Workshop Exercise



The project is for the of U.S. Army Corps of Engineers (USACE) for the Guam Levees, Harbor, and Shore Protection.

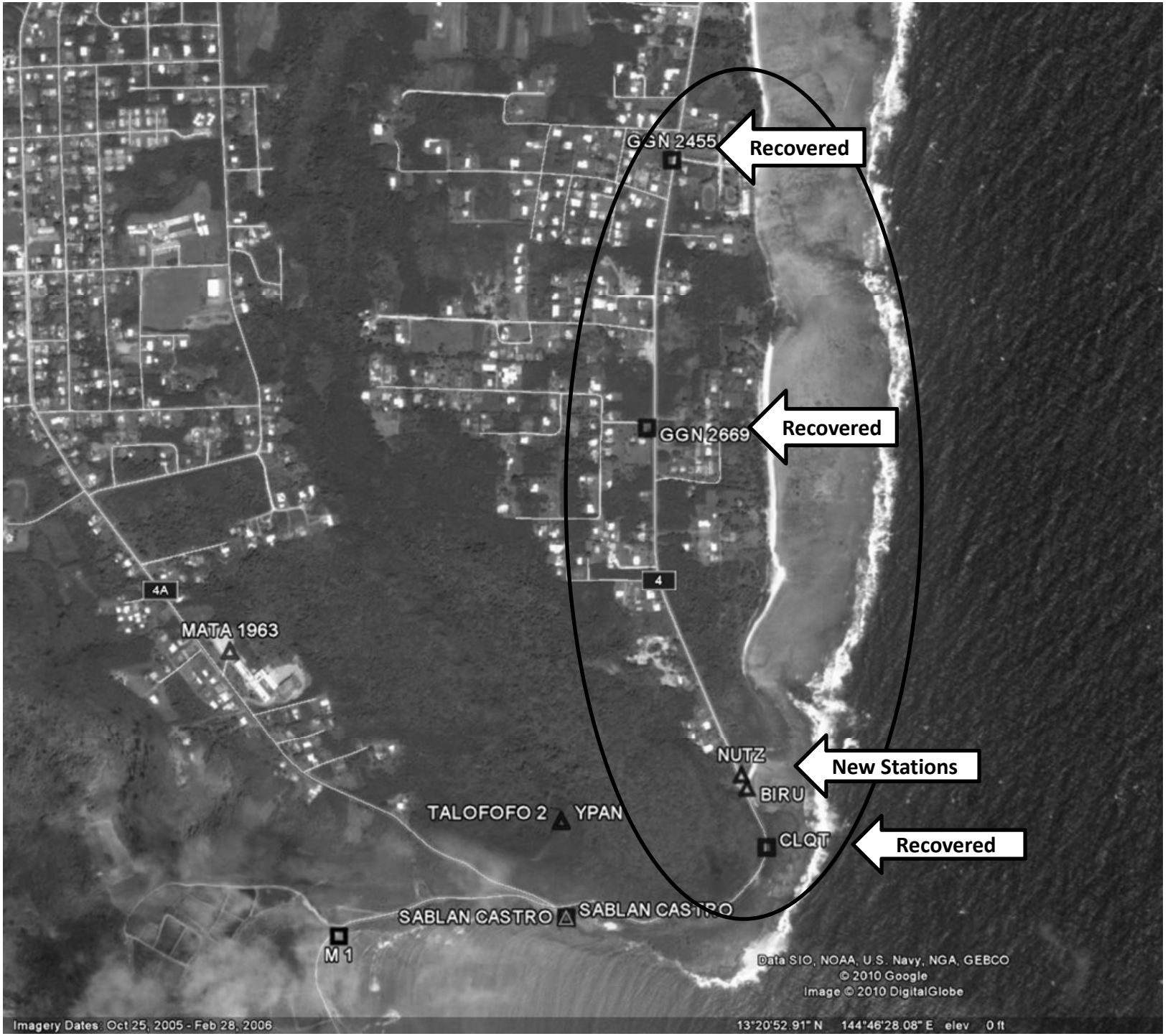
The project is supports the USACE:
"Comprehensive Evaluation of the Vertical Datums on Flood Control, Shore Protection, Hurricane Protection, and Navigation Projects"

Project area in Guam:
1. Ipan Shore Protection


Project Area
4A
4
© 2010 Google
Image © 2010 DigitalGlobe
Imagery Dates: Oct 25, 2005 - Feb 28, 2006
13°20'30.45" N 144°46'21.66" E elev 0 ft
Eye alt 45.80 mi

DSWORLD


DSWORLD
Stations Projects Everything View Edit Submit Help Exit
LATITUDE: N132031
LONGITUDE: W2151343
RADIUS: 1.0
SELECT TYPE: ANY TYPE
SELECT STABILITY: 0-Any stability
NATIONAL GEODETIC SURVEY
Travel Manager
Shortcut to Desktop
Microsoft Office P...
PAGES
Rinex Converter
Convert to Rinex
Translev
NGS - Intranet
Project Tracki...
WinZip 12.0


GGN 2455
Recovered
GGN 2669
Recovered
4A
4
MATA 1963
NUTZ
New Stations
BIRU
TALOFOFO 2
YPAN
CLQT
Recovered
SABLAN CASTRO
SABLAN CASTRO
M 1
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2010 Google
Image © 2010 DigitalGlobe
Imagery Dates: Oct 25, 2005 - Feb 28, 2006
13°20'52.91" N 144°46'28.08" E elev 0 ft

WinDesc Information

Project Name – IPANGU

Descriptions – BIRU_Description, NUTZ_Description
[C:\ACSM2010\WinDesc_Classroom]

Data Base File – NGS_Datasheets.dat
[C:\ACSM2010\WinDesc_Classroom]

ACSM LEVELING NETWORK



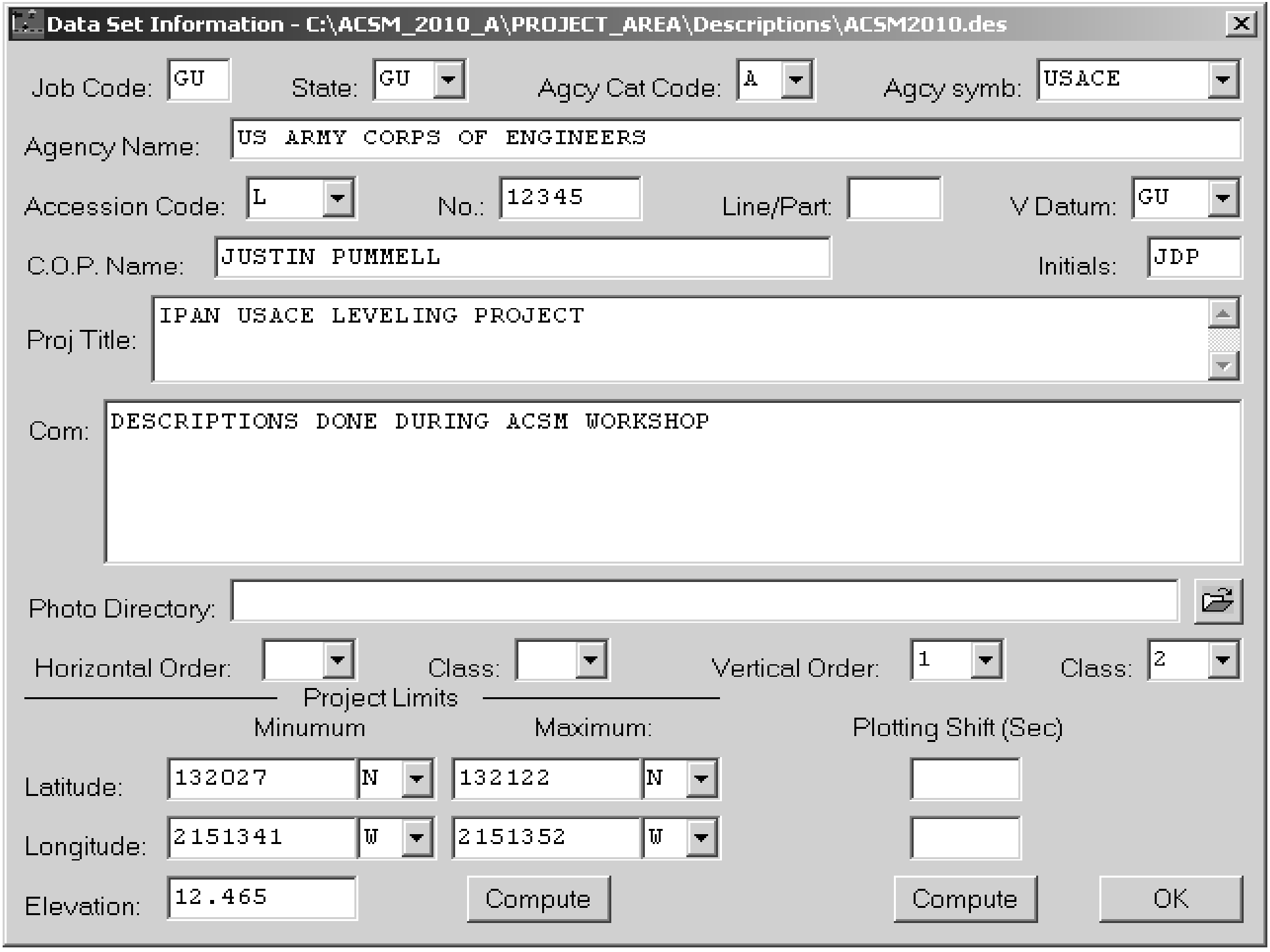
0105 – GGN 2455
PID - DH3028

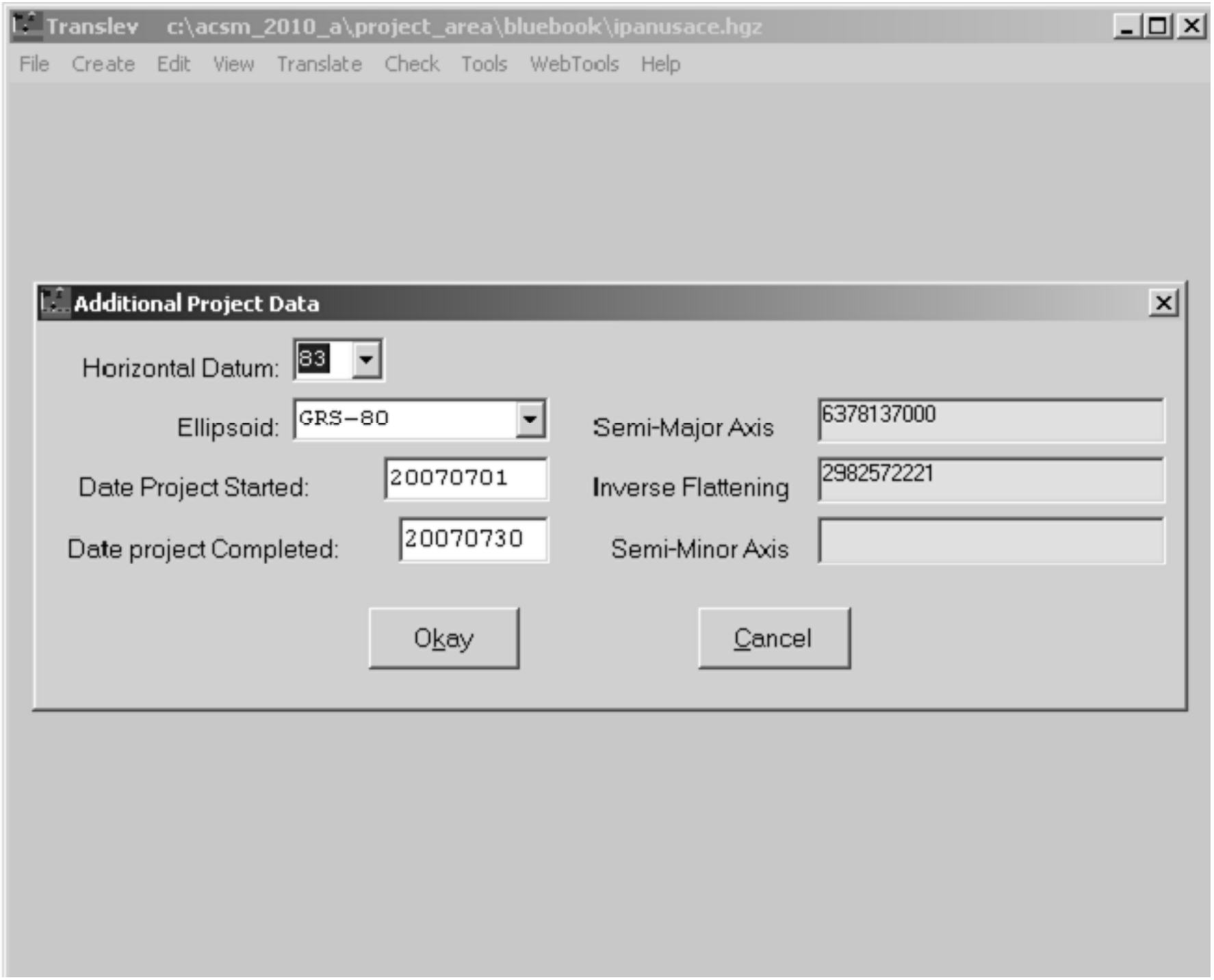
0102 – GGN 2669
PID – DH3040

0104 – NUTZ

0103 – BIRU

0101 – CLQT
PID – DH2964


Data Set Information - C:\ACSM_2010_A\PROJECT_AREA\Descriptions\ACSM2010.des
Job Code: GU
State: GU
Agcy Cat Code: A
Agcy symb: USACE
Agency Name: US ARMY CORPS OF ENGINEERS
Accession Code: L
No.: 12345
Line/Part:
V Datum: GU
C.O.P. Name: JUSTIN PUMMELL
Initials: JDP
Proj Title: IPAN USACE LEVELING PROJECT
Com: DESCRIPTIONS DONE DURING ACSM WORKSHOP
Photo Directory:
Horizontal Order:
Class:
Vertical Order: 1
Class: 2
Project Limits
Minumum
Maximum:
Plotting Shift (Sec)
Latitude: 132027 N 132122 N
Longitude: 2151341 W 2151352 W
Elevation: 12.465
Compute
Compute
OK


Translev c:\acsm_2010_a\project_area\bluebook\ipanusace.hgz
File Create Edit View Translate Check Tools WebTools Help
Additional Project Data
Horizontal Datum:
83
Ellipsoid:
GRS-80
Semi-Major Axis
6378137000
Date Project Started:
20070701
Inverse Flattening
2982572221
Date project Completed:
20070730
Semi-Minor Axis
Okay
Cancel

NATIONAL GEODETIC SURVEY STATION DESCRIPTION/RECOVERY FORM

4-char ID: BIRU Designation: BIRU

PID: TBD Alias: N/A

Country: USA State/Territory: Guam

Latitude: N 13-20-31.6 Longitude: W 215-13-43.1 Datum: NAD83 Elevation:

Original Description: A newly set mark established by the U.S. Army Corps of Engineers.

Date: 7/20/2007 Chief of Party: Justin Pummell (JP)

Monument Stability: Of the most reliable nature; expected to hold well.

Marker Type: 3-in diameter brass disk, survey disk

Setting Type: Concrete (hydraulic cement)

Monument contains magnetic material?: No

Stamping: BIRU 2007 Agency Inscription: USACE

Monument is: Flush

Special Type: Control Station – Benchmark (Used by USACE to stake out construction at Asquiroga Bay Hurricane Shore Protection project)

Mark is suitable for GPS use: Yes

Transportation: Car Pack time to mark: < 1 minute

General Station Location: The station is located along the ocean-side of Route 4 in the municipality of Talofofo, Guam just north of Talofofo Bay at Asquiroga Bay.

Ownership: Guam Department of Public Works

To Reach Narrative: To reach the station from the intersection of Route 4 and Route 4A, travel north along Route 4 for 0.47 miles towards Asquiroga Bay (away from Talofofo Bay). The benchmark is located on the ocean-side of Route 4 and its associated guardrail. The benchmark sits flush in a concrete slurry adjacent to a U.S. Army Corps of Engineers hurricane shore protection project. An old pillbox sits on the north side of Asquiroga Bay, and the bay is a popular swimming/snorkeling location.

Monument Description and Measurements: The station is as follows:

- 22 feet 10 inches, South East from concrete power pole DC-YP 45-600 84-11.
- 41 feet 5 inches, South West from the centerline of Route 4.
- 167 feet 6 inches, North West from concrete power pole DC-YP 45-600 84-12.

- 136 feet from the north end of the guardrail if you follow along the guardrail's total length.

Described by: Justin Pummell, U.S. Army Corps of Engineers, Honolulu District

Phone: (808) 438-7038 E-mail: justin.d.pummell@usace.army.mil

Observation: BIRU has not yet been observed with a survey-grade GPS instrument.

Photos:



BIRU Brass Disk installed into concrete slurry adjacent to Route 4



View of BIRU towards power pole DC-YP 45-600 84-11



View of BIRU towards the centerline of Route 4



View of BIRU towards power pole DC-YP 45-600 84-12

NATIONAL GEODETIC SURVEY STATION DESCRIPTION/RECOVERY FORM

4-char ID: NUTZ Designation: NUTZ

PID: TBD Alias: N/A

Country: USA State/Territory: Guam County: Talofofo

Latitude: N 13-20-32.7 Longitude: W 215-13-43.5 Datum: NAD83 Elevation:

Original Description: A newly set mark Established by: USACE.

Date: 7/20/2007 Chief of Party: Justin Pummell (JP)

Monument Stability: Of the most reliable nature; expected to hold well.

Marker Type: 3-in diameter brass disk.

Setting Type: Concrete (hydraulic cement)

Monument contains magnetic material?: No

Stamping: NUTZ 2007 Agency Inscription: Corps of Engineers, US Army (USACE)

Monument is: Flush

Special Type: Control Station – Benchmark (Used by USACE to stake out construction at Asquiroga Bay Hurricane Shore Protection project)

Mark is suitable for GPS use: Yes

Transportation: Car Pack time to mark: < 1 minute

General Station Location: The station is located along the ocean-side of Route 4 in the municipality of Talofofo, Guam just north of Talofofo Bay at Asquiroga Bay.

Ownership: Guam Department of Public Works

To Reach Narrative: To reach the station from the intersection of Route 4 and Route 4A, travel north along Route 4 for 0.5 miles towards Asquiroga Bay (away from Talofofo Bay). The benchmark is located on the ocean-side of Route 4 and its associated guardrail. The benchmark sits flush in a concrete slurry adjacent to a U.S. Army Corps of Engineers hurricane shore protection project. An old pillbox sits on the north side of Asquiroga Bay, and the bay is a popular swimming/snorkeling location.

Monument Description and Measurements: The station is as follows:

- 95 feet, North West from concrete power pole DC-YP 45-600 84-11.
- 40 feet 4 inches, South West from the centerline of Route 4.
- 50 feet, South East from concrete power pole DC-YP 45-600 84-13.
- 9 feet 6 inches, South West from the guardrail.

- 19 feet 6 inches along the guardrail if I start measuring from the north end of it.

Described by: Justin Pummell, U.S. Army Corps of Engineers, Honolulu District

Phone: (808) 438-7038 E-mail: justin.d.pummell@usace.army.mil

Observation: NUTZ has not yet been observed with a survey-grade GPS instrument.

Photos:



NUTZ Brass Disk installed into concrete slurry adjacent to Route 4



View of NUTZ towards power pole DC-YP 45-600 84-11



View of NUTZ from power pole DC-YP 45-600 84-11



View of NUTZ towards power pole DC-YP 45-600 84-13

MARK LISTING FOR: ACSM2010

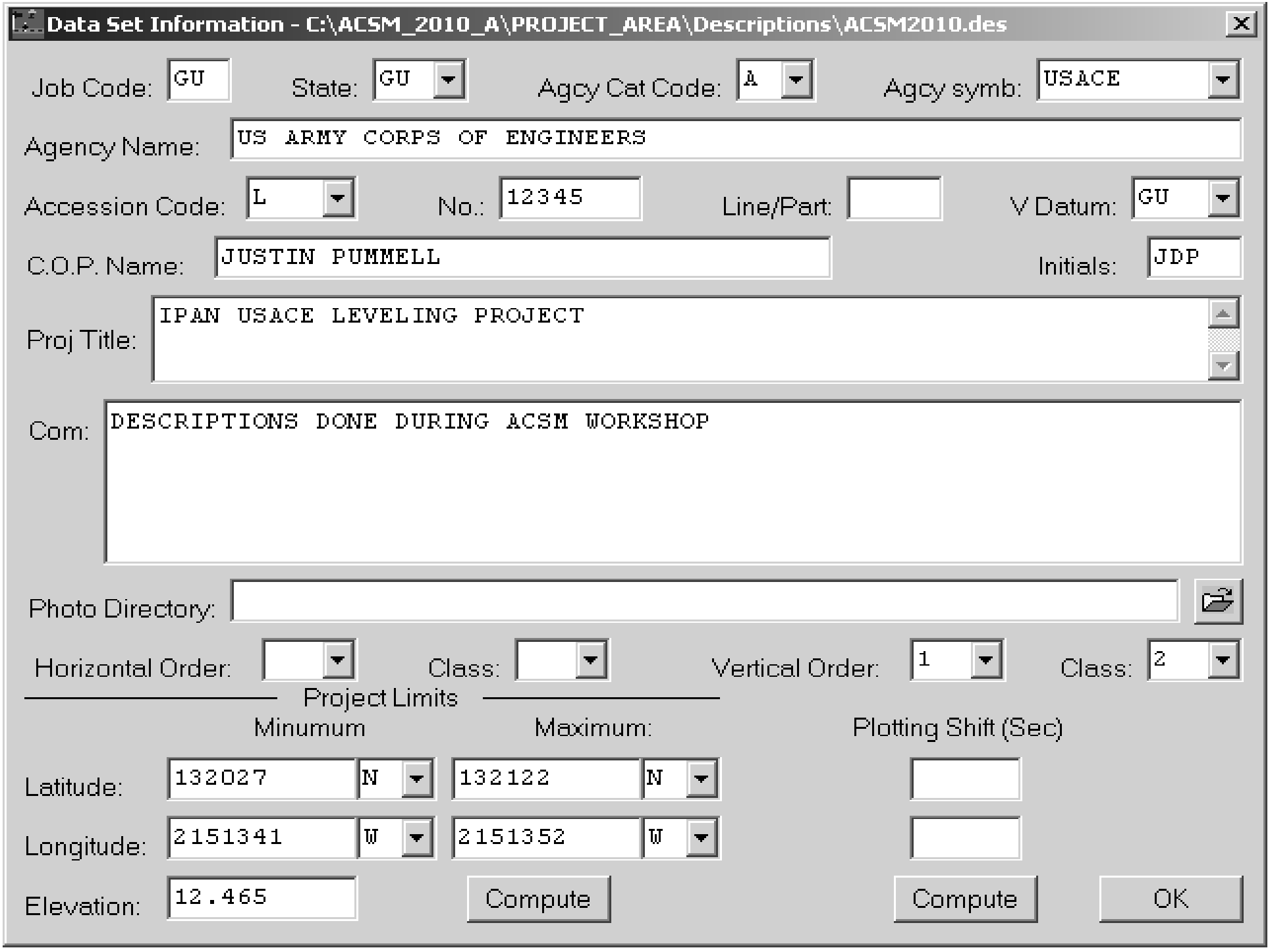
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0103		BIRU	N13-20-31.6	W215-13-43.1
0104		NUTZ	N13-20-32.7	W215-13-43.5
0105	DH3028	GGN 2455	N13-21-21	W215-13-49

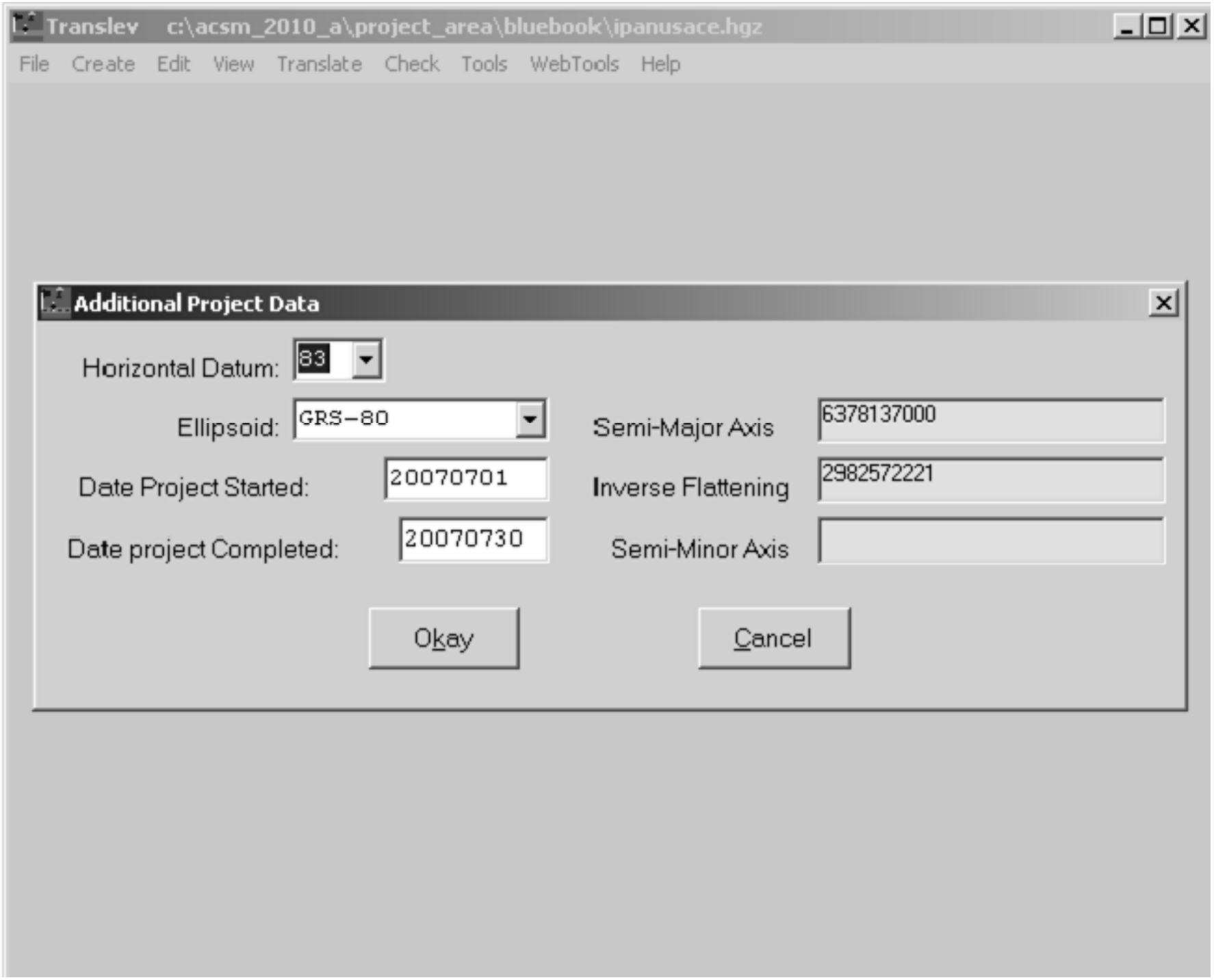
Translev Information

Project Name – IPANGU

Descriptions – ACSM2010.des
[C:\ACSM2010\Translev_Classroom\DESCRIPTIONS]

Data Files – DAY090407.GSI, DAY 090707.GSI
[C:\ACSM2010\Translev_Classroom\RAW_DATA]


Data Set Information - C:\ACSM_2010_A\PROJECT_AREA\Descriptions\ACSM2010.des
Job Code: GU
State: GU
Agcy Cat Code: A
Agcy symb: USACE
Agency Name: US ARMY CORPS OF ENGINEERS
Accession Code: L
No.: 12345
Line/Part:
V Datum: GU
C.O.P. Name: JUSTIN PUMMELL
Initials: JDP
Proj Title: IPAN USACE LEVELING PROJECT
Com: DESCRIPTIONS DONE DURING ACSM WORKSHOP
Photo Directory:
Horizontal Order:
Class:
Vertical Order: 1
Class: 2
Project Limits
Minumum
Maximum:
Plotting Shift (Sec)
Latitude: 132027 N 132122 N
Longitude: 2151341 W 2151352 W
Elevation: 12.465
Compute
Compute
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Translev c:\acsm_2010_a\project_area\bluebook\ipanusace.hgz
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Ellipsoid:
GRS-80
Semi-Major Axis
6378137000
Date Project Started:
20070701
Inverse Flattening
2982572221
Date project Completed:
20070730
Semi-Minor Axis
Okay
Cancel

PRECISE DIGITAL LEVELING – BACKUP RECORDING SHEET

LINE	PROJECT	FILENAME	PAGE
L- 54321	IPAN USACE PROJECT	DAY090407	1 OF 2

CODE 1 – BEGINNING OF DAY OR CHANGE IN OBSERVER OR EQUIPMENT

INFO 1 DATE (MMDDYY)	INFO 2 OBSERVER #	OBSERVER INITIALS	INFO 3 INST TYPE	INFO 4 TEMP CODE
09-04-07	003	GAB	DNA03	C

CODE 2 – EQUIPMENT USED

INFO 1 INST S/N	INFO 2 COLLIMATION "	ROD CODE	INFO 3 ROD 1 S/N	INFO 4 ROD 2 S/N
3343911	9.8	396	30847	30850

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0101	CLQT	10:30	1	31.8	F

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0103	BIRU	10:45	1	32.7	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
4	0.151	-0.9	-3.63092

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0103	BIRU	10:50	1	32.7	F

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0104	NUTZ	11:00	1	32.8	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
2	0.039	0.7	0.48025

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0104	NUTZ	11:05	1	32.2	F

CODE 99 – ENDING SECTION INFORMATION

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0102	GGN 2669	11:59	1	32.8	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
12	0.899	0.6	8.09249

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0102	GGN 2669	13:05	1	32.4	B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0104	NUTZ	13:55	1	32.6	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
14	0.0902	1.2	-8.08350

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0104	NUTZ	14:00	1	32.6	B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0103	BIRU	14:05	1	31.8	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
4	0.152	0.8	3.63075

PRECISE DIGITAL LEVELING – BACKUP RECORDING SHEET

LINE	PROJECT	FILENAME	PAGE
L- 54321	IPAN USACE PROJECT	DAY090407	2 OF 2

CODE 1 – BEGINNING OF DAY OR CHANGE IN OBSERVER OR EQUIPMENT

INFO 1 DATE (MMDDYY)	INFO 2 OBSERVER #	OBSERVER INITIALS	INFO 3 INST TYPE	INFO 4 TEMP CODE
09-04-07	003	GAB	DNA03	C

CODE 2 – EQUIPMENT USED

INFO 1 INST S/N	INFO 2 COLLIMATION "	ROD CODE	INFO 3 ROD 1 S/N	INFO 4 ROD 2 S/N
334391	9.8	396	30847	30850

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0103	BIRU	14:07	1	32.8	B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0101	CLQT	14:17	1	32.2	01

SECTION OBSERVATION INFORMATION

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CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

PRECISE DIGITAL LEVELING – BACKUP RECORDING SHEET

LINE	PROJECT	FILENAME	PAGE
L- 54321	IPAN USACE PROJECT	DAY090707	1 OF 1

CODE 1 – BEGINNING OF DAY OR CHANGE IN OBSERVER OR EQUIPMENT

INFO 1 DATE (MMDDYY)	INFO 2 OBSERVER #	OBSERVER INITIALS	INFO 3 INST TYPE	INFO 4 TEMP CODE
09-07-07	003	GAB	DNA03	C

CODE 2 – EQUIPMENT USED

INFO 1 INST S/N	INFO 2 COLLIMATION "	ROD CODE	INFO 3 ROD 1 S/N	INFO 4 ROD 2 S/N
334391	9.5	396	30847	30850

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0102	GGN 2669	09:25	1	31.4	B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0104	NUTZ	10:12	1	32.0	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
16	0.896	2.4	-8.09485

CODE 11 – BEGINNING SECTION INFORMATION

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0102	GGN 2669	11:05	1	31.5	F

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0105	GGN 2455	12:07	1	31.8	01

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE
8	0.665	-1.0	0.09897

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B
0105	GGN 2455	13:05	1	30.4	B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S
0102	GGN 2669	13:50	1	30.5	01

SECTION OBSERVATION INFORMATION

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6	0.662	3.4	-0.09915

CODE 11 – BEGINNING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	DIR F / B

CODE 99 – ENDING SECTION INFORMATION

SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE

CODE 11 – BEGINNING SECTION INFORMATION

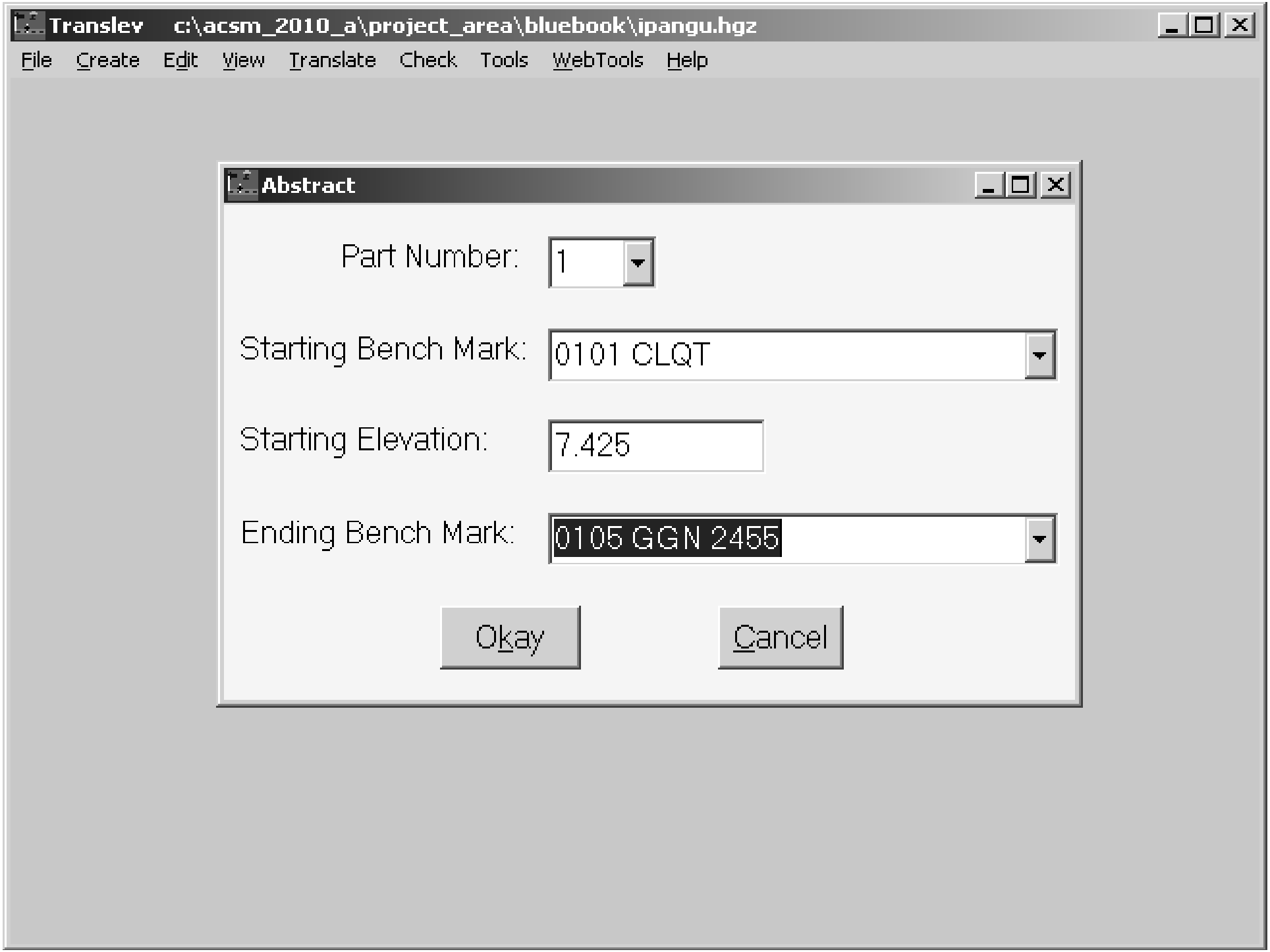
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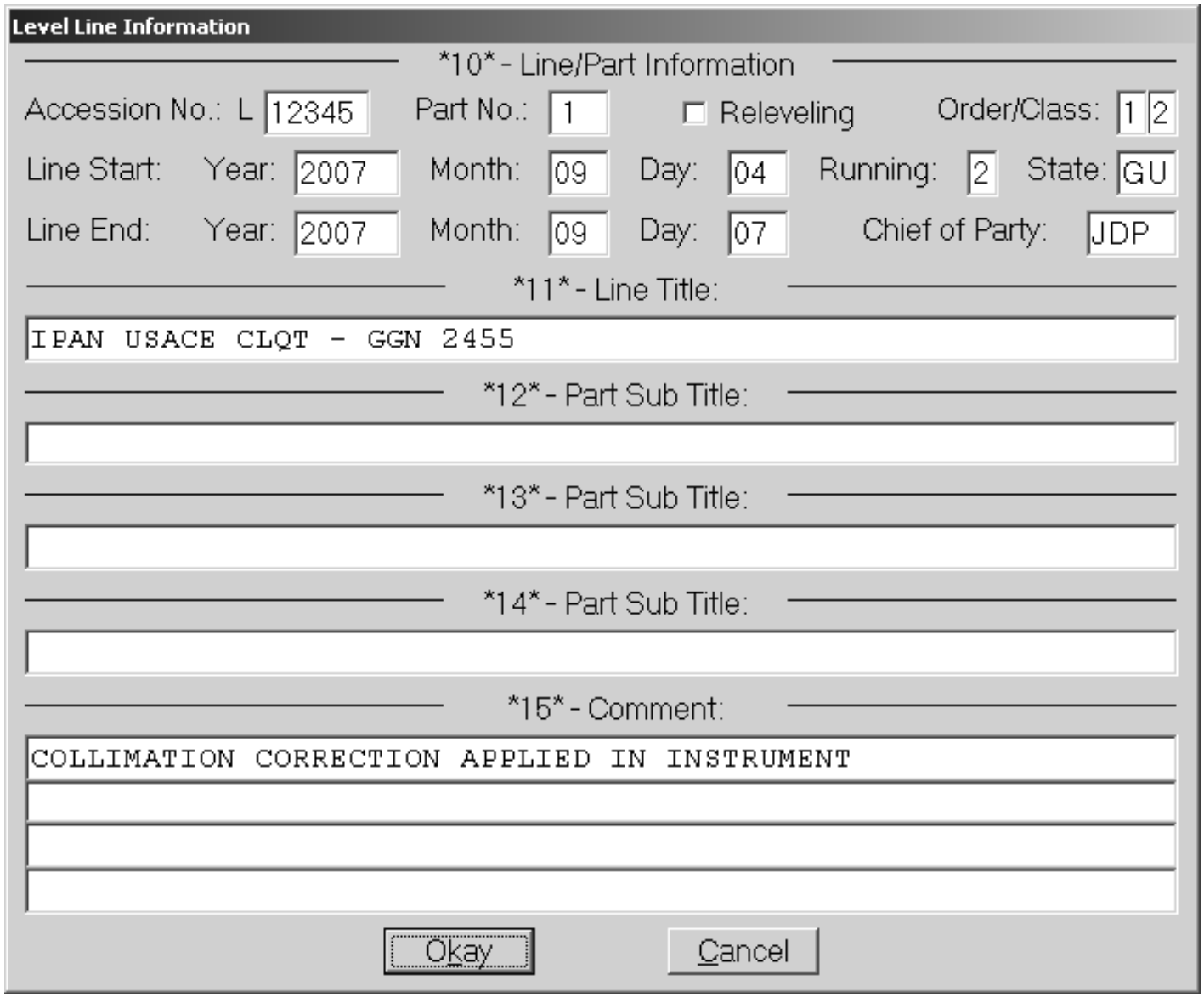
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SPSN #	BENCH MARK STAMPING	INFO 1 TIME	INFO 2 ROD/MK	INFO 3 TEMP	INFO 4 W / S

SECTION OBSERVATION INFORMATION

TOTAL SETUPS	TOTAL DISTANCE (KM)	ACCUMULATED IMBALANCE (M)	ELEVATION DIFFERENCE


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File Create Edit View Translate Check Tools WebTools Help
Abstract
Part Number:
1
Starting Bench Mark:
0101 CLQT
Starting Elevation:
7.425
Ending Bench Mark:
0105 GGN 2455
Okay
Cancel


Level Line Information
10 - Line/Part Information
Accession No.: L 12345
Part No.: 1
Releveling
Order/Class: 1 2
Line Start: Year: 2007 Month: 09 Day: 04 Running: 2 State: GU
Line End: Year: 2007 Month: 09 Day: 07 Chief of Party: JDP
11 - Line Title:
IPAN USACE CLQT - GGN 2455
12 - Part Sub Title:
13 - Part Sub Title:
14 - Part Sub Title:
15 - Comment:
COLLIMATION CORRECTION APPLIED IN INSTRUMENT
Okay
Cancel

C:\ACSM_2010_A\PROJECT_AREA\BlueBook\ipanusace.abs

File

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 TRANSLEV Version  4 . 14               Tue Mar 09 14:05:58 2010


                                              -*- FIELD ABSTRACT -*-
070904-070907              L12345/1      4.0 MM ORDER 1 CLASS 2     PAGE  1
IPAN USACE CLQT - GGN 2455

                                        STARTING START   START  DIST   ELEV DIFF      -(F+B) FIELD ELEV  PUB ELEV
SSN  PID    MARK DESIGNATION              DATE    TIME    TEMP   (KM)   (METERS) CODE  (MM)   (METERS)   (METERS)  I S L

0101 DH2964 CLQT                                                                              7.42500    7.4250
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0101 DH2964 CLQT                      20070904 10:30 F  16.0  0.152   -3.63089  *     0.11   -3.63084           1 M
0103        BIRU                      20070904 14:07 B  16.3  0.152    3.63078  *                              1 M
                                                              0.152                    0.11    3.79416
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0104        NUTZ                      20070904 14:00 B  15.8  0.040   -0.48091  *                              1 M
                                                              0.192                    0.77    4.27474
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0104        NUTZ                      20070904 11:05 F  16.2  0.899    8.09262  *     2.47    8.09386           1 M
0102 DH3040 GGN 2669                  20070904 13:05 B  16.3  0.903   -8.08375 R*                             1 M
                                      20070907 09:25 B  15.8  0.897   -8.09509  *                              1 M
                                                              1.089                    3.24   12.36860   12.3650
--  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
0102 DH3040 GGN 2669                  20070907 11:05 F  30.4  0.665    0.09898  *     0.23    0.09910           1 M
0105 DH3028 GGN 2455                  20070907 13:05 B  30.0  0.663   -0.09921  *                              1 M
                                                              1.752                    3.47   12.46769   12.4650


                                    ELEVATION REJECTION AND ERROR CODES

* - section elevation difference does not include rod and orthometric corrections


  INSTRUMENT CODE       INSTRUMENT                RODS
            1          243 - 334391    396 - 30847     396 - 30850


                                         SEGMENT(S)  & RUNNING ORDER
```

Insert

C:\ACSM_2010_A\PROJECT_AREA\BlueBook\ipanusace.abs

File

```
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
0103        BIRU                          20070904 10:50 F  16.2  0.040    0.48025  *     0.66    0.48058            1 M
0104        NUTZ                          20070904 14:00 B  15.8  0.040   -0.48091  *                                1 M
                                                                  0.192                    0.77    4.27474
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
0104        NUTZ                          20070904 11:05 F  16.2  0.899    8.09262  *     2.47    8.09386            1 M
0102 DH3040 GGN 2669                      20070904 13:05 B  16.3  0.903   -8.08375 R*                               1 M
                                          20070907 09:25 B  15.8  0.897   -8.09509  *                                1 M
                                                                  1.089                    3.24   12.36860   12.3650
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --
0102 DH3040 GGN 2669                      20070907 11:05 F  30.4  0.665    0.09898  *     0.23    0.09910            1 M
0105 DH3028 GGN 2455                      20070907 13:05 B  30.0  0.663   -0.09921  *                                1 M
                                                                  1.752                    3.47   12.46769   12.4650


                                    ELEVATION REJECTION AND ERROR CODES

* - section elevation difference does not include rod and orthometric corrections


  INSTRUMENT CODE      INSTRUMENT              RODS
            1          243 - 334391    396 - 30847     396 - 30850


                                       SEGMENT(S) & RUNNING ORDER

                                      --- Survey point numbers ---                                  length  S L

0101 0103 0104 0102 0105                                                                          1.752  M


  FROM   TO        N. LATITUDE   W. LONGITUDE   FIELD DISTANCE VS. COMPUTED

        0101          132027        2151341          0.00        0.00
  0101  0103          132032        2151343          0.15        0.17
  0103  0104          132033        2151344          0.04        0.04
  0104  0102          132100        2151351          0.90        0.86
  0102  0105          132121        2151349          0.66        0.65

* - Observed vs. computed difference exceeds 200 meters
```

Insert

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IPAN USACE CLQT - GGN 2455

L12345/
ORDER 1 CLASS 2

---------- NEW MINUS OLD COMPARISON ----------

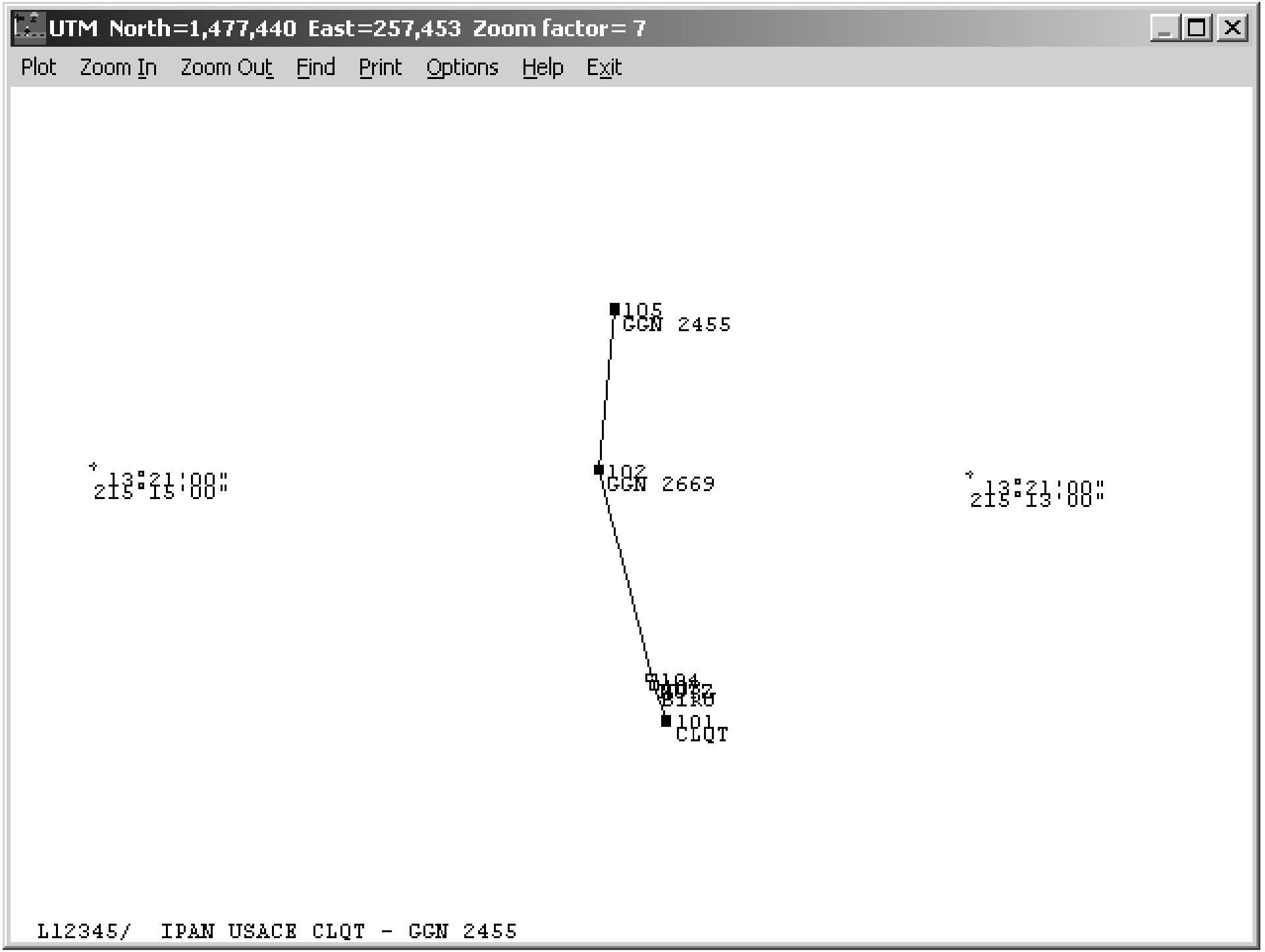
SSN	PID	MARK DESIGNATION	-DIST-	---NEW----	---OLD----	DIF (MM)	ALLOWABLE
0101	DH2964	CLQT		7.42500	7.4250	0.00	
			1.089	4.94356	4.9400	3.56	4.17
0102	DH3040	GGN 2669		12.36856	12.3650	3.56	
			0.663	0.09909	0.1000	-0.91	3.26
0105	DH3028	GGN 2455		12.46765	12.4650	2.65	
		Mean difference				2.07	

* - Exceeds allowable for order and class of survey.

---------- CLOSURE ANALYSIS BETWEEN PUBLISHED BENCH MARKS ----------

FROM BENCH MARK	TO BENCH MARK	DIST,KM	PUB ELEV DIFF, M	OBS ELEV DIFF, M	PUB-OBS DIFF,MM	O/C
0101 CLQT	0102 GGN 2669	1.089	4.9400	4.94356	-3.56	1 2
0101 CLQT	0105 GGN 2455	1.752	5.0400	5.04265	-2.65	1 1
0102 GGN 2669	0105 GGN 2455	0.663	0.1000	0.09909	0.91	1 1

Note: Distances shown were determined from the shortest path between bench marks.


UTM North=1,477,440 East=257,453 Zoom factor= 7
Plot
Zoom In
Zoom Out
Find
Print
Options
Help
Exit
105
GCN 2455
102
GCN 2669
101
CLQT
13°21'08"
13°21'08"
L12345/ IPAN USACE CLQT - GCN 2455

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RUNNING LIST

FROM	TO	DATE	START	END	DIST	EL DIFF
0101 CLQT	0103 BIRU	070904	10:30	10:45	151.6 M	-3.63092
0102 GGN 2669	0104 NUTZ	070904	13:05	13:55	902.6 M	-8.08350
0102 GGN 2669	0104 NUTZ	070907	09:25	10:12	896.9 M	-8.09485
0102 GGN 2669	0105 GGN 2455	070907	11:05	12:07	665.0 M	0.09897
0103 BIRU	0101 CLQT	070904	14:07	14:17	152.2 M	3.63075
0103 BIRU	0104 NUTZ	070904	10:50	11:00	39.7 M	0.48025
0104 NUTZ	0102 GGN 2669	070904	11:05	11:59	899.3 M	8.09249
0104 NUTZ	0103 BIRU	070904	14:00	14:05	40.0 M	-0.48091
0105 GGN 2455	0102 GGN 2669	070907	13:00	13:50	662.7 M	-0.09915

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IPAN USACE CLQT - GGN 2455

Total No. Runnings: 9
Total Distance (km): 4.41
Avg Running Dist (km): 0.49
Avg Sight Dist (m): 32.4
Total Time (Hr.): 5.1
Total Time (Days): 2
Setups/Hour: 13
Kilometers/Hour: 0.87
Kilometers/Day: 2.2

Runnings

Date	Start Time	End Time	Run Time	From SPSN	To SPSN	Start Temp	End Temp	W	S	Su	Dist (km)	Delta Ht (Meters)	Obs
YYMMDD													
070904	10:30	10:45	0:15	0101	0103	31.8	31.9	0	1	4	0.15	-3.63092	GAB
070904	10:50	11:00	0:10	0103	0104	32.3	32.6	0	1	2	0.04	0.48025	GAB
070904	11:05	11:59	0:54	0104	0102	32.2	32.5	0	0	12	0.90	8.09249	GAB
070904	13:05	13:55	0:50	0102	0104	32.3	32.0	0	0	14	0.90	-8.08350	GAB
070904	14:00	14:05	0:05	0104	0103	31.5	32.3	0	1	2	0.04	-0.48091	GAB
070904	14:07	14:17	0:10	0103	0101	32.5	32.1	0	1	4	0.15	3.63075	GAB
070907	9:25	10:12	0:47	0102	0104	31.4	30.3	0	0	16	0.90	-8.09485	GAB
070907	11:05	12:07	1:02	0102	0105	30.4	30.3	0	1	8	0.67	0.09897	DBD
070907	13:00	13:50	0:50	0105	0102	29.6	30.3	0	1	6	0.66	-0.09915	DBD