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PROJECT REPORT

FOR

U.S. Geological Survey

Texas Counties Lidar ARRA, Nueces Co.

August 25, 2011

AEROMETRIC PROJECT NO. 1-101205

Airborne GPS Survey Report

For

U.S. Geological Survey (Nueces County, TX – LiDAR)

NGTOC III

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AEROMETRIC Project No. 1101205

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USGS

Texas Counties Lidar ARRA, Nueces Co.

Aerometric Project No. 1101205

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1 INTRODUCTION

This report contains a summary of the LiDAR data acquisition and processing for the **USGS – FOUR COUNTIES TEXAS LiDAR TASK ORDER, NUECES COUNTY**.

1.1 Contact Info

Questions regarding the technical aspects of this report should be addressed to:

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1.2 Purpose

AEROMETRIC, INC. acquired highly accurate Light Detection and Ranging (LiDAR) data for Nueces County, Texas for the United State Geological Survey. Using AEROMETRIC's Optech 3100 AE LiDAR system, data was collected at 2500 meters to support the project area requirements.

1.3 Project Locations

This phase of the project covers Nueces County, Texas as designed and supplied by USGS under Task Order No. G10PD02746, Contract No. G10PC00025 entered into on September 17, 2010 between the US Geological Survey – NGTOC III and AeroMetric, Inc.

1.4 Time Period

LiDAR data acquisition and control was completed between December 9th, 2010 and February 8th, 2011. A total of 5 flight missions were required to cover Nueces County. See Item 3.4 for a sketch of the acquisition missions and Section 7 of the report for each flight log. QC surveys were completed between December 9th, 2010 and May 24th, 2011.

1.5 Project Scope

AEROMETRIC, INC. acquired highly accurate Light Detection and Ranging (LiDAR) data for Nueces County which encompass approximately 840 square miles in southern Texas. Using AEROMETRIC's Optech 3100 AE LiDAR system, data was collected at 2500 meters to support this phase of the project area's requirements.

As documented in our proposal dated September 9, 2010 we were to achieve a TIN accuracy of 24.5 cm for all areas. The accuracy as tested and published in this report in Section 8 has easily met the vertical accuracy requirements.

1.6 Conditions Affecting Progress

- None.

2 GEODETIC CONTROL

2.1 Network Scope

Base horizontal control for the check point surveys consisted of one NGS Order A station: **877 5870 TIDAL**; one NGS Order B station: **877 5237 TIDAL 2**; and six NGS CORS stations: **KVTX**, **TXAI**, **TXBE**, **TXCC**, **TXPO**, and **TXSI**.

Horizontal control is referenced to the Universal Transverse Mercator (UTM) Coordinate System – Zone 14, based on the North American Datum of 1983/2007 (NAD83/07). Final coordinates are published in meters.

Base vertical control for the check point surveys consisted of two NGS First Order, Class 2 stations: **877 5237 TIDAL 2** and **B 1380**; one NGS Third Order station: **877 5870 TIDAL**; and three NGS CORS stations: **KVTX**, **TXBE**, and **TXCC**. The NGS Geoid Model GEOID09 was applied to the derived ellipsoid heights that approximate the North American Vertical Datum of 1988.

Vertical control is based on the North American Vertical Datum of 1988 (NAVD88).

NGS recovery sheets are located in Section 2 of the Control Survey Report.

2.2 Network Computations

GPS measurements were done in two stages. Initial computations were done with LEICA Geo Office (LGO), version 4.0. LGO permits the conversion of raw satellite data collected by the receivers to a meaningful coordinate difference between points (baseline solutions). Once the baseline solutions were determined, they were input into the GeoSurv-GeoLab2 series of programs (Geolab version 2.4d). Adjustments were performed for analysis and quality closure holding the position and elevation of **TXCC** fixed, as shown below.

HORIZONTAL CLOSURES (in meters)

STATION	NORTHING	EASTING	LINEAR	DISTANCE	PROPORTION
877 5237 TIDAL 2	0.009	0.021	0.023	37962.6	1:1661000
877 5870 H TIDAL	0.003	0.001	0.003	27425.8	1:8672000
KVTX	0.012	0.004	0.013	49476.3	1:3911000
TXAI	0.024	0.010	0.026	64737.2	1:2489000
TXBE	0.010	0.006	0.012	80989.5	1:6944000
TXPO	0.014	0.010	0.017	38233.6	1:2222000
TXSI	0.020	0.006	0.021	30648.9	1:1467000

VERTICAL CLOSURES (in meters)

STATION	ADJUSTED ELEVATION	PUBLISHED ELEVATION	DIF	DISTANCE	ALLOWABLE 3rd ORDER CLOSURE

877 5237 TIDAL 2	2.031	2.046	0.015	37962.6	0.074
877 5870 H TIDAL	-23.979*	-23.949	0.030	27425.8	0.063
B 1380	19.720	19.718	0.002	35550.3	0.072
KVTX	-1.293*	-1.307*	0.014	49476.3	0.084
TXBE	49.360*	49.336*	0.024	80985.5	0.108

* Ellipsoid elevation

All the published control values were held in the fully constrained scaled least squares base network adjustment that was used to derive the Ground Control Checkpoints.

3 LiDAR ACQUISITION & PROCEDURES

3.1 Acquisition Time Period

LiDAR data acquisition and Airborne GPS control surveys were completed between December 9th, 2010 and February 8th, 2011. A total of 5 flight missions were required to cover the area of Nueces county.

3.2 LiDAR Planning

The LiDAR data for this project was collected with AeroMetric's Optech 3100 AE Airborne LiDAR system (Serial Number 03SEN145). All flight planning and acquisition was completed using Optech's ALTM-Nav, version 2.1.25b (flight planning and LiDAR control software).

The following are the acquisition settings for Nueces County.

- Flying Height (Above Ground): 2500 meters
- Laser Pulse Rate: 50 kHz
- Mirror Scan Frequency: 24.5 Hz
- Scan Angle (+/-): 17°
- Side Lap: 30 %
- Ground Speed: 160 kts
- Nominal Point Spacing: 1.5 meters

3.3 LiDAR Acquisition

A total of 5 flight missions were required to cover the project area. The missions were flown using the above planned values. See section 3.4 for a sketch of the acquisition missions and Section 6 of the report for each flight log.

Airborne GPS and IMU trajectories for the LiDAR sensor were also acquired during the time of flight.

Each mission was typically four to five hours long. Before take-off, the LiDAR system and the Airborne GPS and IMU systems were initiated for a period of five minutes and then again after landing for another five minutes. The missions acquired data according to the planned flight lines and included a minimum of one (usually two) cross flights. The cross flights were flown perpendicular to the planned flight lines and their data used in the in-situ calibration of the sensor.

3.4 LiDAR Trajectory Processing

The airborne positioning was based on the following control stations: **ARP7, ARP8, KVTX**, and **TXPV**.

4 QC SURVEYS

The check point survey was performed between December 9th, 2010 and May 24th, 2011 using Rapid Static GPS techniques. A total of 93 check points were surveyed across the project area. These points were collected in hard surface, short grass, and tall grass ground classification categories. Hard surface points were used to assess Fundamental Vertical Accuracy. Twenty hard surface points were not used in the assessment and were delivered to the client along with the short grass and tall grass points.

The control stations mentioned above to support the Airborne GPS acquisition were also used to complete the QC surveys.

See Section 5 of the control report for a complete listing.

5 FINAL LiDAR PROCESSING

5.1 ABGPS and IMU Processing

Airborne GPS

Applanix - POSGPS
Utilizing carrier phase ambiguity resolution on the fly (i.e., without initialization). The solution to sub-decimeter kinematic positioning without the operational constraint of static initialization as used in semi-kinematic or stop-and-go positioning was utilized for the airborne GPS post-processing.

The processing technique used by Applanix, Inc. for achieving the desired accuracy is Kinematic Ambiguity Resolution (KAR). KAR searches for ambiguities and uses a special method to evaluate the relative quality of each intersection (RMS). The quality indicator is used to evaluate the accuracy of the solution for each processing computation. In addition to the quality indicator, the software will compute separation plots between any two solutions, which will ultimately determine the acceptance of the airborne GPS post processing.

Inertial Data

The post-processing of inertial and aiding sensor data (i.e. airborne GPS post processed data) is to compute an optimally blended navigation solution. The Kalman filter-based aided inertial navigation algorithm generates an accurate (in the sense of least-square error) navigation solution that will retain the best characteristics of the processed input data. An example of inertial/GPS sensor blending is the following: inertial data is smooth in the short term. However, a free-inertial navigation solution has errors that grow without bound with time. A GPS navigation solution exhibits short-term noise but has errors that are bounded. This optimally blended navigation solution will retain the best features of both, i.e. the blended navigation solution has errors that are smooth and bounded.
The resultant processing generates the following data:

- Position: Latitude, Longitude, Altitude
- Velocity: North, East, and Down components
- 3-axis attitude: roll, pitch, true heading
- Acceleration: x, y, z components
- Angular rates: x, y, z components

The Applanix software, version 4.4 as well as MMS version 5.2 were used to determine both the ABGPS trajectory and the blending of inertial data.

The airborne GPS and blending of inertial and GPS post-processing were completed in multiple steps.

1. The collected data was transferred from the field data collectors to the main computer. Data was saved under the project number and separated between LiDAR mission dates. Inside each mission date, a sub-directory was created with the aircraft's tail number and an A or B suffix was attached for the time of day when the data was collected. Inside the tail number sub-directory, five sub-directories were also created EO, GPS, IMU, PROC, and RAW.

2. The aircraft raw data (IMU and GPS data combined) was run through a data extractor program. This separated the IMU and GPS data. In addition to the extracting of data, it provided the analyst the first statistics on the overall flight. The program was POSPac (POS post-processing PACkage).

3. Executing POSGPS program to derive accurate GPS positions for all flights:
   Applanix POSGPS
   The software utilized for the data collected was PosGPS, a kinematic on-the-fly (OTF) processing software package. Post processing of the data is computed from each base station (Note: only base stations within the flying area were used) in both a forward and backward direction. This provides the analyst the ability to Quality Check (QC) the post processing, since different ambiguities are determined from different base stations and also with the same data from different directions.

   The trajectory separation program is designed to display the time of week that the airborne or roving antenna traveled, and compute the differences found between processing runs. Processed data can be compared between a forward/reverse solution from one base station, a reverse solution from one base station and a forward solution from the second base station, etc. For the Applanix POSGPS processing, this is considered the final QC check for the given mission. If wrong ambiguities were found with one or both runs, the analyst would see disagreements from the trajectory plot, and re-processing would continue until an agreement was determined.

   Once the analyst accepts a forward and reverse processing solution, the trajectory plot is analyzed and the combined solution is stored in a file format acceptable for the IMU post processor.

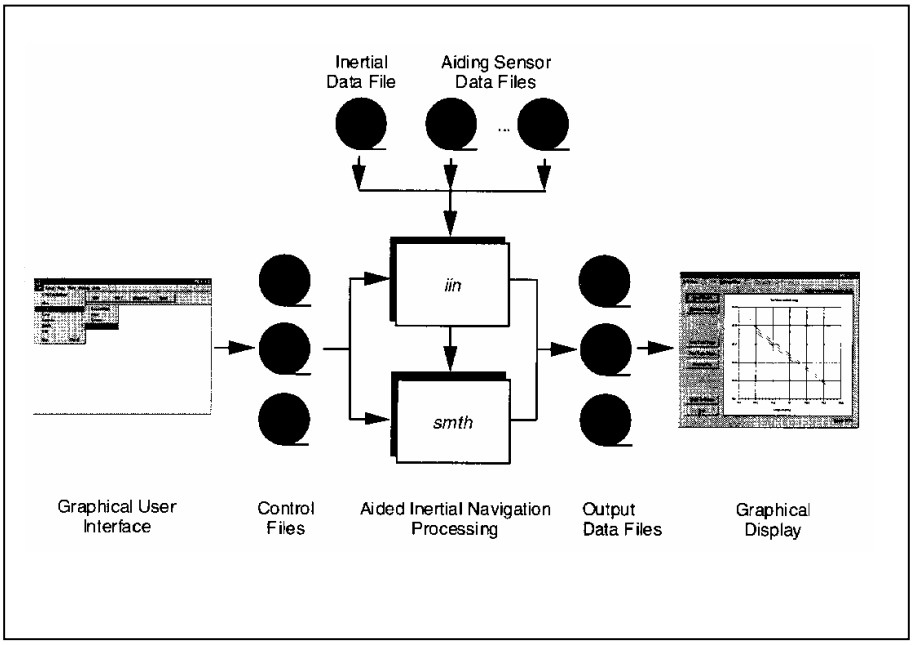
   Please see Section 7 of the control report for the final accepted trajectory plots.

4. When the processed trajectory data is accepted after quality control analysis, the combined solution is stored in a file format acceptable for the IMU post processor (i.e. POSProc).

5. Execute POSProc.

POSProc comprises a set of individual processing interface tools that execute and provide the following functions:

This diagram shows the organization of these tools, and is a function of the



POSProc processing components.

- Integrated Inertial Navigation (*iin*) Module.

  The name *iin* is a contraction of Integrated Inertial Navigation. *iin* reads inertial data and aiding data from data files specified in a processing environment file and computes the aided inertial navigation solution. The inertial data comes from a strapdown IMU. *iin* outputs the navigation data between start and end times at a data rate as specified in the environment file. *iin* also outputs Kalman filter data for analysis of estimation error statistics and smoother data that the smoothing program *smth* uses to improve the navigation solution accuracy.

  iin implements a full strapdown inertial navigator that solves Newton's equation of motion on the earth using inertial data from a strapdown IMU. The inertial navigator implements coning and sculling compensation to handle potential problems caused by vibration of the IMU.

- Smoother Module (*smth*).
  smth is a companion processing module to *iin*. *smth* is comprised of two individual functions that run in sequence. *smth* first runs the *smoother function* and then runs the *navigation correction function*.

  The *smth* smoother function performs backwards-in-time processing of the forwards-in-time blended navigation solution and Kalman filter data generated by *iin* to compute smoothed error estimates. *smth* implements a modified Bryson-Frazier smoothing algorithm specifically designed for use with the *iin* Kalman filter. The resulting smoothed strapdown navigator error estimates at a given time point are the optimal estimates based on all input data before and after the given time point. In this sense, *smth* makes use of all available information in the input data. *smth* writes the smoothed error estimates and their RMS estimation errors to output data files.

  The *smth* navigation correction function implements a feedforward error correction mechanism similar to that in the *iin* strapdown navigation solution using the smoothed strapdown navigation errors. s*mth* reads in the smoothed error estimates and with these, corrects the strapdown navigation data. The resulting navigation solution is called a Best Estimate of Trajectory (BET), and is the best obtainable estimate of vehicle trajectory with the available inertial and aiding sensor data.

The above mentioned modules provide the analyst the following statistics to ensure that the most optimal solution was achieved: a log of the *iin* processing, the Kalman filter Measurement Residuals, Smoothed RMS Estimation Errors, and Smoothed Sensor Errors and RMS.

5.2 LiDAR "Point Cloud" Processing

The ABGPS/IMU post processed data along with the LiDAR raw measurements were processed using Optech Incorporated's ASDA software. This software was used to match the raw LiDAR measurements with the computed ABGPS/IMU positions and attitudes of the LiDAR sensor. The result was a "point cloud" of LiDAR measured points referenced to the ground control system.

5.3 LIDAR CALIBRATION

Introduction

The purpose of the LiDAR system calibration is to refine the system parameters in order for the post-processing software to produce a "point cloud" that best fits the actual ground.

The following report outlines the calibration techniques employed for this project.

Calibration Procedures

AEROMETRIC routinely performs two types of calibrations on its Optech 3100 LiDAR system. The first calibration, system calibration, is performed whenever the LiDAR system is installed in the aircraft. This calibration is performed to define the system parameters affected by the physical misalignment of the system versus aircraft. The second calibration, in-situ calibration, is performed for each mission using that mission's data. This calibration is performed to refine the system parameters that are affected by the on-site conditions as needed.

System Calibration and Correction Software

Optech developed proprietary calibration software in December of 2009 that performs the system calibration. The results from this new software achieved excellent results and an accuracy that meets the project requirements.

This new calibration tool incorporates Optech's proprietary optical sensor models to compute laser point positions and provide laser point calibration improvements on a per flightline basis for the entire project area. It furthermore calculates planar surfaces at different angles from each flight line and then uses a robust least squares solution to compute the orientation parameters at the optical level instead of the traditional methods relating to the ground points. Determining and correcting at the optical level is critical when correcting the data especially when working in terrain and aggressive design parameters as found in this project. Each flight line was computed individually and output in LAS 1.2 format.

In-situ Calibration

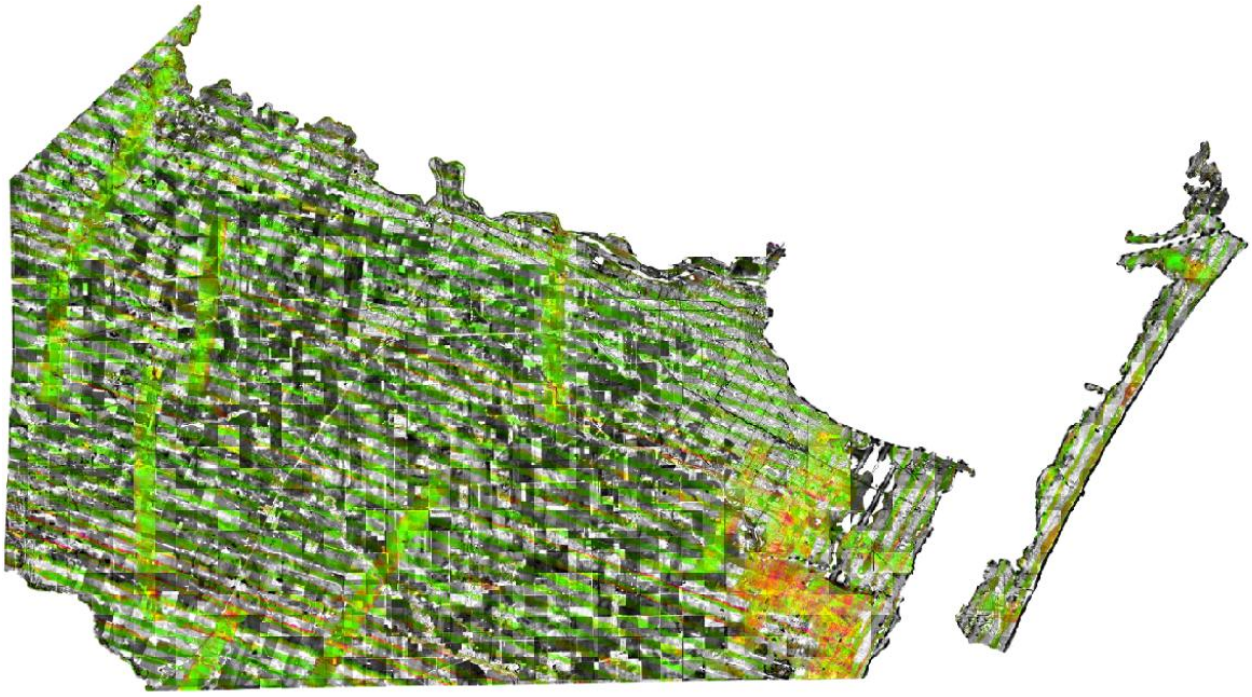
The in-situ calibration is performed as needed using the mission's data. This calibration is performed to refine the system parameters that are affected by the on-site conditions.

For each mission, LiDAR data for at least one cross flight is acquired over the mission's acquisition site. The processed data of the cross flight is compared to the perpendicular flight lines using either the Optech proprietary software or TerraSolid's TerraMatch software to determine if any systematic errors are present. In this calibration, the data of individual flight lines are compared against each other and their systematic errors are corrected in the final processed data.

5.4 LiDAR Processing

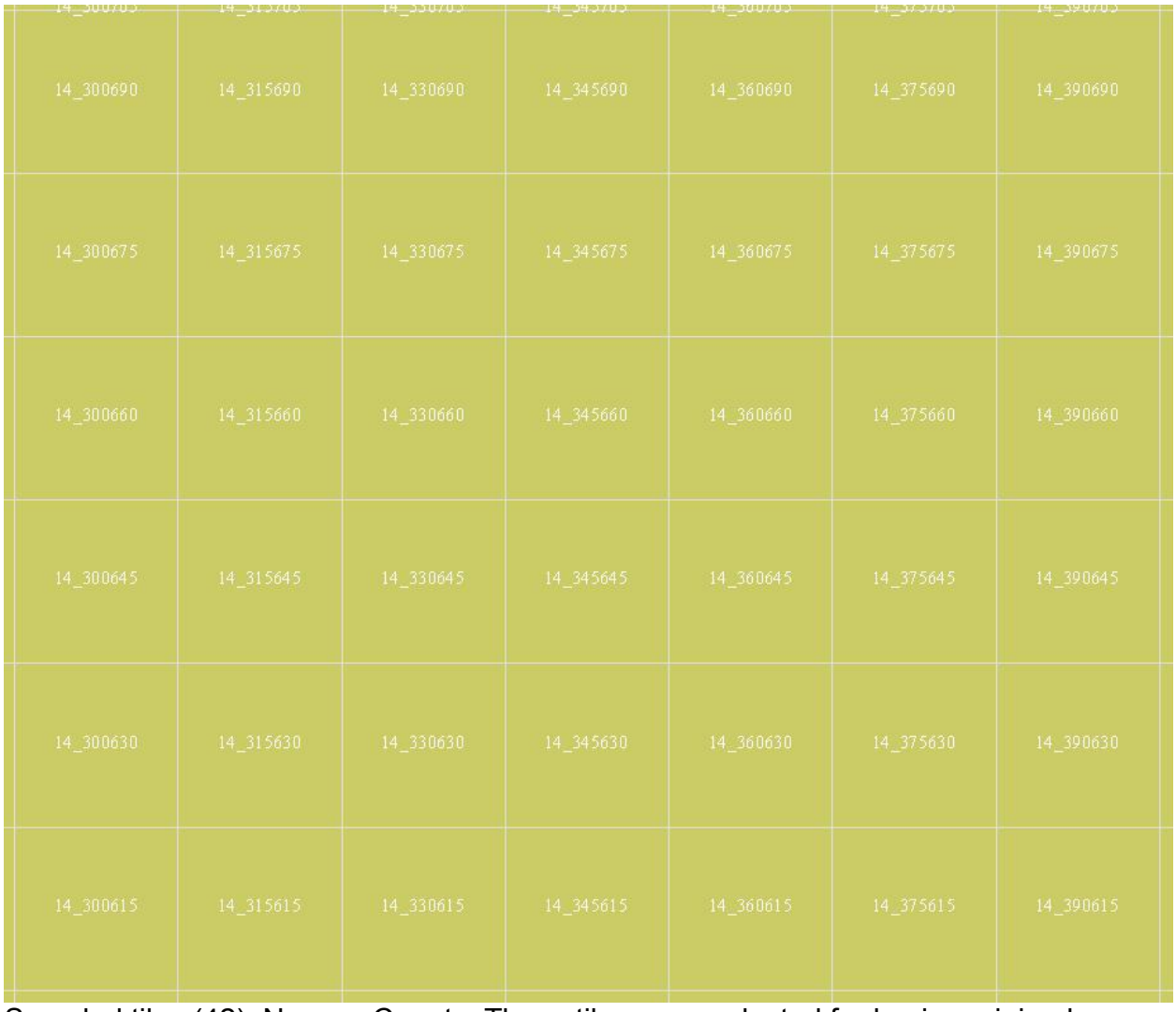
The LAS files were then imported, verified, and parsed into manageable, tiled grids using GeoCue version 7.0.34.5. GeoCue allows for ease of data management and process tracking.

The first step after the data has been processed and calibrated is to perform a relative accuracy assessment on the flightline to flightline comparisons and also a data density test prior to any further processing. To determine a proper accuracy assessment between flightlines, Aerometric uses GeoCue to create Orthos by elevation differences. The generated orthos have assigned elevation ranges that allow the technician to evaluate if the data passes the accuracy assessment and also determine if additional calibration efforts are needed based on the bias trends. Below is a screen capture of the elevation ortho where green indicates a flightline comparison of less than 0.05 meters; yellow is 0.050 – 0.100 meters; orange is 0.101 – 0.150 meters; red is 0.151 – 0.200 meters, and greater than 0.20 meters is magenta.



Nueces County

In addition to the relative accuracy assessment, Aerometric also reviews some tiles to ensure that the required density has been met. AeroMetric utilizes an in-house proprietary software to complete this task. Initially a grid was placed according to the version 12 specification that is based on the nominal post spacing of 1.5 meters. The results indicated that the density of the sampled tiles achieved only 76% of the points meeting the specified data density criteria. However, using the latest USGS specification, version 13, which modifies the requirements to allow up to 2 times the nominal post spacing our data tests now easily meets the desired density requirements. Below are the statistics from the results of the inspected tiles as shown in the next image.



Sampled tiles (42): Nueces County. These tiles were selected for having minimal surface water visible.

Run 1 (Version 12 – 1.5m)
Total number of cells: 42,084,042
Total number of cells with one point: 14,013,976
Total number of cells with one or more points: 32,149,959
Percentage of tiles with 1 or more points: 76.4%

Run 2 (Version 13 – 3.0m)
Total number of cells: 10,542,042
Total number of cells with one point: 88,658
Total number of cells with one or more points: 10,468,977
Percentage of tiles with 1 or more points: 99.3%

Once both the accuracy between swaths and data density is accepted an automated classification algorithm is performed using TerraSolid's TerraScan, version 10.020. This will produce the majority of the bare-earth datasets.

The remainder of the data was classified using manual classification techniques. The majority of the manual edit moved points misclassified as ground (class 2) to unclassified (class 1). Erroneous low points, high points, including clouds are classified to class 7.

5.4 Check Point Validation

The data was then verified using the ground control data collected by Aerometric. TerraScan is used to compute the vertical differences between the surveyed elevation and the LiDAR derived elevation closest to the surveyed point.

A report listing the differences and common statistics was created and can be found in Section 8 of this report.

5.5 LiDAR Data Delivery

Raw point cloud data supplied is in the following format:

- LAS, version 1.2
- GPS times adjusted to GPS Absolute
- Full swaths and delivered as 1 file per swath which did not exceed 2gb.

Classified point cloud data is also being supplied using the following criteria.

- LAS, version 1.2
- GPS times adjusted to GPS Absolute
- Classification scheme:
  - Code 1 – Processed, but unclassified
  - Code 2 – Ground
  - Code 7 – Noise
  - Code 9 - Water
  - Code 10 – Ignored Ground (Breakline proximity)

The 2 meter bare-earth DEMs were created in the following manner. First, ArcGrids in ASCII format were created using TerraModeler version 10.005 (TerraSolid Ltd.). The ASCII grids were then imported into ARC and translated to raster format and placed in a geodatabase DEM feature dataset.

The first return 2 meter intensity images were created using GeoCue. These images are in GeoTiff format.

Nueces County Intensity Raster

Breaklines are first collected in a Microstation environment using the base specifications. Upon acceptance of the breaklines, either polygons or lines, are translated into ARC and imported to the final geodatabase as separate features.

6 CONCLUSION

Because of the rigorous procedures and use of new technology, this project will serve the USGS and all users requiring the provided LiDAR derivative products for Nueces County Texas well into the future. Although this project challenged both the equipment and personnel, the results are extremely accurate and reliable.

The NGS Data Sheet

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

```
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = JANUARY 28, 2011
 AC8428 ***********************************************************************
 AC8428  DESIGNATION -  877 5237 TIDAL 2
 AC8428  PID         -  AC8428
 AC8428  STATE/COUNTY-  TX/NUECES
 AC8428  USGS QUAD   -  PORT ARANSAS (1975)
 AC8428
 AC8428                        *CURRENT SURVEY CONTROL
 AC8428  ______________________________________________________________________
 AC8428* NAD 83(2007)-  27 50 21.86054(N)    097 04 21.92172(W)     ADJUSTED
 AC8428* NAVD 88     -         2.046  (meters)       6.71   (feet)  ADJUSTED
 AC8428  ______________________________________________________________________
 AC8428  EPOCH DATE  -        2002.00
 AC8428  X           -    -694,947.399 (meters)                     COMP
 AC8428  Y           -  -5,601,083.719 (meters)                     COMP
 AC8428  Z           -   2,960,768.615 (meters)                     COMP
 AC8428  LAPLACE CORR-           0.82  (seconds)                    DEFLEC09
 AC8428  ELLIP HEIGHT-         -24.334 (meters)          (01/02/09) ADJUSTED
 AC8428  GEOID HEIGHT-         -26.39  (meters)                     GEOID09
 AC8428  DYNAMIC HT  -           2.043 (meters)       6.70  (feet)  COMP
 AC8428  MODELED GRAV-     979,146.4   (mgal)                       NAVD 88
 AC8428
 AC8428  HORZ ORDER  -  B
 AC8428  VERT ORDER  -  FIRST     CLASS II
 AC8428  ELLP ORDER  -  THIRD     CLASS I
 AC8428
 AC8428.The horizontal coordinates were established by GPS observations
 AC8428.and adjusted by the BLUCHER INST in January 2009.
 AC8428
 AC8428.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AC8428.See National Readjustment for more information.
 AC8428.The horizontal coordinates are valid at the epoch date displayed above.
 AC8428.The epoch date for horizontal control is a decimal equivalence
 AC8428.of Year/Month/Day.
 AC8428
 AC8428.The orthometric height was determined by differential leveling and
 AC8428.adjusted in December 1997.
 AC8428
 AC8428.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AC8428
 AC8428.The Laplace correction was computed from DEFLEC09 derived deflections.
 AC8428
 AC8428.The ellipsoidal height was determined by GPS observations
 AC8428.and is referenced to NAD 83.
 AC8428
 AC8428.The geoid height was determined by GEOID09.
```

```
AC8428
AC8428.The dynamic height is computed by dividing the NAVD 88
AC8428.geopotential number by the normal gravity value computed on the
AC8428.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
AC8428.degrees latitude (g = 980.6199 gals.).
AC8428
AC8428.The modeled gravity was interpolated from observed gravity values.
AC8428
AC8428;                    North         East     Units Scale Factor Converg.
AC8428;SPC TX S     - 5,241,525.130   440,591.179   MT  1.00000154   +0 38 52.7
AC8428;SPC TX S     -17,196,570.36  1,445,506.23   sFT  1.00000154   +0 38 52.7
AC8428;UTM  14      - 3,080,903.735   689,791.999   MT  1.00004462   +0 54 01.0
AC8428
AC8428!             -  Elev Factor  x  Scale Factor =   Combined Factor
AC8428!SPC TX S     -   1.00000382  x   1.00000154  =   1.00000536
AC8428!UTM  14      -   1.00000382  x   1.00004462  =   1.00004844
AC8428
AC8428                           SUPERSEDED SURVEY CONTROL
AC8428
AC8428  NAVD 88 (01/02/09)    2.05   (m)            6.7    (f) LEVELING    3
AC8428
AC8428.Superseded values are not recommended for survey control.
AC8428.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AC8428.See file dsdata.txt to determine how the superseded data were derived.
AC8428
AC8428_U.S. NATIONAL GRID SPATIAL ADDRESS: 14RPR8979180903(NAD 83)
AC8428_MARKER: DB = BENCH MARK DISK
AC8428_SETTING: 37 = SET IN A MASSIVE RETAINING WALL
AC8428_SP_SET: SEAWALL
AC8428_STAMPING: BM 2 ELEV 5.99 1972
AC8428_MARK LOGO: USGS
AC8428_MAGNETIC: N = NO MAGNETIC MATERIAL
AC8428_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AC8428_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AC8428+SATELLITE: SATELLITE OBSERVATIONS - August 26, 2008
AC8428
AC8428  HISTORY     - Date     Condition        Report By
AC8428  HISTORY     - 1972     MONUMENTED       USGS
AC8428  HISTORY     - 19970204 GOOD             NGS
AC8428  HISTORY     - 20080826 GOOD             CBI
AC8428
AC8428                           STATION DESCRIPTION
AC8428
AC8428'DESCRIBED BY NATIONAL GEODETIC SURVEY 1997 (GAS)
AC8428'0.2 KM (0.10 MI) SOUTHERLY ALONG ALISTER STREET FROM THE POST OFFICE
AC8428'IN PORT ARANSAS, THENCE 1.3 KM (0.80 MI) NORTHWESTERLY ALONG STATE
AC8428'HIGHWAY 361, THENCE 0.4 KM (0.25 MI) WESTERLY ALONG POTER STREET,
AC8428'THENCE 0.05 KM (0.05 MI) NORTHERLY ALONG A ROAD LEADING TO THE MARINE
AC8428'SCIENCE INSTITUTE OF FISHERIES AND MARICULTURE, THENCE 0.1 KM (0.05
AC8428'MI) WESTERLY ALONG A PAVED ROAD, THENCE 0.1 KM (0.05 MI) NORTHERLY
AC8428'ALONG A PAVED ROAD, IN A CONCRETE SEAWALL, 8.2 M (26.9 FT) EAST OF THE
AC8428'EXTENDED ROAD CENTER, 2.9 M (9.5 FT) WEST OF THE CENTER OF A PIER
AC8428'WALKWAY, AND 0.2 M (0.7 FT) BELOW THE LEVEL OF THE ROAD.
AC8428
AC8428                           STATION RECOVERY (2008)
AC8428
AC8428'RECOVERY NOTE BY BLUCHER INST 2008 (DBP)
```

```
  AC8428'RECOVERED AS DESCRIBED

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

The NGS Data Sheet

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

```
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = FEBRUARY  9, 2011
 AH1762 ***********************************************************************
 AH1762  HT_MOD      -  This is a Height Modernization Survey Station.
 AH1762  CBN         -  This is a Cooperative Base Network Control Station.
 AH1762  TIDAL BM    -  This is a Tidal Bench Mark.
 AH1762  DESIGNATION -  877 5870 H TIDAL
 AH1762  PID         -  AH1762
 AH1762  STATE/COUNTY-  TX/NUECES
 AH1762  USGS QUAD   -  CRANE ISLANDS SW (1975)
 AH1762
 AH1762                        *CURRENT SURVEY CONTROL
 AH1762  ______________________________________________________________________
 AH1762* NAD 83(2007)-  27 35 17.26666(N)    097 13 22.29500(W)     ADJUSTED
 AH1762* NAVD 88     -         1.83   (meters)       6.0    (feet)  GPS OBS
 AH1762  ______________________________________________________________________
 AH1762  EPOCH DATE  -        2002.00
 AH1762  X           -    -711,246.902 (meters)                     COMP
 AH1762  Y           -  -5,612,090.901 (meters)                     COMP
 AH1762  Z           -   2,936,118.126 (meters)                     COMP
 AH1762  LAPLACE CORR-           0.91  (seconds)                    DEFLEC09
 AH1762  ELLIP HEIGHT-         -23.949 (meters)          (02/10/07) ADJUSTED
 AH1762  GEOID HEIGHT-         -25.91  (meters)                     GEOID09
 AH1762
 AH1762  ------- Accuracy Estimates (at 95% Confidence Level in cm) --------
 AH1762  Type    PID    Designation                     North   East  Ellip
 AH1762  ----------------------------------------------------------------
 AH1762  NETWORK AH1762 877 5870 H TIDAL                  0.18   0.16   0.65
 AH1762  ----------------------------------------------------------------
 AH1762
 AH1762.The horizontal coordinates were established by GPS observations
 AH1762.and adjusted by the National Geodetic Survey in February 2007.
 AH1762
 AH1762.The datum tag of NAD 83(2007) is equivalent to NAD 83(NSRS2007).
 AH1762.See National Readjustment for more information.
 AH1762.The horizontal coordinates are valid at the epoch date displayed above.
 AH1762.The epoch date for horizontal control is a decimal equivalence
 AH1762.of Year/Month/Day.
 AH1762
 AH1762.The orthometric height was determined by GPS observations and a
 AH1762.high-resolution geoid model using precise GPS observation and
 AH1762.processing techniques. It supersedes the leveled height previously
 AH1762.determined for this station.
 AH1762
 AH1762.This Tidal Bench Mark is designated as VM 891
 AH1762.by the CENTER FOR OPERATIONAL OCEANOGRAPHIC PRODUCTS AND SERVICES.
 AH1762
```

AH1762.Photographs are available for this station.
AH1762
AH1762.The X, Y, and Z were computed from the position and the ellipsoidal ht.
AH1762
AH1762.The Laplace correction was computed from DEFLEC09 derived deflections.
AH1762
AH1762.The ellipsoidal height was determined by GPS observations
AH1762.and is referenced to NAD 83.
AH1762
AH1762.The geoid height was determined by GEOID09.
AH1762

		North	East	Units	Scale Factor	Converg.
AH1762;SPC TX S	-	5,213,523.766	426,087.475	MT	0.99994710	+0 34 47.4
AH1762;SPC TX S	-	17,104,702.56	1,397,921.99	sFT	0.99994710	+0 34 47.4
AH1762;UTM 14	-	3,052,838.821	675,408.948	MT	0.99997980	+0 49 23.6

		Elev Factor	x	Scale Factor	=	Combined Factor
AH1762!SPC TX S	-	1.00000376	x	0.99994710	=	0.99995086
AH1762!UTM 14	-	1.00000376	x	0.99997980	=	0.99998356

AH1762
AH1762 SUPERSEDED SURVEY CONTROL
AH1762

AH1762	ELLIP H (05/01/00)	-23.934	(m)			GP( )	3	1
AH1762	NAD 83(1993)-	27 35 17.26645(N)	097 13 22.29525(W)			AD(1996.00)	A	
AH1762	ELLIP H (08/15/96)	-23.952	(m)			GP(1996.00)	3	1
AH1762	NAD 83(1993)-	27 35 17.26631(N)	097 13 22.29551(W)			AD( )	B	
AH1762	ELLIP H (05/09/94)	-23.743	(m)			GP( )	4	2
AH1762	NAVD 88 (12/02/97)	1.973	(m)	6.47	(f)	ADJUSTED	1	2

AH1762
AH1762.Superseded values are not recommended for survey control.
AH1762.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AH1762.See file dsdata.txt to determine how the superseded data were derived.
AH1762
AH1762_U.S. NATIONAL GRID SPATIAL ADDRESS: 14RPR7540852838(NAD 83)
AH1762_MARKER: DB = BENCH MARK DISK
AH1762_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
AH1762_SP_SET: STAINLESS STEEL ROD
AH1762_STAMPING: 5870 H 1985
AH1762_MARK LOGO: NOS
AH1762_PROJECTION: FLUSH
AH1762_MAGNETIC: N = NO MAGNETIC MATERIAL
AH1762_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AH1762_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AH1762+SATELLITE: SATELLITE OBSERVATIONS - December 01, 2006
AH1762_ROD/PIPE-DEPTH: 14.0 meters
AH1762

AH1762	HISTORY	- Date	Condition	Report By
AH1762	HISTORY	- 1985	MONUMENTED	NOS
AH1762	HISTORY	- 19930210	GOOD	NGS
AH1762	HISTORY	- 19960401	GOOD	NGS
AH1762	HISTORY	- 19970204	GOOD	NGS
AH1762	HISTORY	- 19980223	GOOD	NGS
AH1762	HISTORY	- 20030419	GOOD	NGS
AH1762	HISTORY	- 20030425	GOOD	NGS
AH1762	HISTORY	- 2005	GOOD	CCTI
AH1762	HISTORY	- 20061201	GOOD	USPSQD

AH1762

AH1762 STATION DESCRIPTION
AH1762
AH1762'DESCRIBED BY NATIONAL GEODETIC SURVEY 1993
AH1762'THE STATION IS LOCATED ABOUT 5 KM (3.10 MI) SOUTHEAST OF CORPUS
AH1762'CHRISTI IN A FLAT GRASSY AREA NEAR THE EXIT GATE IN PADRE BALLI PARK
AH1762'ON THE NORTH END OF PADRE ISLAND. OWNERSHIP--PADRE BALLI PARK.
AH1762'TO REACH FROM THE JUNCTION OF STATE HIGHWAY 361 (OLD PARK ROAD 53) AND
AH1762'COUNTY PARK ROAD 22 ON NORTH PADRE ISLAND, GO SOUTH ON PARK ROAD 22
AH1762'FOR 1.75 KM (1.10 MI) TO A PAVED CROSSROAD (WHITECAP BOULEVARD).
AH1762'CONTINUE SOUTH ON PARK ROAD 22 FOR 1.62 KM (1.00 MI) TO THE NORTH ONE
AH1762'OF TWO CROSSOVERS AND THE PAVED ENTRANCE/EXIT TO PADRE BALLI PARK ON
AH1762'THE LEFT. TURN LEFT, SOUTHEAST, CROSSING THE NORTHBOUND LANES FOR 30
AH1762'M (98.4 FT) TO THE EXIT ROAD AND THE STATION ON THE EAST SIDE OF A
AH1762'SHORT CONCRETE BLOCK WALL.
AH1762'STATION IS A SURVEY DISK SET ON THE TOP OF A STEEL ROD IN A 10 CM PVC
AH1762'PIPE SURROUNDED BY CONCRETE SET FLUSH WITH THE GROUND. IT IS 25.9 M
AH1762'(85.0 FT) SOUTH-SOUTHEAST FROM POWER POLE NUMBER 195, 14.6 M
AH1762'(47.9 FT) NORTH-NORTHEAST FROM THE EXIT ROAD, 0.65 M (2.13 FT)
AH1762'NORTHEAST FROM THE MOST NORTHEAST CORNER OF THE CONCRETE BLOCK WALL,
AH1762'AND 0.65 M (2.13 FT) SOUTH FROM A STEEL WITNESS POST.
AH1762
AH1762 STATION RECOVERY (1996)
AH1762
AH1762'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (RJH)
AH1762'RECOVERED AS DESCRIBED.
AH1762
AH1762 STATION RECOVERY (1997)
AH1762
AH1762'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (GAS)
AH1762'29.5 KM (18.35 MI) SOUTHEASTERLY ALONG STATE HIGHWAY 358 AND PARK ROAD
AH1762'22 FROM THE JUNCTION OF STATE HIGHWAY 286 IN CORPUS CHRISTI, 32.0 M
AH1762'(105.0 FT) EAST OF THE CENTERLINE OF THE WESTBOUND LANES OF THE ROAD,
AH1762'14.6 M (47.9 FT) NORTH OF THE CENTER OF AN EXIT ROAD FROM THE PADRE
AH1762'BALLI PARK, 7.0 M (23.0 FT) NORTH OF UTILITY POLE NUMBER 48, 0.7 M
AH1762'(2.3 FT) NORTHEAST OF THE NORTHEAST CORNER OF A BLOCK WALL, 0.7 M (2.3
AH1762'FT) SOUTH OF A WITNESS POST, AND 0.3 M (1.0 FT) ABOVE THE LEVEL OF THE
AH1762'ROAD. NOTE--THE DISK IS ENCASED IN A 5-INCH PVC PIPE AND IS FLUSH
AH1762'WITH THE GROUND SURFACE.
AH1762
AH1762 STATION RECOVERY (1998)
AH1762
AH1762'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (WCW)
AH1762'RECOVERED IN GOOD CONDITION. THE STATION IS LOCATED ABOUT 5 KM (3.10
AH1762'MI) SOUTHEAST OF CORPUS CHRISTI ON NORTH PADRE ISLAND AT THE EXIT GATE
AH1762'OF PADRE BALLI PARK. OWNERSHIP--PADRE BALLI STATE PARK, 15820 STATE
AH1762'PARK HIGHWAY 22 (S.P.I.D.), CORPUS CHRISTI TX 78415, PARK OFFICE PHONE
AH1762'512-949-8121. TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY
AH1762'361 (FORMER STATE PARK HIGHWAY 53) AND STATE PARK HIGHWAY 22 (SOUTH
AH1762'PADRE ISLAND DRIVE) GO SOUTH ON STATE PARK HIGHWAY 22 FOR A TOTAL OF
AH1762'3.4 KM (2.10 MI) PASSING WHITECAP BOULEVARD AT 1.8 KM (1.10 MI) TO THE
AH1762'MAIN BOULEVARD ENTRANCE TO THE PADRE BALLI PARK. TURN LEFT AND GO
AH1762'EAST ON THE ENTRANCE DRIVE FOR 0.25 KM (0.15 MI) TO THE FIRST ROAD
AH1762'LEFT. TURN LEFT AND GO NORTH ON ELLIFF ROAD FOR 0.08 KM (0.05 MI) TO
AH1762'A CROSSROAD. TURN LEFT AND GO WEST ON THE EXIT DRIVE FOR 0.25 KM
AH1762'(0.15 MI) TO A MASONRY BLOCK WALL AHEAD AND THE STATION ON RIGHT. THE
AH1762'MARK IS A PUNCH HOLE IN THE CENTER OF A NATIONAL OCEAN SURVEY
AH1762'BENCHMARK DISK CRIMPED ONTO A STAINLESS STEEL ROD OF RECORD LENGTH

```
AH1762'14.0 M (45.9 FT) WITHOUT GREASED SLEEVE ENCASED IN A 12.7 CM (5 IN)
AH1762'PVC PIPE WITHOUT LOGO CAP SURROUNDED WITH CONCRETE.  THE MARK IS FLUSH
AH1762'WITH THE TOP OF ENCASEMENT PIPE AND WITH THE GROUND.  THE STATION IS
AH1762'LOCATED 14.5 M (47.6 FT) NORTH FROM THE CENTER OF THE EXIT DRIVE, 9.2
AH1762'M (30.2 FT) NORTH FROM THE NORTH EXIT GATE POST, 0.7 M (2.3 FT) EAST
AH1762'FROM THE NORTH CORNER OF THE MOST EASTERLY FACE OF A MASONRY BLOCK
AH1762'WALL, AND 0.7 M (2.3 FT) SOUTH FROM A METAL NGS WITNESS POST.
AH1762
AH1762                          STATION RECOVERY (2003)
AH1762
AH1762'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (AJL)
AH1762'RECOVERED AS DESCRIBED AND IN GOOD CONDITION.
AH1762'
AH1762'
AH1762'
AH1762
AH1762                          STATION RECOVERY (2003)
AH1762
AH1762'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (AJL)
AH1762'RECOVERED AS DESCRIBED
AH1762'
AH1762'
AH1762'
AH1762
AH1762                          STATION RECOVERY (2005)
AH1762
AH1762'RECOVERY NOTE BY C AND C TECHNOLOGIES INCORPORATED 2005
AH1762'RECOVERY NOTE BY C AND C TECHNOLOGIES 2005 (JEW)RECOVERED AS
AH1762'DESCRIBED.
AH1762
AH1762                          STATION RECOVERY (2006)
AH1762
AH1762'RECOVERY NOTE BY US POWER SQUADRON 2006 (SRS)
AH1762'RECOVERED IN GOOD CONDITION.

*** retrieval complete.
Elapsed Time = 00:00:01
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The NGS Data Sheet

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

```
DATABASE =  ,PROGRAM = datasheet, VERSION = 7.85
1        National Geodetic Survey,   Retrieval Date = JANUARY 28, 2011
 AH1052 ***********************************************************************
 AH1052  DESIGNATION -  B 1380
 AH1052  PID         -  AH1052
 AH1052  STATE/COUNTY-  TX/NUECES
 AH1052  USGS QUAD   -  KINGSVILLE EAST (1979)
 AH1052
 AH1052                        *CURRENT SURVEY CONTROL
 AH1052  ______________________________________________________________________
 AH1052* NAD 83(1986)-  27 37 19.      (N)    097 46 33.      (W)      SCALED
 AH1052* NAVD 88     -         19.718  (meters)       64.69   (feet)   ADJUSTED
 AH1052  ______________________________________________________________________
 AH1052  GEOID HEIGHT-          -26.30  (meters)                        GEOID09
 AH1052  DYNAMIC HT  -           19.687 (meters)       64.59  (feet)   COMP
 AH1052  MODELED GRAV-      979,105.2   (mgal)                          NAVD 88
 AH1052
 AH1052  VERT ORDER  -  FIRST     CLASS II
 AH1052
 AH1052.The horizontal coordinates were scaled from a topographic map and have
 AH1052.an estimated accuracy of +/- 6 seconds.
 AH1052
 AH1052.The orthometric height was determined by differential leveling and
 AH1052.adjusted in June 1991.
 AH1052
 AH1052.The geoid height was determined by GEOID09.
 AH1052
 AH1052.The dynamic height is computed by dividing the NAVD 88
 AH1052.geopotential number by the normal gravity value computed on the
 AH1052.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 AH1052.degrees latitude (g = 980.6199 gals.).
 AH1052
 AH1052.The modeled gravity was interpolated from observed gravity values.
 AH1052
 AH1052;                    North         East     Units  Estimated Accuracy
 AH1052;SPC TX S     - 5,216,840.      371,470.      MT  (+/- 180 meters Scaled)
 AH1052
 AH1052                          SUPERSEDED SURVEY CONTROL
 AH1052
 AH1052.No superseded survey control is available for this station.
 AH1052
 AH1052_U.S. NATIONAL GRID SPATIAL ADDRESS: 14RPR207559(NAD 83)
 AH1052_MARKER: I = METAL ROD
 AH1052_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
 AH1052_SP_SET: STAINLESS STEEL ROD
 AH1052_STAMPING: B 1380 1981
 AH1052_MARK LOGO: NGS
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AH1052_PROJECTION: RECESSED 2 CENTIMETERS
AH1052_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AH1052_ROD/PIPE-DEPTH: 7.3 meters
AH1052
AH1052 HISTORY - Date Condition Report By
AH1052 HISTORY - 1981 MONUMENTED NGS
AH1052 HISTORY - 19901007 GOOD USPSQD
AH1052 HISTORY - 19970726 MARK NOT FOUND USPSQD
AH1052 HISTORY - 20010331 GOOD NGS
AH1052
AH1052 STATION DESCRIPTION
AH1052
AH1052'DESCRIBED BY NATIONAL GEODETIC SURVEY 1981
AH1052'7.3 KM (4.55 MI) SW FROM DRISCOLL.
AH1052'7.3 KM (4.55 MI) SOUTHWEST ALONG U.S. HIGHWAY 77 SOUTHBOUND FROM THE
AH1052'JUNCTION OF FARM ROAD 665 IN DRISCOLL, ALSO 4.0 KM (2.45 MI) NORTHEAST
AH1052'ALONG BUSINESS U.S. HIGHWAY 77 NORTHBOUND FROM THE JUNCTION OF MAIN
AH1052'STREET IN BISHOP, THENCE 1.4 KM (0.85 MI) NORTHEAST ALONG U.S. HIGHWAY
AH1052'77 NORTHBOUND, AT THE JUNCTION OF FARM ROAD 3354 LEADING EAST,
AH1052'18.0 METERS (59.0 FT) EAST OF THE CENTERLINE OF THE NORTHBOUND LANE,
AH1052'29.6 METERS (97.0 FT) NORTH OF THE CENTERLINE OF FARM ROAD 3354
AH1052'LEADING EAST, 0.3 METER (1.0 FT) SOUTHWEST OF A FENCE, 0.75 METER
AH1052'(2.5 FT) SOUTH OF A 30-CM (12-INCH) FENCE POST, 1.7 METERS (5.5 FT)
AH1052'SOUTH OF A WOODEN POST WITH NUMBER 32 ATTACHED (A TELEPHONE
AH1052'UNDERGROUND CABLE WARNING SIGN), 15.7 METERS (51.6 FT) NORTH OF A
AH1052'POWERLINE POLE AND HIGH VOLTAGE LINES WHICH CROSS THE HIGHWAY.
AH1052'THE MARK IS 0.30 METERS SW FROM A WITNESS POST.
AH1052'THE MARK IS 0.61 M BELOW THE HIGHWAY.
AH1052
AH1052 STATION RECOVERY (1990)
AH1052
AH1052'RECOVERY NOTE BY US POWER SQUADRON 1990 (GGB)
AH1052'RECOVERED IN GOOD CONDITION.
AH1052
AH1052 STATION RECOVERY (1997)
AH1052
AH1052'RECOVERY NOTE BY US POWER SQUADRON 1997
AH1052'MARK NOT FOUND.
AH1052
AH1052 STATION RECOVERY (2001)
AH1052
AH1052'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2001 (DB)
AH1052'THIS REPORT WAS SUBMITTED BY THE US POWER SQUADRONS.

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

ITRF 00
KINGSVILLETX2006 (KVTX), TEXAS

Retrieved from NGS DataBase on 12/10/08 at 10:18:46.

Antenna Reference Point(ARP): KINGSVILLETX2006 CORS ARP

PID = DK7573

ITRF00 POSITION (EPOCH 1997.0)
Computed in Dec. 2008 using 13 days of data.

X =	-777124.664 m	latitude	= 27 32 45.42388 N
Y =	-5605551.252 m	longitude	= 097 53 34.37295 W
Z =	2931984.732 m	ellipsoid height	= -2.603 m

ITRF00 VELOCITY
Predicted with HTDP_3.0 Dec. 2008.

VX =	-0.0115 m/yr	northward	= -0.0054 m/yr
VY =	-0.0006 m/yr	eastward	= -0.0113 m/yr
VZ =	-0.0050 m/yr	upward	= -0.0004 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Dec. 2008.

X =	-777124.110 m	latitude	= 27 32 45.40708 N
Y =	-5605552.742 m	longitude	= 097 53 34.34552 W
Z =	2931984.879 m	ellipsoid height	= -1.293 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Dec. 2008.

VX =	0.0015 m/yr	northward	= -0.0000 m/yr
VY =	0.0005 m/yr	eastward	= 0.0014 m/yr
VZ =	-0.0004 m/yr	upward	= -0.0008 m/yr

L1 Phase Center of the current GPS antenna: KINGSVILLETX2006 CORS L1 PC C

The D/M element, CR, +SCIT radome SCIGN mt antenna
(Antenna Code = TRM29659.00   SCIT) was installed on 09/02/06.
The L2 phase center is 0.018 m above the L1 phase center.

PID = DK7574

ITRF00 POSITION (EPOCH 1997.0)
Computed in Dec. 2008 using 13 days of data.

X =	-777124.676 m	latitude	= 27 32 45.42391 N
Y =	-5605551.346 m	longitude	= 097 53 34.37292 W
Z =	2931984.782 m	ellipsoid height	= -2.496 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Dec. 2008.

X =	-777124.122 m	latitude	= 27 32 45.40711 N
Y =	-5605552.836 m	longitude	= 097 53 34.34549 W
Z =	2931984.929 m	ellipsoid height	= -1.186 m

The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP.

Monument: KINGSVILLETX2006 GRP

PID = DK7575

Inscribed: UNKNOWN

ITRF00 POSITION (EPOCH 1997.0)
Computed in Dec. 2008 using 13 days of data.

X =	-777124.662 m	latitude	= 27 32 45.42388 N
Y =	-5605551.245 m	longitude	= 097 53 34.37295 W
Z =	2931984.728 m	ellipsoid height	= -2.611 m

The ITRF00 VELOCITY of the monument is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Dec. 2008.

X =	-777124.109 m	latitude	= 27 32 45.40708 N
Y =	-5605552.735 m	longitude	= 097 53 34.34552 W
Z =	2931984.875 m	ellipsoid height	= -1.302 m

The NAD_83 (CORS96) VELOCITY of the monument is the same as that for the ARP

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
For additional information on the relation of the GPS antenna to other relevant points at the site and on GPS equipment, consult the link http://www.ngs.noaa.gov/cors/Logfiles.html

ITRF 00

ALICE (TXAI), TEXAS

Retrieved from NGS DataBase on 08/10/10 at 10:56:18.

Antenna Reference Point(ARP): ALICE CORS ARP

PID = DM2694

ITRF00 POSITION (EPOCH 1997.0)
Computed in Aug. 2010 using 11 days of data.

X =	-795418.114 m	latitude	= 27 46 44.37839 N
Y =	-5590915.387 m	longitude	= 098 05 49.62268 W
Z =	2954878.435 m	ellipsoid height	= 42.648 m

ITRF00 VELOCITY
Predicted with HTDP_3.0 Aug. 2010.

VX =	-0.0115 m/yr	northward	= -0.0055 m/yr
VY =	-0.0006 m/yr	eastward	= -0.0113 m/yr
VZ =	-0.0051 m/yr	upward	= -0.0004 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Aug. 2010.

X =	-795417.560 m	latitude	= 27 46 44.36144 N
Y =	-5590916.873 m	longitude	= 098 05 49.59501 W
Z =	2954878.580 m	ellipsoid height	= 43.948 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Aug. 2010.

VX =	0.0016 m/yr	northward	= -0.0000 m/yr
VY =	0.0005 m/yr	eastward	= 0.0015 m/yr
VZ =	-0.0004 m/yr	upward	= -0.0008 m/yr

L1 Phase Center of the current GPS antenna: ALICE CORS L1 PC C

The CONVERTED FROM ABSOLUTE igs05_1480.atx antenna
(Antenna Code = TRM57971.00 NONE) was installed on 03/08/10.
The L2 phase center is 0.020 m below the L1 phase center.

PID = DM2695

ITRF00 POSITION (EPOCH 1997.0)
Computed in Aug. 2010 using 11 days of data.

X =	-795418.124 m	latitude	= 27 46 44.37841 N
Y =	-5590915.462 m	longitude	= 098 05 49.62267 W
Z =	2954878.476 m	ellipsoid height	= 42.734 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Aug. 2010.

X =	-795417.571 m	latitude	= 27 46 44.36146 N
Y =	-5590916.948 m	longitude	= 098 05 49.59500 W
Z =	2954878.620 m	ellipsoid height	= 44.034 m

| The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP. |
|_____|

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
For additional information on the relation of the GPS antenna to other relevant points at the site and on GPS equipment, consult the link http://www.ngs.noaa.gov/cors/Logfiles.html

ITRF 00

BEEVILLE (TXBE), TEXAS

Retrieved from NGS DataBase on 09/22/10 at 09:16:28.

Antenna Reference Point(ARP): BEEVILLE CORS ARP

PID = DM3533

ITRF00 POSITION (EPOCH 1997.0)
Computed in Sep. 2010 using 22 days of data.

X =	-755582.871 m	latitude	= 28 25 25.23680 N
Y =	-5562483.001 m	longitude	= 097 44 07.65056 W
Z =	3017903.394 m	ellipsoid height	= 48.057 m

ITRF00 VELOCITY
Predicted with HTDP_3.0 Sep. 2010.

VX =	-0.0117 m/yr	northward	= -0.0053 m/yr
VY =	-0.0006 m/yr	eastward	= -0.0115 m/yr
VZ =	-0.0049 m/yr	upward	= -0.0004 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Sep. 2010.

X =	-755582.319 m	latitude	= 28 25 25.21935 N
Y =	-5562484.481 m	longitude	= 097 44 07.62312 W
Z =	3017903.537 m	ellipsoid height	= 49.350 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Sep. 2010.

VX =	0.0016 m/yr	northward	= -0.0000 m/yr
VY =	0.0005 m/yr	eastward	= 0.0015 m/yr
VZ =	-0.0004 m/yr	upward	= -0.0008 m/yr

L1 Phase Center of the current GPS antenna: BEEVILLE CORS L1 PC C

The Trimble Zephyr Geodetic with GP antenna
(Antenna Code = TRM41249.00) was installed on 03/08/10.
The L2 phase center is 0.003 m below the L1 phase center.

PID = DM3534

ITRF00 POSITION (EPOCH 1997.0)
Computed in Sep. 2010 using 22 days of data.

X =	-755582.879 m	latitude	= 28 25 25.23681 N
Y =	-5562483.063 m	longitude	= 097 44 07.65054 W
Z =	3017903.428 m	ellipsoid height	= 48.129 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Sep. 2010.

X =	-755582.326 m	latitude	= 28 25 25.21936 N
Y =	-5562484.543 m	longitude	= 097 44 07.62310 W
Z =	3017903.571 m	ellipsoid height	= 49.422 m

| The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP. |
|_____|

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
For additional information on the relation of the GPS antenna to other relevant points at the site and on GPS equipment, consult the link http://www.ngs.noaa.gov/cors/Logfiles.html

ITRF 00
CORPUS CHRISTI R2 (TXCC), TEXAS

Retrieved from NGS DataBase on 03/18/10 at 15:47:50.

Antenna Reference Point(ARP): CORPUS CHRISTI R2 CORS ARP

PID = DF4377

ITRF00 POSITION (EPOCH 1997.0)
Computed in Mar., 2003 using 13 days of data.

X =	-731658.956 m	latitude	= 27 44 26.87170 N
Y =	-5601557.003 m	longitude	= 097 26 30.03806 W
Z =	2951108.159 m	ellipsoid height	= -10.340 m

ITRF00 VELOCITY
Set equal to vel of corc Mar., 2003.

VX =	-0.0110 m/yr	northward	= -0.0043 m/yr
VY =	0.0047 m/yr	eastward	= -0.0115 m/yr
VZ =	-0.0066 m/yr	upward	= -0.0059 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Mar., 2003.

X =	-731658.400 m	latitude	= 27 44 26.85486 N
Y =	-5601558.467 m	longitude	= 097 26 30.01102 W
Z =	2951108.298 m	ellipsoid height	= -9.054 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Mar., 2003.

VX =	0.0021 m/yr	northward	= 0.0009 m/yr
VY =	0.0058 m/yr	eastward	= 0.0013 m/yr
VZ =	-0.0022 m/yr	upward	= -0.0064 m/yr

L1 Phase Center of the current GPS antenna: CORPUS CHRISTI R2 CORS L1 PC C

The CONVERTED FROM ABSOLUTE igs05_1480.atx antenna
(Antenna Code = TRM57971.00   NONE) was installed on 03/12/10.
The L2 phase center is 0.020 m below the L1 phase center.

PID = DL6726

ITRF00 POSITION (EPOCH 1997.0)
Computed in Mar., 2003 using 13 days of data.

X =	-731658.966 m	latitude	= 27 44 26.87172 N
Y =	-5601557.078 m	longitude	= 097 26 30.03806 W
Z =	2951108.199 m	ellipsoid height	= -10.254 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Mar., 2003.

X =	-731658.410 m	latitude	= 27 44 26.85488 N
Y =	-5601558.542 m	longitude	= 097 26 30.01102 W
Z =	2951108.339 m	ellipsoid height	= -8.968 m

| The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP. |
|_____|

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
For additional information on the relation of the GPS antenna to other relevant points at the site and on GPS equipment, consult the link http://www.ngs.noaa.gov/cors/Logfiles.html

ITRF 00
PORT ARANSAS (TXPO), TEXAS

Retrieved from NGS DataBase on 11/09/10 at 13:43:36.

Antenna Reference Point(ARP): PORT ARANSAS CORS ARP

PID = DM4169

ITRF00 POSITION (EPOCH 1997.0)
Computed in Nov. 2010 using 19 days of data.

X =	-694669.212 m	latitude	= 27 50 22.06097 N
Y =	-5601118.509 m	longitude	= 097 04 11.67598 W
Z =	2960775.740 m	ellipsoid height	= -20.761 m

ITRF00 VELOCITY
Predicted with HTDP_3.0 Nov. 2010.

VX =	-0.0115 m/yr	northward	= -0.0051 m/yr
VY =	-0.0006 m/yr	eastward	= -0.0113 m/yr
VZ =	-0.0047 m/yr	upward	= -0.0004 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Nov. 2010.

X =	-694668.659 m	latitude	= 27 50 22.04387 N
Y =	-5601120.000 m	longitude	= 097 04 11.64922 W
Z =	2960775.890 m	ellipsoid height	= -19.442 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Nov. 2010.

VX =	0.0016 m/yr	northward	= -0.0000 m/yr
VY =	0.0005 m/yr	eastward	= 0.0015 m/yr
VZ =	-0.0004 m/yr	upward	= -0.0008 m/yr

L1 Phase Center of the current GPS antenna: PORT ARANSAS CORS L1 PC C

The CONVERTED FROM ABSOLUTE igs05_1480.atx antenna
(Antenna Code = TRM57971.00   NONE) was installed on 05/26/10.
The L2 phase center is 0.020 m below the L1 phase center.

PID = DM4170

ITRF00 POSITION (EPOCH 1997.0)
Computed in Nov. 2010 using 19 days of data.

X =	-694669.221 m	latitude	= 27 50 22.06099 N
Y =	-5601118.583 m	longitude	= 097 04 11.67598 W
Z =	2960775.780 m	ellipsoid height	= -20.675 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Nov. 2010.

X =	-694668.668 m	latitude	= 27 50 22.04389 N
Y =	-5601120.075 m	longitude	= 097 04 11.64922 W
Z =	2960775.930 m	ellipsoid height	= -19.356 m

| The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP. |
|_____|

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
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ITRF 00
SINTON (TXSI), TEXAS

Retrieved from NGS DataBase on 11/09/10 at 13:43:36.

Antenna Reference Point(ARP): SINTON CORS ARP
PID = DM4171

ITRF00 POSITION (EPOCH 1997.0)
Computed in Nov. 2010 using 19 days of data.

X =	-732510.839 m	latitude	= 28 00 58.69321 N
Y =	-5587050.032 m	longitude	= 097 28 09.73593 W
Z =	2978096.846 m	ellipsoid height	= -7.643 m

ITRF00 VELOCITY
Predicted with HTDP_3.0 Nov. 2010.

VX =	-0.0116 m/yr	northward	= -0.0053 m/yr
VY =	-0.0006 m/yr	eastward	= -0.0114 m/yr
VZ =	-0.0049 m/yr	upward	= -0.0004 m/yr

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Nov. 2010.

X =	-732510.286 m	latitude	= 28 00 58.67601 N
Y =	-5587051.519 m	longitude	= 097 28 09.70879 W
Z =	2978096.992 m	ellipsoid height	= -6.336 m

NAD_83 (CORS96) VELOCITY
Transformed from ITRF00 velocity in Nov. 2010.

VX =	0.0015 m/yr	northward	= -0.0001 m/yr
VY =	0.0005 m/yr	eastward	= 0.0014 m/yr
VZ =	-0.0005 m/yr	upward	= -0.0008 m/yr

L1 Phase Center of the current GPS antenna: SINTON CORS L1 PC C
The CONVERTED FROM ABSOLUTE igs05_1480.atx antenna
(Antenna Code = TRM57971.00 NONE) was installed on 05/26/10.
The L2 phase center is 0.020 m below the L1 phase center.
PID = DM4172

ITRF00 POSITION (EPOCH 1997.0)
Computed in Nov. 2010 using 19 days of data.

X =	-732510.848 m	latitude	= 28 00 58.69323 N
Y =	-5587050.107 m	longitude	= 097 28 09.73592 W
Z =	2978096.887 m	ellipsoid height	= -7.557 m

The ITRF00 VELOCITY of the L1 PC is the same as that for the ARP.

NAD_83 (CORS96) POSITION (EPOCH 2002.0)
Transformed from ITRF00 (epoch 1997.0) position in Nov. 2010.

X =	-732510.296 m	latitude	= 28 00 58.67603 N
Y =	-5587051.594 m	longitude	= 097 28 09.70879 W
Z =	2978097.033 m	ellipsoid height	= -6.251 m

| The NAD_83 (CORS96) VELOCITY of the L1 PC is the same as that for the ARP. |
|_____|

* Latitude, longitude and ellipsoid height are computed from their corresponding cartesian coordinates using dimensions for the GRS 80 ellipsoid: semi-major axis = 6,378,137.0 meters
flattening = 1/298.257222101...

* WARNING: Mixing of antenna types can lead to errors of up to 10 cm. in height unless antenna-phase-center variation is properly modeled.

* For additional information about the interpretation and/or derivation of these positions and velocities, consult http://www.ngs.noaa.gov/CORS/Coords.html
For additional information on the relation of the GPS antenna to other relevant points at the site and on GPS equipment, consult the link http://www.ngs.noaa.gov/cors/Logfiles.html

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 1101205
OPERATOR WJN
DATE 12/9/10

SITE NUMBER 1
SITE NAME 1

TRACKING TIMES (LOCAL) MEASURE CST
START 9:42
STOP 9:09

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.281
1.641

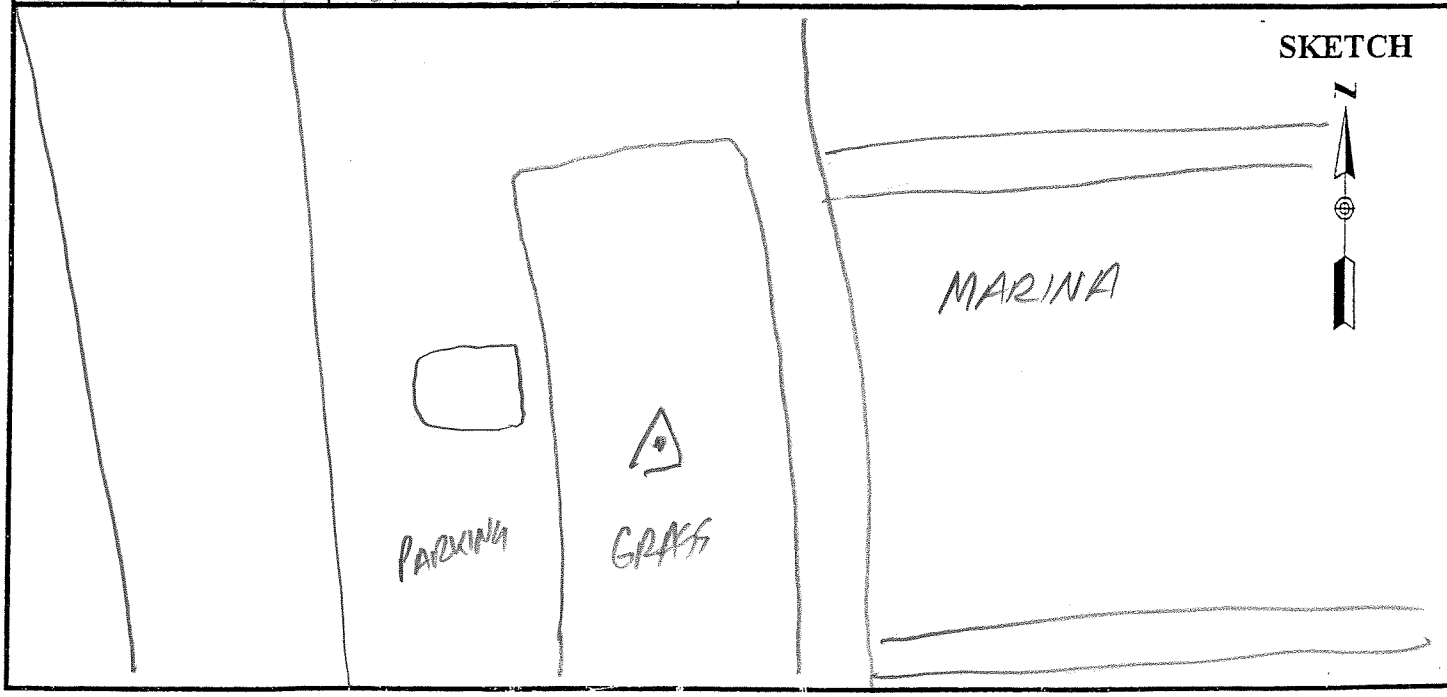
STATION DESCRIPTIONS POINT IN VERY SHORT GRASS

SATELLITE OBSERVATIONS

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

TIME	GDOP	SATELLITES
14:42	1.7	10/10-10
15:09	1.8	10/10-10

SKETCH



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SHEBOYGAN, WISCONSIN 53083

NUECES

BENCH

PROJECT 1101205
OPERATOR UNI
DATE 12/9/10

SITE NUMBER 2
SITE NAME 877 5237 TIDAL 2

TRACKING TIMES (LOCAL) MEASURE CST
START 9:24
STOP 9:50

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.029

1.389

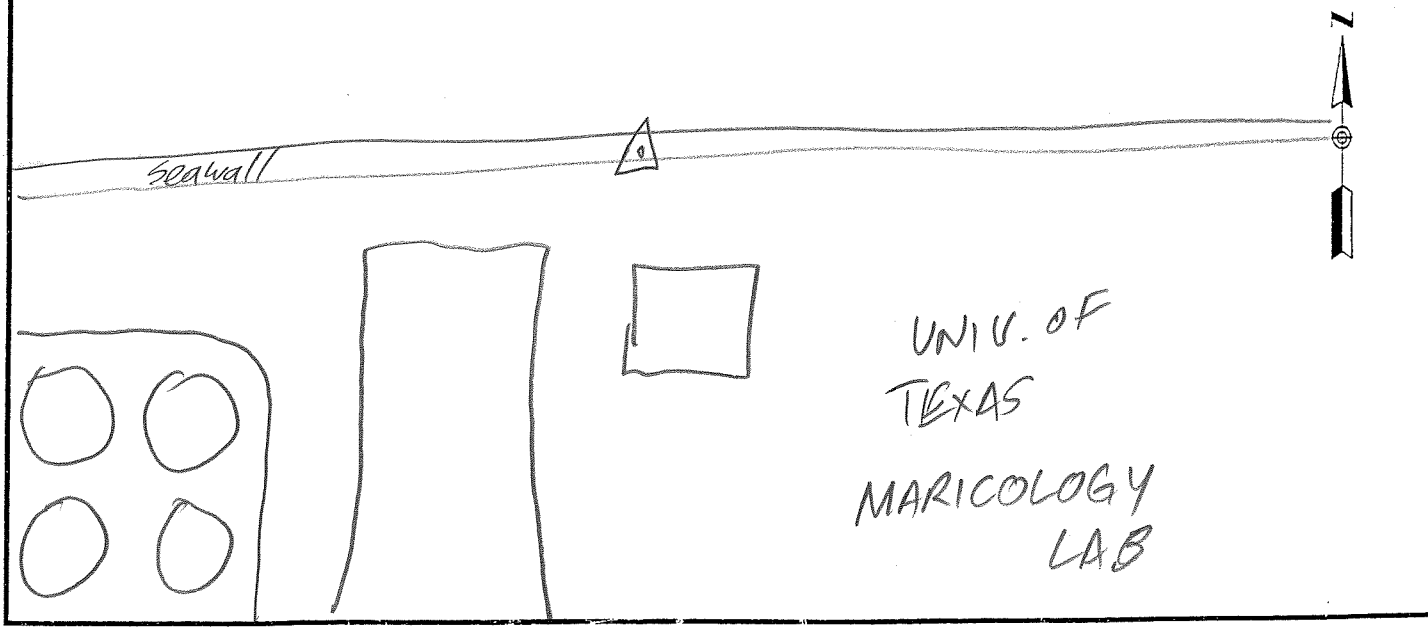
STATION DESCRIPTIONS BRASS TABLET IN SEAWALL MK4 BM2 ELEV 5.99 AGENCY = 1972 USDOI

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:24	2.9	9/9-9
15:50	2.9	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



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SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 110205
OPERATOR VWN
DATE 12/9/10

SITE NUMBER 3
SITE NAME 2

TRACKING TIMES (LOCAL) MEASURE CST
START 10:07
STOP 10:36

SENSOR TYPE ~~500~~ 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS:

HEIGHT READINGS MTS FT
1.329
1.689

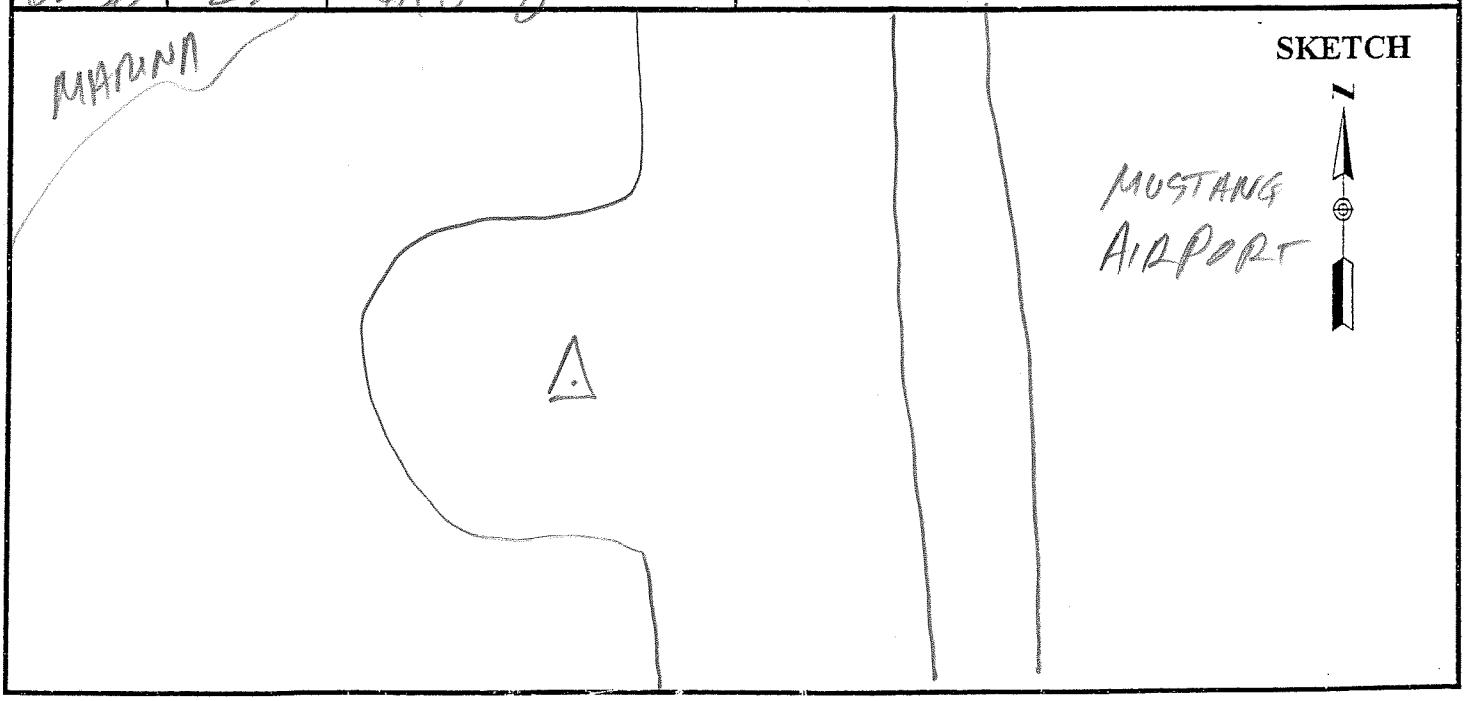
STATION DESCRIPTIONS POINT IN CENTER OF CHANGE PAVE TURN-AROUND

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:07	2.3	3 19 -9
16:36	2.1	3 19 -9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



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SHEBOYGAN, WISCONSIN 53083

2

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/9/10

SITE NUMBER 4
SITE NAME 3

TRACKING TIMES (LOCAL) MEASURE CST
START 10:52
STOP 11:21

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: OH TRAN LINES

HEIGHT READINGS MTS FT
1.283
1.643

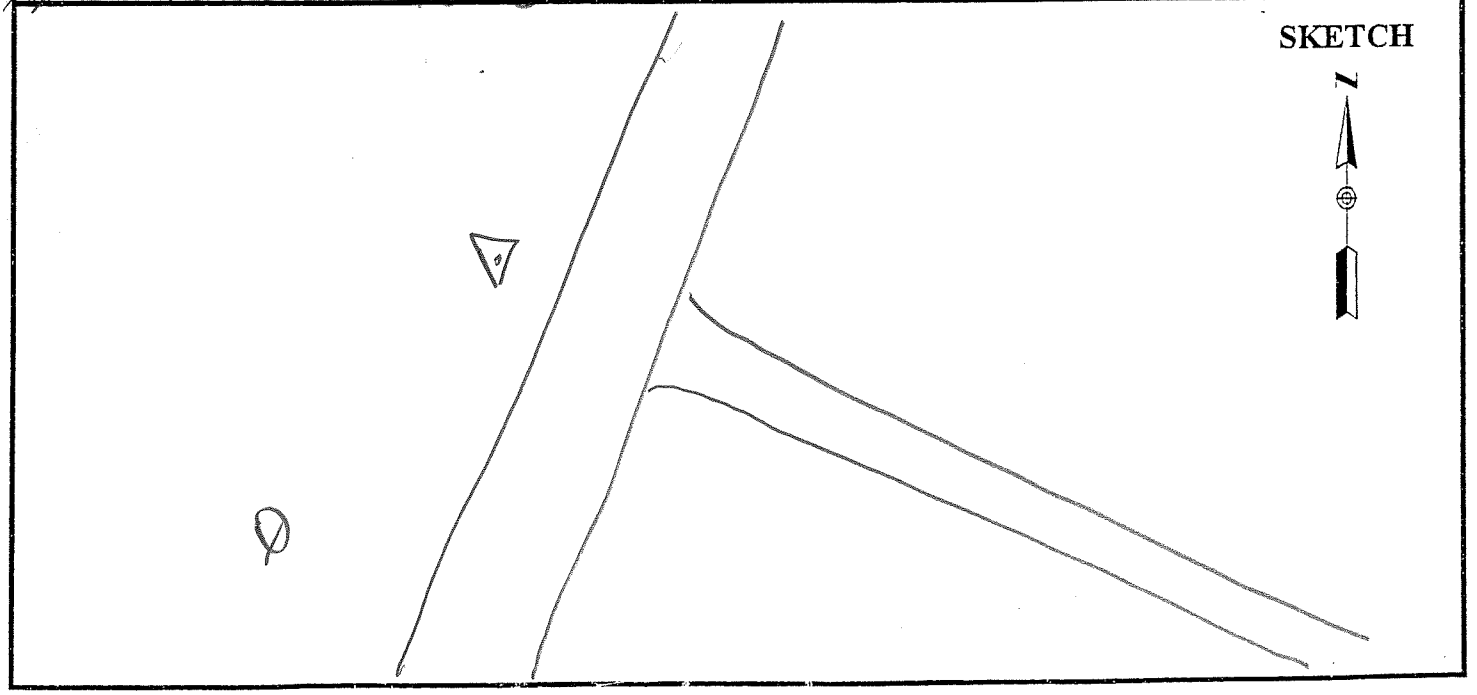
STATION DESCRIPTIONS POINT IN LONGER GRASS ± 18' NW OF NW EDGE PVMNT AND OPP G DRIVE SE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:52	2.1	9/9-9
17:21	2.3	8/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



5

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SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/9/10

SITE NUMBER 5
SITE NAME 4

TRACKING TIMES (LOCAL) MEASURE CST
START 11:33
STOP 11:58

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

HEIGHT READINGS MTS FT
1.309
1.669

OBSTRUCTIONS: NO

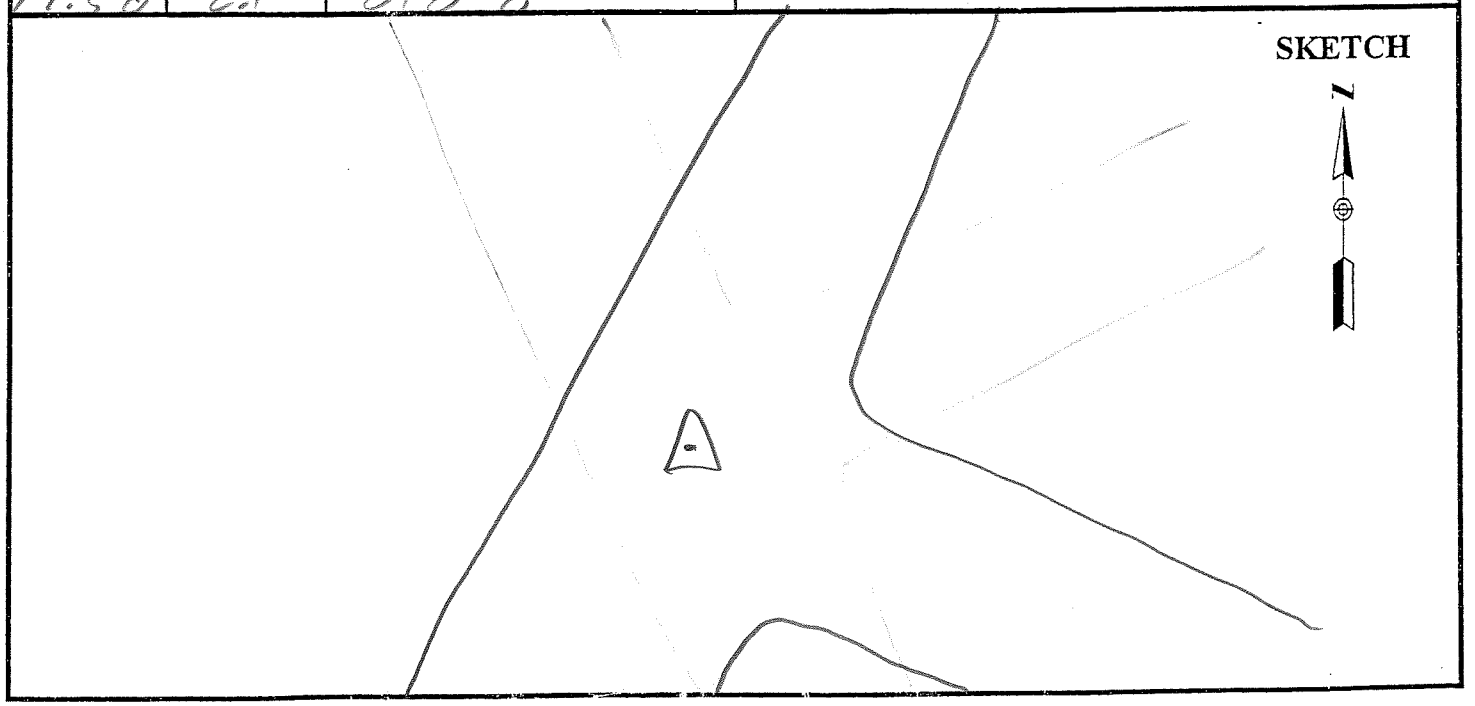
STATION DESCRIPTIONS 4 E
INT STREETS NE-SW-SE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:33	2.3	8/8-9
17:58	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



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SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJM
DATE 12/9/10

SITE NUMBER 6
SITE NAME 5

TRACKING TIMES (LOCAL) MEASURE CST
START 12:12
STOP 12:37

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.322
1.682

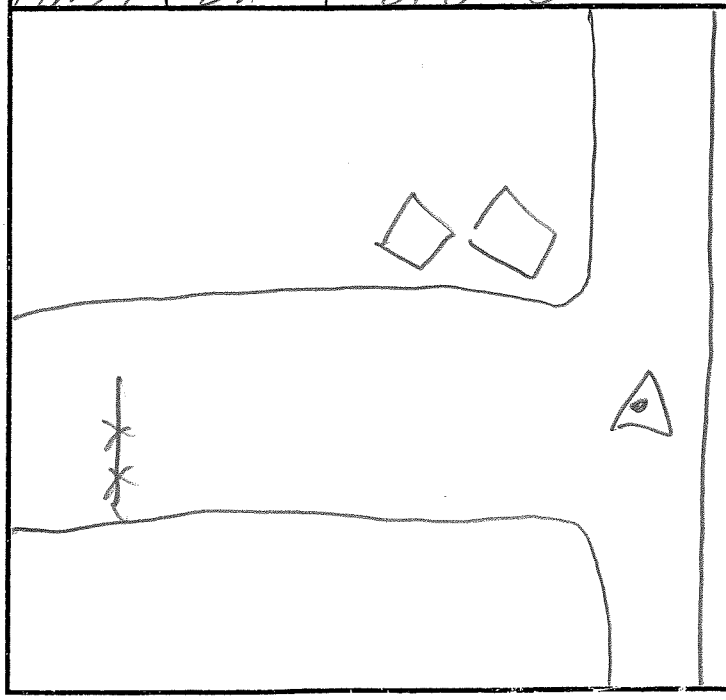
STATION DESCRIPTIONS E & E N-S ROAD AND PARKING AREA W.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
12:12	2.5	7/7-8
12:37	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



5

AERO-METRIC, INC.
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SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 1101205
OPERATOR WJW
DATE 12/9/10

SITE NUMBER 7
SITE NAME 6

TRACKING TIMES (LOCAL) MEASURE CST
START 12:52
STOP 13:20

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

STATION DESCRIPTIONS E.C. BRICK PAVED INT.

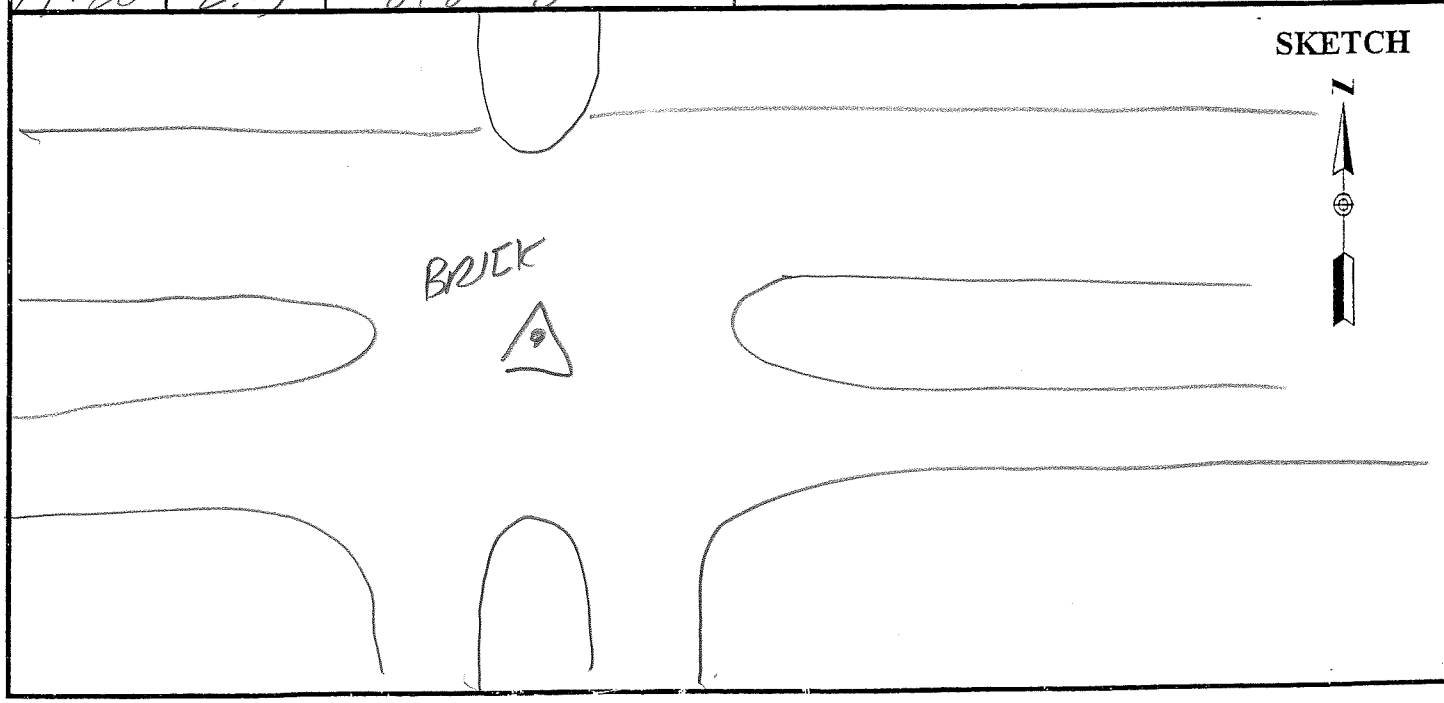
HEIGHT READINGS MTS FT
1.328
1.688

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:52	2.9	7/7-7
19:20	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

CONTROL 1
See Note *

PROJECT 1101205
OPERATOR WJW
DATE 12/9/10

SITE NUMBER 8
SITE NAME 7 (877 5870 H TIDAL)

TRACKING TIMES (LOCAL) MEASURE CST
START 13:42
STOP 14:10

SENSOR TYPE ~~500~~ 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 ~~0.360~~

HEIGHT READINGS MTS FT
1.236
1.596
+.696

OBSTRUCTIONS: BRICK WALL SW

STATION DESCRIPTIONS POINT IN SHORT GRASS @ CENTER OF BRASS CAP FLUSH W/ GD - UNDETERMINE @ THIS POINT FLUSH

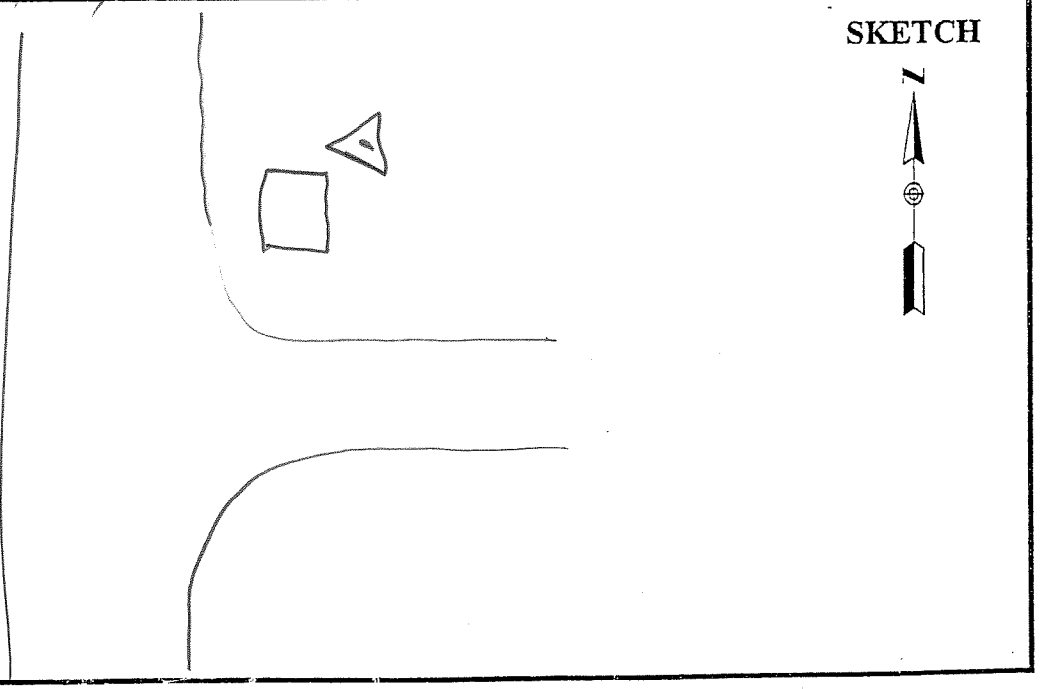
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:42	2.5	9/9-9
20:10	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

* THIS BRASS DISK IS CBN, H-MOD POINT 877 5870 H TIDAL

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5 1

NUECES

PROJECT 110205
OPERATOR WJN
DATE 12/9/10

SITE NUMBER 9
SITE NAME 8

TRACKING TIMES (LOCAL) MEASURE CST
START 14:25
STOP 14:51

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TREES SW NE

HEIGHT READINGS MTS FT
1.341
1.701

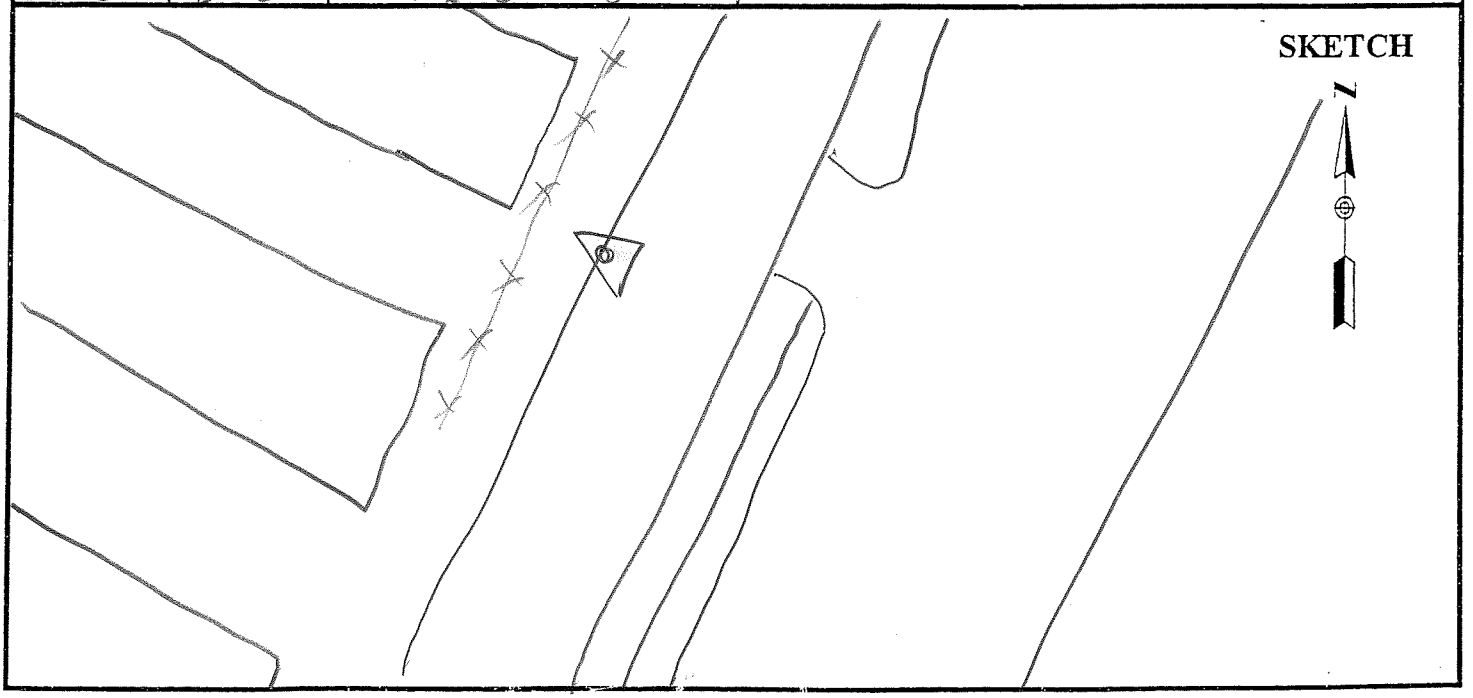
STATION DESCRIPTIONS NW EDGE RD OPP SW EDGE BLG NW

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:25	2.5	7/7-8
20:51	2.2	10/10-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5 1

NUECES

PROJECT 1101205
OPERATOR WHN
DATE 12/9/10

SITE NUMBER 10
SITE NAME 9

TRACKING TIMES (LOCAL) MEASURE CST
START 15:01
STOP 15:29

SENSOR TYPE (500) 9500 399 299
MEMORY CARD
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.306
1.666

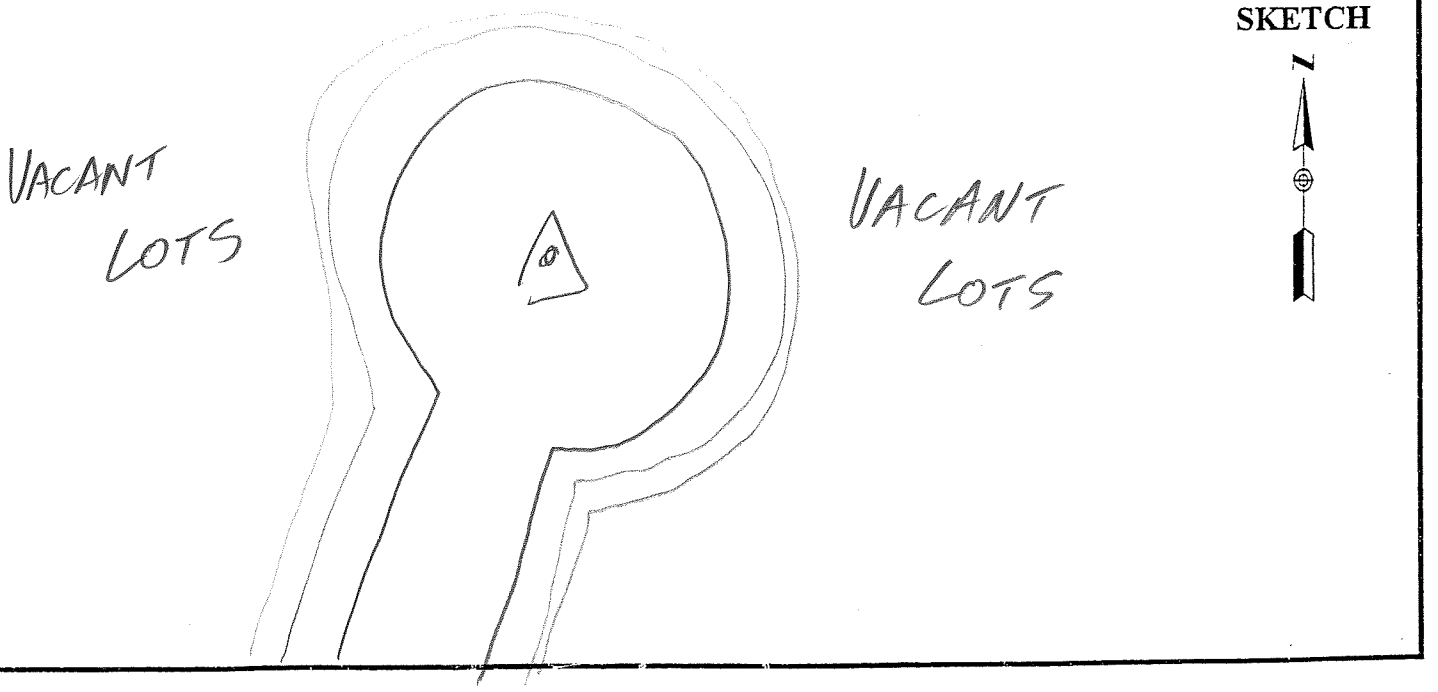
STATION DESCRIPTIONS POINT IN CENTER OF CUL-DE-SAC

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
21:01	2.0	10/10-10
21.29	2.0	10/10-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

PROJECT 1101205
OPERATOR WJN
DATE 12/9/10

SITE NUMBER 11
SITE NAME 10

TRACKING TIMES (LOCAL) MEASURE CST
START 15:39
STOP 16:08

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: SIGNS NW, NE

HEIGHT READINGS MTS FT
1.323
1.683

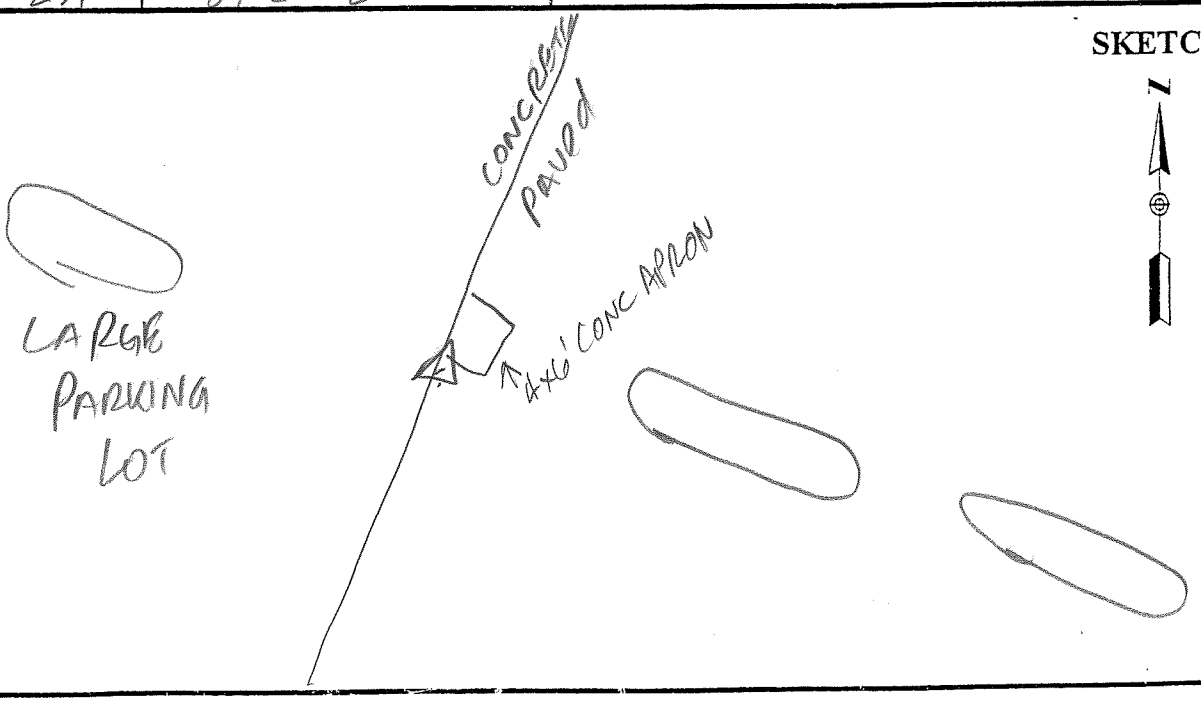
STATION DESCRIPTIONS E'ly EDGE CONCRETE IN LARGE PARKING AREA.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:39	2.0	8/4-8
21:08	2.1	8/2-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC becoming SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

1 8

NUECES

PROJECT 1101205
OPERATOR WW
DATE 12/10/10

SITE NUMBER 12
SITE NAME 11

TRACKING TIMES (LOCAL) MEASURE CST
START 8:23
STOP 8:48

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: PPLS

HEIGHT READINGS MTS FT
1.230

STATION DESCRIPTIONS POINT IN VERY SHORT GRASS, STRIP BETWEEN PARKING LOT AND ROAD

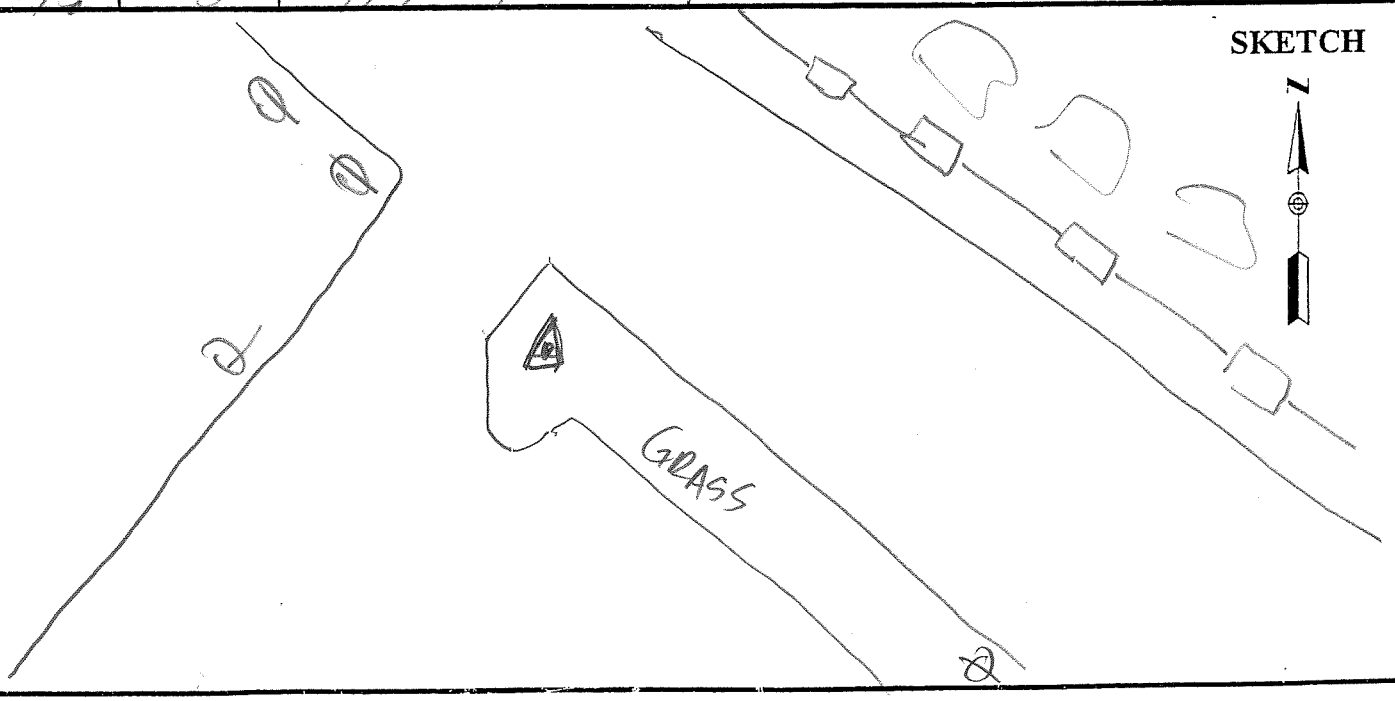
I-590

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
14:23	1.7	10/10-10
14:40	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SK

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WW
DATE 12/10/10

SITE NUMBER 2
SITE NAME 12

TRACKING TIMES (LOCAL) MEASURE CST
START 9:05
STOP 9:30

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.321
1.681

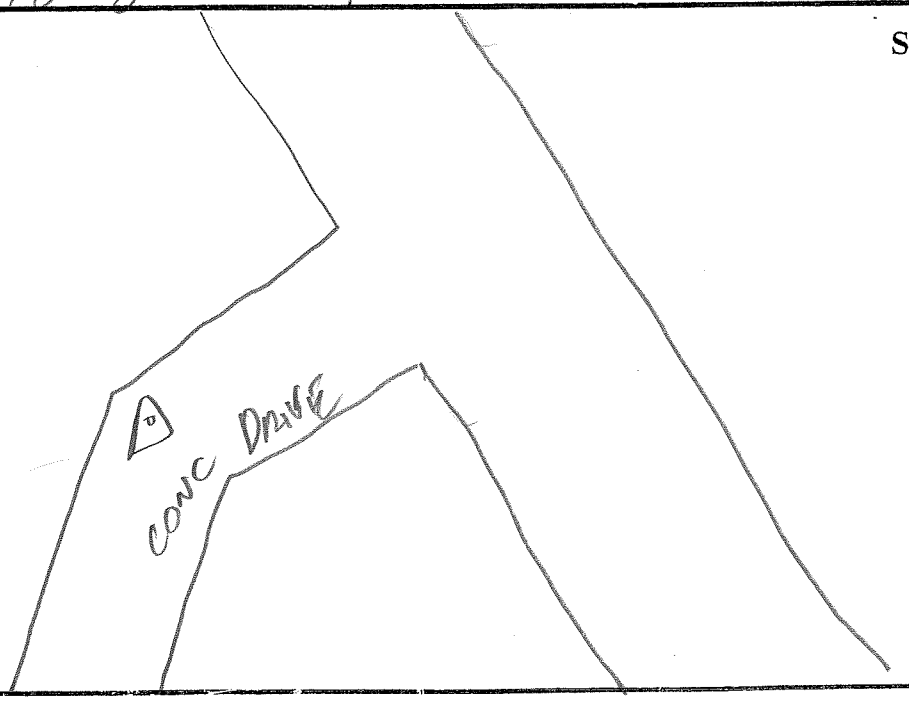
STATION DESCRIPTIONS POINT ON CONC DRIVE @ BEND 2' SW OF EDGE OF CONC

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:05	2.2	8/8-8
15:30	2.2	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5 1

PROJECT 110205
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 3
SITE NAME 13

TRACKING TIMES (LOCAL) MEASURE CST
START 9:38
STOP 10:09

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.310

STATION DESCRIPTIONS POINT IN LARGE PARKING LOT

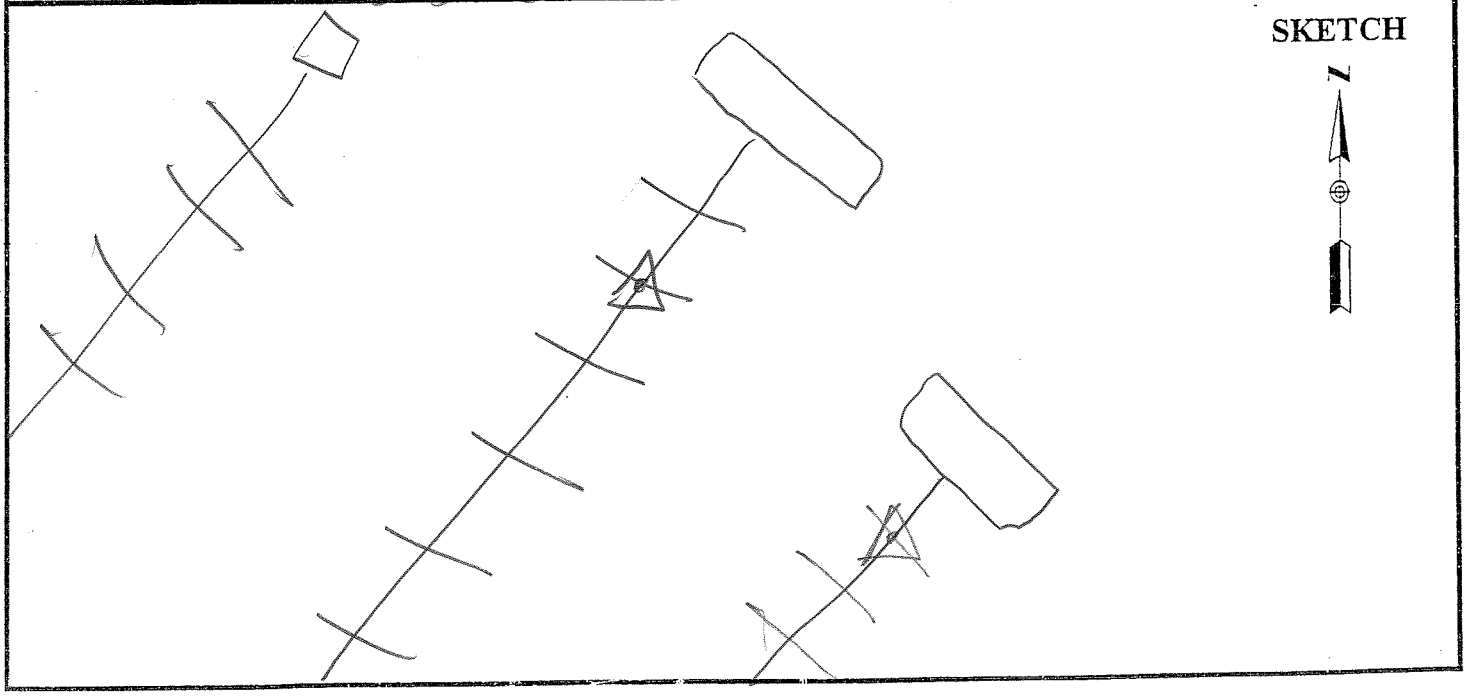
1.310 AT502 1-670

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:38	2.0	8/8-8
16:03	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 11012O5
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 4
SITE NAME 14

TRACKING TIMES (LOCAL) MEASURE CST

START 10:13
STOP 10:39

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

HEIGHT READINGS MTS FT
1.321

1-681

OBSTRUCTIONS: TRAFFIC

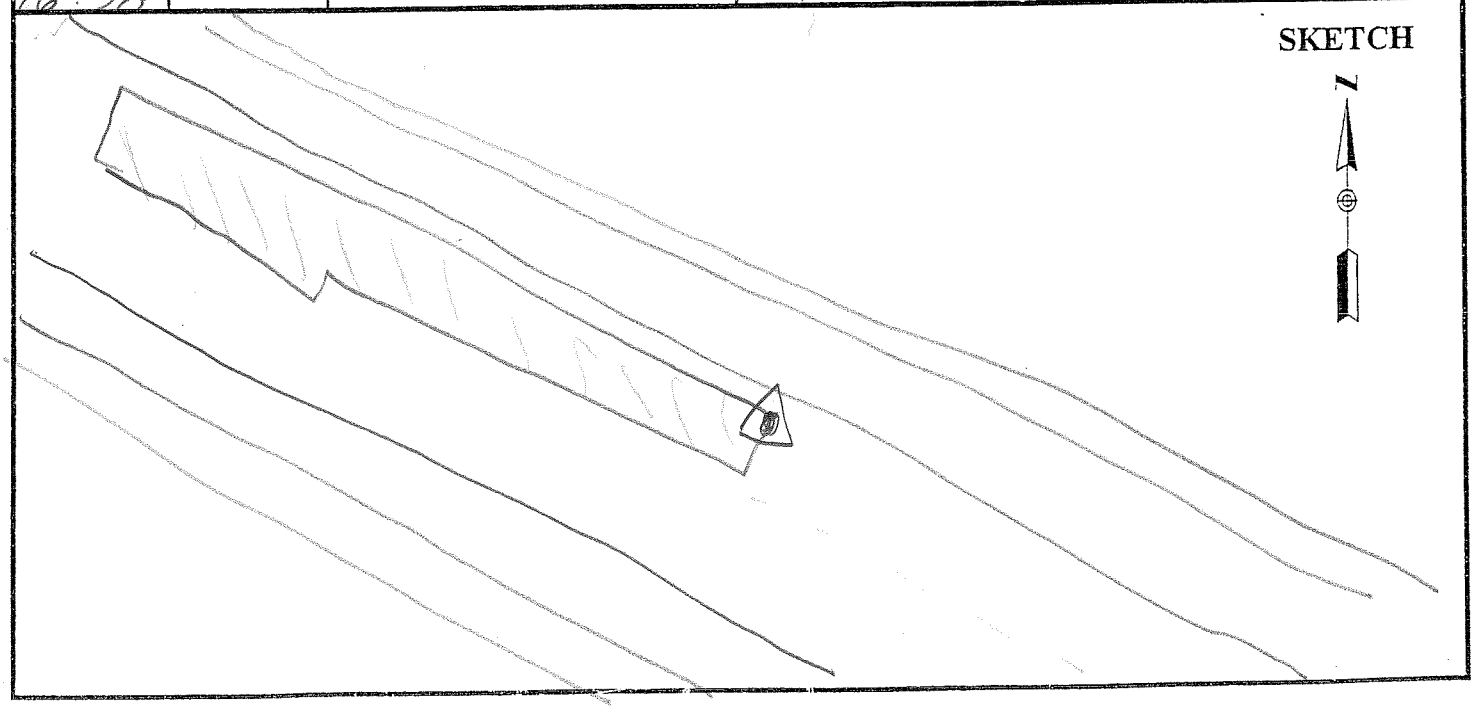
STATION DESCRIPTIONS NE COR
END DARK PATCH I-10 RD.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:13	2.2	8/8-8
16:38		

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
becoming PC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 5
SITE NAME 15

TRACKING TIMES (LOCAL) MEASURE CST
START 10:56
STOP 11:21

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 600
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.327
1.687

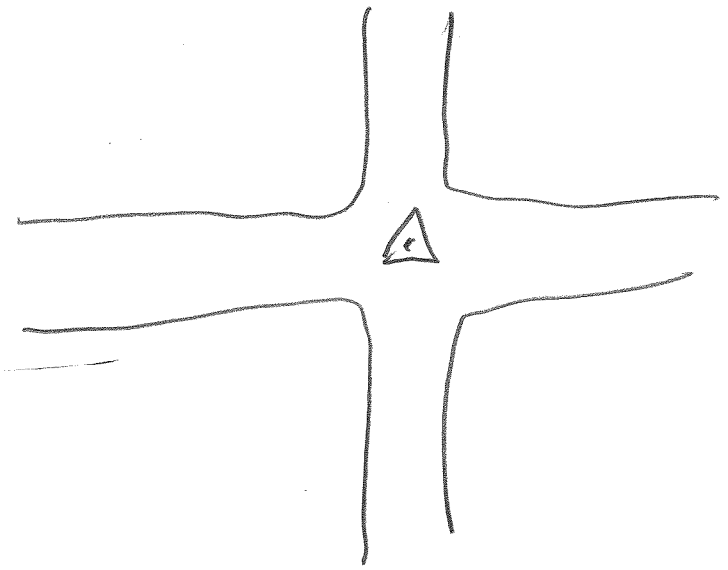
STATION DESCRIPTIONS E & E INT
RDS N-S-E-W

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:56	2.4	9/9-9
16:21	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
becoming MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WN
DATE 12/10/10

SITE NUMBER 6
SITE NAME 16

TRACKING TIMES (LOCAL) MEASURE CST
START 11:33
STOP 11:58

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.340
1.700

OBSTRUCTIONS: NO

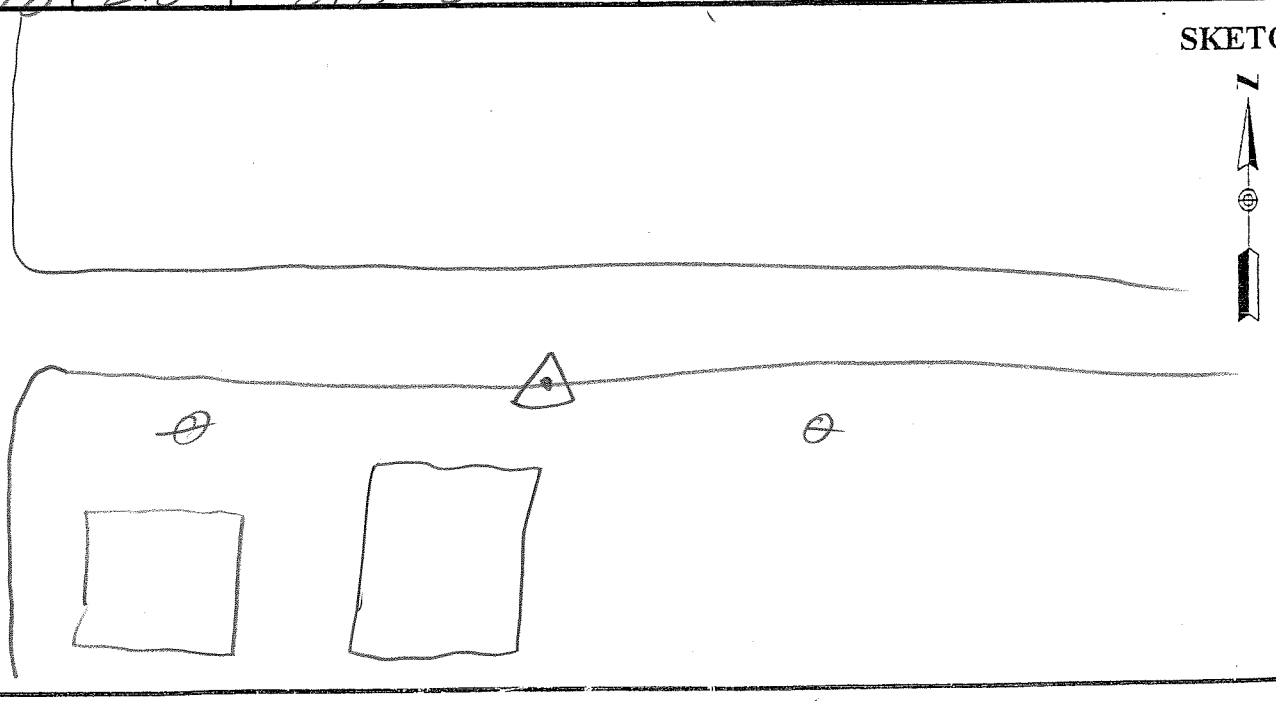
STATION DESCRIPTIONS S. EDGE RD. OPP E. EDGE BLG S.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:33	2.0	7/7-9
17:58	2.0	9/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC WINDY
LOSS OF LOCK @
END OF SESSION

SKETCH



175825

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 7
SITE NAME 17

TRACKING TIMES (LOCAL) MEASURE CST
START 12:09
STOP 12:36

SENSOR TYPE 500 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.331
1.691

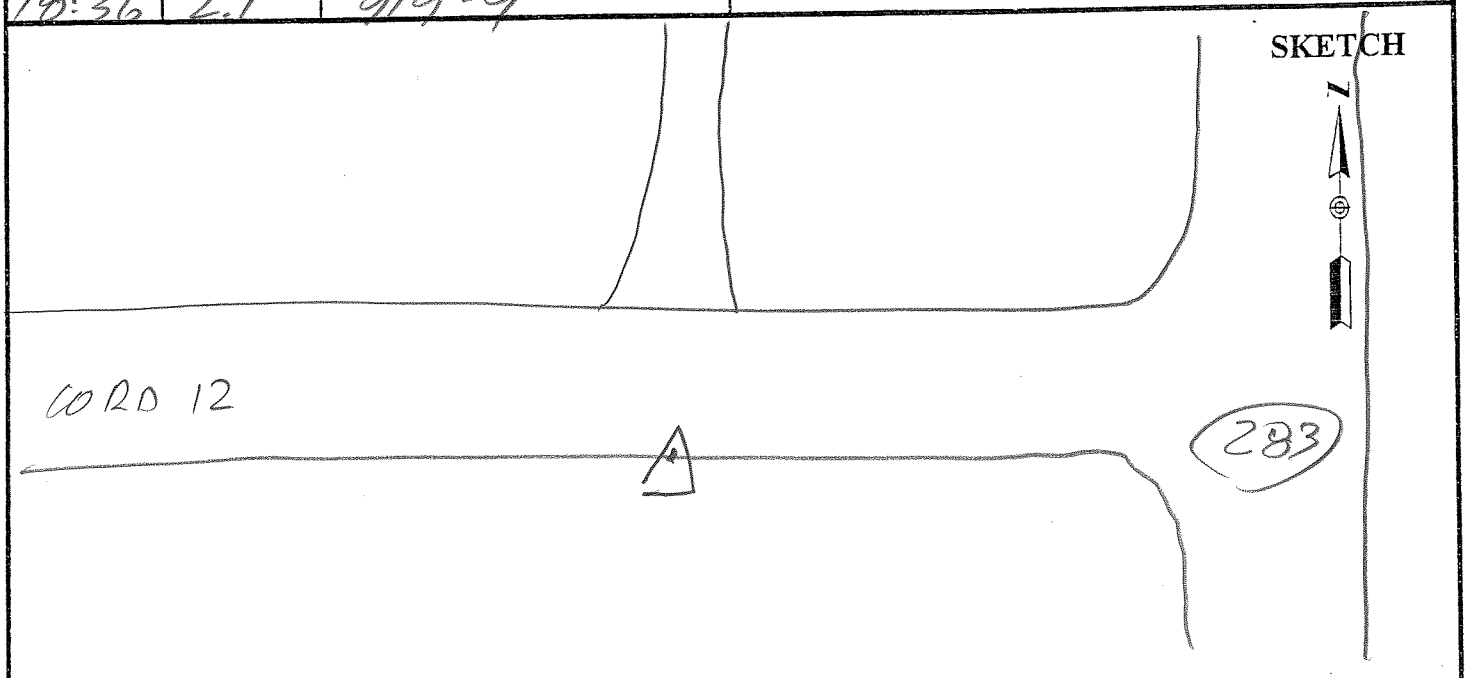
STATION DESCRIPTIONS S. EDGE RD OPP E FARM ACCESS RD N.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:09	1.9	9/9-9
18:36	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC WINDY - CLEARING

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJW
DATE 12/10/10

SITE NUMBER 8
SITE NAME 18

TRACKING TIMES (LOCAL) MEASURE CT
START 12:47
STOP 13:13

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 001
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 ~~0.389~~
500 0.360

HEIGHT READINGS MTS FT
1.277
1.637

OBSTRUCTIONS: TRAFFIC

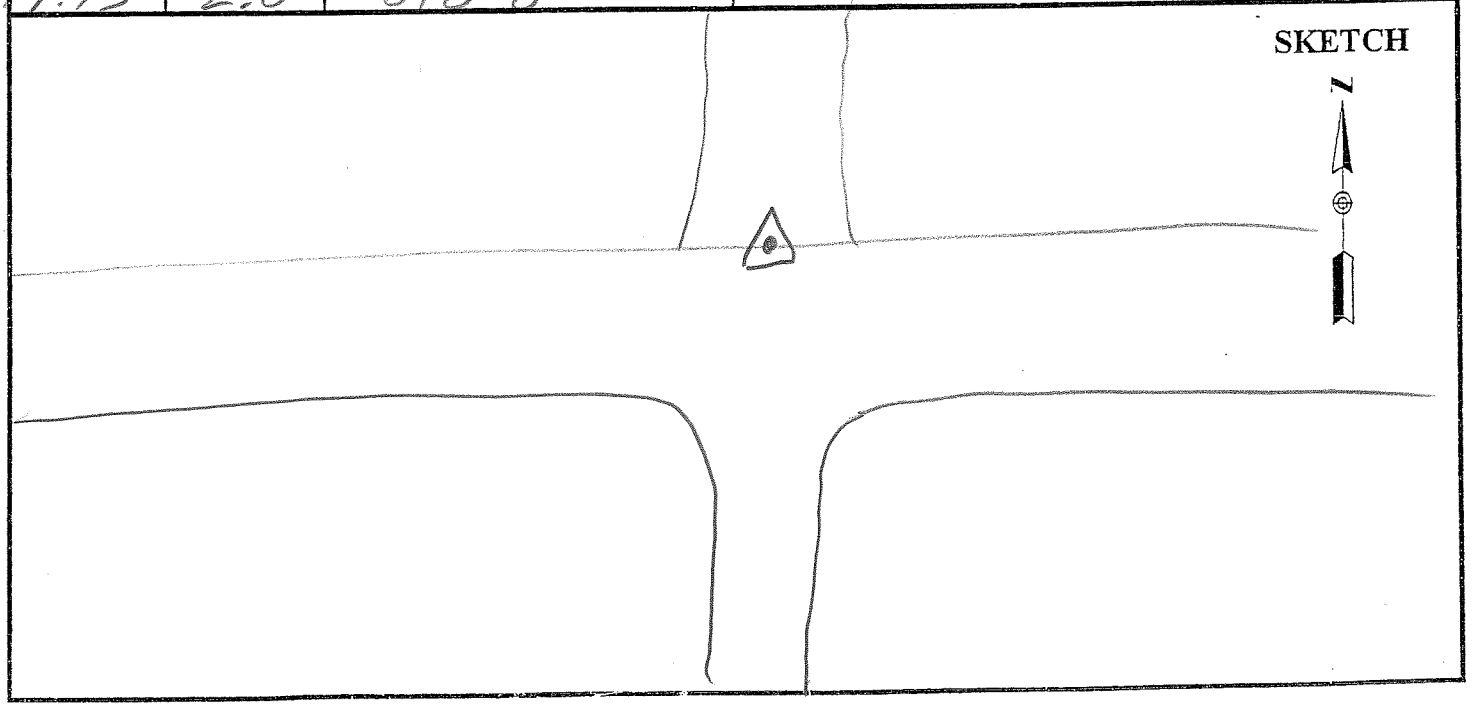
STATION DESCRIPTIONS N. EDGE RD APP @ ROAD S. AND @ FIELD ACCESS N.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:47	1.9	8/8-9
19.13	2.0	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC Very Windy

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 9
SITE NAME 19

TRACKING TIMES (LOCAL) MEASURE CST
START 13:26
STOP 13:52

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.278

1.638

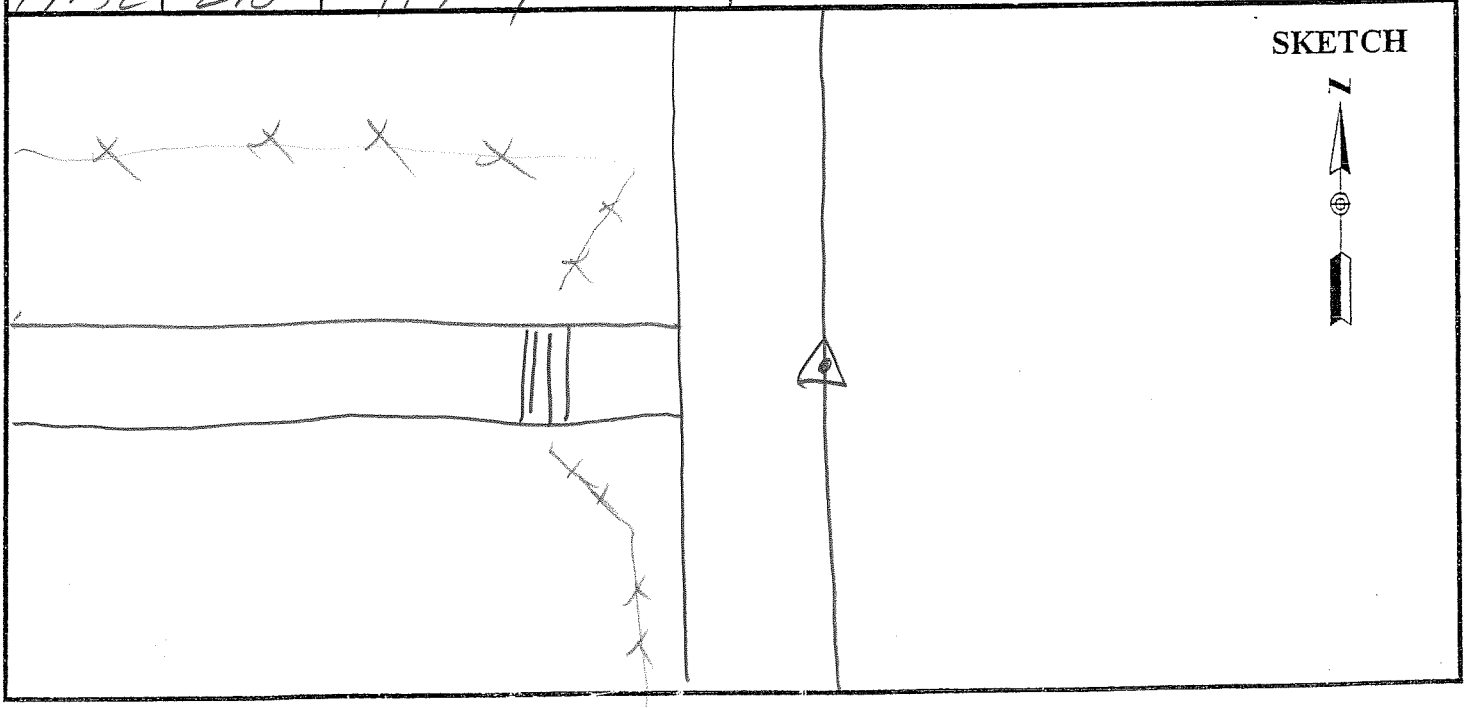
STATION DESCRIPTIONS E. EDGE PVMNT OPP EDRIVE W

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:26	2.1	8/8-8
19:52	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101220
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 10
SITE NAME 20

TRACKING TIMES (LOCAL) MEASURE CST
START 14:11
STOP 14:36

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.298
1.659

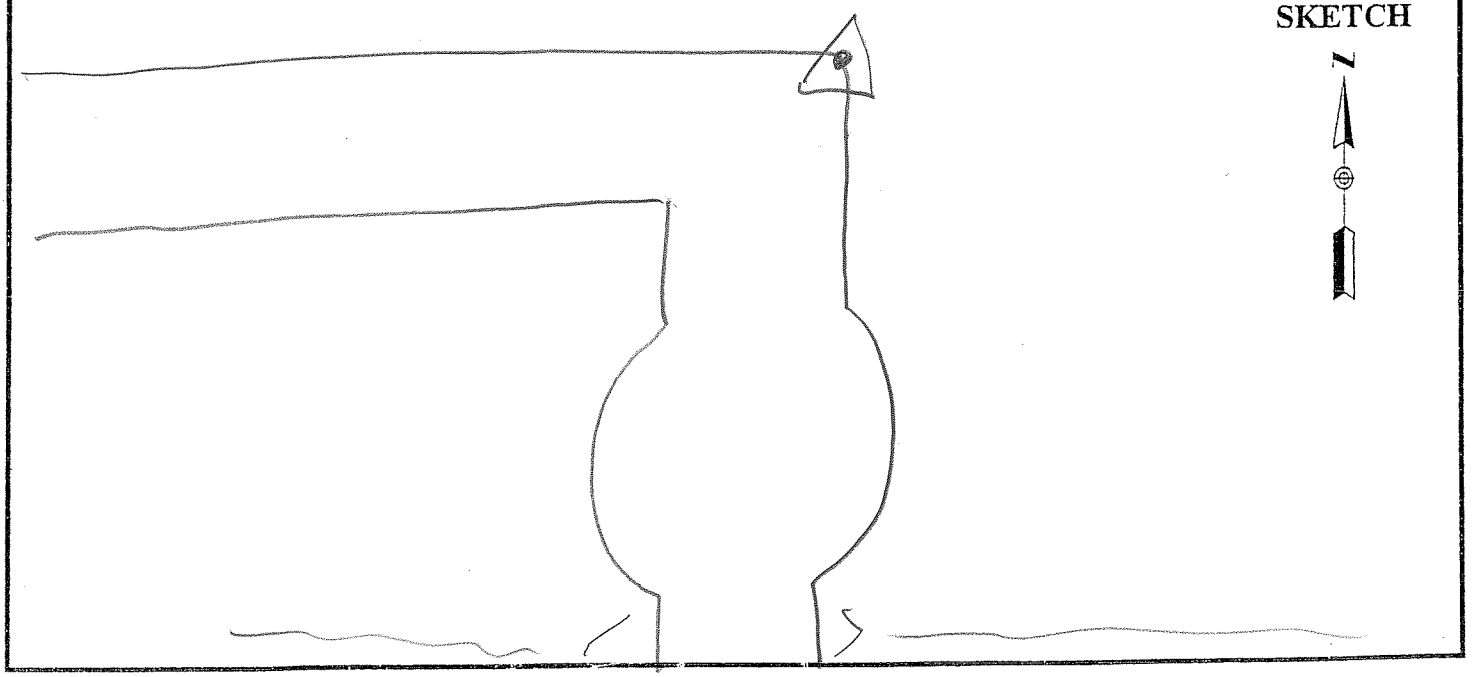
STATION DESCRIPTIONS NE COR PAVEMENT @ TURN IN RD

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:11	2.0	3/8-8
20:36	2.0	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC Very Windy

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/10/10

SITE NUMBER 11
SITE NAME 21

TRACKING TIMES (LOCAL) MEASURE CST
START 14:46
STOP 15:11

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 60
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

HEIGHT READINGS MTS FT
1.265
1.625

OBSTRUCTIONS: TRAFFIC

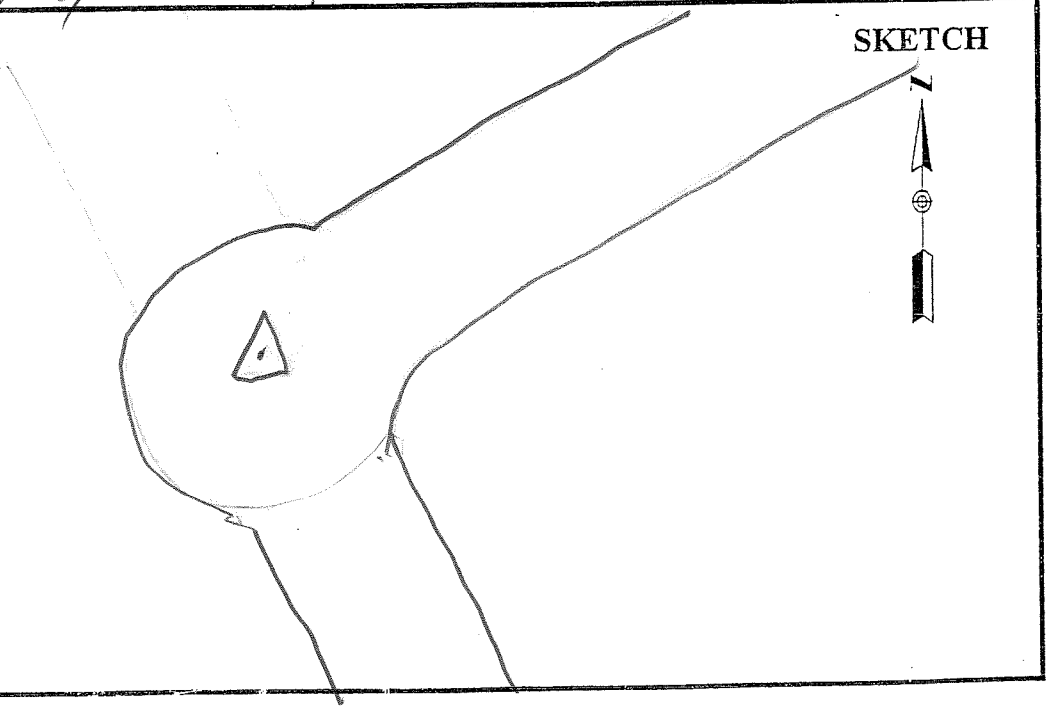
STATION DESCRIPTIONS 4 E INT
RDS NE-SE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:46	2.0	9/9-9
21:11	1.8	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC WINDY

SKETCH



NUECES 5

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

PROJECT: 110120S
OPERATOR: WJN
DATE: 12/11/10
JULIAN 345

SITE NUMBER: 1
SITE NAME: 23

TRACKING TIMES (LOCAL) MEASURE: CST
START: 8:01
STOP: 8:22

SENSOR TYPE: (500 circled) 9500 399 299
MEMORY CARD: 601
BATTERY NO.:
CONTROLLER NO.:
SENSOR NO.:

SENSOR CONSTANT	
299/399	0.441
399E/9500	0.389
500	0.360 (circled)

OBSTRUCTIONS: NO

HEIGHT READINGS

MTS	FT
1.332	

1.692

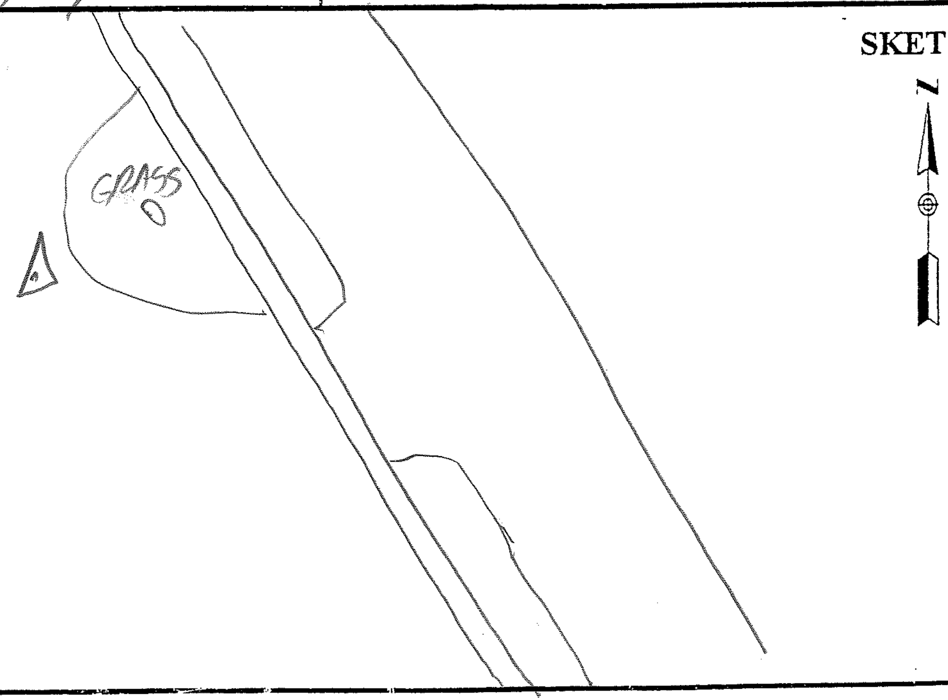
STATION DESCRIPTIONS: POINT IN PARKING LOT OPP GRASS ISLAND (3') NE.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
14:01	1.9	9/9-9
14:22	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



TXCC TXPO

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WM
DATE 12/11/10

SITE NUMBER 2
SITE NAME 24

TRACKING TIMES (LOCAL) MEASURE CST
START 9:32
STOP 9:53

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: LAMP POST NE

HEIGHT READINGS MTS FT
1.334
1.694

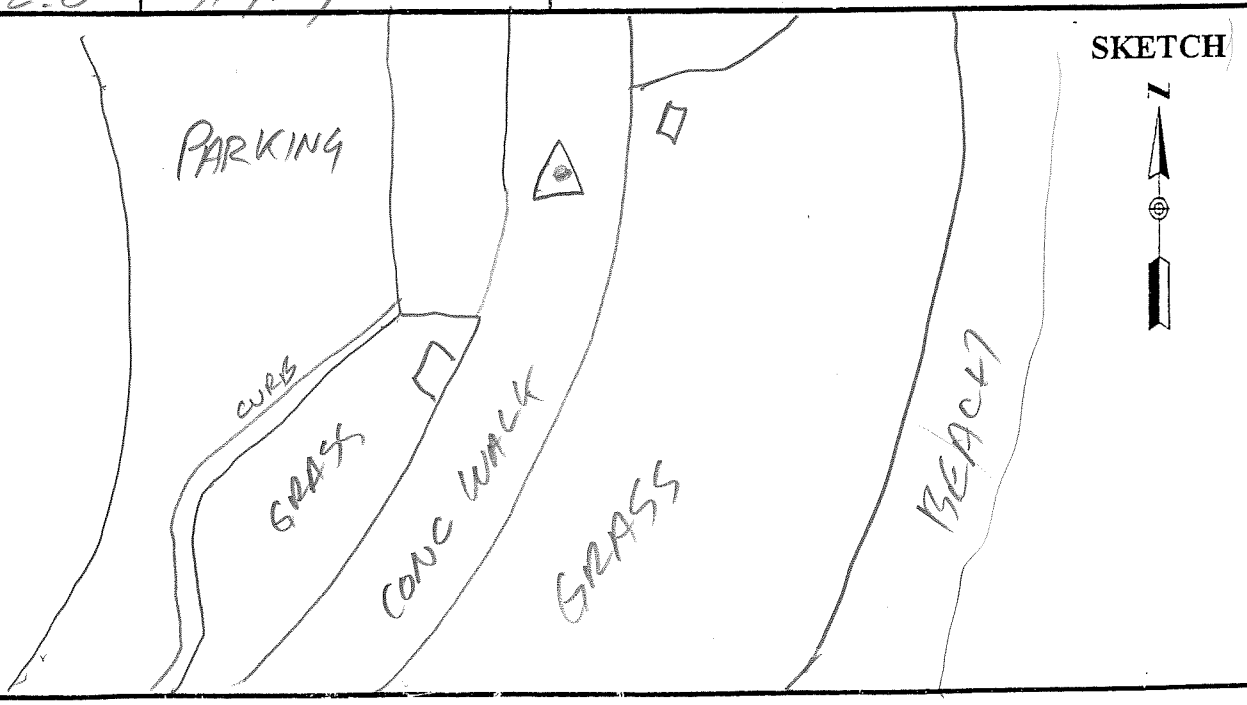
STATION DESCRIPTIONS @ CONC
WALK OPP EXT OF
CURB LINE SW

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
14:32	1.9	9/9-9
14:53	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 12/11/10

SITE NUMBER 3
SITE NAME 25

TRACKING TIMES (LOCAL) MEASURE CST
START 9:04
STOP 9:25

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.324
1.684

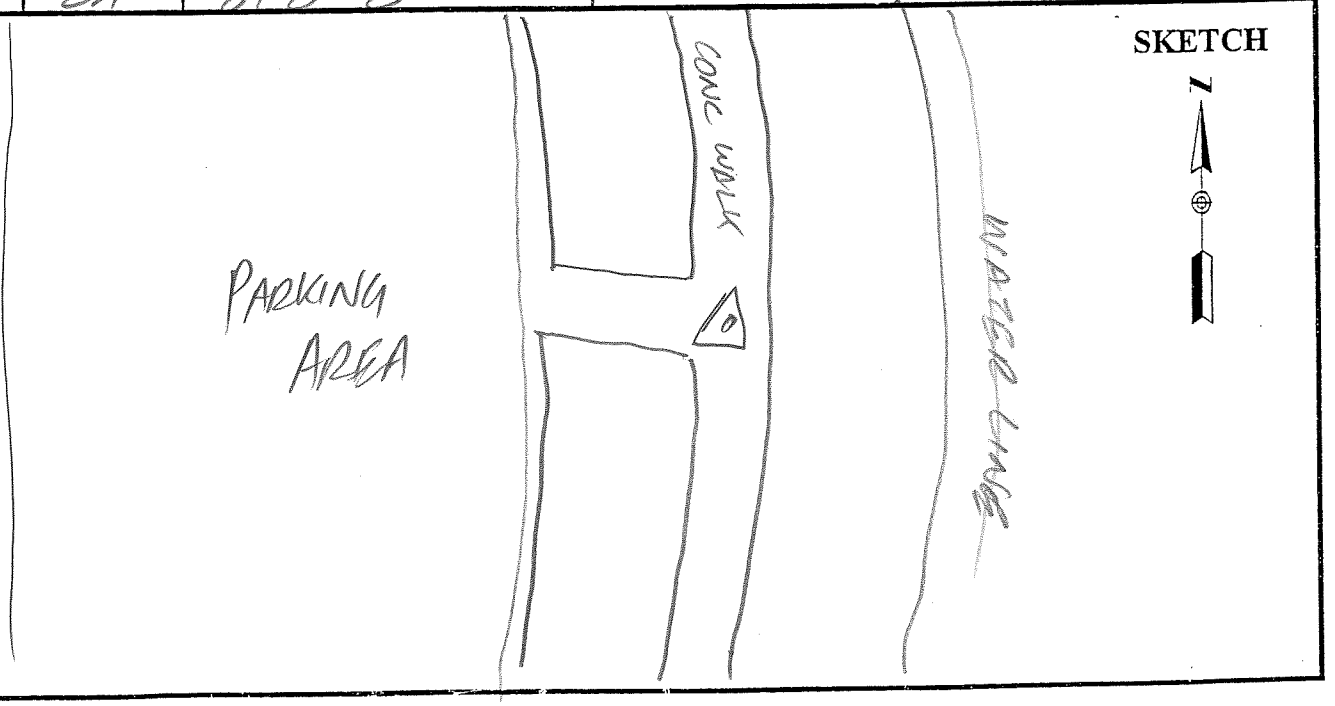
STATION DESCRIPTIONS 4 4 WIDE CONCRETE WALK

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:04	2.0	8/8-8
16:25	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/11/10

SITE NUMBER 4
SITE NAME 26

TRACKING TIMES (LOCAL) MEASURE CST
START 9:40
STOP 10:01

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TREE SE

HEIGHT READINGS
MTS FT
1-295
1-655

STATION DESCRIPTIONS NE COR CONCRETE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:40	2.9	7/7-8
17:01	2.4	7/7-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC becoming very windy

SKETCH

5

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 1101205	SITE NUMBER 5
OPERATOR WJN	SITE NAME 27
DATE 12/11/10	

TRACKING TIMES (LOCAL) MEASURE CST	SENSOR TYPE (500 circled) 500 9500 399 299
START 10:12	MEMORY CARD 6001
STOP 10:33	BATTERY NO.
	CONTROLLER NO.
	SENSOR NO.

SENSOR CONSTANT 299/399 0.441; 399E/9500 0.389; 500 0.360 (circled)	OBSTRUCTIONS: N
HEIGHT READINGS MTS 1.300 FT	STATION DESCRIPTIONS NW EDGE CONC WALK @ ℄ CONC WALK NW
1.660	

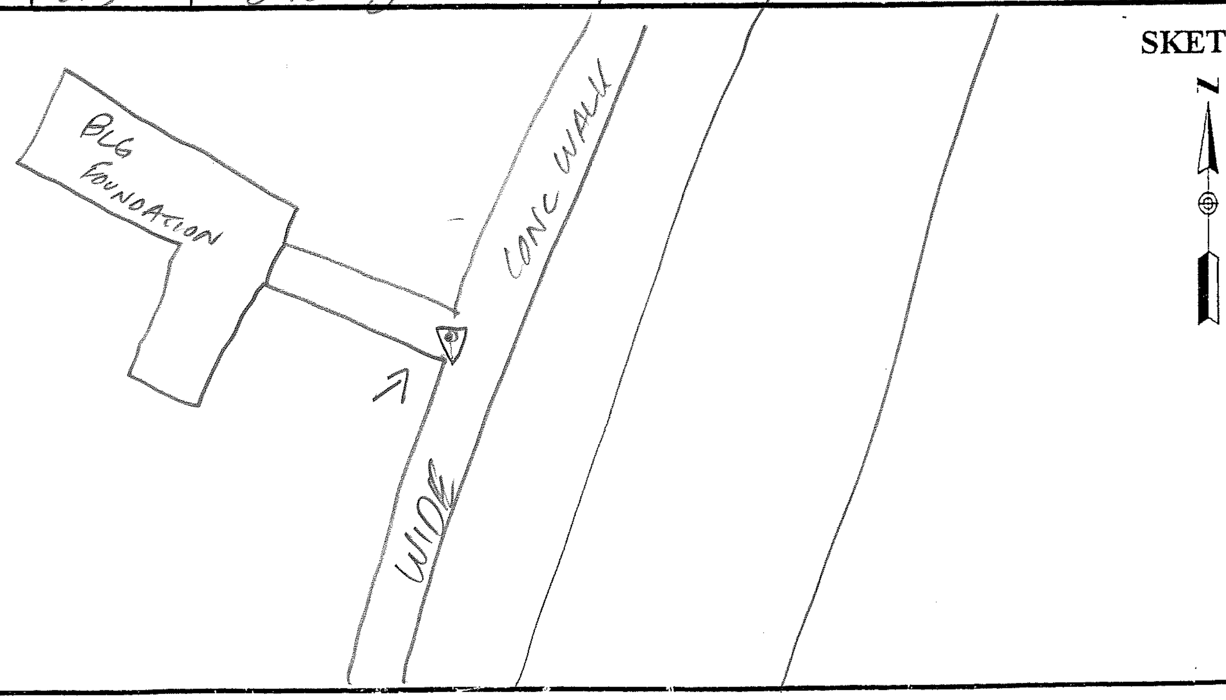
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
10:12	2.5	8/8-8
10:33	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

PC Very Windy

SKETCH



TYCO SINTON

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 1101205
OPERATOR WJN
DATE 12/11/10

SITE NUMBER 6
SITE NAME 28

TRACKING TIMES (LOCAL) MEASURE CST
START 10:56
STOP 11:21

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.205
1.565

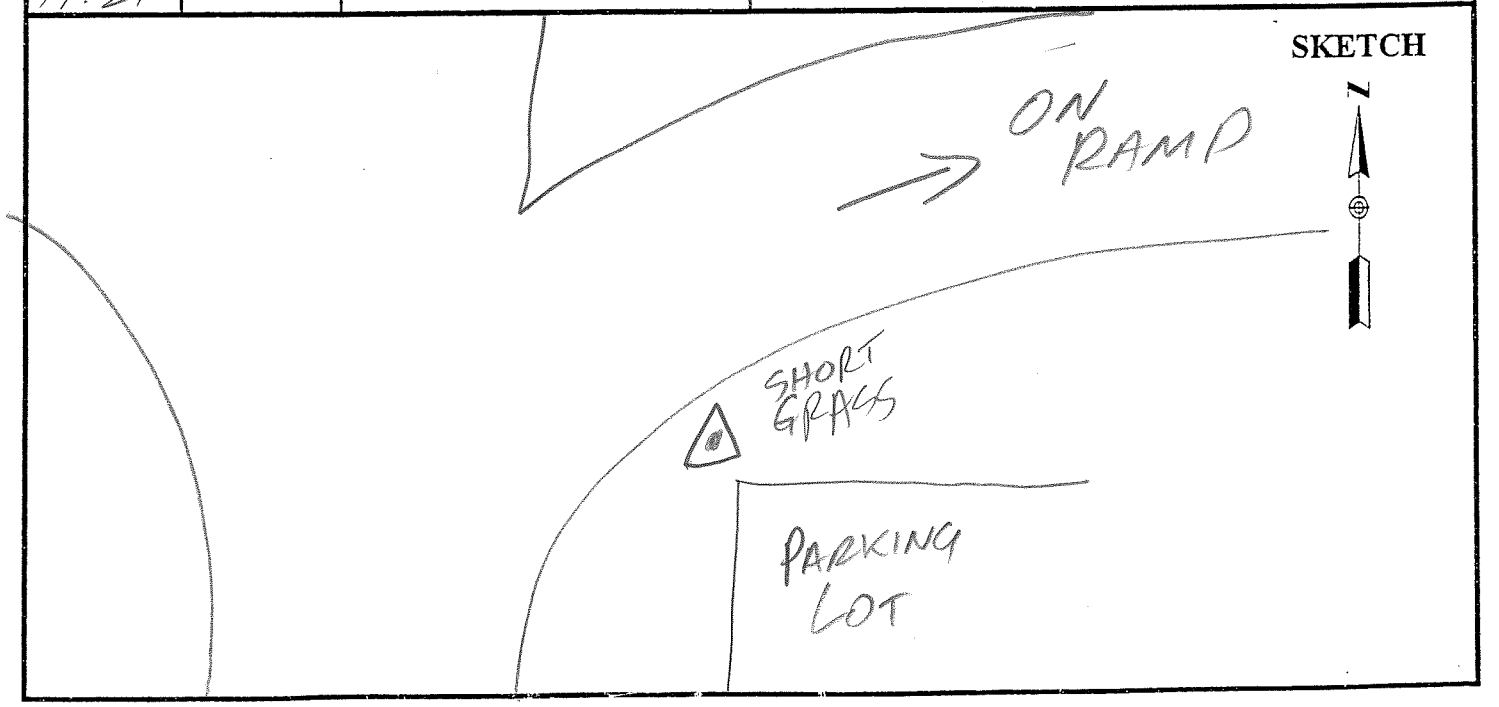
STATION DESCRIPTIONS POINT IN SHORT GRASS BETWEEN NW COR PARKING LOT AND SE EDGE OF PVMNT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:56	2.4	9/9-9
17:21		

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WNN
DATE 12/11/10

SITE NUMBER 7
SITE NAME 29

TRACKING TIMES (LOCAL) MEASURE CST
START 11:37
STOP 12:04

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.306
1.666

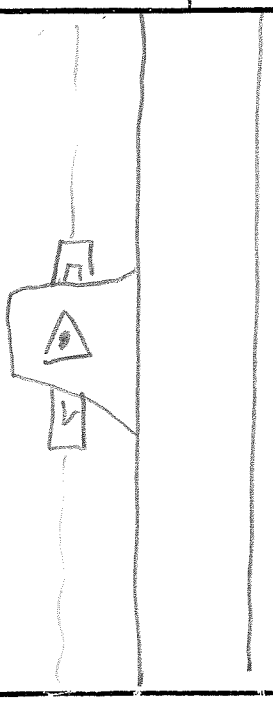
STATION DESCRIPTIONS @ FIELD
ACCESS @ E DITCH/
CULVERT N-S, IN SHORT
SPARSE GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:37	1.9	9/9-9
13:04	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 12/11/10

SITE NUMBER 8
SITE NAME 30

TRACKING TIMES (LOCAL) MEASURE CST
START 12:21
STOP 12:48

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: PPL SW

HEIGHT READINGS MTS FT
1.298
1.658

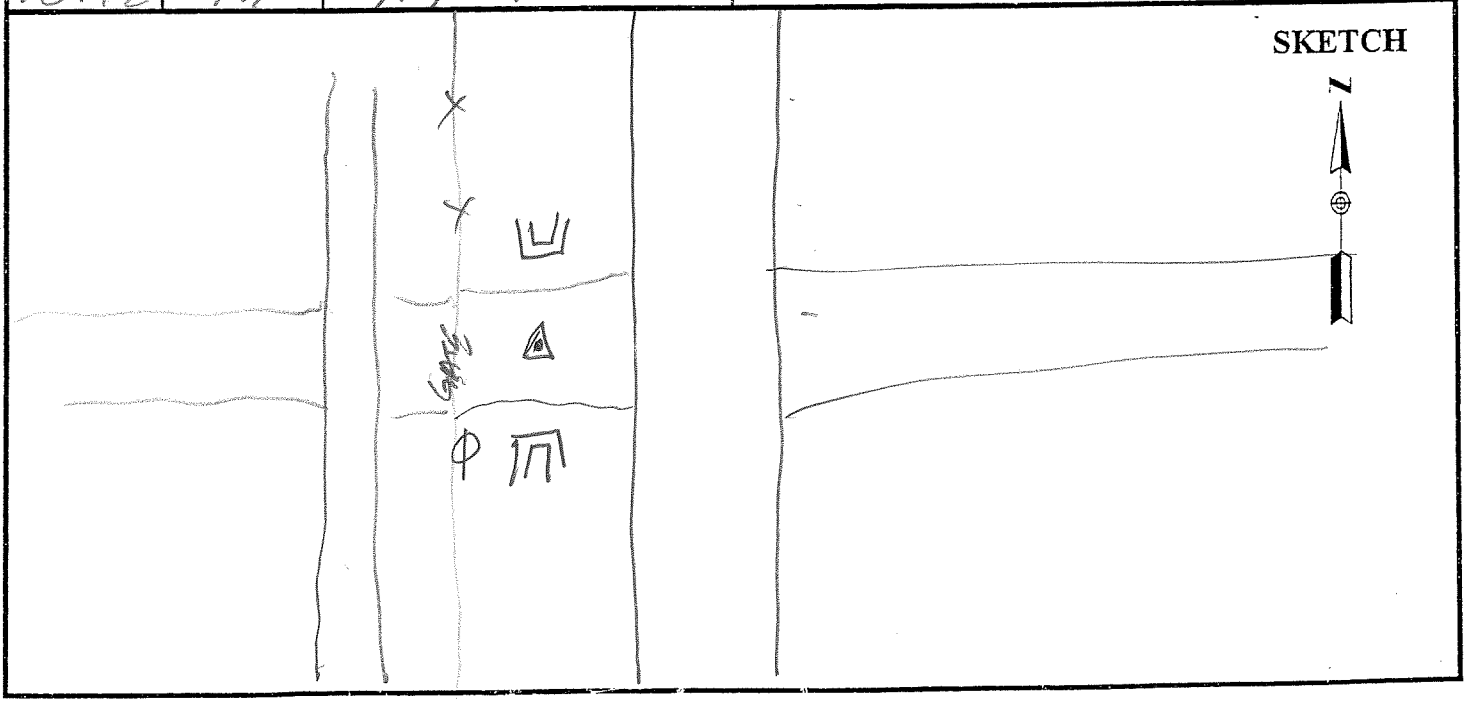
STATION DESCRIPTIONS ℄ AIRPORT
ACCESS RD @ ℄ CULVERT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:21	4.1	6/6-6
18:48	4.1	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC becoming SKC WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR CWW
DATE 12/11/10

SITE NUMBER 9
SITE NAME 31

TRACKING TIMES (LOCAL) MEASURE CST
START 13:07
STOP 13:34

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.308
1.668

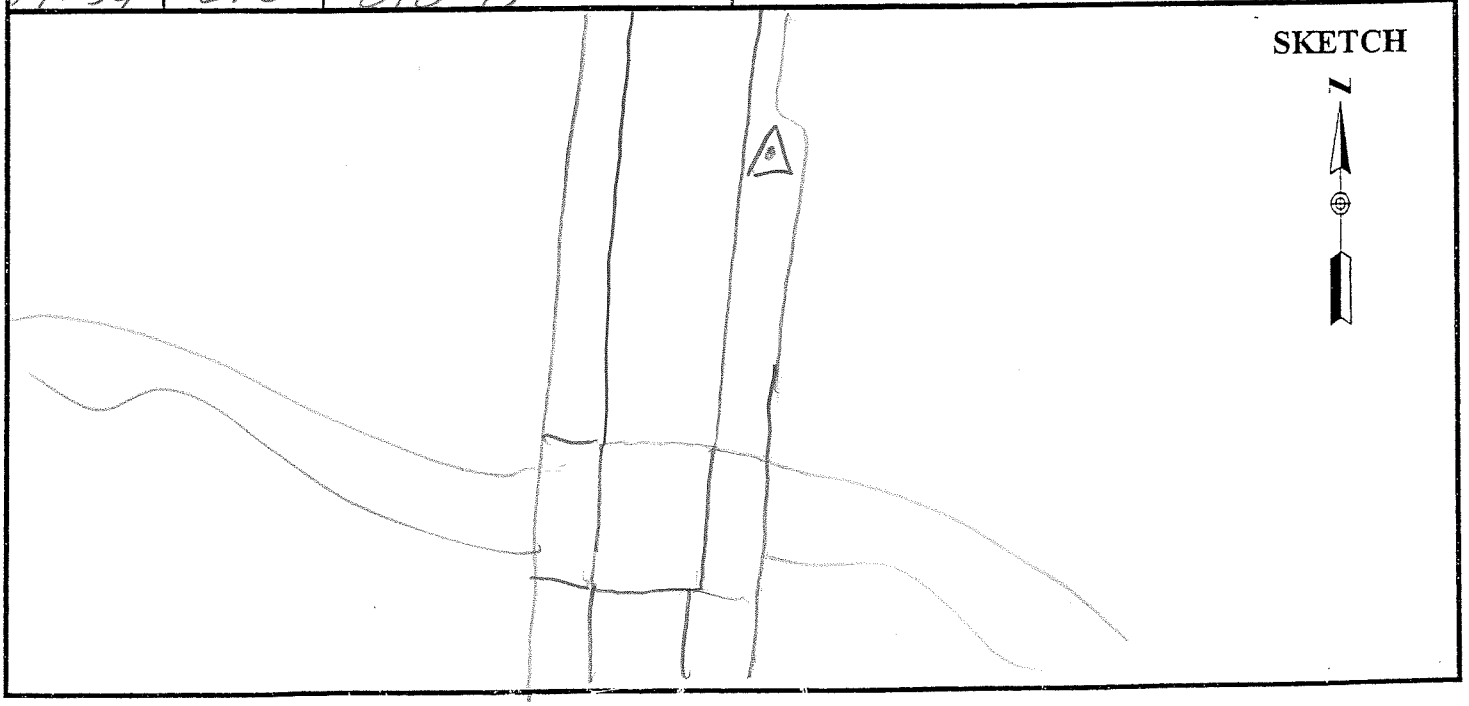
STATION DESCRIPTIONS POINT IN PAVED SHOULDER ± 225' N. OF N BND BRIDGE DECK

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:07	2.1	8/9-9
19:34	2.2	8/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 110205
OPERATOR WVN
DATE 12/11/10

SITE NUMBER 10
SITE NAME 32

TRACKING TIMES (LOCAL) MEASURE CST
START 13:44
STOP 14:11

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 602
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.306
1.666

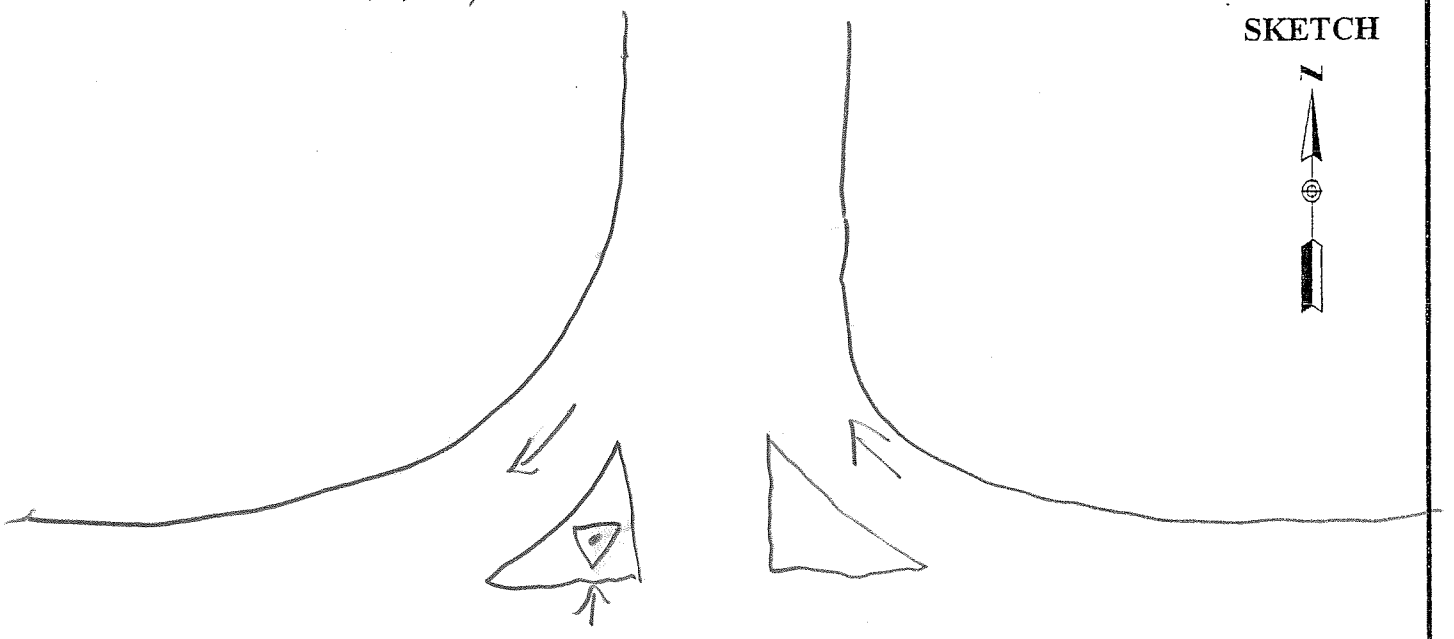
STATION DESCRIPTIONS POINT IN PAINTED TRIANGE AREA IN CENTER OF PAVED AREA

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:44	2.4	8/9-8
20:11	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
PC WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

PROJECT 1101205
OPERATOR WJN
DATE 12/11/10

SITE NUMBER 11
SITE NAME 33

TRACKING TIMES (LOCAL) MEASURE CCT
START 14:30
STOP 14:58

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 601
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.295
1.655

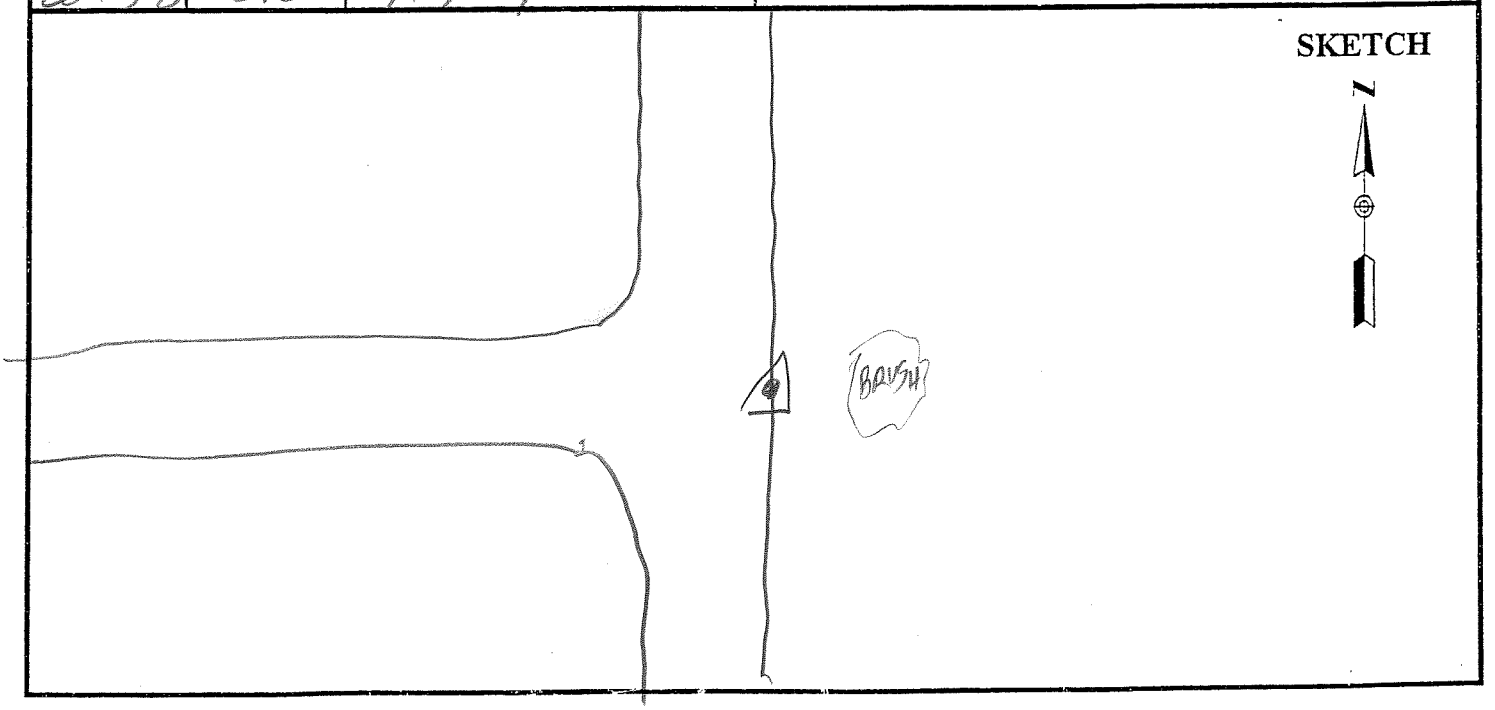
STATION DESCRIPTIONS E. EDGE RD. OPP ℄ RD. W

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:30	2.3	10/10-10
20:58	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC WINDY

SKETCH



TX CC KINGSVILLE

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR MJN
DATE 12/11/10

SITE NUMBER 12
SITE NAME 34

TRACKING TIMES (LOCAL) MEASURE CST
START 15:08
STOP 15:35

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 001
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: OPL SE

HEIGHT READINGS MTS FT
1.298
1.658

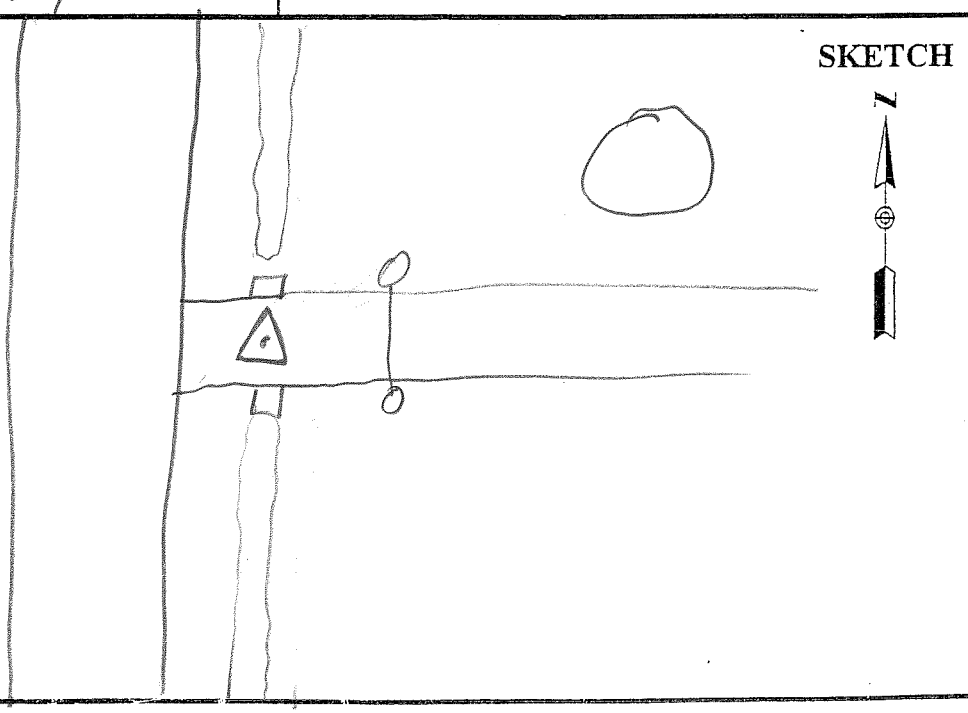
STATION DESCRIPTIONS C ACCESS RD @ C DITCH (CULVERT)

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
21:08	2.4	8/8-9
21:35	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC WINDY

SKETCH



NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5 ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11
JULIAN DATE 020

SITE NUMBER 1
SITE NAME 35

TRACKING TIMES (LOCAL) MEASURE CST

START 10:06

STOP 10:31

SENSOR TYPE (500 circled) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT

299/399	0.441
399E/9500	0.389
500	0.360 (circled)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT

1.335

1.695

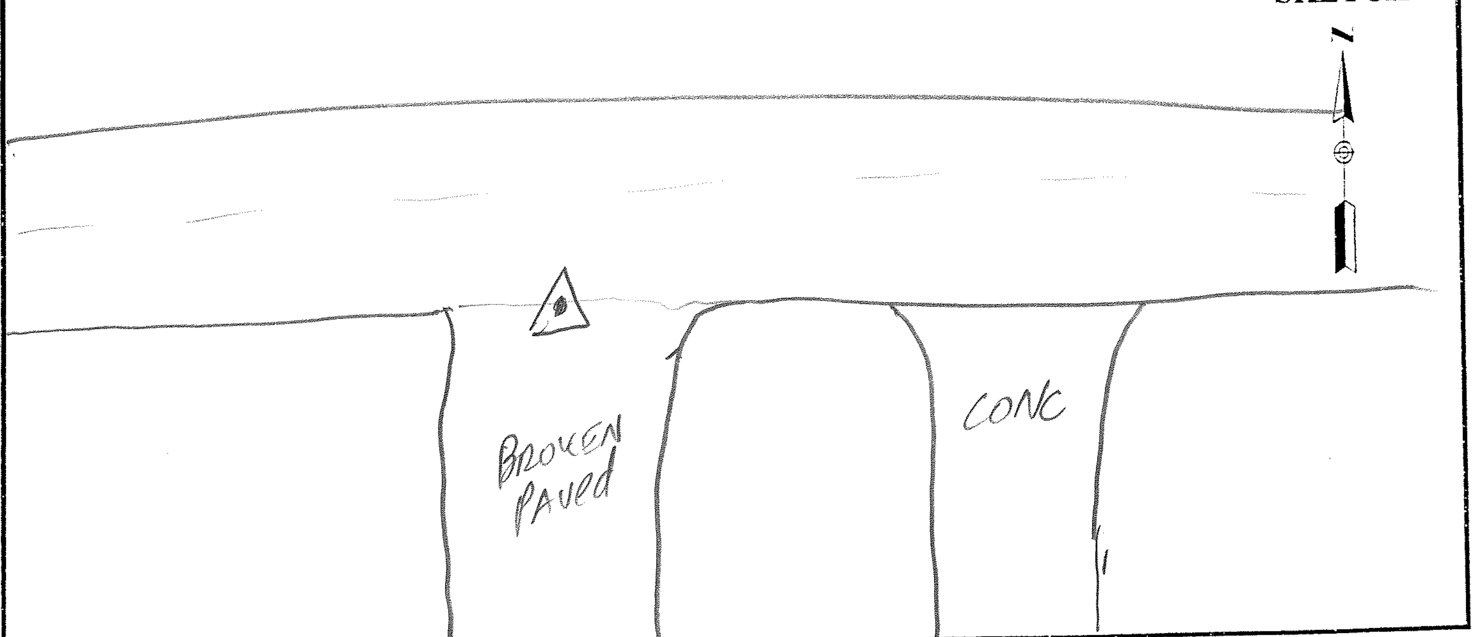
STATION DESCRIPTIONS S. EDGE RD OPP C NARROW PARKING AREA S

SATELLITE OBSERVATIONS

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
FOG

TIME	GDOP	SATELLITES
16:06	3.9	6/7-7
16:31	2.0	8/8-8

SKETCH



TXCC CORPUS C.
TXSI SINTON
TXAI ALICE UNHEALTHY
KVTX KINGSVILLE
DAY 020 CORS CHOICES

16 7

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5 ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 2
SITE NAME 36

TRACKING TIMES (LOCAL) MEASURE CST
START 10:44
STOP 11:09

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.351
1.711

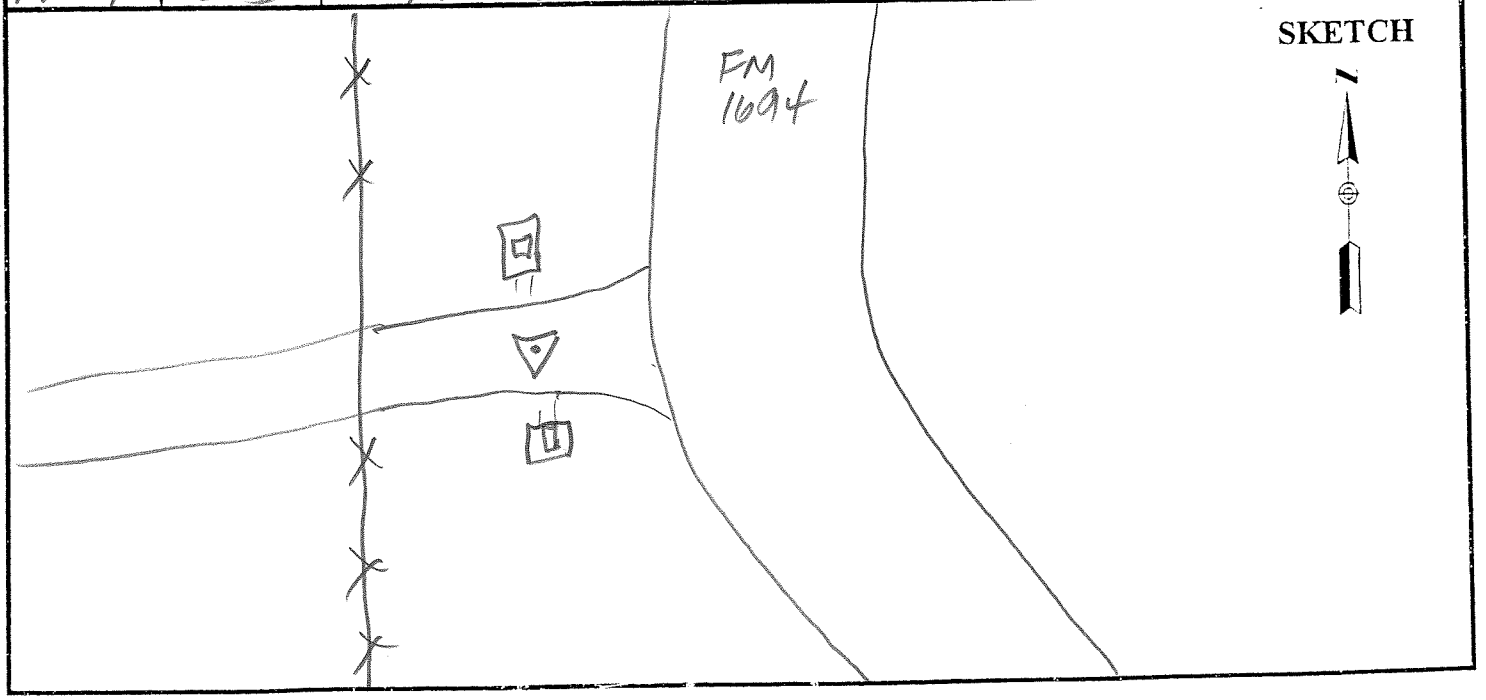
STATION DESCRIPTIONS ℄ ACCESS RD @ ℄ CULVERT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
10:44	3.1	5/5/-7
17:09	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
FOG

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS ✓

PROJECT 1101205
OPERATOR WN
DATE 1/20/11

SITE NUMBER 3
SITE NAME 37

TRACKING TIMES (LOCAL) MEASURE CST
START 11:17
STOP 11:42

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.295
1.655

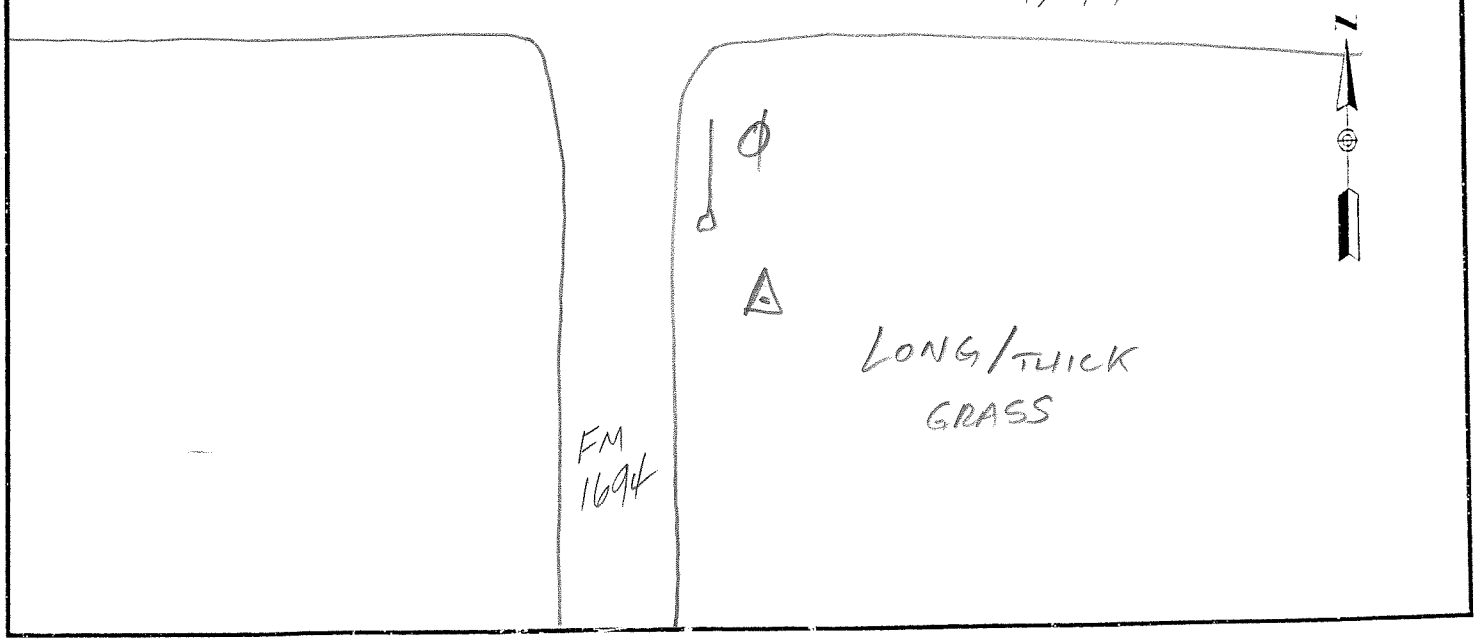
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:17	2.1	8/8-8
17:42	26	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
FOG

SKETCH



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SHEBOYGAN, WISCONSIN 53083

NUECES

SHORT GRASS ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 4
SITE NAME 38

TRACKING TIMES (LOCAL) MEASURE CST
START 12:00
STOP 12:25

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.237
1.597

OBSTRUCTIONS: NO

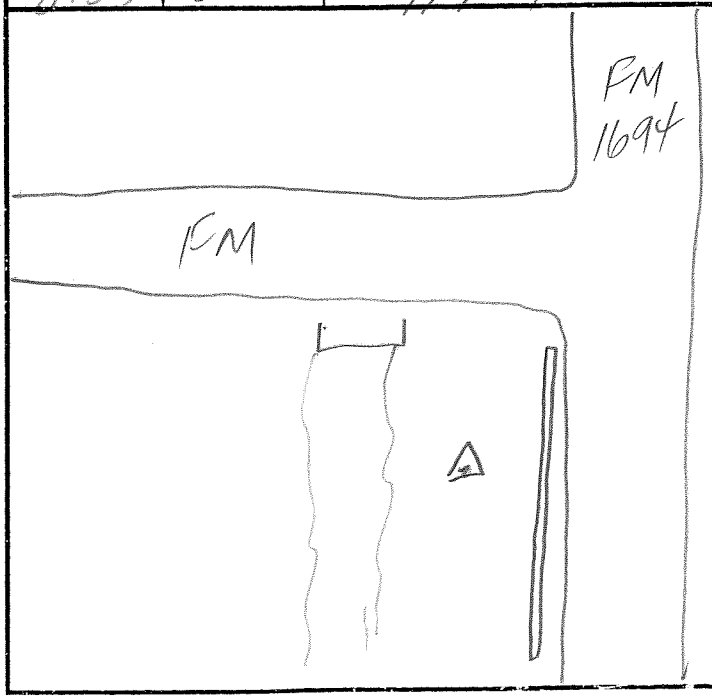
STATION DESCRIPTIONS POINT IN SHORT GRASS IN WIDE R/W AREA SW OF INT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:00	2.3	9/9-9
18:25	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

SKETCH



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SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 5
SITE NAME 39

TRACKING TIMES (LOCAL) MEASURE CST
START 12:34
STOP 13:00

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.327
1.687

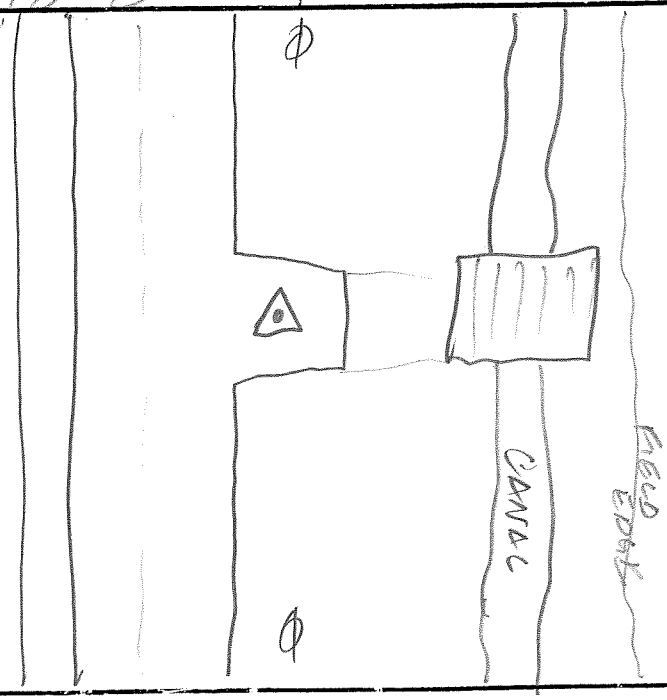
STATION DESCRIPTIONS POINT IN CENTER OF LARGE PAVED TURNOUT E. OF N-S ROAD

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:	2.6	7/7-7
19:00	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

2 ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 6
SITE NAME 40

TRACKING TIMES (LOCAL) MEASURE CST

START 13:12
STOP 13:40

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.210
1.570

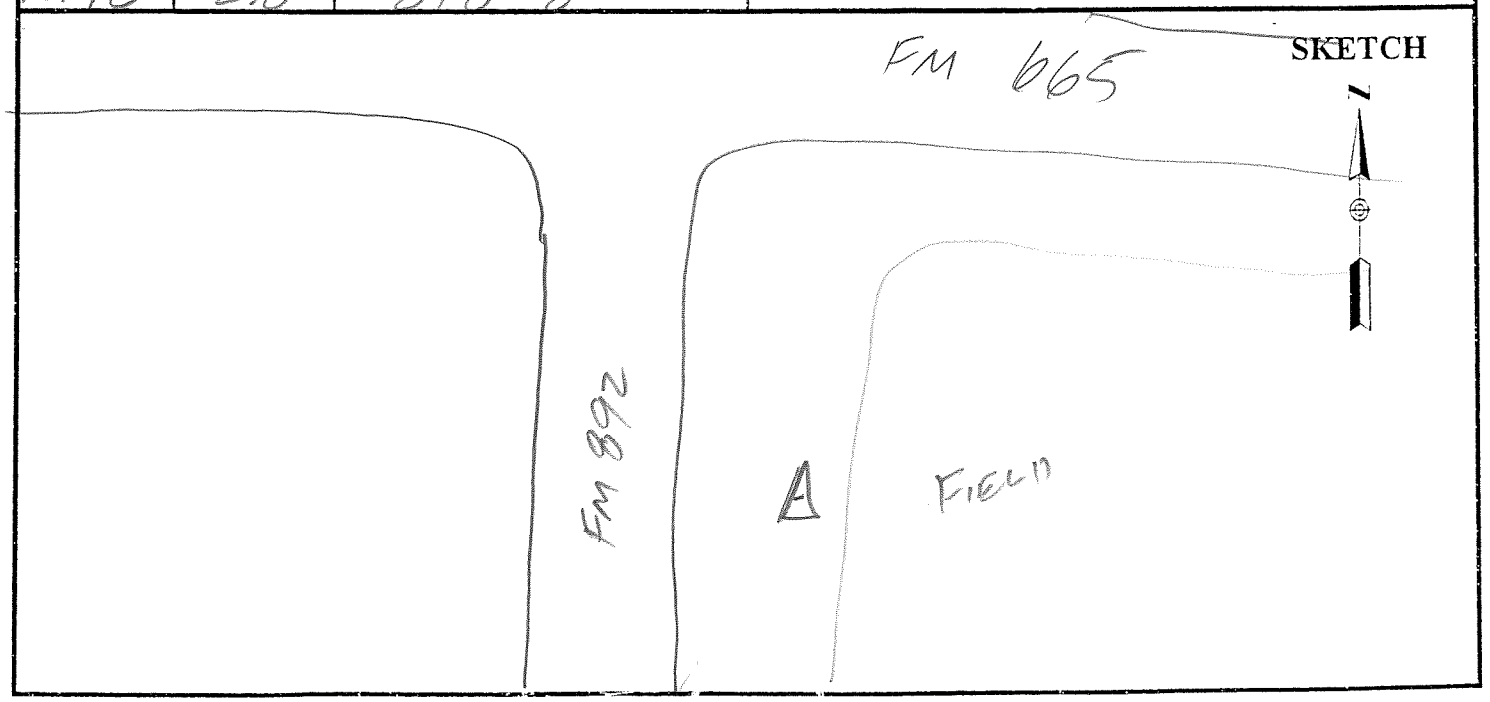
STATION DESCRIPTIONS POINT IN LONG GRASS 3' W OF FIELD EDGE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:12	1.9	8/8-8
19.40	2.0	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

SHORT GRASS ✓

PROJECT 1101205	SITE NUMBER 7
OPERATOR WJN	SITE NAME 41
DATE 1/20/11	

TRACKING TIMES (LOCAL) MEASURE CST

START 13:51

STOP 14:17

SENSOR TYPE (500) 9500 399 299

MEMORY CARD 11

BATTERY NO.

CONTROLLER NO.

SENSOR NO.

SENSOR CONSTANT

299/399	0.441
399E/9500	0.389
500	(0.360)

HEIGHT READINGS

MTS	FT
1.255	

1-6/5

OBSTRUCTIONS: OH POWER LINES

STATION DESCRIPTIONS POINT @ W. EDGE OF FIELD AND E. EDGE SHORT GRASS

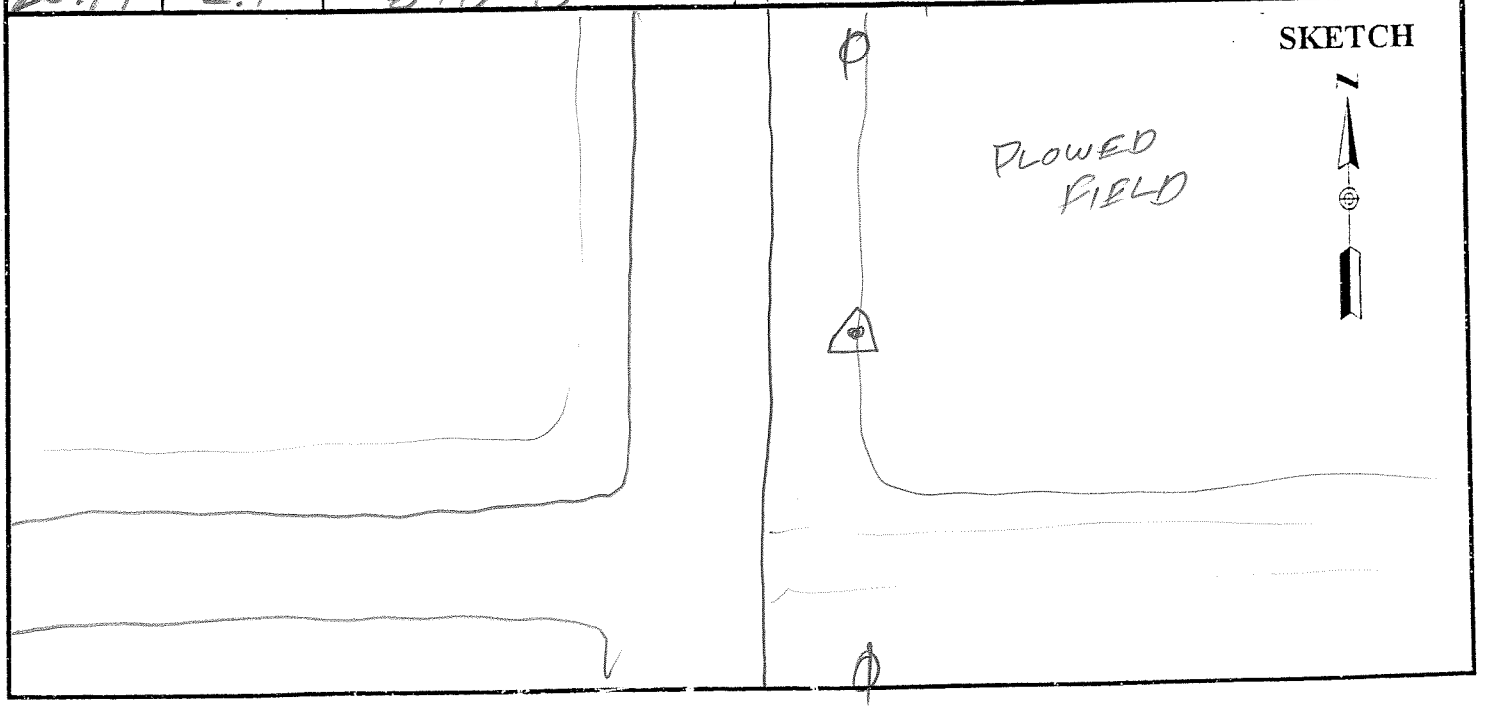
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:51	2.1	8/8-8
20:17	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

OVC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5
6

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 8
SITE NAME 42

TRACKING TIMES (LOCAL) MEASURE CST
START 14:38
STOP 15:04

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.279
1.639

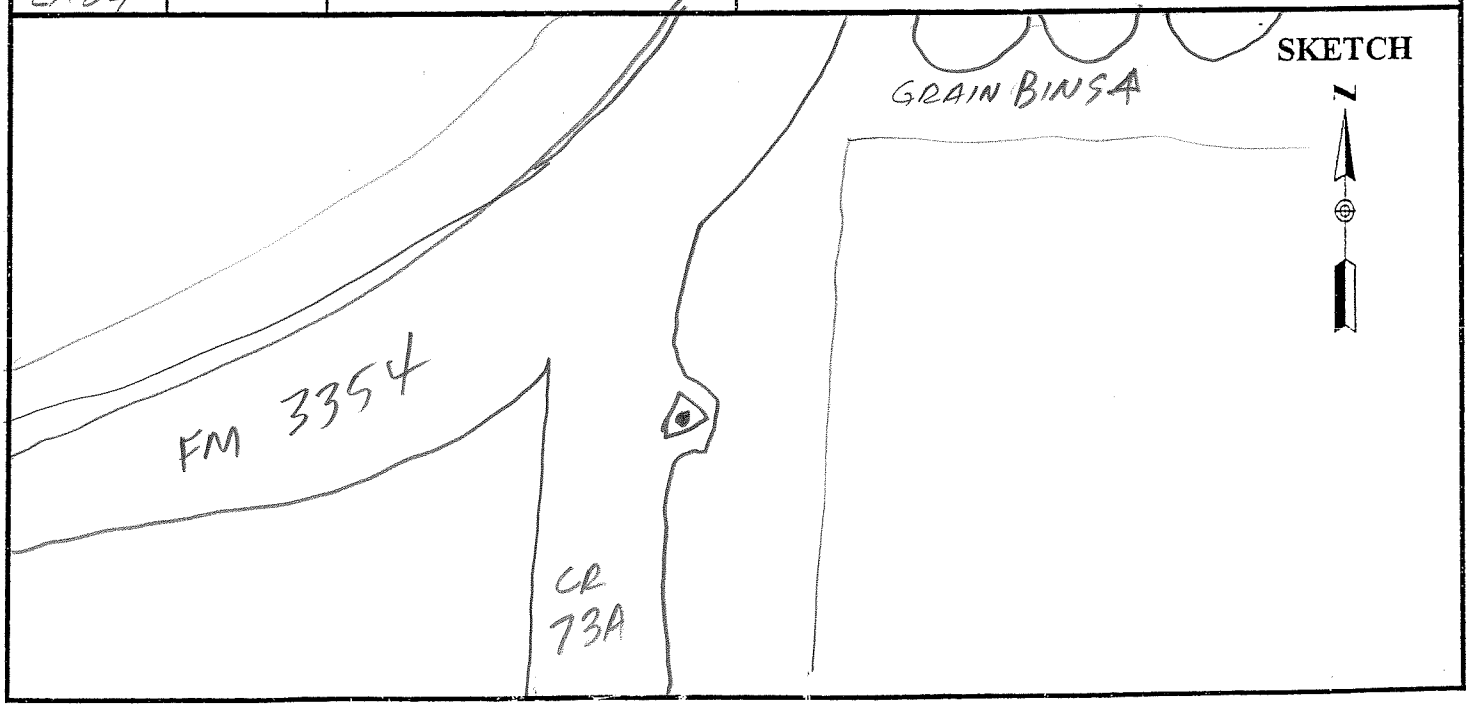
STATION DESCRIPTIONS POINT IN CENTER OF ASPHALT TURNOUT JUST SE OF INT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:38	2.0	10/10-10
21:04		

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
VERY WINDY, 0 UC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5
V

PROJECT 110205
OPERATOR WJN
DATE 11/20/11

SITE NUMBER 9
SITE NAME 43

TRACKING TIMES (LOCAL) MEASURE CST
START 15:19
STOP 15:46

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 4
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: OH POWER LNES PPLS.

HEIGHT READINGS MTS FT
1.315
1.675

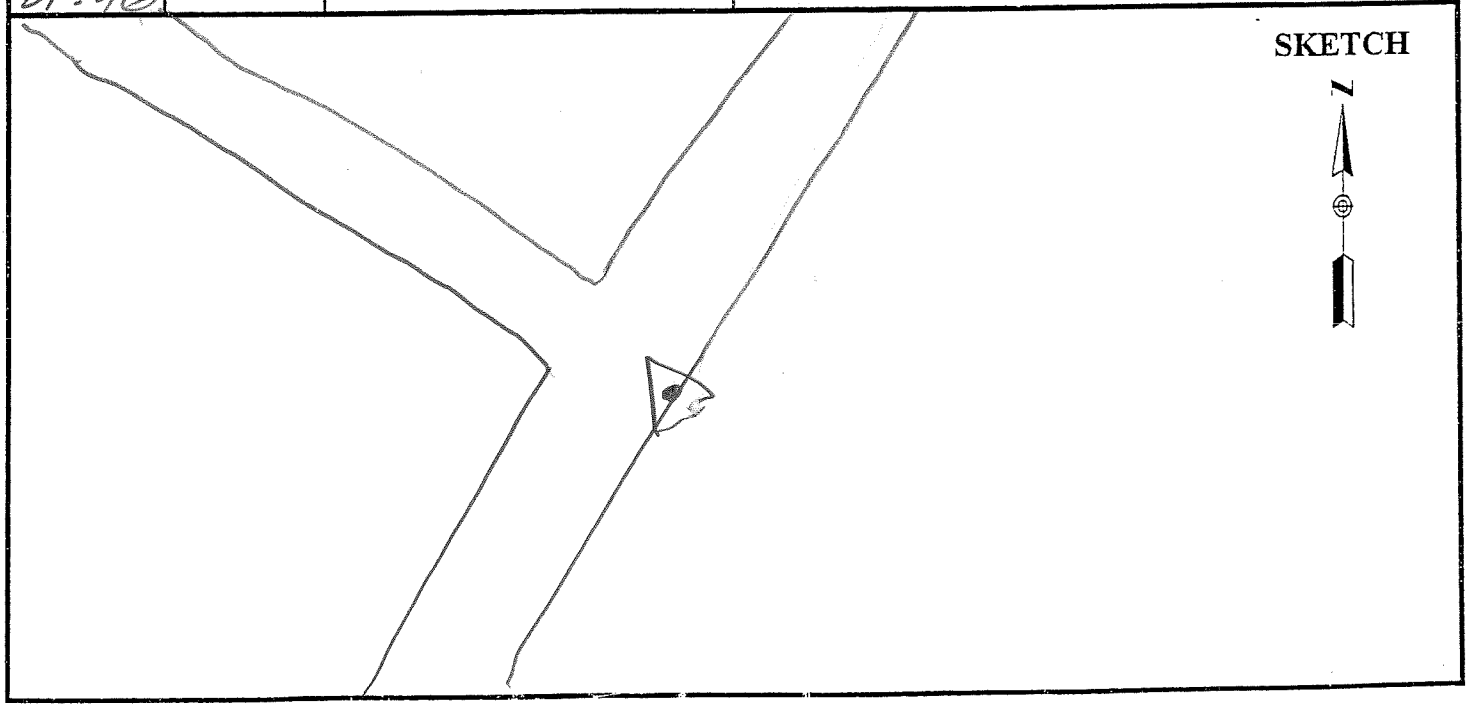
STATION DESCRIPTIONS SE EDGE OF ROAD OPP ℄ ROAD NW

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
~~21~~:19	2.0	10/10-10
21:46		

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
Very Windy, OVC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

SHORT GRASS ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/20/11

SITE NUMBER 10
SITE NAME 44

TRACKING TIMES (LOCAL) MEASURE CST
START 15:59
STOP 16:28

SENSOR TYPE (500) 9500 399 299
MEMORY CARD
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: WATER TOWER ±300' SE

HEIGHT READINGS MTS FT
1.271
1.631

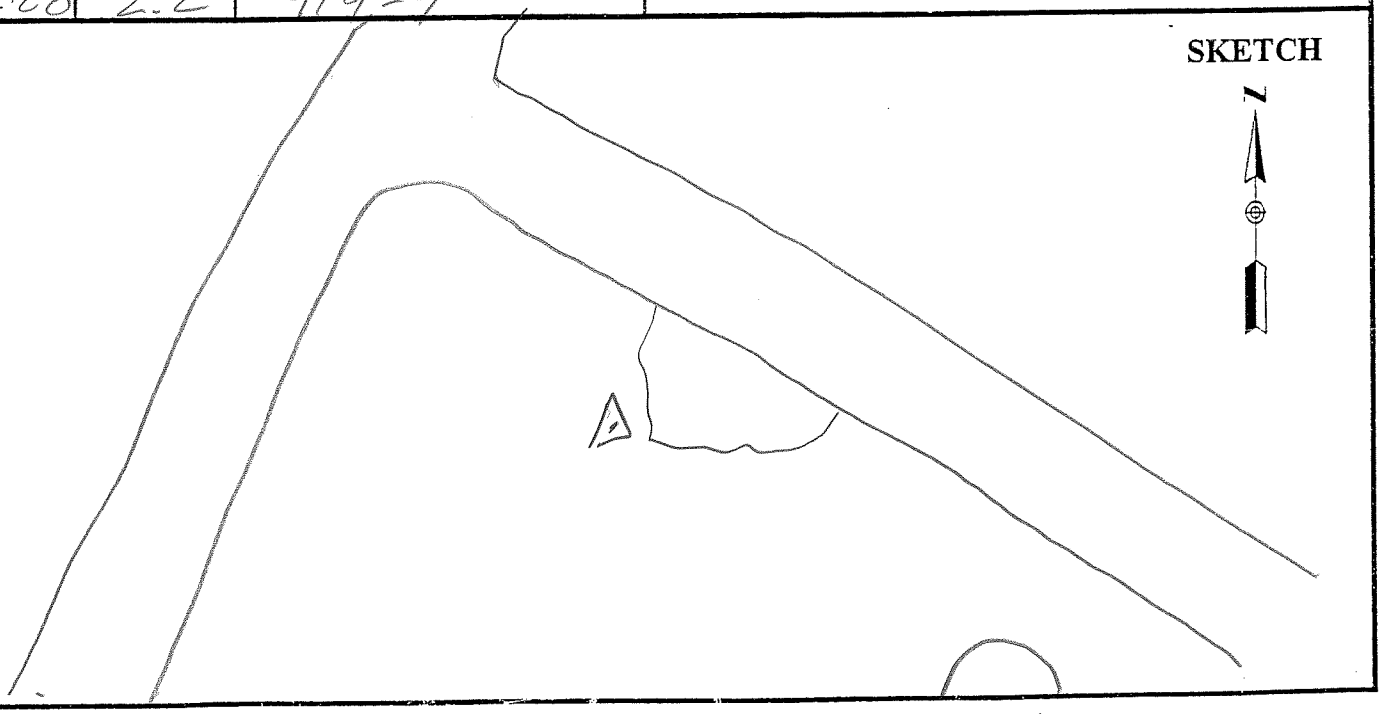
STATION DESCRIPTIONS POINT IN SHORT GRASS ±250' SE OF INT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
21:59	2.4	10/10-10
22:28	2.2	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5 ✓

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 1/21/11
JULIAN DATE 021

SITE NUMBER 1
SITE NAME 45

TRACKING TIMES (LOCAL) MEASURE CST
START 9:44
STOP 10:11

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.320

STATION DESCRIPTIONS E EDGE PAVEMENT OPP N EDGE FENCE E, N EDGE FENCED IN GRAVEL AREA.

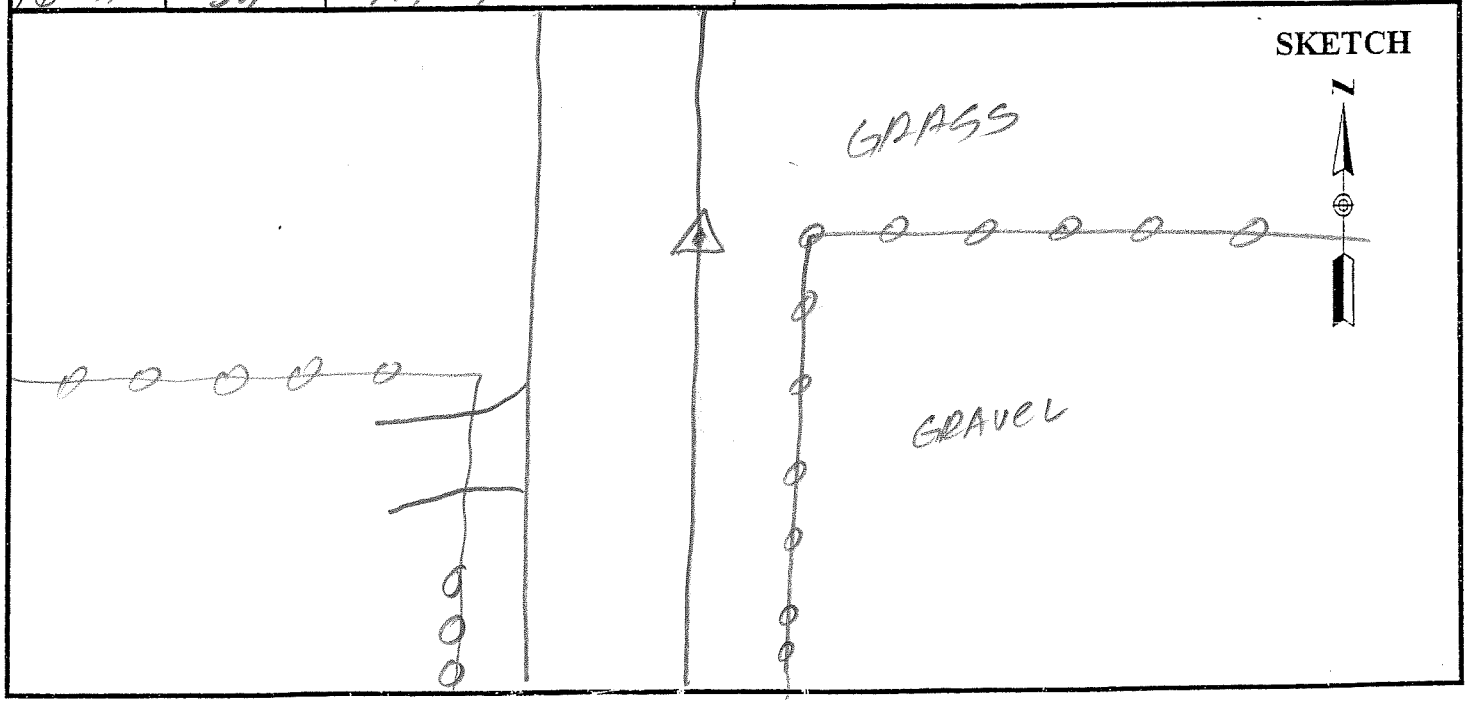
L-680

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:44	3.9	7/7-7
16:11	3.1	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



KVTX TX51 TXCC

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

LONG GRASS

NUECES

V

PROJECT 1101205
OPERATOR WJN
DATE 1/21/10

SITE NUMBER 2
SITE NAME 46

TRACKING TIMES (LOCAL) MEASURE CST
START 10:50
STOP 11:18

SENSOR TYPE (500) 9500 399 299
MEMORY CARD
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.262
1.622

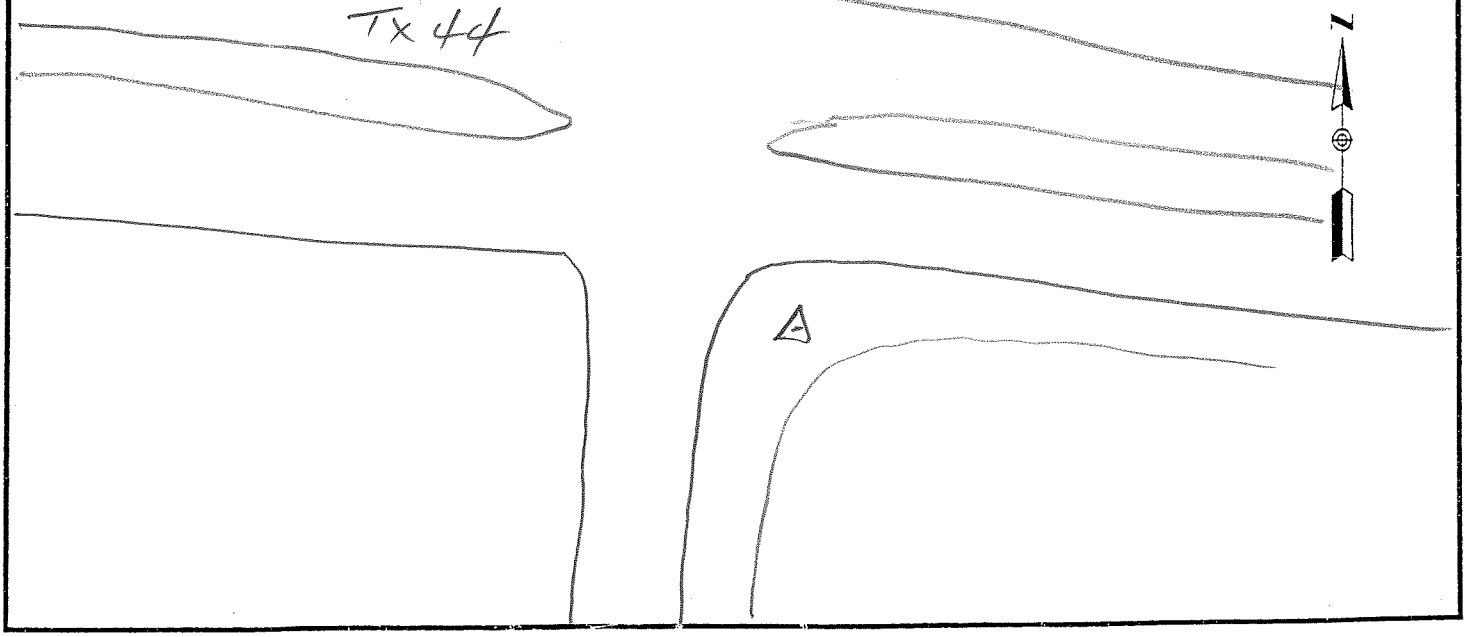
STATION DESCRIPTIONS POINT IN LONG GRASS SE OF INT.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:50	1.9	9/9-9
17:18	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

SHORT GRASS

NUECES

PROJECT 1101205
OPERATOR W.W.
DATE 1/21/11

SITE NUMBER 3
SITE NAME 47

TRACKING TIMES (LOCAL) MEASURE CST
START 11:47
STOP 12:15

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.288
1.648

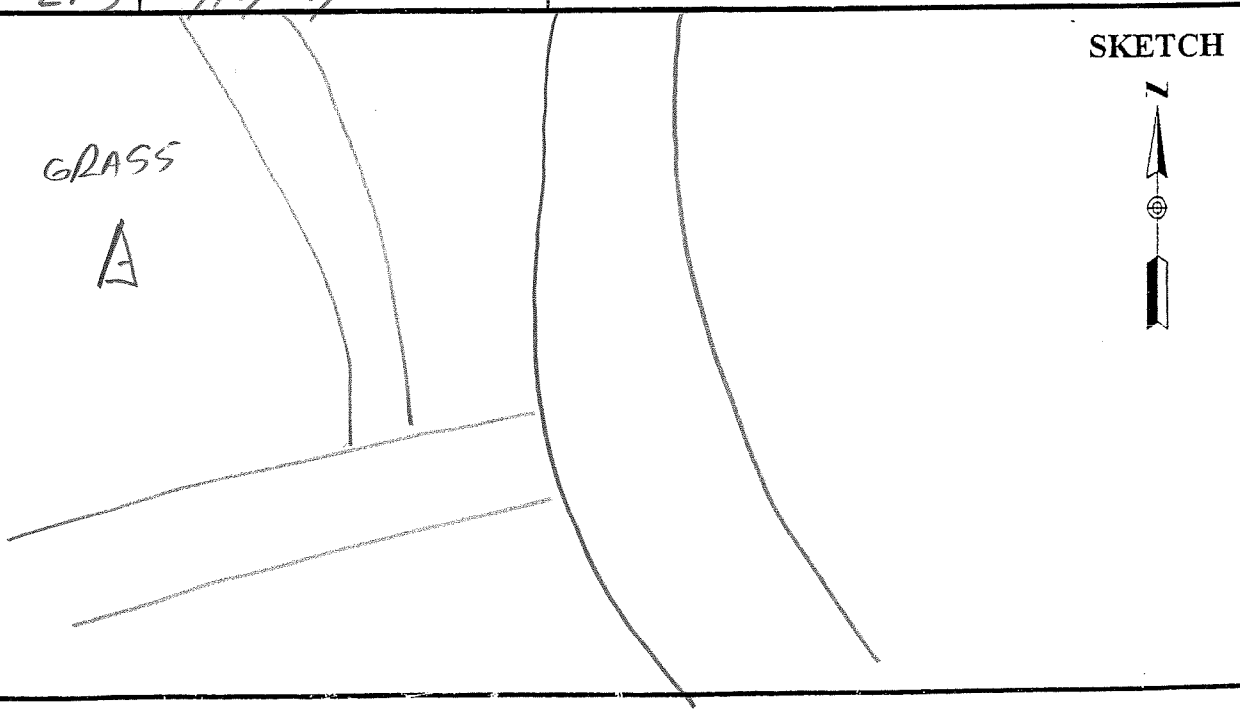
STATION DESCRIPTIONS POINT 141
SHORT GRASS, LARGE FLAT AREA.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:47	2.5	9/9-9
18:15	2.3	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 11D1205
OPERATOR WJW
DATE 1/21/11

SITE NUMBER 4
SITE NAME 48

TRACKING TIMES (LOCAL) MEASURE CST
START 12:25
STOP 12:53

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.290
1.650

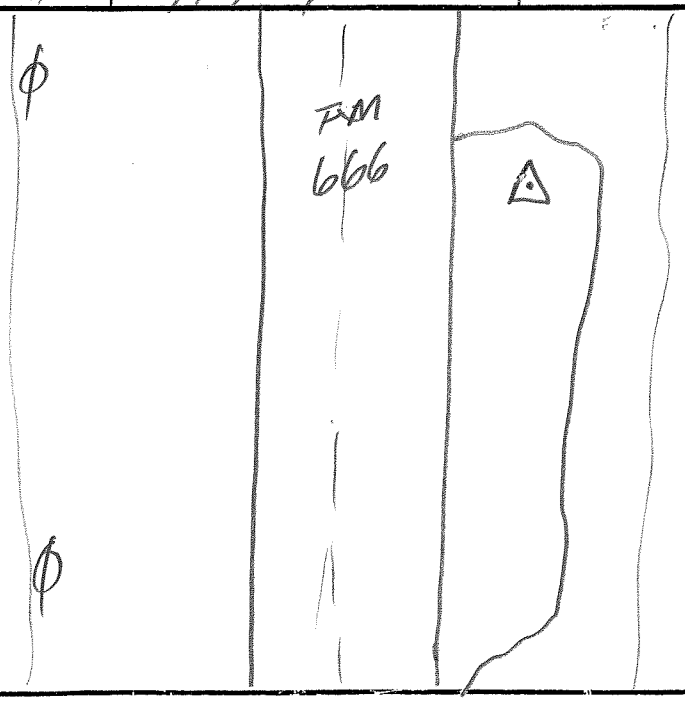
STATION DESCRIPTIONS POINT IN NORTH END LARGE TURNOUT.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:25	2.1	9/9-9
18:53	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS

PROJECT 1101205
OPERATOR WJN
DATE 1/21/11

SITE NUMBER 5
SITE NAME 49

TRACKING TIMES (LOCAL) MEASURE CST

START 13:06
STOP 13:34

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.289
1.649

STATION DESCRIPTIONS POINT IN LONG GRASS

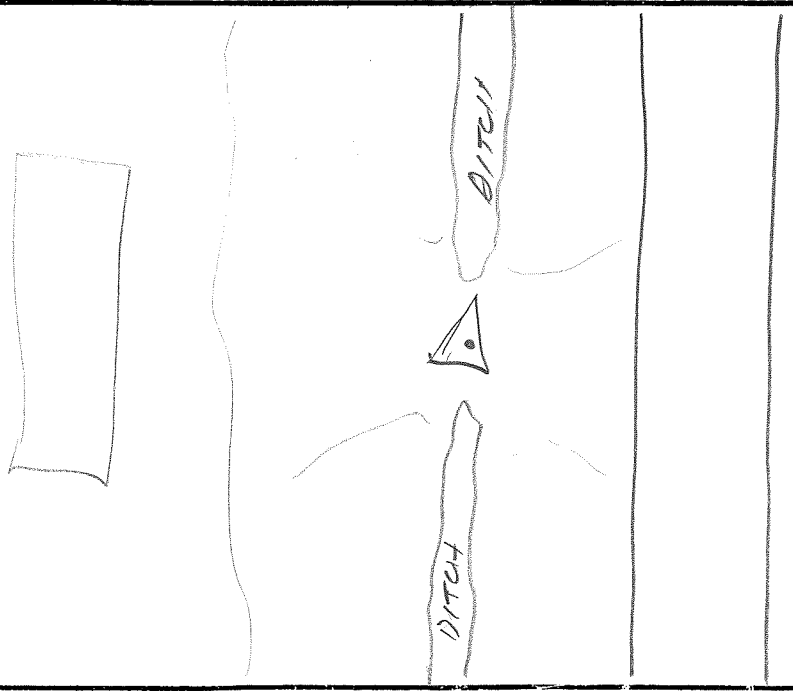
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:06	2.1	9/9-9
19:36	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SK

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 11/21/11

SITE NUMBER 6
SITE NAME 50

TRACKING TIMES (LOCAL) MEASURE CST
START 13:46
STOP 14:14

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.321
1.681

OBSTRUCTIONS: NO

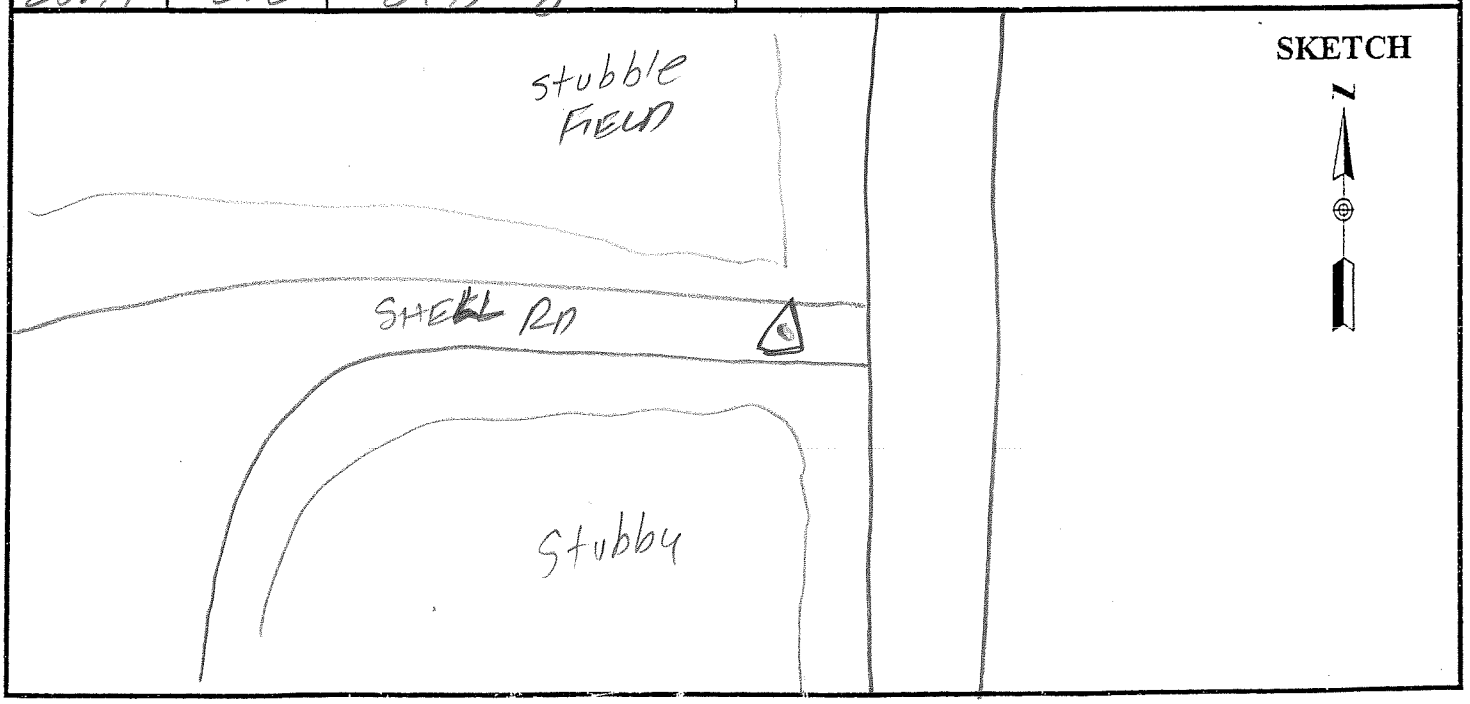
STATION DESCRIPTIONS 4 SHELL ROAD OPP E. FIELD EDGE N-S

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:46	2.1	8 12 -8
20:14	2.2	8 13 -8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

SHORT GRASS

PROJECT 1101205	SITE NUMBER 7
OPERATOR WJN	
DATE 1/21/11	SITE NAME 51

TRACKING TIMES (LOCAL) MEASURE CST

START 14:26

STOP 14:54

SENSOR TYPE (500) 9500 399 299

MEMORY CARD 11

BATTERY NO.

CONTROLLER NO.

SENSOR NO.

SENSOR CONSTANT

299/399	0.441
399E/9500	0.389
500	(0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS

MTS	FT
1.363	

1.723

~~1.693~~

STATION DESCRIPTIONS POINT IN VERY SHORT GRASS IN ℄ OF FARM ACCESS OPP FENCES N-S

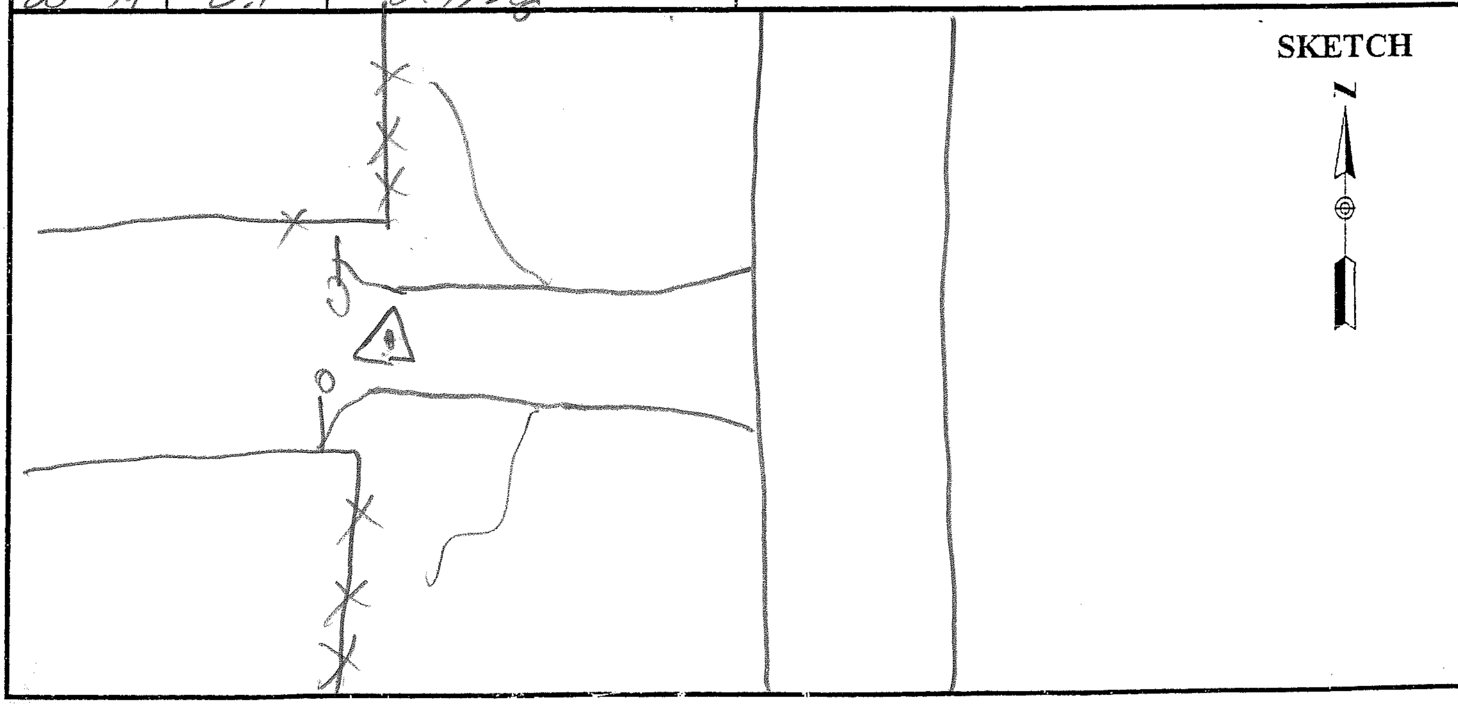
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:26	2.3	8/9-8
20:54	2.1	8/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SK

SKETCH



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7855

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS

PROJECT 1101205
OPERATOR WNN
DATE 1/22/11
22

SITE NUMBER 1
SITE NAME 52

TRACKING TIMES (LOCAL) MEASURE CST
START 9:44
STOP 10:19

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: OH Power lines

HEIGHT READINGS MTS FT
1.310
1.670

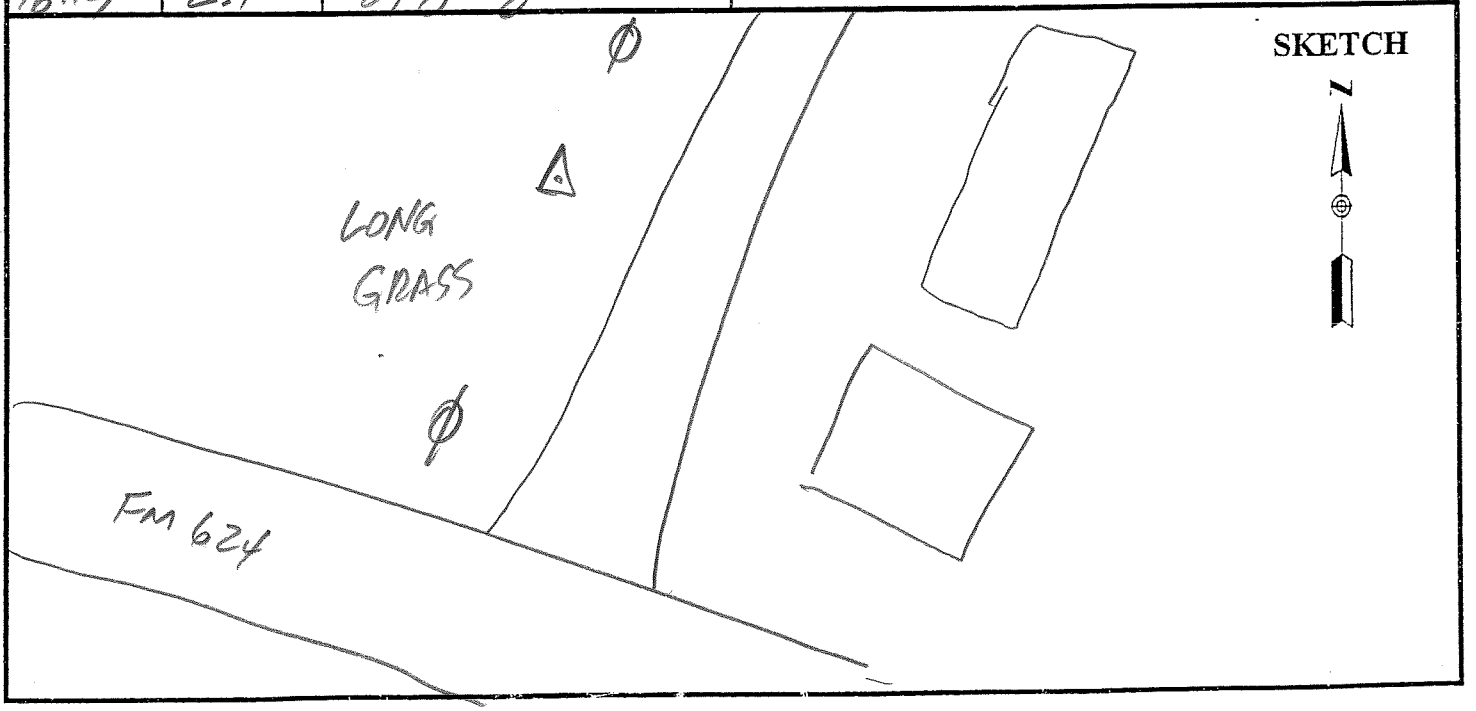
STATION DESCRIPTIONS POINT 101
LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:44	4.0	7/7-7
16:19	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5 ✓

NUECES

PROJECT 110205
OPERATOR WN
DATE 1/22/11

SITE NUMBER 2
SITE NAME 53

TRACKING TIMES (LOCAL) MEASURE CST

START 10:33
STOP 11:09

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.276
1.636

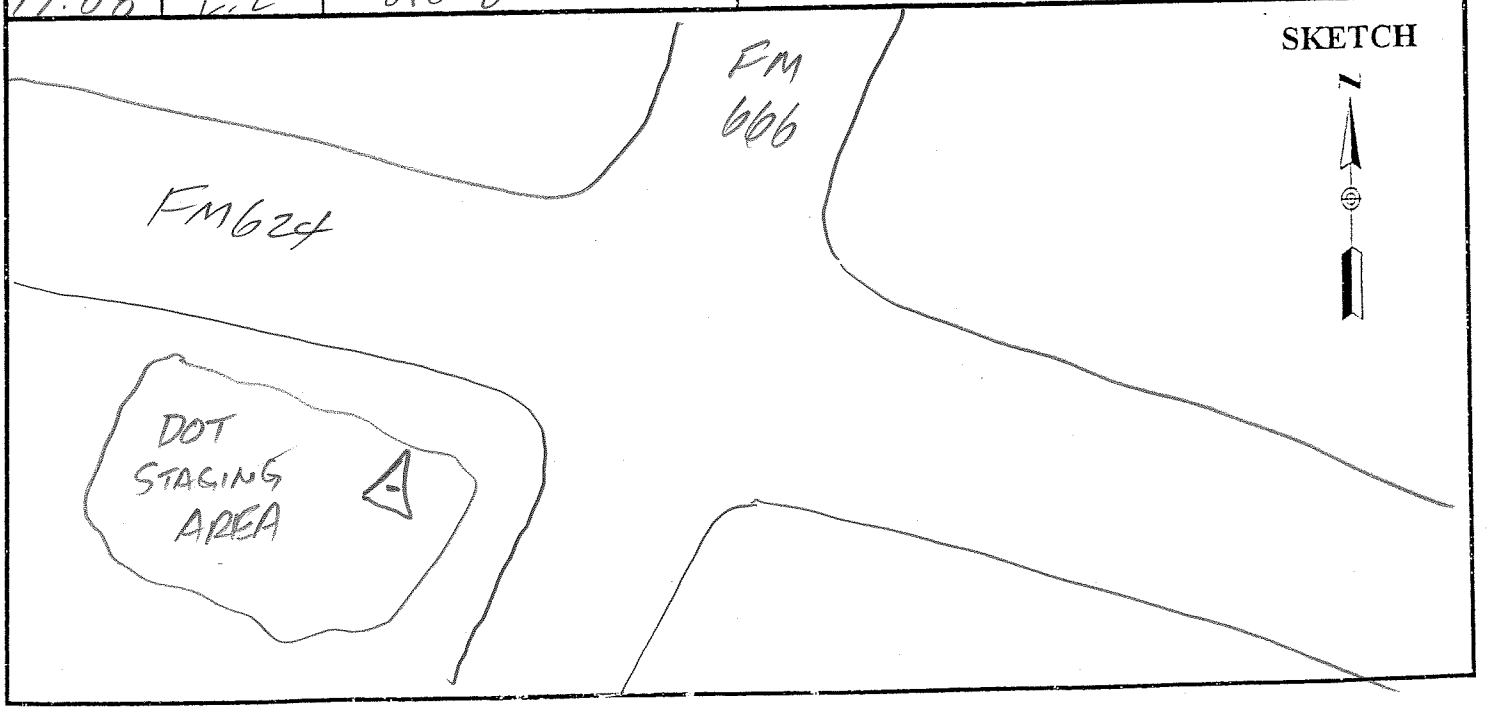
STATION DESCRIPTIONS POINT NEAR NE COR OF TX DOT SERVICE AREA. GRAVEL

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:33	2.7	7/7-7
17:08	2.2	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1
✓

PROJECT 101205
OPERATOR WJN
DATE 1/22/11

SITE NUMBER 3
SITE NAME 54

TRACKING TIMES (LOCAL) MEASURE CST
START 11:22
STOP

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.278
1.638

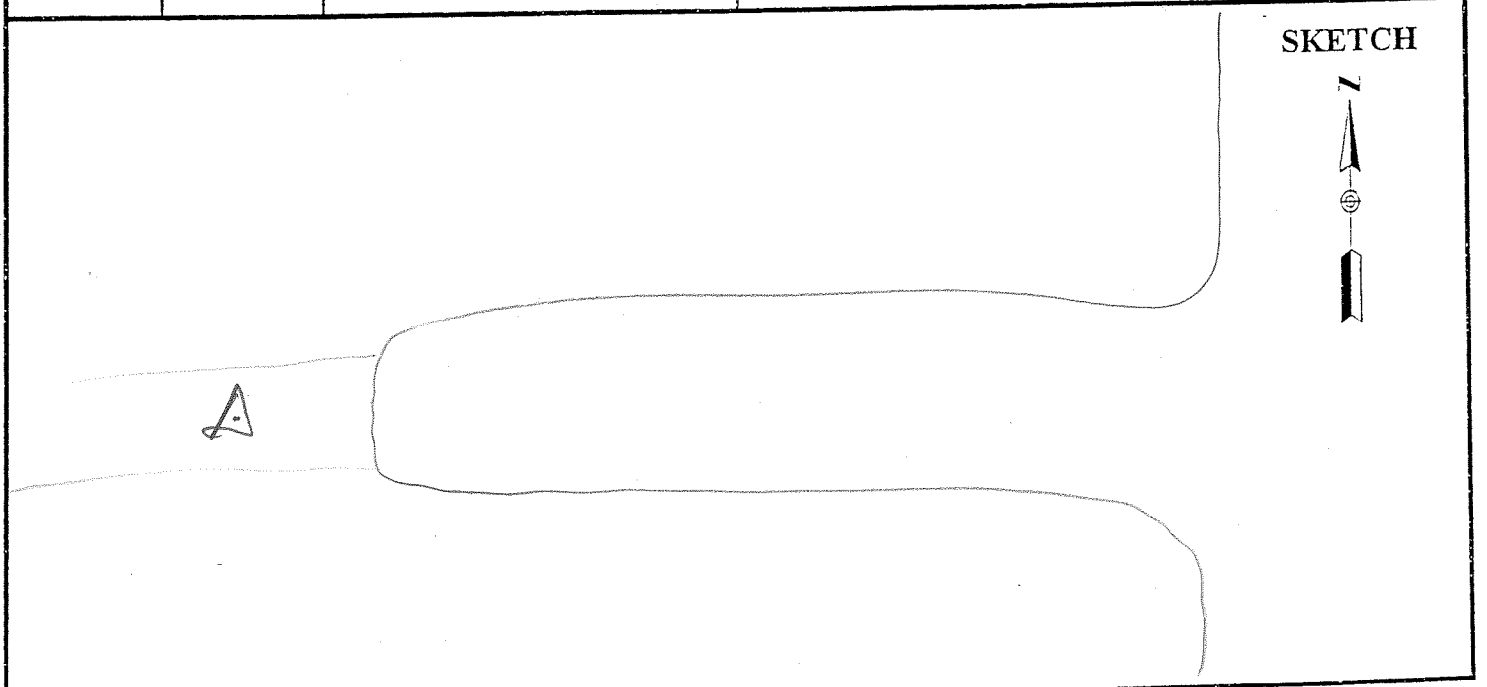
STATION DESCRIPTIONS POINT IN
C OF GRASS TRAIL
± 30' W OF END OF
PUMNT, LONG GRASS
SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:22	2.9	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

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V

PROJECT 1101205
OPERATOR WJN
DATE 11/22/11

SITE NUMBER 4
SITE NAME 55

TRACKING TIMES (LOCAL) MEASURE CST
START 12:28
STOP

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 ~~0.360~~

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.306

1.666

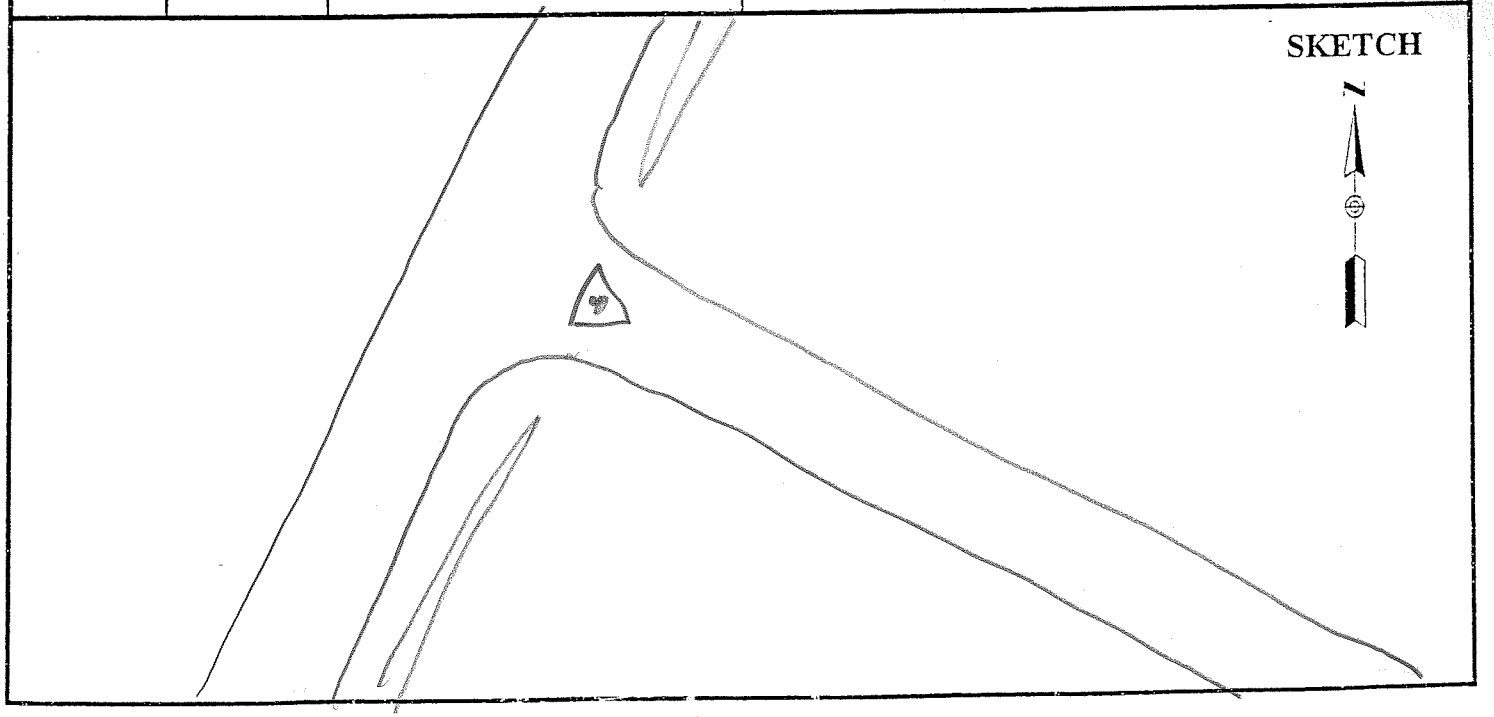
STATION DESCRIPTIONS POINT IN
℄ ROAD OPP ℄
DITCHES SW-NE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:28	2.6	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS
V

PROJECT 1101205
OPERATOR WJN
DATE 1/22/11

SITE NUMBER 5
SITE NAME 56

TRACKING TIMES (LOCAL) MEASURE CST
START 13:20
STOP 13:55

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS:

HEIGHT READINGS MTS FT
1.286
1.646

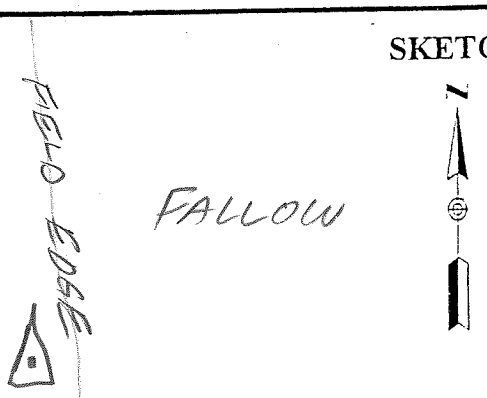
STATION DESCRIPTIONS POINT IN LONG GRASS ± 3' W. OF FIELD EDGE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
13:20	2.4	7/7-7
13:55	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/22/11

SITE NUMBER 6
SITE NAME 57

TRACKING TIMES (LOCAL) MEASURE CST
START 14:12
STOP 14:47

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.343
1.703

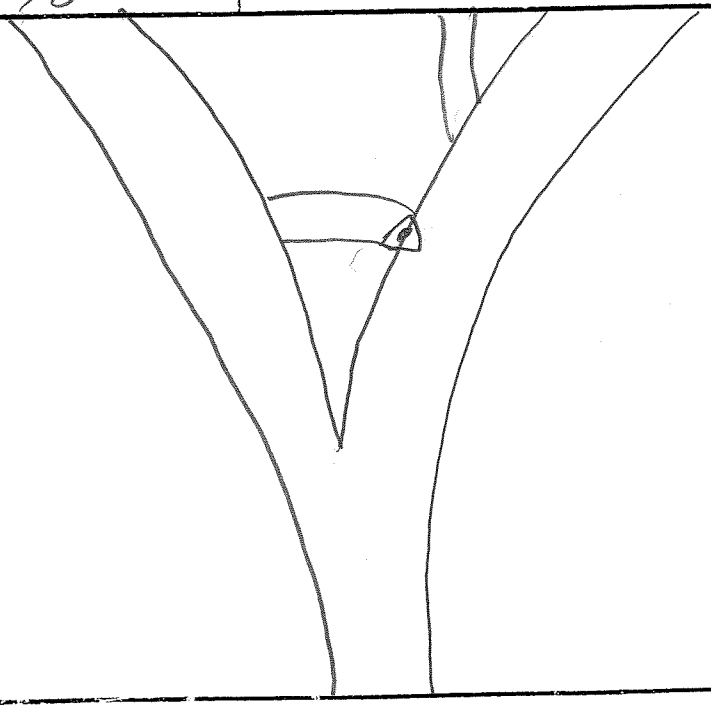
STATION DESCRIPTIONS W EDGE RD @ ℄ TRAIL W.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:12	1.7	10/10-10
20:47	1.9	10/10-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES ✓

PROJECT 1101205	SITE NUMBER 7
OPERATOR WJN	SITE NAME 58
DATE 1/22/11	

TRACKING TIMES (LOCAL) MEASURE CST	SENSOR TYPE (500 circled) 9500 399 299
START 15:15	MEMORY CARD 11
STOP 15:50	BATTERY NO.
	CONTROLLER NO.
	SENSOR NO.

SENSOR CONSTANT 299/399 0.441; 399E/9500 0.389; 500 0.360 (circled)	OBSTRUCTIONS:
HEIGHT READINGS MTS 1.322 FT	STATION DESCRIPTIONS POINT IN CENTER OF ASPHALT SECTION IN CENTER OF R/W ISLAND
1.682	

SATELLITE OBSERVATIONS

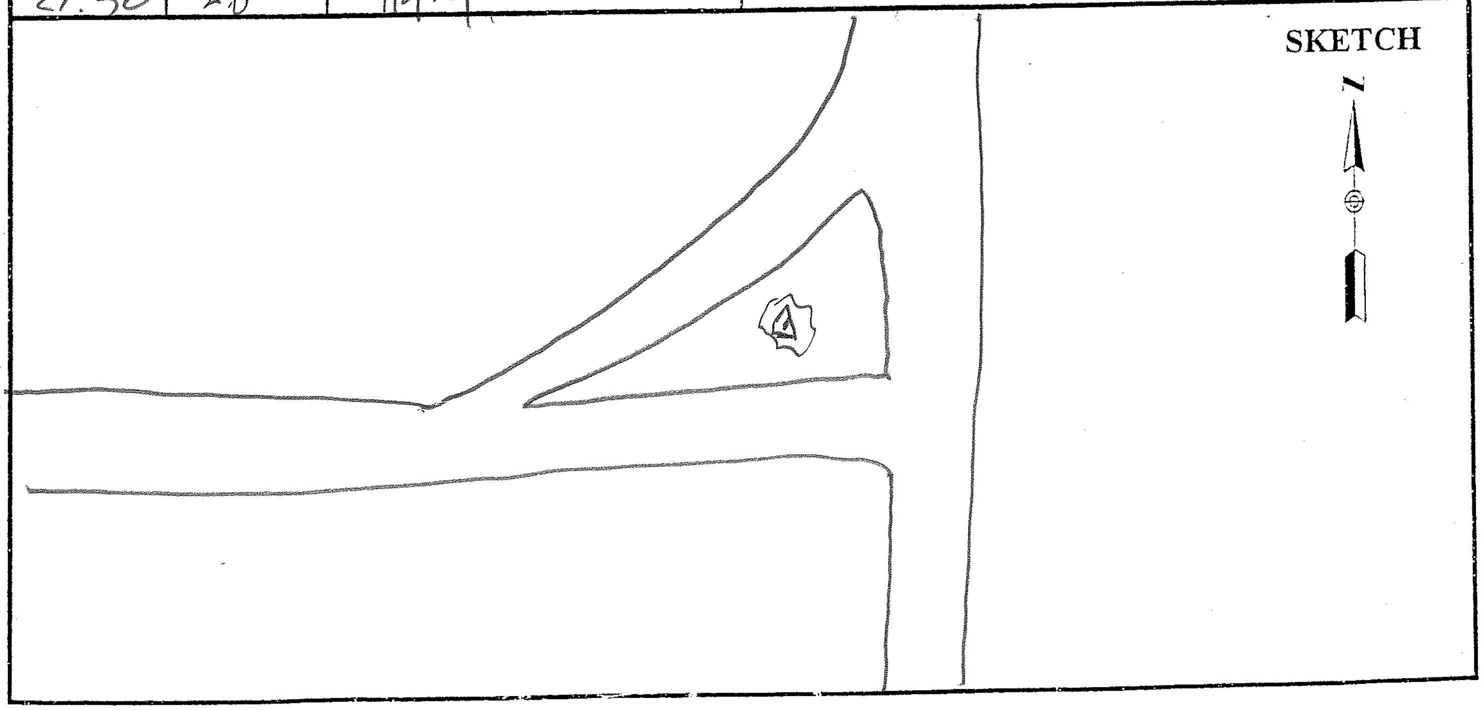
TIME	GDOP	SATELLITES
21:15	1.7	10/10-10
21:50	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKC

NW 70 P 44 CR AND FM 70

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECE ✓

PROJECT 110205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 1
SITE NAME 59

TRACKING TIMES (LOCAL) MEASURE CST
START 9:48
STOP 10:23

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 ~~0.360~~

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.328
1.688

STATION DESCRIPTIONS E C RDS
E-W-N

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:48	4.0	7/7-7
16:23	2.7	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

NUECES CO.
F

SKETCH

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECE ✓

PROJECT 1101205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 1
SITE NAME 59

TRACKING TIMES (LOCAL) MEASURE CST
START 9:49
STOP 10:23

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 ~~0.360~~

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.328
1.688

STATION DESCRIPTIONS E.C. RDS
E-W-N

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:48	4.0	7/7-7
16:23	2.7	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

NUECES CO.
F

SKETCH

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

LONG GRASS ✓

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 2
SITE NAME 60

TRACKING TIMES (LOCAL) MEASURE CST
START 10:38
STOP 11:13

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: DRILL RIG W/

HEIGHT READINGS MTS FT
1.277
1.637

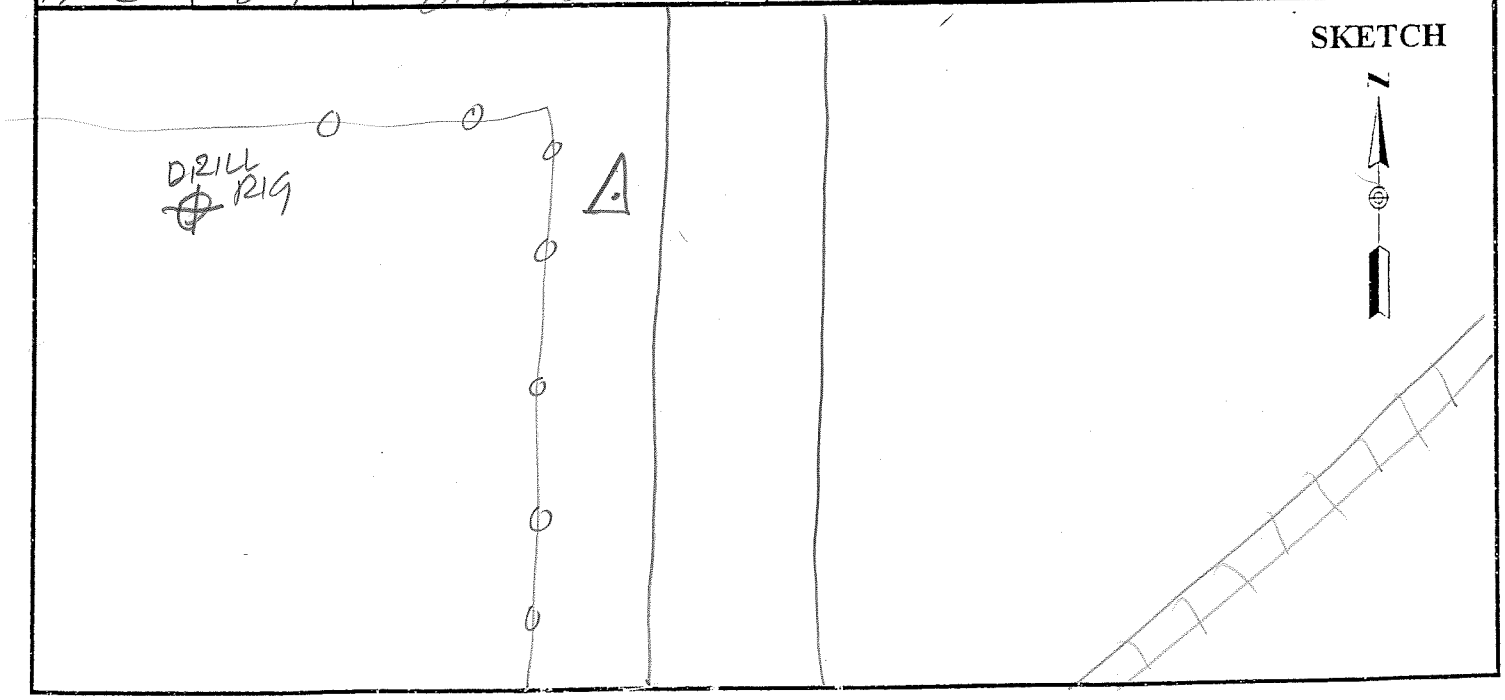
STATION DESCRIPTIONS POINT IN MEDIUM - LONG GRASS IN R/W ± 10' W. OF W. EDGE OF RD ± 7' E OF PIPE FENCE

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:38	2.1	9/a-9
17:13	2.1	9/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

SPARSE GRASS

PROJECT 1101205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 3
SITE NAME 61

TRACKING TIMES (LOCAL) MEASURE CST
START 11:23
STOP 11:59

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.335
1.695

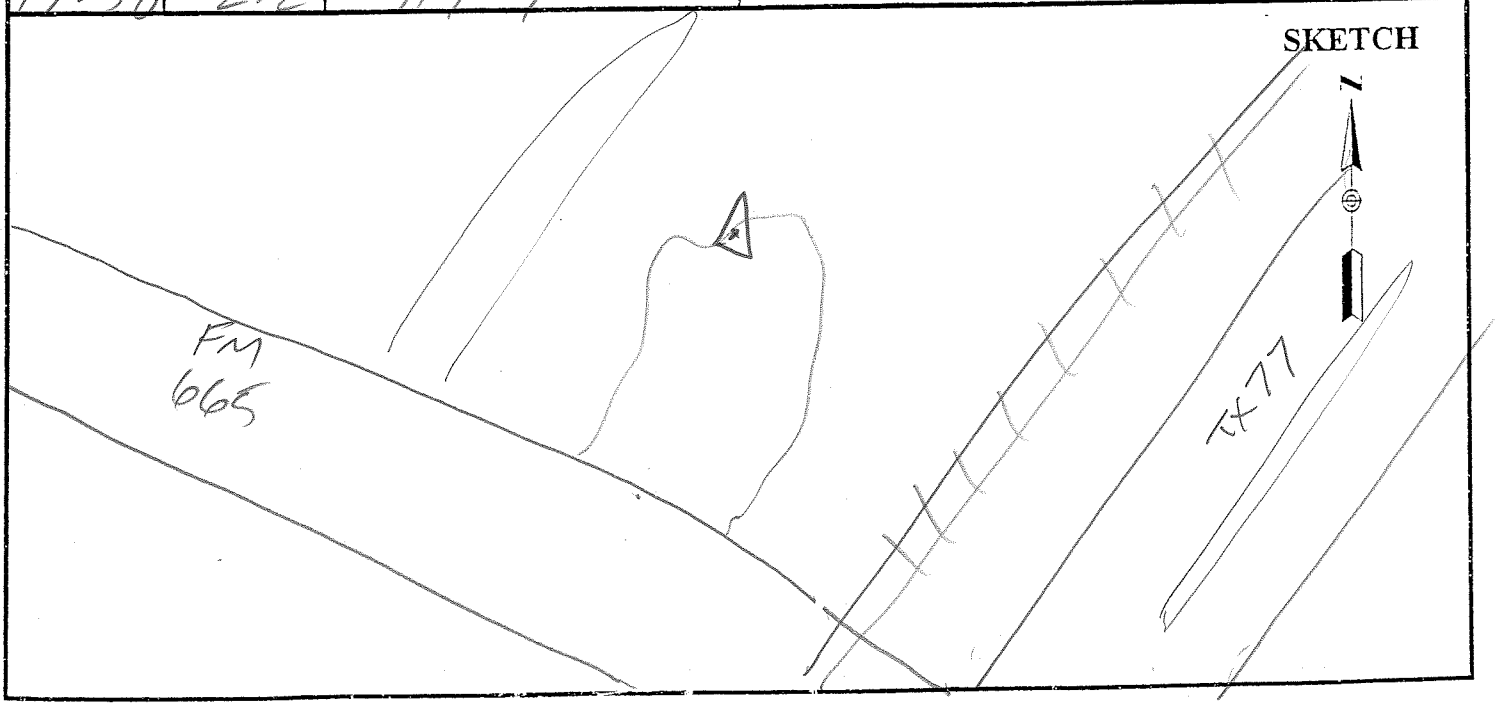
STATION DESCRIPTIONS POINT IN SPARSE GRASS ±100' NE OF ℄ RD ± 100' NW'LY ℄ TRACKS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:23	2.6	9/9-9
17:58	2.2	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

SHORT GRASS ✓

PROJECT 1101205	SITE NUMBER 4
OPERATOR WJN	SITE NAME 62
DATE 1/23/11	

TRACKING TIMES (LOCAL) MEASURE CST

START 12:16

STOP 12:56

SENSOR TYPE (500) 9500 399 299

MEMORY CARD 11

BATTERY NO.

CONTROLLER NO.

SENSOR NO.

SENSOR CONSTANT

299/399	0.441
399E/9500	0.389
500	(0.360)

HEIGHT READINGS

MTS	FT
1.270	
1.630	

OBSTRUCTIONS: NO

STATION DESCRIPTIONS POINT IN Very SHORT GRASS IN C OF FARM ACC OPP E. TOP SLOPE OF DITCH NE-SW

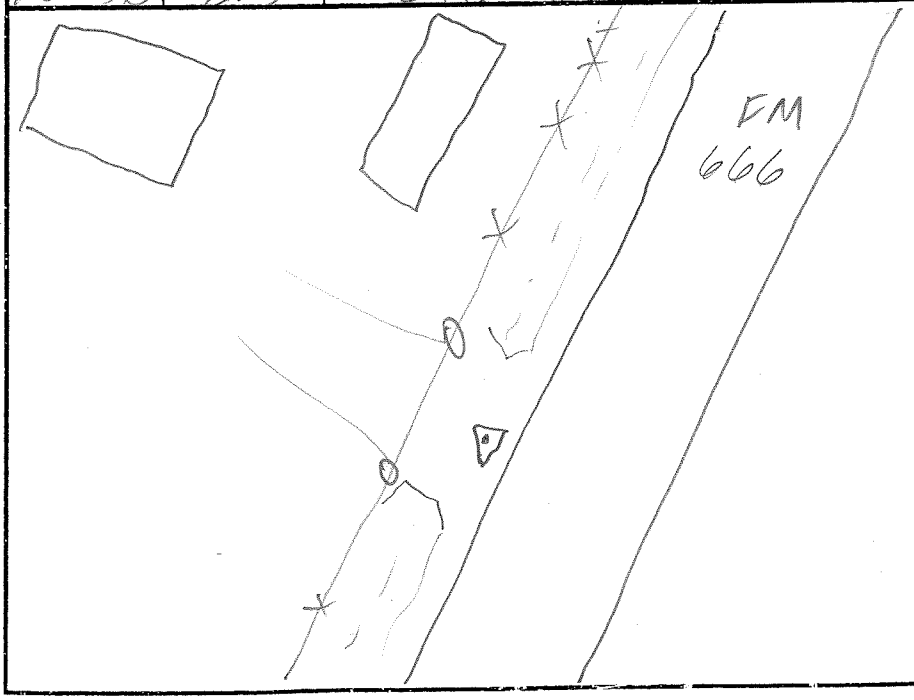
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:16	2.1	8/8-8
18:56	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

OVC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES ✓

PROJECT 1101205
OPERATOR WIN
DATE 1/23/10

SITE NUMBER 5
SITE NAME 63

TRACKING TIMES (LOCAL) MEASURE CST
START 13:15
STOP 13:55

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS:

HEIGHT READINGS MTS FT
1.361 1.721

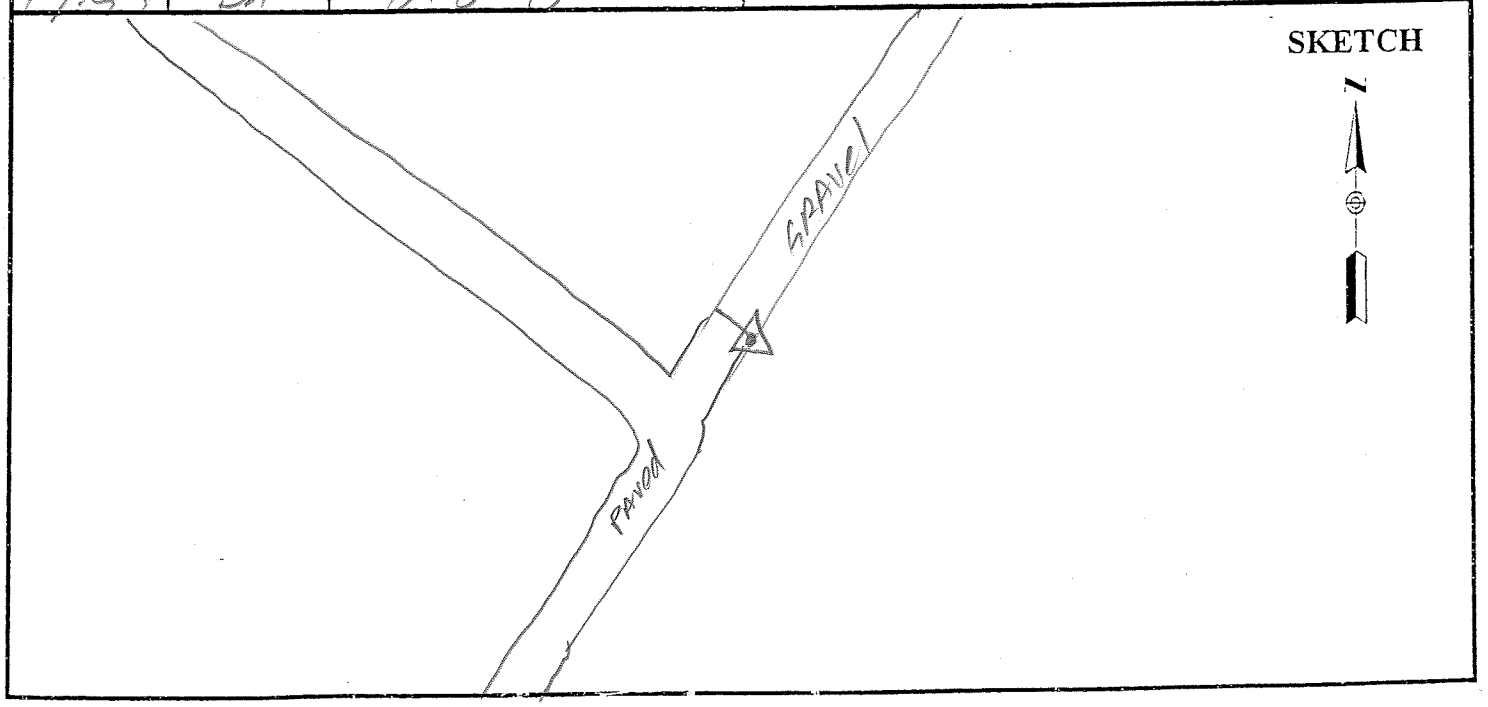
STATION DESCRIPTIONS NE COR
END Pavement @
SE EDGE RD.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:15	2.1	7/7-7
19:55	2.1	9/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS V

PROJECT 1101205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 6
SITE NAME 64

TRACKING TIMES (LOCAL) MEASURE CST
START 14:08
STOP 14:47

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: OH POWER LINES

HEIGHT READINGS MTS FT
1.329
1.689

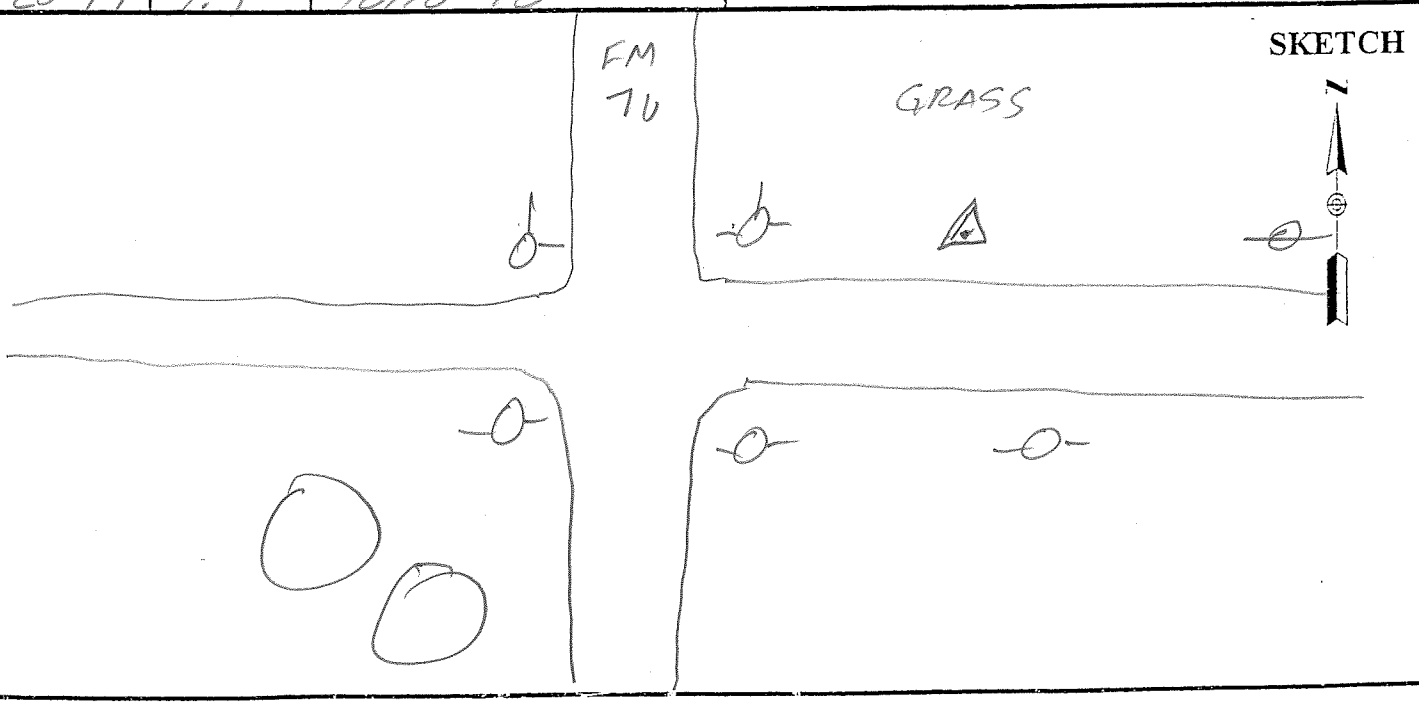
STATION DESCRIPTIONS POINT IN LONG GRASS, ±12' N. OF N EDGE GRAVEL RD ±110' E OF ℄ INT.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:08	1.7	10/10-10
20:47	1.9	10/10-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

LONG GRASS V

PROJECT 1101205
OPERATOR WJN
DATE 1/23/11

SITE NUMBER 7
SITE NAME 65

TRACKING TIMES (LOCAL) MEASURE CST
START 14:57
STOP 15:37

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 1
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.261
1.571

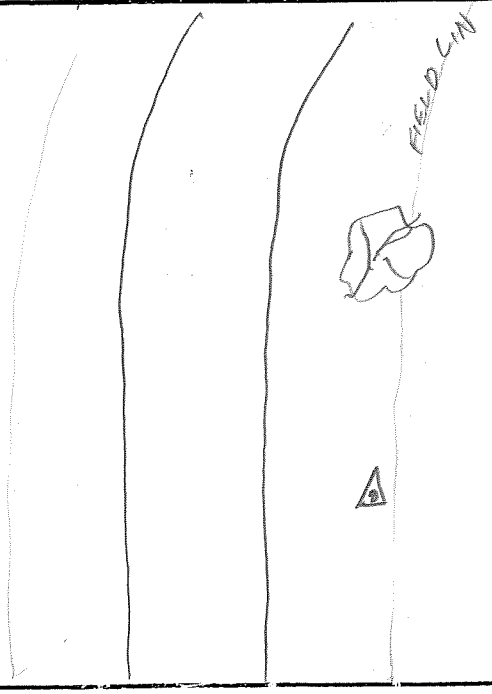
STATION DESCRIPTIONS POINT IN LONG GRASS, ±3' W. OF W. FIELD LINE, ±18' E OF E EDGE RD, ± 115' S. OF LONE TREE

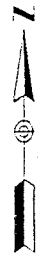
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:57	2.1	10/10-10
20:37	2.6	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH





AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

VERT. CONTROL

PROJECT 1101205
OPERATOR WJN
DATE 1/24/11

SITE NUMBER 1
SITE NAME B 1380

TRACKING TIMES (LOCAL) MEASURE CST
START 11:13
STOP 11:53

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: PPLS

HEIGHT READINGS MTS FT
1.333
1.693

STATION DESCRIPTIONS Steel Rod
IN ALUM SLEEVE MK 8
B 1380 1981
NGS

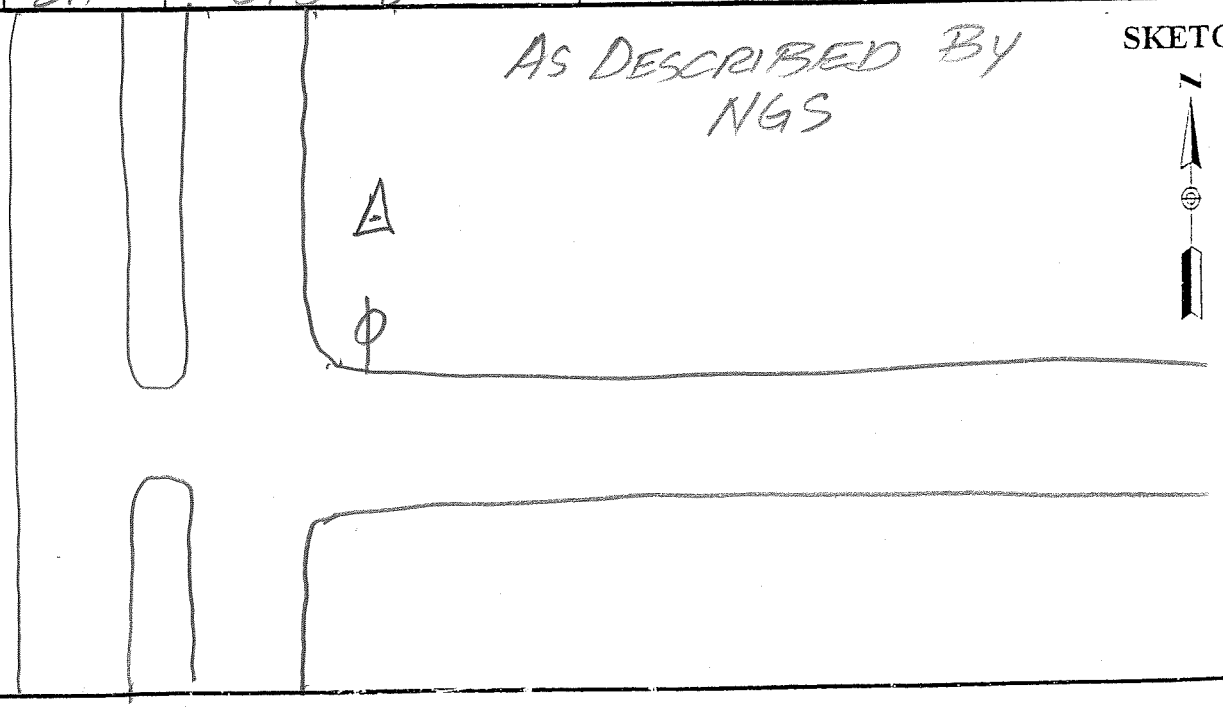
SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:13	2.3	8/8-0
17:53	2.1	8/8-0

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
OVC

SKETCH

AS DESCRIBED BY NGS



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 2/6/11

SITE NUMBER 1
SITE NAME 66

TRACKING TIMES (LOCAL) MEASURE CST
START 12:33
STOP 13:09

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.346
1.706

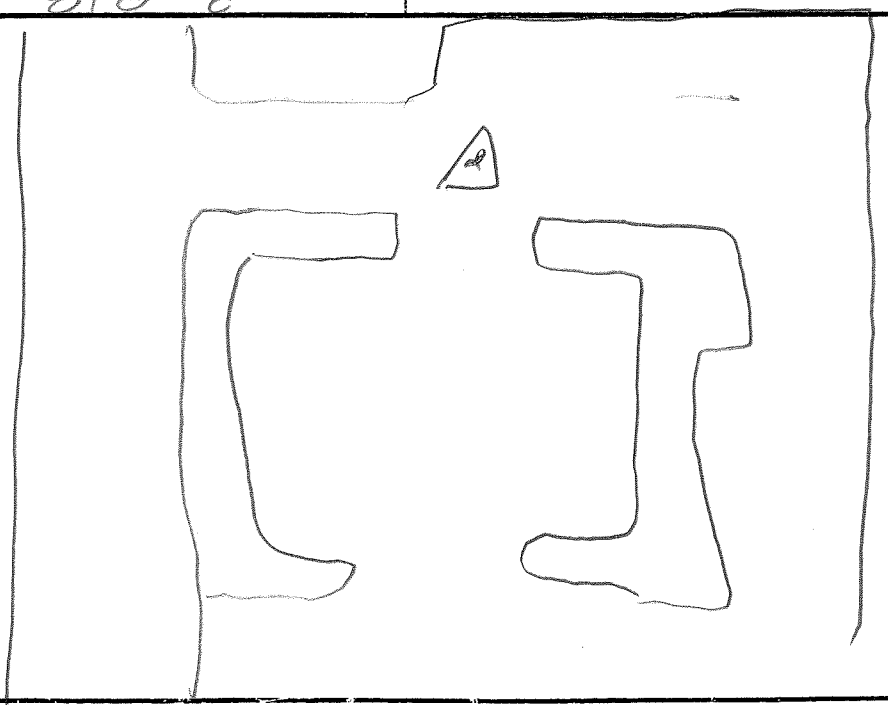
STATION DESCRIPTIONS POINT IN
4 CONC - PARKING ENT
OPP LOT ENT. S.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:33	2.1	8/8-8
19:09	2.2	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WWN
DATE 2/6/11

SITE NUMBER 2
SITE NAME 67

TRACKING TIMES (LOCAL) MEASURE CST
START 13:22
STOP 13:57

SENSOR TYPE (500) 9500 399 299
MEMORY CARD N
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.335
1.695

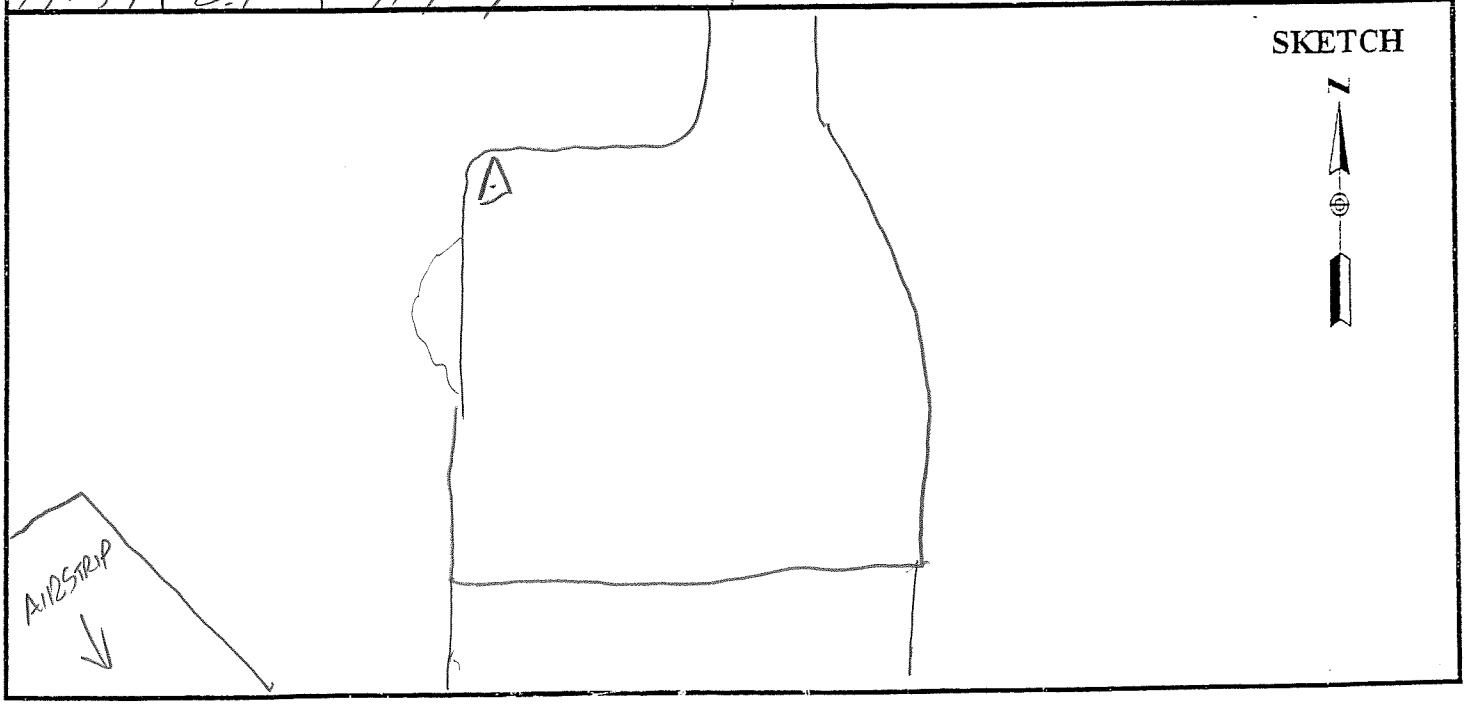
STATION DESCRIPTIONS POINT NEAR NW COR PARKING / LARGE ASPHALT AREA

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:22	2.5	9/9-9
19:57	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 110205
OPERATOR WJN
DATE 2/6/11

SITE NUMBER 3
SITE NAME 68

TRACKING TIMES (LOCAL) MEASURE CST
START 14:23
STOP 14:58

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 ~~0.389~~
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.333
1.698

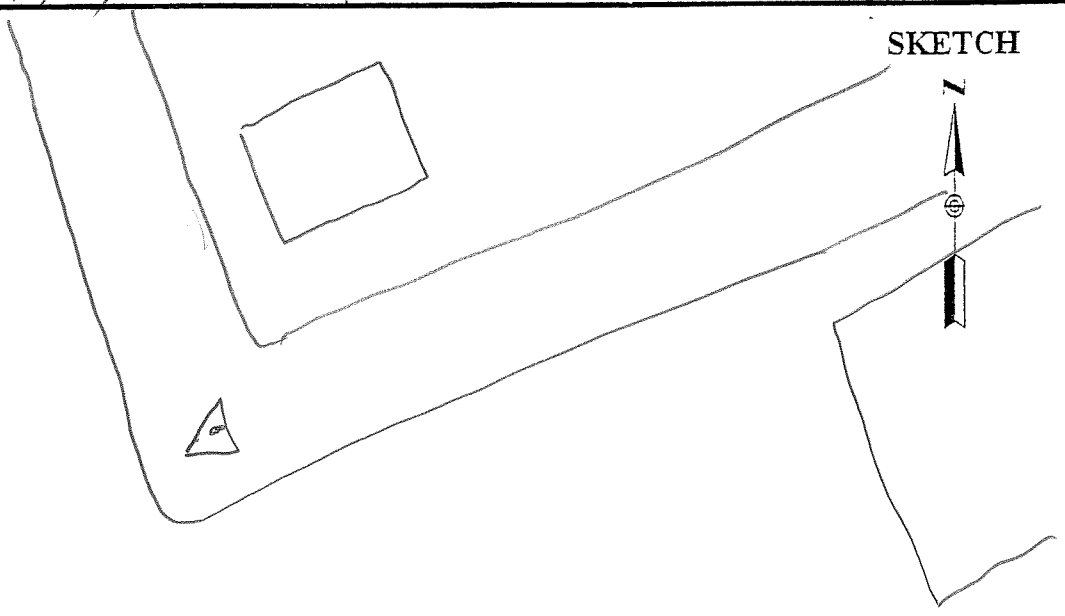
STATION DESCRIPTIONS E & INT.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:23	2.7	9/9-9
20:58	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 110205
OPERATOR WVN
DATE 2/6/11

SITE NUMBER 4
SITE NAME 69

TRACKING TIMES (LOCAL) MEASURE CST
START 15:21
STOP 15:56

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.315

1-675

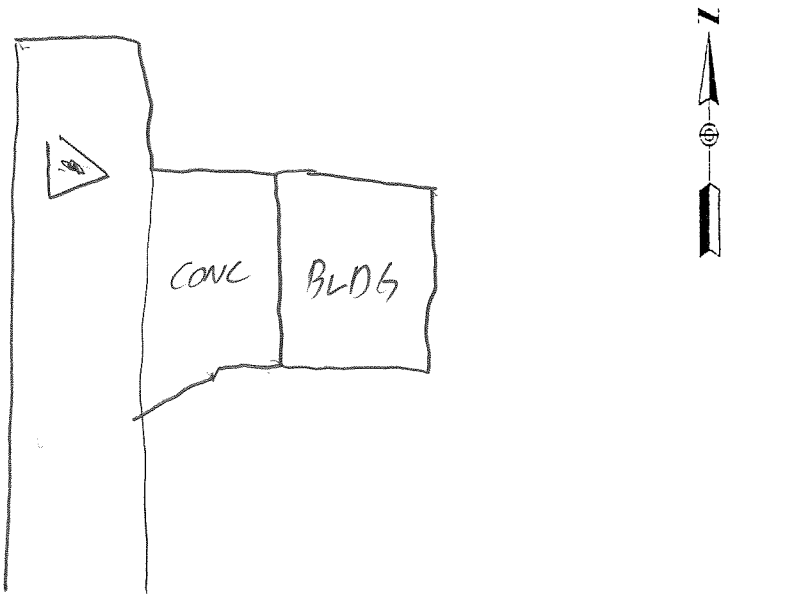
STATION DESCRIPTIONS @ ROAD
OPP N. EDGE CONC
AND N EDGE BLDG N.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
21:21	2.0	9/9-9
21:56	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



5

NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

PROJECT 1101205	SITE NUMBER 1
OPERATOR WJN	
DATE 2/7/11	SITE NAME 70

TRACKING TIMES (LOCAL) MEASURE CST	SENSOR TYPE (500 circled) 9500 399 299
START 9:50	MEMORY CARD 14
STOP 10:20	BATTERY NO.
	CONTROLLER NO.
	SENSOR NO.

SENSOR CONSTANT

299/399	0.441
399E/9500	0.389
500	(0.360 circled)

OBSTRUCTIONS: LAMP POST W.

HEIGHT READINGS

MTS	FT
1.318	

1.678

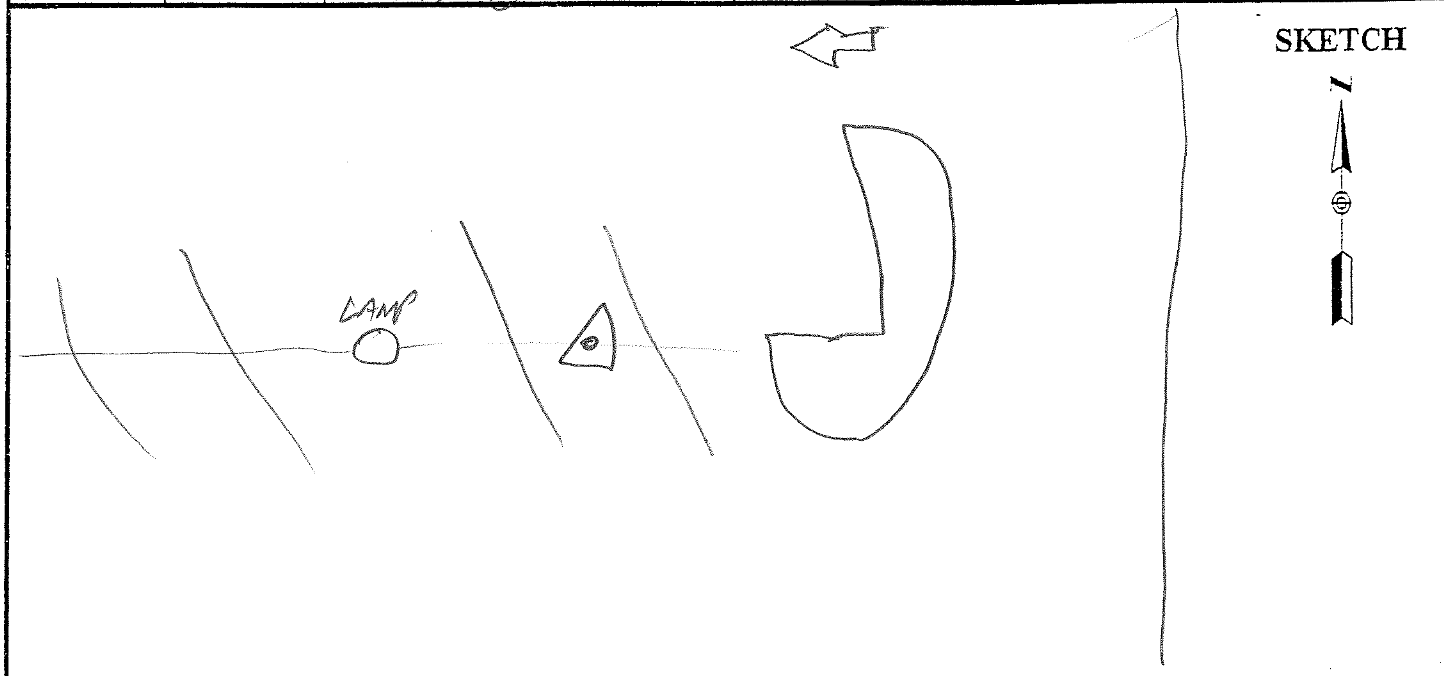
STATION DESCRIPTIONS POINT IN LARGE PARKING BETWEEN LAMP AND ISLAND (GRASS) SE AREA OF LOT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1550	2.7	8/8-9
16:20	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



6527 1570

15 6

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 2/7/11

SITE NUMBER 2
SITE NAME 71

TRACKING TIMES (LOCAL) MEASURE CST
START 10:36
STOP 11:06

SENSOR TYPE ~~500~~ 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 ~~0.360~~

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.308
1.668

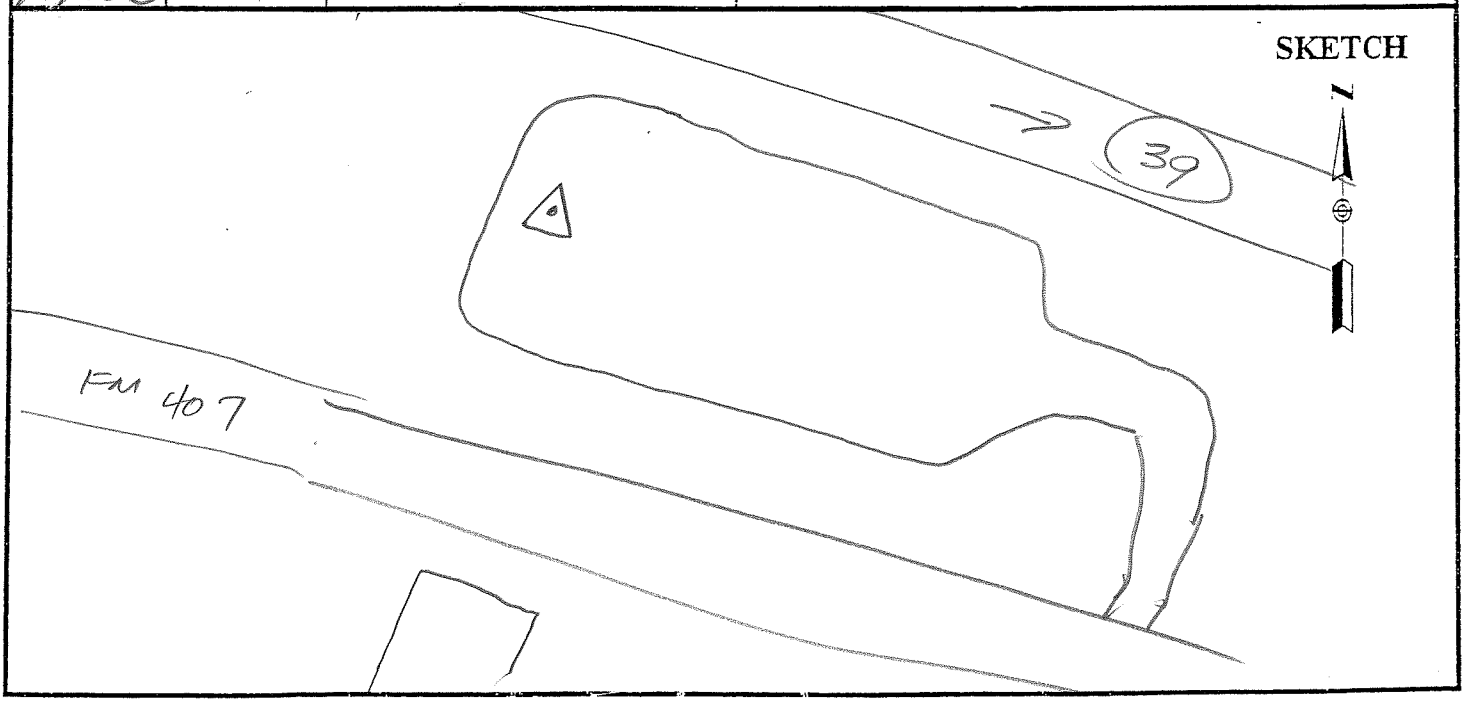
STATION DESCRIPTIONS CENTER OF PARKING AREA OPP W. EDGE BLDG 5

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:36	2.6	9/9-9
17:06		

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES 5

PROJECT 1101205
OPERATOR W.JW
DATE 2/7/11

SITE NUMBER 3
SITE NAME 72

TRACKING TIMES (LOCAL) MEASURE CST
START 11:20
STOP 11:49

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.310
1.670

OBSTRUCTIONS:

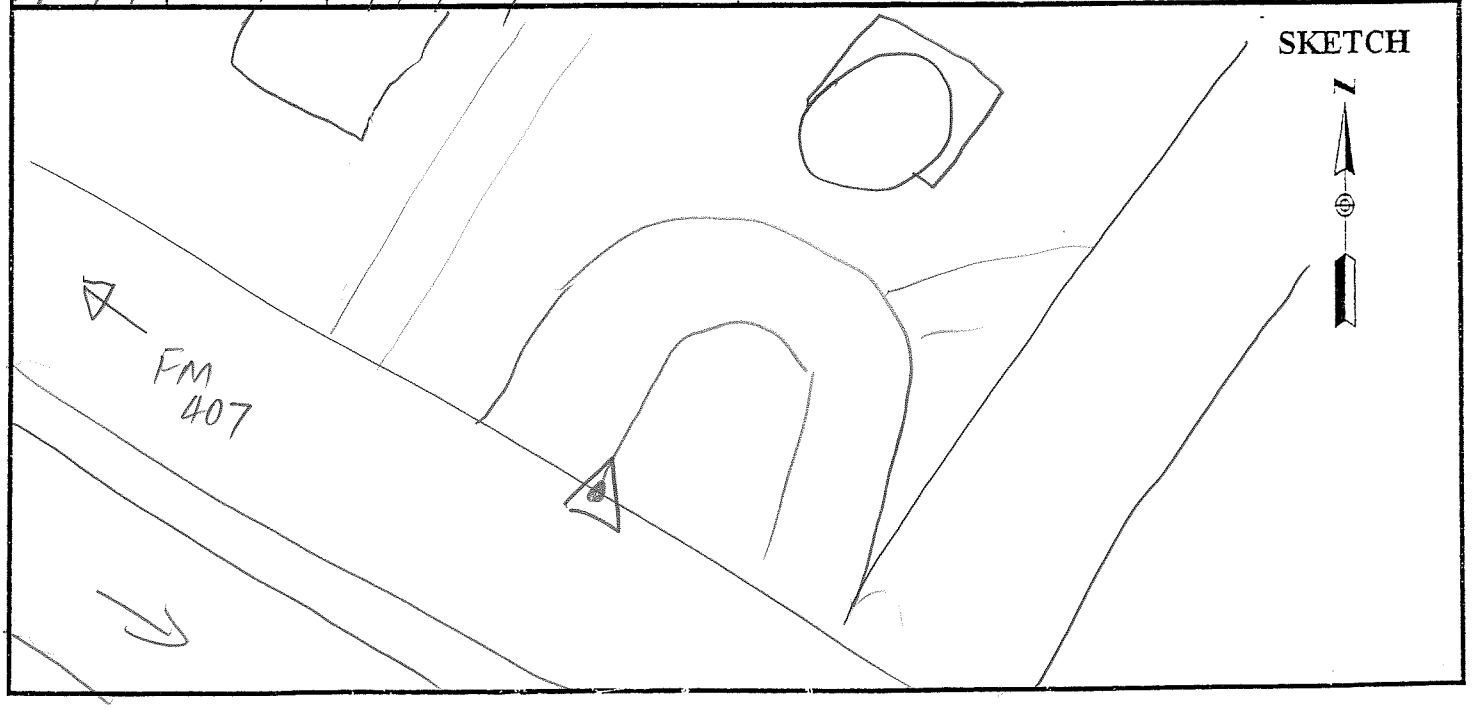
STATION DESCRIPTIONS NE EDGE
PUNCT @ E. EDGE DRIVE NE.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:20	2.6	9/8-9
17:47	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 2/7/11

SITE NUMBER 4
SITE NAME 73

TRACKING TIMES (LOCAL) MEASURE CST
START 12:06
STOP 12:31

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TREES WNW

HEIGHT READINGS MTS FT
1.314
1.674

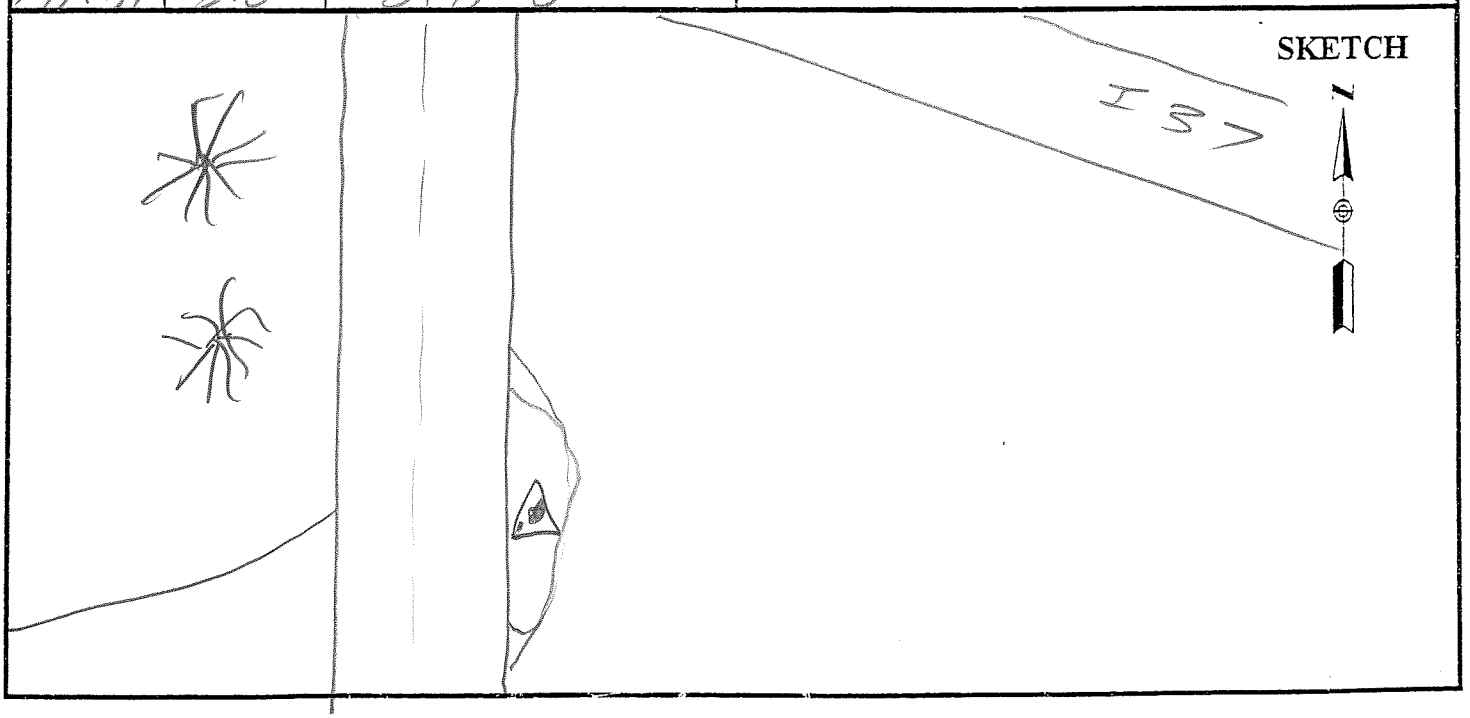
STATION DESCRIPTIONS POINT IN CENTER OF PAVED TURNOUT OPP N EDGE DRIVE W.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:06	1.9	9/8-9
18:31	2.0	8/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 2/7/11

SITE NUMBER 5
SITE NAME 74

TRACKING TIMES (LOCAL) MEASURE CST
START 12:44
STOP 13:10

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: DH Power lines

HEIGHT READINGS MTS FT
1.347
1.707

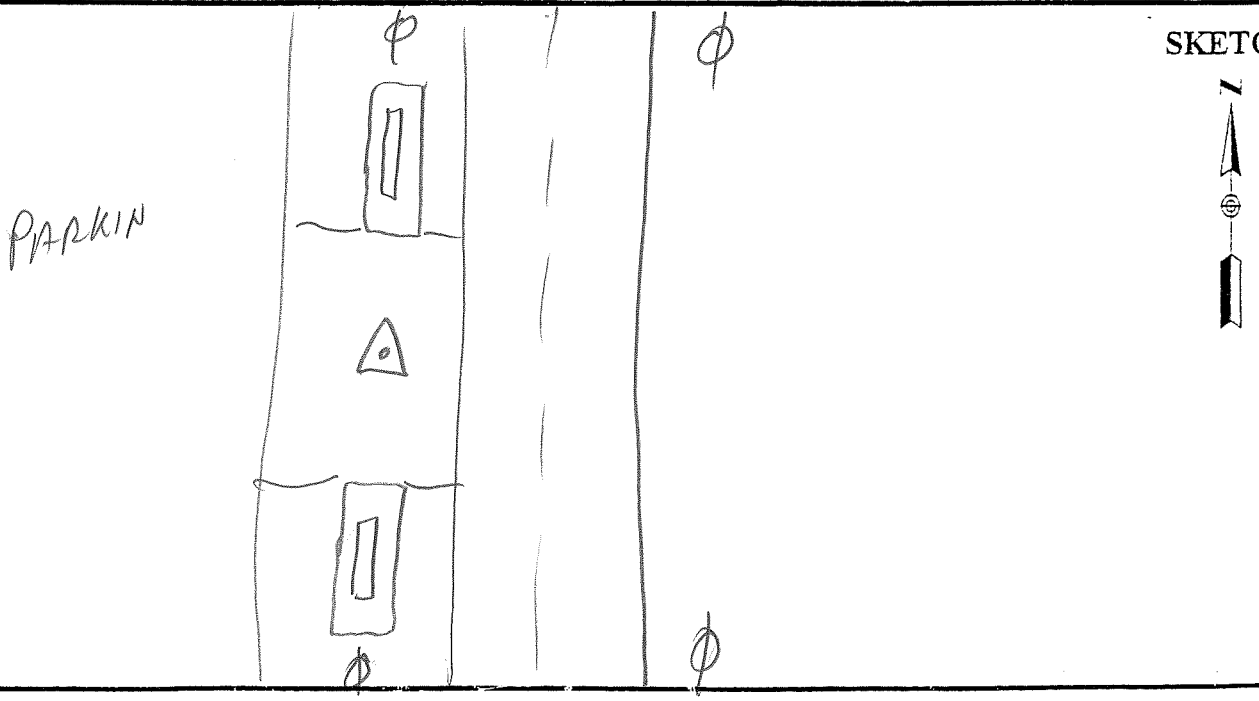
STATION DESCRIPTIONS POINT IN CENTER OF CONC SLAB OPP DITCH N-S.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:44	2.1	7/7-8
19:10	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

5

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 2/7/11

SITE NUMBER 6
SITE NAME 75

TRACKING TIMES (LOCAL) MEASURE CST
START 13:24
STOP 13:56

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.315
1.675

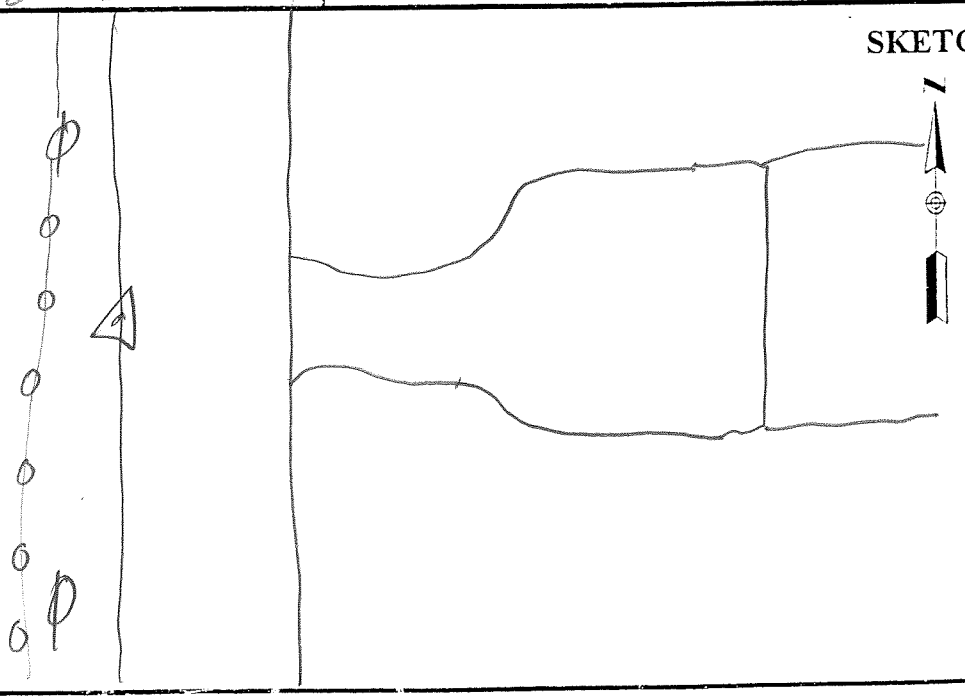
STATION DESCRIPTIONS W. EDGE
PVMNT OPP & DRIVE
E

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:24	2.0	10/10 -10
19:56	2.0	10/10 -10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 110205
OPERATOR WJN
DATE 2/7/11
JULIAN DATE 38

SITE NUMBER 7
SITE NAME 76

TRACKING TIMES (LOCAL) MEASURE CST
START 14:07
STOP 14:47

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.320
1.680

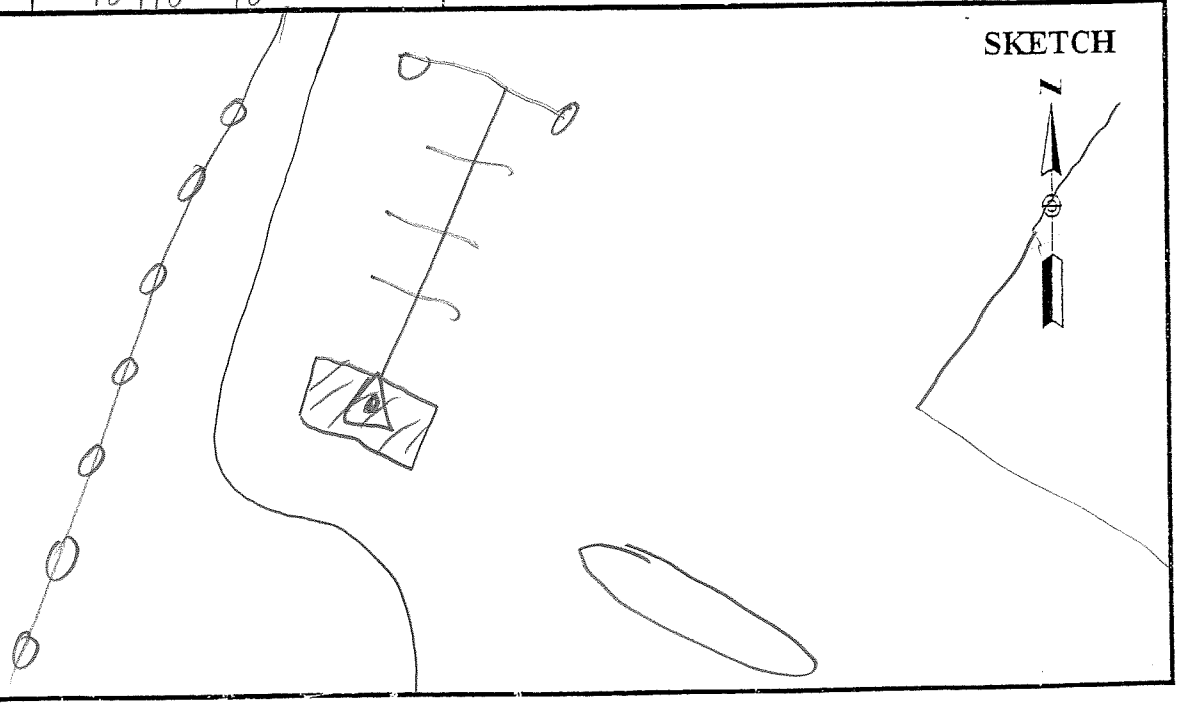
STATION DESCRIPTIONS POINT IN NO PARKING HASHED AREA NEAR SW COR PARKING AREA

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:07	2.2	9/9-9
20:47	2.0	10/10-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 1101205
OPERATOR WJN
DATE 2/8/11

SITE NUMBER 1
SITE NAME 77

TRACKING TIMES (LOCAL) MEASURE CST
START 10:11
STOP 10:46

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.313
1.673

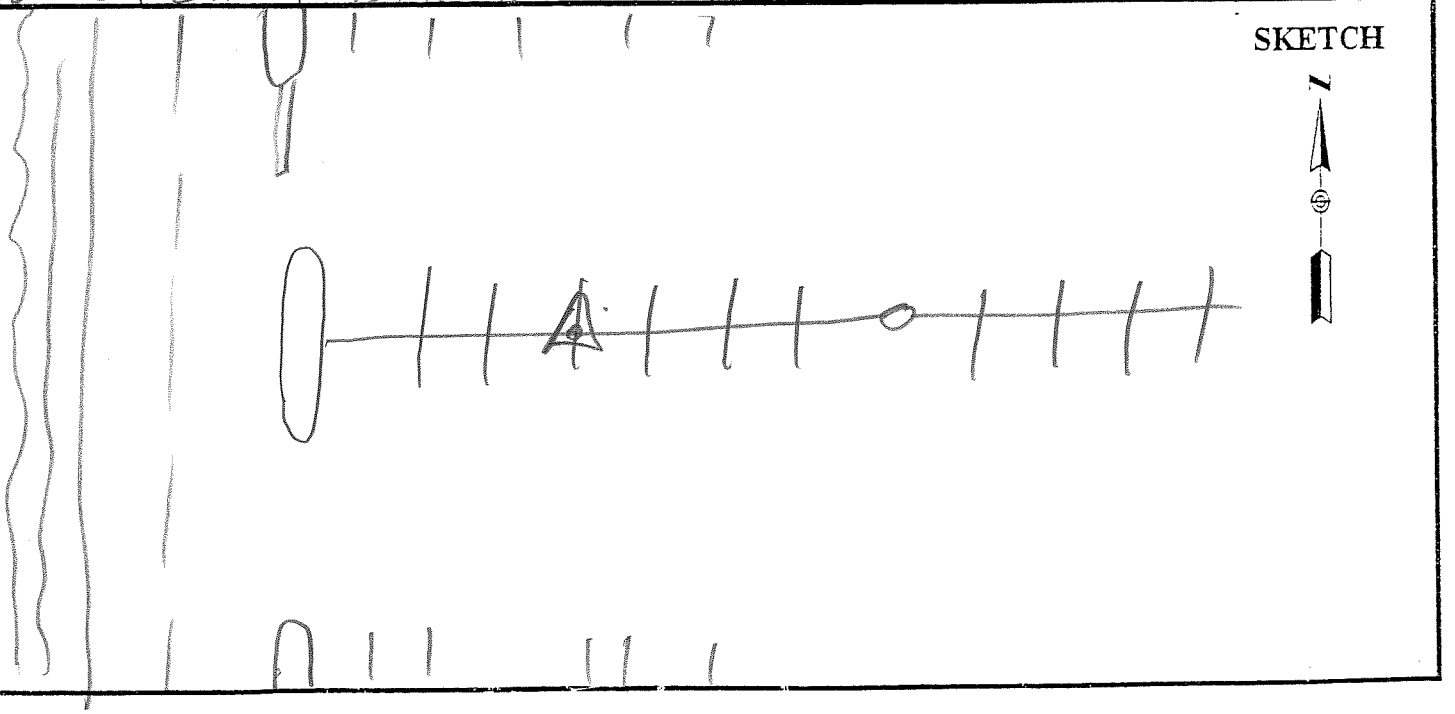
STATION DESCRIPTIONS POINT IN NW AREA OF LARGE PARKING LOT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
10:11	2.6	8/8-8
10:46	2.1	9/9-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJW
DATE 2/8/11

SITE NUMBER 2
SITE NAME 78

TRACKING TIMES (LOCAL) MEASURE CST
START 10:59
STOP 11:33

SENSOR TYPE (500) 9500 399 299
MEMORY CARD
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TREES S.

HEIGHT READINGS MTS FT
1.314
1.674

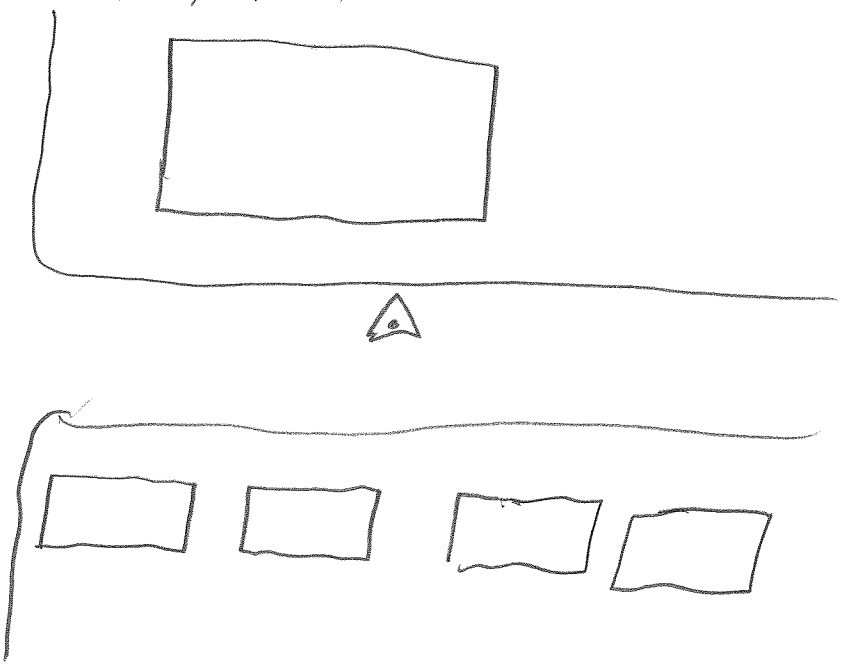
STATION DESCRIPTIONS CENTER OF W. BND LANE OPP E EDGE HOUSE S.

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:59	2.0	9/9-9
17:33	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJN
DATE 2/8/11

SITE NUMBER 3
SITE NAME 79

TRACKING TIMES (LOCAL) MEASURE CST
START 11:46
STOP 12:21

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: TRAFFIC

HEIGHT READINGS MTS FT
1.322
1.682

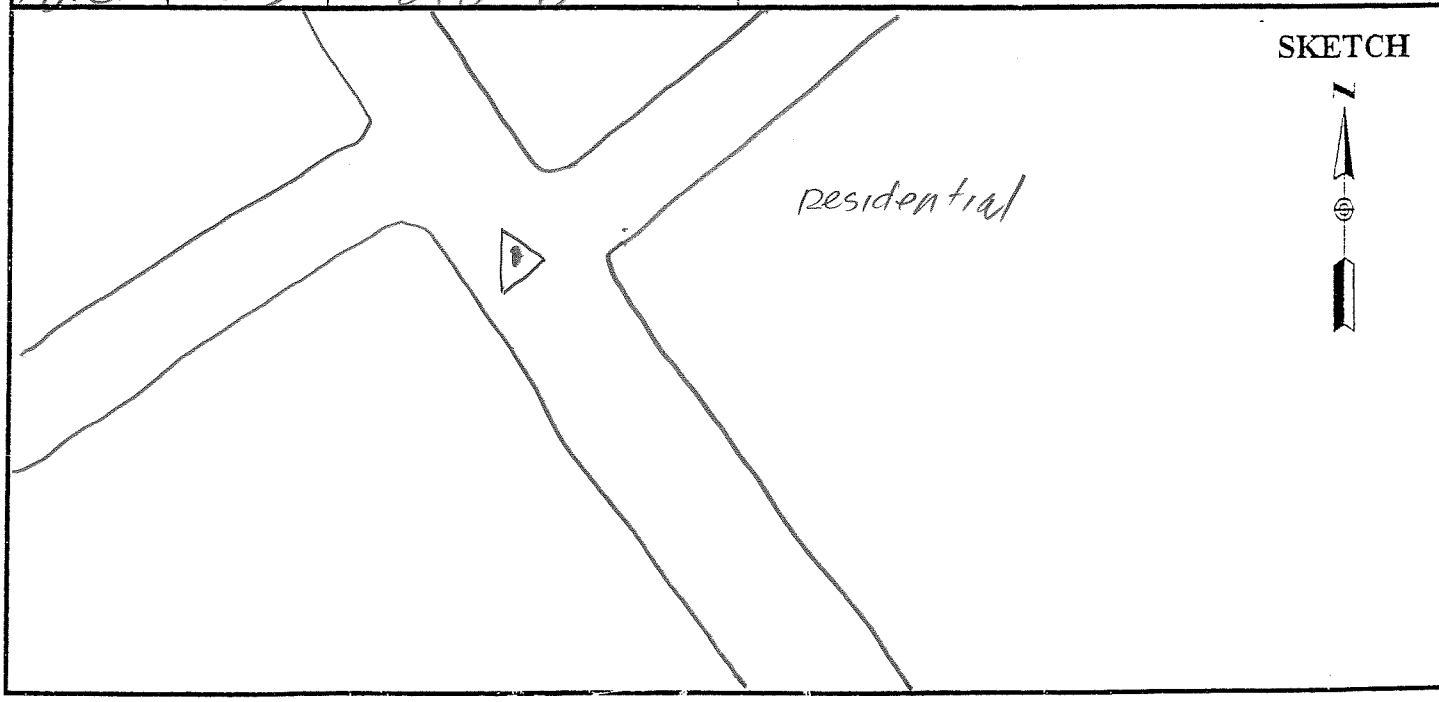
STATION DESCRIPTIONS EQ EQ INT.

SATELLITE OBSERVATIONS

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
SKC

TIME	GDOP	SATELLITES
17:46	2.1	8/8-8
19:21	2.3	8/8-8

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

5

PROJECT 1101205
OPERATOR WJA
DATE 2/7/11

SITE NUMBER 4
SITE NAME 80

TRACKING TIMES (LOCAL) MEASURE CST
START 12:36
STOP

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.370

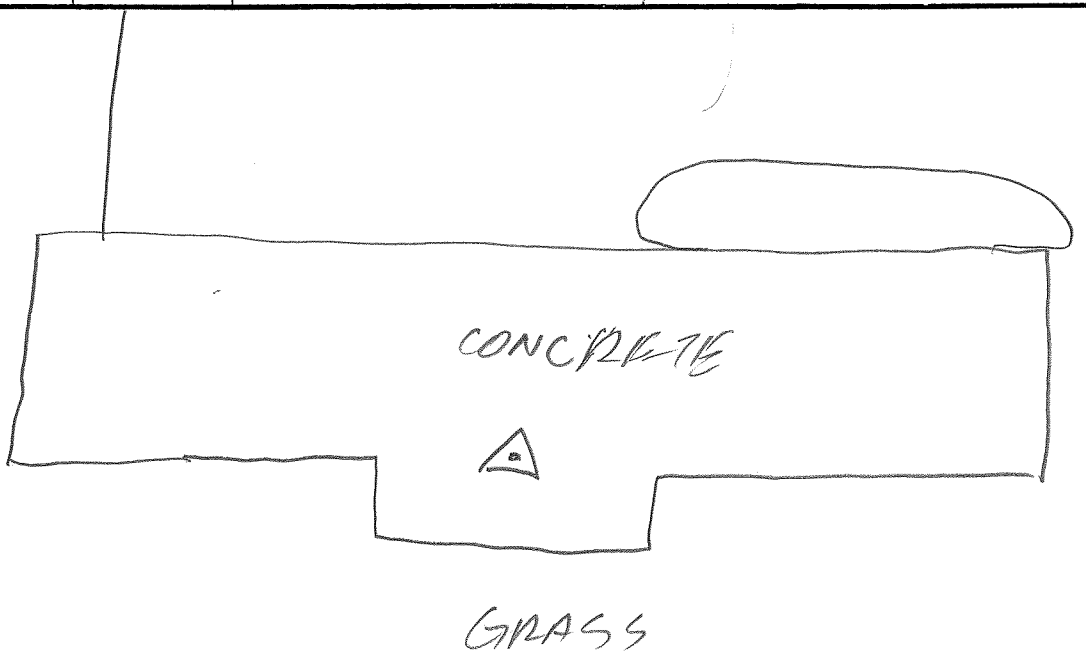
STATION DESCRIPTIONS CENTER OF CONC CUT OUT @ N. EDGE CONC E-W

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:36	2.2	8 10-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
Very Windy

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 101205
OPERATOR WJN
DATE 5/22/11

SITE NUMBER 1
SITE NAME 91

TRACKING TIMES (LOCAL) MEASURE CDT
START 14:36
STOP 15:06

SENSOR TYPE ~~500~~ 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.330

STATION DESCRIPTIONS POINT IN SHORT GRASS, ± 30' W. OF EDGE OF SAND, OPP PPL E

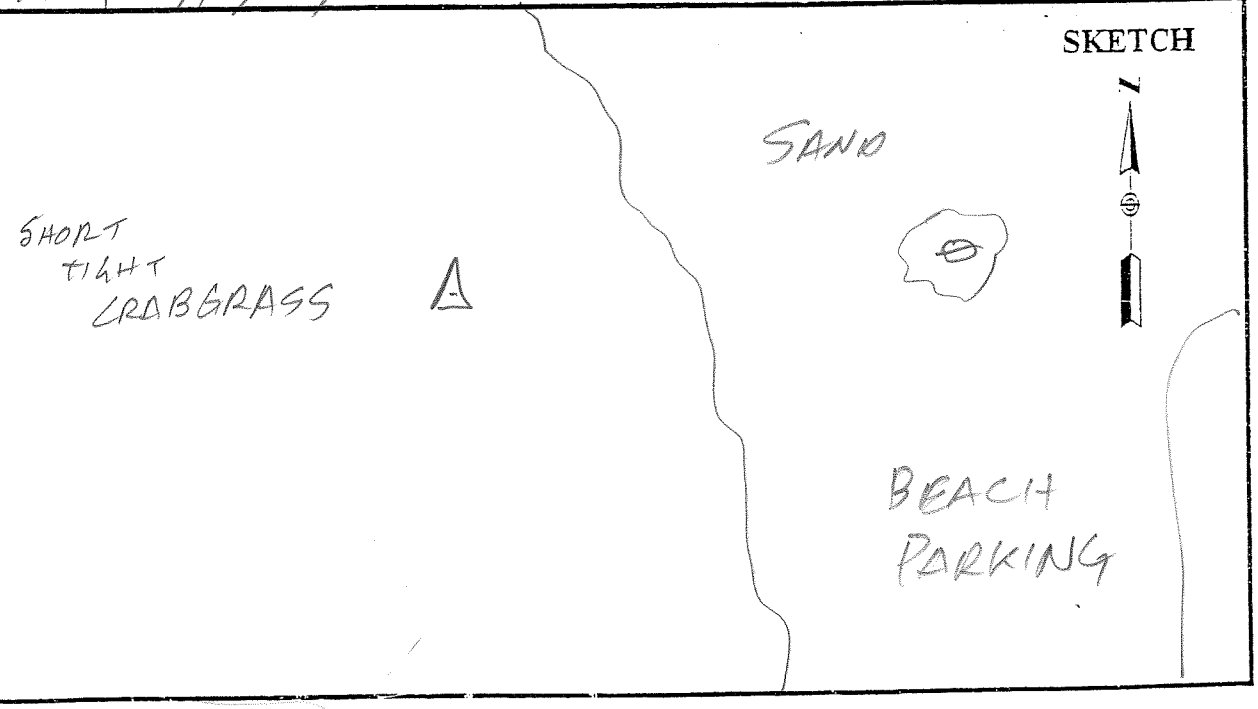
I-690

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:36	2.0	8/8-8
20:06	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



14 2 (19 2)

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 1101205
OPERATOR WJN
DATE 5/22/11

SITE NUMBER 2
SITE NAME 82

TRACKING TIMES (LOCAL) MEASURE CDT
START 15:21
STOP 15:51

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 11
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.265
1.625

STATION DESCRIPTIONS POINT IN
LONG GRASS / WEEDS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:21	1.9	9/9-10
20:51	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH

3 LANE

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 110205
OPERATOR WW
DATE 5/23/11

SITE NUMBER 1
SITE NAME 83

TRACKING TIMES (LOCAL) MEASURE CDT
START 11:41
STOP 12:11

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.261
1.621

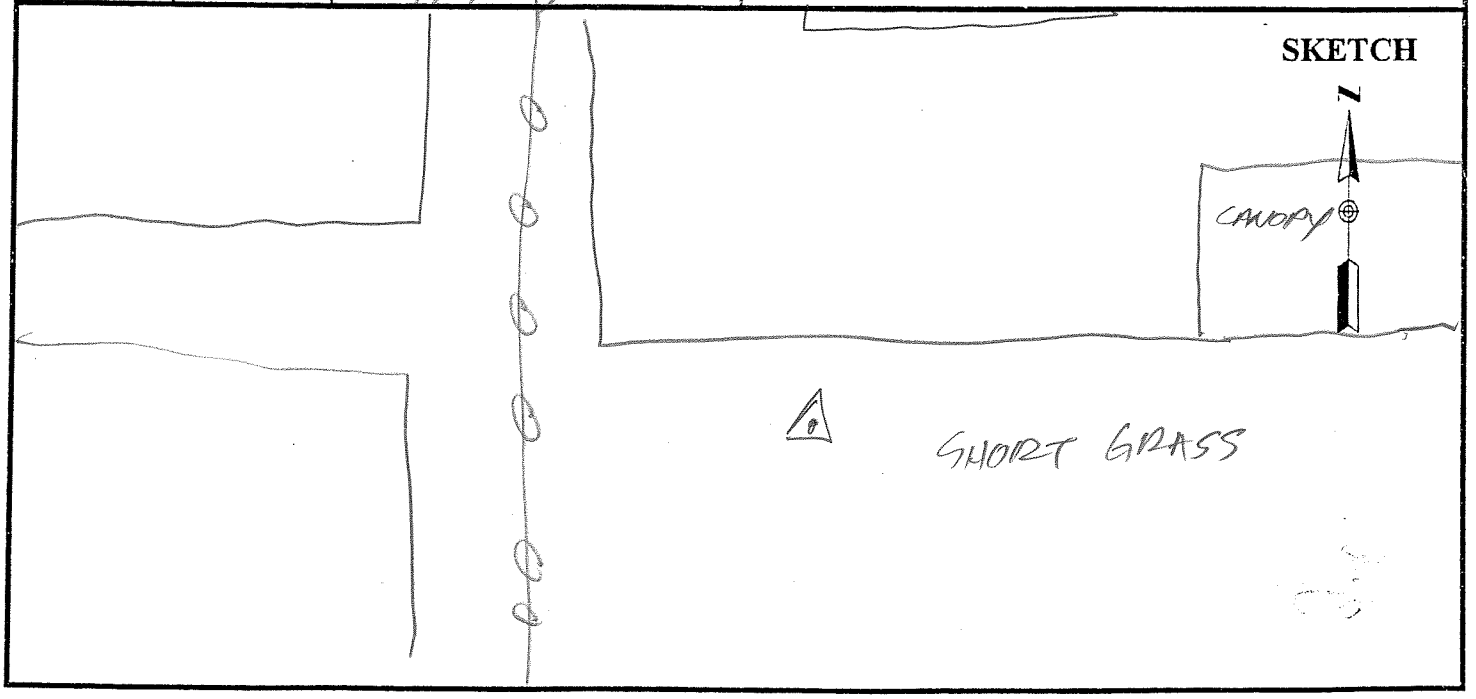
STATION DESCRIPTIONS POINT W
SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1641	2.0	9/9-9
1711	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



166 TXCC TXSI TXRO

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 1101205
OPERATOR UJN
DATE 5/23/11

SITE NUMBER 2
SITE NAME 84

TRACKING TIMES (LOCAL) MEASURE CMT
START 12:22
STOP 12:52

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

HEIGHT READINGS MTS FT
1.266
1.626

OBSTRUCTIONS: NO

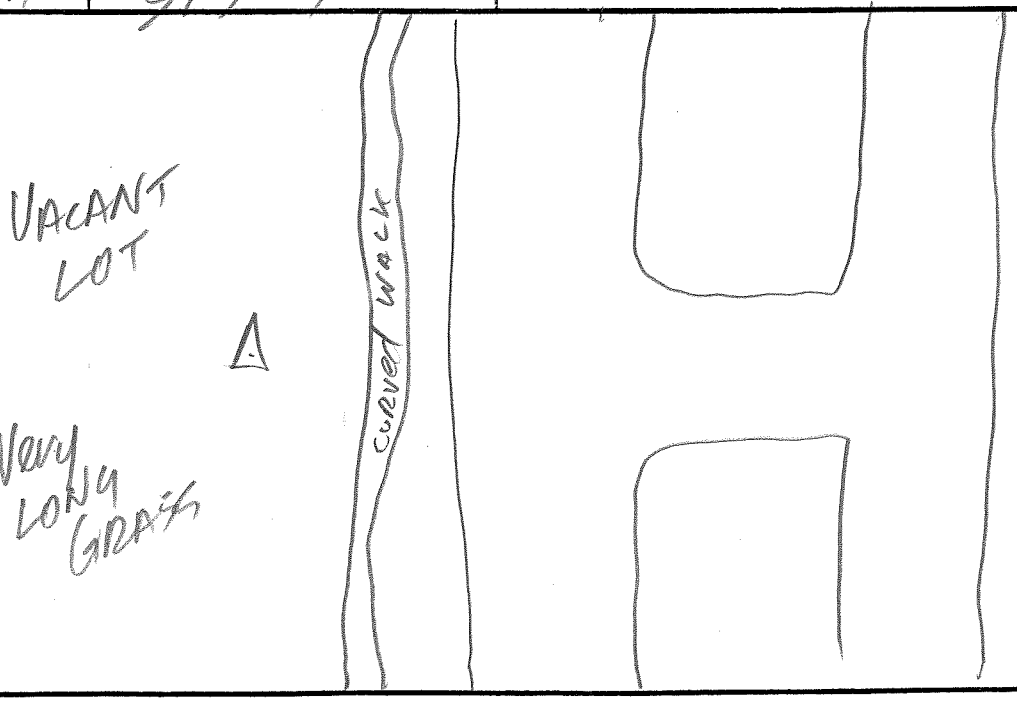
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:22	2.1	9/9-9
17:52	2.1	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY!

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 110205
OPERATOR WJN
DATE 5/23/11

SITE NUMBER 3
SITE NAME 85

TRACKING TIMES (LOCAL) MEASURE CDT
START 13:04
STOP 13:34

SENSOR TYPE (500) 9500 399 299
MEMORY CARD
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.220
1.660

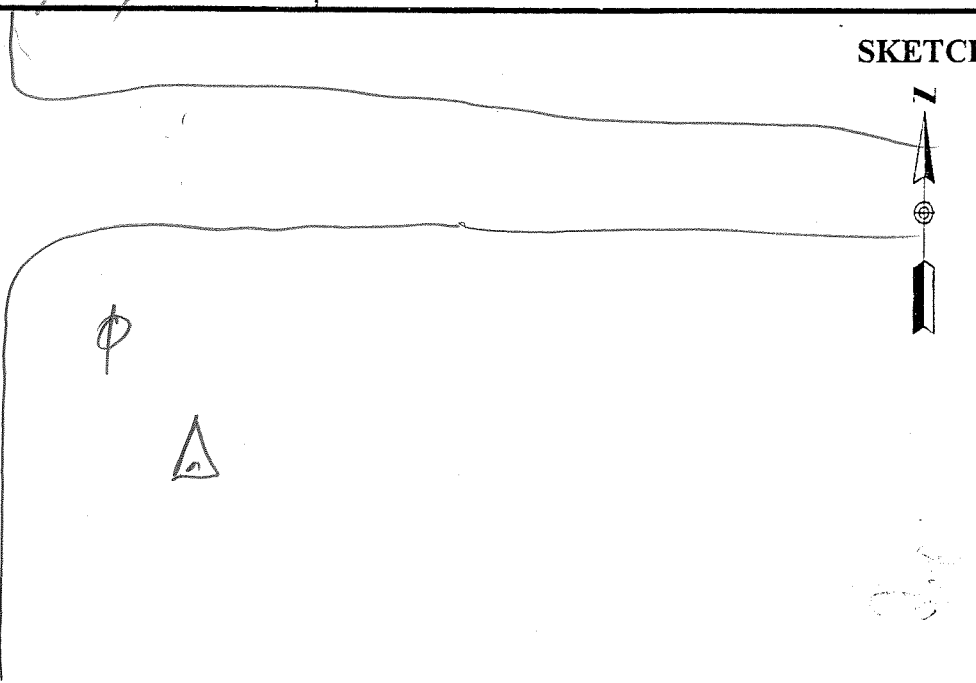
STATION DESCRIPTIONS POINT IN SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
18:04	1.9	10/10-10
19:34	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



AERO-METRIC, INC.
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SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 1101205
OPERATOR MJN
DATE 5/23/11

SITE NUMBER 4
SITE NAME 86

TRACKING TIMES (LOCAL) MEASURE CDT
START 13:47
STOP 14:17

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: PPL E

HEIGHT READINGS MTS FT
1.298
1.658

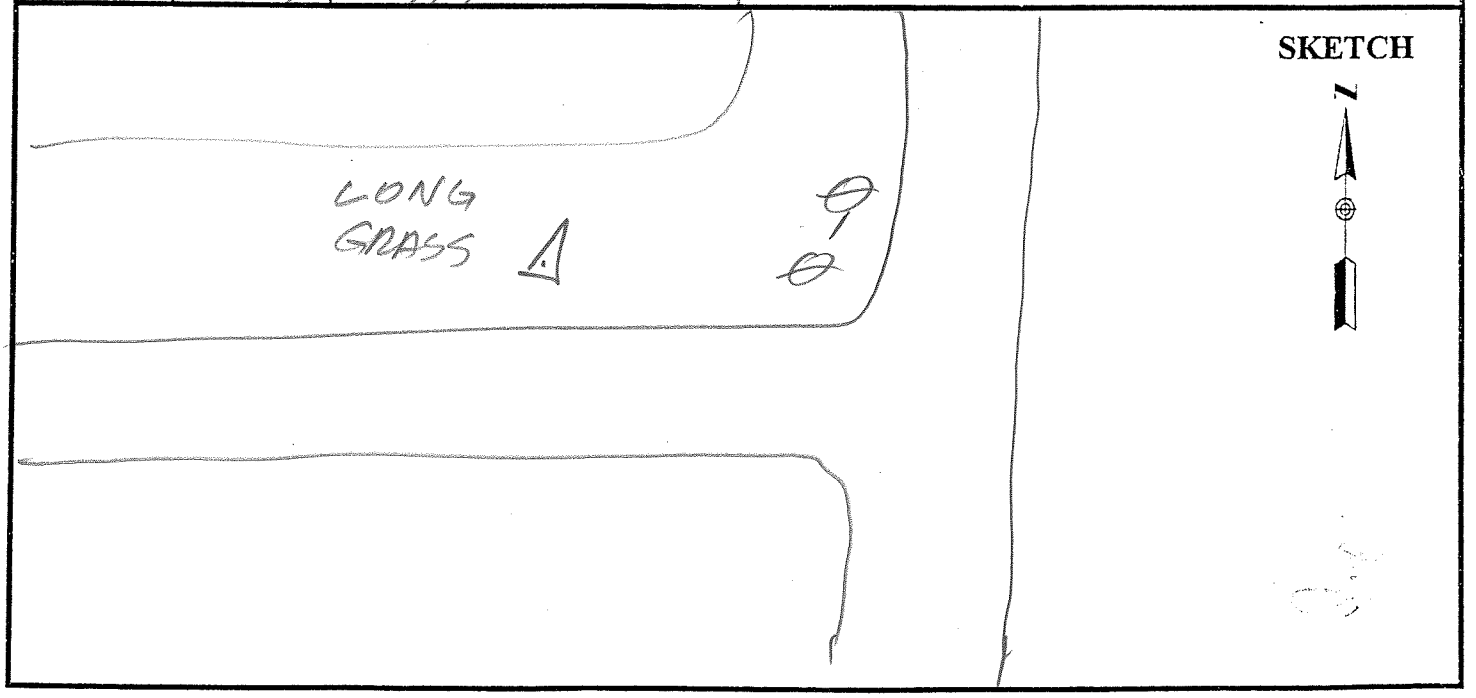
STATION DESCRIPTIONS POINT IN LONG GRASS BETWEEN FIELD AND E-W RD WNW OF INT

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1841	2.2	7/7-7
1917	2.5	7/7-7

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



AERO-METRIC, INC.
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SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 1101205
OPERATOR WJN
DATE 6/23/11

SITE NUMBER 5
SITE NAME 87

TRACKING TIMES (LOCAL) MEASURE CDT
START 14:24
STOP 14:54

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.350

1-710

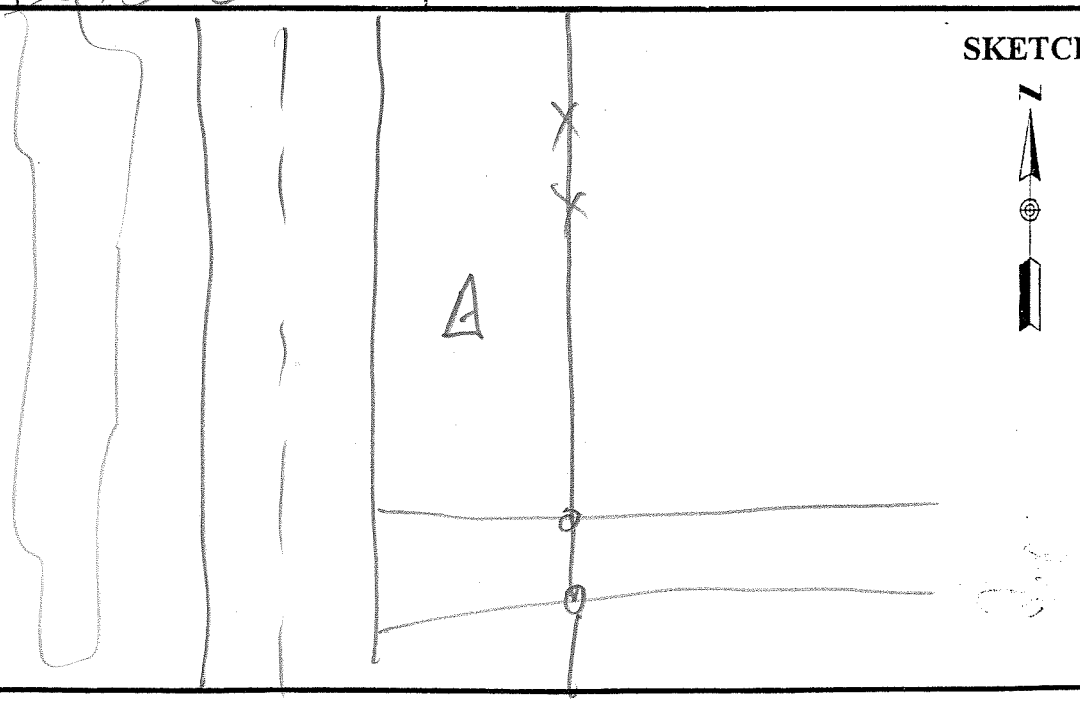
STATION DESCRIPTIONS POINT IN SHORT GRASS Between RD AND R/W FENCE N. OF DRIVE E

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
19:24	2.5	7/6 - 8
19:54	2.2	8/8 - 8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS

SKETCH



NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

2

PROJECT 110205
OPERATOR WJN
DATE 5/23/11

SITE NUMBER 6
SITE NAME 88

TRACKING TIMES (LOCAL) MEASURE CDT
START 15:07
STOP 15:37

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.242
1.602

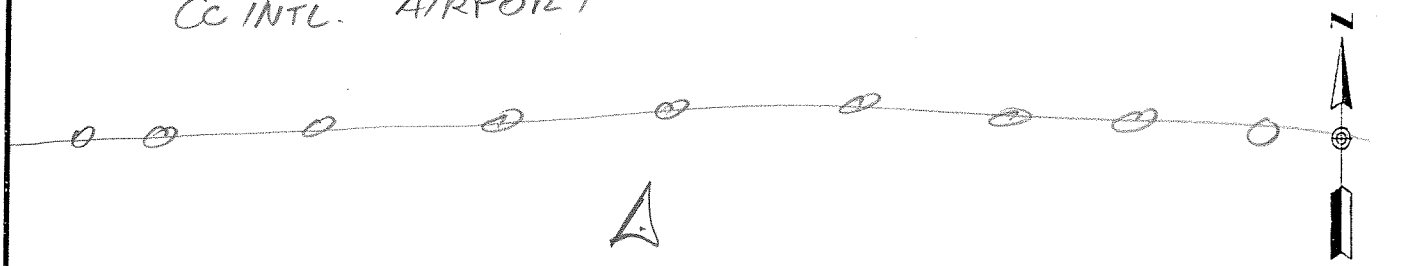
STATION DESCRIPTIONS POINT IN TALL GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
2007	2.3	8/9-8
2037	2.2	8/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 1101205
OPERATOR WJN
DATE 5/23/11

SITE NUMBER 7
SITE NAME 89

TRACKING TIMES (LOCAL) MEASURE CDT
START 15:50
STOP 16:20

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.330
1.690

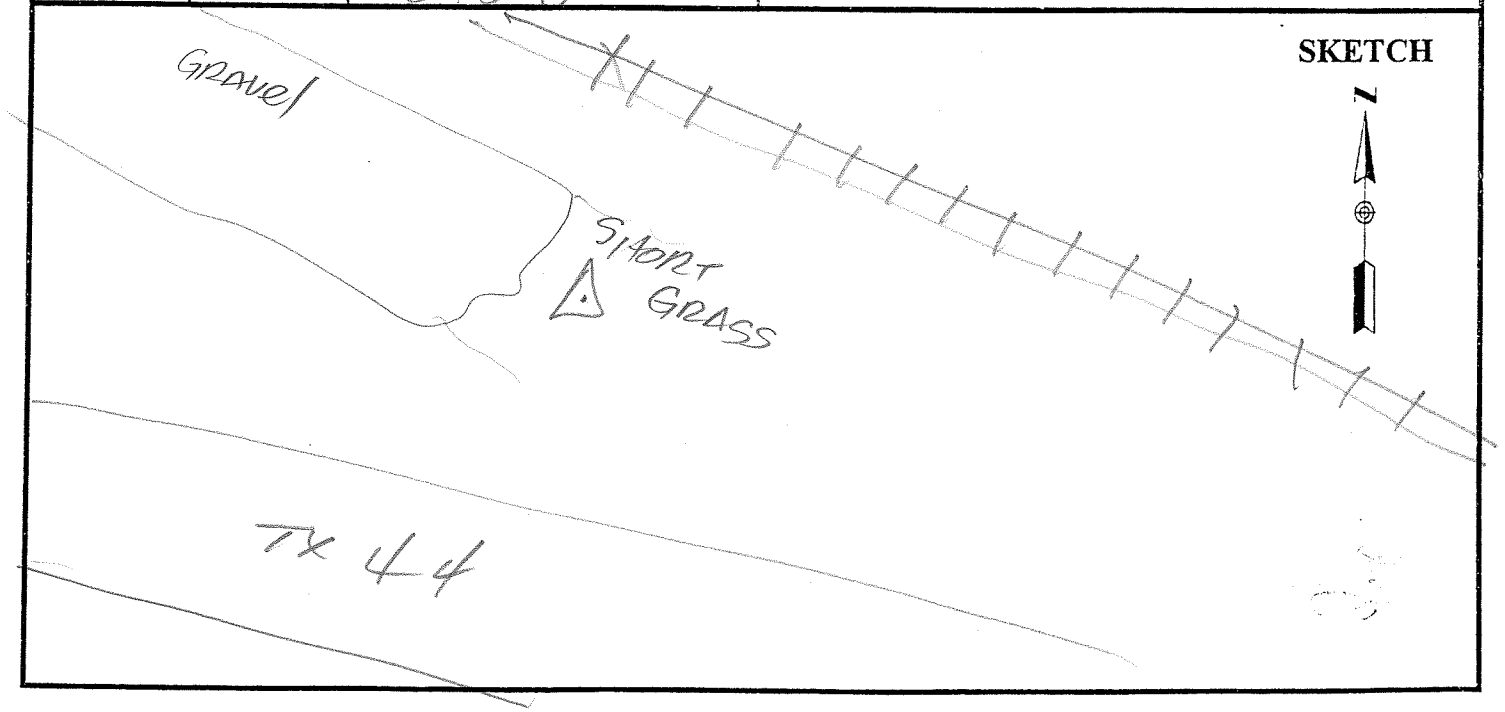
STATION DESCRIPTIONS POINT IN SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
20:50	2.9	9/9-9
21:20	2.5	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH



AERO-METRIC, INC.
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SHEBOYGAN, WISCONSIN 53083

NIECES

2

PROJECT 1101205
OPERATOR WJN
DATE 5/23/11

SITE NUMBER 8
SITE NAME 90

TRACKING TIMES (LOCAL) MEASURE CDT
START 16:38
STOP 17:05

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.263
1.623

STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
21:39	2.5	8/8-10
22:05	2.4	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
WINDY

SKETCH

NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

PROJECT 101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 1
SITE NAME 91

TRACKING TIMES (LOCAL) MEASURE CDT
START 8:41
STOP 9:11

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.304
1.664

OBSTRUCTIONS: NO

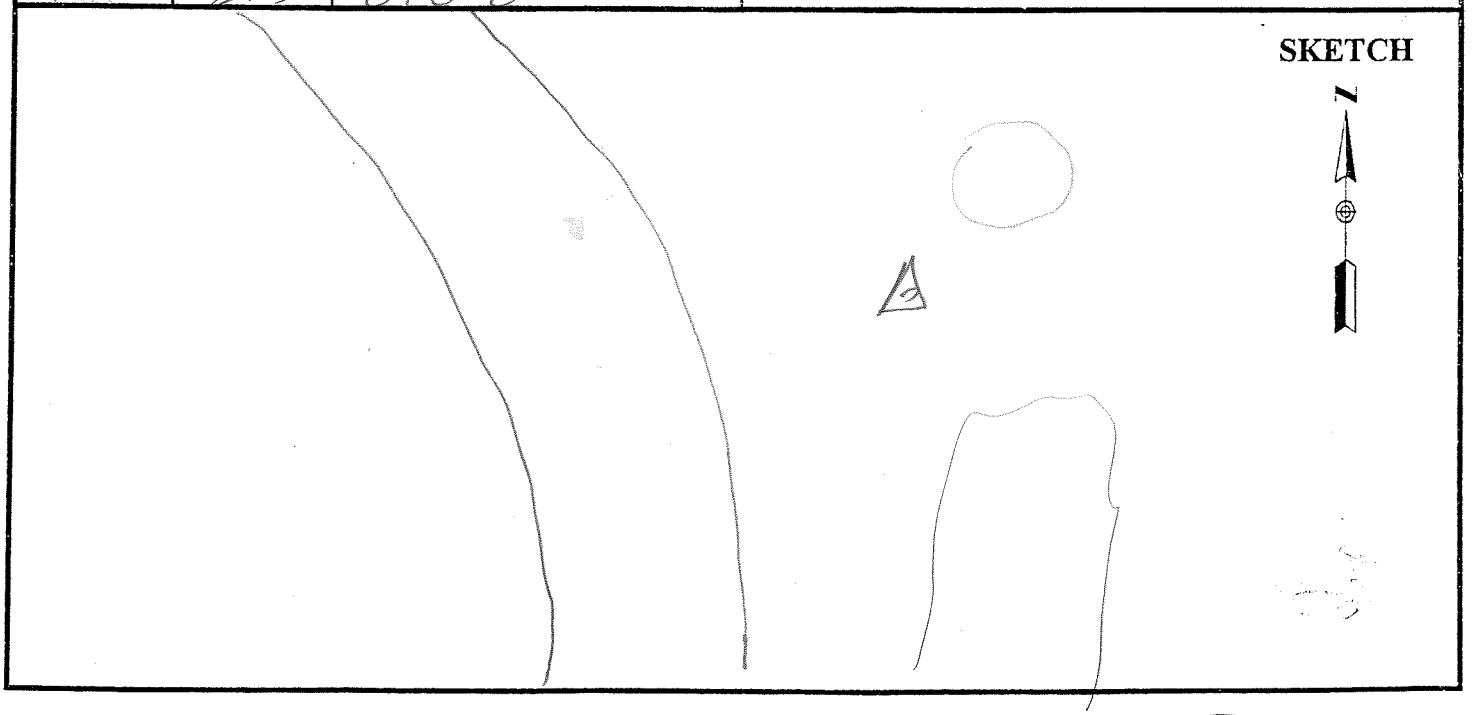
STATION DESCRIPTIONS POINT
IN SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
13:41	2.5	9/9-9
14:11	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



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AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

PROJECT 1101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 2
SITE NAME 92

TRACKING TIMES (LOCAL) MEASURE CST
START 9:20
STOP 9:50

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT 299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.275
1.635

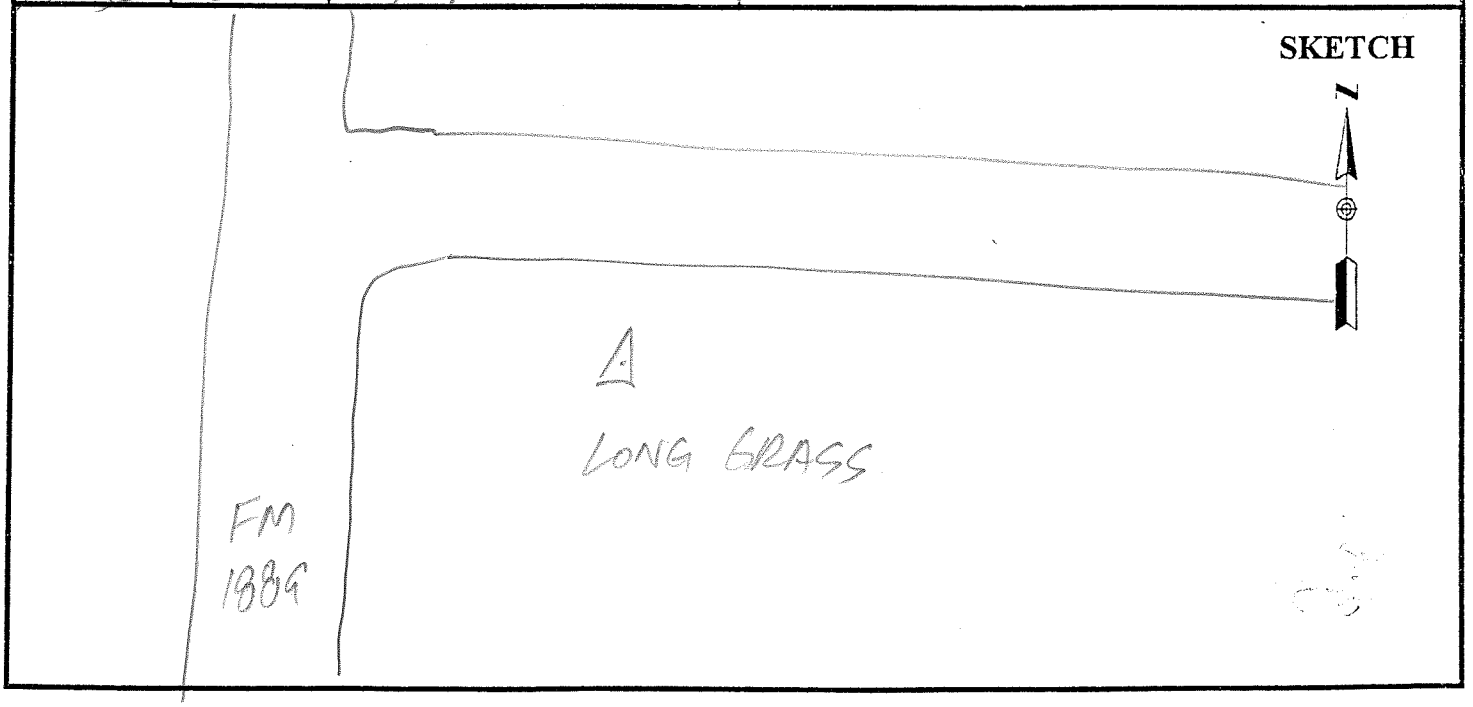
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1420	1.7	10/10-10
1450	2.0	9/9-10

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



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SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 110205
OPERATOR WVN
DATE 5/24/11

SITE NUMBER 3
SITE NAME 93

TRACKING TIMES (LOCAL) MEASURE CDT
START 9:57
STOP 10:27

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.310
1.670

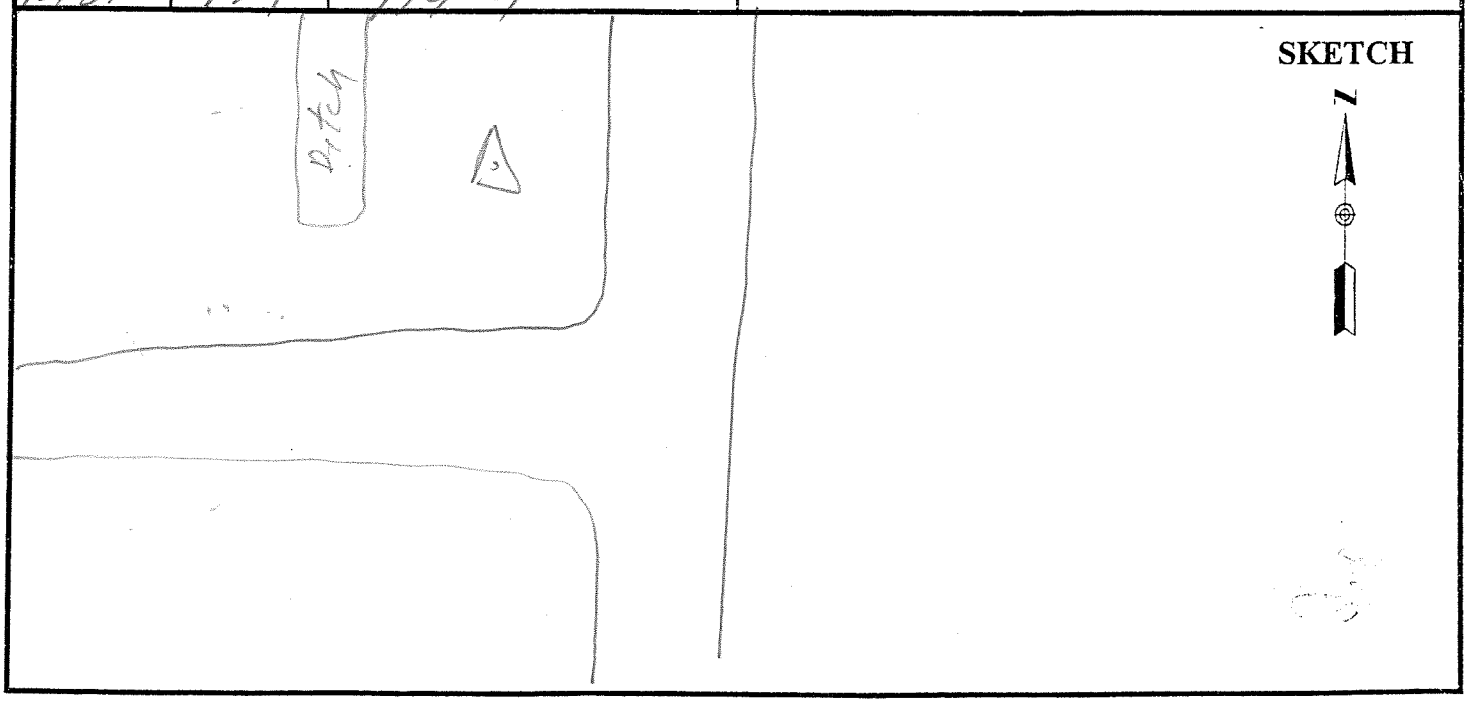
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1457	2.7	9/9-9
1527	1.9	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC WINDY

SKETCH



AERO-METRIC, INC.
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SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 1101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 4
SITE NAME 94

TRACKING TIMES (LOCAL) MEASURE CDT
START 10:36
STOP 11:11

SENSOR TYPE 500 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

HEIGHT READINGS MTS FT
1-281
1.641

OBSTRUCTIONS: NO

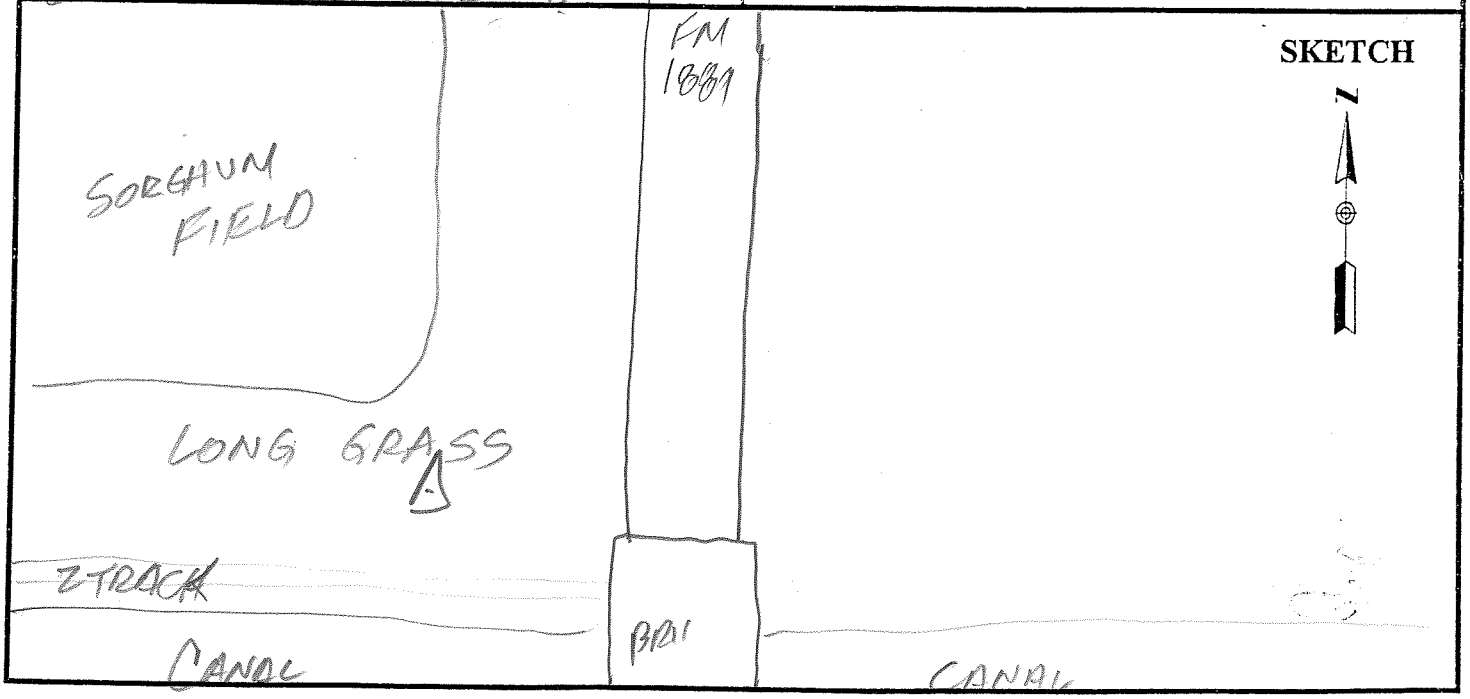
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
15:36	2.1	8/7-8
16:11	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

1

PROJECT 1101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 5
SITE NAME 95

TRACKING TIMES (LOCAL) MEASURE CDT
START 11:22
STOP 11:58

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 74
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.286
1.646

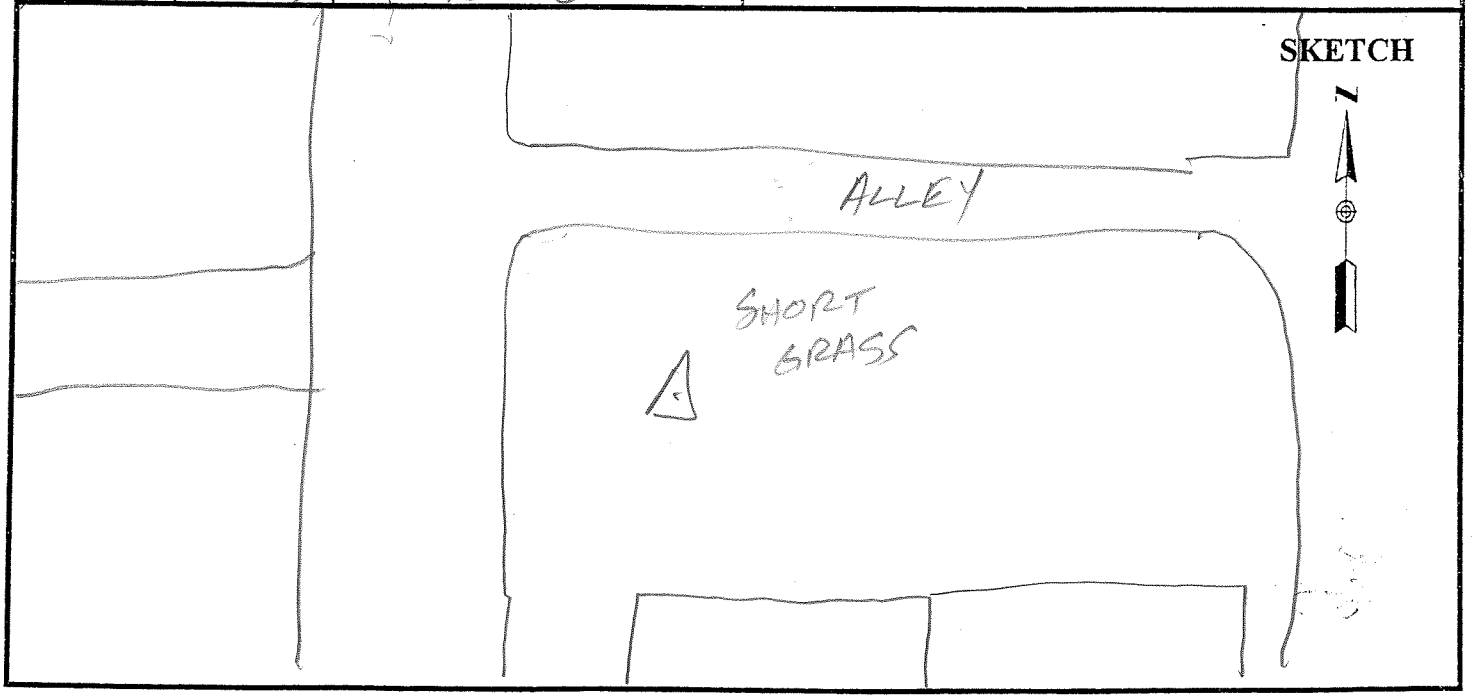
STATION DESCRIPTIONS POINT 11
SHORT GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
16:22	2.3	8/8-8
16:58	2.3	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

2

PROJECT 1101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 6
SITE NAME 96

TRACKING TIMES (LOCAL) MEASURE CDT
START 12:08
STOP 12:46

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 0.360

OBSTRUCTIONS: NO

HEIGHT READINGS MTS FT
1.257
1.617

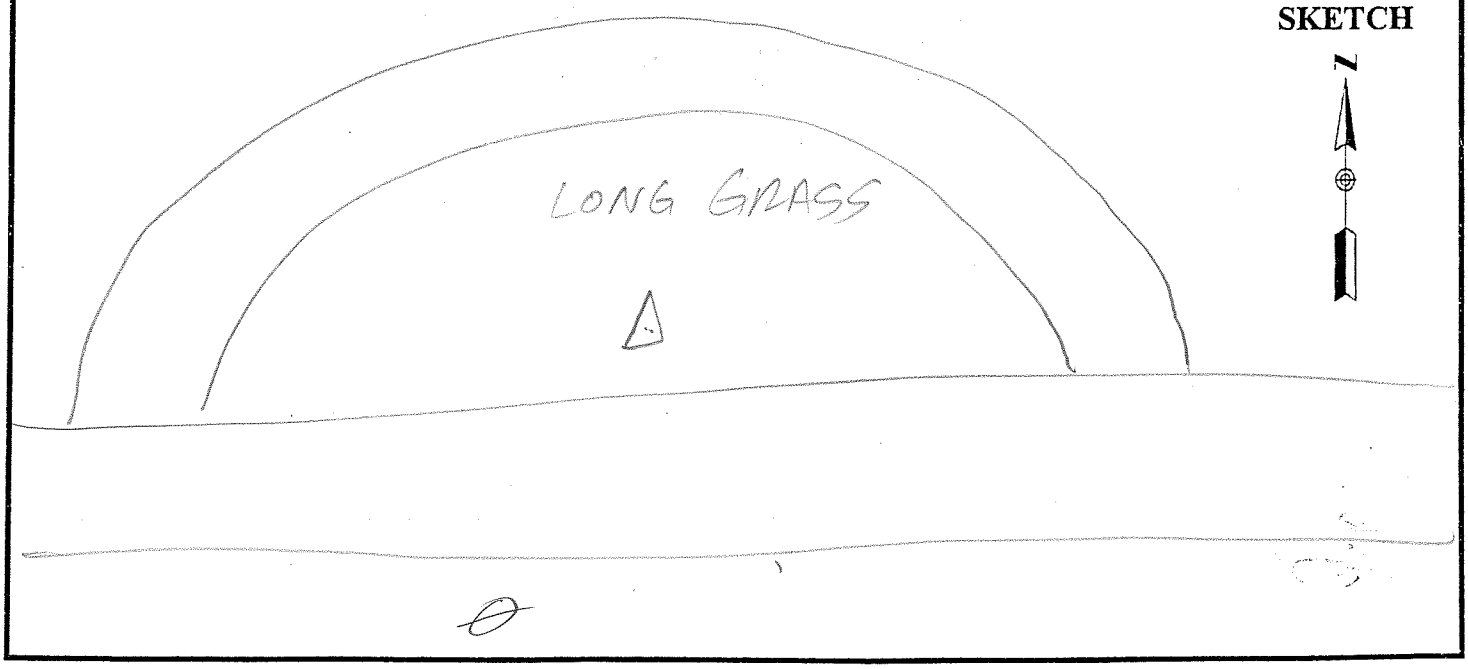
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17:08	2.0	8/8-8
17:46	2.1	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



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4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

NUECES

PROJECT 101205
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 7
SITE NAME 97

TRACKING TIMES (LOCAL) MEASURE CDT
START 12:58
STOP 13:35

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.295
1.655

OBSTRUCTIONS: NO

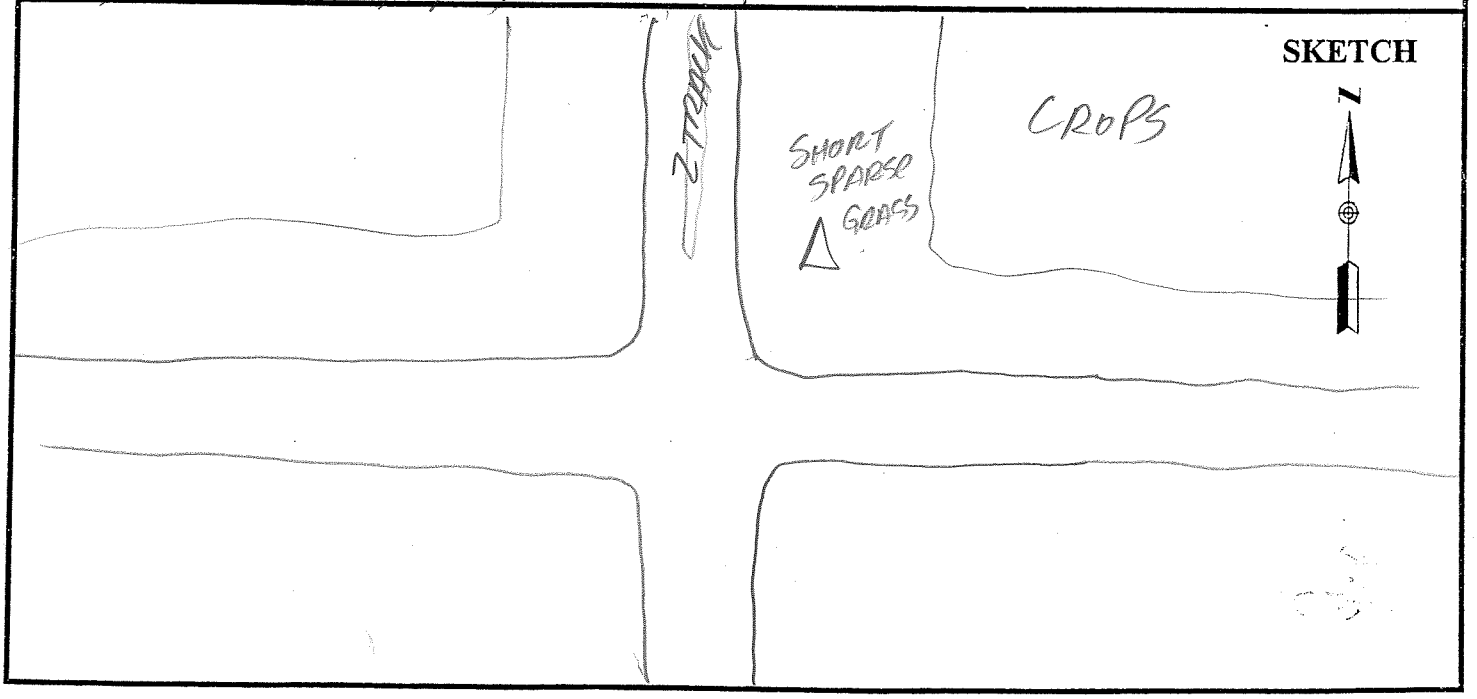
STATION DESCRIPTIONS POINT IN SPARSE GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
17 58	1.9	10/10-10
18 35	2.0	9/9-9

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC

SKETCH



NUECES

AERO-METRIC, INC.
4020 TECHNOLOGY PARKWAY
SHEBOYGAN, WISCONSIN 53083

2

PROJECT 110120S
OPERATOR WJN
DATE 5/24/11

SITE NUMBER 9
SITE NAME 98

TRACKING TIMES (LOCAL) MEASURE CDT
START 14:12
STOP 14:42

SENSOR TYPE (500) 9500 399 299
MEMORY CARD 14
BATTERY NO.
CONTROLLER NO.
SENSOR NO.

SENSOR CONSTANT
299/399 0.441
399E/9500 0.389
500 (0.360)

HEIGHT READINGS MTS FT
1.300
1.660

OBSTRUCTIONS: NO

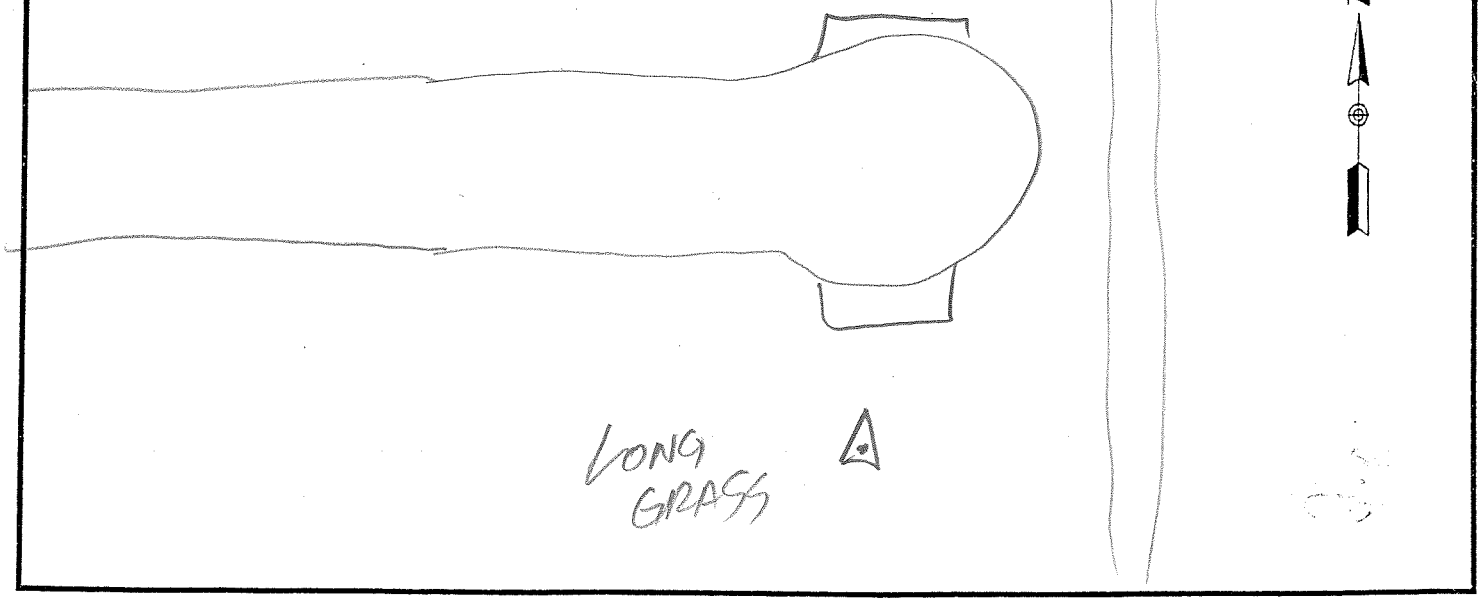
STATION DESCRIPTIONS POINT IN LONG GRASS

SATELLITE OBSERVATIONS

TIME	GDOP	SATELLITES
1912	1.9	8/8-8
1942	2.2	8/8-8

WEATHER CONDITIONS/IMPORTANT OBSERVATIONS
MC WINDY

SKETCH



08:03:57, Thu May 26, 2011

INI file: C:\WINNT\GEOLAB.INI
Input file: R:\1101205\GEOM~6IZ\SURVEY\NUECES\GEO\C.IOB
Output file: R:\1101205\GEOM~6IZ\SURVEY\NUECES\GEO\C.LST

Geoid File: C:\GEOLAB2\G2009U06.GEO

PARAMETERS		OBSERVATIONS	
Description	Number	Description	Number
No. of Stations	102	Directions	0
Coord Parameters	284	Distances	0
Free Latitudes	94	Azimuths	0
Free Longitudes	94	Vertical Angles	0
Free Heights	96	Zenithal Angles	0
Fixed Coordinates	22	Angles	0
Astro. Latitudes	0	Heights	0
Astro. Longitudes	0	Height Differences	0
Geoid Records	0	Auxiliary Params.	0
All Aux. Pars.	0	2-D Coords.	0
Direction Pars.	0	2-D Coord. Diffs.	0
Scale Parameters	0	3-D Coords.	0
Constant Pars.	0	3-D Coord. Diffs.	873
Rotation Pars.	0		
Translation Pars.	0		
	--------		--------
Total Parameters	284	Total Observations	873
Degrees of Freedom = 589			

SUMMARY OF SELECTED OPTIONS

OPTION	SELECTION
Computation Mode	Adjustment
Maximum Iterations	5
Convergence Criterion	0.00100
Confidence Level for Statistics	95.000
Covariance Matrix Computation	Connected Portion Only
Residual Rejection Criterion	Tau Max
Confidence Region Types	3D Station Relative
Relative Confidence Regions	Connected Only
Variance Factor (VF) Known	Yes
CMULT (Multiply Parm Cov With VF)	Yes
RMULT (Multiply Res Cov With VF)	No
Force Convergence in Max Iters	Yes
Distances Affect 3D	No
Full Inverse Computed	No
Normals Reordered	Yes
Coordinates Generated	No
Geoid Interpolation Method	Bi-Linear

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING STD DEV	EASTING STD DEV	O-HEIGHT STD DEV	MAPPROJ
NEO	000	1	3080962.538	690581.148	1.573	UTM 14
			0.002	0.002	0.006	
SFMC		1	1.00004833	0 54 14.556932		UTM 14
NEO	000	10	3062237.777	668072.310	5.727	UTM 14
			0.023	0.023	0.024	
SFMC		10	0.99994869	0 47 29.971534		UTM 14
NEO	000	11	3064580.332	663971.234	4.799	UTM 14
			0.018	0.018	0.019	
SFMC		11	0.99993188	0 46 22.961537		UTM 14
NEO	000	12	3062536.257	661304.388	5.516	UTM 14
			0.017	0.017	0.017	
SFMC		12	0.99992117	0 45 35.584783		UTM 14
NEO	000	13	3063394.432	659211.480	7.135	UTM 14
			0.014	0.014	0.015	
SFMC		13	0.99991289	0 45 0.995996		UTM 14
NEO	000	14	3061015.492	657886.952	5.767	UTM 14
			0.016	0.016	0.016	
SFMC		14	0.99990770	0 44 36.101047		UTM 14
NEO	000	15	3060325.748	656376.859	5.310	UTM 14
			0.017	0.017	0.017	
SFMC		15	0.99990185	0 44 9.819392		UTM 14
NEO	000	16	3057990.435	652626.797	7.880	UTM 14
			0.018	0.018	0.019	
SFMC		16	0.99988754	0 43 3.994611		UTM 14
NEO	000	17	3053962.082	652490.475	7.305	UTM 14
			0.024	0.024	0.024	
SFMC		17	0.99988703	0 42 57.707324		UTM 14
NEO	000	18	3052388.770	654213.342	7.369	UTM 14
			0.026	0.025	0.027	
SFMC		18	0.99989356	0 43 25.245023		UTM 14
NEO	000	19	3050870.343	649411.105	9.774	UTM 14
			0.027	0.027	0.028	
SFMC		19	0.99987556	0 42 2.686267		UTM 14
NEO	000	2	3077480.605	688499.467	1.527	UTM 14
			0.007	0.007	0.009	
SFMC		2	1.00003859	0 53 34.766141		UTM 14
NEO	000	20	3064023.381	653085.011	7.165	UTM 14
			0.010	0.010	0.012	
SFMC		20	0.99988927	0 43 17.737825		UTM 14
NEO	000	21	3064898.884	656061.249	7.352	UTM 14
			0.009	0.009	0.010	
SFMC		21	0.99990063	0 44 9.103572		UTM 14
NEO	000	22	3066927.206	658168.319	8.955	UTM 14
			0.009	0.009	0.010	
SFMC		22	0.99990880	0 44 46.934246		UTM 14
NEO	000	23	3069128.782	659032.973	8.514	UTM 14
			0.010	0.010	0.010	
SFMC		23	0.99991218	0 45 3.888248		UTM 14
NEO	000	24	3070988.427	660006.377	7.043	UTM 14
			0.011	0.011	0.012	
SFMC		24	0.99991602	0 45 22.361802		UTM 14
NEO	000	25	3072993.537	658788.743	2.220	UTM 14

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING / STD DEV	EASTING / STD DEV	O-HEIGHT / STD DEV	MAPPROJ
			0.011	0.011	0.012	
SFMC		25	0.99991122	0 45 3.724226		UTM 14
NEO	000	26	3076807.544	658233.502	2.214	UTM 14
			0.015	0.015	0.016	
SFMC		26	0.99990905	0 44 58.197549		UTM 14
NEO	000	27	3079095.060	658939.133	1.052	UTM 14
			0.017	0.017	0.017	
SFMC		27	0.99991181	0 45 12.587952		UTM 14
NEO	000	28	3079623.125	643023.605	17.505	UTM 14
			0.021	0.021	0.022	
SFMC		28	0.99985249	0 40 41.573845		UTM 14
NEO	000	29	3074708.454	643092.780	14.477	UTM 14
			0.018	0.018	0.019	
SFMC		29	0.99985273	0 40 38.181288		UTM 14
NEO	000	3	3072876.726	685950.316	1.229	UTM 14
			0.015	0.015	0.016	
SFMC		3	1.00002681	0 52 45.759374		UTM 14
NEO	000	30	3071948.234	648552.653	11.115	UTM 14
			0.010	0.010	0.011	
SFMC		30	0.99987239	0 42 8.506423		UTM 14
NEO	000	31	3069009.561	644527.147	11.305	UTM 14
			0.015	0.015	0.016	
SFMC		31	0.99985783	0 40 57.260034		UTM 14
NEO	000	32	3063455.039	642598.876	14.975	UTM 14
			0.020	0.020	0.021	
SFMC		32	0.99985100	0 40 19.348145		UTM 14
NEO	000	33	3060055.991	644417.435	15.002	UTM 14
			0.022	0.022	0.023	
SFMC		33	0.99985744	0 40 47.004790		UTM 14
NEO	000	34	3054911.392	644516.205	11.494	UTM 14
			0.027	0.027	0.028	
SFMC		34	0.99985780	0 40 43.858662		UTM 14
NEO	000	35	3081593.524	639459.008	10.290	UTM 14
			0.024	0.024	0.026	
SFMC		35	0.99984006	0 39 42.535016		UTM 14
NEO	000	36	3079766.580	635924.989	22.654	UTM 14
			0.026	0.026	0.027	
SFMC		36	0.99982804	0 38 40.567232		UTM 14
NEO	000	37	3076618.594	635997.811	19.660	UTM 14
			0.030	0.030	0.032	
SFMC		37	0.99982829	0 38 39.025593		UTM 14
NEO	000	38	3069130.891	636071.078	19.955	UTM 14
			0.028	0.028	0.028	
SFMC		38	0.99982854	0 38 33.653730		UTM 14
NEO	000	39	3064417.990	636128.777	18.448	UTM 14
			0.028	0.028	0.029	
SFMC		39	0.99982873	0 38 30.469610		UTM 14
NEO	000	4	3066808.896	682694.307	2.501	UTM 14
			0.023	0.023	0.025	
SFMC		4	1.00001200	0 51 43.167046		UTM 14
NEO	000	40	3061491.407	631345.195	16.230	UTM 14
			0.029	0.029	0.029	

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING STD DEV	EASTING STD DEV	O-HEIGHT STD DEV	MAPPROJ
SFMC		40	0.99981294	0 37 6.815244		UTM 14
NEO	000	41	3054523.096	631874.299	12.235	UTM 14
			0.029	0.029	0.030	
SFMC		41	0.99981466	0 37 9.825341		UTM 14
NEO	000	42	3053990.787	627571.261	13.534	UTM 14
			0.029	0.029	0.029	
SFMC		42	0.99980088	0 35 56.651533		UTM 14
NEO	000	43	3049798.595	622174.477	17.833	UTM 14
			0.021	0.021	0.021	
SFMC		43	0.99978425	0 34 22.128247		UTM 14
NEO	000	44	3052318.965	618964.837	18.032	UTM 14
			0.018	0.018	0.018	
SFMC		44	0.99977469	0 33 29.911891		UTM 14
NEO	000	45	3073713.352	631203.107	22.718	UTM 14
			0.029	0.028	0.030	
SFMC		45	0.99981248	0 37 14.818551		UTM 14
NEO	000	46	3076187.498	626290.677	26.167	UTM 14
			0.031	0.031	0.031	
SFMC		46	0.99979686	0 35 53.203320		UTM 14
NEO	000	47	3062627.359	615137.520	25.540	UTM 14
			0.026	0.026	0.026	
SFMC		47	0.99976363	0 32 32.961239		UTM 14
NEO	000	48	3064495.859	615119.218	27.179	UTM 14
			0.028	0.027	0.028	
SFMC		48	0.99976358	0 32 34.046619		UTM 14
NEO	000	49	3069174.235	615542.223	26.346	UTM 14
			0.031	0.031	0.031	
SFMC		49	0.99976478	0 32 44.734148		UTM 14
NEO	000	5	3062061.123	680103.385	1.872	UTM 14
			0.027	0.027	0.028	
SFMC		5	1.00000040	0 50 53.640976		UTM 14
NEO	000	50	3074022.510	617432.049	26.790	UTM 14
			0.033	0.033	0.034	
SFMC		50	0.99977021	0 33 20.559655		UTM 14
NEO	000	51	3079388.848	618588.270	26.304	UTM 14
			0.035	0.035	0.035	
SFMC		51	0.99977358	0 33 44.389370		UTM 14
NEO	000	52	3083279.236	628557.381	27.844	UTM 14
			0.030	0.030	0.031	
SFMC		52	0.99980399	0 36 37.767675		UTM 14
NEO	111	5237 TIDAL 2	3080903.735	689791.999	2.046	UTM 14
			0.000	0.000	0.000	
SFMC		5237 TIDAL 2	1.00004462	0 54 1.018155		UTM 14
NEO	000	53	3086406.814	619729.666	22.862	UTM 14
			0.035	0.035	0.036	
SFMC		53	0.99977694	0 34 9.337515		UTM 14
NEO	000	54	3088555.450	614258.360	33.266	UTM 14
			0.038	0.038	0.039	
SFMC		54	0.99976113	0 32 37.313987		UTM 14
NEO	000	55	3093292.590	613892.210	27.073	UTM 14
			0.039	0.039	0.040	
SFMC		55	0.99976010	0 32 34.559930		UTM 14

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING / STD DEV	EASTING / STD DEV	O-HEIGHT / STD DEV	MAPPROJ
NEO	000	56	3087152.517	607856.988	35.897	UTM 14
			0.041	0.041	0.041	
SFMC		56	0.99974358	0 30 46.696292		UTM 14
NEO	000	57	3082981.210	609045.188	33.011	UTM 14
			0.039	0.039	0.040	
SFMC		57	0.99974677	0 31 4.073325		UTM 14
NEO	000	58	3077629.910	608177.021	35.601	UTM 14
			0.038	0.037	0.038	
SFMC		58	0.99974444	0 30 45.469396		UTM 14
NEO	111	5870 H TIDAL	3052838.821	675408.948	1.947	UTM 14
			0.000	0.000	0.000	
SFMC		5870 H TIDAL	0.99997980	0 49 23.615122		UTM 14
NEO	000	59	3074462.550	633131.747	21.000	UTM 14
			0.028	0.028	0.028	
SFMC		59	0.99981877	0 37 48.305840		UTM 14
NEO	000	6	3056227.210	677147.487	2.709	UTM 14
			0.031	0.031	0.032	
SFMC		6	0.99998736	0 49 56.857588		UTM 14
NEO	000	60	3069244.122	628017.544	21.276	UTM 14
			0.030	0.030	0.031	
SFMC		60	0.99980229	0 36 16.859612		UTM 14
NEO	000	61	3061816.829	623380.565	18.201	UTM 14
			0.028	0.028	0.029	
SFMC		61	0.99978790	0 34 52.088143		UTM 14
NEO	000	62	3054314.979	616804.514	20.245	UTM 14
			0.017	0.017	0.018	
SFMC		62	0.99976840	0 32 54.933936		UTM 14
NEO	000	63	3056743.309	610827.441	25.618	UTM 14
			0.016	0.016	0.016	
SFMC		63	0.99975161	0 31 15.643941		UTM 14
NEO	000	64	3061173.026	607208.977	33.121	UTM 14
			0.023	0.023	0.023	
SFMC		64	0.99974187	0 30 17.499241		UTM 14
NEO	000	65	3067351.523	607833.012	34.663	UTM 14
			0.031	0.031	0.031	
SFMC		65	0.99974352	0 30 32.399602		UTM 14
NEO	000	66	3051438.579	619490.815	17.671	UTM 14
			0.019	0.019	0.019	
SFMC		66	0.99977624	0 33 38.114362		UTM 14
NEO	000	67	3055092.683	623070.492	15.760	UTM 14
			0.025	0.025	0.026	
SFMC		67	0.99978696	0 34 41.466936		UTM 14
NEO	000	68	3061354.902	622842.142	19.052	UTM 14
			0.029	0.029	0.030	
SFMC		68	0.99978626	0 34 42.593239		UTM 14
NEO	000	69	3073691.535	629095.495	23.466	UTM 14
			0.035	0.035	0.035	
SFMC		69	0.99980571	0 36 38.913284		UTM 14
NEO	000	70	3081620.055	634750.214	24.101	UTM 14
			0.037	0.037	0.037	
SFMC		70	0.99982412	0 38 22.143666		UTM 14
NEO	000	71	3082240.074	637219.591	13.519	UTM 14

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING / STD DEV	EASTING / STD DEV	O-HEIGHT / STD DEV	MAPPROJ
			0.031	0.031	0.031	
SFMC		71	0.99983241	0 39 4.869052		UTM 14
NEO	000	72	3079931.847	640859.330	21.482	UTM 14
			0.026	0.026	0.026	
SFMC		72	0.99984490	0 40 4.925530		UTM 14
NEO	000	73	3078151.589	645751.399	15.096	UTM 14
			0.020	0.020	0.020	
SFMC		73	0.99986221	0 41 26.724887		UTM 14
NEO	000	74	3075017.905	649138.855	13.645	UTM 14
			0.012	0.012	0.013	
SFMC		74	0.99987454	0 42 21.454565		UTM 14
NEO	000	75	3072451.173	650020.386	12.263	UTM 14
			0.008	0.008	0.008	
SFMC		75	0.99987780	0 42 33.967195		UTM 14
NEO	000	76	3069172.287	653734.973	10.603	UTM 14
			0.001	0.001	0.001	
SFMC		76	0.99989173	0 43 33.899836		UTM 14
NEO	000	8	3062385.007	668416.099	5.330	UTM 14
			0.025	0.024	0.026	
SFMC		8	0.99995011	0 47 35.958480		UTM 14
NEO	000	81	3079825.162	659519.985	1.193	UTM 14
			0.019	0.019	0.019	
SFMC		81	0.99991409	0 45 23.253571		UTM 14
NEO	000	82	3078463.757	658286.122	0.967	UTM 14
			0.016	0.016	0.017	
SFMC		82	0.99990925	0 45 0.799047		UTM 14
NEO	000	83	3063436.096	657455.730	7.709	UTM 14
			0.012	0.012	0.013	
SFMC		83	0.99990602	0 44 31.267990		UTM 14
NEO	000	84	3063263.595	655551.557	5.067	UTM 14
			0.011	0.011	0.012	
SFMC		84	0.99989867	0 43 58.805597		UTM 14
NEO	000	85	3064339.644	652652.173	7.563	UTM 14
			0.009	0.009	0.011	
SFMC		85	0.99988764	0 43 10.709693		UTM 14
NEO	000	86	3065152.497	647666.939	10.032	UTM 14
			0.013	0.013	0.015	
SFMC		86	0.99986915	0 41 46.921593		UTM 14
NEO	000	87	3068322.621	647657.730	11.645	UTM 14
			0.011	0.011	0.012	
SFMC		87	0.99986912	0 41 49.803873		UTM 14
NEO	000	88	3071190.061	647557.824	11.975	UTM 14
			0.011	0.011	0.012	
SFMC		88	0.99986875	0 41 50.854415		UTM 14
NEO	000	89	3074219.230	645291.517	12.790	UTM 14
			0.017	0.017	0.018	
SFMC		89	0.99986056	0 41 15.167585		UTM 14
NEO	000	9	3059605.203	666817.068	4.410	UTM 14
			0.024	0.024	0.024	
SFMC		9	0.99994350	0 47 5.851216		UTM 14
NEO	000	90	3079003.040	642519.679	20.693	UTM 14
			0.025	0.025	0.026	

Adjusted NEO Coordinates:

CODE	FFF	STATION	NORTHING STD DEV	EASTING STD DEV	O-HEIGHT STD DEV	MAPPROJ
SFMC		90	0.99985071	0 40 32.400045		UTM 14
NEO	000	91	3082914.969	633757.707	25.382	UTM 14
			0.028	0.028	0.029	
SFMC		91	0.99982083	0 38 6.320757		UTM 14
NEO	000	92	3081507.350	632067.719	25.863	UTM 14
			0.029	0.029	0.031	
SFMC		92	0.99981528	0 37 36.234489		UTM 14
NEO	000	93	3078933.288	631621.244	25.585	UTM 14
			0.030	0.030	0.033	
SFMC		93	0.99981383	0 37 26.405428		UTM 14
NEO	000	94	3076077.377	631306.338	24.040	UTM 14
			0.030	0.030	0.031	
SFMC		94	0.99981281	0 37 18.594102		UTM 14
NEO	000	95	3074582.558	631251.519	22.355	UTM 14
			0.030	0.030	0.031	
SFMC		95	0.99981263	0 37 16.384392		UTM 14
NEO	000	96	3072314.554	630633.755	23.090	UTM 14
			0.031	0.031	0.032	
SFMC		96	0.99981064	0 37 3.936625		UTM 14
NEO	000	97	3070698.108	628013.132	21.765	UTM 14
			0.033	0.033	0.034	
SFMC		97	0.99980227	0 36 17.993587		UTM 14
NEO	000	98	3081005.266	634906.597	23.226	UTM 14
			0.029	0.029	0.030	
SFMC		98	0.99982464	0 38 24.274687		UTM 14
NEO	001	B 1380	3055897.104	620734.097	19.718	UTM 14
			0.052	0.052	0.000	
SFMC		B 1380	0.99977993	0 34 2.593382		UTM 14
NEO	111	KVTX	3047394.637	609312.229	24.899	UTM 14
			0.000	0.000	0.000	
SFMC		KVTX	0.99974749	0 30 43.388103		UTM 14
NEO	110	TXAI	3073046.960	588957.012	70.374	UTM 14
			0.000	0.000	0.031	
SFMC		TXAI	0.99969767	0 25 14.990715		UTM 14
NEO	111	TXBE	3144786.751	623849.519	76.249	UTM 14
			0.000	0.000	0.000	
SFMC		TXBE	0.99978930	0 36 7.151371		UTM 14
NEO	111	TXCC	3069461.629	653594.841	17.336	UTM 14
			0.000	0.000	0.000	
SFMC		TXCC	0.99989120	0 43 31.806989		UTM 14
NEO	110	TXPO	3080913.797	690072.976	6.993	UTM 14
			0.000	0.000	0.004	
SFMC		TXPO	1.00004594	0 54 5.825142		UTM 14
NEO	110	TXSI	3099952.199	650483.461	20.640	UTM 14
			0.000	0.000	0.009	
SFMC		TXSI	0.99987950	0 43 8.796508		UTM 14

Adjusted PLH Coordinates:

CODE	FFF	STATION	LATITUDE	STD DEV	LONGITUDE	STD DEV	ELIP-HEIGHT	STD DEV
PLH	000	1	N 27 50 23.36688	0.002	W 97 03 53.05287	0.002	-24.809	0.006
PLH	000	10	N 27 40 25.95024	0.023	W 97 17 45.05809	0.023	-20.454	0.024
PLH	000	11	N 27 41 43.86896	0.018	W 97 20 13.54990	0.018	-21.457	0.019
PLH	000	12	N 27 40 38.62371	0.017	W 97 21 51.87141	0.017	-20.715	0.017
PLH	000	13	N 27 41 7.39901	0.014	W 97 23 7.83441	0.014	-19.122	0.015
PLH	000	14	N 27 39 50.67539	0.016	W 97 23 57.29900	0.016	-20.447	0.016
PLH	000	15	N 27 39 28.90089	0.017	W 97 24 52.72188	0.017	-20.895	0.017
PLH	000	16	N 27 38 14.57763	0.018	W 97 27 10.61448	0.018	-18.287	0.019
PLH	000	17	N 27 36 3.75919	0.024	W 97 27 17.42509	0.024	-18.768	0.024
PLH	000	18	N 27 35 11.94187	0.026	W 97 26 15.32180	0.025	-18.657	0.027
PLH	000	19	N 27 34 24.54992	0.027	W 97 29 11.10238	0.027	-16.237	0.028
PLH	000	2	N 27 48 31.33170	0.007	W 97 05 11.10085	0.007	-24.795	0.009
PLH	000	20	N 27 41 30.38849	0.010	W 97 26 51.12976	0.010	-19.132	0.012
PLH	000	21	N 27 41 57.60151	0.009	W 97 25 2.09549	0.009	-18.950	0.010
PLH	000	22	N 27 43 2.61020	0.009	W 97 23 44.22514	0.009	-17.379	0.010
PLH	000	23	N 27 44 13.76501	0.010	W 97 23 11.60779	0.010	-17.857	0.010
PLH	000	24	N 27 45 13.76232	0.011	W 97 22 35.17159	0.011	-19.357	0.012
PLH	000	25	N 27 46 19.42144	0.011	W 97 23 18.67629	0.011	-24.224	0.012
PLH	000	26	N 27 48 23.56098	0.015	W 97 23 37.13419	0.015	-24.307	0.016
PLH	000	27	N 27 49 37.57312	0.017	W 97 23 10.25545	0.017	-25.510	0.017
PLH	000	28	N 27 50 1.18903	0.021	W 97 32 51.63083	0.021	-9.128	0.022
PLH	000	29	N 27 47 21.49130	0.018	W 97 32 51.22756	0.018	-12.070	0.019
PLH	000	3	N 27 46 3.07235	0.015	W 97 06 46.80382	0.015	-25.020	0.016
PLH	000	30	N 27 45 49.68032	0.010	W 97 29 33.00947	0.010	-15.359	0.011
PLH	000	31	N 27 44 15.78804	0.015	W 97 32 1.31046	0.015	-15.131	0.016
PLH	000	32	N 27 41 16.06731	0.020	W 97 33 14.10103	0.020	-11.356	0.021

Adjusted PLH Coordinates:

CODE	FFF	STATION	LATITUDE	STD DEV	LONGITUDE	STD DEV	ELIP-HEIGHT	STD DEV
PLH	000	33	N 27 39 24.93763	0.022	W 97 32 9.20044	0.022	-11.247	0.023
PLH	000	34	N 27 36 37.75499	0.027	W 97 32 7.82249	0.027	-14.637	0.028
PLH	000	35	N 27 51 6.55923	0.024	W 97 35 1.07377	0.024	-16.384	0.026
PLH	000	36	N 27 50 8.51217	0.026	W 97 37 11.00582	0.026	-4.000	0.027
PLH	000	37	N 27 48 26.20863	0.030	W 97 37 9.63850	0.030	-6.943	0.032
PLH	000	38	N 27 44 22.90742	0.028	W 97 37 10.03385	0.028	-6.520	0.028
PLH	000	39	N 27 41 49.76368	0.028	W 97 37 9.85609	0.028	-7.938	0.029
PLH	000	4	N 27 42 47.58371	0.023	W 97 08 49.03910	0.023	-23.659	0.025
PLH	000	40	N 27 40 16.38668	0.029	W 97 40 5.62232	0.029	-10.121	0.029
PLH	000	41	N 27 36 29.79270	0.029	W 97 39 49.06528	0.029	-13.968	0.030
PLH	000	42	N 27 36 13.98388	0.029	W 97 42 26.21535	0.029	-12.688	0.029
PLH	000	43	N 27 33 59.56338	0.021	W 97 45 44.58091	0.021	-8.355	0.021
PLH	000	44	N 27 35 22.48683	0.018	W 97 47 40.71254	0.018	-8.216	0.018
PLH	000	45	N 27 46 53.53673	0.029	W 97 40 5.98376	0.028	-3.851	0.030
PLH	000	46	N 27 48 15.62140	0.031	W 97 43 4.49801	0.031	-0.450	0.031
PLH	000	47	N 27 40 58.63204	0.026	W 97 49 56.73736	0.026	-0.891	0.026
PLH	000	48	N 27 41 59.35075	0.028	W 97 49 56.75947	0.027	0.719	0.028
PLH	000	49	N 27 44 31.23362	0.031	W 97 49 39.69159	0.031	-0.184	0.031
PLH	000	5	N 27 40 14.61840	0.027	W 97 10 26.17296	0.027	-24.207	0.028
PLH	000	50	N 27 47 8.17565	0.033	W 97 48 28.95956	0.033	0.195	0.034
PLH	000	51	N 27 50 2.17236	0.035	W 97 47 44.79538	0.035	-0.354	0.035
PLH	000	52	N 27 52 5.26033	0.030	W 97 41 38.91672	0.030	1.132	0.031
PLH	111	5237 TIDAL 2	N 27 50 21.86054	0.000	W 97 04 21.92172	0.000	-24.341	0.000
PLH	000	53	N 27 53 49.83123	0.035	W 97 47 0.53129	0.035	-3.872	0.036
PLH	000	54	N 27 55 1.37070	0.038	W 97 50 19.88085	0.038	6.542	0.039
PLH	000	55	N 27 57 35.40210	0.039	W 97 50 31.63327	0.039	0.321	0.040

Adjusted PLH Coordinates:

CODE	FFF	STATION	LATITUDE	STD DEV	LONGITUDE	STD DEV	ELIP-HEIGHT	STD DEV
PLH	000	56	N 27 54 17.70411	0.041	W 97 54 14.49734	0.041	9.243	0.041
PLH	000	57	N 27 52 1.81946	0.039	W 97 53 32.41820	0.039	6.367	0.040
PLH	000	58	N 27 49 8.19352	0.038	W 97 54 5.91273	0.037	9.001	0.038
PLH	111	5870 H TIDAL	N 27 35 17.26666	0.000	W 97 13 22.29500	0.000	-23.963	0.000
PLH	000	59	N 27 47 17.19437	0.028	W 97 38 55.22828	0.028	-5.575	0.028
PLH	000	6	N 27 37 6.51998	0.031	W 97 12 17.11621	0.031	-23.264	0.032
PLH	000	60	N 27 44 29.43477	0.030	W 97 42 4.08032	0.030	-5.231	0.031
PLH	000	61	N 27 40 29.66952	0.028	W 97 44 56.16953	0.028	-8.190	0.029
PLH	000	62	N 27 36 28.02153	0.017	W 97 48 58.80057	0.017	-6.045	0.018
PLH	000	63	N 27 37 48.73923	0.016	W 97 52 36.01278	0.016	-0.731	0.016
PLH	000	64	N 27 40 13.73042	0.023	W 97 54 46.60431	0.023	6.701	0.023
PLH	000	65	N 27 43 34.31373	0.031	W 97 54 21.82738	0.031	8.163	0.031
PLH	000	66	N 27 34 53.71358	0.019	W 97 47 21.84496	0.019	-8.560	0.019
PLH	000	67	N 27 36 51.28923	0.025	W 97 45 9.96520	0.025	-10.511	0.026
PLH	000	68	N 27 40 14.83759	0.029	W 97 45 15.99033	0.029	-7.333	0.030
PLH	000	69	N 27 46 53.56387	0.035	W 97 41 22.98552	0.035	-3.109	0.035
PLH	000	70	N 27 51 9.15858	0.037	W 97 37 53.18602	0.037	-2.583	0.037
PLH	000	71	N 27 51 28.39890	0.031	W 97 36 22.66320	0.031	-13.170	0.031
PLH	000	72	N 27 50 12.04514	0.026	W 97 34 10.59626	0.026	-5.163	0.026
PLH	000	73	N 27 49 12.32239	0.020	W 97 31 12.58901	0.020	-11.503	0.020
PLH	000	74	N 27 47 29.17365	0.012	W 97 29 10.21935	0.012	-12.884	0.013
PLH	000	75	N 27 46 5.43229	0.008	W 97 28 39.17748	0.008	-14.213	0.008
PLH	000	76	N 27 44 17.39717	0.001	W 97 26 25.02819	0.001	-15.794	0.001
PLH	000	8	N 27 40 30.57857	0.025	W 97 17 32.43935	0.024	-20.852	0.026
PLH	000	81	N 27 50 1.04261	0.019	W 97 22 48.67807	0.019	-25.380	0.019
PLH	000	82	N 27 49 17.34288	0.016	W 97 23 34.41958	0.016	-25.586	0.017

Adjusted PLH Coordinates:

CODE	FFF	STATION	LATITUDE	STD DEV	LONGITUDE	STD DEV	ELIP-HEIGHT	STD DEV
PLH	000	83	N 27 41 9.49540	0.012	W 97 24 11.88968	0.012	-18.557	0.013
PLH	000	84	N 27 41 4.68764	0.011	W 97 25 21.46277	0.011	-21.205	0.012
PLH	000	85	N 27 41 40.84002	0.009	W 97 27 6.78228	0.009	-18.743	0.011
PLH	000	86	N 27 42 9.24958	0.013	W 97 30 8.37749	0.013	-16.310	0.015
PLH	000	87	N 27 43 52.24565	0.011	W 97 30 7.30621	0.011	-14.763	0.012
PLH	000	88	N 27 45 25.44348	0.011	W 97 30 9.67997	0.011	-14.488	0.012
PLH	000	89	N 27 47 4.74623	0.017	W 97 31 31.11921	0.017	-13.740	0.018
PLH	000	9	N 27 39 0.99071	0.024	W 97 18 32.17704	0.024	-21.723	0.024
PLH	000	90	N 27 49 41.23677	0.025	W 97 33 10.31484	0.025	-5.932	0.026
PLH	000	91	N 27 51 51.58865	0.028	W 97 38 28.94169	0.028	-1.323	0.029
PLH	000	92	N 27 51 6.45989	0.029	W 97 39 31.28786	0.029	-0.822	0.031
PLH	000	93	N 27 49 42.98667	0.030	W 97 39 48.63363	0.030	-1.064	0.033
PLH	000	94	N 27 48 10.30854	0.030	W 97 40 1.27565	0.030	-2.565	0.031
PLH	000	95	N 27 47 21.76058	0.030	W 97 40 3.87096	0.030	-4.227	0.031
PLH	000	96	N 27 46 8.28895	0.031	W 97 40 27.33377	0.031	-3.458	0.032
PLH	000	97	N 27 45 16.67785	0.033	W 97 42 3.68086	0.033	-4.766	0.034
PLH	000	98	N 27 50 49.12759	0.029	W 97 37 47.72066	0.029	-3.449	0.030
PLH	001	B 1380	N 27 37 18.18579	0.052	W 97 46 34.89843	0.052	-6.580	0.000
PLH	111	KVTX	N 27 32 45.40708	0.000	W 97 53 34.34552	0.000	-1.307	0.000
PLH	110	TXAI	N 27 46 44.36144	0.000	W 98 05 49.59501	0.000	44.000	0.031
PLH	111	TXBE	N 28 25 25.21935	0.000	W 97 44 7.62312	0.000	49.336	0.000
PLH	111	TXCC	N 27 44 26.85485	0.000	W 97 26 30.01102	0.000	-9.068	0.000
PLH	110	TXPO	N 27 50 22.04387	0.000	W 97 04 11.64922	0.000	-19.392	0.004
PLH	110	TXSI	N 28 00 58.67601	0.000	W 97 28 9.70879	0.000	-6.278	0.009

Geoid Values:

CODE	NAME	N/S DEFLECTION	E/W DEFLECTION	UNDULATION
GEOI	1	+ 0 0 4.6	- 0 0 1.4	-26.382
GEOI	10	+ 0 0 4.4	- 0 0 1.2	-26.180
GEOI	11	+ 0 0 4.1	- 0 0 1.1	-26.256
GEOI	12	+ 0 0 4.1	- 0 0 1.0	-26.231
GEOI	13	+ 0 0 4.2	- 0 0 0.8	-26.257
GEOI	14	+ 0 0 4.2	- 0 0 0.9	-26.215
GEOI	15	+ 0 0 4.5	- 0 0 0.7	-26.205
GEOI	16	+ 0 0 4.7	- 0 0 0.6	-26.167
GEOI	17	+ 0 0 4.8	- 0 0 0.8	-26.072
GEOI	18	+ 0 0 5.0	- 0 0 0.8	-26.026
GEOI	19	+ 0 0 4.9	- 0 0 0.8	-26.011
GEOI	2	+ 0 0 4.6	- 0 0 1.5	-26.322
GEOI	20	+ 0 0 4.2	- 0 0 0.6	-26.297
GEOI	21	+ 0 0 4.2	- 0 0 0.8	-26.303
GEOI	22	+ 0 0 3.9	- 0 0 0.8	-26.334
GEOI	23	+ 0 0 3.9	- 0 0 0.9	-26.371
GEOI	24	+ 0 0 3.9	- 0 0 0.9	-26.401
GEOI	25	+ 0 0 4.1	- 0 0 0.9	-26.445
GEOI	26	+ 0 0 4.0	- 0 0 0.8	-26.521
GEOI	27	+ 0 0 3.9	- 0 0 0.9	-26.563
GEOI	28	+ 0 0 3.4	- 0 0 0.5	-26.634
GEOI	29	+ 0 0 3.8	- 0 0 0.6	-26.547
GEOI	3	+ 0 0 4.1	- 0 0 1.5	-26.250
GEOI	30	+ 0 0 4.0	- 0 0 0.9	-26.474
GEOI	31	+ 0 0 4.0	- 0 0 0.9	-26.436
GEOI	32	+ 0 0 4.4	- 0 0 0.8	-26.331
GEOI	33	+ 0 0 4.6	- 0 0 0.9	-26.249
GEOI	34	+ 0 0 4.8	- 0 0 0.9	-26.131
GEOI	35	+ 0 0 3.2	- 0 0 0.3	-26.674
GEOI	36	+ 0 0 3.1	- 0 0 0.4	-26.655
GEOI	37	+ 0 0 3.4	- 0 0 0.5	-26.604
GEOI	38	+ 0 0 3.7	- 0 0 0.7	-26.475
GEOI	39	+ 0 0 4.1	- 0 0 0.9	-26.386
GEOI	4	+ 0 0 4.0	- 0 0 1.6	-26.160
GEOI	40	+ 0 0 4.1	- 0 0 0.8	-26.351
GEOI	41	+ 0 0 4.4	- 0 0 1.2	-26.203
GEOI	42	+ 0 0 4.1	- 0 0 1.3	-26.222
GEOI	43	+ 0 0 3.5	- 0 0 1.3	-26.187
GEOI	44	+ 0 0 3.3	- 0 0 1.0	-26.248
GEOI	45	+ 0 0 3.3	- 0 0 0.5	-26.568
GEOI	46	+ 0 0 2.9	- 0 0 0.2	-26.617
GEOI	47	+ 0 0 3.3	- 0 0 0.3	-26.430
GEOI	48	+ 0 0 3.1	- 0 0 0.3	-26.460
GEOI	49	+ 0 0 2.7	+ 0 0 0.0	-26.530
GEOI	5	+ 0 0 4.7	- 0 0 1.6	-26.079
GEOI	50	+ 0 0 2.5	+ 0 0 0.1	-26.595
GEOI	51	+ 0 0 2.2	+ 0 0 0.2	-26.658
GEOI	52	+ 0 0 2.5	+ 0 0 0.1	-26.711
GEOI	5237 TIDAL 2	+ 0 0 4.5	- 0 0 1.4	-26.387
GEOI	53	+ 0 0 2.0	+ 0 0 0.5	-26.734
GEOI	54	+ 0 0 1.4	+ 0 0 1.2	-26.724
GEOI	55	+ 0 0 1.0	+ 0 0 2.0	-26.752
GEOI	56	+ 0 0 0.8	+ 0 0 2.0	-26.654

Geoid Values:

CODE	NAME	N/S DEFLECTION	E/W DEFLECTION	UNDULATION
GEOI	57	+ 0 0 1.2	+ 0 0 1.5	-26.644
GEOI	58	+ 0 0 1.6	+ 0 0 1.0	-26.600
GEOI	5870 H TIDAL	+ 0 0 4.9	- 0 0 1.7	-25.910
GEOI	59	+ 0 0 3.4	- 0 0 0.4	-26.575
GEOI	6	+ 0 0 4.8	- 0 0 1.8	-25.973
GEOI	60	+ 0 0 3.5	- 0 0 0.7	-26.507
GEOI	61	+ 0 0 3.7	- 0 0 0.6	-26.391
GEOI	62	+ 0 0 3.3	- 0 0 0.8	-26.290
GEOI	63	+ 0 0 3.2	- 0 0 0.6	-26.349
GEOI	64	+ 0 0 2.7	- 0 0 0.1	-26.419
GEOI	65	+ 0 0 2.2	+ 0 0 0.2	-26.499
GEOI	66	+ 0 0 3.3	- 0 0 1.1	-26.231
GEOI	67	+ 0 0 3.7	- 0 0 1.0	-26.272
GEOI	68	+ 0 0 3.6	- 0 0 0.7	-26.385
GEOI	69	+ 0 0 3.1	- 0 0 0.5	-26.575
GEOI	70	+ 0 0 3.0	- 0 0 0.2	-26.684
GEOI	71	+ 0 0 3.0	- 0 0 0.4	-26.689
GEOI	72	+ 0 0 3.3	- 0 0 0.5	-26.645
GEOI	73	+ 0 0 3.6	- 0 0 0.5	-26.599
GEOI	74	+ 0 0 3.8	- 0 0 0.7	-26.529
GEOI	75	+ 0 0 4.0	- 0 0 0.8	-26.476
GEOI	76	+ 0 0 3.9	- 0 0 0.8	-26.397
GEOI	8	+ 0 0 4.3	- 0 0 1.2	-26.182
GEOI	81	+ 0 0 3.9	- 0 0 0.9	-26.573
GEOI	82	+ 0 0 4.1	- 0 0 0.9	-26.552
GEOI	83	+ 0 0 4.2	- 0 0 0.8	-26.266
GEOI	84	+ 0 0 4.2	- 0 0 0.8	-26.271
GEOI	85	+ 0 0 4.2	- 0 0 0.6	-26.305
GEOI	86	+ 0 0 4.4	- 0 0 0.7	-26.342
GEOI	87	+ 0 0 3.9	- 0 0 0.8	-26.408
GEOI	88	+ 0 0 4.0	- 0 0 0.8	-26.463
GEOI	89	+ 0 0 3.8	- 0 0 0.7	-26.530
GEOI	9	+ 0 0 4.5	- 0 0 1.2	-26.132
GEOI	90	+ 0 0 3.4	- 0 0 0.5	-26.625
GEOI	91	+ 0 0 2.6	- 0 0 0.3	-26.705
GEOI	92	+ 0 0 2.9	- 0 0 0.2	-26.685
GEOI	93	+ 0 0 3.0	- 0 0 0.2	-26.648
GEOI	94	+ 0 0 3.2	- 0 0 0.3	-26.605
GEOI	95	+ 0 0 3.3	- 0 0 0.4	-26.582
GEOI	96	+ 0 0 3.3	- 0 0 0.5	-26.547
GEOI	97	+ 0 0 3.2	- 0 0 0.6	-26.531
GEOI	98	+ 0 0 3.0	- 0 0 0.2	-26.675
GEOI	B 1380	+ 0 0 3.5	- 0 0 0.9	-26.298
GEOI	KVTX	+ 0 0 3.4	- 0 0 0.5	-26.206
GEOI	TXAI	+ 0 0 0.2	+ 0 0 2.6	-26.374
GEOI	TXBE	- 0 0 0.6	+ 0 0 3.3	-26.913
GEOI	TXCC	+ 0 0 3.9	- 0 0 0.8	-26.404
GEOI	TXPO	+ 0 0 4.5	- 0 0 1.4	-26.385
GEOI	TXSI	+ 0 0 2.5	- 0 0 0.2	-26.917

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D012011.ASC ,obs#:		1				
DXCT		KVTX	35	32347.04510	-0.003	-0.036
				0.080	0.077	0.06
DYCT		KVTX	35	11518.16420	-0.017	-0.222
				0.081	0.077	0.38
DZCT		KVTX	35	30004.05440	0.014	0.182
				0.082	0.078	0.31
GROUP: D012011.ASC ,obs#:		2				
DXCT		TXCC	35	-13118.67100	0.004	0.157
				0.033	0.023	0.19
DYCT		TXCC	35	7523.85320	0.018	0.761
				0.035	0.024	0.99
DZCT		TXCC	35	10880.65400	-0.004	-0.179
				0.035	0.025	0.24
GROUP: D012011.ASC ,obs#:		3				
DXCT		TXSI	35	-12266.76970	-0.004	-0.127
				0.038	0.029	0.17
DYCT		TXSI	35	-6982.99420	-0.019	-0.636
				0.039	0.029	0.87
DZCT		TXSI	35	-16108.07980	0.001	0.031
				0.039	0.030	0.04
GROUP: D012011.ASC ,obs#:		4				
DXCT		KVTX	36	28711.22940	0.007	0.105
				0.074	0.069	0.17
DYCT		KVTX	36	11150.36710	0.002	0.022
				0.074	0.069	0.04
DZCT		KVTX	36	28429.89780	-0.004	-0.060
				0.074	0.069	0.10
GROUP: D012011.ASC ,obs#:		5				
DXCT		TXSI	36	-15902.57760	-0.002	-0.043
				0.044	0.035	0.06
DYCT		TXSI	36	-7350.78860	-0.003	-0.075
				0.044	0.035	0.11
DZCT		TXSI	36	-17682.23870	-0.015	-0.429
				0.044	0.035	0.61
GROUP: D012011.ASC ,obs#:		6				
DXCT		TXCC	36	-16754.47230	-0.001	-0.030
				0.036	0.025	0.04
DYCT		TXCC	36	7156.09220	0.001	0.042
				0.038	0.027	0.06
DZCT		TXCC	36	9306.46320	0.011	0.450
				0.037	0.025	0.56
GROUP: D012011.ASC ,obs#:		7				
DXCT		KVTX	37	28553.78250	0.007	0.112
				0.070	0.063	0.18
DYCT		KVTX	37	9691.20840	-0.008	-0.120
				0.071	0.063	0.19
DZCT		KVTX	37	25643.40680	-0.009	-0.136
				0.070	0.063	0.22
GROUP: D012011.ASC ,obs#:		8				
DXCT		TXCC	37	-16911.91850	-0.002	-0.111
				0.034	0.015	0.09

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		TXCC	37	5696.92360	0.002	0.115
				0.036	0.016	0.10
DZCT		TXCC	37	6519.97730	0.002	0.133
				0.034	0.015	0.10
GROUP: D012011.ASC ,obs#:		9				
DXCT		KVTX	38	28080.28750	-0.004	-0.070
				0.061	0.054	0.11
DYCT		KVTX	38	6233.22490	-0.005	-0.087
				0.061	0.055	0.14
DZCT		KVTX	38	19017.07060	-0.010	-0.185
				0.061	0.054	0.29
GROUP: D012011.ASC ,obs#:		10				
DXCT		TXCC	38	-17385.42700	0.001	0.070
				0.031	0.014	0.06
DYCT		TXCC	38	2238.94360	0.001	0.087
				0.031	0.014	0.07
DZCT		TXCC	38	-106.36100	0.003	0.185
				0.031	0.014	0.15
GROUP: D012011.ASC ,obs#:		11				
DXCT		KVTX	39	27794.55070	-0.001	-0.015
				0.056	0.049	0.02
DYCT		KVTX	39	4060.55460	-0.009	-0.181
				0.057	0.049	0.28
DZCT		KVTX	39	14843.31840	-0.005	-0.105
				0.056	0.049	0.16
GROUP: D012011.ASC ,obs#:		12				
DXCT		TXCC	39	-17671.16000	0.000	0.016
				0.032	0.016	0.01
DYCT		TXCC	39	66.26750	0.003	0.179
				0.033	0.017	0.16
DZCT		TXCC	39	-4280.10740	0.002	0.102
				0.033	0.016	0.09
GROUP: D012011.ASC ,obs#:		13				
DXCT		KVTX	40	22843.64260	-0.001	-0.031
				0.046	0.036	0.04
DYCT		KVTX	40	3379.57980	-0.006	-0.155
				0.047	0.037	0.22
DZCT		KVTX	40	12297.04290	-0.004	-0.113
				0.047	0.036	0.16
GROUP: D012011.ASC ,obs#:		14				
DXCT		TXSI	40	-21770.17940	0.005	0.073
				0.076	0.070	0.12
DYCT		TXSI	40	-15121.58420	-0.002	-0.022
				0.076	0.070	0.04
DZCT		TXSI	40	-33815.10170	-0.007	-0.099
				0.076	0.071	0.16
GROUP: D012011.ASC ,obs#:		15				
DXCT		TXCC	40	-22622.06760	-0.001	-0.021
				0.042	0.030	0.03
DYCT		TXCC	40	-614.70630	0.005	0.165
				0.042	0.031	0.22
DZCT		TXCC	40	-6826.38570	0.005	0.178

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.042	0.031	0.23
GROUP: D012011.ASC ,obs#:		16				
DXCT		KVTX	41	22862.28050	0.001	0.025
				0.042	0.030	0.03
DYCT		KVTX	41	115.60440	-0.013	-0.438
				0.043	0.031	0.57
DZCT		KVTX	41	6116.30850	0.002	0.081
				0.042	0.030	0.10
GROUP: D012011.ASC ,obs#:		17				
DXCT		TXSI	41	-21751.53890	0.004	0.054
				0.087	0.081	0.09
DYCT		TXSI	41	-18385.58260	0.014	0.168
				0.087	0.082	0.28
DZCT		TXSI	41	-39995.81750	-0.019	-0.233
				0.087	0.081	0.39
GROUP: D012011.ASC ,obs#:		18				
DXCT		TXCC	41	-22603.42620	-0.002	-0.062
				0.047	0.036	0.08
DYCT		TXCC	41	-3878.69670	0.012	0.337
				0.047	0.037	0.47
DZCT		TXCC	41	-13007.11060	0.003	0.070
				0.047	0.036	0.10
GROUP: D012011.ASC ,obs#:		19				
DXCT		KVTX	42	18561.40830	-0.000	-0.007
				0.034	0.019	0.01
DYCT		KVTX	42	467.30710	-0.009	-0.470
				0.035	0.019	0.46
DZCT		KVTX	42	5685.68620	-0.000	-0.003
				0.034	0.019	0.00
GROUP: D012011.ASC ,obs#:		20				
DXCT		TXCC	42	-26904.30170	0.000	0.004
				0.053	0.045	0.01
DYCT		TXCC	42	-3526.99840	0.021	0.470
				0.054	0.045	0.70
DZCT		TXCC	42	-13437.73310	0.000	0.006
				0.053	0.045	0.01
GROUP: D012011.ASC ,obs#:		21				
DXCT		KVTX	43	12912.02620	0.000	0.012
				0.023	0.009	0.01
DYCT		KVTX	43	-702.84840	-0.002	-0.189
				0.023	0.009	0.13
DZCT		KVTX	43	2020.41270	-0.001	-0.162
				0.023	0.009	0.11
GROUP: D012011.ASC ,obs#:		22				
DXCT		TXSI	43	-31701.79620	0.007	0.068
				0.101	0.099	0.12
DYCT		TXSI	43	-19204.02320	0.013	0.133
				0.102	0.099	0.23
DZCT		TXSI	43	-44091.72640	-0.010	-0.099
				0.102	0.099	0.17
GROUP: D012011.ASC ,obs#:		23				
DXCT		TXCC	43	-32553.67970	-0.004	-0.060

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.065	0.062	0.10
DYCT		TXCC	43	-4697.13350	0.008	0.130
				0.066	0.062	0.22
DZCT		TXCC	43	-17103.02350	0.016	0.255
				0.065	0.062	0.43
GROUP: D012011.ASC ,obs#:		24				
DXCT		KVTX	44	9915.95140	-0.001	-0.225
				0.019	0.006	0.13
DYCT		KVTX	44	898.96070	-0.003	-0.455
				0.019	0.006	0.26
DZCT		KVTX	44	4282.95010	0.002	0.376
				0.019	0.006	0.22
GROUP: D012011.ASC ,obs#:		25				
DXCT		TXSI	44	-34697.88130	0.016	0.157
				0.101	0.099	0.27
DYCT		TXSI	44	-17602.22170	0.020	0.199
				0.101	0.099	0.34
DZCT		TXSI	44	-41829.16410	-0.031	-0.312
				0.101	0.099	0.54
GROUP: D012011.ASC ,obs#:		26				
DXCT		TXCC	44	-35549.76990	0.010	0.156
				0.068	0.066	0.26
DYCT		TXCC	44	-3095.34370	0.026	0.397
				0.069	0.066	0.68
DZCT		TXCC	44	-14840.45180	-0.015	-0.224
				0.068	0.066	0.38
GROUP: D012311.ASC ,obs#:		27				
DXCT		TXSI	59	-19056.55200	0.001	0.020
				0.054	0.047	0.03
DYCT		TXSI	59	-9409.12470	-0.006	-0.124
				0.055	0.047	0.19
DZCT		TXSI	59	-22347.36200	-0.005	-0.102
				0.055	0.047	0.16
GROUP: D012311.ASC ,obs#:		28				
DXCT		TXCC	59	-19908.44480	-0.000	-0.008
				0.037	0.025	0.01
DYCT		TXCC	59	5097.74530	0.009	0.344
				0.038	0.025	0.41
DZCT		TXCC	59	4641.36050	0.001	0.044
				0.038	0.025	0.05
GROUP: D012311.ASC ,obs#:		29				
DXCT		KVTX	59	25557.26530	-0.001	-0.011
				0.064	0.057	0.02
DYCT		KVTX	59	9092.04630	-0.017	-0.296
				0.064	0.057	0.47
DZCT		KVTX	59	23764.77770	0.003	0.051
				0.064	0.057	0.08
GROUP: D012311.ASC ,obs#:		30				
DXCT		TXSI	60	-24502.65440	0.002	0.033
				0.067	0.060	0.05
DYCT		TXSI	60	-11102.87660	-0.004	-0.065
				0.068	0.060	0.10

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DZCT		TXSI	60	-26916.64780	-0.008	-0.126
				0.067	0.060	0.20
GROUP: D012311.ASC ,obs#:		31				
DXCT		TXCC	60	-25354.54620	-0.000	-0.005
				0.045	0.034	0.01
DYCT		TXCC	60	3403.99220	0.012	0.346
				0.046	0.034	0.46
DZCT		TXCC	60	72.07260	0.000	0.014
				0.045	0.034	0.02
GROUP: D012311.ASC ,obs#:		32				
DXCT		KVTX	60	20111.16420	-0.001	-0.022
				0.051	0.041	0.03
DYCT		KVTX	60	7398.29190	-0.013	-0.305
				0.051	0.041	0.44
DZCT		KVTX	60	19195.48840	0.004	0.090
				0.051	0.041	0.13
GROUP: D012311.ASC ,obs#:		33				
DXCT		TXSI	61	-29635.34670	0.004	0.050
				0.082	0.078	0.08
DYCT		TXSI	61	-13867.08090	0.002	0.022
				0.083	0.078	0.04
DZCT		TXSI	61	-33452.10330	-0.010	-0.128
				0.083	0.078	0.21
GROUP: D012311.ASC ,obs#:		34				
DXCT		TXCC	61	-30487.23640	-0.000	-0.008
				0.055	0.047	0.01
DYCT		TXCC	61	639.79130	0.014	0.296
				0.055	0.048	0.45
DZCT		TXCC	61	-6463.38760	0.003	0.060
				0.055	0.047	0.09
GROUP: D012311.ASC ,obs#:		35				
DXCT		KVTX	61	14978.47350	-0.001	-0.027
				0.036	0.022	0.03
DYCT		KVTX	61	4634.08710	-0.006	-0.284
				0.036	0.022	0.32
DZCT		KVTX	61	12660.03350	0.001	0.033
				0.036	0.022	0.04
GROUP: D012311.ASC ,obs#:		36				
DXCT		TXCC	62	-37544.68820	-0.000	-0.005
				0.070	0.068	0.01
DYCT		TXCC	62	-1880.52310	0.011	0.161
				0.070	0.068	0.28
DZCT		TXCC	62	-13051.75600	0.008	0.117
				0.070	0.068	0.20
GROUP: D012311.ASC ,obs#:		37				
DXCT		KVTX	62	7921.02110	0.000	0.005
				0.018	0.004	0.00
DYCT		KVTX	62	2113.76390	-0.001	-0.160
				0.018	0.005	0.07
DZCT		KVTX	62	6071.67150	-0.001	-0.116
				0.018	0.005	0.05
GROUP: D012311.ASC ,obs#:		38				

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DXCT		TXSI	63	-42436.01560	0.014	0.138
				0.103	0.102	0.24
DYCT		TXSI	63	-14437.96230	0.009	0.087
				0.104	0.102	0.15
DZCT		TXSI	63	-37836.51850	-0.006	-0.064
				0.104	0.102	0.11
GROUP: D012311.ASC ,obs#:		39				
DXCT		TXCC	63	-43287.90310	0.008	0.100
				0.079	0.077	0.17
DYCT		TXCC	63	68.90900	0.022	0.287
				0.079	0.077	0.50
DZCT		TXCC	63	-10847.80210	0.006	0.072
				0.079	0.077	0.12
GROUP: D012311.ASC ,obs#:		40				
DXCT		KVTX	63	2177.81500	-0.001	-0.167
				0.017	0.004	0.08
DYCT		KVTX	63	4063.20770	-0.001	-0.285
				0.017	0.004	0.13
DZCT		KVTX	63	8275.62250	-0.000	-0.016
				0.017	0.004	0.01
GROUP: D012311.ASC ,obs#:		41				
DXCT		TXSI	64	-45698.06550	0.005	0.049
				0.102	0.100	0.08
DYCT		TXSI	64	-11901.23380	-0.005	-0.055
				0.103	0.100	0.09
DZCT		TXSI	64	-33879.70360	-0.006	-0.057
				0.102	0.100	0.10
GROUP: D012311.ASC ,obs#:		42				
DXCT		TXCC	64	-46549.94680	-0.008	-0.098
				0.083	0.080	0.17
DYCT		TXCC	64	2605.64810	-0.003	-0.035
				0.083	0.080	0.06
DZCT		TXCC	64	-6890.99250	0.012	0.147
				0.083	0.080	0.25
GROUP: D012311.ASC ,obs#:		43				
DXCT		KVTX	64	-1084.24530	0.000	0.046
				0.025	0.009	0.03
DYCT		KVTX	64	6599.92000	0.001	0.065
				0.025	0.009	0.04
DZCT		KVTX	64	12232.43890	-0.001	-0.080
				0.025	0.009	0.05
GROUP: D012311.ASC ,obs#:		44				
DXCT		TXSI	65	-44630.92970	0.011	0.119
				0.095	0.089	0.20
DYCT		TXSI	65	-9153.30880	-0.002	-0.019
				0.095	0.089	0.03
DZCT		TXSI	65	-28412.22210	-0.013	-0.141
				0.095	0.089	0.23
GROUP: D012311.ASC ,obs#:		45				
DXCT		TXCC	65	-45482.81940	0.006	0.086
				0.081	0.075	0.14
DYCT		TXCC	65	5353.55960	0.014	0.194

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.081	0.075	0.32
DZCT		TXCC	65	-1423.50780	0.002	0.020
				0.081	0.075	0.03
GROUP: D012311.ASC ,obs#:		46				
DXCT		KVTX	65	-17.10060	-0.003	-0.154
				0.035	0.018	0.14
DYCT		KVTX	65	9347.85200	-0.003	-0.146
				0.036	0.018	0.13
DZCT		KVTX	65	17699.91120	0.002	0.085
				0.036	0.018	0.08
GROUP: D012411.ASC ,obs#:		47				
DXCT		TXSI	B 1380	-32686.42290	0.004	0.050
				0.094	0.078	0.07
DYCT		TXSI	B 1380	-16213.04980	0.005	0.056
				0.094	0.090	0.10
DZCT		TXSI	B 1380	-38672.47930	-0.018	-0.217
				0.094	0.081	0.33
GROUP: D012411.ASC ,obs#:		48				
DXCT		TXCC	B 1380	-33538.31150	-0.001	-0.042
				0.063	0.035	0.04
DYCT		TXCC	B 1380	-1706.15980	-0.000	-0.007
				0.063	0.058	0.01
DZCT		TXCC	B 1380	-11683.77540	0.007	0.163
				0.063	0.042	0.19
GROUP: D121110.ASC ,obs#:		49				
DXCT		TXCC	23	5365.28770	-0.000	-0.198
				0.010	0.002	0.06
DYCT		TXCC	23	-879.45040	-0.001	-0.586
				0.010	0.002	0.18
DZCT		TXCC	23	-360.71700	0.001	0.759
				0.010	0.002	0.22
GROUP: D121110.ASC ,obs#:		50				
DXCT		TXPO	23	-31624.45810	0.011	0.186
				0.059	0.058	0.33
DYCT		TXPO	23	-1317.89590	0.033	0.571
				0.059	0.059	1.01
DZCT		TXPO	23	-10028.29420	-0.043	-0.747
				0.059	0.058	1.30
GROUP: D121110.ASC ,obs#:		51				
DXCT		TXCC	24	6465.51350	-0.001	-0.315
				0.012	0.002	0.12
DYCT		TXCC	24	-153.67520	-0.001	-0.540
				0.012	0.003	0.21
DZCT		TXCC	24	1273.07820	0.001	0.439
				0.012	0.002	0.16
GROUP: D121110.ASC ,obs#:		52				
DXCT		TXPO	24	-30524.23810	0.016	0.295
				0.056	0.055	0.51
DYCT		TXPO	24	-592.11630	0.029	0.520
				0.056	0.055	0.90
DZCT		TXPO	24	-8394.51950	-0.023	-0.419
				0.056	0.055	0.72

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D121110.ASC ,obs#:	53					
DXCT		TXCC	25	5405.65810	-0.001	-0.271
				0.011	0.002	0.09
DYCT		TXCC	25	937.32340	0.001	0.275
				0.012	0.002	0.10
DZCT		TXCC	25	3059.26480	0.001	0.394
				0.011	0.002	0.14
GROUP: D121110.ASC ,obs#:	54					
DXCT		TXPO	25	-31584.09240	0.015	0.272
				0.057	0.056	0.47
DYCT		TXPO	25	498.92940	-0.017	-0.291
				0.058	0.057	0.51
DZCT		TXPO	25	-6608.33340	-0.023	-0.401
				0.057	0.056	0.70
GROUP: D121110.ASC ,obs#:	55					
DXCT		TXCC	26	5133.75270	-0.001	-0.197
				0.015	0.004	0.09
DYCT		TXCC	26	2769.15670	0.001	0.193
				0.016	0.004	0.10
DZCT		TXCC	26	6439.78970	0.000	0.112
				0.016	0.004	0.05
GROUP: D121110.ASC ,obs#:	56					
DXCT		TXPO	26	-31855.99360	0.011	0.198
				0.057	0.055	0.34
DYCT		TXPO	26	2330.75730	-0.011	-0.196
				0.058	0.056	0.34
DZCT		TXPO	26	-3227.82510	-0.006	-0.116
				0.057	0.055	0.20
GROUP: D121110.ASC ,obs#:	57					
DXCT		TXSI	27	6852.04660	0.004	0.117
				0.040	0.036	0.19
DYCT		TXSI	27	-10776.95660	-0.022	-0.604
				0.040	0.036	0.97
DZCT		TXSI	27	-18534.49350	-0.013	-0.372
				0.040	0.036	0.60
GROUP: D121110.ASC ,obs#:	58					
DXCT		TXCC	27	6000.15970	-0.003	-0.281
				0.019	0.010	0.26
DYCT		TXCC	27	3729.90190	0.004	0.429
				0.020	0.010	0.39
DZCT		TXCC	27	8454.21660	0.005	0.489
				0.019	0.010	0.45
GROUP: D121110.ASC ,obs#:	59					
DXCT		TXPO	27	-30989.59230	0.014	0.276
				0.055	0.052	0.46
DYCT		TXPO	27	3291.48810	0.007	0.132
				0.055	0.053	0.22
DZCT		TXPO	27	-1213.38660	-0.014	-0.258
				0.055	0.053	0.43
GROUP: D121110.ASC ,obs#:	60					
DXCT		TXSI	28	-8880.33830	-0.001	-0.036
				0.038	0.032	0.05

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		TXSI	28	-8387.32060	-0.014	-0.417
				0.040	0.033	0.64
DZCT		TXSI	28	-17883.95870	-0.031	-0.976
				0.038	0.032	1.45
GROUP: D121110.ASC ,obs#:		61				
DXCT		TXCC	28	-9732.23290	-0.000	-0.032
				0.026	0.016	0.03
DYCT		TXCC	28	6119.54470	0.005	0.342
				0.027	0.016	0.37
DZCT		TXCC	28	9104.72050	0.018	1.150
				0.026	0.016	1.22
GROUP: D121110.ASC ,obs#:		62				
DXCT		TXPO	28	-46721.97830	0.010	0.127
				0.083	0.080	0.22
DYCT		TXPO	28	5681.13170	0.007	0.091
				0.083	0.080	0.16
DZCT		TXPO	28	-562.84850	-0.035	-0.434
				0.083	0.080	0.74
GROUP: D121110.ASC ,obs#:		63				
DXCT		TXSI	29	-9170.31940	0.004	0.087
				0.046	0.043	0.14
DYCT		TXSI	29	-10659.87820	-0.018	-0.429
				0.047	0.043	0.69
DZCT		TXSI	29	-22233.37250	-0.008	-0.189
				0.047	0.043	0.31
GROUP: D121110.ASC ,obs#:		64				
DXCT		TXCC	29	-10022.20840	-0.001	-0.130
				0.021	0.009	0.11
DYCT		TXCC	29	3846.98490	0.003	0.331
				0.021	0.010	0.27
DZCT		TXCC	29	4755.34520	0.003	0.284
				0.021	0.009	0.23
GROUP: D121110.ASC ,obs#:		65				
DXCT		TXPO	29	-47011.95230	0.008	0.098
				0.084	0.081	0.17
DYCT		TXPO	29	3408.56930	0.008	0.093
				0.084	0.082	0.16
DZCT		TXPO	29	-4912.25610	-0.018	-0.216
				0.084	0.082	0.37
GROUP: D121110.ASC ,obs#:		66				
DXCT		TXSI	30	-3961.99730	0.000	0.004
				0.050	0.049	0.01
DYCT		TXSI	30	-12672.97540	-0.002	-0.046
				0.051	0.050	0.08
DZCT		TXSI	30	-24735.39530	-0.003	-0.064
				0.052	0.050	0.12
GROUP: D121110.ASC ,obs#:		67				
DXCT		TXCC	30	-4813.89100	-0.000	-0.025
				0.010	0.002	0.01
DYCT		TXCC	30	1833.90710	-0.000	-0.087
				0.011	0.003	0.04
DZCT		TXCC	30	2253.32940	0.001	0.184

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.011	0.003	0.09
GROUP: D121110.ASC ,obs#:	68					
DXCT		TXPO	30	-41803.62760	0.002	0.025
				0.075	0.074	0.04
DYCT		TXPO	30	1395.48230	0.013	0.179
				0.076	0.075	0.32
DZCT		TXPO	30	-7414.27580	-0.016	-0.212
				0.076	0.075	0.37
GROUP: D121110.ASC ,obs#:	69					
DXCT		TXSI	31	-8164.36760	-0.015	-0.283
				0.056	0.053	0.48
DYCT		TXSI	31	-13476.33160	-0.019	-0.362
				0.056	0.053	0.61
DZCT		TXSI	31	-27293.06210	0.004	0.068
				0.056	0.054	0.12
GROUP: D121110.ASC ,obs#:	70					
DXCT		TXCC	31	-9016.27850	0.002	0.346
				0.016	0.005	0.20
DYCT		TXCC	31	1030.53180	0.002	0.328
				0.016	0.005	0.20
DZCT		TXCC	31	-304.33000	-0.000	-0.002
				0.016	0.005	0.00
GROUP: D121110.ASC ,obs#:	71					
DXCT		TXPO	31	-46005.99640	-0.015	-0.183
				0.083	0.082	0.32
DYCT		TXPO	31	592.12550	-0.003	-0.037
				0.083	0.082	0.07
DZCT		TXPO	31	-9971.94290	-0.009	-0.107
				0.083	0.082	0.19
GROUP: D121110.ASC ,obs#:	72					
DXCT		TXSI	32	-10479.40160	0.008	0.124
				0.066	0.063	0.21
DYCT		TXSI	32	-15768.24950	-0.015	-0.240
				0.067	0.063	0.40
DZCT		TXSI	32	-32188.82540	-0.021	-0.328
				0.066	0.063	0.55
GROUP: D121110.ASC ,obs#:	73					
DXCT		TXCC	32	-11331.28630	-0.001	-0.172
				0.022	0.009	0.12
DYCT		TXCC	32	-1261.38220	0.002	0.242
				0.023	0.009	0.17
DZCT		TXCC	32	-5200.12160	0.004	0.479
				0.022	0.009	0.33
GROUP: D121110.ASC ,obs#:	74					
DXCT		TXPO	32	-48321.03210	0.010	0.111
				0.089	0.087	0.19
DYCT		TXPO	32	-1699.78430	-0.007	-0.079
				0.090	0.087	0.14
DZCT		TXPO	32	-14867.71020	-0.029	-0.333
				0.089	0.087	0.57
GROUP: D121110.ASC ,obs#:	75					
DXCT		TXCC	33	-9776.70100	0.000	0.038

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.023	0.006	0.02
DYCT		TXCC	33	-3069.90790	0.001	0.218
				0.024	0.006	0.10
DZCT		TXCC	33	-8229.55110	0.002	0.297
				0.023	0.006	0.13
GROUP: D121110.ASC ,obs#:		76				
DXCT		TXPO	33	-46766.43230	-0.003	-0.037
				0.088	0.086	0.06
DYCT		TXPO	33	-3508.29880	-0.019	-0.221
				0.089	0.086	0.38
DZCT		TXPO	33	-17897.14540	-0.026	-0.299
				0.088	0.086	0.51
GROUP: D121110.ASC ,obs#:		77				
DXCT		TXSI	34	-9199.98920	0.003	0.045
				0.080	0.075	0.07
DYCT		TXSI	34	-19945.01890	0.001	0.017
				0.080	0.075	0.03
DZCT		TXSI	34	-39778.94880	-0.016	-0.219
				0.080	0.075	0.36
GROUP: D121110.ASC ,obs#:		78				
DXCT		TXCC	34	-10051.87880	-0.001	-0.070
				0.030	0.014	0.06
DYCT		TXCC	34	-5438.13270	-0.000	-0.026
				0.031	0.014	0.02
DZCT		TXCC	34	-12790.24120	0.004	0.315
				0.031	0.014	0.25
GROUP: D121110.ASC ,obs#:		79				
DXCT		TXPO	34	-47041.61850	0.004	0.046
				0.092	0.088	0.08
DYCT		TXPO	34	-5876.54490	0.001	0.008
				0.093	0.088	0.01
DZCT		TXPO	34	-22457.84090	-0.018	-0.199
				0.093	0.088	0.34
GROUP: D2012111.ASC,obs#:		80				
DXCT		TXBE	45	2050.23900	0.010	0.084
				0.126	0.123	0.14
DYCT		TXBE	45	-34056.03630	0.001	0.011
				0.126	0.123	0.02
DZCT		TXBE	45	-62797.38410	0.039	0.318
				0.126	0.123	0.55
GROUP: D2012111.ASC,obs#:		81				
DXCT		TXSI	45	-21021.78150	0.007	0.133
				0.058	0.050	0.20
DYCT		TXSI	45	-9488.94390	0.011	0.210
				0.059	0.051	0.33
DZCT		TXSI	45	-22990.80750	-0.028	-0.536
				0.059	0.052	0.85
GROUP: D2012111.ASC,obs#:		82				
DXCT		TXCC	45	-21873.66710	-0.002	-0.058
				0.040	0.029	0.07
DYCT		TXCC	45	5017.93840	0.013	0.432
				0.042	0.030	0.57

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DZCT		TXCC	45	3997.89560	-0.002	-0.075
				0.042	0.031	0.10
GROUP: D2012111.ASC,obs#:		83				
DXCT		KVTX	45	23592.04630	-0.005	-0.101
				0.060	0.053	0.16
DYCT		KVTX	45	9012.26560	-0.039	-0.722
				0.061	0.054	1.14
DZCT		KVTX	45	23121.28810	0.024	0.445
				0.062	0.054	0.71
GROUP: D2012111.ASC,obs#:		84				
DXCT		TXSI	46	-25707.26580	0.003	0.053
				0.060	0.051	0.08
DYCT		TXSI	46	-7670.18730	0.016	0.311
				0.060	0.051	0.47
DZCT		TXSI	46	-20753.96700	-0.022	-0.428
				0.060	0.051	0.65
GROUP: D2012111.ASC,obs#:		85				
DXCT		TXCC	46	-26559.15330	-0.004	-0.097
				0.050	0.039	0.13
DYCT		TXCC	46	6836.70510	0.008	0.208
				0.050	0.039	0.29
DZCT		TXCC	46	6234.73550	0.004	0.104
				0.050	0.039	0.14
GROUP: D2012111.ASC,obs#:		86				
DXCT		KVTX	46	18906.55260	0.000	0.001
				0.059	0.050	0.00
DYCT		KVTX	46	10831.01970	-0.031	-0.618
				0.059	0.050	0.93
DZCT		KVTX	46	25358.14450	0.014	0.280
				0.059	0.050	0.42
GROUP: D2012111.ASC,obs#:		87				
DXCT		TXBE	46	-2635.25020	0.011	0.096
				0.121	0.117	0.16
DYCT		TXBE	46	-32237.29100	0.018	0.154
				0.121	0.117	0.26
DZCT		TXBE	46	-60560.50490	0.006	0.051
				0.121	0.117	0.09
GROUP: D2012111.ASC,obs#:		88				
DXCT		TXSI	47	-37740.59980	-0.001	-0.016
				0.091	0.087	0.03
DYCT		TXSI	47	-12346.70130	0.019	0.220
				0.091	0.087	0.37
DZCT		TXSI	47	-32659.20480	-0.023	-0.261
				0.091	0.087	0.44
GROUP: D2012111.ASC,obs#:		89				
DXCT		TXCC	47	-38592.49340	-0.002	-0.027
				0.069	0.064	0.04
DYCT		TXCC	47	2160.16950	0.033	0.514
				0.069	0.064	0.84
DZCT		TXCC	47	-5670.49290	-0.006	-0.096
				0.069	0.064	0.16
GROUP: D2012111.ASC,obs#:		90				

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DXCT		KVTX	47	6873.21420	0.000	0.027
				0.029	0.013	0.02
DYCT		KVTX	47	6154.48590	-0.008	-0.580
				0.030	0.014	0.50
DZCT		KVTX	47	13452.91640	0.004	0.261
				0.029	0.014	0.22
GROUP: D2012111.ASC,obs#:		91				
DXCT		TXSI	48	-37623.03150	-0.000	-0.005
				0.088	0.084	0.01
DYCT		TXSI	48	-11487.57060	0.012	0.145
				0.089	0.084	0.24
DZCT		TXSI	48	-31003.50330	-0.017	-0.205
				0.088	0.084	0.34
GROUP: D2012111.ASC,obs#:		92				
DXCT		TXCC	48	-38474.92230	-0.004	-0.056
				0.068	0.063	0.09
DYCT		TXCC	48	3019.29890	0.027	0.433
				0.069	0.063	0.70
DZCT		TXCC	48	-4014.78450	-0.008	-0.121
				0.069	0.063	0.20
GROUP: D2012111.ASC,obs#:		93				
DXCT		KVTX	48	6990.78310	0.001	0.047
				0.032	0.016	0.04
DYCT		KVTX	48	7013.60910	-0.008	-0.465
				0.032	0.017	0.43
DZCT		KVTX	48	15108.62280	0.004	0.248
				0.032	0.016	0.23
GROUP: D2012111.ASC,obs#:		94				
DXCT		TXSI	49	-36863.46780	0.003	0.034
				0.082	0.076	0.06
DYCT		TXSI	49	-9395.97400	-0.001	-0.016
				0.083	0.076	0.03
DZCT		TXSI	49	-26865.28960	-0.009	-0.117
				0.083	0.076	0.19
GROUP: D2012111.ASC,obs#:		95				
DXCT		TXCC	49	-37715.35940	0.000	0.004
				0.067	0.060	0.01
DYCT		TXCC	49	5110.88140	0.028	0.467
				0.067	0.060	0.73
DZCT		TXCC	49	123.43780	-0.008	-0.132
				0.067	0.060	0.21
GROUP: D2012111.ASC,obs#:		96				
DXCT		KVTX	49	7750.34960	0.001	0.037
				0.040	0.025	0.04
DYCT		KVTX	49	9105.19220	-0.008	-0.290
				0.041	0.026	0.33
DZCT		KVTX	49	19246.84720	0.002	0.066
				0.040	0.026	0.08
GROUP: D2012111.ASC,obs#:		97				
DXCT		TXBE	49	-13791.42250	-0.019	-0.142
				0.134	0.130	0.24
DYCT		TXBE	49	-33963.05210	-0.025	-0.190

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.134	0.130	0.33
DZCT		TXBE	49	-66671.84550	0.037	0.284
				0.134	0.130	0.49
GROUP: D2012111.ASC,obs#:		98				
DXCT		TXSI	50	-34638.61080	0.001	0.012
				0.074	0.066	0.02
DYCT		TXSI	50	-7430.26280	0.006	0.083
				0.075	0.066	0.13
DZCT		TXSI	50	-22590.26400	-0.017	-0.251
				0.074	0.066	0.40
GROUP: D2012111.ASC,obs#:		99				
DXCT		TXCC	50	-35490.50250	-0.001	-0.026
				0.064	0.055	0.04
DYCT		TXCC	50	7076.59740	0.030	0.542
				0.065	0.055	0.82
DZCT		TXCC	50	4398.45130	-0.003	-0.063
				0.064	0.055	0.09
GROUP: D2012111.ASC,obs#:		100				
DXCT		KVTX	50	9975.20630	-0.001	-0.015
				0.049	0.036	0.02
DYCT		KVTX	50	11070.92280	-0.020	-0.555
				0.050	0.036	0.73
DZCT		KVTX	50	23521.85760	0.009	0.255
				0.049	0.036	0.33
GROUP: D2012111.ASC,obs#:		101				
DXCT		TXBE	50	-11566.59230	0.006	0.054
				0.125	0.121	0.09
DYCT		TXBE	50	-31997.36000	0.001	0.009
				0.125	0.121	0.02
DZCT		TXBE	50	-62396.79150	0.001	0.007
				0.125	0.121	0.01
GROUP: D2012111.ASC,obs#:		102				
DXCT		TXSI	51	-33101.72370	-0.004	-0.077
				0.067	0.057	0.12
DYCT		TXSI	51	-5118.20860	-0.005	-0.079
				0.067	0.058	0.12
DZCT		TXSI	51	-17853.10500	-0.021	-0.365
				0.067	0.057	0.55
GROUP: D2012111.ASC,obs#:		103				
DXCT		TXCC	51	-33953.62670	0.005	0.086
				0.064	0.054	0.13
DYCT		TXCC	51	9388.63780	0.034	0.622
				0.064	0.054	0.92
DZCT		TXCC	51	9135.58900	0.014	0.252
				0.064	0.054	0.37
GROUP: D2012111.ASC,obs#:		104				
DXCT		KVTX	51	11512.09710	-0.009	-0.200
				0.059	0.047	0.28
DYCT		KVTX	51	13382.97820	-0.031	-0.661
				0.059	0.048	0.94
DZCT		KVTX	51	28259.01360	0.008	0.168
				0.059	0.047	0.24

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D2012111.ASC,obs#: 105						
DXCT		TXBE	51	-10029.73870	0.035	0.315
				0.116	0.110	0.53
DYCT		TXBE	51	-29685.34030	0.026	0.231
				0.116	0.110	0.39
DZCT		TXBE	51	-57659.62340	-0.012	-0.113
				0.116	0.110	0.19
GROUP: D2012211.ASC,obs#: 106						
DXCT		TXSI	52	-22944.16110	0.004	0.105
				0.049	0.038	0.15
DYCT		TXSI	52	-4714.61550	0.000	0.007
				0.049	0.038	0.01
DZCT		TXSI	52	-14502.35420	-0.013	-0.333
				0.050	0.039	0.47
GROUP: D2012211.ASC,obs#: 107						
DXCT		TXCC	52	-23796.04890	-0.002	-0.053
				0.050	0.040	0.07
DYCT		TXCC	52	9792.25420	0.015	0.372
				0.051	0.041	0.53
DZCT		TXCC	52	12486.35860	0.003	0.066
				0.051	0.041	0.09
GROUP: D2012211.ASC,obs#: 108						
DXCT		KVTX	52	21669.66050	-0.002	-0.028
				0.072	0.065	0.05
DYCT		KVTX	52	13786.56210	-0.017	-0.268
				0.072	0.065	0.43
DZCT		KVTX	52	31609.76630	0.014	0.214
				0.072	0.065	0.34
GROUP: D2012211.ASC,obs#: 109						
DXCT		TXBE	52	127.87230	-0.005	-0.050
				0.109	0.104	0.08
DYCT		TXBE	52	-29281.68770	-0.029	-0.280
				0.109	0.104	0.47
DZCT		TXBE	52	-54308.89430	0.017	0.164
				0.109	0.104	0.28
GROUP: D2012211.ASC,obs#: 110						
DXCT		TXSI	53	-31457.62160	0.003	0.054
				0.059	0.048	0.08
DYCT		TXSI	53	-2033.98780	0.002	0.040
				0.060	0.048	0.06
DZCT		TXSI	53	-11659.42630	-0.011	-0.233
				0.059	0.048	0.33
GROUP: D2012211.ASC,obs#: 111						
DXCT		TXCC	53	-32309.50930	-0.004	-0.065
				0.067	0.057	0.10
DYCT		TXCC	53	12472.88140	0.017	0.304
				0.067	0.057	0.46
DZCT		TXCC	53	15329.28640	0.005	0.083
				0.067	0.057	0.12
GROUP: D2012211.ASC,obs#: 112						
DXCT		KVTX	53	13156.19310	0.004	0.058
				0.071	0.062	0.09

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		KVTX	53	16467.18320	-0.009	-0.148
				0.072	0.062	0.23
DZCT		KVTX	53	34452.70450	0.006	0.090
				0.071	0.062	0.14
GROUP: D2012211.ASC,obs#: 113						
DXCT		TXBE	53	-8385.58840	-0.006	-0.067
				0.103	0.097	0.11
DYCT		TXBE	53	-26601.06030	-0.027	-0.281
				0.103	0.097	0.47
DZCT		TXBE	53	-51465.95780	0.010	0.108
				0.103	0.097	0.18
GROUP: D2012211.ASC,obs#: 114						
DXCT		TXSI	54	-36719.64890	0.003	0.046
				0.067	0.055	0.07
DYCT		TXSI	54	-281.06470	0.004	0.080
				0.068	0.056	0.12
DZCT		TXSI	54	-9708.46380	-0.013	-0.246
				0.067	0.055	0.36
GROUP: D2012211.ASC,obs#: 115						
DXCT		TXCC	54	-37571.53610	-0.004	-0.063
				0.077	0.067	0.10
DYCT		TXCC	54	14225.80170	0.023	0.337
				0.077	0.067	0.52
DZCT		TXCC	54	17280.24650	0.005	0.070
				0.077	0.067	0.11
GROUP: D2012211.ASC,obs#: 116						
DXCT		KVTX	54	7894.16580	0.004	0.058
				0.073	0.062	0.09
DYCT		KVTX	54	18220.11010	-0.010	-0.168
				0.073	0.062	0.25
DZCT		KVTX	54	36403.66210	0.008	0.129
				0.073	0.062	0.19
GROUP: D2012211.ASC,obs#: 117						
DXCT		TXBE	54	-13647.61690	-0.005	-0.057
				0.100	0.093	0.09
DYCT		TXBE	54	-24848.13390	-0.028	-0.302
				0.101	0.093	0.49
DZCT		TXBE	54	-49514.99430	0.007	0.076
				0.100	0.093	0.12
GROUP: D2012211.ASC,obs#: 118						
DXCT		TXSI	55	-36734.13450	0.000	0.007
				0.066	0.053	0.01
DYCT		TXSI	55	1968.96460	-0.002	-0.030
				0.066	0.053	0.04
DZCT		TXSI	55	-5522.46930	-0.005	-0.098
				0.066	0.053	0.14
GROUP: D2012211.ASC,obs#: 119						
DXCT		TXCC	55	-37586.02720	-0.001	-0.012
				0.082	0.072	0.02
DYCT		TXCC	55	16475.82730	0.020	0.282
				0.082	0.072	0.44
DZCT		TXCC	55	21466.25040	0.004	0.049

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.082	0.072	0.08
GROUP: D2012211.ASC,obs#: 120						
DXCT		KVTX	55	7879.67480	0.007	0.096
				0.081	0.071	0.15
DYCT		KVTX	55	20470.12370	-0.001	-0.012
				0.082	0.071	0.02
DZCT		KVTX	55	40589.66680	0.006	0.086
				0.082	0.071	0.13
GROUP: D2012211.ASC,obs#: 121						
DXCT		TXBE	55	-13662.10150	-0.008	-0.101
				0.092	0.084	0.16
DYCT		TXBE	55	-22598.11710	-0.022	-0.258
				0.092	0.084	0.41
DZCT		TXBE	55	-45328.98220	-0.002	-0.027
				0.092	0.084	0.04
GROUP: D2012211.ASC,obs#: 122						
DXCT		TXBE	56	-20089.29520	-0.009	-0.092
				0.105	0.097	0.15
DYCT		TXBE	56	-24595.14610	-0.035	-0.364
				0.105	0.097	0.59
DZCT		TXBE	56	-50701.55230	0.009	0.093
				0.105	0.097	0.15
GROUP: D2012211.ASC,obs#: 123						
DXCT		TXSI	56	-43161.33120	0.003	0.044
				0.078	0.067	0.07
DYCT		TXSI	56	-28.08640	0.007	0.099
				0.079	0.067	0.15
DZCT		TXSI	56	-10895.02070	-0.013	-0.189
				0.079	0.067	0.28
GROUP: D2012211.ASC,obs#: 124						
DXCT		TXCC	56	-44013.22220	-0.000	-0.000
				0.086	0.076	0.00
DYCT		TXCC	56	14478.78640	0.018	0.242
				0.087	0.076	0.38
DZCT		TXCC	56	16093.69130	0.004	0.050
				0.086	0.076	0.08
GROUP: D2012211.ASC,obs#: 125						
DXCT		KVTX	56	1452.48580	0.002	0.029
				0.070	0.057	0.04
DYCT		KVTX	56	18473.08180	-0.002	-0.029
				0.070	0.057	0.04
DZCT		KVTX	56	35217.11060	0.004	0.062
				0.070	0.057	0.09
GROUP: D2012211.ASC,obs#: 126						
DXCT		TXBE	57	-19217.78490	0.003	0.027
				0.112	0.105	0.05
DYCT		TXBE	57	-26688.65180	-0.008	-0.072
				0.112	0.105	0.12
DZCT		TXBE	57	-54400.06870	0.003	0.028
				0.112	0.105	0.05
GROUP: D2012211.ASC,obs#: 127						
DXCT		TXSI	57	-42289.81150	0.005	0.078

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.079	0.068	0.12
DYCT		TXSI	57	-2121.56750	0.010	0.143
				0.079	0.069	0.22
DZCT		TXSI	57	-14593.53820	-0.018	-0.258
				0.079	0.068	0.39
GROUP: D2012211.ASC,obs#: 128						
DXCT		TXCC	57	-43141.69890	-0.001	-0.017
				0.082	0.072	0.03
DYCT		TXCC	57	12385.30410	0.023	0.316
				0.082	0.072	0.49
DZCT		TXCC	57	12395.16950	0.003	0.043
				0.082	0.072	0.07
GROUP: D2012211.ASC,obs#: 129						
DXCT		KVTX	57	2324.01310	-0.004	-0.073
				0.063	0.049	0.10
DYCT		KVTX	57	16379.61940	-0.017	-0.351
				0.063	0.049	0.48
DZCT		KVTX	57	31518.58320	0.008	0.172
				0.063	0.049	0.24
GROUP: D2012211.ASC,obs#: 130						
DXCT		TXBE	58	-20468.85580	-0.003	-0.026
				0.121	0.116	0.04
DYCT		TXBE	58	-29037.57290	-0.025	-0.219
				0.121	0.116	0.37
DZCT		TXBE	58	-59124.73830	0.008	0.067
				0.121	0.116	0.11
GROUP: D2012211.ASC,obs#: 131						
DXCT		TXSI	58	-43540.88960	0.007	0.089
				0.084	0.075	0.14
DYCT		TXSI	58	-4470.51610	0.020	0.259
				0.085	0.075	0.41
DZCT		TXSI	58	-19318.20200	-0.019	-0.246
				0.084	0.076	0.39
GROUP: D2012211.ASC,obs#: 132						
DXCT		TXCC	58	-44392.77280	-0.004	-0.056
				0.081	0.072	0.09
DYCT		TXCC	58	10036.36900	0.019	0.263
				0.081	0.072	0.41
DZCT		TXCC	58	7670.50530	0.003	0.035
				0.081	0.072	0.05
GROUP: D2012211.ASC,obs#: 133						
DXCT		KVTX	58	1072.93320	-0.000	-0.010
				0.053	0.038	0.01
DYCT		KVTX	58	14030.67450	-0.011	-0.293
				0.054	0.038	0.37
DZCT		KVTX	58	26793.92190	0.005	0.129
				0.053	0.038	0.16
GROUP: D2120910.ASC,obs#: 134						
DXCT		TXCC	1	37497.66200	-0.012	-0.178
				0.069	0.069	0.32
DYCT		TXCC	1	399.43070	0.002	0.022
				0.069	0.069	0.04

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DZCT		TXCC	1	9701.09540	0.008	0.117
				0.069	0.069	0.21
GROUP: D2120910.ASC,obs#: 135						
DXCT		TXPO	1	507.91500	-0.000	-0.004
				0.002	0.000	0.00
DYCT		TXPO	1	-38.97890	-0.000	-0.085
				0.004	0.000	0.06
DZCT		TXPO	1	33.48180	0.000	0.104
				0.002	0.000	0.03
GROUP: D2120910.ASC,obs#: 136						
DXCT		TXSI	1	38349.53870	0.005	0.063
				0.079	0.079	0.11
DYCT		TXSI	1	-14107.46570	0.013	0.167
				0.080	0.080	0.30
DZCT		TXSI	1	-17287.59760	-0.027	-0.348
				0.079	0.079	0.62
GROUP: D2120910.ASC,obs#: 137						
DXCT		KVTX	1	82963.36730	-0.008	-0.051
				0.155	0.155	0.09
DYCT		KVTX	1	4393.72780	-0.020	-0.131
				0.155	0.155	0.23
DZCT		KVTX	1	28824.51350	0.009	0.058
				0.155	0.155	0.10
GROUP: D2120910.ASC,obs#: 138						
DXCT		TXCC	10	13821.99380	-0.003	-0.177
				0.029	0.017	0.19
DYCT		TXCC	10	-5253.91170	-0.000	-0.003
				0.029	0.017	0.00
DZCT		TXCC	10	-6570.47570	0.006	0.364
				0.029	0.018	0.40
GROUP: D2120910.ASC,obs#: 139						
DXCT		TXPO	10	-23167.75040	0.006	0.143
				0.051	0.045	0.23
DYCT		TXPO	10	-5692.33360	0.011	0.233
				0.052	0.046	0.37
DZCT		TXPO	10	-16238.07660	-0.014	-0.312
				0.052	0.046	0.50
GROUP: D2120910.ASC,obs#: 140						
DXCT		TXSI	10	14673.88120	0.004	0.051
				0.073	0.070	0.08
DYCT		TXSI	10	-19760.77200	-0.024	-0.348
				0.074	0.070	0.58
DZCT		TXSI	10	-33559.19410	-0.004	-0.052
				0.074	0.070	0.09
GROUP: D2120910.ASC,obs#: 141						
DXCT		KVTX	10	59287.69510	0.005	0.052
				0.107	0.104	0.09
DYCT		KVTX	10	-1259.63970	0.003	0.031
				0.107	0.105	0.05
DZCT		KVTX	10	12552.96560	-0.016	-0.152
				0.107	0.105	0.26
GROUP: D2120910.ASC,obs#: 142						

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DXCT		TXPO	2	-1810.02930	0.000	0.228
				0.007	0.001	0.06
DYCT		TXPO	2	-1373.35090	0.000	0.124
				0.008	0.001	0.04
DZCT		TXPO	2	-3016.48240	-0.000	-0.090
				0.007	0.001	0.03
GROUP: D2120910.ASC,obs#: 143						
DXCT		TXSI	2	36031.60760	-0.008	-0.104
				0.078	0.078	0.18
DYCT		TXSI	2	-15441.81380	-0.010	-0.134
				0.078	0.078	0.23
DZCT		TXSI	2	-20337.58550	-0.004	-0.049
				0.078	0.078	0.09
GROUP: D2120910.ASC,obs#: 144						
DXCT		TXCC	2	35179.71810	-0.012	-0.199
				0.063	0.063	0.35
DYCT		TXCC	2	-934.94100	0.001	0.022
				0.063	0.063	0.04
DZCT		TXCC	2	6651.13090	0.008	0.131
				0.063	0.063	0.23
GROUP: D2120910.ASC,obs#: 145						
DXCT		KVTX	2	80645.42270	-0.007	-0.050
				0.149	0.149	0.09
DYCT		KVTX	2	3059.35950	-0.024	-0.160
				0.149	0.149	0.28
DZCT		KVTX	2	25774.55210	0.006	0.040
				0.149	0.149	0.07
GROUP: D2120910.ASC,obs#: 146						
DXCT		TXCC	3	32316.92230	-0.025	-0.452
				0.057	0.055	0.77
DYCT		TXCC	3	-2722.24830	0.010	0.172
				0.058	0.056	0.29
DZCT		TXCC	3	2613.62020	-0.022	-0.390
				0.057	0.055	0.66
GROUP: D2120910.ASC,obs#: 147						
DXCT		KVTX	3	77782.62400	-0.017	-0.120
				0.142	0.141	0.21
DYCT		KVTX	3	1272.05930	-0.023	-0.160
				0.143	0.142	0.28
DZCT		KVTX	3	21737.03940	-0.022	-0.154
				0.142	0.141	0.27
GROUP: D2120910.ASC,obs#: 148						
DXCT		TXPO	3	-4672.84050	0.003	0.564
				0.016	0.006	0.34
DYCT		TXPO	3	-3160.64990	0.000	0.004
				0.017	0.006	0.00
DZCT		TXPO	3	-7054.02650	0.003	0.619
				0.016	0.006	0.38
GROUP: D2120910.ASC,obs#: 149						
DXCT		TXSI	3	33168.81360	-0.022	-0.289
				0.079	0.077	0.50
DYCT		TXSI	3	-17229.11030	-0.013	-0.166

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.080	0.078	0.29
DZCT		TXSI	3	-24375.09530	-0.035	-0.447
				0.079	0.077	0.77
GROUP: D2120910.ASC,obs#: 150						
DXCT		TXCC	4	28647.22370	-0.004	-0.081
				0.052	0.046	0.13
DYCT		TXCC	4	-5087.19310	-0.002	-0.040
				0.052	0.046	0.06
DZCT		TXCC	4	-2711.67560	0.013	0.286
				0.052	0.046	0.45
GROUP: D2120910.ASC,obs#: 151						
DXCT		TXPO	4	-8342.51590	0.001	0.074
				0.028	0.016	0.07
DYCT		TXPO	4	-5525.60760	0.002	0.089
				0.030	0.017	0.10
DZCT		TXPO	4	-12379.28140	-0.003	-0.169
				0.029	0.016	0.17
GROUP: D2120910.ASC,obs#: 152						
DXCT		TXSI	4	29499.11540	-0.001	-0.019
				0.082	0.078	0.03
DYCT		TXSI	4	-19594.08060	0.001	0.014
				0.084	0.080	0.02
DZCT		TXSI	4	-29700.37820	-0.013	-0.162
				0.082	0.078	0.28
GROUP: D2120910.ASC,obs#: 153						
DXCT		KVTX	4	74112.92590	0.004	0.029
				0.134	0.132	0.05
DYCT		KVTX	4	-1092.90050	-0.019	-0.145
				0.134	0.132	0.25
DZCT		KVTX	4	16411.75220	0.004	0.033
				0.134	0.132	0.06
GROUP: D2120910.ASC,obs#: 154						
DXCT		TXPO	5	-11255.90400	-0.003	-0.107
				0.038	0.026	0.13
DYCT		TXPO	5	-7364.45520	0.004	0.150
				0.038	0.026	0.18
DZCT		TXPO	5	-16548.74870	0.000	0.011
				0.038	0.026	0.01
GROUP: D2120910.ASC,obs#: 155						
DXCT		TXSI	5	26585.71900	0.003	0.036
				0.085	0.080	0.06
DYCT		TXSI	5	-21432.90460	-0.020	-0.249
				0.086	0.081	0.42
DZCT		TXSI	5	-33869.85550	0.000	0.004
				0.085	0.081	0.01
GROUP: D2120910.ASC,obs#: 156						
DXCT		TXCC	5	25733.82570	0.002	0.056
				0.049	0.040	0.08
DYCT		TXCC	5	-6926.04420	0.004	0.100
				0.049	0.040	0.15
DZCT		TXCC	5	-6881.12580	-0.001	-0.024
				0.049	0.040	0.04

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D2120910.ASC,obs#: 157						
DXCT		KVTX	5	71199.52780	0.010	0.079
				0.127	0.124	0.14
DYCT		KVTX	5	-2931.73820	-0.027	-0.214
				0.128	0.125	0.37
DZCT		KVTX	5	12242.29010	0.002	0.017
				0.128	0.125	0.03
GROUP: D2120910.ASC,obs#: 158						
DXCT		TXCC	6	22380.28180	-0.004	-0.113
				0.048	0.036	0.15
DYCT		TXCC	6	-9211.60160	-0.003	-0.090
				0.048	0.036	0.12
DZCT		TXCC	6	-12009.68730	0.015	0.419
				0.048	0.036	0.56
GROUP: D2120910.ASC,obs#: 159						
DXCT		TXPO	6	-14609.46100	0.004	0.104
				0.049	0.039	0.14
DYCT		TXPO	6	-9650.02950	0.013	0.335
				0.051	0.040	0.48
DZCT		TXPO	6	-21677.27410	-0.020	-0.475
				0.052	0.041	0.71
GROUP: D2120910.ASC,obs#: 160						
DXCT		TXSI	6	23232.16950	0.002	0.025
				0.090	0.085	0.04
DYCT		TXSI	6	-23718.47280	-0.017	-0.195
				0.091	0.085	0.32
DZCT		TXSI	6	-38998.39860	-0.002	-0.023
				0.092	0.086	0.04
GROUP: D2120910.ASC,obs#: 161						
DXCT		KVTX	6	67845.98530	0.002	0.018
				0.121	0.117	0.03
DYCT		KVTX	6	-5217.31110	-0.018	-0.158
				0.121	0.117	0.27
DZCT		KVTX	6	7113.73830	0.009	0.073
				0.121	0.117	0.13
GROUP: D2120910.ASC,obs#: 162						
DXCT		TXPO	5870 H TIDAL	-16578.24310	0.007	0.128
				0.056	0.056	0.23
DYCT		TXPO	5870 H TIDAL	-10970.84240	-0.003	-0.049
				0.057	0.057	0.09
DZCT		TXPO	5870 H TIDAL	-24657.78070	-0.013	-0.235
				0.056	0.056	0.42
GROUP: D2120910.ASC,obs#: 163						
DXCT		TXSI	5870 H TIDAL	21263.39090	0.002	0.019
				0.094	0.094	0.03
DYCT		TXSI	5870 H TIDAL	-25039.29090	-0.028	-0.290
				0.096	0.095	0.52
DZCT		TXSI	5870 H TIDAL	-41978.89720	-0.004	-0.037
				0.094	0.094	0.07
GROUP: D2120910.ASC,obs#: 164						
DXCT		TXCC	5870 H TIDAL	20411.50040	-0.002	-0.034
				0.048	0.048	0.06

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		TXCC	5870 H TIDAL	-10532.42480	-0.009	-0.189
				0.049	0.049	0.34
DZCT		TXCC	5870 H TIDAL	-14990.18100	0.009	0.180
				0.048	0.048	0.32
GROUP: D2120910.ASC,obs#: 165						
DXCT		KVTX	5870 H TIDAL	65877.20570	0.003	0.023
				0.117	0.117	0.04
DYCT		KVTX	5870 H TIDAL	-6538.13400	-0.025	-0.211
				0.117	0.117	0.37
DZCT		KVTX	5870 H TIDAL	4133.23870	0.008	0.069
				0.117	0.117	0.12
GROUP: D2120910.ASC,obs#: 166						
DXCT		TXCC	8	14173.44900	-0.003	-0.183
				0.029	0.016	0.17
DYCT		TXCC	8	-5231.83320	0.000	0.021
				0.030	0.017	0.02
DZCT		TXCC	8	-6444.49160	0.006	0.401
				0.029	0.016	0.38
GROUP: D2120910.ASC,obs#: 167						
DXCT		TXPO	8	-22816.29670	0.008	0.185
				0.050	0.044	0.29
DYCT		TXPO	8	-5670.24240	-0.002	-0.035
				0.052	0.045	0.06
DZCT		TXPO	8	-16112.08890	-0.018	-0.409
				0.051	0.044	0.63
GROUP: D2120910.ASC,obs#: 168						
DXCT		KVTX	8	59639.15390	0.002	0.018
				0.107	0.105	0.03
DYCT		KVTX	8	-1237.55910	0.002	0.015
				0.108	0.105	0.03
DZCT		KVTX	8	12678.93750	-0.004	-0.036
				0.108	0.105	0.06
GROUP: D2120910.ASC,obs#: 169						
DXCT		TXPO	5237 TIDAL 2	-278.76460	0.030	18.972
				0.002	0.002	107.27
					^^^^^^^^^^^^^^^^	
DYCT		TXPO	5237 TIDAL 2	36.33660	-0.005	-3.076
				0.004	0.002	19.30
DZCT		TXPO	5237 TIDAL 2	-7.27540	-0.026	-12.022
				0.003	0.002	93.07
					^^^^^^^^^^^^^^^^	
GROUP: D2120910.ASC,obs#: 170						
DXCT		TXSI	5237 TIDAL 2	37562.87620	0.018	0.233
				0.077	0.077	0.41
DYCT		TXSI	5237 TIDAL 2	-14032.10430	-0.038	-0.486
				0.078	0.078	0.87
DZCT		TXSI	5237 TIDAL 2	-17328.38410	-0.024	-0.313
				0.078	0.078	0.56
GROUP: D2120910.ASC,obs#: 171						
DXCT		TXCC	5237 TIDAL 2	36710.98680	0.013	0.201
				0.067	0.067	0.35
DYCT		TXCC	5237 TIDAL 2	474.76520	-0.023	-0.340

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.067	0.067	0.60
DZCT		TXCC	5237 TIDAL 2	9660.33260	-0.013	-0.187
				0.067	0.067	0.33
GROUP: D2120910.ASC,obs#: 172						
DXCT		KVTX	5237 TIDAL 2	82176.69240	0.018	0.114
				0.154	0.154	0.20
DYCT		KVTX	5237 TIDAL 2	4469.06250	-0.045	-0.292
				0.154	0.154	0.51
DZCT		KVTX	5237 TIDAL 2	28783.75340	-0.014	-0.093
				0.154	0.154	0.16
GROUP: D2120910.ASC,obs#: 173						
DXCT		TXPO	9	-24602.86300	0.007	0.133
				0.056	0.050	0.21
DYCT		TXPO	9	-6731.34540	0.014	0.284
				0.056	0.051	0.46
DZCT		TXPO	9	-18554.93350	-0.021	-0.423
				0.056	0.050	0.68
GROUP: D2120910.ASC,obs#: 174						
DXCT		TXSI	9	13238.77140	0.001	0.012
				0.077	0.073	0.02
DYCT		TXSI	9	-20799.78190	-0.022	-0.307
				0.077	0.073	0.52
DZCT		TXSI	9	-35876.05530	-0.006	-0.087
				0.077	0.073	0.15
GROUP: D2120910.ASC,obs#: 175						
DXCT		TXCC	9	12386.88050	-0.002	-0.127
				0.029	0.017	0.13
DYCT		TXCC	9	-6292.91880	-0.001	-0.061
				0.030	0.017	0.06
DZCT		TXCC	9	-8887.34060	0.007	0.437
				0.029	0.017	0.45
GROUP: D2120910.ASC,obs#: 176						
DXCT		KVTX	9	57852.58590	0.002	0.021
				0.104	0.101	0.04
DYCT		KVTX	9	-2298.64830	0.004	0.037
				0.104	0.101	0.06
DZCT		KVTX	9	10236.09330	-0.008	-0.075
				0.104	0.101	0.13
GROUP: D2121010.ASC,obs#: 177						
DXCT		TXCC	11	9928.20860	-0.001	-0.149
				0.020	0.010	0.12
DYCT		TXCC	11	-3629.58240	-0.001	-0.092
				0.021	0.010	0.08
DZCT		TXCC	11	-4447.05650	0.007	0.773
				0.020	0.009	0.64
GROUP: D2121010.ASC,obs#: 178						
DXCT		TXPO	11	-27061.53420	0.007	0.130
				0.055	0.052	0.22
DYCT		TXPO	11	-4067.99720	0.003	0.052
				0.056	0.052	0.09
DZCT		TXPO	11	-14114.64280	-0.028	-0.545
				0.055	0.051	0.91

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D2121010.ASC,obs#: 179						
DXCT		TXSI	11	10780.10290	-0.002	-0.027
				0.068	0.065	0.05
DYCT		TXSI	11	-18136.46140	-0.006	-0.097
				0.070	0.067	0.17
DZCT		TXSI	11	-31435.75250	-0.025	-0.388
				0.067	0.065	0.66
GROUP: D2121010.ASC,obs#: 180						
DXCT		KVTX	11	55393.90340	0.013	0.135
				0.101	0.099	0.24
DYCT		KVTX	11	364.67010	0.022	0.219
				0.102	0.100	0.38
DZCT		KVTX	11	14676.39460	-0.025	-0.249
				0.101	0.099	0.43
GROUP: D2121010.ASC,obs#: 181						
DXCT		TXCC	12	7136.73700	-0.002	-0.242
				0.018	0.007	0.17
DYCT		TXCC	12	-4211.01940	0.001	0.114
				0.019	0.008	0.08
DZCT		TXCC	12	-6225.11680	0.004	0.574
				0.018	0.008	0.42
GROUP: D2121010.ASC,obs#: 182						
DXCT		TXPO	12	-29853.01110	0.012	0.200
				0.060	0.058	0.34
DYCT		TXPO	12	-4649.42960	-0.000	-0.001
				0.061	0.058	0.00
DZCT		TXPO	12	-15892.71090	-0.023	-0.400
				0.060	0.058	0.68
GROUP: D2121010.ASC,obs#: 183						
DXCT		TXSI	12	7988.62250	0.007	0.099
				0.069	0.067	0.17
DYCT		TXSI	12	-18717.89640	-0.007	-0.099
				0.070	0.067	0.17
DZCT		TXSI	12	-33213.81680	-0.024	-0.360
				0.069	0.067	0.62
GROUP: D2121010.ASC,obs#: 184						
DXCT		KVTX	12	52602.43790	0.007	0.074
				0.095	0.094	0.13
DYCT		KVTX	12	-216.73170	-0.012	-0.122
				0.096	0.094	0.21
DZCT		KVTX	12	12898.31890	-0.012	-0.132
				0.096	0.094	0.23
GROUP: D2121010.ASC,obs#: 185						
DXCT		TXPO	13	-31864.74050	0.015	0.246
				0.063	0.061	0.42
DYCT		TXPO	13	-3975.54250	-0.014	-0.224
				0.063	0.061	0.39
DZCT		TXPO	13	-15107.60640	-0.015	-0.251
				0.063	0.061	0.43
GROUP: D2121010.ASC,obs#: 186						
DXCT		TXCC	13	5125.01000	-0.001	-0.245
				0.015	0.003	0.10

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		TXCC	13	-3537.14580	0.001	0.216
				0.015	0.004	0.09
DZCT		TXCC	13	-5440.00090	0.001	0.245
				0.015	0.003	0.10
GROUP: D2121010.ASC,obs#: 187						
DXCT		TXPO	14	-33349.97330	-0.004	-0.058
				0.067	0.065	0.10
DYCT		TXPO	14	-4887.74310	-0.008	-0.127
				0.067	0.065	0.22
DZCT		TXPO	14	-17199.73810	0.002	0.030
				0.067	0.065	0.05
GROUP: D2121010.ASC,obs#: 188						
DXCT		TXCC	14	3639.75780	-0.000	-0.032
				0.017	0.006	0.02
DYCT		TXCC	14	-4449.34250	0.002	0.366
				0.017	0.006	0.24
DZCT		TXCC	14	-7532.11550	0.001	0.158
				0.017	0.006	0.10
GROUP: D2121010.ASC,obs#: 189						
DXCT		TXSI	14	4491.64840	0.003	0.046
				0.070	0.068	0.08
DYCT		TXSI	14	-18956.20380	-0.021	-0.307
				0.070	0.068	0.53
DZCT		TXSI	14	-34520.82750	-0.015	-0.227
				0.070	0.068	0.39
GROUP: D2121010.ASC,obs#: 190						
DXCT		KVTX	14	49105.46000	0.007	0.083
				0.089	0.088	0.14
DYCT		KVTX	14	-455.04970	-0.015	-0.173
				0.089	0.088	0.30
DZCT		KVTX	14	11591.31070	-0.006	-0.071
				0.089	0.088	0.12
GROUP: D2121010.ASC,obs#: 191						
DXCT		TXCC	15	2093.35920	-0.000	-0.108
				0.017	0.003	0.04
DYCT		TXCC	15	-4561.68510	0.001	0.275
				0.018	0.003	0.10
DZCT		TXCC	15	-8125.97270	0.001	0.223
				0.017	0.003	0.08
GROUP: D2121010.ASC,obs#: 192						
DXCT		KVTX	15	47559.05930	0.009	0.109
				0.086	0.084	0.19
DYCT		KVTX	15	-567.38520	-0.024	-0.278
				0.087	0.085	0.48
DZCT		KVTX	15	10997.46610	-0.019	-0.226
				0.086	0.084	0.39
GROUP: D2121010.ASC,obs#: 193						
DXCT		TXCC	16	-1792.29600	-0.000	-0.053
				0.020	0.009	0.04
DYCT		TXCC	16	-5127.63030	-0.001	-0.116
				0.021	0.009	0.09
DZCT		TXCC	16	-10151.32400	0.004	0.525

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.020	0.009	0.39
GROUP: D2121010.ASC,obs#: 194						
DXCT		TXPO	16	-38782.03360	0.002	0.033
				0.077	0.075	0.06
DYCT		TXPO	16	-5566.03650	-0.006	-0.079
				0.078	0.075	0.14
DZCT		TXPO	16	-19818.93620	-0.005	-0.066
				0.077	0.075	0.11
GROUP: D2121010.ASC,obs#: 195						
DXCT		TXSI	16	-940.39310	-0.009	-0.131
				0.074	0.072	0.22
DYCT		TXSI	16	-19634.51340	-0.002	-0.033
				0.076	0.073	0.06
DZCT		TXSI	16	-37140.01120	-0.037	-0.509
				0.075	0.072	0.88
GROUP: D2121010.ASC,obs#: 196						
DXCT		KVTX	16	43673.39860	0.015	0.191
				0.079	0.076	0.33
DYCT		KVTX	16	-1133.37940	0.023	0.304
				0.079	0.077	0.52
DZCT		KVTX	16	8972.11980	-0.020	-0.266
				0.079	0.077	0.46
GROUP: D2121010.ASC,obs#: 197						
DXCT		TXCC	17	-2219.56880	-0.004	-0.253
				0.027	0.014	0.23
DYCT		TXCC	17	-6953.99030	-0.004	-0.272
				0.028	0.014	0.25
DZCT		TXCC	17	-13719.46190	0.004	0.277
				0.028	0.014	0.25
GROUP: D2121010.ASC,obs#: 198						
DXCT		TXPO	17	-39209.32330	0.016	0.208
				0.081	0.078	0.35
DYCT		TXPO	17	-7392.39710	-0.008	-0.105
				0.082	0.078	0.18
DZCT		TXPO	17	-23387.08620	0.007	0.084
				0.082	0.078	0.14
GROUP: D2121010.ASC,obs#: 199						
DXCT		TXSI	17	-1367.67990	0.001	0.019
				0.081	0.078	0.03
DYCT		TXSI	17	-21460.87890	0.000	0.002
				0.082	0.078	0.00
DZCT		TXSI	17	-40708.18080	-0.006	-0.071
				0.082	0.079	0.12
GROUP: D2121010.ASC,obs#: 200						
DXCT		KVTX	17	43246.12520	0.012	0.166
				0.077	0.073	0.28
DYCT		KVTX	17	-2959.75610	0.037	0.504
				0.078	0.074	0.85
DZCT		KVTX	17	5403.99250	-0.031	-0.426
				0.078	0.074	0.72
GROUP: D2121010.ASC,obs#: 201						
DXCT		TXCC	18	-626.54520	-0.002	-0.121

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.030	0.016	0.12
DYCT		TXCC	18	-7907.38720	-0.001	-0.059
				0.032	0.018	0.06
DZCT		TXCC	18	-15132.99110	0.007	0.409
				0.032	0.018	0.44
GROUP: D2121010.ASC,obs#: 202						
DXCT		TXPO	18	-37616.28710	0.005	0.068
				0.081	0.077	0.11
DYCT		TXPO	18	-8345.81590	0.017	0.214
				0.081	0.077	0.36
DZCT		TXPO	18	-24800.58030	-0.025	-0.323
				0.082	0.077	0.55
GROUP: D2121010.ASC,obs#: 203						
DXCT		TXSI	18	225.34580	0.001	0.012
				0.084	0.080	0.02
DYCT		TXSI	18	-22414.24680	-0.026	-0.323
				0.085	0.080	0.54
DZCT		TXSI	18	-42121.71380	0.002	0.021
				0.085	0.081	0.04
GROUP: D2121010.ASC,obs#: 204						
DXCT		KVTX	18	44839.15630	0.006	0.082
				0.080	0.076	0.14
DYCT		KVTX	18	-3913.12280	0.010	0.130
				0.080	0.076	0.22
DZCT		KVTX	18	3990.45820	-0.023	-0.301
				0.081	0.076	0.51
GROUP: D2121010.ASC,obs#: 205						
DXCT		TXCC	19	-5494.99050	-0.001	-0.072
				0.034	0.020	0.07
DYCT		TXCC	19	-7953.06280	0.003	0.139
				0.034	0.020	0.15
DZCT		TXCC	19	-16424.88120	0.005	0.247
				0.034	0.020	0.26
GROUP: D2121010.ASC,obs#: 206						
DXCT		TXPO	19	-42484.72870	0.002	0.025
				0.089	0.085	0.04
DYCT		TXPO	19	-8391.47950	0.008	0.098
				0.089	0.085	0.17
DZCT		TXPO	19	-26092.48060	-0.017	-0.204
				0.089	0.085	0.34
GROUP: D2121010.ASC,obs#: 207						
DXCT		TXSI	19	-4643.09980	0.002	0.022
				0.087	0.082	0.04
DYCT		TXSI	19	-22459.92190	-0.023	-0.275
				0.087	0.082	0.46
DZCT		TXSI	19	-43413.59730	-0.007	-0.091
				0.087	0.082	0.15
GROUP: D2121010.ASC,obs#: 208						
DXCT		KVTX	19	39970.71410	0.004	0.056
				0.071	0.066	0.09
DYCT		KVTX	19	-3958.78210	-0.003	-0.039
				0.072	0.066	0.06

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DZCT		KVTX	19	2698.54840	-0.006	-0.087
				0.071	0.066	0.14
GROUP: D2121010.ASC,obs#: 209						
DXCT		TXPO	20	-37889.57070	0.007	0.092
				0.072	0.071	0.16
DYCT		TXPO	20	-2859.71550	0.022	0.308
				0.073	0.072	0.54
DZCT		TXPO	20	-14480.95120	-0.056	-0.793
				0.072	0.071	1.39
GROUP: D2121010.ASC,obs#: 210						
DXCT		TXCC	20	-899.82940	-0.000	-0.037
				0.010	0.002	0.01
DYCT		TXCC	20	-2421.28160	-0.001	-0.257
				0.012	0.003	0.12
DZCT		TXCC	20	-4813.38720	0.001	0.637
				0.010	0.002	0.24
GROUP: D2121010.ASC,obs#: 211						
DXCT		TXSI	20	-47.93130	-0.004	-0.067
				0.064	0.063	0.12
DYCT		TXSI	20	-16928.16490	-0.002	-0.027
				0.072	0.071	0.05
DZCT		TXSI	20	-31802.10780	-0.007	-0.103
				0.065	0.064	0.18
GROUP: D2121010.ASC,obs#: 212						
DXCT		TXPO	21	-34876.89720	0.011	0.165
				0.066	0.066	0.29
DYCT		TXPO	21	-2860.23980	-0.004	-0.057
				0.067	0.066	0.10
DZCT		TXPO	21	-13739.19700	-0.034	-0.511
				0.066	0.066	0.89
GROUP: D2121010.ASC,obs#: 213						
DXCT		TXCC	21	2112.84860	-0.000	-0.182
				0.009	0.002	0.06
DYCT		TXCC	21	-2421.83240	-0.000	-0.007
				0.010	0.002	0.00
DZCT		TXCC	21	-4071.60990	0.001	0.589
				0.009	0.002	0.18
GROUP: D2121010.ASC,obs#: 214						
DXCT		KVTX	21	47578.55180	0.006	0.071
				0.088	0.088	0.12
DYCT		KVTX	21	1572.43920	0.004	0.042
				0.089	0.088	0.07
DZCT		KVTX	21	15051.83570	-0.026	-0.293
				0.088	0.088	0.51
GROUP: D2121010.ASC,obs#: 215						
DXCT		TXPO	22	-32641.62510	0.027	0.448
				0.061	0.061	0.78
DYCT		TXPO	22	-2213.95040	0.010	0.165
				0.062	0.061	0.29
DZCT		TXPO	22	-11966.86690	-0.022	-0.356
				0.062	0.061	0.62
GROUP: D2121010.ASC,obs#: 216						

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DXCT		TXCC	22	4348.13790	-0.001	-0.538
				0.009	0.002	0.21
DYCT		TXCC	22	-1775.52840	-0.001	-0.317
				0.010	0.002	0.14
DZCT		TXCC	22	-2299.26790	0.001	0.404
				0.010	0.002	0.17
GROUP: D2121010.ASC,obs#: 217						
DXCT		TXSI	22	5200.01360	0.017	0.290
				0.060	0.059	0.51
DYCT		TXSI	22	-16282.42690	0.013	0.223
				0.061	0.059	0.39
DZCT		TXSI	22	-29287.98550	-0.010	-0.168
				0.060	0.059	0.29
GROUP: D020611.ASC ,obs#: 218						
DXCT		TXCC	66	-35092.63280	0.004	0.058
				0.068	0.065	0.10
DYCT		TXCC	66	-3571.52800	0.009	0.138
				0.068	0.065	0.23
DZCT		TXCC	66	-15625.63250	0.012	0.190
				0.068	0.065	0.32
GROUP: D020611.ASC ,obs#: 219						
DXCT		KVTX	66	10373.08100	-0.000	-0.058
				0.019	0.005	0.03
DYCT		KVTX	66	422.75710	-0.001	-0.137
				0.020	0.005	0.07
DZCT		KVTX	66	3497.79990	-0.001	-0.188
				0.019	0.005	0.09
GROUP: D020611.ASC ,obs#: 220						
DXCT		TXCC	67	-31282.30880	0.001	0.020
				0.059	0.054	0.03
DYCT		TXCC	67	-2397.62050	0.012	0.217
				0.060	0.054	0.34
DZCT		TXCC	67	-12419.17890	0.007	0.138
				0.059	0.054	0.22
GROUP: D020611.ASC ,obs#: 221						
DXCT		KVTX	67	14183.40220	-0.000	-0.021
				0.028	0.012	0.02
DYCT		KVTX	67	1596.66910	-0.003	-0.215
				0.029	0.012	0.17
DZCT		KVTX	67	6704.24910	-0.002	-0.135
				0.028	0.012	0.10
GROUP: D020611.ASC ,obs#: 222						
DXCT		TXCC	68	-31054.15360	-0.006	-0.116
				0.056	0.048	0.17
DYCT		TXCC	68	502.21710	0.006	0.131
				0.056	0.048	0.20
DZCT		TXCC	68	-6867.32180	0.006	0.134
				0.056	0.048	0.20
GROUP: D020611.ASC ,obs#: 223						
DXCT		KVTX	68	14411.54850	0.002	0.116
				0.034	0.018	0.11
DYCT		KVTX	68	4496.50100	-0.002	-0.128

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.035	0.018	0.12
DZCT		KVTX	68	12256.10600	-0.002	-0.133
				0.035	0.018	0.12
GROUP: D020611.ASC ,obs#: 224						
DXCT		KVTX	69	21502.77960	0.005	0.114
				0.058	0.046	0.16
DYCT		KVTX	69	9293.65550	0.001	0.031
				0.058	0.047	0.04
DZCT		KVTX	69	23122.40730	-0.010	-0.217
				0.058	0.046	0.31
GROUP: D020611.ASC ,obs#: 225						
DXCT		TXCC	69	-23962.92180	-0.003	-0.114
				0.044	0.026	0.12
DYCT		TXCC	69	5299.38240	-0.001	-0.030
				0.044	0.026	0.03
DZCT		TXCC	69	3998.97250	0.006	0.217
				0.044	0.026	0.23
GROUP: D020711.ASC ,obs#: 226						
DXCT		TXCC	70	-17782.85410	-0.005	-0.311
				0.040	0.015	0.21
DYCT		TXCC	70	8172.24390	-0.008	-0.563
				0.040	0.015	0.38
DZCT		TXCC	70	10957.83470	0.008	0.530
				0.040	0.015	0.35
GROUP: D020711.ASC ,obs#: 227						
DXCT		TXPO	70	-54772.62140	0.028	0.310
				0.097	0.090	0.51
DYCT		TXPO	70	7733.77360	0.051	0.561
				0.098	0.090	0.92
DZCT		TXPO	70	1290.26860	-0.048	-0.528
				0.097	0.090	0.86
GROUP: D020711.ASC ,obs#: 228						
DXCT		TXCC	71	-15290.16380	-0.002	-0.093
				0.037	0.019	0.08
DYCT		TXCC	71	8127.43760	0.004	0.196
				0.037	0.019	0.18
DZCT		TXCC	71	11476.53340	0.002	0.115
				0.037	0.019	0.11
GROUP: D020711.ASC ,obs#: 229						
DXCT		KVTX	71	30175.54410	0.000	0.000
				0.079	0.072	0.00
DYCT		KVTX	71	12121.75240	-0.036	-0.494
				0.079	0.072	0.80
DZCT		KVTX	71	30599.94480	0.010	0.136
				0.079	0.072	0.22
GROUP: D020711.ASC ,obs#: 230						
DXCT		TXPO	71	-52279.91160	0.011	0.129
				0.093	0.088	0.21
DYCT		TXPO	71	7689.00460	0.026	0.292
				0.093	0.088	0.48
DZCT		TXPO	71	1808.94190	-0.028	-0.319
				0.093	0.088	0.53

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: D020711.ASC ,obs#: 231						
DXCT		TXCC	72	-11854.21590	-0.001	-0.086
				0.029	0.013	0.07
DYCT		TXCC	72	6554.99050	0.002	0.125
				0.029	0.013	0.10
DZCT		TXCC	72	9402.09930	0.002	0.123
				0.029	0.013	0.10
GROUP: D020711.ASC ,obs#: 232						
DXCT		KVTX	72	33611.49200	0.001	0.009
				0.080	0.075	0.02
DYCT		KVTX	72	10549.29820	-0.031	-0.406
				0.080	0.076	0.68
DZCT		KVTX	72	28525.51040	0.009	0.126
				0.080	0.076	0.21
GROUP: D020711.ASC ,obs#: 233						
DXCT		TXPO	72	-48843.96070	0.009	0.109
				0.087	0.083	0.18
DYCT		TXPO	72	6116.55940	0.022	0.261
				0.087	0.083	0.44
DZCT		TXPO	72	-265.49540	-0.025	-0.306
				0.087	0.083	0.51
GROUP: D020711.ASC ,obs#: 234						
DXCT		TXCC	73	-7137.01550	-0.003	-0.542
				0.021	0.005	0.24
DYCT		TXCC	73	5070.15310	-0.005	-0.968
				0.021	0.005	0.44
DZCT		TXCC	73	7773.34080	0.004	0.842
				0.021	0.005	0.38
GROUP: D020711.ASC ,obs#: 235						
DXCT		TXPO	73	-44126.79400	0.041	0.541
				0.078	0.076	0.92
DYCT		TXPO	73	4631.66360	0.073	0.965
				0.079	0.076	1.65
DZCT		TXPO	73	-1894.21280	-0.064	-0.838
				0.078	0.076	1.43
GROUP: D020711.ASC ,obs#: 236						
DXCT		TXCC	74	-4009.50190	0.001	0.229
				0.013	0.003	0.09
DYCT		TXCC	74	3165.53790	-0.001	-0.427
				0.013	0.003	0.17
DZCT		TXCC	74	4964.17220	0.000	0.028
				0.013	0.003	0.01
GROUP: D020711.ASC ,obs#: 237						
DXCT		TXPO	74	-40999.22750	-0.008	-0.118
				0.073	0.072	0.20
DYCT		TXPO	74	2727.07960	0.046	0.638
				0.073	0.072	1.11
DZCT		TXPO	74	-4703.43390	-0.015	-0.215
				0.073	0.072	0.37
GROUP: D020711.ASC ,obs#: 238						
DXCT		KVTX	74	41456.22640	-0.018	-0.212
				0.085	0.085	0.37

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DYCT		KVTX	74	7159.82030	-0.008	-0.098
				0.086	0.085	0.17
DZCT		KVTX	74	24087.57300	0.018	0.216
				0.085	0.085	0.38
GROUP: D020711.ASC ,obs#: 239						
DXCT		TXCC	75	-3323.15840	-0.000	-0.109
				0.008	0.001	0.03
DYCT		TXCC	75	1864.84990	-0.000	-0.378
				0.008	0.001	0.10
DZCT		TXCC	75	2682.91160	0.000	0.233
				0.008	0.001	0.06
GROUP: D020711.ASC ,obs#: 240						
DXCT		TXPO	75	-40312.90500	0.012	0.164
				0.072	0.072	0.29
DYCT		TXPO	75	1426.39600	0.042	0.590
				0.072	0.072	1.03
DZCT		TXPO	75	-6984.68310	-0.027	-0.372
				0.072	0.072	0.65
GROUP: D020711.ASC ,obs#: 241						
DXCT		KVTX	75	42142.55360	-0.002	-0.029
				0.084	0.084	0.05
DYCT		KVTX	75	5859.13440	-0.010	-0.115
				0.084	0.084	0.20
DZCT		KVTX	75	21806.32390	0.007	0.083
				0.084	0.084	0.15
GROUP: D020711.ASC ,obs#: 242						
DXCT		TXCC	76	118.54340	-0.000	0.000*
				0.001	0.000	0.01
DYCT		TXCC	76	-146.13480	-0.000	0.000*
				0.001	0.000	0.01
DZCT		TXCC	76	-260.79820	0.000	0.000*
				0.001	0.000	0.03
GROUP: D020711.ASC ,obs#: 243						
DXCT		TXPO	76	-36871.20660	0.015	0.228
				0.067	0.067	0.40
DYCT		TXPO	76	-584.56520	0.019	0.286
				0.067	0.067	0.50
DZCT		TXPO	76	-9928.37720	-0.043	-0.634
				0.067	0.067	1.12
GROUP: D020711.ASC ,obs#: 244						
DXCT		KVTX	76	45584.24770	0.005	0.062
				0.087	0.087	0.11
DYCT		KVTX	76	3848.18270	-0.042	-0.483
				0.087	0.087	0.85
DZCT		KVTX	76	18862.62240	-0.002	-0.018
				0.087	0.087	0.03
GROUP: 052211N.ASC ,obs#: 245						
DXCT		TXSI	81	7480.94630	0.007	0.208
				0.039	0.034	0.32
DYCT		TXSI	81	-10518.48050	-0.010	-0.278
				0.040	0.034	0.43
DZCT		TXSI	81	-17895.56660	0.003	0.080

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.039	0.034	0.12
GROUP: 052211N.ASC ,obs#: 246						
DXCT		TXCC	81	6629.06160	-0.002	-0.208
				0.021	0.010	0.18
DYCT		TXCC	81	3988.39170	0.003	0.279
				0.021	0.010	0.24
DZCT		TXCC	81	9093.16540	-0.001	-0.081
				0.021	0.010	0.07
GROUP: 052211N.ASC ,obs#: 247						
DXCT		TXSI	82	6158.86260	0.009	0.254
				0.040	0.037	0.41
DYCT		TXSI	82	-10980.13020	0.016	0.426
				0.042	0.038	0.70
DZCT		TXSI	82	-19085.25230	-0.024	-0.657
				0.041	0.037	1.06
GROUP: 052211N.ASC ,obs#: 248						
DXCT		TXCC	82	5306.97990	-0.002	-0.254
				0.018	0.007	0.18
DYCT		TXCC	82	3526.77360	-0.003	-0.427
				0.019	0.007	0.31
DZCT		TXCC	82	7903.44710	0.005	0.658
				0.018	0.007	0.47
GROUP: 052311D.ASC ,obs#: 249						
DXCT		TXCC	83	3388.18930	-0.001	-0.428
				0.013	0.003	0.20
DYCT		TXCC	83	-3282.01300	-0.001	-0.379
				0.013	0.004	0.19
DZCT		TXCC	83	-5382.59800	0.003	0.741
				0.013	0.004	0.37
GROUP: 052311D.ASC ,obs#: 250						
DXCT		TXSI	83	4240.06460	0.017	0.267
				0.066	0.064	0.46
DYCT		TXSI	83	-17788.89160	-0.007	-0.114
				0.066	0.064	0.20
DZCT		TXSI	83	-32371.29680	-0.027	-0.419
				0.066	0.064	0.73
GROUP: 052311D.ASC ,obs#: 251						
DXCT		TXPO	83	-33601.56740	0.021	0.321
				0.065	0.064	0.56
DYCT		TXPO	83	-3720.46380	0.038	0.596
				0.066	0.064	1.04
DZCT		TXPO	83	-15050.17890	-0.038	-0.593
				0.066	0.064	1.03
GROUP: 052311D.ASC ,obs#: 252						
DXCT		TXCC	84	1489.13890	-0.001	-0.482
				0.012	0.003	0.21
DYCT		TXCC	84	-3101.90770	-0.000	-0.116
				0.012	0.003	0.06
DZCT		TXCC	84	-5514.87600	0.003	0.933
				0.012	0.003	0.40
GROUP: 052311D.ASC ,obs#: 253						
DXCT		TXSI	84	2341.01240	0.019	0.297

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.065	0.064	0.52
DYCT		TXSI	84	-17608.77090	-0.022	-0.336
				0.066	0.065	0.59
DZCT		TXSI	84	-32503.57040	-0.031	-0.489
				0.065	0.064	0.85
GROUP: 052311D.ASC ,obs#: 254						
DXCT		TXPO	84	-35500.62210	0.025	0.371
				0.068	0.067	0.64
DYCT		TXPO	84	-3540.35020	0.031	0.459
				0.069	0.068	0.80
DZCT		TXPO	84	-15182.44030	-0.055	-0.812
				0.068	0.067	1.41
GROUP: 052311D.ASC ,obs#: 255						
DXCT		TXCC	85	-1305.74130	-0.001	-0.464
				0.009	0.002	0.16
DYCT		TXCC	85	-2217.76490	-0.001	-0.649
				0.011	0.002	0.29
DZCT		TXCC	85	-4528.34380	0.002	0.966
				0.010	0.002	0.35
GROUP: 052311D.ASC ,obs#: 256						
DXCT		TXSI	85	-453.86770	0.019	0.312
				0.063	0.062	0.55
DYCT		TXSI	85	-16724.66060	0.010	0.153
				0.065	0.063	0.27
DZCT		TXSI	85	-31517.03750	-0.033	-0.527
				0.063	0.062	0.92
GROUP: 052311D.ASC ,obs#: 257						
DXCT		TXPO	85	-38295.49700	0.020	0.281
				0.072	0.072	0.49
DYCT		TXPO	85	-2656.22560	0.048	0.665
				0.073	0.072	1.17
DZCT		TXPO	85	-14195.90870	-0.055	-0.766
				0.072	0.072	1.34
GROUP: 052311D.ASC ,obs#: 258						
DXCT		TXCC	86	-6186.22110	-0.000	-0.041
				0.013	0.002	0.01
DYCT		TXCC	86	-1169.42310	-0.003	-1.023
				0.014	0.002	0.35
DZCT		TXCC	86	-3752.93070	0.003	1.064
				0.014	0.003	0.37
GROUP: 052311D.ASC ,obs#: 259						
DXCT		TXPO	86	-43175.95730	0.001	0.018
				0.080	0.079	0.03
DYCT		TXPO	86	-1607.90770	0.071	0.900
				0.080	0.079	1.57
DZCT		TXPO	86	-13420.47470	-0.075	-0.950
				0.080	0.079	1.66
GROUP: 052311D.ASC ,obs#: 260						
DXCT		TXCC	87	-5964.77930	-0.001	-0.403
				0.011	0.002	0.10
DYCT		TXCC	87	287.32980	-0.001	-0.673
				0.012	0.002	0.19

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
DZCT		TXCC	87	-945.58430	0.001	0.712
				0.011	0.002	0.19
GROUP: 052311D.ASC ,obs#: 261						
DXCT		TXPO	87	-42954.54760	0.033	0.427
				0.078	0.077	0.75
DYCT		TXPO	87	-151.13160	0.049	0.632
				0.079	0.078	1.11
DZCT		TXPO	87	-10613.15250	-0.052	-0.675
				0.078	0.077	1.18
GROUP: 052311D.ASC ,obs#: 262						
DXCT		TXCC	88	-5854.89210	-0.001	-0.285
				0.011	0.003	0.13
DYCT		TXCC	88	1619.64670	-0.003	-0.998
				0.013	0.003	0.55
DZCT		TXCC	88	1593.54350	0.002	0.651
				0.011	0.003	0.30
GROUP: 052311D.ASC ,obs#: 263						
DXCT		TXSI	88	-5003.00710	0.008	0.163
				0.051	0.050	0.28
DYCT		TXSI	88	-12887.26350	0.022	0.441
				0.052	0.050	0.77
DZCT		TXSI	88	-25395.16150	-0.022	-0.432
				0.051	0.050	0.75
GROUP: 052311D.ASC ,obs#: 264						
DXCT		TXPO	88	-42844.64380	0.016	0.213
				0.077	0.076	0.37
DYCT		TXPO	88	1181.15390	0.078	1.023
				0.078	0.076	1.79
DZCT		TXPO	88	-8074.04690	-0.029	-0.385
				0.077	0.076	0.67
GROUP: 052311D.ASC ,obs#: 265						
DXCT		TXCC	89	-7879.41200	-0.000	-0.063
				0.017	0.004	0.02
DYCT		TXCC	89	3322.60220	-0.004	-1.043
				0.018	0.004	0.43
DZCT		TXCC	89	4298.55510	0.003	0.864
				0.017	0.004	0.32
GROUP: 052311D.ASC ,obs#: 266						
DXCT		TXPO	89	-44869.14940	0.002	0.032
				0.080	0.078	0.05
DYCT		TXPO	89	2884.10730	0.080	1.015
				0.080	0.078	1.76
DZCT		TXPO	89	-5368.99890	-0.065	-0.827
				0.080	0.078	1.43
GROUP: 052311D.ASC ,obs#: 267						
DXCT		TXCC	90	-10277.14170	0.001	0.166
				0.026	0.008	0.09
DYCT		TXCC	90	5899.69040	-0.012	-1.488
				0.027	0.008	0.81
DZCT		TXCC	90	8563.09010	0.005	0.608
				0.026	0.008	0.33
GROUP: 052311D.ASC ,obs#: 268						

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION STD DEV	RESIDUAL STD DEV	STD RES PPM
DXCT		TXPO	90	-47266.86050	-0.015	-0.182
				0.084	0.080	0.31
DYCT		TXPO	90	5461.14780	0.120	1.479
				0.085	0.081	2.51
DZCT		TXPO	90	-1104.48020	-0.047	-0.577
				0.084	0.081	0.98
GROUP: 052411D.ASC ,obs#: 269						
DXCT		TXAI	91	45087.71770	0.006	0.085
				0.081	0.076	0.14
DYCT		TXAI	91	-1735.50290	0.004	0.059
				0.081	0.072	0.09
DZCT		TXAI	91	8342.87090	-0.018	-0.241
				0.081	0.075	0.39
GROUP: 052411D.ASC ,obs#: 270						
DXCT		TXSI	91	-17819.54850	-0.001	-0.038
				0.042	0.032	0.05
DYCT		TXSI	91	-5600.82800	-0.019	-0.592
				0.043	0.032	0.79
DZCT		TXSI	91	-14875.56640	0.003	0.099
				0.042	0.032	0.13
GROUP: 052411D.ASC ,obs#: 271						
DXCT		TXCC	91	-18671.44300	-0.001	-0.020
				0.042	0.032	0.03
DYCT		TXCC	91	8906.02040	0.017	0.553
				0.043	0.031	0.73
DZCT		TXCC	91	12113.16320	0.002	0.062
				0.042	0.032	0.08
GROUP: 052411D.ASC ,obs#: 272						
DXCT		TXAI	92	43310.73480	0.002	0.031
				0.077	0.072	0.05
DYCT		TXAI	92	-2152.22940	-0.004	-0.060
				0.078	0.068	0.09
DZCT		TXAI	92	7114.91740	-0.014	-0.194
				0.077	0.071	0.31
GROUP: 052411D.ASC ,obs#: 273						
DXCT		TXSI	92	-19596.53580	-0.001	-0.029
				0.046	0.036	0.04
DYCT		TXSI	92	-6017.57680	-0.005	-0.128
				0.048	0.037	0.18
DZCT		TXSI	92	-16103.51160	-0.001	-0.023
				0.046	0.036	0.03
GROUP: 052411D.ASC ,obs#: 274						
DXCT		TXCC	92	-20448.43100	0.000	0.007
				0.044	0.032	0.01
DYCT		TXCC	92	8489.29760	0.005	0.166
				0.045	0.032	0.22
DZCT		TXCC	92	10885.21090	0.005	0.159
				0.044	0.032	0.21
GROUP: 052411D.ASC ,obs#: 275						
DXCT		TXAI	93	42680.39530	0.002	0.034
				0.076	0.070	0.06
DYCT		TXAI	93	-3277.98450	-0.031	-0.469

Residuals (critical value = 4.158):

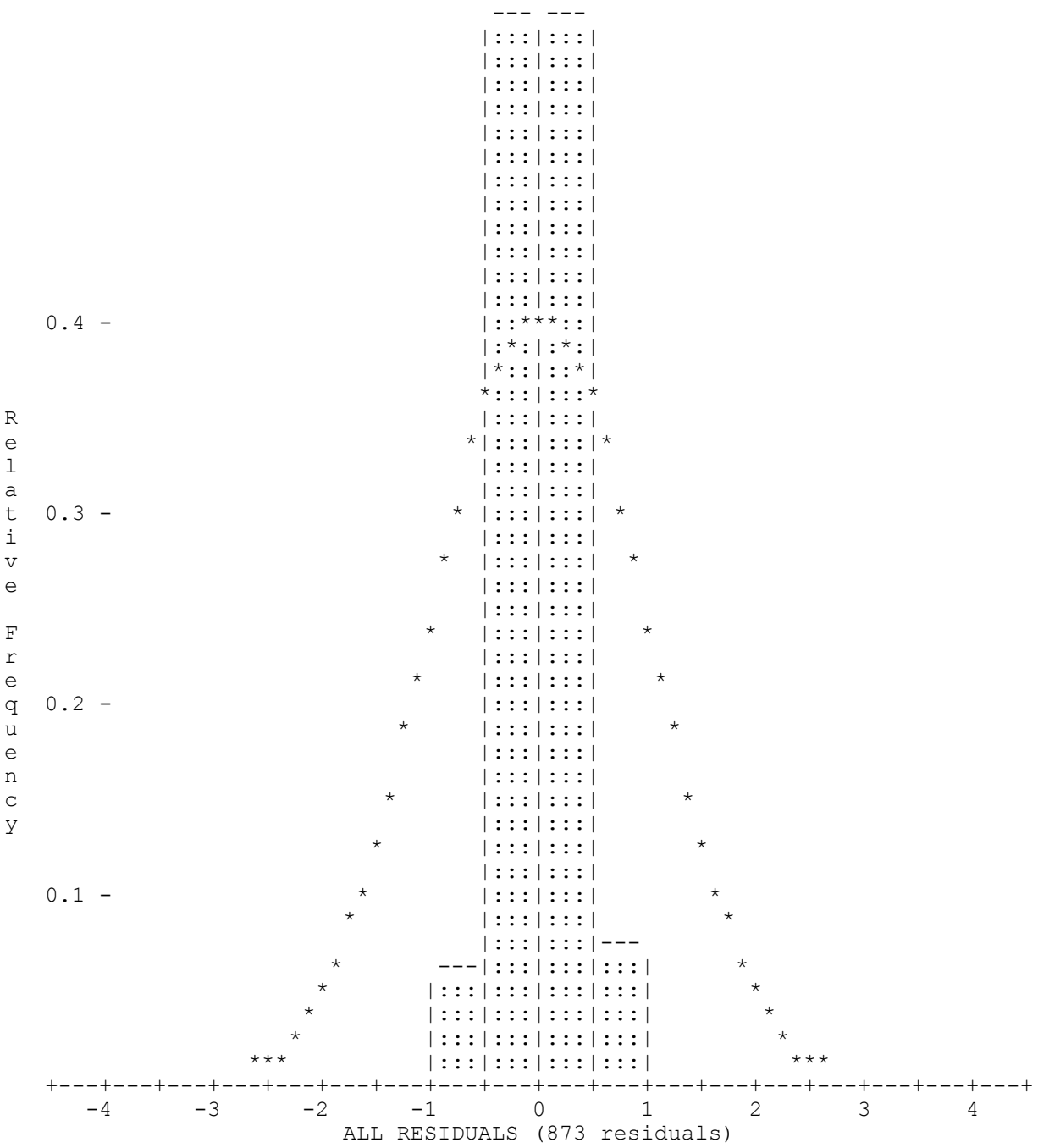
TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
				0.078	0.067	0.73
DZCT		TXAI	93	4842.69400	-0.002	-0.034
				0.076	0.069	0.05
GROUP: 052411D.ASC ,obs#: 276						
DXCT		TXSI	93	-20226.87750	0.001	0.033
				0.050	0.040	0.05
DYCT		TXSI	93	-7143.34230	-0.022	-0.460
				0.058	0.047	0.77
DZCT		TXSI	93	-18375.72490	0.000	0.011
				0.050	0.041	0.02
GROUP: 052411D.ASC ,obs#: 277						
DXCT		TXCC	93	-21078.76850	-0.002	-0.054
				0.042	0.030	0.07
DYCT		TXCC	93	7363.49630	0.024	0.772
				0.045	0.031	1.01
DZCT		TXCC	93	8613.00330	0.001	0.022
				0.042	0.030	0.03
GROUP: 052411D.ASC ,obs#: 278						
DXCT		TXAI	94	42160.09560	0.005	0.068
				0.075	0.068	0.11
DYCT		TXAI	94	-4549.86460	-0.013	-0.200
				0.075	0.065	0.30
DZCT		TXAI	94	2318.78580	-0.006	-0.095
				0.075	0.068	0.15
GROUP: 052411D.ASC ,obs#: 279						
DXCT		TXSI	94	-20747.17740	0.004	0.085
				0.054	0.045	0.13
DYCT		TXSI	94	-8415.20470	-0.021	-0.467
				0.054	0.045	0.68
DZCT		TXSI	94	-20899.63410	-0.003	-0.059
				0.054	0.045	0.09
GROUP: 052411D.ASC ,obs#: 280						
DXCT		TXCC	94	-21599.06390	-0.004	-0.129
				0.041	0.028	0.16
DYCT		TXCC	94	6091.64300	0.016	0.576
				0.041	0.028	0.69
DZCT		TXCC	94	6089.08820	0.003	0.124
				0.041	0.028	0.15
GROUP: 052411D.ASC ,obs#: 281						
DXCT		TXAI	95	41996.90870	-0.001	-0.012
				0.075	0.068	0.02
DYCT		TXAI	95	-5229.58350	-0.013	-0.206
				0.075	0.064	0.31
DZCT		TXAI	95	996.03460	-0.009	-0.137
				0.075	0.067	0.22
GROUP: 052411D.ASC ,obs#: 282						
DXCT		TXSI	95	-20910.37390	0.008	0.167
				0.056	0.047	0.25
DYCT		TXSI	95	-9094.93240	-0.012	-0.264
				0.056	0.047	0.39
DZCT		TXSI	95	-22222.38460	-0.006	-0.129
				0.056	0.048	0.19

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION / STD DEV	RESIDUAL / STD DEV	STD RES / PPM
GROUP: 052411D.ASC ,obs#: 283						
DXCT		TXCC	95	-21762.25610	-0.004	-0.142
				0.040	0.027	0.17
DYCT		TXCC	95	5411.92930	0.010	0.388
				0.041	0.027	0.45
DZCT		TXCC	95	4766.33180	0.006	0.216
				0.041	0.027	0.26
GROUP: 052411D.ASC ,obs#: 284						
DXCT		TXAI	96	41219.49670	-0.002	-0.029
				0.073	0.067	0.05
DYCT		TXAI	96	-6189.14830	-0.004	-0.064
				0.074	0.063	0.10
DZCT		TXAI	96	-1004.57260	-0.010	-0.147
				0.073	0.066	0.23
GROUP: 052411D.ASC ,obs#: 285						
DXCT		TXSI	96	-21687.78570	0.007	0.128
				0.060	0.052	0.19
DYCT		TXSI	96	-10054.47660	-0.024	-0.463
				0.060	0.051	0.70
DZCT		TXSI	96	-24222.99830	-0.000	-0.002
				0.060	0.051	0.00
GROUP: 052411D.ASC ,obs#: 286						
DXCT		TXCC	96	-22539.67060	-0.002	-0.091
				0.041	0.027	0.11
DYCT		TXCC	96	4452.37180	0.012	0.461
				0.041	0.027	0.53
DZCT		TXCC	96	2765.72700	0.003	0.112
				0.041	0.027	0.13
GROUP: 052411D.ASC ,obs#: 287						
DXCT		TXAI	97	38506.11370	0.024	0.401
				0.069	0.061	0.62
DYCT		TXAI	97	-6568.45080	0.009	0.148
				0.070	0.057	0.22
DZCT		TXAI	97	-2410.99390	-0.023	-0.387
				0.069	0.060	0.59
GROUP: 052411D.ASC ,obs#: 288						
DXCT		TXSI	97	-24401.13330	-0.002	-0.044
				0.065	0.056	0.07
DYCT		TXSI	97	-10433.77110	-0.019	-0.345
				0.065	0.056	0.52
DZCT		TXSI	97	-25629.43140	-0.002	-0.033
				0.065	0.056	0.05
GROUP: 052411D.ASC ,obs#: 289						
DXCT		TXCC	97	-25253.02050	-0.009	-0.296
				0.045	0.031	0.36
DYCT		TXCC	97	4073.08850	0.006	0.185
				0.046	0.031	0.22
DZCT		TXCC	97	1359.28440	0.011	0.347
				0.045	0.031	0.42
GROUP: 052411D.ASC ,obs#: 290						
DXCT		TXSI	98	-16820.90440	0.003	0.088
				0.043	0.032	0.12

Residuals (critical value = 4.158):

TYPE	AT	FROM	TO	OBSERVATION STD DEV	RESIDUAL STD DEV	STD RES PPM
DYCT		TXSI	98	-6639.22690	-0.018	-0.559
				0.044	0.032	0.74
DZCT		TXSI	98	-16576.48280	0.006	0.185
				0.044	0.032	0.24
GROUP: 052411D.ASC ,obs#: 291						
DXCT		TXCC	98	-17672.79320	-0.002	-0.088
				0.039	0.026	0.10
DYCT		TXCC	98	7867.62500	0.015	0.560
				0.039	0.026	0.66
DZCT		TXCC	98	10412.25650	-0.005	-0.186
				0.039	0.026	0.22


Relative Frequency
0.4
0.3
0.2
0.1
-4
-3
-2
-1
0
1
2
3
4
ALL RESIDUALS (873 residuals)

S T A T I S T I C S S U M M A R Y

Residual Critical Value Type	Tau Max
Residual Critical Value	4.1584
Number of Flagged Residuals	2
Convergence Criterion	0.0010
Final Iteration Counter Value	2
Confidence Level Used	95.0000
Estimated Variance Factor	1.0000
Number of Degrees of Freedom	589

Chi-Square Test on the Variance Factor:

8.9494e-01 < 1.0000 < 1.1248e+00 ?

THE TEST PASSES

NOTE: All confidence regions were computed using the following factors:

Variance factor used = 1.0000
3-D expansion factor = 2.7955

Note that, for relative confidence regions, precisions are computed from the ratio of the major semi-axis and the spatial distance between the two stations.

3D Station Confidence Regions (95.000 percent):

STATION	MAJ-SEMI	(AZ,VANG)	MED-SEMI	(AZ,VANG)	MIN-SEMI	(AZ,VANG)
1	0.017	(270, 85)	0.005	(90, 5)	0.004	(0, 0)
10	0.067	(342, 71)	0.065	(180, 18)	0.064	(88, 6)
11	0.053	(248, 75)	0.050	(90, 14)	0.050	(359, 5)
12	0.048	(270, 83)	0.047	(0, 0)	0.047	(90, 7)
13	0.041	(0, 90)	0.040	(0, 0)	0.040	(90, 0)
14	0.044	(0, 90)	0.044	(0, 0)	0.044	(90, 0)
15	0.048	(180, 73)	0.046	(0, 17)	0.046	(90, 0)
16	0.053	(180, 85)	0.052	(90, 0)	0.052	(0, 5)
17	0.067	(0, 76)	0.066	(180, 14)	0.066	(90, 0)
18	0.077	(344, 66)	0.071	(146, 23)	0.071	(239, 7)
19	0.078	(90, 86)	0.076	(0, 0)	0.076	(270, 4)
2	0.024	(0, 90)	0.019	(0, 0)	0.019	(90, 0)
20	0.033	(190, 80)	0.027	(0, 10)	0.027	(90, 2)
21	0.027	(270, 83)	0.025	(0, 0)	0.025	(90, 7)
22	0.028	(0, 81)	0.026	(180, 9)	0.026	(90, 0)
23	0.028	(270, 79)	0.027	(90, 11)	0.027	(0, 0)
24	0.034	(251, 75)	0.032	(90, 14)	0.032	(359, 5)
25	0.032	(270, 83)	0.031	(0, 0)	0.031	(90, 7)
26	0.044	(0, 90)	0.042	(0, 0)	0.042	(90, 0)
27	0.047	(0, 90)	0.047	(0, 0)	0.047	(90, 0)
28	0.061	(198, 79)	0.058	(0, 11)	0.058	(91, 3)
29	0.053	(0, 90)	0.052	(90, 0)	0.052	(0, 0)
3	0.046	(180, 84)	0.042	(0, 6)	0.042	(90, 0)
30	0.032	(352, 70)	0.027	(180, 20)	0.027	(89, 3)
31	0.044	(0, 82)	0.042	(180, 8)	0.042	(90, 0)
32	0.059	(157, 81)	0.057	(269, 4)	0.057	(0, 9)
33	0.064	(215, 81)	0.063	(0, 7)	0.063	(91, 5)
34	0.078	(316, 80)	0.076	(181, 7)	0.076	(90, 7)
35	0.072	(341, 72)	0.067	(147, 18)	0.066	(239, 4)
36	0.076	(130, 85)	0.073	(320, 5)	0.073	(230, 1)
37	0.090	(177, 78)	0.085	(0, 12)	0.085	(270, 1)
38	0.078	(270, 86)	0.077	(0, 0)	0.077	(90, 4)
39	0.080	(340, 77)	0.078	(180, 12)	0.078	(89, 4)
4	0.069	(202, 83)	0.065	(90, 2)	0.065	(0, 6)
40	0.082	(347, 78)	0.080	(180, 12)	0.080	(89, 3)
41	0.083	(165, 80)	0.082	(0, 10)	0.082	(270, 3)
42	0.082	(191, 76)	0.081	(0, 13)	0.081	(91, 3)
43	0.060	(0, 81)	0.059	(180, 9)	0.059	(90, 0)
44	0.052	(0, 90)	0.051	(0, 0)	0.051	(90, 0)
45	0.084	(346, 67)	0.079	(148, 21)	0.079	(240, 6)
46	0.088	(157, 83)	0.087	(0, 6)	0.087	(270, 3)
47	0.073	(204, 83)	0.071	(0, 6)	0.071	(90, 3)
48	0.078	(336, 79)	0.077	(180, 10)	0.077	(89, 4)
49	0.088	(347, 78)	0.086	(180, 12)	0.086	(89, 3)
5	0.078	(0, 78)	0.077	(180, 12)	0.077	(90, 0)
50	0.094	(180, 82)	0.093	(0, 8)	0.093	(90, 0)
51	0.098	(180, 79)	0.097	(0, 11)	0.097	(90, 0)
52	0.087	(343, 71)	0.085	(153, 18)	0.084	(244, 3)
53	0.100	(144, 86)	0.099	(0, 3)	0.099	(270, 2)
54	0.109	(180, 82)	0.107	(0, 8)	0.107	(90, 0)
55	0.111	(346, 79)	0.110	(180, 10)	0.110	(90, 3)
56	0.116	(0, 90)	0.115	(0, 0)	0.115	(90, 0)
57	0.111	(180, 78)	0.110	(0, 12)	0.110	(90, 0)

3D Station Confidence Regions (95.000 percent):

STATION	MAJ-SEMI	(AZ,VANG)	MED-SEMI	(AZ,VANG)	MIN-SEMI	(AZ,VANG)
58	0.105	(0, 82)	0.105	(180, 8)	0.105	(90, 0)
59	0.080	(343, 73)	0.077	(147, 17)	0.077	(238, 5)
6	0.091	(345, 67)	0.087	(147, 22)	0.087	(240, 6)
60	0.086	(156, 82)	0.084	(0, 7)	0.084	(270, 3)
61	0.080	(180, 81)	0.078	(0, 9)	0.078	(90, 0)
62	0.050	(0, 77)	0.049	(180, 13)	0.049	(90, 0)
63	0.046	(0, 90)	0.045	(0, 0)	0.045	(90, 0)
64	0.065	(180, 75)	0.064	(0, 15)	0.064	(90, 0)
65	0.087	(341, 83)	0.086	(180, 7)	0.086	(90, 2)
66	0.053	(180, 82)	0.052	(0, 8)	0.052	(90, 0)
67	0.072	(192, 77)	0.071	(0, 13)	0.071	(91, 3)
68	0.083	(345, 81)	0.082	(180, 9)	0.082	(90, 2)
69	0.098	(180, 78)	0.098	(0, 12)	0.098	(90, 0)
70	0.103	(180, 80)	0.102	(90, 0)	0.102	(0, 10)
71	0.088	(180, 84)	0.087	(0, 6)	0.087	(90, 0)
72	0.074	(342, 76)	0.073	(180, 13)	0.073	(89, 4)
73	0.056	(0, 82)	0.056	(180, 8)	0.056	(90, 0)
74	0.035	(180, 78)	0.034	(0, 12)	0.034	(90, 0)
75	0.023	(0, 90)	0.023	(0, 0)	0.023	(90, 0)
76	0.004	(0, 90)	0.002	(0, 0)	0.002	(90, 0)
8	0.072	(201, 80)	0.068	(0, 10)	0.068	(91, 4)
81	0.053	(90, 80)	0.052	(270, 10)	0.052	(0, 0)
82	0.048	(180, 81)	0.046	(90, 0)	0.046	(0, 9)
83	0.036	(0, 76)	0.035	(180, 14)	0.034	(90, 0)
84	0.034	(180, 76)	0.032	(0, 14)	0.031	(90, 0)
85	0.030	(206, 83)	0.026	(90, 3)	0.026	(0, 6)
86	0.042	(7, 71)	0.036	(271, 2)	0.036	(180, 19)
87	0.033	(62, 74)	0.030	(228, 15)	0.030	(319, 4)
88	0.034	(180, 81)	0.030	(90, 0)	0.030	(0, 9)
89	0.050	(203, 78)	0.046	(91, 4)	0.046	(0, 11)
9	0.068	(270, 84)	0.067	(0, 0)	0.067	(90, 6)
90	0.072	(29, 78)	0.069	(207, 12)	0.069	(297, 0)
91	0.081	(0, 89)	0.078	(180, 1)	0.078	(90, 0)
92	0.086	(155, 80)	0.082	(299, 9)	0.082	(30, 6)
93	0.093	(143, 75)	0.083	(297, 13)	0.083	(29, 6)
94	0.086	(0, 88)	0.084	(180, 2)	0.084	(90, 0)
95	0.086	(0, 84)	0.084	(193, 6)	0.084	(103, 1)
96	0.088	(180, 86)	0.086	(0, 4)	0.086	(90, 0)
97	0.095	(228, 89)	0.091	(90, 1)	0.091	(360, 1)
98	0.083	(51, 77)	0.081	(229, 13)	0.081	(319, 1)
B 1380	0.146	(0, 0)	0.146	(90, 0)	0.000	(0, 90)
TXAI	0.088	(0, 90)	0.000	(0, 0)	0.000	(90, 0)
TXPO	0.012	(0, 90)	0.000	(0, 0)	0.000	(90, 0)
TXSI	0.024	(0, 90)	0.000	(0, 0)	0.000	(90, 0)

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
1	KVTX	0.017 (270, 85)	0.005 (90, 5)	0.004 (0, 0)	87937.914	0.19
1	TXCC	0.017 (270, 85)	0.005 (90, 5)	0.004 (0, 0)	38734.283	0.44
1	TXPO	0.012 (270, 80)	0.005 (90, 10)	0.004 (0, 0)	510.508	24.42
1	TXSI	0.029 (270, 88)	0.005 (90, 2)	0.004 (0, 0)	44368.566	0.66
10	KVTX	0.067 (342, 71)	0.065 (180, 18)	0.064 (88, 6)	60615.136	1.11
10	TXCC	0.067 (342, 71)	0.065 (180, 18)	0.064 (88, 6)	16180.917	4.15
10	TXPO	0.068 (341, 75)	0.065 (180, 14)	0.064 (89, 5)	28858.664	2.35
10	TXSI	0.070 (341, 83)	0.065 (170, 7)	0.064 (80, 1)	41617.685	1.69
11	KVTX	0.053 (248, 75)	0.050 (90, 14)	0.050 (359, 5)	57306.325	0.93
11	TXCC	0.053 (248, 75)	0.050 (90, 14)	0.050 (359, 5)	11468.192	4.65
11	TXPO	0.054 (248, 79)	0.050 (90, 11)	0.050 (359, 4)	30791.213	1.76
11	TXSI	0.058 (248, 84)	0.050 (90, 5)	0.050 (360, 2)	37859.611	1.53
12	KVTX	0.048 (270, 83)	0.047 (0, 0)	0.047 (90, 7)	54161.153	0.89
12	TXCC	0.048 (270, 83)	0.047 (0, 0)	0.047 (90, 7)	10364.251	4.63
12	TXPO	0.049 (270, 86)	0.047 (0, 0)	0.047 (90, 4)	34137.923	1.44
12	TXSI	0.053 (270, 89)	0.047 (90, 1)	0.047 (0, 0)	38953.014	1.36
13	TXCC	0.041 (0, 90)	0.040 (0, 0)	0.040 (90, 0)	8268.659	5.02
13	TXPO	0.043 (0, 90)	0.040 (0, 0)	0.040 (90, 0)	35488.111	1.21
14	KVTX	0.044 (0, 90)	0.044 (0, 0)	0.044 (90, 0)	50457.035	0.88
14	TXCC	0.044 (0, 90)	0.044 (0, 0)	0.044 (90, 0)	9475.084	4.67
14	TXPO	0.046 (0, 90)	0.044 (0, 0)	0.044 (90, 0)	37841.010	1.20
14	TXSI	0.050 (0, 90)	0.044 (0, 0)	0.044 (90, 0)	39638.390	1.26
15	KVTX	0.048 (180, 73)	0.046 (0, 17)	0.046 (90, 0)	48817.321	0.99
15	TXCC	0.048 (180, 73)	0.046 (0, 17)	0.046 (90, 0)	9551.049	5.04
16	KVTX	0.053 (180, 85)	0.052 (90, 0)	0.052 (0, 5)	44599.889	1.18
16	TXCC	0.053 (180, 85)	0.052 (90, 0)	0.052 (0, 5)	11513.219	4.59

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
16	TXPO	0.054 (180, 88)	0.052 (90, 0)	0.052 (0, 2)	43906.915	1.23
16	TXSI	0.058 (180, 89)	0.052 (90, 0)	0.052 (0, 1)	42021.206	1.37
17	KVTX	0.067 (0, 76)	0.066 (180, 14)	0.066 (90, 0)	43682.847	1.54
17	TXCC	0.067 (0, 76)	0.066 (180, 14)	0.066 (90, 0)	15540.530	4.34
17	TXPO	0.068 (0, 81)	0.066 (180, 9)	0.066 (90, 0)	46249.031	1.48
17	TXSI	0.071 (0, 86)	0.066 (180, 4)	0.066 (90, 0)	46039.074	1.54
18	KVTX	0.077 (344, 66)	0.071 (146, 23)	0.071 (239, 7)	45186.132	1.71
18	TXCC	0.077 (344, 66)	0.071 (146, 23)	0.071 (239, 7)	17085.858	4.53
18	TXPO	0.078 (344, 68)	0.071 (151, 21)	0.071 (243, 4)	45822.561	1.70
18	TXSI	0.080 (344, 74)	0.072 (157, 16)	0.071 (247, 2)	47714.663	1.68
19	KVTX	0.078 (90, 86)	0.076 (0, 0)	0.076 (270, 4)	40256.830	1.94
19	TXCC	0.078 (90, 86)	0.076 (0, 0)	0.076 (270, 4)	19058.401	4.09
19	TXPO	0.079 (90, 87)	0.076 (0, 0)	0.076 (270, 3)	50558.750	1.56
19	TXSI	0.081 (90, 89)	0.076 (0, 0)	0.076 (270, 1)	49099.374	1.65
2	KVTX	0.024 (0, 90)	0.019 (0, 0)	0.019 (90, 0)	84719.363	0.28
2	TXCC	0.024 (0, 90)	0.019 (0, 0)	0.019 (90, 0)	35815.129	0.67
2	TXPO	0.021 (0, 90)	0.019 (0, 0)	0.019 (90, 0)	3776.435	5.58
2	TXSI	0.034 (0, 90)	0.019 (0, 0)	0.019 (90, 0)	44162.695	0.76
20	TXCC	0.033 (190, 80)	0.027 (0, 10)	0.027 (90, 2)	5462.690	5.99
20	TXPO	0.035 (190, 83)	0.027 (0, 7)	0.027 (90, 1)	40663.208	0.85
20	TXSI	0.040 (190, 86)	0.027 (0, 4)	0.027 (90, 1)	36026.929	1.12
21	KVTX	0.027 (270, 83)	0.025 (0, 0)	0.025 (90, 7)	49927.435	0.54
21	TXCC	0.027 (270, 83)	0.025 (0, 0)	0.025 (90, 7)	5187.234	5.22
21	TXPO	0.029 (270, 87)	0.025 (0, 0)	0.025 (90, 3)	37594.476	0.78
22	TXCC	0.028 (0, 81)	0.026 (180, 9)	0.026 (90, 0)	5229.285	5.44
22	TXPO	0.031 (0, 85)	0.026 (180, 5)	0.026 (90, 0)	34836.502	0.88

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
22	TXSI	0.037 (0, 88)	0.026 (180, 2)	0.026 (90, 0)	33910.824	1.09
23	TXCC	0.028 (270, 79)	0.027 (90, 11)	0.027 (0, 0)	5448.840	5.11
23	TXPO	0.030 (270, 87)	0.027 (90, 3)	0.027 (0, 0)	33202.560	0.91
24	TXCC	0.034 (251, 75)	0.032 (90, 14)	0.032 (359, 5)	6591.449	5.13
24	TXPO	0.036 (251, 83)	0.032 (90, 7)	0.032 (360, 2)	31663.023	1.12
25	TXCC	0.032 (270, 83)	0.031 (0, 0)	0.031 (90, 7)	6281.625	5.17
25	TXPO	0.034 (270, 86)	0.031 (0, 0)	0.031 (90, 4)	32271.864	1.06
26	TXCC	0.044 (0, 90)	0.042 (0, 0)	0.042 (90, 0)	8688.759	5.03
26	TXPO	0.045 (0, 90)	0.042 (0, 0)	0.042 (90, 0)	32103.815	1.40
27	TXCC	0.047 (0, 90)	0.047 (0, 0)	0.047 (90, 0)	11017.620	4.29
27	TXPO	0.048 (0, 90)	0.047 (0, 0)	0.047 (90, 0)	31187.501	1.55
27	TXSI	0.051 (0, 90)	0.047 (0, 0)	0.047 (90, 0)	22508.261	2.27
28	TXCC	0.061 (198, 79)	0.058 (0, 11)	0.058 (91, 3)	14664.976	4.15
28	TXPO	0.062 (198, 82)	0.058 (0, 8)	0.058 (90, 2)	47069.464	1.31
28	TXSI	0.063 (198, 84)	0.058 (0, 6)	0.058 (90, 2)	21657.445	2.90
29	TXCC	0.053 (0, 90)	0.052 (90, 0)	0.052 (0, 0)	11741.266	4.51
29	TXPO	0.054 (0, 90)	0.052 (90, 0)	0.052 (0, 0)	47390.629	1.14
29	TXSI	0.057 (0, 90)	0.052 (90, 0)	0.052 (0, 0)	26306.868	2.15
3	KVTX	0.046 (180, 84)	0.042 (0, 6)	0.042 (90, 0)	80772.829	0.57
3	TXCC	0.046 (180, 84)	0.042 (0, 6)	0.042 (90, 0)	32536.492	1.41
3	TXPO	0.045 (180, 81)	0.042 (0, 9)	0.042 (90, 0)	9032.406	4.94
3	TXSI	0.051 (180, 88)	0.042 (0, 2)	0.042 (90, 0)	44622.397	1.15
30	TXCC	0.032 (352, 70)	0.027 (180, 20)	0.027 (89, 3)	5622.656	5.69
30	TXPO	0.034 (352, 76)	0.027 (180, 14)	0.027 (90, 2)	42478.963	0.80
30	TXSI	0.039 (352, 83)	0.028 (180, 7)	0.027 (90, 1)	28073.862	1.40
31	TXCC	0.044 (0, 82)	0.042 (180, 8)	0.042 (90, 0)	9080.080	4.81

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
31	TXPO	0.045 (0, 86)	0.042 (180, 4)	0.042 (90, 0)	47078.058	0.96
31	TXSI	0.049 (0, 89)	0.042 (180, 1)	0.042 (90, 0)	31514.762	1.56
32	TXCC	0.059 (157, 81)	0.057 (269, 4)	0.057 (0, 9)	12531.176	4.69
32	TXPO	0.060 (158, 84)	0.057 (0, 5)	0.057 (270, 2)	50585.177	1.18
32	TXSI	0.063 (158, 87)	0.057 (0, 3)	0.057 (270, 1)	37344.045	1.68
33	TXCC	0.064 (215, 81)	0.063 (0, 7)	0.063 (91, 5)	13142.819	4.86
33	TXPO	0.065 (216, 85)	0.063 (0, 4)	0.063 (90, 3)	50196.778	1.29
34	TXCC	0.078 (316, 80)	0.076 (181, 7)	0.076 (90, 7)	17152.368	4.52
34	TXPO	0.078 (315, 83)	0.076 (180, 5)	0.076 (90, 5)	52457.627	1.49
34	TXSI	0.080 (314, 86)	0.076 (180, 3)	0.076 (90, 3)	45440.175	1.77
35	KVTX	0.072 (341, 72)	0.067 (147, 18)	0.066 (239, 4)	45598.717	1.58
35	TXCC	0.072 (341, 72)	0.067 (147, 18)	0.066 (239, 4)	18630.529	3.87
35	TXSI	0.073 (341, 74)	0.067 (150, 16)	0.066 (241, 3)	21417.432	3.40
36	KVTX	0.076 (130, 85)	0.073 (320, 5)	0.073 (230, 1)	41915.685	1.82
36	TXCC	0.076 (130, 85)	0.073 (320, 5)	0.073 (230, 1)	20458.067	3.73
36	TXSI	0.077 (131, 87)	0.073 (319, 3)	0.073 (229, 1)	24891.530	3.10
37	KVTX	0.090 (177, 78)	0.085 (0, 12)	0.085 (270, 1)	39583.104	2.28
37	TXCC	0.090 (177, 78)	0.085 (0, 12)	0.085 (270, 1)	18999.425	4.75
38	KVTX	0.078 (270, 86)	0.077 (0, 0)	0.077 (90, 4)	34481.937	2.26
38	TXCC	0.078 (270, 86)	0.077 (0, 0)	0.077 (90, 4)	17529.325	4.44
39	KVTX	0.080 (340, 77)	0.078 (180, 12)	0.078 (89, 4)	31770.253	2.53
39	TXCC	0.080 (340, 77)	0.078 (180, 12)	0.078 (89, 4)	18182.233	4.42
4	KVTX	0.069 (202, 83)	0.065 (90, 2)	0.065 (0, 6)	75916.181	0.90
4	TXCC	0.069 (202, 83)	0.065 (90, 2)	0.065 (0, 6)	29221.497	2.35
4	TXPO	0.068 (202, 83)	0.065 (90, 3)	0.065 (0, 7)	15917.806	4.29
4	TXSI	0.072 (202, 87)	0.065 (90, 1)	0.065 (0, 3)	46219.464	1.56

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
40	KVTX	0.082 (347, 78)	0.080 (180, 12)	0.080 (89, 3)	26162.390	3.14
40	TXCC	0.082 (347, 78)	0.080 (180, 12)	0.080 (89, 3)	23637.582	3.47
40	TXSI	0.085 (347, 85)	0.080 (180, 5)	0.080 (90, 1)	42965.852	1.97
41	KVTX	0.083 (165, 80)	0.082 (0, 10)	0.082 (270, 3)	23666.570	3.53
41	TXCC	0.083 (165, 80)	0.082 (0, 10)	0.082 (270, 3)	26365.584	3.17
41	TXSI	0.086 (164, 86)	0.082 (0, 4)	0.082 (270, 1)	49100.156	1.75
42	KVTX	0.082 (191, 76)	0.081 (0, 13)	0.081 (91, 3)	19418.323	4.24
42	TXCC	0.082 (191, 76)	0.081 (0, 13)	0.081 (91, 3)	30279.592	2.72
43	KVTX	0.060 (0, 81)	0.059 (180, 9)	0.059 (90, 0)	13088.028	4.58
43	TXCC	0.060 (0, 81)	0.059 (180, 9)	0.059 (90, 0)	37071.797	1.62
43	TXSI	0.064 (0, 89)	0.060 (180, 1)	0.059 (90, 0)	57601.030	1.12
44	KVTX	0.052 (0, 90)	0.051 (0, 0)	0.051 (90, 0)	10838.721	4.76
44	TXCC	0.052 (0, 90)	0.051 (0, 0)	0.051 (90, 0)	38647.197	1.33
44	TXSI	0.057 (0, 90)	0.051 (0, 0)	0.051 (90, 0)	57126.710	0.99
45	KVTX	0.084 (346, 67)	0.079 (148, 21)	0.079 (240, 6)	34240.323	2.45
45	TXBE	0.084 (346, 67)	0.079 (148, 21)	0.079 (240, 6)	71466.941	1.17
45	TXCC	0.084 (346, 67)	0.079 (148, 21)	0.079 (240, 6)	22795.183	3.68
45	TXSI	0.085 (346, 74)	0.079 (158, 16)	0.079 (249, 2)	32565.831	2.63
46	KVTX	0.088 (157, 83)	0.087 (0, 6)	0.087 (270, 3)	33433.580	2.62
46	TXBE	0.088 (157, 83)	0.087 (0, 6)	0.087 (270, 3)	68656.830	1.28
46	TXCC	0.088 (157, 83)	0.087 (0, 6)	0.087 (270, 3)	28124.748	3.12
46	TXSI	0.089 (159, 87)	0.087 (0, 3)	0.087 (270, 1)	33917.886	2.63
47	KVTX	0.073 (204, 83)	0.071 (0, 6)	0.071 (90, 3)	16312.564	4.49
47	TXCC	0.073 (204, 83)	0.071 (0, 6)	0.071 (90, 3)	39066.632	1.88
47	TXSI	0.077 (205, 87)	0.071 (0, 2)	0.071 (90, 1)	51414.188	1.49
48	KVTX	0.078 (336, 79)	0.077 (180, 10)	0.077 (89, 4)	18064.669	4.34

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
48	TXCC	0.078 (336, 79)	0.077 (180, 10)	0.077 (89, 4)	38801.479	2.02
48	TXSI	0.081 (334, 86)	0.077 (180, 3)	0.077 (90, 2)	50086.673	1.62
49	KVTX	0.088 (347, 78)	0.086 (180, 12)	0.086 (89, 3)	22658.630	3.88
49	TXBE	0.088 (347, 78)	0.086 (180, 12)	0.086 (89, 3)	76084.325	1.16
49	TXCC	0.088 (347, 78)	0.086 (180, 12)	0.086 (89, 3)	38060.280	2.31
49	TXSI	0.090 (346, 85)	0.086 (180, 5)	0.086 (90, 1)	46571.919	1.94
5	KVTX	0.078 (0, 78)	0.077 (180, 12)	0.077 (90, 0)	72303.825	1.08
5	TXCC	0.078 (0, 78)	0.077 (180, 12)	0.077 (90, 0)	27523.623	2.85
5	TXPO	0.078 (0, 77)	0.077 (180, 13)	0.077 (90, 0)	21325.845	3.68
5	TXSI	0.081 (0, 85)	0.077 (180, 5)	0.077 (90, 0)	48097.172	1.69
50	KVTX	0.094 (180, 82)	0.093 (0, 8)	0.093 (90, 0)	27845.068	3.37
50	TXBE	0.094 (180, 82)	0.093 (0, 8)	0.093 (90, 0)	71070.221	1.32
50	TXCC	0.094 (180, 82)	0.093 (0, 8)	0.093 (90, 0)	36455.464	2.57
50	TXSI	0.096 (180, 87)	0.093 (0, 3)	0.093 (90, 0)	42016.221	2.28
51	KVTX	0.098 (180, 79)	0.097 (0, 11)	0.097 (90, 0)	33319.720	2.93
51	TXBE	0.098 (180, 79)	0.097 (0, 11)	0.097 (90, 0)	65623.521	1.49
51	TXCC	0.098 (180, 79)	0.097 (0, 11)	0.097 (90, 0)	36393.060	2.68
51	TXSI	0.099 (180, 86)	0.097 (0, 4)	0.097 (90, 0)	37955.956	2.61
52	KVTX	0.087 (343, 71)	0.085 (153, 18)	0.084 (244, 3)	40728.628	2.13
52	TXBE	0.087 (343, 71)	0.085 (153, 18)	0.084 (244, 3)	61699.995	1.41
52	TXCC	0.087 (343, 71)	0.085 (153, 18)	0.084 (244, 3)	28601.570	3.04
52	TXSI	0.088 (343, 76)	0.085 (157, 14)	0.084 (247, 1)	27549.602	3.18
5237 TIDAL 2	TXPO	0.012 (0, 90)	0.000 (0, 0)	0.000 (90, 0)	281.187	41.88
5237 TIDAL 2	TXSI	0.024 (0, 90)	0.000 (0, 0)	0.000 (90, 0)	43682.328	0.56
53	KVTX	0.100 (144, 86)	0.099 (0, 3)	0.099 (270, 2)	40388.644	2.47
53	TXBE	0.100 (144, 86)	0.099 (0, 3)	0.099 (270, 2)	58537.849	1.71

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
53	TXCC	0.100 (144, 86)	0.099 (0, 3)	0.099 (270, 2)	37874.332	2.64
53	TXSI	0.101 (148, 88)	0.099 (0, 2)	0.099 (270, 1)	33610.435	3.00
54	KVTX	0.109 (180, 82)	0.107 (0, 8)	0.107 (90, 0)	41467.061	2.62
54	TXBE	0.109 (180, 82)	0.107 (0, 8)	0.107 (90, 0)	57056.312	1.90
54	TXCC	0.109 (180, 82)	0.107 (0, 8)	0.107 (90, 0)	43733.303	2.48
54	TXSI	0.110 (180, 86)	0.107 (0, 4)	0.107 (90, 0)	37982.443	2.88
55	KVTX	0.111 (346, 79)	0.110 (180, 10)	0.110 (90, 3)	46137.153	2.40
55	TXBE	0.111 (346, 79)	0.110 (180, 10)	0.110 (90, 3)	52459.946	2.11
55	TXCC	0.111 (346, 79)	0.110 (180, 10)	0.110 (90, 3)	46313.747	2.39
55	TXSI	0.112 (344, 83)	0.110 (180, 6)	0.110 (90, 2)	37199.075	3.00
56	KVTX	0.116 (0, 90)	0.115 (0, 0)	0.115 (90, 0)	39794.592	2.91
56	TXBE	0.116 (0, 90)	0.115 (0, 0)	0.115 (90, 0)	59825.994	1.94
56	TXCC	0.116 (0, 90)	0.115 (0, 0)	0.115 (90, 0)	49049.022	2.36
56	TXSI	0.117 (0, 90)	0.115 (0, 0)	0.115 (90, 0)	44515.197	2.63
57	KVTX	0.111 (180, 78)	0.110 (0, 12)	0.110 (90, 0)	35596.545	3.11
57	TXBE	0.111 (180, 78)	0.110 (0, 12)	0.110 (90, 0)	63568.662	1.74
57	TXCC	0.111 (180, 78)	0.110 (0, 12)	0.110 (90, 0)	46564.395	2.38
57	TXSI	0.112 (180, 86)	0.110 (0, 4)	0.110 (90, 0)	44787.282	2.50
58	KVTX	0.105 (0, 82)	0.105 (180, 8)	0.105 (90, 0)	30264.256	3.48
58	TXBE	0.105 (0, 82)	0.105 (180, 8)	0.105 (90, 0)	68977.461	1.53
58	TXCC	0.105 (0, 82)	0.105 (180, 8)	0.105 (90, 0)	46155.004	2.28
58	TXSI	0.107 (0, 88)	0.105 (180, 2)	0.105 (90, 0)	47843.364	2.24
5870 H TIDAL	TXPO	0.012 (0, 90)	0.000 (0, 0)	0.000 (90, 0)	31673.398	0.37
5870 H TIDAL	TXSI	0.024 (0, 90)	0.000 (0, 0)	0.000 (90, 0)	53304.103	0.46
59	KVTX	0.080 (343, 73)	0.077 (147, 17)	0.077 (238, 5)	36063.882	2.21
59	TXCC	0.080 (343, 73)	0.077 (147, 17)	0.077 (238, 5)	21068.353	3.78

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
59	TXSI	0.081 (343, 81)	0.077 (154, 9)	0.077 (244, 2)	30839.726	2.64
6	KVTX	0.091 (345, 67)	0.087 (147, 22)	0.087 (240, 6)	68417.132	1.33
6	TXCC	0.091 (345, 67)	0.087 (147, 22)	0.087 (240, 6)	27017.822	3.37
6	TXPO	0.091 (345, 68)	0.087 (149, 21)	0.087 (241, 5)	27865.106	3.27
6	TXSI	0.093 (345, 76)	0.087 (156, 14)	0.087 (247, 2)	51216.948	1.82
60	KVTX	0.086 (156, 82)	0.084 (0, 7)	0.084 (270, 3)	28769.087	2.98
60	TXCC	0.086 (156, 82)	0.084 (0, 7)	0.084 (270, 3)	25582.132	3.35
60	TXSI	0.088 (157, 87)	0.084 (0, 3)	0.084 (270, 1)	38054.701	2.30
61	KVTX	0.080 (180, 81)	0.078 (0, 9)	0.078 (90, 0)	20152.067	3.97
61	TXCC	0.080 (180, 81)	0.078 (0, 9)	0.078 (90, 0)	31171.402	2.57
61	TXSI	0.083 (180, 87)	0.079 (0, 3)	0.078 (90, 0)	46793.090	1.77
62	KVTX	0.050 (0, 77)	0.049 (180, 13)	0.049 (90, 0)	10201.753	4.85
62	TXCC	0.050 (0, 77)	0.049 (180, 13)	0.049 (90, 0)	39793.066	1.24
63	KVTX	0.046 (0, 90)	0.045 (0, 0)	0.045 (90, 0)	9473.038	4.84
63	TXCC	0.046 (0, 90)	0.045 (0, 0)	0.045 (90, 0)	44626.464	1.03
63	TXSI	0.052 (0, 90)	0.045 (0, 0)	0.045 (90, 0)	58658.941	0.88
64	KVTX	0.065 (180, 75)	0.064 (0, 15)	0.064 (90, 0)	13941.560	4.64
64	TXCC	0.065 (180, 75)	0.064 (0, 15)	0.064 (90, 0)	47129.325	1.37
64	TXSI	0.069 (180, 88)	0.064 (0, 2)	0.064 (90, 0)	58118.731	1.18
65	KVTX	0.087 (341, 83)	0.086 (180, 7)	0.086 (90, 2)	20016.730	4.33
65	TXCC	0.087 (341, 83)	0.086 (180, 7)	0.086 (90, 2)	45818.920	1.89
65	TXSI	0.089 (338, 88)	0.086 (180, 2)	0.086 (90, 1)	53693.176	1.66
66	KVTX	0.053 (180, 82)	0.052 (0, 8)	0.052 (90, 0)	10955.096	4.83
66	TXCC	0.053 (180, 82)	0.052 (0, 8)	0.052 (90, 0)	38579.896	1.37
67	KVTX	0.072 (192, 77)	0.071 (0, 13)	0.071 (91, 3)	15769.121	4.57
67	TXCC	0.072 (192, 77)	0.071 (0, 13)	0.071 (91, 3)	33742.660	2.14

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
68	KVTX	0.083 (345, 81)	0.082 (180, 9)	0.082 (90, 2)	19445.394	4.27
68	TXCC	0.083 (345, 81)	0.082 (180, 9)	0.082 (90, 2)	31808.380	2.61
69	KVTX	0.098 (180, 78)	0.098 (0, 12)	0.098 (90, 0)	32914.846	2.98
69	TXCC	0.098 (180, 78)	0.098 (0, 12)	0.098 (90, 0)	24865.579	3.95
70	TXCC	0.103 (180, 80)	0.102 (90, 0)	0.102 (0, 10)	22429.664	4.60
70	TXPO	0.104 (180, 83)	0.102 (0, 7)	0.102 (90, 0)	55330.947	1.87
71	KVTX	0.088 (180, 84)	0.087 (0, 6)	0.087 (90, 0)	44652.623	1.97
71	TXCC	0.088 (180, 84)	0.087 (0, 6)	0.087 (90, 0)	20773.910	4.24
71	TXPO	0.089 (180, 87)	0.087 (0, 3)	0.087 (90, 0)	52873.257	1.68
72	KVTX	0.074 (342, 76)	0.073 (180, 13)	0.073 (89, 4)	45329.072	1.63
72	TXCC	0.074 (342, 76)	0.073 (180, 13)	0.073 (89, 4)	16489.084	4.47
72	TXPO	0.075 (341, 83)	0.073 (180, 7)	0.073 (90, 2)	49226.159	1.51
73	TXCC	0.056 (0, 82)	0.056 (180, 8)	0.056 (90, 0)	11707.618	4.82
73	TXPO	0.058 (0, 87)	0.056 (180, 3)	0.056 (90, 0)	44409.589	1.29
74	KVTX	0.035 (180, 78)	0.034 (0, 12)	0.034 (90, 0)	48477.749	0.72
74	TXCC	0.035 (180, 78)	0.034 (0, 12)	0.034 (90, 0)	7123.183	4.93
74	TXPO	0.037 (180, 87)	0.034 (0, 3)	0.034 (90, 0)	41358.155	0.89
75	KVTX	0.023 (0, 90)	0.023 (0, 0)	0.023 (90, 0)	47810.459	0.48
75	TXCC	0.023 (0, 90)	0.023 (0, 0)	0.023 (90, 0)	4660.371	4.96
75	TXPO	0.026 (0, 90)	0.023 (0, 0)	0.023 (90, 0)	40938.371	0.63
76	KVTX	0.004 (0, 90)	0.002 (0, 0)	0.002 (90, 0)	49482.631	0.07
76	TXCC	0.004 (0, 90)	0.002 (0, 0)	0.002 (90, 0)	321.595	11.42
76	TXPO	0.012 (0, 90)	0.002 (0, 0)	0.002 (90, 0)	38189.003	0.32
8	KVTX	0.072 (201, 80)	0.068 (0, 10)	0.068 (91, 4)	60984.554	1.18
8	TXCC	0.072 (201, 80)	0.068 (0, 10)	0.068 (91, 4)	16425.287	4.38
8	TXPO	0.072 (201, 81)	0.069 (0, 8)	0.068 (90, 3)	28501.486	2.54

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
81	TXCC	0.053	0.052	0.052	11938.901	4.47
		(90, 80)	(270, 10)	(0, 0)		
81	TXSI	0.056	0.052	0.052	22064.780	2.55
		(90, 87)	(270, 3)	(0, 0)		
82	TXCC	0.048	0.046	0.046	10152.176	4.73
		(180, 81)	(90, 0)	(0, 9)		
82	TXSI	0.052	0.046	0.046	22863.560	2.27
		(180, 87)	(90, 0)	(0, 3)		
83	TXCC	0.036	0.035	0.034	7157.078	5.02
		(0, 76)	(180, 14)	(90, 0)		
83	TXPO	0.038	0.035	0.034	37005.602	1.02
		(0, 84)	(180, 6)	(90, 0)		
83	TXSI	0.043	0.035	0.034	37179.643	1.15
		(0, 88)	(180, 2)	(90, 0)		
84	TXCC	0.034	0.032	0.031	6500.246	5.22
		(180, 76)	(0, 14)	(90, 0)		
84	TXPO	0.036	0.032	0.031	38772.857	0.92
		(180, 82)	(0, 8)	(90, 0)		
84	TXSI	0.041	0.032	0.031	37040.979	1.11
		(180, 87)	(0, 3)	(90, 0)		
85	TXCC	0.030	0.026	0.026	5208.582	5.72
		(206, 83)	(90, 3)	(0, 6)		
85	TXPO	0.032	0.026	0.026	40928.281	0.78
		(206, 86)	(90, 2)	(0, 4)		
85	TXSI	0.038	0.026	0.026	35682.568	1.07
		(205, 88)	(90, 1)	(0, 2)		
86	TXCC	0.042	0.036	0.036	7329.485	5.72
		(7, 71)	(271, 2)	(180, 19)		
86	TXPO	0.043	0.036	0.036	45242.231	0.96
		(6, 75)	(180, 14)	(270, 2)		
87	TXCC	0.033	0.030	0.030	6046.097	5.45
		(62, 74)	(228, 15)	(319, 4)		
87	TXPO	0.035	0.030	0.030	44246.506	0.79
		(63, 81)	(232, 9)	(322, 2)		
88	TXCC	0.034	0.030	0.030	6280.319	5.42
		(180, 81)	(90, 0)	(0, 9)		
88	TXPO	0.036	0.030	0.030	43614.770	0.82
		(180, 84)	(90, 0)	(0, 6)		
88	TXSI	0.041	0.030	0.030	28914.120	1.42
		(180, 87)	(90, 0)	(0, 3)		
89	TXCC	0.050	0.046	0.046	9570.914	5.20
		(203, 78)	(91, 4)	(0, 11)		
89	TXPO	0.051	0.046	0.046	45281.185	1.13
		(203, 82)	(90, 3)	(0, 8)		
9	KVTX	0.068	0.067	0.067	58796.115	1.15
		(270, 84)	(0, 0)	(90, 6)		
9	TXCC	0.068	0.067	0.067	16493.038	4.10
		(270, 84)	(0, 0)	(90, 6)		
9	TXPO	0.068	0.067	0.067	31541.999	2.17
		(270, 86)	(0, 0)	(90, 4)		
9	TXSI	0.071	0.067	0.067	43531.469	1.63
		(270, 89)	(0, 0)	(90, 1)		

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
90	TXCC	0.072	0.069	0.069	14620.274	4.93
		(29, 78)	(207, 12)	(297, 0)		
90	TXPO	0.073	0.069	0.069	47594.148	1.53
		(29, 81)	(207, 9)	(297, 0)		
91	TXAI	0.110	0.078	0.078	45885.924	2.41
		(0, 90)	(180, 0)	(90, 0)		
91	TXCC	0.081	0.078	0.078	23972.257	3.38
		(0, 89)	(180, 1)	(90, 0)		
91	TXSI	0.081	0.078	0.078	23878.614	3.39
		(0, 90)	(0, 0)	(90, 0)		
92	TXAI	0.113	0.082	0.082	43943.986	2.56
		(152, 89)	(319, 1)	(49, 0)		
92	TXCC	0.086	0.082	0.082	24671.735	3.50
		(155, 80)	(299, 9)	(30, 6)		
92	TXSI	0.087	0.082	0.082	26068.346	3.33
		(155, 80)	(301, 8)	(31, 5)		
93	TXAI	0.116	0.084	0.083	43079.153	2.69
		(142, 87)	(318, 3)	(48, 0)		
93	TXCC	0.093	0.083	0.083	23931.565	3.88
		(143, 75)	(297, 13)	(29, 6)		
93	TXSI	0.094	0.083	0.083	28245.733	3.31
		(143, 76)	(301, 13)	(32, 5)		
94	TXAI	0.112	0.084	0.084	42468.249	2.63
		(44, 90)	(180, 0)	(270, 0)		
94	TXCC	0.086	0.084	0.084	23253.066	3.69
		(0, 88)	(180, 2)	(90, 0)		
94	TXSI	0.087	0.084	0.084	30627.701	2.83
		(0, 89)	(180, 1)	(90, 0)		
95	TXAI	0.112	0.084	0.084	42332.978	2.64
		(0, 90)	(192, 0)	(102, 0)		
95	TXCC	0.086	0.084	0.084	22926.034	3.77
		(0, 84)	(193, 6)	(103, 1)		
95	TXSI	0.087	0.084	0.084	31840.165	2.74
		(0, 86)	(193, 4)	(103, 1)		
96	TXAI	0.113	0.086	0.086	41693.663	2.70
		(180, 90)	(0, 0)	(90, 0)		
96	TXCC	0.088	0.086	0.086	23141.086	3.81
		(180, 86)	(0, 4)	(90, 0)		
96	TXSI	0.089	0.086	0.086	34032.431	2.63
		(180, 87)	(0, 3)	(90, 0)		
97	TXAI	0.115	0.091	0.091	39136.685	2.93
		(180, 90)	(90, 0)	(0, 0)		
97	TXCC	0.095	0.091	0.091	25615.489	3.70
		(228, 89)	(90, 1)	(360, 1)		
97	TXSI	0.096	0.091	0.091	36893.729	2.59
		(227, 89)	(90, 1)	(360, 1)		
98	TXCC	0.083	0.081	0.081	21969.125	3.78
		(51, 77)	(229, 13)	(319, 1)		
98	TXSI	0.083	0.081	0.081	24531.651	3.40
		(51, 80)	(229, 10)	(319, 0)		
B 1380	TXCC	0.146	0.146	0.000	35556.151	4.10
		(0, 0)	(90, 0)	(0, 90)		

3D Relative Confidence Regions (95.000 percent):

FROM	TO	MAJ-SEMI (AZ,VANG)	MED-SEMI (AZ,VANG)	MIN-SEMI (AZ,VANG)	DISTANCE	PPM
B 1380	TXSI	0.146 (0, 0)	0.146 (90, 0)	0.024 (0, 90)	53167.912	2.74

08:04:47, Thu May 26, 2011

1101205 USGS-NUECES COUNTY *** GROUND SURVEY FILE ***
HORIZONTAL - NAD 83/07 UTM ZONE 14
VERTICAL - NAVD88 METERS

STATION	EASTING	NORTHING	ELEVATION
1	690581.148	3080962.538	1.573
2	688499.467	3077480.605	1.527
3	685950.316	3072876.726	1.229
4	682694.307	3066808.896	2.501
5	680103.385	3062061.123	1.872
6	677147.487	3056227.210	2.709
8	668416.099	3062385.007	5.330
9	666817.068	3059605.203	4.410
10	668072.310	3062237.777	5.727
11	663971.234	3064580.332	4.799
12	661304.388	3062536.257	5.516
13	659211.480	3063394.432	7.135
14	657886.952	3061015.492	5.767
15	656376.859	3060325.748	5.310
16	652626.797	3057990.435	7.880
17	652490.475	3053962.082	7.305
18	654213.342	3052388.770	7.369
19	649411.105	3050870.343	9.774
20	653085.011	3064023.381	7.165
21	656061.249	3064898.884	7.352
22	658168.319	3066927.206	8.955
23	659032.973	3069128.782	8.514
24	660006.377	3070988.427	7.043
25	658788.743	3072993.537	2.220
26	658233.502	3076807.544	2.214
27	658939.133	3079095.060	1.052
28	643023.605	3079623.125	17.505
29	643092.780	3074708.454	14.477
30	648552.653	3071948.234	11.115
31	644527.147	3069009.561	11.305
32	642598.876	3063455.039	14.975
33	644417.435	3060055.991	15.002
34	644516.205	3054911.392	11.494
35	639459.008	3081593.524	10.290
36	635924.989	3079766.580	22.654
37	635997.811	3076618.594	19.660
38	636071.078	3069130.891	19.955
39	636128.777	3064417.990	18.448
40	631345.195	3061491.407	16.230
41	631874.299	3054523.096	12.235
42	627571.261	3053990.787	13.534
43	622174.477	3049798.595	17.833
44	618964.837	3052318.965	18.032
45	631203.107	3073713.352	22.718
46	626290.677	3076187.498	26.167
47	615137.520	3062627.359	25.540
48	615119.218	3064495.859	27.179
49	615542.223	3069174.235	26.346
50	617432.049	3074022.510	26.790
51	618588.270	3079388.848	26.304
52	628557.381	3083279.236	27.844
53	619729.666	3086406.814	22.862
54	614258.360	3088555.450	33.266
55	613892.210	3093292.590	27.073
56	607856.988	3087152.517	35.897
57	609045.188	3082981.210	33.011

58	608177.021	3077629.910	35.601
59	633131.747	3074462.550	21.000
60	628017.544	3069244.122	21.276
61	623380.565	3061816.829	18.201
62	616804.514	3054314.979	20.245
63	610827.441	3056743.309	25.618
64	607208.977	3061173.026	33.121
65	607833.012	3067351.523	34.663
66	619490.815	3051438.579	17.671
67	623070.492	3055092.683	15.760
68	622842.142	3061354.902	19.052
69	629095.495	3073691.535	23.466
70	634750.214	3081620.055	24.101
71	637219.591	3082240.074	13.519
72	640859.330	3079931.847	21.482
73	645751.399	3078151.589	15.096
74	649138.855	3075017.905	13.645
75	650020.386	3072451.173	12.263
76	653734.973	3069172.287	10.603
81	659519.985	3079825.162	1.193
82	658286.122	3078463.757	0.967
83	657455.730	3063436.096	7.709
84	655551.557	3063263.595	5.067
85	652652.173	3064339.644	7.563
86	647666.939	3065152.497	10.032
87	647657.730	3068322.621	11.645
88	647557.824	3071190.061	11.975
89	645291.517	3074219.230	12.790
90	642519.679	3079003.040	20.693
91	633757.707	3082914.969	25.382
92	632067.719	3081507.350	25.863
93	631621.244	3078933.288	25.585
94	631306.338	3076077.377	24.040
95	631251.519	3074582.558	22.355
96	630633.755	3072314.554	23.090
97	628013.132	3070698.108	21.765
98	634906.597	3081005.266	23.226
5237TIDAL2	689791.999	3080903.735	2.046
5870HTIDAL	675408.948	3052838.821	1.947
B 1380	620734.097	3055897.104	19.718
KVTX	609312.229	3047394.637	24.899
TXAI	588957.012	3073046.960	70.374
TXBE	623849.519	3144786.751	76.249
TXCC	653594.841	3069461.629	17.336
TXPO	690072.976	3080913.797	6.993
TXSI	650483.461	3099952.199	20.640

LIDAR FLIGHT LOG

MISSION: [redacted] Q012111A DATE: 1/21/11

PILOT: Robbie OPERATOR: Jessica AIRCRAFT: N7516Q

ALTM

PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME START	TIME STOP	Laser Time	TZPK	REMARKS
1101205	2 test						1624	1629		1111	Static / hobbs 80.8
	80 W	155	24	19	50	2500	1730 14	1728			calhoun had fog / clouds
	79 E	160	↓	↓	↓	↓	1730	1742			
	78 W	155	↓	↓	↓	↓	1745	1759			
	x flt S	160	↓	↓	↓	↓	1802	1804			
	77 E	↓	↓	↓	↓	↓	1808	1820			
	x-flt N	↓	↓	↓	↓	↓	1824	1825			
							1836	1841			Static
											Laser on time 00:58:27

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START:	STOP:	NOTES: hobbs not working
○ 1101205	199	4		2.1		[redacted]	1624	1841	Had 2.1 flight time
○						WX			
○									

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE. 920-467-2655 **FAX: 920-457-1451** E-Mail amephoto@aerometric.com

LIDAR FLIGHT LOG

MISSION: Q0121113 | DATE: 1/21/11

PILOT: Robbie | OPERATOR: Jessica | AIRCRAFT: 7516Q

PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME START	TIME STOP	Laser Time	TZPK	REMARKS
1101205	2 test strips						1900	1905		1111	static
	55 W	155	24	19	50	2500	1926	1937			
	54 E	160	24.5				1940	1941			
	53 W	155	24				1944	1945			
	56 E	160	24.5				1948	1957			
	57 W	155	24				2000	2011			
	58 E	160	24.5				2014	2024			
	59 W	155	24				2027	2039			
	60 E	160	24.5				2041	2051			
	61 W	155	24				2054	2106			
	62 E	160	24.5				2109	2120			
	63 W	155	24				2123	2135			
	64 E	160	24.5				2138	2150			
	65 W	155	24				2152	2205			
	66 E	160	24.5				2208	2219			
	67 W	155	24				2222	2235			
	68 E	160	24.5				2238	2250			
	69 W	155	24				2253	2306			
	x-flt N	160	24.5				2309	2313			
	x-flt S	↓	↓				2318	2321			

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START:	STOP:	NOTES: Laser ON time
✓ 1101205	199	17		4.5			1900	2340	03:03:51
○						WX			
○									

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 920-457-1451 E-Mail: amephoto@aerometric.com

LIDAR FLIGHT LOG

ALTM

MISSION: 0012611A **DATE:** 1/26/11

PILOT: Robbie **OPERATOR:** Jessica **AIRCRAFT:** N7516Q

PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME -6 START	TIME -6 STOP	Laser Time	TZPK	REMARKS
1101205	2 test strips						1203	1208		0134	static
	70 W	160	24.5	19	50	2500	1227	1240			
	71 E						1244	1256			
	72 W						1259	1312			
	73 E						1315	1327			
	74 W						1330	1343			
	75 E						1346	1357			
	x-f/t N						1400	1402			
	76 W						1407	1407			not on line
	~~x-flt~~ 76 W						1411	1425			
	x-flt						1430	1433			
							1447	1452			static
											Laser ON time 01:34:02

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START:	STOP:	NOTES:
◐ 1101205	199	7	106	2.8			1203	1452	
○						WX			
○									

AERO-METRIC, INC. N6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 **FAX: 920-457-1451** E-Mail: amephoto@aerometric.com

LIDAR FLIGHT LOG

ALTM

1 of 2

MISSION: $Q010611A → POS defaulted to 6Q30010A	DATE: 1/6/11	
PILOT: Robbie	OPERATOR: Jessica	AIRCRAFT: 7516Q

PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME 6 START	TIME 6 STOP	Laser Time	TZPK	REMARKS
1101205							1850	1855			static / 70.5 hobbs / 2 test strips
	109 S	155	24	19	50	2500	1915	1920	:05	0181	
	108 N	↓	↓	↓	↓	↓	1923	1928	:05		
	107 S						1931	1936	:05		
	106 N	160	24.5				1939	1943	:04		
	105 S	↓	↓				1946	1950	:04		
	104 N						1953	1956	:03		
	103 S						1959	2002	:03		
	102 N						2005	2008	:03		
	101 S						2011	2014	:03		
	100 N						2017	2021	:04		
	99 S						2024	2027	:03		
	x-flt E						2031	2034	:03		
	110 N						2040	2050	:10		
	111 S						2053	2102	:09		
	112 N	155	24				2106	2115	:09		
	113 S	160	24.5				2119	2127	:07		
	114 N	155	24				2131	2140	:09		
	115 S	160	24.5				2143	2151	:08		
	116 N	155	24				2155	2203	:08		

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC START:	STATIC STOP:	NOTES:
◔ 1101205	199	27	172	4.8		1850	2356	
○						WX		
○								

LIDAR FLIGHT LOG

MISSION:

DATE: 1/6/11

PILOT: Robbie

OPERATOR: Jessica

AIRCRAFT: 7516Q

PROJECT NUMBER	LINE NO. & Hdg		GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME START	TIME STOP	Laser Time	TZPK	REMARKS
1101205	117	S	160	24.5	19	50	2500	2206	2214	:08	181	
	118	N	150	23.7	↓	↓	↓	2221	2223	:02		
	x-flt	W	↓	↓				2227	2230	:03		
	92	W	140	22.9				2244	2253	:09		
	93	E	160	24.5				2255	2301	:06		
	94	W	145	23.3				2305	2312	:07		
	95	E	160	24.5				2315	2318	:03		
	96	W	145	23.3				2322	2325	:03		
	97	E	160	24.5				2328	2330	:02		
	98	W	145	23.3				2333	2334	:01		
	x-flt	N	↓	↓	↓	↓	↓	2337	2340			
								2351	2356			static / 75.3 hobbs
												total laser time 02:35:27

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START:	STOP:	NOTES:
○				4.8					
○						WX			
○									

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 920-457-1451 E-Mail: amephoto@aerometric.com

LIDAR FLIGHT LOG

MISSION: [redacted] Q011B11A | DATE: 1/18/11 | 1

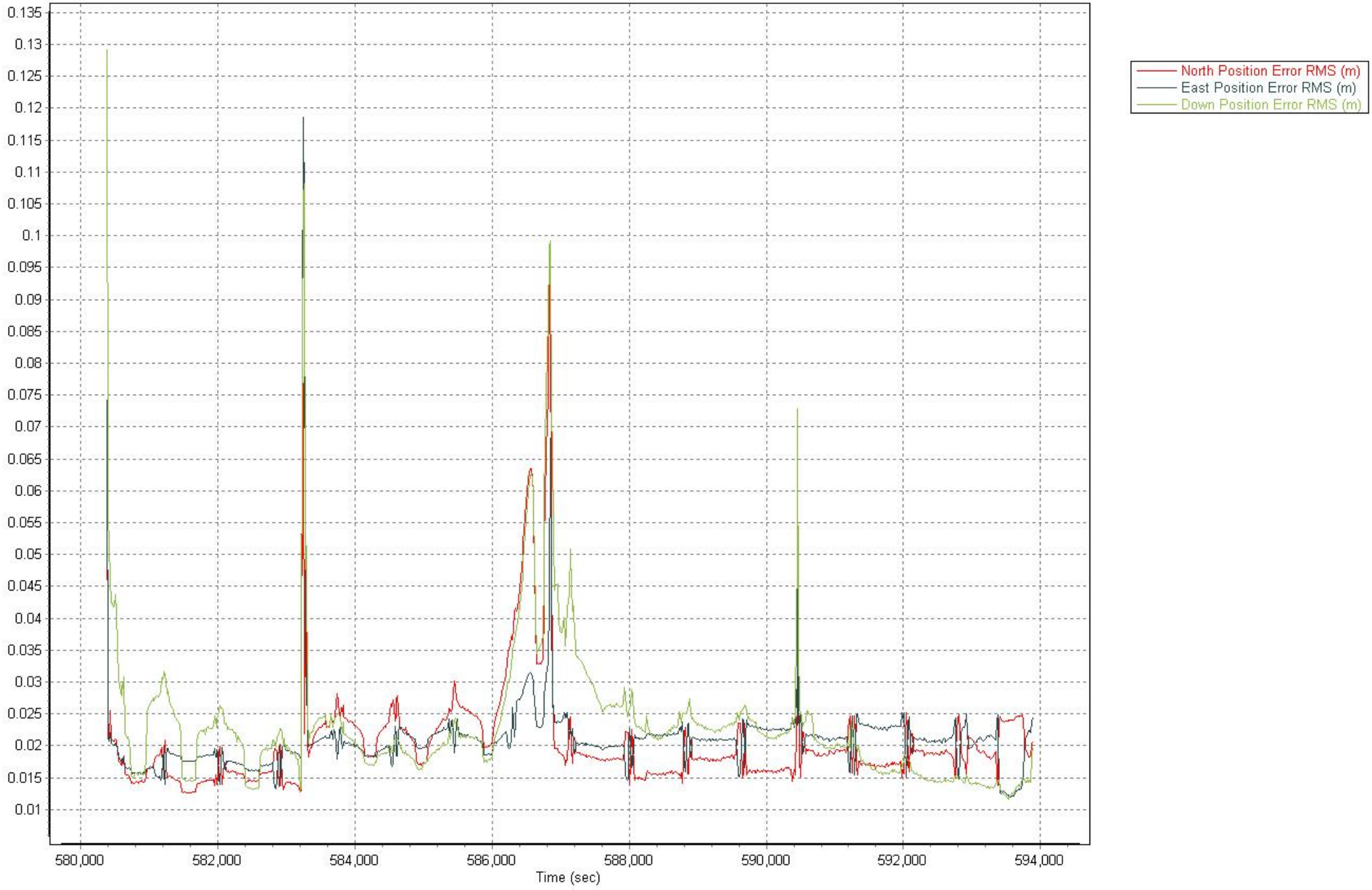
PILOT: Robbie | OPERATOR: Jessica | AIRCRAFT: 16Q

ALTM

PROJECT NUMBER	LINE NO. & Hdg	GND SPEED (KTS)	SCAN FREQ	SCAN ANGLE	PRF	ALT (m)	TIME START	TIME STOP	Laser Time	TZPK	REMARKS
1101205	2 test		[redacted]24	19	50		~~1415~~ ~~1356~~	~~1439~~ ~~1461~~		0134	static / hobbs 78.7
	91 W	150	23.7			2500	2037	2046			some turbulence all day
	90 E	160	24.5				2049	2057			
	89 N	150	23.7				2100	2111			
	88 E	160	24.5				2114	2122			
	87 W	150	23.7				2125	2137			
	86 E	160	24.5				2139	2149			
	85 W	150	23.7				2152	2205			
	84 E	160	24.5				2208	2219			
	83 W	150	23.7				2222	2236			
	82 E	160	24.5				2238	2250			
	81 W	155	24				2253	2306			
	xflt S						2309	2312			
	xflt N						2316	2319			
							2334	2339			static / 80.0 hobbs
											NOT accurate
											02:09:43 laser on TIME

STATUS	TOTAL LINES	FLOWN	LEFT	AIRCRAFT SITE	AIRCRAFT FERRY	STATIC	START:	STOP:	NOTES:
✓ 1101205	199	11	149	1.3?			1415	1739	
						WX			

AERO-METRIC, INC. N.6216 Resource Drive Sheboygan Falls, WI. 53085 PHONE: 920-467-2655 FAX: 920-457-1451 E-Mail: amephoto@aerometric.com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East Position Error RMS (m)
Down Position Error RMS (m)
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0.13
0.125
0.12
0.115
0.11
0.105
0.1
0.095
0.09
0.085
0.08
0.075
0.07
0.065
0.06
0.055
0.05
0.045
0.04
0.035
0.03
0.025
0.02
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586,000
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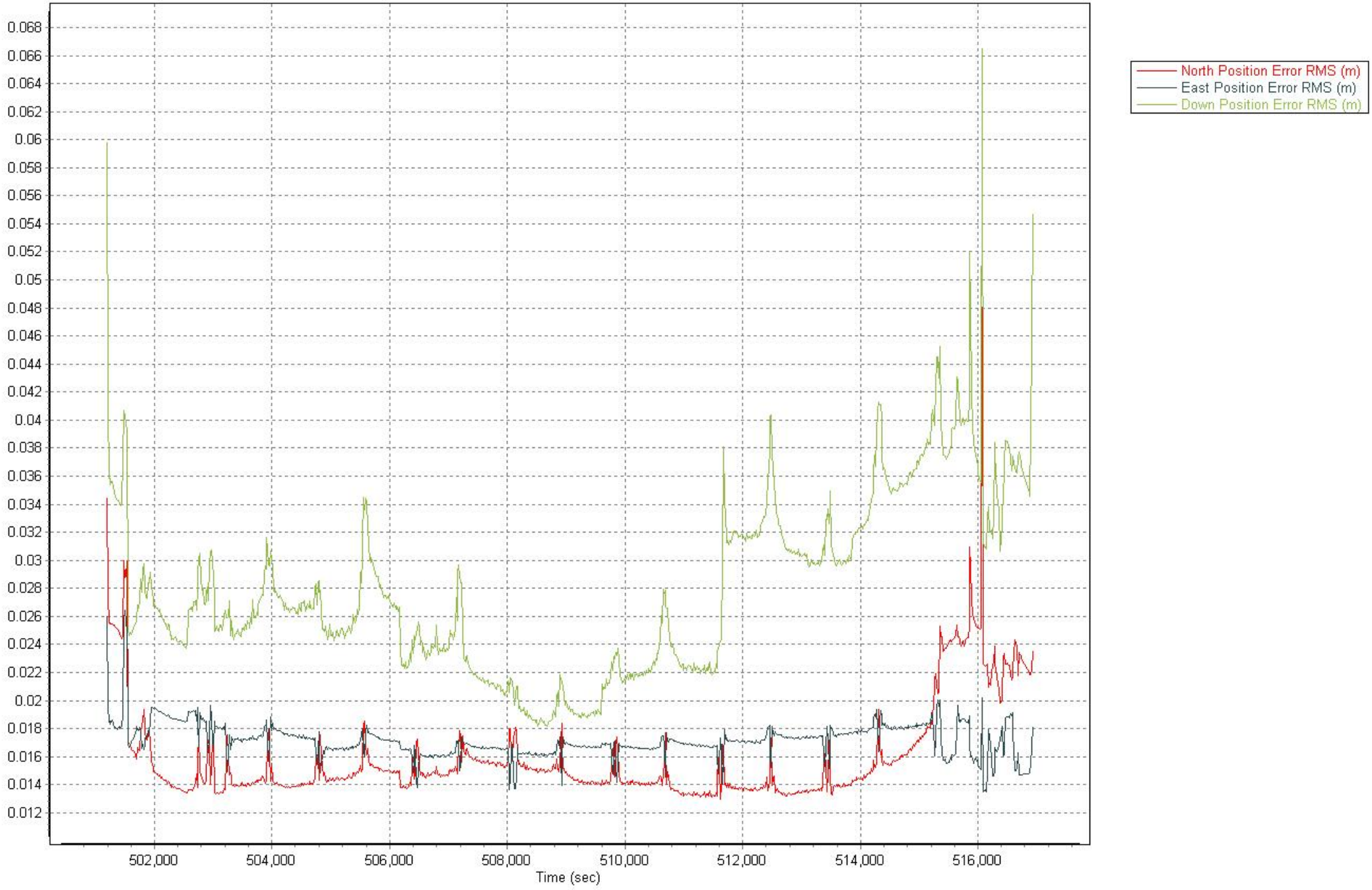
592,000
594,000
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
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0.066
0.064
0.062
0.06
0.058
0.056
0.054
0.052
0.05
0.048
0.046
0.044
0.042
0.04
0.038
0.036
0.034
0.032
0.03
0.028
0.026
0.024
0.022
0.02
0.018
0.016
0.014
0.012
502,000
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506,000
508,000
510,000
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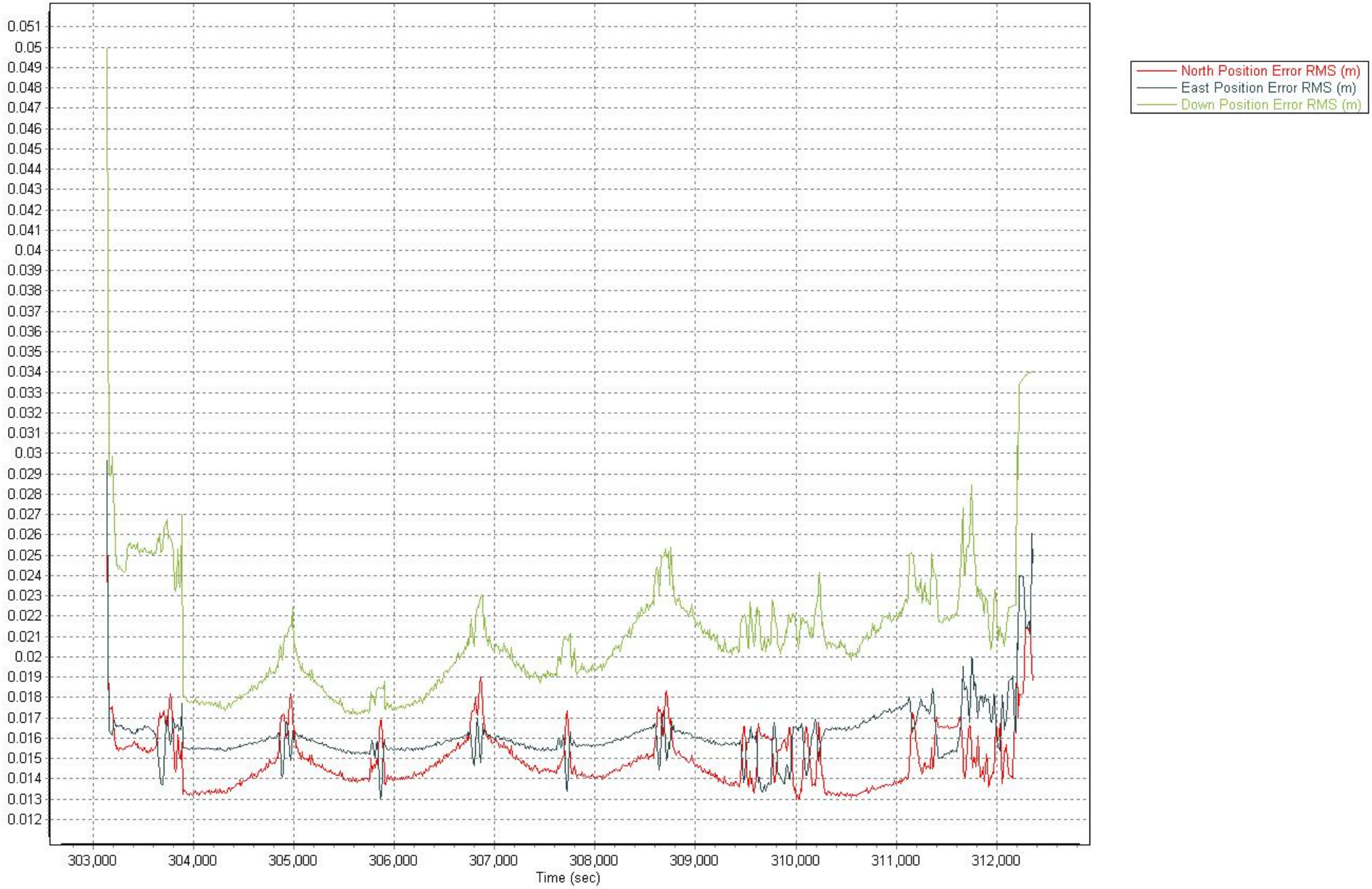
514,000
516,000
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
0.051
0.05
0.049
0.048
0.047
0.046
0.045
0.044
0.043
0.042
0.041
0.04
0.039
0.038
0.037
0.036
0.035
0.034
0.033
0.032
0.031
0.03
0.029
0.028
0.027
0.026
0.025
0.024
0.023
0.022
0.021
0.02
0.019
0.018
0.017
0.016
0.015
0.014
0.013
0.012
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305,000
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307,000
308,000
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310,000
311,000
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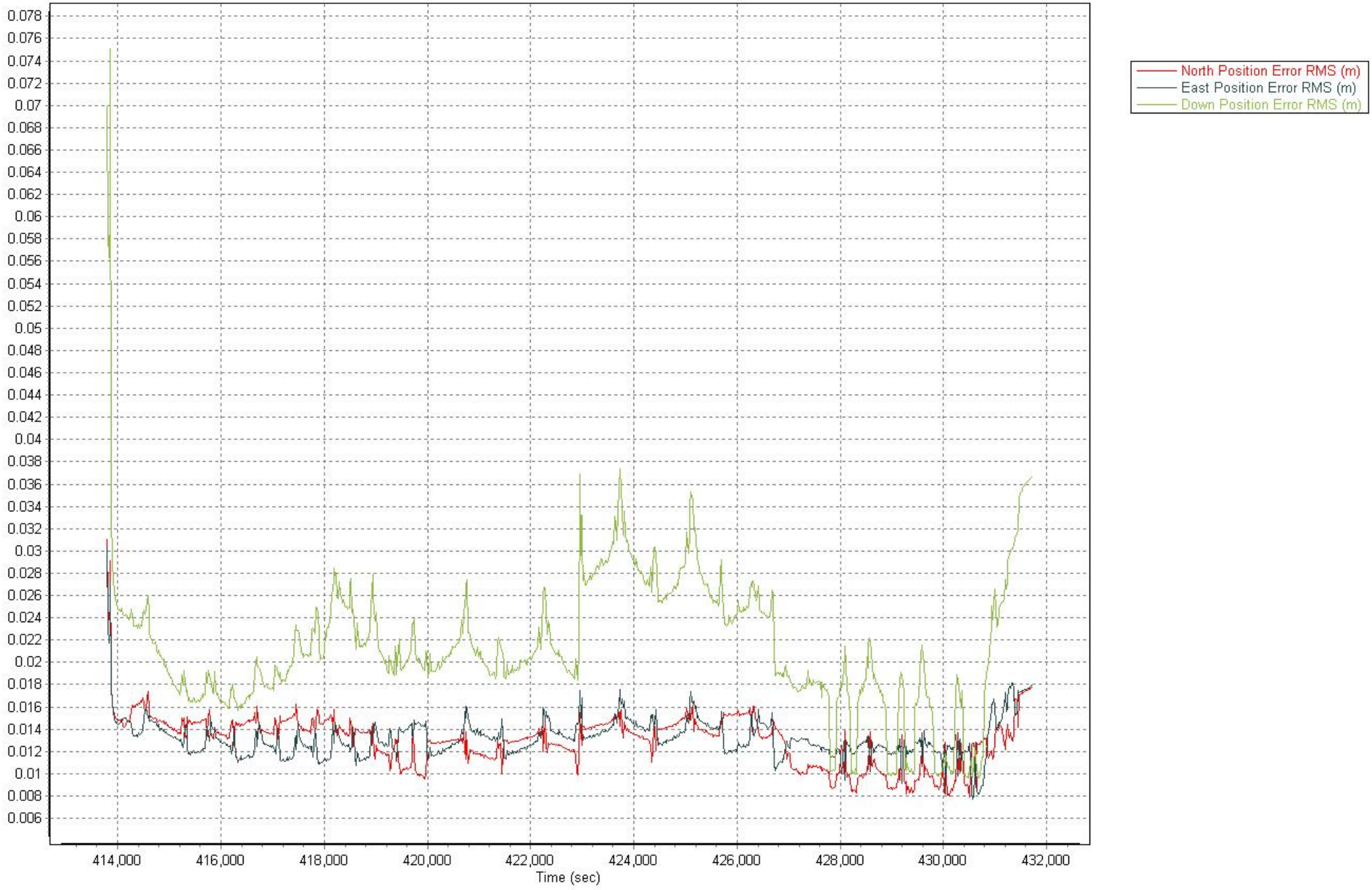
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
0.078
0.076
0.074
0.072
0.07
0.068
0.066
0.064
0.062
0.06
0.058
0.056
0.054
0.052
0.05
0.048
0.046
0.044
0.042
0.04
0.038
0.036
0.034
0.032
0.03
0.028
0.026
0.024
0.022
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
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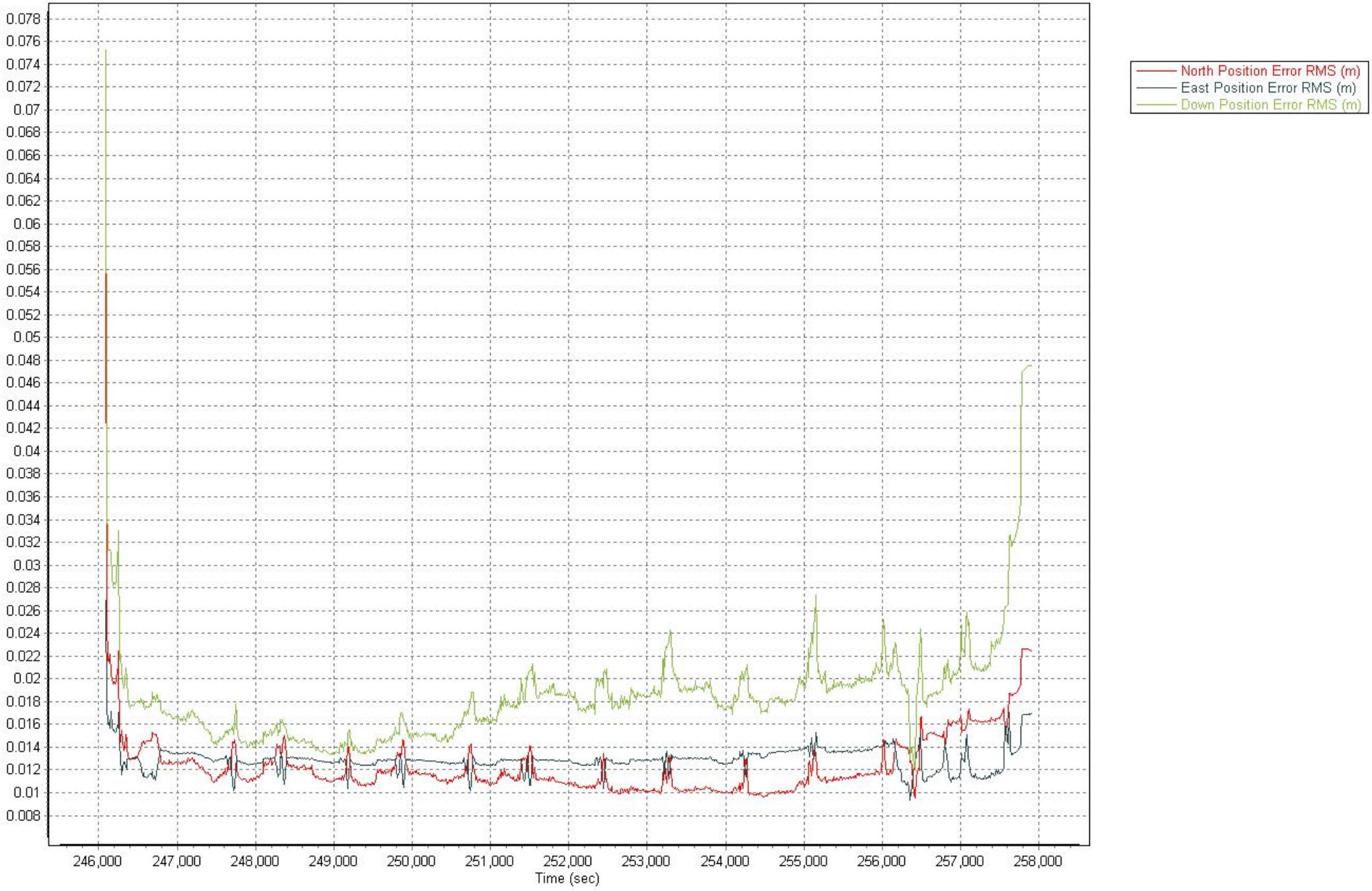
430,000
432,000
Time (sec)


North Position Error RMS (m)
East Position Error RMS (m)
Down Position Error RMS (m)
0.078
0.076
0.074
0.072
0.07
0.068
0.066
0.064
0.062
0.06
0.058
0.056
0.054
0.052
0.05
0.048
0.046
0.044
0.042
0.04
0.038
0.036
0.034
0.032
0.03
0.028
0.026
0.024
0.022
0.02
0.018
0.016
0.014
0.012
0.01
0.008
246,000
247,000
248,000
249,000
250,000
251,000
252,000
253,000
254,000
255,000
256,000
257,000
258,000
Time (sec)

R:\1101205\Lidar\QAQC\Nueces\1101205_NUECES_Ground.txt

Number	Easting	Northing	Known Z	Laser Z	Dz
4	682694.307	3066808.896	2.501	2.440	-0.061
5	680103.385	3062061.123	1.872	1.880	+0.008
9	666817.068	3059605.203	4.410	4.440	+0.030
10	668072.310	3062237.777	5.727	5.780	+0.053
13	659211.480	3063394.432	7.135	7.180	+0.045
15	656376.859	3060325.748	5.310	5.250	-0.060
17	652490.475	3053962.082	7.305	7.270	-0.035
18	654213.342	3052388.770	7.369	7.290	-0.079
19	649411.105	3050870.343	9.774	9.630	-0.144
20	653085.011	3064023.381	7.165	7.170	+0.005
22	658168.319	3066927.206	8.955	8.940	-0.015
23	659032.973	3069128.782	8.514	8.560	+0.046
24	660006.377	3070988.427	7.043	7.070	+0.027
25	658788.743	3072993.537	2.220	2.220	+0.000
30	648552.653	3071948.234	11.115	11.140	+0.025
31	644527.147	3069009.561	11.305	11.320	+0.015
32	642598.876	3063455.039	14.975	15.030	+0.055
34	644516.205	3054911.392	11.494	11.550	+0.056
35	639459.008	3081593.524	10.290	10.310	+0.020
43	622174.477	3049798.595	17.833	17.800	-0.033
55	613892.210	3093292.590	27.073	27.090	+0.017
58	608177.021	3077629.910	35.601	35.590	-0.011
59	633131.747	3074462.550	21.000	21.100	+0.100
67	623070.492	3055092.683	15.760	15.790	+0.030
68	622842.142	3061354.902	19.052	19.040	-0.012
69	629095.495	3073691.535	23.466	23.500	+0.034
70	634750.214	3081620.055	24.101	24.130	+0.029
71	637219.591	3082240.074	13.519	13.550	+0.031
72	640859.330	3079931.847	21.482	21.490	+0.008
73	645751.399	3078151.589	15.096	15.150	+0.054
74	649138.855	3075017.905	13.645	13.710	+0.065
75	650020.386	3072451.173	12.263	12.280	+0.017
76	653734.973	3069172.287	10.603	10.600	-0.003

Average dz	+0.010
Minimum dz	-0.144
Maximum dz	+0.100
Average magnitude	0.037
Root mean square	0.048
Std deviation	0.047