) TO A SET OF DOUBLE
AJ8390'LOCKED GATES, PASSING THROUGH THE GATES GO EAST THEN NORTH ON THE
AJ8390'LEVEE ROAD FOR 1.1 MI (1.8 KM) TO A LOCKED GATE AND THE INTERSECTION
AJ8390'OF A PAVED ROAD (AN OLD IRON BRIDGE SPANNING CANAL 31N) , CONTINUE
AJ8390'NORTH ON THE LEVEE ROAD FOR 0.1 MI (0.2 KM) TO A LOCKED GATE, CONTINUE
AJ8390'NORTH ON THE LEVEE ROAD FOR 1.55 MI (2.49 KM) TO THE MARK ON THE
AJ8390'RIGHT, SET IN THE TOP OF A ROUND CONCRETE MONUMENT FLUSH WITH THE
AJ8390'GROUND AND LEVEL WITH THE LEVEE ROAD. LOCATED 43.3 FT (13.2 M) EAST OF
AJ8390'THE APPROXIMATE CENTERLINE OF THE UPPER LEVEE ROAD, 17.4 FT (5.3 M)
AJ8390'EAST OF THE APPROXIMATE CENTERLINE OF THE LOWER LEVEE ROAD, 2.2 FT
AJ8390'(0.7 M) WEST OF THE TOP OF THE BANK OF THE CANAL AND 2.1 FT (0.6 M)
AJ8390'WEST OF A METAL WITNESS POST. NOTE A BAR MAGNET WAS INBEDDED IN THE
AJ8390'GROUND NEXT TO THE MONUMENT ON THE NORTH SIDE. NOTE FOR KEY CONTACT
AJ8390'SOUTH FLORIDA WATER MANAGEMENT DISTRICT AT 2195 NORTHEAST 8TH STREET
AJ8390'HOMESTEAD, FL 33033, PHONE 305-242-5955.
AJ8390
AJ8390                          STATION RECOVERY (2007)
AJ8390
AJ8390'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2007 (DF)
AJ8390'RECOVERED IN GOOD CONDITION.
AJ8390
AJ8390                          STATION RECOVERY (2008)
AJ8390
AJ8390'RECOVERY NOTE BY G.C.Y., INCORPORATED 2008 (MDL)
AJ8390'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:01
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```
H 00 1820B                    11:27:35 08/05/95  11:27:35 08/05/95 ENGLISH   2.55
H 99 ELEV RUN @ L31 ON LEVE
C 00 11:30:00 08/05/95  80 30.0 000001 STH TB  JG  GF
C 01 WILD       NA2000     90788            100
S 00 P1                        P G1
S 01 09:10:50 08/05/95  1.000
O 00 BM1                       P F8 CMON-F504
O 09 09:56:50                                          6.129  5.148  4.167
O 00 TP111                     P F8 NL-60D
O 09 10:01:17                                          6.336  5.256  4.176
S 00 P2                        P G1
S 01 10:01:44 08/05/95  1.000
O 00 TP111                     P F8 NL-60D
O 09 10:04:58                                          6.518  5.511  4.504
O 00 TP211                     P F8 NL-60D
O 09 10:08:53                                          6.003  4.939  3.875
S 00 P3                        P G1
S 01 10:09:14 08/05/95  1.000
O 00 TP211                     P F8 NL-60D
O 09 10:12:40                                          5.588  4.589  3.590
O 00 TP311                     P F8 NL-60D
O 09 10:16:29                                          5.905  4.852  3.799
S 00 P4                        P G1
S 01 10:16:39 08/05/95  1.000
O 00 TP311                     P F8 NL-60D
O 09 10:20:49                                          5.685  4.691  3.697
O 00 TP411                     P F8 NL-60D
O 09 10:26:19                                          5.525  4.435  3.345
SD00 S5                        P G1
SD01 10:26:34 08/05/95  1.000
OD00 TP4                       P F8 NL-60D
OD09 10:30:51                                          5.883  4.712  3.541
OD00 BM2                       P F8 CMON-FCE-4514
OD09 10:33:25                                          6.300  4.872  3.444
S 00 P5                        P G1
S 01 10:38:30 08/05/95  1.000
O 00 TP411                     P F8 NL-60D
O 09 10:40:30                                          5.879  4.708  3.537
O 09 10:56:25                                          5.873  4.702  3.531
O 00 TBM1                      P F8 CMON-FCE-4515
OD09 11:20:04                                          6.279  4.861  3.443
OM09 10:43:23                                          6.279  4.861  3.443
O 09 11:20:23                                          6.276  4.856  3.436
OM09 10:53:19                                          6.276  4.856  3.436

S 00 S1                        P G1
S 01 11:30:42 08/05/95  1.000
O 00 TBM1                      P F8 CMON-FCE-4515
O 09 11:42:00                                          6.151  5.172  4.193
O 00 TP1                       P F8 NL-60D
O 09 11:47:13                                          6.392  5.345  4.298
S 00 S2                        P G1
S 01 11:47:25 08/05/95  1.000
O 00 TP1                       P F8 NL-60D
O 09 11:51:39                                          5.595  4.572  3.549
O 00 TP2                       P F8 NL-60D
O 09 11:55:15                                          5.179  4.170  3.161
S 00 S3                        P G1
S 01 11:55:22 08/05/95  1.000
O 00 TP2                       P F8 NL-60D
O 09 11:57:36                                          5.146  4.112  3.078
O 00 TP3                       P F8 NL-60D
O 09 12:01:12                                          5.309  4.279  3.249
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S 00 S4                          P G1
S 01 12:01:18 08/05/95  1.000
O 00 TP3                         P F8 NL-60D
O 09 12:03:52                                          5.969  4.962  3.955
O 00 TP4                         P F8 NL-60D
O 09 12:07:22                                          5.987  4.935  3.883
S 00 S5                          P G1
S 01 12:07:28 08/05/95  1.000
O 00 TP4                         P F8 NL-60D
O 09 12:10:39                                          5.172  4.166  3.160
O 00 TP5                         P F8 NL-60D
O 09 12:14:19                                          5.760  4.738  3.716
S 00 S6                          P G1
S 01 12:14:26 08/05/95  1.000
O 00 TP5                         P F8 NL-60D
O 09 12:20:38                                          6.579  5.857  5.135
O 00 TP6                         P F8 MISC-SFWM-BRASS DI
O 99 SFWM-BRASS DISC #S332C
O 09 12:23:43                                          5.193  4.661  4.129
S 00 S7                          P G1
S 01 12:23:54 08/05/95  1.000
O 00 TP6                         P F8 MISC-SFWM-BRASS DI
O 99 SFWM-BRASS DISC #S332C
O 09 12:28:20                                          8.629  7.751  6.873
O 00 TP7                         P F8 NL-60D
O 09 12:32:29                                          5.443  4.408  3.373
S 00 S8                          P G1
S 01 12:32:34 08/05/95  1.000
O 00 TP7                         P F8 NL-60D
O 09 12:35:46                                          6.012  5.021  4.030
O 00 TP8                         P F8 NL-60D
O 09 12:39:05                                          5.813  4.799  3.785
S 00 S9                          P G1
S 01 12:39:15 08/05/95  1.000
O 00 TP8                         P F8 NL-60D
O 09 12:42:55                                          5.764  4.775  3.786
O 00 TP9                         P F8 NL-60D
O 09 12:45:57                                          5.705  4.676  3.647
S 00 S10                         P G1
S 01 12:46:03 08/05/95  1.000
O 00 TP9                         P F8 NL-60D
O 09 12:49:27                                          5.572  4.558  3.544
O 00 TP10                        P F8 NL-60D
O 09 12:52:58                                          5.830  4.818  3.806
S 00 S11                         P G1
S 01 12:53:13 08/05/95  1.000
O 00 TP10                        P F8 NL-60D
O 09 12:57:21                                          6.127  4.863  3.599
O 00 TP11                        P F8 MISC-BRASS DISC
O 99 SFWM BRASS DISC #S332C T/W
O 09 13:01:40                                          8.017  6.714  5.411
S 00 S12                         P G1
S 01 13:01:52 08/05/95  1.000
O 00 TP11                        P F8 MISC-BRASS DISC
O 99 SFWM BRASS DISC #S332C T/W
O 09 13:10:51                                          4.968  4.054  3.140
O 00 TP12                        P F8 NL-60D
O 09 13:14:23                                          6.415  5.451  4.487
S 00 S13                         P G1
S 01 13:14:28 08/05/95  1.000
O 00 TP12                        P F8 NL-60D
O 09 13:17:33                                          5.613  4.582  3.551
O 00 TP13                        P F8 NL-60D
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O 09 13:21:03                                                  5.795  4.796  3.797
S 00 S14                        P G1
S 01 13:21:08 08/05/95  1.000
O 00 TP13                       P F8 NL-60D
O 09 13:24:09                                                  5.700  4.707  3.714
O 00 TP14                       P F8 NL-PK
O 09 13:28:08                                                  7.878  6.835  5.792
C 00 07:27:05 08/09/95  80 30.0 000001 STH TB  GF
C 01 WILD       NA2000     90788            100
S 00 S15                        P G1
S 01 07:28:02 08/09/95  1.000
O 00 TP14                       P F8 NL-PK
O 09 07:31:24                                                  5.669  4.736  3.803
O 00 TP15                       P F8 NL-PK
O 09 07:36:59                                                  5.941  4.776  3.611
S 00 S16                        P G1
S 01 07:37:06 08/09/95  1.000
O 00 TP15                       P F8 NL-PK
O 09 07:41:26                                                  8.205  7.180  6.155
O 00 TP16                       P F8 NL-60D
O 09 07:45:17                                                  5.686  4.625  3.564
S 00 S17                        P G1
S 01 07:45:23 08/09/95  1.000
O 00 TP16                       P F8 NL-60D
O 09 07:48:30                                                  5.399  4.392  3.385
O 00 TP17                       P F8 NL-60D
O 09 07:52:37                                                  5.735  4.743  3.751
S 00 S18                        P G1
S 01 07:52:44 08/09/95  1.000
O 00 TP17                       P F8 NL-60D
O 09 07:56:01                                                  5.657  4.648  3.639
O 00 TP18                       P F8 NL-60D
O 09 07:59:47                                                  5.278  4.292  3.306
S 00 S19                        P G1
S 01 07:59:58 08/09/95  1.000
O 00 TP18                       P F8 NL-60D
O 09 08:03:13                                                  5.523  4.504  3.485
O 00 TP19                       P F8 NL-60D
O 09 08:06:32                                                  5.535  4.576  3.617
S 00 S20                        P G1
S 01 08:06:43 08/09/95  1.000
O 00 TP19                       P F8 NL-60D
O 09 08:09:52                                                  5.462  4.450  3.438
O 00 TP20                       P F8 NL-60D
O 09 08:13:19                                                  5.622  4.651  3.680
S 00 S21                        P G1
S 01 08:13:26 08/09/95  1.000
O 00 TP20                       P F8 NL-60D
O 09 08:23:12                                                  5.674  4.839  4.004
O 00 TP21                       P F8 NL-60D
O 09 08:26:53                                                  5.708  4.744  3.780
S 00 S22                        P G1
S 01 08:27:02 08/09/95  1.000
O 00 TP21                       P F8 NL-60D
O 09 08:30:35                                                  5.635  4.612  3.589
O 00 TP22                       P F8 NL-60D
O 09 08:34:26                                                  5.421  4.438  3.455
S 00 S23                        P G1
S 01 08:34:48 08/09/95  1.000
O 00 TP22                       P F8 NL-60D
O 09 08:38:18                                                  5.969  4.947  3.925
O 00 TP23                       P F8 NL-60D
O 09 08:44:33                                                  5.770  4.858  3.946
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S 00 S24                          P G1
S 01 08:44:40 08/09/95  1.000
O 00 TP23                         P F8 NL-60D
O 09 08:49:09                                          5.667  4.679  3.691
O 00 TP24                         P F8 NL-60D
O 09 08:53:43                                          5.231  4.314  3.397
S 00 S25                          P G1
S 01 08:53:50 08/09/95  1.000
O 00 TP24                         P F8 NL-60D
O 09 08:57:18                                          5.162  4.138  3.114
O 00 TP25                         P F8 NL-60D
O 09 09:01:03                                          5.475  4.602  3.729
S 00 S26                          P G1
S 01 09:01:09 08/09/95  1.000
O 00 TP25                         P F8 NL-60D
O 09 09:04:28                                          5.526  4.506  3.486
O 00 TP26                         P F8 NL-60D
O 09 09:08:44                                          5.251  4.313  3.375
S 00 S27                          P G1
S 01 09:09:08 08/09/95  1.000
O 00 TP26                         P F8 NL-60D
O 09 09:12:33                                          5.508  4.512  3.516
O 00 TP27                         P F8 NL-60D
O 09 09:18:32                                          5.361  4.390  3.419
S 00 S28                          P G1
S 01 09:18:44 08/09/95  1.000
O 00 TP27                         P F8 NL-60D
O 09 09:30:36                                          5.178  4.186  3.194
O 00 TP28                         P F8 NL-60D
O 09 09:41:54                                          5.950  4.960  3.970
S 00 S29                          P G1
S 01 09:42:11 08/09/95  1.000
O 00 TP28                         P F8 NL-60D
O 09 09:45:18                                          5.739  4.708  3.677
O 00 BM2                          P F8 MISC-ALUM-CAP
O 99 RUTZKE ALUM CAP 2001
O 09 09:51:42                                         10.764 10.037  9.310
S 00 S30                          P G1
S 01 09:56:42 08/09/95  1.000
O 00 BM2                          P F8 MISC-ALUM-CAP
O 99 RUTZKE ALUM CAP 2001
O 09 09:58:34                                         11.129 10.278  9.427
O 00 TP29                         P F8 NL-60D
O 09 10:03:19                                          5.458  4.469  3.480
S 00 S31                          P G1
S 01 10:03:28 08/09/95  1.000
O 00 TP29                         P F8 NL-60D
O 09 10:06:31                                          5.495  4.480  3.465
O 00 TP30                         P F8 NL-60D
O 09 10:10:33                                          5.717  4.759  3.801
S 00 S32                          P G1
S 01 10:10:42 08/09/95  1.000
O 00 TP30                         P F8 NL-60D
O 09 10:14:28                                          5.706  4.722  3.738
O 00 TP31                         P F8 NL-60D
O 09 10:19:05                                          5.745  4.685  3.625
S 00 S33                          P G1
S 01 10:19:11 08/09/95  1.000
O 00 TP31                         P F8 NL-60D
O 09 10:22:39                                          5.701  4.669  3.637
O 00 TP32                         P F8 NL-60D
O 09 10:26:59                                          5.467  4.478  3.489
S 00 S34                          P G1
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S 01 10:27:07 08/09/95  1.000
O 00 TP32                      P F8 NL-60D
O 09 10:30:42                                          5.731  4.703  3.675
O 00 TP33                      P F8 NL-60D
O 09 10:34:50                                          5.718  4.709  3.700
S 00 S35                       P G1
S 01 10:34:57 08/09/95  1.000
O 00 TP33                      P F8 NL-60D
O 09 10:38:31                                          5.301  4.292  3.283
O 00 TP34                      P F8 NL-60D
O 09 10:45:09                                          5.879  4.444  3.009
S 00 S36                       P G1
S 01 10:45:15 08/09/95  1.000
O 00 TP34                      P F8 NL-60D
O 09 10:50:42                                          6.420  4.947  3.474
O 00 TP35                      P F8 NL-60D
O 09 10:55:21                                          5.915  4.810  3.705
S 00 S37                       P G1
S 01 10:55:39 08/09/95  1.000
O 00 TP35                      P F8 NL-60D
O 09 10:59:09                                          5.953  4.797  3.641
O 00 TP36                      P F8 NL-60D
O 09 11:03:00                                          5.948  4.780  3.612
S 00 S38                       P G1
S 01 11:03:09 08/09/95  1.000
O 00 TP36                      P F8 NL-60D
O 09 11:07:03                                          5.902  4.765  3.628
O 00 TP37                      P F8 NL-60D
O 09 11:13:47                                          5.939  4.765  3.591
S 00 S39                       P G1
S 01 11:14:15 08/09/95  1.000
O 00 TP37                      P F8 NL-60D
O 09 11:17:50                                          5.342  4.221  3.100
O 00 TP38                      P F8 NL-60D
O 09 11:22:25                                          5.165  4.088  3.011
S 00 S40                       P G1
S 01 11:22:34 08/09/95  1.000
O 00 TP38                      P F8 NL-60D
O 09 11:25:55                                          5.719  4.541  3.363
O 00 TP39                      P F8 NL-60D
O 09 11:42:03                                          5.199  4.770  4.341
S 00 S41                       P G1
S 01 11:42:12 08/09/95  1.000
O 00 TP39                      P F8 NL-60D
O 09 11:43:55                                          4.917  4.596  4.275
O 00 BM3                       P F8 MISC-BRASS-DISC
O 99 RUTZKE#2 ARMY CORP OF ENGINERS
O 09 11:46:15                                         10.474  9.790  9.106
S 00 S42                       P G1
S 01 11:48:43 08/09/95  1.000
O 00 BM3                       P F8 MISC-BRASS-DISC
O 99 RUTZKE#2 ARMY CORP OF ENGINERS
O 09 11:49:02                                         11.183 10.126  9.069
O 00 TP40                      P F8 NL-60D
O 09 12:18:03                                          5.485  4.417  3.349
S 00 S43                       P G1
S 01 12:18:14 08/09/95  1.000
O 00 TP40                      P F8 NL-60D
O 09 12:23:20                                          3.578  2.501  1.424
O 00 TP41                      P F8 NL-PK
O 09 12:26:29                                          5.998  4.879  3.760
S 00 S44                       P G1
S 01 12:26:44 08/09/95  1.000
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O 00 TP41                       P F8 NL-PK
O 09 12:29:38                                          5.884  4.750  3.616
O 00 TP42                       P F8 NL-PK
O 09 12:32:57                                          5.768  4.665  3.562
S 00 S45                        P G1
S 01 12:33:09 08/09/95  1.000
O 00 TP42                       P F8 NL-PK
O 09 12:35:45                                          5.974  4.819  3.664
O 00 TP43                       P F8 NL-PK
O 09 12:39:40                                          5.908  4.796  3.684
S 00 S46                        P G1
S 01 12:39:50 08/09/95  1.000
O 00 TP43                       P F8 NL-PK
O 09 12:42:36                                          7.681  6.355  5.029
O 00 TP44                       P F8 NL-60D
O 09 12:47:36                                          5.721  4.611  3.501
S 00 S47                        P G1
S 01 12:47:41 08/09/95  1.000
O 00 TP44                       P F8 NL-60D
O 09 12:50:22                                          5.940  4.764  3.588
O 00 TP45                       P F8 NL-60D
O 09 12:54:37                                          5.627  4.513  3.399
S 00 S48                        P G1
S 01 12:55:11 08/09/95  1.000
O 00 TP45                       P F8 NL-60D
O 09 13:00:08                                          5.908  4.725  3.542
O 00 TP46                       P F8 NL-60D
O 09 13:05:00                                          5.764  4.711  3.658
S 00 S49                        P G1
S 01 13:05:06 08/09/95  1.000
O 00 TP46                       P F8 NL-60D
O 09 13:08:05                                          6.289  5.559  4.829
O 00 BM4                        P F8 MISC-BRASS DISC SF
O 99 BRASS DISC S.F.W.M -S332C T/W
O 09 13:11:02                                          5.136  4.427  3.718
S 00 S50                        P G1
S 01 13:11:10 08/09/95  1.000
O 00 BM4                        P F8 MISC-BRASS DISC SF
O 99 BRASS DISC S.F.W.M -S332C T/W
O 09 13:14:03                                          7.916  6.754  5.592
O 00 TP47                       P F8 NL-60D
O 09 13:18:33                                          5.843  4.802  3.761
S 00 S51                        P G1
S 01 13:18:39 08/09/95  1.000
O 00 TP47                       P F8 NL-60D
O 09 13:21:11                                          5.960  4.801  3.642
O 00 TP48                       P F8 NL-60D
O 09 13:25:51                                          5.786  4.607  3.428
S 00 S52                        P G1
S 01 13:25:57 08/09/95  1.000
O 00 TP48                       P F8 NL-60D
O 09 13:28:41                                          5.763  4.566  3.369
O 00 TP49                       P F8 NL-60D
O 09 13:35:17                                          5.582  4.561  3.540
S 00 S53                        P G1
S 01 13:35:25 08/09/95  1.000
O 00 TP49                       P F8 NL-60D
O 09 13:38:17                                          5.704  4.501  3.298
O 00 TP50                       P F8 NL-60D
O 09 13:42:46                                          5.867  4.770  3.673
S 00 S54                        P G1
S 01 13:42:51 08/09/95  1.000
O 00 TP50                       P F8 NL-60D
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O 09 13:45:12                                                  5.475  4.709  3.943
O 00 BM5                       P F8 MISC-BRASS DISC
O 99 BRASS DISC-SFWM-S332C
O 09 13:47:45                                                  8.849  8.144  7.439
S 00 S55                       P G1
S 01 13:47:56 08/09/95  1.000
O 00 BM5                       P F8 MISC-BRASS DISC
O 99 BRASS DISC-SFWM-S332C
O 09 13:50:45                                                  4.825  3.649  2.473
O 00 TP51                      P F8 NL-60D
O 09 13:54:47                                                  5.654  4.601  3.548
S 00 S56                       P G1
S 01 13:54:53 08/09/95  1.000
O 00 TP51                      P F8 NL-60D
O 09 13:57:34                                                  6.408  5.201  3.994
O 00 TP52                      P F8 NL-60D
O 09 14:01:47                                                  5.603  4.400  3.197
S 00 S57                       P G1
S 01 14:01:53 08/09/95  1.000
O 00 TP52                      P F8 NL-60D
O 09 14:04:49                                                  5.408  4.247  3.086
O 00 TP53                      P F8 NL-60D
O 09 14:08:48                                                  5.916  4.745  3.574
S 00 S58                       P G1
S 01 14:08:53 08/09/95  1.000
O 00 TP53                      P F8 NL-60D
O 09 14:11:33                                                  5.524  4.347  3.170
O 00 TP54                      P F8 NL-60D
O 09 14:15:32                                                  5.634  4.495  3.356
S 00 S59                       P G1
S 01 14:15:38 08/09/95  1.000
O 00 TP54                      P F8 NL-60D
O 09 14:18:28                                                  6.397  5.269  4.141
O 00 BM6                       P F8 CMON-FCE-4515
O 99 BRASS DISC
O 09 14:21:02                                                  6.231  5.185  4.139
R 00 00:00:00 12/31/99
R 99 TAPE OBSERVATION DATA STARTS HERE
C 00 00:00:00 12/31/99
C 99 DUMMY TAPE CALIBRATION TO RE-INITIALIZE COLLIMATION TO ZERO
C 01 TAPING     TAPING                10 99 100
C 03 00:00:00                      D   0  0  0.0  90  0  0.0
C 03 00:00:00                      D   0  0  0.0  90  0  0.0
C 03 00:00:00                      R 180  0  0.0 270  0  0.0
C 03 00:00:00                      R 180  0  0.0 270  0  0.0
R 00 00:00:00 12/31/99
R 99 TAPE OBSERVATION DATA ENDS HERE
R 00 00:00:00 12/31/99
R 99 TAPE TRAVERSE DATA (I.E. CHAINS) START HERE
R 00 00:00:00 12/31/99
R 99 TAPE TRAVERSE DATA (I.E. CHAINS) ENDS HERE
R 00 00:00:00 12/31/99
R 99 CHAIN DATA STARTS HERE
R 00 00:00:00 12/31/99
R 99 CHAIN DATA ENDS HERE
R 00 00:00:00 12/31/99
R 99 PREFIX DATA STARTS HERE
P 00
P 01 S59,BM5,TP54
À↕F25    9¶“ñ┬À↕^”5 €¤  ¤  x*˜–┼          “Ò“¼└À↕^”5♬─5  ¦¤5ï┤j¤55â“×└À↕^”5
R 00 00:00:00 12/31/99
R 99 PREFIX DATA ENDS HERE
```

MISCLOSURE OF MULTIPLE ELEV. DIFFERENCE MEASUREMENTS
  STATIONS MISCLOSURE
END OF MISCLOSURE REPORT

   64 OF   129 STATIONS IDENTIFIED AS VERTICAL SIDESHOTS
BAND IS   1 STATIONS
LEVEL NETWORK ADJUSTMENT

NUMBER OF BENCHMARKS =   2
NUMBER OF STATIONS =   65
NUMBER OF MEASUREMENTS =   64
NUMBER OF REQUIRED TERMS FOR NORMAL EQUATIONS =   129

RESULTS OF ADJUSTMENT

BENCHMARK ELEVATION RESIDUALS

STATION	INPUT ELEV.	ADJUSTED ELEV.	ERROR EST.	RESIDUAL
BM1	9.220	9.220	.000	.000 (.0)
BM6	9.520	9.520	.000	.000 (.0)

BENCHMARK RMS ERROR = .000 SNOOP RMS = .0
MAX. BENCHMARK RESIDUAL AT STATION BM6 OF .000

RESIDUALS

FROM	TO	MEASURED	RESIDUAL	EST. ERROR
BM1	TP111	-.108	.000 (.0)	.010
TP111	TP211	.572	.000 (.0)	.010
TP211	TP311	-.263	.000 (.0)	.010
TP311	TP411	.256	.000 (.0)	.010
TP411	TBM1	-.148	.000 (.0)	.010
TBM1	TP1	-.173	.000 (.0)	.010
TP1	TP2	.402	.000 (.0)	.010
TP2	TP3	-.167	.000 (.0)	.010
TP3	TP4	.027	.000 (.0)	.010
TP4	TP5	-.572	.000 (.0)	.010
TP5	TP6	1.196	.000 (.0)	.010
TP6	TP7	3.343	.000 (.0)	.010
TP7	TP8	.222	.000 (.0)	.010
TP8	TP9	.099	.000 (.0)	.010
TP9	TP10	-.260	.000 (.0)	.010
TP10	TP11	-1.851	.000 (.0)	.010
TP11	TP12	-1.397	.000 (.0)	.010
TP12	TP13	-.214	.000 (.0)	.010
TP13	TP14	-2.128	.000 (.0)	.010
TP14	TP15	-.040	.000 (.0)	.010
TP15	TP16	2.555	.000 (.0)	.010
TP16	TP17	-.351	.000 (.0)	.010
TP17	TP18	.356	.000 (.0)	.010
TP18	TP19	-.072	.000 (.0)	.010
TP19	TP20	-.201	.000 (.0)	.010
TP20	TP21	.095	.000 (.0)	.010
TP21	TP22	.174	.000 (.0)	.010
TP22	TP23	.089	.000 (.0)	.010
TP23	TP24	.365	.000 (.0)	.010
TP24	TP25	-.464	.000 (.0)	.010
TP25	TP26	.193	.000 (.0)	.010
TP26	TP27	.122	.000 (.0)	.010

TP27	TP28	-.774	.000	(.0)	.010
TP28	BM2	-5.329	.000	(.0)	.010
BM2	TP29	5.809	.000	(.0)	.010
TP29	TP30	-.279	.000	(.0)	.010
TP30	TP31	.037	.000	(.0)	.010
TP31	TP32	.191	.000	(.0)	.010
TP32	TP33	-.006	.000	(.0)	.010
TP33	TP34	-.152	.000	(.0)	.010
TP34	TP35	.137	.000	(.0)	.010
TP35	TP36	.017	.000	(.0)	.010
TP36	TP37	.000	.000	(.0)	.010
TP37	TP38	.133	.000	(.0)	.010
TP38	TP39	-.229	.000	(.0)	.010
TP39	BM3	-5.194	.000	(.0)	.010
BM3	TP40	5.709	.000	(.0)	.010
TP40	TP41	-2.378	.000	(.0)	.010
TP41	TP42	.085	.000	(.0)	.010
TP42	TP43	.023	.000	(.0)	.010
TP43	TP44	1.744	.000	(.0)	.010
TP44	TP45	.251	.000	(.0)	.010
TP45	TP46	.014	.000	(.0)	.010
TP46	BM4	1.132	.000	(.0)	.010
BM4	TP47	1.952	.000	(.0)	.010
TP47	TP48	.194	.000	(.0)	.010
TP48	TP49	.005	.000	(.0)	.010
TP49	TP50	-.269	.000	(.0)	.010
TP50	BM5	-3.435	.000	(.0)	.010
BM5	TP51	-.952	.000	(.0)	.010
TP51	TP52	.801	.000	(.0)	.010
TP52	TP53	-.498	.000	(.0)	.010
TP53	TP54	-.148	.000	(.0)	.010
TP54	BM6	.084	.000	(.0)	.010

ELEV. DIFF. RMS ERROR = .000 SNOOP RMS = .0
MAX. ELEV. DIFF. RESIDUAL TP30 - TP31 OF .000

95% CONFIDENCE F STATISTIC STANDARD ERROR MULTIPLIER FOR 1 D.F. IS 20.00

STATION	ADJUSTED ELEV.	STANDARD ERROR
BM1	9.220	.001
TP111	9.111	.079
TP211	9.683	.111
TP311	9.419	.135
TP411	9.675	.155
TBM1	9.526	.172
TP1	9.353	.187
TP2	9.754	.200
TP3	9.587	.212
TP4	9.613	.222
TP5	9.041	.232
TP6	10.236	.241
TP7	13.579	.250
TP8	13.800	.257
TP9	13.899	.265
TP10	13.638	.271
TP11	11.787	.277
TP12	10.389	.283
TP13	10.175	.288
TP14	8.046	.292
TP15	8.006	.297
TP16	10.560	.300

LEVEL.1D

TP17	10.209	.304
TP18	10.564	.307
TP19	10.492	.310
TP20	10.290	.312
TP21	10.385	.314
TP22	10.558	.316
TP23	10.647	.317
TP24	11.011	.319
TP25	10.547	.319
TP26	10.739	.320
TP27	10.861	.320
TP28	10.087	.320
BM2	4.757	.319
TP29	10.566	.319
TP30	10.286	.317
TP31	10.323	.316
TP32	10.513	.314
TP33	10.507	.312
TP34	10.354	.310
TP35	10.491	.307
TP36	10.507	.304
TP37	10.507	.300
TP38	10.639	.297
TP39	10.410	.292
BM3	5.215	.288
TP40	10.924	.283
TP41	8.545	.277
TP42	8.630	.271
TP43	8.652	.265
TP44	10.396	.257
TP45	10.646	.250
TP46	10.660	.241
BM4	11.791	.232
TP47	13.743	.222
TP48	13.936	.212
TP49	13.941	.200
TP50	13.671	.187
BM5	10.236	.172
TP51	9.283	.155
TP52	10.084	.135
TP53	9.585	.111
TP54	9.437	.079
BM6	9.520	.001

STANDARD ERROR OF UNIT WEIGHT IS .400
WITH 1 DEGREES OF FREEDOM

CHI SQUARED TEST ON ANALYSIS
.031 < .400 < 1.960
(LOW) (HIGH)
PASSES AT THE 5 % SIGNIFICANCE LEVEL

PROJECT NAME IS LEVEL

ELEVATION CLOSURE REPORT
SUM OF DISTANCES ALONG SURVEY IS 26408.700
CLOSURE IN ELEVATION (Z) = -.032
CLOSURE PER STATION = -.001
PRECISION = 1 / 825272.

STATION	ELEVATION (Z)
BM1	9.220
TP111	9.111
TP211	9.683
TP311	9.419
TP411	9.675
TBM1	9.526
TP1	9.353
TP2	9.754
TP3	9.587
TP4	9.613
TP5	9.041
TP6	10.236
TP7	13.579
TP8	13.800
TP9	13.899
TP10	13.638
TP11	11.787
TP12	10.389
TP13	10.175
TP14	8.046
TP15	8.006
TP16	10.560
TP17	10.209
TP18	10.564
TP19	10.492
TP20	10.290
TP21	10.385
TP22	10.558
TP23	10.647
TP24	11.011
TP25	10.547
TP26	10.739
TP27	10.861
TP28	10.087
BM2	4.757
TP29	10.566
TP30	10.286
TP31	10.323
TP32	10.513
TP33	10.507
TP34	10.354
TP35	10.491
TP36	10.507
TP37	10.507
TP38	10.639
TP39	10.410
BM3	5.215
TP40	10.924
TP41	8.545
TP42	8.630
TP43	8.652
TP44	10.396
TP45	10.646

	LEVEL.CHL
TP46	10.660
BM4	11.791
TP47	13.743
TP48	13.936
TP49	13.941
TP50	13.671
BM5	10.236
TP51	9.283
TP52	10.084
TP53	9.585
TP54	9.437
BM6	9.520

TOTAL LENGTH OF EVALUATED SURVEY DISTANCE = 5.002 MILES
OVERALL PRECISION = 1 / 825272.

NAVD88 Adjusted


```
G 00         LEVEL.SOE
G 01 BM1                        P F8 CMON-F504                          F
G 04                                                      9.220     .001
G 01 TP111                      P F8 NL-60D                             F
G 04                                                      9.111     .079
G 01 TP211                      P F8 NL-60D                             F
G 04                                                      9.683     .111
G 01 TP311                      P F8 NL-60D                             F
G 04                                                      9.419     .135
G 01 TP411                      P F8 NL-60D                             F
G 04                                                      9.675     .155
G 01 TBM1                       P F8 CMON-FCE-4515                      F
G 04                                                      9.526     .172
G 01 TP1                        P F8 NL-60D                             F
G 04                                                      9.353     .187
G 01 TP2                        P F8 NL-60D                             F
G 04                                                      9.754     .200
G 01 TP3                        P F8 NL-60D                             F
G 04                                                      9.587     .212
G 01 TP4                        P F8 NL-60D                             F
G 04                                                      9.613     .222
G 01 TP5                        P F8 NL-60D                             F
G 04                                                      9.041     .232
G 01 TP6                        P F8 MISC-SFWM-BRASS DI                 F
G 99 SFWM-BRASS DISC #S332C
G 04                                                     10.236     .241
G 01 TP7                        P F8 NL-60D                             F
G 04                                                     13.579     .250
G 01 TP8                        P F8 NL-60D                             F
G 04                                                     13.800     .257
G 01 TP9                        P F8 NL-60D                             F
G 04                                                     13.899     .265
G 01 TP10                       P F8 NL-60D                             F
G 04                                                     13.638     .271
G 01 TP11                       P F8 MISC-BRASS DISC                    F
G 99 SFWM BRASS DISC #S332C T/W
G 04                                                     11.787     .277
G 01 TP12                       P F8 NL-60D                             F
G 04                                                     10.389     .283
G 01 TP13                       P F8 NL-60D                             F
G 04                                                     10.175     .288
G 01 TP14                       P F8 NL-PK                              F
G 04                                                      8.046     .292
G 01 TP15                       P F8 NL-PK                              F
G 04                                                      8.006     .297
G 01 TP16                       P F8 NL-60D                             F
G 04                                                     10.560     .300
G 01 TP17                       P F8 NL-60D                             F
G 04                                                     10.209     .304
G 01 TP18                       P F8 NL-60D                             F
G 04                                                     10.564     .307
G 01 TP19                       P F8 NL-60D                             F
G 04                                                     10.492     .310
G 01 TP20                       P F8 NL-60D                             F
G 04                                                     10.290     .312
G 01 TP21                       P F8 NL-60D                             F
G 04                                                     10.385     .314
G 01 TP22                       P F8 NL-60D                             F
G 04                                                     10.558     .316
G 01 TP23                       P F8 NL-60D                             F
G 04                                                     10.647     .317
G 01 TP24                       P F8 NL-60D                             F
G 04                                                     11.011     .319
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G 01 TP25                      P F8 NL-60D                              F
G 04                                                  10.547     .319
G 01 TP26                      P F8 NL-60D                              F
G 04                                                  10.739     .320
G 01 TP27                      P F8 NL-60D                              F
G 04                                                  10.861     .320
G 01 TP28                      P F8 NL-60D                              F
G 04                                                  10.087     .320
G 01 BM2                       P F8 MISC-ALUM-CAP                       F
G 99 RUTZKE ALUM CAP 2001
G 04                                                   4.757     .319
G 01 TP29                      P F8 NL-60D                              F
G 04                                                  10.566     .319
G 01 TP30                      P F8 NL-60D                              F
G 04                                                  10.286     .317
G 01 TP31                      P F8 NL-60D                              F
G 04                                                  10.323     .316
G 01 TP32                      P F8 NL-60D                              F
G 04                                                  10.513     .314
G 01 TP33                      P F8 NL-60D                              F
G 04                                                  10.507     .312
G 01 TP34                      P F8 NL-60D                              F
G 04                                                  10.354     .310
G 01 TP35                      P F8 NL-60D                              F
G 04                                                  10.491     .307
G 01 TP36                      P F8 NL-60D                              F
G 04                                                  10.507     .304
G 01 TP37                      P F8 NL-60D                              F
G 04                                                  10.507     .300
G 01 TP38                      P F8 NL-60D                              F
G 04                                                  10.639     .297
G 01 TP39                      P F8 NL-60D                              F
G 04                                                  10.410     .292
G 01 BM3                       P F8 MISC-BRASS-DISC                     F
G 99 RUTZKE#2 ARMY CORP OF ENGINERS
G 04                                                   5.215     .288
G 01 TP40                      P F8 NL-60D                              F
G 04                                                  10.924     .283
G 01 TP41                      P F8 NL-PK                               F
G 04                                                   8.545     .277
G 01 TP42                      P F8 NL-PK                               F
G 04                                                   8.630     .271
G 01 TP43                      P F8 NL-PK                               F
G 04                                                   8.652     .265
G 01 TP44                      P F8 NL-60D                              F
G 04                                                  10.396     .257
G 01 TP45                      P F8 NL-60D                              F
G 04                                                  10.646     .250
G 01 TP46                      P F8 NL-60D                              F
G 04                                                  10.660     .241
G 01 BM4                       P F8 MISC-BRASS DISC SF                  F
G 99 BRASS DISC S.F.W.M -S332C T/W
G 04                                                  11.791     .232
G 01 TP47                      P F8 NL-60D                              F
G 04                                                  13.743     .222
G 01 TP48                      P F8 NL-60D                              F
G 04                                                  13.936     .212
G 01 TP49                      P F8 NL-60D                              F
G 04                                                  13.941     .200
G 01 TP50                      P F8 NL-60D                              F
G 04                                                  13.671     .187
G 01 BM5                       P F8 MISC-BRASS DISC                     F
G 99 BRASS DISC-SFWM-S332C
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LEVEL.SOE

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G 04                                          10.236     .172
G 01 TP51                  P F8 NL-60D                       F
G 04                                           9.283     .155
G 01 TP52                  P F8 NL-60D                       F
G 04                                          10.084     .135
G 01 TP53                  P F8 NL-60D                       F
G 04                                           9.585     .111
G 01 TP54                  P F8 NL-60D                       F
G 04                                           9.437     .079
G 01 BM6                   P F8 CMON-FCE-4515                F
G 99 BRASS DISC
G 04                                           9.520     .001
```

```
H 00 1820B                    11:27:35 08/05/95  11:27:35 08/05/95 ENGLISH   2.55
H 99 ELEV RUN @ L31 ON LEVE
C 00 11:30:00 08/05/95  80 30.0 000001 STH TB  JG  GF
C 01 WILD       NA2000     90788            100
S 00 P1                        P G1
S 01 09:10:50 08/05/95  1.000
O 00 BM1                       P F8 CMON-F504
O 09 09:56:50                                          6.129  5.148  4.167
O 00 TP111                     P F8 NL-60D
O 09 10:01:17                                          6.336  5.256  4.176
S 00 P2                        P G1
S 01 10:01:44 08/05/95  1.000
O 00 TP111                     P F8 NL-60D
O 09 10:04:58                                          6.518  5.511  4.504
O 00 TP211                     P F8 NL-60D
O 09 10:08:53                                          6.003  4.939  3.875
S 00 P3                        P G1
S 01 10:09:14 08/05/95  1.000
O 00 TP211                     P F8 NL-60D
O 09 10:12:40                                          5.588  4.589  3.590
O 00 TP311                     P F8 NL-60D
O 09 10:16:29                                          5.905  4.852  3.799
S 00 P4                        P G1
S 01 10:16:39 08/05/95  1.000
O 00 TP311                     P F8 NL-60D
O 09 10:20:49                                          5.685  4.691  3.697
O 00 TP411                     P F8 NL-60D
O 09 10:26:19                                          5.525  4.435  3.345
SD00 S5                        P G1
SD01 10:26:34 08/05/95  1.000
OD00 TP4                       P F8 NL-60D
OD09 10:30:51                                          5.883  4.712  3.541
OD00 BM2                       P F8 CMON-FCE-4514
OD09 10:33:25                                          6.300  4.872  3.444
S 00 P5                        P G1
S 01 10:38:30 08/05/95  1.000
O 00 TP411                     P F8 NL-60D
O 09 10:40:30                                          5.879  4.708  3.537
O 09 10:56:25                                          5.873  4.702  3.531
O 00 TBM1                      P F8 CMON-FCE-4515
OD09 11:20:04                                          6.279  4.861  3.443
OM09 10:43:23                                          6.279  4.861  3.443
O 09 11:20:23                                          6.276  4.856  3.436
OM09 10:53:19                                          6.276  4.856  3.436

S 00 S1                        P G1
S 01 11:30:42 08/05/95  1.000
O 00 TBM1                      P F8 CMON-FCE-4515
O 09 11:42:00                                          6.151  5.172  4.193
O 00 TP1                       P F8 NL-60D
O 09 11:47:13                                          6.392  5.345  4.298
S 00 S2                        P G1
S 01 11:47:25 08/05/95  1.000
O 00 TP1                       P F8 NL-60D
O 09 11:51:39                                          5.595  4.572  3.549
O 00 TP2                       P F8 NL-60D
O 09 11:55:15                                          5.179  4.170  3.161
S 00 S3                        P G1
S 01 11:55:22 08/05/95  1.000
O 00 TP2                       P F8 NL-60D
O 09 11:57:36                                          5.146  4.112  3.078
O 00 TP3                       P F8 NL-60D
O 09 12:01:12                                          5.309  4.279  3.249
```

```
S 00 S4                          P G1
S 01 12:01:18 08/05/95  1.000
O 00 TP3                         P F8 NL-60D
O 09 12:03:52                                          5.969  4.962  3.955
O 00 TP4                         P F8 NL-60D
O 09 12:07:22                                          5.987  4.935  3.883
S 00 S5                          P G1
S 01 12:07:28 08/05/95  1.000
O 00 TP4                         P F8 NL-60D
O 09 12:10:39                                          5.172  4.166  3.160
O 00 TP5                         P F8 NL-60D
O 09 12:14:19                                          5.760  4.738  3.716
S 00 S6                          P G1
S 01 12:14:26 08/05/95  1.000
O 00 TP5                         P F8 NL-60D
O 09 12:20:38                                          6.579  5.857  5.135
O 00 TP6                         P F8 MISC-SFWM-BRASS DI
O 99 SFWM-BRASS DISC #S332C
O 09 12:23:43                                          5.193  4.661  4.129
S 00 S7                          P G1
S 01 12:23:54 08/05/95  1.000
O 00 TP6                         P F8 MISC-SFWM-BRASS DI
O 99 SFWM-BRASS DISC #S332C
O 09 12:28:20                                          8.629  7.751  6.873
O 00 TP7                         P F8 NL-60D
O 09 12:32:29                                          5.443  4.408  3.373
S 00 S8                          P G1
S 01 12:32:34 08/05/95  1.000
O 00 TP7                         P F8 NL-60D
O 09 12:35:46                                          6.012  5.021  4.030
O 00 TP8                         P F8 NL-60D
O 09 12:39:05                                          5.813  4.799  3.785
S 00 S9                          P G1
S 01 12:39:15 08/05/95  1.000
O 00 TP8                         P F8 NL-60D
O 09 12:42:55                                          5.764  4.775  3.786
O 00 TP9                         P F8 NL-60D
O 09 12:45:57                                          5.705  4.676  3.647
S 00 S10                         P G1
S 01 12:46:03 08/05/95  1.000
O 00 TP9                         P F8 NL-60D
O 09 12:49:27                                          5.572  4.558  3.544
O 00 TP10                        P F8 NL-60D
O 09 12:52:58                                          5.830  4.818  3.806
S 00 S11                         P G1
S 01 12:53:13 08/05/95  1.000
O 00 TP10                        P F8 NL-60D
O 09 12:57:21                                          6.127  4.863  3.599
O 00 TP11                        P F8 MISC-BRASS DISC
O 99 SFWM BRASS DISC #S332C T/W
O 09 13:01:40                                          8.017  6.714  5.411
S 00 S12                         P G1
S 01 13:01:52 08/05/95  1.000
O 00 TP11                        P F8 MISC-BRASS DISC
O 99 SFWM BRASS DISC #S332C T/W
O 09 13:10:51                                          4.968  4.054  3.140
O 00 TP12                        P F8 NL-60D
O 09 13:14:23                                          6.415  5.451  4.487
S 00 S13                         P G1
S 01 13:14:28 08/05/95  1.000
O 00 TP12                        P F8 NL-60D
O 09 13:17:33                                          5.613  4.582  3.551
O 00 TP13                        P F8 NL-60D
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O 09 13:21:03                                                  5.795  4.796  3.797
S 00 S14                        P G1
S 01 13:21:08 08/05/95  1.000
O 00 TP13                       P F8 NL-60D
O 09 13:24:09                                                  5.700  4.707  3.714
O 00 TP14                       P F8 NL-PK
O 09 13:28:08                                                  7.878  6.835  5.792
C 00 07:27:05 08/09/95  80 30.0 000001 STH TB  GF
C 01 WILD       NA2000     90788            100
S 00 S15                        P G1
S 01 07:28:02 08/09/95  1.000
O 00 TP14                       P F8 NL-PK
O 09 07:31:24                                                  5.669  4.736  3.803
O 00 TP15                       P F8 NL-PK
O 09 07:36:59                                                  5.941  4.776  3.611
S 00 S16                        P G1
S 01 07:37:06 08/09/95  1.000
O 00 TP15                       P F8 NL-PK
O 09 07:41:26                                                  8.205  7.180  6.155
O 00 TP16                       P F8 NL-60D
O 09 07:45:17                                                  5.686  4.625  3.564
S 00 S17                        P G1
S 01 07:45:23 08/09/95  1.000
O 00 TP16                       P F8 NL-60D
O 09 07:48:30                                                  5.399  4.392  3.385
O 00 TP17                       P F8 NL-60D
O 09 07:52:37                                                  5.735  4.743  3.751
S 00 S18                        P G1
S 01 07:52:44 08/09/95  1.000
O 00 TP17                       P F8 NL-60D
O 09 07:56:01                                                  5.657  4.648  3.639
O 00 TP18                       P F8 NL-60D
O 09 07:59:47                                                  5.278  4.292  3.306
S 00 S19                        P G1
S 01 07:59:58 08/09/95  1.000
O 00 TP18                       P F8 NL-60D
O 09 08:03:13                                                  5.523  4.504  3.485
O 00 TP19                       P F8 NL-60D
O 09 08:06:32                                                  5.535  4.576  3.617
S 00 S20                        P G1
S 01 08:06:43 08/09/95  1.000
O 00 TP19                       P F8 NL-60D
O 09 08:09:52                                                  5.462  4.450  3.438
O 00 TP20                       P F8 NL-60D
O 09 08:13:19                                                  5.622  4.651  3.680
S 00 S21                        P G1
S 01 08:13:26 08/09/95  1.000
O 00 TP20                       P F8 NL-60D
O 09 08:23:12                                                  5.674  4.839  4.004
O 00 TP21                       P F8 NL-60D
O 09 08:26:53                                                  5.708  4.744  3.780
S 00 S22                        P G1
S 01 08:27:02 08/09/95  1.000
O 00 TP21                       P F8 NL-60D
O 09 08:30:35                                                  5.635  4.612  3.589
O 00 TP22                       P F8 NL-60D
O 09 08:34:26                                                  5.421  4.438  3.455
S 00 S23                        P G1
S 01 08:34:48 08/09/95  1.000
O 00 TP22                       P F8 NL-60D
O 09 08:38:18                                                  5.969  4.947  3.925
O 00 TP23                       P F8 NL-60D
O 09 08:44:33                                                  5.770  4.858  3.946
```

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S 00 S24                          P G1
S 01 08:44:40 08/09/95  1.000
O 00 TP23                         P F8 NL-60D
O 09 08:49:09                                          5.667  4.679  3.691
O 00 TP24                         P F8 NL-60D
O 09 08:53:43                                          5.231  4.314  3.397
S 00 S25                          P G1
S 01 08:53:50 08/09/95  1.000
O 00 TP24                         P F8 NL-60D
O 09 08:57:18                                          5.162  4.138  3.114
O 00 TP25                         P F8 NL-60D
O 09 09:01:03                                          5.475  4.602  3.729
S 00 S26                          P G1
S 01 09:01:09 08/09/95  1.000
O 00 TP25                         P F8 NL-60D
O 09 09:04:28                                          5.526  4.506  3.486
O 00 TP26                         P F8 NL-60D
O 09 09:08:44                                          5.251  4.313  3.375
S 00 S27                          P G1
S 01 09:09:08 08/09/95  1.000
O 00 TP26                         P F8 NL-60D
O 09 09:12:33                                          5.508  4.512  3.516
O 00 TP27                         P F8 NL-60D
O 09 09:18:32                                          5.361  4.390  3.419
S 00 S28                          P G1
S 01 09:18:44 08/09/95  1.000
O 00 TP27                         P F8 NL-60D
O 09 09:30:36                                          5.178  4.186  3.194
O 00 TP28                         P F8 NL-60D
O 09 09:41:54                                          5.950  4.960  3.970
S 00 S29                          P G1
S 01 09:42:11 08/09/95  1.000
O 00 TP28                         P F8 NL-60D
O 09 09:45:18                                          5.739  4.708  3.677
O 00 BM2                          P F8 MISC-ALUM-CAP
O 99 RUTZKE ALUM CAP 2001
O 09 09:51:42                                         10.764 10.037  9.310
S 00 S30                          P G1
S 01 09:56:42 08/09/95  1.000
O 00 BM2                          P F8 MISC-ALUM-CAP
O 99 RUTZKE ALUM CAP 2001
O 09 09:58:34                                         11.129 10.278  9.427
O 00 TP29                         P F8 NL-60D
O 09 10:03:19                                          5.458  4.469  3.480
S 00 S31                          P G1
S 01 10:03:28 08/09/95  1.000
O 00 TP29                         P F8 NL-60D
O 09 10:06:31                                          5.495  4.480  3.465
O 00 TP30                         P F8 NL-60D
O 09 10:10:33                                          5.717  4.759  3.801
S 00 S32                          P G1
S 01 10:10:42 08/09/95  1.000
O 00 TP30                         P F8 NL-60D
O 09 10:14:28                                          5.706  4.722  3.738
O 00 TP31                         P F8 NL-60D
O 09 10:19:05                                          5.745  4.685  3.625
S 00 S33                          P G1
S 01 10:19:11 08/09/95  1.000
O 00 TP31                         P F8 NL-60D
O 09 10:22:39                                          5.701  4.669  3.637
O 00 TP32                         P F8 NL-60D
O 09 10:26:59                                          5.467  4.478  3.489
S 00 S34                          P G1
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S 01 10:27:07 08/09/95  1.000
O 00 TP32                      P F8 NL-60D
O 09 10:30:42                                          5.731  4.703  3.675
O 00 TP33                      P F8 NL-60D
O 09 10:34:50                                          5.718  4.709  3.700
S 00 S35                       P G1
S 01 10:34:57 08/09/95  1.000
O 00 TP33                      P F8 NL-60D
O 09 10:38:31                                          5.301  4.292  3.283
O 00 TP34                      P F8 NL-60D
O 09 10:45:09                                          5.879  4.444  3.009
S 00 S36                       P G1
S 01 10:45:15 08/09/95  1.000
O 00 TP34                      P F8 NL-60D
O 09 10:50:42                                          6.420  4.947  3.474
O 00 TP35                      P F8 NL-60D
O 09 10:55:21                                          5.915  4.810  3.705
S 00 S37                       P G1
S 01 10:55:39 08/09/95  1.000
O 00 TP35                      P F8 NL-60D
O 09 10:59:09                                          5.953  4.797  3.641
O 00 TP36                      P F8 NL-60D
O 09 11:03:00                                          5.948  4.780  3.612
S 00 S38                       P G1
S 01 11:03:09 08/09/95  1.000
O 00 TP36                      P F8 NL-60D
O 09 11:07:03                                          5.902  4.765  3.628
O 00 TP37                      P F8 NL-60D
O 09 11:13:47                                          5.939  4.765  3.591
S 00 S39                       P G1
S 01 11:14:15 08/09/95  1.000
O 00 TP37                      P F8 NL-60D
O 09 11:17:50                                          5.342  4.221  3.100
O 00 TP38                      P F8 NL-60D
O 09 11:22:25                                          5.165  4.088  3.011
S 00 S40                       P G1
S 01 11:22:34 08/09/95  1.000
O 00 TP38                      P F8 NL-60D
O 09 11:25:55                                          5.719  4.541  3.363
O 00 TP39                      P F8 NL-60D
O 09 11:42:03                                          5.199  4.770  4.341
S 00 S41                       P G1
S 01 11:42:12 08/09/95  1.000
O 00 TP39                      P F8 NL-60D
O 09 11:43:55                                          4.917  4.596  4.275
O 00 BM3                       P F8 MISC-BRASS-DISC
O 99 RUTZKE#2 ARMY CORP OF ENGINERS
O 09 11:46:15                                         10.474  9.790  9.106
S 00 S42                       P G1
S 01 11:48:43 08/09/95  1.000
O 00 BM3                       P F8 MISC-BRASS-DISC
O 99 RUTZKE#2 ARMY CORP OF ENGINERS
O 09 11:49:02                                         11.183 10.126  9.069
O 00 TP40                      P F8 NL-60D
O 09 12:18:03                                          5.485  4.417  3.349
S 00 S43                       P G1
S 01 12:18:14 08/09/95  1.000
O 00 TP40                      P F8 NL-60D
O 09 12:23:20                                          3.578  2.501  1.424
O 00 TP41                      P F8 NL-PK
O 09 12:26:29                                          5.998  4.879  3.760
S 00 S44                       P G1
S 01 12:26:44 08/09/95  1.000
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O 00 TP41                       P F8 NL-PK
O 09 12:29:38                                          5.884  4.750  3.616
O 00 TP42                       P F8 NL-PK
O 09 12:32:57                                          5.768  4.665  3.562
S 00 S45                        P G1
S 01 12:33:09 08/09/95  1.000
O 00 TP42                       P F8 NL-PK
O 09 12:35:45                                          5.974  4.819  3.664
O 00 TP43                       P F8 NL-PK
O 09 12:39:40                                          5.908  4.796  3.684
S 00 S46                        P G1
S 01 12:39:50 08/09/95  1.000
O 00 TP43                       P F8 NL-PK
O 09 12:42:36                                          7.681  6.355  5.029
O 00 TP44                       P F8 NL-60D
O 09 12:47:36                                          5.721  4.611  3.501
S 00 S47                        P G1
S 01 12:47:41 08/09/95  1.000
O 00 TP44                       P F8 NL-60D
O 09 12:50:22                                          5.940  4.764  3.588
O 00 TP45                       P F8 NL-60D
O 09 12:54:37                                          5.627  4.513  3.399
S 00 S48                        P G1
S 01 12:55:11 08/09/95  1.000
O 00 TP45                       P F8 NL-60D
O 09 13:00:08                                          5.908  4.725  3.542
O 00 TP46                       P F8 NL-60D
O 09 13:05:00                                          5.764  4.711  3.658
S 00 S49                        P G1
S 01 13:05:06 08/09/95  1.000
O 00 TP46                       P F8 NL-60D
O 09 13:08:05                                          6.289  5.559  4.829
O 00 BM4                        P F8 MISC-BRASS DISC SF
O 99 BRASS DISC S.F.W.M -S332C T/W
O 09 13:11:02                                          5.136  4.427  3.718
S 00 S50                        P G1
S 01 13:11:10 08/09/95  1.000
O 00 BM4                        P F8 MISC-BRASS DISC SF
O 99 BRASS DISC S.F.W.M -S332C T/W
O 09 13:14:03                                          7.916  6.754  5.592
O 00 TP47                       P F8 NL-60D
O 09 13:18:33                                          5.843  4.802  3.761
S 00 S51                        P G1
S 01 13:18:39 08/09/95  1.000
O 00 TP47                       P F8 NL-60D
O 09 13:21:11                                          5.960  4.801  3.642
O 00 TP48                       P F8 NL-60D
O 09 13:25:51                                          5.786  4.607  3.428
S 00 S52                        P G1
S 01 13:25:57 08/09/95  1.000
O 00 TP48                       P F8 NL-60D
O 09 13:28:41                                          5.763  4.566  3.369
O 00 TP49                       P F8 NL-60D
O 09 13:35:17                                          5.582  4.561  3.540
S 00 S53                        P G1
S 01 13:35:25 08/09/95  1.000
O 00 TP49                       P F8 NL-60D
O 09 13:38:17                                          5.704  4.501  3.298
O 00 TP50                       P F8 NL-60D
O 09 13:42:46                                          5.867  4.770  3.673
S 00 S54                        P G1
S 01 13:42:51 08/09/95  1.000
O 00 TP50                       P F8 NL-60D
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O 09 13:45:12                                                  5.475  4.709  3.943
O 00 BM5                       P F8 MISC-BRASS DISC
O 99 BRASS DISC-SFWM-S332C
O 09 13:47:45                                                  8.849  8.144  7.439
S 00 S55                       P G1
S 01 13:47:56 08/09/95  1.000
O 00 BM5                       P F8 MISC-BRASS DISC
O 99 BRASS DISC-SFWM-S332C
O 09 13:50:45                                                  4.825  3.649  2.473
O 00 TP51                      P F8 NL-60D
O 09 13:54:47                                                  5.654  4.601  3.548
S 00 S56                       P G1
S 01 13:54:53 08/09/95  1.000
O 00 TP51                      P F8 NL-60D
O 09 13:57:34                                                  6.408  5.201  3.994
O 00 TP52                      P F8 NL-60D
O 09 14:01:47                                                  5.603  4.400  3.197
S 00 S57                       P G1
S 01 14:01:53 08/09/95  1.000
O 00 TP52                      P F8 NL-60D
O 09 14:04:49                                                  5.408  4.247  3.086
O 00 TP53                      P F8 NL-60D
O 09 14:08:48                                                  5.916  4.745  3.574
S 00 S58                       P G1
S 01 14:08:53 08/09/95  1.000
O 00 TP53                      P F8 NL-60D
O 09 14:11:33                                                  5.524  4.347  3.170
O 00 TP54                      P F8 NL-60D
O 09 14:15:32                                                  5.634  4.495  3.356
S 00 S59                       P G1
S 01 14:15:38 08/09/95  1.000
O 00 TP54                      P F8 NL-60D
O 09 14:18:28                                                  6.397  5.269  4.141
O 00 BM6                       P F8 CMON-FCE-4515
O 99 BRASS DISC
O 09 14:21:02                                                  6.231  5.185  4.139
R 00 00:00:00 12/31/99
R 99 TAPE OBSERVATION DATA STARTS HERE
C 00 00:00:00 12/31/99
C 99 DUMMY TAPE CALIBRATION TO RE-INITIALIZE COLLIMATION TO ZERO
C 01 TAPING     TAPING                10 99 100
C 03 00:00:00                      D   0  0  0.0  90  0  0.0
C 03 00:00:00                      D   0  0  0.0  90  0  0.0
C 03 00:00:00                      R 180  0  0.0 270  0  0.0
C 03 00:00:00                      R 180  0  0.0 270  0  0.0
R 00 00:00:00 12/31/99
R 99 TAPE OBSERVATION DATA ENDS HERE
R 00 00:00:00 12/31/99
R 99 TAPE TRAVERSE DATA (I.E. CHAINS) START HERE
R 00 00:00:00 12/31/99
R 99 TAPE TRAVERSE DATA (I.E. CHAINS) ENDS HERE
R 00 00:00:00 12/31/99
R 99 CHAIN DATA STARTS HERE
R 00 00:00:00 12/31/99
R 99 CHAIN DATA ENDS HERE
R 00 00:00:00 12/31/99
R 99 PREFIX DATA STARTS HERE
P 00
P 01 S59,BM5,TP54
À↕F25    9¶“ñ┬À↕^”5 €¤  ¤  x*˜–┼          “Ò“¼└À↕^”5♬─5  ¦¤5ï┤j¤55â“×└À↕^”5
R 00 00:00:00 12/31/99
R 99 PREFIX DATA ENDS HERE
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MISCLOSURE OF MULTIPLE ELEV. DIFFERENCE MEASUREMENTS
  STATIONS MISCLOSURE
END OF MISCLOSURE REPORT

   64 OF   129 STATIONS IDENTIFIED AS VERTICAL SIDESHOTS
BAND IS   1 STATIONS
LEVEL NETWORK ADJUSTMENT

NUMBER OF BENCHMARKS =   2
NUMBER OF STATIONS =   65
NUMBER OF MEASUREMENTS =   64
NUMBER OF REQUIRED TERMS FOR NORMAL EQUATIONS =   129

RESULTS OF ADJUSTMENT

BENCHMARK ELEVATION RESIDUALS

STATION	INPUT ELEV.	ADJUSTED ELEV.	ERROR EST.	RESIDUAL
BM1	10.709	10.709	.000	.000 (.0)
BM6	11.106	11.106	.000	.000 (.0)

BENCHMARK RMS ERROR = .000 SNOOP RMS = .0
MAX. BENCHMARK RESIDUAL AT STATION BM1 OF .000

RESIDUALS

FROM	TO	MEASURED	RESIDUAL	EST. ERROR
BM1	TP111	-.108	.001 (.1)	.010
TP111	TP211	.572	.001 (.1)	.010
TP211	TP311	-.263	.001 (.1)	.010
TP311	TP411	.256	.001 (.1)	.010
TP411	TBM1	-.148	.001 (.1)	.010
TBM1	TP1	-.173	.001 (.1)	.010
TP1	TP2	.402	.001 (.1)	.010
TP2	TP3	-.167	.001 (.1)	.010
TP3	TP4	.027	.001 (.1)	.010
TP4	TP5	-.572	.001 (.1)	.010
TP5	TP6	1.196	.001 (.1)	.010
TP6	TP7	3.343	.001 (.1)	.010
TP7	TP8	.222	.001 (.1)	.010
TP8	TP9	.099	.001 (.1)	.010
TP9	TP10	-.260	.001 (.1)	.010
TP10	TP11	-1.851	.001 (.1)	.010
TP11	TP12	-1.397	.001 (.1)	.010
TP12	TP13	-.214	.001 (.1)	.010
TP13	TP14	-2.128	.001 (.1)	.010
TP14	TP15	-.040	.001 (.1)	.010
TP15	TP16	2.555	.001 (.1)	.010
TP16	TP17	-.351	.001 (.1)	.010
TP17	TP18	.356	.001 (.1)	.010
TP18	TP19	-.072	.001 (.1)	.010
TP19	TP20	-.201	.001 (.1)	.010
TP20	TP21	.095	.001 (.1)	.010
TP21	TP22	.174	.001 (.1)	.010
TP22	TP23	.089	.001 (.1)	.010
TP23	TP24	.365	.001 (.1)	.010
TP24	TP25	-.464	.001 (.1)	.010
TP25	TP26	.193	.001 (.1)	.010
TP26	TP27	.122	.001 (.1)	.010

TP27	TP28	-.774	.001	(.1)	.010
TP28	BM2	-5.329	.001	(.1)	.010
BM2	TP29	5.809	.001	(.1)	.010
TP29	TP30	-.279	.001	(.1)	.010
TP30	TP31	.037	.001	(.1)	.010
TP31	TP32	.191	.001	(.1)	.010
TP32	TP33	-.006	.001	(.1)	.010
TP33	TP34	-.152	.001	(.1)	.010
TP34	TP35	.137	.001	(.1)	.010
TP35	TP36	.017	.001	(.1)	.010
TP36	TP37	.000	.001	(.1)	.010
TP37	TP38	.133	.001	(.1)	.010
TP38	TP39	-.229	.001	(.1)	.010
TP39	BM3	-5.194	.001	(.1)	.010
BM3	TP40	5.709	.001	(.1)	.010
TP40	TP41	-2.378	.001	(.1)	.010
TP41	TP42	.085	.001	(.1)	.010
TP42	TP43	.023	.001	(.1)	.010
TP43	TP44	1.744	.001	(.1)	.010
TP44	TP45	.251	.001	(.1)	.010
TP45	TP46	.014	.001	(.1)	.010
TP46	BM4	1.132	.001	(.1)	.010
BM4	TP47	1.952	.001	(.1)	.010
TP47	TP48	.194	.001	(.1)	.010
TP48	TP49	.005	.001	(.1)	.010
TP49	TP50	-.269	.001	(.1)	.010
TP50	BM5	-3.435	.001	(.1)	.010
BM5	TP51	-.952	.001	(.1)	.010
TP51	TP52	.801	.001	(.1)	.010
TP52	TP53	-.498	.001	(.1)	.010
TP53	TP54	-.148	.001	(.1)	.010
TP54	BM6	.084	.001	(.1)	.010

ELEV. DIFF. RMS ERROR = .001 SNOOP RMS = .1
MAX. ELEV. DIFF. RESIDUAL TP111 - TP211 OF .001

95% CONFIDENCE F STATISTIC STANDARD ERROR MULTIPLIER FOR 1 D.F. IS 20.00

STATION	ADJUSTED ELEV.	STANDARD ERROR
BM1	10.709	.002
TP111	10.602	.161
TP211	11.175	.226
TP311	10.913	.275
TP411	11.170	.315
TBM1	11.023	.349
TP1	10.851	.379
TP2	11.254	.406
TP3	11.088	.430
TP4	11.116	.452
TP5	10.545	.472
TP6	11.742	.490
TP7	15.086	.507
TP8	15.309	.523
TP9	15.409	.537
TP10	15.150	.551
TP11	13.300	.563
TP12	11.904	.574
TP13	11.691	.584
TP14	9.564	.594
TP15	9.525	.603
TP16	12.081	.610

LEVEL.1D

TP17	11.731	.617
TP18	12.088	.624
TP19	12.017	.629
TP20	11.817	.634
TP21	11.913	.638
TP22	12.088	.642
TP23	12.178	.645
TP24	12.544	.647
TP25	12.081	.649
TP26	12.275	.650
TP27	12.399	.650
TP28	11.626	.650
BM2	6.298	.649
TP29	12.108	.647
TP30	11.830	.645
TP31	11.868	.642
TP32	12.060	.638
TP33	12.055	.634
TP34	11.904	.629
TP35	12.042	.624
TP36	12.060	.617
TP37	12.061	.610
TP38	12.195	.603
TP39	11.967	.594
BM3	6.774	.584
TP40	12.484	.574
TP41	10.107	.563
TP42	10.193	.551
TP43	10.217	.537
TP44	11.962	.523
TP45	12.214	.507
TP46	12.229	.490
BM4	13.362	.472
TP47	15.315	.452
TP48	15.510	.430
TP49	15.516	.406
TP50	15.248	.379
BM5	11.814	.349
TP51	10.863	.315
TP52	11.665	.275
TP53	11.168	.226
TP54	11.021	.161
BM6	11.106	.002

STANDARD ERROR OF UNIT WEIGHT IS .812
WITH 1 DEGREES OF FREEDOM

CHI SQUARED TEST ON ANALYSIS
.031 < .812 < 1.960
(LOW) (HIGH)
PASSES AT THE 5 % SIGNIFICANCE LEVEL

PROJECT NAME IS LEVEL

ELEVATION CLOSURE REPORT
SUM OF DISTANCES ALONG SURVEY IS 26408.700
CLOSURE IN ELEVATION (Z) = .065
CLOSURE PER STATION = .001
PRECISION = 1 / 406288.

STATION	ELEVATION (Z)
BM1	10.709
TP111	10.602
TP211	11.175
TP311	10.913
TP411	11.170
TBM1	11.023
TP1	10.851
TP2	11.254
TP3	11.088
TP4	11.116
TP5	10.545
TP6	11.742
TP7	15.086
TP8	15.309
TP9	15.409
TP10	15.150
TP11	13.300
TP12	11.904
TP13	11.691
TP14	9.564
TP15	9.525
TP16	12.081
TP17	11.731
TP18	12.088
TP19	12.017
TP20	11.817
TP21	11.913
TP22	12.088
TP23	12.178
TP24	12.544
TP25	12.081
TP26	12.275
TP27	12.399
TP28	11.626
BM2	6.298
TP29	12.108
TP30	11.830
TP31	11.868
TP32	12.060
TP33	12.055
TP34	11.904
TP35	12.042
TP36	12.060
TP37	12.061
TP38	12.195
TP39	11.967
BM3	6.774
TP40	12.484
TP41	10.107
TP42	10.193
TP43	10.217
TP44	11.962
TP45	12.214

	LEVEL.CHL
TP46	12.229
BM4	13.362
TP47	15.315
TP48	15.510
TP49	15.516
TP50	15.248
BM5	11.814
TP51	10.863
TP52	11.665
TP53	11.168
TP54	11.021
BM6	11.106

TOTAL LENGTH OF EVALUATED SURVEY DISTANCE = 5.002 MILES
OVERALL PRECISION = 1 / 406288.

NGVD29 Adjusted

LEVEL.SOE

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G 00         LEVEL.SOE
G 01 BM1                        P F8 CMON-F504                          F
G 04                                                    10.709     .002
G 01 TP111                      P F8 NL-60D                             F
G 04                                                    10.602     .161
G 01 TP211                      P F8 NL-60D                             F
G 04                                                    11.175     .226
G 01 TP311                      P F8 NL-60D                             F
G 04                                                    10.913     .275
G 01 TP411                      P F8 NL-60D                             F
G 04                                                    11.170     .315
G 01 TBM1                       P F8 CMON-FCE-4515                      F
G 04                                                    11.023     .349
G 01 TP1                        P F8 NL-60D                             F
G 04                                                    10.851     .379
G 01 TP2                        P F8 NL-60D                             F
G 04                                                    11.254     .406
G 01 TP3                        P F8 NL-60D                             F
G 04                                                    11.088     .430
G 01 TP4                        P F8 NL-60D                             F
G 04                                                    11.116     .452
G 01 TP5                        P F8 NL-60D                             F
G 04                                                    10.545     .472
G 01 TP6                        P F8 MISC-SFWM-BRASS DI                 F
G 99 SFWM-BRASS DISC #S332C
G 04                                                    11.742     .490
G 01 TP7                        P F8 NL-60D                             F
G 04                                                    15.086     .507
G 01 TP8                        P F8 NL-60D                             F
G 04                                                    15.309     .523
G 01 TP9                        P F8 NL-60D                             F
G 04                                                    15.409     .537
G 01 TP10                       P F8 NL-60D                             F
G 04                                                    15.150     .551
G 01 TP11                       P F8 MISC-BRASS DISC                    F
G 99 SFWM BRASS DISC #S332C T/W
G 04                                                    13.300     .563
G 01 TP12                       P F8 NL-60D                             F
G 04                                                    11.904     .574
G 01 TP13                       P F8 NL-60D                             F
G 04                                                    11.691     .584
G 01 TP14                       P F8 NL-PK                              F
G 04                                                     9.564     .594
G 01 TP15                       P F8 NL-PK                              F
G 04                                                     9.525     .603
G 01 TP16                       P F8 NL-60D                             F
G 04                                                    12.081     .610
G 01 TP17                       P F8 NL-60D                             F
G 04                                                    11.731     .617
G 01 TP18                       P F8 NL-60D                             F
G 04                                                    12.088     .624
G 01 TP19                       P F8 NL-60D                             F
G 04                                                    12.017     .629
G 01 TP20                       P F8 NL-60D                             F
G 04                                                    11.817     .634
G 01 TP21                       P F8 NL-60D                             F
G 04                                                    11.913     .638
G 01 TP22                       P F8 NL-60D                             F
G 04                                                    12.088     .642
G 01 TP23                       P F8 NL-60D                             F
G 04                                                    12.178     .645
G 01 TP24                       P F8 NL-60D                             F
G 04                                                    12.544     .647
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G 01 TP25                      P F8 NL-60D                              F
G 04                                                  12.081     .649
G 01 TP26                      P F8 NL-60D                              F
G 04                                                  12.275     .650
G 01 TP27                      P F8 NL-60D                              F
G 04                                                  12.399     .650
G 01 TP28                      P F8 NL-60D                              F
G 04                                                  11.626     .650
G 01 BM2                       P F8 MISC-ALUM-CAP                       F
G 99 RUTZKE ALUM CAP 2001
G 04                                                   6.298     .649
G 01 TP29                      P F8 NL-60D                              F
G 04                                                  12.108     .647
G 01 TP30                      P F8 NL-60D                              F
G 04                                                  11.830     .645
G 01 TP31                      P F8 NL-60D                              F
G 04                                                  11.868     .642
G 01 TP32                      P F8 NL-60D                              F
G 04                                                  12.060     .638
G 01 TP33                      P F8 NL-60D                              F
G 04                                                  12.055     .634
G 01 TP34                      P F8 NL-60D                              F
G 04                                                  11.904     .629
G 01 TP35                      P F8 NL-60D                              F
G 04                                                  12.042     .624
G 01 TP36                      P F8 NL-60D                              F
G 04                                                  12.060     .617
G 01 TP37                      P F8 NL-60D                              F
G 04                                                  12.061     .610
G 01 TP38                      P F8 NL-60D                              F
G 04                                                  12.195     .603
G 01 TP39                      P F8 NL-60D                              F
G 04                                                  11.967     .594
G 01 BM3                       P F8 MISC-BRASS-DISC                     F
G 99 RUTZKE#2 ARMY CORP OF ENGINERS
G 04                                                   6.774     .584
G 01 TP40                      P F8 NL-60D                              F
G 04                                                  12.484     .574
G 01 TP41                      P F8 NL-PK                               F
G 04                                                  10.107     .563
G 01 TP42                      P F8 NL-PK                               F
G 04                                                  10.193     .551
G 01 TP43                      P F8 NL-PK                               F
G 04                                                  10.217     .537
G 01 TP44                      P F8 NL-60D                              F
G 04                                                  11.962     .523
G 01 TP45                      P F8 NL-60D                              F
G 04                                                  12.214     .507
G 01 TP46                      P F8 NL-60D                              F
G 04                                                  12.229     .490
G 01 BM4                       P F8 MISC-BRASS DISC SF                  F
G 99 BRASS DISC S.F.W.M -S332C T/W
G 04                                                  13.362     .472
G 01 TP47                      P F8 NL-60D                              F
G 04                                                  15.315     .452
G 01 TP48                      P F8 NL-60D                              F
G 04                                                  15.510     .430
G 01 TP49                      P F8 NL-60D                              F
G 04                                                  15.516     .406
G 01 TP50                      P F8 NL-60D                              F
G 04                                                  15.248     .379
G 01 BM5                       P F8 MISC-BRASS DISC                     F
G 99 BRASS DISC-SFWM-S332C
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G 04                                          11.814     .349
G 01 TP51                  P F8 NL-60D                       F
G 04                                          10.863     .315
G 01 TP52                  P F8 NL-60D                       F
G 04                                          11.665     .275
G 01 TP53                  P F8 NL-60D                       F
G 04                                          11.168     .226
G 01 TP54                  P F8 NL-60D                       F
G 04                                          11.021     .161
G 01 BM6                   P F8 CMON-FCE-4515                F
G 99 BRASS DISC
G 04                                          11.106     .002
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