```
Identification_Information:
        Citation:
                Citation_Information:
                        Originator: Darren Townsend(ed.)
                        Publication_Date: 20050518
                        Publication_Time: Unknown
                        Title: S.F.W.M.D. Well  HE-858
                        Publication_Information:
                                Publication_Place: 20050130
                                Publisher: None
                        Online_Linkage: darrent@cooner.com
        Description:
                Abstract:
                        South Florida Water Management District
                        HE-858
                Purpose:
                        To establish NAVD 88 and NGVD 29 elevations on the
                        well from nearby, existing benchmarks.  Also, to
                        establish an on-site benchmark.
                Supplemental_Information:
                        ACCOMPANYING DIGITAL FILES
                        HE-858.GEN , CORPSMET95 FILE
                        HE-858.MET, CORPSMET95 FILE
                        HE-858-2005.DOC , BENCHMARK RECOVERY FORM
                        HE-858.PDF , SCANNED COPIES OF
                        FIELD NOTES,
                        VERTCON CALCULATONS (IF APPLICABLE)
                        HE-858.PPT , POWER POINT FILES OF WELL SITE
                        PICTURES
                        HE858.LST, LEAST SQUARES ADJUSTMENT
        Time_Period_of_Content:
                Time_Period_Information:
                        Range_of_Dates/Times:
                                Beginning_Date: 20050722
                                Ending_Date: 20050817
                Currentness_Reference: Publication Date
        Status:
                Progress: Complete
                Maintenance_and_Update_Frequency: Unknown
        Spatial_Domain:
                Bounding_Coordinates:
                        West_Bounding_Coordinate: -081°07'45.35"
                        East_Bounding_Coordinate: -081°07'45.35"
                        North_Bounding_Coordinate: +26°42'08.45"
                        South_Bounding_Coordinate: +26°42'08.45"
        Keywords:
                Theme:
                        Theme_Keyword_Thesaurus: None
                        Theme_Keyword: Record Survey
                        Theme_Keyword: Well Site
                Place:
                        Place_Keyword_Thesaurus: None
                        Place_Keyword: SFWMD WELL HE-858
                        Place_Keyword: SEC.33, TWP 43 S, RGE 32 E
                        Place_Keyword: HENDRY COUNTY FLORIDA
        Access_Constraints: None
        Use_Constraints: None
        Point_of_Contact:
                Contact_Information:
                        Contact_Person_Primary:
                                Contact_Person: Elvie Ebanks
                                Contact_Organization: South Florida Water Management
District
```

Darren Townsend
Cooner & Associates

Purpose

Deliverable

Survey Date

Elvie Ebanks
SFWMD

Contact_Position: Professional Surveyor & Mapper
Contact_Address:
Address_Type: mailing and physical address
Address: 3301 Gun Club Road
City: West Palm Beach
State_or_Province: Florida
Postal_Code: 33406
Country: USA
Contact_Voice_Telephone: (561) 753-2400, Ext. 4717
Contact_Electronic_Mail_Address: eebanks@sfwmd.gov
Hours_of_Service: 8:00 am to 5:00 pm EST

Data_Quality_Information:
Attribute_Accuracy:
Attribute_Accuracy_Report:

Equipment Used

The horizontal location of the wells and benchmark was performed using differentially corrected TRIMBLE GPS PATHFINDER PRO XR reciever. The vertical data was collected using a TOPCON DL-101C electronic digital level. Coordinates are based on the Florida State Plane Coordinate System, East Zone, NAD 83/99. Elevations are based on NAVD 88.

Logical_Consistency_Report:
Horizontal data was established using differentially corrected GPS signals from U.S. Coast Guard Beacon at Eggmont Key. Vertical data was established using existing NGS benchmarks H530 and G530.

Completeness_Report:

Project Results

WELL SITE
Existing well site was destroyed before horizontal location and elevation could be measured.
NEW SITE BENCHMARK
HE-858 is a standard SFWMD brass disk set in top of a class "C" concrete monument, flush with the ground. A magnet was set on the south side of the monument. Set prior to destruction of well site.
From the intersection or S.R. 80 & C.R. 883 in Hendry county Fl. Travel south on C.R. 883 for 3.4 miles on the mark on the right 35.5 ft from centerline of road.
26.10 feet west southwest of a PK & Disc "CONT.PT. LB 6773" set in the edge of pavement 25.20 feet west northwest of a PK & Disc "CONT.PT. LB 6773" set in the edge of pavement and 33.85 feet northwest of a PK & Disc"CONT.PT. LB 6773" set in the edge of pavement.
Lat. +26°42'08.45"
Long. -081°07'45.35"
N 860996.89 feet
E 613695.83 feet
22.91 feet (NAVD 88)
24.23 feet (NGVD 29) calculated using 1.32 feet offset value based on NGS NGVD 29 adjustment of CERP vertical network for control point G530.
24.24 feet (NGVD 29) calculated using 1.33 feet offset value based on NGS NGVD 29 adjustment of CERP vertical network for control point H530.

Positional_Accuracy:
Horizontal_Positional_Accuracy:
Horizontal_Positional_Accuracy_Report:

Horizontal

The horizontal positions of the well and set benchmark

were established with differentially corrected GPS signals

from U.S. Coast Guard Beacon at Eggmont Key.
Quantitative_Horizontal_Positional_Accuracy_Assessment:

```
                                Horizontal_Positional_Accuracy_Value: sub meter
                                Horizontal_Positional_Accuracy_Explanation: The
intended  positional accuracy for this survey is sub meter.
                Vertical_Positional_Accuracy:
                        Vertical_Positional_Accuracy_Report:
                                A level line was run originating on NGS benchmark
H530
                                with an NAVD 88 elevation running through new site
                                benchmark HE-858 and terminating on NGS benchmark
                                G530 in accordance with Florida Minimum
                                Technical Standards (Chapter 61G17-6).  Existing
well site
                                was destroyed before level line could be run from
new site
                                benchmark.
                        Quantitative_Vertical_Positional_Accuracy_Assessment:
                                Vertical_Positional_Accuracy_Value: 0.009 ft
                                Vertical_Positional_Accuracy_Explanation: NAVD 88
level run to set BM, 0.009 ft closure in 5693.06 ft, max. allowed 0.0312 ft (MTS)
        Lineage:
                Process_Step:
                        Process_Description:
                                The horizontal work was performed using a Trimble
GPS
                                Pathfinder Pro XR reciever using U.S. Coast Guard
                                beacon at Eggmont Key. The level line was performed
                                using a Topcon DL-101C electronic digital level.
                        Process_Date: 20060130
Metadata_Reference_Information:
        Metadata_Date: 20060130
        Metadata_Contact:
                Contact_Information:
                        Contact_Person_Primary:
                                Contact_Person: Darren Townsend
                                Contact_Organization: Cooner & Associates, Inc.
                        Contact_Position: Project Surveyor
                        Contact_Address:
                                Address_Type: mailing and physical address
                                Address: 5670 Zip Drive
                                City: Fort Myers
                                State_or_Province: Florida
                                Postal_Code: 33905
                                Country: USA
                        Contact_Voice_Telephone: (239) 277-0722
                        Contact_Facsimile_Telephone: (239) 277-7179
                        Contact_Electronic_Mail_Address: darrent@cooner.com
                        Hours_of_Service: 8:00 am to 5:00 pm EST
        Metadata_Standard_Name: FGDC Content Standards for Digital Geospatial
Metadata
        Metadata_Standard_Version: 19980601
```

Level Line

HE -858

- COONER & ASSOCIATES, INC.
- Date of photo: September 1, 2005
- View: Looking North at BM

HE -858

- COONER & ASSOCIATES, INC.
- Date of photo: September 21, 2005
- View: Looking at top view of BM 858

HE -858

- COONER & ASSOCIATES, INC.
- Date of photo: August 26, 2005
- View: Looking at well damage 1

HE -858

- COONER & ASSOCIATES, INC.
- Date of photo: August 26, 2005
- View: Looking at well damage 2

8-17-05 HE 858

HE 14
D. LOOKABILL
T. ROSENBURG

BS	DIST	HI	FS	DIST	EL NAVD 88	DESC.
						H530
8.813	201.08	30.553			21.74	FND ROUND CON. MON W/ BRASS DISC"
6.138	208.02	30.869	5.822	214.12	24.731	TP 1 (HUB SET ON W. SIDE OF 833)
					24.73' Adjusted	
6.166	207.16	29.929	7.106	195.18	23.763	TP 2 (HUB SET ON W. SIDE OF 833)
					23.76' Adj.	
5.210	202.30	29.275	5.864	210.76	24.065	TP 3 (HUB SET ON W. SIDE OF 833)
					24.06' Adj.	
5.857	193.92	29.417	5.715	204.18	23.560	TP 4 (HUB SET ON W. SIDE OF 833)
					23.56' Adj	
5.450	226.80	29.324	5.543	211.26	23.874	TP 5 (HUB SET ON W. SIDE OF 833)
					23.87' Adj.	

Adj. = Adjusted

8-17-05T

HE 858
CONT.

HE 15
D. LOOKABILL
T. ROSENBERG

BS	DIST	HI	FS	DIST	EL	DESC.
4.262	247.04	29.051	4.535	220.88	24.789	TP6 (SET HUB ON W. SIDE OF 833)
					~~24.789~~ 24.78' Adj.	FND COAL. MON. "HE 858 2005", TP-7
5.381	209.50	28.299	6.133	294.06	22.918	
					~~22.91~~ 22.91' Adjusted	
5.338	208.90	28.080	5.557	198.06	22.742	TP8 (SET HUB ON W. SIDE OF 833)
					~~22.737~~ 22.74' Adj.	
5.085	195.00	28.749	4.416	196.50	23.664	TP9 (SET HUB ON W. SIDE OF 833)
					~~23.67~~ 23.66' Adj.	
5.122	199.14	28.544	5.327	203.36	23.422	TP10 (SET HUB ON W. SIDE OF 832)
					~~23.413~~ 23.42' Adj	
5.446	199.42	28.605	5.385	212.36	23.159	TP11 (SET HUB ON W. SIDE OF 832)
					~~23.152~~ 23.15' Adj	

Adj. = Adjusted

8-18-05

HE 858
CONT.

HE 16
D. LOOKABILL
T. ROSENBERG

BS	DIST	HI	FS	DIST	EL	
4.958	309.18	28.366	5.197	223.86	23.408	TP12 (SET HUB ON W. SIDE OF 858)
					~~23.400~~ 23.40' Adj.	
5.206	135.30	28.756	4.816	185.92	23.550	TP13 (SET HUB ON W. SIDE OF 858)
					~~23.541~~ 23.54' Adj.	
			8.157	74.78	20.579	G530 FND STEEL DEEP ROD STAMPED "G 530 2021" +0.009
					20.59' Adj.	20.59' POSTED NAVD 88

Misclosure = +0.009'

Total Dist = 5693.06'

Allowable = $\sqrt{\frac{\cancel{5692.98}\ 5693.06}{5280}} \times 0.03 = \cancel{0.031}\ 0.0312'$

Adj. = Adjusted.

020801,06 HENDRY CO. WELLS

* WELL DESTROYED BEFORE LOCATION OR ELEVATION COULD BE DETERMINED.

A
B
D

FILE: HENDRYCO. 7-22-05

MAPPING GRADE GPS COORDINATES

2POINT GENERIC HE-858 BM N - 860916.89'

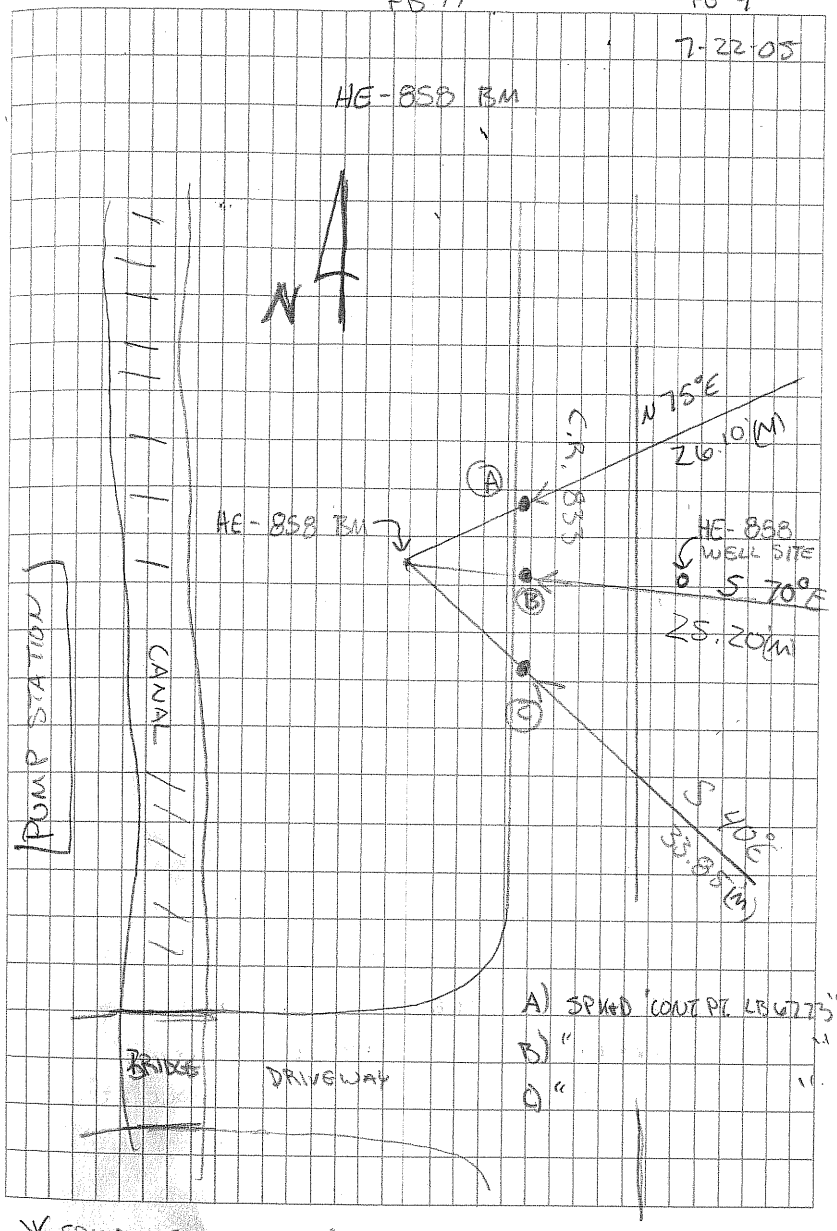
E - 613965.83'

(U.S. STATE PLANE 1983, FL EAST ZONE)

C. COLLINS
E SORENSEN

FB 99 PG 9

7-22-05



A) SPIKED 'CONT.PT LBUTTS'

B) "

D) "

* SPIKED = SET PK NAIL 'CONT.PT LBUTTS'

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Rev. 4/01

COUNTY HENDRY	**PROJECT** HENDRY WELLS	**DESIGNATION** HE-858
SECTION 33	**TOWNSHIP 43 S**	**RANGE 32 E**

GEOGRAPHIC INDEX OF QUAD

Established by X **Recovered by** Cooner & Associates, Inc.	**NAME OF QUADRANGLE** GRASSY MARSH (1970)
SURVEYOR CGC **DATE** 7 / 12 / 2005	**FIELD BOOK** 99/ HE **PAGE** 9/14-16

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 Sub-meter (circle one) VERTICAL **1** (**2**) **3**

STATE PLANE COORDINATES	**X** 860996.89’	**Y** 613965.83’	**EL.** ~~24.78’~~ 22.91'

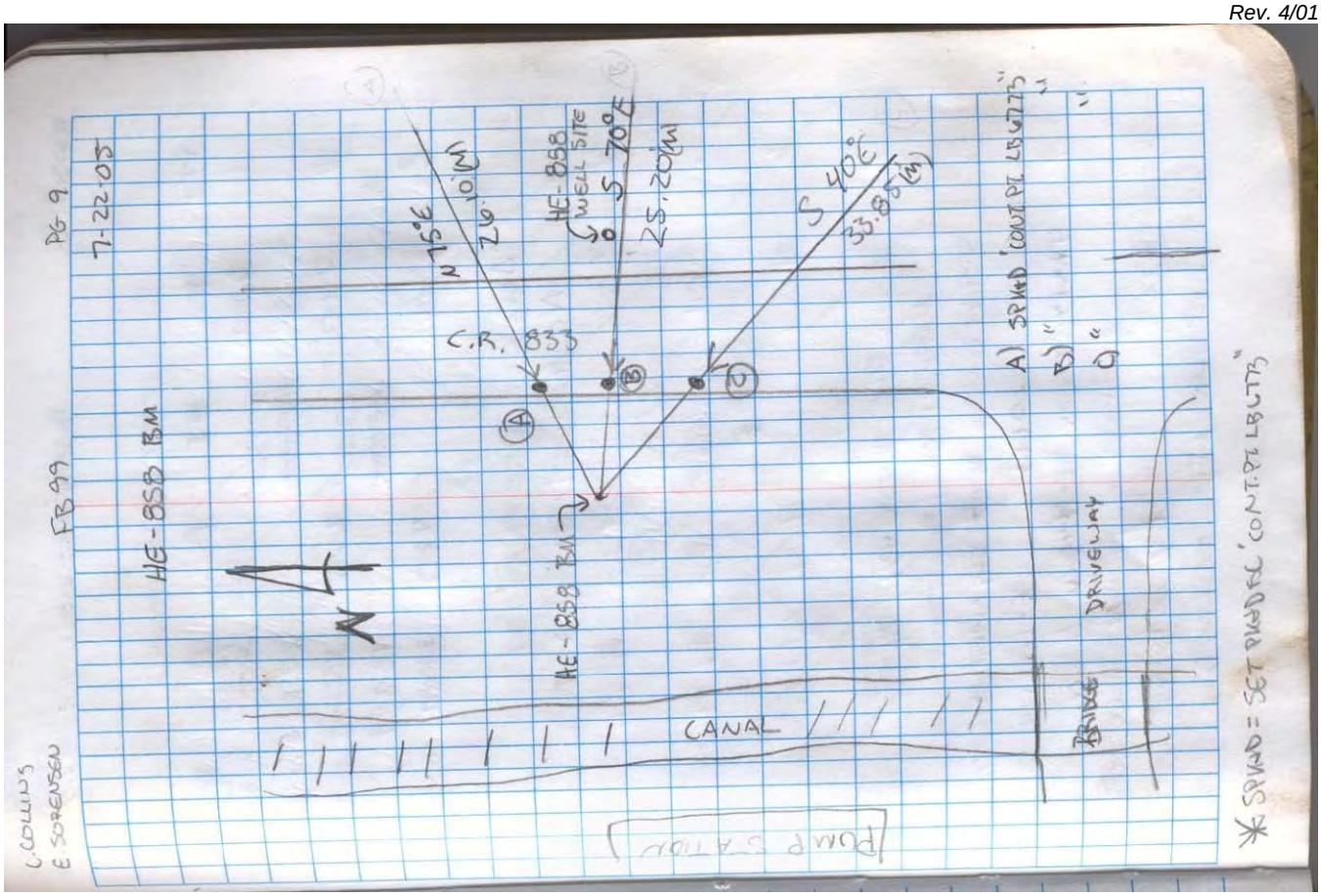
LATITUDE 26° 42’ 08.45” N LONGITUDE 081° 07’ 45.35” W

DESCRIPTION Poured concrete monument with aluminum SFWMD disk stamped “HE-858 2005”

To Reach: From the intersection or S.R. 80 & C.R. 883 in Hendry county Fl. Travel south on C.R. 883 for 3.4 miles on the Mark on the right 35.5 ft from centerline of road. 26.10 feet west southwest of a PK & Disc “CONT.PT. LB 6773” set in the Edge of pavement 25.20’ west northwest of a PK & Disc “CONT.PT. LB 6773” set in the Edge of pavement And 33.85’ northwest of a PK & Disc “CONT.PT. LB 6773” set in the E.O.P.

Notable Land marks:

SKETCH


PG 9
7-22-05
FB 99
HE-858 BM
L. COLLINS
E. SORENSEN
N 75°E
26.10(M)
HE-858 WELL SITE
S 70°E
25.20(M)
S 40°E
33.85(M)
C.R. 833
A
B
C
HE-858 BM
CANAL
PUMP STATION
DRIVEWAY
BRIDGE
A) SPWD 'CONT.PL LBUTTS"
B) "
C) "
* SPWD = SET PWDEL 'CONT.PL LBUTTS"

From the NGS Adjustment file "ngvd29.txt" for the CERP Geodetic Vertical Control Project.
Line/Part: L26225 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID	SSN	PID	Designation	Geopotential	Elevation	Codes
1476	2206	AJ7614	G 530	6.5448	6.6784	
1477	2207	AJ7597	H 530	6.8895	7.0301	

The NGS Data Sheet

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

```
DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.57
1        National Geodetic Survey,   Retrieval Date = DECEMBER  5, 2007
 AJ7614 ***********************************************************************
 AJ7614  DESIGNATION -  G 530
 AJ7614  PID         -  AJ7614
 AJ7614  STATE/COUNTY-  FL/HENDRY
 AJ7614  USGS QUAD   -  GRASSY MARSH (1970)
 AJ7614
 AJ7614                          *CURRENT SURVEY CONTROL
 AJ7614  ______________________________________________________________________
 AJ7614* NAD 83(2007)-  26 42 34.58650(N)    081 07 44.38134(W)     ADJUSTED
 AJ7614* NAVD 88     -         6.275  (meters)      20.59   (feet)  ADJUSTED
 AJ7614  ______________________________________________________________________
 AJ7614  EPOCH DATE  -        2002.00
 AJ7614  X           -     879,215.947 (meters)                     COMP
 AJ7614  Y           -  -5,633,204.818 (meters)                     COMP
 AJ7614  Z           -   2,849,501.582 (meters)                     COMP
 AJ7614  LAPLACE CORR-           -0.86  (seconds)                   DEFLEC99
 AJ7614  ELLIP HEIGHT-         -18.230 (meters)          (02/10/07) ADJUSTED
 AJ7614  GEOID HEIGHT-         -24.51  (meters)                     GEOID03
 AJ7614  DYNAMIC HT  -           6.265 (meters)      20.55  (feet)  COMP
 AJ7614
 AJ7614  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 AJ7614  Type    PID    Designation                        North   East  Ellip
 AJ7614  ----------------------------------------------------------------------
 AJ7614  NETWORK AJ7614 G 530                               2.06   2.41   4.35
 AJ7614  ----------------------------------------------------------------------
 AJ7614  MODELED GRAV-     979,106.0   (mgal)                     NAVD 88
 AJ7614
 AJ7614  VERT ORDER  -  FIRST     CLASS II
 AJ7614
 AJ7614.The horizontal coordinates were established by GPS observations
 AJ7614.and adjusted by the National Geodetic Survey in February 2007.
 AJ7614
 AJ7614.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AJ7614.The horizontal coordinates are valid at the epoch date displayed above.
 AJ7614.The epoch date for horizontal control is a decimal equivalence
 AJ7614.of Year/Month/Day.
 AJ7614
 AJ7614.The orthometric height was determined by differential leveling
 AJ7614.and adjusted in February 2002.
 AJ7614
 AJ7614.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AJ7614
 AJ7614.The Laplace correction was computed from DEFLEC99 derived deflections.
 AJ7614
 AJ7614.The ellipsoidal height was determined by GPS observations
 AJ7614.and is referenced to NAD 83.
 AJ7614
 AJ7614.The geoid height was determined by GEOID03.
 AJ7614
 AJ7614.The dynamic height is computed by dividing the NAVD 88
 AJ7614.geopotential number by the normal gravity value computed on the
 AJ7614.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AJ7614.degrees latitude (g = 980.6199 gals.).
 AJ7614
 AJ7614.The modeled gravity was interpolated from observed gravity values.
 AJ7614
 AJ7614;                    North         East     Units Scale Factor Converg.
 AJ7614;SPC FL E     -   263,236.574   187,164.659   MT  0.99994321   -0 03 28.7
 AJ7614;SPC FL E     -   863,635.33    614,056.05    sFT  0.99994321   -0 03 28.7
 AJ7614;UTM  17      - 2,954,278.740   487,169.038   MT  0.99960203   -0 03 28.7
 AJ7614
 AJ7614!             -  Elev Factor  x  Scale Factor =   Combined Factor
 AJ7614!SPC FL E     -   1.00000286  x   0.99994321  =   0.99994607
 AJ7614!UTM  17      -   1.00000286  x   0.99960203  =   0.99960489
 AJ7614
 AJ7614                          SUPERSEDED SURVEY CONTROL
 AJ7614
```

```
AJ7614  NAD 83(1999)-  26 42 34.58660(N)    081 07 44.38143(W) AD(       ) 1
AJ7614  ELLIP H (12/12/02)  -18.231  (m)                        GP(       ) 3 1
AJ7614  NAVD 88 (12/12/02)    6.28   (m)           20.6    (f) LEVELING    3
AJ7614
AJ7614.Superseded values are not recommended for survey control.
AJ7614.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ7614.See file dsdata.txt to determine how the superseded data were derived.
AJ7614
AJ7614_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMK8716954279(NAD 83)
AJ7614_MARKER: F = FLANGE-ENCASED ROD
AJ7614_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AJ7614_STAMPING: G 530 2001 CERP
AJ7614_MARK LOGO: NONE
AJ7614_PROJECTION: RECESSED 10 CENTIMETERS
AJ7614_MAGNETIC: O = OTHER; SEE DESCRIPTION
AJ7614_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AJ7614_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ7614+SATELLITE: SATELLITE OBSERVATIONS - April 26, 2002
AJ7614_ROD/PIPE-DEPTH: 24.3 meters
AJ7614
AJ7614  HISTORY     - Date     Condition        Report By
AJ7614  HISTORY     - 20010627 MONUMENTED       EMCINC
AJ7614  HISTORY     - 20020426 GOOD             MAPTEC
AJ7614  HISTORY     - 20050818 GOOD             INDIV
AJ7614
AJ7614                          STATION DESCRIPTION
AJ7614
AJ7614'DESCRIBED BY EMC INCORPORATED 2001 (MKC)
AJ7614'THE MARK IS LOCATED ABOUT 14.5 KILOMETERS (9.0 MILES) SOUTH
AJ7614'SOUTHWEST OF MOORE HAVEN, FLORIDA, ALSO ABOUT 19.3 KILOMETERS (12.0
AJ7614'MILES) WEST OF CLEWISTON, FLORIDA, ON THE RIGHT OF WAY OF COUNTY
AJ7614'ROAD 833. LOCATED ON THE GRASSY MARSH QUAD IN SECTION 27, TOWNSHIP 43
AJ7614'SOUTH, RANGE 32 EAST.
AJ7614'
AJ7614'OWNERSHIP  FLDT
AJ7614'
AJ7614'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 80 AND
AJ7614'COUNTY ROAD 833 ABOUT 17.7 KILOMETERS (11.0 MILES) WEST OF
AJ7614'CLEWISTON, FLORIDA, GO SOUTH 4.83 KILOMETERS (3.0 MILES) ON COUNTY
AJ7614'ROAD 833 TO THE MARK ON THE LEFT (EAST) SIDE OF THE ROAD AT A BOARD
AJ7614'FENCE.
AJ7614'
AJ7614'THE MARK IS 36.4 METERS (119.4 FEET) NORTH OF THE CORNER OF A
AJ7614'BOARD FENCE, 15.2 METERS (49.9 FEET) EAST OF THE CENTER OF COUNTY
AJ7614'ROAD 833, 0.6 METERS (2.0 FEET) WEST OF A CARSONITE WITNESS POST SET
AJ7614'AT A BOARD FENCE.
AJ7614'THE MARK IS A STAINLESS STEEL ROD DRIVEN TO A DEPTH OF 24.38 METERS
AJ7614'LOCATED IN A 5-INCH LOGO COVER, RECESSED 0.1 METERS (0.3 FEET). A
AJ7614'MAGNET WAS PLACED INSIDE THE LOGO COVER.
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614
AJ7614                          STATION RECOVERY (2002)
AJ7614
AJ7614'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AJ7614'THE MARK IS LOCATED ABOUT 14.5 KILOMETERS (9.0 MILES) SOUTH
AJ7614'SOUTHWEST OF MOORE HAVEN, FLORIDA, ALSO ABOUT 19.3 KILOMETERS (12.0
AJ7614'MILES) WEST OF CLEWISTON, FLORIDA, ON THE RIGHT OF WAY OF COUNTY
AJ7614'ROAD 833. LOCATED ON THE GRASSY MARSH QUAD IN SECTION 27, TOWNSHIP 43
AJ7614'SOUTH, RANGE 32 EAST.
AJ7614'
AJ7614'OWNERSHIP  FLDT
AJ7614'
AJ7614'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 80 AND
AJ7614'COUNTY ROAD 833 ABOUT 17.7 KILOMETERS (11.0 MILES) WEST OF
AJ7614'CLEWISTON, FLORIDA, GO SOUTH 4.83 KILOMETERS (3.0 MILES) ON COUNTY
AJ7614'ROAD 833 TO THE MARK ON THE LEFT (EAST) SIDE OF THE ROAD AT A BOARD
AJ7614'FENCE.
AJ7614'
AJ7614'THE MARK IS 36.4 METERS (119.4 FEET) NORTH OF THE CORNER OF A
AJ7614'BOARD FENCE, 15.2 METERS (49.9 FEET) EAST OF THE CENTER OF COUNTY
AJ7614'ROAD 833, 0.6 METERS (2.0 FEET) WEST OF A CARSONITE WITNESS POST SET
AJ7614'AT A BOARD FENCE.
AJ7614'THE MARK IS A STAINLESS STEEL ROD DRIVEN TO A DEPTH OF 24.38 METERS
AJ7614'LOCATED IN A 5-INCH LOGO COVER, RECESSED 0.1 METERS (0.3 FEET). A
```

```
AJ7614'MAGNET WAS PLACED INSIDE THE LOGO COVER.
AJ7614'
AJ7614'
AJ7614'STATION RECOVERY (2002)
AJ7614'RECOVERY NOTE BY MAPTECH, INCORPORATED 2002 (CP)
AJ7614'RECOVERED AS DESCRIBED.
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614'
AJ7614
AJ7614                          STATION RECOVERY (2005)
AJ7614
AJ7614'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (DL)
AJ7614'RECOVERED AS DESCRIBED

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

From the NGS Adjustment file "ngvd29.txt" for the CERP Geodetic Vertical Control Project.
Line/Part: L26225 SSN+: mark floated, SSN*: mark constrained, SSN#: mark floated & constrained

Mark ID	SSN	PID	Designation	Geopotential	Elevation	Codes
1476	2206	AJ7614	G 530	6.5448	6.6784	
1477	2207	AJ7597	H 530	6.8895	7.0301	

The NGS Data Sheet

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

```
DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 7.57
1        National Geodetic Survey,   Retrieval Date = DECEMBER  5, 2007
 AJ7597 ***********************************************************************
 AJ7597  DESIGNATION -  H 530
 AJ7597  PID         -  AJ7597
 AJ7597  STATE/COUNTY-  FL/HENDRY
 AJ7597  USGS QUAD   -  GRASSY MARSH (1970)
 AJ7597
 AJ7597                          *CURRENT SURVEY CONTROL
 AJ7597  ______________________________________________________________________
 AJ7597* NAD 83(2007)-  26 41 38.42756(N)    081 07 44.38495(W)     ADJUSTED
 AJ7597* NAVD 88     -         6.625  (meters)      21.74   (feet)  ADJUSTED
 AJ7597  ______________________________________________________________________
 AJ7597  EPOCH DATE  -        2002.00
 AJ7597  X           -     879,335.668 (meters)                      COMP
 AJ7597  Y           -  -5,633,972.529 (meters)                      COMP
 AJ7597  Z           -   2,847,957.646 (meters)                      COMP
 AJ7597  LAPLACE CORR-           -0.81  (seconds)                    DEFLEC99
 AJ7597  ELLIP HEIGHT-         -17.864 (meters)          (02/10/07) ADJUSTED
 AJ7597  GEOID HEIGHT-         -24.51  (meters)                     GEOID03
 AJ7597  DYNAMIC HT  -           6.615 (meters)      21.70  (feet)  COMP
 AJ7597
 AJ7597  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 AJ7597  Type    PID    Designation                        North   East  Ellip
 AJ7597  ---------------------------------------------------------------------
 AJ7597  NETWORK AJ7597 H 530                               2.59   2.98   5.27
 AJ7597  ---------------------------------------------------------------------
 AJ7597  MODELED GRAV-     979,103.7   (mgal)                      NAVD 88
 AJ7597
 AJ7597  VERT ORDER  -  FIRST     CLASS II
 AJ7597
 AJ7597.The horizontal coordinates were established by GPS observations
 AJ7597.and adjusted by the National Geodetic Survey in February 2007.
 AJ7597
 AJ7597.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AJ7597.The horizontal coordinates are valid at the epoch date displayed above.
 AJ7597.The epoch date for horizontal control is a decimal equivalence
 AJ7597.of Year/Month/Day.
 AJ7597
 AJ7597.The orthometric height was determined by differential leveling
 AJ7597.and adjusted in February 2002.
 AJ7597
 AJ7597.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AJ7597
 AJ7597.The Laplace correction was computed from DEFLEC99 derived deflections.
 AJ7597
 AJ7597.The ellipsoidal height was determined by GPS observations
 AJ7597.and is referenced to NAD 83.
 AJ7597
 AJ7597.The geoid height was determined by GEOID03.
 AJ7597
 AJ7597.The dynamic height is computed by dividing the NAVD 88
 AJ7597.geopotential number by the normal gravity value computed on the
 AJ7597.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AJ7597.degrees latitude (g = 980.6199 gals.).
 AJ7597
 AJ7597.The modeled gravity was interpolated from observed gravity values.
 AJ7597
 AJ7597;                    North         East     Units Scale Factor Converg.
 AJ7597;SPC FL E     -   261,508.243   187,162.810   MT  0.99994321   -0 03 28.6
 AJ7597;SPC FL E     -   857,964.96    614,049.99    sFT  0.99994321   -0 03 28.6
 AJ7597;UTM  17      - 2,952,550.999   487,167.190   MT  0.99960203   -0 03 28.6
 AJ7597
 AJ7597!             -  Elev Factor  x  Scale Factor =   Combined Factor
 AJ7597!SPC FL E     -   1.00000281  x   0.99994321  =   0.99994602
 AJ7597!UTM  17      -   1.00000281  x   0.99960203  =   0.99960484
 AJ7597
 AJ7597                          SUPERSEDED SURVEY CONTROL
 AJ7597
```

```
AJ7597  NAD 83(1999)-  26 41 38.42766(N)    081 07 44.38503(W) AD(       ) 1
AJ7597  ELLIP H (12/12/02)  -17.865  (m)                        GP(       ) 3 1
AJ7597  NAVD 88 (12/12/02)    6.62   (m)           21.7    (f) LEVELING    3
AJ7597
AJ7597.Superseded values are not recommended for survey control.
AJ7597.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AJ7597.See file dsdata.txt to determine how the superseded data were derived.
AJ7597
AJ7597_U.S. NATIONAL GRID SPATIAL ADDRESS: 17RMK8716752551(NAD 83)
AJ7597_MARKER: DD = SURVEY DISK
AJ7597_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AJ7597_STAMPING: H 530 2001 CERP
AJ7597_MARK LOGO: USE
AJ7597_PROJECTION: RECESSED 10 CENTIMETERS
AJ7597_MAGNETIC: O = OTHER; SEE DESCRIPTION
AJ7597_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AJ7597+STABILITY: SURFACE MOTION
AJ7597_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ7597+SATELLITE: SATELLITE OBSERVATIONS - April 25, 2002
AJ7597
AJ7597  HISTORY     - Date     Condition        Report By
AJ7597  HISTORY     - 20010528 MONUMENTED       EMCINC
AJ7597  HISTORY     - 20020425 GOOD             MAPTEC
AJ7597  HISTORY     - 20050817 GOOD             INDIV
AJ7597
AJ7597                           STATION DESCRIPTION
AJ7597
AJ7597'DESCRIBED BY EMC INCORPORATED 2001 (MKC)
AJ7597'THE MARK IS LOCATED ABOUT 16.1 KILOMETERS (10.0 MILES) SOUTH
AJ7597'SOUTHWEST OF MOORE HAVEN, FLORIDA, ALSO ABOUT 19.3 KILOMETERS (12.0
AJ7597'MILES) WEST OF CLEWISTON, FLORIDA, ON THE RIGHT OF WAY OF COUNTY
AJ7597'ROAD 833. LOCATED ON THE GRASSY MARSH QUAD IN SECTION 3, TOWNSHIP 44
AJ7597'SOUTH, RANGE 32 EAST.
AJ7597'
AJ7597'OWNERSHIP  FLDT
AJ7597'
AJ7597'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 80 AND
AJ7597'COUNTY ROAD 833 ABOUT 17.7 KILOMETERS (11.0 MILES) WEST OF
AJ7597'CLEWISTON, FLORIDA, GO SOUTH 6.53 KILOMETERS (4.05 MILES) ON COUNTY
AJ7597'ROAD 833 TO THE MARK ON THE LEFT (EAST) SIDE OF THE ROAD.
AJ7597'
AJ7597'THE MARK IS 26.2 METERS (86.0 FEET) NORTH OF POWER POLE NUMBER
AJ7597'813, 17.1 METERS (56.1 FEET) SOUTH OF THE CENTER OF A FIELD ACCESS
AJ7597'ROAD LEADING EAST, 14.3 METERS (47.0 FEET) EAST OF THE CENTER OF
AJ7597'COUNTY ROAD 833, 1.0 METERS (3.3 FEET) SOUTH OF A CARSONITE WITNESS
AJ7597'POST, 0.5 METERS (1.6 FEET) WEST OF A BARB WIRE FENCE AND 0.25
AJ7597'METERS (0.8 FEET) SOUTH OF A MAGNET BURIED 0.1 METERS (0.3 FEET)
AJ7597'BELOW GROUND.
AJ7597'
AJ7597'
AJ7597'
AJ7597'
AJ7597'
AJ7597'
AJ7597'
AJ7597
AJ7597                           STATION RECOVERY (2002)
AJ7597
AJ7597'RECOVERY NOTE BY MAPTECH INCORPORATED 2002 (CP)
AJ7597'THE MARK IS LOCATED ABOUT 16.1 KILOMETERS (10.0 MILES) SOUTH
AJ7597'SOUTHWEST OF MOORE HAVEN, FLORIDA, ALSO ABOUT 19.3 KILOMETERS (12.0
AJ7597'MILES) WEST OF CLEWISTON, FLORIDA, ON THE RIGHT OF WAY OF COUNTY
AJ7597'ROAD 833. LOCATED ON THE GRASSY MARSH QUAD IN SECTION 3, TOWNSHIP 44
AJ7597'SOUTH, RANGE 32 EAST.
AJ7597'
AJ7597'OWNERSHIP  FLDT
AJ7597'
AJ7597'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 80 AND
AJ7597'COUNTY ROAD 833 ABOUT 17.7 KILOMETERS (11.0 MILES) WEST OF
AJ7597'CLEWISTON, FLORIDA, GO SOUTH 6.53 KILOMETERS (4.05 MILES) ON COUNTY
AJ7597'ROAD 833 TO THE MARK ON THE LEFT (EAST) SIDE OF THE ROAD.
AJ7597'
AJ7597'THE MARK IS 26.2 METERS (86.0 FEET) NORTH OF POWER POLE NUMBER
AJ7597'813, 17.1 METERS (56.1 FEET) SOUTH OF THE CENTER OF A FIELD ACCESS
AJ7597'ROAD LEADING EAST, 14.3 METERS (47.0 FEET) EAST OF THE CENTER OF
AJ7597'COUNTY ROAD 833, 1.0 METERS (3.3 FEET) SOUTH OF A CARSONITE WITNESS
AJ7597'POST, 0.5 METERS (1.6 FEET) WEST OF A BARB WIRE FENCE AND 0.25
AJ7597'METERS (0.8 FEET) SOUTH OF A MAGNET BURIED 0.1 METERS (0.3 FEET)
AJ7597'BELOW GROUND.
AJ7597'
AJ7597'
```

```
AJ7597'STATION RECOVERY (2002)
AJ7597'RECOVERY NOTE BY MAPTECH, INCORPORATED 2002 (CP)
AJ7597'RECOVERED AS DESCRIBED.
AJ7597'
AJ7597'
AJ7597'
AJ7597'
AJ7597
AJ7597                          STATION RECOVERY (2005)
AJ7597
AJ7597'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (DL)
AJ7597'RECOVERED AS DESCRIBED

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

STAR*NET-LEV Version 6.0.25

Licensed for Use by Jeffrey C. Cooner and Associates
Run Date: Tue Dec 20 2005 13:05:26

Summary of Files Used and Option Settings

Project Folder and Data Files

Project Name HE858
Project Folder J:\2002\A020801.06\STARNET
Data File List he858.dat

Project Option Settings

STAR*NET Run Mode	: Adjust with Error Propagation
Type of Adjustment	: Lev
Project Units	: FeetUS
Input/Output Coordinate Order	: North-East
Create Coordinate File	: Yes

Instrument Standard Error Settings

Project Default Instrument
  Differential Levels : 0.010000 FeetUS / Mile

Listing of Input Data

```
[File: J:\2002\A020801.06\STARNET\HE858.DAT]
.Units  FeetUS
.Sep    -
.3D

#NAVD 88 ELEVATIONS

E     H530                    21.74000 !
E     G530            20.59    !

# Elevation Difference Records
#stations                    Diff        Dist        Descriptor
L     H530-1                                2.99100     415.20000
L     1-2                                  -0.96800     403.20000
L     2-3                                   0.30200     417.92000
L     3-4                                  -0.50500     406.56000
L     4-5                                   0.31400     405.18000
L     5-6                                   0.91500     447.68000
L     6-7                                  -1.87100     541.10000
L     7-8                                  -0.17600     407.56000
L     8-9                                   0.92200     405.40000
L     9-10                                 -0.24200     398.30000
L     10-11                                -0.26300     411.50000
L     11-12                                 0.24900     423.28000
L     12-13                                 0.14200     395.10000
L     13-G530                              -2.95100     215.08000
```

Summary of Unadjusted Input Observations

Number of Entered Stations (FeetUS) = 2

Fixed Stations	Elev	Description
H530	21.7400	
G530	20.5900	

Number of Differential Level Observations (FeetUS) = 14

From	To	Elev Diff	StdErr	Length
H530	1	2.9910	0.0028	415
1	2	-0.9680	0.0028	403
2	3	0.3020	0.0028	418
3	4	-0.5050	0.0028	407
4	5	0.3140	0.0028	405
5	6	0.9150	0.0029	448
6	7	-1.8710	0.0032	541
7	8	-0.1760	0.0028	408
8	9	0.9220	0.0028	405
9	10	-0.2420	0.0027	398
10	11	-0.2630	0.0028	412
11	12	0.2490	0.0028	423
12	13	0.1420	0.0027	395
13	G530	-2.9510	0.0020	215

Adjustment Statistical Summary

Number of Stations = 15

Number of Observations = 14
Number of Unknowns = 13
Number of Redundant Obs = 1

Observation	Count	Sum Squares of StdRes	Error Factor
Level Data	14	0.751	0.867
Total	14	0.751	0.867

The Chi-Square Test at 5.00% Level Passed
Lower/Upper Bounds (0.031/2.241)

Adjusted Elevations and Error Propagation (FeetUS)

Station	Elev	StdDev	95%	Description
H530	21.7400	0.000000	0.000000	
G530	20.5900	0.000000	0.000000	
1	24.7303	0.002700	0.005292	
2	23.7617	0.003643	0.007140	
3	24.0630	0.004281	0.008391	
4	23.5574	0.004705	0.009221	
5	23.8708	0.004983	0.009767	
6	24.7851	0.005152	0.010098	
7	22.9132	0.005180	0.010153	
8	22.7366	0.005076	0.009949	
9	23.6579	0.004859	0.009523	
10	23.4153	0.004519	0.008857	
11	23.1516	0.004002	0.007845	
12	23.4000	0.003212	0.006296	
13	23.5413	0.001980	0.003880	

Adjusted Observations and Residuals

Adjusted Differential Level Observations (FeetUS)

From	To	Elev Diff	Residual	StdErr	StdRes
H530	1	2.9903	-0.0007	0.0028	0.2
1	2	-0.9686	-0.0006	0.0028	0.2
2	3	0.3013	-0.0007	0.0028	0.2
3	4	-0.5056	-0.0006	0.0028	0.2
4	5	0.3134	-0.0006	0.0028	0.2
5	6	0.9143	-0.0007	0.0029	0.2
6	7	-1.8719	-0.0009	0.0032	0.3
7	8	-0.1766	-0.0006	0.0028	0.2
8	9	0.9214	-0.0006	0.0028	0.2
9	10	-0.2426	-0.0006	0.0027	0.2
10	11	-0.2637	-0.0007	0.0028	0.2
11	12	0.2483	-0.0007	0.0028	0.2
12	13	0.1414	-0.0006	0.0027	0.2
13	G530	-2.9513	-0.0003	0.0020	0.2

Elapsed Time = 00:00:00

→16
41

02 00000126 Adjusted Differential Level Observations
01 00000143 End of File
00001B0A
STARPLUS
0000C781

```
b,19,HE858,H530,+21740,9909252250,CM,,,
g,19,+8813,+20108,+30553,,,H530,H530,2250,
i,19,+5822,+21412,+24731,,,1,H530,2252,
g,19,+6138,+20802,+30869,,,1,H530,2256,
i,19,+7106,+19518,+23763,,,2,H530,2259,
g,19,+6166,+20716,+29929,,,2,H530,2304,
i,19,+5864,+21076,+24065,,,3,H530,2306,
g,19,+5210,+20238,+29275,,,3,H530,2310,
i,19,+5715,+20418,+23560,,,4,H530,2311,
g,19,+5857,+19392,+29417,,,4,H530,2317,
i,19,+5543,+21126,+23874,,,5,H530,2322,
g,19,+5450,+22680,+29324,,,5,H530,2326,
i,19,+4535,+22088,+24789,,,6,H530,2328,
g,19,+4262,+24704,+29051,,,6,H530,2334,
i,19,+6133,+29406,+22918,,,7,H530,2338,
g,19,+5381,+20950,+28299,,,7,H530,1625,
i,19,+5557,+19806,+22742,,,8,H530,1627,
g,19,+5338,+20890,+28080,,,8,H530,1632,
i,19,+4416,+19650,+23664,,,9,H530,1634,
g,19,+5085,+19500,+28749,,,9,H530,1639,
i,19,+5327,+20330,+23422,,,10,H530,1643,
g,19,+5122,+19914,+28544,,,10,H530,1649,
i,19,+5385,+21236,+23159,,,11,H530,1650,
g,19,+5446,+19942,+28605,,,11,H530,1655,
i,19,+5197,+22386,+23408,,,12,H530,1656,
g,19,+4958,+20918,+28366,,,12,H530,1701,
i,19,+4816,+18592,+23550,,,13,H530,1703,
g,19,+5206,+13530,+28756,,,13,H530,1709,
i,19,+8157,+7978,+20599,,,14,H530,1710,
w,19,HE858,G530,9909262239,-1141,-1141,+569306,+569306,+20599,DEEPROD,,
t,00,HE858,,9909262239,,,,,,,
```