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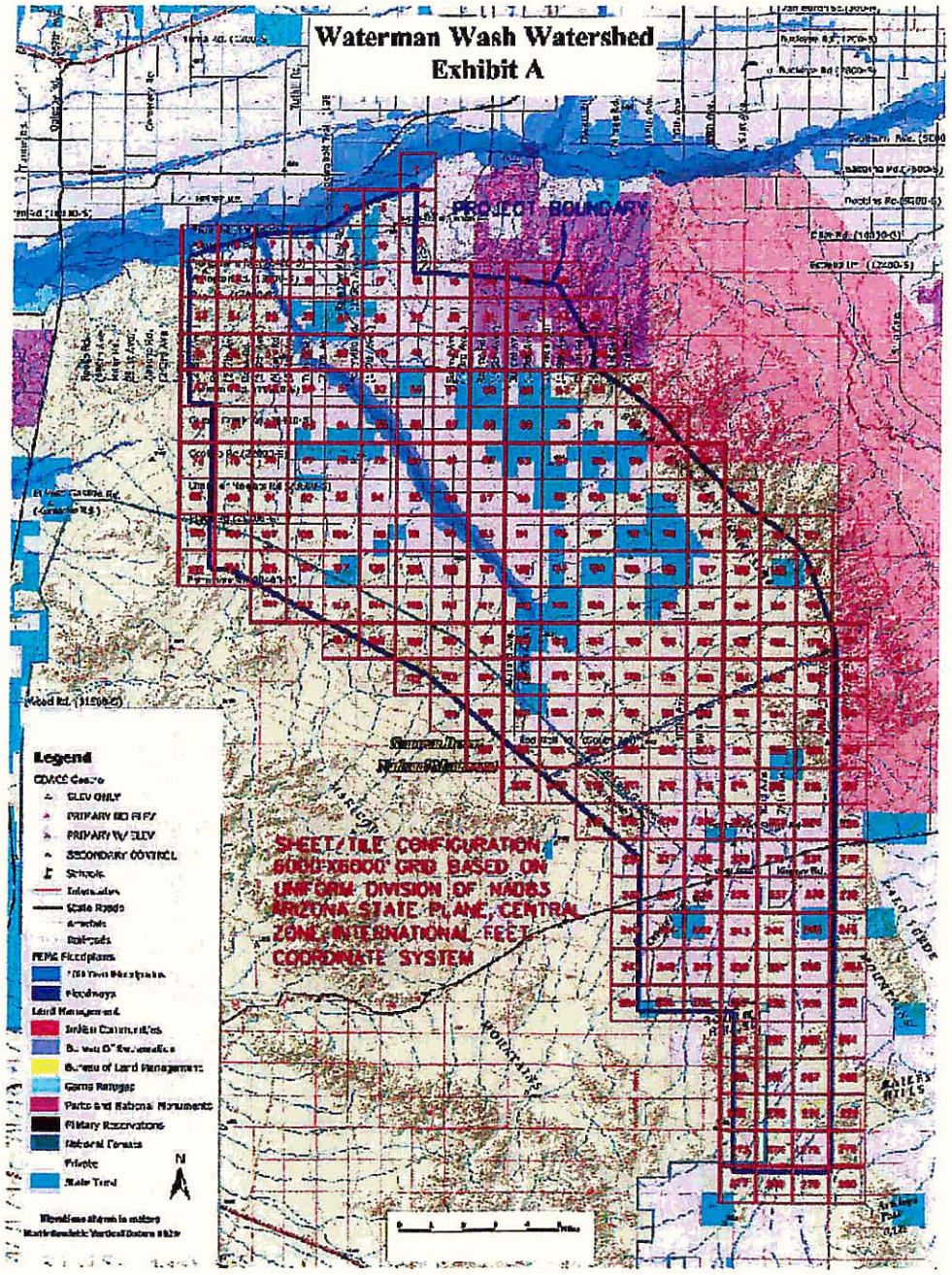
CONTRACT FCD 2003C067
MAPPING SERVICES FOR RAINBOW VALLEY AREA DRAINAGE MASTER PLAN

TECHNICAL DATA NOTEBOOK



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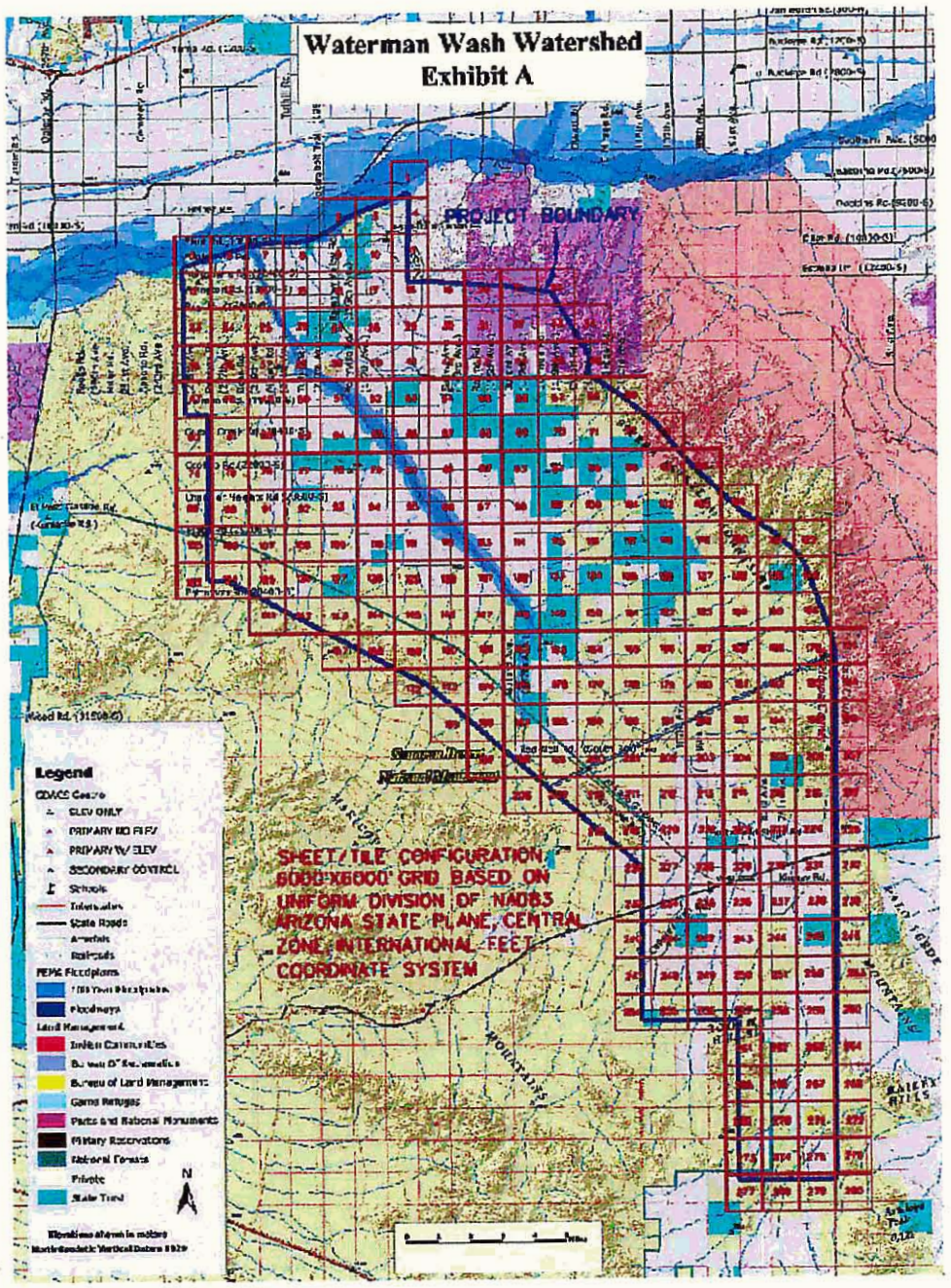

GENERAL DYNAMICS
Advanced Information Systems

Contract FCD 2203C067
Mapping Services for Rainbow Valley
Area Drainage Master Plan (ADMP)
Technical Data Notebook

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GENERAL DYNAMICS
Advanced Information Systems

August 11, 2005

Mr. Greg Jones
Project Manager
Flood Control District of Maricopa County
2800 West Durango Street
Phoenix, Arizona 85009

RE: Contract FCD 2203C067
Mapping Services for Rainbow Valley Area Drainage Master Plan (ADMP)
Technical Data Notebook

Dear Mr. Jones:

GENERAL DYNAMICS - Advanced Information Systems is pleased to present the following detailed information and report on all aspects of the surveying and photogrammetric mapping efforts as defined by the contract Scope of Work.

This report is a compilation of our team's successful efforts to complete all the necessary technical tasks involved in the preparation and development of topographic map coverage of the Rainbow Valley project for incorporation and use in developing the Area Drainage Master Plan within the project boundaries.

All of the information and data in this report has been carefully reviewed by Mr. Lee Harbers, Arizona RLS # 26401 and Certified Photogrammetrist # R704. Members of the team serving as our subconsultants included: Huitt-Zollars, Inc., Project Engineering Consultants, Ltd. (PEC), and Horizons, Inc. Each of these subconsultants are experts in their individual professional services fields. All of their work was completed under supervision of Registrants and Certified personnel within their own firms. PEC served expertly in their role as our Minority Business Partner for this project. They worked directly with and under the daily supervision of Huitt-Zollars, Inc. who served as the primary lead for field survey services, directed by GD-AIS.

Huitt-Zollars, Inc. and PEC were charged with providing all necessary field survey services, including; locating and setting primary survey control, Airborne GPS ground support, "blind" target (QA/QC) control, measurement of found PLSS monuments, and independent QA/QC profile collection as directed by GD-AIS. Horizons, Inc. was tasked to complete all necessary aerial image and LiDAR data collection and processing for the project.

This entire report is enclosed on the accompanying CD-ROM in WORD format with related Adobe .pdf, Excel tables, MicroStation .dgn files and .jpg images. Please review the "read.me" text file on the CD-ROM for description of the contents.

Respectfully,

Lee Harbers, RLS, Certified Photogrammetrist
Director of Photogrammetry & Program Development
GENERAL DYNAMICS – AIS
4400 E. Broadway Blvd., Suite 118
Tucson, Arizona 85711

REGISTERED LAND SURVEYOR
CERTIFICATE NO. 26401
LEE
HARBERS
Date Signed 8.11.05
ARIZONA U.S.A.

PROJECT APPROACH

Design of the technical approach for surveying and mapping required careful consideration and development of strategies to coordinate surveying, LiDAR and image data acquisition to meet the needs and requirements of the Flood Control District, adhering to standards and specifications outlined for mapping services by the District and the Federal Emergency Management Agency guidelines.

The Rainbow Valley ADPM project area, as defined by the established project boundary, encompasses approximately 300 square miles generally centered over the Waterman Wash from its confluence with the Gila River at the Northwest, south-southeasterly for a total of over 35 miles to a southerly boundary approximately 10 miles south of Maricopa Road. The easterly boundary is defined and established by the apex of the Estrella Mountains and the Maricopa/Pinal County line. The Westerly boundary generally follows a north/south line from the Gila Rive along the center of Range 3 West south to its intersection with the gas line road to its intersection with Maricopa Road and thence southerly to the extreme south end of Booth Hills. Approximately 220 square miles of the project area will be mapped at a 2-foot contour interval (for areas where slopes do not exceed 20 percent.) The southerly 80 square miles of the project will be mapped at a 4-foot contour interval. GD-AIS will examine all existing (2000-2001 vintage) map and digital terrain model data from the District and incorporate/match/merge the newly collected LiDAR and photogrammetric information where valid for the western slopes of the Estrella Mountains.

Project requirements call for development of topographic mapping by photogrammetric methods (with incorporation of LiDAR data), based on established methods incorporating Airborne GPS technology for ground control. After the final project boundary was established through negotiations between FCDMC and GD-AIS, we carefully established ground control requirements and methodology for both image and LiDAR data acquisition. Extreme terrain elevation changes within the project area dictated multiple flight height adjustments for the image acquisition and directly impacted the configuration of the ground control survey point pattern.

The GD-AIS project principal developed the ground control schema, incorporating nineteen (19) existing GDACS points along with setting an additional twenty four (24) "Primary Control Point" locations throughout the project. This configuration is generally dictated by industry standard methods for incorporation of Airborne GPS as an analytical approach for photogrammetric mapping. The density of the control points is established based on the requested level of accuracy (i.e., 2-foot and 4-foot contour interval coverage), and our professional opinion, to insure that accuracy requirements are met. Additionally, nine (9) other GDACS points were incorporated into the network, but not targeted for mapping because they fell outside the project boundary and outside the areas of image coverage.

Procedures were negotiated with the FCDMC surveying and mapping manager to establish the level of effort for setting "blind" targets as a quality control check for the Airborne GPS and subsequent analytical aerotriangulation process. A total of one-hundred five (105) point locations, uniformly and randomly spaced throughout the project, were established for this purpose.

The Airborne GPS process, as dictated by the scope of work, required simultaneous ground station data collection on three known points ***during*** mobilization for LiDAR data and aerial image acquisition. Specifications called for the three stations to be located within ten (10) miles of each other with at least one station within ten (10) miles of the airborne platform during the airborne data acquisition mobilization. Three GDACS points were identified and occupied to meet this criterion. A fourth ground station control point was established at the Phoenix Goodyear Airport as part of the control network for the Airborne GPS phase(s) of data collection.

Data collection for the feature and terrain detail on this project is based on the incorporation of the edited "bare earth data" from the LiDAR acquisition with standard photogrammetric methods to complete the final edit of the bare earth model, enhance the dataset with breaklines and extract the planimetric/cultural features (vectors) for complete map representation.

All photogrammetric data extraction is completed in a "soft copy" environment linked directly to MicroStation for point and vector storage, and hard copy output. Each feature is uniquely coded for direct and transparent translation to a GIS. Digital terrain model data (mass points and break lines) are exported directly to the District's required ACSII file format. All final map data (contours, features, control points, coordinate grids, etc.) are translated to the District's HIS.

PROJECT PLANNING

The project has been designed to deliver both 2-foot and 4-foot contour interval map coverages. The project boundary was defined through negotiations based on project requirements and budget constraints dictated by the District. The final project boundary is shown on the cover page of this report and more precisely defined in the following table:

Point	North 83SP - Metric	East 83SP - Metric	Conversion factor	NORTH AZSP-NAD83 Intrntl Foot	EAST AZSP-NAD83 Intrntl Foot	Latitude	Longitude
Wpt1	213695.280	186568.080	3.280839895	701100.00	612100.00	32 55 37.28108	112 12 11.33023
Wpt2	213736.428	181876.040	3.280839895	701235.00	596050.00	32 55 38.14584	112 15 19.64725
Wpt3	221770.956	181730.904	3.280839895	727595.00	596230.00	32 59 58.97838	112 15 16.52948
Wpt4	221770.956	176905.920	3.280839895	727595.00	580400.00	32 59 58.43597	112 18 24.41133
Wpt5	229516.972	176944.020	3.280839895	753015.00	580525.00	33 04 09.96196	112 18 24.05120
Wpt6	233560.620	172282.104	3.280839895	766275.00	565230.00	33 06 20.56466	112 21 24.44474
Wpt7	238711.740	166329.360	3.280839895	783175.00	545700.00	33 09 06.90920	112 25 15.00053
Wpt8	244106.700	156170.376	3.280839895	800875.00	512370.00	33 12 00.27581	112 31 48.25671
Wpt9	244111.272	155210.256	3.280839895	800890.00	509220.00	33 12 00.23998	112 32 25.32887
Wpt10	252497.844	155265.976	3.280839895	828405.00	509370.00	33 16 32.48072	112 32 25.49587
Wpt11	252502.416	154120.596	3.280839895	828420.00	505645.00	33 13 32.40683	112 33 09.37267
Wpt12	259947.156	153978.864	3.280839895	852845.00	505180.00	33 20 34.03495	112 33 16.60894
Wpt13	261010.908	157426.152	3.280839895	856335.00	516490.00	33 21 09.22931	112 31 03.52635
Wpt14	261122.160	158201.868	3.280839895	856700.00	519035.00	33 21 12.98476	112 30 33.54746
Wpt15	261167.880	159910.272	3.280839895	856850.00	524640.00	33 21 14.77934	112 29 27.47812
Wpt16	261366.000	160679.892	3.280839895	857500.00	527165.00	33 21 21.34704	112 28 57.75150
Wpt17	261747.000	161501.328	3.280839895	858750.00	529860.00	33 21 33.85809	112 28 26.05716
Wpt18	262373.364	162293.808	3.280839895	860805.00	532460.00	33 21 54.32654	112 27 55.53039
Wpt19	263581.896	165428.676	3.280839895	864770.00	542745.00	33 22 34.07550	112 25 54.49150
Wpt20	259147.056	165364.668	3.280839895	850220.00	542535.00	33 20 10.10836	112 25 56.11894
Wpt21	259056.684	167582.088	3.280839895	849930.00	549810.00	33 20 07.58684	112 24 30.35156
Wpt22	258857.496	170256.708	3.280839895	849270.00	558585.00	33 20 01.45431	112 22 46.88549
Wpt23	258516.120	172597.572	3.280839895	848150.00	566265.00	33 19 50.70121	112 21 16.30680
Wpt24	255292.860	174476.664	3.280839895	837575.00	572430.00	33 18 08.32087	112 20 03.14402
Wpt25	254328.168	174409.608	3.280839895	834410.00	572210.00	33 17 34.99710	112 20 06.58676
Wpt26	253453.392	175840.644	3.280839895	831540.00	576905.00	33 17 06.78344	112 19 10.14229
Wpt27	251979.684	177684.684	3.280839895	826705.00	582955.00	33 16 19.17005	112 17 58.66172
Wpt28	249806.460	179504.340	3.280839895	819575.00	588925.00	33 15 08.83481	112 16 48.05082
Wpt29	247422.924	182032.656	3.280839895	811755.00	597220.00	33 13 51.73569	112 15 10.07191
Wpt30	246218.964	183834.024	3.280839895	807805.00	603130.00	33 13 12.83540	112 14 00.35108
Wpt31	244880.892	185170.572	3.280839895	803415.00	607515.00	33 12 29.52729	112 13 08.58222
Wpt32	241328.448	186496.452	3.280839895	791760.00	611865.00	33 10 34.32661	112 12 17.00413
Wpt33	240202.212	186728.100	3.280839895	788065.00	612625.00	33 09 57.78897	112 12 07.94346
Wpt34	225710.496	188740.292	3.280839895	740520.00	612665.00	33 02 07.34996	112 12 05.95348
Wpt1(Close)	213695.280	186568.080	3.280839895	701100.00	612100.00	32 55 37.28108	112 12 11.33023
split1(Wpt8)	233560.620	172282.104	3.280839895	766275.00	565230.00	33 06 20.56466	112 21 24.44474
split2(Wpt33)	240202.212	186728.100	3.280839895	788065.00	612625.00	33 09 57.78897	112 12 07.94346
Mapping "South" of the split line will be 4-foot contour interval							
Mapping "North" of the split line will be 2-foot contour interval							

After the project limits were established, the control network, LiDAR flight planning and aerial image acquisition plan was established in the most efficient manner that retained the accuracy specifications for the delivery of all requested data. Critical to the success of the field survey mission was the direct involvement of the District's Mapping and Surveying Manager to assist with project site access. It was necessary to meet with Maricopa County Parks officials to obtain access and operational permission to the Estrella Mountain Park area. All field personnel carried letters provided by the District, identifying the project activities, greatly assisting the field survey personnel with private property access and public awareness.

All project activities were developed from the approach that final data delivered to the District was to meet all project specifications, and would be based on National Map Accuracy Standards for photogrammetric mapping, with the direct incorporation of LiDAR technology using what has become known as LiDARgrammetry for terrain definition. This approach dictated that all subconsultants meet strict requirements for both personnel experience and equipment that met the needs for accurate data collection. Each of the three subconsultants involved have extensive similar project experience and the equipment and technology to fulfill expectations.

The control network (GDACS points, "primary control" and "blind targets") were planned with the use of airborne GPS technology for both LiDAR and stereo image acquisition. Mobilization for LiDAR requires simultaneous GPS data collection from the airborne platform with three known ground stations. The three ground stations (GDACS) points were identified to meet the criteria for having at least one ground station within ten linear miles of the airborne platform at all times during the mobilization. Additionally, a fourth station was established at the Phoenix Goodyear Airport and included in the control network.

Subsequent to completion of LiDAR acquisition, planning for primary and blind target paneling and measurement was developed to insure complete project coverage for the two day mobilization for stereo image acquisition. ALL control points (GDACS, Primary and blind targets) were set and in place for the image acquisition effort. This was a major accomplishment for the field personnel to insure that the +/- 150 targets over the 300 square mile area were secure and readily identifiable in the resultant imagery. In addition to the planned photogrammetric control network, field personnel were assigned the task to measure any found PLSS monuments. All found PLSS corners were measured with either static or RTK GPS methods and documented as part of the project effort. ***Approximately 240 PLSS corners were found and measured for this project.***

Following the specifications established by the District for aerotriangulation quality control, the plan was effected by completing all aerotriangulation without the benefit of coordinate triplet values for the blind targets. Each blind target was measured in the stereo imagery and the calculated values presented to the District's Survey & Mapping Manager for validation against the coordinate triplet values measured by field methods (incorporating both static and RTK measurement methods.)

In addition to the field survey effort for establishing control and providing airborne GPS ground support, the field personnel were also tasked with providing a limited amount of quality control "profiles." The executed plan involved RTK continuous data collection on a mobile (vehicular) unit to collect profile data along roadways within the project. These datasets were imported to the photogrammetric data collection process and superimposed on the 3-D models to validate both the LiDAR "bare earth" points and the additional photogrammetrically collected mass points and break lines.

Product delivery (electronic and hard copy) has been designed to cover the project area with uniform 6000-foot by 6000-foot map sheets/tiles corresponding to the coordinate system established for the project (Arizona State Plane, Central Zone – NAD83 – International Feet.) The coordinates for the sheet/tile corners have been intentionally established with values that or evenly divisible by the 6000'x6000' format to provide ease of location and reference in the HIS.

PROJECT EXECUTION

The following individual sections of this report provide detailed procedural explanation of the data acquisition and post-processing events. They include control point maps, flight plans, calibration reports and certificates, and results of all field survey efforts and LiDAR and image post-processing (including aerotriangulation.)

Upon completion of the preliminary existing data collection phase, and careful project planning, the production activities were initiated on February 8, 2005 with the mobilization for LiDAR data acquisition.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 2003C067
Mapping Services for Rainbow Valley Area Drainage Master Plan

DATA COLLECTION REPORT

GENERAL DYNAMICS –AIS
4400 E. Broadway Blvd., Suite 118
Tucson, Arizona 85711

Data collection for the surveying and mapping effort required participation of GD-AIS as the Prime consultant, District personnel and members of our field survey subconsultant team.

These efforts resulted in the collection of the following materials:

1. Notification letter to Property Owners within and/or impacted by the field survey efforts for the project. This letter was prepared and distributed by the District's Mapping and Survey Manager, Mr. John Stock. Laminated copies of said letter were distributed to all field survey personnel working on site for the duration of survey activities.
2. Primary survey control for this project consist of all GDACS points in and near the project area. The most current data for the GDACS points utilized were obtained directly from Maricopa County Department of Transportation. It is anticipated that the following points will be used:

   3BF3, 3BD3, 3CE3, 3CC3, 3DD1, 3DB3, 3EE2, 3EC2, 3EA3, 2EB3, 3FD2, 3FB2, 2FB3, 3GC2, 3GA2, 2GC3, 3HB2, 2HB1, 1418, 2IA3, 2JB2, 3KB2, 2KB2

3. Existing map information that has been received from the District includes:
   i. Digital Terrain Model data (ASCII files)
   ii. 10-foot contour interval topographic map coverage (ARCView shape files)
   iii. MrSid compressed grey-scale orthophotography files

   The existing map files and images provided by the District are identified as datasets prepared in 2000-2001 for the county-wide orthophotography project.

   No other map files have been provided by the District for examination or edge-matching by GD-AIS.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 2003C067

Mapping Services for Rainbow Valley Area Drainage Master Plan

LiDAR Data Collection Report

GENERAL DYNAMICS –AIS
4400 E. Broadway Blvd., Suite 118
Tucson, Arizona 85711

Mapping for the Rainbow Valley Area Drainage Master Plan includes the utilization of LiDAR technology and data collection for terrain modeling. General Dynamics-AIS with the support of our LiDAR and image subconsultant (Horizons, Inc.) and field survey subconsultants (Huitt-Zollars, Inc. and Project Engineering Consultants, Ltd.) completed the LiDAR data acquisition task during the period of February 8 & 9, 2005. The following documentation details procedures, flight plans, LiDAR equipment calibration report, flight logs and mission reports.

PROCEDURES

Contract Scope of Work specifications require a minimum of three (3) GPS Base Stations operating simultaneously during the flight mobilization for LiDAR data acquisition. An examination of the project site/limits and verification of existing GDACS control points provided an efficient solution to meet the three Base Station requirement with the 10-mile minimum distance criteria. The three base stations were located on GDACS points 3DD1**(9999), 3FB2 and 2IA3, keeping the simultaneous "set-ups" within 10 linear miles of each other. This configuration also ensured that at least one Base Station was within the maximum allowable distance of ten miles from the airborne LiDAR platform.

In addition to the three required Base Stations, a 4th receiver was set on a recoverable monument along the airport runway at Phoenix Goodyear Airport. All four Base Stations were operated simultaneously before, during and after the data acquisition mobilizations on February 8 and 9, 2005. Each of the four geodetic quality Base Stations operated in dual frequency mode, collecting C/A, P Code and carrier phase measurements with data collection and storage maintained at one second intervals throughout the mobilization period(s).

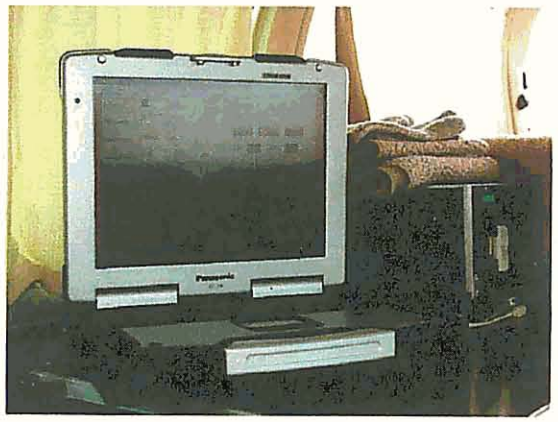
The Leica Geosystems ALS50 Airborne Laser Scanner LiDAR system was mobilized for this project. It is the current state-of-the-art data acquisition system available. Operation of the system and platform includes scanner, data collector, IMU and GPS navigation/position calculation equipment. Real time GPS data collection is stored at 1-second intervals and calibrated to the 4 (four) airborne GPS ground/base stations simultaneously operating during the acquisition phase.

Twin-engine LiDAR Platform

LiDAR Equipment Installation(1)

LiDAR Equipment Installation(2)

LiDAR Equipment Installation(3)



PC-based Control Unit

Mobilization for LiDAR data collection was planned according to the Contract Scope of Work specifications as identified in Section 3.5.2. The flight plan is based on the requirement for "calibration lines" over the Phoenix Goodyear airport as illustrated on the flight plan map below. Two of the calibration lines were flown parallel to the airport runway and a third line was flown perpendicular to the first two. Following the calibration flights, a series of "cross-flights" were flown over the project (east/west lines) as illustrated by flight line numbers 4, 5, 6, 7 & 8. The entire project area was flown for data acquisition in a series of north/south serpentine lines as illustrated and numbered as lines 9 through 50. Finally, to insure complete coverage and "closure" of the project dataset, three (3) additional lines were flown northwest-southeast over the westerly slopes and apex of the Estrella Mountains.

GDACS control point 3DD1 was occupied by "others" during the mobilization for LiDAR data acquisition. A 'random" monument (Point 9999) was set approximately ten (10) feet from the GDACS point and occupied for the duration of the LiDAR data acquisition (as well as for image acquisition that occurred at a later date.) The "random" monument was subsequently tied to the GDACS network with static GPS techniques when the original GDACS point 3DD1 could be occupied for use as a primary control point. Both GDACS point 3DD1* ***AND *the random point will be targeted and included in the control network for both LiDAR processing and aerotriangulation of the aerial imagery used for terrain data collection.*

The fourth GPS Base Station at the Phoenix Goodyear airport was also subsequently tied to the GDACS network by static GPS and post-processing that included application of the "raw" data collected at that station during LiDAR data acquisition.

LiDAR Data Acquisition

HORIZONS INC.			
Client	General Dynamics		
Use	2' DEM & Grid		
Type	LiDAR	TR	DH
B&W	N/A	Flts (Wpts)	53 (1095)
Color	N/A	Line Miles	789.1
CIR	N/A	Swath Post	7.41E8
FOV:PPS	30° @ 39K	Neat Post	2.12E8
Side	30%	Acres	189,734
Speed	130 kts	[33N12.61]	[112W22.15]
GPS	GPS/IMU		
Comment	Flight Plan Complete		
AMT 7000'	Area & Flts – Rainbow 1-53		
Max MSL = 9900'			
		JFlight 9.153 ☼ 2/2/2005 3:18:29 PM	

Horizon's, Inc.
LiDAR Acquisition/Processing/Quality Control
Rainbow Valley, Arizona

LiDAR Acquisition

LiDAR Acquisition. LiDAR acquisition for this project was performed by Horizons Inc. in a Cessna 210 equipped with an LH System ALS50-Serial #0036 LiDAR system including an inertial measuring unit (IMU) and a dual frequency GPS receiver. Acquisition was accomplished on 2/8/2005. Maps identifying the flight lines and LiDAR collection log sheets containing information regarding flights, times, conditions, etc are included in the Appendix. The LiDAR flight specifications follow:

Field of View	30 Degrees
Altitude	7000 feet AMT
Scan Rate	39000 Hz
Pulse Rate	25 kHz
Airspeed	130 knots
Average Post Spacing	3.2 meters
Average Swath Width	3750 feet
Intensity Mode	4+3
Total Flight Lines:	50
Number of Lifts	3

GPS Data Collection

GPS Data Collection. A GPS receiver was in constant operation over base stations during flight acquisition. The base station identifications and locations are listed in the following table.

Station	Location	
3FB2	33°09'55.58076"N	112°21'43.07516"W
2IA3	33°01'50.33230"N	112°17'34.98158"W
XMKL	33°26'06.30953"N	112°22'10.91924"W
9999	33°14'49.49777"N	112°27'51.47040"W

GPS base station

GPS Data Processing

GPS Data Processing. All GPS phase data was post processed with continuous kinematic survey techniques using "On the Fly" (OTF) integer ambiguity resolution. The GPS data was processed with forward and reverse processing algorithms. The results from each process, using the data collected at the airport, were combined to yield a single fixed integer phase differential solution of the aircraft trajectory. Plots of altitude and the forward and reverse GPS solution residuals are included in the Appendix. The differences between the forward to reverse solution within the project area were within project specifications (<10cm) in both the horizontal and vertical components, indicating a valid and accurate solution.

IMU Data Processing

IMU Data Processing. An IMU was used to record precise changes in position and orientation of the LIDAR scanner at a rate of 200 Hz. All IMU data was processed post flight with a filter to integrate inertial measurements and precise phase differential GPS positions. The resulting solution contains geodetic position, omega, phi, kappa, and time for subsequent merging with the laser ranging information.

LiDAR Data Processing

LIDAR Data Preprocess.

Flight Line Data Acquisition/Quality Control Check. LiDAR data and the IMU files were processed together using LIDAR processing software. The data set for each flight line was checked for project area coverage, data gaps between overlapping flight lines, and tension/compression areas (areas where data points are more or less dense than the average project specified post spacing). Based on this check it appears the entire project area is covered without gaps. LiDAR Coverage Check and Line Overlap Check Diagrams are included in Appendix.

Boresighting Process. Pre-processing of LiDAR corrects for rotational, atmospheric, and elevation differences that are inherent to LiDAR data sets. This process is called bore-sighting. LiDAR data was collected for bi- and cross-directional flight lines over the airport prior to and after acquisition of the project area. Using

an iterative process that involves analyzing raster difference calculations the Omega, Phi, Kappa angle corrections of the LiDAR instrument were determined. The corrections were applied to the LiDAR data set for the project area.

Vertical Accuracy Check. Extensive comparisons were made of vertical and horizontal positional differences between points common to two or more LiDAR flight lines. This was done for the airport bore-sight testing area and the project area. All flight lines (airport and project) were within project specifications for vertical accuracy.

LiDAR Intensity Check. An intensity raster for each flight line was generated. The raster was checked and verified that intensity was recorded for each LiDAR point.

Project Coordinate System. LiDAR preprocessing software outputs data to its corresponding UTM zone in meters and a GRS80 ellipsoidal height. LiDAR data was transformed to a project coordinate system of Arizona State Plane Central Zone, NAD83, NAVD88, International Feet.

Vertical Bias Correction. LiDAR has a consistent vertical offset. LiDAR ground points were compared to independently surveyed and positioned ground control points at both the airport bore-sight area and the project area. Based on the results of these comparisons, the LiDAR data was vertically biased down to the ground.

Project Ground Control Check. Comparisons between on-site ground survey control points and LiDAR data yielded the following results:

Vertical Accuracy (RMSE)	*0.166*
Standard Deviation	0.169
Mean Difference	0.000
Number of Points	37

LiDAR Data Surfacing Process.

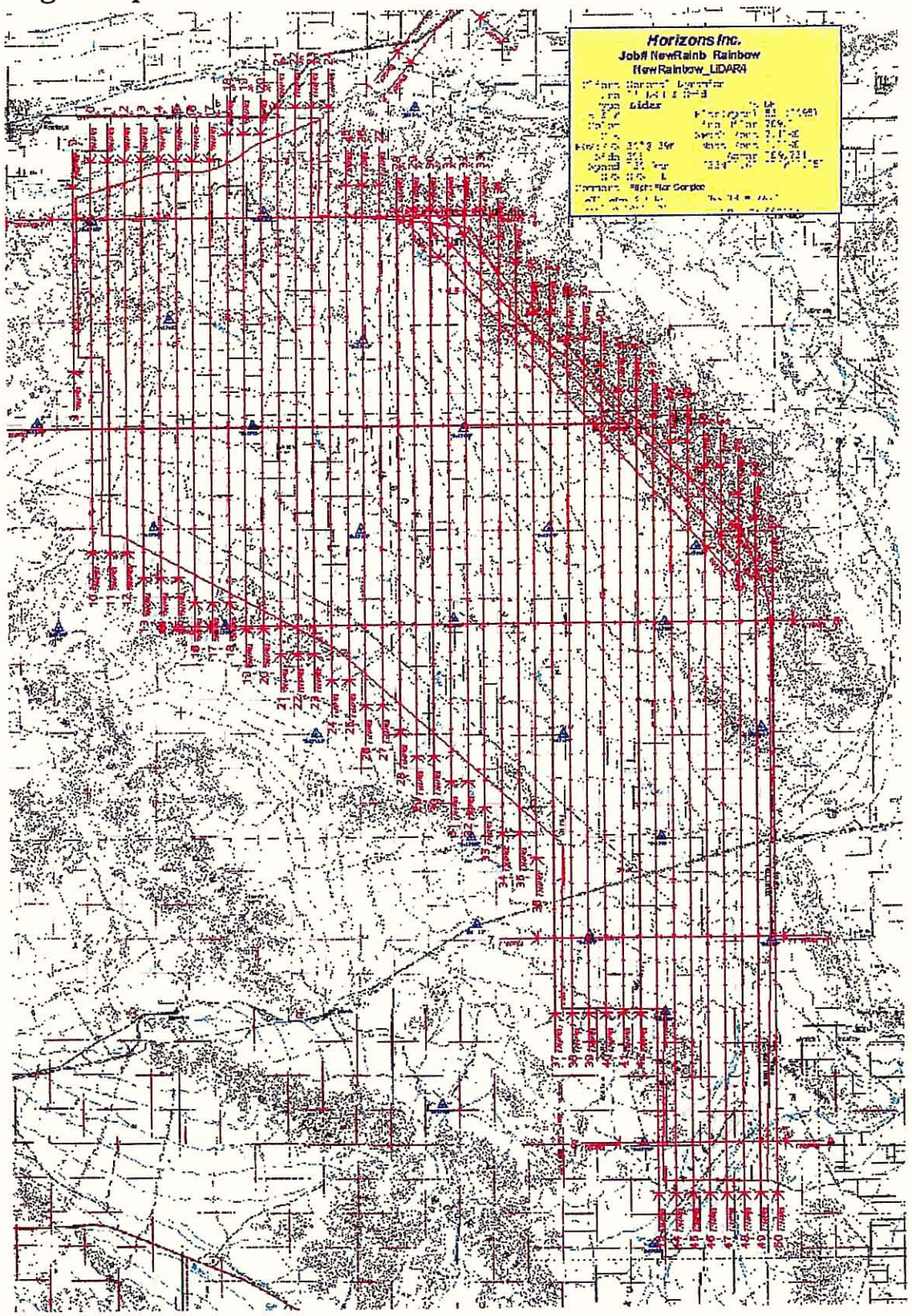
Raw LiDAR Data Set. LiDAR data in overlap areas of project flight lines was removed and data from all swaths was merged into a single data set. The data set was trimmed to the digital project boundary including an additional buffer zone (buffer zone assures adequate contour generation from the DEM). Resulting data set is the Raw LiDAR data. The Raw LiDAR data set was processed through a minimum block mean algorithm and points were classified as either bare earth or non-bare earth. User developed "macros" that factor mean terrain angle and height from the ground, were used to determine bare earth point classification.

LiDAR Surfacing Process. The surfacing process is a 2D-edit procedure that ensures the accuracy of the automated feature classification. Editors used a combination of imagery, intensity of the LiDAR reflection and tin-editing software to assess points. The resulting data set is 2D Surfaced Bare Earth. The LiDAR data is filtered using a quadric error metric to remove redundant points. This method leaves points where there is a change in the slope of surfaces (road ditches) and eliminates points from evenly sloped terrain (flat field) where the points do not affect the TIN LiDAR data. The resulting data set is 2D Surfaced/Filtered Bare Earth

Appendix Items.

Flight Map
LiDAR Collection Logsheet
Diagram – Altitude and Forward/Reverse GPS Solution Residuals
Diagram – Aircraft Trajectory Plot
Diagram - Project Flight Lines Overlap and LiDAR Coverage Check

Rainbow Valley
Flight Map



nbow Valley
)AR Collection Log Sheets – Lift 2

ct:	Rainbow for General Dynamics	LiDAR Ser #	Attenuator:	Mode:	FMS	Above Mean Terane:	AIRCRAFT	Operator:	Weather	Grnd Temp	Alt Temp	Atlm
		036	full	4+3	CCNS	7000 ft		Joe Doran	Start:	+18c	+0c	30.02
ct #: /	12272 / Lift #2	Laser Pulse Rate:	AGC # 1	Hard Dr	Des. Speed kts:	IMU Start:	Cessna	Pilot:	End:	+16c	+2c	30.03
		46000	12	2	150	23:51		Cliff Wippel	PID #		Ground Station	
/ n:	8-Feb-05 039	Range Gate:	AGC # 2	Session:	UTM Zone:	IMU Stop:	310 N2636P	Airport ID	GY11 - AZTEC ENG		Start	Stop
		3553 - 8031	3	B	12	3:28		KGYR	Ant. Ht.	2.080	18:20	03:30

zons e #	Direction Deg.	From WPT	To WPT	GPS Time Beginning	GPS Time End	F. O. V.	Scan Rate:	Speed Kts:	Comments and Conditions:	# Sats	PDOP	HD Mem Rem
est				235357		20	1	0	Forgot Recorder was on turned off after take off	8	1.4	1.1
1n	038	1	6	001252	0014	31	32	148		7	2.0	1.2
1s	218	6	1	001658	0018			150		7	2.0	1.2
2n	038	1	6	002051	0022			150		7	1.9	1.2
3e	128	1	4	002444	0025			142		8	1.6	1.1
4s	179	24	1	002744	0034			152		8	1.6	1.1
5n	359	1	23	003642	0042			147	Due to clouds on lift #1 reflew	8	1.5	1.0
6s	179	22	1	004535	0051			152		10	1.1	0.8
3n	359	1	24	005307	0059			145		10	1.1	0.8
2s	179	23	1	010130	0107			154		11	1.1	0.7
1n	359	1	23	011011	0116			150		11	1.1	0.7
0s	179	22	1	011841	0124			145		10	1.3	0.8
9n	359	1	22	012657	0132			151		9	1.5	0.9
8s	179	21	1	013508	0140			147		10	1.1	0.8
7n	359	1	21	014328	0148			154		10	1.1	0.8
6s	179	21	1	015109	0156			147		9	1.3	1.0
5n	359	1	20	015932	0204			152		8	1.6	1.1
4s	179	23	1	020739	0213			148		8	1.7	1.1
3n	359	1	22	021650	0222			149	Temp @ ALT +6c	9	1.4	0.9
2s	179	22	1	022546	0231			148	Request to decend to 8000' Range Gate getting high Denied	9	1.5	0.9
1n	359	1	22	023430	0240			154		9	1.5	0.9
0s	179	20	1	024330	0248			147	Decent to 8000' granted.	9	1.5	1.0
9n	359	1	20	025209	0257			146		9	1.5	1.0
1n	038	1	6	025931	0300			144		9	1.5	1.0
1s	218	6	1	030304	0304			154		9	1.5	1.0
2n	038	1	6	030647	0308			145		10	1.3	0.9
3e	128	1	4	031041	0311			143		10	1.3	0.9

nbow Valley
)AR Collection Log Sheets – Lift 1

ct:	Rainbow for General Dynamics	LiDAR Ser #	Attenuator:	Mode:	FMS	Above Mean Terane:	AIRCRAFT	Operator:	Weather	Grnd Temp	Alt Temp	Atlm
		036	full	4+3	CCNS	7000 ft	Cessna	Joe Doran	Start:	+15c	-1c	3006
ct #: /	[illegible]	Laser Pulse Rate:	AGC # 1	Hard Dr	Des. Speed kts:	IMU Start:	310	Pilot:	End:	+18c	+1c	3001

			46000	12	2	0	18:43	N2636P	Cliff Wippel	PID #		Ground Station
/ n:	8-Feb-05	039	Range Gate: 3544 - 8031	AGC # 2 3	Session: A	UTM Zone: 12	IMU Stop: 23:13		Airport ID KGYR	GY11 - AZTEC ENG Ant. Ht. 2.080	Start 18:20	Stop 03:30

zons e #	Direction Deg.	From WPT	To WPT	GPS Time Beginning	GPS Time End	F. O. V.	Scan Rate:	Speed Kts:	Comments and Conditions:	# Sats	PDOP	HD Mem Rem
est				184646	1847	20	1	0		9	1.4	0.9
1n	038	1	6	190545	1907	31	32	152		9	1.5	0.9
1s	218	6	1	190959	1911			147				
2n	038	1	6	191410	1915			150				
3e	128	1	4	191816	1919			149				
0s	179	25	1	192545	1932			148		10	1.0	0.8
9n	359	1	27	193517	1942			144				
8s	179	28	1	194506	1952			155		9	1.1	0.9
7n	359	1	29	195536	2003			147				
6s	179	29	1	200548	2013			151	Cloud ? On North end	8	1.2	1.0
5n	359	1	30	201700	2024			147				
4s	179	30	1	202725	2035			150		7	2.0	1.6
3w	269	8	1	203906	2040			148	Crossing line	8	1.1	1.2
3n	359	1	31	204416	2052			146		7	2.0	1.4
2s	179	25	1	205408	2100			152	Temp @ alt -1c			
1n	359	1	25	210430	2111			150		7	2.2	1.3
0s	179	26	1	211402	2120			155				
9n	359	1	27	212410	2131			148		8	1.8	1.0
5w	269	23	1	213419	2140			148	Crossing line	8	2.0	1.0
5e	089	1	24	214423	2150			145	Crossing line	8	2.2	1.0
7w	269	11	1	215457	2158			152	Crossing line	9	2.0	1.0
7n	359	1	28	220130	2209			147	Cloud ? On North end	9	2.1	1.0
8s	179			Aborted	Aborted			147	[NAV OFF] on CCNS			
8n	179	27	1	222533	2232			150	Cloud ? On North end	9	2.0	1.1
5n	359	1	23	223553	2241			149	Clouds ? On North end			
3w	308	4	1	224456	2245			147		8	1.7	0.9
1n	038	1	6	224835	2250			148		8	1.7	0.9
1s	218	6	1	225220	2253			151		9	1.4	0.8
2n	038	1	6	225605	2257			149		9	1.4	0.8

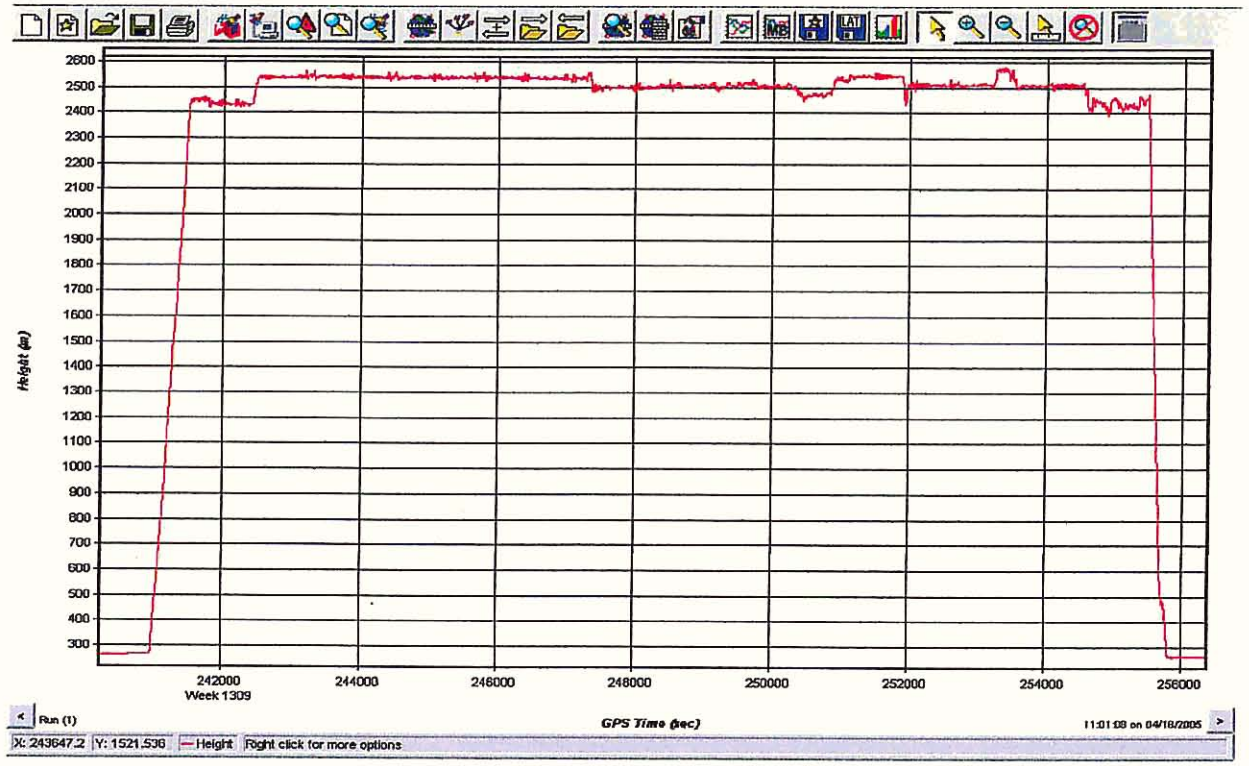
nbow Valley
DAR Collection Log Sheets – Lift 3

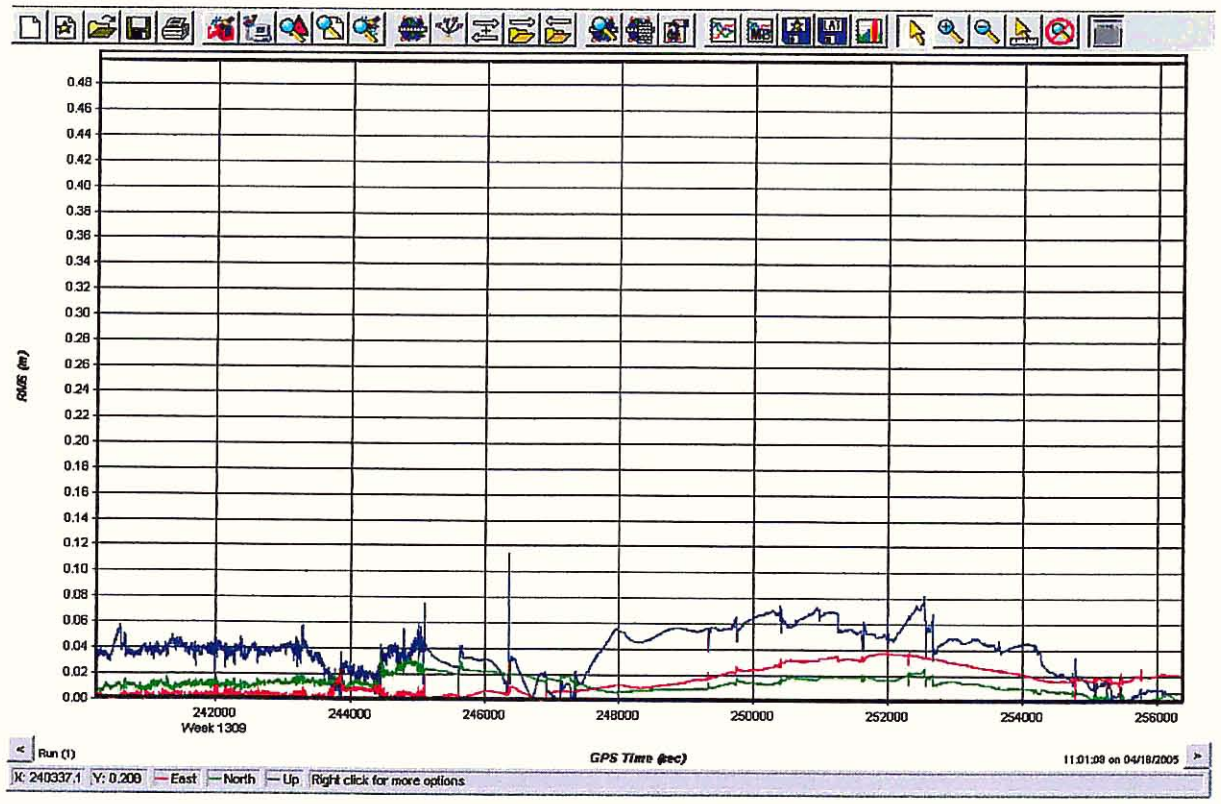
Rainbow for neral Dynamics	LiDAR Ser #	Attenuator:	Mode:	FMS	Above Mean Terane:	AIRCRAFT	Operator:	Weather	Grnd Temp	Alt Temp	Atlm
	036	full	4+3	CCNS	7000		Joe Doran	Start:	+16c	+5c	30.10
2272 / Lift #3	Laser Pulse Rate:	AGC # 1	Hard Dr	Des. Speed kts:	IMU Start:	Cessna 310 N2636P	Pilot:	End:	+15c	+6c	30.02
	46000	12	1	150	18:45		Cliff Wippel	PID #		Ground Station	
9-Feb-05 040	Range Gate:	AGC # 2	Session:	UTM Zone:	IMU Stop:		Airport ID	GY11 - AZTEC ENG		Start	Stop
	3553-8031	3	A	12	22:30		KGYR	Ant. Ht.	2.080	18:29	22:40

tion	From	To	GPS Time	F. O. V.	Scan	Speed	Comments and Conditions:	# Sats	PDOP	HDOP

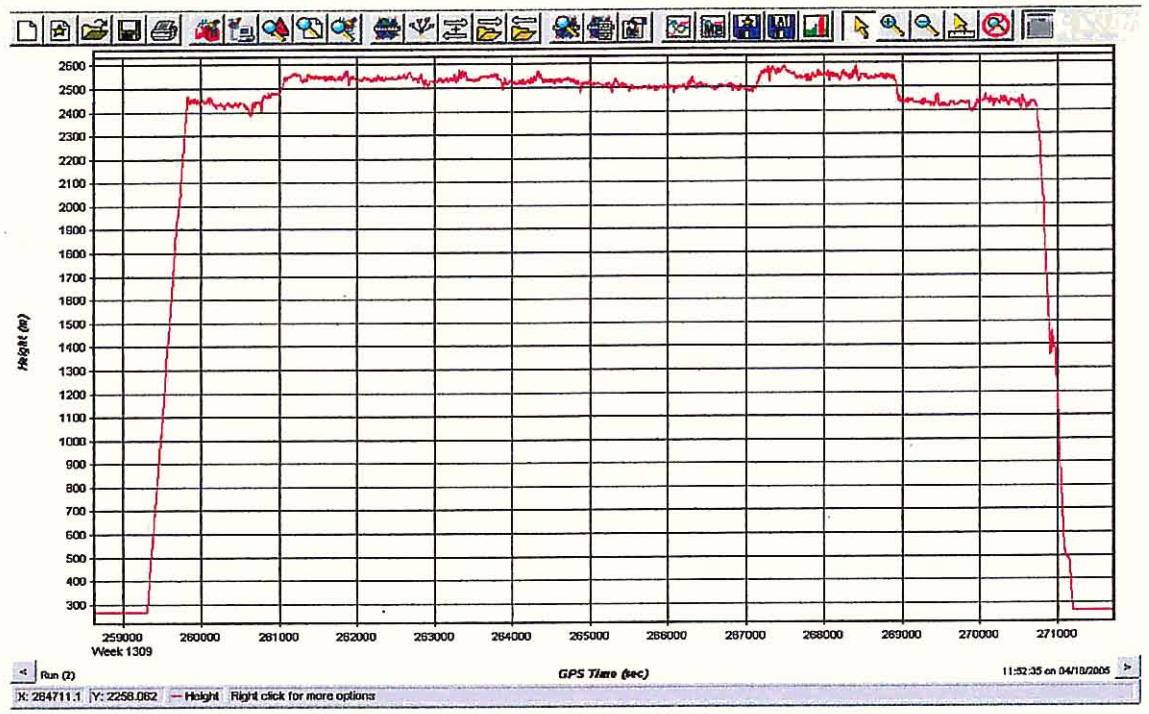
g.	WPT	WPT	Beginning	End		Rate:	Kts:				
			184808	1849	20	1	0		9	1.4	0.9
8	1	6	191159	1913	31	32	151		9	1.4	0.9
8	6	1	191609	1917			152		9	1.4	1.0
8	1	6	191936	1920			152		10	1.0	0.8
8	1	4	192325	1924			141		10	1.0	0.8
7	1	17	193536	1940			148	Lite Chop / 1st return % reached 100% @ WPT 6 and fell off @ WPT15	9	1.1	0.9
7	17	1	194235	1946			154	Lite Chop / 1st return % >82%, WPT 5 & 6 100% rest low.	8	1.3	1.0
7	1	17	194922	1953			144	Lite Chop / 1st return % reached 100% @ WPT 6 and fell off shortly after	8	1.3	1.0
9	18	1	195928	2004			150	Crossing line	8	1.2	1.0
9	1	8	200826	2010			146		8	1.2	1.0
9	16	1	201242	2016			140		8	1.1	1.0
9	1	16	201930	2023			148		7	2.0	1.6
9	16	1	202606	2030			142	Temp +6c 30.06 ALTM	7	2.0	1.6
9	1	17	203237	2037			147		8	1.1	1.2
9	17	1	203939	2044			146		7	2.0	1.4
9	1	17	204644	2051			149	30.03 ALTM	7	2.0	1.4
9	18	1	205341	2058			145		7	2.1	1.3
9	1	18	210054	2105			155		7	2.2	1.3
9	19	1	210759	2113			145	PHX ALTM 30.02	7	2.2	1.3
8	1	6	220604	2207			150		10	2.1	1.0
8	6	1	220939	2210			150		10	2.1	1.0
8	1	6	221251	2214			148		10	2.1	1.0
8	1	4	221628	2217			142		10	2.1	1.0

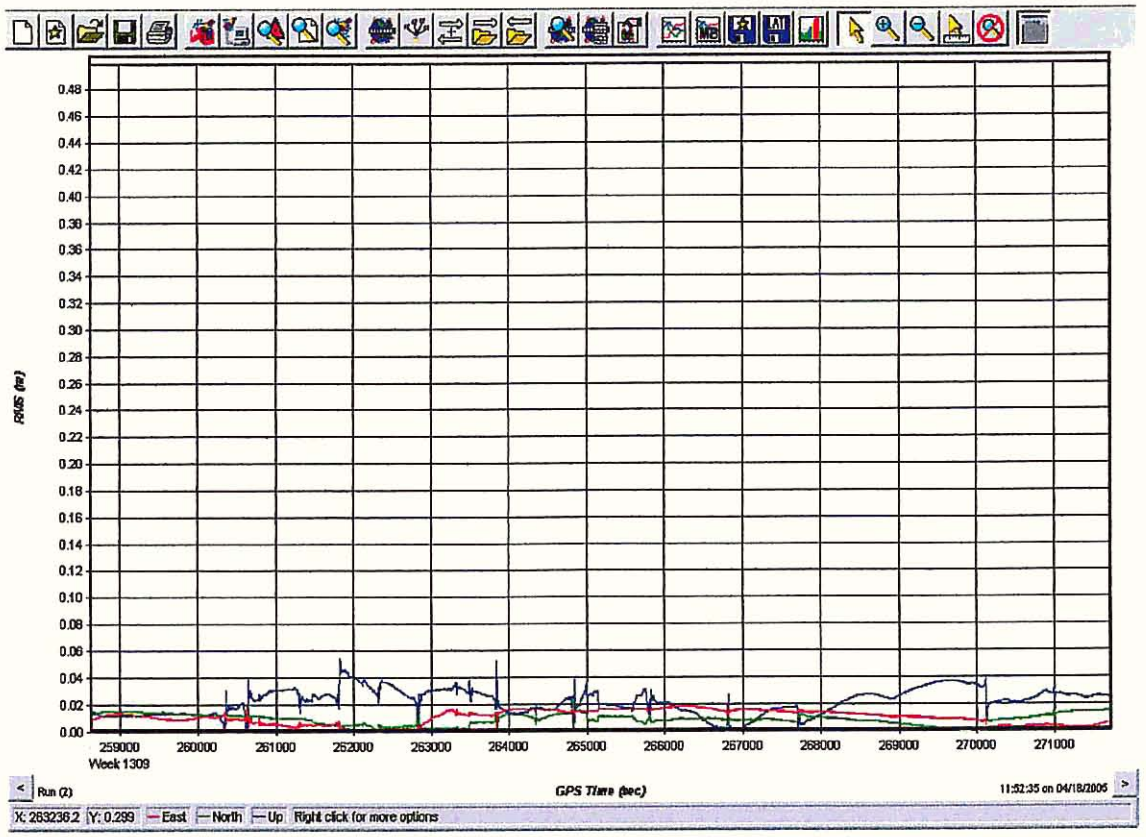
Rainbow Valley
Diagram – Altitude and Forward/Reverse GPS Solution Residuals, Lift 1



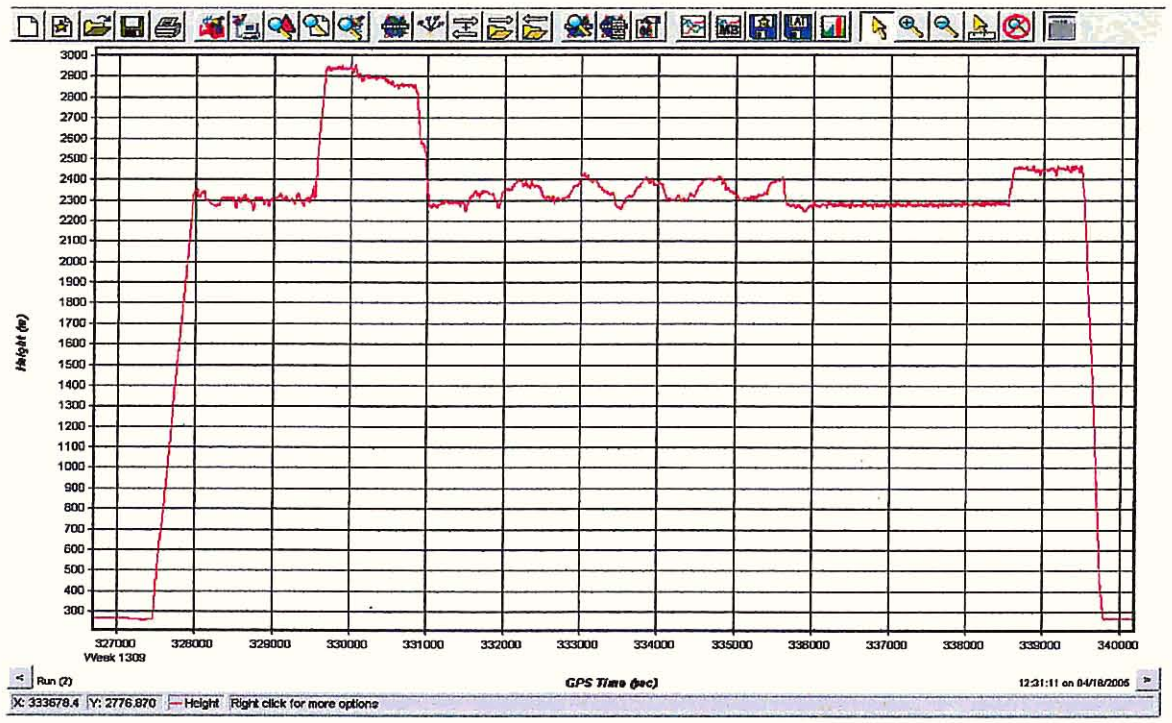


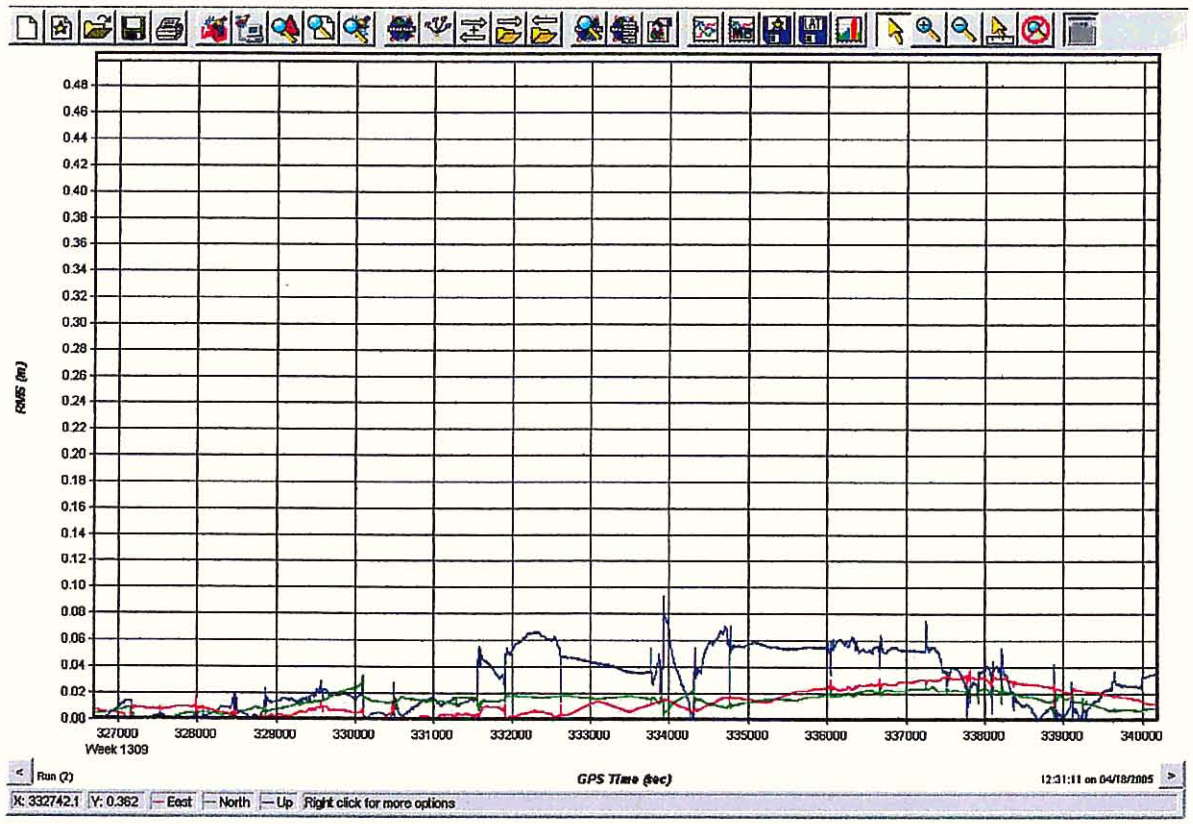
Rainbow Valley
Diagram – Altitude and Forward/Reverse GPS Solution Residuals, Lift 2



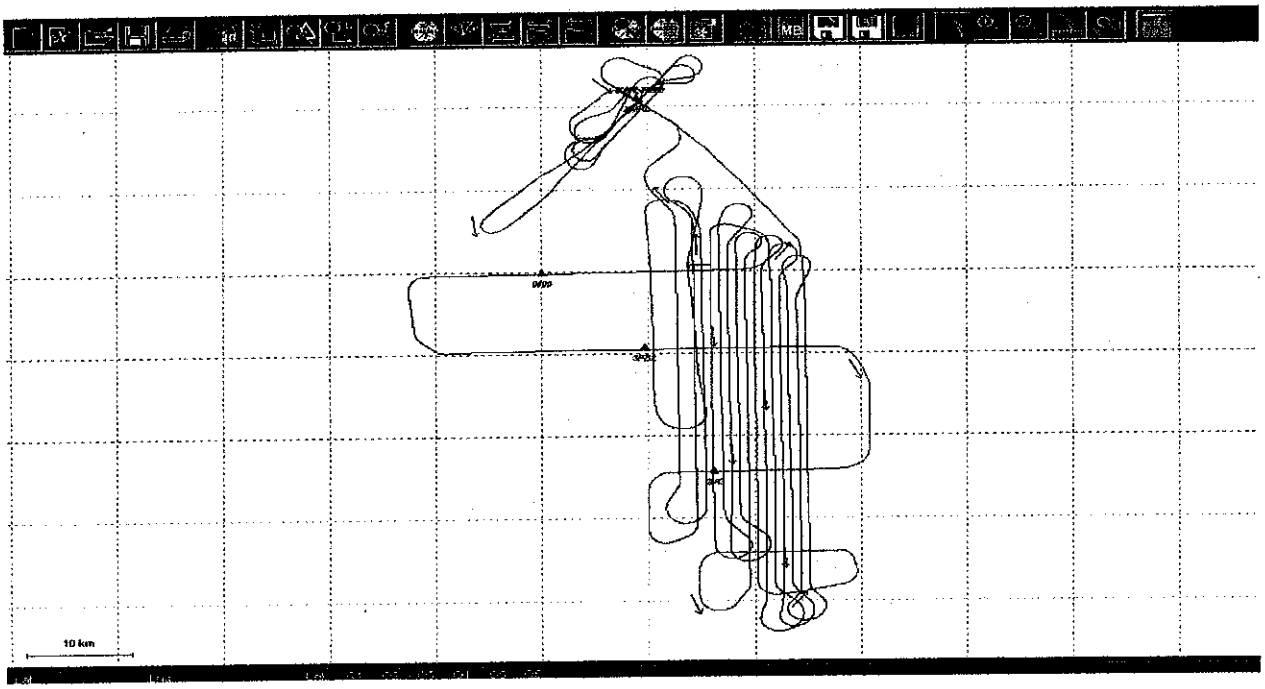


Rainbow Valley
Diagram – Altitude and Forward/Reverse GPS Solution Residuals, Lift 3

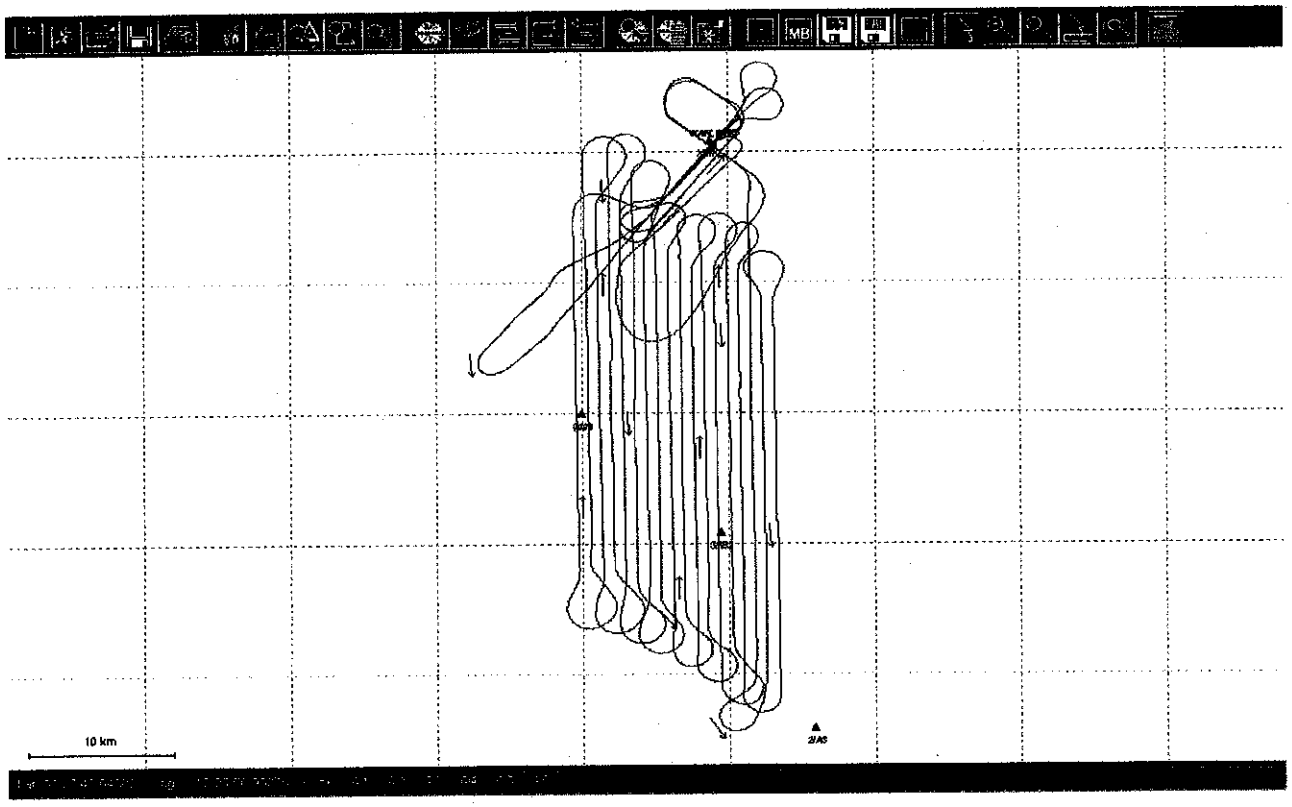




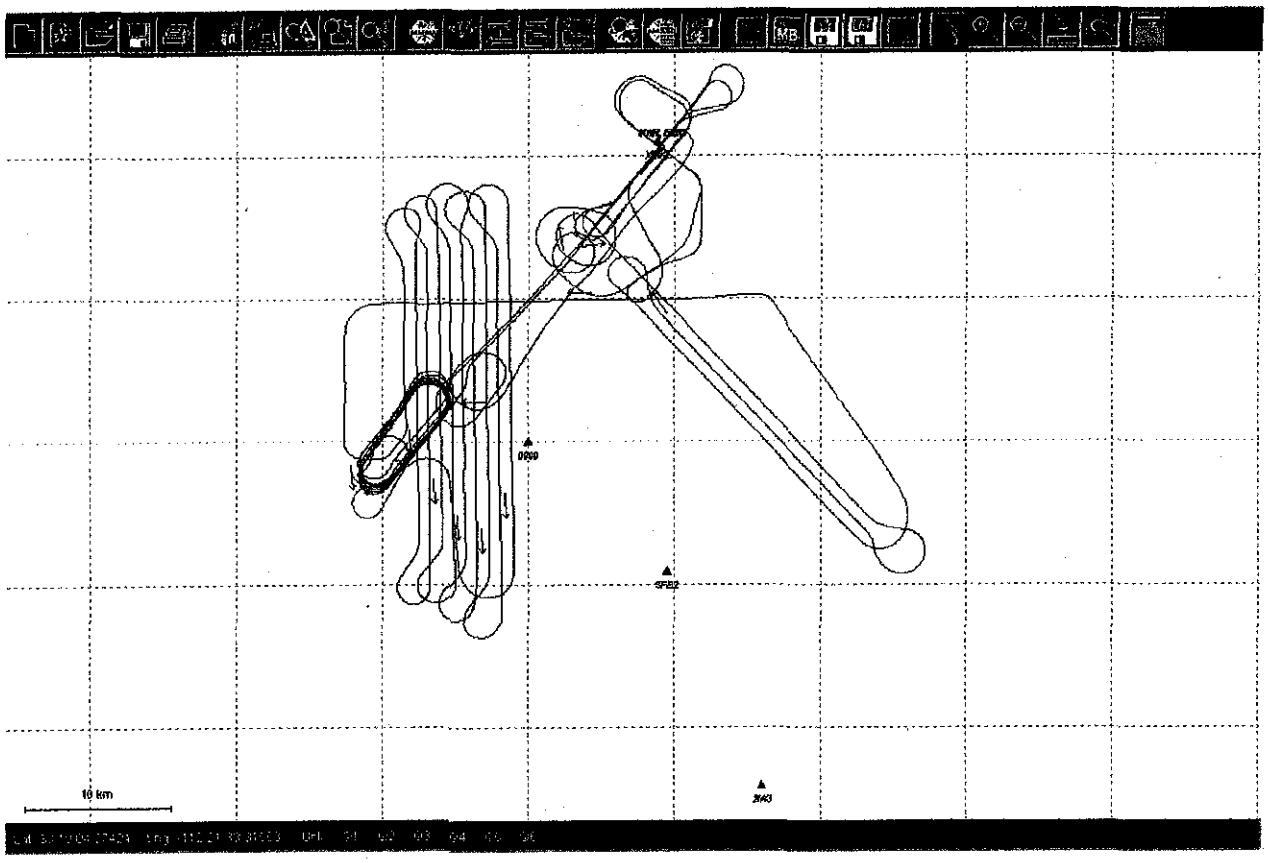
Rainbow Valley
Diagram – Aircraft Trajectory Plot, Lift 1



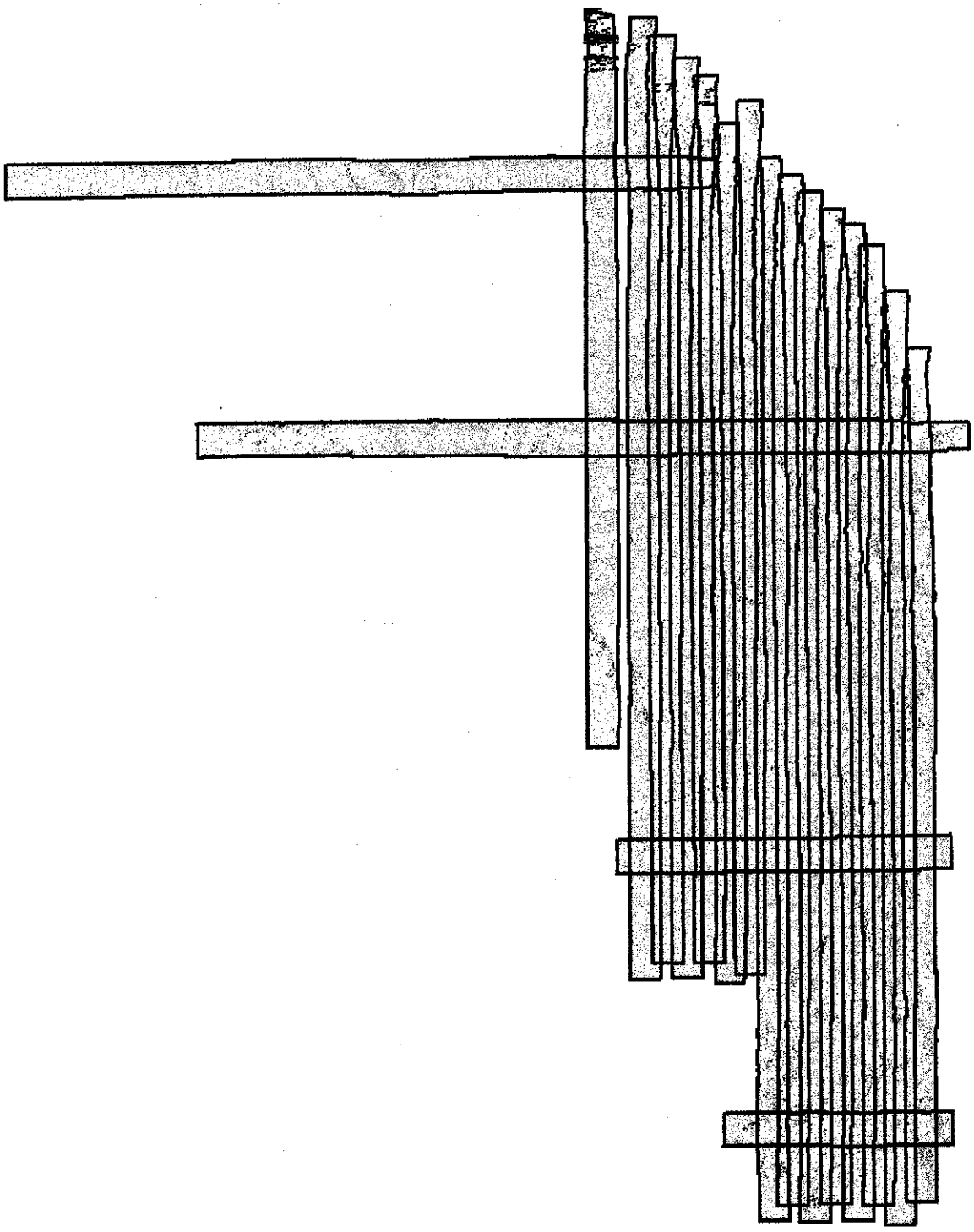
Rainbow Valley
Diagram – Aircraft Trajectory Plot, Lift 2



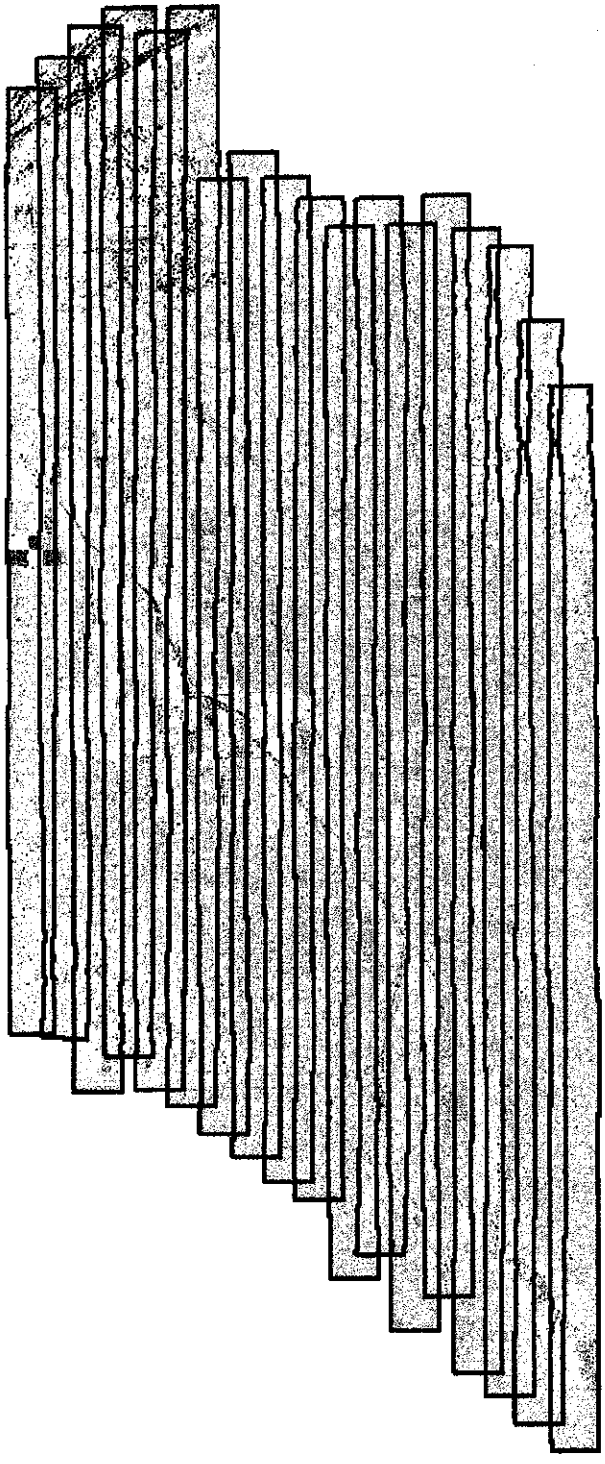
Rainbow Valley
Diagram – Aircraft Trajectory Plot, Lift 3



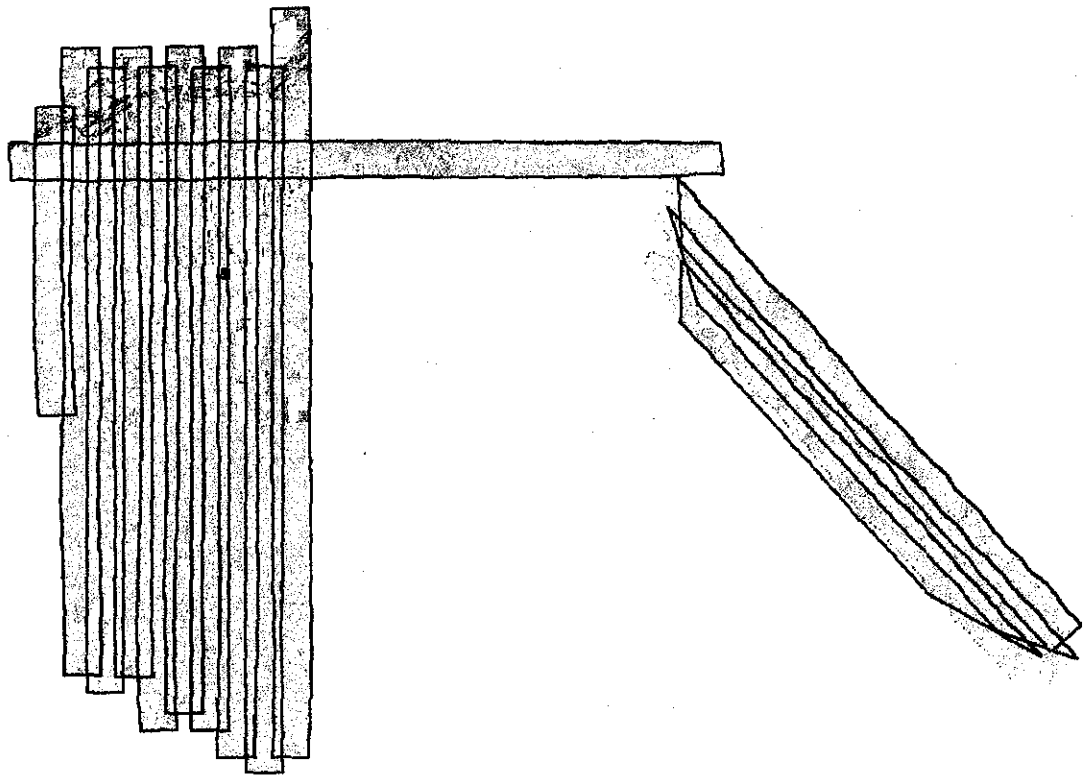
Rainbow Valley
Diagram - Project Flight Lines Overlap and LiDAR Coverage Check, Lift 1

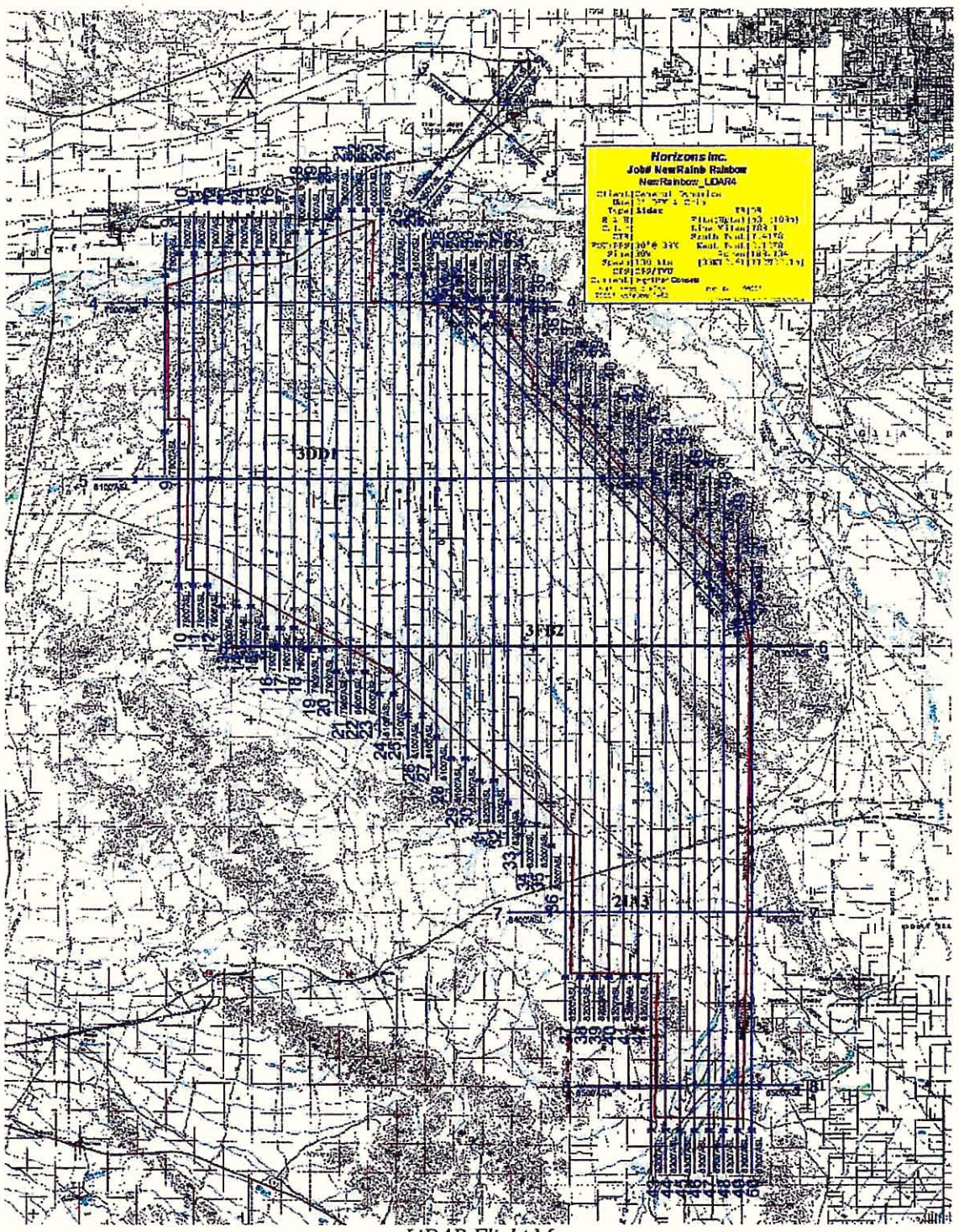


Rainbow Valley
Diagram - Project Flight Lines Overlap and LiDAR Coverage Check, Lift 2



Rainbow Valley
Diagram - Project Flight Lines Overlap and LiDAR Coverage Check, Lift 3

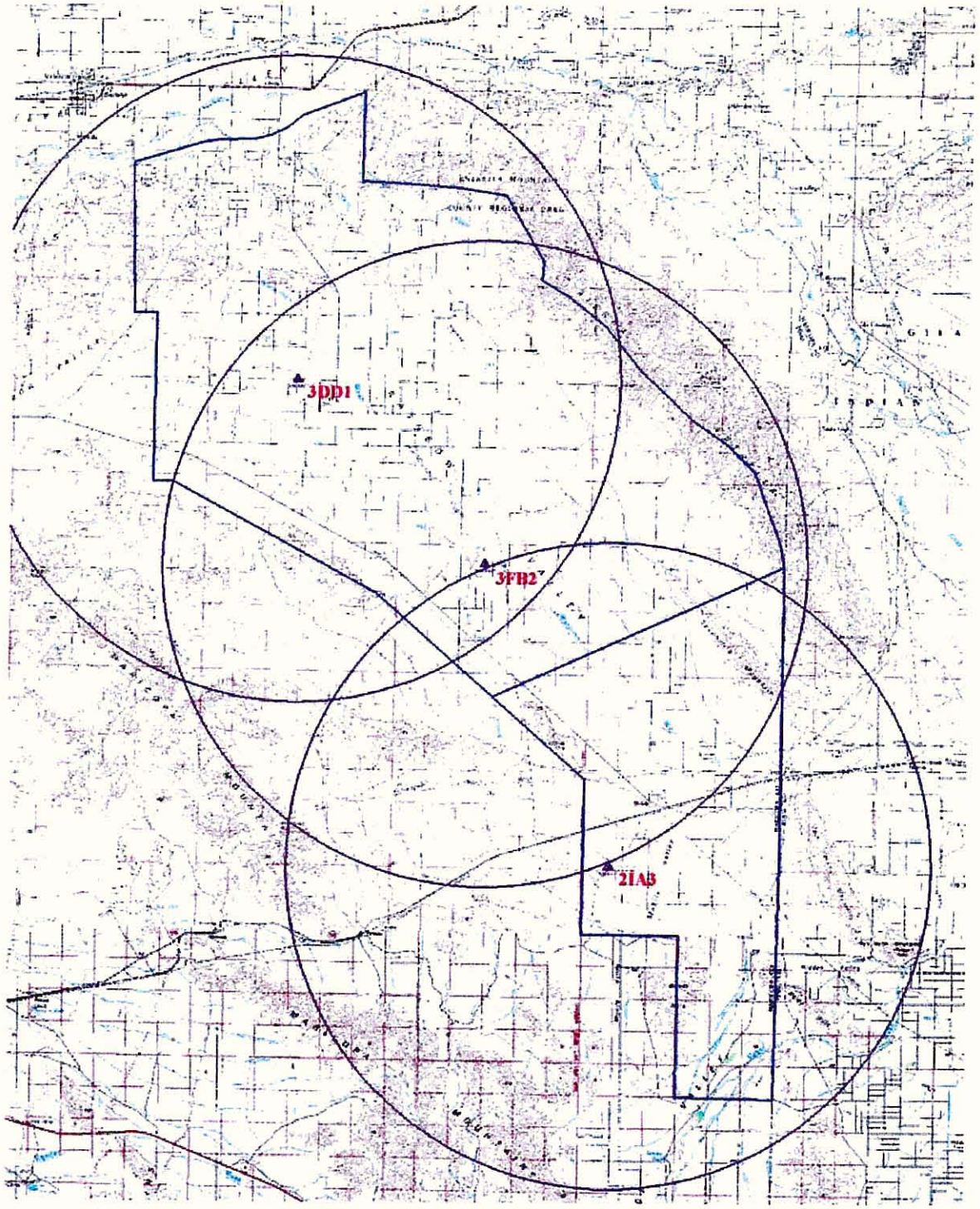




LiDAR Flight Map

*Note location of Base Station Units at GDACS 3DD1** (9999), 3FB2 & 2IA3*

Base Station Locations – To Meet 10-mile Radius Requirement



APPENDIX A

MANUFACTURER'S
LiDAR CALIBRATION REPORT

Control Report Printout

Objective:	To provide a copy of the height Control_Report.txt file for the ALS system listed on the cover of this document.

Definitions

The following descriptions are used in the table below:

Name	Units	Definition
Number	integer	Sequential identification number for control points
Easting	meters	x-coordinate (longitude) of control point in UTM projection
Northing	meters	y-coordinate of control point (latitude) in UTM projection
Known Z	meters	z-coordinate (elevation) of control point in UTM projection
Laser Z	meters	z-coordinate (elevation) of LIDAR TIN surface at the XY location of the control point
Dz	meters	Height difference between control point and LIDAR TIN at same XY location (i.e., Dz = Known Z – Laser Z)

e:\050117c\control_runway.txt

Number	Easting	Northing	Known Z	Laser Z	Dz
1	273753.595	4715369.966	79.748	slope	*
2	273760.563	4715370.706	80.005	slope	*
3	273762.838	4715368.839	76.794	76.790	-0.004
4	273751.821	4715367.885	76.591	76.920	+0.329
5	273783.234	4715311.790	76.404	removed	*
6	273780.811	4715299.198	76.384	76.090	-0.294
7	273783.214	4715300.703	80.385	removed	*
8	273835.666	4715291.509	80.348	removed	*
9	273837.108	4715289.079	76.360	76.400	+0.040
10	273839.712	4715301.791	76.405	76.420	+0.015
11	273837.354	4715300.302	80.405	removed	*
12	273784.734	4715309.486	80.379	removed	*
13	273590.855	4715551.326	77.658	77.860	+0.202
14	273580.118	4715553.145	77.859	77.970	+0.111
15	273569.420	4715554.973	77.645	77.960	+0.315
16	273564.136	4715524.964	77.096	77.350	+0.254
17	273574.816	4715522.643	77.267	77.180	-0.087
18	273585.501	4715520.488	77.058	76.970	-0.088
19	273596.159	4715515.755	76.822	77.220	+0.398
20	273557.785	4715522.699	76.934	77.200	+0.266
21	273552.144	4715493.153	76.450	76.690	+0.240
22	273558.325	4715491.702	76.572	76.780	+0.208
23	273568.966	4715489.139	76.755	76.620	-0.135
24	273579.650	4715486.881	76.500	76.300	-0.200
25	273590.687	4715484.678	76.348	76.460	+0.112
26	273570.181	4715496.223	76.853	76.720	-0.133
27	273585.266	4715454.401	76.024	76.110	+0.086
28	273574.376	4715456.628	76.216	75.960	-0.256
29	273563.641	4715458.741	76.419	76.300	-0.119
30	273552.985	4715461.017	76.250	76.410	+0.160
31	273546.220	4715462.350	76.139	76.310	+0.171

32	273540.190	4715431.048	75.875	76.040	+0.165
33	273558.182	4715427.064	76.145	76.020	-0.125
34	273568.836	4715425.015	75.948	75.720	-0.228
35	273580.042	4715422.881	75.727	75.890	+0.163
36	273574.917	4715393.037	75.493	75.590	+0.097
37	273563.629	4715395.230	75.689	75.580	-0.109
38	273553.065	4715397.175	75.895	75.840	-0.055
39	273542.229	4715399.498	75.711	75.960	+0.249
40	273535.102	4715400.691	75.636	75.830	+0.194
41	273545.111	4715407.749	75.857	75.990	+0.133
42	273563.824	4715404.458	75.860	75.650	-0.210
43	273556.006	4715359.473	75.469	75.310	-0.159
44	273537.318	4715362.804	75.504	75.630	+0.126
45	273528.989	4715370.560	75.398	75.570	+0.172
46	273536.870	4715368.686	75.515	75.730	+0.215
47	273547.715	4715366.472	75.679	75.600	-0.079
48	273558.199	4715364.584	75.481	75.360	-0.121
49	273569.365	4715362.303	75.275	75.310	+0.035
50	273563.474	4715331.554	75.042	75.080	+0.038
51	273552.827	4715333.612	75.255	75.090	-0.165
52	273542.286	4715335.457	75.425	75.280	-0.145
53	273531.409	4715337.584	75.248	75.460	+0.212
54	273523.328	4715339.027	75.121	75.280	+0.159
55	273517.731	4715308.797	74.934	75.050	+0.116
56	273526.092	4715307.148	75.011	75.180	+0.169
57	273536.952	4715304.984	75.196	75.070	-0.126
58	273547.535	4715303.181	75.001	74.820	-0.181
59	273557.813	4715301.182	74.801	74.900	+0.099
60	273552.204	4715270.966	74.585	74.640	+0.055
61	273542.242	4715272.669	74.771	74.590	-0.181
62	273531.672	4715274.451	74.918	74.820	-0.098
63	273520.774	4715276.441	74.772	74.930	+0.158
64	273511.840	4715277.974	74.624	74.870	+0.246
65	273506.421	4715246.991	74.429	74.610	+0.181
66	273515.283	4715245.141	74.531	74.690	+0.159
67	273526.184	4715243.083	74.692	74.550	-0.142
68	273536.665	4715241.009	74.558	74.370	-0.188
69	273546.528	4715239.320	74.376	74.470	+0.094
70	273540.516	4715208.065	74.306	74.380	+0.074
71	273531.237	4715209.638	74.390	74.230	-0.160
72	273520.751	4715211.747	74.527	74.410	-0.117
73	273509.816	4715213.817	74.391	74.490	+0.099
74	273500.530	4715215.372	74.274	74.350	+0.076
75	273495.527	4715184.746	74.168	74.310	+0.142
76	273504.481	4715183.130	74.277	74.390	+0.113
77	273515.205	4715181.041	74.395	74.300	-0.095
78	273525.883	4715179.137	74.295	73.990	-0.305
79	273535.375	4715177.012	74.108	74.250	+0.142
80	273512.060	4715162.930	74.304	74.210	-0.094
81	273529.826	4715147.450	74.033	74.160	+0.127
82	273520.634	4715149.089	74.111	73.980	-0.131
83	273510.024	4715151.065	74.234	74.140	-0.094
84	273499.197	4715152.787	74.141	74.250	+0.109
85	273490.170	4715154.403	74.012	74.020	+0.008
86	273485.311	4715124.052	73.886	73.900	+0.014
87	273493.922	4715122.607	73.968	74.010	+0.042

88	273504.652	4715120.757	74.041	73.920	-0.121
89	273515.338	4715118.616	73.957	73.710	-0.247
90	273524.095	4715116.978	73.909	73.980	+0.071
91	273519.087	4715086.318	73.788	73.900	+0.112
92	273509.991	4715088.066	73.825	73.620	-0.205
93	273499.313	4715090.286	73.892	73.750	-0.142
94	273488.621	4715092.316	73.824	73.860	+0.036
95	273480.074	4715093.885	73.759	73.810	+0.051
96	273475.034	4715064.303	73.651	73.640	-0.011
97	273494.003	4715060.024	73.647	73.530	-0.117
98	273504.696	4715057.974	73.641	73.470	-0.171
99	273516.326	4715055.757	73.580	73.680	+0.100
100	273510.368	4715025.739	73.521	73.350	-0.171
101	273499.380	4715027.409	73.585	73.430	-0.155
102	273488.626	4715029.582	73.575	73.390	-0.185
103	273477.973	4715031.294	73.564	73.530	-0.034
104	273469.497	4715032.810	73.530	73.540	+0.010
105	273464.676	4715003.224	73.529	73.440	-0.089
106	273483.320	4714999.278	73.533	73.410	-0.123
107	273480.523	4714982.133	73.531	73.450	-0.081
108	273504.303	4714989.873	73.462	73.620	+0.158
109	273492.971	4714990.911	73.507	73.390	-0.117
110	273473.767	4715007.262	73.534	73.460	-0.074
111	273467.756	4714973.649	73.422	73.360	-0.062
112	273487.096	4714957.239	73.376	73.310	-0.066
113	273498.756	4714957.575	73.421	73.350	-0.071
114	273476.586	4714960.062	73.398	73.370	-0.028
115	273465.736	4714961.539	73.325	73.300	-0.025
116	273457.823	4714962.732	73.233	73.330	+0.097
117	273452.261	4714932.381	73.212	73.190	-0.022
118	273460.465	4714930.991	73.239	73.200	-0.039
119	273471.241	4714929.183	73.292	73.190	-0.102
120	273481.880	4714927.265	73.281	73.200	-0.081
121	273493.336	4714925.344	73.207	73.190	-0.017
122	273487.874	4714895.396	73.098	73.180	+0.082
123	273476.674	4714897.400	73.213	72.980	-0.233
124	273465.898	4714899.264	73.299	73.170	-0.129
125	273455.299	4714901.314	73.223	73.210	-0.013
126	273447.221	4714902.785	73.151	73.160	+0.009
127	273441.223	4714871.882	73.016	73.200	+0.184
128	273449.907	4714870.463	73.163	73.250	+0.087
129	273460.513	4714868.247	73.264	73.120	-0.144
130	273471.271	4714866.255	73.134	72.960	-0.174
131	273482.746	4714863.757	72.957	73.080	+0.123
132	273477.130	4714833.158	72.888	73.010	+0.122
133	273465.805	4714834.893	73.055	72.850	-0.205
134	273455.020	4714836.474	73.218	73.090	-0.128
135	273444.356	4714838.484	73.063	73.170	+0.107
136	273435.209	4714839.794	72.987	73.090	+0.103
137	273453.320	4714826.957	73.181	73.030	-0.151
138	273429.857	4714810.704	72.894	72.890	-0.004
139	273439.222	4714808.954	72.967	73.050	+0.083
140	273449.759	4714806.218	73.124	72.970	-0.154
141	273449.246	4714803.088	73.109	72.930	-0.179
142	273460.408	4714803.903	72.981	72.790	-0.191
143	273471.230	4714801.416	72.859	72.960	+0.101

144	273465.537	4714770.627	72.722	72.880	+0.158
145	273454.876	4714772.407	72.917	72.680	-0.237
146	273444.141	4714774.079	73.038	72.890	-0.148
147	273433.380	4714775.718	72.890	72.990	+0.100
148	273423.880	4714777.414	72.778	72.830	+0.052
149	273418.409	4714746.792	72.666	72.720	+0.054
150	273428.037	4714744.985	72.790	72.900	+0.110
151	273438.827	4714743.053	72.945	72.820	-0.125
152	273449.450	4714741.172	72.801	72.580	-0.221
153	273460.121	4714739.142	72.663	72.650	-0.013
154	273444.967	4714723.390	72.790	72.620	-0.170
155	273437.137	4714678.373	72.695	outside	*
156	273418.414	4714681.666	72.631	outside	*
157	273426.206	4714726.755	72.751	72.850	+0.099
158	273413.142	4714716.444	72.619	outside	*
159	273422.776	4714714.673	72.683	72.880	+0.197
160	273433.272	4714712.111	72.862	72.760	-0.102
161	273444.035	4714710.272	72.722	72.480	-0.242
162	273454.808	4714708.056	72.539	72.650	+0.111
163	273449.025	4714676.563	72.505	outside	*
164	273438.441	4714678.124	72.677	outside	*
165	273427.584	4714680.120	72.792	outside	*
166	273417.060	4714681.870	72.613	outside	*
167	273407.070	4714683.531	72.515	outside	*
168	273401.434	4714653.502	72.386	outside	*
169	273411.767	4714651.731	72.569	outside	*
170	273422.477	4714649.915	72.754	outside	*
171	273433.185	4714647.930	72.592	outside	*
172	273443.195	4714646.076	72.435	outside	*
173	273437.612	4714615.223	72.404	outside	*
174	273427.823	4714617.229	72.541	outside	*
175	273417.044	4714619.078	72.708	outside	*
176	273406.494	4714621.320	72.525	outside	*
177	273395.963	4714623.167	72.364	outside	*
178	273390.446	4714592.745	72.294	outside	*
179	273401.150	4714590.823	72.460	outside	*
180	273411.814	4714588.975	72.674	outside	*
181	273413.077	4714595.909	72.684	outside	*
182	273422.727	4714587.896	72.471	outside	*
183	273431.868	4714585.781	72.345	outside	*
184	273426.147	4714555.513	72.334	outside	*
185	273417.364	4714557.212	72.456	outside	*
186	273406.578	4714559.799	72.637	outside	*
187	273395.807	4714560.214	72.477	outside	*
188	273384.570	4714561.796	72.280	outside	*
189	273379.054	4714530.745	72.252	outside	*
190	273390.346	4714528.922	72.440	outside	*
191	273401.060	4714527.133	72.601	outside	*
192	273411.822	4714525.487	72.386	outside	*
193	273420.852	4714523.693	72.307	outside	*
194	273402.367	4714521.966	72.566	outside	*
195	273398.028	4714522.756	72.590	outside	*
196	274036.308	4714541.218	71.704	outside	*
197	274033.345	4714531.427	71.901	outside	*
198	274023.988	4714519.904	72.068	outside	*
199	274014.997	4714508.538	71.830	outside	*

200	274008.978	4714502.780	71.698	outside	*
201	273985.382	4714522.815	71.860	outside	*
202	273990.818	4714528.968	71.959	outside	*
203	274000.666	4714539.846	72.102	outside	*
204	274010.327	4714551.027	71.948	outside	*
205	274015.122	4714557.003	71.820	outside	*
206	273992.599	4714575.778	71.926	outside	*
207	273987.652	4714570.267	72.034	outside	*
208	273977.753	4714559.297	72.146	outside	*
209	273984.416	4714553.729	72.132	outside	*
210	273968.809	4714547.625	72.004	outside	*
211	273963.681	4714541.889	71.924	outside	*
212	273941.912	4714562.677	71.964	outside	*
213	273945.725	4714567.186	72.050	outside	*
214	273955.205	4714578.243	72.215	outside	*
215	273964.774	4714589.628	72.093	outside	*
216	273968.909	4714594.505	71.996	outside	*
217	273969.901	4714583.829	72.083	outside	*
218	273952.467	4714563.054	72.080	outside	*
219	273917.623	4714592.687	72.152	outside	*
220	273935.104	4714613.424	72.195	outside	*
221	273945.995	4714615.952	72.003	outside	*
222	273940.859	4714610.020	72.180	outside	*
223	273931.185	4714598.692	72.251	outside	*
224	273921.563	4714587.773	72.125	outside	*
225	273916.329	4714581.704	72.019	outside	*
226	273892.649	4714602.226	72.054	outside	*
227	273897.647	4714608.149	72.167	outside	*
228	273907.124	4714619.185	72.325	outside	*
229	273917.198	4714630.127	72.180	outside	*
230	273922.505	4714635.796	72.059	outside	*
231	273899.230	4714655.732	72.098	72.410	+0.312
232	273894.245	4714649.617	72.214	72.330	+0.116
233	273884.428	4714638.669	72.367	72.260	-0.107
234	273874.581	4714627.696	72.220	72.250	+0.030
235	273869.605	4714621.899	72.098	72.180	+0.082
236	273846.381	4714641.447	72.146	72.270	+0.124
237	273851.455	4714647.324	72.259	72.290	+0.031
238	273861.091	4714658.347	72.437	72.310	-0.127
239	273870.782	4714669.584	72.292	72.310	+0.018
240	273876.011	4714675.578	72.151	72.410	+0.259
241	273852.087	4714695.951	72.223	72.460	+0.237
242	273847.131	4714689.698	72.330	72.390	+0.060
243	273837.706	4714678.438	72.475	72.290	-0.185
244	273847.332	4714670.222	72.475	72.350	-0.125
245	273827.938	4714667.377	72.344	72.360	+0.016
246	273822.912	4714661.516	72.234	72.290	+0.056
247	273800.006	4714681.354	72.307	72.390	+0.083
248	273804.939	4714686.970	72.429	72.460	+0.031
249	273814.706	4714698.017	72.528	72.380	-0.148
250	273824.427	4714709.052	72.408	72.500	+0.092
251	273829.447	4714714.974	72.328	72.580	+0.252
252	273805.615	4714735.322	72.384	72.540	+0.156
253	273800.552	4714729.290	72.460	72.450	-0.010
254	273790.810	4714718.260	72.599	72.470	-0.129
255	273781.048	4714707.252	72.479	72.510	+0.031

256	273776.106	4714701.390	72.359	72.400	+0.041
257	273752.881	4714721.505	72.442	72.490	+0.048
258	273757.691	4714727.210	72.520	72.560	+0.040
259	273767.041	4714738.502	72.691	72.500	-0.191
260	273776.644	4714749.612	72.548	72.590	+0.042
261	273782.048	4714755.356	72.430	72.630	+0.200
262	273758.454	4714775.597	72.486	72.610	+0.124
263	273753.162	4714769.564	72.593	72.640	+0.047
264	273743.449	4714758.603	72.737	72.590	-0.147
265	273733.717	4714747.558	72.566	72.610	+0.044
266	273728.604	4714741.604	72.472	72.530	+0.058
267	273705.287	4714761.883	72.565	72.700	+0.135
268	273710.165	4714767.536	72.666	72.660	-0.006
269	273719.976	4714778.550	72.805	72.710	-0.095
270	273729.076	4714790.030	72.703	72.660	-0.043
271	273734.393	4714796.092	72.514	72.740	+0.226
272	273737.542	4714781.202	72.669	72.540	-0.129
273	273733.609	4714776.545	72.696	72.380	-0.316
274	273724.170	4714765.359	72.703	72.650	-0.053
275	273720.208	4714760.710	72.628	72.680	+0.052
276	273685.402	4714790.370	72.746	72.770	+0.024
277	273689.365	4714794.979	72.859	72.800	-0.059
278	273698.757	4714806.174	72.845	72.570	-0.275
279	273702.721	4714810.874	72.758	72.670	-0.088
280	273712.318	4714814.752	72.602	72.750	+0.148
281	273707.367	4714808.529	72.749	72.740	-0.009
282	273697.330	4714797.703	72.892	72.770	-0.122
283	273687.364	4714786.908	72.693	72.760	+0.067
284	273682.377	4714781.345	72.572	72.780	+0.208
285	273659.144	4714801.378	72.666	72.830	+0.164
286	273663.951	4714806.825	72.772	72.830	+0.058
287	273673.730	4714817.791	72.975	72.710	-0.265
288	273683.559	4714828.756	72.798	72.790	-0.008
289	273688.993	4714834.628	72.656	72.850	+0.194
290	273665.187	4714854.840	72.807	72.940	+0.133
291	273659.892	4714848.810	72.894	72.900	+0.006
292	273650.218	4714837.773	73.062	72.890	-0.172
293	273640.137	4714827.055	72.876	72.880	+0.004
294	273635.055	4714821.738	72.776	72.790	+0.014
295	273611.613	4714841.806	72.900	72.870	-0.030
296	273616.381	4714847.285	72.995	72.980	-0.015
297	273626.216	4714858.229	73.159	73.010	-0.149
298	273635.744	4714869.398	72.999	73.020	+0.021
299	273640.910	4714875.346	72.924	73.030	+0.106
300	273616.731	4714895.795	73.013	73.160	+0.147
301	273611.793	4714889.812	73.079	73.100	+0.021
302	273601.959	4714878.890	73.223	73.010	-0.213
303	273592.080	4714867.925	73.044	73.020	-0.024
304	273587.007	4714862.295	72.959	72.950	-0.009
305	273563.864	4714882.073	73.038	73.070	+0.032
306	273568.754	4714887.814	73.111	73.030	-0.081
307	273578.210	4714899.066	73.251	73.130	-0.121
308	273587.943	4714910.154	73.164	73.230	+0.066
309	273587.948	4714910.151	73.166	73.230	+0.064
310	273592.221	4714914.965	73.124	73.280	+0.156
311	273568.702	4714934.690	73.259	73.530	+0.271

312	273564.580	4714930.014	73.265	73.280	+0.015
313	273562.791	4714931.518	73.276	73.210	-0.066
314	273552.684	4714920.850	73.329	73.100	-0.229
315	273542.908	4714909.768	73.242	73.170	-0.072
316	273538.111	4714904.139	73.181	73.140	-0.041
317	273515.589	4714924.660	73.249	73.250	+0.001
318	273519.573	4714929.591	73.318	73.280	-0.038
319	273529.406	4714940.502	73.394	73.220	-0.174
320	273539.579	4714951.286	73.359	73.360	+0.001
321	273544.977	4714957.746	73.338	73.580	+0.242
322	273521.139	4714976.504	73.351	73.750	+0.399
323	273516.180	4714971.208	73.409	73.430	+0.021
324	273505.909	4714960.602	73.466	73.360	-0.106
325	273495.676	4714949.854	73.349	73.320	-0.029
326	273490.901	4714943.746	73.282	73.270	-0.012
327	273467.305	4714963.894	73.377	73.310	-0.067
328	273472.047	4714969.990	73.430	73.310	-0.120
329	273481.593	4714981.179	73.532	73.360	-0.172
330	273491.387	4714992.363	73.522	73.370	-0.152
331	273496.051	4714998.472	73.505	73.450	-0.055
332	273470.772	4715019.642	73.552	73.470	-0.082
333	273465.584	4715014.181	73.540	73.550	+0.010
334	273457.097	4715002.104	73.568	73.460	-0.108
335	273444.453	4714993.521	73.487	73.440	-0.047
336	273438.675	4714987.998	73.421	73.380	-0.041
337	273413.869	4715008.844	73.389	73.440	+0.051
338	273419.226	4715015.011	73.507	73.550	+0.043
339	273428.909	4715026.022	73.648	73.540	-0.108
340	273438.846	4715036.864	73.599	73.550	-0.049
341	273443.502	4715042.161	73.558	73.930	+0.372
342	273419.554	4715063.299	73.626	73.790	+0.164
343	273414.252	4715057.769	73.686	73.720	+0.034
344	273403.711	4715047.417	73.719	73.600	-0.119
345	273393.778	4715036.589	73.547	73.570	+0.023
346	273388.446	4715030.689	73.486	73.490	+0.004
347	273364.753	4715051.027	73.531	73.570	+0.039
348	273369.928	4715056.863	73.637	73.640	+0.003
349	273379.704	4715067.803	73.775	73.660	-0.115
350	273389.528	4715078.791	73.723	73.830	+0.107
351	273394.726	4715084.808	73.675	73.790	+0.115
352	273369.244	4715106.240	73.701	73.850	+0.149
353	273363.798	4715100.624	73.759	73.870	+0.111
354	273354.940	4715088.873	73.797	73.710	-0.087
355	273344.121	4715078.761	73.655	73.700	+0.045
356	273339.098	4715073.199	73.620	73.610	-0.010
357	273315.032	4715093.533	73.643	73.680	+0.037
358	273320.164	4715099.115	73.735	73.790	+0.055
359	273326.902	4715112.703	73.884	73.770	-0.114
360	273340.221	4715121.417	73.797	73.860	+0.063
361	273345.197	4715126.950	73.745	73.890	+0.145
362	273320.763	4715147.797	73.772	74.000	+0.228
363	273315.539	4715141.725	73.848	73.920	+0.072
364	273305.745	4715130.767	73.942	73.850	-0.092
365	273296.158	4715119.501	73.772	73.900	+0.128
366	273291.106	4715113.289	73.708	73.740	+0.032
367	273267.374	4715133.738	73.725	73.730	+0.005

368	273272.671	4715139.475	73.841	73.900	+0.059
369	273282.697	4715150.290	73.963	73.800	-0.163
370	273293.141	4715160.732	73.859	73.960	+0.101
371	273298.626	4715166.578	73.787	73.980	+0.193
372	273274.526	4715186.954	73.845	74.040	+0.195
373	273269.272	4715181.009	73.959	74.020	+0.061
374	273259.889	4715169.712	74.063	73.940	-0.123
375	273250.524	4715158.368	73.893	73.960	+0.067
376	273245.252	4715152.477	73.775	73.830	+0.055
377	273222.072	4715172.276	73.901	74.110	+0.209
378	273227.169	4715178.159	74.013	74.030	+0.017
379	273236.642	4715189.464	74.173	74.130	-0.043
380	273246.447	4715200.402	74.008	74.130	+0.122
381	273251.883	4715206.518	73.910	74.120	+0.210
382	273256.690	4715189.954	74.028	73.890	-0.138
383	273252.735	4715185.360	74.084	73.770	-0.314
384	273243.259	4715174.186	74.033	74.070	+0.037
385	273239.358	4715169.582	73.953	74.070	+0.117
386	273204.517	4715199.212	74.124	74.280	+0.156
387	273208.459	4715203.865	74.229	74.190	-0.039
388	273217.932	4715214.984	74.180	73.840	-0.340
389	273221.859	4715219.574	74.105	73.990	-0.115
390	273228.058	4715226.697	73.971	74.220	+0.249
391	273222.396	4715220.863	74.090	74.180	+0.090
392	273212.903	4715209.659	74.253	74.270	+0.017
393	273202.904	4715198.796	74.085	74.210	+0.125
394	273197.778	4715192.839	73.989	74.060	+0.071
395	273173.918	4715213.312	74.087	74.170	+0.083
396	273178.966	4715219.183	74.184	74.250	+0.066
397	273188.700	4715230.244	74.353	74.250	-0.103
398	273198.629	4715241.075	74.227	74.350	+0.123
399	273203.956	4715247.077	74.127	74.340	+0.213
400	273179.488	4715267.812	74.231	74.380	+0.149
401	273174.175	4715261.877	74.326	74.360	+0.034
402	273164.369	4715250.927	74.452	74.310	-0.142
403	273154.489	4715240.007	74.338	74.440	+0.102
404	273149.207	4715234.054	74.234	74.350	+0.116
405	273125.121	4715254.732	74.359	74.460	+0.101
406	273130.292	4715260.542	74.482	74.500	+0.018
407	273141.135	4715270.678	74.613	74.530	-0.083
408	273149.520	4715282.828	74.512	74.630	+0.118
409	273154.846	4715288.872	74.420	74.620	+0.200
410	273130.620	4715309.320	74.515	outside	*
411	273125.413	4715303.320	74.616	outside	*
412	273115.614	4715292.354	74.777	outside	*
413	273105.686	4715281.464	74.632	outside	*
414	273100.451	4715275.705	74.522	outside	*
415	273076.724	4715295.682	74.600	outside	*
416	273081.916	4715301.672	74.752	outside	*
417	273091.800	4715312.687	74.890	outside	*
418	273101.729	4715323.459	74.750	outside	*
419	273107.322	4715329.346	74.634	outside	*
420	273083.078	4715349.866	74.833	outside	*
421	273077.800	4715343.779	74.933	outside	*
422	273067.998	4715332.813	75.022	outside	*
423	273057.940	4715322.113	74.892	outside	*

424	273052.612	4715316.194	74.749	outside	*
425	273028.439	4715337.128	74.909	outside	*
426	273033.594	4715342.750	75.059	outside	*
427	273043.419	4715353.632	75.178	outside	*
428	273053.275	4715364.650	75.031	outside	*
429	273058.631	4715370.765	74.907	outside	*
430	273030.525	4715394.113	75.115	outside	*
431	273025.320	4715388.440	75.262	outside	*
432	273024.499	4715387.579	75.275	outside	*
433	273007.016	4715366.925	75.253	outside	*
434	273001.057	4715360.298	75.071	outside	*
435	272974.900	4715382.267	75.247	outside	*
436	272980.225	4715388.132	75.414	outside	*
437	272990.211	4715399.127	75.538	outside	*
438	272999.938	4715410.035	75.406	outside	*
439	273005.232	4715415.848	75.267	outside	*
440	272991.130	4715427.994	75.375	outside	*
441	272985.998	4715421.814	75.496	outside	*
442	272976.572	4715410.558	75.594	outside	*
443	272967.127	4715399.191	75.492	outside	*
444	272962.200	4715393.006	75.322	outside	*
445	272972.145	4715396.527	75.486	outside	*
446	272989.674	4715417.187	75.467	outside	*
447	273596.538	4715515.741	76.798	77.190	+0.392

Average dz	+0.011
Minimum dz	-0.340
Maximum dz	+0.399
Average magnitude	0.116
Root mean square	0.141
Std deviation	0.141

Definitions:
"Slope" means that the 3 points which comprise the TIN from the LIDARdata has a slope greater than used in the Dialogue. Typically this occurs when you have some vegetation or a car over the control point, creating a badly sloped surface - like the next one. Default maximum slope is 45 degrees.

"Removed" means that the point has been manually unchecked and not used in the TScan Control Point Report. Oftentimes this is done for control points which clearly lie upon LIDAR points which are not on the ground - typically, transient events: Vegetation, cars, construction ... You can view in cross section those points which have a large Std Dev and eliminate them (those points greater than a defined Std Dev value, in the dialogue, can be highlighted in red.) So those removed points were just "fly" points.

"Outside" means that the control point lies outside the LIDAR data used to compare it to. (Remember that sometimes, as a part of our calibration procedure, we don't use the whole FOV's data to compare to the control.)

Accuracy Verification Summary

Objective:	To provide documentation of the accuracy of the ALS system listed on the cover of this document

ALS Calibration Summary	
Model	ALS50
Serial Number	036
Date of Test	07 Jan 2005
Performed by	Galla / Hentschel
Signature	
Specification	Actual value measured
Z Accuracy	<14.1 cm (one sigma) @ 1400 m AGL
Z Jitter	5 cm (one sigma)

ALS Calibration Summary		
Parameter	Units	Value
Encoder Scale Factor	encoder counts per revolution	8384839
Encoder Offset	encoder counts	2082
Roll	milliradians	***
Pitch	milliradians	***
Heading	milliradians	***
Torsion Constant	newton–meters / radian	***
Range Offset	meters	***
Elevation Offset	meters	0.0

APPENDIX B

LiDAR FLIGHT LOGS

Project:	Rainbow for General Dynamics	LIDAR Ser #	Attenuator:	Mode:	FMS	Above Mean Terrain	AIRCRAFT	Operator:	Weather	Gnd Temp	Alt Temp	Alt/n
		036	full	4+3	CCNS	7000 ft		Joe Doran	Start:	+15c	-1c	3006
Project # / Lift:	12272 / Lift #1	Laser Pulse Rate:	AGC # 1	Hard Dr	Gnd. Speed Min:	IMU Start:	Cessna	Pilot:	End:	+16c	+1c	3001
		48000	12	2	150	18:43	310	Cliff Wiggel	PID #		Ground Station	
Date / Julian:	8-Feb-05 039	Range Gate:	AGC # 2	Session:	UTM Zone:	IMU Stop:	N2636P	Airport ID	GY11 - AZTEC ENG		Start	Stop
		3544 - 6031	3	A	12	23:13		KGYR	Ant. Ht.	2.000	18:20	03:30

Horizons line #	Direction Deg.	From WPT	To WPT	GPS Time Beginning	GPS Time End	F. O. V.	Scan Rate	Speed Kts	Comments and Conditions	# Sats	PDOP	HDilution Rem
Test				184646	1847	20	1	0		9	1.4	0.9
ap1n	038	1	6	190646	1907	31	32	152		9	1.5	0.9
ap1s	218	6	1	190959	1911			147				
ap2n	038	1	6	191410	1916			150				
ap3e	128	1	4	191816	1919			149				
r50s	179	25	1	192545	1932			148		10	1.0	0.8
r49n	359	1	27	193517	1942			144				
r48s	179	28	1	194508	1952			155		9	1.1	0.9
r47n	359	1	29	195536	2003			147				
r46s	179	29	1	200548	2013			151	Cloud ? On North end	8	1.2	1.0
r45n	359	1	30	201700	2024			147				
r44s	179	30	1	202725	2035			150		7	2.0	1.6
r5w	269	6	1	203906	2046			149	Crossing line	8	1.1	1.2
r43n	359	1	31	204416	2052			146		7	2.0	1.4
r42s	179	25	1	205408	2100			152	Temp @ alt -1c			
r41n	359	1	26	210430	2111			150		7	2.2	1.3
r40s	179	26	1	211402	2120			155				
r39n	359	1	27	212410	2131			148		8	1.8	1.0
r5w	269	23	1	213419	2140			149	Crossing line	8	2.0	1.0
r6e	089	1	24	214423	2150			145	Crossing line	8	2.2	1.0
r7w	269	11	1	215457	2158			152	Crossing line	9	2.0	1.0
r37n	359	1	28	220130	2209			147	Cloud ? On North end	9	2.1	1.0
r36s	179			Aborted	Aborted			147	[NAV OFF] on CCNS			
r35n	179	27	1	222533	2232			150	Cloud ? On North end	9	2.0	1.1
r8e	359	1	28	223553	2241			149	Clouds ? On North end			
ap4w	308	4	1	224456	2246			147		8	1.7	0.9
ap1n	038	1	6	224835	2250			148		8	1.7	0.9
ap1s	218	6	1	225220	2253			151		9	1.4	0.8
ap2n	038	1	6	225605	2257			149		9	1.4	0.8

TTL	Project:	Operator:
#REF!	Project #: / Lift:	Av. PDOP = 1.7
#REF!	Date / Julian:	Av. Speed Kts = 17
#REF!		Total Memory Used GB = 0.00

Turn Times	Line Label	Line Minutes	mem / lin	Camera-Record Time (total) = ######	Difference
0:00	184646	0:00	#REF!		
################	190545	0:00	#REF!		32
################	190959	0:00	#REF!		0
################	191410	0:00	0		0
################	191816	0:00	0		0
################	192545	0:00	0		0
################	193517	0:00	0		0
################	194508	0:00	0		0
################	195536	0:00	0		0
################	200548	0:00	0		0
################	201700	0:00	0		0
################	202725	0:00	0		0
################	203906	0:00	0		0
################	204416	0:00	0		0
################	205408	0:00	0		0
################	210430	0:00	0		0
################	211402	0:00	0		0
################	212410	0:00	0		0
################	213419	0:00	0		0
################	214423	0:00	0		0
################	215457	0:00	0		0
################	220130	0:00	0		0
################ Aborted	#VALUE!	0			0
#VALUE!	222533	0:00	0		0
################	223553	0:00	0		0
################	224456	0:00	0		0
	224835	0:00			
	225220	0:00			
	225605	0:00			
0:00	0	0:00	0		0
0:00	0	0:00	0		0

124.8 MOUNTAIN HOME DEP
118.05 CENTER OFF MOUNTAIN HOME

3.6 flight
1.8 transition

Project:	Rainbow for General Dynamics	LIDAR Ser #	Attenuator:	Mode:	FMS	Above Mean Terrain	AIRCRAFT	Operator:	Weather	Gnd Temp	Alt Temp	Alt/n
		036	full	4+3	CCNS	7600 ft		Joe Doran	Start:	+18c	+0c	30.02
Project # / Lift:	12272 / Lift #2	Laser Pulse Rate:	AGC # 1	Hard Dr	Gnd. Speed Min:	IMU Start:	Cessna	Pilot:	End:	+18c	+2c	30.00
		48000	12	2	150	23:51	310	Cliff Wiggel	PID #		Ground Station	
Date / Julian:	8-Feb-05 039	Range Gate:	AGC # 2	Session:	UTM Zone:	IMU Stop:	N2636P	Airport ID	GY11 - AZTEC ENG		Start	Stop
		3553 - 6031	3	B	12	3:28		KGYR	Ant. Ht.	2.000	18:20	03:30

Horizons line #	Direction Deg.	From WPT	To WPT	GPS Time Beginning	GPS Time End	F. O. V.	Scan Rate	Speed Kts	Comments and Conditions	# Sats	PDOP	HDilution Rem
Test				235357		20	1	0	Forgot Recorder was on turned off after take off	8	1.4	1.1
ap1n	038	1	6	001252	0014	31	32	148		7	2.0	1.2
ap1s	218	6	1	001658	0018			150		7	2.0	1.2
ap2n	038	1	6	002051	0022			150		7	1.9	1.2
ap3e	128	1	4	002444	0025			142		8	1.6	1.1
r34s	179	24	1	002744	0034			152		8	1.6	1.1
r35n	358	1	23	003842	0042			147	Due to clouds on lift #1 reflew	8	1.5	1.0
r36s	178	22	1	004535	0051			152		10	1.1	0.8
r33n	358	1	24	005307	0059			145		10	1.1	0.8
r32s	178	23	1	010130	0107			154		11	1.1	0.7
r31n	358	1	23	011011	0115			150		11	1.1	0.7
r30s	178	22	1	011841	0124			145		10	1.3	0.8
r29n	358	1	22	012657	0132			151		9	1.5	0.9
r28s	178	21	1	013508	0140			147		10	1.1	0.8
r27n	358	1	21	014328	0148			154		10	1.1	0.8
r26s	178	21	1	015109	0156			147		9	1.3	1.0
r25n	358	1	20	015932	0204			152		8	1.6	1.1
r24s	178	23	1	020739	0213			148		8	1.7	1.1
r23n	358	1	22	021650	0222			149	Temp @ ALT +6c	9	1.4	0.9
r22s	178	22	1	022546	0231			148	Request to decend to 8000' Range Gate getting high Denied	9	1.5	0.9
r21n	358	1	22	023430	0240			154		9	1.5	0.9
r20s	178	20	1	024330	0248			147	Decent to 8000' granted.	9	1.5	1.0
r19n	358	1	20	025209	0257			146		9	1.5	1.0
ap1n	038	1	6	025931	0300			144		9	1.5	1.0
ap1s	218	6	1	030304	0304			154		9	1.5	1.0
ap2n	038	1	6	030647	0308			145		10	1.3	0.9
ap3e	128	1	4	031041	0311			143		10	1.3	0.9

TTL	Project:	Operator:
#REF!	Project #: / Lift:	Av. PDOP = 1.4
#REF!	Date / Julian:	Av. Speed Kts = 17
#REF!		Total Memory Used GB = 0.00

Turn Times	Line Label	Line Minutes	mem / lin	Camera-Record Time (total) = 0:00	Difference
0:00	235357	0:00	#REF!		
0:00	1252	0:00	#REF!		32
######	1658	0:00	#REF!		0
######	2051	0:00	0		0
######	2444	0:00	0		0
######	2744	0:00	0		0
######	3842	0:00	0		0
######	4535	0:00	0		0
######	5307	0:00	0		0
######	10130	0:00	0		0
######	11011	0:00	0		0
######	11841	0:00	0		0
######	12657	0:00	0		0
######	13508	0:00	0		0
######	14328	0:00	0		0
######	15109	0:00	0		0
######	15932	0:00	0		0
######	20739	0:00	0		0
######	21650	0:00	0		0
######	22546	0:00	0		0
######	23430	0:00	0		0
######	24330	0:00	0		0
######	25209	0:00	0		0
######	25931	0:00	0		0
######	30304	0:00	0		0
######	30647	0:00	0		0
	31041	0:00			
	0	0:00			
	0	0:00			
0:00	0	0:00	0		0
0:00	0	0:00	0		0

124.8 MOUNTAIN HOME DEP
118.05 CENTER OFF MOUNTAIN HOME

3.6 flight
1.8 transition

Project	Rainbow for General Dynamics	LIDAR Ser # 036	Attenuator: full	Mode: 4+3	FMS CCNS	Above Mean Terrain: 7000	AIRCRAFT	Operator: Joe Doran	Weather	Gnd Temp	Alt Temp	Altm
Project # / Lift:	12272 / Lift #3	Laser Pulse Rate: 46000	AGC # 1 12	Hard Dr 1	Gen Speed/dac 150	IMU Start: 18:45	Cessna 310	Pilot Cliff Wippel	Start:	+19c	+9c	30.10
									End:	+19c	+6c	30.02
Date / Julian:	6-Feb-05 040	Range Gate: 3553-6031	AGC # 2 3	Session: A	UTM Zone: 12	IMU Stop: 22:30	N2636P	Airport ID KGYR	PID # GV11 - AZTEC ENG		Ground Station Start 18:29	Stop 22:40
									Ant. Ht.	2.000		

Horizons line #	Direction Deg	From WPT	To WPT	GPS Time Beginning	GPS Time End	F.O.V.	Scan Rate	Speed Kts	Comments and Conditions	# Sats	PDOP	HDOP
Test				184808	1849	20	1	0		9	1.4	0.9
ap1n	038	1	6	191159	1913	31	32	161		9	1.4	0.9
ap1s	218	6	1	191609	1917			152		9	1.4	1.0
ap2n	038	1	6	191936	1920			152		10	1.0	0.8
ap3e	128	1	4	192325	1924			141		10	1.0	0.8
r51e	137	1	17	193536	1940			148	Lite Chop / 1st return % reached 100% @ WPT 6 and fell off @ WPT 15	9	1.1	0.9
r52w	317	17	1	194235	1946			154	Lite Chop / 1st return % >92%, WPT 5 & 6 100% rest low.	8	1.3	1.0
r53e	137	1	17	194922	1953			144	Lite Chop / 1st return % reached 100% @ WPT 6 and fell off shortly after	8	1.3	1.0
r4w	269	18	1	195928	2004			150	Crossing line	8	1.2	1.0
r9n	359	1	6	200826	2010			146		8	1.2	1.0
r10s	179	18	1	201242	2016			140		6	1.1	1.0
r11n	359	1	16	201930	2023			148		7	2.0	1.6
r12s	179	16	1	202606	2030			142	Temp +6c 30.06 ALTM	7	2.0	1.6
r13n	359	1	17	203237	2037			147		8	1.1	1.2
r14s	179	17	1	203939	2044			146		7	2.0	1.4
r15n	359	1	17	204644	2051			149	30.03 ALTM	7	2.0	1.4
r16s	179	18	1	205341	2058			146		7	2.1	1.3
r17n	359	1	18	210054	2105			155		7	2.2	1.3
r18s	179	18	1	210759	2113			145	PHX ALTM 30.02	7	2.2	1.3
ap1n	038	1	6	220604	2207			150		10	2.1	1.0
ap1s	218	6	1	220939	2210			150		10	2.1	1.0
ap2n	038	1	6	221251	2214			148		10	2.1	1.0
ap3e	128	1	4	221628	2217			142		10	2.1	1.0

TTL	Project	Operator:
#REF!	Project # / Lift:	Av. PDOP = 1.6
#REF!	Date / Julian:	Av. Speed Kts = 17
#REF!		Total Memory Used GB = 0.00
#REF!		

Turn Times	Line Label	mean / lin Line Minutes	Camera-Record Time (total) = 0:00	Differenc e
0:00	184808	0:00 #REF!		
######	191159	0:00 #REF!		32
######	191609	0:00 #REF!		0
######	191936	0:00 0		0
######	192325	0:00 0		0
######	193536	0:00 0		0
######	194235	0:00 0		0
######	194922	0:00 0		0
######	195928	0:00 0		0
######	200826	0:00 0		0
######	201242	0:00 0		0
######	201930	0:00 0		0
######	202606	0:00 0		0
######	203237	0:00 0		0
######	203939	0:00 0		0
######	204644	0:00 0		0
######	205341	0:00 0		0
######	210054	0:00 0		0
######	210759	0:00 0		0
######	220604	0:00 0		0
######	220939	0:00 0		0
######	221251	0:00 0		0
######	221628	0:00 0		0
0:00	0	0:00	0	0
0:00	0	0:00	0	0
0:00	0	0:00	0	0
	0	0:00		
	0	0:00		
	0	0:00		
0:00	0	0:00	0	0
0:00	0	0:00	0	0

124.8 MOUNTAIN HOME DEP
119.05 CENTER OFF MOUNTAIN HOME

3.9 flight
1.5 transistion

APPENDIX C

BASE STATION COORDINATE TABLE
BASE STATION OBSERVATION SHEETS

GPS STATION OBSERVATION SHEET

PROJECT: Rainbow Valley
STATION NAME: 2IA3
STATION ID: 2IA3

DATE FOUND/SET:

STATION DESCRIPTION: Stainless steel rod in headwall

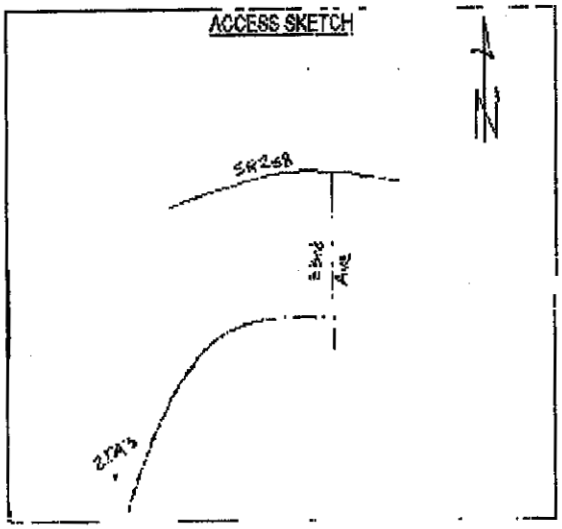
STATION STAMPING:

STATION ACCESS: Hwy 238 to 87rd Avenue; thence South 0.8 miles to EPMG Pipeline Road; thence continue on dirt road for 1.2 miles to bend in road to southwest; thence 0.8 miles southwest to bend in road; thence 0.5 miles southwest to station

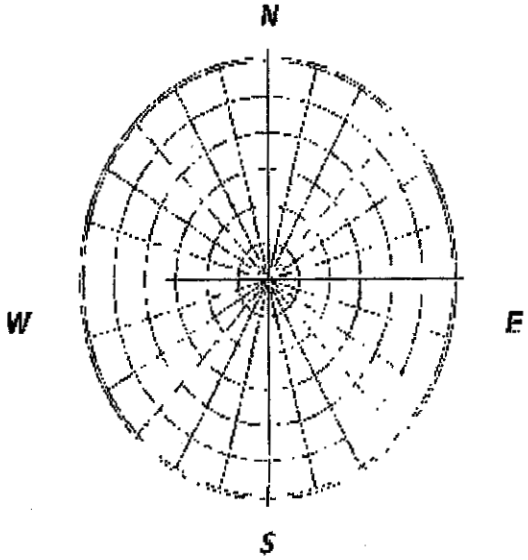
OPERATOR: Jeff Maldonado
RECEIVER TYPE: Ashtech Z-Extreme ANTENNA TYPE: AERAT2775_42
SESSION #: A **FILE NAME:** 2IA30371
LOCAL DATE: 02-08-2005 START: 11:30am END: 4:15pm

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): 1.759 m.
START (1st)____ (2nd)____ (3rd)____ (AVG)____
STOP (1st)____ (2nd)____ (3rd)____ (AVG)____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: ____ LONG: ____ HEIGHT: ____

GPS STATION OBSERVATION SHEET

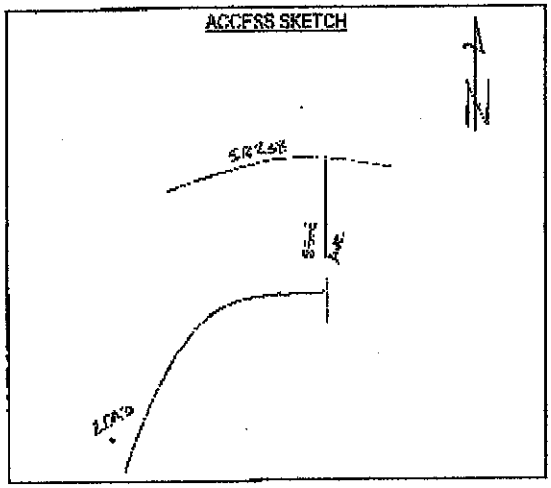
SHEET 1 of 3

PROJECT: Rainbow Valley
STATION NAME: 2IA3
STATION ID: 2IA3
DATE FOUND/SET:
STATION DESCRIPTION: Stainless steel rod in handhole

STATION STAMPING:

STATION ACCESS: Hwy 138 to 83rd Avenue; thence South 0.8 miles to EPNG Pipeline Road; thence continue on dirt road for 1.2 miles to bend in road to southwest; thence 0.8 miles southwest to bend in road; thence 0.5 miles southwest to station

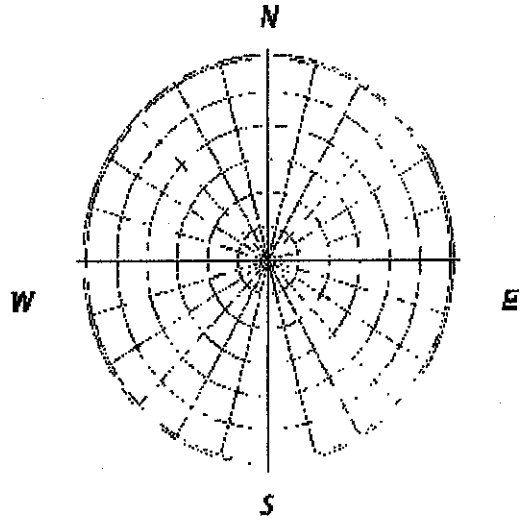
ACCESS SKETCH



OPERATOR: Jeff Maldonado
RECEIVER TYPE: Ashtech Z-Extreme ANTENNA TYPE: ASH701775_42
SESSION #: B **FILE NAME:** 2IA30392
LOCAL DATE: 07-08-2005 START: 4:27pm END: 8:30pm

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): 1.759 m
START (1st)____ (2nd)____ (3rd)____ (AVG)____
STOP (1st)____ (2nd)____ (3rd)____ (AVG)____

OBSTRUCTION CHART



LAT:____ LONG:____ HEIGHT:____

GPS STATION OBSERVATION SHEET

SHEET 1 of 3

PROJECT: Rainbow Valley

STATION NAME: 2IA3

STATION ID: 2IA3

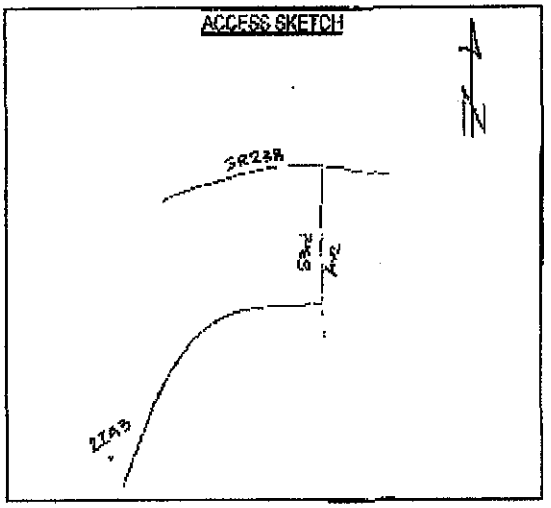
DATE FOUND/SET: ___

STATION DESCRIPTION: Stainless steel rod in handhole

STATION STAMPING: ___

STATION ACCESS: Hwy 238 to 83rd Avenue; thence south 0.8 miles to EPMG Pipeline Road; thence continue on dirt road for 1.2 miles to bend in road to southwest; thence 0.8 miles southwest to bend in road; thence 0.5 miles southwest to station

ACCESS SKETCH



OPERATOR: Karl Vliegen

RECEIVER TYPE: Ashtech Z-Extreme ANTENNA TYPE: Aeroantenna 2T25_42

SESSION #: C **FILE NAME:** 2IA30403

LOCAL DATE: 02-08-2005 START: 11:31 am END: 4:01 pm

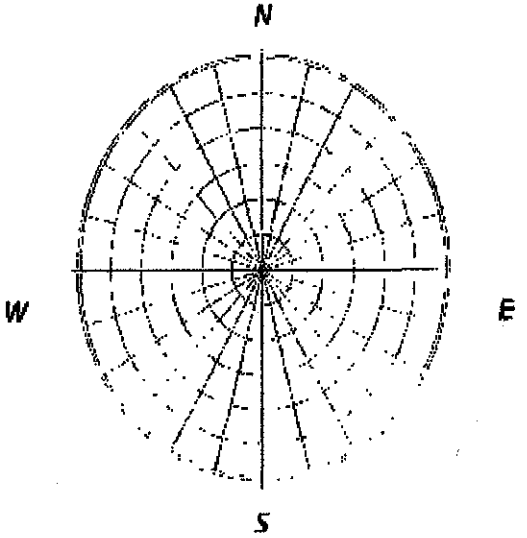
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): 1.829 m

START (1st)___ (2nd)___ (3rd)___ (AVG)___

STOP (1st)___ (2nd)___ (3rd)___ (AVG)___

OBSTRUCTION CHART



LAT: ___ LONG: ___ HEIGHT: ___

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 2003C067
Mapping Services for Rainbow Valley Area Drainage Master Plan

Aerial Photography Collection Report

GENERAL DYNAMICS –AIS
4400 E. Broadway Blvd., Suite 118
Tucson, Arizona 85711

Mapping for the Rainbow Valley Area Drainage Master Plan requires acquisition of stereo aerial photography to capture planimetric features and enhance LiDAR processed DEM data for the creation of a final digital terrain model (DTM) dataset and further processing for completion of the required 2-foot and 4-foot contour interval coverages. The flight plan for aerial image acquisition is designed to capture 1:7500 scale stereo imagery for all project 2-foot contour mapping areas and 1:15000 scale stereo imagery for the remaining 4-foot contour interval areas.

PROCEDURES

Contract Scope of Work specifications require a minimum of three (3) GPS Base Stations operating simultaneously during the flight mobilization for LiDAR data acquisition. These three Base Station locations were also used for image acquisition on March 30 and 31, 2005. An examination of the project site/limits and verification of existing GDACS control points provided an efficient solution to meet the three Base Station requirement with the 10-mile minimum distance criteria. The three base stations were located on GDACS points 3DD1** (9999), 3FB2 and 2IA3, keeping the simultaneous "set-ups" within 10 linear miles of each other. This configuration also ensured that at least one Base Station was within the maximum allowable distance of ten miles from the airborne aerial photography platform.

In addition to the three required Base Stations, a 4th receiver was set on a recoverable monument along the airport runway at Phoenix Goodyear Airport. All four Base Stations were operated simultaneously before, during and after the data acquisition mobilizations on March 30 and 31, 2005. Each of the four geodetic quality Base Stations operated in dual frequency mode, collecting C/A, P Code and carrier phase measurements with data collection and storage maintained at one second intervals throughout the mobilization period(s).

The Zeiss RMK Top 15 metric camera system was mobilized for this mission. The 6-inch focal length system is of photogrammetric quality, equipped with Forward Motion Compensation. The enclosed U.S. Geological Survey Calibration Report validates the excellent quality of this equipment.

Our flight plan for the project incorporates specific planning that meet National Map Accuracy Standardsthe for the 2-foot contour interval and 4-foot contour interval photogrammetric mapping. Planning required careful consideration of the terrain relief within the project boundaries, the result of which is reflected in the flight line plan demonstrated in the following graphics. Most of the 1:7500 photo scale imagery flight lines were flown on a diagonal line (from cardinal) to accommodate the general shape of the project boundary, and maintain a high level of efficiency on image use. This plan results in a minimum number of flight lines and stereo models while insuring proper photo scale for imagery collected along the western slope(s) of the Estrella Mountains.

GDACS control point 3DD1 was occupied by "others" during the mobilization for LiDAR data acquisition. A 'random" monument was set approximately ten (10) feet from the GDACS point and occupied for the duration of the LiDAR data acquisition (as well as for image acquisition that occurred at a later date.) Therefore, the random point was also occupied with the GPS Base Station equipment for airborne GPS support during the mobilization for image collection. The "random" monument (9999) was subsequently tied to the GDACS network with static GPS techniques when the original GDACS point 3DD1 could be occupied for use as a primary control point. Both GDACS point 3DD1* ***AND *the random point will be targeted and included in the control network for both LiDAR processing and aerotriangulation of the aerial imagery used for terrain data collection.*

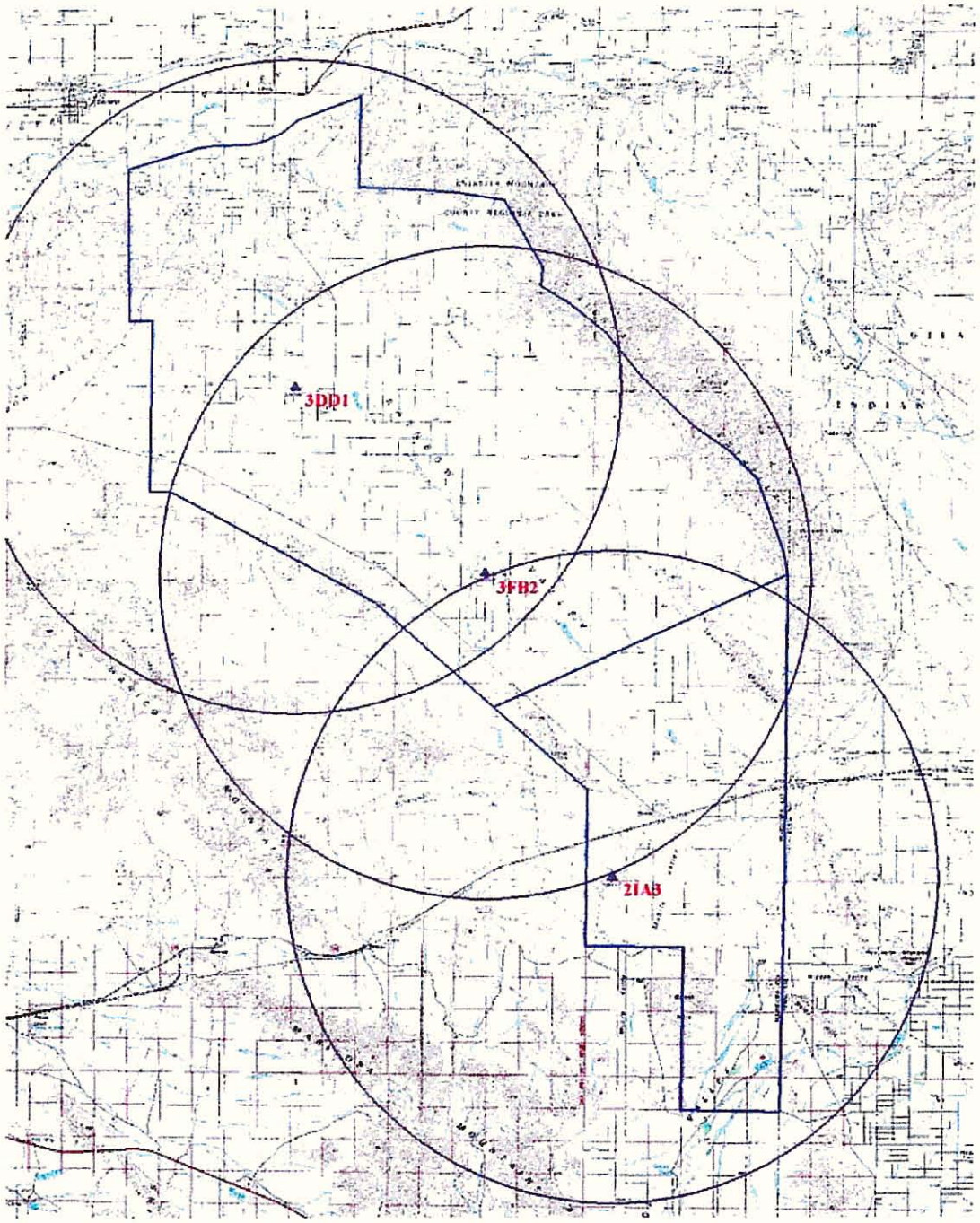
The fourth GPS Base Station at the Phoenix Goodyear airport was also subsequently tied to the GDACS network by static GPS and post-processing that included application of the "raw" data collected at that station during LiDAR and aerial image data acquisition.

HORIZONS INC.			
Client	General Dynamics		
Use	1"=200' – 2' C.I. LiDAR Edit		
Type	Film Camera	TR	DH
B&W	Yes	Flts (Wpts)	38 (918)
Color	N/A	SS & Obl	0 & 0
CIR	N/A	Mi (Models)	357.0 (880)
End	60%	Film Qty	967 Ft
Side	30%	Acres	148,852
Speed	130 kts	[33N14.63]	[112W22.12]
GPS	Yes		
CCNS	CCNS Film		
Label	Standard		
Comment	Flight Plan Complete		
AMT 3750'	Area & Flts – Rainbow 1-38		
Max MSL = 7600'			
		JFlight 9.153 ☼ 3/23/2005 3:20:46 PM	

1:7500 Aerial Image Acquisition Flight Plan

HORIZONS INC.			
Client	General Dynamics		
Use	1"=200' – 4' C.I. LiDAR Edit		
Type	Film Camera	TR	DH
B&W	Yes	Flts (Wpts)	9 (127)
Color	N/A	SS & Obl	0 & 0
CIR	N/A	Mi (Models)	95.7 (118)
End	60%	Film Qty	147 Ft
Side	30%	Acres	40,881
Speed	130 kts	[33N04.29]	[112W15.91]
GPS	Yes		
CCNS	CCNS Film		
Label	Standard		
Comment	Flight Plan Complete		
AMT 7500'	Area & Flts – Rainbow 39-47		
Max MSL = 10200'			
		JFlight 9.153 ☼ 3/23/2005 3:21:10 PM	

1:15000 Aerial Image Acquisition Flight Plan

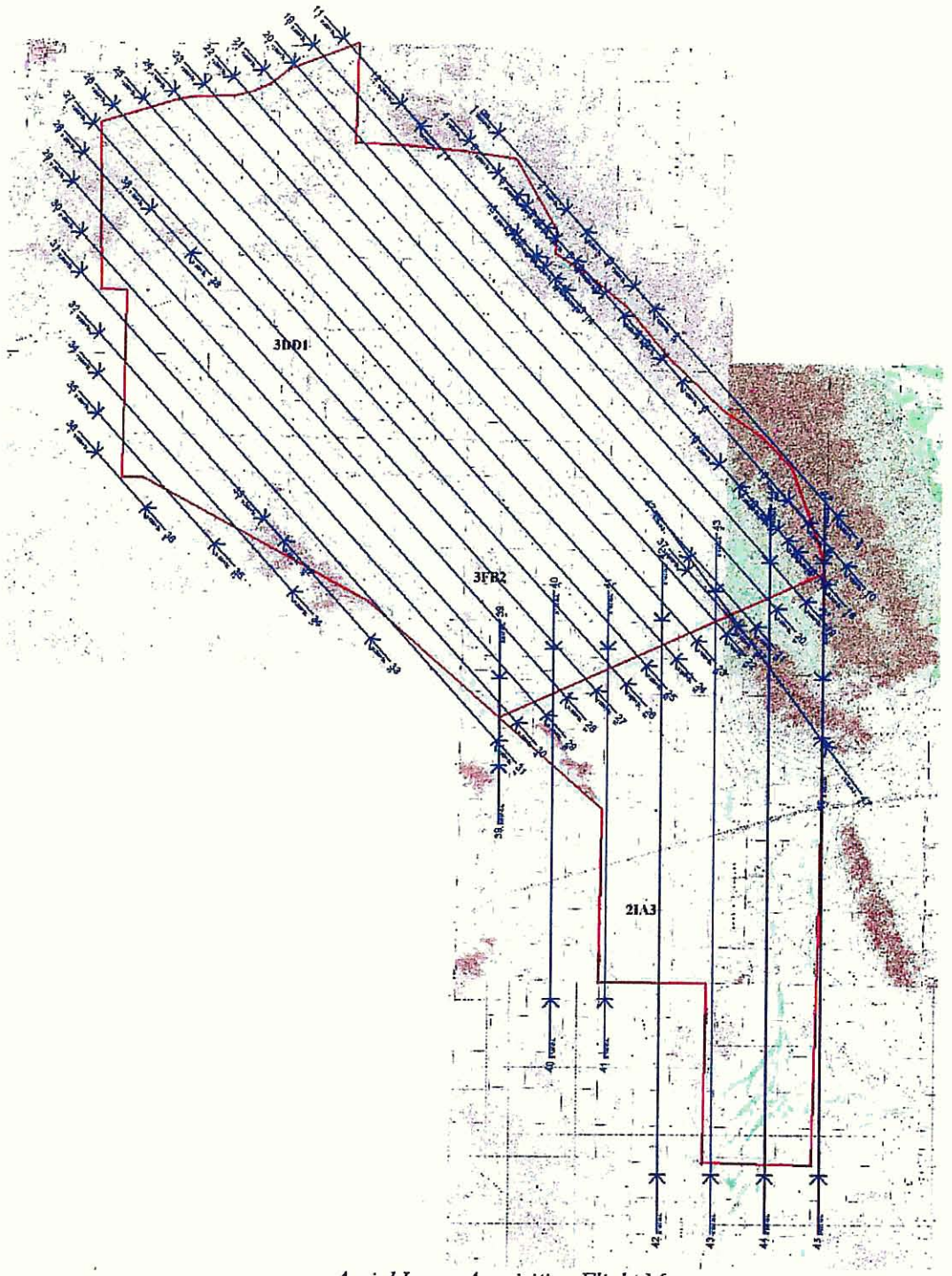


Base Station Locations – To Meet 10-mile Radius Requirement

Base Station Control Point Data

Point #	Northing	Easting	Elevation	Code	Description
XMKL	886132.3523	561796.7693	973.7264	RB	Phoenix-Goodyear Airport
9999	817866.2237	532578.9652	1059.6161	ACF	Replacement for GDACS 3DD1
3FB2	788012.3961	563737.6379	1154.1011	GMON	GDACS 3FB2
2IA3	738888.2649	584649.9515	1387.1719	GMON	GDACS 2IA3

Coordinates are NAD83 (1992 epoch) Arizona State Plane – Central Zone
International Foot units of measurement. Elevations are NAVD88 – Monument



Aerial Image Acquisition Flight Map
*Note location of Base Station Units at GDACS 3DD1**, 3FB2 & 2IA3*

APPENDIX A

USGS CAMERA CALIBRATION REPORT

USGS Report No. OSL/1067

United States Department of the Interior

11

USGS GEOLOGICAL SURVEY
Reston, Virginia 20192

REPORT OF CALIBRATION
of Aerial Mapping Camera

August 16, 2004

Camera type:	Zeiss RMK Top 15*	Camera serial no.:	144123
Lens type:	Zeiss Pleogon A3/4	Lens serial no.:	143105
Nominal focal length:	153 mm	Maximum aperture:	f/4
		Test aperture:	f/4

Submitted by: Horizons, Inc.
Rapid City, South Dakota

References: Horizons, Inc. purchase order No. 9030, dated August 11, 2004. Signed by Mr. Marshall Swenson.

These measurements were made on Kodak Micro-flat glass plates, 0.25 inch thick, with spectroscopic emulsion type 137-01 Panchromatic, developed in D-19 at 68° F for 3 minutes with continuous agitation. These photographic plates were exposed on a multicollimator camera calibrator using a white light source rated at approximately 5200K.

I. Calibrated Focal Length: 152.767 mm

II. Lens Distortion

Field angles	7.5°	15°	22.7°	30°	35°	40°
Symmetric radial (um)	0	-1	-1	0	0	1
Decentering (um)	0	0	1	1	2	3

Symmetric radial distortion parameters	Decentering distortion parameters	Calibrated principal point
$K_0 = 0.2427 \times 10^{-4}$	$P_1 = 0.1721 \times 10^{-6}$	$x_p = -0.001$ mm
$K_1 = -0.3739 \times 10^{-8}$	$P_2 = -0.4426 \times 10^{-7}$	$y_p = 0.012$ mm
$K_2 = 0.1156 \times 10^{-12}$	$P_3 = 0.0000$	
$K_3 = 0.0000$	$P_4 = 0.0000$	
$K_4 = 0.0000$		

The values and parameters for Calibrated Focal Length (CFL), Symmetric Radial Distortion (K_0, K_1, K_2, K_3, K_4), Decentering Distortion (P_1, P_2, P_3, P_4), and Calibrated Principal Point (point of symmetry) (x_p, y_p) were determined through a least-squares Simultaneous Multiframe Analytical Calibration (SMAC) adjustment. The x and y-coordinate measurements utilized in the adjustment of the above parameters have a standard deviation (σ) of ±3 microns.

* Equipped with Forward Motion Compensation

III. Lens Resolving Power in cycles/mm

Area-weighted average resolution: 99

Field angle:	0°	7.5°	15°	22.5°	30°	35°	40°
Radial lines	134	159	134	95	95	95	95
Tangential lines	134	159	113	95	80	80	80

The resolving power is obtained by photographing a series of test bars and examining the resultant image with appropriate magnification to find the spatial frequency of the finest pattern in which the bars can be counted with reasonable confidence. The series of patterns has spatial frequencies from 8 to 268 cycles/mm in a geometric series having a ratio of the 4th root of 2. Radial lines are parallel to a radius from the center of the field, and tangential lines are perpendicular to a radius.

IV. Filter Parallelism

The two surfaces of the USGS TOV 15 test filter KL-F (60%) No. 142399 are within 10 seconds of being parallel. This filter, in conjunction with the internal "0" filter, was used for the calibration.

V. Shutter Calibration

Indicated time (sec)	Rise time (μ sec)	Fall Time (μ sec)	½ width time (ms)	Nom. Speed (sec-1)	Efficiency (%)
1/100	3733	3823	10.67	1/120	78
1/200	1853	1871	5.15	1/250	78
1/300	1249	1262	3.43	1/380	78
1/400	896	909	2.55	1/500	78
1/500	736	739	2.02	1/640	78

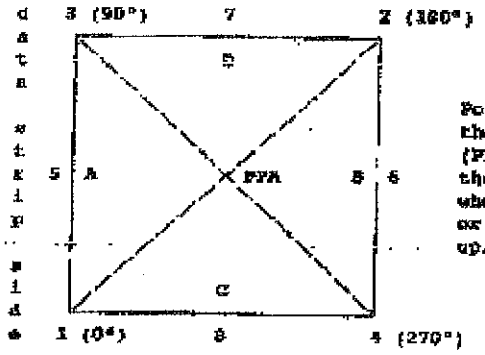
The effective exposure times were determined with the lens at aperture f/4. The method is considered accurate within 3 percent. The technique used is Method I described in American National Standard PH3.48-1972(R1978).

VI. Magazine Platen

The platen mounted in T-MC film magazine No. 145754 does not depart from a true plane by more than 13 um (0.0005 in).

The platen for this film magazine is equipped with an identification marker that will register "145750" in the data strip area for each exposure.

VII. Principal Points and Fiducial Coordinates



Positions of all points are referenced to the principal point of autocollimation (FPA) as origin. The diagram indicates the orientation of the reference points when the camera is viewed from the back, or a contact positive with the emulsion up. The data strip is to the left.

	X coordinate	Y coordinate
Indicated principal point, corner fiducials	0.009 mm	-0.009 mm
Indicated principal point, midside fiducials	0.013	-0.012
Principal point of autocollimation (FPA)	0.0	0.0
Calibrated principal point (pt. of sym.) x_p, y_p	-0.001	0.012

Fiducial Marks		
A	-113.002 mm	-113.013 mm
2	113.015	112.989
3	-112.986	112.990
4	113.010	-113.013
5	-112.985	-0.014
6	113.021	-0.010
7	0.011	112.991
8	0.015	-113.018

VIII. Distances Between Fiducial Marks

Corner fiducials (diagonals)

1-2: 319.625 mm 3-4: 319.612 mm

Lines joining these markers intersect at an angle of 90° 00' 04"

Midside fiducials

5-6: 226.006 mm 7-8: 226.010 mm

Lines joining these markers intersect at an angle of 90° 00' 00"

Corner fiducials (perimeter)

1-3: 226.002 mm 2-3: 226.001 mm

1-4: 226.012 mm 2-4: 226.002 mm

The method of measuring these distances is considered accurate within 0.003 mm

Note: For GPS applications, the nominal entrance pupil distance from the focal plane is 254 mm with a 10 mm filter thickness. Additional filter thickness will increase entrance pupil distance by 0.34 X added thickness.

USGS Report No. OSL/3067

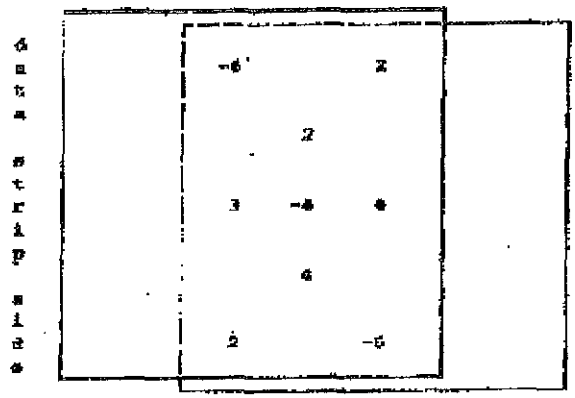
IX. Stereomodel Flatness

WWC Magazine No.: 145754

Plated ID: 148750

Base/Height ratio: 0.6

Maximum angle of field tested: 40°



Stereomodel
Test point array
(values in micrometers)

The values shown on the diagram are the average departures from flatness (at negative scale) for two computer-simulated stereo models. The values are based on comparator measurements on Kodak 4425 copy film made from Kodak 2405 film exposures. These measurements can vary by as much as ± 5 µm from model to model.

X. System Resolving Power on film in cycles/mm

Area-weighted average resolution: 45

Film: Type 2405

Field angle:	0°	7.5°	15°	22.7°	30°	35°	40°
Radial lines	57	57	49	48	48	48	40
Tangential lines	57	57	48	48	48	40	40

USGS Report No. OSL/3067

LENS/FILM DISTORTION PARAMETERS

FMC Magazine No.: 148764 Base/Height ratio: 0.6

Platen ID: 145760 Maximum angle of field tested: 40°

XI. **Calibrated Focal Length:** 152.752 mm

XII. Lens/Film Distortion

Field angle:	7.5°	15°	22.7°	30°	35°	40°
Symmetric radial (μm)	1	1	1	1	0	-1
Decentering (μm)	0	0	0	1	1	1

Symmetric radial distortion parameters	Decentering distortion parameters	Calibrated principal point
$K_0 = -0.4040 \times 10^{-4}$	$P_1 = 0.6080 \times 10^{-7}$	$x_p = -0.001$ mm
$K_1 = 0.4652 \times 10^{-8}$	$P_2 = -0.4675 \times 10^{-7}$	$y_p = 0.012$ mm
$K_2 = -0.9301 \times 10^{-13}$	$P_3 = 0.0000$	
$K_3 = 0.0000$	$P_4 = 0.0000$	
$K_4 = 0.0000$		

The above measurements were computed from Kodak 4425 copy film made from Kodak 2405 film exposed in the magazine.

The values and parameters for Calibrated Focal Length (CFL), Symmetric Radial Distortion (K_0, K_1, K_2, K_3, K_4), Decentering Distortion (P_1, P_2, P_3, P_4), and Calibrated Principal Point (point of symmetry) (x_p, y_p) were determined through a least-squares Simultaneous Multiframe Analytical Calibration (SMAC) adjustment. The x and y-coordinate measurements utilized in the adjustment of the above parameters have a standard deviation (σ) of ±3 microns.

This aerial mapping camera calibration report supersedes the previously issued USGS Report No. OSL/2808, dated November 18, 2002.

Gregory I. Snyder, Manager
HQ Commercial Remote Sensing Program Office
National Mapping Division

APPENDIX B

BASE STATION OBSERVATION SHEETS

GPS STATION OBSERVATION SHEET

PROJECT: Rainbow Valley
STATION NAME: 2IA3
STATION ID: 2IA3

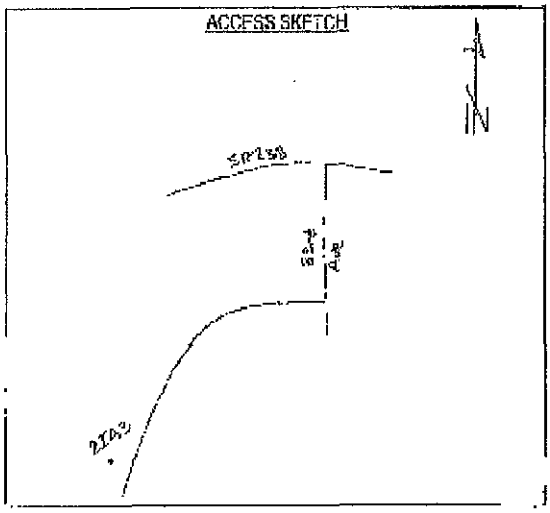
DATE FOUND/SET: _____

STATION DESCRIPTION: Stainless steel rod in handhole

STATION STAMPING: _____

STATION ACCESS: Hwy 238 to 83rd Avenue; thence South 0.8 miles to Epsig Road; thence continue on dirt road for 1.2 miles to bend in road to southwest; thence 0.8 miles southwest to bend in road; thence 0.5 miles southwest to station

ACCESS SKETCH

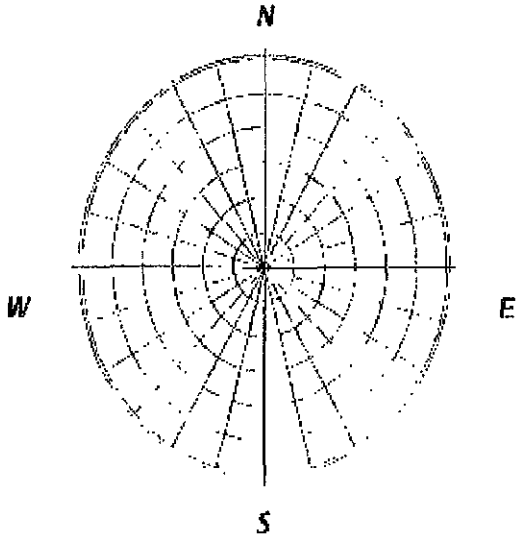


OPERATOR: Karl Vlieger
RECEIVER TYPE: Leica 1200 ANTENNA TYPE: LEIAX1202

SESSION #: D **FILE NAME:** 2IA30890
LOCAL DATE: 03-30-2005 START: 9:06 am END: 3:05 pm

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/INCORRECTED): 1.451 m
START (1st)_____ (2nd)_____ (3rd)_____ (AVG)_____
STOP (1st)_____ (2nd)_____ (3rd)_____ (AVG)_____

OBSTRUCT ON CHART



LAT:_____ LONG:_____ HEIGHT:_____

GPS STATION OBSERVATION SHEET

PROJECT: Rainbow Valley
STATION NAME: 2IA3
STATION ID: 2IA3

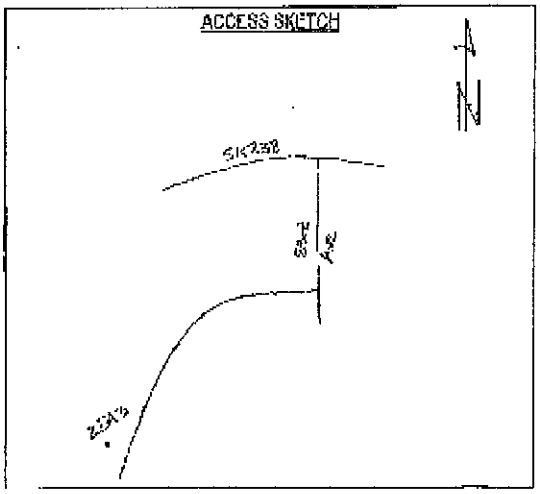
DATE FOUND/SET: _____

STATION DESCRIPTION: Stainless steel rod in handhole

STATION STAMPING: _____

STATION ACCESS: Hwy 238 to 83rd Avenue; thence South 0.8 miles to EPNG Pipeline Road; thence continue on dirt road for 1.2 miles to bend in road to southwest; thence 0.8 miles southwest to bend in road; thence 0.5 miles southwest to station

ACCESS SKETCH

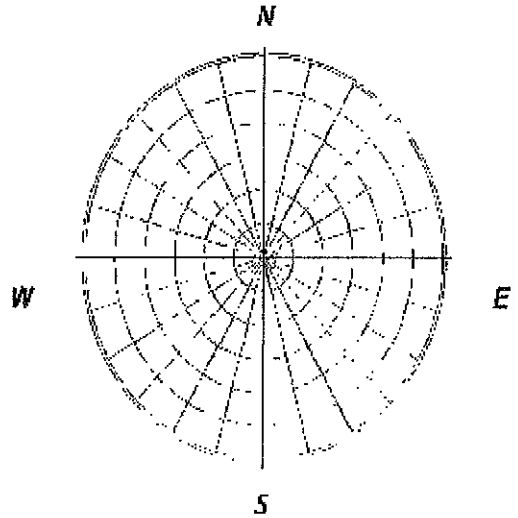


OPERATOR: Karl Vliegger
RECEIVER TYPE: Leica 1200 ANTENNA TYPE: Leica 1202

SESSION #: E **FILE NAME:** 2IA30900
LOCAL DATE: 03-31-2005 START: 9:02am END: 2:47pm

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): 1.448m
START (1st)_____ (2nd)_____ (3rd)_____ (AVG)_____
STOP (1st)_____ (2nd)_____ (3rd)_____ (AVG)_____

OBSTRUCTION CHART



LAT: _____ LONG: _____ HEIGHT: _____

APPENDIX C

AEROTRIANGULATION

Aerotriangulation for the Rainbow Valley project was conducted with two datasets. Each set relates to the associated photo scales for the project. The "low" areotriangulation processing files are associated with the 1:7500 photo scale imagery acquired for the 2-foot contour interval mapping area. The "high" aerotriangulation files are associated with the 1:15000 photo scale imagery acquired for the 4-foot contour interval mapping area.

As previously noted, in each case, the aerotriangulation "first run" was completed without the aid of the "blind target" values. This was planned and completed according to the District's quality control processes to validate the Airborne GPS and aerotriangulation results. Upon completion of the "first run", the results (aerotriangulation values) of the blind targets were delivered to the District's Surveying and Mapping Manager for comparison to the field values for the blind targets (supplied to him by the field survey personnel.) After checking and noting that four targets had been miss-identified, due to multiple control point targets that had been set for other projects in certain geographic areas, the "first run" was re-calculated. The results of the aerotriangulation proved to be excellent, far exceeding the expectations and requirements for positional accuracy:

> ***From:*** *John Stock - FCDX [jrs@mail.maricopa.gov]*
> ***Sent:*** *Tuesday, June 07, 2005 9:46 AM*
> ***To:*** *Harbers, J. L.*
> ***Subject:*** *Rainbow Valley Blind Targets*
>
> *Mr. Harbers: I am pleased to inform you that the 2ft portion of the blind targets is accepted by the Flood Control District with the following RMSE values:*
> ***Y=.219, X=.233, Z=.180.***
>
> *I have taken the liberty of attaching the calculation sheet that arrived at the values and the original control from Huitt-Zollars with both monument and ground values per your request.*
>
> *Sincerely:*
>
> *John R. Stock, RLS, CFM*
> *Mapping and Survey Manager*
> *Flood Control District of Maricopa County*

Analytical Aerial Triangulation Summary

Date: June 10, 2005

Horizons Incorporated acquired the aerial photography for this project utilized a gyro stabilized wide-angle aerial camera that is equipped with forward motion compensation (HZ11, ZEISS RMK TOP15, SN: 144123, CFL: 152.767). This project was flown at an altitude of 3750' above the mean terrain elevation (1:7500 photo scale.) During this photo mission, 38 flights of photography were acquired. The flights used for this adjustment were planned to have 60% forward overlap along the flight and 30% sidelap common to parallel flights.

Kinematic GPS events are collected at one-second epochs utilizing an ASHTECH Z-12 dual frequency receiver onboard the aircraft. The antenna is mounted on top of the fuselage of the aircraft directly above the center of the camera. An ASHTECH Z-Surveyor dual frequency receiver was used as a static base station on the ground and was operating simultaneously during the photo mission. APPLANIX GRAPHNAV/POSGPS software was used for post processing of the airborne gps data. Differential corrections have been applied to the post-processed kinematic gps data for absolute geo-positioning of each exposure. The antenna phase center to camera station offset is applied to the post-processed airborne gps file supplied for the analytical aerial triangulation adjustment.

93 surveyed ground control points were used to control this photo block. Each exposure required for the project was scanned utilizing a ZEISS PHOTOSCAN scanner at a 14-micron resolution. Digital stereo mensurations were collected for each scanned image using a LH SYSTEMS SOCET SET/ORIMA softcopy workstation. The final adjustment was made on the stereo mensurations using ORIMA software. Final adjusted ground control files and exterior orientation parameters for each exposure were output from the ORIMA adjustment.

Number of Control Points: 93
Number of Terrain Points: 5502
Number of Images: 918
Number of Cameras: 1
Number of GPS Profiles: 1
Number of Add. Observations: 3039

Brief Summary of Ground Control Statistics

This data is expressed in International feet

For 1:7500 photo scale imagery (2-foot contour interval mapping

Point#	Easting	Northing	Elevation	DX	DY	DZ
F 1	505440.473	852260.534	855.617	0.004	-0.009	-0.029
F 2	518150.890	854930.475	871.340	0.018	-0.130	-0.017
F 3	537607.198	861703.419	910.663	-0.004	0.014	-0.039
F 4	547051.241	852795.571	1081.956	0.024	0.034	0.107
F 5	563383.615	851132.835	1263.716	0.100	-0.112	-0.103
F 7	506680.247	828611.618	1075.161	-0.013	0.065	0.023
F 8	580785.117	817314.632	1404.827	0.115	0.070	0.164
F 9	608121.186	791123.433	1663.643	-0.109	0.146	0.102
F 10	509572.993	801061.662	1246.667	-0.141	0.059	0.244
F 11	527043.980	793365.202	1289.649	-0.339	-0.051	-0.001
F 12	549379.525	780465.162	1243.574	-0.201	0.096	-0.186
F 13	559553.429	771401.700	1230.291	0.080	-0.153	-0.112
F 14	567922.728	764710.791	1273.167	-0.199	0.072	-0.289
F 15	575451.469	770270.697	1230.143	0.028	0.131	0.006
F 16	580812.579	775355.551	1205.081	0.104	-0.242	-0.071
F 17	591319.535	783359.603	1315.822	0.153	-0.112	0.054
F 18	601960.198	791280.784	1465.598	-0.257	0.227	0.221
F 160	534337.822	850327.288	961.128	0.030	-0.083	-0.228
F BT001	528303.467	855540.769	898.900	0.049	-0.044	-0.080
F BT002	536392.984	856031.585	949.453	-0.015	-0.039	0.285
F BT003	515274.661	849602.839	905.743	-0.073	-0.189	-0.325
F BT004	523204.131	849569.435	905.104	0.017	-0.027	-0.229
F BT005	531190.166	849337.513	943.722	0.248	-0.054	0.208
F BT006	538980.279	849428.972	981.644	0.049	0.181	0.055
F BT007	547119.196	849355.217	1060.964	0.171	0.075	-0.250
F BT008	561286.037	849179.494	1225.478	0.004	-0.010	-0.124
F BT009	528397.800	844188.754	965.694	-0.050	-0.148	-0.036
F BT010	554558.810	843743.737	1151.854	-0.002	0.019	-0.054
F BT011	507542.814	840673.502	1056.761	-0.035	-0.138	0.119
F BT012	513744.371	841136.378	989.669	0.056	0.065	0.134
F BT013	520535.913	841913.572	926.582	0.185	-0.278	-0.156
F BT014	541691.644	841801.045	1025.995	-0.035	-0.135	-0.030
F BT015	533786.990	838742.293	1007.962	-0.051	-0.109	-0.316
F BT016	549488.090	838847.837	1099.838	0.074	0.158	0.151
F BT017	562137.390	838682.732	1314.195	-0.338	0.049	0.055
F BT018	525741.602	836293.309	957.212	-0.208	0.071	-0.008
F BT019	509905.345	833808.735	1070.529	-0.110	0.074	-0.017
F BT020	517871.240	833725.665	1024.211	-0.015	0.112	0.213
F BT021	538990.026	833603.403	1016.118	0.064	-0.227	-0.047
F BT022	546924.263	833641.213	1080.366	0.085	0.054	0.197
F BT023	554629.393	833462.395	1160.955	-0.061	0.237	0.071
F BT024	559909.184	833395.745	1221.019	0.018	0.087	0.107
F BT025	525809.407	828407.735	994.776	-0.046	0.094	-0.025
F BT026	533598.545	828455.172	994.278	-0.076	0.043	-0.136

F BT027	544218.512	825745.649	1048.533	-0.058	-0.087	-0.043
F BT028	554582.347	825604.982	1136.326	0.036	-0.057	0.142
F BT029	567773.021	825536.572	1279.196	-0.100	0.121	0.114
F BT030	517809.029	823200.191	1030.770	0.100	0.308	-0.128
F BT031	559844.931	822935.520	1173.090	-0.031	0.071	-0.115
F BT032	575681.726	822865.429	1388.980	0.129	0.096	0.290
F BT033	528244.092	820484.673	1045.833	0.025	-0.253	0.109
F BT034	538818.415	820417.097	1027.178	0.165	-0.109	-0.024
F BT035	514685.053	817969.809	1071.186	-0.133	0.215	-0.140
F BT036	546861.389	817882.741	1059.970	-0.039	0.053	0.009
F BT037	554552.508	817636.630	1113.036	0.068	-0.008	-0.280
F BT038	570418.311	817509.862	1263.038	0.274	0.156	0.156
F BT039	512467.719	812681.166	1118.479	-0.034	-0.028	0.219
F BT040	522689.428	812583.947	1113.128	0.194	-0.072	0.345
F BT041	541431.329	812664.746	1062.118	-0.250	-0.086	-0.095
F BT042	533540.212	809390.617	1118.521	-0.044	0.348	0.035
F BT043	549297.302	809800.594	1073.504	-0.111	-0.186	-0.081
F BT044	557127.958	809720.502	1117.864	0.000	-0.089	0.088
F BT045	565030.447	809746.854	1177.800	0.188	-0.046	-0.221
F BT046	580947.822	809622.667	1327.018	0.061	0.017	0.028
F BT047	588698.748	809518.080	1459.611	0.099	0.074	0.152
F BT048	517751.244	807381.902	1164.104	0.125	-0.062	-0.205
F BT049	528117.907	807303.669	1153.714	0.112	-0.010	0.156
F BT050	573046.865	806936.372	1234.313	0.024	-0.223	-0.080
F BT051	522849.888	801363.647	1208.197	-0.212	-0.069	0.183
F BT052	538764.511	801955.646	1127.129	-0.126	0.321	0.068
F BT053	554423.820	802741.539	1099.089	0.007	-0.215	-0.034
F BT054	562356.360	801808.540	1141.635	-0.060	0.080	-0.079
F BT055	591473.413	801720.951	1382.078	-0.016	0.038	-0.216
F BT056	533459.491	798971.639	1186.800	0.138	0.110	0.080
F BT057	549199.208	796629.670	1138.150	0.000	-0.123	0.066
F BT058	559835.206	796639.155	1121.297	0.013	-0.243	-0.069
F BT059	567578.906	796466.224	1168.848	-0.137	0.053	0.055
F BT060	580866.154	796388.114	1269.198	0.111	-0.004	0.167
F BT061	538759.127	792938.936	1171.399	0.086	-0.083	0.031
F BT062	595813.140	794281.136	1421.236	-0.025	-0.072	0.031
F BT063	554413.823	791274.770	1161.972	-0.018	0.067	0.001
F BT064	575453.275	791124.827	1219.523	0.038	-0.091	0.096
F BT065	587428.801	791098.760	1319.065	-0.014	-0.118	-0.011
F BT066	547780.275	788181.834	1197.797	0.141	-0.105	-0.082
F BT067	554388.538	782397.441	1207.777	-0.045	0.118	-0.206
F BT068	580814.738	783439.670	1238.497	0.178	-0.039	0.133
F BT069	606865.678	783596.512	1588.809	0.142	0.202	-0.282
F BT070	562365.593	780631.346	1184.938	0.054	-0.051	0.000
F BT071	572856.990	780627.443	1185.795	-0.122	-0.120	0.144
F BT072	601092.286	781150.731	1512.181	-0.097	0.279	-0.135
F BT074	567499.732	775277.870	1219.412	0.033	-0.065	0.097
F BT075	589635.255	775167.339	1245.948	-0.073	-0.237	-0.047

F BT077	570188.464	768391.334	1251.945	-0.093	0.281	-0.031

Maximum residuals at control points:

X: -0.3389 at Point ID.: 11
Y: 0.3475 at Point ID.: BT042
Z: 0.3450 at Point ID.: BT040

RMS of residuals at control points:

X: 0.1185
Y: 0.1382
Z: 0.1470

Brief Summary of ABGPS Statistics
This data is expressed in International Feet

RMS-X: 0.239
RMS-Y: 0.229
RMS-Z: 0.244

Any Other Comments
The results of this adjustment looked very good and will meet or exceed the required standards for this project

Analytical Aerial Triangulation Summary

Date: June 10, 2005

Horizons Incorporated acquired the aerial photography for this project utilizing a gyro stabilized wide-angle aerial camera that is equipped with forward motion compensation (HZ11, ZEISS RMK TOP15, SN: 144123, CFL: 152.767). This project was flown at an altitude of 7500' above the mean terrain elevation (1:15000 photo scale.) During this photo mission, 9 flights of photography were acquired. The flights used for this adjustment were planned to have 60% forward overlap along the flight and 30% sidelap common to parallel flights.

Kinematic GPS events are collected at one-second epochs utilizing an ASHTECH Z-12 dual frequency receiver onboard the aircraft. The antenna is mounted on top of the fuselage of the aircraft directly above the center of the camera. An ASHTECH Z-Surveyor dual frequency receiver was used as a static base station on the ground and was operating simultaneously during the photo mission. APPLANIX GRAPHNAV/POSGPS software was used for post processing of the airborne gps data. Differential corrections have been applied to the post-processed kinematic gps data for absolute geo-positioning of each exposure. The antenna phase center to camera station offset is applied to the post-processed airborne gps file supplied for the analytical aerial triangulation adjustment.

39 surveyed ground control points were used to control this photo block. Each exposure required for the project was scanned utilizing a ZEISS PHOTOSCAN scanner at a 14-micron resolution. Digital stereo mensurations were collected for each scanned image using a LH SYSTEMS SOCET SET/ORIMA softcopy workstation. The final adjustment was made on the stereo mensurations using ORIMA software. Final adjusted ground control files and exterior orientation parameters for each exposure were output from the ORIMA adjustment.

Number of Control Points: 39
Number of Terrain Points: 768
Number of Images: 127
Number of Cameras: 1
Number of GPS Profiles: 1
Number of Add. Observations: 504

Brief Summary of Ground Control Statistics
This data is expressed in Internationl feet
For 1:15000 photo scale imagery (4-foot contour interval mapping)

Point#	Easting	Northing	Elevation	DX	DY	DZ
F 9	608121.492	791123.025	1663.253	0.197	-0.262	-0.289
F 14	567923.311	764710.519	1273.361	0.384	-0.200	-0.095
F 15	575451.504	770270.812	1230.597	0.063	0.246	0.460
F 16	580812.059	775355.832	1205.203	-0.416	0.040	0.051
F 17	591319.216	783359.530	1316.105	-0.166	-0.185	0.337
F 19	580858.612	753523.226	1310.264	-0.110	0.152	-0.342
F 20	596426.276	743742.173	1332.070	0.093	-0.195	-0.191
F 21	580551.336	727788.691	1469.053	-0.323	0.017	0.214
F 22	596290.856	701410.768	1576.158	-0.159	0.130	0.388
F 23	612077.047	701205.767	1526.141	0.220	-0.016	-0.045

F BT069	606865.888	783596.299	1589.361	0.352	-0.011	0.270
F BT072	601092.054	781150.104	1512.026	-0.329	-0.348	-0.290
F BT073	609961.381	777097.613	1587.182	0.273	0.050	0.179
F BT074	567499.453	775277.535	1219.431	-0.246	-0.400	0.116
F BT075	589635.792	775167.723	1246.180	0.464	0.147	0.185
F BT076	596529.614	772138.004	1295.178	-0.234	-0.406	0.259
F BT077	570188.316	768391.043	1251.742	-0.242	-0.010	-0.234
F BT078	591253.507	768929.081	1245.177	-0.169	0.180	0.198
F BT079	586058.656	764757.668	1241.849	-0.581	-0.115	-0.274
F BT080	576402.809	762838.264	1257.169	0.358	0.701	0.313
F BT081	601820.078	762673.005	1311.919	-0.267	-0.129	0.015
F BT082	591213.152	759413.148	1263.457	0.135	0.347	0.210
F BT083	611662.660	758119.441	1320.322	0.126	-0.050	-0.004
F BT084	583687.315	756318.575	1288.833	-0.165	-0.389	-0.365
F BT085	601719.681	754138.044	1285.214	-0.443	0.138	-0.369
F BT086	608008.967	752875.166	1295.052	0.541	0.061	0.077
F BT087	591129.638	749753.231	1312.056	0.067	0.443	-0.178
F BT088	597657.275	749795.381	1301.981	-0.304	-0.220	-0.260
F BT089	608387.344	748895.792	1311.102	0.313	0.259	0.082
F BT090	584347.475	745850.304	1348.681	-0.032	-0.075	-0.498
F BT091	591315.528	743627.416	1344.024	0.015	0.050	0.033
F BT092	603651.673	743537.798	1332.676	0.363	-0.021	-0.314
F BT093	607026.727	738605.096	1357.110	0.386	0.019	-0.005
F BT094	582819.413	736444.220	1411.011	-0.104	-0.052	-0.206
F BT095	591242.823	735610.502	1389.764	0.202	-0.042	0.289
F BT096	601551.984	735637.219	1369.215	-0.216	-0.233	-0.012
F BT097	582074.105	729845.449	1450.783	-0.214	-0.054	-0.053
F BT098	591211.161	728517.027	1433.888	0.478	0.478	0.047
F BT099	602795.686	728226.521	1414.910	-0.310	-0.048	0.301

Maximum Residuals at control points:

X: -0.5808 at Point ID.: BT079
Y: 0.7013 at Point ID.: BT080
Z: -0.4977 at Point ID.: BT090

RMS of Residuals at control points:

X: 0.2929
Y: 0.2385
Z: 0.2448

Brief Summary of ABGPS Statistics
This data is expressed in Internationl Feet

RMS-X: 0.251
RMS-Y: 0.363
RMS-Z: 0.261

Any Other Comments
The results of this adjustment looked very good and will meet or exceed the required standards for this project.

NOTE: ALL FINAL ADJUSTMENT FILES FOR THE AEROTRIANGULATION ARE INCLUDED ON THE CD-ROM VERSION OF THIS REPORT. THESE ADJUSTMENT FILES ARE TOO LARGE FOR INLCUSION WITH THE ORINTED VERSION OF THE REPORT.

Field Survey Report (Huitt-Zollars, Inc.)

The following documentation is a compilation of the full survey report submitted to General Dynamics-AIS by Huitt-Zollars, Inc. (primary survey subconsultant for the project). This report has been thoroughly examined and accepted by Mr. Lee Harbers, RLS, Director of Photogrammetry & Program Development, GD-AIS.

Refer to electronic files (HZ Survey Report) included on the CD-ROM version of this report.

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HUITT-ZOLLARS, INC. • 426 North 44th Street • Suite 300 • Phoenix, AZ 85008-6596 • 602.952.9123 phone • 602.952.9124 fax • huitt-zollars.com

July 19, 2005

Mr. Greg Jones
Project Manager
Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

RE: Mapping Services for Rainbow Valley Area Drainage Master Plan (ADMP)
Contract FCD 2003C067
Survey Report

Dear Mr. Jones:

Huitt-Zollars, Inc. is pleased to submit the following survey report regarding the above referenced project. The contents of this report were prepared during the time of February 2005 thru July 2005.

Huitt-Zollars, Inc., as a sub-consultant to General Dynamics- Advanced Information Systems, Inc. (GD-AIS), provided mapping control data over approximately 302 square miles encompassing the watershed of Waterman Wash as it runs through the Rainbow Valley area of southwest Maricopa County.

We were responsible for providing main aerial target data to GD-AIS, "blind" aerial target data to the Flood Control District for quality control, and coordinate data for section corners that we came across as we were working the job sight. We also provided "Check Profiles" along designated lines as requested by GD-AIS.

As part of our assigned duties, we also reviewed work provided by Project Engineering Consultants, Ltd. (PEC). PEC assisted us with the location of the "blind" aerial targets and provided GPS data used in the processing of the airborne GPS and LiDAR information collected for this job. Some of their information has been included in this report.

The data contained within this report and the attached maps were prepared under my direct supervision. The accuracy of this data meets the guidelines of both FEMA and the District.

Sincerely,

Huitt-Zollars, Inc.

Daniel G. Francetic, RLS
Survey Manager

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA U.S.A.

PROJECT APPROACH

Huitt-Zollars, Inc. was tasked with providing survey work in an effort to support aerial mapping of the project area. Prior to starting the project, General Dynamics- Advanced Information Systems (GD-AIS) determined that in addition to using aerial targets to control its photography, data would also be obtained using both LiDAR and airborne GPS methods. From the ground surveying aspect, this involved running three GPS receivers that were constantly collecting data while the respective flights were occurring. Project Engineering Consultants, Ltd. (PEC) provided the field personnel and equipment necessary to accomplish this task. We reviewed PEC's information before forwarding it on to GD-AIS and their aerial sub-consultant, Horizons.

Due to the large size of the project area, the speediest way to expedite the location of aerial targets is to use Global Positioning System (GPS) satellite surveying methods. In accordance with Federal Emergency Management Agency (FEMA) Guidelines and Specifications for Aerial Mapping (April 2003), as well as the FCDMC's own guidelines and specifications, differential GPS methods are considered adequate for the purposes of this project. Differential GPS is generally defined as having a "base" receiver unit at a known point and measuring other points in the project area by using a "rover" receiver unit, producing a three-dimensional difference in location between the two. This information can then be used to calculate horizontal coordinates and elevation for the point located at the "rover". We decided to use Real-Time Kinematic (RTK) methods to conduct this differential GPS survey. With its constant radio communication with the "base" unit, the "rover" could collect information on the fly, reducing the amount of data processing necessary at the office afterwards. All aerial control points, GPS control points, and blind aerial targets were located at least twice (on different days at different times of day) to verify their accuracy.

As directed by John Stock with the FCDMC, Maricopa County Geodetic Densification and Cadastral Survey (GDACS) control points were to be used as both a horizontal and vertical basis of this survey. Due to the large size of the project area, and the limitations of GPS RTK surveying, the whole project could not be collected from one base point. We determined that the best way to approach this project would be to divide our area into thirteen smaller survey areas, denoted as Areas 1 thru 13, [see drawings at the end of this section]. It was determined that Areas 9 and 11 did not have sufficient GDACS control to conduct the survey. National Geodetic Survey (NGS) point ENID RM1, which is on the same system as GDACS, was used for Area 9. "Static" GPS survey methods were used to obtain a location for BT 103, a point set by Huitt-Zollars, as the basis for Area 11. "Static" GPS surveying involves longer occupation times and produces coordinate and elevation values that are much more accurate than RTK surveying. Our base points for these areas are noted below:

Area 1- 3BD3	Area 6- 3DB3	Area 11- BT103
Area 2- 3BF3	Area 7- 2EB3	Area 12- 3FB2
Area 3- 3CC3	Area 8- 3GA2	Area 13- 3CE3
Area 4- 3EE2	Area 9- ENID RM1	
Area 5- 3EC2	Area 10- 2IA3	

To ensure the quality of our measurements, we did a "site calibration" by using the nearest GDACS points to the northeast, northwest, southwest, and southeast of our base point. This provided a check of the GDACS control points and a best-fit mathematical model for the area we were surveying. In some areas, GDACS coverage was insufficient, and additional points were set and locations obtained using static GPS methods. With this "site calibration", we could survey a large polygon with the GDACS and other control points at the vertices, and the base point in the

center. Because the National Geodetic Survey (NGS) has not yet certified the GDACS points for vertical accuracy, we also took measurements on additional NGS vertical benchmarks in the project area to check and ensure the vertical accuracy of our surveys.

After the control for our sites was calibrated, checked, and verified, we moved on to locating the aerial control points. GD-AIS and Horizons used the GDCAS control points and an additional 23 points set by us as control for this job. These 23 points were designated as the Primary Control or Prime points. All Prime points were located at least twice, and where they fell between survey areas, were located from each area. Results were checked and averaged, then provided to GD-AIS.

Further assisting us in the project, PEC set and located all the blind check points. GD-AIS designated 105 locations for these points. We checked and verified the information provided by PEC. Both the blind target and Prime point data processing was checked internally by Huitt-Zollars using the QA \ QC procedures outlined at the end of this chapter. Once we were satisfied with the results, the coordinate information for the blind points was sent to the FCDMC to check versus information obtained by the aerial mappers.

As a final check of the mapping. GD-AIS had us run several "check profiles" through the job site. These were obtained using RTK methods, with the GPS rover receiver of known height mounted on a work vehicle as it slowly moved down a roadway.

As an additional task used to help the FCDMC, the location of section corners throughout the jobsite were also obtained and provided as they were found in the course of doing our work.

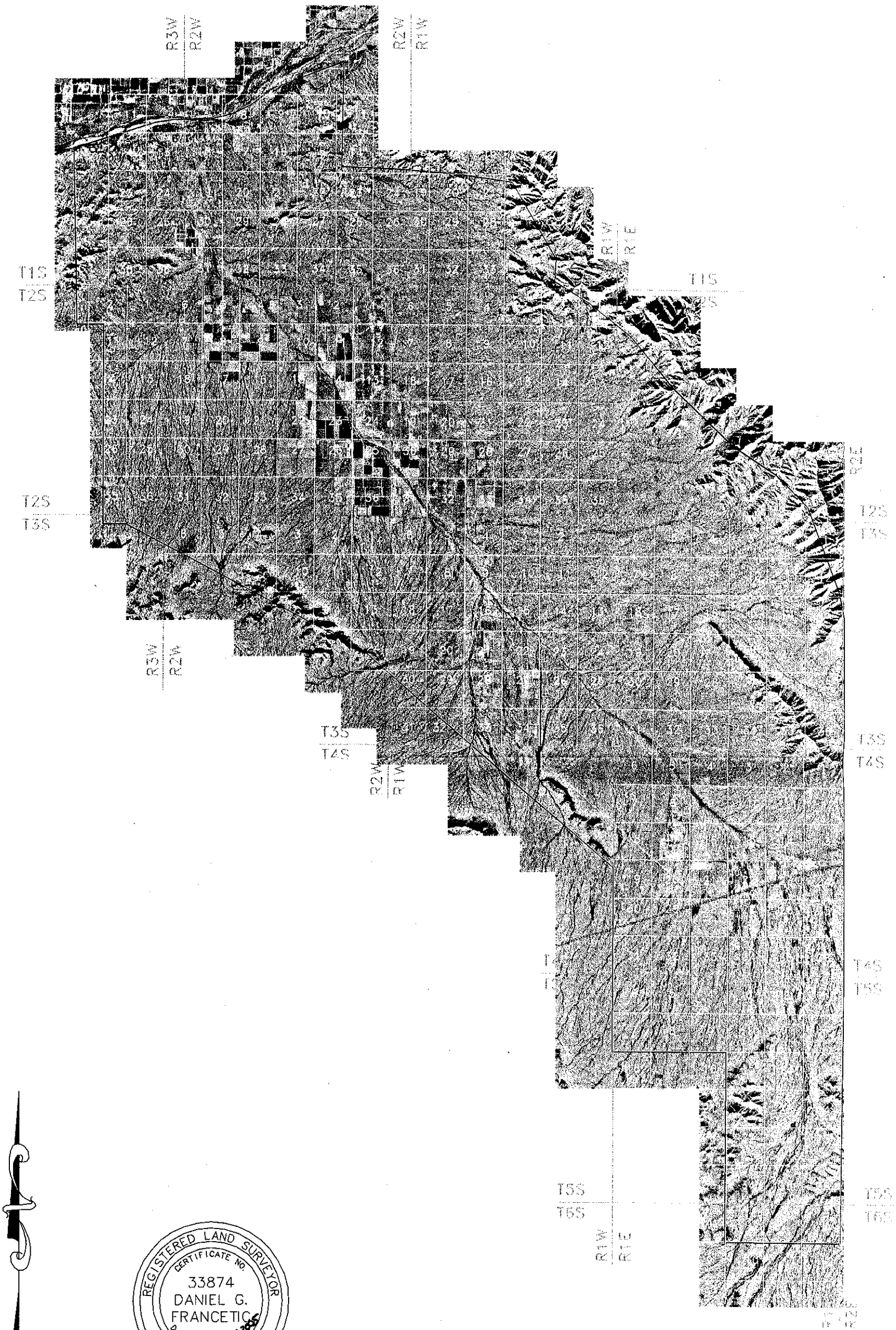
Huitt-Zollars, Inc. conducted all its GPS work with Trimble 4700, 4800, 5700, and 5800 GPS receivers and Trimble TSC1 and TSCe data collectors. Data was downloaded and processed through Trimble Geomatics Office (Version 1.62) software. Further data processing was done in Microsoft Excel 2002. All enclosed maps were produced in AutoCAD 2002. Existing control point information obtained from the Maricopa County D.O.T. (www.mcdot.maricopa.gov) and NGS (www.ngs.noaa.gov) websites. NGVD29 elevations were obtained using the VERTCON (Version 2.0) conversion program available through the NGS website (www.ngs.noaa.gov/TOOLS).

OVERVIEW OF QUALITY ASSURANCE \ QUALITY CONTROL PROCEDURES
RAINBOW VALLEY ADMP MAPPING PROJECT
05-1487-01

Huitt-Zollars, Inc. is followed the below described procedures for the above job:

1. Data is collected in the field by the field crews. Job site is divided into 13 RTK areas. Each area is calibrated on existing NGS control points. Site calibrations are checked to verify they are within acceptable tolerances.
2. Crew Chief downloads data and creates a spreadsheet file for the coordinates of each point.
3. Field Manager reviews data and makes sure that coordinates have not been corrupted between the data collector and the computer. Control points are verified to assure they are the published values.
4. Survey staff member extracts the coordinates from the spreadsheet for the desired data set (i.e. Primary control, Blind Targets, etc.) and creates a new spreadsheet for each area. Points that have been located multiple times from the same area are averaged.
5. Survey Manger checks coordinate data and verifies that all points that have been located multiple times are within the job's tolerance. If so, the Survey Manager accepts the values. If values are out of tolerance, Survey Manager consults with Field Manager, and a course of action is determined to obtain acceptable values for the point. Typically, additional locations are required.
6. Values that have been accepted for each of the 13 areas are combined into another spreadsheet, showing all values for all areas. Points that have been shot from different areas are averaged.
7. Survey Manager reviews new data set created for all the points. If the points that were shot from different areas are within tolerance, the new coordinates are accepted.
8. Field Manager reviews final data set. If any problems arise, they are corrected. Otherwise, coordinates are converted into latitude, longitude, ellipsoid height, and UTM data, and another spreadsheet is created.
9. Survey Manger reviews coordinate data for all coordinate systems. If there are problems, the information is sent back to the Field Manager for correction. Otherwise data is forwarded to the Client.

For this project, Huitt-Zollars obtained at least two measurements on all Primary control. For Blind Targets, Huitt-Zollars located each point once and compared to values obtained by PEC. Additional locations were obtained as necessary. All data passed several sets of eyes before being released to the client. As data is moved from one spreadsheet to another, at least two sets of eyes verify that it is not corrupted between sheets. All data is reviewed by both the Field Manager and Survey Manager before being sent to the Client. All spreadsheets were initialed and dated by those who did the processing or the reviewer. Initialed spreadsheets are kept on file, copies of which are included in this report.



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

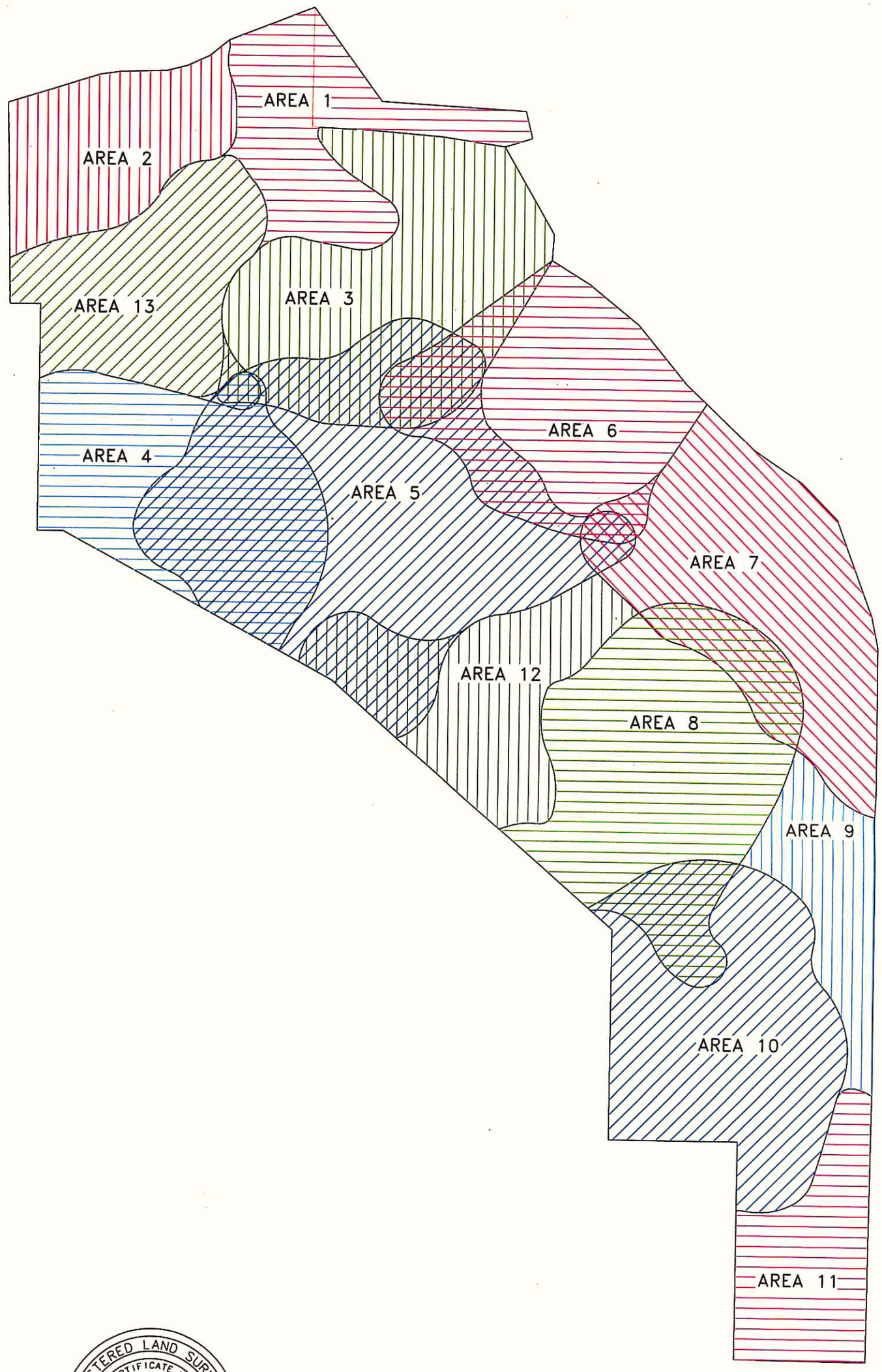
VICINITY MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, & PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST, MARICOPA COUNTY, ARIZONA

REVISION				BY	APP.	DATE
DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/13/05	1	1	

H.Z. JOB NO. 05-1487-01

G:\PROJ\05148701\MAPS\VICINITY MAP.DWG



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO. 33874
DANIEL G. FRANCETIC
Date Signed 7-19-2005
ARIZONA U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

AREAS MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, & PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST, MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/06/05	1	1	

H.Z. JOB NO. 05-1487-01

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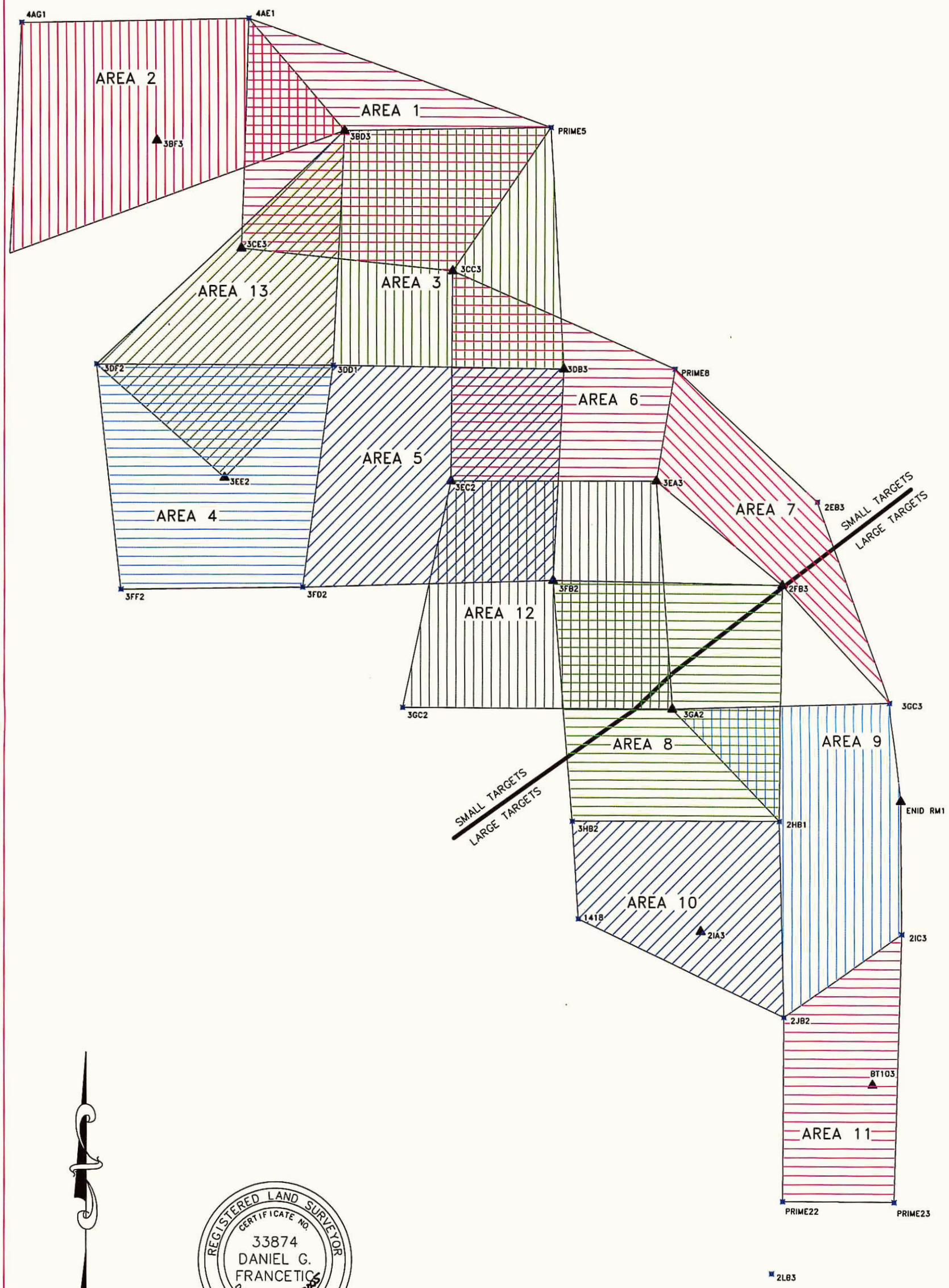

N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA, U.S.A.

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Huitt-Zollars, Inc. Phoenix
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Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

CALIBRATION MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, & PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST, MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/12/05	1	1	

H.Z. JOB NO. 05-1487-01

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HUITT-ZOLLARS, INC.
FIELD NOTES

BM
GF

Rainbow Valley ADMP

SET 36" REBAR w/ALUM. CAP - PRIME 8

SET 36" REBAR w/ALUM. CAP BT 16

SET 36" REBAR w/ALUM. CAP BT 103

2/5/05 50°-68° clear, sunny

Bm

MS Rainbow Valley ADMP
1487-01 STATIC4
Faststatic pt: PRIME 23

Hi = 1.784
SESSION 1
Start time; 8:32
End time; 2:03

2/7/05 45°-63° partly cloudy

40/2

BM

MS

Rainbow Valley
RV STAT 2-8-05
SET 24" LONG 1/2" REBAR w/ AC
PRIME 22 SESSION 2

HI = 1.846
START TIME; 8:56 am
END TIME; 2:03 pm

2/8/05 46°-67° clear sunny

BM
MSS

Rainbow Valley
RV STAT 2/21/05

PRIME 23
BASE Ht. = 1.754m

START TIME; 8:53 am
END TIME; 1:01 pm

PRIME 22
BASE Ht. = 1.518m

START TIME; 9:53 am
END TIME; 1:53 pm

2/21/05 50°-65° cloudy

BM M
MS

AREA 2 STATIC
GPS: 5800

Faststatic pt 3BF3

HI = 1.906m
Start time = 7:43 am
End time = 11:30

3/18/05 52°-71° overcast

GF #

DF

05-1487-01

RAINBOW VALLEY

41/1

2-6-05

50°-67° P-CLOUDY WINDY

SET PRIME 23 36" ½" REBAR WITH ALUMINUM CAP STAMPED PRIME 23

2-6-05

GF # 05-1487-01 RAINBOW VALLEY

CL # 2-7-05 2-7-05

41/2

54°-60° m-cloudy windy

Trimble 5700 BASE
Trimble 5700 ROVER
TSC-1 5700 - 5700 BASE
TSC-1 4700 - 5700 ROVER

SESSION 1 + 2
5700 BASE
3DB3 GMON HA = 1.650 m 5.413 IFT
START 8:08 AM
END 2:20 PM
SESSION 1
5700 ROVER
Prime 8 ACF HA = 1.635 m 5.364 IFT
START 8:34 AM
END 11:00 PM

SESSION 2
5700 ROVER
BT 16 ACF HA = 1.6195 m 5.313 IFT
START 11:33 AM
END 2:00 PM

GF III 05-1487-01 RAINBOW VALLEY

CL π 2-8-05 41/3

50° - 67° CLEAR WINDY

π Trimble 5700 BASE RVSTATIC1 2-8-05

π Trimble 5700 ROVER RVSTATIC3 2-8-05

TSC-1 5700 5700 BASE

TSC-1 4700 5700 ROVER

Prime 1 SET 24" 1/2" REBAR WITH

ALUMINUM CAP STAMPED Prime 1

SESSION 1

5700 BASE

3BF3 GMON HA= 1.666m 5.465 IFT

START 8:05 AM

END 2:15 PM

5700 ROVER

Prime 1 ACF HA. 1.532m 5.026 IFT

START 8:35 AM

END 2:00 PM

2-8-05

OGF OUT RAINBOW VALLEY 2-21-05

QUAD MILEAGE: MC-JZ3G MILEAGE TO POINT:

START: 1799 0.0 3.6

STOP: 1806 7.2

TRIMBLE 5700 ROVER RV STATIC 3 2-21-05

TSC1 4700 – 5700 ROVER

PRIME 5 SET 18" REBAR (½" DIA) WITH ALUMINUM CAP STAMPED PRIME 5

SESSION

5700 ROVER USE THIS ✓

PRIME 5 ACF MA = 1.407 (BTM. NOTCH) 1.490 (TOP NOTCH)

4.88' 4.89' (4.888')

START 10:49 AM

STOP 1:01 PM

60°-65° P. CLOUDY BREEZY LATER MUGGY

NOTE:

36" REBAR ATTEMPT MET REFUSAL @ 18"

GF III 05-1487-01 RAINBOW VALLEY

41/11

CLT

3-18-05

54° - 72° M-CLOUDY L-WINDS

π Trimble 5700 BASE RV STATIC 2 3-18-05

π Trimble 5700 ROVER RV STATIC 3 3-18-05

TSC-1 5700 5700 BASE

TSC-1 4700 4700 ROVER

STATIC

SESSION 1

5700 BASE

3EC2 GMON HA= 1.720 M 5.643 IFT

START 7:22 AM

END 12:35 PM

SESSION 1

5700 ROVER

Prime & ACE HA= 1.590 M 5.2165 IFT

START 8:03 AM

END 12:00 PM

3-18-05

RAINBOW VALLEY ADMP

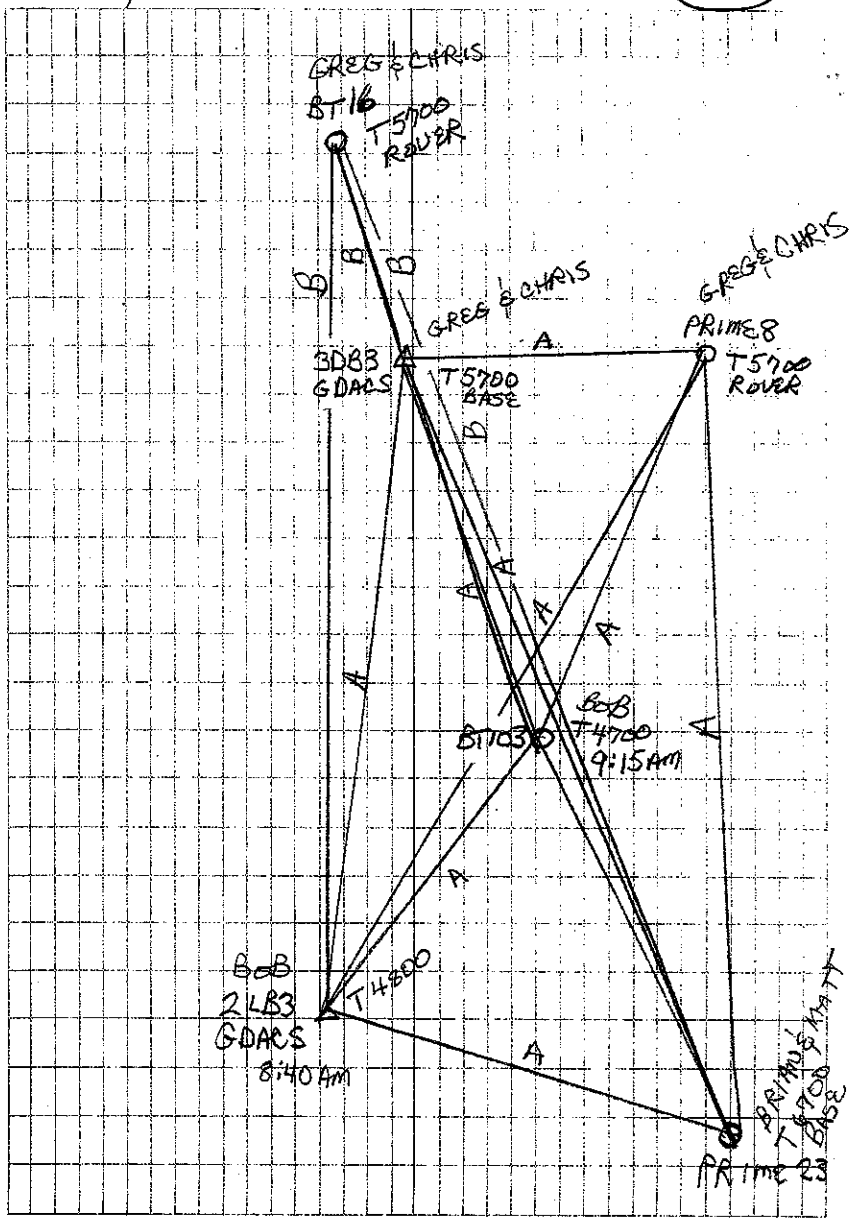
STATIC SESSIONS

B.P.		
TRIMBLE 4800	@ 2LB3	HI = 5.5683' FT.
Bob	START:	8:40 AM
	STOP:	2:25 PM (RV STAT 2)
TRIMBLE 4700	@ BT103	HI = 1.560 m 5.118'
Bob	START:	9:15 AM
	STOP:	2:00 PM (RV 4700)
TRIMBLE 5700 R	@ PRIME 8	HI = 1.635m 5.364
GREG & CHRIS	START:	8:34
	STOP:	11:00 AM
TRIMBLE 5700 B	@ 3DB3	HI = 1.650m 5.413'
GREG & CHRIS	START:	8:00
	STOP:	2:20
TRIMBLE 5800 B	@ PRIME 23	HI = 1.784m 5.853'
BRIAN & MATT	START:	8:32
	STOP:	2:03 PM
TRIMBLE 5700 R	@ BT 16	HI = 1.619m 5.313'
GREG & CHRIS	START:	11:33 AM
	STOP:	2:00 PM

02/07/05

COOL / CLOUDY / LT. BRZ

42/1



BP
M.S.

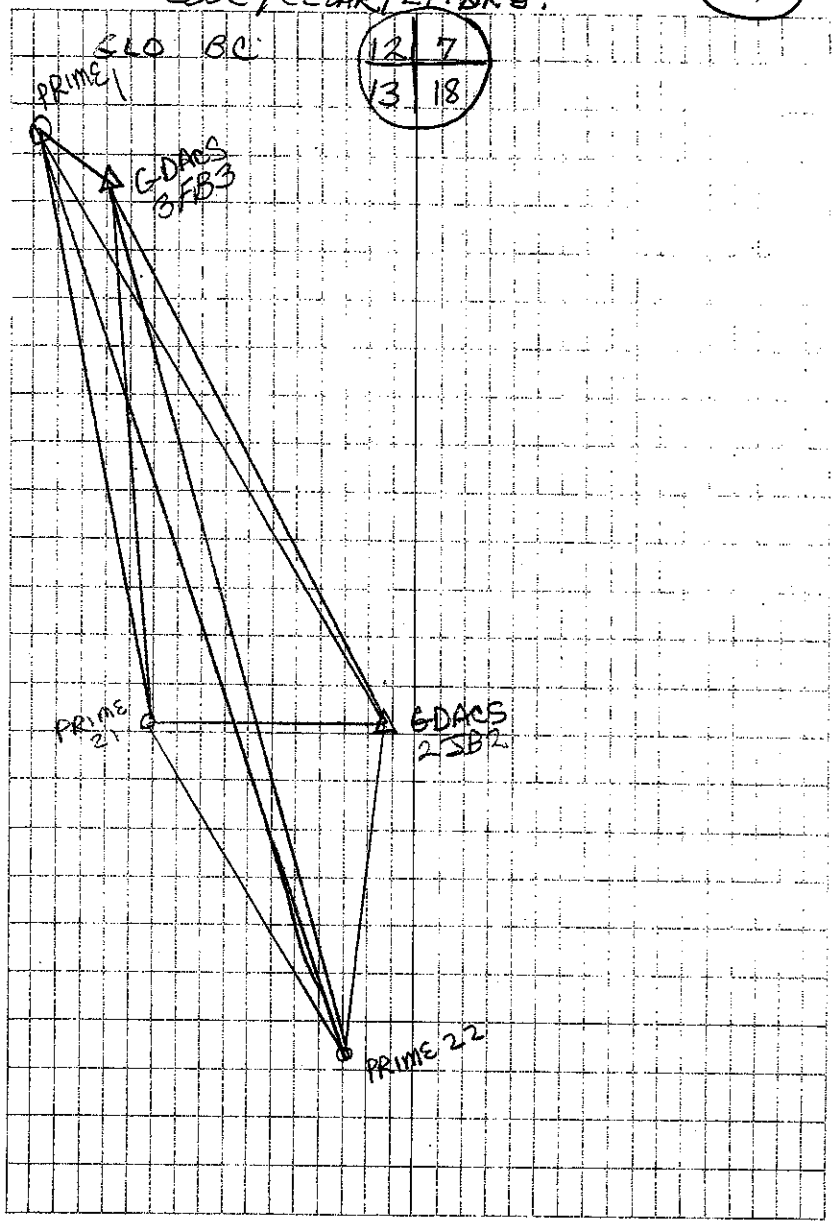
RAINBOW VALLEY STATIC

02/08/05

COOL / CLEAR / LT. BRZ.

42/3

			HI = 1.4335 m
✓ TRIMBLE	4800	@ PRIME 21	HI = 1.6715 m GROUND
		ALSO. T5S, R1W, S12 NW	
BOB & MATT	START:	10:15 AM	
	STOP:	2:37 PM	
✓ TRIMBLE	4700	@ 2JB2	HI = 5.243'
	START:	11:20 AM	
	STOP:	2:01 PM	
✓ TRIMBLE	5700	@ PRIME 1	HI = 5.026'
GREG & CHRIS	START:	8:35	
	STOP:	2:00	
✓ TRIMBLE	5700	@ 3BF3	HI = 5.465'
	START:	8:05	
	STOP:	2:15	
✓ TRIMBLE	5800	@ PRIME 22	HI = 6.056'
	START:	8:35	
	STOP:	2:00	



BP
CL

RAINBOW VALLEY STATIC

TRIMBLE 4800 @ BT16 HI = 5.144'
START: 1000 AM
STOP: 1:40 PM

TRIMBLE 4700 @ PRIME 1 HI = 5.08'
START: 1055 AM
STOP: 1:00 PM

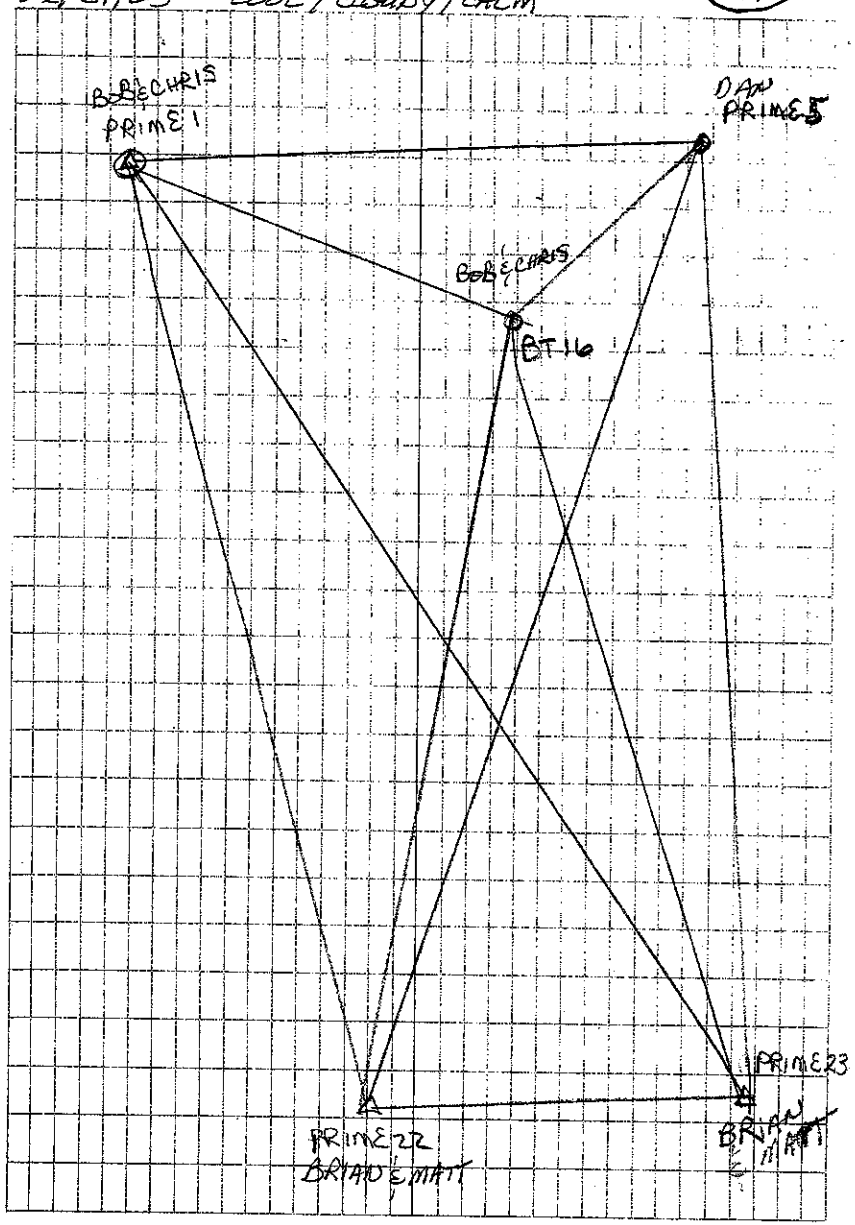
TRIMBLE 5700 @ PRIME 5 HI = 4.888'
START: 10:50 AM
STOP: 1:02 PM

TRIMBLE 5800 @ PRIME 23 HI = 5.755'
START: 8:53 AM
STOP: 1:01 PM

TRIMBLE 5700 @ PRIME 22 HI = 6.056'
START: 9:53 AM
STOP: 1:53 PM

02/21/05 COOL / CLOUDY / CALM

(42/4)



BP
BB

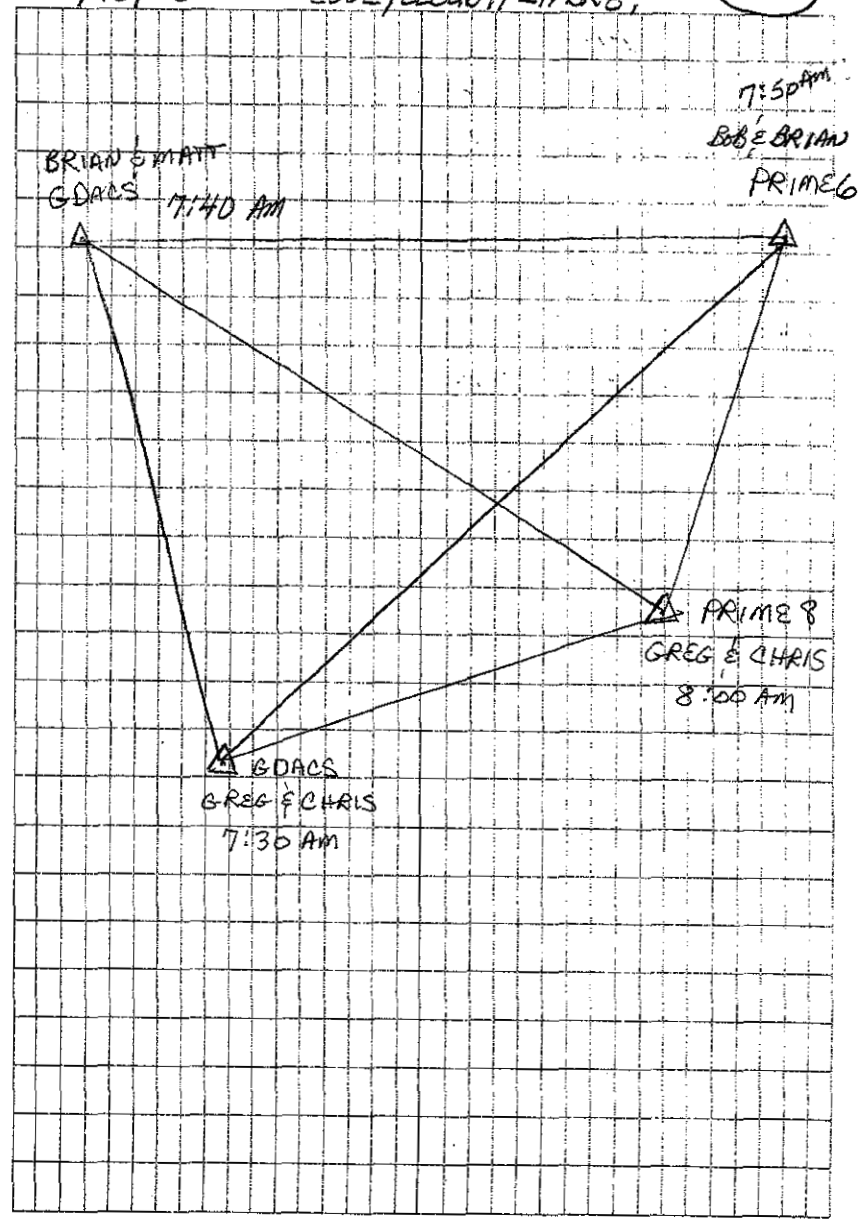
RAINBOW VALLEY STATIC

= 1.868 m

TRIMBLE	4800 @ PRIME 6	HT = 5.1414	
	START: 0750 AM		
	STOP: 10:30 AM		
TRIMBLE	5700 @ PRIME 8	HT =	
	START: 8:03 AM		
	STOP: 10:30 AM		
TRIMBLE	5700 @	HT =	
	START: 7:30 AM		
	STOP: 10:30 AM		
TRIMBLE	5800 @	HT =	
	START: 7:40 AM		
	STOP: 10:30 AM		
TRIMBLE	4700 @ PRIME 6	HT = 4.917'	
	START: 11:00		
	STOP: 12:00		

3/18/05 COOL/CLOUDY/LT. BRZ.

42/5



PROJECT ENGINEERING CONSULTANTS, LTD. DATA

Since 3DD1 was already occupied, a rebar was set 8'± northwest of 3DD1. This became point 9999. The elevation for that point, based upon 3DD1, is 322.971m.

****

Session A
02-08-2005
11:30 am - 4:15 pm

Pt: 9999 (Rebar 8'± northwest of 3DD1)
H.I.: 1.705m
Antenna: AERAT2775_42

Pt: 3FB2
H.I.: 1.920m
Antenna: ASH701975.01A (Rev. A)

Pt: 2IA3
H.I.: 1.759m
Antenna: AERAT2775_42

****

Session B
02-08-2005
4:20 pm - 8:40 pm

Pt: 9999 (Rebar 8'± northwest of 3DD1)
H.I.: 1.705m
Antenna: AERAT2775_42

Pt: 3FB2
H.I.: 1.920m
Antenna: ASH701975.01A (Rev. A)

Pt: 2IA3
H.I.: 1.759m
Antenna: AERAT2775_42

****

Session C
02-09-2005
11:30 am - 3:45 pm

Pt: 9999 (Rebar 8'± northwest of 3DD1)
H.I.: 1.777m
Antenna: AERAT2775_42

Pt: 3FB2
H.I.: 1.984m
Antenna: ASH701975.01A (Rev. A)

Pt: 2IA3
H.I.: 1.829m
Antenna: AERAT2775_42

6.8241

HIs.txt

The HI for both days is 2.080m measured vertically to the antenna phase center.

The antenna type is an Ashtech ASH700718B Geodetic III 'Whopper', REV. D

NETWORK ADJUSTMENT REPORT

Network Adjustment Report

Project : RV ALL STAT

User name	bphillips	**Date & Time**	2:50:34 PM 4/8/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Goeid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Adjustment Style Settings - 95% Confidence Limits

Residual Tolerances

To End Iterations : 0.000033ift
Final Convergence Cutoff : 0.016404ift

Covariance Display

Horizontal
Propagated Linear Error [E] : U.S.
Constant Term [C] : 0.00000000ift
Scale on Linear Error [S] : 1.96

Three-Dimensional
Propagated Linear Error [E] : U.S.
Constant Term [C] : 0.00000000ift
Scale on Linear Error [S] : 1.96
Elevation Errors were used in the calculations.

Adjustment Controls

Compute Correlations for Geoid : True
Horizontal and Vertical adjustment performed

Set-up Errors

GPS
Error in Height of Antenna : 0.000ift
Centering Error : 0.000ift

Back to top

Statistical Summary

Successful Adjustment in 1 iteration(s)

Network Reference Factor : 0.99
Chi Square Test (α=95%) : PASS
Degrees of Freedom : 111.00

GPS Observation Statistics

Reference Factor : 1.00
Redundancy Number (r) : 110.01

Individual GPS Observation Statistics

Observation ID	Reference Factor	Redundancy Number
B4	0.76	1.91
B6	1.31	2.26
B7	1.16	1.33
B8	0.99	2.20
B9	0.31	2.01
B11	0.91	1.92
B12	0.18	1.60
B13	0.81	2.35
B14	0.42	2.37
B15	0.99	2.18
B16	1.77	1.48
B17	0.66	2.48
B18	0.32	2.28
B19	1.19	0.61
B20	0.85	2.53
B21	1.05	2.04
B22	0.34	2.24
B23	0.70	2.16
B24	0.80	2.34
B25	1.34	2.31
B26	0.77	2.67
B27	0.36	2.93

B28	0.57	1.58
B29	0.54	1.72
B30	0.27	2.72
B31	0.79	2.38
B32	1.06	1.86
B33	0.47	2.90
B34	0.45	2.57
B35	0.57	2.01
B36	0.65	1.99
B37	0.60	1.92
B38	0.30	2.20
B39	0.89	2.47
B40	0.57	1.73
B41	0.29	2.59
B42	0.49	2.30
B43	0.82	2.33
B44	0.60	2.23
B45	1.07	2.15
B46	0.54	2.69
B47	0.51	2.34
B48	0.43	2.65
B49	1.42	2.63
B51	1.62	2.47
B52	2.33	2.89
B55	1.17	1.81
B56	1.65	2.34
B57	1.79	2.18
B59	2.43	2.16

Geoid Model Statistics

Reference Factor : 0.14
Redundancy Number (r) : 0.99

Weighting Strategies

GPS Observations

User-defined Scalar Applied to All Observations

Scalar : 10.00

Geoid Observations

User-defined Scalar Applied to All Observations

Scalar : 1.00

Back to top

Adjusted Coordinates

Adjustment performed in WGS-84

Number of Points	: 17
Number of Constrained Points	: 6
Elevation Only	: 1
Horizontal plus Height and Elevation	: 5

Adjusted Grid Coordinates

Errors are reported using 1.96σ.

Point Name	Northing	N error	Easting	E error	Elevation	e error	Fix
3DB3	817447.9491ift	0.0000ift	565233.3812ift	0.0000ift	1206.8570ift	0.0000ift	N E h e
BT 103	717620.1849ift	0.0164ift	608895.7867ift	0.0162ift	1459.4151ift	0.8291ift	
BT 16	838847.6787ift	0.0144ift	549488.0159ift	0.0145ift	1099.6869ift	0.4526ift	
PRIME 8	817314.5622ift	0.0105ift	580785.0020ift	0.0102ift	1404.6635ift	0.5789ift	
PRIME 23	701205.7828ift	0.0153ift	612076.8275ift	0.0151ift	1526.1863ift	0.8566ift	
3BF3	849225.5903ift	0.0000ift	507662.2945ift	0.0000ift	935.8596ift	0.0000ift	N E h e
PRIME 21	727788.6596ift	0.0117ift	580551.6754ift	0.0112ift	1469.3697ift	0.7719ift	
2JB2	727072.3612ift	0.0000ift	596385.6019ift	0.0000ift	1430.8071ift	0.0000ift	N E h e
PRIME 1	852260.5427ift	0.0071ift	505440.4694ift	0.0070ift	855.6464ift	0.5482ift	
PRIME 22	701410.6380ift	0.0137ift	596291.0147ift	0.0136ift	1575.7703ift	0.8415ift	
PRIME 5	851132.9461ift	0.0243ift	563383.5151ift	0.0283ift	1263.8188ift	0.5851ift	
PRIME 6	855207.9250ift	0.0196ift	580259.1670ift	0.0166ift	1108.8707ift	0.6531ift	
3EC2	801803.2788ift	0.0166ift	549302.0704ift	0.0146ift	1106.0404ift	0.4219ift	
XMKL	886132.3523ift	0.0129ift	561796.7683ift	0.0120ift	973.7264ift	0.7131ift	

2IA3	738888.2649ift	0.0000ift	584649.9515ift	0.0000ift	1387.1719ift	0.0000ift	N E h e
3FB2	788012.3961ift	0.0000ift	563737.6379ift	0.0000ift	1154.1011ift	0.0000ift	N E h e
9999	817866.2237ift	0.0153ift	532578.9652ift	0.0130ift	1059.6161ift	0.0000ift	e

Adjusted Geodetic Coordinates

Errors are reported using 1.96σ.

Point Name	Latitude	N error	Longitude	E error	Height	h error	Fix
3DB3	33° 14'46.88724"N	0.0000ift	112° 21'26.93786"W	0.0000ift	1107.0538ift	0.0000ift	Lat Long h e
BT 103	32° 58'20.65821"N	0.0164ift	112° 12'49.47144"W	0.0162ift	1359.3007ift	0.1113ift	
BT 16	33° 18'17.92292"N	0.0144ift	112° 24'33.52980"W	0.0145ift	999.8888ift	0.1044ift	
PRIME 8	33° 14'46.17907"N	0.0105ift	112° 18'23.80856"W	0.0102ift	1305.4761ift	0.0996ift	
PRIME 23	32° 55'38.32716"N	0.0153ift	112° 12'11.60548"W	0.0151ift	1426.0809ift	0.1196ift	
3BF3	33° 19'58.37467"N	0.0000ift	112° 32'47.09057"W	0.0000ift	835.3675ift	0.0000ift	Lat Long h e
PRIME 21	33° 00'00.35773"N	0.0117ift	112° 18'22.63873"W	0.0112ift	1368.9906ift	0.0858ift	
2JB2	32° 59'53.81195"N	0.0000ift	112° 15'16.68262"W	0.0000ift	1330.6102ift	0.0000ift	Lat Long h e
PRIME 1	33° 20'28.26823"N	0.0071ift	112° 33'13.49649"W	0.0070ift	755.1813ift	0.0456ift	
PRIME 22	32° 55'39.89140"N	0.0137ift	112° 15'16.82607"W	0.0136ift	1475.5857ift	0.1127ift	
PRIME 5	33° 20'20.09369"N	0.0243ift	112° 21'50.42023"W	0.0283ift	1164.4872ift	0.1887ift	
PRIME 6	33° 21'01.08429"N	0.0196ift	112° 18'31.67693"W	0.0166ift	1009.7972ift	0.1833ift	
3EC2	33° 12'11.39177"N	0.0166ift	112° 24'33.66256"W	0.0146ift	1005.5720ift	0.0795ift	
XMKL	33° 26'06.30953"N	0.0129ift	112° 22'10.91924"W	0.0120ift	874.1439ift	0.2210ift	

2IA3	33° 01'50.33230"N	0.0000ift	112° 17'34.98158"W	0.0000ift	1286.8438ift	0.0000ift	Lat Long h e
3FB2	33° 09'55.58076"N	0.0000ift	112° 21'43.07516"W	0.0000ift	1053.7073ift	0.0000ift	Lat Long h e
9999	33° 14'49.49777"N	0.0153ift	112° 27'51.47040"W	0.0130ift	959.0606ift	0.0922ift	e

Coordinate Deltas

Point Name	ΔNorthing	ΔEasting	ΔElevation	ΔHeight	ΔGeoid Separation
3DB3	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift
BT 103	0.0000ift	0.0000ift	-0.0289ift	0.0000ift	-0.0289ift
BT 16	0.0000ift	0.0000ift	-0.0587ift	0.0000ift	-0.0587ift
PRIME 8	0.0000ift	0.0000ift	-0.0523ift	0.0000ift	-0.0523ift
PRIME 23	0.0000ift	0.0000ift	-0.0243ift	0.0000ift	-0.0243ift
3BF3	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift
PRIME 21	0.0000ift	0.0000ift	-0.0361ift	0.0000ift	-0.0361ift
2JB2	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift
PRIME 1	0.0000ift	0.0000ift	-0.0536ift	0.0000ift	-0.0536ift
PRIME 22	0.0000ift	0.0000ift	-0.0269ift	0.0000ift	-0.0269ift
PRIME 5	0.0000ift	0.0000ift	-0.0531ift	0.0000ift	-0.0531ift
PRIME 6	0.0000ift	0.0000ift	-0.0486ift	0.0000ift	-0.0486ift
3EC2	0.0000ift	0.0000ift	-0.0598ift	0.0000ift	-0.0598ift
XMKL	0.0000ift	0.0000ift	-0.0444ift	0.0000ift	-0.0444ift
2IA3	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift
3FB2	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift
9999	0.0000ift	0.0000ift	0.0000ift	0.0000ift	0.0000ift

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Control Coordinate Comparisons

Values shown are control coord minus adjusted coord.

Point Name	ΔNorthing	ΔEasting	ΔElevation	ΔHeight

3DB3	N/A	N/A	N/A	N/A
3BF3	N/A	N/A	N/A	N/A
2JB2	N/A	N/A	N/A	N/A
3EC2	0.0272ift	-0.0032ift	0.0292ift	0.0054ift
2IA3	N/A	N/A	N/A	N/A
3FB2	N/A	N/A	N/A	N/A
9999	N/A	N/A	N/A	N/A

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Adjusted Observations

Adjustment performed in WGS-84

GPS Observations

GPS Transformation Group: <GPS Default>

Deflection in Longitude : 0°00'00.0991" **(1.96σ)** : 0°00'00.5265"
Deflection in Latitude : 0°00'00.1151" **(1.96σ)** : 0°00'00.4121"
Azimuth Rotation : -0°00'00.0471" **(1.96σ)** : 0°00'00.0155"
Network Scale : 0.99999986 **(1.96σ)** : 0.00000008

Number of Observations : 50
Number of Outliers : 0

Observation Adjustment (Critical Tau = 3.52). Any outliers are in red.

Obs. ID	From Pt.	To Pt.		Observation	A-posteriori Error (1.96σ)	Residual	Stand. Residual
B59	9999	2IA3	Az.	146° 18'11.6653"	0°00'00.0271"	0° 00'00.0546"	2.59
			ΔHt.	327.7142ift	0.0896ift	-0.0889ift	-1.22
			Dist.	94605.913ift	0.015ift	0.041ift	3.17
B52	3FB2	2IA3	Az.	156° 41'49.8205"	0°00'00.0154"	0° 00'00.1545"	2.94
			ΔHt.	233.0992ift	0.0498ift	-0.2363ift	-2.48
			Dist.	53394.484ift	0.004ift	-0.014ift	-0.87
B51	XMKL	3FB2	Az.	178°	0°00'00.0213"	-0°	-2.81

				37'04.9987"		00'00.0581"	
			ΔHt.	179.5077ift	0.0653ift	-0.0271ift	-0.35
			Dist.	98146.834ift	0.011ift	-0.006ift	-0.51
B16	PRIME 21	2JB2	Az.	92°22'40.7230"	0°00'00.1555"	-0° 00'00.0257"	-0.32
			ΔHt.	-38.3882ift	0.0737ift	0.0460ift	1.30
			Dist.	15851.477ift	0.012ift	0.017ift	2.74
B57	9999	3FB2	Az.	133° 28'29.5625"	0°00'00.0609"	-0° 00'00.1425"	-2.66
			ΔHt.	94.6152ift	0.0910ift	0.0821ift	1.12
			Dist.	43155.384ift	0.014ift	0.002ift	0.18
B49	XMKL	2IA3	Az.	170° 55'45.7016"	0°00'00.0156"	0° 00'00.0194"	1.02
			ΔHt.	412.6067ift	0.0709ift	-0.2316ift	-2.20
			Dist.	149019.142ift	0.012ift	-0.006ift	-0.34
B25	BT 16	PRIME 22	Az.	160° 55'29.4773"	0°00'00.0208"	-0° 00'00.0388"	-2.07
			ΔHt.	475.5977ift	0.1072ift	0.0154ift	0.15
			Dist.	145199.458ift	0.016ift	0.019ift	1.29
B6	3DB3	BT 16	Az.	323° 24'48.4004"	0°00'00.1055"	0° 00'00.0942"	0.94
			ΔHt.	-107.1454ift	0.1035ift	0.0296ift	0.36
			Dist.	26570.153ift	0.015ift	-0.030ift	-2.05
B56	9999	2IA3	Az.	146° 18'11.6653"	0°00'00.0271"	0° 00'00.0083"	0.31
			ΔHt.	327.7142ift	0.0896ift	-0.1743ift	-2.02
			Dist.	94605.913ift	0.015ift	-0.028ift	-2.05
B19	3BF3	PRIME 1	Az.	323° 26'48.5282"	0°00'00.3647"	-0° 00'00.0521"	-0.55
			ΔHt.	-80.1833ift	0.0451ift	-0.0077ift	-0.66
			Dist.	3761.523ift	0.007ift	0.004ift	1.92
B45	3BF3	XMKL	Az.	55°22'07.9508"	0°00'00.0383"	0° 00'00.0507"	1.63
			ΔHt.	38.7714ift	0.0704ift	-0.0360ift	-0.61
			Dist.	65522.796ift	0.011ift	0.006ift	0.77
B21	PRIME 21	PRIME 22	Az.	148° 57'50.8807"	0°00'00.0780"	0° 00'00.0857"	1.55

			ΔHt.	106.5730ift	0.0819ift	0.0006ift	0.01
			Dist.	30719.511ift	0.013ift	-0.011ift	-1.06
B7	3DB3	PRIME 8	Az.	90°14'59.0204"	0°00'00.1359"	0° 00'00.0738"	1.17
			ΔHt.	198.4150ift	0.0703ift	0.0074ift	0.25
			Dist.	15553.458ift	0.010ift	0.007ift	1.45
B55	XMKL	9999	Az.	202° 55'18.7762"	0°00'00.0413"	-0° 00'00.0248"	-1.02
			ΔHt.	84.8926ift	0.0963ift	-0.0915ift	-1.44
			Dist.	74261.362ift	0.015ift	0.011ift	1.07
B32	PRIME 22	PRIME 23	Az.	90°33'35.0923"	0°00'00.1636"	-0° 00'00.1627"	-1.41
			ΔHt.	-49.5123ift	0.0891ift	-0.0050ift	-0.09
			Dist.	15788.552ift	0.013ift	-0.012ift	-1.35
B11	3DB3	PRIME 23	Az.	157° 48'38.4992"	0°00'00.0180"	-0° 00'00.0072"	-0.56
			ΔHt.	318.9397ift	0.0829ift	0.0378ift	0.73
			Dist.	125336.485ift	0.011ift	0.011ift	1.34
B24	PRIME 1	PRIME 22	Az.	148° 35'33.5789"	0°00'00.0127"	0° 00'00.0063"	0.54
			ΔHt.	720.2765ift	0.0739ift	-0.0013ift	-0.02
			Dist.	176108.151ift	0.012ift	-0.015ift	-1.33
B15	3BF3	PRIME 21	Az.	148° 40'55.4435"	0°00'00.0154"	-0° 00'00.0163"	-1.32
			ΔHt.	533.5204ift	0.0749ift	0.0352ift	0.55
			Dist.	141642.719ift	0.012ift	0.010ift	1.01
B8	BT 16	BT 103	Az.	153° 37'23.7223"	0°00'00.0241"	0° 00'00.0247"	1.23
			ΔHt.	359.3158ift	0.1084ift	-0.0259ift	-0.27
			Dist.	135012.619ift	0.017ift	-0.018ift	-1.30
B39	PRIME 8	3BF3	Az.	293° 21'45.1440"	0°00'00.0278"	-0° 00'00.0325"	-1.05
			ΔHt.	-470.0557ift	0.0716ift	-0.0080ift	-0.10
			Dist.	79788.189ift	0.010ift	-0.015ift	-1.28
B26	BT 16	PRIME 1	Az.	286° 39'55.0021"	0°00'00.0670"	-0° 00'00.0267"	-0.26
			ΔHt.	-244.6788ift	0.1103ift	0.0586ift	0.37

			Dist.	46047.469ift	0.016ift	-0.029ift	-1.26
B31	BT 16	PRIME 23	Az.	155° 16'41.8792"	0°00'00.0186"	-0° 00'00.0120"	-0.71
			ΔHt.	426.0852ift	0.0973ift	-0.0225ift	-0.21
			Dist.	151216.587ift	0.015ift	0.019ift	1.25
B4	3DB3	BT 103	Az.	156° 08'08.2214"	0°00'00.0247"	-0° 00'00.0073"	-0.49
			ΔHt.	252.1703ift	0.0856ift	0.0243ift	0.35
			Dist.	108967.924ift	0.014ift	0.011ift	1.22
B13	BT 16	PRIME 23	Az.	155° 16'41.8792"	0°00'00.0186"	0° 00'00.0228"	1.21
			ΔHt.	426.0852ift	0.0973ift	-0.0074ift	-0.08
			Dist.	151216.587ift	0.015ift	-0.012ift	-0.82
B43	PRIME 8	PRIME 6	Az.	358° 59'27.1637"	0°00'00.0863"	0° 00'00.0746"	0.88
			ΔHt.	-295.6573ift	0.0605ift	0.0016ift	0.03
			Dist.	37900.176ift	0.019ift	-0.021ift	-1.12
B20	PRIME 1	2JB2	Az.	143° 39'14.3522"	0°00'00.0153"	0° 00'00.0194"	1.08
			ΔHt.	575.3154ift	0.0780ift	0.0456ift	0.49
			Dist.	154746.967ift	0.013ift	-0.014ift	-0.89
B23	2JB2	PRIME 22	Az.	180° 01'38.2264"	0°00'00.1011"	0° 00'00.0340"	0.41
			ΔHt.	144.9614ift	0.0824ift	-0.0721ift	-1.05
			Dist.	25664.144ift	0.012ift	-0.004ift	-0.40
B40	PRIME 8	3EC2	Az.	243° 33'26.5981"	0°00'00.0957"	-0° 00'00.0513"	-1.04
			ΔHt.	-299.8976ift	0.0771ift	-0.0190ift	-0.30
			Dist.	35099.420ift	0.014ift	0.000ift	-0.04
B37	3BF3	3EC2	Az.	138° 22'09.5315"	0°00'00.0476"	-0° 00'00.0100"	-0.35
			ΔHt.	170.1582ift	0.0797ift	-0.0133ift	-0.18
			Dist.	63113.171ift	0.016ift	-0.010ift	-1.00
B17	3BF3	2JB2	Az.	143° 39'47.8062"	0°00'00.0154"	0° 00'00.0092"	0.55
			ΔHt.	495.1320ift	0.0766ift	0.0849ift	0.98
			Dist.	150985.470ift	0.013ift	0.001ift	0.06

B29	PRIME 5	PRIME 22	Az.	167° 21'33.8772"	0°00'00.0365"	-0° 00'00.0182"	-0.98
			ΔHt.	310.9990ift	0.1475ift	0.0086ift	0.09
			Dist.	153308.790ift	0.024ift	0.004ift	0.27
B47	PRIME 1	XMKL	Az.	58°38'32.3286"	0°00'00.0397"	0° 00'00.0077"	0.20
			ΔHt.	118.9548ift	0.0732ift	-0.0622ift	-0.88
			Dist.	65756.511ift	0.011ift	-0.002ift	-0.18
B28	BT 16	PRIME 5	Az.	48°14'55.9043"	0°00'00.2905"	0° 00'00.1246"	0.87
			ΔHt.	164.5988ift	0.1516ift	0.0033ift	0.03
			Dist.	18548.993ift	0.025ift	0.007ift	0.57
B35	PRIME 6	3BF3	Az.	265° 04'25.1653"	0°00'00.0549"	-0° 00'00.0438"	-0.84
			ΔHt.	-174.3982ift	0.0630ift	-0.0012ift	-0.04
			Dist.	72848.149ift	0.016ift	-0.008ift	-0.53
B44	PRIME 21	XMKL	Az.	353° 01'53.7139"	0°00'00.0163"	0° 00'00.0107"	0.79
			ΔHt.	-494.7491ift	0.0797ift	-0.0473ift	-0.65
			Dist.	159463.418ift	0.014ift	-0.006ift	-0.46
B36	PRIME 6	3EC2	Az.	209° 53'04.0788"	0°00'00.0623"	-0° 00'00.0449"	-0.79
			ΔHt.	-4.2401ift	0.0623ift	0.0169ift	0.54
			Dist.	61733.288ift	0.018ift	0.011ift	0.67
B34	PRIME 5	PRIME 23	Az.	161° 45'45.2326"	0°00'00.0364"	-0° 00'00.2063"	-0.66
			ΔHt.	261.4866ift	0.1503ift	0.0591ift	0.28
			Dist.	157649.700ift	0.025ift	0.066ift	0.65
B48	PRIME 22	XMKL	Az.	349° 14'14.9147"	0°00'00.0153"	-0° 00'00.0939"	-0.64
			ΔHt.	-601.3219ift	0.0819ift	-0.0716ift	-0.65
			Dist.	187930.377ift	0.014ift	0.023ift	0.61
B42	PRIME 6	3EC2	Az.	209° 53'04.0788"	0°00'00.0623"	0° 00'00.0372"	0.63
			ΔHt.	-4.2401ift	0.0623ift	-0.0068ift	-0.11
			Dist.	61733.288ift	0.018ift	-0.009ift	-0.56
		PRIME		144°		-0°	

B33	PRIME 1	23	Az.	25'53.0602"	0°00'00.0139"	00'00.1702"	-0.61
			ΔHt.	670.7640ift	0.0943ift	0.0403ift	0.14
			Dist.	184916.322ift	0.013ift	0.113ift	0.54
B14	PRIME 8	PRIME 23	Az.	164° 42'14.1292"	0°00'00.0233"	-0° 00'00.0135"	-0.58
			ΔHt.	120.5249ift	0.0824ift	-0.0160ift	-0.17
			Dist.	120262.036ift	0.014ift	-0.006ift	-0.48
B46	2JB2	XMKL	Az.	347° 32'46.7178"	0°00'00.0153"	-0° 00'00.0135"	-0.08
			ΔHt.	-456.3608ift	0.0736ift	-0.0621ift	-0.58
			Dist.	162790.870ift	0.013ift	0.013ift	0.31
B22	3BF3	PRIME 22	Az.	148° 42'32.1330"	0°00'00.0124"	-0° 00'00.0004"	-0.03
			ΔHt.	640.0931ift	0.0720ift	0.0331ift	0.49
			Dist.	172362.143ift	0.012ift	-0.003ift	-0.33
B18	PRIME 1	PRIME 21	Az.	148° 32'34.0068"	0°00'00.0154"	-0° 00'00.0064"	-0.47
			ΔHt.	613.7038ift	0.0764ift	0.0109ift	0.15
			Dist.	145388.956ift	0.013ift	-0.003ift	-0.26
B27	PRIME 1	PRIME 22	Az.	148° 35'33.5789"	0°00'00.0127"	-0° 00'00.1350"	-0.44
			ΔHt.	720.2765ift	0.0739ift	0.0151ift	0.05
			Dist.	176108.151ift	0.012ift	0.074ift	0.39
B41	PRIME 6	3BF3	Az.	265° 04'25.1653"	0°00'00.0549"	-0° 00'00.0183"	-0.22
			ΔHt.	-174.3982ift	0.0630ift	-0.0427ift	-0.43
			Dist.	72848.149ift	0.016ift	-0.006ift	-0.30
B9	PRIME 8	BT 103	Az.	164° 02'24.2896"	0°00'00.0304"	-0° 00'00.0137"	-0.41
			ΔHt.	53.7555ift	0.0758ift	-0.0092ift	-0.26
			Dist.	103590.805ift	0.016ift	-0.004ift	-0.27
B38	PRIME 8	PRIME 6	Az.	358° 59'27.1637"	0°00'00.0863"	-0° 00'00.0291"	-0.31
			ΔHt.	-295.6573ift	0.0605ift	-0.0095ift	-0.26
			Dist.	37900.176ift	0.019ift	0.007ift	0.36
B30	PRIME 5	PRIME 1	Az.	270° 52'08.3220"	0°00'00.0872"	-0° 00'00.0343"	-0.24

			ΔHt.	-409.2774ift	0.1525ift	0.0527ift	0.20
			Dist.	57957.966ift	0.029ift	0.013ift	0.04
B12	BT 103	PRIME 23	Az.	168° 52'14.4589"	0°00'00.1627"	0° 00'00.0114"	0.14
			ΔHt.	66.7696ift	0.0887ift	0.0088ift	0.15
			Dist.	16721.313ift	0.014ift	0.001ift	0.21

Geoid Observations

Number of Observations : 12
Number of Outliers : 0

Observation Adjustment (Critical Tau = 3.52). Any outliers are in red.

Observation ID	Point Name	Separation	A-posteriori Error (1.96σ)	Residual	Standardized Residual
G61	PRIME 22	-100.1846ift	0.8330ift	0.0269ift	0.14
G56	PRIME 23	-100.1055ift	0.8472ift	0.0243ift	0.14
G53	BT 103	-100.1144ift	0.8205ift	0.0289ift	0.14
G58	PRIME 21	-100.3791ift	0.7664ift	0.0361ift	0.14
G68	9999	-100.5555ift	0.0922ift	0.0668ift	0.14
G60	PRIME 1	-100.4650ift	0.5471ift	0.0536ift	0.14
G64	3EC2	-100.4683ift	0.4127ift	0.0598ift	0.14
G54	BT 16	-99.7982ift	0.4415ift	0.0587ift	0.14
G62	PRIME 5	-99.3316ift	0.5553ift	0.0531ift	0.14
G55	PRIME 8	-99.1874ift	0.5701ift	0.0523ift	0.14
G65	XMKL	-99.5826ift	0.6811ift	0.0444ift	0.14
G63	PRIME 6	-99.0735ift	0.6275ift	0.0486ift	0.14
G57	3BF3	?	?	?	?
G59	2JB2	?	?	?	?
G66	2IA3	?	?	?	?
G67	3FB2	?	?	?	?
G52	3DB3	?	?	?	?

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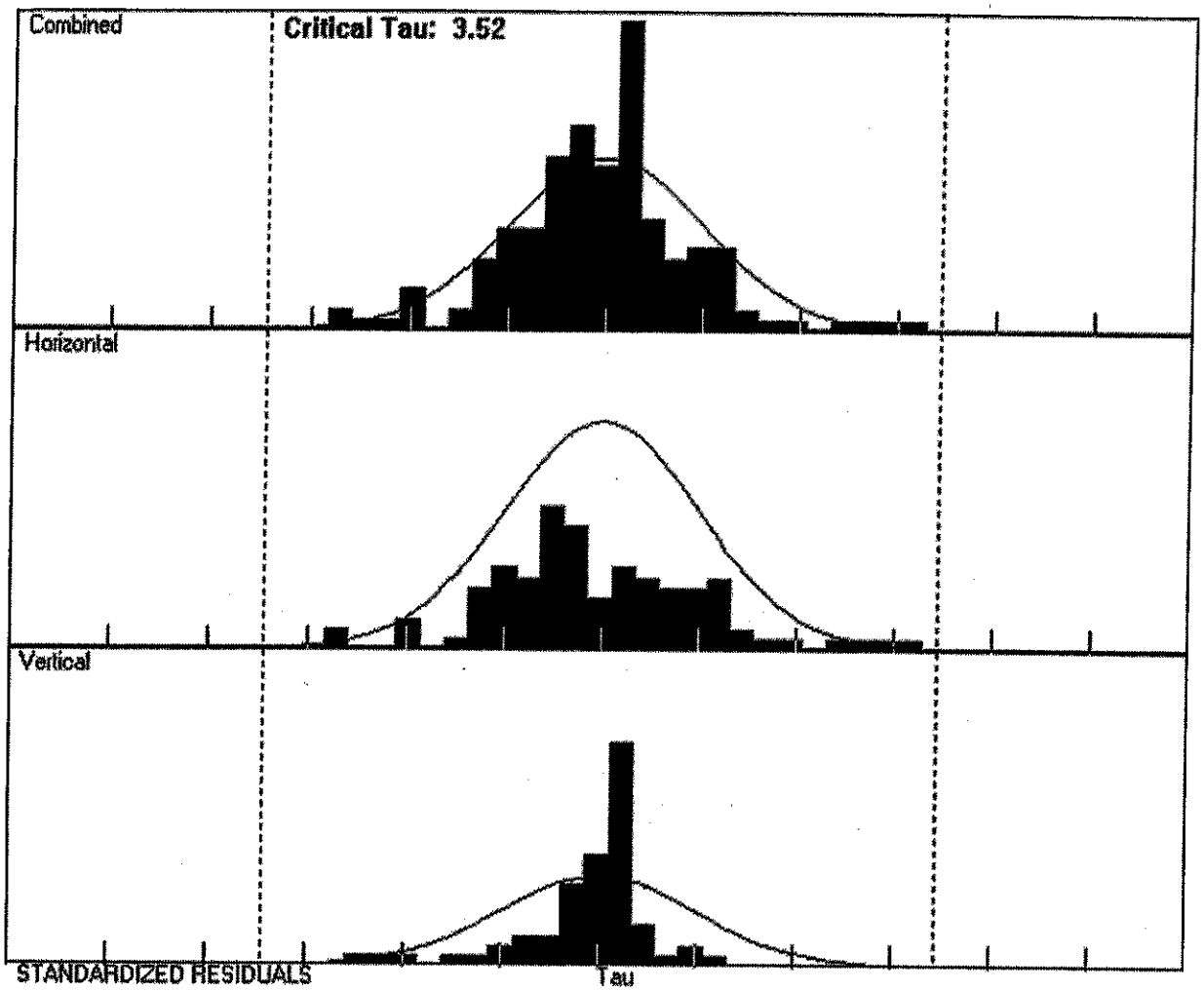
Histograms of Standardized Residuals



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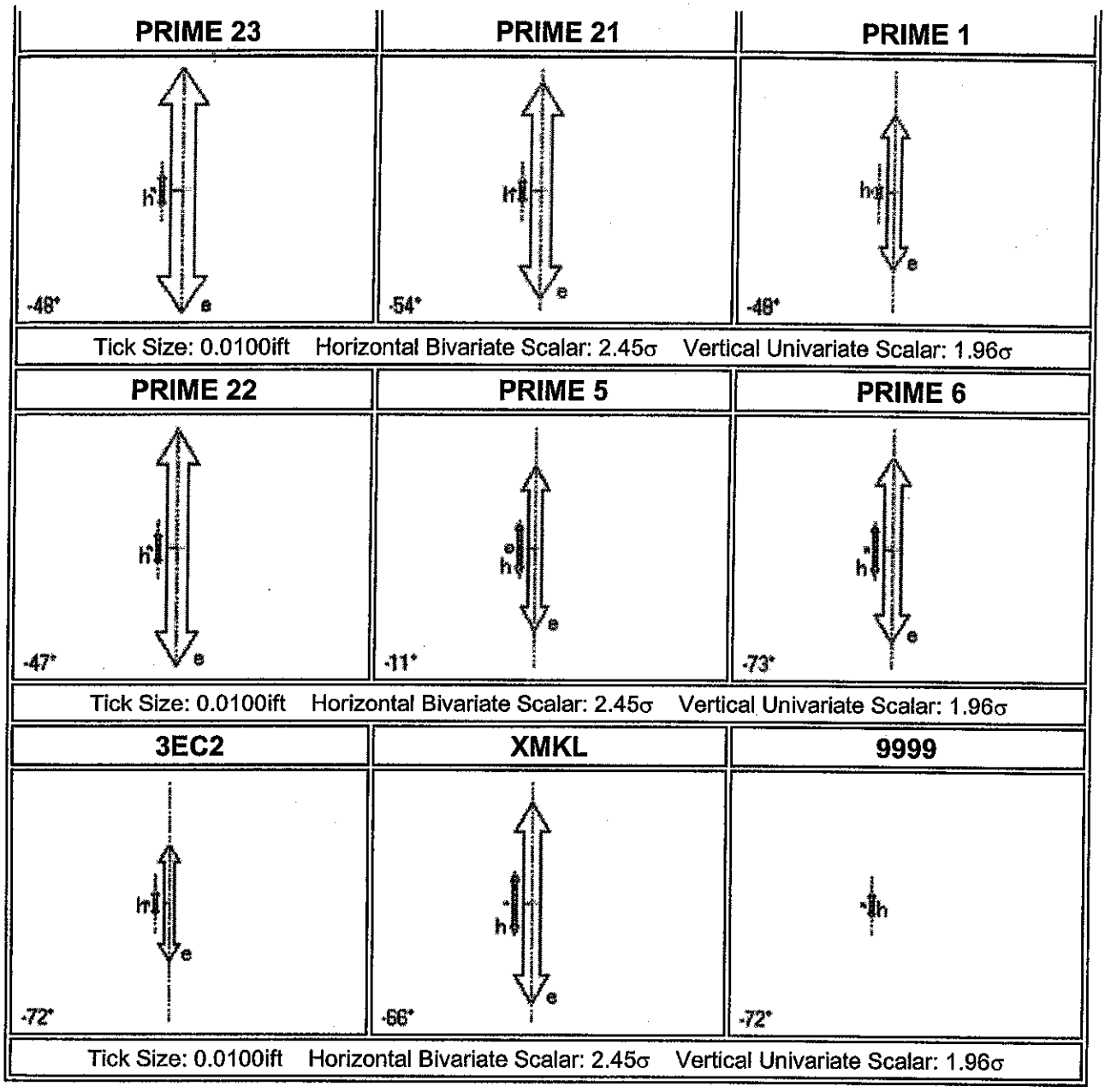
Point Error Ellipses

BT 103	BT 16	PRIME 8

Tick Size: 0.0100ft Horizontal Bivariate Scalar: 2.45σ Vertical Univariate Scalar: 1.96σ



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Covariant Terms

Adjustment performed in WGS-84

From Point	To Point		Components	A-posteriori Error (1.96σ)	Horiz. Precision (Ratio)	3D Precision (Ratio)
3DB3	BT 103	Az.	156°	0°00'00.0294"	1:6417193	1:6417193

			08'08.2687"			
		ΔHt.	252.2469ift	0.1113ift		
		ΔElev.	252.5581ift	0.8291ift		
		Dist.	108967.939ift	0.017ift		
3DB3	BT 16	Az.	323° 24'48.4476"	0°00'00.1060"	1:1744470	1:1744470
		ΔHt.	-107.1650ift	0.1044ift		
		ΔElev.	-107.1700ift	0.4526ift		
		Dist.	26570.157ift	0.015ift		
3DB3	PRIME 8	Az.	90°14'59.0675"	0°00'00.1387"	1:1519735	1:1519735
		ΔHt.	198.4223ift	0.0996ift		
		ΔElev.	197.8066ift	0.5789ift		
		Dist.	15553.461ift	0.010ift		
3DB3	PRIME 23	Az.	157° 48'38.5464"	0°00'00.0239"	1:7944518	1:7944518
		ΔHt.	319.0271ift	0.1196ift		
		ΔElev.	319.3294ift	0.8566ift		
		Dist.	125336.502ift	0.016ift		
BT 103	BT 16	Az.	333° 43'48.6573"	0°00'00.0285"	1:6524713	1:6524713
		ΔHt.	-359.4120ift	0.1582ift		
		ΔElev.	-359.7282ift	0.9298ift		
		Dist.	135012.638ift	0.021ift		
BT 103	PRIME 8	Az.	344° 05'26.9650"	0°00'00.0330"	1:5854969	1:5854969
		ΔHt.	-53.8246ift	0.1571ift		
		ΔElev.	-54.7516ift	0.8329ift		
		Dist.	103590.819ift	0.018ift		
BT 103	PRIME 23	Az.	168° 52'14.5061"	0°00'00.1634"	1:1208157	1:1208157
		ΔHt.	66.7801ift	0.0905ift		
		ΔElev.	66.7712ift	0.3588ift		
		Dist.	16721.316ift	0.014ift		
BT 16	PRIME 23	Az.	155° 16'41.9265"	0°00'00.0242"	1:7693681	1:7693681

		ΔHt.	426.1921ift	0.1647ift		
		ΔElev.	426.4994ift	0.9659ift		
		Dist.	151216.608ift	0.020ift		
BT 16	PRIME 1	Az.	286° 39'55.0494"	0°00'00.0662"	1:2903981	1:2903981
		ΔHt.	-244.7074ift	0.1101ift		
		ΔElev.	-244.0406ift	0.5916ift		
		Dist.	46047.476ift	0.016ift		
BT 16	PRIME 22	Az.	160° 55'29.5246"	0°00'00.0254"	1:7400516	1:7400516
		ΔHt.	475.6969ift	0.1671ift		
		ΔElev.	476.0834ift	0.9593ift		
		Dist.	145199.478ift	0.020ift		
BT 16	PRIME 5	Az.	48°14'55.9514"	0°00'00.2912"	1:736415	1:736415
		ΔHt.	164.5984ift	0.1686ift		
		ΔElev.	164.1318ift	0.4011ift		
		Dist.	18548.996ift	0.025ift		
PRIME 8	PRIME 23	Az.	164° 42'14.1765"	0°00'00.0268"	1:7260789	1:7260789
		ΔHt.	120.6047ift	0.1769ift		
		ΔElev.	121.5228ift	0.8838ift		
		Dist.	120262.053ift	0.017ift		
PRIME 8	3BF3	Az.	293° 21'45.1913"	0°00'00.0272"	1:7837111	1:7837111
		ΔHt.	-470.1086ift	0.0996ift		
		ΔElev.	-468.8039ift	0.5789ift		
		Dist.	79788.201ift	0.010ift		
PRIME 8	PRIME 6	Az.	358° 59'27.2107"	0°00'00.0870"	1:1984030	1:1984030
		ΔHt.	-295.6789ift	0.1086ift		
		ΔElev.	-295.7928ift	0.5398ift		
		Dist.	37900.182ift	0.019ift		
PRIME 8	3EC2	Az.	243° 33'26.6453"	0°00'00.0961"	1:2522334	1:2522334
		ΔHt.	-299.9041ift	0.1171ift		

		ΔElev.	-298.6232ift	0.5144ift		
		Dist.	35099.425ift	0.014ift		
PRIME 23	PRIME 1	Az.	324° 37'22.8664"	0°00'00.0186"	1:10001072	1:10001072
		ΔHt.	-670.8995ift	0.1320ift		
		ΔElev.	-670.5400ift	1.1107ift		
		Dist.	184916.347ift	0.018ift		
PRIME 23	PRIME 22	Az.	270° 35'15.8212"	0°00'00.1635"	1:1233999	1:1233999
		ΔHt.	49.5048ift	0.0827ift		
		ΔElev.	49.5840ift	0.3509ift		
		Dist.	15788.554ift	0.013ift		
PRIME 23	PRIME 5	Az.	341° 51'01.6542"	0°00'00.0395"	1:5513372	1:5513372
		ΔHt.	-261.5937ift	0.2498ift		
		ΔElev.	-262.3676ift	1.0394ift		
		Dist.	157649.722ift	0.029ift		
3BF3	PRIME 21	Az.	148° 40'55.4907"	0°00'00.0154"	1:11542470	1:11542470
		ΔHt.	533.6231ift	0.0858ift		
		ΔElev.	533.5101ift	0.7719ift		
		Dist.	141642.739ift	0.012ift		
3BF3	2JB2	Az.	143° 39'47.8534"	0°00'00.0000"	1:0	1:0
		ΔHt.	495.2427ift	0.0000ift		
		ΔElev.	494.9475ift	0.0000ift		
		Dist.	150985.491ift	0.000ift		
3BF3	PRIME 1	Az.	323° 26'48.5753"	0°00'00.3690"	1:510796	1:510796
		ΔHt.	-80.1862ift	0.0456ift		
		ΔElev.	-80.2132ift	0.5482ift		
		Dist.	3761.524ift	0.007ift		
3BF3	PRIME 22	Az.	148° 42'32.1802"	0°00'00.0153"	1:11925752	1:11925752
		ΔHt.	640.2182ift	0.1127ift		
		ΔElev.	639.9107ift	0.8415ift		

		Dist.	172362.167ift	0.014ift		
3BF3	PRIME 6	Az.	84°56'35.0517"	0°00'00.0558"	1:4421693	1:4421693
		ΔHt.	174.4297ift	0.1833ift		
		ΔElev.	173.0111ift	0.6531ift		
		Dist.	72848.159ift	0.016ift		
3BF3	3EC2	Az.	138° 22'09.5786"	0°00'00.0483"	1:3823672	1:3823672
		ΔHt.	170.2045ift	0.0795ift		
		ΔElev.	170.1808ift	0.4219ift		
		Dist.	63113.180ift	0.017ift		
3BF3	XMKL	Az.	55°22'07.9977"	0°00'00.0410"	1:5555931	1:5555931
		ΔHt.	38.7764ift	0.2210ift		
		ΔElev.	37.8668ift	0.7131ift		
		Dist.	65522.805ift	0.012ift		
PRIME 21	2JB2	Az.	92°22'40.7700"	0°00'00.1516"	1:1407611	1:1407611
		ΔHt.	-38.3804ift	0.0858ift		
		ΔElev.	-38.5626ift	0.7719ift		
		Dist.	15851.479ift	0.011ift		
PRIME 21	PRIME 1	Az.	328° 40'41.4756"	0°00'00.0178"	1:10123713	1:10123713
		ΔHt.	-613.8093ift	0.0965ift		
		ΔElev.	-613.7234ift	1.0169ift		
		Dist.	145388.976ift	0.014ift		
PRIME 21	PRIME 22	Az.	148° 57'50.9278"	0°00'00.0807"	1:2198080	1:2198080
		ΔHt.	106.5951ift	0.0876ift		
		ΔElev.	106.4006ift	0.4694ift		
		Dist.	30719.515ift	0.014ift		
PRIME 21	XMKL	Az.	353° 01'53.7607"	0°00'00.0219"	1:8562015	1:8562015
		ΔHt.	-494.8467ift	0.2781ift		
		ΔElev.	-495.6433ift	1.1180ift		
		Dist.	159463.441ift	0.019ift		
2JB2	PRIME 1	Az.	323°	0°00'00.0090"	1:21015061	1:21015061

			49'03.5506"			
		ΔHt.	-575.4289ift	0.0456ift		
		ΔElev.	-575.1607ift	0.5482ift		
		Dist.	154746.988ift	0.007ift		
2JB2	PRIME 22	Az.	180° 01'38.2736"	0°00'00.1092"	1:1868254	1:1868254
		ΔHt.	144.9755ift	0.1127ift		
		ΔElev.	144.9632ift	0.8415ift		
		Dist.	25664.148ift	0.014ift		
2JB2	XMKL	Az.	347° 32'46.7647"	0°00'00.0149"	1:12505844	1:12505844
		ΔHt.	-456.4663ift	0.2210ift		
		ΔElev.	-457.0807ift	0.7131ift		
		Dist.	162790.893ift	0.013ift		
PRIME 1	PRIME 22	Az.	148° 35'33.6261"	0°00'00.0175"	1:10541797	1:10541797
		ΔHt.	720.4043ift	0.1230ift		
		ΔElev.	720.1239ift	1.0919ift		
		Dist.	176108.175ift	0.017ift		
PRIME 1	PRIME 5	Az.	90°45'52.9456"	0°00'00.0874"	1:2015129	1:2015129
		ΔHt.	409.3059ift	0.1914ift		
		ΔElev.	408.1724ift	0.6840ift		
		Dist.	57957.974ift	0.029ift		
PRIME 1	XMKL	Az.	58°38'32.3755"	0°00'00.0423"	1:5358108	1:5358108
		ΔHt.	118.9625ift	0.2234ift		
		ΔElev.	118.0801ift	0.7242ift		
		Dist.	65756.520ift	0.012ift		
PRIME 22	PRIME 5	Az.	347° 25'09.0603"	0°00'00.0393"	1:5619642	1:5619642
		ΔHt.	-311.0985ift	0.2494ift		
		ΔElev.	-311.9515ift	1.0363ift		
		Dist.	153308.811ift	0.027ift		
PRIME 22	XMKL	Az.	349° 14'14.9615"	0°00'00.0217"	1:8690991	1:8690991
		ΔHt.	-601.4418ift	0.3081ift		

		ΔElev.	-602.0439ift	1.1974ift		
		Dist.	187930.404ift	0.022ift		
PRIME 6	3EC2	Az.	209° 53'04.1261"	0°00'00.0642"	1:3266969	1:3266969
		ΔHt.	-4.2252ift	0.1937ift		
		ΔElev.	-2.8303ift	0.6886ift		
		Dist.	61733.297ift	0.019ift		
XMKL	2IA3	Az.	170° 55'45.7490"	0°00'00.0165"	1:11477217	1:11477217
		ΔHt.	412.6999ift	0.2210ift		
		ΔElev.	413.4455ift	0.7131ift		
		Dist.	149019.163ift	0.013ift		
XMKL	3FB2	Az.	178° 37'05.0461"	0°00'00.0252"	1:7619228	1:7619228
		ΔHt.	179.5634ift	0.2210ift		
		ΔElev.	180.3747ift	0.7131ift		
		Dist.	98146.848ift	0.013ift		
XMKL	9999	Az.	202° 55'18.8236"	0°00'00.0427"	1:4648249	1:4648249
		ΔHt.	84.9167ift	0.2258ift		
		ΔElev.	85.8897ift	0.7131ift		
		Dist.	74261.372ift	0.016ift		
2IA3	3FB2	Az.	336° 44'05.3451"	0°00'00.0000"	1:0	1:0
		ΔHt.	-233.1365ift	0.0000ift		
		ΔElev.	-233.0708ift	0.0000ift		
		Dist.	53394.492ift	0.000ift		
2IA3	9999	Az.	326° 23'48.7293"	0°00'00.0283"	1:6164532	1:6164532
		ΔHt.	-327.7832ift	0.0922ift		
		ΔElev.	-327.5558ift	0.0000ift		
		Dist.	94605.926ift	0.015ift		
3FB2	9999	Az.	313° 31'51.3631"	0°00'00.0643"	1:2889596	1:2889596
		ΔHt.	-94.6467ift	0.0922ift		
		ΔElev.	-94.4850ift	0.0000ift		

Dist.	43155.390ift	0.015ift

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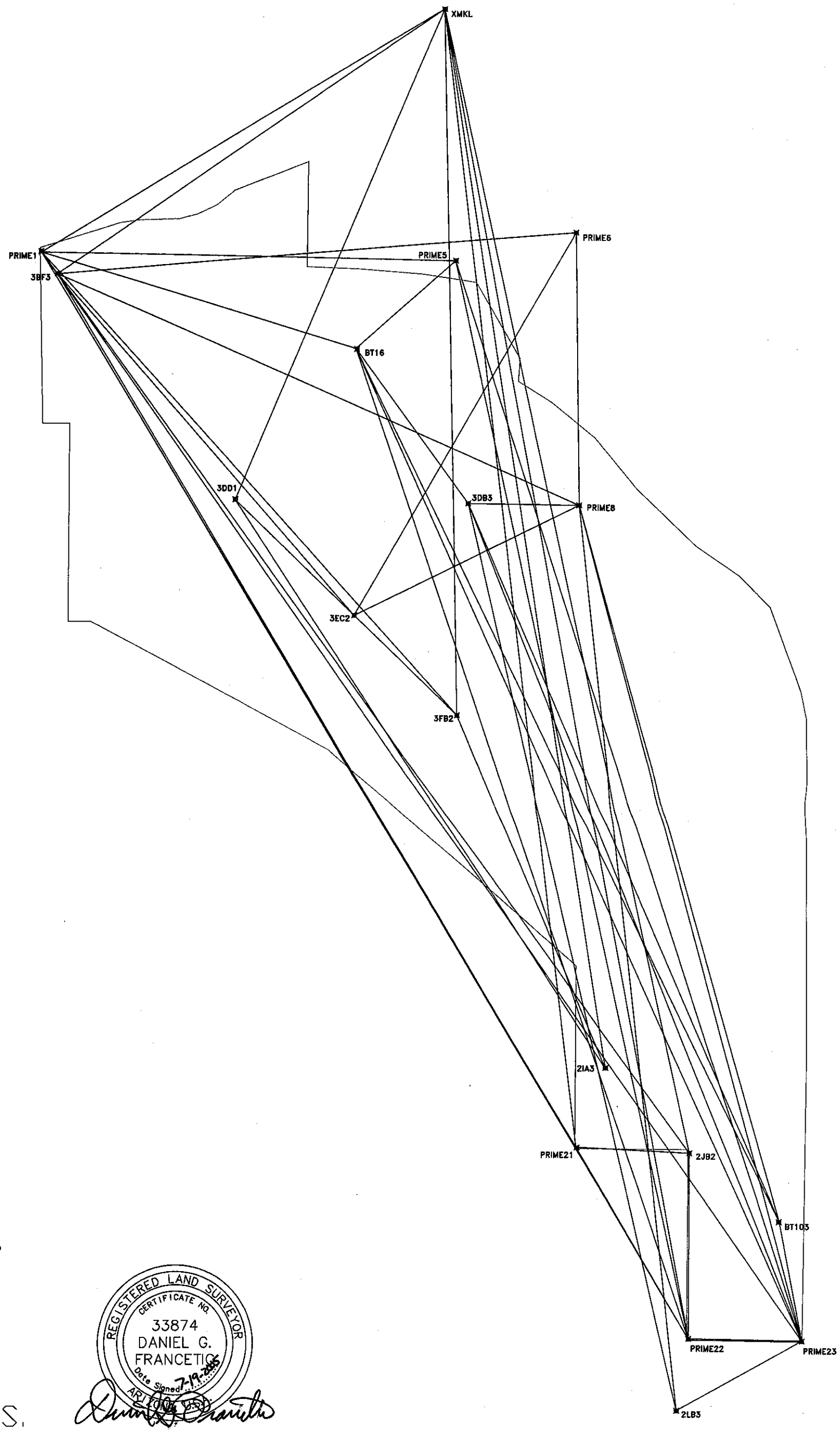
FINAL DELIVERABLES

FINAL PROCESSED DATA FOR STATIC
4/8/05 [illegible]

Point	Latitude	Longitude	Northing GRID	Easting GRID	Elipsoid Height	Elevation	Code
3DB3	33°14'46.88724"N	112°21'26.93786"W	817447.9491	565233.3812	1107.0538	1206.8570	GMON
3BF3	33°19'58.37467"N	112°32'47.09057"W	849225.5903	507662.2945	835.3675	935.8596	GMON
2JB2	32°59'53.81195"N	112°15'16.68262"W	727072.3612	596385.6019	1330.6102	1430.8071	GMON
3FB2	33°09'55.58076"N	112°21'43.07516"W	788012.3961	563737.6379	1053.7073	1154.1011	GMON
2IA3	33°01'50.33230"N	112°17'34.98158"W	738888.2649	584649.9515	1286.8438	1387.1719	GMON
3EC2	33°12'11.39204"N	112°24'33.66260"W	801803.3071	549302.0669	1005.5774	1106.0696	GMON
9999	33°14'49.49777"N	112°27'51.47040"W	817866.2237	532578.9652	959.0606	1059.6161	ACF
PRIME 1	33°20'28.26823"N	112°33'13.49649"W	852260.5427	505440.4694	755.1813	855.6464	ACF
PRIME 5	33°20'20.09369"N	112°21'50.42023"W	851132.9461	563383.5151	1164.4872	1263.8188	ACF
PRIME 6	33°21'01.08429"N	112°18'31.67693"W	855207.925	580259.167	1009.7972	1108.8707	ACF
PRIME 8	33°14'46.17907"N	112°18'23.80856"W	817314.5622	580785.002	1305.4761	1404.6635	ACF
PRIME 21	33°00'00.35773"N	112°18'22.63873"W	727788.6596	580551.6754	1368.9906	1469.3697	ACF
PRIME 22	32°55'39.8914"N	112°15'16.82607"W	701410.638	596291.0147	1475.5857	1575.7703	ACF
PRIME 23	32°55'38.32716"N	112°12'11.60548"W	701205.7828	612076.8275	1426.0809	1526.1863	ACF
XMKL	33°26'06.30953"N	112°22'10.91924"W	886132.3523	561796.7683	874.1439	973.7264	RB
BT 16	33°18'17.92292"N	112°24'33.52980"W	838847.6787	549488.0159	999.8888	1099.6869	ACF
BT 103	32°58'20.65821"N	112°12'49.47144"W	717620.1849	608895.7867	1359.3007	1459.4151	ACF

Point	Latitude (NAD 83(92))	Longitude (NAD 83(92))	UTM North (Meters) Zone 12	UTM East (Meters) Zone 12	Northing (NAD 83(92)) Central Zone GRID (Int Ft)	Easting (NAD 83(92)) Central Zone GRID (Int Ft)	Elipsoid Height (Int Ft)	Elevation NAVD88 (Int Ft)	Code
3FB2	33°09'55.58076"N	112°21'43.07516"W	3670453.604	373004.011	788012.3961	563737.6379	1053.7073	1154.1011	GMON
2IA3	33°01'50.33230"N	112°17'34.98158"W	3655427.382	379246.202	738888.2649	584649.9515	1286.8438	1387.1719	GMON
9999	33°14'49.49777"N	112°27'51.47040"W	3679634.897	363588.016	817866.2237	532578.9652	959.0606	1059.6161	ACF
XMKL	33°26'06.30953"N	112°22'10.91924"W	3700360.954	372675.241	886132.3523	561796.7683	874.1439	973.7264	RB
NOTES									
Latitude, Longitude and Grid Northings and Eastings are on the NAD83 (1992) Datum, Arizona State Plane Coordinate System.									
NAVD88 Elevations obtained through GPS methods.									
UTM Values obtained by converting Latitude and Longitude using the NGS conversion program, (NAD 83 to UTM).									
Geoid 03 Model, Zone 5									

MAP OF STATIC NETWORK



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

STACTIC NETWORK MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, & PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST, MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/12/05	1	1	

H.Z. JOB NO. 05-1487-01

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GPS COORDINATE DATA BY AREA

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 1
4/20/2005 MS

POINT	NORTH	EAST	ELEV	DESC
3BD3	850589.3307	534183.8845	989.469	GMON
4AE1	866245.8497	520688.8156	869.226	GMON
3CC3	831084.0223	549534.1503	1102.133	GMON
3CE3	834188.458	519572.2703	1002.690	GMON
HURLEYBASE	880847.7494	596759.1682	985.132	SET B.SPIKE
GPRIME 5	851132.9333	563383.495	1263.862	ACF
G3CC3	831083.989	549534.1221	1102.102	GMON
G3CE3	834188.4926	519572.3093	1002.689	GMON
G4AE1	866245.8705	520688.8703	869.174	GMON
PRIME 5	851132.946	563383.515	1263.819	ACF
CSPRIME 160	850327.359	534337.8359	961.365	ACF
CSPRIME 2	854930.5818	518150.883	871.321	ACF
PRIME 3	861703.4015	537607.2183	910.732	ACF
PRIME 4	852795.5178	547051.1955	1081.816	ACF
CSPRIME 3	861703.4075	537607.1852	910.672	ACF
CSPRIME 4	852795.4953	547051.2681	1081.987	ACF
CKPRIME 4	852795.5557	547051.2382	1081.882	ACF

CHECKED: OGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 2
4/14/2005 MS

POINT	NORTH	EAST	ELEV	DESC
3BD3	850589.3307	534183.8845	989.469	GMON
3CG2	833447.6673	486993.2251	918.077	GMON
4AG1	865722.8248	488725.1903	892.388	GMON
4AE1	866245.8497	520688.8156	869.226	GMON
3BF3	849225.5906	507662.2933	935.860	GMON
G3BD3	850589.2654	534183.8918	989.501	GMON
G4AE1	866245.8703	520688.8124	869.193	GMON
G4AG1	865722.8622	488725.2371	892.345	GMON
3DF2	818000.4134	499205.5446	1030.280	GMON
G3CG2	833447.6998	486993.2341	918.073	GMON
PRIME 2	854930.6290	518150.8610	871.393	GMON

CHECKED:
DCF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 3
4/20/2005 MS

POINT	NORTH	EAST	ELEV	DESC
3CC3	831083.9914	549534.1659	1102.015	GMON
3BD3	850589.3307	534183.8845	989.469	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3DD1	817859.5571	532583.481	1059.547	GMON
GPRIME 5	851132.9417	563383.5363	1263.753	ACF
G3DB3	817447.9701	565233.358	1206.916	GMON
G3DD1	817859.5315	532583.4893	1059.486	GMON
G3BD3	850589.34	534183.8795	989.537	GMON
PRIME 5	851132.946	563383.515	1263.819	ACF

CHECKED: OGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 4
4/14/2005 MS

POINT	NORTH	EAST	ELEV	DESC
3DD1	817859.5571	532583.481	1059.547	GMON
3DF2	818000.4134	499205.5446	1030.28	GMON
3FD2	786974.4127	528281.0794	1354.003	GMON
3FF2	786680.4068	502618.5532	1339.34	GMON
G3FD2	786974.436	528281.0955	1353.974	GMON
G3DD1	817859.5683	532583.4889	1059.569	GMON
G3DF2	818000.3839	499205.5696	1030.258	GMON
G3FF2	786680.4017	502618.5041	1339.369	GMON
PRIME 10	801061.5966	509573.1319	1246.424	ACF
PRIME 11	793365.2371	527044.3159	1289.671	ACF
PRIME 11A	793365.2444	527044.3336	1289.612	ACF
PRIME 10A	801061.6093	509573.1355	1246.422	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 5
4/14/2005 MD

POINT	NORTH	EAST	ELEV	DESC
3FD2	786974.4127	528281.0794	1354.003	GMON
3DD1	817859.5571	532583.481	1059.547	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3FB2	788012.395	563737.6378	1154.101	GMON
PRIME 11AVG	793365.2405	527044.325	1289.641	ACF
G3FB2	788012.3895	563737.623	1154.098	GMON
G3DB3	817447.9319	565233.3972	1206.861	GMON
G3DD1	817859.5794	532583.4427	1059.544	GMON
G3FD2	786974.4135	528281.1178	1354.006	GMON
PRIME 11B	793365.2878	527044.2991	1289.672	ACF
PRIME 12	780465.0651	549379.7164	1243.801	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 6
4/20/2005 MS

POINT	NORTH	EAST	ELEV	DESC
3EC2	801803.3071	549302.0669	1106.069	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3CC3	831084.0223	549534.1503	1102.133	GMON
3EA3	801917.044	578335.3937	1265.092	GMON
GPRIME 8	817314.5818	580785.0118	1404.686	ACF
G3EA3	801917.132	578335.3742	1265.127	GMON
G3EC2	801803.3377	549302.0716	1106.012	GMON
G3CC3	831084.0264	549534.1835	1102.124	GMON
200	828299.2777	549426.9665	1095.691	BCF
201	801863.1939	549276.4104	1105.953	BCF
202	801851.6066	551832.2315	1102.404	ACF
203	812349.4382	565075.3805	1192.087	BCF
PRIME 8	817314.562	580785.002	1404.663	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 7
4/20/2005 MD

POINT	NORTH	EAST	ELEV	DESC
2EB3	799155.0197	601045.7021	1547.703	GMON
3EA3	801917.0440	578335.3937	1265.092	GMON
2FB3	787471.9725	596144.0082	1408.135	GMON
2GC3	771072.9528	611259.2421	1614.239	GMON
GPRIME 8	817314.5099	580784.9995	1404.667	ACF
G3EA3	801917.0735	578335.4179	1265.123	GMON
G2GC3	771072.9594	611259.2223	1614.232	GMON
G2EB3	799154.9828	601045.7113	1547.691	GMON
PRIME 8	817314.5620	580785.0020	1404.663	ACF
C2EB3	799155.0590	601045.7118	1547.720	GMON
BT 62	794281.2050	595813.1493	1421.114	PNL
2001	791086.0947	599303.7635	1437.334	BCF
PRIME 18	791280.5421	601960.4807	1465.367	ACF
2002	791080.4088	601947.4381	1464.668	BCF
PRIME 18A	791280.5713	601960.4292	1465.386	ACF
PRIME 9A	791123.2918	608121.2841	1663.544	ACF
PRIME 9AA	791123.2816	608121.3065	1663.538	ACF
BT 69	783596.3013	606865.5346	1589.134	PNL
BT 73	777097.6413	609961.1132	1586.848	PNL
CBT73	777097.5809	609961.1478	1586.902	PNL
BT 72	781150.4660	601092.4010	1512.620	PNL
2003	791122.7119	588739.5715	1331.635	GLO
BT 65	791098.8395	587428.8439	1319.059	PNL
2004	791134.3648	586099.4873	1308.949	GLO
2005	791155.9450	580825.4550	1259.431	GLO
2006	791239.0977	580864.0843	1259.815	GLO
2007	793796.5549	580837.2992	1264.956	GLO
BT 60	796388.1074	580866.0793	1269.091	FIP
BT 47	809518.0182	588698.6441	1459.485	PNL
BT 55	801720.8914	591473.4287	1382.348	PNL
2008	801679.9078	591433.2300	1382.154	GLO
PRIME 17	783359.7441	591319.3941	1315.753	ACF

CHECKED:
DGF 4-22-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES-AREA 8
4/19/2005 ND

POINT	NORTH	EAST	ELEV	DESC
3HB2	754154.7638	566461.5978	1330.774	GMON
2HB1	754250.5741	595736.3944	1282.152	GMON
2FB3	787471.9718	596144.0092	1408.137	GMON
3FB2	788012.395	563737.6378	1154.101	GMON
3GA2	770091.7388	580651.0367	1217.028	GMON
G2FB3	787471.9431	596143.9868	1408.167	GMON
G2HB1	754250.5779	595736.3456	1282.173	GMON
G3HB2	754154.7801	566461.6024	1330.748	GMON
G3FB2	788012.3398	563737.7015	1154.129	GMON
PRIME 17	783359.6878	591319.3726	1315.791	ACF
PRIME 15	770270.5434	575451.4307	1230.131	ACF
PRIME 14	764710.6819	567922.9335	1273.457	ACF
PRIME 17A	783359.6866	591319.3666	1315.772	ACF
100	769992.1983	591293.9368	1247.119	BCF
101	770002.0866	588653.8047	1230.133	BCF
102	770012.3916	586013.4459	1220.548	BCF
103	770023.4732	583372.6706	1219.434	BCF
104	770032.5123	580733.0226	1218.211	BCF
105	770042.2737	578091.8485	1219.403	BCF
PRIME 15A	770270.5731	575451.4357	1230.152	ACF
106	770056.3948	575451.2232	1231.579	BCF
PRIME 14A	764710.7187	567922.9676	1273.447	ACF
107	770070.7422	568310.8822	1246.073	GMON
108	770067.947	572812.2	1238.396	BCF
CS PRIME 15	770270.5447	575451.48	1230.171	ACF
PRIME 16	775355.789	580812.474	1205.148	ACF
PRIME 16A	775355.7958	580812.4766	1205.156	ACF
PRIME 19	753523.0835	580858.7285	1310.598	ACF
PRIME 19A	753523.0826	580858.7344	1310.548	ACF

CHECKED: RGP 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 9
4/14/2005 MD

POINT	NORTH	EAST	ELEV	DESC
2GC3	771072.9528	611259.2421	1614.2388	GMON
2HB1	754250.5741	595736.3944	1282.1522	GMON
2IC3	738592.9068	612947.7297	1353.773	GMON
3GA2	770091.7388	580651.0367	1217.0276	GMON
2JB2	727072.3622	596385.6004	1430.8071	GMON
G2GC3	771072.9521	611259.2715	1614.2329	GMON
G3GA2	770091.7395	580651.0283	1217.0223	GMON
G2HB1	754250.5504	595736.392	1282.1698	GMON
G2JB2	727072.3483	596385.6034	1430.7998	GMON
G2IC3	738592.9444	612947.7081	1353.774	GMON

CHECKED?
DAF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01) MD
GRID COORDINATES-AREA 10
4/29/2005

POINT	NORTH	EAST	ELEV	DESC
2IA3	738888.2808	584649.9610	1387.1837	GMON- CALIB COORDS
2IA3	738888.2644	584649.9508	1387.1719	GMON
3HB2	754154.7638	566461.5978	1330.7743	GMON
2HB1	754250.5741	595736.3944	1282.1522	GMON
2JB2	727072.3622	596385.6004	1430.8071	GMON
PRIME 21	727788.6726	580551.6539	1469.3686	ACF
1418	740572.2343	567323.3891	1420.082	GMON
G1418	740572.2171	567323.4105	1420.1214	GMON
G3HB2	754154.7750	566461.5935	1330.7356	GMON
G2HB1	754250.5897	595736.3937	1282.1712	GMON
G2JB2	727072.3527	596385.5839	1430.7874	GMON
GPRIME21	727788.6581	580551.6473	1469.624	GMON
PRIME 20	743742.3782	596426.1886	1332.2453	ACF
PRIME 19	753523.0747	580858.6770	1310.6065	ACF
CSPRIME 19	753523.0528	580858.7481	1310.6682	ACF
CSPRIME 20	743742.3568	596426.1766	1332.2768	ACF

CHECKED:
DGG (4/29/05)

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 11
4/20/2005 MD

POINT	NORTH	EAST	ELEV	DESC
BT103	717620.2081	608895.7812	1459.468	ACF
2JB2	727072.3622	596385.6004	1430.807	GMON
2IC3	738592.9068	612947.7297	1353.773	GMON
2KB2	707068.2054	593170.7972	1569.652	GMON
GPRIME 23	701205.7758	612076.8483	1526.196	GMON
GPRIME 22	701410.6522	596291.0025	1575.755	GMON
G2KB2	707068.2889	593170.7923	1569.625	GMON
G2JB2	727072.3644	596385.5947	1430.822	GMON
G2IC3	738592.8977	612947.7266	1353.763	GMON
PRIME 22	701410.638	596291.015	1575.770	ACF
PRIME 23	701205.783	612076.827	1526.186	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 12
4/19/2005

POINT	NORTH	EAST	ELEV	DESC
3FB2	788012.3950	563737.6378	1154.101	GMON
3GA2	770091.7388	580651.0367	1217.028	GMON
3EC2	801803.3071	549302.0669	1106.07	GMON
3GC2	770209.4390	542468.2677	1374.574	GMON
3EA3	801917.0440	578335.3937	1265.092	GMON
G3EA3	801917.0625	578335.3916	1265.066	GMON
G3GC2	770209.4585	542468.2601	1374.577	GMON
G3GA2	770091.7770	580650.9958	1216.995	GMON
G3EC2	801803.2747	549302.0786	1106.02	GMON
PRIME 12B	780465.0675	549379.7348	1243.719	ACF
PRIME 13	771401.8411	559553.3474	1230.387	ACF
PRIME 13A	771401.8541	559553.3574	1230.452	ACF
PRIME 13B	771401.8648	559553.3411	1230.371	ACF
PRIME 14B	764710.7379	567922.9032	1273.46	ACF
PRIME 15B	770270.5789	575451.4324	1230.123	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 13
4/14/2005

POINT	NORTH	EAST	ELEV	DESC
3BD3	850589.3307	534183.8845	989.4685	GMON
3CE3	834188.4584	519572.2821	1002.706	GMON
3DD1	817859.5571	532583.481	1059.547	GMON
3DF2	818000.4134	499205.5446	1030.28	GMON
3EE2	802195.7513	517230.7776	1221.818	GMON
G3BD3	850589.3244	534183.8807	989.4785	BCF
G3DD1	817859.5587	532583.4656	1059.525	GMON
G3EE2	802195.7294	517230.8056	1221.839	GMON
G3DF2	818000.4401	499205.5358	1030.271	GMON
PRIME 7	828611.5704	506680.278	1075.148	GMON
PRIME 7A	828611.5363	506680.2411	1075.128	GMON
10	833724.2993	517871.2634	1024.969	GLO
11	833725.5171	517871.2748	1024.278	ACF
PRIME 160	850327.3828	534337.7481	961.3459	ACF

CHECKED:
DAF 4/22/05

AVERAGED GRID COORDINATES BY AREA

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 1
4/20/2005 MS

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3BD3	850589.3307		534183.8845		989.469		GMON
4AE1	866245.8497		520688.8156		869.226		GMON
3CC3	831084.0223		549534.1503		1102.133		GMON
3CE3	834188.4580		519572.2703		1002.690		GMON
CSPRIME 2	854930.5818		518150.8830		871.321		ACF
PRIME 3	861703.4015		537607.2183		910.732		ACF
CSPRIME 3	861703.4075	861703.4045	537607.1852	537607.2018	910.672	910.702	ACF
RAB PRIME 4	852795.5178	RAB	547051.1955	RAB	1081.816	RAB OUT OF TOLERANCE	ACF
BAD CSPRIME 4	~~852795.4953~~	852795.5368	~~547051.2081~~	547051.2169	~~1081.987~~	1081.849	~~ACF~~
CKPRIME 4	852795.5557	~~852795.5220~~	547051.2382	~~547051.2339~~	1081.882	~~1081.895~~	ACF
PRIME 5	851132.9460		563383.5150		1263.819		ACF
CSPRIME 160	850327.3590		534337.8359		961.365		ACF
HURLEYBASE	880847.7494		596759.1682		985.132		SET B.SPIKE

CHECKED: DGF 4/22/05
(SEE NOTE ABOVE)

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 2
4/15/2005 MB

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3BD3	850589.3307		534183.8845		989.469		GMON
3CG2	833447.6673		486993.2251		918.077		GMON
4AG1	865722.8248		488725.1903		892.388		GMON
4AE1	866245.8497		520688.8156		869.226		GMON
3BF3	849225.5906		507662.2933		935.860		GMON
3DF2	818000.4134		499205.5446		1030.280		GMON
PRIME 2	854930.6290		518150.8610		871.393		GMON

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 3
4/20/2005 MS

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3CC3	831083.9914		549534.1659		1102.015		GMON
3BD3	850589.3307		534183.8845		989.469		GMON
3DB3	817447.9495		565233.3825		1206.857		GMON
3DD1	817859.5571		532583.4810		1059.547		GMON
PRIME 5	851132.9460		563383.5150		1263.819		ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 4
4/15/2005 MD

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3DD1	817859.5571		532583.4810		1059.547		GMON
3DF2	818000.4134		499205.5446		1030.280		GMON
3FD2	786974.4127		528281.0794		1354.003		GMON
3FF2	786680.4068		502618.5532		1339.340		GMON
PRIME 10	801061.5966		509573.1319		1246.424		ACF
PRIME 10A	801061.6093	801061.6030	509573.1355	509573.1337	1246.422	1246.423	ACF
PRIME 11	793365.2371		527044.3159		1289.671		ACF
PRIME 11A	793365.2444	793365.2408	527044.3336	527044.3248	1289.612	1289.642	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
GRID COORDINATES- AREA 5
4/15/2005 MB

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3FD2	786974.4127		528281.0794		1354.003		GMON
3DD1	817859.5571		532583.4810		1059.547		GMON
3DB3	817447.9495		565233.3825		1206.857		GMON
3FB2	788012.3950		563737.6378		1154.101		GMON
PRIME 11AVG	793365.2405		527044.3250		1289.641		ACF
PRIME 11B	793365.2878	793365.2642	527044.2991	527044.3121	1289.672	1289.657	ACF
PRIME 12	780465.0651		549379.7164		1243.801		ACF

CHECKED:
DCF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 6
4/20/2005 MD

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3EC2	801803.3071		549302.0669		1106.069		GMON
3DB3	817447.9495		565233.3825		1206.857		GMON
3CC3	831084.0223		549534.1503		1102.133		GMON
3EA3	801917.0440		578335.3937		1265.092		GMON
PRIME 8	817314.5620		580785.0020		1404.663		ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 7
4/20/2005 MD

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
2EB3	799155.0197		601045.7021		1547.703		GMON
2FB3	787471.9725		596144.0082		1408.135		GMON
2GC3	771072.9528		611259.2421		1614.239		GMON
3EA3	801917.0440		578335.3937		1265.092		GMON
PRIME 8	817314.5620		580785.0020		1404.663		ACF
PRIME 9A	791123.2918		608121.2841		1663.544		ACF
PRIME 9AA	791123.2816	791123.2867	608121.3065	608121.2953	1663.538	1663.541	ACF
PRIME 17	783359.7441		591319.3941		1315.753		ACF
PRIME 18	791280.5421		601960.4807		1465.367		ACF
PRIME 18A	791280.5713	791280.5567	601960.4292	601960.4550	1465.386	1465.377	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES-AREA 8
4/19/2005 MA

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3HB2	754154.7638		566461.5978		1330.774		GMON
2HB1	754250.5741		595736.3944		1282.152		GMON
2FB3	787471.9718		596144.0092		1408.137		GMON
3FB2	788012.3950		563737.6378		1154.101		GMON
3GA2	770091.7388		580651.0367		1217.028		GMON
PRIME 14	764710.6819		567922.9335		1273.457		ACF
PRIME 14A	764710.7187	764710.700.	567922.9676	567922.9506	1273.447	1273.452	ACF
PRIME 15	770270.5434		575451.4307		1230.131		ACF
PRIME 15A	770270.5731		575451.4357		1230.152		ACF
CS PRIME 15	770270.5447	770270.5537	575451.4800	575451.4488	1230.171	1230.151	ACF
PRIME 16	775355.7890		580812.4740		1205.148		ACF
PRIME 16A	775355.7958	775355.7924	580812.4766	580812.4753	1205.156	1205.152	ACF
PRIME 17	783359.6878		591319.3726		1315.791		ACF
PRIME 17A	783359.6866	783359.6872	591319.3666	591319.3696	1315.772	1315.782	ACF
PRIME 19	753523.0835		580858.7285		1310.598		ACF
PRIME 19A	753523.0826	753523.0831	580858.7344	580858.7315	1310.548	1310.573	ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 9
4/15/2005 MD

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
2GC3	771072.9528		611259.2421		1614.239		GMON
2HB1	754250.5741		595736.3944		1282.152		GMON
2IC3	738592.9068		612947.7297		1353.773		GMON
3GA2	770091.7388		580651.0367		1217.028		GMON
2JB2	727072.3622		596385.6004		1430.807		GMON

CHECKED:
DAF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES-AREA 10
4/29/2005 MB

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
2IA3	738888.2644		584649.9508		1387.172		GMON
3HB2	754154.7638		566461.5978		1330.774		GMON
2HB1	754250.5741		595736.3944		1282.152		GMON
2JB2	727072.3622		596385.6004		1430.807		GMON
1418	740572.2343		567323.3891		1420.082		GMON
PRIME 19	753523.0747		580858.6770		1310.607		ACF
CSPRIME 19	753523.0528	753523.0638	580858.7481	580858.7126	1310.668	1310.638	ACF
PRIME 20	743742.3782		596426.1886		1332.245		ACF
CSPRIME 20	743742.3568	743742.3675	596426.1766	596426.1826	1332.277	1332.261	ACF
GPRIME 21- G	727788.6905		580551.6711		1469.553		
GPRIME 21-B	727788.6581	727788.6743	580551.6473	580551.6592	1469.624	1469.588	ACF

CHECKED:
DGF 4/29/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 11
4/20/2005 MD

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
2JB2	727072.3622		596385.6004		1430.807		GMON
2IC3	738592.9068		612947.7297		1353.773		GMON
2KB2	707068.2054		593170.7972		1569.652		GMON
PRIME 22	701410.6380		596291.0150		1575.770		ACF
PRIME 23	701205.7830		612076.8270		1526.186		ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 12
4/19/2005 MS

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3FB2	788012.3950		563737.6378		1154.101		GMON
3GA2	770091.7388		580651.0367		1217.028		GMON
3EC2	801803.3071		549302.0669		1106.070		GMON
3GC2	770209.4390		542468.2677		1374.574		GMON
3EA3	801917.0440		578335.3937		1265.092		GMON
PRIME 12B	780465.0675		549379.7348		1243.719		ACF
PRIME 13	771401.8411		559553.3474		1230.387		ACF
PRIME 13A	771401.8541		559553.3574		1230.452		ACF
PRIME 13B	771401.8648	771401.8533	559553.3411	559553.3486	1230.371	1230.403	ACF
PRIME 14B	764710.7379		567922.9032		1273.460		ACF
PRIME 15B	770270.5789		575451.4324		1230.123		ACF

CHECKED:
DGF 4/22/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
AERIAL CONTROL GRID COORDINATES- AREA 13
4/15/2005 MA

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
3BD3	850589.3307		534183.8845		989.469		GMON
3CE3	834188.4584		519572.2821		1002.706		GMON
3DD1	817859.5571		532583.4810		1059.547		GMON
3DF2	818000.4134		499205.5446		1030.280		GMON
3EE2	802195.7513		517230.7776		1221.818		GMON
PRIME 7	828611.5704		506680.2780		1075.148		GMON
PRIME 7A	828611.5363	828611.5534	506680.2411	506680.2596	1075.128	1075.138	GMON
PRIME 160	850327.3828		534337.7481		961.346		ACF

CHECKED:
DAF 4/22/05

AERIAL CONTROL
ALL POINTS - ALL AREAS

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-ALL POINTS ALL AREAS MB
4/29/2005

PT	AREA	GRID N (IF)	GRID E (IF)	NAVD88 (IF)	
2EB3	7	799155.0197	601045.7021	1547.703	
2FB3	8	787471.9718	596144.0092	1408.137	
2GC3	7,9	771072.9528	611259.2421	1614.239	
2HB1	8,9,10	754250.5741	595736.3944	1282.152	
2IA3	10	738888.2644	584649.9508	1387.172	OGF
2IC3	9,11	738592.9068	612947.7297	1353.773	
2JB2	9,10,11	727072.3622	596385.6004	1430.807	
2KB2	11	707068.2054	593170.7972	1569.652	
3BD3	2,3,13	850589.3307	534183.8845	989.469	
3BF3	2	849225.5906	507662.2933	935.860	
3CC3	1,6	831084.0223	549534.1503	1102.133	
3CE3	1	834188.458	519572.2703	1002.690	
3CG2	2	833447.6673	486993.2251	918.077	
3DB3	3,5	817447.9495	565233.3825	1206.857	
3DD1	3,4,5,13	817859.5571	532583.4810	1059.547	
3DF2	4,13	818000.4134	499205.5446	1030.280	
3EA3	6,7,12	801917.0440	578335.3937	1265.092	
3EC2	6,12	801803.3071	549302.0669	1106.070	OGF
3EE2	13	802195.7513	517230.7776	1221.818	
3FB2	5,8,12	788012.3950	563737.6378	1154.101	
3FD2	4,5	786974.4127	528281.0794	1354.003	
3FF2	4	786680.4068	502618.5531	1339.337	OGF
3GA2	8,9,12	770091.7388	580651.0367	1217.028	
3GC2	12	770209.4390	542468.2677	1374.574	
3HB2	8,10	754154.7638	566461.5978	1330.774	
4AE1	1,2	866245.8497	520688.8156	869.226	
4AG1	2	865722.8248	488725.1903	892.388	

CHECKED RA 4/29/05

MD

PT	AREA	GRID N (IF)	GRID E (IF)	NAVD88 (IF)
PRIME 1	S	852260.5427	505440.4694	855.646
PRIME 2	1	854930.5818	518150.8830	871.321
PRIME 2	2	854930.6290	518150.8610	871.393
PRIME 3	1	861703.4045	537607.2018	910.702
PRIME 4	1	852795.5368	547051.2169	1081.849
PRIME 5	1,3,S	851132.9460	563383.5150	1263.819
PRIME 6	S	855207.9250	580259.1670	1108.871
PRIME 7	13	828611.5534	506680.2596	1075.138
PRIME 8	6,7,S	817314.5620	580785.0020	1404.663
PRIME 9	7	791123.2867	608121.2953	1663.541
PRIME 10	4	801061.6030	509573.1337	1246.423
PRIME 11	4	793365.2408	527044.3248	1289.642
PRIME 11	5	793365.2642	527044.3121	1289.657
PRIME 12	5	780465.0651	549379.7164	1243.801
PRIME 12B	12	780465.0675	549379.7348	1243.719
PRIME 13	12	771401.8533	559553.3486	1230.403
PRIME 14	8	764710.7000	567922.9506	1273.452
PRIME 14B	12	764710.7379	567922.9032	1273.460
PRIME 15	8	770270.5537	575451.4488	1230.151
PRIME 15B	12	770270.5789	575451.4324	1230.123
PRIME 16	8	775355.7924	580812.4753	1205.152
PRIME 17	7	783359.7441	591319.3941	1315.753
PRIME 17	8	783359.6872	591319.3696	1315.782
PRIME 18	7	791280.5567	601960.4550	1465.377
PRIME 19	8	753523.0831	580858.7315	1310.573
PRIME 19	10	753523.0638	580858.7126	1310.638
PRIME 20	10	743742.3675	596426.1826	1332.261
PRIME 21	10	727788.6743	580551.6592	1469.588
PRIME 22	11,S	701410.6380	596291.0150	1575.770
PRIME 23	11,S	701205.7830	612076.8270	1526.186
PRIME 160	13	850327.3828	534337.7481	961.346
CSPRIME 160	1	850327.3590	534337.8359	961.365

CHECKED:
DCF
4/29/05

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-MULTIPLE AREA POINT AVERAGES
4/29/2005

PT	AREA	GRID N (IF)	GRID E (IF)	NAVD88 (IF)
PRIME 2	1	854930.5818	518150.8830	871.321
PRIME 2	2	854930.6290	518150.8610	871.393
AVG		854930.6054	518150.8720	871.357
PRIME 11	4	793365.2408	527044.3248	1289.642
PRIME 11	5	793365.2642	527044.3121	1289.657
AVG		793365.2525	527044.3185	1289.650
PRIME 12	5	780465.0651	549379.7164	1243.801
PRIME 12B	12	780465.0675	549379.7348	1243.719
AVG		780465.0663	549379.7256	1243.760
PRIME 14	8	764710.7000	567922.9506	1273.452
PRIME 14B	12	764710.7379	567922.9032	1273.460
AVG		764710.7190	567922.9269	1273.456
PRIME 15	8	770270.5537	575451.4488	1230.151
PRIME 15B	12	770270.5789	575451.4324	1230.123
AVG		770270.5663	575451.4406	1230.137
PRIME 17	7	783359.7441	591319.3941	1315.753
PRIME 17	8	783359.6872	591319.3696	1315.782
AVG		783359.7151	591319.3819	1315.768
PRIME 160	13	850327.3828	534337.7481	961.346
CSPRIME 160	1	850327.3590	534337.8359	961.365
AVG		850327.3709	534337.7920	961.356
PRIME 19	8	753523.0831	580858.7315	1310.573
PRIME 19	10	753523.0638	580858.7126	1310.638
AVG		753523.0735	580858.7221	1310.606

CHECKED:
DGF 4/29/05

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-FINAL POINT COORDINATES & ELEVATIONS
4/29/2005

MT

PT	GRID N (IF)	GRID E (IF)	NAVD88 (IF)
2EB3	799155.0197	601045.7021	1547.703
2FB3	787471.9718	596144.0092	1408.137
2GC3	771072.9528	611259.2421	1614.239
2HB1	754250.5741	595736.3944	1282.152
2IA3	738888.2644	584649.9508	1387.172
2IC3	738592.9068	612947.7297	1353.773
2JB2	727072.3622	596385.6004	1430.807
2KB2	707068.2054	593170.7972	1569.652
3BD3	850589.3307	534183.8845	989.469
3BF3	849225.5906	507662.2933	935.860
3CC3	831084.0223	549534.1503	1102.133
3CE3	834188.458	519572.2703	1002.690
3CG2	833447.6673	486993.2251	918.077
3DB3	817447.9495	565233.3825	1206.857
3DD1	817859.5571	532583.4810	1059.547
3DF2	818000.4134	499205.5446	1030.280
3EA3	801917.0440	578335.3937	1265.092
3EC2	801803.3071	549302.0669	1106.070
3EE2	802195.7513	517230.7776	1221.818
3FB2	788012.3950	563737.6378	1154.101
3FD2	786974.4127	528281.0794	1354.003
3FF2	786680.4068	502618.5531	1339.337
3GA2	770091.7388	580651.0367	1217.028
3GC2	770209.4390	542468.2677	1374.574
3HB2	754154.7638	566461.5978	1330.774
4AE1	866245.8497	520688.8156	869.226
4AG1	865722.8248	488725.1903	892.388
PRIME 1	852260.5427	505440.4694	855.646
PRIME 2	854930.6054	518150.8720	871.357
PRIME 3	861703.4045	537607.2018	910.702
PRIME 4	852795.5368	547051.2169	1081.849
PRIME 5	851132.9460	563383.5150	1263.819
PRIME 6	855207.9250	580259.1670	1108.871
PRIME 7	828611.5534	506680.2596	1075.138
PRIME 8	817314.5620	580785.0020	1404.663
PRIME 9	791123.2867	608121.2953	1663.541
PRIME 10	801061.6030	509573.1337	1246.423
PRIME 11	793365.2525	527044.3185	1289.650
PRIME 12	780465.0663	549379.7256	1243.760
PRIME 13	771401.8533	559553.3486	1230.403
PRIME 14	764710.7190	567922.9269	1273.456
PRIME 15	770270.5663	575451.4406	1230.137
PRIME 16	775355.7924	580812.4753	1205.152
PRIME 17	783359.7151	591319.3819	1315.768
PRIME 18	791280.5567	601960.4550	1465.377
PRIME 19	753523.0735	580858.7221	1310.606
PRIME 20	743742.3675	596426.1826	1332.261
PRIME 21	727788.6743	580551.6592	1469.589
PRIME 22	701410.6380	596291.0150	1575.770
PRIME 23	701205.7830	612076.8270	1526.186
PRIME 160	850327.3709	534337.7920	961.356

CHECKED:
DGF 4/29/05

FEET TO METER CALCULATIONS

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-FEET TO METER CONVERSION
4/29/2005

PT	GRID N (IF)	GRID E (IF)	NAVD88 (IF)	GRID N (M)	GRID E (M)	NAVD88 (M)
2EB3	799155.0197	601045.7021	1547.703	243582.4500	183198.7300	471.740
2FB3	787471.9725	596144.0082	1408.135	240021.4572	181704.6937	429.199
2FB3	787471.9718	596144.0092	1408.137	240021.4570	181704.6940	429.200
2GC3	771072.9528	611259.2421	1614.239	235023.0360	186311.8170	492.020
2HB1	754250.5741	595736.3944	1282.152	229895.5750	181580.4530	390.800
2IA3	738888.2839	584649.9780	1387.156	225213.1489	178201.3133	422.805
2IC3	738592.9068	612947.7297	1353.773	225123.1180	186826.4680	412.630
2JB2	727072.3622	596385.6004	1430.807	221611.6560	181778.3310	436.110
2KB2	707068.2054	593170.7972	1569.652	215514.3890	180798.4590	478.430
3BD3	850589.3307	534183.8845	989.469	259259.6280	162819.2480	301.590
3BF3	849225.5906	507662.2933	935.860	258843.9600	154735.4670	285.250
3CC3	831084.0223	549534.1503	1102.133	253314.4100	167498.0090	335.930
3CE3	834188.458	519572.2703	1002.6903	254260.6420	158365.6280	305.620
3CG2	833447.6673	486993.2251	918.077	254034.8490	148435.5350	279.830
3DB3	817447.9495	565233.3825	1206.857	249158.1350	172283.1350	367.850
3DD1	817859.5571	532583.4810	1059.547	249283.5930	162331.4450	322.950
3DF2	818000.4134	499205.5446	1030.280	249326.5260	152157.8500	314.029
3EA3	801917.0440	578335.3937	1265.092	244424.3150	176276.6280	385.600
3EC2	801803.3071	549302.0669	1106.069	244389.6480	167427.2700	337.130
3EE2	802195.7513	517230.7776	1221.818	244509.2650	157651.9410	372.410
3FB2	788012.3950	563737.6378	1154.101	240186.1780	171827.2320	351.770
3FD2	786974.4127	528281.0794	1354.003	239869.8010	161020.0730	412.700
3FF2	786680.4068	502618.5532	1339.340	239780.1880	153198.1350	408.231
3GA2	770091.7388	580651.0367	1217.028	234723.9620	176982.4360	370.950
3GC2	770209.4390	542468.2677	1374.574	234759.8370	165344.3280	418.970
3HB2	754154.7638	566461.5978	1330.774	229866.3720	172657.4950	405.620
4AE1	866245.8497	520688.8156	869.226	264031.7350	158705.9510	264.940
4AG1	865722.8248	488725.1903	892.388	263872.3170	148963.4380	272.000
PRIME 1	852260.5427	505440.4694	855.646	259769.0134	154058.2551	260.801
PRIME 2	854930.6054	518150.8720	871.357	260582.8485	157932.3858	265.590
PRIME 3	861703.4045	537607.2018	910.702	262647.1977	163862.6751	277.582
PRIME 4	852795.5368	547051.2169	1081.849	259932.0796	166741.2109	329.748
PRIME 5	851132.9460	563383.5150	1263.819	259425.3219	171719.2954	385.212
PRIME 6	855207.9250	580259.1670	1108.871	260667.3755	176862.9941	337.984
PRIME 7	828611.5534	506680.2596	1075.138	252560.8015	154436.1431	327.702
PRIME 8	817314.5620	580785.0020	1404.663	249117.4785	177023.2686	428.141
PRIME 9	791123.2867	608121.2953	1663.541	241134.3778	185355.3708	507.047
PRIME 10	801061.6030	509573.1337	1246.423	244163.5766	155317.8912	379.910
PRIME 11	793365.2525	527044.3185	1289.650	241817.7290	160643.1083	393.085
PRIME 12	780465.0663	549379.7256	1243.760	237885.7522	167450.9404	379.098
PRIME 13	771401.8533	559553.3486	1230.403	235123.2849	170551.8607	375.027
PRIME 14	764710.7190	567922.9269	1273.456	233083.8272	173102.9081	388.149
PRIME 15	770270.5663	575451.4406	1230.137	234778.4686	175397.5991	374.946
PRIME 16	775355.7924	580812.4753	1205.152	236328.4455	177031.6425	367.330
PRIME 17	783359.7151	591319.3819	1315.768	238768.0412	180234.1476	401.046
PRIME 18	791280.5567	601960.4550	1465.377	241182.3137	183477.5467	446.647
PRIME 19	753523.0831	580858.7315	1310.573	229673.8357	177045.7414	399.463
PRIME 20	743742.3479	596426.2242	1332.175	226692.6676	181790.7131	406.047
PRIME 21	727788.6743	580551.6592	1469.589	221829.9879	176952.1457	447.931
PRIME 22	701410.6380	596291.0150	1575.770	213789.9625	181749.5014	480.295
PRIME 23	701205.7830	612076.8270	1526.186	213727.5227	186561.0169	465.181
PRIME 160	850327.3709	534337.7920	961.356	259179.7827	162866.1590	293.021

CALCULATED LATITUDES AND LONGITUDES

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	259769.0134	154058.2551	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 20 28.26823	112 33 13.49649	AZ C	-0 21 0.60	0.9999433

2

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	260582.8485	157932.3858	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 20 55.42882	112 30 43.85149	AZ C	-0 19 38.58	0.9999379

3

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	262647.1977	163862.6751	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 22 3.47940	112 26 54.89410	AZ C	-0 17 33.23	0.9999302

4

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	259932.0796	166741.2109	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FACTOR
33 20 35.80851	112 25 3.03168	AZ C	-0 16 31.06	0.9999268

5

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	259425.3219	171719.2954	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 20 20.09369	112 21 50.42023	AZ C	-0 14 45.08	0.9999214

6

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	260667.3755	176862.9941	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 21 1.08429	112 18 31.67693	AZ C	-0 12 56.09	0.9999164

7

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	252560.8015	154436.1431	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 16 34.36425	112 32 57.19231	AZ C	-0 20 49.48	0.9999428

8

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	249117.4785	177023.2686	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 14 46.17907	112 18 23.80856	AZ C	-0 12 49.63	0.9999163

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	241134.3778	185355.3708	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 10 27.92458	112 13 1.03089	AZ C	-0 9 51.53	0.9999097

10

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	244163.5766	155317.8912	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 12 1.95863	112 32 21.18500	AZ C	-0 20 27.24	0.9999415

11

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	241817.7290	160643.1083	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 10 46.79130	112 28 55.08184	AZ C	-0 18 33.76	0.9999343

12

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	237885.7522	167450.9404	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 08 40.26939	112 24 31.56834	AZ C	-0 16 8.63	0.9999260

13

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	235123.2849	170551.8607	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 07 11.05124	112 22 31.44499	AZ C	-0 15 2.35	0.9999226

14

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	233083.8272	173102.9081	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 06 5.19761	112 20 52.71010	AZ C	-0 14 7.98	0.9999200

15

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	234778.4686	175397.5991	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 07 0.50696	112 19 24.45969	AZ C	-0 13 20.11	0.9999178

16

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	236328.4455	177031.6425	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 07 51.02399	112 18 21.64720	AZ C	-0 12 46.08	0.9999163

17

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	238768.0412	180234.1476	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 09 10.58787	112 16 18.40691	AZ C	-0 11 39.14	0.9999135

18

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	241182.3137	183477.5467	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 10 29.30000	112 14 13.52311	AZ C	-0 10 31.21	0.9999110

19

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	229673.8357	177045.7414	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FACTOR
33 04 15.00147	112 18 20.15143	AZ C	-0 12 44.04	0.9999163

20

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	226692.6676	181790.7131	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FACTOR
33 02 38.75784	112 15 16.83492	AZ C	-0 11 3.53	0.9999123

21

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	221829.9879	176952.1457	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FACTOR
33 00 0.35788	112 18 22.63892	AZ C	-0 12 43.94	0.9999163

22

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	213789.9625	181749.5014	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
32 55 39.89141	112 15 16.82607	AZ C	-0 11 1.45	0.9999123

23

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	213727.5227	186561.0169	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
32 55 38.32717	112 12 11.60549	AZ C	-0 9 20.76	0.9999089

160

	North(Meters)	East(Meters)	Datum	Zone
INPUT =	259179.7827	162866.1590	NAD83	0202

LATITUDE DD MM SS.sssss	LONGITUDE DDD MM SS.sssss	AREA	CONVERGENCE DD MM SS.ss	SCALE FAC
33 20 10.75916	112 27 32.74645	AZ C	-0 17 53.16	0.9999314

CALCULATED UTM COORDINATES

	Latitude	Longitude	Datum
INPUT =	N332028.26823	W1123313.49649	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3690189.551	355409.383	12	-0 51 14.85	0.99985776

2

	Latitude	Longitude	Datum
INPUT =	N332055.42882	W1123043.85149	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3690969.207	359290.174	12	-0 49 53.16	0.99984411

3

	Latitude	Longitude	Datum
INPUT =	N332203.47940	W1122654.89410	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3692981.092	365237.804	12	-0 47 48.67	0.99982391

4

	Latitude	Longitude	Datum
INPUT =	N332035.80851	W1122503.03168	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3690241.052	368092.027	12	-0 46 45.31	0.99981452

S

	Latitude	Longitude	Datum
INPUT =	N332020.09369	W1122150.42023	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3689690.596	373064.878	12	-0 44 59.08	0.99979865

6

	Latitude	Longitude	Datum
INPUT =	N332101.08429	W1121831.67693	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3690887.206	378218.642	12	-0 43 10.59	0.99978285

7

	Latitude	Longitude	Datum
INPUT =	N331634.36425	W1123257.19231	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3682978.916	355723.883	12	-0 51 0.60	0.99985664

8

	Latitude	Longitude	Datum
INPUT =	N331446.17907	W1121823.80856	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3679337.890	378277.440	12	-0 42 59.12	0.99978267

9

	Latitude	Longitude	Datum
INPUT =	N331027.92458	W1121301.03089	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3671283.220	386538.082	12	-0 39 57.51	0.99975872

10

	Latitude	Longitude	Datum
INPUT =	N331201.95863	W1123221.18500	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3674575.011	356531.870	12	-0 50 34.71	0.99985378

11

	Latitude	Longitude	Datum
INPUT =	N331046.79130	W1122855.08184	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3672182.827	361835.838	12	-0 48 40.17	0.99983536

12

	Latitude	Longitude	Datum
INPUT =	N330840.26939	W1122431.56834	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3668191.832	368608.273	12	-0 46 13.29	0.99981286

13

	Latitude	Longitude	Datum
INPUT =	N330711.05124	W1122231.44499	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3665402.674	371684.555	12	-0 45 5.79	0.99980301

14

	Latitude	Longitude	Datum
INPUT =	N330605.19761	W1122052.71010	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3663341.247	374217.368	12	-0 44 10.52	0.99979507

15

	Latitude	Longitude	Datum
INPUT =	N330700.50696	W1121924.45969	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3665015.553	376526.490	12	-0 43 23.38	0.99978797

16

	Latitude	Longitude	Datum
INPUT =	N330751.02399	W1121821.64720	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3666550.981	378173.807	12	-0 42 50.01	0.99978299

17

	Latitude	Longitude	Datum
INPUT =	N330910.58787	W1121618.40691	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3668962.138	381397.091	12	-0 41 44.11	0.99977343

18

	Latitude	Longitude	Datum
INPUT =	N331029.30000	W1121413.52311	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3671347.585	384661.030	12	-0 40 37.22	0.99976402

19

	Latitude	Longitude	Datum
INPUT =	N330415.00147	W1121820.15143	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3659897.389	378129.760	12	-0 42 45.07	0.99978313

20

	Latitude	Longitude	Datum
INPUT =	N330238.75784	W1121516.83492	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3656875.336	382847.878	12	-0 41 3.24	0.99976922

21

	Latitude	Longitude	Datum
INPUT =	N330000.35788	W1121822.63892	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3652055.699	377967.765	12	-0 42 41.56	0.99978362

22

	Latitude	Longitude	Datum
INPUT =	N325539.89141	W1121516.82607	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3643975.323	382694.288	12	-0 40 55.54	0.99976967

23

	Latitude	Longitude	Datum
INPUT =	N325538.32717	W1121211.60549	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3643871.051	387504.367	12	-0 39 14.80	0.99975604

160

	Latitude	Longitude	Datum
INPUT =	N332010.75916	W1122732.74645	NAD83

NORTH(Y) METERS	EAST(X) METERS	ZONE	CONVERGENCE DD MM SS.ss	SCALE
3689522.942	364210.929	12	-0 48 7.10	0.99982733

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-GRID, LAT-LON & UTM
4/29/2005

MD

PT	GRID N (IF)	GRID E (IF)	NAVD88 (IF)	LATITUDE	LONGITUDE	UTM NORTHING(M)	UTM EASTING(M)
2EB3	799155.0197	601045.7021	1547.703	33° 11' 47.18571"	112° 14' 24.57218"	3673749.719	384403.282
2FB3	787471.9718	596144.0092	1408.137	33° 09' 51.43475"	112° 15' 21.81256"	3670202.460	382878.341
2GC3	771072.9528	611259.2421	1614.239	33° 07' 09.62305"	112° 12' 23.45817"	3665164.673	387440.886
2HB1	754250.5741	595736.3944	1282.152	33° 04' 22.71096"	112° 15' 25.33933"	3660079.499	382665.608
2IA3	738888.2644	584649.9508	1387.172	33° 01' 50.33230"	112° 17' 34.98158"	3655427.382	379246.202
2IC3	738592.9068	612947.7297	1353.773	33° 01' 48.28945"	112° 12' 02.57101"	3655262.156	387869.005
2JB2	727072.3622	596385.6004	1430.807	32° 59' 53.81195"	112° 15' 16.68262"	3651795.351	382791.200
2KB2	707068.2054	593170.7972	1569.652	32° 56' 35.77158"	112° 15' 53.65462"	3645707.712	381758.416
3BD3	850589.3307	534183.8845	989.469	33° 20' 13.34303"	112° 27' 34.57667"	3689603.188	364164.726
3BF3	849225.5906	507662.2933	935.860	33° 19' 58.37467"	112° 32' 47.09057"	3689258.658	356078.376
3CC3	831084.0223	549534.1503	1102.133	33° 17' 01.11088"	112° 24' 32.55467"	3683617.735	368790.557
3CE3	834188.4580	519572.2703	1002.690	33° 17' 30.28867"	112° 30' 25.71083"	3684644.031	359667.789
3CG2	833447.6673	486993.2251	918.077	33° 17' 20.97144"	112° 36' 49.46004"	3684505.483	349736.930
3DB3	817447.9495	565233.3825	1206.857	33° 14' 46.88724"	112° 21' 26.93786"	3679420.118	373538.455
3DD1	817859.5571	532583.4810	1059.547	33° 14' 49.43206"	112° 27' 51.41682"	3679632.854	363589.374
3DF2	818000.4134	499205.5446	1030.280	33° 14' 48.92266"	112° 34' 24.44927"	3679765.032	353417.483
3EA3	801917.0440	578335.3937	1265.092	33° 12' 13.73982"	112° 18' 51.96346"	3674652.075	377489.785
3EC2	801803.3071	549302.0669	1106.070	33° 12' 11.39204"	112° 24' 33.66260"	3674694.949	368641.548
3EE2	802195.7513	517230.7776	1221.818	33° 12' 13.62169"	112° 30' 51.14072"	3674900.204	358868.648
3FB2	788012.3950	563737.6378	1154.101	33° 09' 55.58076"	112° 21' 43.07516"	3670453.604	373004.011
3FD2	786974.4127	528281.0794	1354.003	33° 09' 43.62512"	112° 28' 40.12716"	3670231.866	362195.697
3FF2	786680.4068	502618.5531	1339.337	33° 09' 39.25426"	112° 33' 41.98816"	3670210.728	354373.988
3GA2	770091.7388	580651.0367	1217.028	33° 06' 58.93297"	112° 18' 23.31555"	3664947.203	378110.581
3GC2	770209.4390	542468.2677	1374.574	33° 06' 58.46860"	112° 25' 52.26484"	3665084.805	366474.639
3HB2	754154.7638	566461.5978	1330.774	33° 04' 20.69209"	112° 21' 09.37376"	3660128.205	373743.925
4AE1	866245.8497	520688.8156	869.226	33° 22' 47.52218"	112° 30' 14.68475"	3694410.826	360093.986
4AG1	865722.8248	488725.1903	892.388	33° 22' 40.40473"	112° 36' 31.58077"	3694337.197	350351.278
1418	740572.2343	567323.3891	1420.082	33° 02' 06.33447"	112° 20' 58.58814"	3655986.630	373970.429
PRIME 1	852260.5427	505440.4694	855.646	33° 20' 28.26823"	112° 33' 13.49649"	3690189.551	355409.383
PRIME 2	854930.6054	518150.8720	871.357	33° 20' 55.42882"	112° 30' 43.85149"	3690969.207	359290.174
PRIME 3	861703.4045	537607.2018	910.702	33° 22' 03.47940"	112° 26' 54.89410"	3692981.092	365237.804
PRIME 4	852795.5368	547051.2169	1081.849	33° 20' 35.80851"	112° 25' 03.03168"	3690241.052	368092.027
PRIME 5	851132.9460	563383.5150	1263.819	33° 20' 20.09369"	112° 21' 50.42023"	3689690.596	373064.878
PRIME 6	855207.9250	580259.1670	1108.871	33° 21' 01.08429"	112° 18' 31.67693"	3690887.206	378218.642
PRIME 7	828611.5534	506680.2596	1075.138	33° 16' 34.36425"	112° 32' 57.19231"	3682978.916	355723.883
PRIME 8	817314.5620	580785.0020	1404.663	33° 14' 46.17907"	112° 18' 23.80856"	3679337.890	378277.440
PRIME 9	791123.2867	608121.2953	1663.541	33° 10' 27.92458"	112° 13' 01.03089"	3671283.220	386538.082
PRIME 10	801061.6030	509573.1337	1246.423	33° 12' 01.95863"	112° 32' 21.18500"	3674575.011	356531.870
PRIME 11	793365.2525	527044.3185	1289.650	33° 10' 46.79130"	112° 28' 55.08184"	3672182.827	361835.838
PRIME 12	780465.0663	549379.7256	1243.760	33° 08' 40.26939"	112° 24' 31.56834"	3668191.832	368608.273
PRIME 13	771401.8533	559553.3486	1230.403	33° 07' 11.05124"	112° 22' 31.44499"	3665402.674	371684.555
PRIME 14	764710.7190	567922.9269	1273.456	33° 06' 05.19761"	112° 20' 52.71010"	3663341.247	374217.368
PRIME 15	770270.5663	575451.4406	1230.137	33° 07' 00.50696"	112° 19' 24.45969"	3665015.553	376526.490
PRIME 16	775355.7924	580812.4753	1205.152	33° 07' 51.02399"	112° 18' 21.64720"	3666550.981	378173.807
PRIME 17	783359.7151	591319.3819	1315.768	33° 09' 10.58787"	112° 16' 18.40691"	3668962.138	381397.091
PRIME 18	791280.5567	601960.4550	1465.377	33° 10' 29.30000"	112° 14' 13.52311"	3671347.585	384661.030
PRIME 19	753523.0735	580858.7221	1310.606	33° 04' 15.00147"	112° 18' 20.15143"	3659897.389	378129.760
PRIME 20	743742.3675	596426.1826	1332.261	33° 02' 38.75784"	112° 15' 16.83492"	3656875.336	382847.878
PRIME 21	727788.6743	580551.6592	1469.589	33° 00' 00.35788"	112° 18' 22.63892"	3652055.699	377967.765
PRIME 22	701410.6380	596291.0150	1575.770	32° 55' 39.89141"	112° 15' 16.82607"	3643975.323	382694.288
PRIME 23	701205.7830	612076.8270	1526.186	32° 55' 38.32717"	112° 12' 11.60549"	3643871.051	387504.367
PRIME 160	850327.3709	534337.7920	961.356	33° 20' 10.75916"	112° 27' 32.74645"	3689522.942	364210.929

CHECKED:
DGF 4/29/05

MEASURE UP \ MEASURE DOWN

RAINBOW VALLEYADMP MAPPING
MEASURE UP/DOWN
4/26/2005

PT	AREA	MEASURED
~~2BF3~~	~~8~~	~~0.12~~
2EB3	7	-0.1
2FB3	7	-0.14
2GC3	7,9	0
2HB1	10	-0.13
2IA3	10	-0.14
2IC3	9,11	-0.09
2JB2	10	-0.35
2KB2	11	-0.3
3BD3	2,3,13	0
3BF3	2	-0.2
3CC3	6	-0.09
3CG2	2	X
3DB3	3,5	-0.08
3DD1	3,4,5,13	-0.24
3DF2	4,13	X
3EA3	6,7,12	-0.09
3EC2	6,12	-0.2
3~~E~~CE3	13	-0.12
3EE2	13	-0.24
3FB2	5,8,12	-0.14
3FD2	4,5	X
3FF2	4	X
3GA2	8	-0.09
3GC2	12	X
3HB2	8,10	X
4AE1	1,2	X
4AG1	2	X

NO SUCH POINT IN AREA B

"–" = BELOW GROUND LEVEL

"+" = ABOVE GROUND LEVEL

CHECKED:
OGF 4/29/05

PT	AREA	MEASURED
PRIME 1	S	0
PRIME 2	1	0
PRIME 3	1	0
PRIME 4	1	0
PRIME 5	1,3,S	0
PRIME 6	S	0
PRIME 7	13	0
PRIME 8	6,7,S	0
PRIME 9	7	0
PRIME 10	4	0
PRIME 11	4	0
PRIME 12	5	0
PRIME 13	12	0
PRIME 14	8	0
PRIME 15	8	0
PRIME 16	8	0
PRIME 17	7	0
PRIME 18	7	0
PRIME 19	8	0
PRIME 20	10	0
PRIME 21	10,S	0.75
PRIME 22	11,S	0
PRIME 23	11,S	0
PRIME 160	13	0

VERTCON CALCULATIONS

4AG1

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 22 40.40473

Longitude: 112 36 31.58077

NAVD 88 height: 892.388 ft

Datum shift(NAVD 88 minus NGVD 29): 2.087 feet

Converted to NGVD 29 height: 890.301 feet

1418

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 02 06.33447

Longitude: 112 20 58.58814

NAVD 88 height: 1420.082 ft

Datum shift(NAVD 88 minus NGVD 29): 2.037 feet

Converted to NGVD 29 height: 1418.045 feet

P-1

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 28.26823

Longitude: 112 33 13.49649

NAVD 88 height: 855.646 ft

Datum shift (NAVD 88 minus NGVD 29): 2.110 feet

Converted to NGVD 29 height: 853.536 feet

P-2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 55.42882

Longitude: 112 30 43.85149

NAVD 88 height: 871.357 ft

Datum shift(NAVD 88 minus NGVD 29): 2.096 feet

Converted to NGVD 29 height: 869.261 feet

P-3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 22 03.47940

Longitude: 112 26 54.89410

NAVD 88 height: 910.702 ft

Datum shift(NAVD 88 minus NGVD 29): 2.100 feet

Converted to NGVD 29 height: 908.602 feet

P-4

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 35.80851

Longitude: 112 25 03.03168

NAVD 88 height: 1081.849 ft

Datum shift(NAVD 88 minus NGVD 29): 2.123 feet

Converted to NGVD 29 height: 1079.726 feet

P-5

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 20 .09369

Longitude: 112 21 50.42023

NAVD 88 height: 1363.819 ft

Datum shift(NAVD 88 minus NGVD 29): 2.175 feet

Converted to NGVD 29 height: 1361.644 feet

P-6

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 21 01.08429

Longitude: 112 18 31.67693

NAVD 88 height: 1108.871 ft

Datum shift (NAVD 88 minus NGVD 29): 2.165 feet

Converted to NGVD 29 height: 1106.706 feet

P-7

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 16 34.36425

Longitude: 112 32 57.19231

NAVD 88 height: 1075.138 ft

Datum shift(NAVD 88 minus NGVD 29): 2.156 feet

Converted to NGVD 29 height: 1072.983 feet

P-8

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 14 46.17907

Longitude: 112 18 23.80856

NAVD 88 height: 1404.663 ft

Datum shift(NAVD 88 minus NGVD 29): 2.106 feet

Converted to NGVD 29 height: 1402.557 feet

P-9

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 10 27.92458

Longitude: 112 13 01.03089

NAVD 88 height: 1663.541 ft

Datum shift(NAVD 88 minus NGVD 29): 2.034 feet

Converted to NGVD 29 height: 1661.507 feet

P-10

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 12 01.95863

Longitude: 112 32 21.18500

NAVD 88 height: 1246.423 ft

Datum shift(NAVD 88 minus NGVD 29): 2.182 feet

Converted to NGVD 29 height: 1244.241 feet

P-11

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 10 46.79130

Longitude: 112 28 55.08184

NAVD 88 height: 1289.650 ft

Datum shift(NAVD 88 minus NGVD 29): 2.139 feet

Converted to NGVD 29 height: 1287.511 feet

P-12

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 08 40.26939

Longitude: 112 24 31.56834

NAVD 88 height: 1243.760 ft

Datum shift(NAVD 88 minus NGVD 29): 2.070 feet

Converted to NGVD 29 height: 1241.690 feet

P-13

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 07 11.05124

Longitude: 112 22 31.44499

NAVD 88 height: 1230.403 ft

Datum shift(NAVD 88 minus NGVD 29): 2.051 feet

Converted to NGVD 29 height: 1228.353 feet

P-14

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 06 05.19761

Longitude: 112 20 52.71010

NAVD 88 height: 1273.456 ft

Datum shift(NAVD 88 minus NGVD 29): 2.021 feet

Converted to NGVD 29 height: 1271.435 feet

P-15

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 07 00.50696

Longitude: 112 19 24.45969

NAVD 88 height: 1230.137 ft

Datum shift(NAVD 88 minus NGVD 29): 2.008 feet

Converted to NGVD 29 height: 1228.129 feet

P-16

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 07 51.02399

Longitude: 112 18 21.64720

NAVD 88 height: 1205.152 ft

Datum shift(NAVD 88 minus NGVD 29): 2.001 feet

Converted to NGVD 29 height: 1203.151 feet

P-17

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 09 10.58787

Longitude: 112 16 18.40691

NAVD 88 height: 1315.768 ft

Datum shift(NAVD 88 minus NGVD 29): 2.008 feet

Converted to NGVD 29 height: 1313.760 feet

P-18

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 10 29.30000

Longitude: 112 14 13.52311

NAVD 88 height: 1465.377 ft

Datum shift(NAVD 88 minus NGVD 29): 2.031 feet

Converted to NGVD 29 height: 1463.346 feet

P-19

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 04 15.00147

Longitude: 112 18 20.15143

NAVD 88 height: 1310.606 ft

Datum shift(NAVD 88 minus NGVD 29): 2.011 feet

Converted to NGVD 29 height: 1308.595 feet

P-20

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 02 38.75784

Longitude: 112 15 16.83492

NAVD 88 height: 1332.261 ft

Datum shift(NAVD 88 minus NGVD 29): 2.008 feet

Converted to NGVD 29 height: 1330.253 feet

P-21

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 00 00.35788

Longitude: 112 18 22.63892

NAVD 88 height: 1469.589 ft

Datum shift (NAVD 88 minus NGVD 29): 2.067 feet

Converted to NGVD 29 height: 1467.522 feet

P-22

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 32 55 39.89141

Longitude: 112 15 16.82607

NAVD 88 height: 1575.770 ft

Datum shift(NAVD 88 minus NGVD 29): 2.057 feet

Converted to NGVD 29 height: 1573.713 feet

P-23

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 32 55 38.32717

Longitude: 112 12 11.60549

NAVD 88 height: 1526.186 ft

Datum shift(NAVD 88 minus NGVD 29): 2.051 feet

Converted to NGVD 29 height: 1524.136 feet

P-160

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 10.75916

Longitude: 112 27 32.74645

NAVD 88 height: 961.356 ft

Datum shift (NAVD 88 minus NGVD 29): 2.093 feet

Converted to NGVD 29 height: 959.263 feet

RAINBOW VALLEY ADMP MAPPING
VERTCON CALCULATIONS
5/2/2005

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2EB3	33° 11' 47.18571"	112° 14' 24.57218"	1547.703	-2.047	1545.656
2FB3	33° 09' 51.43475"	112° 15' 21.81256"	1408.137	-2.018	1406.119
2GC3	33° 07' 09.62305"	112° 12' 23.45817"	1614.239	-1.972	1612.267
2HB1	33° 04' 22.71096"	112° 15' 25.33933"	1282.152	-1.995	1280.157
2IA3	33° 01' 50.33230"	112° 17' 34.98158"	1387.172	-2.037	1385.135
2IC3	33° 01' 48.28945"	112° 12' 02.57101"	1353.773	-1.965	1351.808
2JB2	32° 59' 53.81195"	112° 15' 16.68262"	1430.807	-2.051	1428.756
2KB2	32° 56' 35.77158"	112° 15' 53.65462"	1569.652	-2.067	1567.585
3BD3	33° 20' 13.34303"	112° 27' 34.57667"	989.469	-2.093	987.376
3BF3	33° 19' 58.37467"	112° 32' 47.09057"	935.860	-2.119	933.741
3CC3	33° 17' 01.11088"	112° 24' 32.55467"	1102.133	-2.106	1100.027
3CE3	33° 17' 30.28867"	112° 30' 25.71083"	1002.690	-2.110	1000.580
3CG2	33° 17' 20.97144"	112° 36' 49.46004"	918.077	-2.116	915.961
3DB3	33° 14' 46.88724"	112° 21' 26.93786"	1206.857	-2.087	1204.770
3DD1	33° 14' 49.43206"	112° 27' 51.41682"	1059.547	-2.090	1057.457
3DF2	33° 14' 48.92266"	112° 34' 24.44927"	1030.280	-2.142	1028.138
3EA3	33° 12' 13.73982"	112° 18' 51.96346"	1265.092	-2.041	1263.051
3EC2	33° 12' 11.39204"	112° 24' 33.66260"	1106.070	-2.070	1104.000
3EE2	33° 12' 13.62169"	112° 30' 51.14072"	1221.818	-2.152	1219.666
3FB2	33° 09' 55.58076"	112° 21' 43.07516"	1154.101	-2.037	1152.064
3FD2	33° 09' 43.62512"	112° 28' 40.12716"	1354.003	-2.149	1351.854
3FF2	33° 09' 39.25426"	112° 33' 41.98816"	1339.337	-2.198	1337.139
3GA2	33° 06' 58.93297"	112° 18' 23.31555"	1217.028	-1.998	1215.030
3GC2	33° 06' 58.46860"	112° 25' 52.26484"	1374.574	-2.113	1372.461
3HB2	33° 04' 20.69209"	112° 21' 09.37376"	1330.774	-2.024	1328.750
4AE1	33° 22' 47.52218"	112° 30' 14.68475"	869.226	-2.106	867.120
4AG1	33° 22' 40.40473"	112° 36' 31.58077"	892.388	-2.087	890.301
1418	33° 02' 06.33447"	112° 20' 58.58814"	1420.082	-2.037	1418.045
PRIME 1	33° 20' 28.26823"	112° 33' 13.49649"	855.646	-2.110	853.536
PRIME 2	33° 20' 55.42882"	112° 30' 43.85149"	871.357	-2.096	869.261
PRIME 3	33° 22' 03.47940"	112° 26' 54.89410"	910.702	-2.100	908.602
PRIME 4	33° 20' 35.80851"	112° 25' 03.03168"	1081.849	-2.123	1079.726
PRIME 5	33° 20' 20.09369"	112° 21' 50.42023"	1263.819	-2.175	1261.644
PRIME 6	33° 21' 01.08429"	112° 18' 31.67693"	1108.871	-2.165	1106.706
PRIME 7	33° 16' 34.36425"	112° 32' 57.19231"	1075.138	-2.156	1072.982
PRIME 8	33° 14' 46.17907"	112° 18' 23.80856"	1404.663	-2.106	1402.557
PRIME 9	33° 10' 27.92458"	112° 13' 01.03089"	1663.541	-2.034	1661.507
PRIME 10	33° 12' 01.95863"	112° 32' 21.18500"	1246.423	-2.182	1244.241
PRIME 11	33° 10' 46.79130"	112° 28' 55.08184"	1289.650	-2.139	1287.511
PRIME 12	33° 08' 40.26939"	112° 24' 31.56834"	1243.760	-2.070	1241.690
PRIME 13	33° 07' 11.05124"	112° 22' 31.44499"	1230.403	-2.051	1228.352
PRIME 14	33° 06' 05.19761"	112° 20' 52.71010"	1273.456	-2.021	1271.435
PRIME 15	33° 07' 00.50696"	112° 19' 24.45969"	1230.137	-2.008	1228.129
PRIME 16	33° 07' 51.02399"	112° 18' 21.64720"	1205.152	-2.001	1203.151
PRIME 17	33° 09' 10.58787"	112° 16' 18.40691"	1315.768	-2.008	1313.760
PRIME 18	33° 10' 29.30000"	112° 14' 13.52311"	1465.377	-2.031	1463.346
PRIME 19	33° 04' 15.00147"	112° 18' 20.15143"	1310.606	-2.011	1308.595
PRIME 20	33° 02' 38.75784"	112° 15' 16.83492"	1332.261	-2.008	1330.253
PRIME 21	33° 00' 00.35788"	112° 18' 22.63892"	1469.589	-2.067	1467.522
PRIME 22	32° 55' 39.89141"	112° 15' 16.82607"	1575.770	-2.057	1573.713
PRIME 23	32° 55' 38.32717"	112° 12' 11.60549"	1526.186	-2.051	1524.135
PRIME 160	33° 20' 10.75916"	112° 27' 32.74645"	961.356	-2.093	959.263

CHECKED:
DGF 5/2/05

2EB3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 11 47.18571

Longitude: 112 14 24.57218

NAVD 88 height: 1547.703 ft

Datum shift(NAVD 88 minus NGVD 29): 2.047 feet

Converted to NGVD 29 height: 1545.656 feet

2FB3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 09 51.43475

Longitude: 112 15 21.81256

NAVD 88 height: 1408.137 ft

Datum shift(NAVD 88 minus NGVD 29): 2.018 feet

Converted to NGVD 29 height: 1406.119 feet

2GC3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 07 09.62305

Longitude: 112 12 23.45817

NAVD 88 height: 1614.239 ft

Datum shift(NAVD 88 minus NGVD 29): 1.972 feet

Converted to NGVD 29 height: 1612.267 feet

2HB1

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 04 22.71096

Longitude: 112 15 25.33933

NAVD 88 height: 1282.152 ft

Datum shift(NAVD 88 minus NGVD 29): 1.995 feet

Converted to NGVD 29 height: 1280.157 feet

21A3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 01 50.33230

Longitude: 112 17 34.98158

NAVD 88 height: 1387.172 ft

Datum shift(NAVD 88 minus NGVD 29): 2.037 feet

Converted to NGVD 29 height: 1385.135 feet

2IC3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 01 48.28945

Longitude: 112 12 02.57101

NAVD 88 height: 1353.773 ft

Datum shift(NAVD 88 minus NGVD 29): 1.965 feet

Converted to NGVD 29 height: 1351.808 feet

2JB2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 32 59 53.81195

Longitude: 112 15 16.68262

NAVD 88 height: 1430.807 ft

Datum shift(NAVD 88 minus NGVD 29): 2.051 feet

Converted to NGVD 29 height: 1428.757 feet

2KB2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 32 56 35.77158

Longitude: 112 15 53.65462

NAVD 88 height: 1569.652 ft

Datum shift(NAVD 88 minus NGVD 29): 2.067 feet

Converted to NGVD 29 height: 1567.585 feet

3BD3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 20 13.34303

Longitude: 112 27 34.57667

NAVD 88 height: 989.469 ft

Datum shift(NAVD 88 minus NGVD 29): 2.093 feet

Converted to NGVD 29 height: 987.376 feet

3BF3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 19 58.37467

Longitude: 112 32 47.09057

NAVD 88 height: 935.860 ft

Datum shift(NAVD 88 minus NGVD 29): 2.119 feet

Converted to NGVD 29 height: 933.741 feet

3EC3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 17 01.11088

Longitude: 112 24 32.55467

NAVD 88 height: 1102.133 ft

Datum shift(NAVD 88 minus NGVD 29): 2.106 feet

Converted to NGVD 29 height: 1100.027 feet

3CE3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 17 30.28867

Longitude: 112 30 25.71083

NAVD 88 height: 1002.690 ft

Datum shift(NAVD 88 minus NGVD 29): 2.110 feet

Converted to NGVD 29 height: 1000.580 feet

3CG2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 17 20.97144

Longitude: 112 36 49.46004

NAVD 88 height: 918.077 ft

Datum shift(NAVD 88 minus NGVD 29): 2.116 feet

Converted to NGVD 29 height: 915.961 feet

~~3D751~~ 3DB3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 14 46.88724

Longitude: 112 21 26.93786

NAVD 88 height: 1206.857 ft

Datum shift(NAVD 88 minus NGVD 29): 2.087 feet

Converted to NGVD 29 height: 1204.770 feet

3DD1

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 14 49.43206

Longitude: 112 27 51.41682

NAVD 88 height: 1059.547 ft

Datum shift(NAVD 88 minus NGVD 29): 2.090 feet

Converted to NGVD 29 height: 1057.457 feet

3DF2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 14 48.92266

Longitude: 112 34 24.44927

NAVD 88 height: 1030.28 ft

Datum shift(NAVD 88 minus NGVD 29): 2.142 feet

Converted to NGVD 29 height: 1028.138 feet

3EA3

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 12 13.73982

Longitude: 112 18 51.96346

NAVD 88 height: 1265.092 ft

Datum shift(NAVD 88 minus NGVD 29): 2.041 feet

Converted to NGVD 29 height: 1263.051 feet

3EC2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 12 11.39204

Longitude: 112 24 33.66260

NAVD 88 height: 1106.070 ft

Datum shift(NAVD 88 minus NGVD 29): 2.070 feet

Converted to NGVD 29 height: 1104.000 feet

3EE2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 12 13.62169

Longitude: 112 30 51.14072

NAVD 88 height: 1221.818 ft

Datum shift(NAVD 88 minus NGVD 29): 2.152 feet

Converted to NGVD 29 height: 1219.666 feet

3 FB2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 09 55.58076

Longitude: 112 21 43.07516

NAVD 88 height: 1154.101 ft

Datum shift(NAVD 88 minus NGVD 29): 2.037 feet

Converted to NGVD 29 height: 1152.064 feet

3FD2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 09 43.62512

Longitude: 112 28 40.12716

NAVD 88 height: 1354.003 ft

Datum shift(NAVD 88 minus NGVD 29): 2.149 feet

Converted to NGVD 29 height: 1351.854 feet

3PR2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 09 39.25426

Longitude: 112 33 41.98816

NAVD 88 height: 1339.337 ft

Datum shift(NAVD 88 minus NGVD 29): 2.198 feet

Converted to NGVD 29 height: 1337.139 feet

3GA2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 06 58.93297

Longitude: 112 18 23.31555

NAVD 88 height: 1217.028 ft

Datum shift (NAVD 88 minus NGVD 29): 1.998 feet

Converted to NGVD 29 height: 1215.030 feet

3GC2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 06 58.46860

Longitude: 112 25 52.26484

NAVD 88 height: 1374.574ft

Datum shift(NAVD 88 minus NGVD 29): 2.113 feet

Converted to NGVD 29 height: 1372.461 feet

3HB2

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 04 20.69209

Longitude: 112 21 09.37376

NAVD 88 height: 1330.774 ft

Datum shift (NAVD 88 minus NGVD 29): 2.024 feet

Converted to NGVD 29 height: 1328.750 feet

4AE1

Questions concerning the VERTCON process may be mailed to NGS

Latitude: 33 22 47.52218

Longitude: 112 30 14.68475

NAVD 88 height: 869.226 ft

Datum shift(NAVD 88 minus NGVD 29): 2.106 feet

Converted to NGVD 29 height: 867.120 feet

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PRIME 20	33° 02' 38.75784"	112° 15' 16.83492"	1332.261	-2.008	1330.253
PRIME 21	33° 00' 00.35788"	112° 18' 22.63892"	1469.589	-2.067	1467.522
PRIME 22	32° 55' 39.89141"	112° 15' 16.82607"	1575.770	-2.057	1573.713
PRIME 23	32° 55' 38.32717"	112° 12' 11.60549"	1526.186	-2.051	1524.135
PRIME 160	33° 20' 10.75916"	112° 27' 32.74645"	961.356	-2.093	959.263

CHECKED:
DGF 5/2/05

FINAL DELIVERABLES

RAINBOW VALLEY ADMP MAPPING
AERIAL CONTROL-GRID, LAT-LON & UTM
4/29/2005 DGF

PT	GRID N (IF)	GRID E (IF)	MON EL (IF)	PAN EL (IF)	LATITUDE	LONGITUDE	UTM NORTHING(M)	UTM EASTING(M)
2EB3	799155.0197	601045.7021	1547.703	1547.803	33° 11' 47.18571"	112° 14' 24.57218"	3673749.719	384403.282
2FB3	787471.9718	596144.0092	1408.137	1408.277	33° 09' 51.43475"	112° 15' 21.81256"	3670202.460	382878.341
2GC3	771072.9528	611259.2421	1614.239	1614.239	33° 07' 09.62305"	112° 12' 23.45817"	3665164.673	387440.886
2HB1	754250.5741	595736.3944	1282.152	1282.282	33° 04' 22.71096"	112° 15' 25.33933"	3660079.499	382665.608
2IA3	738888.2644	584649.9508	1387.172	1387.312	33° 01' 50.33230"	112° 17' 34.98158"	3655427.382	379246.202
2IC3	738592.9068	612947.7297	1353.773	1353.863	33° 01' 48.28945"	112° 12' 02.57101"	3655262.156	387869.005
2JB2	727072.3622	596385.6004	1430.807	1431.157	32° 59' 53.81195"	112° 15' 16.68262"	3651795.351	382791.200
2KB2	707068.2054	593170.7972	1569.652	1569.952	32° 56' 35.77158"	112° 15' 53.65462"	3645707.712	381758.416
3BD3	850589.3307	534183.8845	989.469	989.469	33° 20' 13.34303"	112° 27' 34.57667"	3689603.188	364164.726
3BF3	849225.5906	507662.2933	935.860	936.060	33° 19' 58.37467"	112° 32' 47.09057"	3689258.658	356078.376
3CC3	831084.0223	549534.1503	1102.133	1102.223	33° 17' 01.11088"	112° 24' 32.55467"	3683617.735	368790.557
3CE3	834188.4580	519572.2703	1002.690	1002.810	33° 17' 30.28867"	112° 30' 25.71083"	3684644.031	359667.789
3CG2	833447.6673	486993.2251	918.077		33° 17' 20.97144"	112° 36' 49.46004"	3684505.483	349736.930
3DB3	817447.9495	565233.3825	1206.857	1206.937	33° 14' 46.88724"	112° 21' 26.93786"	3679420.118	373538.455
3DD1	817859.5571	532583.4810	1059.547	1059.787	33° 14' 49.43206"	112° 27' 51.41682"	3679632.854	363589.374
3DF2	818000.4134	499205.5446	1030.280		33° 14' 48.92266"	112° 34' 24.44927"	3679765.032	353417.483
3EA3	801917.0440	578335.3937	1265.092	1265.182	33° 12' 13.73982"	112° 18' 51.96346"	3674652.075	377489.785
3EC2	801803.3071	549302.0669	1106.070	1106.270	33° 12' 11.39204"	112° 24' 33.66260"	3674694.949	368641.548
3EE2	802195.7513	517230.7776	1221.818	1222.058	33° 12' 13.62169"	112° 30' 51.14072"	3674900.204	358868.648
3FB2	788012.3950	563737.6378	1154.101	1154.241	33° 09' 55.58076"	112° 21' 43.07516"	3670453.604	373004.011
3FD2	786974.4127	528281.0794	1354.003		33° 09' 43.62512"	112° 28' 40.12716"	3670231.866	362195.697
3FF2	786680.4068	502618.5531	1339.337		33° 09' 39.25426"	112° 33' 41.98816"	3670210.728	354373.988
3GA2	770091.7388	580651.0367	1217.028	1217.118	33° 06' 58.93297"	112° 18' 23.31555"	3664947.203	378110.581
3GC2	770209.4390	542468.2677	1374.574		33° 06' 58.46860"	112° 25' 52.26484"	3665084.805	366474.639
3HB2	754154.7638	566461.5978	1330.774		33° 04' 20.69209"	112° 21' 09.37376"	3660128.205	373743.925
4AE1	866245.8497	520688.8156	869.226		33° 22' 47.52218"	112° 30' 14.68475"	3694410.826	360093.986
4AG1	865722.8248	488725.1903	892.388		33° 22' 40.40473"	112° 36' 31.58077"	3694337.197	350351.278
1418	740572.2343	567323.3891	1420.082		33° 02' 06.33447"	112° 20' 58.58814"	3655986.630	373970.429
PRIME 1	852260.5427	505440.4694	855.646	855.646	33° 20' 28.26823"	112° 33' 13.49649"	3690189.551	355409.383
PRIME 2	854930.6054	518150.8720	871.357	871.357	33° 20' 55.42882"	112° 30' 43.85149"	3690969.207	359290.174
PRIME 3	861703.4045	537607.2018	910.702	910.702	33° 22' 03.47940"	112° 26' 54.89410"	3692981.092	365237.804
PRIME 4	852795.5368	547051.2169	1081.849	1081.849	33° 20' 35.80851"	112° 25' 03.03168"	3690241.052	368092.027
PRIME 5	851132.9460	563383.5150	1263.819	1263.819	33° 20' 20.09369"	112° 21' 50.42023"	3689690.596	373064.878
PRIME 6	855207.9250	580259.1670	1108.871	1108.871	33° 21' 01.08429"	112° 18' 31.67693"	3690887.206	378218.642
PRIME 7	828611.5534	506680.2596	1075.138	1075.138	33° 16' 34.36425"	112° 32' 57.19231"	3682978.916	355723.883
PRIME 8	817314.5620	580785.0020	1404.663	1404.663	33° 14' 46.17907"	112° 18' 23.80856"	3679337.890	378277.440
PRIME 9	791123.2867	608121.2953	1663.541	1663.541	33° 10' 27.92458"	112° 13' 01.03089"	3671283.220	386538.082
PRIME 10	801061.6030	509573.1337	1246.423	1246.423	33° 12' 01.95863"	112° 32' 21.18500"	3674575.011	356531.870
PRIME 11	793365.2525	527044.3185	1289.650	1289.650	33° 10' 46.79130"	112° 28' 55.08184"	3672182.827	361835.838
PRIME 12	780465.0663	549379.7256	1243.760	1243.760	33° 08' 40.26939"	112° 24' 31.56834"	3668191.832	368608.273
PRIME 13	771401.8533	559553.3486	1230.403	1230.403	33° 07' 11.05124"	112° 22' 31.44499"	3665402.674	371684.555

4/29/05

DGF 4/29/05

PRIME 14	764710.7190	567922.9269	1273.456	1273.456	33° 06' 05.19761"	112° 20' 52.71010"	3663341.247	374217.368
PRIME 15	770270.5663	575451.4406	1230.137	1230.137	33° 07' 00.50696"	112° 19' 24.45969"	3665015.553	376526.490
PRIME 16	775355.7924	580812.4753	1205.152	1205.152	33° 07' 51.02399"	112° 18' 21.64720"	3666550.981	378173.807
PRIME 17	783359.7151	591319.3819	1315.768	1315.768	33° 09' 10.58787"	112° 16' 18.40691"	3668962.138	381397.091
PRIME 18	791280.5567	601960.4550	1465.377	1465.377	33° 10' 29.30000"	112° 14' 13.52311"	3671347.585	384661.030
PRIME 19	753523.0735	580858.7221	1310.606	1310.606	33° 04' 15.00147"	112° 18' 20.15143"	3659897.389	378129.760
PRIME 20	743742.3675	596426.1826	1332.261	1332.261	33° 02' 38.75784"	112° 15' 16.83492"	3656875.336	382847.878
PRIME 21	727788.6743	580551.6592	1469.589	1468.839	33° 00' 00.35788"	112° 18' 22.63892"	3652055.699	377967.765
PRIME 22	701410.6380	596291.0150	1575.770	1575.770	32° 55' 39.89141"	112° 15' 16.82607"	3643975.323	382694.288
PRIME 23	701205.7830	612076.8270	1526.186	1526.186	32° 55' 38.32717"	112° 12' 11.60549"	3643871.051	387504.367
PRIME 160	850327.3709	534337.7920	961.356	961.356	33° 20' 10.75916"	112° 27' 32.74645"	3689522.942	364210.929

NOTES

LATITUDE AND LONGITUDE, GRID NORTHINGS AND GRID EASTINGS ARE ON THE NORTH AMERICAN DATUM OF 1983, 1992 EPOCH, NAD83(92), ARIZONA STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE.

UNIVERSAL TRANSVERSE MERCATOR (UTM) COORDINATES ARE IN ZONE 12.

UNITS FOR NAD83(92) GRID COORDINATES ARE INTERNATIONAL FEET.

UNITS FOR UTM COORDINATES ARE METERS.

"MONE EL" = MONUMENT ELEVATION IN INTERNATIONAL FEET

"PAN EL" = PANEL ELEVATION, IN OTHER WORDS, THE GROUND ELEVATION AT THE MONUMENT, IN INTERNATIONAL FEET. POINTS WITHOUT "PAN EL" ARE OUTSIDE THE PROJECT SITE AND WERE NOT PANELED.

FOR NGS POINTS, GRID COORDINATES AND LATITUDES AND LONGITUDES OBTAINED FROM THE NGS WEBSITE.

FOR PRIME POINTS, GRID COORDINATES OBTAINED VIA GPS METHODS. LATITUDE, LONGITUDE, AND UTM COORDINATES CALCULATED FROM GRID COORDINATES USING NGS SOFTWARE. IF THERE IS A DISCREPANCY, HOLD THE GRID COORDINATES.

4/29/05

"GO TO" SKETCHES

Prime 1 4-25-05

LOCATION T1S R3W S15 G+SR B&L+M

SKETCH BY G. FRARY HUIT-ZOLLARS

DATE: VISITED 2-8-05 BY G. FRARY

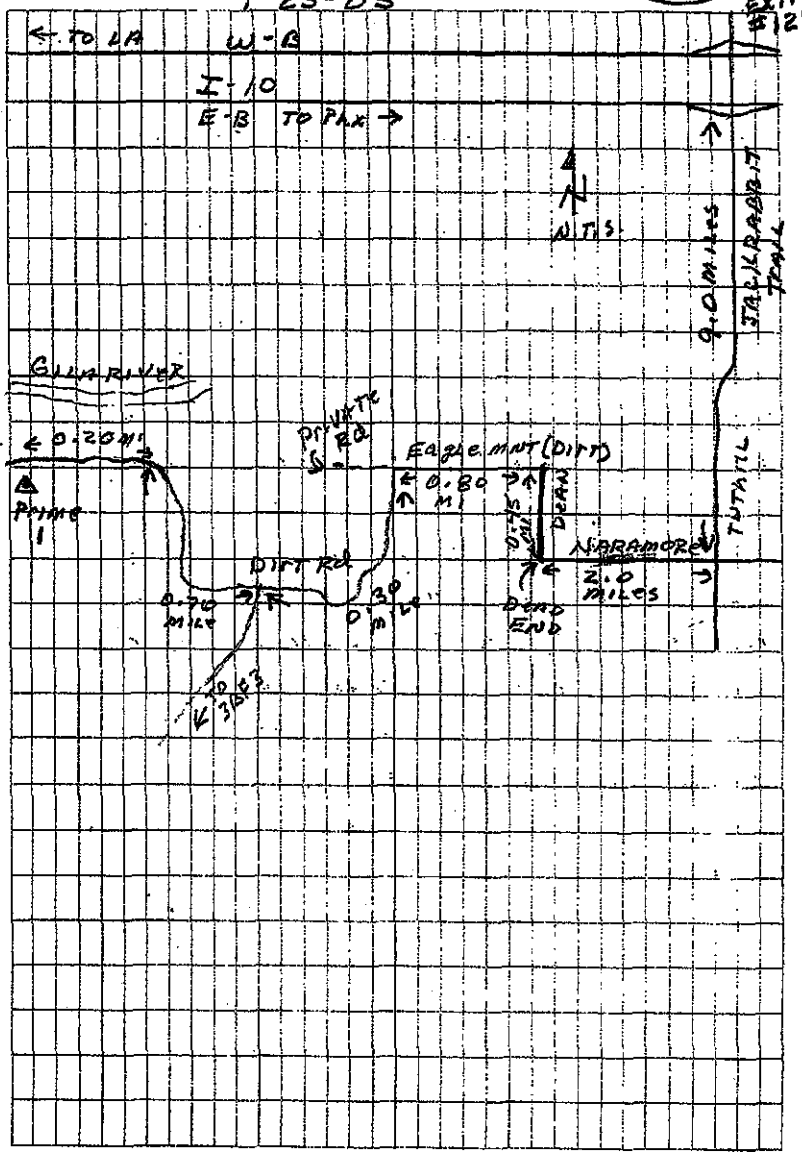
DESCRIPTION SET 1/2" 24" REBAR WITH 2" ALUMINUM CAP STAMPED PRIME 1

EXIT #121 JACKRABBIT TRAIL W-B I-10 Then GO 9.0 MILES SOUTH TO NARRAMORE Rd. Then GO 2.0 MILES WEST TO DEAN Rd. Then GO 0.45 MILE NORTH TO Eagle MOUNTAIN Rd & DIRT Rd. Then GO 0.80 MILE WEST TO A DIRT Rd ON LT. Then GO 1.20, MILES ON MEANDERING DIRT Rd TO POINT ON LT. Prime 1 IS 60' SOUTH OF DIRT Rd.

5-2-05

4-25-05

45/1



4-22-05

Prime #2

LOCATION T1S R3W S12 G+SR B&M

SKETCH By G. Frary HUITT-Zollars

DATE: VISITED 2-28-05 By B. MALMOS

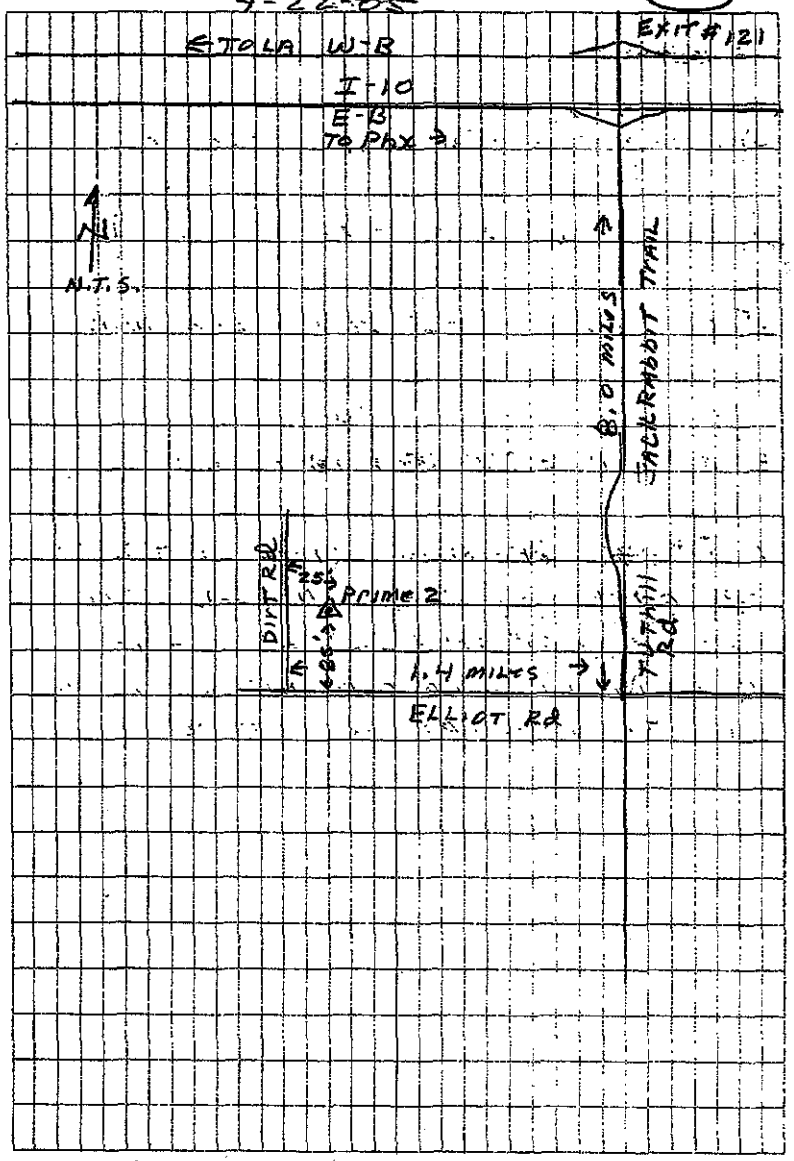
DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 2

EXIT #121 JACKRABBIT TRAIL W-B I-10 GO SOUTH 8.0 MILES TO ELLIOT Rd. Then GO WEST ON ELLIOT Rd 1.4 miles TO A DIRT Rd ON RIGHT: 85' NORTH OF ELLIOT Rd + 25' EAST OF DIRT Rd

5-2-05

45/2

4-22-05



Prime 3 4-27-05

LOCATION T1S R2W S3 G+SR B&M

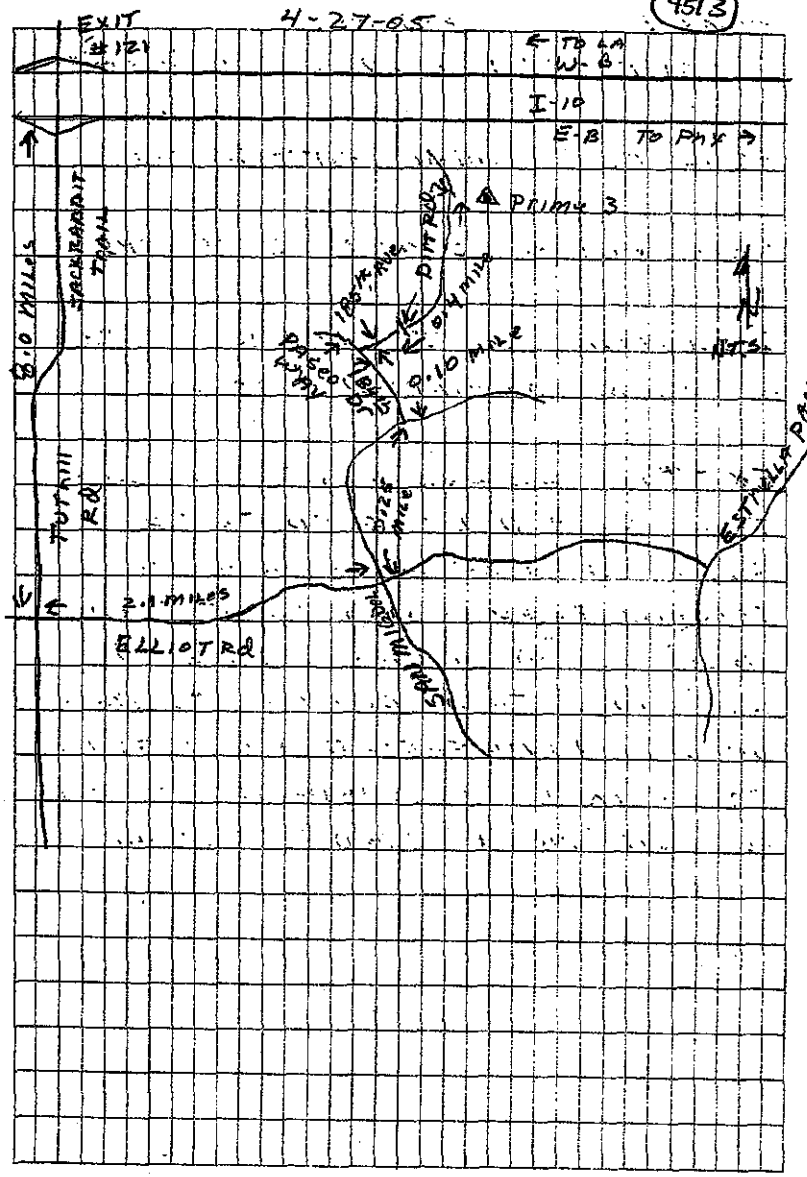
SKETCH BY G. FRARY HULIT-ZOLLARS

DATE: VISITED 3-20-05 BY B. PHILLIPS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 3

EXIT #121 JACKRABBIT TRAIL W-B I-10 Then GO 8.0 MILES SOUTH TO ELLIOT Rd. Then GO 2.1 miles EAST TO SAN MIGUEL Rd. Then TURN LT + GO 0.25 MILE TO 184th DR (PASEO WAY). Then TURN LT + GO 0.10 MILE TO 185th AVE. Then TURN RT + GO 0.40 MILE North. TO GET TO POINT ON 185th AVE YOU MUST GO OVER CURB + FOLLOW DIRT TRAIL.

5/2/05



Prime 4 4-29-05

LOCATION T1S R2W S13 G&SR B&M

SKETCH BY G. FRIARY HULIT-ZOLLARS

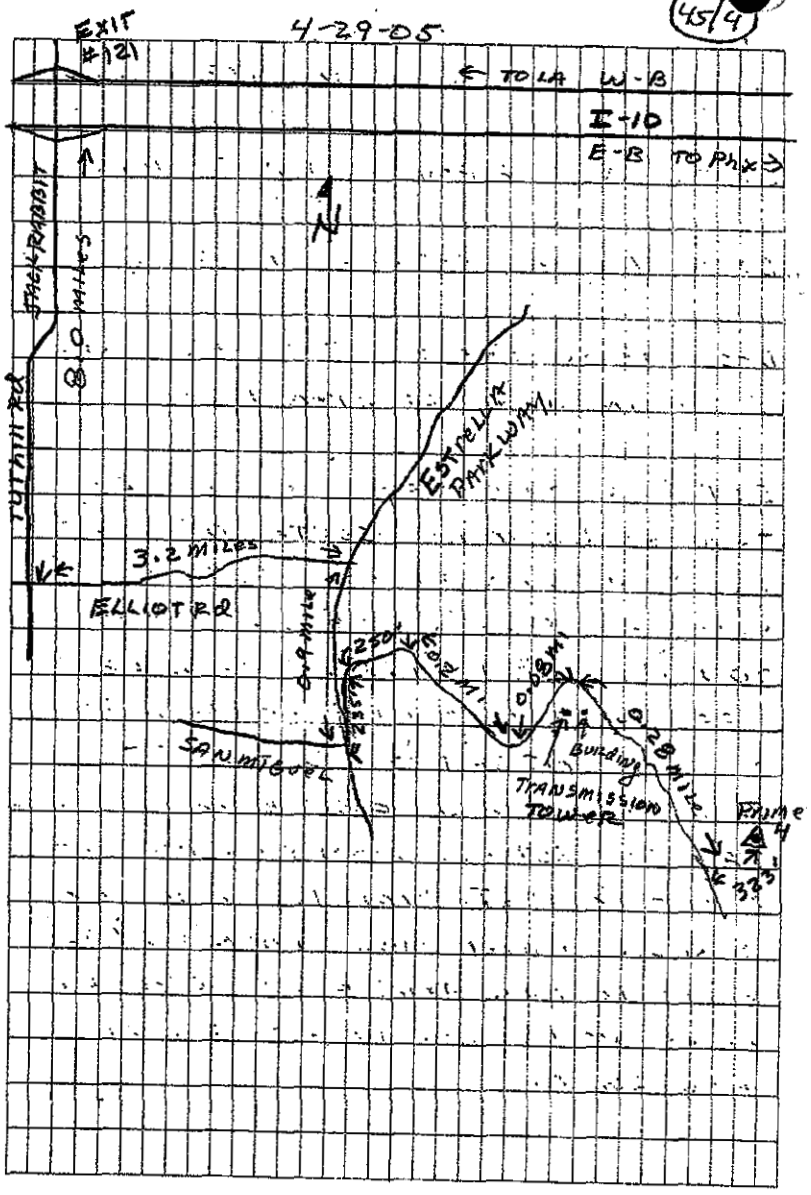
DATE: VITISED 3-20-05 B. PHILLIPS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 4

EXIT #121 JACKRABBIT TRAIL W-B I-10 Then GO 8.0 MILES SOUTH TO ELLIOT Rd. Then GO 3.2 MILES EAST TO ESTRELLA PARKWY. Then GO 0.9 MILE SOUTH TO SAN MIGUEL. Then GO 235' NORTH TO A PAVE Rd RT. Then GO 250' NORTH EASTERLY TO A DIRT TRAIL RT. Then GO 0.20 MILE SOUTHEASTERLY TO A DIRT Rd LT. Then GO 0.08 MILE NORTH TO A DIRT TRAIL RT. Then GO RT AROUND TRANSMISSION TOWER & SMALL BUILDING FOR 0.28 MILE SOUTHEASTERLY & POINT ON LT. POINT IS 323' OFF ROAD.

5-2-05

4-29-05



Prime 5 4-29-05

LOCATION T1S R1W S16 G&SR B&M

SKETCH BY G. FRATY HUITT-ZOLLARS

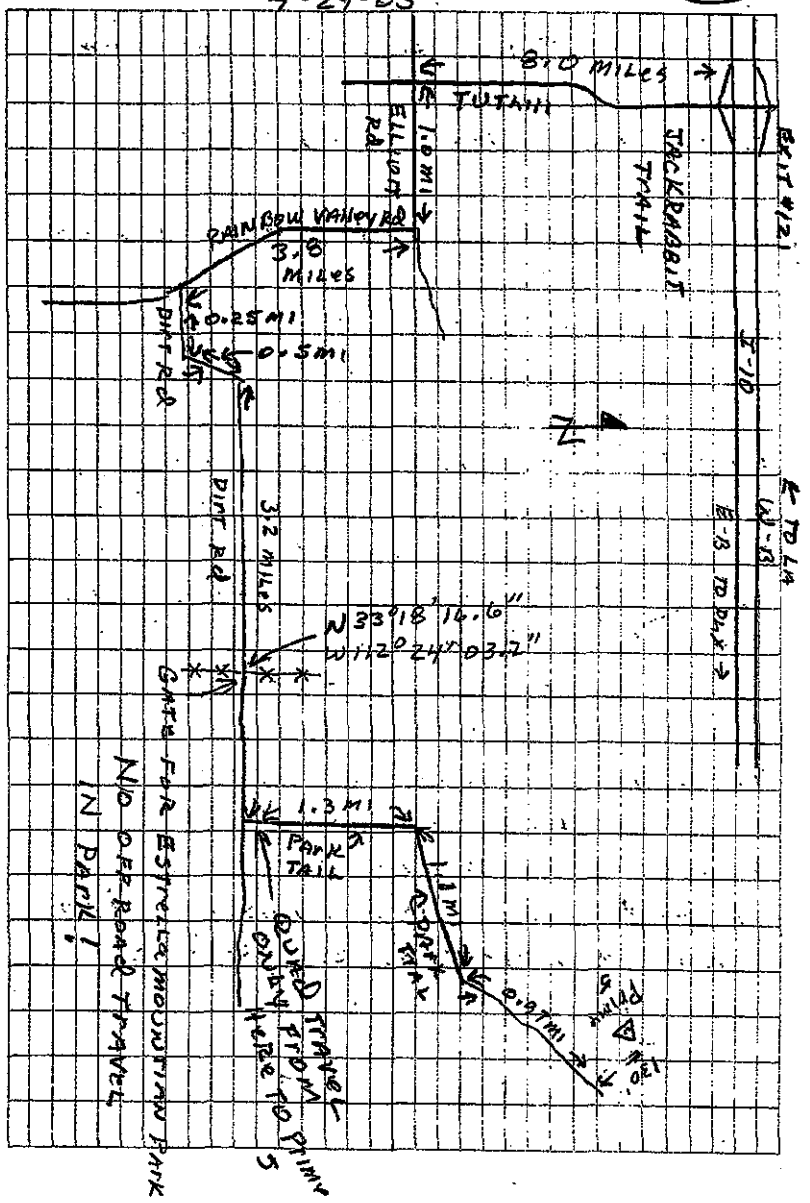
DATE: VISITED 2-21-05 BY D. FRANCETIC

DESCRIPTION SET 1/2" 18" REBAR WITH 2" ALUMINUM CAP STAMPED PRIME 5

EXIT #121 JACKRABBIT TRAIL W-B I-10 THEN GO 8.0 MILES SOUTH TO ELLIOT Rd. THEN GO 1.0 MILE EAST TO RAINBOW VALLEY Rd. THEN GO 3.8 MILES SOUTH TO A DIRT Rd LT (EAST). THEN GO 0.25 MILES EAST TO A DIRT LT. THEN GO 0.5 MILE NORTH EAST TO A DIRT Rd RT. THEN GO 3.2 MILES EAST GOING THROUGH GATE FOR ESTRELLA MOUNTIAN PARK TO A DIRT TRAIL LT. FROM THIS POINT ON IS QUAD TRAVEL ONLY. THEN GO 1.30 MILES TO A DIRT TRAL RT. THEN GO 1.1 MILES NORTH EAST TO A DIRT TRAIL LT. THEN GO 0.97 MILE NORTH EAST TO POINT ON LT. POINT IS 130' OFF DIRT TRAIL, DO NOT DRIVE OFF TRAIL!

5/2/05

4-29-05



Prime 6 4-28-05

LOCATION T1S R1W S12 G+SR B+M

SKETCH BY G. FEARY HUITT-ZOLLARS

DATE: VISITED 3-18-5 BY B. PHILLIPS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM STAMPED Prime 6

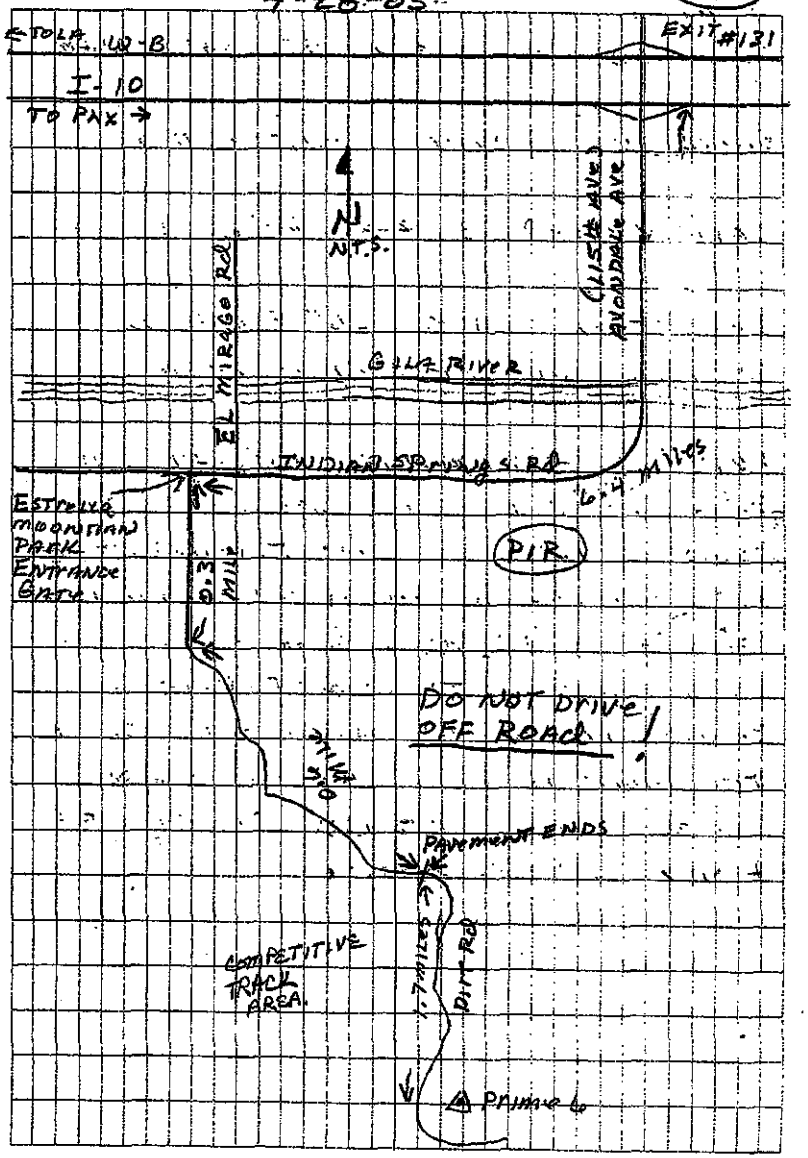
EXIT #131 AVONDALE AVE (115th AVE) W-B I-10. THEN GO 6.4 MILES SOUTH TILL ROAD TURN'S WEST INTO INDIAN SPRINGS RD + ENTRANCE TO ESTRELLA MOUNTAIN PARK ON LT (SOUTH). THEN GO 0.9 MILE SOUTHEASTERLY TO END OF PAVEMENT. THEN CONTINUE 1.7 MILES SOUTHEASTERLY TO POINT ON LT. POINT IS @ BASE OF SMALL HILL. DO NOT DRIVE OFF ROAD IN PARK AREA!

ACCESS TO PARK CAN BE OBTAINED BY CONTACTING ESTRELLA MTN. PARK SERVICE @ 623-932-3811

Rev 5/12/05

4-28-05

45/6



Prime 7 4-29-05

LOCATION T2S R3W S10 G+SR B1+m

sketch By G. Frary Hulit-20Mars

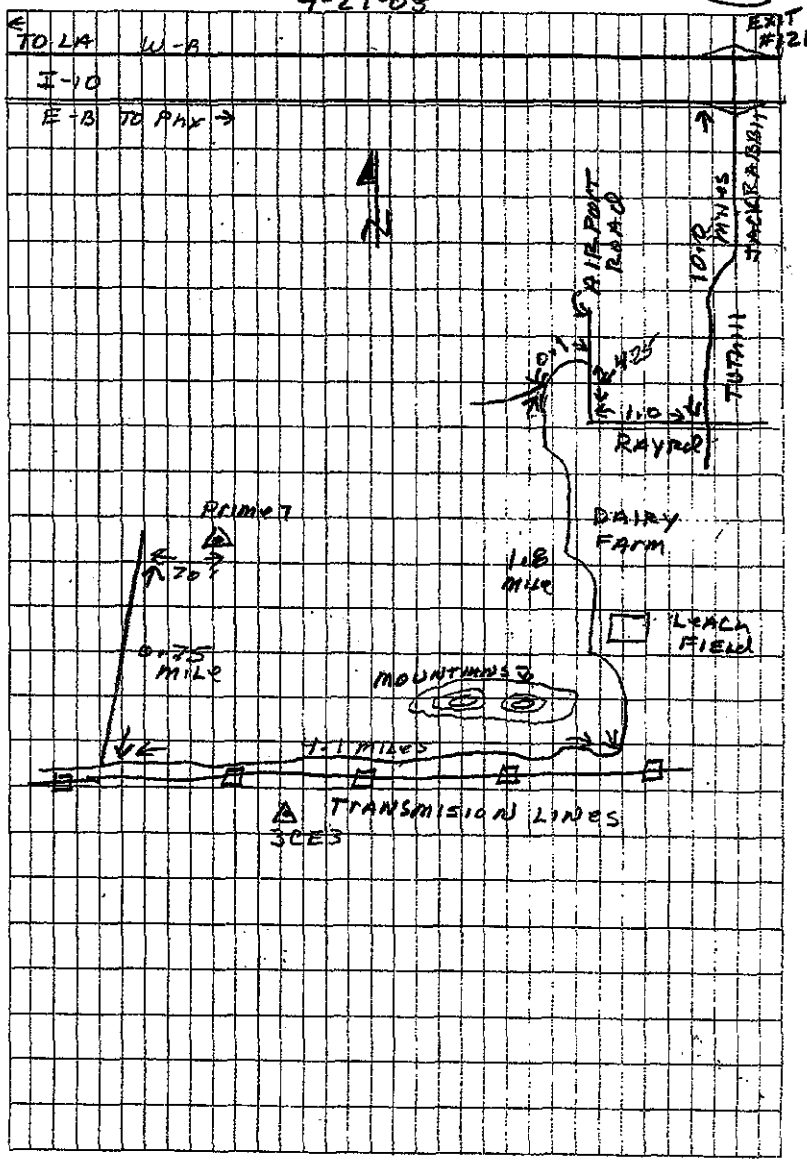
DATE: Visited 3-1-05 By B. Malmos

DESCRIPTION set 1/2" 36" ReBAR with 2" ALUMINUM CAP STAMPED Prime 7

EXIT #121 JACKRABBIT TRAIL W-B I-10 Then Go 10.0 miles SOUTH TO RAY Rd. Then Go 1.0 mile WEST TO AIRPORT Rd. Then Go 425' North TO A DIRT Rd LT. Then Go 0.10 mile TO A DIRT Rd ON RT + STAY LT. Then Go 1.8 miles SOUTH Through DAIRY FARM + By SMAH MOUNTIANS TO A DIRT Rd RT. Then Go 4.1 miles EASTERLY ON DIRT Rd + NEXT TO TRANSMISION LINES + A DIRT Rd RT (North). Then Go 0.75 mile North AND POINT ON RT. POINT IS 70' EAST OF DIRT Rd.

5-2-05

4-29-05



Prime 8 4-22-05

LOCATION T 2S R 1W S 24 G+SR BL+M

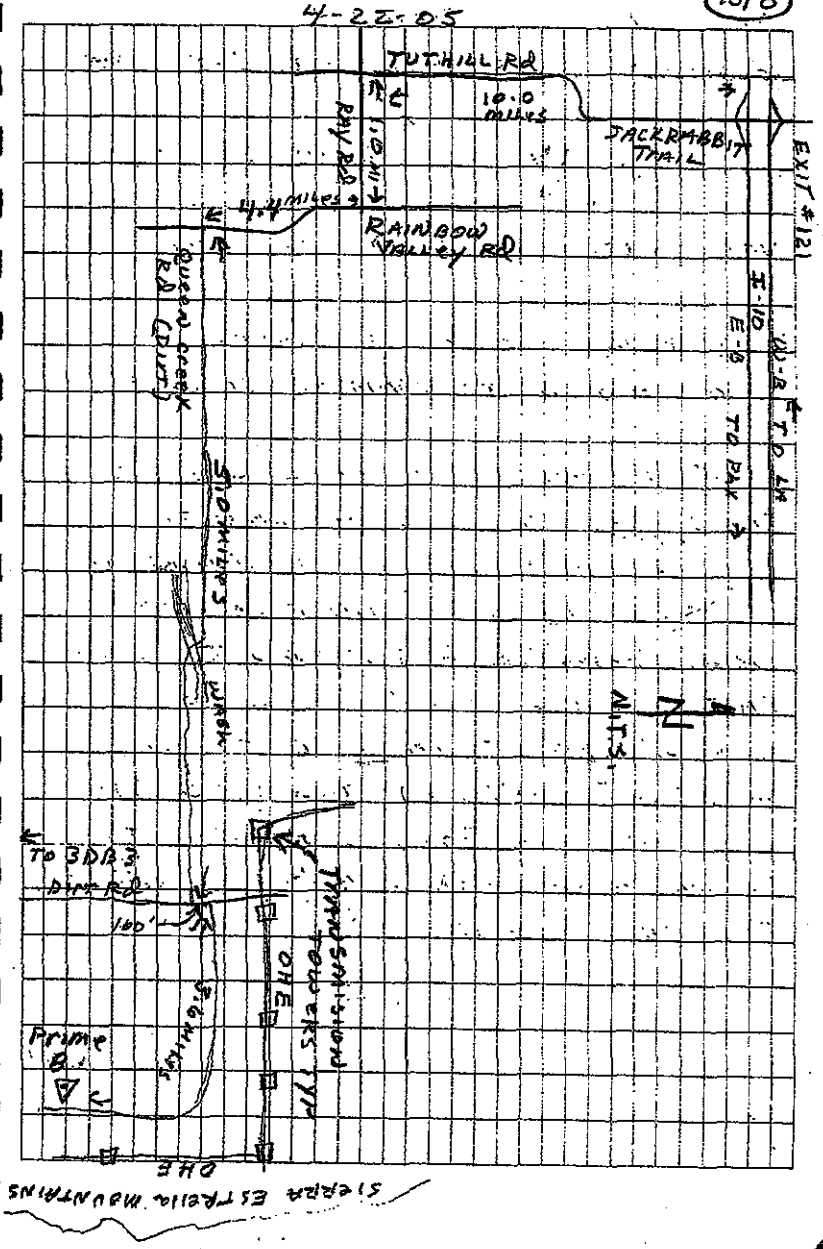
SKETCH BY G. FRARY HOIT-20110,05

DATE: VISITED 2-28-05 BY G. FRARY

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 8

EXIT #121 JACKRABBIT TRAIL W-B I-10 GO SOUTH 10.0 MILES TO RAY Rd. Then GO EAST 1.0 MILE TO RAINBOW VALLEY Rd. Then GO SOUTH 4.4 MILES TO QUEEN CREEK Rd, A DIRT Rd. Then GO EAST 5.6 MILES TO A DIRT Rd RUNNING NORTH + SOUTH. Then GO NORTH 100' TO The POWER LINE Rd. Then GO EAST 3.6 MILES TO POINT. NOTE THAT ROAD TURNS SOUTH BEFORE YOU GET TO Prime 8.

5-2-05



Prime 9A 4-28-05

LOCATION T35 R1E S12 G+SRB&M

SKETCH BY G. FERRY HUIT-ZOLLARS

DATE: VISITED 3-18-05 BY B. PHILLIPS

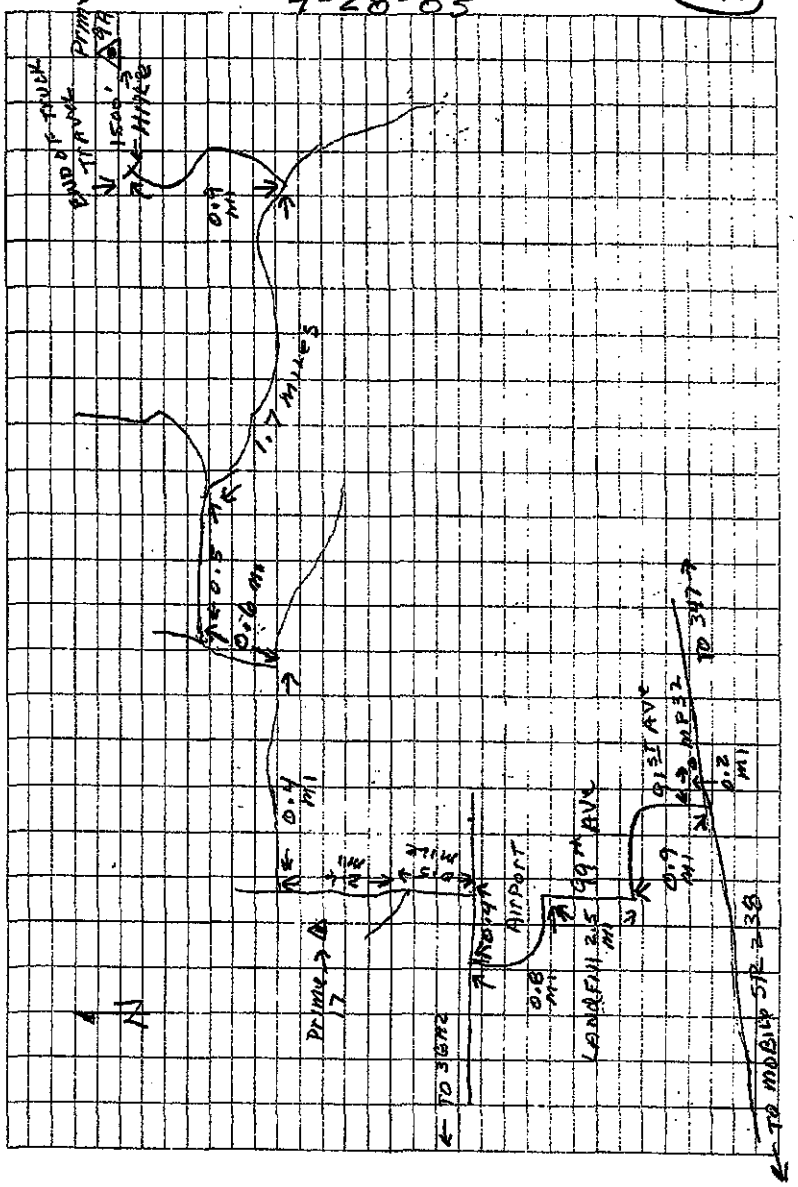
DESCRIPTION SET 1/2" 18" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 9ALT

EXIT 91ST AVE NORTH OFF SR238 THEN GO 1.9 MILES NORTH + WEST TO 99TH AVE THEN GO 2.5 MILES NORTH TO A DIRT RD LT. THEN GO 0.8 MILE WEST + NORTH AROUND SMALL AIRPORT AND A DIRT RD RUNNING EAST + WEST. THEN GO 0.4 MILE EAST TO A DIRT RD LT. THEN GO 3.1 MILES NORTH TO A DIRT RD RT. THEN GO 0.4 MILE EAST TO A DIRT RD + POWER LINES. THEN GO 0.6 MILE NORTH TO A DIRT RD RT. THEN GO 2.2 MILES EASTERLY ON MEANDERING DIRT RD TO A DIRT RD LT. THEN GO 0.9 MILE NORTHERLY TO END OF TRUCK TRAVEL. THEN HIKE 1500' EAST TO POINT.

5-2-05

4-28-05

45/9



Prime 10 4-22-05

LOCATION T3S R3W S2 G+SR BL+M

SKETCH BY G. Fmry HUITT-ZOllars

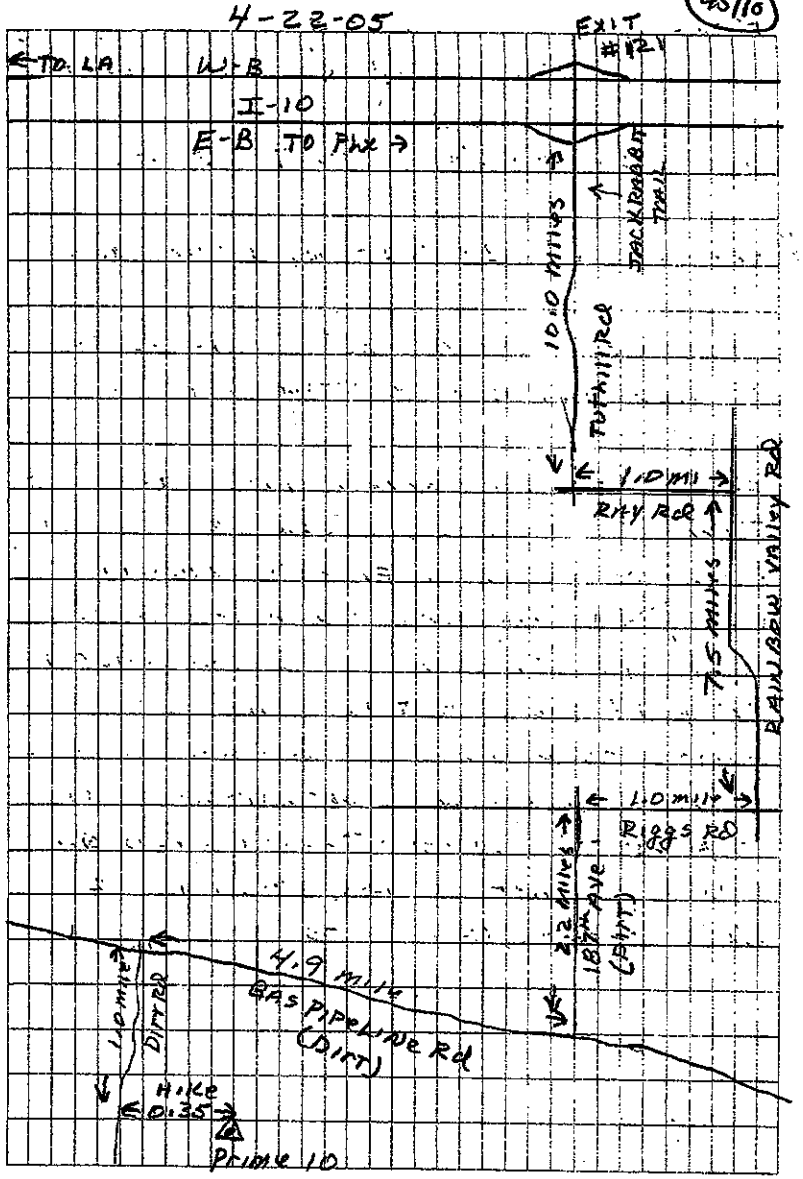
DATE VISITED 2-23-05 BY G. FMRY B. mmms

DESCRIPTION SET 1/2" 36" R+BAR WITH 2" ALUMINUM CAP STAMPED Prime 10

EXIT # 121 JACKRABBIT TRAIL W-B I-10 Then GO 10.0 MILES SOUTH TO RAY Rd. Then GO 1.0 MILE EAST TO RAINBOW Valley Rd. Then GO 7.5 MILES SOUTH TO Riggs Rd. Then GO 1.0 MILES WEST TO 187th AVE, A DIRT Rd. Then GO 2.2 MILES SOUTH TO A DIRT Rd (GAS PIPELINE Rd). Then GO 4.9 MILES NORTHWESTERLY TO A DIRT Rd ON LT (SOUTH). Then GO 1.0 MILE SOUTH - PARK. Then HIKE EAST FOR 0.35 MILE TO POINT.

5-2-05

4-22-05



Prime 11 4-25-05

LOCATION T 3 S R 2 W S 8 G+SR B L+M

SKETCH BY G. FRARY HUITT-ZOLLARS

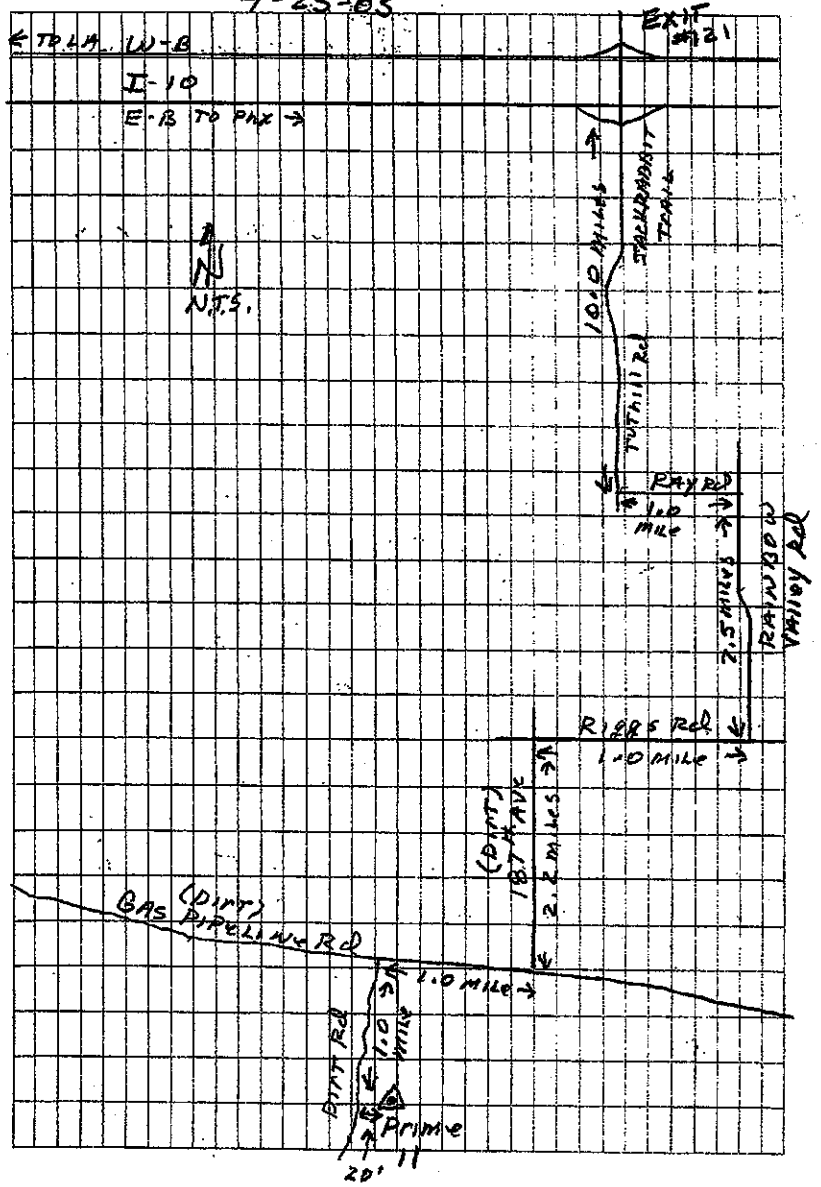
DATE: VISITED BY G. FRARY B. MALMOS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 11

EXIT # 121 JACKRABBIT TRAIL W-B I-10 Then GO 10.0 MILES SOUTH TO RAY Rd. Then GO 1.0 MILE EAST TO RAINBOW VALLEY Rd. Then GO 7.5 MILES SOUTH TO Riggs Rd. Then GO 1.0 MILE WEST TO 187th AVE A DIRT Rd. Then GO 2.2 MILES SOUTH TO A DIRT Rd (GAS PIPELINE Rd). Then GO 1.0 MILE NORTHWESTERLY TO A DIRT Rd ON LT. Then GO 1.0 MILE SOUTH + POINT ON LT. POINT IS 20' EAST OF DIRT Rd.

-Rass 5-2-05

4-25-05



Prime 12 4-22-05

LOCATION T 3S R 1W S 30 G&SR BL&M

SKETCH BY G. FRARY HUITT - ZOLLARS

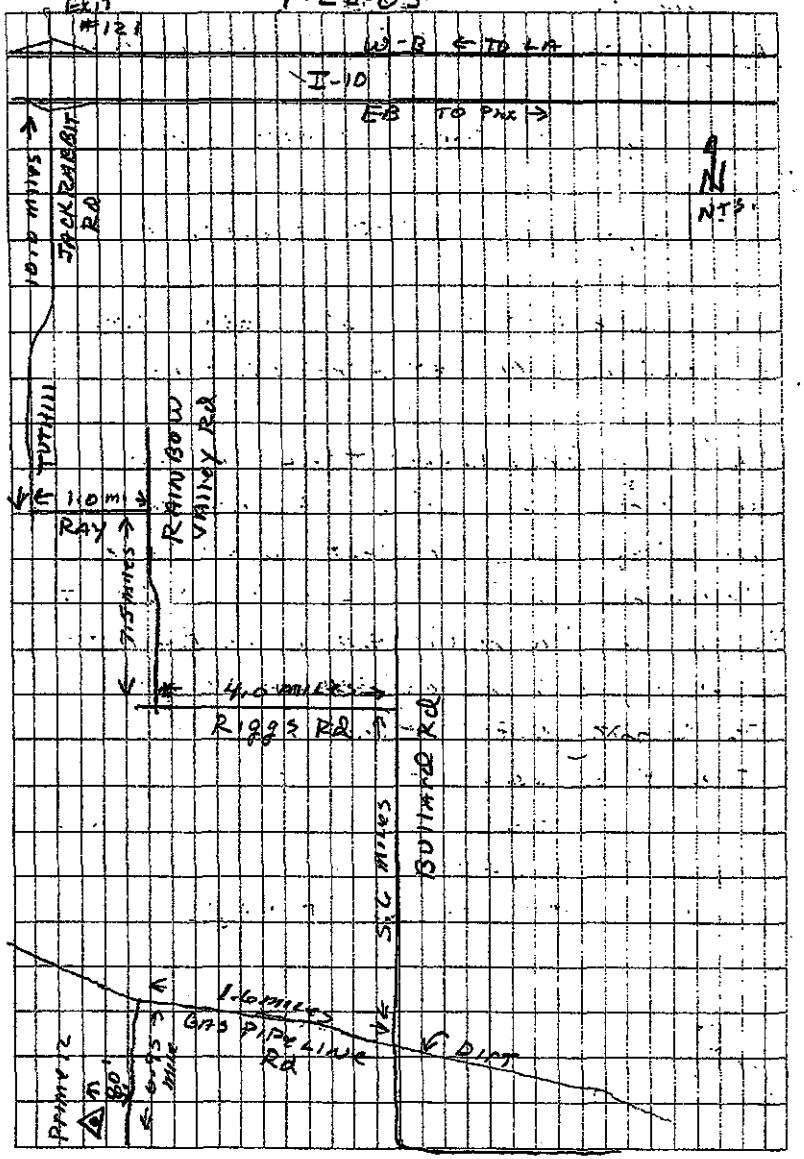
DATE: VISITED 3-1-05 BY G. FRARY B. MAYNES

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 12

EXIT #121 JACKRABBIT TRAIL W-B I-10
GO SOUTH 10.0 MILES TO RAY RD.
THEN GO 1.0 MILE EAST TO RAINBOW VALLEY RD.
THEN GO 7.5 MILES SOUTH TO Riggs Rd.
THEN GO 4.0 MILES EAST TO Bullard Rd.
THEN GO 5.6 MILES SOUTH TO A DIRT Rd (GAS PIPELINE Rd).
THEN GO 1.6 MILES NORTHWESTERLY TO A DIRT Rd ON LEFT (SOUTH). THEN GO 0.95 MILE SOUTH TO POINT ON LT.
POINT IS 80' WEST OF DIRT Rd.

5-2-05

4-22-05



Prime 13 4-22-05

LOCATION T.3S R1W S.32 G&SR B&M

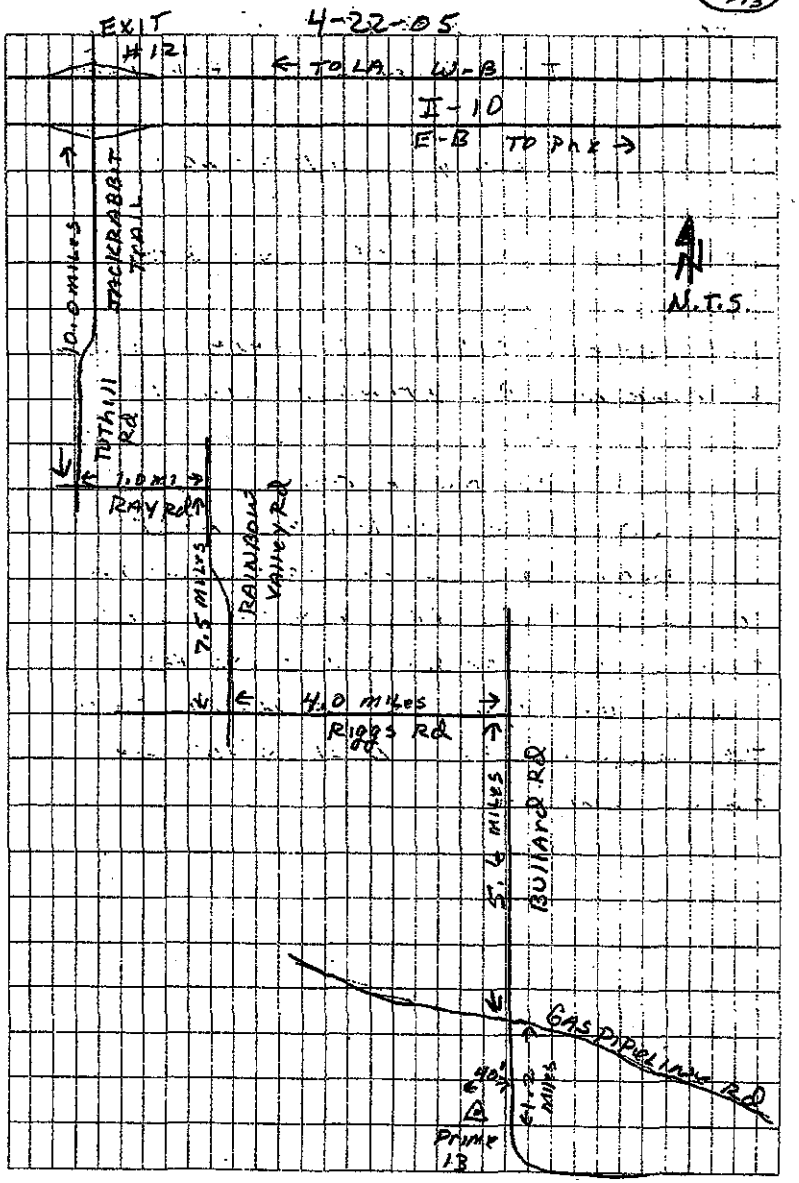
SKETCH BY G. FRARY HUITT-ZOLLARS

DATE VISITED 3-1-05 BY G. FRARY

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED PRIME 13

EXIT #121 JACK RABBIT TRAIL W-B I-10 GO SOUTH 10.0 MILES TO RAY RD. THEN GO 1.0 MILE EAST TO RAINBOW VALLEY RD. THEN GO 7.5 MILES SOUTH TO RIGGS RD. THEN GO 4.0 MILES EAST TO BULLARD RD. THEN GO 6.8 MILES SOUTH TO POINT ON RT. POINT IS 40' WEST OF BULLARD RD.

5-2-05



Prime 14 4-25-05

LOCATION T4S R1W S10 G+SR B&M

sketch by G. Frary Huitt-Zollars

DATE: visited 2-25-05 By G. Frary

Description set 1/2" 36" ReBar with 2" Aluminum Cap stamped Prime 14

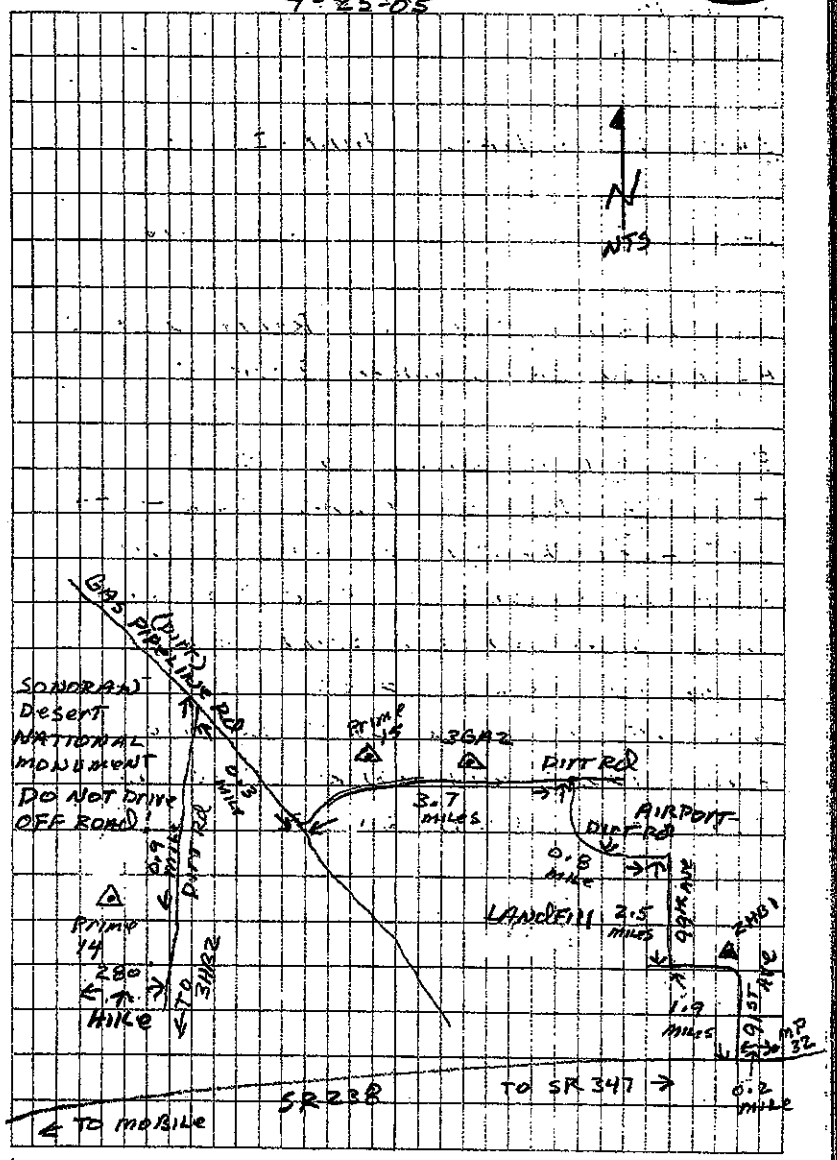
EXIT 91ST Ave North off SR238 Then Go 1.90 miles North + West to 99th Ave. Then Go 2.5 miles North to a dirt Rd on Lt. Then Go 0.80 mile West + North around small airport and a dirt Rd running East + West. Then Go 3.7 miles West Going By GDAC's Point 3GA2 + Prime 15 to Gas Pipeline Rd. Then Go 0.3 mile North westerly to a dirt Rd on Lt. Then Go 0.9 mile to point on Rt. Park on dirt Rd Then Hike 280' West to point.

DO NOT Drive OFF ROAD!

Point is set in Sonoran Desert National Monument

5-2-05

4-25-05



Prime 15 4-25-05

LOCATION T3S R1W S34 G+SR BLM

SKETCH BY G. FRARY HUITT-ZOLLARS

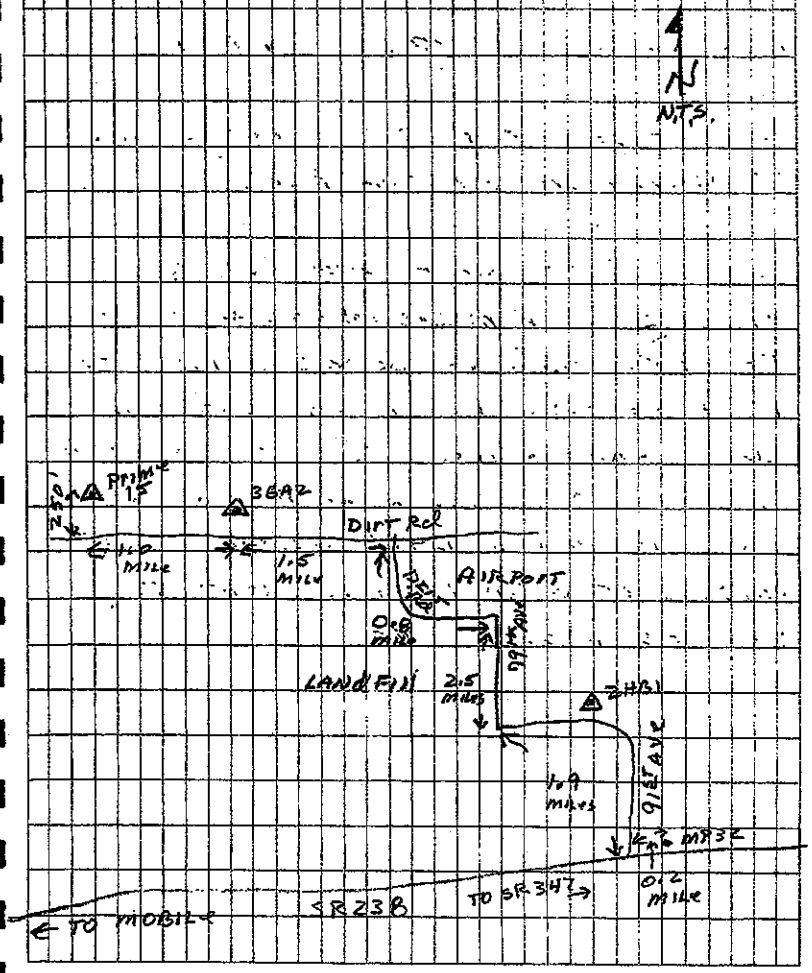
DATE: VISITED 2-25-05 BY G. FRARY

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 15

EXIT 91ST AVE NORTH OFF SR 238 Then GO 1.90 MILES NORTH + WEST TO 99th AVE. Then GO 2.5 MILES NORTH TO A DIRT Rd ON LT. Then GO 0.80 MILE WEST + NORTH AROUND SMALL AIRPORT AND A DIRT Rd RUNNING EAST + WEST. Then GO 2.50 MILES WEST GOING BY GDAC'S POINT 3GA2 + POINT ON RT. POINT IS 250' NORTH OF DIRT Rd.

5-2-05

4-25-05



Prime 16 4-28-05

LOCATION T 3 S R 1 W S 36 G&SR B&M

SKETCH BY G. FRARY HUITT-ZOLLARS

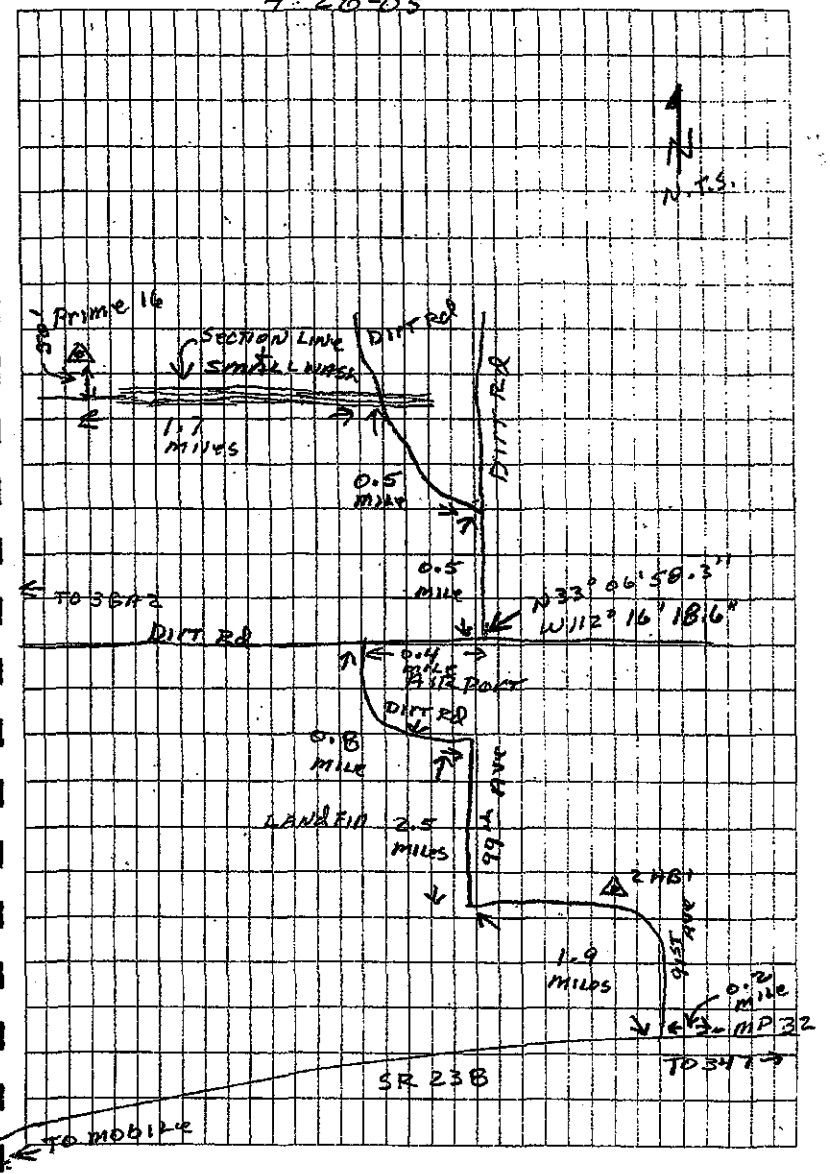
DATE: VISITED 3-28-05 BY B. PHILLIPS

DESCRIPTION SET ½" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 16

EXIT 91ST AVE NORTH OFF SR238 Then GO 1.90 MILES NORTH + WEST TO 99TH AVE. Then GO 2.5 MILES NORTH TO A DIRT Rd LT. Then GO 0.8 MILE WEST + NORTH AROUND SMALL AIRPORT AND A DIRT Rd RUNNING EAST + WEST. Then GO 0.4 MILE EAST TO A DIRT Rd LT (NORTH). Then GO 0.5 MILE NORTH TO A DIRT Rd LT. Then GO 0.5 NORTHWESTERLY TO A SMALL WASH, WHICH IS A SECTION LINE. Then GO 1.7 MILES WEST ALONG SOUTH BANK OF WASH TO POINT ON RT (NORTH). POINT IS 50' NORTH OF WASH.

5-2-05

4-28-05



Prime 17 4-26-05

LOCATION T 3 S R 1 E S20 G+SR B&M

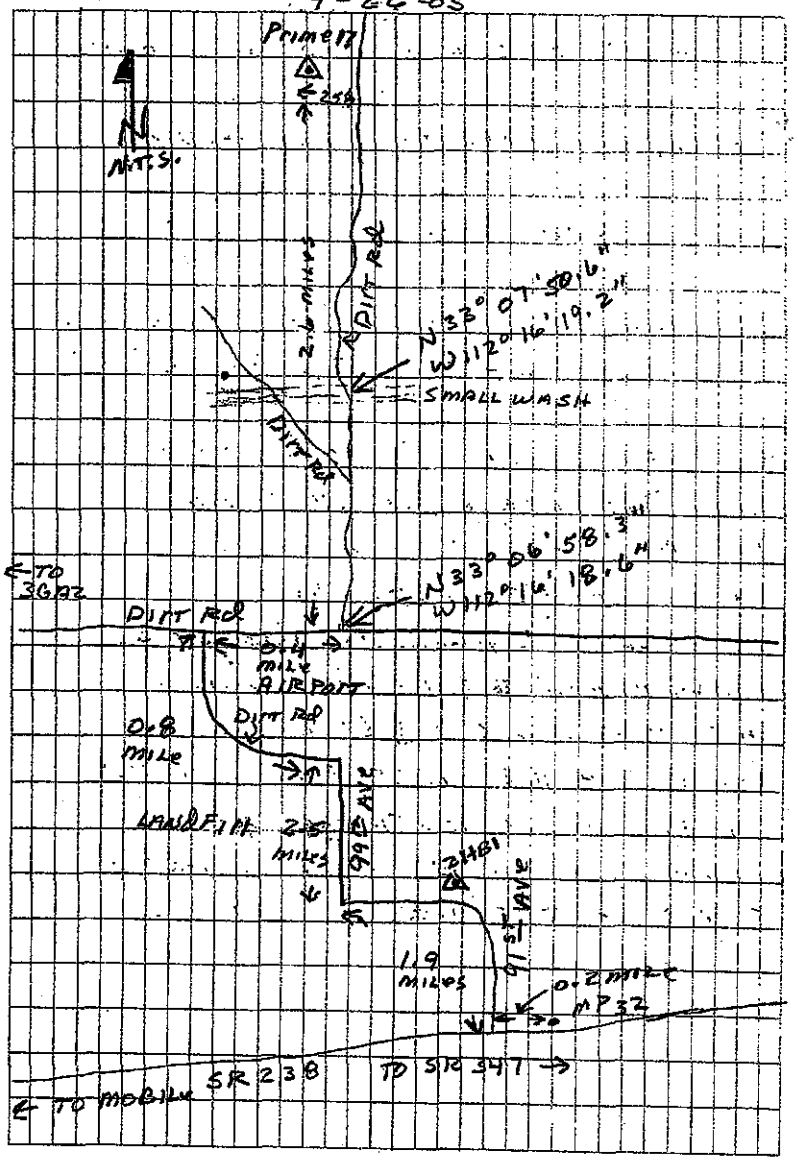
SKETCH BY G. Emery HUIT-ZOHARS

DATE: VISITED 2-25-05 BY G. Emery

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 17

EXIT 91ST AVE NORTH OFF SR238 THEN GO 1.90 MILES NORTH + WEST TO 99TH AVE. THEN GO 2.5 MILES NORTH TO A DIRT RD ON LT. THEN GO 0.80 MILE WEST + NORTH AROUND SMALL AIRPORT AND A DIRT RD RUNNING EAST + WEST. THEN GO 0.4 MILE EAST TO A DIRT RD ON LT (NORTH). THEN GO 2.6 MILES NORTH ON A MEANDERING DIRT RD + POINT ON LT (WEST). POINT IS 25' WEST OF DIRT RD.

4-26-05



PRIME 18 4-29-05

LOCATION: T35 R1E S10 G&SR BL&M

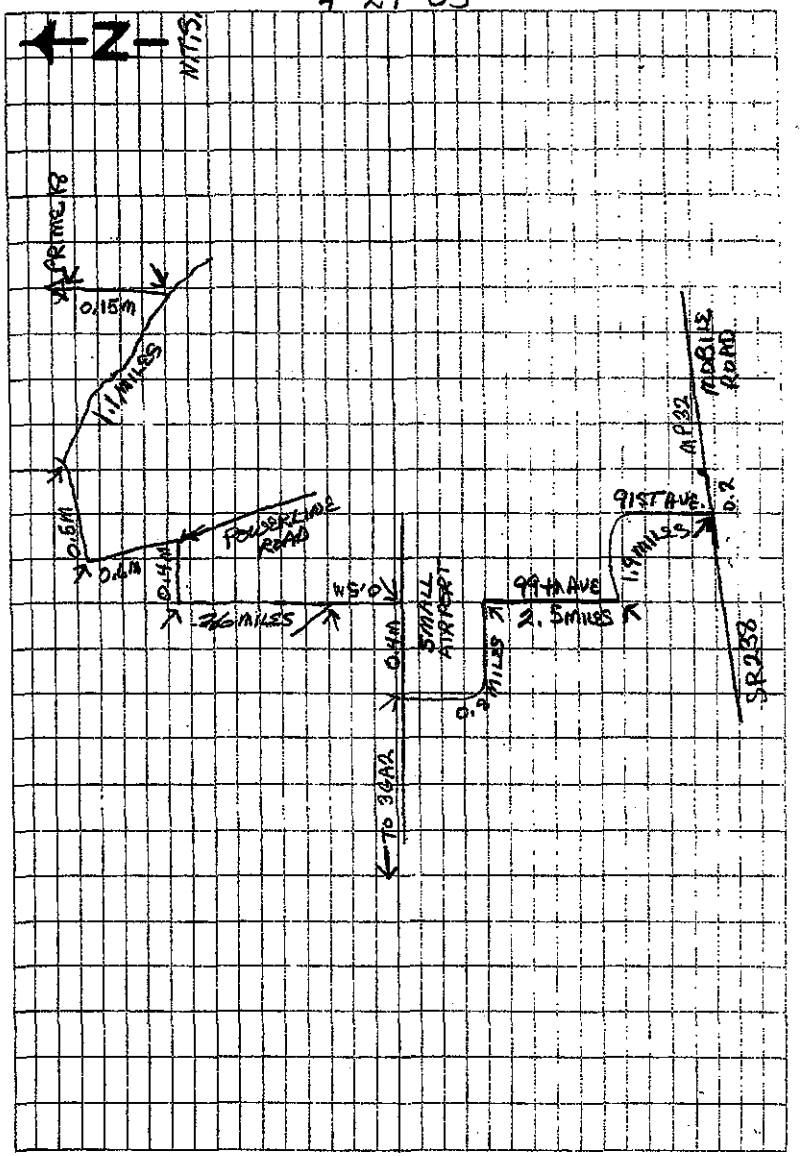
SKETCH BY B. PHILLIPS HUITT-ZOLLARS

DATE: VISITED BY B. PHILLIPS ON 4-24-05

DESCRIPTION SET 1/2" 24" REBAR W/ 2" ALUMINUM CAP STAMPED PRIME 18

EXIT 91ST AVE. NORTH OFF SR238 THEN GO 1.90 MILES NORTH THEN WEST TO 99th AVE. THEN GO 2.5 MILES NORTH TO A DIRT RD ON LEFT. TURN LEFT, WEST AND GO 0.8 MILES WEST AND NORTH AROUND A SMALL AIRPORT TO A DIRT ROAD RUNNING EAST WEST ALONG A SECTION LINE. THEN GO 0.4 MILES EAST TO A DIRT ROAD ON THE LEFT, NORTH. THEN GO 0.5 MILES NORTH TO A "Y" INTERSECTION. TAKE THE RIGHT FORK AND GO NORTH ALONG A SECTION LINE FOR 2.6 MILES, TURN RIGHT, EAST, ON DIRT TRAIL AND TRAVEL 0.4 MILES TO A POWER LINE ROAD. TURN LEFT, NORTH, AND GO 0.6 MILES TO A ROAD RIGHT, EAST, STAY ON APPROVED TRAILS FROM HERE ON. TRAVEL EAST 1.6 MILES STAYING TO THE RIGHT TO A BLOCKED ROAD LEFT, NORTH, AND END OF TRUCK TRAVEL, WALK NORTH ON TRAIL 0.15 MILES TO POINT,

4-29-05



Prime 19 4-28-05

LOCATION T4S R1W S24 G&SR B&M

SKETCH BY G. FRARY HULIT-ZOLLARS

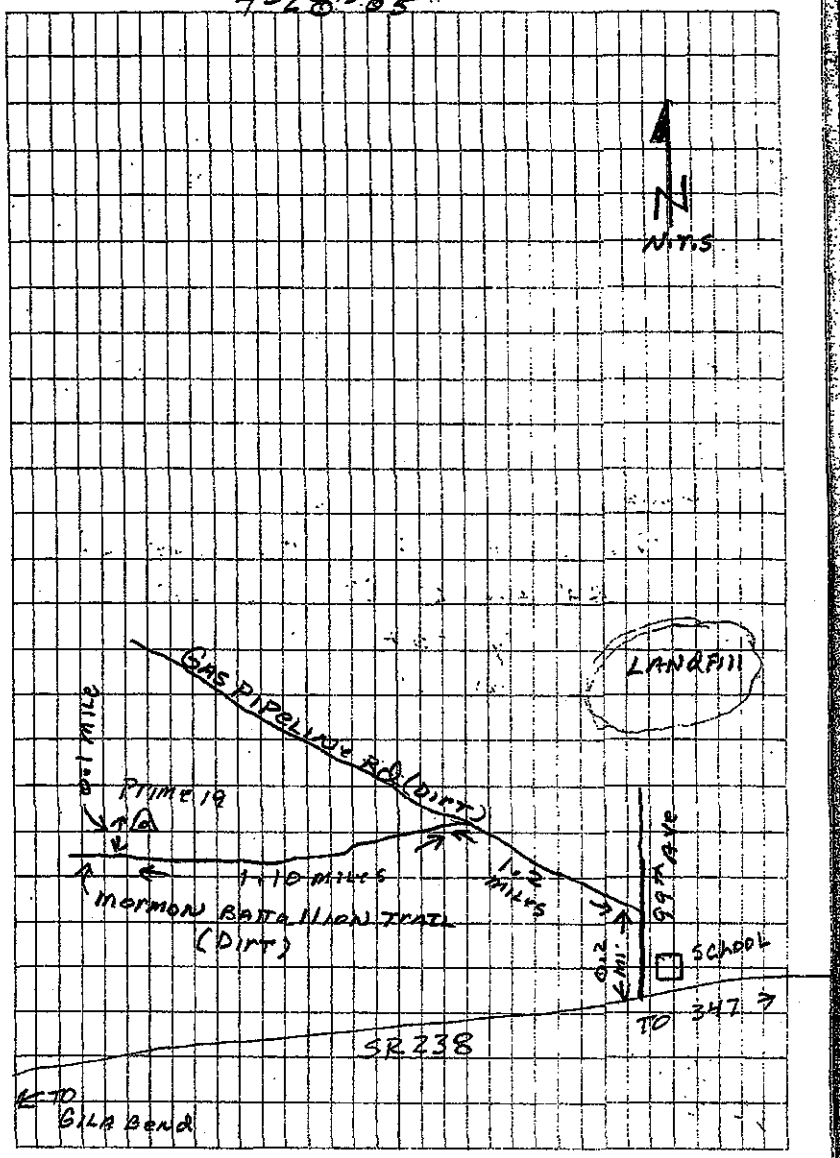
DATE: VISITED 3-24-05 BY B. PHILLIPS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 19

EXIT 99± AVE NORTH OFF SR 238 BY MOBILE SCHOOL HOUSE. THEN GO 0.2 MILE NORTH TO GAS PIPELINE Rd A DIRT Rd ON LT. THEN GO 1.2 MILES NORTH WESTERLY TO A DIRT Rd ON LT THE MORMON BATTALION TRAIL. THEN GO 1.10 MILES WEST TO POINT ON RT (NORTH). POINT IS 0.10 MILE NORTH OF DIRT Rd.

5-2-05

4-28-05



Prime 20 4-26-05

LOCATION T4S R1E S27 G+SR BL+M

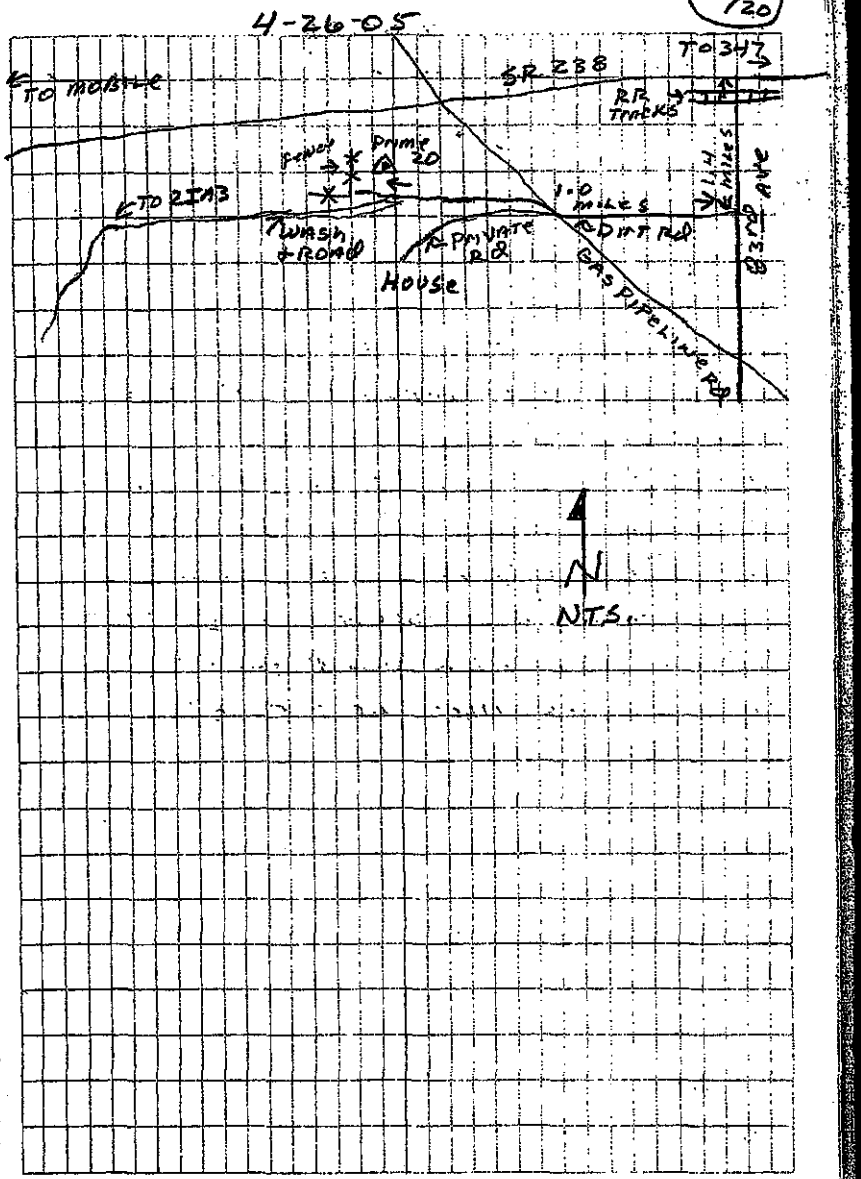
SKETCH BY G. FRARY HUITT - ZOLLARS

DATE: VISITED 3-3-05 BY G. FRARY

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 20

EXIT 83rd AVE SOUTH OFF SR 238 THEN GO 1.4 MILES SOUTH TO END OF PAVEMENT + A DIRT RD ON RT (WEST). THEN GO 1.0 MILE WEST GOING PAST GAS PIPELINE RD + POINT ON RT (NORTH). POINT IS 30' NORTH OF DIRT RD.

5-2-05



Prime 21 4-26-05

LOCATION T5S R1W R1E S12 S7 S13 S18

G+SR B L+M

SKETCH BY G. Emry HUITT-Zollars

DATE: VISITED 2-8-05 BY B. PHILLIPS

DESCRIPTION GLO BRASS CAP +0.75 UP

STAMPED T5S R1W R1E S12 S7 S13 S18

1914

EXIT 83rd AVE SOUTH OFF SR238

THEN GO 1.4 MILES SOUTH TO END OF

PAVEMENT + A DIRT RD ON RT (WEST).

THEN GO 2.0 MILES WEST TO A GATE

WITH CATTLE GUARD. THEN GO 4.1 MILES

WEST, THEN SOUTH ON MEANDING DIRT RD

GOING PAST GDRC'S, POINT 21A3 ON RT

TO A POINT ON DIRT RD, SEE SKETCH.

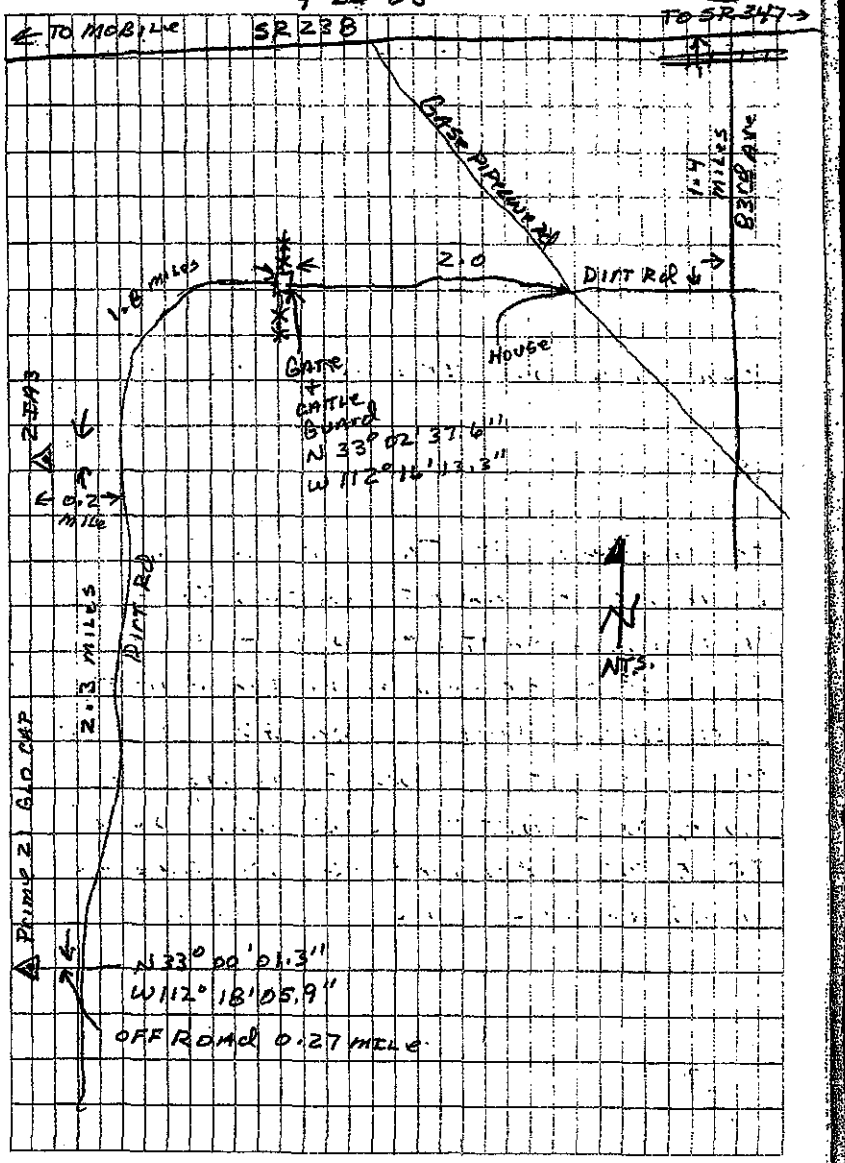
THEN GO 0.27 WEST OFF ROAD TO

POINT.

1 REC'D 5-2-05

45/21

4-26-05



Prime 22 4-28-05

Location T 6 S R 1 E S 4 G+SR B&M

Sketch By G. Frary Hulit-Zollars

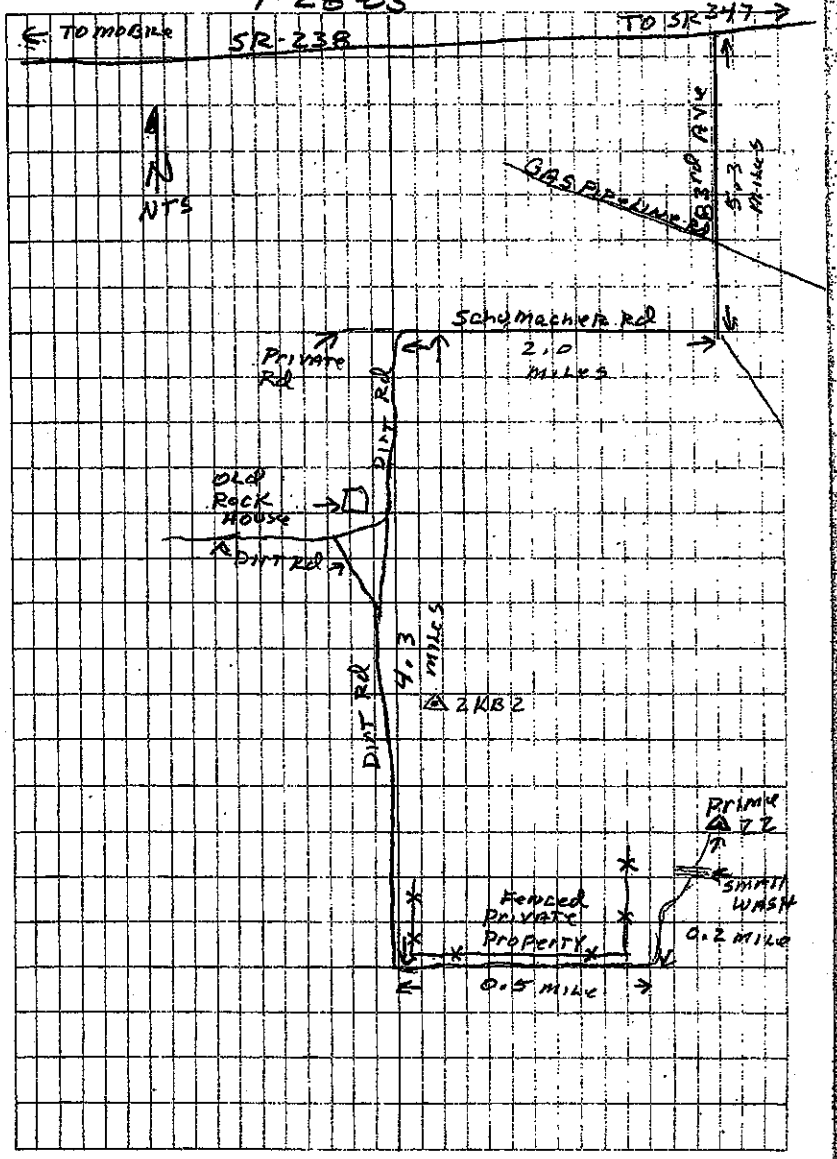
Date: Visited 2-8-05 By B. Malmos

Description Set 1/2" 24" ReBar with 2" Aluminum cap stamped Prime 22

Exit 83rd Ave South off SR 238 Then go 5.3 miles South to Schumacher Rd. Then go 2.0 miles West to a Dirt Rd on Lt (South). Then go 4.3 miles South to a Dirt Road on South side of Private Property with Barb Wire Fence Around Property. Then go 0.5 mile East along Fence Line to a Dirt Trail North. Then go 0.20 mile North, Going Through Small Wash + Point.

5-2-05

4-28-05



Prime 23 4-28-05

LOCATION T6S R2E S7 G+SR B&M

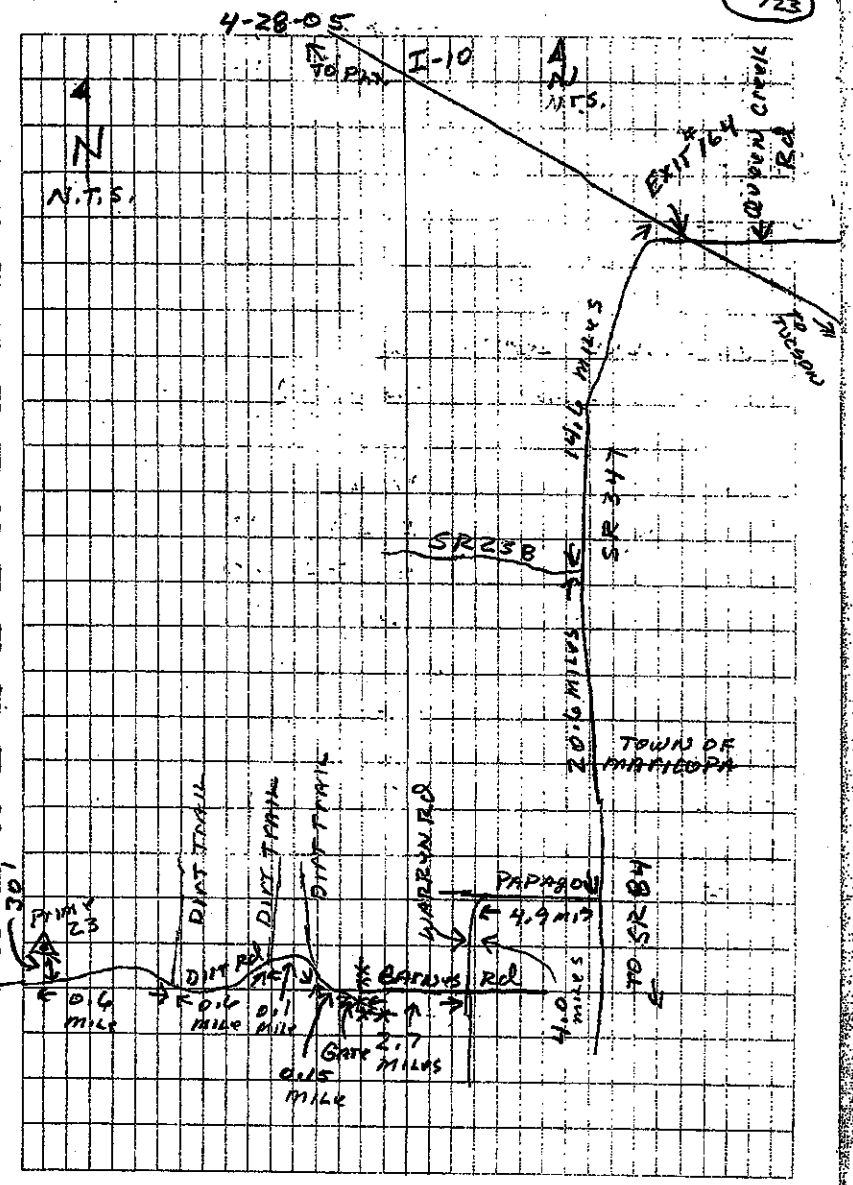
SKETCH BY G. FRARY HUITT-ZOLLARS

DATE: VISITED 2-6-05 BY G. FRARY

DESCRIPTION SET ½" 36" REBAR WITH 2" ALUMINUM CAP STAMPED Prime 23

EXIT #164 QUEEN CREEK Rd (SR 347) E-B I-10. THEN GO 35.2 miles SOUTH ON SR 347 TO PAPAGO Rd. THEN GO 4.9 MILES WEST TO WARREN Rd. THEN GO 4.0 MILES SOUTH TO BARNES Rd. THEN GO 2.7 MILES WEST TO A GATE @ END OF BARNES Rd. THEN GO 1.45 MILES WEST PAST GATE ON meandering DIRT Rd AND POINT ON RT (North). POINT IS 30' NORTH OF DIRT Rd.

6-2-05



Prime 160 4-26-05

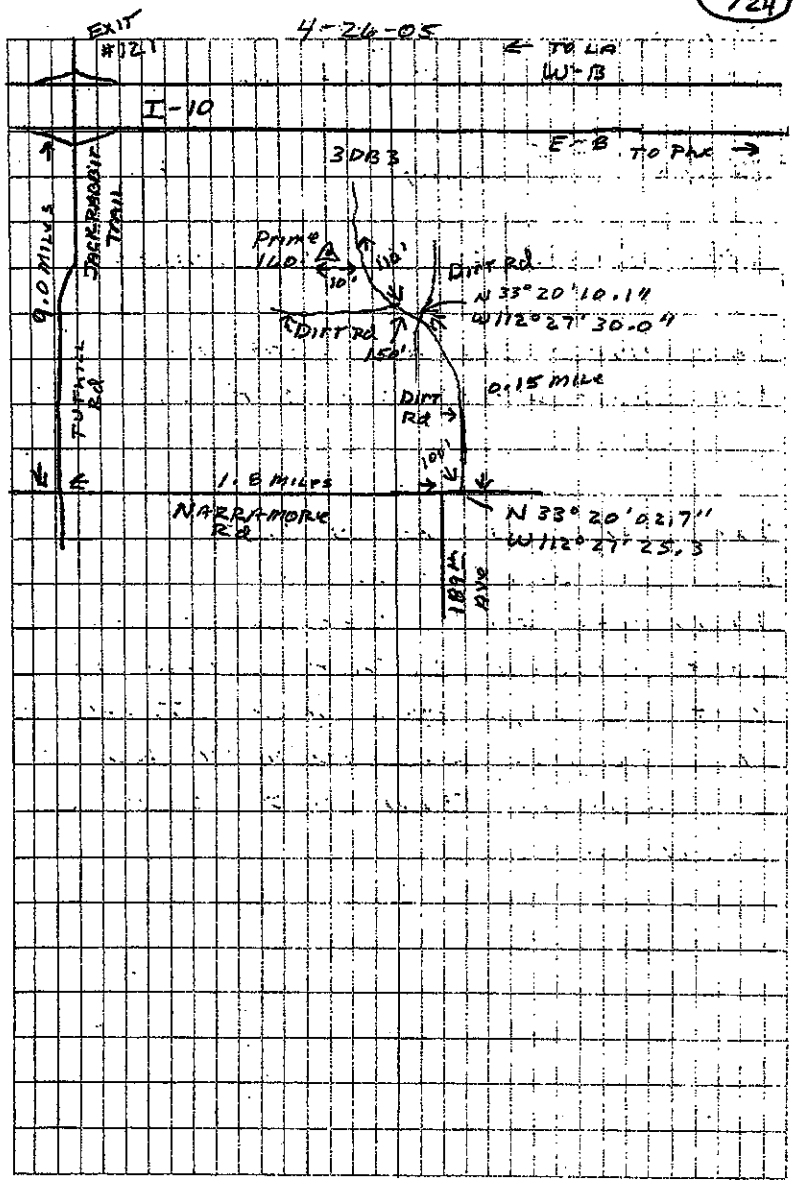
LOCATION T1S R2W S16 G&SR BL&M

SKETCH BY G. FRACY HUIT-ZOLLARS

DATE: VISITED 3-1-05 BY B. MALMOS

DESCRIPTION SET 1/2" 36" REBAR WITH 2" ALUMINUM CAP STAMPED PRIME 160

EXIT #121 JACKRABBIT TRAIL W-B I-10 THEN GO 9.0 MILES SOUTH TO NARRAMORE Rd. THEN GO 1.8 MILES EAST TO 189th AVE ON RT, THEN GO 100' MORE TO A DIRT Rd ON LT (NORTH). THEN GO 0.15 MILE NORTH TO A POINT (SEE SKETCH). THEN GO 260' NORTHWESTERLY TO POINT ON LT (WEST). POINT IS 10' WEST OF DIRT Rd.



5-2-05

3BF3 4-27-05

LOCATION T1S R3W S22

SKETCH BY G. FRARY HUIT-ZONARS

DATE: VISITED 3-18-05 BY B. MALMOS

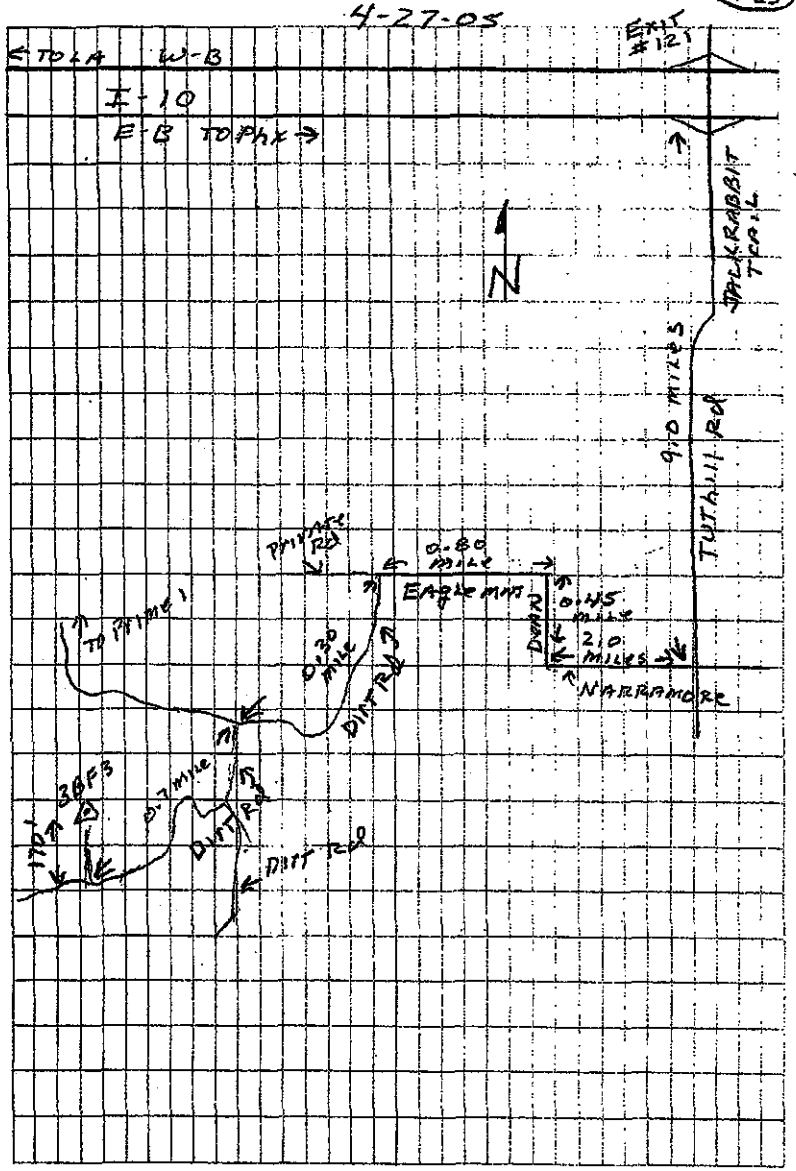
DESCRIPTION SEE NGS DATA SHEET FOR INFORMATION ON THIS POINT

PID# AJ3823

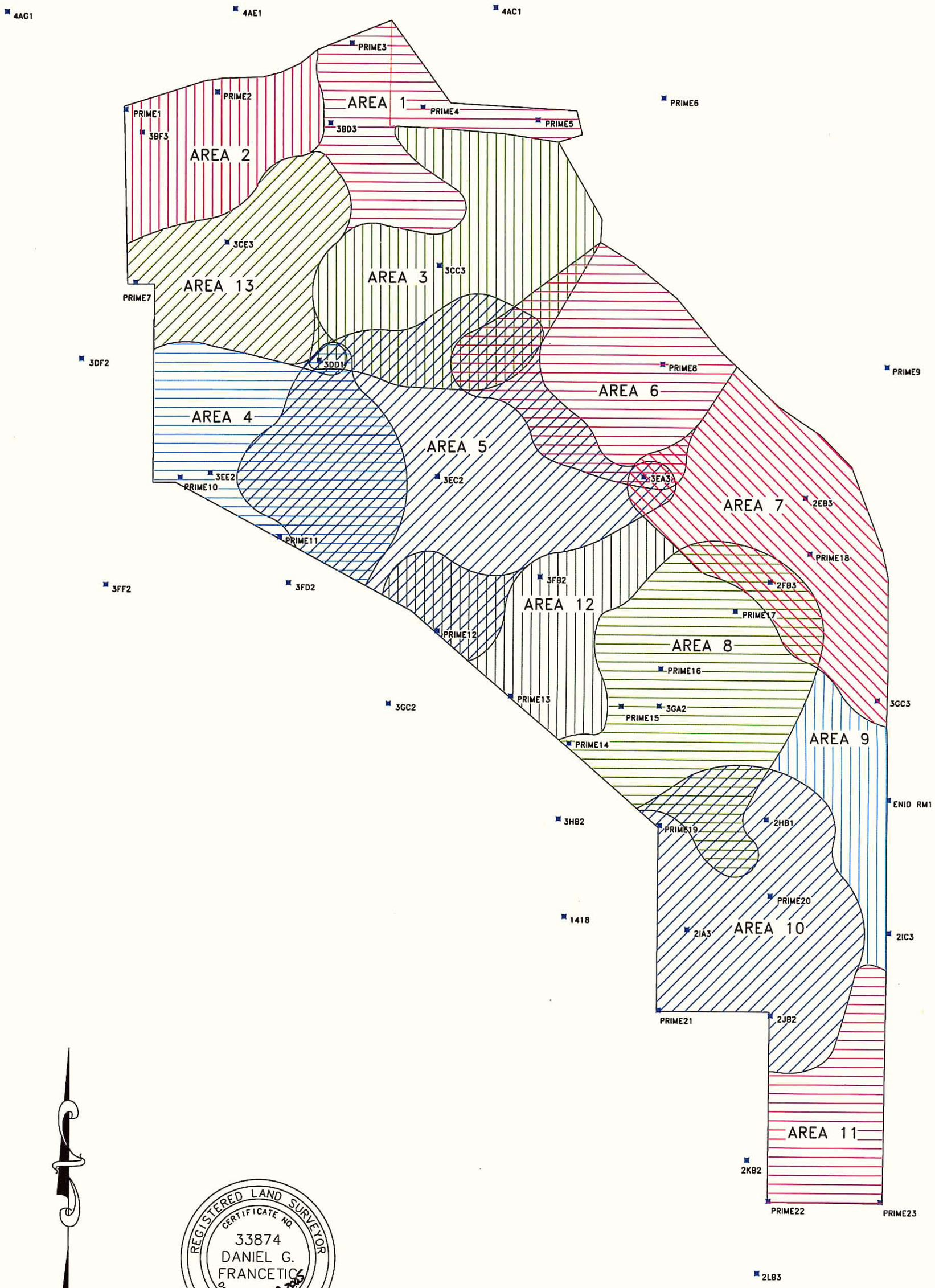
EXIT #121 JACK RABBIT TRAIL W-B I-10 THEN GO 9.0 MILES SOUTH TO NARRAMORE RD. THEN GO 2.0 MILES WEST TO DEAN RD. THEN GO 0.45 MILE NORTH TO EAGLE MOUNTAIN RD. THEN GO 0.80 MILE WEST TO A DIRT RD LT (SOUTH). THEN GO 0.30 MILE SOUTH + WEST TO A DIRT RD ON LT (SOUTH). THEN GO 0.70 MILE SOUTH WESTERLY ON MEANDING DIRT RD. POINT IS 170' NORTH OF DIRT RD, ON TOP OF SMALL HILL. ALSO SEE GO TO FOR THIS POINT ON NGS DATA SHEETS.

Bob 5-2-05

4-27-05



MAP OF AERIAL CONTROL POINTS



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA, U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

GDACS & PRIME POINT MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, &
PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST,
MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/06/05	1	1	

H.Z. JOB NO. 05-1487-01

G:\PROJ\05148701\MAPS\AREA-GDACS & PRIME.DWG

RAW GPS COORDINATE DATA BY AREA

Points

Project : AREA 1 5-20-05

User name	dfran	**Date & Time**	3:38:08 PM 5/24/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

	Name	Northing	Easting	Elevation		Feature Code
BASE	3BD3	850589.337	534183.909	989.443		GMON
	✓4AE1	866245.850	520688.816	869.226		GMON
	✓3CC3	831084.022	549534.150	1102.133		GMON
	✓3CE3	834188.458	519572.270	1002.690		GMON
	HURLEYBASE	880847.749	596759.168	985.132		SET B.SPIKE
	GPRIME 5	851132.933	563383.495	1263.862		ACF
	G3CC3	831083.989	549534.122	1102.102		GMON
	G3CE3	834188.493	519572.309	1002.689		GMON
	G4AE1	866245.870	520688.870	869.174		GMON
	✓PRIME 5	851132.946	563383.515	1263.819		ACF
	CSPRIME 160	850327.359	534337.836	961.365		ACF
	CSPRIME 2	854930.582	518150.883	871.321		ACF
	PRIME 3	861703.402	537607.218	910.732		ACF
	PRIME 4	852795.518	547051.195	1081.816		ACF
	CSPRIME 3	861703.407	537607.185	910.672		ACF
	CSPRIME 4	852795.495	547051.268	1081.987		ACF
	CKPRIME 4	852795.556	547051.238	1081.882		ACF
	GG3CE3	834188.493	519572.309	1002.689		GMON
	GG3CC3	831083.989	549534.122	1102.102		GMON
	GG4AE1	866245.870	520688.870	869.174		GMON
	GGPRIME 5	851132.946	563383.515	1263.819		ACF
	CSPRIME 160A	850327.376	534337.817	961.315		ACF
	BT2	856031.617	536393.057	949.186	949.198	PNL
	3000	854766.048	531070.519	919.710		BCH
	BT7	849355.131	547119.046	1061.192		ACF
	3001	849331.518	547132.088	1060.730		BCF
	3002	838888.754	544201.487	1051.386		BCF
	BT14	841801.175	541691.695	1026.037		PNL
	BT6	849428.757	538980.249	982.536		PNL

CHECKED:
DGF
5/26/05

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Points

Project : RV AREA 2 5-2-05

User name	msmolinski	**Date & Time**	9:56:59 AM 5/24/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
✓3BD3	850589.331	534183.885	989.469	GMON
✓3CG2	833447.667	486993.225	918.077	GMON
✓4AG1	865722.825	488725.190	892.388	GMON
✓4AE1	866245.850	520688.806	869.226	GMON
BASE 3BF3	849225.598	507662.304	935.856	GMON
3DF2	818000.413	499205.545	1030.280	GMON
PRIME 2	854930.629	518150.861	871.393	GMON
G4AG1	865722.862	488725.237	892.345	GMON
G3CG2	833447.700	486993.234	918.073	GMON
G3BD3	850589.265	534183.892	989.501	GMON
G4AE1	866245.870	520688.812	869.193	GMON
PRIME 1	852260.543	505440.469	855.700	ACF
BT 3	849602.975	515274.785	906.088	PNL
BT 13	841913.834	520535.778	926.756	PNL
BT 12	841136.278	513744.381	989.600	PNL
BT 4	849569.399	523204.136	905.374	PNL
BT9	844188.894	528397.865	965.823	PNL
BT5	849337.522	531189.965	943.538	PNL
BT1	855540.758	528303.422	898.941	PNL
1000	929480.368	612226.584	1147.125	GATE
GLO	850977.749	509998.617	875.871	2009
CBT3	849602.985	515274.780	906.053	PK
CBT11	840673.614	507542.902	1056.740	PNL

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CHECKED:
DGF
5/26/05

Points

Project : RV AREA3 5-26-05

User name	dfran	**Date & Time**	7:49:29 AM 5/31/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
3CC3	831084.022	549534.150	1102.133	GMON
3BD3	850589.331	534183.885	989.469	GMON
3DB3	817447.950	565233.383	1206.857	GMON
3DD1	817859.557	532583.481	1059.547	GMON
GPRIME 5	851132.942	563383.536	1263.753	ACF
G3DB3	817447.970	565233.358	1206.916	GMON
G3DD1	817859.531	532583.489	1059.486	GMON
G3BD3	850589.340	534183.880	989.537	GMON
PRIME 5	851132.946	563383.515	1263.819	ACF
CS 3DD1	817859.539	532583.476	1059.448	GMON
BT 34	820417.130	538818.287	1026.431	BCH
BT 36	817882.708	546861.446	1059.759	CPR
BT 28	825605.064	554582.338	1136.022	ACF GLO
BT 27	825745.719	544218.628	1048.527	CPR
BT 26	828455.069	533598.642	994.474	CPR
BT 21	833603.590	538989.974	1016.137	CPR
BT 22	833641.139	546924.202	1080.156	CPR
BT 16	838847.612	549487.978	1099.627	ACF
BT 17	838682.698	562137.788	1313.990	CPR
GGPRIME 5	851132.912	563383.536	1263.884	ACF
GG3DB3	817447.994	565233.289	1207.176	GMON
GG3DD1	817859.617	532583.477	1059.548	GMON
GG3BD3	850589.368	534183.928	989.494	GMON
CSBT 16	838847.669	549487.989	1099.733	ACF
BT 10	843743.698	554558.798	1151.924	PNL
BT 8	849179.445	561285.980	1225.589	PNL
CSBT 17	838682.682	562137.712	1314.182	PNL
BT 23	833462.135	554629.478	1160.945	PNL
BT 24	833395.644	559909.153	1220.977	PNL
CSBT 22	833641.123	546924.217	1080.225	PNL

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Points

Project : Area3_05-26-05a

User name	dfran	**Date & Time**	7:56:35 AM 5/31/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
3CC3	831084.022	549534.150	1102.133	GMON
3BD3	850589.331	534183.885	989.469	GMON
3DB3	817447.950	565233.383	1206.857	GMON
3DD1	817859.557	532583.481	1059.547	GMON
PRIME 5	851132.946	563383.515	1263.819	ACF
CS 3DD1	817859.539	532583.476	1059.448	GMON
BT 34	820417.130	538818.287	1026.431	BCH
BT 36	817882.708	546861.446	1059.759	CPR
BT 28	825605.064	554582.338	1136.022	ACF GLO
BT 27	825745.719	544218.628	1048.527	CPR
BT 26	828455.069	533598.642	994.474	CPR
BT 21	833603.590	538989.974	1016.137	CPR
BT 22	833641.139	546924.202	1080.156	CPR
BT 16	838847.612	549487.978	1099.627	ACF
BT 17	838682.698	562137.788	1313.990	CPR
G3BD3	850589.368	534183.928	989.494	GMON
G3DD1	817859.617	532583.477	1059.548	GMON
G3DB3	817447.994	565233.289	1207.176	GMON
GPRIME 5	851132.912	563383.536	1263.884	ACF
CS 3DB3	817447.926	565233.395	1206.804	GMON
BT37	817636.637	554552.447	1113.274	PNL
CS BT34	820417.239	538818.256	1026.526	BCH
BT27	825745.740	544218.571	1048.684	PNL
BT36	817882.723	546861.437	1059.911	PNL
BT31	822935.442	559844.982	1174.522	PNL
BT28	825605.079	554582.288	1136.197	PNL
BT2	856031.629	536392.942	949.150	FIP

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Points

Project : RV AREA 4_4-25-05

User name	msmolinski	**Date & Time**	2:10:29 PM 5/18/2005
Coordinate System	Projection from data collector	**Zone**	Zone from data collector
Project Datum	(WGS 84)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BASE 3EE2	802195.752	517230.795	1221.782	GMON
✓3DD1	817859.557	532583.481	1059.547	GMON
✓3DF2	818000.413	499205.545	1030.280	GMON
✓3FD2	786974.413	528281.079	1354.003	GMON
✓3FF2	786680.407	502618.553	1339.340	GMON
PRIME 10	801061.597	509573.132	1246.424	ACF
PRIME 11	793365.237	527044.316	1289.670	ACF
PRIME 11A	793365.244	527044.334	1289.612	ACF
PRIME 10A	801061.609	509573.135	1246.422	ACF
G3FF2	786680.402	502618.504	1339.369	GMON
G3DF2	818000.384	499205.570	1030.258	GMON
G3DD1	817859.568	532583.489	1059.569	GMON
G3FD2	786974.436	528281.096	1353.974	GMON
2061	792938.998	538759.039	1171.319	CPR
BT61	792938.998	538759.039	1171.319	CPR
BT56	798971.520	533459.324	1186.670	CPR
BT52	801955.325	538764.629	1126.972	CPR
BT51	801363.698	522850.133	1207.980	CPR
2000	807394.340	512432.712	1170.492	GLO
2001	807358.091	517718.068	1163.525	GLO
BT48	807381.986	517751.142	1164.308	CPR
BT49	807303.639	528117.801	1153.502	CPR
BT42	809390.225	533540.270	1118.421	CPR
BT39	812681.169	512467.792	1119.349	GLO
1000	807394.340	512432.712	1170.492	GLO
1001	807358.091	517718.068	1163.525	GLO
BT35	817969.561	514685.247	1071.248	CPR
1002	817919.376	517778.722	1067.578	GLO
RAIN	817841.978	522186.594	1071.883	BCF
BT40	812583.984	522689.266	1112.785	CPR

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Points

Project : Area5 05-18-05

User name	bphillips	**Date & Time**	1:28:01 PM 6/1/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

	Name	Northing	Easting	Elevation	Feature Code
BASE	3EC2	801803.316 +.009	549302.086 +.014	1106.088 +.018	GMON
	✓3FD2	786974.413	528281.079	1354.003	GMON
	✓3DD1	817859.557	532583.481	1059.547	GMON
	✓3DB3	817447.950	565233.383	1206.857	GMON
	✓3FB2	788012.395	563737.638	1154.101	GMON
	PRIME 11AVG	793365.241	527044.325	1289.641	ACF
	PRIME 11B	793365.308	527044.353	1289.647	ACF
	PRIME 12	780465.107	549379.737	1243.781	ACF
	PRIME 13	771401.841	559553.347	1230.387	ACF
	PRIME 13A	771401.854	559553.357	1230.452	ACF
	PRIME 12A	780465.078	549379.706	1243.716	ACF
	BT67	782397.300	554388.592	1207.967	PNL
	BT66	788181.957	547780.157	1197.915	PNL
	BT61	792939.040	538759.042	1171.416	PNL
	BT56	798971.555	533459.369	1186.727	PNL
	BT52	801955.353	538764.656	1127.078	PNL
	300	807213.008	538742.820	1104.637	BCH
	BT49	807303.670	528117.802	1153.604	PNL
	301	807284.830	528182.269	1153.223	ACF
	BT42	809390.266	533540.222	1118.581	PNL
	302	812494.481	538773.257	1076.626	BCH
	BT41	812664.816	541431.544	1062.233	PNL
	303	812478.338	541412.534	1064.220	ACF
	304	815136.508	538787.921	1059.456	ACF
	305	817774.997	538803.595	1042.562	BCH
	BT34	820417.184	538818.243	1026.508	PNL
	BT36	817882.680	546861.447	1060.033	PNL
	BT37	817636.584	554552.420	1113.453	PNL
	BT28	825605.007	554582.308	1136.258	PNL
	BT31	822935.439	559844.937	1174.683	PNL
	BT45	809746.856	565030.192	1178.001	PNL
	306	809708.578	565065.091	1179.092	BCF
	BT43	809800.758	549297.375	1073.615	PNL
	307	809784.758	549318.362	1073.822	BCF
	G3DD1	817859.563	532583.486	1059.570	GMON
	G3DB3	817447.919	565233.391	1206.927	GMON
	G3FB2	788012.421	563737.622	1154.108	GMON
	G3FD2	786974.444	528281.170	1353.971	GMON

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CBT 43	809800.789	549297.425	1073.615	FIP
BT44	809720.601	557127.974	1117.787	FIP
BT53	802741.748	554423.811	1099.158	FIP
BT54	801808.462	562356.443	1141.718	FIP
BT59	796466.179	567579.049	1168.779	FIP
2011	796462.402	567632.358	1170.862	ACF
BT58	796639.412	559835.165	1121.430	FIP
BT63	791274.692	554413.878	1161.993	FIP
2012	791276.778	554425.869	1162.998	BCF
BT57	796629.811	549199.230	1138.120	FIP

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Points

Project : RV AREA 5 5-31-05

User name	bphillips	**Date & Time**	1:15:40 PM 6/1/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BASE- 3EC2	801803.307	549302.067	1106.070	GMON
✓3FD2	786974.413	528281.079	1354.003	GMON
✓3DD1	817859.557	532583.481	1059.547	GMON
ROVER ✓3DB3	817447.950	565233.383	1206.857	GMON
✓3FB2	788012.395	563737.638	1154.101	GMON
PRIME 11AVG	793365.241	527044.325	1289.641	ACF
G3FB2	788012.421	563737.622	1154.108	GMON
G3DB3	817447.919	565233.391	1206.927	GMON
G3DD1	817859.563	532583.486	1059.570	GMON
G3FD2	786974.444	528281.170	1353.971	GMON
PRIME 11B	793365.308	527044.353	1289.647	ACF
PRIME 12	780465.107	549379.737	1243.781	ACF
PRIME 13	771401.841	559553.347	1230.387	ACF
PRIME 13A	771401.854	559553.357	1230.452	ACF
PRIME 12A	780465.078	549379.706	1243.716	ACF
BT67	782397.300	554388.592	1207.967	PNL
BT66	788181.957	547780.157	1197.915	PNL
BT61	792939.040	538759.042	1171.416	PNL
BT56	798971.555	533459.369	1186.727	PNL
BT52	801955.353	538764.656	1127.078	PNL
300	807213.008	538742.820	1104.637	BCH
BT49	807303.670	528117.802	1153.604	PNL
301	807284.830	528182.269	1153.223	ACF
BT42	809390.266	533540.222	1118.581	PNL
302	812494.481	538773.257	1076.626	BCH
BT41	812664.816	541431.544	1062.233	PNL
303	812478.338	541412.534	1064.220	ACF
304	815136.508	538787.921	1059.456	ACF
305	817774.997	538803.595	1042.562	BCH
BT34	820417.184	538818.243	1026.508	PNL
BT36	817882.680	546861.447	1060.033	PNL
BT37	817636.584	554552.420	1113.453	PNL
BT28	825605.007	554582.308	1136.258	PNL
BT31	822935.439	559844.937	1174.683	PNL
BT45	809746.856	565030.192	1178.001	PNL
306	809708.578	565065.091	1179.092	BCF
BT43	809800.758	549297.375	1073.615	PNL
307	809784.758	549318.362	1073.822	BCF

3005	801863.150	549276.368	1106.035	BCF
CSBT57	796629.769	549199.230	1138.122	PNL
CSBT52	801955.317	538764.636	1127.141	PNL
3006	804572.644	538727.732	1118.247	ACF
CSBT41	812664.813	541431.577	1062.246	PNL
3007	809853.964	538758.029	1092.687	ACF
CSBT51	801363.691	522850.097	1208.042	PNL
CSBT43	809800.748	549297.372	1073.561	PNL

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Points

Project : AREA 6_5-24-05

User name	dfran	**Date & Time**	3:25:33 PM 5/24/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
✓3EC2	801803.307	549302.067	1106.069•	GMON
BASE 3DB3	817447.980	565233.388	1206.861	GMON
✓3CC3	831084.022	549534.150	1102.133•	GMON
✓3EA3	801917.044	578335.394	1265.092•	GMON
GPRIME 8	817314.582	580785.012	1404.686	ACF
G3EA3	801917.132	578335.374	1265.127	GMON
G3EC2	801803.338	549302.072	1106.012	GMON
G3CC3	831084.026	549534.184	1102.124	GMON
200	828299.278	549426.967	1095.691	BCF
201	801863.194	549276.410	1105.953	BCF
202	801851.607	551832.231	1102.404	ACF
203	812349.438	565075.380	1192.087	BCF
✓PRIME 8	817314.562	580785.002	1404.663•	ACF
CS203	812349.477	565075.381	1192.153	BCF
BT45	809746.947	565030.276	1178.019	PNL
204	809708.633	565065.132	1179.167	BCF
BT50	806936.619	573046.863	1234.421	PNL
BT46	809622.616	580947.793	1326.914	PNL
205	809641.876	580910.231	1327.237	BCF
206	812326.458	570359.577	1234.767	BCF
CPRIME 8	817314.623	580784.981	1404.627	ACF
2014	817594.956	573023.208	1294.390	BCF
BT 38	817509.761	570417.983	1262.924	FIP
2015	817593.926	570385.699	1262.032	FIP
2016	820273.890	565117.062	1221.520	BCF
2017	822902.014	567764.252	1265.931	ACF
BT 32	822865.377	575681.504	1390.064	BCF
BT 29	825536.497	567773.036	1279.189	ACF
BT 31	822935.466	559844.966	1174.520	BCF
BT 37	817636.693	554552.395	1113.254	FIP

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Points

Project : Area7_05-25-05

User name	dfran	**Date & Time**	11:15:46 AM 5/26/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
✓2EB3	799155.020	601045.702	1547.703	GMON
✓3EA3	801917.044	578335.394	1265.092	GMON
BASE 2FB3	787471.972	596144.008	1408.135	GMON
✓2GC3	771072.953	611259.242	1614.239	GMON
GPRIME 8	817314.510	580785.000	1404.667	ACF
G3EA3	801917.074	578335.418	1265.123	GMON
G2GC3	771072.959	611259.222	1614.232	GMON
G2EB3	799154.983	601045.711	1547.691	GMON
✓PRIME 8	817314.562	580785.002	1404.663	ACF
C2EB3	799155.059	601045.712	1547.720	GMON
BT 62	794281.205	595813.149	1421.113	PNL
2001	791086.095	599303.763	1437.334	BCF
PRIME 18	791280.542	601960.481	1465.367	ACF
2002	791080.409	601947.438	1464.667	BCF
PRIME 18A	791280.571	601960.429	1465.386	ACF
PRIME 9A	791123.292	608121.284	1663.544	ACF
PRIME 9AA	791123.282	608121.306	1663.538	ACF
BT 69	783596.301	606865.535	1589.134	PNL
BT 73	777097.641	609961.113	1586.848	PNL
CBT73	777097.581	609961.148	1586.902	PNL
BT 72	781150.466	601092.401	1512.620	PNL
2003	791122.712	588739.571	1331.635	GLO
BT 65	791098.839	587428.844	1319.059	PNL
2004	791134.365	586099.487	1308.949	GLO
2005	791155.945	580825.455	1259.431	GLO
2006	791239.098	580864.084	1259.815	GLO
2007	793796.555	580837.299	1264.956	GLO
BT 60	796388.107	580866.079	1269.091	FIP
BT 47	809518.018	588698.644	1459.485	PNL
BT 55	801720.891	591473.429	1382.348	PNL
2008	801679.908	591433.230	1382.154	GLO
PRIME	783359.744	591319.394	1315.753	ACF
C3EA3	801917.050	578335.371	1265.005	GMON
CBT 55	801720.934	591473.429	1382.239	FIP
CBT47	809517.994	588698.654	1459.432	FIP
CBT62	794281.193	595813.223	1421.108	FIP
2020	791090.376	596660.274	1409.121	BCF
2021	791086.096	599303.770	1437.343	BCF
CBT69	783596.319	606865.537	1589.047	FIP
CCBT73	777097.560	609961.064	1586.962	FIP

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BT 82	759412.806	591213.006	1263.241	PNL
CS PRIME 15A	770270.550	575451.436	1230.157	ACF
BT80	762837.541	576402.447	1256.737	PNL
BT84	756318.976	583687.463	1289.180	PNL
BT87	749752.795	591129.563	1312.235	PNL
CSBT80	762837.545	576402.451	1256.770	PNL
CSBT74	775277.912	567499.702	1219.350	PNL

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Points

Project : RV AREA8 5-27-05

User name	philk	**Date & Time**	12:57:44 PM 6/1/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

PK 6-1-05

Name	Northing	Easting	Elevation	Feature Code
3HB2	754154.764	566461.598	1330.774	GMON
2HB1	754250.574	595736.394	1282.152	GMON
2FB3	787471.972	596144.009	1408.137	GMON
3FB2	788012.395	563737.638	1154.101	GMON
3GA2	770091.739	580651.037	1217.028	GMON
G2FB3	787471.943	596143.987	1408.167	GMON
G2HB1	754250.578	595736.346	1282.173	GMON
G3HB2	754154.780	566461.602	1330.748	GMON
G3FB2	788012.340	563737.702	1154.129	GMON
PRIME 17	783359.688	591319.373	1315.791	ACF
PRIME 15	770270.543	575451.431	1230.131	ACF
PRIME 14	764710.682	567922.933	1273.457	ACF
PRIME 17A	783359.687	591319.367	1315.772	ACF
100	769992.198	591293.937	1247.119	BCF
101	770002.087	588653.805	1230.133	BCF
102	770012.392	586013.446	1220.548	BCF
103	770023.473	583372.671	1219.434	BCF
104	770032.512	580733.023	1218.211	BCF
105	770042.274	578091.848	1219.403	BCF
PRIME 15A	770270.573	575451.436	1230.152	ACF
106	770056.395	575451.223	1231.579	BCF
PRIME 14A	764710.719	567922.968	1273.447	ACF
107	770070.742	568310.882	1246.073	GMON
108	770067.947	572812.200	1238.396	BCF
CSPRIME 15	770270.535	575451.460	1230.167	ACF
BT 71	780627.561	572857.116	1186.925	PNL
BT 68	783439.677	580814.576	1238.428	PNL
109	791155.949	580825.413	1259.520	BCF
110	791239.100	580864.136	1259.858	GLO
111	791134.255	586099.487	1308.964	BCF
BT 65	791098.879	587428.806	1319.074	CPR
112	791122.644	588739.585	1331.662	BCF
BT 72	781150.431	601092.389	1512.564	PNL
BT 76	772138.426	596529.850	1294.888	PNL
BT 75	775167.558	589635.348	1246.052	PNL
BT 78	768928.909	591253.655	1245.025	PNL
BT 79	764757.812	586059.215	1242.193	PNL
113	764740.532	585978.885	1243.230	BCF

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Points

Project : AREA 9_5-24-05

User name	bphillips	**Date & Time**	10:20:36 AM 5/31/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
ENID RM1	757069.564	612801.863	1528.379	GMON
2GC3	771072.953	611259.242	1614.239	GMON
2HB1	754250.574	595736.394	1282.152	GMON
2IC3	738592.907	612947.730	1353.773	GMON
3GA2	770091.739	580651.037	1217.028	GMON
2JB2	727072.362	596385.600	1430.807	GMON
G3GA2	770091.727	580651.060	1217.047	GMON
G2HB1	754250.575	595736.405	1282.171	GMON
G2JB2	727072.421	596385.630	1430.759	GMON
G2IC3	738593.006	612947.699	1353.751	GMON
G2GC3	771072.955	611259.248	1614.260	GMON
C2HB1	754250.611	595736.425	1282.196	GMON
BT 81	762673.128	601820.392	1311.910	FIP
2018	762041.755	601818.894	1308.856	BCF
BT 86	752875.103	608008.442	1294.979	CPPK
BT 89	748895.549	608387.025	1311.075	FIP
2019	752864.839	608317.091	1294.856	GMON
BT 83	758119.483	611662.535	1320.364	FIP

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Points

Project : RV AREA 10_5-2-05

User name	msmolinski	**Date & Time**	9:58:38 AM 5/24/2005
Coordinate System	Projection from data collector	**Zone**	Zone from data collector
Project Datum	Datum from data collector		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BASE – 2IA3	738888.281	584649.961	1387.184	GMON
✓3HB2	754154.764	566461.598	1330.774	GMON
✓2HB1	754250.574	595736.394	1282.152	GMON
✓2JB2	727072.362	596385.600	1430.807	GMON
✓1418	740572.234	567323.389	1420.082	GMON
PRIME 20	743742.378	596426.189	1332.245	ACF
PRIME 19	753523.075	580858.677	1310.607	ACF
CSPRIME 19	753523.053	580858.748	1310.668	ACF
CSPRIME 20	743742.357	596426.177	1332.277	ACF
G2HB1	754250.592	595736.393	1282.179	GMON
G3HB2	754154.776	566461.596	1330.735	GMON
G2JB2	727072.358	596385.584	1430.766	GMON
GPRIME21	727788.663	580551.649	1469.598	GMON
G1418	740572.219	567323.414	1420.106	GMON
PRIME 21	727788.673	580551.654	1469.568	GLO
BT97	729845.523	582074.344	1450.876	CPR
BT94	736444.198	582819.511	1411.166	CPR
BT98	728516.624	591210.681	1433.861	CPR
BT95	735610.558	591242.645	1389.538	CPR
1003	732996.612	601677.577	1384.983	GLO
BT96	735637.479	601552.232	1369.299	CPR
BT99	728226.623	602796.012	1414.653	CPR
BT102	723194.785	601556.123	1455.600	CPR
BT92	743537.812	603651.377	1333.057	CPR
BT93	738605.108	607026.368	1357.192	CPR
BT91	743627.366	591315.542	1344.072	CPR
BT90	745850.405	584347.503	1349.176	FPK
BT88	749795.636	597657.571	1302.305	FPK
BT87	749752.782	591129.583	1312.268	CPR
BT84	756319.000	583687.522	1289.153	CPR
BT82	759412.840	591213.022	1263.259	FBK
BT85	754137.923	601720.104	1285.639	CPR

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Points

Project : RV AREA10A 5-27-05

User name	philk	**Date & Time**	12:58:42 PM 6/1/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

CHECKED PK 6-1-05

Name	Northing	Easting	Elevation	Feature Code
BASE — 2IA3	738888.265	584649.951	1387.172 —	GMON
✓3HB2	754154.764	566461.598	1330.774	GMON
✓2HB1	754250.574	595736.394	1282.152	GMON
✓2JB2	727072.362	596385.600	1430.807	GMON
✓1418	740572.234	567323.389	1420.082	GMON
G1418	740572.217	567323.411	1420.121	GMON
G3HB2	754154.775	566461.594	1330.736	GMON
G2HB1	754250.590	595736.394	1282.171	GMON
G2JB2	727072.353	596385.584	1430.787	GMON
CSBT94	736444.248	582819.512	1411.246	PNL
CSBT97	729845.483	582074.293	1450.795	PNL

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Points

Project : Area 11 5-24-05

User name	msmolinski	**Date & Time**	8:16:13 AM 5/24/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BT103	717620.194	608895.772	1459.495	ACF
2JB2	727072.362	596385.600	1430.807	GMON
2IC3	738592.907	612947.730	1353.773	GMON
2KB2	707068.205	593170.797	1569.652	GMON
GPRIME 23	701205.767	612076.824	1526.202	GMON
GPRIME 22	701410.656	596290.987	1575.735	GMON
G2KB2	707068.293	593170.783	1569.609	GMON
G2JB2	727072.355	596385.600	1430.842	GMON
G2IC3	738592.869	612947.732	1353.830	GMON
PRIME 22	701410.638	596291.015	1575.770	ACF
PRIME 23	701205.783	612076.827	1526.186	ACF
BT 105	706571.055	606762.361	1513.551	CPR
1012	706579.062	606873.871	1513.878	GLO
1013	706579.121	606743.428	1514.535	GLO
1014	698704.805	596151.412	1584.869	GLO
CS PRIME 22	701410.704	596291.025	1575.792	ACF
BT 104	713930.544	600293.380	1500.966	CPR
BT 101	724957.453	608203.465	1429.415	CPR
BT 100	731798.869	611442.067	1387.592	CPR
BM J 89	735996.354	587898.610	1395.714	BCF

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CHECKED: 5-31-05

Points

Project : RV AREA11A 5-27-05

User name	philk	**Date & Time**	12:59:13 PM 6/1/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BT103	717620.188	608895.778	1459.457	ACF
PRIME 22	701410.648 +.010 +.011	596291.003 -.012	1575.765 -.005	ACF
PRIME 23	701205.794	612076.811 -.016	1526.275 +.089	ACF
✓2JB2	727072.362	596385.600	1430.807	GMON
✓2IC3	738592.907	612947.730	1353.773	GMON
GPRIME 23	701205.783	612076.827	1526.186	ACF
GPRIME 22	701410.638	596291.015	1575.770	ACF
G2JB2	727072.364	596385.595	1430.822	GMON
G2IC3	738592.898	612947.727	1353.763	GMON
CSBT104	713930.537	600293.421	1500.982	PNL

COORDINATES FOR PRIME 22 & PRIME 23 ARE NOT CORRECT (SEE 5/24/05) BUT ARE CLOSE ENOUGH FOR PURPOSES OF THIS CHECK SHOT.
DGF 6/1/05

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Points

Project : AREA 12_5-19-05

User name	bphillips	**Date & Time**	1:32:19 PM 5/31/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
BASE 3FB2	788012.404	563737.627	1154.073	GMON
PRIME 12B	780465.067	549379.735	1243.719	ACF
PRIME 12	771401.865	559553.341	1230.371	ACF
PRIME 14B	764710.738	567922.903	1273.460	ACF
PRIME 15B	770270.579	575451.432	1230.123	ACF
PRIME 13A	771401.854	559553.357	1230.452	ACF
PRIME 13	771401.841	559553.347	1230.387	ACF
3EC2	801803.307	549302.067	1106.070	GMON
3EA3	801917.044	578335.394	1265.092	GMON
3GA2	770091.739	580651.037	1217.028	GMON
3GC2	770209.439	542468.268	1374.574	GMON
G3EC2	801803.275	549302.079	1106.020	GMON
G3EA3	801917.062	578335.392	1265.066	GMON
G3GA2	770091.777	580650.996	1216.995	GMON
G3GC2	770209.459	542468.260	1374.577	GMON
CPRIME 12	780465.079	549379.744	1243.746	ACF
BT 66	788181.947	547780.151	1197.852	FIP
BT 67	782397.309	554388.643	1207.922	FIP
2013	770091.745	567530.265	1243.417	GMON
BT 77	768391.074	570188.546	1251.879	FIP
BT 74	775277.957	567499.696	1219.280	FIP
BT 64	791124.924	575453.250	1219.458	FIP
BT 70	780631.388	562365.559	1184.870	FIP

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Points

Project : AREA 13 5-24-05

User name	msmolinski	**Date & Time**	8:20:32 AM 5/24/2005
Coordinate System	US State Plane 1983	**Zone**	Arizona Central 0202
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Geoid03_Grid5 (West AZ)
Coordinate Units	International feet		
Distance Units	International feet		
Height Units	International feet		

Point listing

Name	Northing	Easting	Elevation	Feature Code
3CE3	834188.458	519572.270	1002.690	GMON
3BD3	850589.331	534183.885	989.469	GMON
3DD1	817859.557	532583.481	1059.547	GMON
3DF2	818000.413	499205.545	1030.280	GMON
3EE2	802195.751	517230.778	1221.818	GMON
G3BD3	850589.296	534183.854	989.512	BCF
G3DD1	817859.577	532583.430	1059.530	GMON
G3EE2	802195.775	517230.786	1221.792	GMON
G3DF2	818000.470	499205.547	1030.190	GMON
PRIME 7	828611.582	506680.283	1075.095	GMON
PRIME 7A	828611.548	506680.246	1075.075	GMON
10	833724.300	517871.254	1024.949	GLO
11	833725.518	517871.265	1024.257	ACF
PRIME 160	850327.354	534337.721	961.380	ACF
CS PRIME 7	828611.557	506680.309	1075.093	ACF
BT 19	833808.647	509905.492	1070.509	CPR
BT12	841136.317	513744.302	989.538	CPR
BT25	828407.644	525809.464	994.850	CPR
BT33	820484.882	528244.101	1045.767	CPR
BT30	823199.890	517808.944	1031.905	GLO
BT15	838742.395	533787.057	1008.273	CPR
BT9	844188.936	528397.899	965.662	CPK
BT 18	836293.256	525741.802	956.206	BCF
BT 20	833725.526	517871.256	1024.234	BCF

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GPS COORDINATE INFORMATION BY AREA

MJ

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 1
5/25/2005

POINT	NORTH	EAST	ELEV	DESC
3BD3	850589.3375	534183.9092	989.443	GMON
4AE1	866245.8497	520688.8156	869.226	GMON
3CC3	831084.0223	549534.1503	1102.133	GMON
3CE3	834188.4580	519572.2703	1002.690	GMON
GPRIME 5	851132.9333	563383.4950	1263.862	ACF
G3CC3	831083.9890	549534.1221	1102.102	GMON
G3CE3	834188.4926	519572.3093	1002.689	GMON
G4AE1	866245.8705	520688.8703	869.174	GMON
PRIME 5	851132.9460	563383.5150	1263.819	ACF
CSPRIME 160	850327.3590	534337.8359	961.365	ACF
CSPRIME 2	854930.5818	518150.8830	871.321	ACF
PRIME 3	861703.4015	537607.2183	910.732	ACF
PRIME 4	852795.5178	547051.1955	1081.816	ACF
CSPRIME 3	861703.4075	537607.1852	910.672	ACF
CSPRIME 4	852795.4953	547051.2681	1081.987	ACF
CKPRIME 4	852795.5557	547051.2382	1081.882	ACF
GG3CE3	834188.4926	519572.3093	1002.689	GMON
GG3CC3	831083.9890	549534.1221	1102.102	GMON
GG4AE1	866245.8705	520688.8703	869.174	GMON
GGPRIME 5	851132.9460	563383.5150	1263.819	ACF
CSPRIME 160A	850327.3762	534337.8166	961.315	ACF
BT2	856031.6165	536393.0565	949.186	PNL
3000	854766.0482	531070.5186	919.710	BCH
BT7	849355.1307	547119.0462	1061.192	ACF
3001	849331.5179	547132.0875	1060.730	BCF
3002	838888.7537	544201.4868	1051.387	BCF
BT14	841801.1747	541691.6951	1026.037	PNL
BT6	849428.7568	538980.2486	982.536	PNL

CHECKED:
RA
5/27/05

MJ

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 2
5/2/2005

POINT	NORTH	EAST	ELEV	DESC
3BD3	850589.3307	534183.8845	989.469	GMON
3CG2	833447.6673	486993.2251	918.077	GMON
4AG1	865722.8248	488725.1903	892.388	GMON
4AE1	866245.8497	520688.8056	869.226	GMON
3BF3	849225.5980	507662.3042	935.856	GMON
3DF2	818000.4134	499205.5446	1030.280	GMON
PRIME 2	854930.6290	518150.8610	871.393	GMON
G4AG1	865722.8622	488725.2371	892.345	GMON
G3CG2	833447.6998	486993.2341	918.073	GMON
G3BD3	850589.2654	534183.8918	989.501	GMON
G4AE1	866245.8703	520688.8124	869.193	GMON
PRIME 1	852260.5431	505440.4691	855.700	ACF
BT 3	849602.9753	515274.7853	906.088	PNL
BT 13	841913.8342	520535.7778	926.756	PNL
BT 12	841136.2781	513744.3809	989.600	PNL
BT 4	849569.3993	523204.1359	905.375	PNL
BT9	844188.8944	528397.8654	965.823	PNL
BT5	849337.5215	531189.9653	943.538	PNL
BT1	855540.7582	528303.4225	898.941	PNL
1000	929480.3679	612226.5841	1147.125	GATE
GLO	850977.7487	509998.6169	875.872	2009
CBT3	849602.9852	515274.7796	906.053	PK
CBT11	840673.6139	507542.9019	1056.740	PNL

CHECKED: RAB 5-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKES- AREA 3 (RV FILE)
5/31/2005 DGF

POINT	NORTH	EAST	ELEV	DESC
3CC3	831084.0223	549534.1503	1102.133	GMON
3BD3	850589.3307	534183.8845	989.469	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3DD1	817859.5571	532583.4810	1059.547	GMON
GPRIME 5	851132.9417	563383.5363	1263.753	ACF
G3DB3	817447.9701	565233.3580	1206.916	GMON
G3DD1	817859.5315	532583.4893	1059.486	GMON
G3BD3	850589.3400	534183.8795	989.537	GMON
PRIME 5	851132.9460	563383.5150	1263.819	ACF
CS 3DD1	817859.5386	532583.4762	1059.448	GMON
BT 34	820417.1296	538818.2871	1026.431	BCH
BT 36	817882.7083	546861.4461	1059.759	CPR
BT 28	825605.0636	554582.3377	1136.022	ACF GLO
BT 27	825745.7191	544218.6277	1048.527	CPR
BT 26	828455.0694	533598.6424	994.474	CPR
BT 21	833603.5902	538989.9743	1016.137	CPR
BT 22	833641.1392	546924.2017	1080.156	CPR
BT 16	838847.6118	549487.9781	1099.627	ACF
BT 17	838682.6984	562137.7877	1313.990	CPR
GGPRIME 5	851132.9120	563383.5359	1263.884	ACF
GG3DB3	817447.9937	565233.2895	1207.176	GMON
GG3DD1	817859.6175	532583.4768	1059.548	GMON
GG3BD3	850589.3676	534183.9275	989.494	GMON
CSBT 16	838847.6692	549487.9885	1099.733	ACF
BT 10	843743.6981	554558.7975	1151.924	PNL
BT 8	849179.4453	561285.9803	1225.589	PNL
CSBT 17	838682.6820	562137.7118	1314.182	PNL
BT 23	833462.1345	554629.4778	1160.945	PNL
BT 24	833395.6444	559909.1528	1220.977	PNL
CSBT 22	833641.1227	546924.2171	1080.225	PNL

CHECKED!
RaBB
5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKES- AREA 3 (A FILE)
5/31/2005 DGF

POINT	NORTH	EAST	ELEV	DESC
3CC3	831084.0223	549534.1503	1102.133	GMON
3BD3	850589.3307	534183.8845	989.469	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3DD1	817859.5571	532583.4810	1059.547	GMON
PRIME 5	851132.9460	563383.5150	1263.819	ACF
CS 3DD1	817859.5386	532583.4762	1059.448	GMON
BT 34	820417.1296	538818.2871	1026.431	BCH
BT 36	817882.7083	546861.4461	1059.759	CPR
BT 28	825605.0636	554582.3377	1136.022	ACF GLO
BT 27	825745.7191	544218.6277	1048.527	CPR
BT 26	828455.0694	533598.6424	994.474	CPR
BT 21	833603.5902	538989.9743	1016.137	CPR
BT 22	833641.1392	546924.2017	1080.156	CPR
BT 16	838847.6118	549487.9781	1099.627	ACF
BT 17	838682.6984	562137.7877	1313.990	CPR
G3BD3	850589.3676	534183.9275	989.494	GMON
G3DD1	817859.6175	532583.4768	1059.548	GMON
G3DB3	817447.9937	565233.2895	1207.176	GMON
GPRIME 5	851132.9120	563383.5359	1263.884	ACF
CS 3DB3	817447.9256	565233.3955	1206.804	GMON
BT37	817636.6375	554552.4472	1113.274	PNL
CS BT34	820417.2391	538818.2559	1026.526	BCH
BT27	825745.7400	544218.5711	1048.684	PNL
BT36	817882.7229	546861.4369	1059.911	PNL
BT31	822935.4419	559844.9817	1174.522	PNL
BT28	825605.0792	554582.2882	1136.197	PNL
BT2	856031.6293	536392.9421	949.150	FIP

CHECKED:
RAB
05-31-05

MD

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 4
5/24/2005

POINT	NORTH	EAST	ELEV	DESC
3EE2	802195.7521	517230.7955	1221.782	GMON
3DD1	817859.5571	532583.4810	1059.547	GMON
3DF2	818000.4134	499205.5446	1030.280	GMON
3FD2	786974.4127	528281.0794	1354.003	GMON
3FF2	786680.4068	502618.5532	1339.340	GMON
PRIME 10	801061.5966	509573.1319	1246.424	ACF
PRIME 11	793365.2371	527044.3159	1289.671	ACF
PRIME 11A	793365.2444	527044.3336	1289.612	ACF
PRIME 10A	801061.6093	509573.1355	1246.422	ACF
G3FF2	786680.4017	502618.5041	1339.369	GMON
G3DF2	818000.3839	499205.5696	1030.258	GMON
G3DD1	817859.5683	532583.4889	1059.569	GMON
G3FD2	786974.4361	528281.0956	1353.974	GMON
2061	792938.9985	538759.0392	1171.319	CPR
BT61	792938.9985	538759.0392	1171.319	CPR
BT56	798971.5196	533459.3238	1186.670	CPR
BT52	801955.3251	538764.6294	1126.972	CPR
BT51	801363.6982	522850.1329	1207.980	CPR
2000	807394.3399	512432.7115	1170.492	GLO
2001	807358.0911	517718.0681	1163.525	GLO
BT48	807381.9860	517751.1424	1164.308	CPR
BT49	807303.6394	528117.8013	1153.502	CPR
BT42	809390.2249	533540.2702	1118.421	CPR
BT39	812681.1687	512467.7918	1119.349	GLO
1000	807394.3399	512432.7115	1170.492	GLO
1001	807358.0911	517718.0681	1163.525	GLO
BT35	817969.5608	514685.2475	1071.248	CPR
1002	817919.3763	517778.7222	1067.578	GLO
RAIN	817841.9781	522186.5944	1071.883	BCF
BT40	812583.9838	522689.2657	1112.785	CPR

CHECKED:
5-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 5
5/24/2005 **REVISED: 06-01-05 RAPII**

POINT	NORTH	EAST	ELEV	DESC
3EC2	801803.3165	549302.0862	1106.088	GMON
3FD2	786974.4127	528281.0794	1354.003	GMON
3DD1	817859.5571	532583.4810	1059.547	GMON
3DB3	817447.9495	565233.3825	1206.857	GMON
3FB2	788012.3950	563737.6378	1154.101	GMON
PRIME 11AVG	793365.2405	527044.3250	1289.641	ACF
PRIME 11B	793365.3083	527044.3526	1289.647	ACF
PRIME 12	780465.1066	549379.7372	1243.781	ACF
PRIME 13	771401.8411	559553.3474	1230.387	ACF
PRIME 13A	771401.8541	559553.3574	1230.452	ACF
PRIME 12A	780465.0779	549379.7058	1243.716	ACF
BT67	782397.3003	554388.5921	1207.967	PNL
BT66	788181.9569	547780.1571	1197.915	PNL
BT61	792939.0403	538759.0424	1171.416	PNL
BT56	798971.5550	533459.3694	1186.727	PNL
BT52	801955.3533	538764.6560	1127.079	PNL
300	807213.0080	538742.8204	1104.637	BCH
BT49	807303.6702	528117.8023	1153.604	PNL
301	807284.8299	528182.2692	1153.223	ACF
BT42	809390.2664	533540.2215	1118.581	PNL
302	812494.4808	538773.2568	1076.626	BCH
BT41	812664.8158	541431.5438	1062.233	PNL
303	812478.3380	541412.5338	1064.220	ACF
304	815136.5078	538787.9215	1059.456	ACF
305	817774.9967	538803.5949	1042.562	BCH
BT34	820417.1836	538818.2434	1026.508	PNL
BT36	817882.6796	546861.4465	1060.033	PNL
BT37	817636.5837	554552.4205	1113.453	PNL
BT28	825605.0068	554582.3080	1136.258	PNL
BT31	822935.4391	559844.9368	1174.683	PNL
BT45	809746.8557	565030.1922	1178.001	PNL
306	809708.5782	565065.0909	1179.092	BCF
BT43	809800.7583	549297.3750	1073.615	PNL
307	809784.7583	549318.3620	1073.822	BCF
G3DD1	817859.5634	532583.4861	1059.570	GMON
G3DB3	817447.9188	565233.3914	1206.927	GMON
G3FB2	788012.4207	563737.6216	1154.109	GMON
G3FD2	786974.4437	528281.1699	1353.971	GMON
CBT 43	809800.7894	549297.4255	1073.615	FIP
BT44	809720.6008	557127.9738	1117.787	FIP
BT53	802741.7483	554423.8106	1099.158	FIP
BT54	801808.4620	562356.4426	1141.718	FIP
BT59	796466.1785	567579.0491	1168.779	FIP
2011	796462.4023	567632.3583	1170.862	ACF
BT58	796639.4123	559835.1646	1121.430	FIP
BT63	791274.6918	554413.8778	1161.993	FIP
2012	791276.7782	554425.8693	1162.998	BCF

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DGF 6/1/05

BT57	796629.8110	549199.2302	1138.120	FIP
3005	801863.1500	549276.3680	1106.035	BCF
CSBT57	796629.7690	549199.2300	1138.122	PNL
CSBT52	801955.3170	538764.6360	1127.141	PNL
3006	804572.6440	538727.7320	1118.247	ACF
CSBT41	812664.8130	541431.5770	1062.246	PNL
3007	809853.9640	538758.0290	1092.687	ACF
CSBT51	801363.6910	522850.0970	1208.042	PNL
CSBT43	809800.7480	549297.3720	1073.561	PNL

CHECKED:
DGF 6/1/05

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RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 6
5/25/2005

POINT	NORTH	EAST	ELEV	DESC
3EC2	801803.3071	549302.0669	1106.069	GMON
3DB3	817447.9798	565233.3881	1206.861	GMON
3CC3	831084.0223	549534.1503	1102.133	GMON
3EA3	801917.0440	578335.3937	1265.092	GMON
GPRIME 8	817314.5818	580785.0118	1404.686	ACF
G3EA3	801917.1320	578335.3743	1265.127	GMON
G3EC2	801803.3377	549302.0716	1106.012	GMON
G3CC3	831084.0264	549534.1835	1102.124	GMON
200	828299.2777	549426.9665	1095.691	BCF
201	801863.1939	549276.4104	1105.953	BCF
202	801851.6066	551832.2315	1102.404	ACF
203	812349.4382	565075.3805	1192.087	BCF
PRIME 8	817314.5620	580785.0020	1404.663	ACF
CS203	812349.4767	565075.3812	1192.153	BCF
BT45	809746.9473	565030.2762	1178.019	PNL
204	809708.6330	565065.1316	1179.167	BCF
BT50	806936.6187	573046.8626	1234.421	PNL
BT46	809622.6160	580947.7932	1326.914	PNL
205	809641.8762	580910.2315	1327.237	BCF
206	812326.4577	570359.5765	1234.767	BCF
CPRIME 8	817314.6231	580784.9809	1404.627	ACF
2014	817594.9560	573023.2081	1294.390	BCF
BT 38	817509.7614	570417.9834	1262.924	FIP
2015	817593.9260	570385.6986	1262.033	FIP
2016	820273.8905	565117.0625	1221.520	BCF
2017	822902.0144	567764.2520	1265.931	ACF
BT 32	822865.3774	575681.5043	1390.064	BCF
BT 29	825536.4968	567773.0363	1279.189	ACF
BT 31	822935.4661	559844.9662	1174.520	BCF
BT 37	817636.6930	554552.3953	1113.254	FIP

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5-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 7
5/28/2005 **REVISED: 05-27-05 RAPII**

POINT	NORTH	EAST	ELEV	DESC
2EB3	799155.0197	601045.7021	1547.703	GMON
3EA3	801917.0440	578335.3937	1265.092	GMON
2FB3	787471.9725	596144.0082	1408.135	GMON
2GC3	771072.9528	611259.2421	1614.239	GMON
GPRIME 8	817314.5099	580784.9995	1404.667	ACF
G3EA3	801917.0735	578335.4179	1265.123	GMON
G2GC3	771072.9594	611259.2223	1614.232	GMON
G2EB3	799154.9828	601045.7113	1547.691	GMON
PRIME 8	817314.5620	580785.0020	1404.663	ACF
C2EB3	799155.0590	601045.7118	1547.72	GMON
BT 62	794281.2050	595813.1493	1421.114	PNL
2001	791086.0947	599303.7635	1437.334	BCF
PRIME 18	791280.5421	601960.4807	1465.367	ACF
2002	791080.4088	601947.4381	1464.668	BCF
PRIME 18A	791280.5713	601960.4292	1465.386	ACF
PRIME 9A	791123.2918	608121.2841	1663.544	ACF
PRIME 9AA	791123.2816	608121.3065	1663.538	ACF
BT 69	783596.3013	606865.5346	1589.134	PNL
BT 73	777097.6413	609961.1132	1586.848	PNL
CBT73	777097.5809	609961.1478	1586.902	PNL
BT 72	781150.4660	601092.4010	1512.62	PNL
2003	791122.7119	588739.5715	1331.635	GLO
BT 65	791098.8395	587428.8439	1319.059	PNL
2004	791134.3648	586099.4873	1308.949	GLO
2005	791155.9450	580825.4550	1259.431	GLO
2006	791239.0977	580864.0843	1259.815	GLO
2007	793796.5549	580837.2992	1264.956	GLO
BT 60	796388.1074	580866.0793	1269.091	FIP
BT 47	809518.0182	588698.6441	1459.485	PNL
BT 55	801720.8914	591473.4287	1382.348	PNL
2008	801679.9078	591433.2300	1382.154	GLO
PRIME	783359.7441	591319.3941	1315.753	ACF
C3EA3	801917.0499	578335.3713	1265.005	GMON
CBT 55	801720.9342	591473.4288	1382.239	FIP
CBT47	809517.9936	588698.6542	1459.432	FIP
CBT62	794281.1934	595813.2232	1421.108	FIP
2020	791090.3757	596660.2742	1409.121	BCF
2021	791086.0962	599303.7700	1437.343	BCF
CBT69	783596.3187	606865.5372	1589.047	FIP
CCBT73	777097.5600	609961.0638	1586.962	FIP

CHECKED:
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RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 8
5/25/05 REVISED 6/01/2005 PHIL K.

POINT	NORTH	EAST	ELEV	DESC
3HB2	754154.7638	566461.5978	1330.774	GMON
2HB1	754250.5741	595736.3944	1282.152	GMON
2FB3	787471.9718	596144.0092	1408.137	GMON
3FB2	788012.3950	563737.6378	1154.101	GMON
3GA2	770091.7388	580651.0367	1217.028	GMON
G2FB3	787471.9431	596143.9868	1408.167	GMON
G2HB1	754250.5779	595736.3456	1282.173	GMON
G3HB2	754154.7801	566461.6024	1330.748	GMON
G3FB2	788012.3398	563737.7015	1154.129	GMON
PRIME 17	783359.6878	591319.3726	1315.791	ACF
PRIME 15	770270.5434	575451.4307	1230.131	ACF
PRIME 14	764710.6819	567922.9335	1273.457	ACF
PRIME 17A	783359.6866	591319.3666	1315.772	ACF
100	769992.1983	591293.9368	1247.119	BCF
101	770002.0866	588653.8047	1230.133	BCF
102	770012.3916	586013.4459	1220.548	BCF
103	770023.4732	583372.6706	1219.434	BCF
104	770032.5123	580733.0226	1218.211	BCF
105	770042.2737	578091.8485	1219.403	BCF
PRIME 15A	770270.5731	575451.4357	1230.152	ACF
106	770056.3948	575451.2232	1231.579	BCF
PRIME 14A	764710.7187	567922.9676	1273.447	ACF
107	770070.7422	568310.8822	1246.073	GMON
108	770067.9470	572812.2000	1238.396	BCF
CSPRIME 15	770270.5348	575451.4599	1230.167	ACF
BT 71	780627.5614	572857.1165	1186.925	PNL
BT 68	783439.6767	580814.5758	1238.429	PNL
109	791155.9486	580825.4132	1259.520	BCF
110	791239.1003	580864.1359	1259.858	GLO
111	791134.2552	586099.4873	1308.964	BCF
BT 65	791098.8786	587428.8061	1319.074	CPR
112	791122.6437	588739.5852	1331.663	BCF
BT 72	781150.4307	601092.3894	1512.564	PNL
BT 76	772138.4259	596529.8499	1294.888	PNL
CSBT 74	775277.9120	567499.7020	1219.350	PNL
BT 75	775167.5575	589635.3484	1246.052	PNL
BT 78	768928.9088	591253.6553	1245.025	PNL
BT 79	764757.8119	586059.2147	1242.194	PNL
113	764740.5316	585978.8848	1243.230	BCF
BT 82	759412.8059	591213.0059	1263.241	PNL
CS PRIME 15A	770270.5505	575451.4360	1230.157	ACF
BT80	762837.5414	576402.4468	1256.737	PNL
CSBT80	762837.5450	576402.4510	1256.770	PNL
BT84	756318.9758	583687.4628	1289.180	PNL
BT87	749752.7954	591129.5631	1312.235	PNL

CHECKED:
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RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 9
5/25/2005

POINT	NORTH	EAST	ELEV	DESC
ENID RM1	757069.5636	612801.8635	1528.379	GMON
2GC3	771072.9528	611259.2421	1614.239	GMON
2HB1	754250.5741	595736.3944	1282.152	GMON
2IC3	738592.9068	612947.7297	1353.773	GMON
3GA2	770091.7388	580651.0367	1217.028	GMON
2JB2	727072.3622	596385.6004	1430.807	GMON
G3GA2	770091.7275	580651.0596	1217.047	GMON
G2HB1	754250.5745	595736.4051	1282.171	GMON
G2JB2	727072.4210	596385.6301	1430.759	GMON
G2IC3	738593.0056	612947.6992	1353.751	GMON
G2GC3	771072.9548	611259.2480	1614.260	GMON
C2HB1	754250.6111	595736.4248	1282.196	GMON
BT 81	762673.1280	601820.3923	1311.910	FIP
2018	762041.7552	601818.8937	1308.856	BCF
BT 86	752875.1028	608008.4416	1294.979	CPPK
BT 89	748895.5489	608387.0255	1311.075	FIP
2019	752864.8385	608317.0909	1294.856	GMON
BT 83	758119.4831	611662.5353	1320.364	FIP

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5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 10
5/3/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	EAST	ELEV	DESC
3HB2	754154.7638	566461.5978	1330.774	GMON
2HB1	754250.5741	595736.3944	1282.152	GMON
2JB2	727072.3622	596385.6004	1430.807	GMON
1418	740572.2343	567323.3891	1420.082	GMON
PRIME 20	743742.3782	596426.1886	1332.245	ACF
PRIME 19	753523.0747	580858.6770	1310.607	ACF
CSPRIME 19	753523.0528	580858.7481	1310.668	ACF
CSPRIME 20	743742.3568	596426.1766	1332.277	ACF
G2HB1	754250.5916	595736.3926	1282.179	GMON
G3HB2	754154.7755	566461.5960	1330.735	GMON
G2JB2	727072.3580	596385.5841	1430.766	GMON
GPRIME21	727788.6625	580551.6493	1469.598	GMON
G1418	740572.2194	567323.4136	1420.106	GMON
PRIME 21	727788.6726	580551.6539	1469.568	GLO
BT97	729845.5232	582074.3445	1450.876	CPR
CSBT97	729845.4830	582074.2930	1450.795	PNL
BT94	736444.1982	582819.5110	1411.166	CPR
CSBT94	736444.2480	582819.5120	1411.246	PNL
BT98	728516.6236	591210.6812	1433.861	CPR
BT95	735610.5576	591242.6445	1389.538	CPR
1003	732996.6121	601677.5770	1384.983	GLO
BT96	735637.4788	601552.2325	1369.299	CPR
BT99	728226.6233	602796.0118	1414.653	CPR
BT102	723194.7848	601556.1231	1455.601	CPR
BT92	743537.8123	603651.3765	1333.057	CPR
BT93	738605.1075	607026.3680	1357.192	CPR
BT91	743627.3659	591315.5423	1344.072	CPR
BT90	745850.4053	584347.5034	1349.176	FPK
BT88	749795.6360	597657.5714	1302.306	FPK
BT87	749752.7824	591129.5835	1312.268	CPR
BT84	756319.0002	583687.5222	1289.153	CPR
BT82	759412.8397	591213.0218	1263.259	FBK
BT85	754137.9225	601720.1039	1285.639	CPR

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA-11
5/24/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	EAST	ELEV	DESC
BT103	717620.1936	608895.7722	1459.495	ACF
2JB2	727072.3622	596385.6004	1430.807	GMON
2IC3	738592.9068	612947.7297	1353.773	GMON
2KB2	707068.2054	593170.7972	1569.652	GMON
GPRIME 23	701205.7673	612076.8243	1526.202	GMON
GPRIME 22	701410.6564	596290.987	1575.735	GMON
G2KB2	707068.2927	593170.783	1569.609	GMON
G2JB2	727072.3551	596385.5999	1430.843	GMON
G2IC3	738592.869	612947.7325	1353.83	GMON
PRIME 22	701410.638	596291.015	1575.77	ACF
PRIME 23	701205.783	612076.827	1526.186	ACF
BT 105	706571.0545	606762.361	1513.552	CPR
1012	706579.0621	606873.8705	1513.878	GLO
1013	706579.1207	606743.4281	1514.535	GLO
1014	698704.8052	596151.4124	1584.869	GLO
CS PRIME 22	701410.7037	596291.0247	1575.792	ACF
BT 104	713930.5444	600293.3803	1500.966	CPR
CSBT104	713930.537	600293.421	1500.982	PNL
BT 101	724957.453	608203.4655	1429.415	CPR
BT 100	731798.8693	611442.0665	1387.592	CPR
BM J 89	735996.3544	587898.6096	1395.714	BCF

CHECKED:
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RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA 12
5/24/2005

POINT	NORTH	EAST	ELEV	DESC
3FB2	788012.4042	563737.6270	1154.073	GMON
PRIME 12B	780465.0675	549379.7348	1243.719	ACF
PRIME 12	771401.8648	559553.3411	1230.371	ACF
PRIME 14B	764710.7379	567922.9032	1273.460	ACF
PRIME 15B	770270.5789	575451.4324	1230.123	ACF
PRIME 13A	771401.8541	559553.3574	1230.452	ACF
PRIME 13	771401.8411	559553.3474	1230.387	ACF
3EC2	801803.3071	549302.0669	1106.070	GMON
3EA3	801917.0440	578335.3937	1265.092	GMON
3GA2	770091.7388	580651.0367	1217.028	GMON
3GC2	770209.4390	542468.2677	1374.574	GMON
G3EC2	801803.2747	549302.0786	1106.020	GMON
G3EA3	801917.0625	578335.3916	1265.066	GMON
G3GA2	770091.7770	580650.9958	1216.995	GMON
G3GC2	770209.4585	542468.2601	1374.577	GMON
CPRIME 12	780465.0791	549379.7442	1243.746	ACF
BT 66	788181.9467	547780.1506	1197.852	FIP
BT 67	782397.3086	554388.6434	1207.922	FIP
2013	770091.7447	567530.2652	1243.417	GMON
BT 77	768391.0745	570188.5457	1251.879	FIP
BT 74	775277.9574	567499.6955	1219.280	FIP
BT 64	791124.9241	575453.2496	1219.458	FIP
BT 70	780631.3880	562365.5592	1184.870	FIP

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5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND POKE AREA-13
5/24/2005

POINT	NORTH	EAST	ELEV	DESC
3CE3	834188.4580	519572.2703	1002.690	GMON
3BD3	850589.3307	534183.8845	989.469	GMON
3DD1	817859.5571	532583.4810	1059.547	GMON
3DF2	818000.4134	499205.5446	1030.280	GMON
3EE2	802195.7513	517230.7776	1221.818	GMON
G3BD3	850589.2956	534183.8539	989.512	BCF
G3DD1	817859.5768	532583.4296	1059.530	GMON
G3EE2	802195.7751	517230.7859	1221.792	GMON
G3DF2	818000.4697	499205.5472	1030.191	GMON
PRIME 7	828611.5823	506680.2825	1075.095	GMON
PRIME 7A	828611.5483	506680.2457	1075.075	GMON
10	833724.3001	517871.2539	1024.949	GLO
11	833725.5179	517871.2653	1024.257	ACF
PRIME 160	850327.3543	534337.7210	961.380	ACF
CS PRIME 7	828611.5573	506680.3090	1075.093	ACF
BT 19	833808.6475	509905.4919	1070.509	CPR
BT12	841136.3169	513744.3019	989.538	CPR
BT25	828407.6443	525809.4640	994.850	CPR
BT33	820484.8818	528244.1008	1045.767	CPR
BT30	823199.8900	517808.9436	1031.905	GLO
BT15	838742.3950	533787.0568	1008.273	CPR
BT9	844188.9361	528397.8987	965.662	CPK
BT 18	836293.2565	525741.8022	956.206	BCF
BT 20	833725.5255	517871.2558	1024.234	BCF

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5-31-05

HUITT-ZOLLARS, INC.
BLIND TARGET COORDINATES
AND AVERAGES

MS

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES AREA 1
5/25/2005

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 2	856031.6165		536393.0565		949.186		PNL
BT 6	849428.7568		538980.2486		982.536		PNL
BT 7	849355.1307		547119.0462		1061.192		ACF
BT 14	841801.1747		541691.6951		1026.037		PNL

CHECKED: 5-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 2
5/2/2005 **Revised: 05-27-05 RAPII**

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT1	855540.7582		528303.4225		898.941		PNL
BT 3	849602.9753		515274.7853		906.088		PK
CBT3	849602.9852	849602.9803	515274.7796	515274.7825	906.053	906.071	PK
BT 4	849569.3993		523204.1359		905.375		PNL
BT5	849337.5215		531189.9653		943.538		PNL
BT9	844188.8944		528397.8654		965.823		PNL
BT11	840673.6139		507542.9019		1056.740		PNL
BT 12	841136.2781		513744.3809		989.600		PNL
BT 13	841913.8342		520535.7778		926.756		PNL

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGET GRID COORDINATES- AREA 3
5/31/2005 DGF

POINT	NORTH		EAST		ELEV		DESC
BT2	856031.6293		536392.9421		949.150		FIP
BT 8	849179.4453		561285.9803		1225.589		PNL
BT 10	843743.6981		554558.7975		1151.924		PNL
BT 16	838847.6118		549487.9781		1099.627		ACF
CSBT 16	838847.6692	838847.6405	549487.9885	549487.9833	1099.733	1099.680	ACF
BT 17	838682.6984		562137.7877		1313.990		CPR
CSBT 17	838682.6820	838682.6902	562137.7118	562137.7498	1314.182	1314.086	PNL
BT 21	833603.5902		538989.9743		1016.137		CPR
BT 22	833641.1392		546924.2017		1080.156		CPR
CSBT 22	833641.1227	833641.1310	546924.2171	546924.2094	1080.225	1080.190	PNL
BT 23	833462.1345		554629.4778		1160.945		PNL
BT 24	833395.6444		559909.1528		1220.977		PNL
BT 26	828455.0694		533598.6424		994.474		CPR
BT 27	825745.7191		544218.6277		1048.527		CPR
BT27	825745.7400	825745.7296	544218.5711	544218.5994	1048.684	1048.606	PNL
BT 28	825605.0636		554582.3377		1136.022		ACF GLO
BT28	825605.0792	825605.0714	554582.2882	554582.3130	1136.197	1136.110	PNL
BT31	822935.4419		559844.9817		1174.522		PNL
BT 34	820417.1296		538818.2871		1026.431		BCH
CS BT34	820417.2391	820417.1844	538818.2559	538818.2715	1026.526	1026.478	BCH
BT 36	817882.7083		546861.4461		1059.759		CPR
BT36	817882.7229	817882.7156	546861.4369	546861.4415	1059.911	1059.835	PNL
BT37	817636.6375		554552.4472		1113.274		PNL

CHECKED: RABT 5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 4
5/24/2005

NB

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 35	817969.5608		514685.2475		1071.248		CPR
BT 39	812681.1687		512467.7918		1119.349		GLO
BT 40	812583.9838		522689.2657		1112.785		CPR
BT 42	809390.2249		533540.2702		1118.421		CPR
BT 48	807381.9860		517751.1424		1164.308		CPR
BT 49	807303.6394		528117.8013		1153.502		CPR
BT 51	801363.6982		522850.1329		1207.980		CPR
BT 52	801955.3251		538764.6294		1126.972		CPR
BT 56	798971.5196		533459.3238		1186.670		CPR
BT 61	792938.9985		538759.0392		1171.319		CPR

CHECKED:
5-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS AND GRID AREA 5
5/24/2005 REVISED: 06-01-05 RAPII

POINT	NORTH		EAST		ELEV		DESC
BT28	825605.0068		554582.3080		1136.258		PNL
BT31	822935.4391		559844.9368		1174.683		PNL
BT34	820417.1836		538818.2434		1026.508		PNL
BT36	817882.6796		546861.4465		1060.033		PNL
BT37	817636.5837		554552.4205		1113.453		PNL
BT41	812664.8158		541431.5438		1062.233		PNL
CSBT41	812664.8130	812664.8144	541431.5770	541431.5604	1062.246	1062.240	PNL
BT42	809390.2664		533540.2215		1118.581		PNL
BT43	809800.7583		549297.3750		1073.615		PNL
CBT 43	809800.7894		549297.4255		1073.615		FIP
CSBT43	809800.7480	809800.7652	549297.3720	549297.3908	1073.561	1073.597	PNL
BT44	809720.6008		557127.9738		1117.787		FIP
BT45	809746.8557		565030.1922		1178.001		PNL
BT49	807303.6702		528117.8023		1153.604		PNL
CSBT51	801363.6910		522850.0970		1208.042		PNL
BT52	801955.3533		538764.6560		1127.079		PNL
CSBT52	801955.3170	801955.3352	538764.6360	538764.6460	1127.141	1127.110	PNL
BT53	802741.7483		554423.8106		1099.158		FIP
BT54	801808.4620		562356.4426		1141.718		FIP
BT56	798971.5550		533459.3694		1186.727		PNL
BT57	796629.8110		549199.2302		1138.120		FIP
CSBT57	796629.7690	796629.7900	549199.2300	549199.2301	1138.122	1138.121	PNL
BT58	796639.4123		559835.1646		1121.430		FIP
BT59	796466.1785		567579.0491		1168.779		FIP
BT61	792939.0403		538759.0424		1171.416		PNL
BT63	791274.6918		554413.8778		1161.993		FIP
BT66	788181.9569		547780.1571		1197.915		PNL
BT67	782397.3003		554388.5921		1207.967		PNL

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 6
5/25/2005

MS

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 29	825536.4968		567773.0363		1279.189		ACF
BT 31	822935.4661		559844.9662		1174.520		BCF
BT 32	822865.3774		575681.5043		1390.064		BCF
BT 37	817636.6930		554552.3953		1113.254		FIP
BT 38	817509.7614		570417.9834		1262.924		FIP
BT 45	809746.9473		565030.2762		1178.019		PNL
BT 46	809622.6160		580947.7932		1326.914		PNL
BT 50	806936.6187		573046.8626		1234.421		PNL

CHECKED:
RWT
05-27-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES - AREA 7
5/28/2005 **REVISED: 05-27-05 RAPII**

RaPII

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 47	809518.0182		588698.6441		1459.485		PNL
CBT47	809517.9936	809518.0059	588698.6542	588698.6492	1459.432	1459.4586	FIP
BT 55	801720.8914		591473.4287		1382.348		PNL
CBT 55	801720.9342	801720.9128	591473.4288	591473.4288	1382.239	1382.2937	FIP
BT 60	796388.1074		580866.0793		1269.091		FIP
BT 62	794281.2050		595813.1493		1421.114		PNL
CBT62	794281.1934	794281.1992	595813.2232	595813.1863	1421.108	1421.1109	FIP
BT 65	791098.8395		587428.8439		1319.059		PNL
BT 69	783596.3013		606865.5346		1589.134		PNL
CBT69	783596.3187	783596.3100	606865.5372	606865.5359	1589.047	1589.0905	FIP
BT 72	781150.4660		601092.4010		1512.62		PNL
BT 73	777097.6413		609961.1132		1586.848		PNL
CBT73	777097.5809		609961.1478		1586.902		PNL
CCBT73	777097.5600	777097.5941	609961.0638	609961.1083	1586.962	1586.9043	FIP

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 8
5/25/05 REVISED 6/01/2005 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 65	791098.8786		587428.8061		1319.074		PNL
BT 68	783439.6767		580814.5758		1238.429		PNL
BT 71	780627.5614		572857.1165		1186.925		PNL
BT 72	781150.4307		601092.3894		1512.564		PNL
CSBT74	775277.9120		567499.7020		1219.350		PNL
BT 75	775167.5575		589635.3484		1246.052		PNL
BT 76	772138.4259		596529.8499		1294.888		PNL
BT 78	768928.9088		591253.6553		1245.025		PNL
BT 79	764757.8119		586059.2147		1242.194		PNL
BT 80	762837.5414		576402.4468		1256.737		PNL
CSBT80	762837.5450	762837.5432	576402.4510	576402.4489	1256.770	1256.754	PNL
BT 82	759412.8059		591213.0059		1263.241		PNL
BT 84	756318.9758		583687.4628		1289.180		PNL
BT 87	749752.7954		591129.5631		1312.235		PNL

CHECKED:
DGF 6/1/05

MS

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 9
5/25/2005

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 81	762673.1280		601820.3923		1311.910		FIP
BT 83	758119.4831		611662.5353		1320.364		FIP
BT 86	752875.1028		608008.4416		1294.979		CPPK
BT 89	748895.5489		608387.0255		1311.075		FIP

Checked:
5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 10
5/3/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL.	DESC
BT 82	759412.8397		591213.0218		1263.259		FPK
BT 84	756319.0002		583687.5222		1289.153		CPR
BT 85	754137.9225		601720.1039		1285.639		CPR
BT 87	749752.7824		591129.5835		1312.268		CPR
BT 88	749795.6360		597657.5714		1302.306		FPK
BT 90	745850.4053		584347.5034		1349.176		FPK
BT 91	743627.3659		591315.5423		1344.072		CPR
BT 92	743537.8123		603651.3765		1333.057		CPR
BT 93	738605.1075		607026.3680		1357.192		CPR
BT 94	736444.1982		582819.5110		1411.166		CPR
CSBT94	736444.2480	736444.2231	582819.5120	582819.5115	1411.246	1411.206	PNL
BT 95	735610.5576		591242.6445		1389.538		CPR
BT 96	735637.4788		601552.2325		1369.299		CPR
BT 97	729845.5232		582074.3445		1450.876		CPR
CSBT97	729845.4830	729845.5031	582074.2930	582074.3188	1450.795	1450.836	PNL
BT 98	728516.6236		591210.6812		1433.861		CPR
BT 99	728226.6233		602796.0118		1414.653		CPR
BT 102	723194.7848		601556.1231		1455.601		CPR

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 11
5/24/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 100	731798.8693		611442.0665		1387.592		CPR
BT 101	724957.4530		608203.4655		1429.415		CPR
BT103	717620.1936		608895.7722		1459.495		ACF
BT 104	713930.5444		600293.3803		1500.966		CPR
CSBT 104	713930.5370	713930.5407	600293.4210	600293.4007	1500.982	1500.974	PNL
BT 105	706571.0545		606762.3610		1513.552		CPR

CHECKED:
DCF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 12
5/24/2005

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 64	791124.9241		575453.2496		1219.458		FIP
BT 66	788181.9467		547780.1506		1197.852		FIP
BT 67	782397.3086		554388.6434		1207.922		FIP
BT 70	780631.3880		562365.5592		1184.870		FIP
BT 74	775277.9574		567499.6955		1219.280		FIP
BT 77	768391.0745		570188.5457		1251.879		FIP

CHECKED:
05-31-05

MS

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 13
5/24/2005

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 9	844188.9361		528397.8987		965.662		CPK
BT 12	841136.3169		513744.3019		989.538		CPR
BT 15	838742.3950		533787.0568		1008.273		CPR
BT 18	836293.2565		525741.8022		956.206		BCF
BT 19	833808.6475		509905.4919		1070.509		CPR
BT 20	833725.5255		517871.2558		1024.234		BCF
BT 25	828407.6443		525809.4640		994.850		CPR
BT 30	823199.8900		517808.9436		1031.905		GLO
BT 33	820484.8818		528244.1008		1045.767		CPR

Checked:
5-31-05

PROJECT ENGINEERING CONSULTANTS, LTD.
BLIND TARGET COORDINATES

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
PEC BLIND TARGET INFO-MONUMENT AND PANEL DATA
6/1/2005

POINT	GRID N	GRID E	MON. EL.	PNL. EL.	DESC
BT01	855540.8681	528303.4133	899.019	899.019	800001
BT02	856031.4228	536392.4318	937.562	937.562	800002
BT03	849603.0749	515274.6845	906.064	906.064	800003
BT04	849569.5250	523204.0923	905.291	905.291	800004
BT05	849337.6124	531189.8707	943.491	943.491	800005
BT06	849428.8254	538980.2111	982.562	981.632	800006
BT07	849355.1524	547119.0046	1061.236	1061.236	800007
BT08	849179.5622	561286.0860	1225.614	1225.614	800008
BT09	844188.8740	528397.7850	965.707	965.707	800009
BT10	843743.7376	554558.8263	1151.892	1151.892	800010
BT11	840673.6636	507542.7960	1056.744	1056.744	800011
BT12	841136.3442	513744.2629	989.466	989.466	800012
BT13	841913.8653	520535.6788	926.719	926.719	800013
BT14	841801.1849	541691.6637	1026.014	1026.014	800014
BT15	838742.4086	533787.0258	1008.282	1008.282	800015
BT16	838847.6847	549487.9888	1099.722	1099.722	800016
BT17	838682.6749	562137.7071	1314.195	1314.195	800017
BT18	836293.2190	525741.8180	956.173	957.173	800018
BT19	833808.6749	509905.4189	1070.582	1070.582	800019
BT20	833725.5799	517871.2542	1024.162	1024.162	800020
BT21	833603.6704	538989.9502	1016.193	1016.193	800021
BT22	833641.1860	546924.1470	1080.147	1080.147	800022
BT23	833462.1810	554629.4300	1160.824	1160.824	800023
BT24	833395.6710	559909.1790	1220.847	1220.847	800024
BT25	828407.6370	525809.4410	994.752	994.752	800025
BT26	828455.1880	533598.6000	994.351	994.351	800026
BT27	825745.7420	544218.5390	1048.547	1048.547	800027
BT28	825605.0700	554582.3080	1135.989	1135.989	800028
BT29	825536.4050	567773.2050	1279.175	1279.175	800029
BT30	823199.8765	517808.9151	1031.892	1030.892	800030
BT31	822935.4240	559845.0070	1174.444	1174.444	800031
BT32	822865.2880	575681.6900	1390.115	1387.395	800032
BT33	820484.9710	528244.0331	1045.681	1045.681	800033
BT34	820417.2500	538818.2350	1026.518	1027.318	800034
BT35	817969.6267	514685.1238	1071.403	1071.403	800035
BT36	817882.6690	546861.3950	1060.015	1060.015	800036
BT37	817636.6390	554552.4950	1113.278	1113.278	800037
BT38	817509.6500	570418.0900	1262.841	1262.841	800038
BT39	812681.2198	512467.7150	1119.311	1118.211	800039
BT40	812584.0540	522689.2020	1112.781	1112.781	800040
BT41	812664.8499	541431.5983	1062.186	1062.186	800041
BT42	809390.3160	533540.2760	1118.455	1118.455	800042
BT43	809800.7941	549297.4347	1073.572	1073.572	800043
BT44	809720.5810	557127.9426	1117.765	1117.765	800044
BT45	809746.8955	565030.3081	1178.043	1178.043	800045
BT46	809622.6840	580947.7290	1327.067	1327.067	800046
BT47	809518.0510	588698.6840	1459.727	1459.727	800047

BT48	807381.9420	517751.0955	1164.311	1164.311	800048
BT49	807303.7260	528117.7810	1153.568	1153.568	800049
BT50	806936.5720	573046.8190	1234.365	1234.365	800050
BT51	801363.7580	522850.0710	1208.019	1208.019	800051
BT52	801955.3150	538764.6340	1127.100	1127.100	800052
BT53	802741.7603	554423.8146	1099.088	1099.088	800053
BT54	801808.4582	562356.3978	1141.710	1141.710	800054
BT55	801720.9600	591473.4100	1382.511	1382.511	800055
BT56	798971.5110	533459.3660	1186.762	1186.762	800056
BT57	796629.7950	549199.1860	1138.047	1138.047	800057
BT58	796639.3810	559835.2210	1121.299	1121.299	800058
BT59	796466.1627	567579.0374	1168.807	1168.807	800059
BT60	796388.1293	580866.0068	1268.972	1268.972	800060
BT61	792938.9660	538758.7000	1171.453	1171.453	800061
BT62	794281.2160	595813.1431	1421.299	1421.299	800062
BT63	791274.7140	554413.8040	1161.950	1161.950	800063
BT64	791124.9124	575453.2247	1219.396	1219.396	800064
BT65	791098.9150	587428.7941	1319.096	1319.096	800065
BT66	788181.9140	547780.0940	1197.867	1197.867	800066
BT67	782397.3610	554388.5140	1208.059	1208.059	800067
BT68	783439.7418	580814.5442	1238.299	1238.299	800068
BT69	783596.2347	606865.5576	1589.576	1589.576	800069
BT70	780631.4055	562365.5189	1185.006	1185.006	800070
BT71	780627.5653	572857.1062	1186.756	1185.576	800071
BT72	781150.4585	601092.3596	1512.754	1512.754	800072
BT73	777097.5326	609961.1072	1587.101	1587.101	800073
BT74	775277.9749	567499.6271	1219.525	1219.525	800074
BT75	775167.5936	589635.3079	1245.937	1245.937	800075
BT76	772138.3930	596529.8450	1294.951	1294.951	800076
BT77	768391.0310	570188.5690	1252.073	1252.073	800077
BT78	768928.8930	591253.6960	1244.932	1244.932	800078
BT79	764757.7540	586059.2590	1242.252	1242.252	800079
BT80	762837.5830	576402.4530	1256.957	1256.957	800080
BT81	762673.1390	601820.2970	1311.899	1311.899	800081
BT82	759412.7570	591213.0240	1263.240	1263.240	800082
BT83	758119.4970	611662.5330	1320.288	1320.288	800083
BT84	756318.9160	583687.4560	1289.261	1289.261	800084
BT85	754137.8890	601720.1440	1285.526	1285.526	800085
BT86	752875.1080	608008.4110	1294.970	1294.970	800086
BT87	749752.7870	591129.5660	1312.199	1312.199	800087
BT88	749795.5650	597657.5860	1302.175	1302.175	800088
BT89	748895.5170	608387.0370	1310.965	1310.965	800089
BT90	745850.3510	584347.5110	1349.183	1349.183	800090
BT91	743627.3650	591315.4840	1343.910	1343.910	800091
BT92	743537.8260	603651.2440	1332.922	1332.922	800092
BT93	738605.0470	607026.3130	1357.038	1357.038	800093
BT94	736444.3190	582819.5220	1411.227	1411.227	800094
BT95	735610.5310	591242.5980	1389.413	1389.413	800095
BT96	735637.4250	601552.1680	1369.153	1369.153	800096
BT97	729845.5170	582074.3610	1450.617	1450.617	800097
BT98	728516.4740	591210.6840	1433.821	1433.821	800098
BT99	728226.5140	602795.9800	1414.565	1414.565	800099

BT100	731798.9170	611442.0910	1387.427	1387.427	800100
BT101	724957.4320	608203.5070	1429.472	1429.472	800101
MRK102	723194.8054	601556.0748	1455.807	1455.807	800102
BT103	717620.1670	608895.8200	1459.582	1459.582	800103
MRK104	713930.4740	600293.5076	1501.276	1501.276	800104
BT105	706571.0050	606762.4460	1513.697	1513.697	800105

AVERAGED BLIND TARGET COORDINATES BY AREA

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES AREA 1
5/25/2005 Revised:05-27-05 RAPII

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 2	856031.6165		536393.0565		949.186		PNL
BT 6	849428.7568		538980.2486		982.536		PNL
BT 6*	849428.8254	849428.7911	538980.2111	538980.2299	982.562	982.549	800006
BT 7	849355.1307		547119.0462		1061.192		ACF
BT 7*	849355.1524	849355.1416	547119.0046	547119.0254	1061.236	1061.214	800007
BT 14	841801.1747		541691.6951		1026.037		PNL
BT 14*	841801.1849	841801.1798	541691.6637	541691.6794	1026.014	1026.025	800014

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 2
5/3/2005 Revised: 06-01-05 RAPII

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT1	855540.7582		528303.4225		898.941		PNL
BT01*	855540.8681	855540.8132	528303.4133	528303.4179	899.019	898.980	800001
BT 3	849602.9803		515274.7825		906.071		PK
BT03*	849603.0749	849603.0276	515274.6845	515274.7335	906.064	906.068	800003
BT 4	849569.3993		523204.1359		905.375		PNL
BT04*	849569.5250	849569.4622	523204.0923	523204.1141	905.291	905.333	800004
BT5	849337.5215		531189.9653		943.538		PNL
BT05*	849337.6124	849337.5670	531189.8707	531189.9180	943.491	943.514	800005
BT9	844188.8944		528397.8654		965.823		PNL
BT09*	844188.8740	844188.8842	528397.7850	528397.8252	965.707	965.765	800009
BT11	840673.6139		507542.9019		1056.740		PNL
BT11*	840673.6636	840673.6388	507542.7960	507542.8490	1056.744	1056.742	800011
BT 12	841136.2781		513744.3809		989.600		PNL
BT12*	841136.3442	841136.3112	513744.2629	513744.3219	989.466	989.533	800012
BT 13	841913.8342		520535.7778		926.756		PNL
BT13*	841913.8653	841913.8498	520535.6788	520535.7283	926.719	926.738	800013

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGET GRID COORDINATES- AREA 3
5/31/2005 DGF

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT2	856031.6293		536392.9421		949.150		FIP
BT 8	849179.4453		561285.9803		1225.589		PNL
BT08*	849179.5622	849179.5038	561286.0860	561286.0332	1225.614	1225.602	800008
BT 10	843743.6981		554558.7975		1151.924		PNL
BT10*	843743.7376	843743.7179	554558.8263	554558.8119	1151.892	1151.908	800010
BT 16	838847.6405		549487.9833		1099.680		ACF
BT16*	838847.6847	838847.6626	549487.9888	549487.9861	1099.722	1099.701	800016
BT 17	838682.6902		562137.7498		1314.086		CPR
BT17*	838682.6749	838682.6826	562137.7071	562137.7284	1314.195	1314.140	800017
BT 21	833603.5902		538989.9743		1016.137		CPR
BT21*	833603.6704	833603.6303	538989.9502	538989.9623	1016.193	1016.165	800021
BT 22	833641.1310		546924.2094		1080.190		CPR
BT22*	833641.1860	833641.1585	546924.1470	546924.1782	1080.147	1080.169	800022
BT 23	833462.1345		554629.4778		1160.945		PNL
BT23*	833462.1810	833462.1578	554629.4300	554629.4539	1160.824	1160.884	800023
BT 24	833395.6444		559909.1528		1220.977		PNL
BT24*	833395.6710	833395.6577	559909.1790	559909.1659	1220.847	1220.912	800024
BT 26	828455.0694		533598.6424		994.474		CPR
BT26*	828455.1880	828455.1287	533598.6000	533598.6212	994.351	994.413	800026
BT 27	825745.7296		544218.5994		1048.606		CPR
BT27*	825745.7420	825745.7358	544218.5390	544218.5692	1048.547	1048.576	800027
BT 28	825605.0714		554582.3130		1136.110		ACF GLO
BT 31	822935.4419		559844.9817		1174.522		PNL
BT 34	820417.1844		538818.2715		1026.478		BCH
BT 36	817882.7156		546861.4415		1059.835		CPR
BT 37	817636.6375		554552.4472		1113.274		PNL

CHECKED. 5-31-05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 4
5/24/2005
Revised: 05-27-05 RAPII DGF
Revised: 6/1/2005 DGF

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 35	817969.5608		514685.2475		1071.248		CPR
BT 35*	817969.6267	817969.5938	514685.1238	514685.1857	1071.403	1071.326	800035
BT 39	812681.1687		512467.7918		1119.349		GLO
BT 39*	812681.2198	812681.1943	512467.7150	512467.7534	1119.311	1119.330	800039
BT 40	812583.9838		522689.2657		1112.785		CPR
BT 40*	812584.0540	812584.0189	522689.2020	522689.2339	1112.781	1112.783	800040
BT 42	809390.2249		533540.2702		1118.421		CPR
BT 48	807381.9860		517751.1424		1164.308		CPR
BT 48*	807381.9420	807381.9640	517751.0955	517751.1190	1164.311	1164.309	800048
BT 49	807303.6394		528117.8013		1153.502		CPR
BT 51	801363.6982		522850.1329		1207.980		CPR
BT 52	801955.3251		538764.6294		1126.972		CPR
BT 56	798971.5196		533459.3238		1186.670		CPR
BT 61	792938.9985		538759.0392		1171.319		CPR

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6-1-05
PK

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
TARGETS GRID COORDINATES- AREA 5
005 Revised: 06-01-05 RAPII

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 28	825605.0068		554582.3080		1136.258		PNL
BT 31	822935.4391		559844.9368		1174.683		PNL
BT 34	820417.1836		538818.2434		1026.508		PNL
BT 36	817882.6796		546861.4465		1060.033		PNL
BT 37	817636.5837		554552.4205		1113.453		PNL
BT 41	812664.8144		541431.5604		1062.240		PNL
BT41*	812664.8499	812664.8322	541431.5983	541431.5794	1062.186	1062.213	800041
BT 42	809390.2664		533540.2215		1118.581		PNL
BT 43	809800.7652		549297.3908		1073.597		PNL
BT43*	809800.7941	809800.7797	549297.4347	549297.4128	1073.572	1073.585	800043
BT 44	809720.6008		557127.9738		1117.787		FIP
BT 44*	809720.5810	809720.5909	557127.9426	557127.9582	1117.765	1117.776	800044
BT 45	809746.8557		565030.1922		1178.001		PNL
BT 49	807303.6702		528117.8023		1153.604		PNL
CSBT51	801363.6910		522850.0970		1208.042		PNL
BT 52	801955.3352		538764.6460		1127.110		PNL
BT 53	802741.7483		554423.8106		1099.158		FIP
BT 53*	802741.7603	802741.7543	554423.8146	554423.8126	1099.088	1099.123	800053
BT 54	801808.4620		562356.4426		1141.718		FIP
BT 54*	801808.4582	801808.4601	562356.3978	562356.4202	1141.710	1141.714	800054
BT 56	798971.5550		533459.3694		1186.727		PNL
BT 57	796629.7900		549199.2301		1138.121		FIP
BT57*	796629.7950	796629.7925	549199.1860	549199.2081	1138.047	1138.0840	800057
BT 58	796639.4123		559835.1646		1121.430		FIP
BT 58*	796639.3810	796639.3967	559835.2210	559835.1928	1121.299	1121.365	800058
BT 59	796466.1785		567579.0491		1168.779		FIP
BT 59*	796466.1627	796466.1706	567579.0374	567579.0433	1168.807	1168.793	800059
BT 61	792939.0403		538759.0424		1171.416		PNL
BT 63	791274.6918		554413.8778		1161.993		FIP
BT 63*	791274.7140	791274.7029	554413.8040	554413.8409	1161.950	1161.971	800063
BT 66	788181.9569		547780.1571		1197.915		PNL
BT 67	782397.3003		554388.5921		1207.967		PNL
BT 67*	782397.3610	782397.3307	554388.5140	554388.5531	1208.059	1208.013	800067

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 6
5/25/2005 Revised: 05-27-05 RAPII

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 29	825536.4968		567773.0363		1279.189		ACF
BT 29*	825536.4050	825536.4509	567773.2050	567773.1207	1279.175	1279.182	800029
BT 31	822935.4661		559844.9662		1174.520		BCF
BT 32	822865.3774		575681.5043		1390.064		BCF
BT 32*	822865.2880	822865.3327	575681.6900	575681.5972	1390.115	1390.090	800032
BT 37	817636.6930		554552.3953		1113.254		FIP
BT 38	817509.7614		570417.9834		1262.924		FIP
BT 38*	817509.6500	817509.7057	570418.0900	570418.0367	1262.841	1262.882	800038
BT 45	809746.9473		565030.2762		1178.019		PNL
BT 46	809622.6160		580947.7932		1326.914		PNL
BT 46*	809622.6840	809622.6500	580947.7290	580947.7611	1327.067	1326.990	800046
BT 50	806936.6187		573046.8626		1234.421		PNL
BT 50*	806936.5720	806936.5954	573046.8190	573046.8408	1234.365	1234.393	800050

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES - AREA 7
5/28/2005
REVISED: 05-27-05 RAPII DGF
REVISED: 6/1/05 DGF

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 47	809518.0059		588698.6492		1459.459		PNL
BT 55	801720.9128		591473.4288		1382.294		PNL
BT 60	796388.1074		580866.0793		1269.091		FIP
BT60*	796388.1293	796388.1184	580866.0068	580866.0431	1268.972	1269.0314	800060
BT 62	794281.1992		595813.1863		1421.111		PNL
BT62*	794281.2160	794281.2076	595813.1431	595813.1647	1421.299	1421.2050	FIP
BT 65	791098.8395		587428.8439		1319.059		PNL
BT 69	783596.3100		606865.5359		1589.091		PNL
BT 72	781150.4660		601092.4010		1512.62		PNL
BT 73	777097.5941		609961.1083		1586.904		PNL
BT73*	777097.5326	777097.5634	609961.1072	609961.1078	1587.101	1587.0027	80073

CHECKED
6-1-05
PK

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 8
5/25/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 65	791098.8786		587428.8061		1319.074		PNL
BT 68	783439.6767		580814.5758		1238.429		PNL
BT 68*	783439.7418	783439.7093	580814.5442	580814.5600	1238.299	1238.364	800068
BT 71	780627.5614		572857.1165		1186.925		PNL
BT 71*	780627.5653	780627.5634	572857.1062	572857.1114	1186.756	1186.841	800071
BT 72	781150.4307		601092.3894		1512.564		PNL
CSBT74	775277.9120		567499.7020		1219.350		PNL
BT 75	775167.5575		589635.3484		1246.052		PNL
BT 75*	775167.5936	775167.5756	589635.3079	589635.3282	1245.937	1245.995	800075
BT 76	772138.4259		596529.8499		1294.888		PNL
BT 76*	772138.3930	772138.4095	596529.8450	596529.8475	1294.951	1294.919	800076
BT 78	768928.9088		591253.6553		1245.025		PNL
BT 78*	768928.8930	768928.9009	591253.6960	591253.6757	1244.932	1244.979	800078
BT 79	764757.8119		586059.2147		1242.194		PNL
BT 79*	764757.7540	764757.7830	586059.2590	586059.2369	1242.252	1242.223	800079
BT 80	762837.5432		576402.4489		1256.754		PNL
BT 82	759412.8059		591213.0059		1263.241		PNL
BT 84	756318.9758		583687.4628		1289.180		PNL
BT 87	749752.7954		591129.5631		1312.235		PNL

CHECKED:
DGF 6/1/05

MS

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 9
5/25/2005

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 81	762673.1280		601820.3923		1311.910		FIP
✓BT 81*	762673.1390	762673.1335	601820.2970	601820.3447	1311.899	1311.904	800081
BT 83	758119.4831		611662.5353		1320.364		FIP
✓BT 83*	758119.4970	758119.4901	611662.5330	611662.5342	1320.288	1320.326	800083
BT 86	752875.1028		608008.4416		1294.979		CPPK
✓BT 86*	752875.1080	752875.1054	608008.4110	608008.4263	1294.970	1294.975	800086
BT 89	748895.5489		608387.0255		1311.075		FIP
✓BT 89*	748895.5170	748895.5330	608387.0370	608387.0313	1310.965	1311.020	800089

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5-31-05
PK

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 10
5/3/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 82	759412.8397		591213.0218		1263.259		FPK
BT 84	756319.0002		583687.5222		1289.153		CPR
BT 85	754137.9225		601720.1039		1285.639		CPR
BT85*	754137.8890	754137.9058	601720.1440	601720.1240	1285.526	1285.583	800085
BT 87	749752.7824		591129.5835		1312.268		CPR
BT 88	749795.6360		597657.5714		1302.306		FPK
BT88*	749795.5650	749795.6005	597657.5860	597657.5787	1302.175	1302.240	800088
BT 90	745850.4053		584347.5034		1349.176		FPK
BT90*	745850.3510	745850.3782	584347.5110	584347.5072	1349.183	1349.179	800090
BT 91	743627.3659		591315.5423		1344.072		CPR
BT91*	743627.3650	743627.3655	591315.4840	591315.5132	1343.910	1343.991	800091
BT 92	743537.8123		603651.3765		1333.057		CPR
BT92*	743537.8260	743537.8192	603651.2440	603651.3103	1332.922	1332.989	800092
BT 93	738605.1075		607026.3680		1357.192		CPR
BT93*	738605.0470	738605.0773	607026.3130	607026.3405	1357.038	1357.115	800093
BT 94	736444.2231		582819.5115		1411.206		CPR
BT94*	736444.3190	736444.2711	582819.5220	582819.5168	1411.227	1411.217	800094
BT 95	735610.5576		591242.6445		1389.538		CPR
BT95*	735610.5310	735610.5443	591242.5980	591242.6213	1389.413	1389.475	800095
BT 96	735637.4788		601552.2325		1369.299		CPR
BT96*	735637.4250	735637.4519	601552.1680	601552.2003	1369.153	1369.226	800096
BT 97	729845.5031		582074.3188		1450.836		CPR
BT 98	728516.6236		591210.6812		1433.861		CPR
BT98*	728516.4740	728516.5488	591210.6840	591210.6826	1433.821	1433.841	800098
BT 99	728226.6233		602796.0118		1414.653		CPR
BT99*	728226.5140	728226.5687	602795.9800	602795.9959	1414.565	1414.609	800099
BT 102	723194.7848		601556.1231		1455.601		CPR
BT102*	723194.8054	723194.7951	601556.0748	601556.0990	1455.807	1455.704	800102

CHECKED:
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RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 11
5/24/2005 REVISED 6/01/05 PHIL K.

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 100	731798.8693		611442.0665		1387.592		CPR
BT100*	731798.9170	731798.8932	611442.0910	611442.0788	1387.4270	1387.5096	800100
BT 101	724957.4530		608203.4655		1429.415		CPR
BT101*	724957.4320	724957.4425	608203.5070	608203.4863	1429.4720	1429.4437	800101
BT103	717620.1936		608895.7722		1459.495		ACF
BT103*	717620.1670	717620.1803	608895.8200	608895.7961	1459.5820	1459.5383	800103
BT 104	713930.5407		600293.4007		1500.974		CPR
BT 105	706571.0545		606762.3610		1513.552		CPR
BT105*	706571.0050	706571.0298	606762.4460	606762.4035	1513.6970	1513.6243	800105

CHECKED:
DGF 6/1/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 12
5/24/2005
Revised: 05-31-05 RAPII DGF
Revised: 6/1/05 DGF

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 64	791124.9241		575453.2496		1219.458		FIP
BT 64*	791124.9124	791124.9183	575453.2247	575453.2372	1219.396	1219.427	800064
BT 66	788181.9467		547780.1506		1197.852		FIP
BT 67	782397.3086		554388.6434		1207.922		FIP
BT 67*	782397.3610	782397.3348	554388.5140	554388.5787	1208.059	1207.990	800067
BT 70	780631.3880		562365.5592		1184.870		FIP
BT 70*	780631.4055	780631.3968	562365.5189	562365.5391	1185.006	1184.938	800070
BT 74	775277.9574		567499.6955		1219.280		FIP
BT 77	768391.0745		570188.5457		1251.879		FIP
BT 77*	768391.0310	768391.0528	570188.5690	570188.5574	1252.073	1251.976	800077

CHECKED
6-1-05
PK

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGETS GRID COORDINATES- AREA 13
5/24/2005
Revised: 6/1/05 DGF DGF

POINT	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT 9	844188.9361		528397.8987		965.662		CPK
BT 9*	844188.8740	844188.9051	528397.7850	528397.8419	965.707	965.684	800009
BT 12	841136.3169		513744.3019		989.538		CPR
BT 12*	841136.3442	841136.3306	513744.2629	513744.2824	989.466	989.502	800012
BT 15	838742.3950		533787.0568		1008.273		CPR
BT 15*	838742.4086	838742.4018	533787.0258	533787.0413	1008.282	1008.278	800015
BT 18	836293.2565		525741.8022		956.206		BCF
BT 18*	836293.2190	836293.2378	525741.8180	525741.8101	956.173	956.190	800018
BT 19	833808.6475		509905.4919		1070.509		CPR
BT 19*	833808.6749	833808.6612	509905.4189	509905.4554	1070.582	1070.546	800019
BT 20	833725.5255		517871.2558		1024.234		BCF
BT 20*	833725.5799	833725.5527	517871.2542	517871.2550	1024.162	1024.198	800020
BT 25	828407.6443		525809.4640		994.850		CPR
BT 25*	828407.6370	828407.6407	525809.4410	525809.4525	994.752	994.801	800025
BT 30	823199.8900		517808.9436		1031.905		GLO
BT 30*	823199.8765	823199.8833	517808.9151	517808.9294	1031.892	1031.898	800030
BT 33	820484.8818		528244.1008		1045.767		CPR
BT 33*	820484.9710	820484.9264	528244.0331	528244.0670	1045.681	1045.724	800033

CHECKED
6-1-05
PK

BLIND TARGETS
ALL POINTS - ALL AREAS

CHECKED:
DGF 6/2/05

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGET GRID COORDINATES- ALL AREAS
6/1/2005

POINT	AREA	NORTH	AVG N	EAST	AVG E	ELEV	AVG EL	DESC
BT1	2	855540.7582		528303.4225		898.941		PNL
BT01*	PEC	855540.8681	855540.8132	528303.4133	528303.4179	899.019	898.980	800001
BT 2	1	856031.6165		536393.0565		949.186		PNL
BT2	3	856031.6293	856031.6229	536392.9421	536392.9993	949.150	949.168	FIP
BT2*	PEC	856031.4228		536392.4318		937.562		800002
BT 3	2	849602.9803		515274.7825		906.071		PK
BT03*	PEC	849603.0749	849603.0276	515274.6845	515274.7335	906.064	906.068	800003
BT 4	2	849569.3993		523204.1359		905.375		PNL
BT04*	PEC	849569.5250	849569.4622	523204.0923	523204.1141	905.291	905.333	800004
BT5	2	849337.5215		531189.9653		943.538		PNL
BT05*	PEC	849337.6124	849337.5670	531189.8707	531189.9180	943.491	943.514	800005
BT 6	1	849428.7568		538980.2486		982.536		PNL
BT 6*	PEC	849428.8254	849428.7911	538980.2111	538980.2299	982.562	982.549	800006
BT 7	1	849355.1307		547119.0462		1061.192		ACF
BT 7*	PEC	849355.1524	849355.1416	547119.0046	547119.0254	1061.236	1061.214	800007
BT 8	3	849179.4453		561285.9803		1225.589		PNL
BT08*	PEC	849179.5622	849179.5038	561286.0860	561286.0332	1225.614	1225.602	800008
BT9	2	844188.8944		528397.8654		965.823		PNL
BT 9	13	844188.9361		528397.8987		965.662		CPK
BT 9*	PEC	844188.8740	844188.9015	528397.7850	528397.8497	965.707	965.730	800009
BT 10	3	843743.6981		554558.7975		1151.924		PNL
BT10*	PEC	843743.7376	843743.7179	554558.8263	554558.8119	1151.892	1151.908	800010
BT11	2	840673.6139		507542.9019		1056.740		PNL
BT11*	PEC	840673.6636	840673.6388	507542.7960	507542.8490	1056.744	1056.742	800011
BT 12	2	841136.2781		513744.3809		989.600		PNL
BT 12	13	841136.3169		513744.3019		989.538		CPR
BT 12*	PEC	841136.3442	841136.3131	513744.2629	513744.3152	989.466	989.535	800012
BT 13	2	841913.8342		520535.7778		926.756		PNL
BT13*	PEC	841913.8653	841913.8498	520535.6788	520535.7283	926.719	926.738	800013
BT 14	1	841801.1747		541691.6951		1026.037		PNL
BT 14*	PEC	841801.1849	841801.1798	541691.6637	541691.6794	1026.014	1026.025	800014
BT 15	13	838742.3950		533787.0568		1008.273		CPR
BT 15*	PEC	838742.4086	838742.4018	533787.0258	533787.0413	1008.282	1008.278	800015

BT 16	HZ STAT	838847.6787		549488.0159		1099.687		ACF
BT 16	3	838847.6405		549487.9833		1099.680		ACF
BT16*	PEC	838847.6847	838847.6787	549487.9888	549488.0159	1099.722	1099.687	800016
BT 17	3	838682.6902		562137.7498		1314.086		CPR
BT17*	PEC	838682.6749	838682.6826	562137.7071	562137.7284	1314.195	1314.140	800017
BT 18	13	836293.2565		525741.8022		956.206		BCF
BT 18*	PEC	836293.2190	836293.2378	525741.8180	525741.8101	956.173	956.190	800018
BT 19	13	833808.6475		509905.4919		1070.509		CPR
BT 19*	PEC	833808.6749	833808.6612	509905.4189	509905.4554	1070.582	1070.546	800019
BT 20	13	833725.5255		517871.2558		1024.234		BCF
BT 20*	PEC	833725.5799	833725.5527	517871.2542	517871.2550	1024.162	1024.198	800020
BT 21	3	833603.5902		538989.9743		1016.137		CPR
BT21*	PEC	833603.6704	833603.6303	538989.9502	538989.9623	1016.193	1016.165	800021
BT 22	3	833641.1310		546924.2094		1080.190		CPR
BT22*	PEC	833641.1860	833641.1585	546924.1470	546924.1782	1080.147	1080.169	800022
BT 23	3	833462.1345		554629.4778		1160.945		PNL
BT23*	PEC	833462.1810	833462.1578	554629.4300	554629.4539	1160.824	1160.884	800023
BT 24	3	833395.6444		559909.1528		1220.977		PNL
BT24*	PEC	833395.6710	833395.6577	559909.1790	559909.1659	1220.847	1220.912	800024
BT 25	13	828407.6443		525809.4640		994.850		CPR
BT 25*	PEC	828407.6370	828407.6407	525809.4410	525809.4525	994.752	994.801	800025
BT 26	3	828455.0694		533598.6424		994.474		CPR
BT26*	PEC	828455.1880	828455.1287	533598.6000	533598.6212	994.351	994.413	800026
BT 27	3	825745.7296		544218.5994		1048.606		CPR
BT27*	PEC	825745.7420	825745.7358	544218.5390	544218.5692	1048.547	1048.576	800027
BT 28	3	825605.0714		554582.3130		1136.110		ACF GLO
BT 28	5	825605.0068	825605.0391	554582.3080	554582.3105	1136.258	1136.184	PNL
BT28*	PEC	825605.0700		554582.3080		1135.989		800028
BT 29	6	825536.4968		567773.0363		1279.189		ACF
BT 29*	PEC	825536.4050	825536.4509	567773.2050	567773.1207	1279.175	1279.182	800029
BT 30	13	823199.8900		517808.9436		1031.905		GLO
BT 30*	PEC	823199.8765	823199.8833	517808.9151	517808.9294	1031.892	1031.898	800030
BT 31	3	822935.4419		559844.9817		1174.522		PNL
BT 31	5	822935.4391		559844.9368		1174.683		PNL
BT 31	6	822935.4661	822935.4490	559844.9662	559844.9616	1174.520	1174.575	BCF
BT31*	PEC	822935.4240		559845.0070		1174.444		800031

BT 32	6	822865.3774		575681.5043		1390.064		BCF
BT 32*	PEC	822865.2880	822865.3327	575681.6900	575681.5972	1390.115	1390.090	800032
BT 33	13	820484.8818		528244.1008		1045.767		CPR
BT 33*	PEC	820484.9710	820484.9264	528244.0331	528244.0670	1045.681	1045.724	800033
BT 34	3	820417.1844		538818.2715		1026.478		BCH
BT 34	5	820417.1836		538818.2434		1026.508		PNL
BT34*	PEC	820417.2500	820417.2060	538818.2350	538818.2500	1026.518	1026.502	800034
BT 35	4	817969.5608		514685.2475		1071.248		CPR
BT 35*	PEC	817969.6267	817969.5938	514685.1238	514685.1857	1071.403	1071.326	800035
BT 36	3	817882.7156		546861.4415		1059.835		CPR
BT 36	5	817882.6796		546861.4465		1060.033		PNL
BT36*	PEC	817882.6690	817882.6881	546861.3950	546861.4277	1060.015	1059.961	800036
BT 37	3	817636.6375		554552.4472		1113.274		PNL
BT 37	5	817636.5837		554552.4205		1113.453		PNL
BT 37	6	817636.6930		554552.3953		1113.254		FIP
BT37*	PEC	817636.6390	817636.6383	554552.4950	554552.4395	1113.278	1113.315	800037
BT 38	6	817509.7614		570417.9834		1262.924		FIP
BT 38*	PEC	817509.6500	817509.7057	570418.0900	570418.0367	1262.841	1262.882	800038
BT 39	4	812681.1687		512467.7918		1119.349		GLO
BT 39*	PEC	812681.2198	812681.1943	512467.7150	512467.7534	1119.311	1119.330	800039
BT 40	4	812583.9838		522689.2657		1112.785		CPR
BT 40*	PEC	812584.0540	812584.0189	522689.2020	522689.2339	1112.781	1112.783	800040
BT 41	5	812664.8144		541431.5604		1062.240		PNL
BT41*	PEC	812664.8499	812664.8322	541431.5983	541431.5794	1062.186	1062.213	800041
BT 42	4	809390.2249		533540.2702		1118.421		CPR
BT 42	5	809390.2664		533540.2215		1118.581		PNL
BT42*	PEC	809390.3160	809390.2691	533540.2760	533540.2559	1118.455	1118.486	800042
BT 43	5	809800.7652		549297.3908		1073.597		PNL
BT43*	PEC	809800.7941	809800.7797	549297.4347	549297.4128	1073.572	1073.585	800043
BT 44	5	809720.6008		557127.9738		1117.787		FIP
BT 44*	PEC	809720.5810	809720.5909	557127.9426	557127.9582	1117.765	1117.776	800044
BT 45	5	809746.8557		565030.1922		1178.001		PNL
BT 45	6	809746.9473		565030.2762		1178.019		PNL
BT45*	PEC	809746.8955	809746.8995	565030.3081	565030.2588	1178.043	1178.021	800045
BT 46	6	809622.6160		580947.7932		1326.914		PNL
BT 46*	PEC	809622.6840	809622.6500	580947.7290	580947.7611	1327.067	1326.990	800046

BT 47	7	809518.0059		588698.6492		1459.459		PNL
BT47*	PEC	809518.0510		588698.6840		1459.727		800047
BT 48	4	807381.9860		517751.1424		1164.308		CPR
BT 48*	PEC	807381.9420	807381.9640	517751.0955	517751.1190	1164.311	1164.309	800048
BT 49	4	807303.6394		528117.8013		1153.502		CPR
BT 49	5	807303.6702		528117.8023		1153.604		PNL
BT49*	PEC	807303.7260	807303.6785	528117.7810	528117.7949	1153.568	1153.558	800049
BT 50	6	806936.6187		573046.8626		1234.421		PNL
BT 50*	PEC	806936.5720	806936.5954	573046.8190	573046.8408	1234.365	1234.393	800050
BT 51	4	801363.6982		522850.1329		1207.980		CPR
CSBT51	5	801363.6910		522850.0970		1208.042		PNL
BT51*	PEC	801363.7580	801363.7157	522850.0710	522850.1003	1208.019	1208.014	800051
BT 52	4	801955.3251		538764.6294		1126.972		CPR
BT 52	5	801955.3352		538764.6460		1127.110		PNL
BT52*	PEC	801955.3150	801955.3251	538764.6340	538764.6365	1127.100	1127.061	800052
BT 53	5	802741.7483		554423.8106		1099.158		FIP
BT 53*	PEC	802741.7603	802741.7543	554423.8146	554423.8126	1099.088	1099.123	800053
BT 54	5	801808.4620		562356.4426		1141.718		FIP
BT 54*	PEC	801808.4582	801808.4601	562356.3978	562356.4202	1141.710	1141.714	800054
BT 55	7	801720.9128		591473.4288		1382.294		PNL
BT55*	PEC	801720.9600		591473.4100		1382.511		800055
BT 56	4	798971.5196		533459.3238		1186.670		CPR
BT 56	5	798971.5550		533459.3694		1186.727		PNL
BT56*	PEC	798971.5110	798971.5285	533459.3660	533459.3531	1186.762	1186.720	800056
BT 57	5	796629.7900		549199.2301		1138.121		FIP
BT57*	PEC	796629.7950	796629.7925	549199.1860	549199.2081	1138.047	1138.084	800057
BT 58	5	796639.4123		559835.1646		1121.430		FIP
BT 58*	PEC	796639.3810	796639.3967	559835.2210	559835.1928	1121.299	1121.365	800058
BT 59	5	796466.1785		567579.0491		1168.779		FIP
BT 59*	PEC	796466.1627	796466.1706	567579.0374	567579.0433	1168.807	1168.793	800059
BT 60	7	796388.1074		580866.0793		1269.091		FIP
BT60*	PEC	796388.1293	796388.1184	580866.0068	580866.0431	1268.972	1269.031	800060
BT 61	4	792938.9985		538759.0392		1171.319		CPR
BT 61	5	792939.0403	792939.0194	538759.0424	538759.0408	1171.416	1171.368	PNL
BT61*	PEC	792938.9660		538758.7000		1171.453		800061

BT 62	7	794281.1992		595813.1863		1421.111		PNL
BT62*	PEC	794281.2160	794281.2076	595813.1431	595813.1647	1421.299	1421.205	FIP
BT 63	5	791274.6918		554413.8778		1161.993		FIP
BT 63*	PEC	791274.7140	791274.7029	554413.8040	554413.8409	1161.950	1161.971	800063
BT 64	12	791124.9241		575453.2496		1219.458		FIP
BT 64*	PEC	791124.9124	791124.9183	575453.2247	575453.2372	1219.396	1219.427	800064
BT 65	7	791098.8395		587428.8439		1319.059		PNL
BT 65	8	791098.8786		587428.8061		1319.074		PNL
BT65*	PEC	791098.9150	791098.8777	587428.7941	587428.8147	1319.096	1319.076	800065
BT 66	5	788181.9569		547780.1571		1197.915		PNL
BT 66	12	788181.9467		547780.1506		1197.852		FIP
BT66*	PEC	788181.9140	788181.9392	547780.0940	547780.1339	1197.867	1197.878	800066
BT 67	5	782397.3003		554388.5921		1207.967		PNL
BT 67	12	782397.3086		554388.6434		1207.922		FIP
BT 67*	PEC	782397.3610	782397.3233	554388.5140	554388.5832	1208.059	1207.983	800067
BT 68	8	783439.6767		580814.5758		1238.429		PNL
BT 68*	PEC	783439.7418	783439.7093	580814.5442	580814.5600	1238.299	1238.364	800068
BT 69	7	783596.3100		606865.5359		1589.091		PNL
BT69*	PEC	783596.2347		606865.5576		1589.576		800069
BT 70	12	780631.3880		562365.5592		1184.870		FIP
BT 70*	PEC	780631.4055	780631.3968	562365.5189	562365.5391	1185.006	1184.938	800070
BT 71	8	780627.5614		572857.1165		1186.925		PNL
BT 71*	PEC	780627.5653	780627.5634	572857.1062	572857.1114	1186.756	1186.841	800071
BT 72	7	781150.4660		601092.4010		1512.620		PNL
BT 72	8	781150.4307		601092.3894		1512.564		PNL
BT72*	PEC	781150.4585	781150.4517	601092.3596	601092.3833	1512.754	1512.646	800072
BT 73	7	777097.5941		609961.1083		1586.904		PNL
BT73*	PEC	777097.5326	777097.5634	609961.1072	609961.1078	1587.101	1587.003	80073
CSBT74	8	775277.9120		567499.7020		1219.350		PNL
BT 74	12	775277.9574	775277.9347	567499.6955	567499.6988	1219.280	1219.315	FIP
BT74*	PEC	775277.9749		567499.6271		1219.525		800074
BT 75	8	775167.5575		589635.3484		1246.052		PNL
BT 75*	PEC	775167.5936	775167.5756	589635.3079	589635.3282	1245.937	1245.995	800075
BT 76	8	772138.4259		596529.8499		1294.888		PNL
BT 76*	PEC	772138.3930	772138.4095	596529.8450	596529.8475	1294.951	1294.919	800076
BT 77	12	768391.0745		570188.5457		1251.879		FIP
BT 77*	PEC	768391.0310	768391.0528	570188.5690	570188.5574	1252.073	1251.976	800077

BT 78	8	768928.9088		591253.6553		1245.025		PNL
BT 78*	PEC	768928.8930	768928.9009	591253.6960	591253.6757	1244.932	1244.979	800078
BT 79	8	764757.8119		586059.2147		1242.194		PNL
BT 79*	PEC	764757.7540	764757.7830	586059.2590	586059.2369	1242.252	1242.223	800079
BT 80	8	762837.5432		576402.4489		1256.754		PNL
BT80*	PEC	762837.5830	762837.5631	576402.4530	576402.4510	1256.957	1256.856	800080
BT 81	9	762673.1280		601820.3923		1311.910		FIP
BT 81*	PEC	762673.1390	762673.1335	601820.2970	601820.3447	1311.899	1311.904	800081
BT 82	8	759412.8059		591213.0059		1263.241		PNL
BT 82	10	759412.8397		591213.0218		1263.259		FPK
BT82*	PEC	759412.7570	759412.8009	591213.0240	591213.0172	1263.240	1263.247	800082
BT 83	9	758119.4831		611662.5353		1320.364		FIP
BT 83*	PEC	758119.4970	758119.4901	611662.5330	611662.5342	1320.288	1320.326	800083
BT 84	8	756318.9758		583687.4628		1289.180		PNL
BT 84	10	756319.0002		583687.5222		1289.153		CPR
BT84*	PEC	756318.9160	756318.9640	583687.4560	583687.4803	1289.261	1289.198	800084
BT 85	10	754137.9225		601720.1039		1285.639		CPR
BT85*	PEC	754137.8890	754137.9058	601720.1440	601720.1240	1285.526	1285.583	800085
BT 86	9	752875.1028		608008.4416		1294.979		CPPK
BT 86*	PEC	752875.1080	752875.1054	608008.4110	608008.4263	1294.970	1294.975	800086
BT 87	8	749752.7954		591129.5631		1312.235		PNL
BT 87	10	749752.7824		591129.5835		1312.268		CPR
BT87*	PEC	749752.7870	749752.7883	591129.5660	591129.5709	1312.199	1312.234	800087
BT 88	10	749795.6360		597657.5714		1302.306		FPK
BT88*	PEC	749795.5650	749795.6005	597657.5860	597657.5787	1302.175	1302.240	800088
BT 89	9	748895.5489		608387.0255		1311.075		FIP
BT 89*	PEC	748895.5170	748895.5330	608387.0370	608387.0313	1310.965	1311.020	800089
BT 90	10	745850.4053		584347.5034		1349.176		FPK
BT90*	PEC	745850.3510	745850.3782	584347.5110	584347.5072	1349.183	1349.179	800090
BT 91	10	743627.3659		591315.5423		1344.072		CPR
BT91*	PEC	743627.3650	743627.3655	591315.4840	591315.5132	1343.910	1343.991	800091
BT 92	10	743537.8123		603651.3765		1333.057		CPR
BT92*	PEC	743537.8260	743537.8192	603651.2440	603651.3103	1332.922	1332.989	800092
BT 93	10	738605.1075		607026.3680		1357.192		CPR
BT93*	PEC	738605.0470	738605.0773	607026.3130	607026.3405	1357.038	1357.115	800093

BT 94	10	736444.2231		582819.5115		1411.206		CPR
BT94*	PEC	736444.3190	736444.2711	582819.5220	582819.5168	1411.227	1411.217	800094
BT 95	10	735610.5576		591242.6445		1389.538		CPR
BT95*	PEC	735610.5310	735610.5443	591242.5980	591242.6213	1389.413	1389.475	800095
BT 96	10	735637.4788		601552.2325		1369.299		CPR
BT96*	PEC	735637.4250	735637.4519	601552.1680	601552.2003	1369.153	1369.226	800096
BT 97	10	729845.5031		582074.3188		1450.836		CPR
BT97*	PEC	729845.5170		582074.3610		1450.617		800097
BT 98	10	728516.6236		591210.6812		1433.861		CPR
BT98*	PEC	728516.4740	728516.5488	591210.6840	591210.6826	1433.821	1433.841	800098
BT 99	10	728226.6233		602796.0118		1414.653		CPR
BT99*	PEC	728226.5140	728226.5687	602795.9800	602795.9959	1414.565	1414.609	800099
BT 100	11	731798.8693		611442.0665		1387.592		CPR
BT100*	PEC	731798.9170	731798.8932	611442.0910	611442.0788	1387.427	1387.510	800100
BT 101	11	724957.4530		608203.4655		1429.415		CPR
BT101*	PEC	724957.4320	724957.4425	608203.5070	608203.4863	1429.472	1429.444	800101
BT 102	10	723194.7848		601556.1231		1455.601		CPR
BT102*	PEC	723194.8054	723194.7951	601556.0748	601556.0990	1455.807	1455.704	800102
BT 103	HZ STAT	717620.1849		608895.7867		1459.415		ACF
BT103	11	717620.1936		608895.7722		1459.495		ACF
BT103*	PEC	717620.1670	717620.1849	608895.8200	608895.7867	1459.582	1459.415	800103
BT 104	11	713930.5407		600293.4007		1500.974		CPR
BT104*	PEC	713930.4740		600293.5076		1501.276		800104
BT 105	11	706571.0545		606762.3610		1513.552		CPR
BT105*	PEC	706571.0050	706571.0298	606762.4460	606762.4035	1513.697	1513.624	800105

FINAL BLIND TARGET MONUMENT COORDINATES

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGET GRID COORDINATES- ALL AREAS
6/2/2005

POINT	GRID N	GRID E	MON EL	DESC
BT 1	855540.8132	528303.4179	898.980	PNL
BT 2	856031.6229	536392.9993	949.168	FIP
BT 3	849603.0276	515274.7335	906.068	PK
BT 4	849569.4622	523204.1141	905.333	PNL
BT 5	849337.5670	531189.9180	943.514	PNL
BT 6	849428.7911	538980.2299	982.549	PNL
BT 7	849355.1416	547119.0254	1061.214	ACF
BT 8	849179.5038	561286.0332	1225.602	PNL
BT 9	844188.9015	528397.8497	965.730	PNL
BT 10	843743.7179	554558.8119	1151.908	PNL
BT 11	840673.6388	507542.8490	1056.742	PNL
BT 12	841136.3131	513744.3152	989.535	PNL
BT 13	841913.8498	520535.7283	926.738	PNL
BT 14	841801.1798	541691.6794	1026.025	PNL
BT 15	838742.4018	533787.0413	1008.278	CPR
BT 16	838847.6787	549488.0159	1099.687	ACF
BT 17	838682.6826	562137.7284	1314.140	CPR
BT 18	836293.2378	525741.8101	956.190	BCF
BT 19	833808.6612	509905.4554	1070.546	CPR
BT 20	833725.5527	517871.2550	1024.198	BCF
BT 21	833603.6303	538989.9623	1016.165	CPR
BT 22	833641.1585	546924.1782	1080.169	CPR
BT 23	833462.1578	554629.4539	1160.884	PNL
BT 24	833395.6577	559909.1659	1220.912	PNL
BT 25	828407.6407	525809.4525	994.801	CPR
BT 26	828455.1287	533598.6212	994.413	CPR
BT 27	825745.7358	544218.5692	1048.576	CPR
BT 28	825605.0391	554582.3105	1136.184	PNL
BT 29	825536.4509	567773.1207	1279.182	ACF
BT 30	823199.8833	517808.9294	1031.898	GLO
BT 31	822935.4490	559844.9616	1174.575	BCF
BT 32	822865.3327	575681.5972	1390.090	BCF
BT 33	820484.9264	528244.0670	1045.724	CPR
BT 34	820417.2060	538818.2500	1026.502	PNL
BT 35	817969.5938	514685.1857	1071.326	CPR
BT 36	817882.6881	546861.4277	1059.961	PNL
BT 37	817636.6383	554552.4395	1113.315	PNL
BT 38	817509.7057	570418.0367	1262.882	FIP
BT 39	812681.1943	512467.7534	1119.330	GLO
BT 40	812584.0189	522689.2339	1112.783	CPR
BT 41	812664.8322	541431.5794	1062.213	PNL
BT 42	809390.2691	533540.2559	1118.486	PNL
BT 43	809800.7797	549297.4128	1073.585	PNL
BT 44	809720.5909	557127.9582	1117.776	FIP
BT 45	809746.8995	565030.2588	1178.021	PNL
BT 46	809622.6500	580947.7611	1326.990	PNL
BT 47	809518.0059	588698.6492	1459.459	PNL

CHECKED:
DGF 6/2/05

BT 48	807381.9640	517751.1190	1164.309	CPR
BT 49	807303.6785	528117.7949	1153.558	PNL
BT 50	806936.5954	573046.8408	1234.393	PNL
BT 51	801363.7157	522850.1003	1208.014	PNL
BT 52	801955.3251	538764.6365	1127.061	PNL
BT 53	802741.7543	554423.8126	1099.123	FIP
BT 54	801808.4601	562356.4202	1141.714	FIP
BT 55	801720.9128	591473.4288	1382.294	PNL
BT 56	798971.5285	533459.3531	1186.720	PNL
BT 57	796629.7925	549199.2081	1138.084	PNL
BT 58	796639.3967	559835.1928	1121.365	PNL
BT 59	796466.1706	567579.0433	1168.793	PNL
BT 60	796388.1184	580866.0431	1269.031	PNL
BT 61	792939.0194	538759.0408	1171.368	PNL
BT 62	794281.2076	595813.1647	1421.205	FIP
BT 63	791274.7029	554413.8409	1161.971	FIP
BT 64	791124.9183	575453.2372	1219.427	FIP
BT 65	791098.8777	587428.8147	1319.076	PNL
BT 66	788181.9392	547780.1339	1197.878	FIP
BT 67	782397.3233	554388.5832	1207.983	FIP
BT 68	783439.7093	580814.5600	1238.364	PNL
BT 69	783596.3100	606865.5359	1589.091	PNL
BT 70	780631.3968	562365.5391	1184.938	FIP
BT 71	780627.5634	572857.1114	1186.841	PNL
BT 72	781150.4517	601092.3833	1512.646	PNL
BT 73	777097.5634	609961.1078	1587.003	PNL
BT 74	775277.9347	567499.6988	1219.315	FIP
BT 75	775167.5756	589635.3282	1245.995	PNL
BT 76	772138.4095	596529.8475	1294.919	PNL
BT 77	768391.0528	570188.5574	1251.976	FIP
BT 78	768928.9009	591253.6757	1244.979	PNL
BT 79	764757.7830	586059.2369	1242.223	PNL
BT 80	762837.5631	576402.4510	1256.856	PNL
BT 81	762673.1335	601820.3447	1311.904	FIP
BT 82	759412.8009	591213.0172	1263.247	FPK
BT 83	758119.4901	611662.5342	1320.326	FIP
BT 84	756318.9640	583687.4830	1289.198	CPR
BT 85	754137.9058	601720.1240	1285.583	CPR
BT 86	752875.1054	608008.4263	1294.975	CPPK
BT 87	749752.7883	591129.5709	1312.234	CPR
BT 88	749795.6005	597657.5787	1302.240	FPK
BT 89	748895.5330	608387.0313	1311.020	FIP
BT 90	745850.3782	584347.5072	1349.179	FPK
BT 91	743627.3655	591315.5132	1343.991	CPR
BT 92	743537.8192	603651.3103	1332.989	CPR
BT 93	738605.0773	607026.3405	1357.115	CPR
BT 94	736444.2711	582819.5168	1411.217	CPR
BT 95	735610.5443	591242.6213	1389.475	CPR
BT 96	735637.4519	601552.2003	1369.226	CPR
BT 97	729845.5031	582074.3188	1450.836	CPR
BT 98	728516.5488	591210.6826	1433.841	CPR
BT 99	728226.5687	602795.9959	1414.609	CPR

BT 100	731798.8932	611442.0788	1387.510	CPR
BT 101	724957.4425	608203.4863	1429.444	CPR
BT 102	723194.7951	601556.0990	1455.704	CPR
BT 103	717620.1849	608895.7867	1459.415	ACF
BT 104	713930.5407	600293.4007	1500.974	CPR
BT 105	706571.0298	606762.4035	1513.624	CPR

MEASURE UP \ MEASURE DOWN

BLIND TARGETS MEASURE
05-1487-01
6/2/2005
PHIL K

CHECKED:
DGF 6/2/05

NUMBER	MEASURE	MEASURE	MEASURE
BT 1	0		
BT 2	0		
BT 3	0	0	
BT 4	0		
BT 5	0		
BT 6	-0.96		
BT 7	0		
BT 8	0		
BT 9	0	0	
BT 10	0		
BT 11	-0.10		
BT 12	0	0	
BT 13	0	0	
BT 14	0		
BT 15	0		
BT 16	0		
BT 17	0		
BT 18	1.03	1.00	
BT 19	0		
BT 20	-0.20		
BT 21	0		
BT 22	0		
BT 23	0		
BT 24	0		
BT 25	0		
BT 26	0		
BT 27	0	0	
BT 28	0	0	0
BT 29	-0.10		
BT 30	-1.00		
BT 31	-1.37	-1.21	-1.40
BT 32	-1.40		
BT 33	0		
BT 34	0.70	0.77	
BT 35	0		
BT 36	0	0	0
BT 37	0		
BT 38	0		
BT 39	-1.07		
BT 40	0		
BT 41	0		
BT 42	0	0	
BT 43	0		

BT 44	0	
BT 45	0	0
BT 46	0	
BT 47	0	0
BT 48	0	
BT 49	0	0
BT 50	0	
BT 51	0	
BT 52	0	0
BT 53	0	
BT 54	0	
BT 55	0	
BT 56	0	0
BT 57	0	
BT 58	0	
BT 59	0	
BT 60	0	
BT 61	0	0
BT 62	0	
BT 63	0	
BT 64	0	
BT 65	0	0
BT 66	0	0
BT 67	0	0
BT 68	0	
BT 69	0	0
BT 70	0	
BT 71	-1.19	
BT 72	0	-0.33
BT 73	0	0
BT 74	0	
BT 75	0	
BT 76	0	
BT 77	0	
BT 78	0	
BT 79	-0.10	
BT 80	0	
BT 81	0	
BT 82	0	0
BT 83	0	
BT 84	0	0
BT 85	0	
BT 86	0	
BT 87	0	0
BT 88	0	
BT 89	0	
BT 90	0	
BT 91	0	
BT 92	0	
BT 93	0	
BT 94	0	
BT 95	0	

BT 96	0
BT 97	0
BT 98	0
BT 99	0
BT 100	0
BT 101	0
BT 102	0
BT 103	0
BT 104	0
BT 105	0

FINAL DELIVERABLES

RAINBOW VALLEY ADMP MAPPING (05-1487-01)
BLIND TARGET GRID COORDINATES- ALL AREAS
6/2/2005 DGF

POINT	GRID N	GRID E	MON EL	PNL EL	DESC
BT 1	855540.8132	528303.4179	898.980	898.980	PNL
BT 2	856031.6229	536392.9993	949.168	949.168	FIP
BT 3	849603.0276	515274.7335	906.068	906.068	PK
BT 4	849569.4622	523204.1141	905.333	905.333	PNL
BT 5	849337.5670	531189.9180	943.514	943.514	PNL
BT 6	849428.7911	538980.2299	982.549	981.589	PNL
BT 7	849355.1416	547119.0254	1061.214	1061.214	ACF
BT 8	849179.5038	561286.0332	1225.602	1225.602	PNL
BT 9	844188.9015	528397.8497	965.730	965.730	PNL
BT 10	843743.7179	554558.8119	1151.908	1151.908	PNL
BT 11	840673.6388	507542.8490	1056.742	1056.642	PNL
BT 12	841136.3131	513744.3152	989.535	989.535	PNL
BT 13	841913.8498	520535.7283	926.738	926.738	PNL
BT 14	841801.1798	541691.6794	1026.025	1026.025	PNL
BT 15	838742.4018	533787.0413	1008.278	1008.278	CPR
BT 16	838847.6787	549488.0159	1099.687	1099.687	ACF
BT 17	838682.6826	562137.7284	1314.140	1314.140	CPR
BT 18	836293.2378	525741.8101	956.190	957.220	BCF
BT 19	833808.6612	509905.4554	1070.546	1070.546	CPR
BT 20	833725.5527	517871.2550	1024.198	1023.998	BCF
BT 21	833603.6303	538989.9623	1016.165	1016.165	CPR
BT 22	833641.1585	546924.1782	1080.169	1080.169	CPR
BT 23	833462.1578	554629.4539	1160.884	1160.884	PNL
BT 24	833395.6577	559909.1659	1220.912	1220.912	PNL
BT 25	828407.6407	525809.4525	994.801	994.801	CPR
BT 26	828455.1287	533598.6212	994.413	994.413	CPR
BT 27	825745.7358	544218.5692	1048.576	1048.576	CPR
BT 28	825605.0391	554582.3105	1136.184	1136.184	PNL
BT 29	825536.4509	567773.1207	1279.182	1279.082	ACF
BT 30	823199.8833	517808.9294	1031.898	1030.898	GLO
BT 31	822935.4490	559844.9616	1174.575	1173.205	BCF
BT 32	822865.3327	575681.5972	1390.090	1388.690	BCF *DOESNOT MATCH PEL*
BT 33	820484.9264	528244.0670	1045.724	1045.724	CPR
BT 34	820417.2060	538818.2500	1026.502	1027.202	PNL
BT 35	817969.5938	514685.1857	1071.326	1071.326	CPR
BT 36	817882.6881	546861.4277	1059.961	1059.961	PNL
BT 37	817636.6383	554552.4395	1113.315	1113.315	PNL
BT 38	817509.7057	570418.0367	1262.882	1262.882	FIP
BT 39	812681.1943	512467.7534	1119.330	1118.260	GLO
BT 40	812584.0189	522689.2339	1112.783	1112.783	CPR
BT 41	812664.8322	541431.5794	1062.213	1062.213	PNL
BT 42	809390.2691	533540.2559	1118.486	1118.486	PNL
BT 43	809800.7797	549297.4128	1073.585	1073.585	PNL
BT 44	809720.5909	557127.9582	1117.776	1117.776	FIP
BT 45	809746.8995	565030.2588	1178.021	1178.021	PNL
BT 46	809622.6500	580947.7611	1326.990	1326.990	PNL
BT 47	809518.0059	588698.6492	1459.459	1459.459	PNL

CHECKED
6-2-05
PK

BT 48	807381.9640	517751.1190	1164.309	1164.309	CPR
BT 49	807303.6785	528117.7949	1153.558	1153.558	PNL
BT 50	806936.5954	573046.8408	1234.393	1234.393	PNL
BT 51	801363.7157	522850.1003	1208.014	1208.014	PNL
BT 52	801955.3251	538764.6365	1127.061	1127.061	PNL
BT 53	802741.7543	554423.8126	1099.123	1099.123	FIP
BT 54	801808.4601	562356.4202	1141.714	1141.714	FIP
BT 55	801720.9128	591473.4288	1382.294	1382.294	PNL
BT 56	798971.5285	533459.3531	1186.720	1186.720	PNL
BT 57	796629.7925	549199.2081	1138.084	1138.084	PNL
BT 58	796639.3967	559835.1928	1121.365	1121.365	PNL
BT 59	796466.1706	567579.0433	1168.793	1168.793	PNL
BT 60	796388.1184	580866.0431	1269.031	1269.031	PNL
BT 61	792939.0194	538759.0408	1171.368	1171.368	PNL
BT 62	794281.2076	595813.1647	1421.205	1421.205	FIP
BT 63	791274.7029	554413.8409	1161.971	1161.971	FIP
BT 64	791124.9183	575453.2372	1219.427	1219.427	FIP
BT 65	791098.8777	587428.8147	1319.076	1319.076	PNL
BT 66	788181.9392	547780.1339	1197.878	1197.878	FIP
BT 67	782397.3233	554388.5832	1207.983	1207.983	FIP
BT 68	783439.7093	580814.5600	1238.364	1238.364	PNL
BT 69	783596.3100	606865.5359	1589.091	1589.091	PNL
BT 70	780631.3968	562365.5391	1184.938	1184.938	FIP
BT 71	780627.5634	572857.1114	1186.841	1185.651	PNL
BT 72	781150.4517	601092.3833	1512.646	1512.316	PNL
BT 73	777097.5634	609961.1078	1587.003	1587.003	PNL
BT 74	775277.9347	567499.6988	1219.315	1219.315	FIP
BT 75	775167.5756	589635.3282	1245.995	1245.995	PNL
BT 76	772138.4095	596529.8475	1294.919	1294.919	PNL
BT 77	768391.0528	570188.5574	1251.976	1251.976	FIP
BT 78	768928.9009	591253.6757	1244.979	1244.979	PNL
BT 79	764757.7830	586059.2369	1242.223	1242.123	PNL
BT 80	762837.5631	576402.4510	1256.856	1256.856	PNL
BT 81	762673.1335	601820.3447	1311.904	1311.904	FIP
BT 82	759412.8009	591213.0172	1263.247	1263.247	FPK
BT 83	758119.4901	611662.5342	1320.326	1320.326	FIP
BT 84	756318.9640	583687.4803	1289.198	1289.198	CPR
BT 85	754137.9058	601720.1240	1285.583	1285.583	CPR
BT 86	752875.1054	608008.4263	1294.975	1294.975	CPPK
BT 87	749752.7883	591129.5709	1312.234	1312.234	CPR
BT 88	749795.6005	597657.5787	1302.240	1302.240	FPK
BT 89	748895.5330	608387.0313	1311.020	1311.020	FIP
BT 90	745850.3782	584347.5072	1349.179	1349.179	FPK
BT 91	743627.3655	591315.5132	1343.991	1343.991	CPR
BT 92	743537.8192	603651.3103	1332.989	1332.989	CPR
BT 93	738605.0773	607026.3405	1357.115	1357.115	CPR
BT 94	736444.2711	582819.5168	1411.217	1411.217	CPR
BT 95	735610.5443	591242.6213	1389.475	1389.475	CPR
BT 96	735637.4519	601552.2003	1369.226	1369.226	CPR
BT 97	729845.5031	582074.3188	1450.836	1450.836	CPR
BT 98	728516.5488	591210.6826	1433.841	1433.841	CPR
BT 99	728226.5687	602795.9959	1414.609	1414.609	CPR

BT 100	731798.8932	611442.0788	1387.510	1387.510	CPR
BT 101	724957.4425	608203.4863	1429.444	1429.444	CPR
BT 102	723194.7951	601556.0990	1455.704	1455.704	CPR
BT 103	717620.1849	608895.7867	1459.415	1459.415	ACF
BT 104	713930.5407	600293.4007	1500.974	1500.974	CPR
BT 105	706571.0298	606762.4035	1513.624	1513.624	CPR

NOTES

GRID NORTHINGS AND EASTINGS ARE NAD83(92) STATE PLANE COORDINATES, ARIZONA CENTRAL ZONE.

"MON EL" IS THE ELEVATION OF THE TOP OF THE MONUMENT ON NAVD88 DATUM.

"PNL EL" IS THE GROUND ELEVATION OF THE PANEL AT THE SAME POINT ON NAVD88 DATUM.

"DESC" IS THE HUITT-ZOLLARS, INC. DESCRIPTOR CODE, AND DOES NOT NECESSARILY DENOTE AN ACCURATE DESCRIPTION OF THE MONUMENT USED.

GEOID03, ZONE 5, APPLIED TO GPS OBSERVATIONS TO OBTAIN ELEVATIONS SHOWN.

"GO TO" SKETCHES

GPS STATION OBSERVATION SHEET

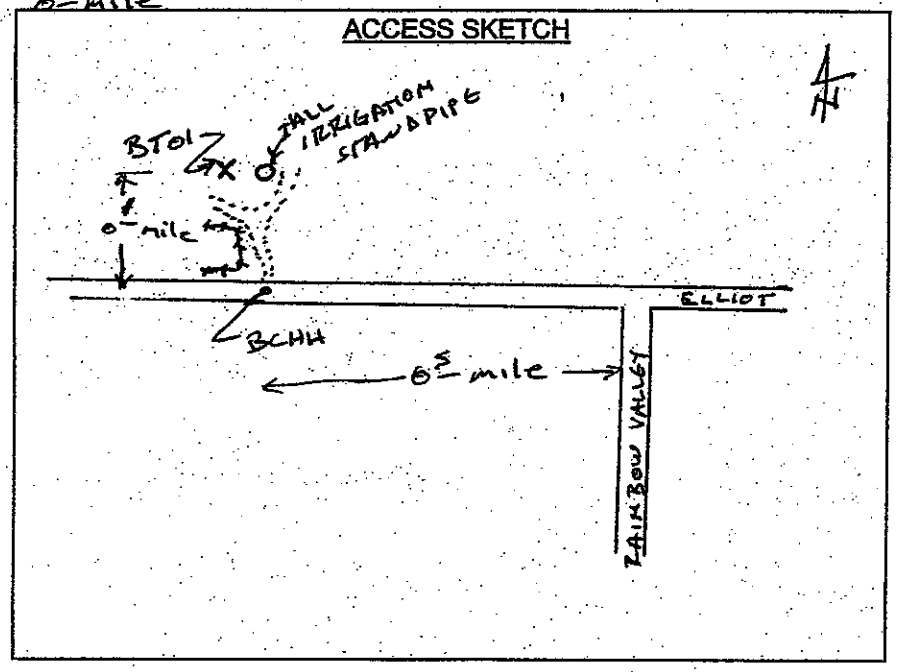
SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT01
DATE FOUND/SET: 3/10/05
STATION DESCRIPTION: FND 1/2" RB W/RED PLASTIC CAP PAMELED

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM THE INTERSECTION OF RAINBOW VALLEY & ELLIOT TRAVEL WEST ON ELLIOT 1/2 mile. TURN RIGHT (NORTH) ON DIRT ROAD, WHICH RUNS between a fence to the west and a ravine to the east, for 0.5 mile

ACCESS SKETCH

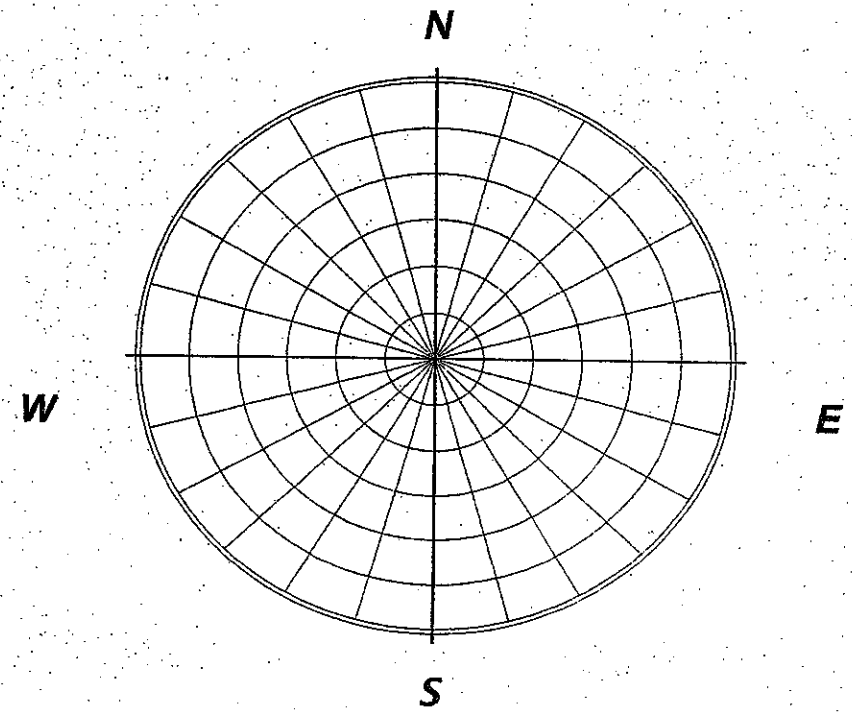


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-21-02.025 LONG: 112-28-44.205 HEIGHT: 899.019 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT02
DATE FOUND/SET: 3/10/05
STATION DESCRIPTION: FND 1/2" RB w/RED PLASTIC CAP

STATION STAMPING: PEC CONTROL

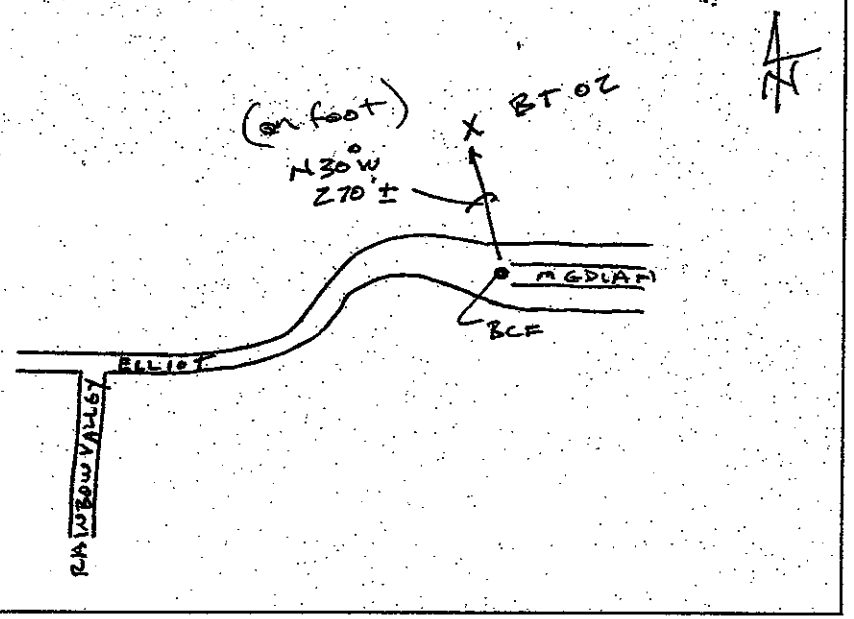
STATION ACCESS: FROM THE INTERSECTION OF RAINBOW VALLEY & ELLIOT TRAVEL EAST ON ELLIOT 1 mile ± to where ELLIOT SPLITS. FROM ABCF @ that LOCATION TRAVEL N30°W, 270 ft ± TO BT02

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

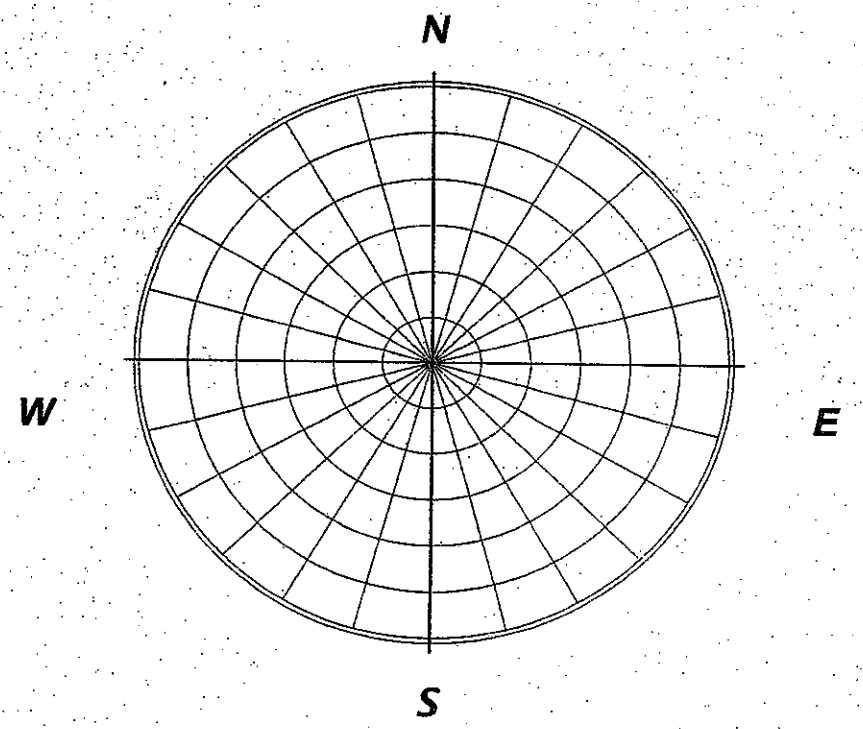
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-21-07.300 LONG: 112-27-08.874 HEIGHT: 937.562 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT3

DATE FOUND/SET: 3/4/05

STATION DESCRIPTION: SET PR PANEL PT ± ℄ OF NARRAMORE ℄ ± 70' EAST OF DEAN ROAD

STATION STAMPING: —

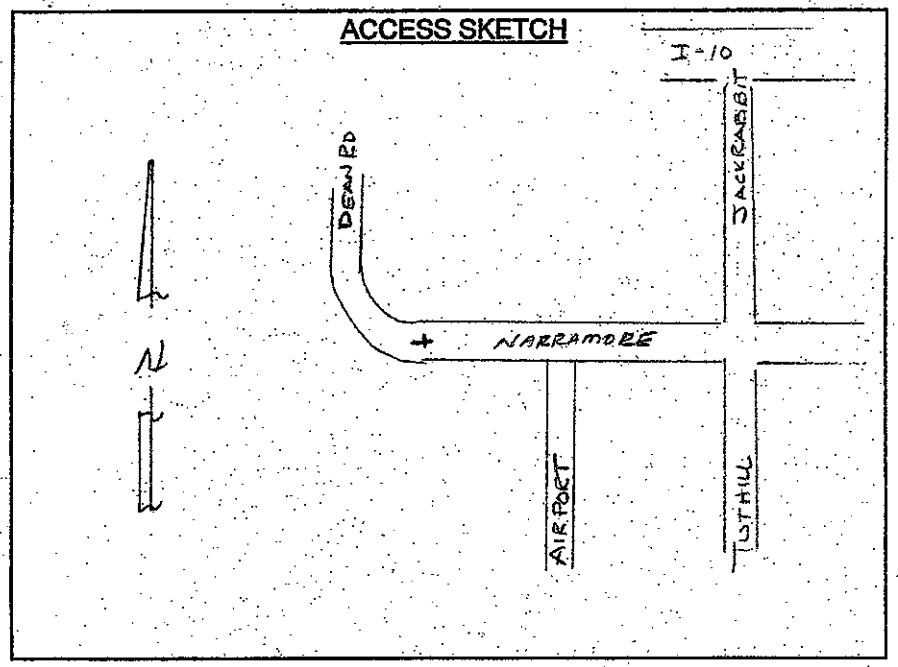
STATION ACCESS: S. FROM I-10 ON JACKRABBIT (TOTHILL) ±9.6 MILES THEN W. ON NARRAMORE ±1.9 MILES TO STATION

OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202

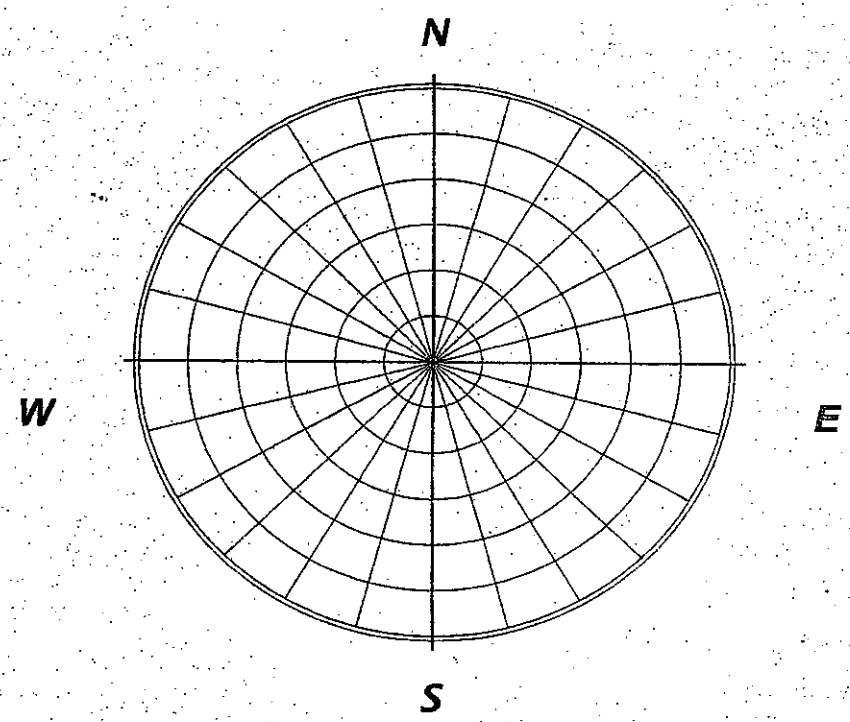
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-20-02.555 LONG: 112-31-17.393 HEIGHT: 906.064 ft

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GPS STATION OBSERVATION SHEET

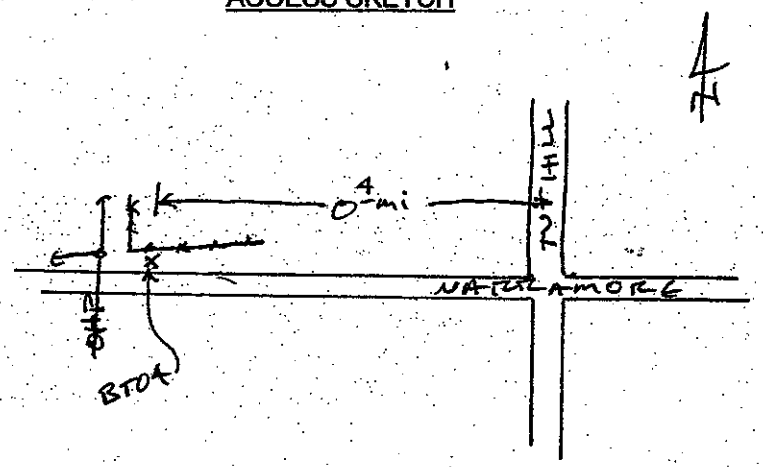
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT04
DATE FOUND/SET: 3/10/05
STATION DESCRIPTION: FND 1/2" RB & RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM INTERSECTION OF TUTHILL & NARRAMORE TRAVEL 0.4 mi WEST ON NARRAMORE. POINT IS NORTH OF NARRAMORE & SOUTH OF FENCE

ACCESS SKETCH

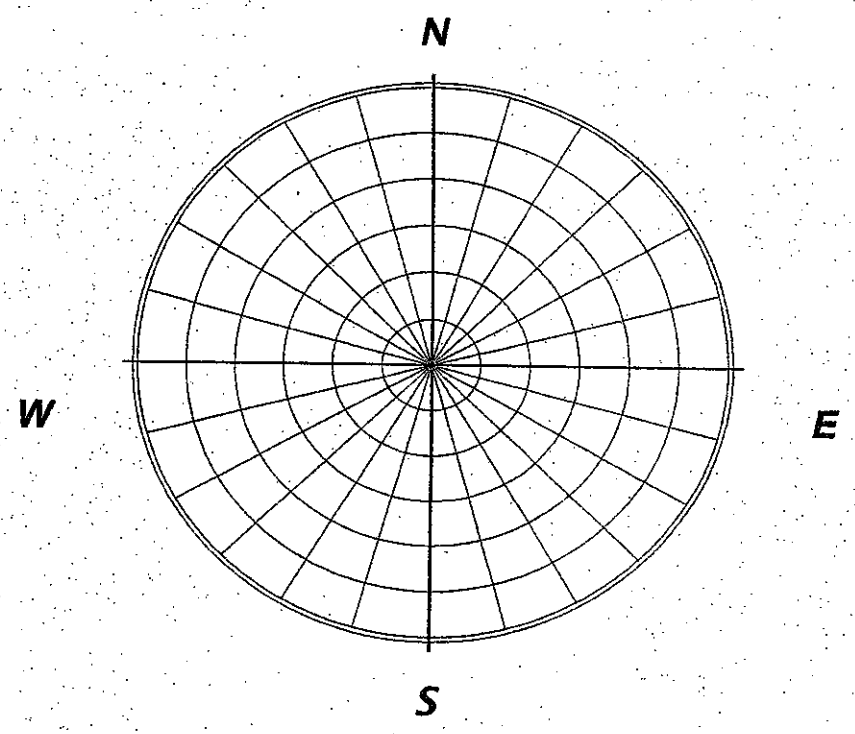


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-20-02.069 LONG: 112-29-43.930 HEIGHT: 905.291 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BTOS
DATE FOUND/SET: 3/10/05
STATION DESCRIPTION: FND 1/2" RB w/ RED plastic CAP IN FIELD

STATION STAMPING: PEC CONTROL

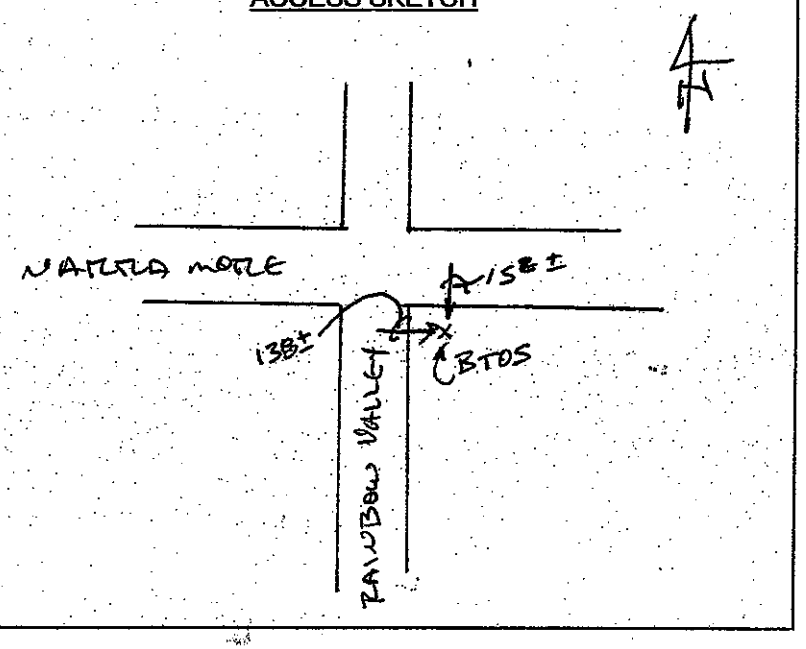
STATION ACCESS: AT INTERSECTION OF WARRAMORE & RAINBOW VALLEY SOUTH 152'± & EAST 138'±

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

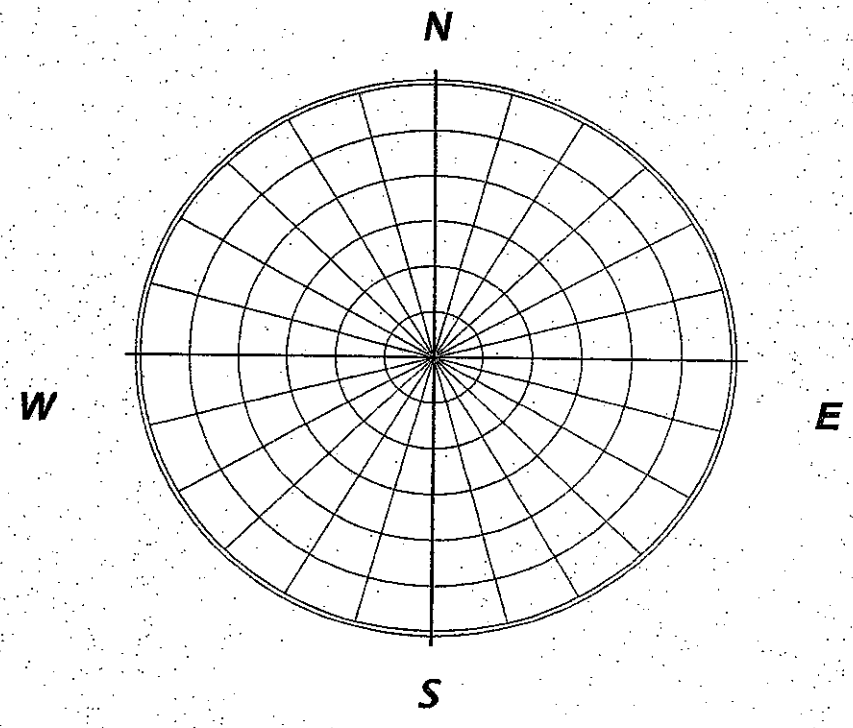
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-20-00.803 LONG: 112-28-09.789 HEIGHT: 943.491

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GPS STATION OBSERVATION SHEET

SH[illegible] 1 of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 6
STATION ID:

DATE FOUND/SET:

STATION DESCRIPTION: 2" GLO CAP. 0.93 ABOVE NATURAL GROUND

STATION STAMPING: 1/4 S15 S22 1931

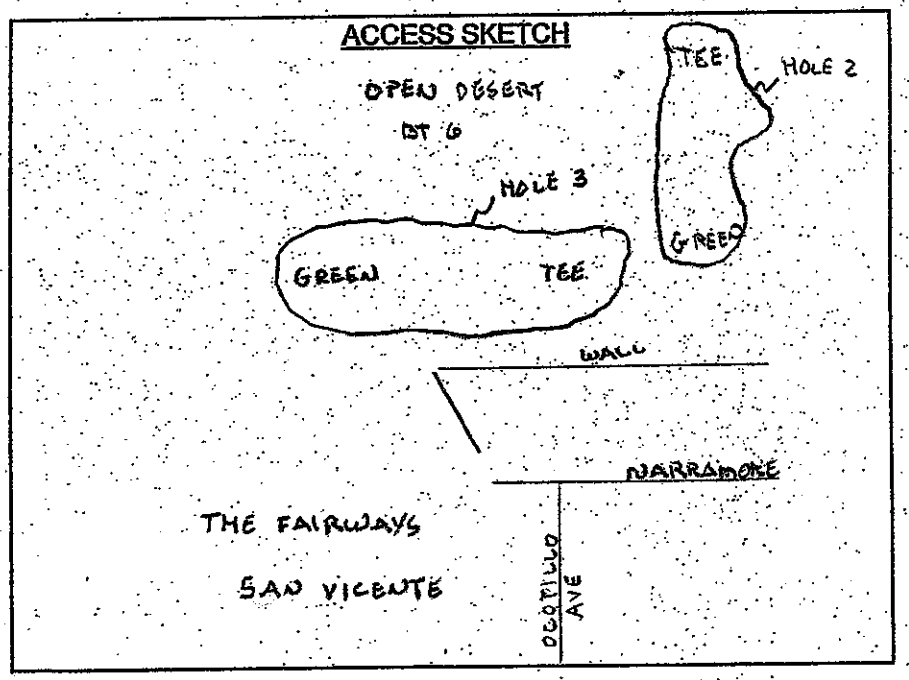
STATION ACCESS: FROM OCOTILLO & NARRAMORE WALK AROUND WALL, ACROSS HOLE 3 TO POINT IN OPEN DESERT 0.17 MI

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

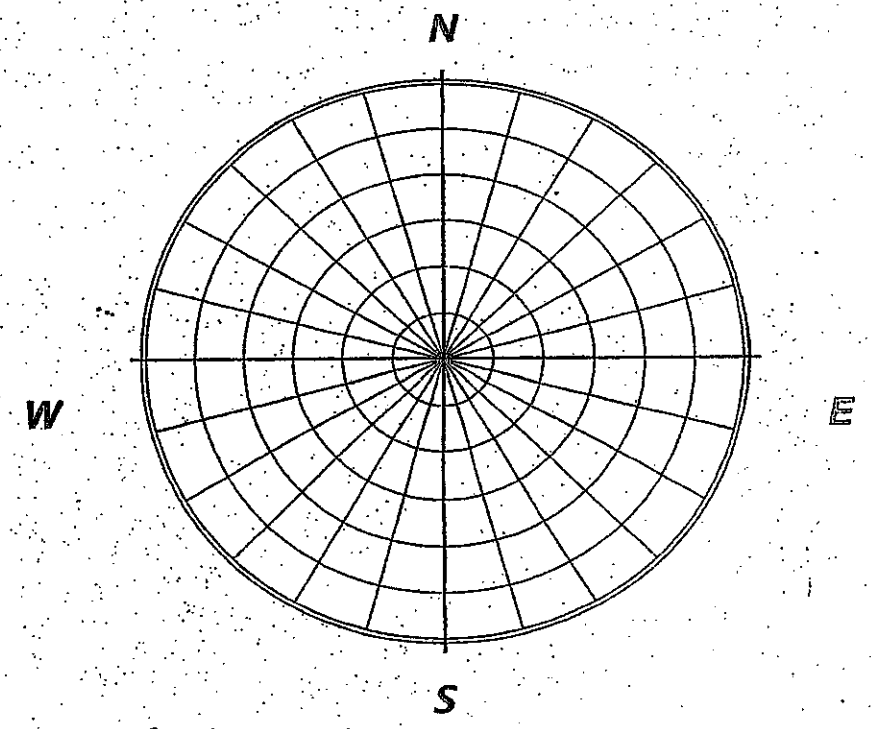
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-20-02.105 LONG: 112-26-37.972 HEIGHT: 982.562 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT7
STATION ID: PANNEL
DATE FOUND/SET: 3-15-05
STATION DESCRIPTION: 25' N. OF SEC. COR. T1S R2W S14/S13 1931 W/CARUM S23/S24

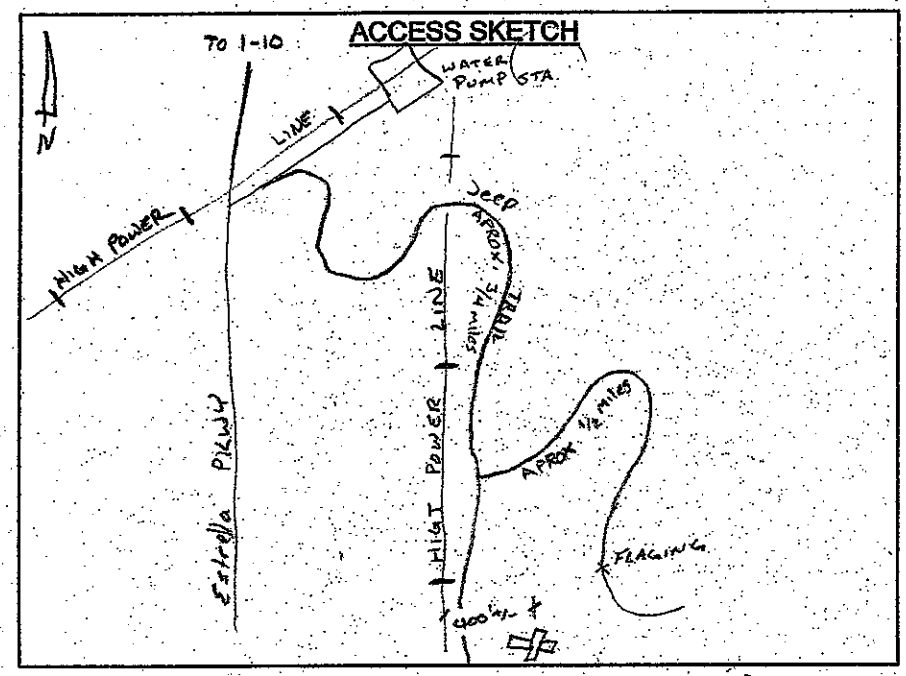
STATION STAMPING: ALUM. CAP END #159 RLS 10260 25' +/- NORTH OF SEC. CORNER

STATION ACCESS: FROM ESTRELLA PKWY AND HIGH TENTION POWER LINE (ALSO ACCESS ROAD FOR WELL SITE) GO EAST +/- 300' TO START JEEP TRAIL. TRAVEL SE ON TRAIL APROX. 3/4 MI. TO JEEP TRAIL GOING EAST. TRAVELING ON WINDING TRAIL TO FLAGING

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202
SESSION #: ___ **FILE NAME:** ___
LOCAL DATE: ___ START: ___ END: ___

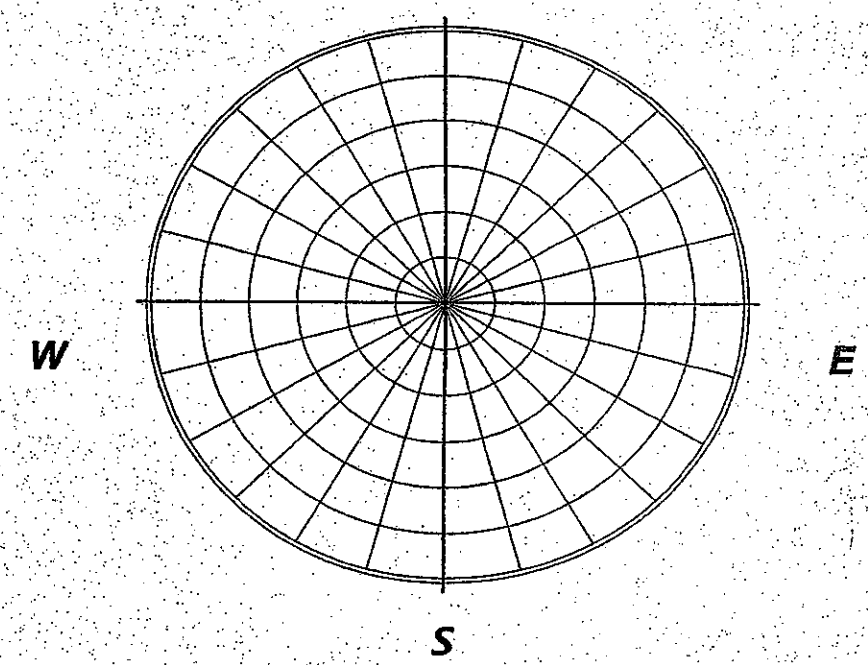
ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): ___
START (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___
STOP (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___

ACCESS SKETCH



HIGH SCHOOL

OBSTRUCTION CHART



LAT: 33-20-01.773 LONG: 112-25-02.038 HEIGHT: 1061.2368

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GPS STATION OBSERVATION SHEET

SH. ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 8

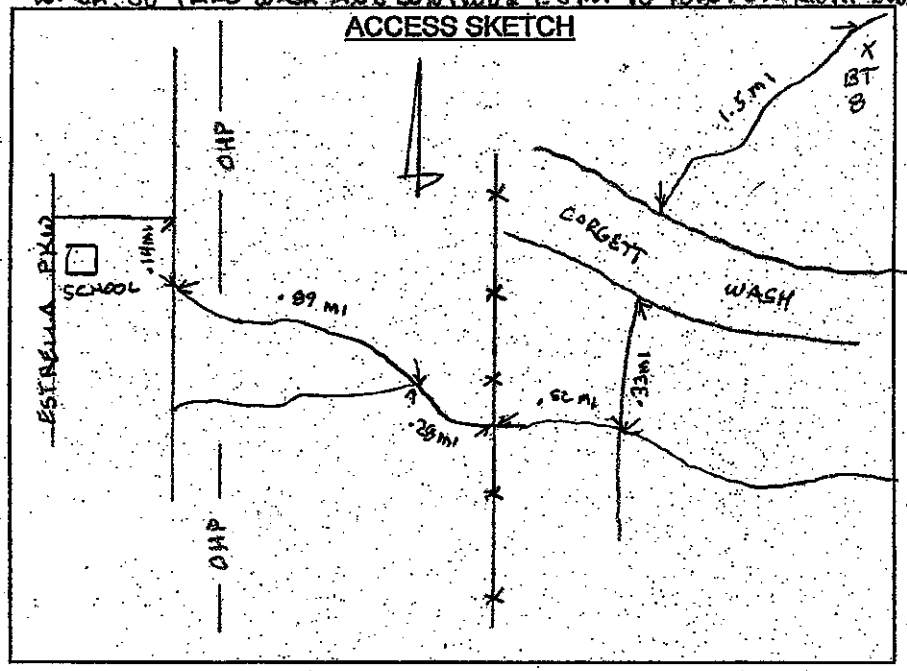
DATE FOUND/SET:

STATION DESCRIPTION: ½" RB / RED CAP

STATION STAMPING: REC CONTROL

STATION ACCESS: FROM ESTRELLA PKW. & HIGH SCHOOL DRIVE NORTH OF HIGH SCHOOL, EAST TO DIRT ROAD HEADING NORTH AND SOUTH. GO SOUTH FOR .19 MI TO A ROAD HEADING SOUTH WESTERLY. GO SOUTHWESTERLY 1.17 MI TO A FENCE LINE. CONTINUE SOUTH WESTERLY .52 MI TO A TEE. GO NORT FOR .33 MI TO THE CORGETT WASH. GO THRU WASH AND CONTINUE 1.5 MI TO POINT ON RIGHT SIDE OF ROAD.

ACCESS SKETCH

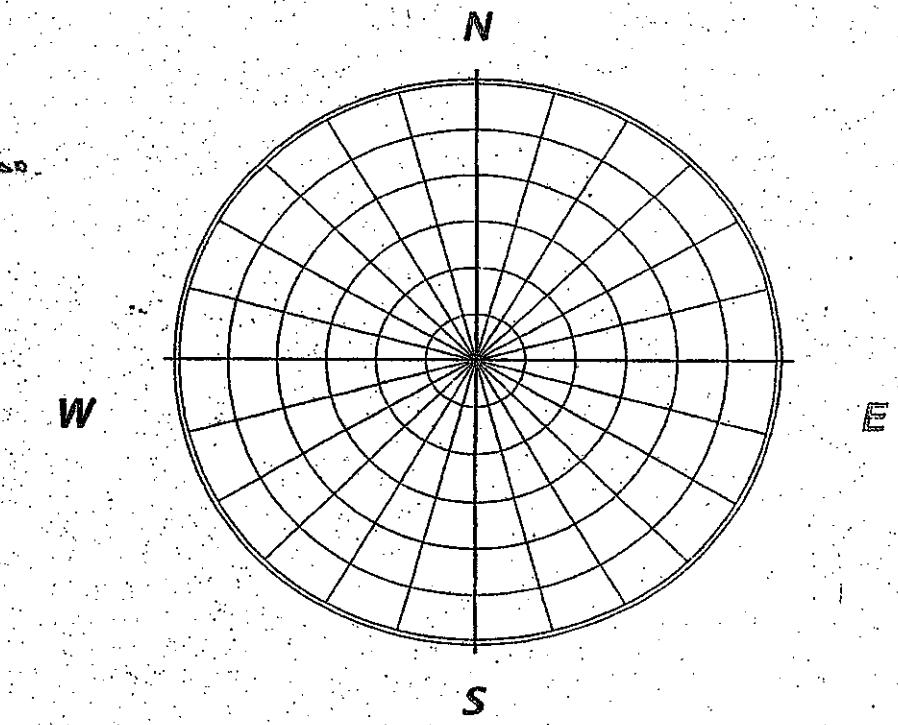


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-20-00.677 LONG: 112-22-15.044 HEIGHT: 1225.6145+

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT09

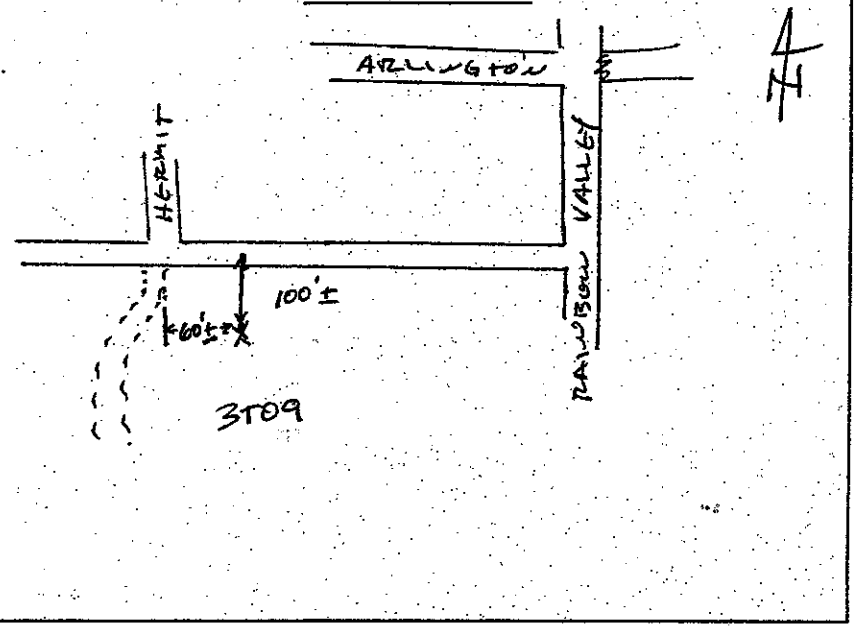
DATE FOUND/SET: 3/10/05

STATION DESCRIPTION: 1/2" RB w/ RED PLASTIC CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM INTERSECTION OF RAINBOW VALLEY and travel WEST ON for 0.4 miles to HERMIT. POINT IS 100'± SOUTH OF ROAD ℄ & 60'± EAST OF ℄ HERMIT EXTENDED.

ACCESS SKETCH



OPERATOR: KARL VLIEGER

RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

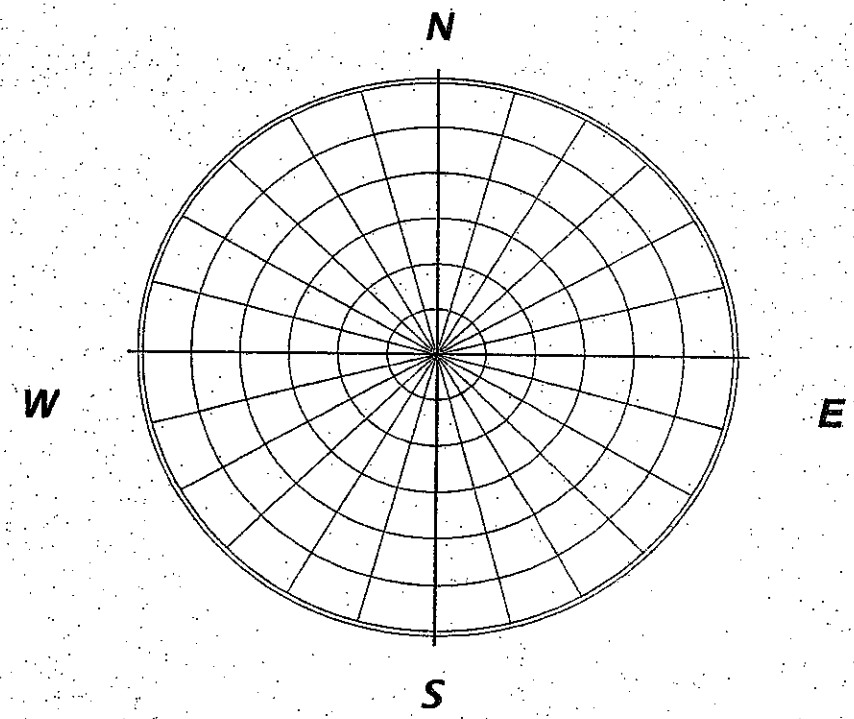
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-19-09.714 LONG: 112-28-42.372 HEIGHT: 965.707 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT10
STATION ID: PANNEL

DATE FOUND/SET: 3-15-05

STATION DESCRIPTION: SET 1/2" RB WIRED PEC CONTROL CAP

STATION STAMPING:

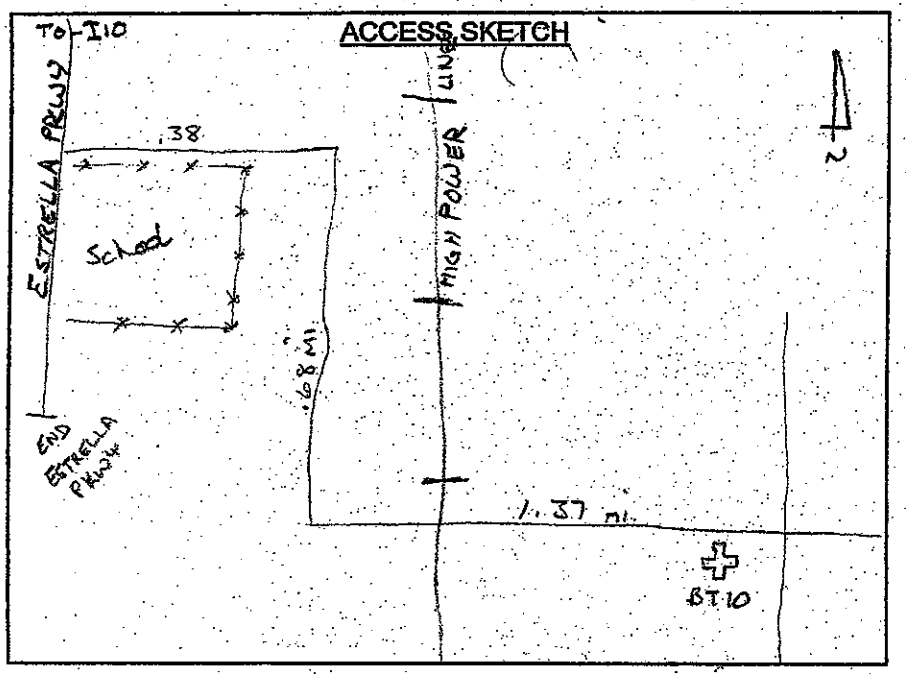
STATION ACCESS:

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

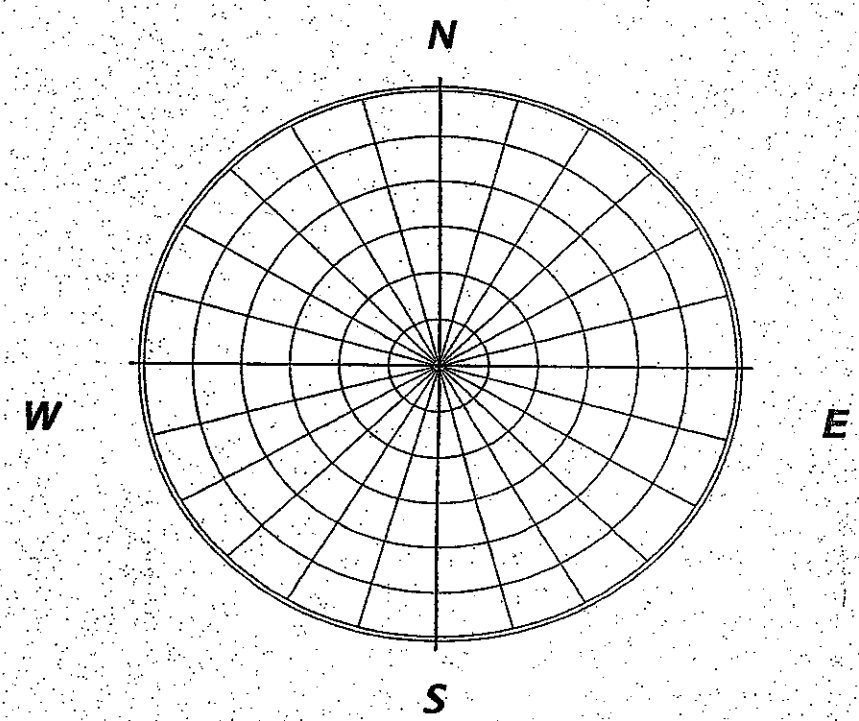
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-19-06.598 LONG: 112-23-34.044 HEIGHT: 1151.892 ft

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 36 60025
STATION ID:

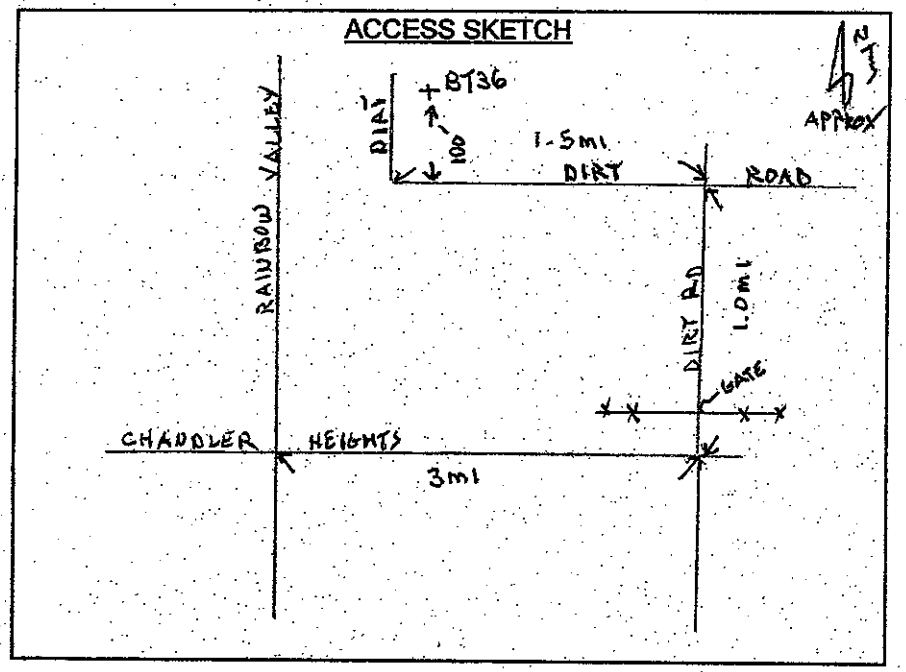
DATE FOUND/SET: 03/15/05

STATION DESCRIPTION: REBAR FLUSH

STATION STAMPING: RED CAP PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY AND CHANDLER HEIGHTS GO EAST FOR 1 MILE TO DIRT ROAD FOR 1 MI. TAKE DIRT ROAD NORTH FOR 1 MILE TO DIRT ROAD RUNNING EAST AND WEST. TAKE DIRT ROAD WEST FOR 1 MILE.

ACCESS SKETCH

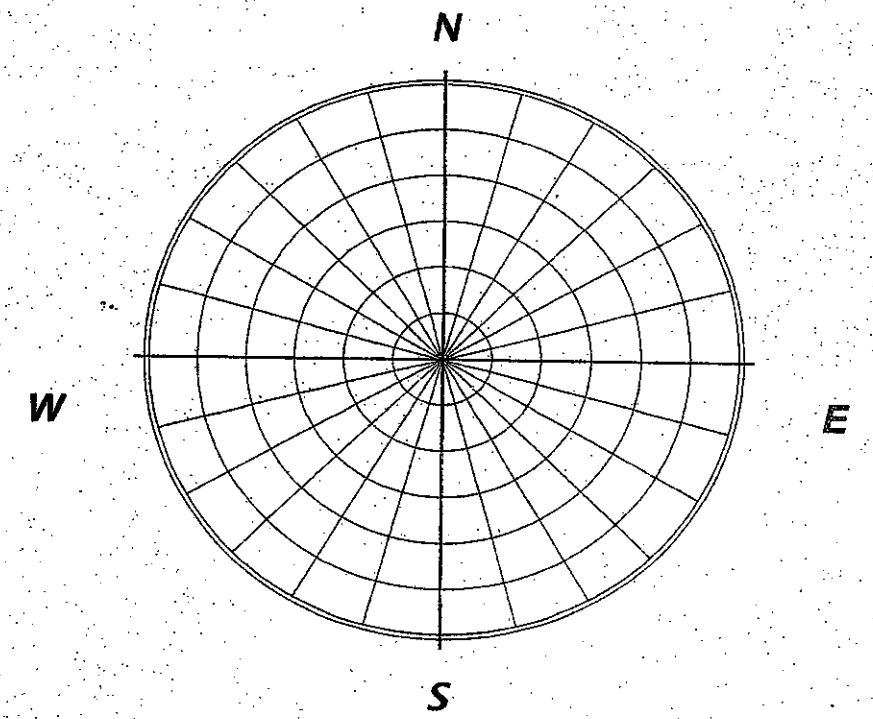


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-14-50.369 LONG: 112-25-03.294 HEIGHT: 1060.015 ft

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GPS STATION OBSERVATION SHEET

SH ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 37
DATE FOUND/SET: 03/04/05
STATION DESCRIPTION:

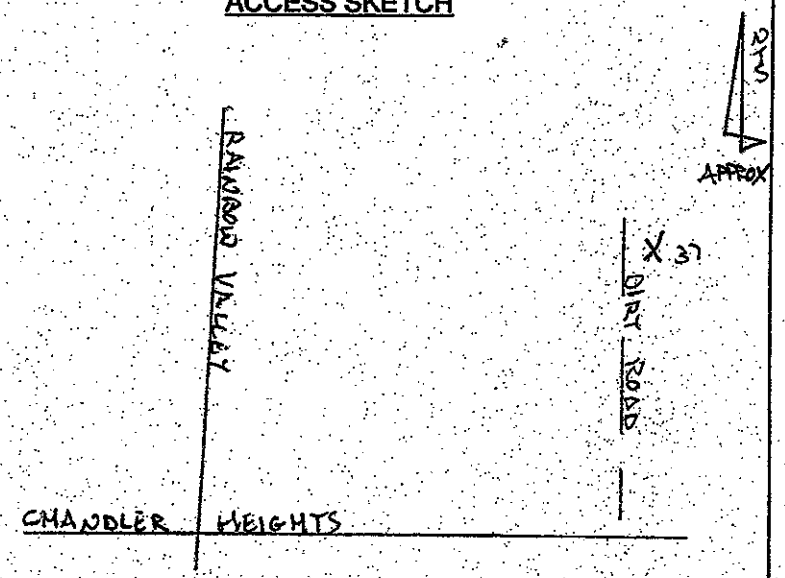
STATION STAMPING:

STATION ACCESS: FROM THE INTERSECTION OF RAINBOW VALLEY & CHANDLER HEIGHTS GO 2 MILES EAST. WHEN PVMT TURNS TO DIRT TAKE DIRT RD NORTH FOR 1 MILE.

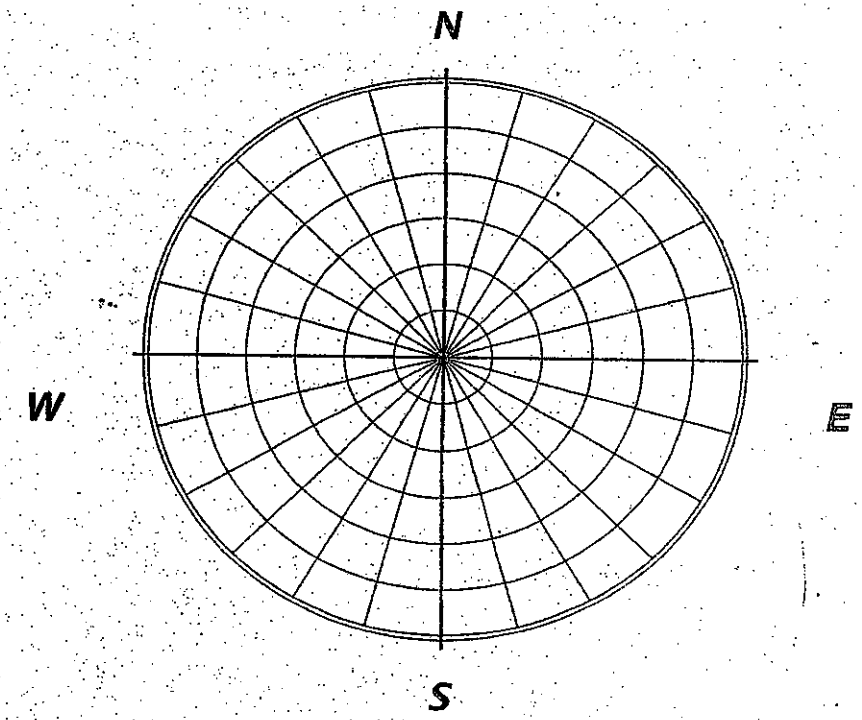
OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-14-48.291 LONG: 112-23-32.717 HEIGHT: 1113.278 ft

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GPS STATION OBSERVATION SHEET

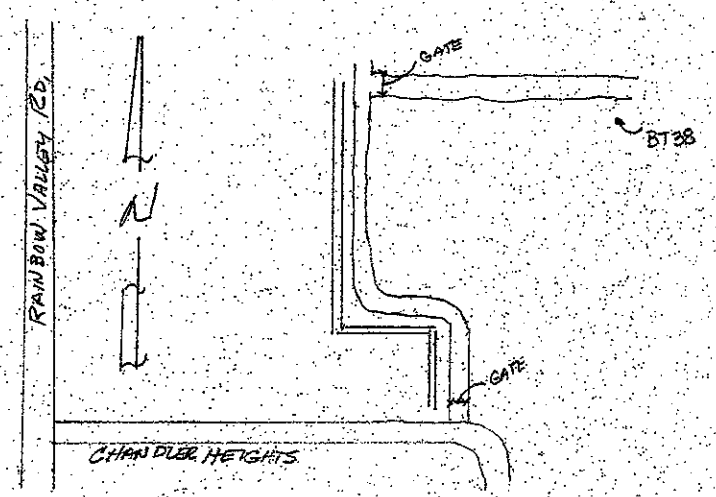
SH___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 38
STATION ID:
DATE FOUND/SET: 3/7/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED LS TAG FLUSH W/GROUND

STATION STAMPING: LS CONTROL PEC

STATION ACCESS: FROM RAINBOW VALLEY RD & CHANDLER HEIGHTS RD EAST FOR 3.9± MILES TO ROADWAY NORTH. THENCE N. THROUGH GATE PARALLELING A CONC. IRRIG. DITCH (NORTH, THEN WEST, THEN NORTH) FOR ±1.3 MILES. THEN EAST THRU A GATE ALONG A DIRT ROAD ±.28 MILES TO THE POINT

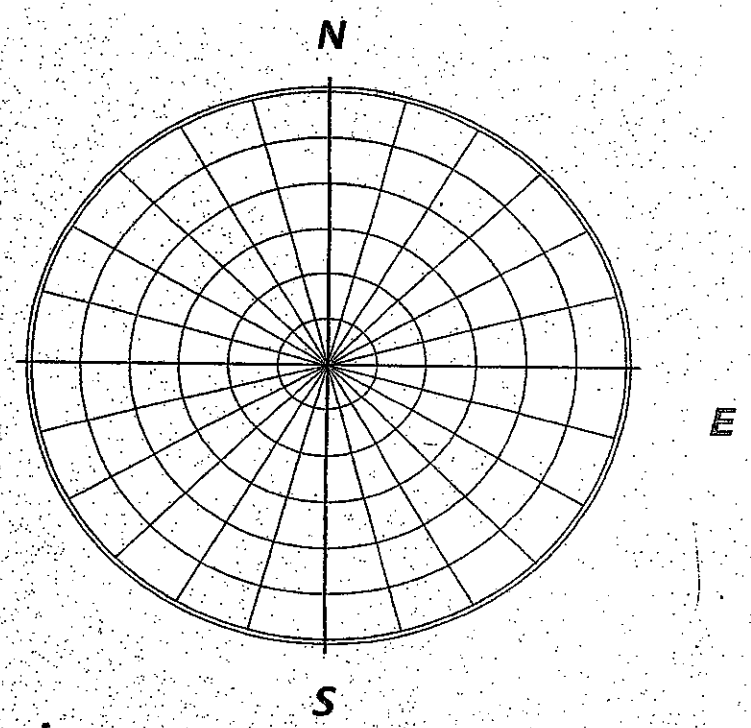
ACCESS SKETCH



OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-14-47.710 LONG: 112-20-25.890 HEIGHT: 1262.841 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - [redacted]

STATION NAME:

STATION ID: BT39

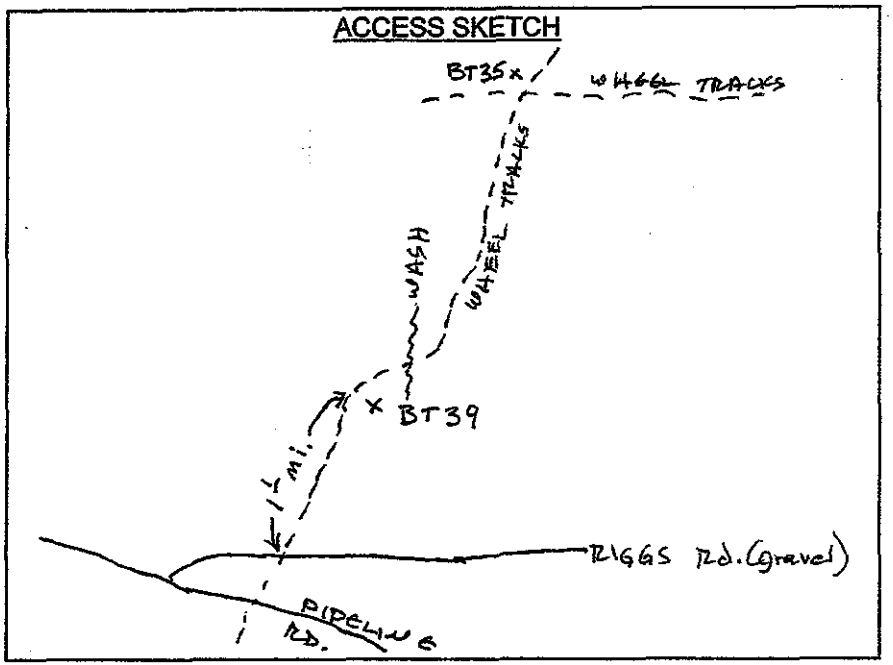
DATE FOUND/SET: 3/14/05

STATION DESCRIPTION: Fnd1½" pipe w/GLO Brass Cap
Cap is 1.1' above ground level

STATION STAMPING: T2S R3W
S23 | S24
S26 | S25
1931

STATION ACCESS: beginning at the intersection of a wheel track path and Riggs Rd. lying NEly of Riggs intersection with a gas pipeline road, travel Northerly along wheel track path 1.1mi. Point is East 50' from track.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

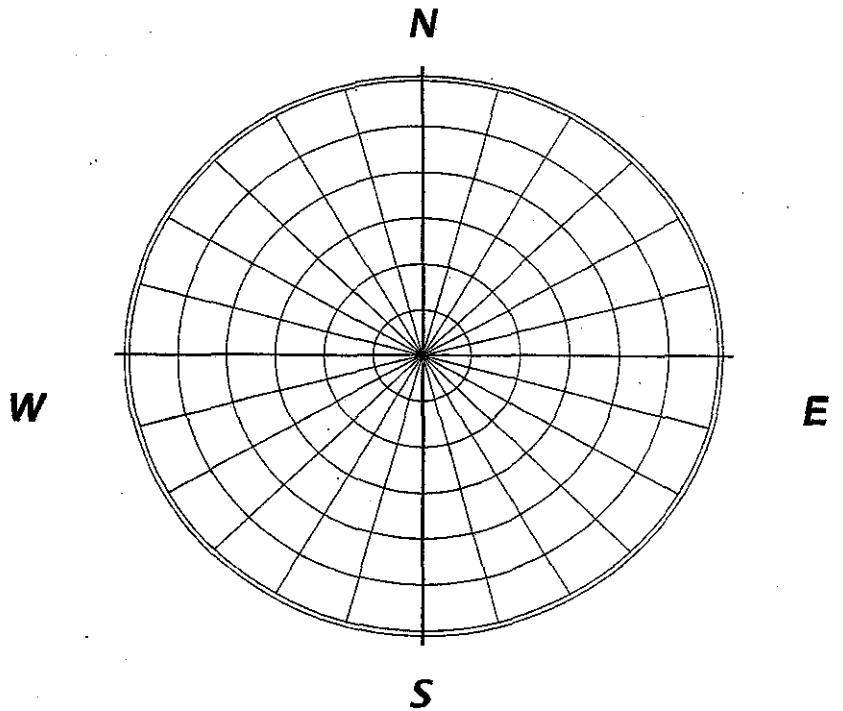
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-13-57.092 LONG: 112-31-49.922 HEIGHT: 1119.311 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 40
STATION ID:

DATE FOUND/SET:

STATION DESCRIPTION: ½" RB FLUSH

STATION STAMPING: RED CAP PEC CONTROL

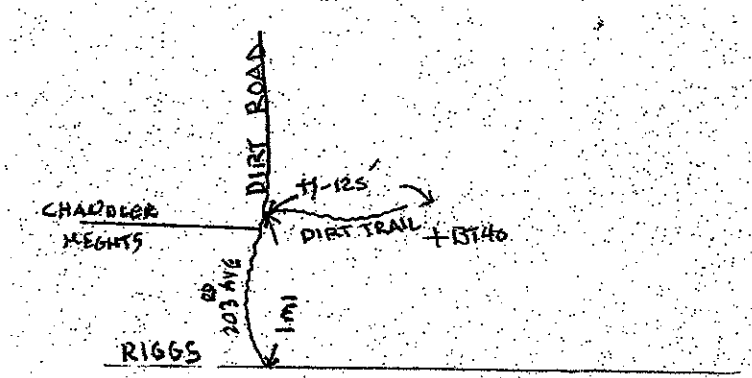
STATION ACCESS: FROM 203RD AVE AND RIGGS TAKE DIRT ROAD NORTH 1 MI TO A DIRT TRAIL ON THE RIGHT. POINT IS 125' EAST ON TRAIL.

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

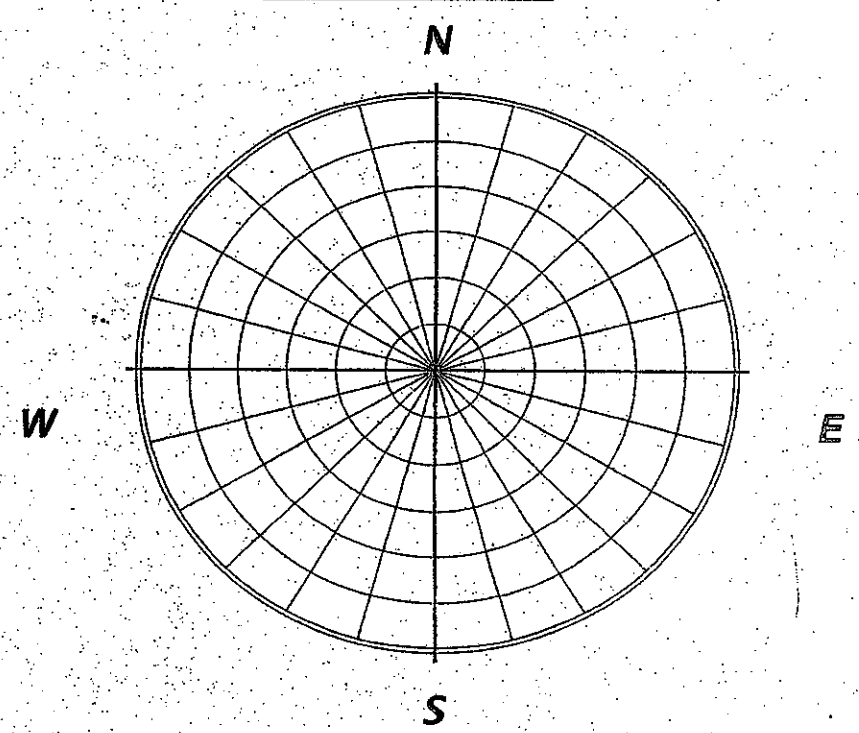
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-56.709 LONG: 112-29-47.578 HEIGHT: 1112.873

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GPS STATION OBSERVATION SHEET

SHE___of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 41
STATION ID:

DATE FOUND/SET:

STATION DESCRIPTION: T/B FLUSH

STATION STAMPING:

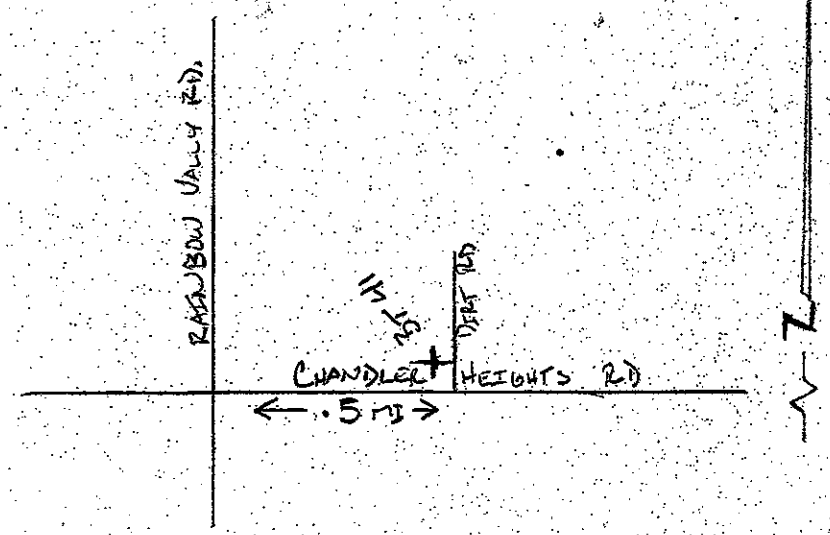
STATION ACCESS: START AT RAINBOW VALLEY RD & CHANDLER HEIGHTS RD. GO EAST ON CHANDLER HGTS. FOR .5 MI. TILL DIRT RD ON NORTH SIDE OF ROAD. TURN NORTH ON DIRT RD AND GO 30 FEET TO POINT.

OPERATOR: PAUL MILUSKI
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

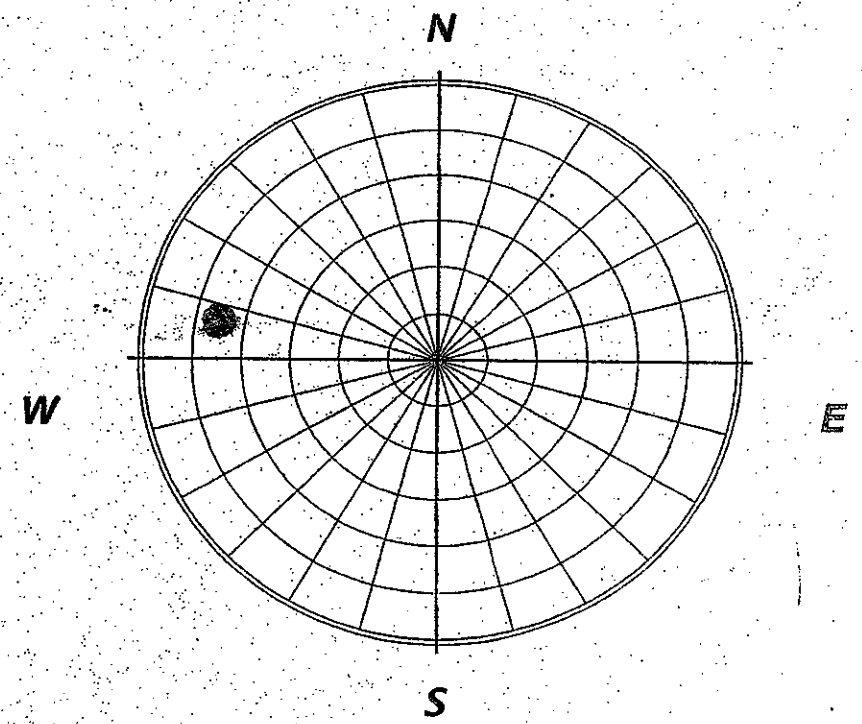
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)_____(2nd)_____(3rd)_____(AVG)_____
STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-58.482 LONG: 112-26-06.926 HEIGHT: 1062.186 ft

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GPS STATION OBSERVATION SHEET

SH: ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 42
STATION ID:

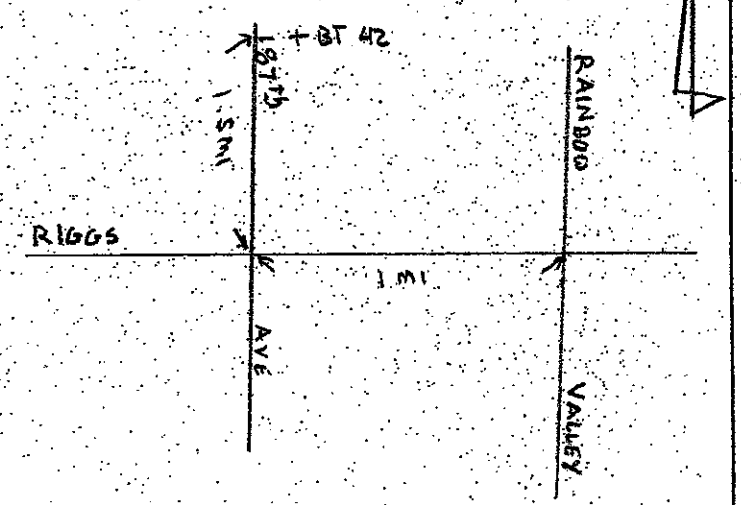
DATE FOUND/SET:

STATION DESCRIPTION: ½" REBAR / RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM INTERSECTION OF RAINBOW VALLEY & RIGGS RD GO WEST 1 MI TO 187TH AVE. GO NORTH ON 187TH AVE 1.5 MILES TO POINT ON RIGHT SIDE OF ROAD.

ACCESS SKETCH

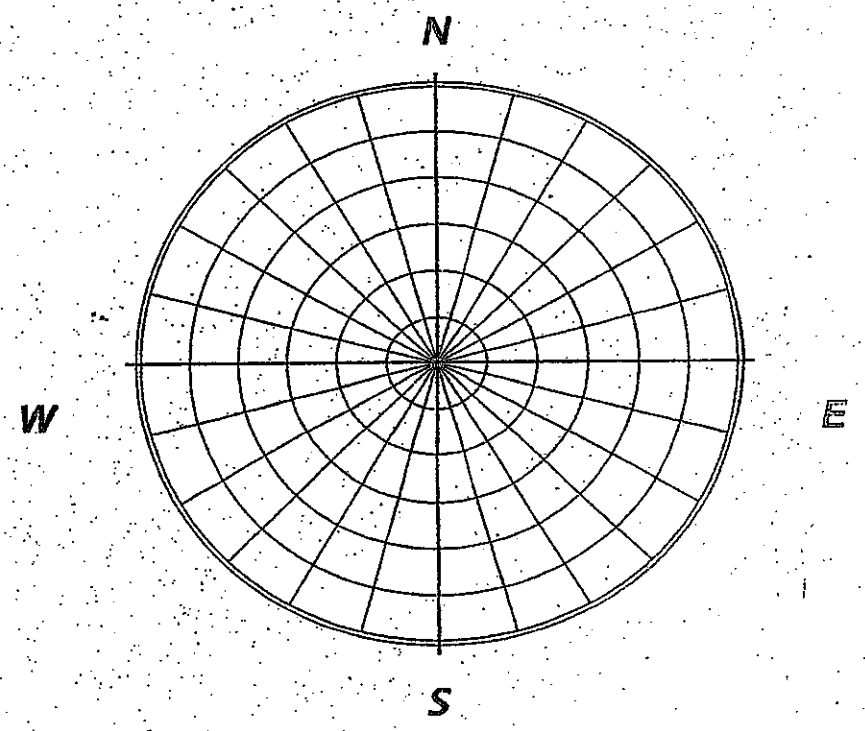


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-13-25.686 LONG: 112-27-39.631 HEIGHT: 1118.455 ft

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GPS STATION OBSERVATION SHEET

SH ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 43
STATION ID:

DATE FOUND/SET:

STATION DESCRIPTION: R/B FLUSH

STATION STAMPING:

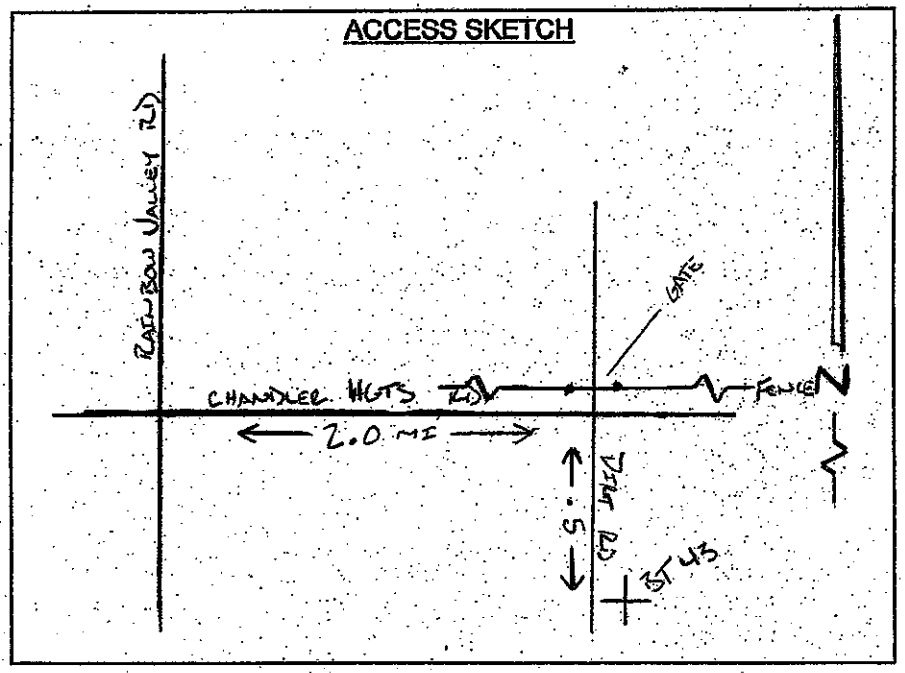
STATION ACCESS: START AT RAINBOW VALLEY RD & CHANDLER HGTS. RD. GO EAST ON CHANDLER HGTS FOR 2 MI TILL A DIRT ROAD. TURN SOUTH ON DIRT RD FOR .5 MI TILL POINT.

OPERATOR: PAUL MILUSKI
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

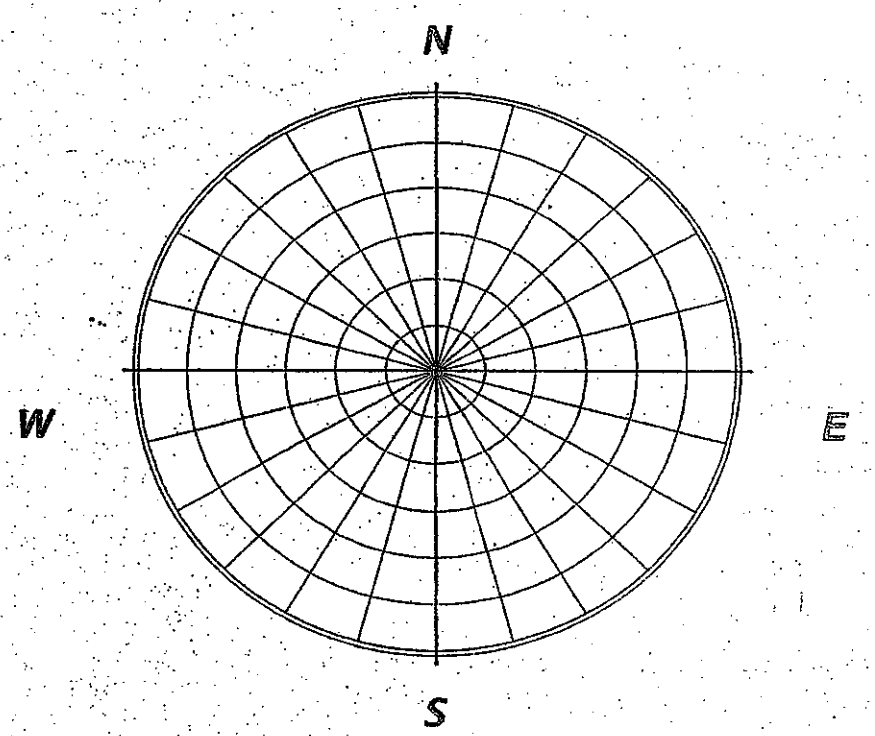
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-30.521 LONG: 112-24-34.161 HEIGHT: 1073.572 ft

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GPS STATION OBSERVATION SHEET

SHEET _of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 44
STATION ID: PANEL

DATE FOUND/SET: 3-18-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEC CONTROL CAP

STATION STAMPING: 9x1 PANEL

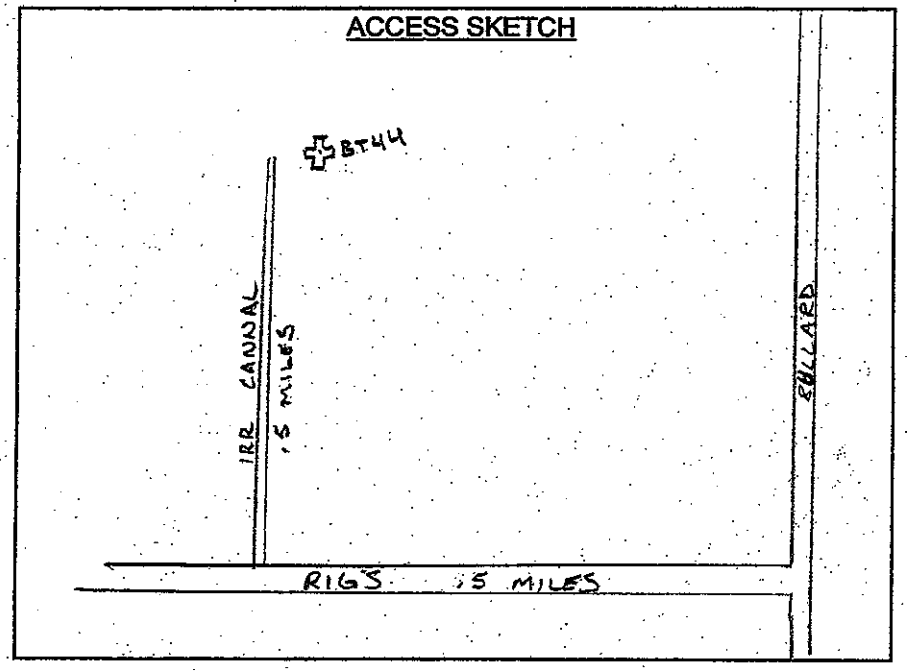
STATION ACCESS: FROM BULLARD AND RIGGS RD. DRIVE WEST ON RIGGS FOR 0.5 MILE TO IRR DITCH THEN TURN NORTH FOR 0.5 MILES TO POINT

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

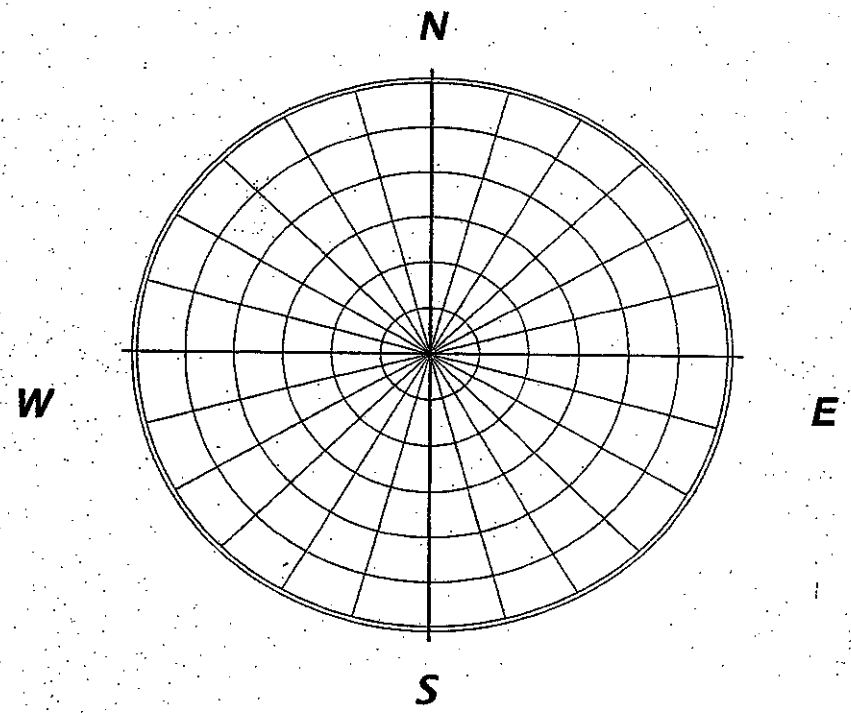
SESSION #:_____ **FILE NAME:**_____
LOCAL DATE:_____ START:_____ END:_____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):_____
START (1st)_____(2nd)_____(3rd)_____(AVG)_____
STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-30.083 LONG: 112-23-01.974 HEIGHT: 1117.696 ft

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GPS STATION OBSERVATION SHEET

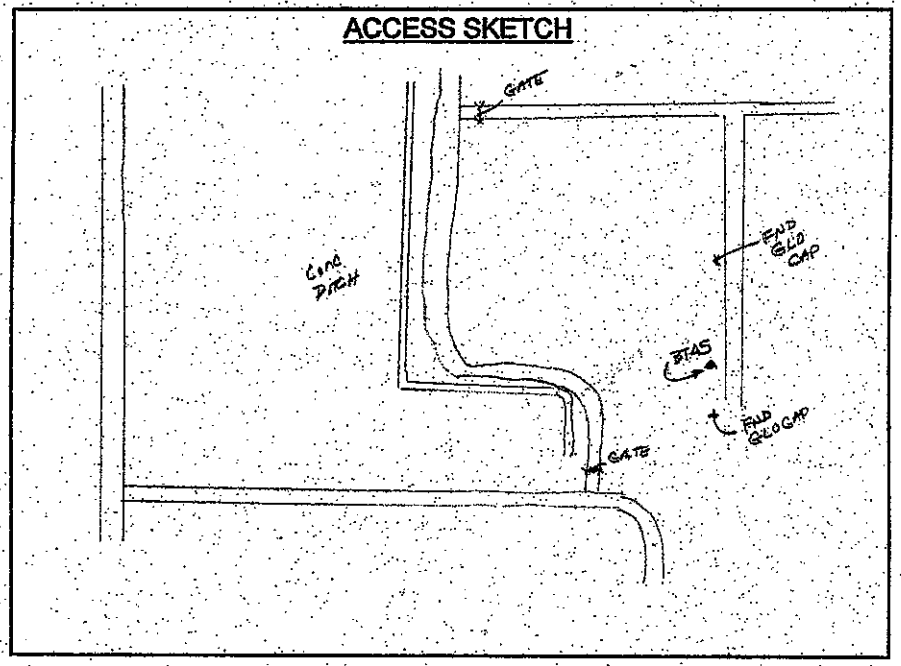
SHE___of

PROJECT: RAINBOW VALLEY
STATION NAME: BT45
STATION ID:
DATE FOUND/SET: 3/7/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED LS TAG FLUSH W/GROUND

STATION STAMPING: LS* PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY RD. & CHANDLER HEIGHTS RD. EAST FOR 13.9 MILES TO ROMONA N. THENCE N. THRU A GATE - PARALLELING A CONC. LINED DITCH (NORTH - THEN WEST - THEN NORTH FOR 1.3 MILES. THENCE EAST THRU A GATE ALONG A DIRT ROAD ±1.2 MILES, THENCE SOUTH ALONG A DIRT ROAD ± 1.5 MILES TO THE POINT.

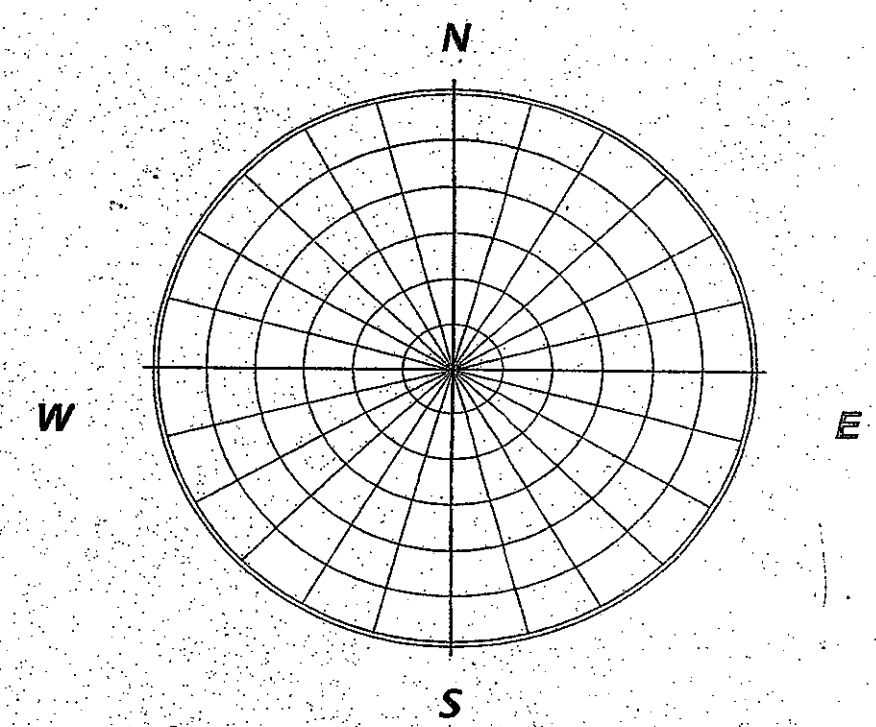
ACCESS SKETCH



OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)____(2nd)____(3rd)____(AVG)____
STOP (1st)____(2nd)____(3rd)____(AVG)____

OBSTRUCTION CHART



LAT: 33-13-30.683 LONG: 112-21-28.946 HEIGHT: 1178.0435

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 46
DATE FOUND/SET:
STATION DESCRIPTION: SET ½" REBAR W/ RED CAP

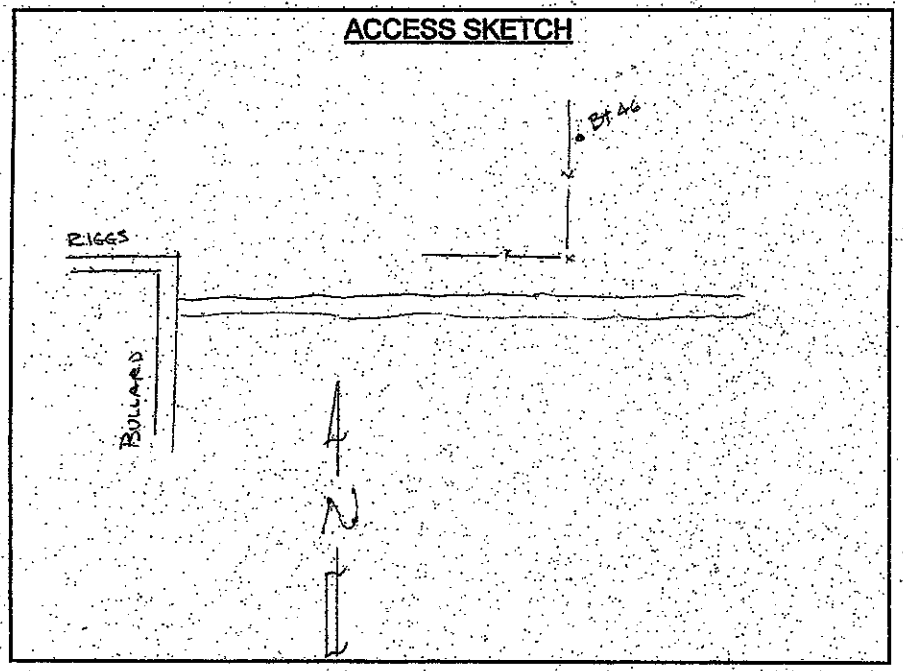
STATION STAMPING:

STATION ACCESS: FROM RIGGS & BULLARD, E ON DIRT ROAD ± 4.0 MILES (THEN ON FOOT 0.4± MILES ALONG FC TO POINT)

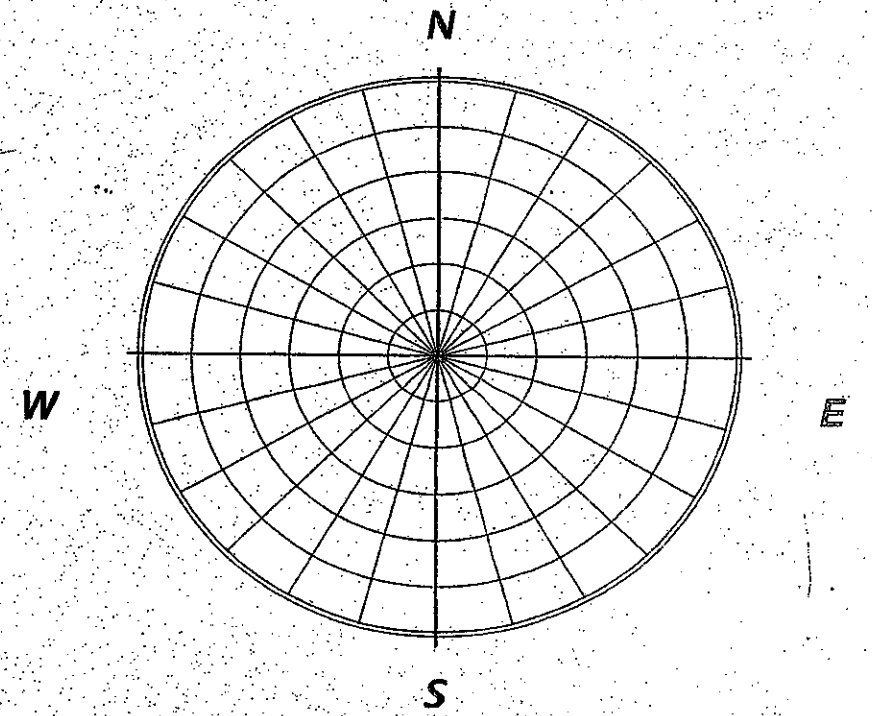
OPERATOR:
RECEIVER TYPE: ANTENNA TYPE:
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-39.079 LONG: 112-18-21.555 HEIGHT: 1327.067

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GPS STATION OBSERVATION SHEET

SHE___of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 47

DATE FOUND/SET:

STATION DESCRIPTION: SET 1/2" REBAR W/ RED CAP

STATION STAMPING:

STATION ACCESS: FROM BULLARD & RIGGS EAST ON DIRT ROAD ± 5.4 MILES TO POWERLINE ROAD - THEN N.WESTERLY ON POWERLINE ROAD ± 0.3 MILES TO WALK POINT. THEN N.E 0.4± MILES TO POINT.

OPERATOR:

RECEIVER TYPE: ANTENNA TYPE:

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

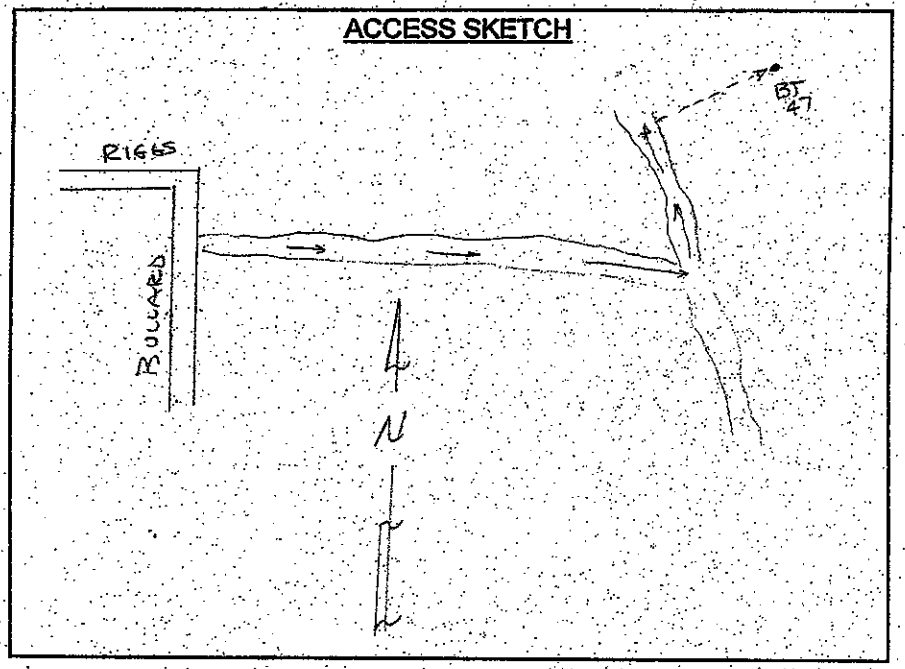
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

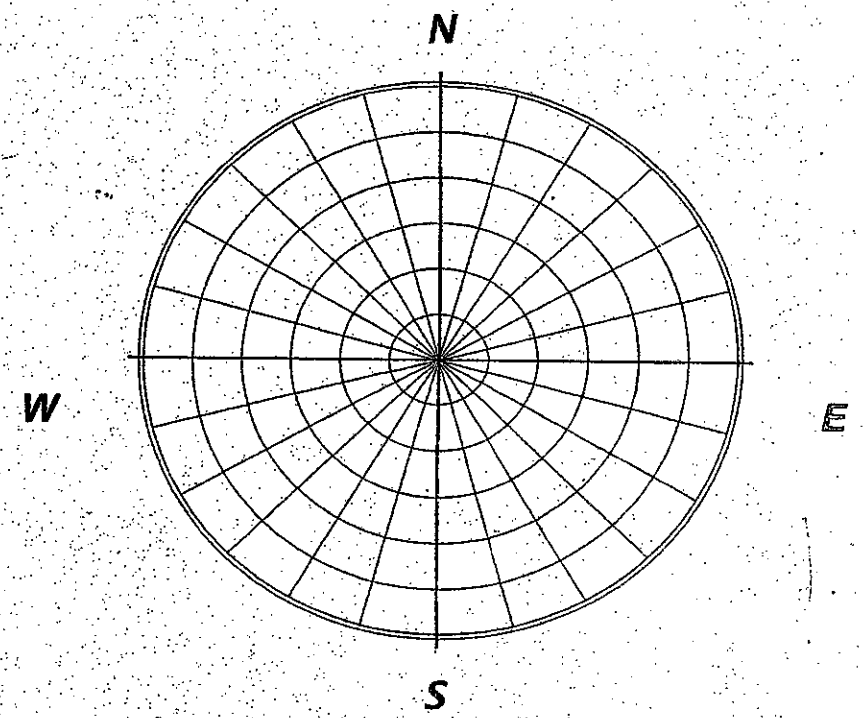
START (1st)_____(2nd)_____(3rd)_____(AVG)_____

STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-29.320 LONG: 112-16-50.305 HEIGHT: 1459.494 M

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME:

STATION ID: BT48

DATE FOUND/SET: 3/14/05

STATION DESCRIPTION: Set 1/2" rebar w/ red cap

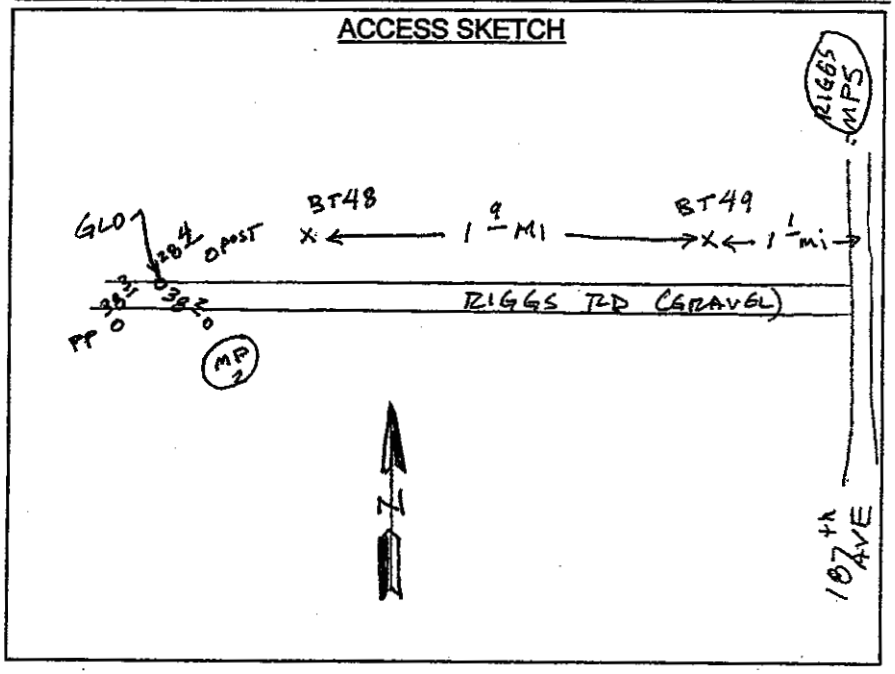
Fnd 2½" pipe w/brass GLO cap in Riggs Rd. cut bank

STATION STAMPING: Set PEC Control

GLO	T2S	
	R3W	R2W
	S25	S30
	S6	S31

STATION ACCESS: Beginning at the intersection of 187th Ave and Riggs Rd. travel Westerly on Riggs, 3.0 miles to MP 2. Panel lies North and East 50' of GLO monument.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: Leica 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

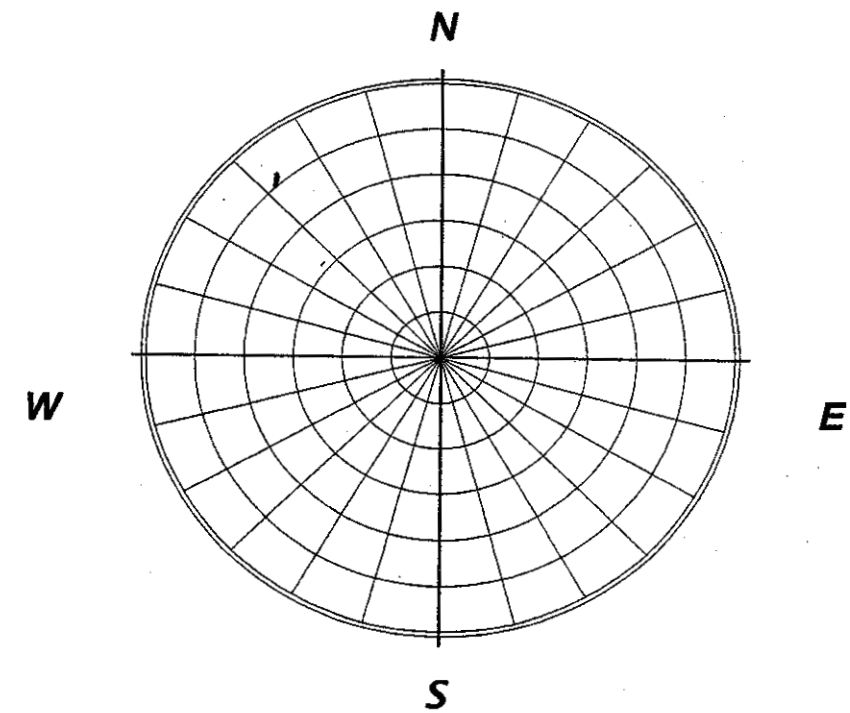
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-13-04.963 LONG: 112-30-45.365 HEIGHT: 1164.311 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME:

STATION ID: BT49

DATE FOUND/SET: 3/14/05

STATION DESCRIPTION: **Fnd** 1/2" rebar w/ red cap

Fnd Maricopa County brass cap ½' below ground

STATION STAMPING: **Fnd** PEC Control

Fnd MC T2S R2W

S29 | S28

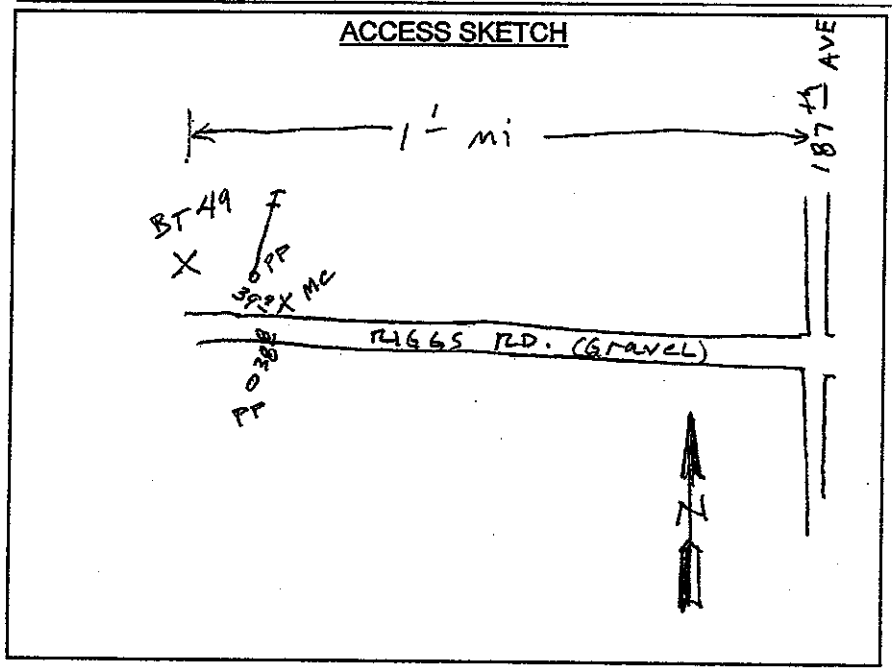
S32 | S33

RLS 36563

2004

STATION ACCESS: Beginning at the intersection of 187th Ave and Riggs Rd. travel Westerly on Riggs 1.1 miles. Panel lies North of Riggs 50' +/-.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

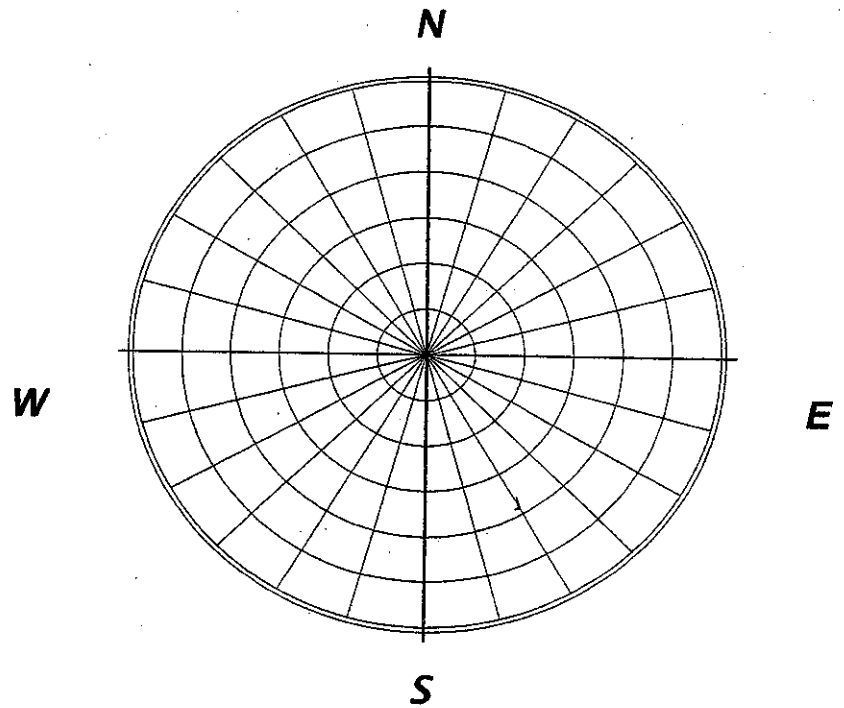
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-13-04.757 LONG: 112-28-43.332 HEIGHT: 1153.568 ft

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GPS STATION OBSERVATION SHEET

SH__ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 50

DATE FOUND/SET: 3/8/2005

STATION DESCRIPTION: SET ½" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS RD & BOLLARD AVE, EAST ON A DIRT ROAD 2.25± MILES TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

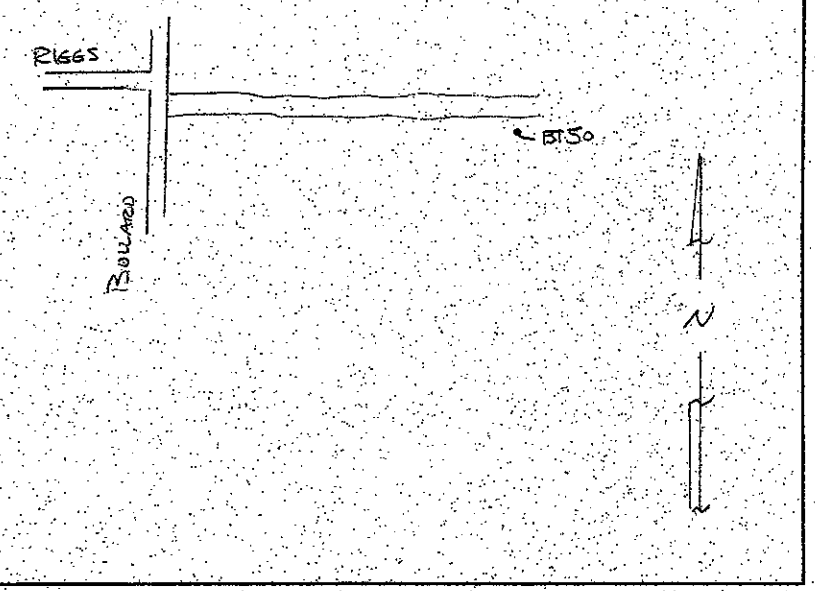
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

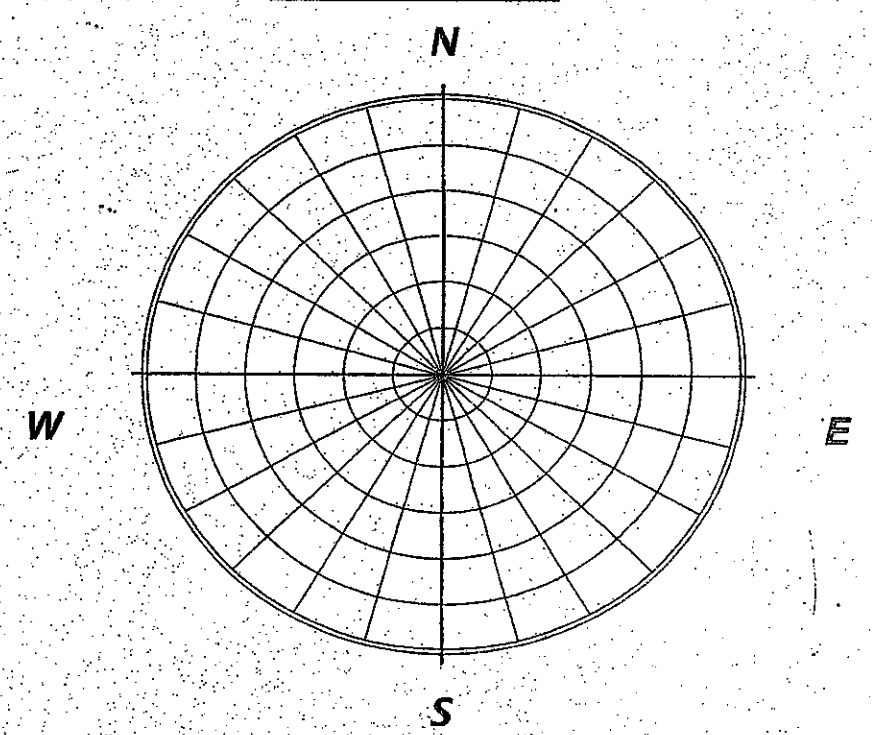
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-13-03.201 LONG: 112-19-54.442 HEIGHT: 1234.365 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME:

STATION ID: BT11

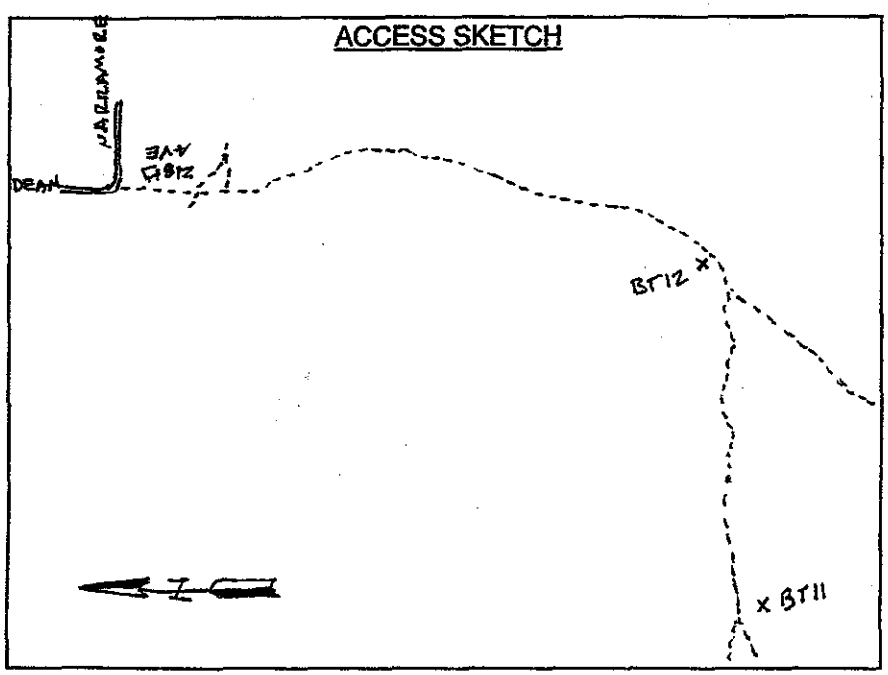
DATE FOUND/SET: 3/10/05

STATION DESCRIPTION: Set 1/2" rebar w/ red cap

STATION STAMPING: PEC Control

STATION ACCESS: Beginning at the intersection of 218th Ave and Narramore (just East of Dean) travel Southerly on 218th, which turns into a meandering dirt road/sandy wash, 1.8 miles to a fork in the traveled way. Take the right fork (West) and travel 1.2 miles to another fork. Panel is approximately 50 ' South of traveled way.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

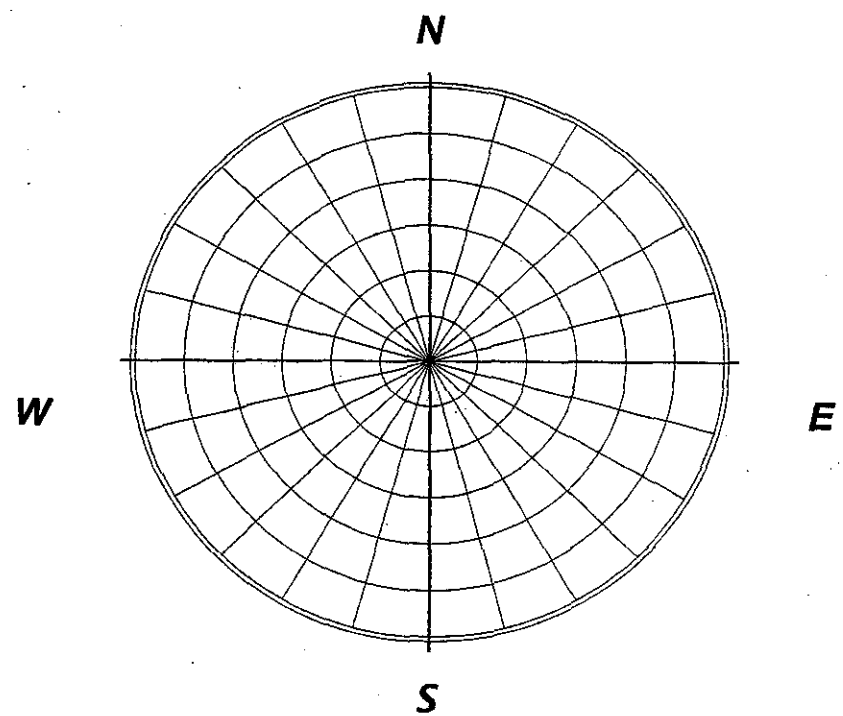
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-18-33.756 LONG: 112-32-47.890 HEIGHT: 1056.744ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME:

STATION ID: BT12

DATE FOUND/SET: 3/10/05

STATION DESCRIPTION: Set 1/2" rebar w/ red cap

STATION STAMPING: PEC Control

STATION ACCESS: Beginning at the intersection of 218th Ave and Narramore (just East of Dean) travel Southerly on 218th, which turns into a meandering dirt road/sandy wash, 1.6 miles. Panel is approx. 25' NW of traveled way

OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

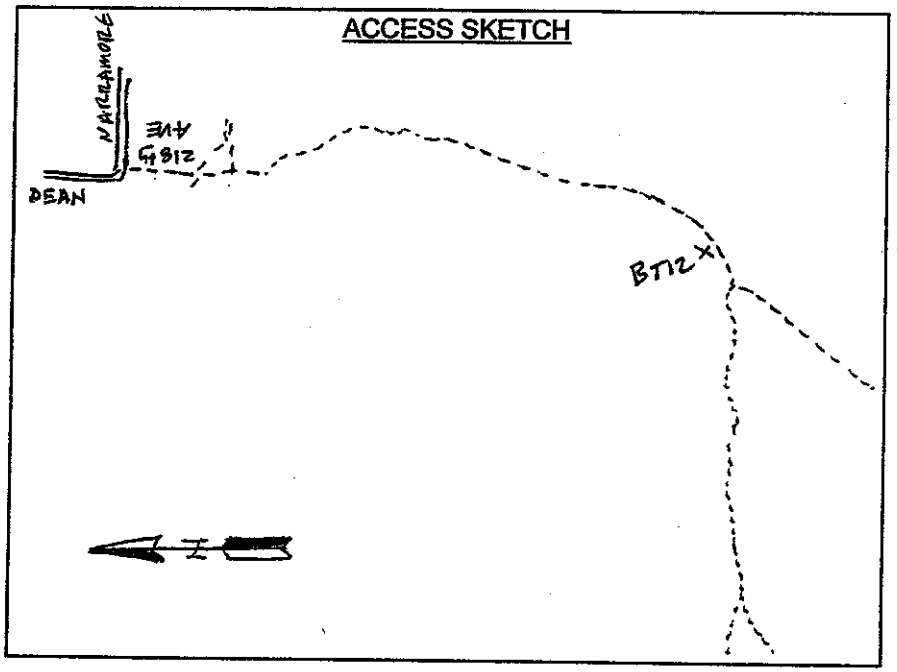
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

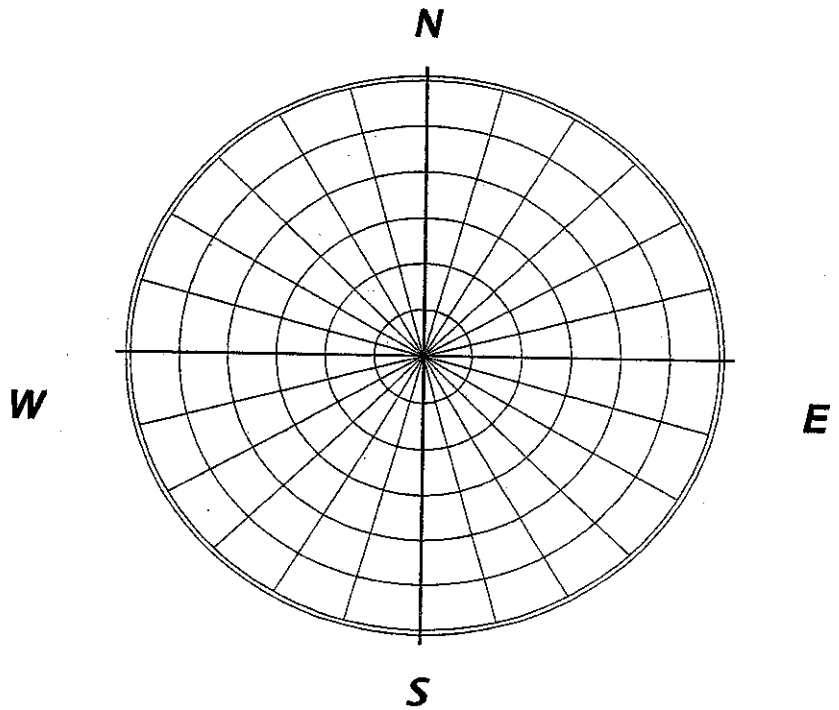
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-18-38.699 LONG: 112-31-34.848 HEIGHT: 989.466 ft

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GPS STATION OBSERVATION SHEET

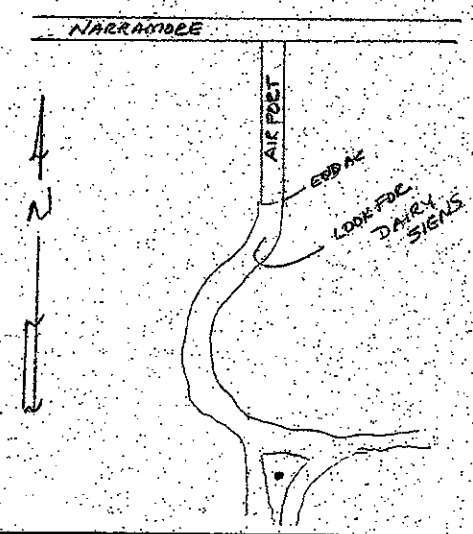
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 13
DATE FOUND/SET: 3/04/05
STATION DESCRIPTION: SET 1/2" REBAR FLUSH W/RED LS CONTROL CAP

STATION STAMPING: ~~AA~~ PEC CONTROL

STATION ACCESS: FOR NARRAMORE & AIRPORT RDS – SOUTH ALONG AIRPORT ±0.9 MILES TO DIRT ROAD WESTERLY (DAIRY SIGNS) THEN ALONG DIRT ROAD ±0.55 MILES TO INTERSECTION OF 3 DIRT ROADS – POINT SET IN CENTER AREA

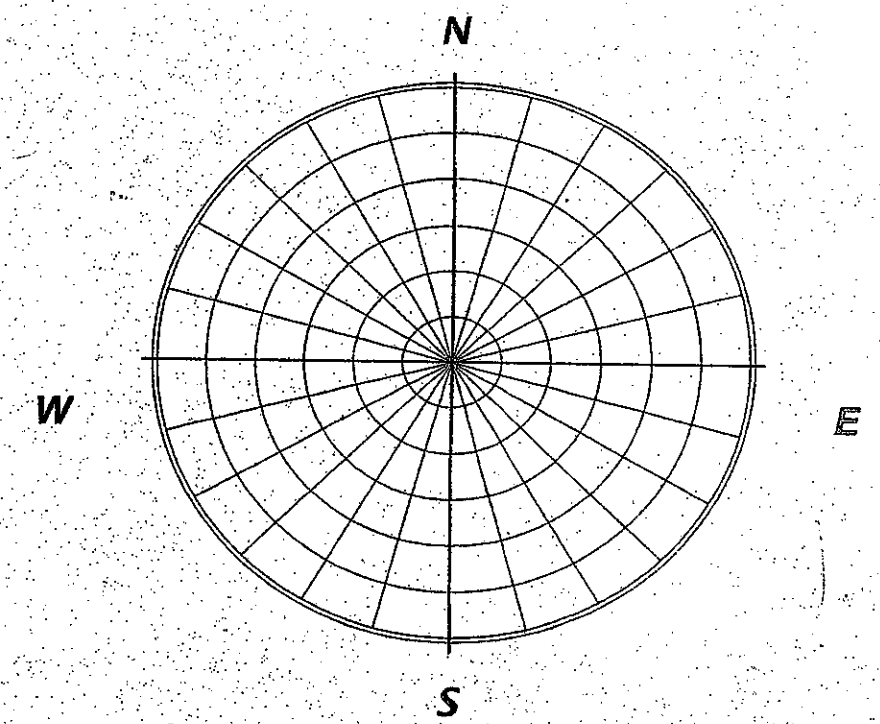
ACCESS SKETCH



OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-18-46.777 LONG: 112-30-14.813 HEIGHT: 926.719 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT 14
STATION ID: PANEL

DATE FOUND/SET: 3-18-05

STATION DESCRIPTION: SET 1/2" RB W/RED CONTROL CAP

STATION STAMPING: 9X1 PANEL

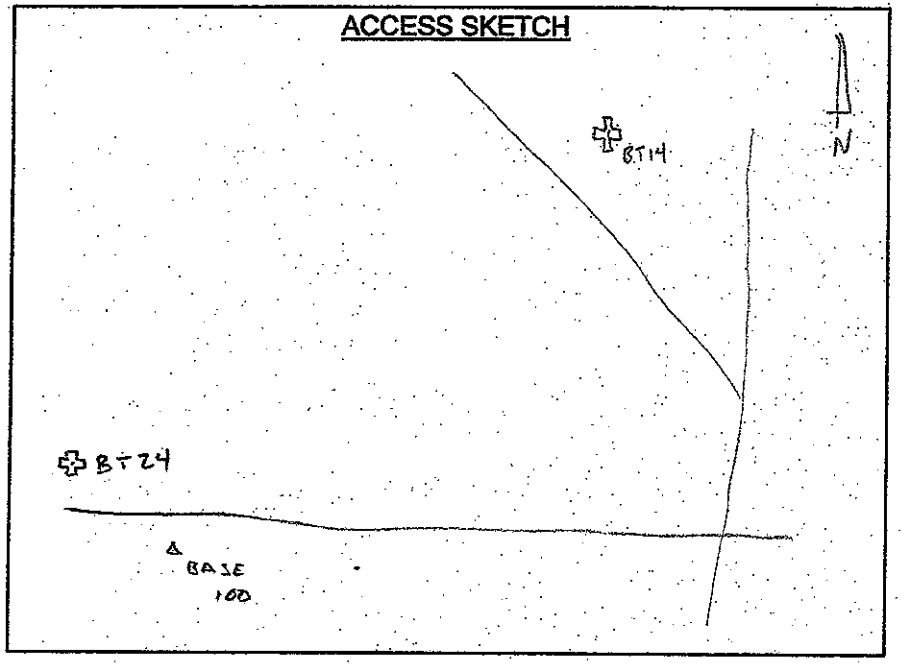
STATION ACCESS: FROM BASE PT 100 DRIVE EAST for ~1.0 miles to DIRT ROAD N,S THENCE DRIVE NORTH FOR +/- 1/2 MILE TO JEEP TRAIL GOING N.W. FOR 3/4 MILES and WALK 200' WEST TO BT14

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

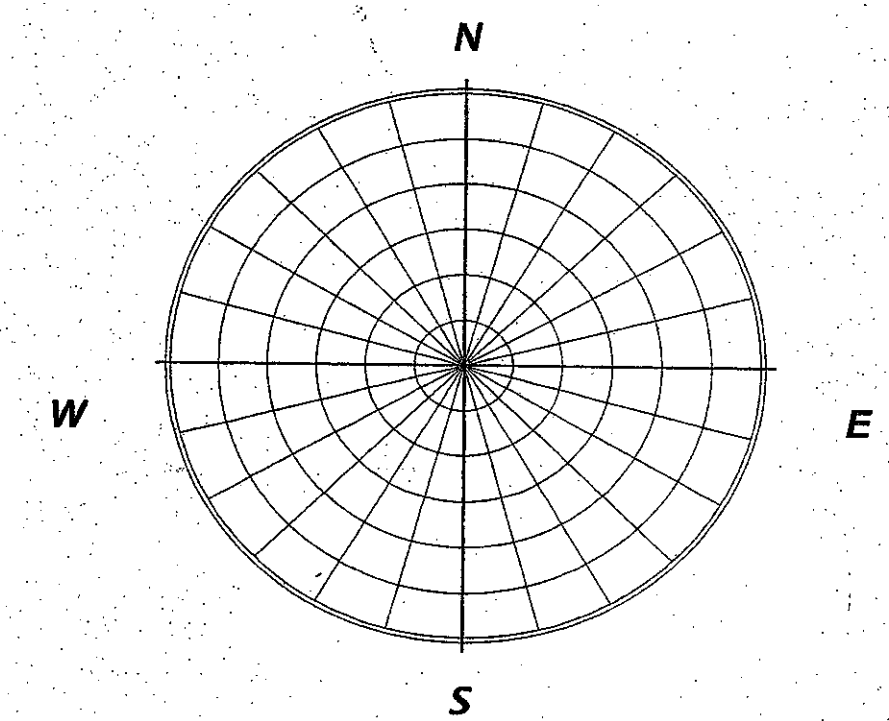
ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



1 mi.

OBSTRUCTION CHART



LAT: 33-18-46.771 LONG: 112-26-05.544 HEIGHT: 1026.014

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 15
STATION ID:

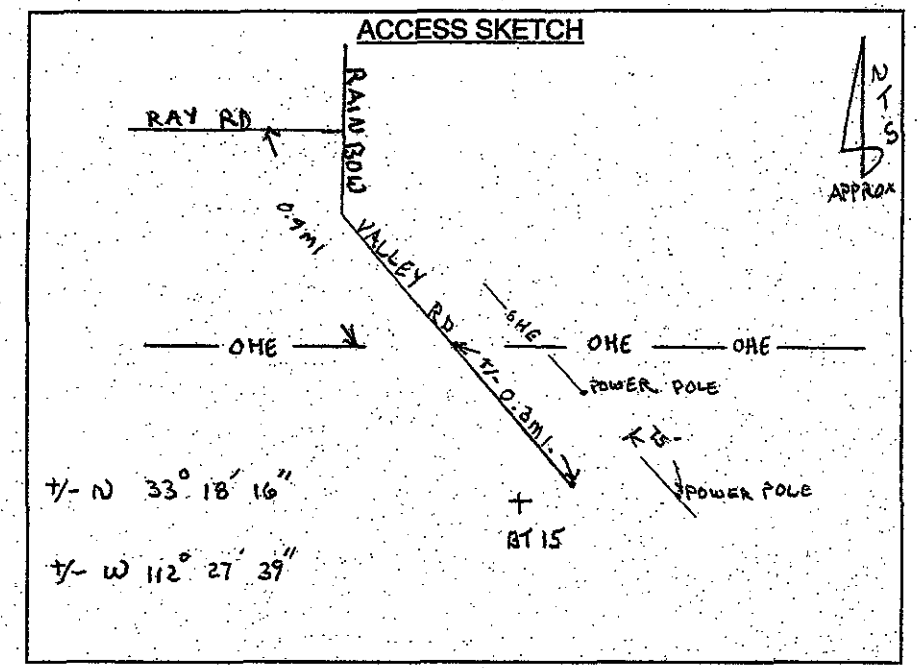
DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: 1/2" REBAR FLUSH. PLASTIC PANEL POINT. 4' LEGS

STATION STAMPING: RED PLASTIC CAP MARKED PEC CONTROL

STATION ACCESS: POINT IS +/- 0.30 MILES SOUTH EAST OF OVER HEAD POWER LINE. +/- 27.5' WEST OF THE EDGE OF PAVEMENT. +/- 8.8 EAST OF A 4' BARB WIRE FENCE. +/- 75' NORTH WEST OF A WOOD POLE ON THE EAST SIDE OF RAINBOW VALLEY ROAD

ACCESS SKETCH

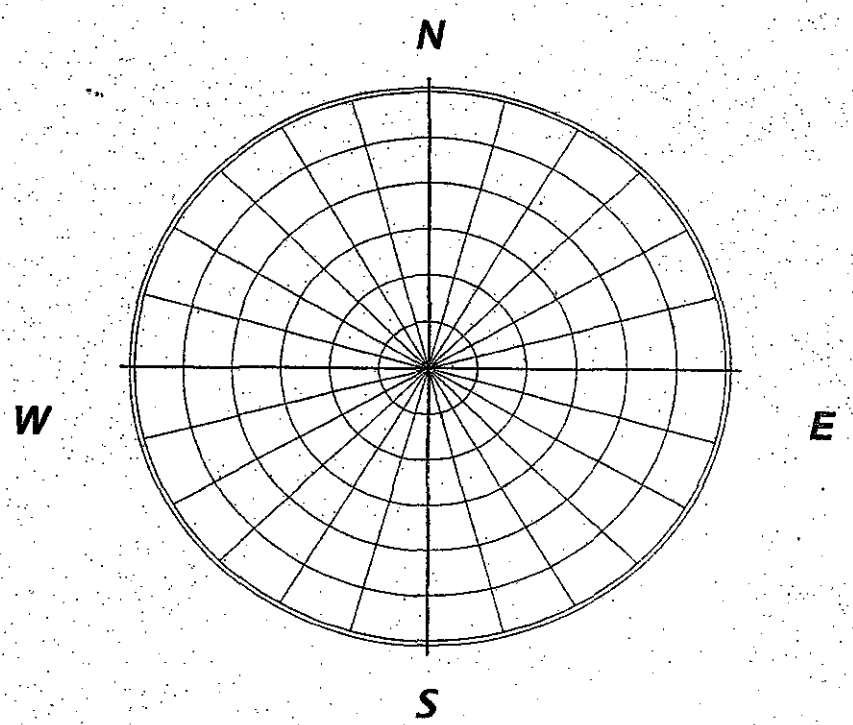


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-18-16.110 LONG: 112-27-38.526 HEIGHT: 1008.282

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW
STATION NAME: BT 16
STATION ID: PANEL

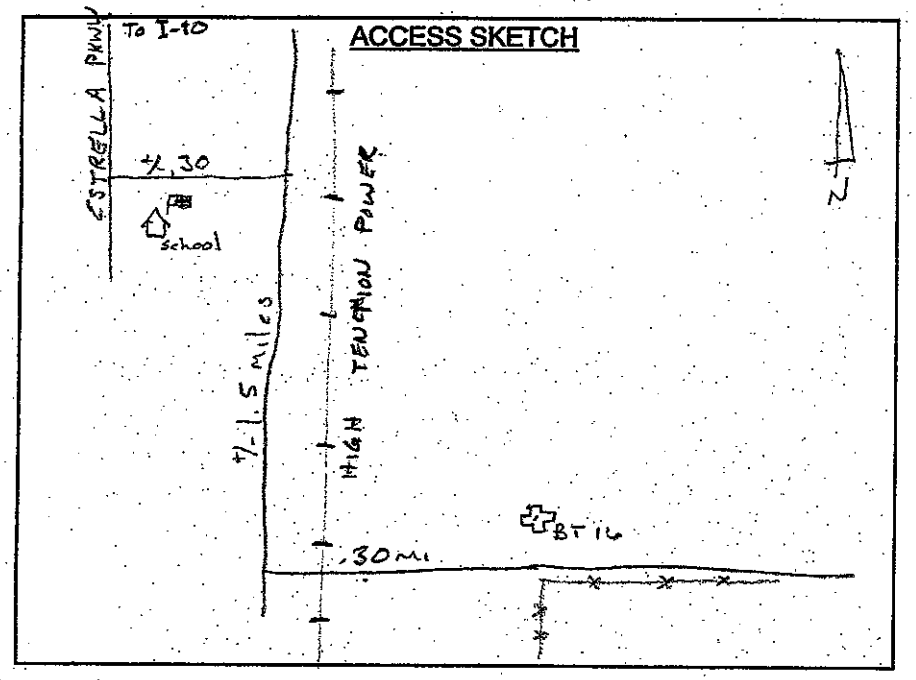
DATE FOUND/SET: 3-18-05

STATION DESCRIPTION: Fnd 2" ALUM CAP <H-Z> SET

STATION STAMPING: 9x1 PANEL

STATION ACCESS: from ESTRELLA HIGH school take Dirt ROAD north of school to power line road turn Right <south> for 1.5 miles turn Left <east> for .30 miles to corner of fence. WALK 40' NORTH TO BT16

ACCESS SKETCH

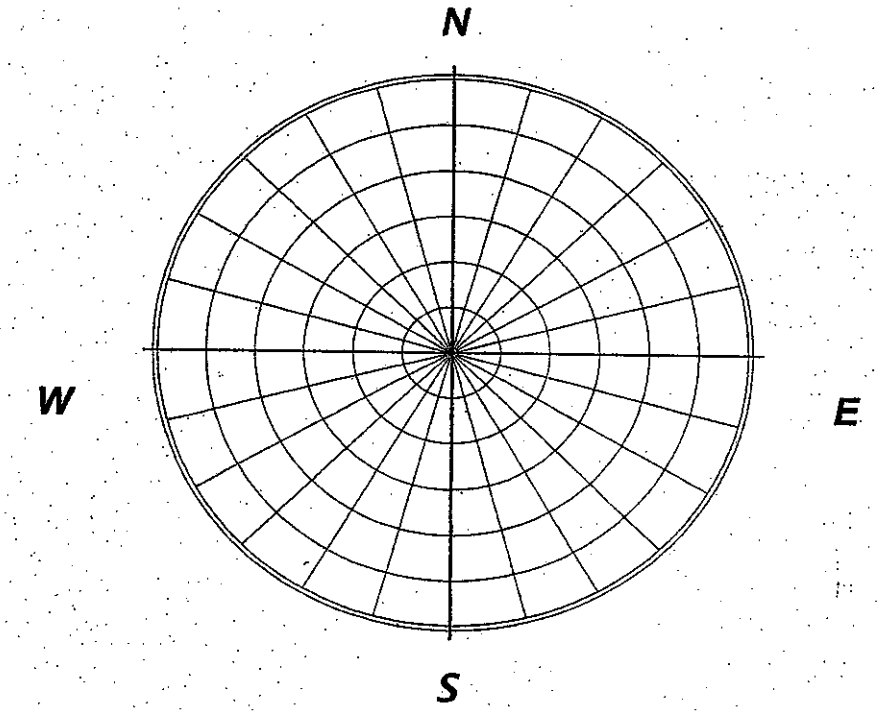


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

OBSTRUCTION CHART



LAT: 33-18-17.923 LONG: 112-24-33.530 HEIGHT: 1099.722

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT17
STATION ID: PANNEL

DATE FOUND/SET: 3-16-05

STATION DESCRIPTION: SET ½" RB W/RED PEC CONTROL CAP

STATION STAMPING:

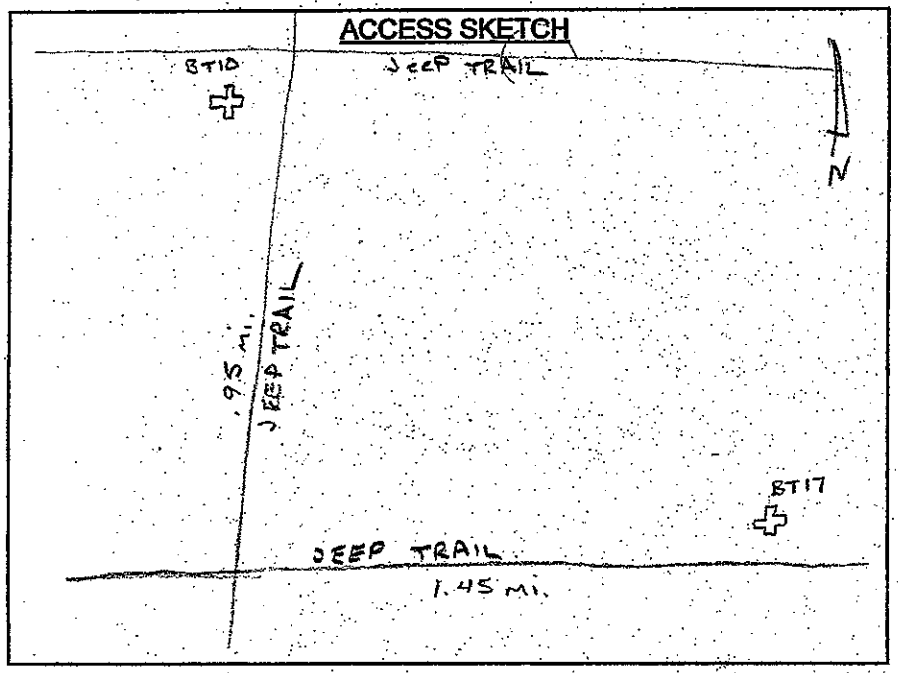
STATION ACCESS:

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

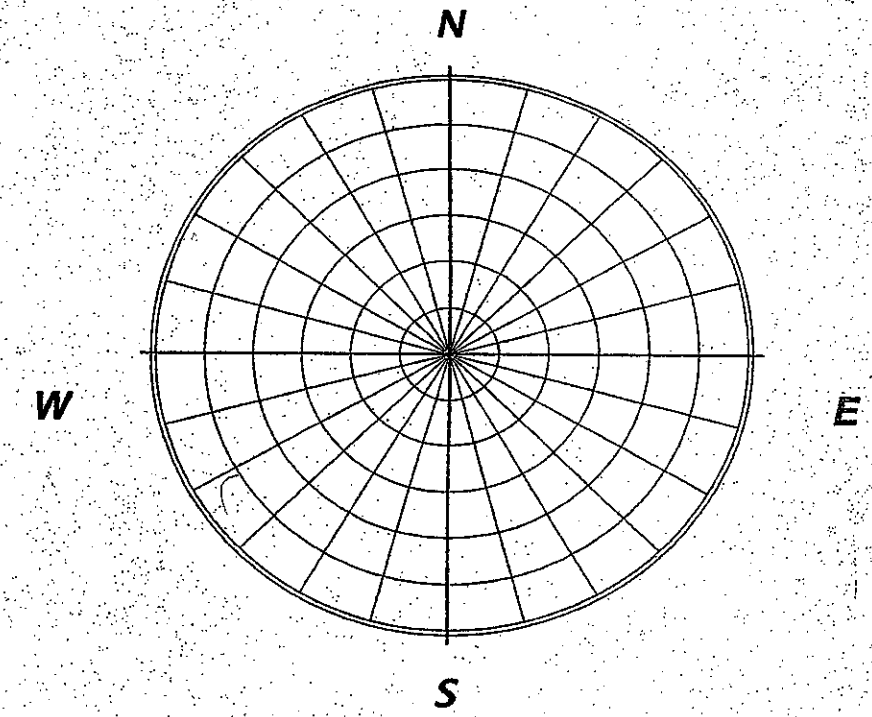
SESSION #: ___ **FILE NAME:** ___
LOCAL DATE: ___ START: ___ END: ___

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): ___
START (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___
STOP (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-18-16.856 LONG: 112-22-04.470 HEIGHT: 1314.195

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 10

DATE FOUND/SET: 03/16/05

STATION DESCRIPTION: 3" BRASS CAP. 1' BELOW PVMT

STATION STAMPING:

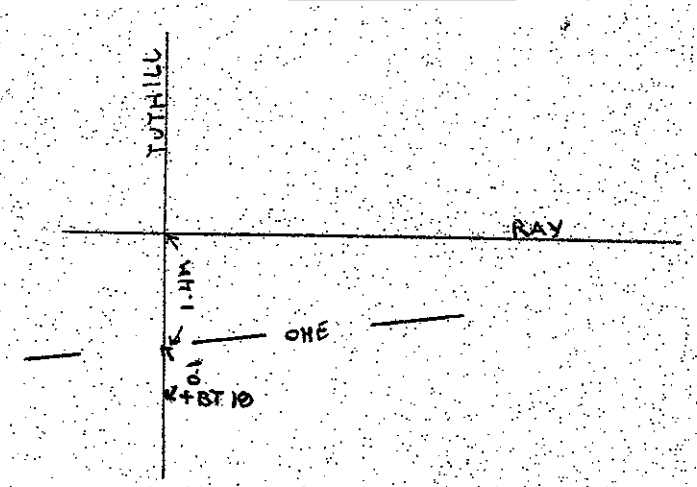
STATION ACCESS: FROM TOTHILL & RAY GO 1.5 MILES SOUTH. POINT IS +/- 3.5' EAST OF ℄ TOTHILL. 1' BELOW PVMT.

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

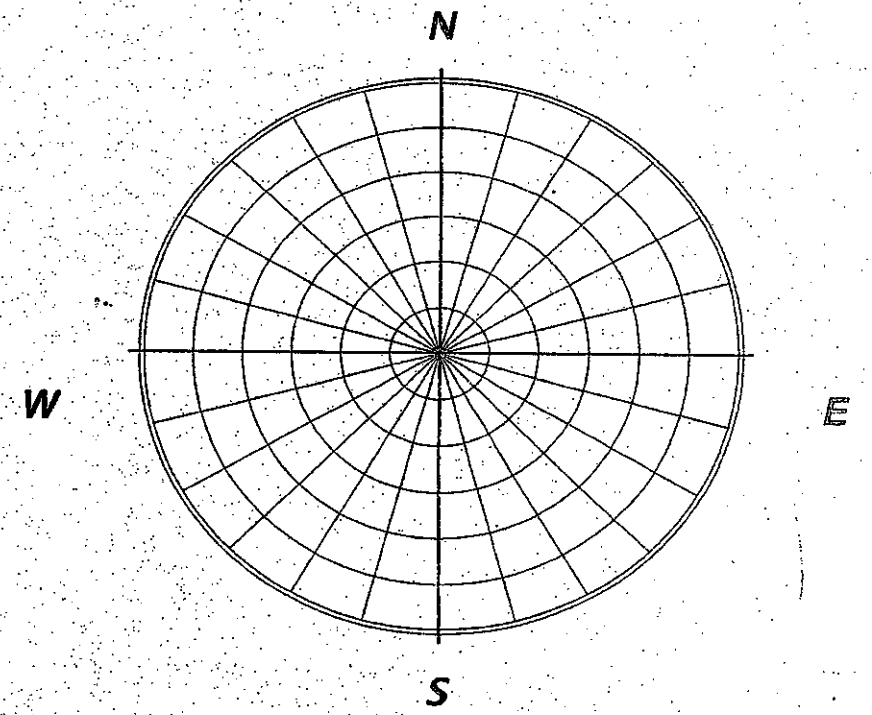
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-17-51.452 LONG: 112-29-13.163 HEIGHT: 956.173 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME: _____

STATION ID: BT19

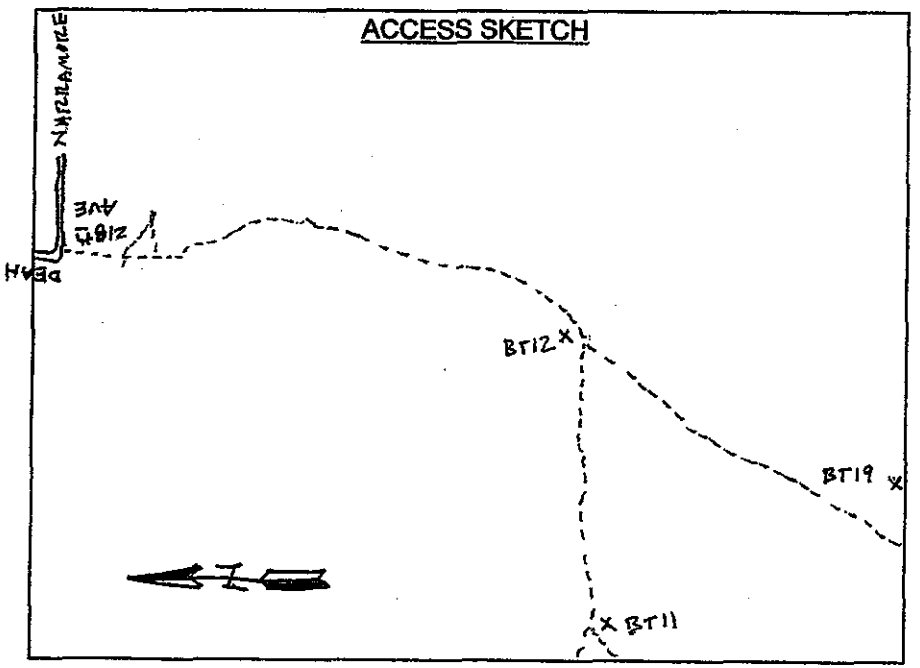
DATE FOUND/SET: 3/10/05

STATION DESCRIPTION: Set 1/2" rebar w/ red cap

STATION STAMPING: PEC Control

STATION ACCESS: Beginning at the intersection of 218th Ave and Narramore (just East of Dean) travel Southerly on 218th, which turns into a meandering dirt road/sandy wash. 1.8 miles to a fork in the traveled way. Take the left fork (SWly) and travel 0.8 miles. Leaving the traveled way proceed on foot, S 35° E, across wash, 0.2mi to panel.
SW corner Section 35, T1S, R3W lies SWly 80' from panel in Palo Verde clump

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX 1202

SESSION #: _____ **FILE NAME:** _____

LOCAL DATE: _____ START: _____ END: _____

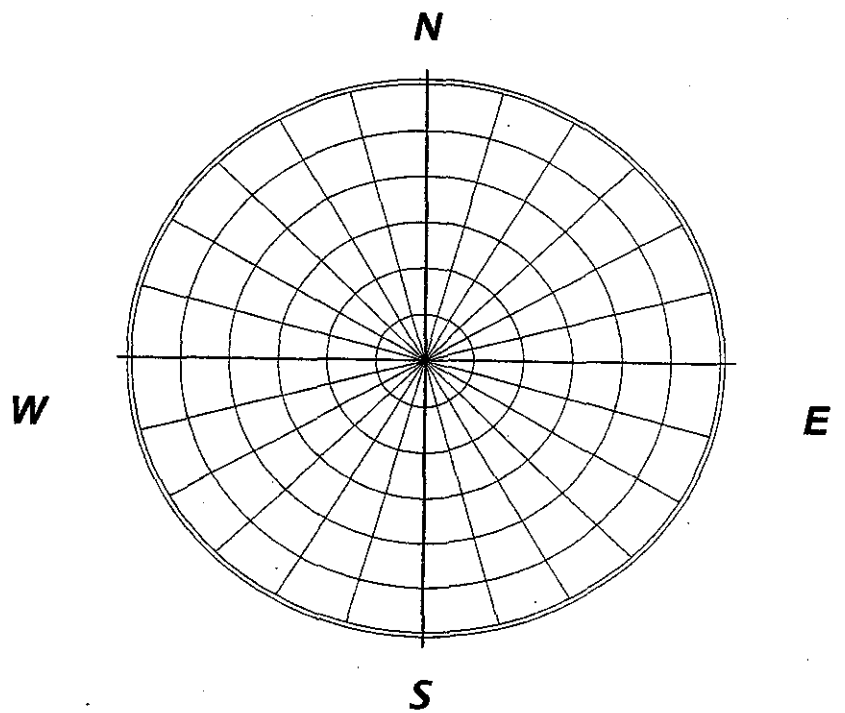
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____

STOP (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____

OBSTRUCTION CHART



LAT: 33-17-25.976 LONG: 112-32-19.569 HEIGHT: 1070.582 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 20

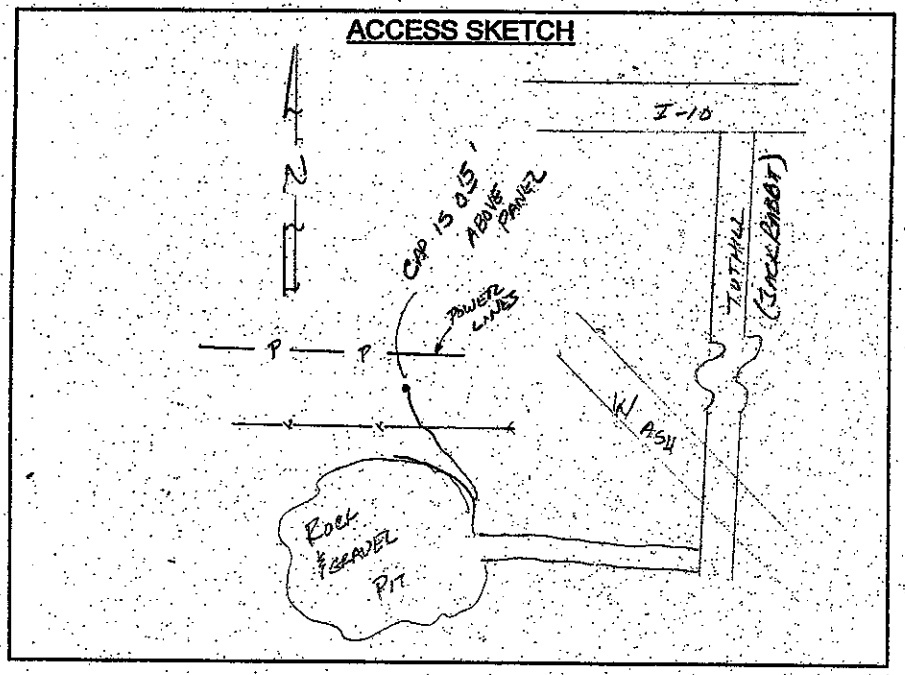
DATE FOUND/SET: 3/4/2005

STATION DESCRIPTION: PANEL SET STRADDLING REBAR W/2" ALUM. CAP – 1.2'± N.E OF BLM CAP

STATION STAMPING: R3W T13 R2W S6 S3 T2S LS# 36583

STATION ACCESS: FROM I-10 & JACKRABBIT (TUTHILL) SOUTH ON TUTHILL ± 13.0 MILES JUST PASSED (SOUTH OF) THE WATERMAN WASH. THEN WEST ON DIRT ROAD TO A ROCK QUARRY – THEN TRACK NORTHERLY & WESTERLY ALONG QUARRY EDGE TO THE N. SIDE OF QUARRY – N THROUGH HOLE IN FENCE ± 200' TO THE STATION

ACCESS SKETCH



OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

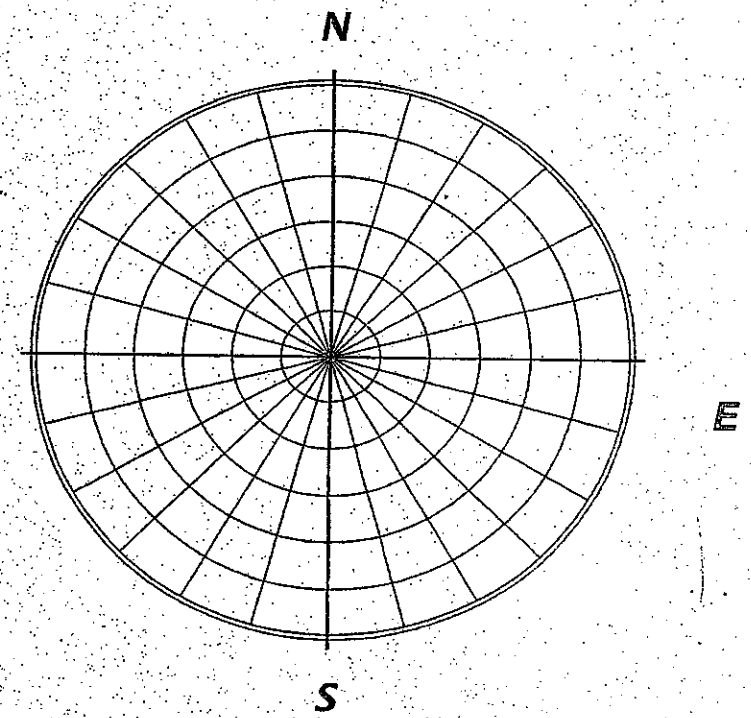
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-17-25.613 LONG: 112-30-45.719 HEIGHT: 1024.162 ft

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GPS STATION OBSERVATION SHEET

SHE___of

PROJECT: RAINBOW VALLEY
STATION NAME: BT21
STATION ID:

DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: 1/2" REBAR FLUSH. PLASTIC PANEL PT. 4' LEGS

STATION STAMPING: RED PLASTIC CAP MARKED PEC CONTROL PT.

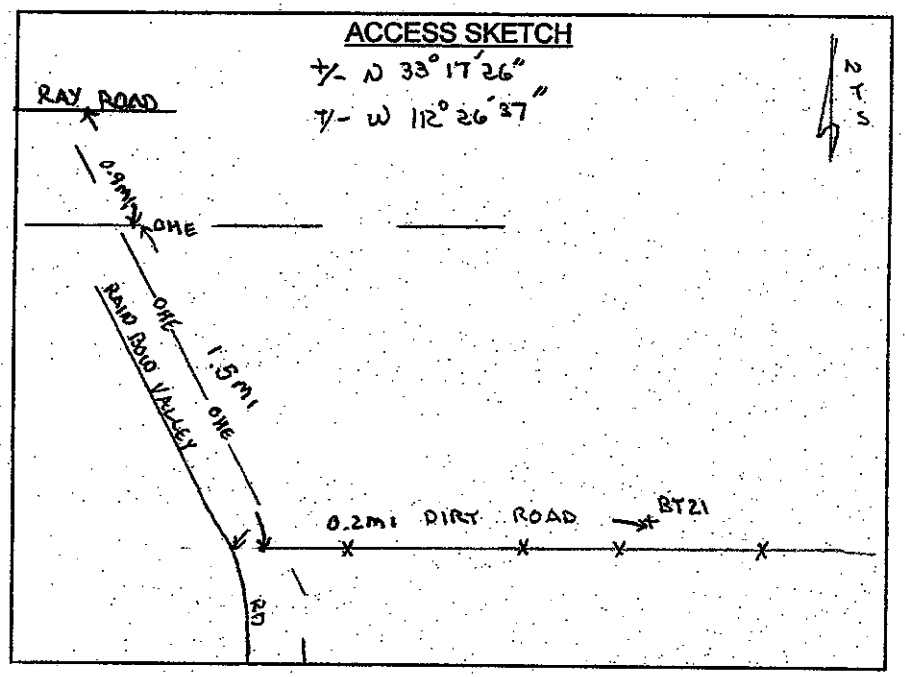
STATION ACCESS: +/-0.2MI EAST ALONG A DIRT ROAD FROM RAINBOW VALLEY RD. +/- 35' NORTH OF THE EDGE OF ROAD. DIRT ROAD IS +/- 2.4 SOUTHEAST OF OHP GOING EST/WEST.

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

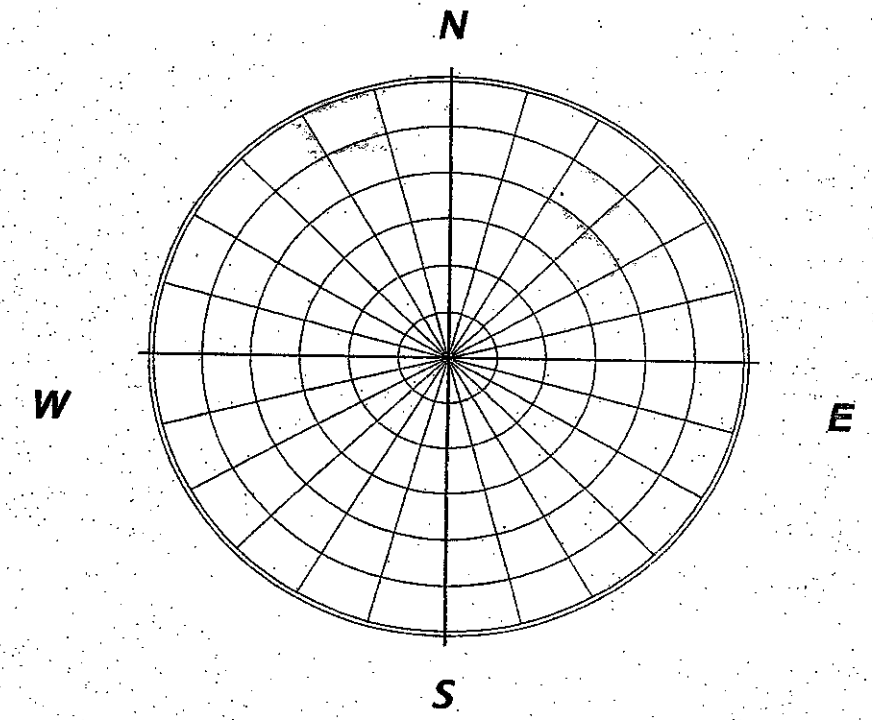
SESSION #:_____ **FILE NAME:**_____
LOCAL DATE:_____ START:_____ END:_____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):_____
START (1st)_____(2nd)_____(3rd)_____(AVG)_____
STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-17-25.531 LONG: 112-26-36.915 HEIGHT: 1016.193 ft

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GPS STATION OBSERVATION SHEET

SH___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 22
STATION ID:

DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: ½" REBAR FLUSH. PLASTIC PANEL PK, 4' LEGS

STATION STAMPING: RED PLASTIC CAP MARKED PEC CONTROL

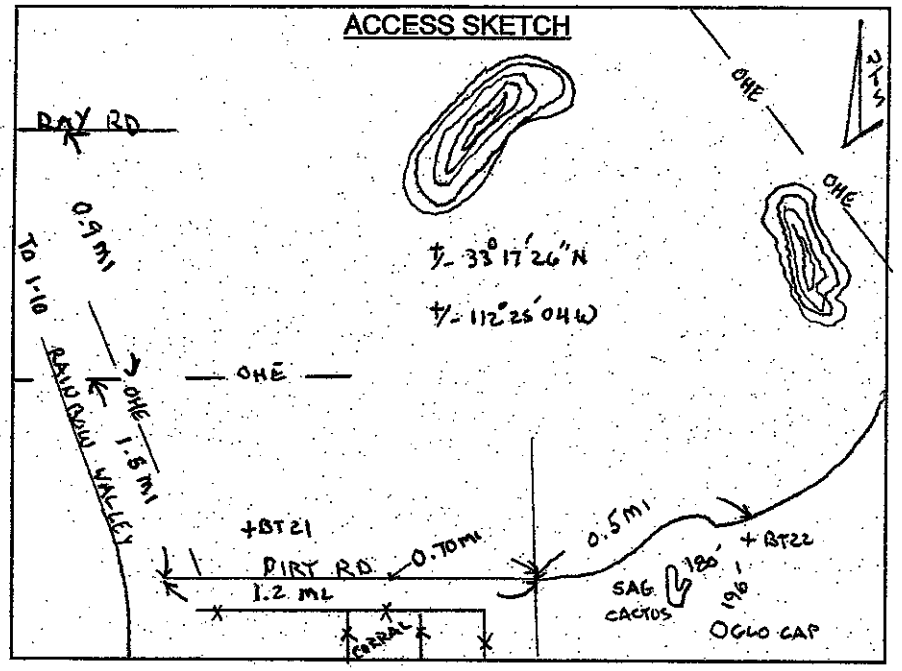
STATION ACCESS:

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

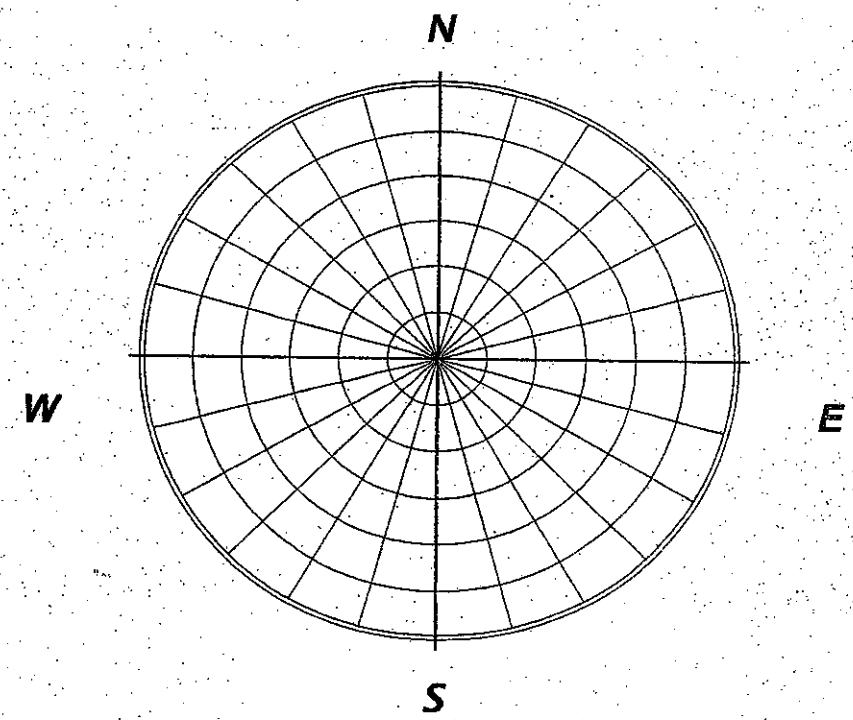
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-17-26.289 LONG: 112-25-03.445 HEIGHT: 1080.147 ft

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GPS STATION OBSERVATION SHEET

SHL ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT23

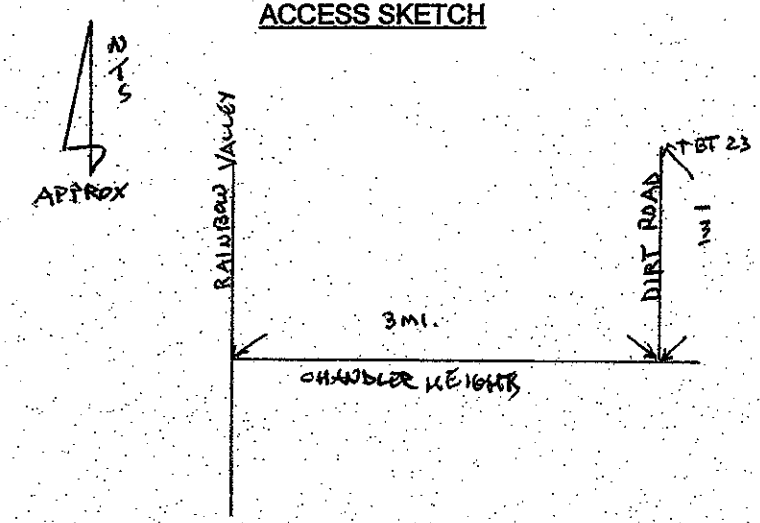
DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: ½" RB FLUSH PLASTIC PANEL POINT. 4' LEGS

STATION STAMPING: RED CAP STAMPED REC CONTROL

STATION ACCESS: FROM THE INTERSECTION OF RAINBOW VALLEY AND CHAND. HEIGHTS TAKE PAVED ROAD EAST FOR 3 MILES EAST TO A DIRT ROAD HEADING NORTH. TAKE DIRT ROAD NORTH FOR 1 MILE TO M.

ACCESS SKETCH

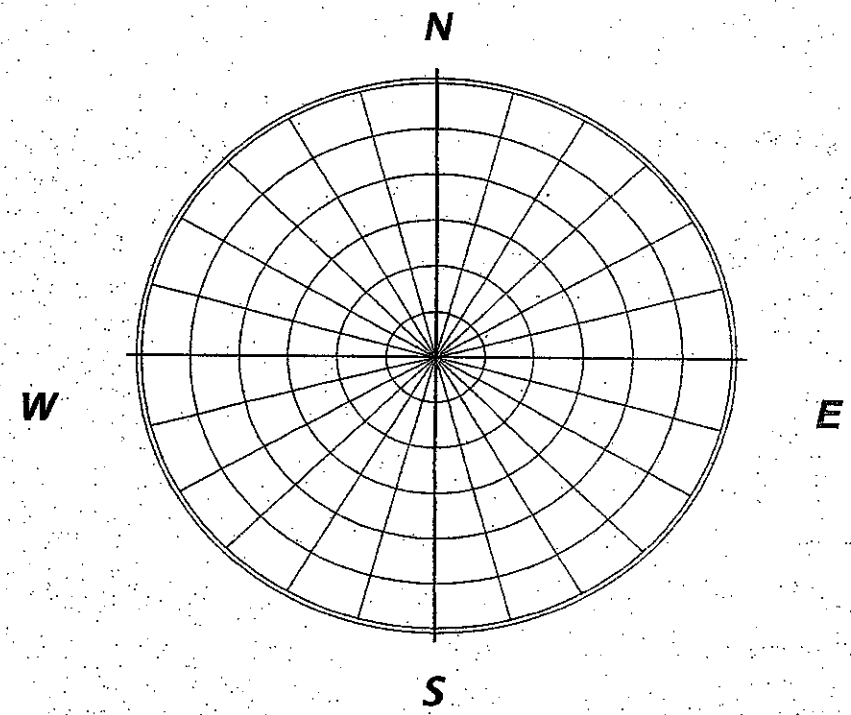


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-17-24.874 LONG: 112-23-32.659 HEIGHT: 1160.824

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GPS STATION OBSERVATION SHEET

Sh. ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BM 24

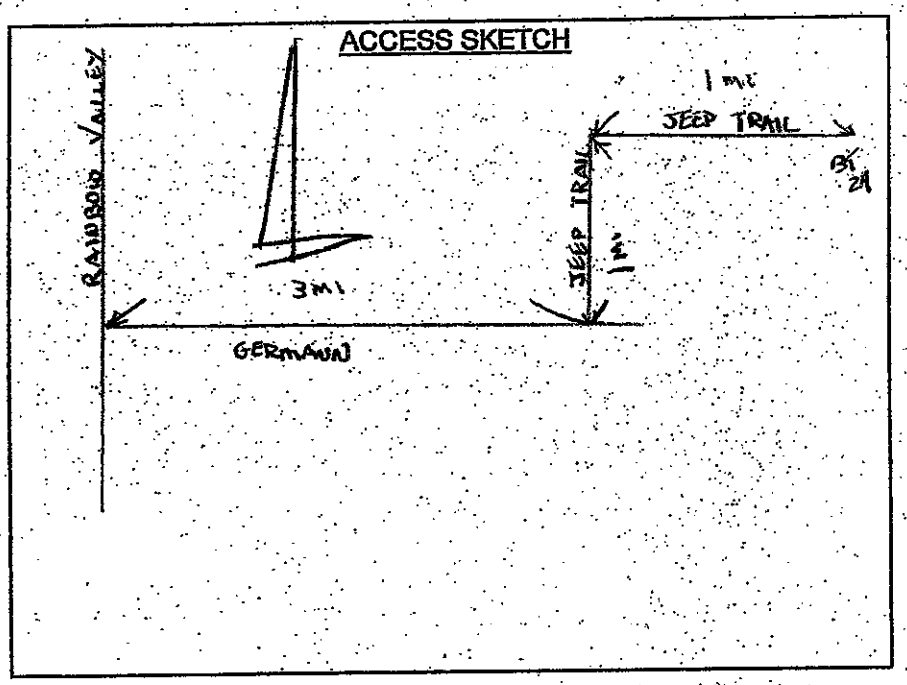
DATE FOUND/SET:

STATION DESCRIPTION: ½" RB/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY AND GERMANN GO EAST FOR 3 MI TO JEEP TRAIL. TAKE JEEP TRAIL NORTH FOR 1 MI TO JEEP TRAIL. TAKE JEEP TRAIL EAST 1 MI TO POINT.

ACCESS SKETCH

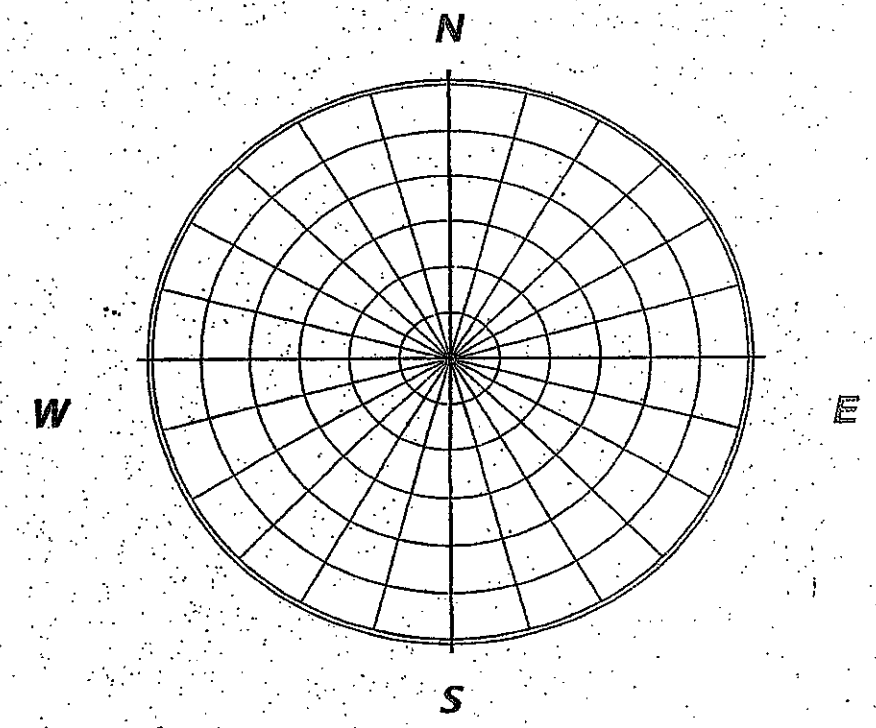


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-17-24.450 LONG: 112-22-30.455 HEIGHT: 1290.847 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT25
STATION ID:

DATE FOUND/SET:

STATION DESCRIPTION: REBAR FLUSH

STATION STAMPING: RED CAP PEC CONTROL

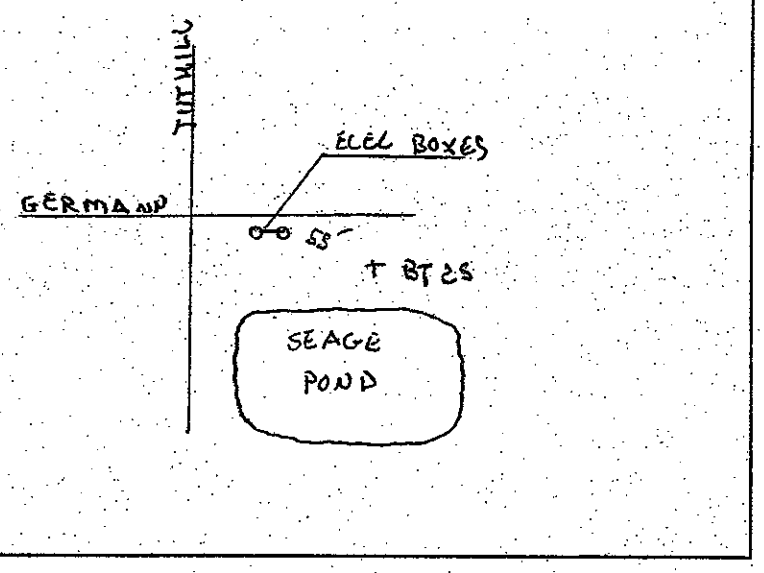
STATION ACCESS: POINT IS +/- 55' SOUTH EAST OF ELEC BOXES LOCATED AT SOUTH EAST COR. OF TUTHILL & GERMANN RD

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

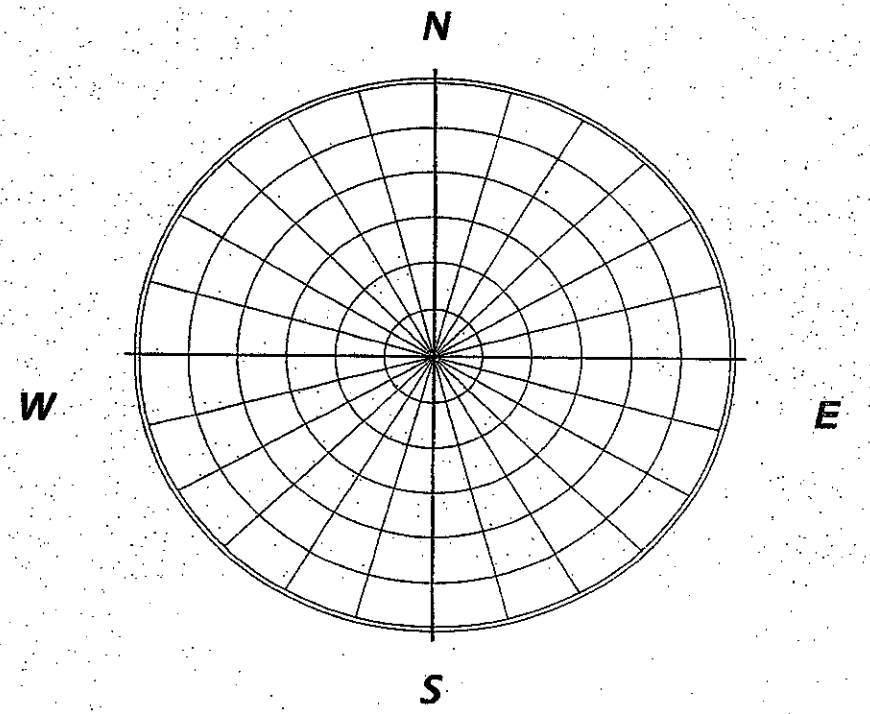
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-16-33.436 LONG: 112-29-11.859 HEIGHT: 994.752

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAIN BOW VALLEY

STATION NAME: BT 26

STATION ID:

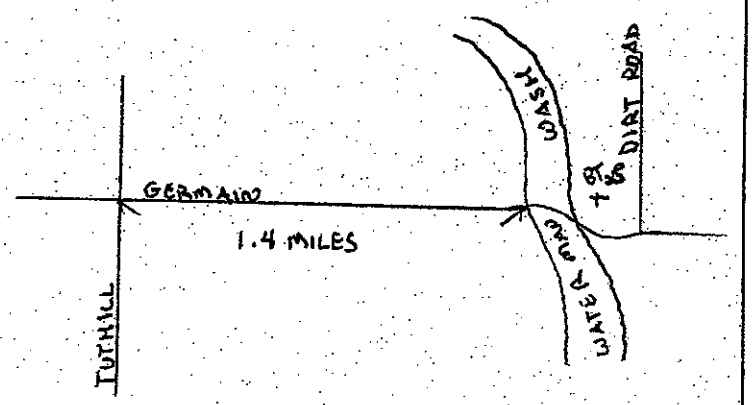
DATE FOUND/SET:

STATION DESCRIPTION:

STATION STAMPING:

STATION ACCESS: FROM INTERSECTION OF TUTHILL & GERMANN DRIVE WEST +/- 1.4 MILES TO WASH. PARK TRUCK AND WALK ACROSS WASH. POINT IS ON NORTH SIDE OF WASH. +/- 15' WEST OF DIRT ROAD RUNNING NORTHERLY

ACCESS SKETCH



OPERATOR: CHUCK STUART

RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

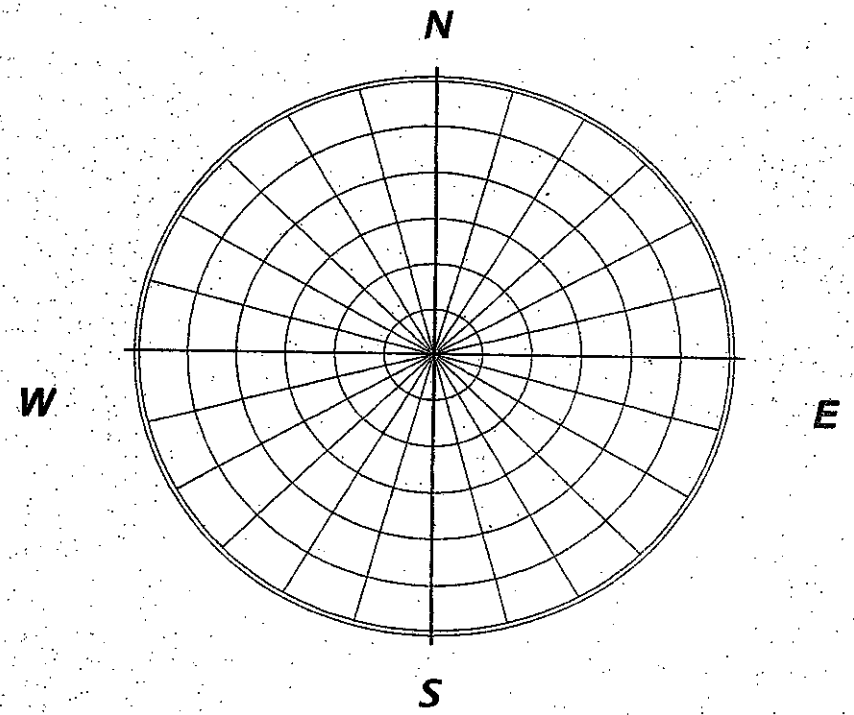
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-16°-34.318 LONG: 112-27-40.114 HEIGHT: 994.351 ft

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GPS STATION OBSERVATION SHEET

SHT ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 27
STATION ID:

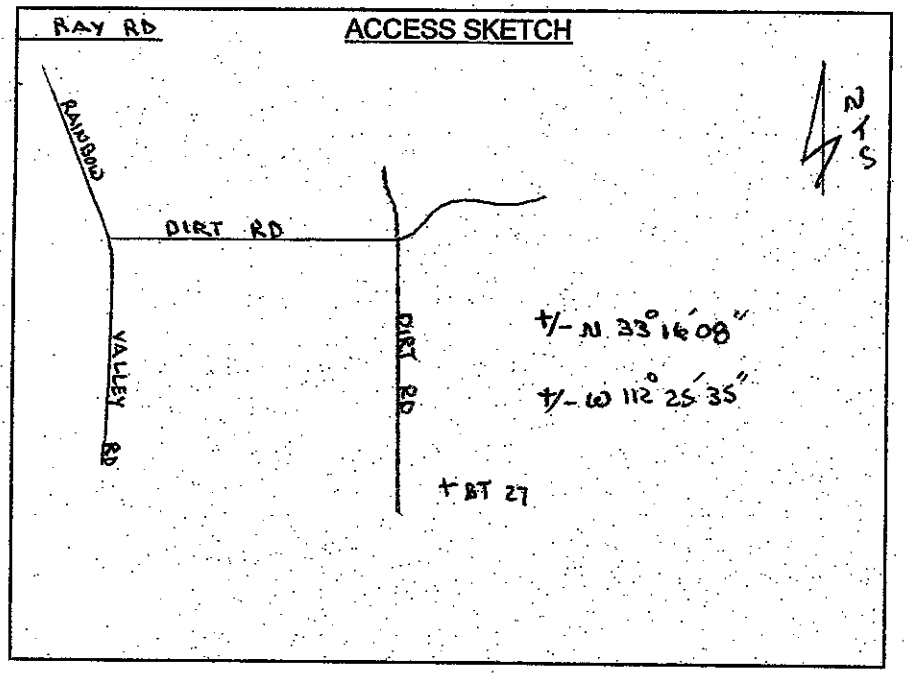
DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: ½" REBAR FLUSH PLASTIC PANEL 4' LEGS

STATION STAMPING:

STATION ACCESS: FROM RAINBOW VALLEY AND RAY RD GO SOUTH 2.4MI TO A DIRT ROAD HEADING WEST GO +/- 1.2MI TO A DIRT RUNNING RUNNING NORTH AND SOUTH. GO SOUTH THRU A GATE, 1.5 MI TO POINT. POINT BEING +/- 50' EAST OF ℄ DIRT ROAD

ACCESS SKETCH

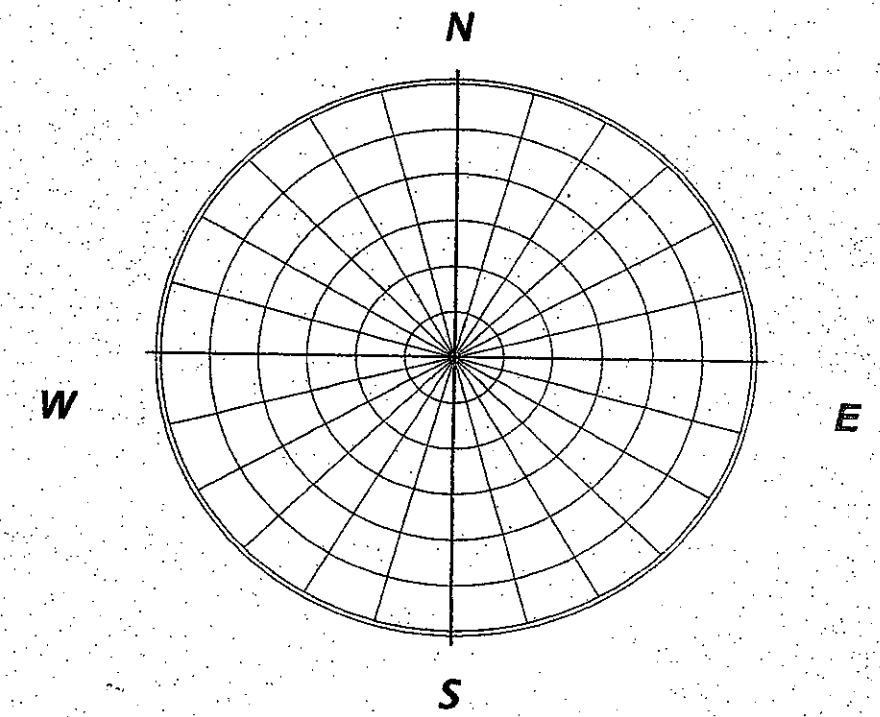


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-16-08.041 LONG: 112-25-34.866 HEIGHT: 1048.547 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 28
STATION ID:

DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: 2" ALUM CAP FLUSH, PLASTIC PANEL POINT, 4' LEGS

STATION STAMPING: MARICOPA COUNTY T2S R1W 1/4 S7 S8 RLS 36563 2005

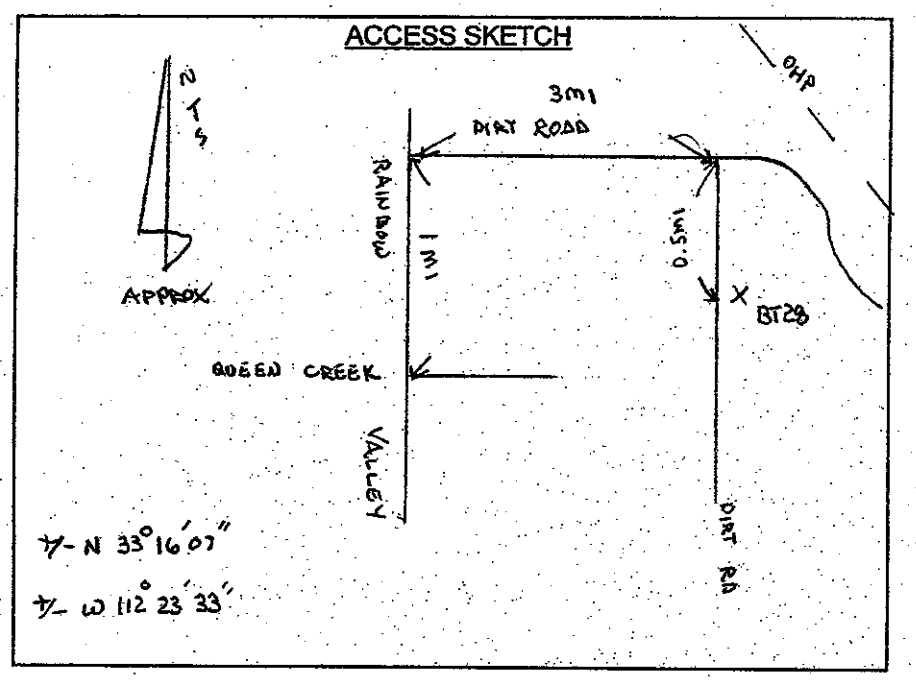
STATION ACCESS:

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

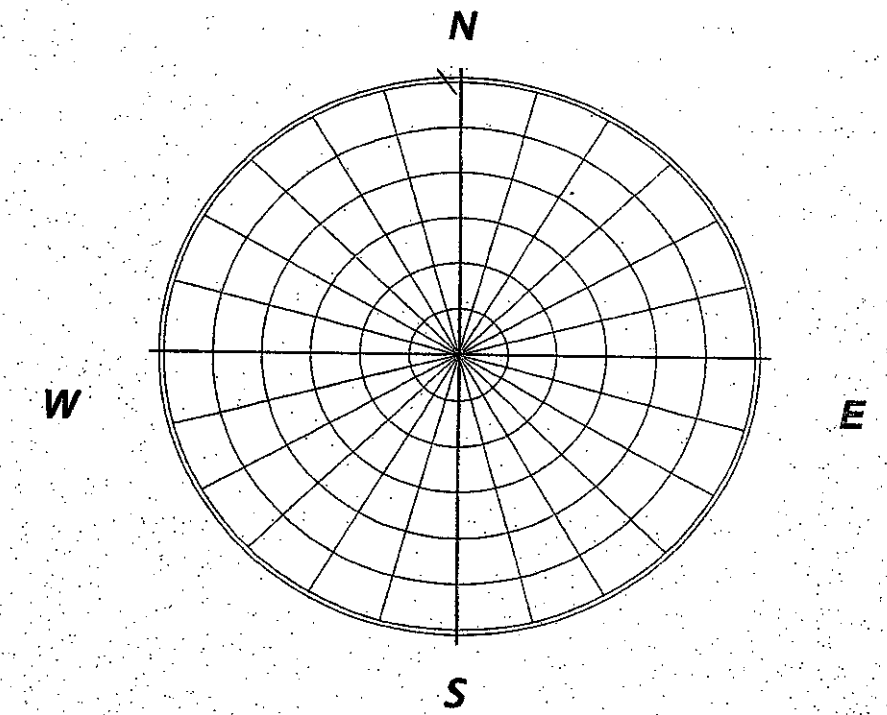
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-16-07.133 LONG: 112-23-32.793 HEIGHT: 1135.989 ft

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GPS STATION OBSERVATION SHEET

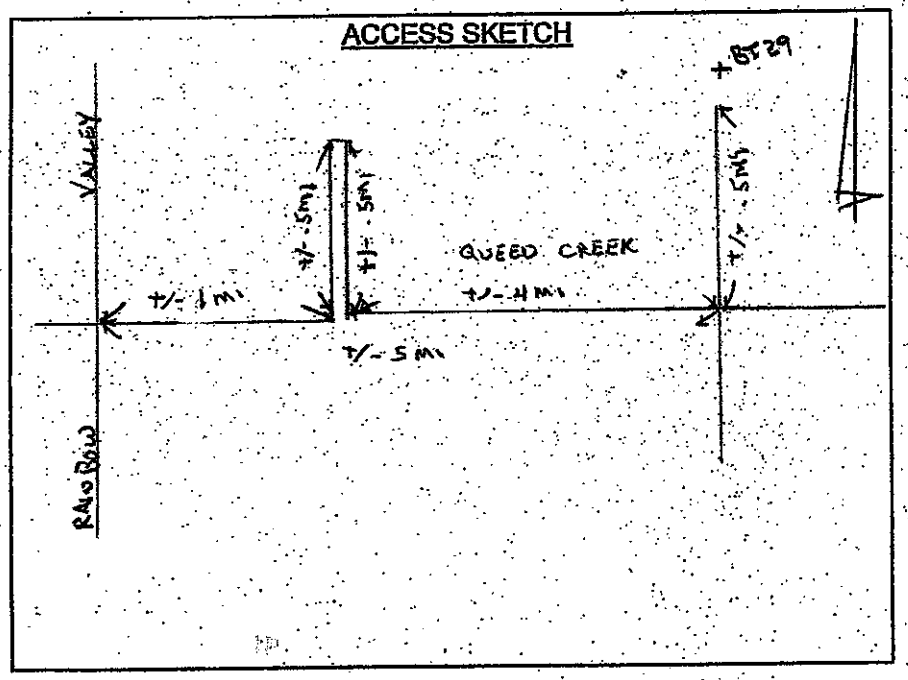
SH[illegible] ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 29
DATE FOUND/SET:
STATION DESCRIPTION: ½" BR FLUSH

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY AND QUEEN CREEK GO EAST +/- 1MI, NORTH +/- 0.5MI, SOUTH +/- 0.5MI, EAST +/- 4MI TO DIRT ROAD HEADING NORTH SOUTH. GO NORTH +/- 0.5MI TO POINT.

ACCESS SKETCH

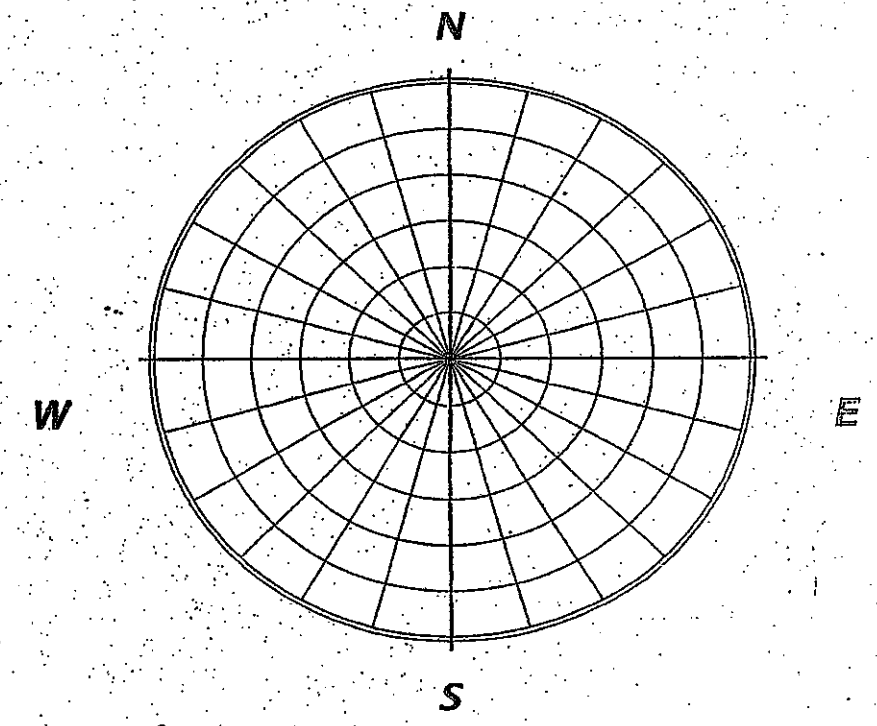


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-16-07.021 LONG: 112-20-57.425 HEIGHT: 1279.175 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME: _____

STATION ID: BT30

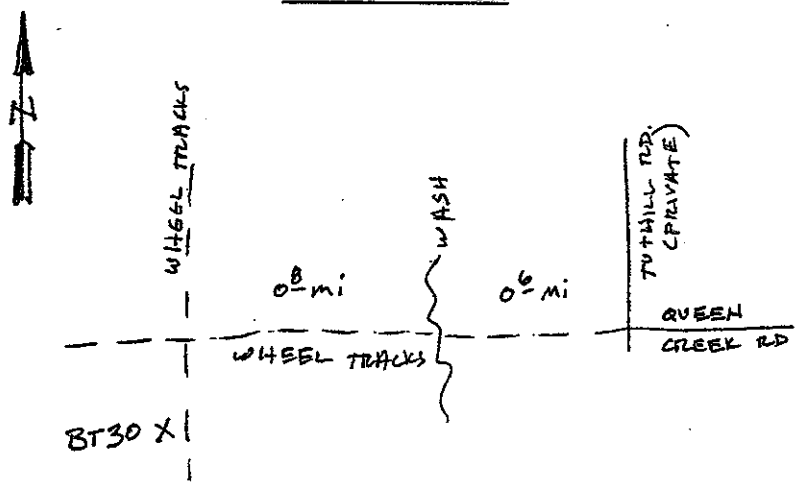
DATE FOUND/SET: 3/14/05

STATION DESCRIPTION: Fnd 2.5" pipe w/ brass cap top of monument is 1.0' above ground level

STATION STAMPING: T2S
R3W R2W
S12 | S7
S13 | S18

STATION ACCESS: beginning @ int-x of Tuthill Rd. (private) and Queen Creek Rd. Travel West 0.6mi. to a wash. Cont. West along wheel track path 0.8mi. to a wheel track crossing. Turn South on wheel track for 100'. Point is 25' West of track.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX 1202

SESSION #: _____ **FILE NAME:** _____

LOCAL DATE: _____ START: _____ END: _____

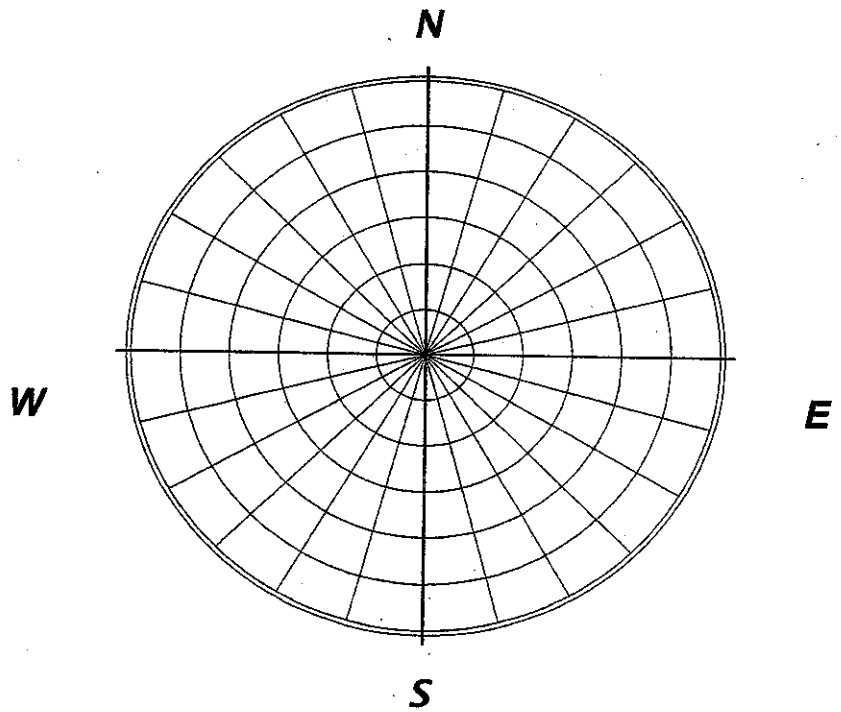
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____

STOP (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____

OBSTRUCTION CHART



LAT: 33-15-41.469 LONG: 112-30-45.746 HEIGHT: 1031.892 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 31

DATE FOUND/SET:

STATION DESCRIPTION: ½" REBAR / FLUSH

STATION STAMPING: PEC CONTROL

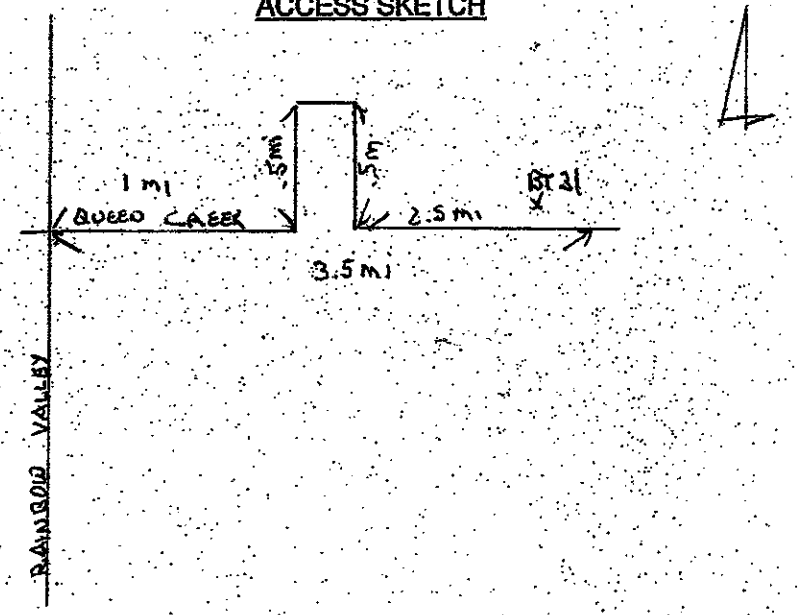
STATION ACCESS: FROM RAINBOW VALLEY & QUEEN CREEK GO EAST +/- 1MI, NORTH +/- .5MI, SOUTH +/- .5MI, EAST +/- 2.5MI TO POINT ON LEFT SIDE OF ROAD

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

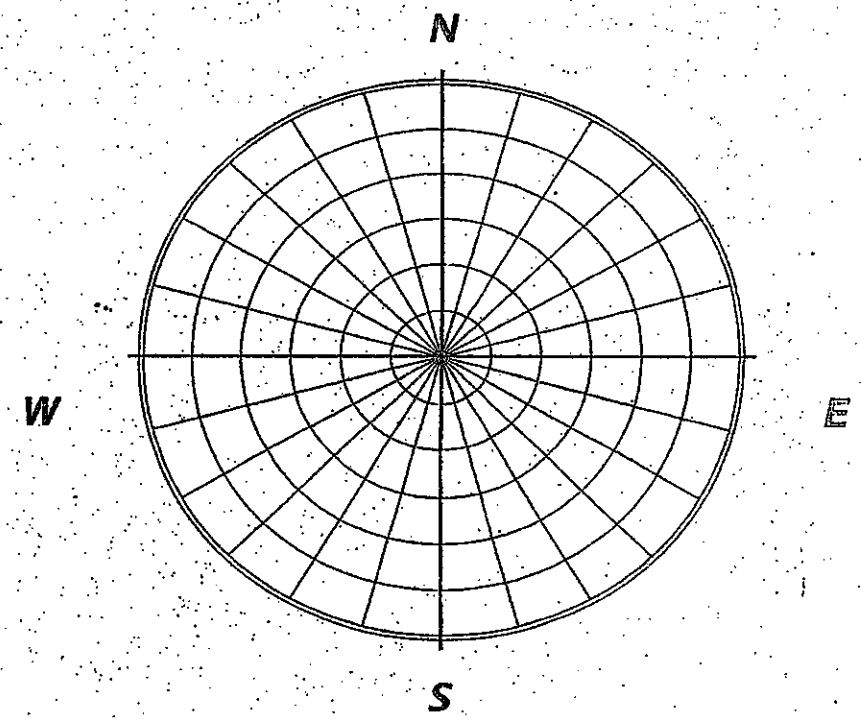
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-15-40.952 LONG: 112-22-30.670 HEIGHT: 1174.444 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 32

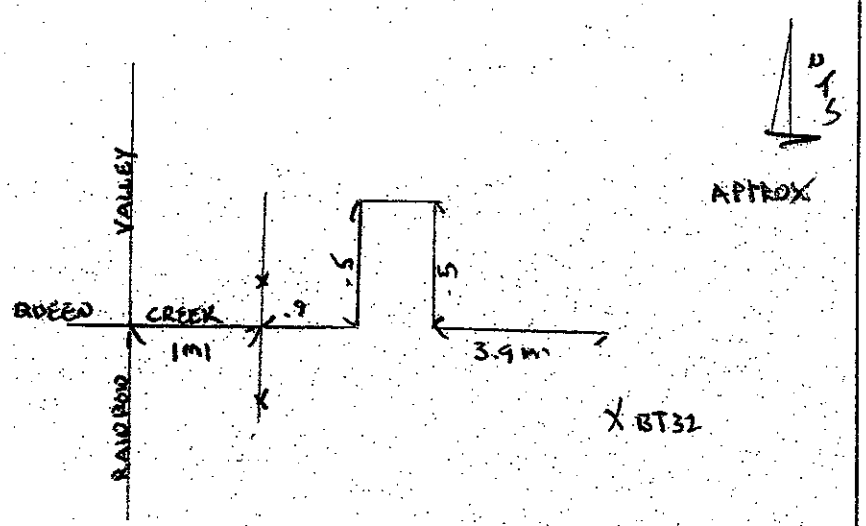
DATE FOUND/SET: 03/18/03

STATION DESCRIPTION: GLD CAP. 1.36' ABOVE NG

STATION STAMPING: US GENERAL LAND OFFICE SURVEY T2S R1W S11, S12, S14, S13 1916

STATION ACCESS: FROM RAINBOW VALLEY GO EAST FOR 1.9 MILES TO A DIRT ROAD GOING NORTH. GO NORTH 0.5 MI THAN SOUTH 0.5 MI. GO EAST 2.4 MILES TO POWER LINE ROAD. FOLLOW POWER LINE ROAD EAST 1.7 MILES TO POINT. POINT IS +/- 100' SOUTH OF ROAD.

ACCESS SKETCH

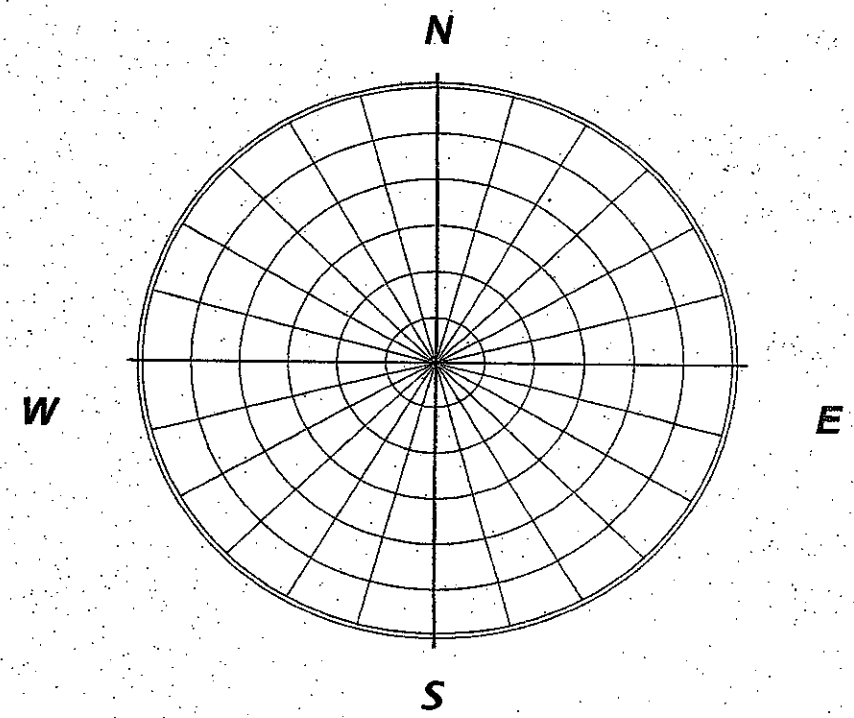


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-15-40.907 LONG: 112-19-24.155 HEIGHT: 1390.115 ft

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GPS STATION OBSERVATION SHEET

SHL ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 33
STATION ID:

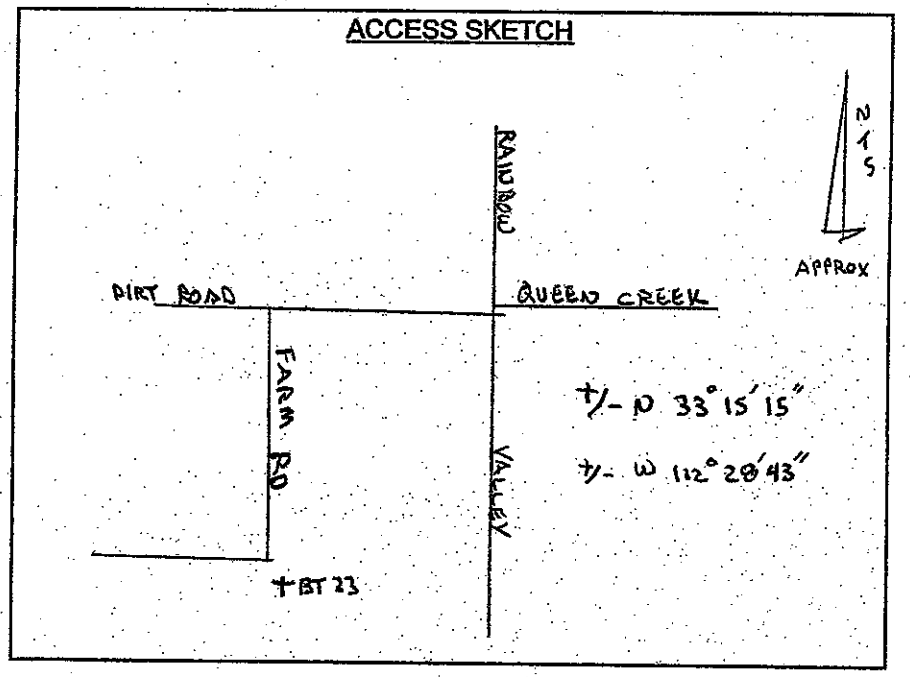
DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: ½" REBAR FLUSH. PLASTIC PANEL PK - 4 LEGS

STATION STAMPING: RED PLASTIC CAP MARKED PEC CONTROL PK.

STATION ACCESS: FROM RAINBOW VALLEY AND QUEEN CREEK CROSS BOX CULVURT - TAKE DIRT ROAD +/- 2 MILES WEST TO A FARM RD. TAKE FARM ROAD SOUTH +/- 0.5 MI TO THE POINT. POINT IS +/- 10' NORTH OF BARBED WIRE FENCE AND +/- 8' WEST OF BARB WIRE FENCE

ACCESS SKETCH

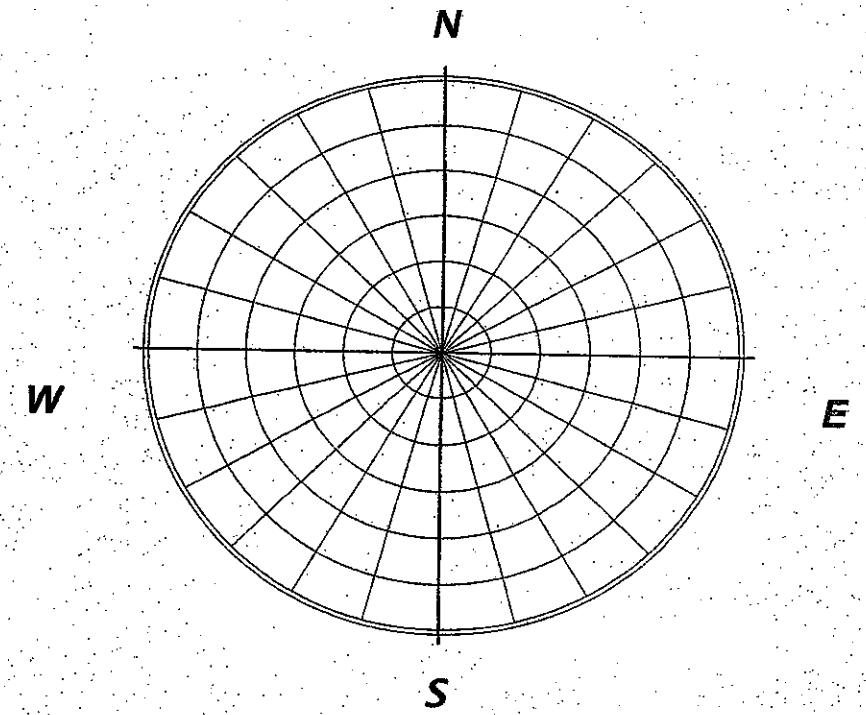


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-15-15.180 LONG: 112-28-42.681 HEIGHT: 1045.671 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 34
STATION ID:

DATE FOUND/SET: 03/04/05

STATION DESCRIPTION: BCH 0.80 BELOW PVMT. PAINTED PANEL POINT 4' LEGS

STATION STAMPING: MARACOPA COUNTY DOT

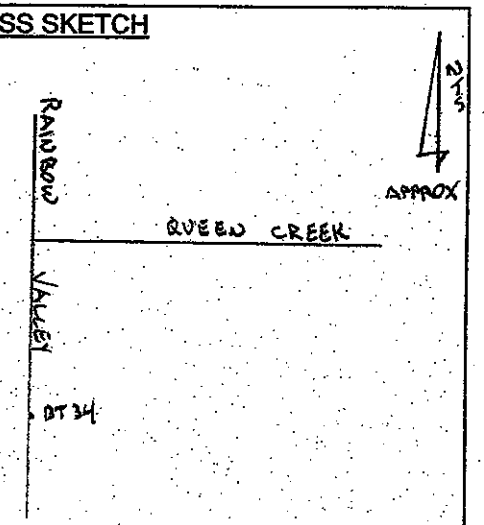
STATION ACCESS: ½ mi SOUTH OF QUEEN CREEK. ℄ RAINBOW VALLEY RD.

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

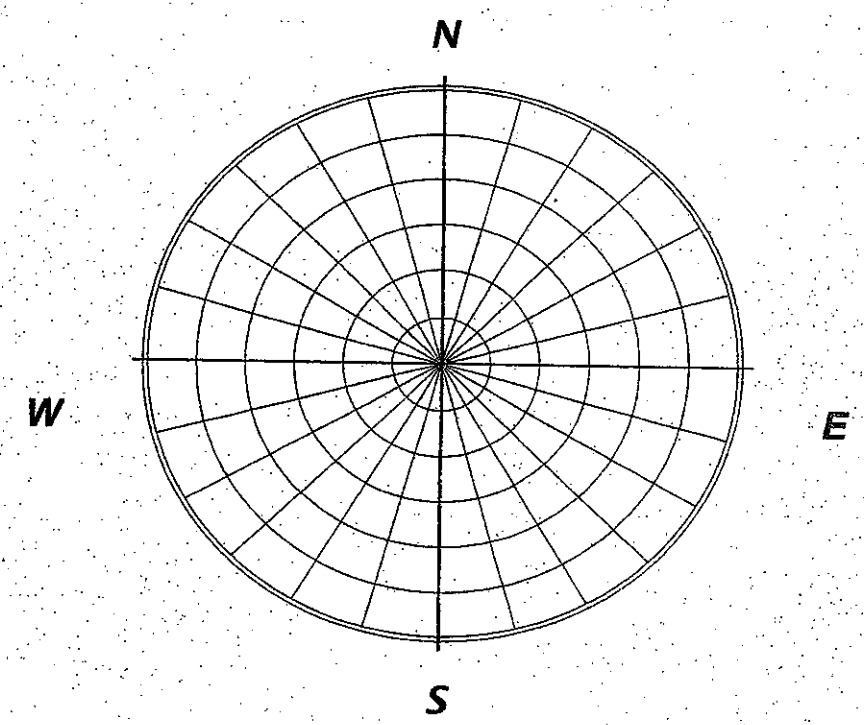
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-15-15.055 LONG: 112-26-38.155 HEIGHT: 1026.378

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: Rainbow Valley - 04007

STATION NAME:

STATION ID: BT35

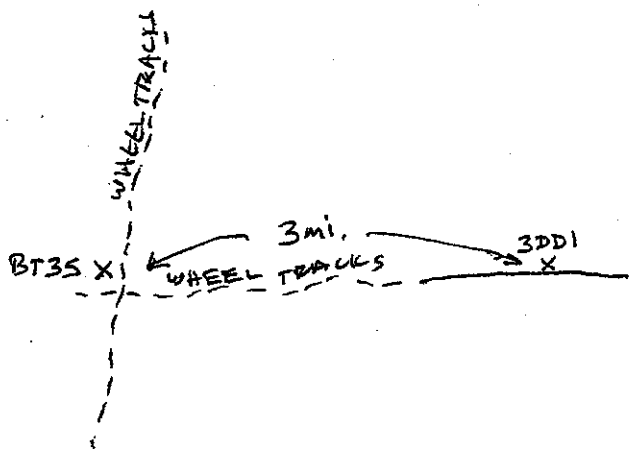
DATE FOUND/SET: 3/14/05

STATION DESCRIPTION: Set ½" rebar w/ red cap level w/ ground

STATION STAMPING: PEC Control

STATION ACCESS: beginning NGS point 3DD1, travel West along wheel track path 3mi. to a wheel track crossing. Point is North and West 30' from intersecting tracks.

ACCESS SKETCH



OPERATOR: Karl Vlieger

RECEIVER TYPE: Leica ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

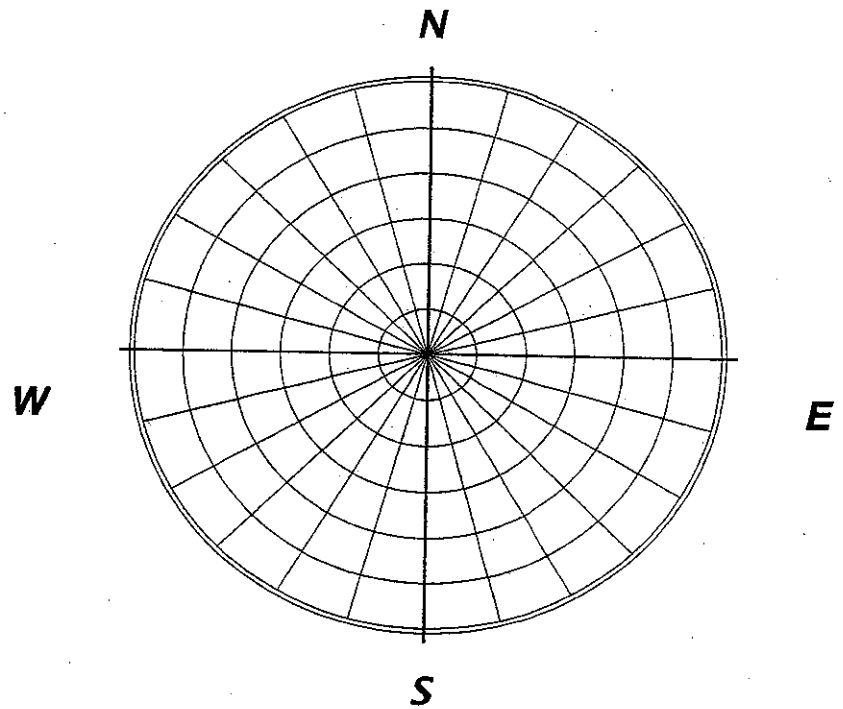
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED): RTK

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-14-49.544 LONG: 112-31-22.177 HEIGHT: 1071.403

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT S1

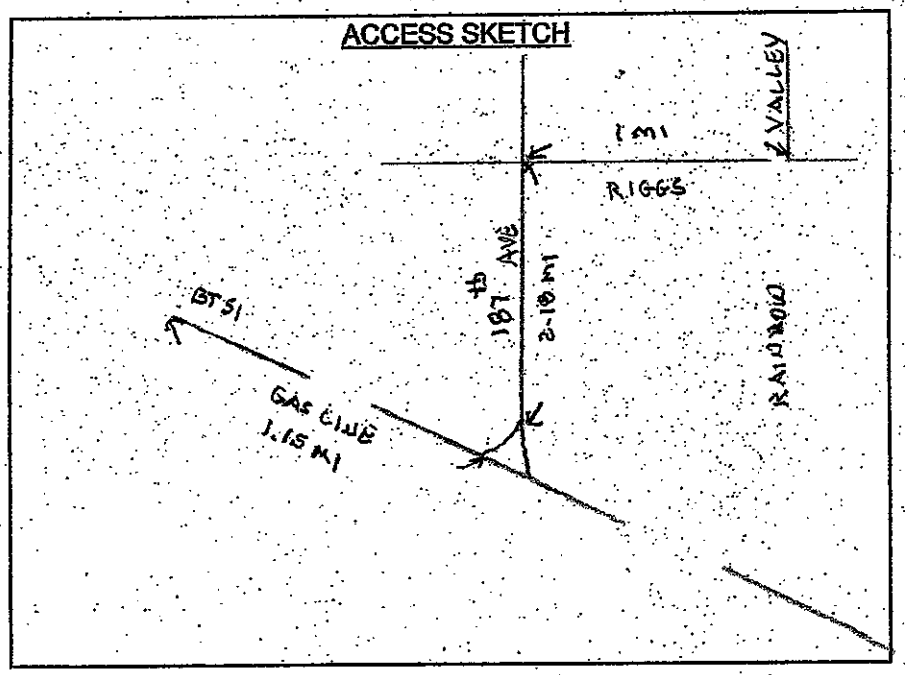
DATE FOUND/SET:

STATION DESCRIPTION: 1/2" RB / RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM INTERSECTION OF RAINBOW VALLEY GO WEST 1 MI TO 187TH AVE. GO SOUTH 2.18 MI TO GAS LINE. GO NORTHWESTERLY 1.15 MI TO POINT ON RIGHT SIDE OF ROAD.

ACCESS SKETCH

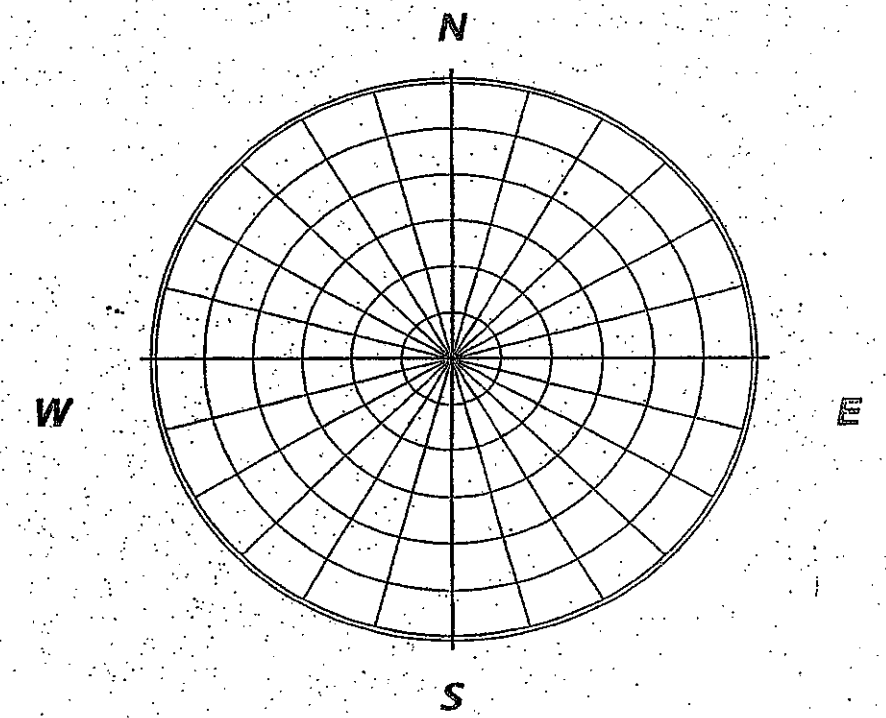


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-12-05.704 LONG: 112-29-44.953 HEIGHT: 1208.144 ft

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GPS STATION OBSERVATION SHEET

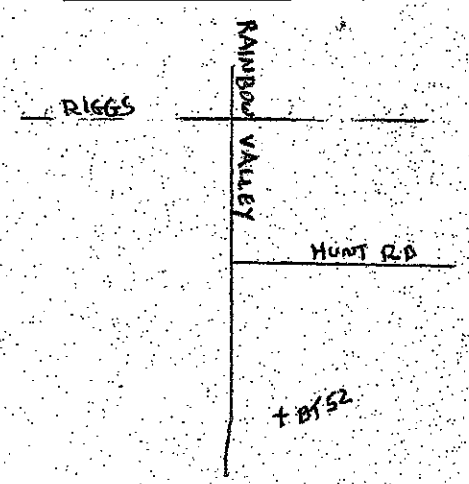
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BTS2
DATE FOUND/SET:
STATION DESCRIPTION: SET 1/2" RB FLUSH

STATION STAMPING: RED PLASTIC CAP

STATION ACCESS: FROM INTERSECTION OF RIGGS ROAD & RAINBOW VALLEY GO 1 MI. SOUTH. PT IS +/- 25' EAST OF ROAD

ACCESS SKETCH

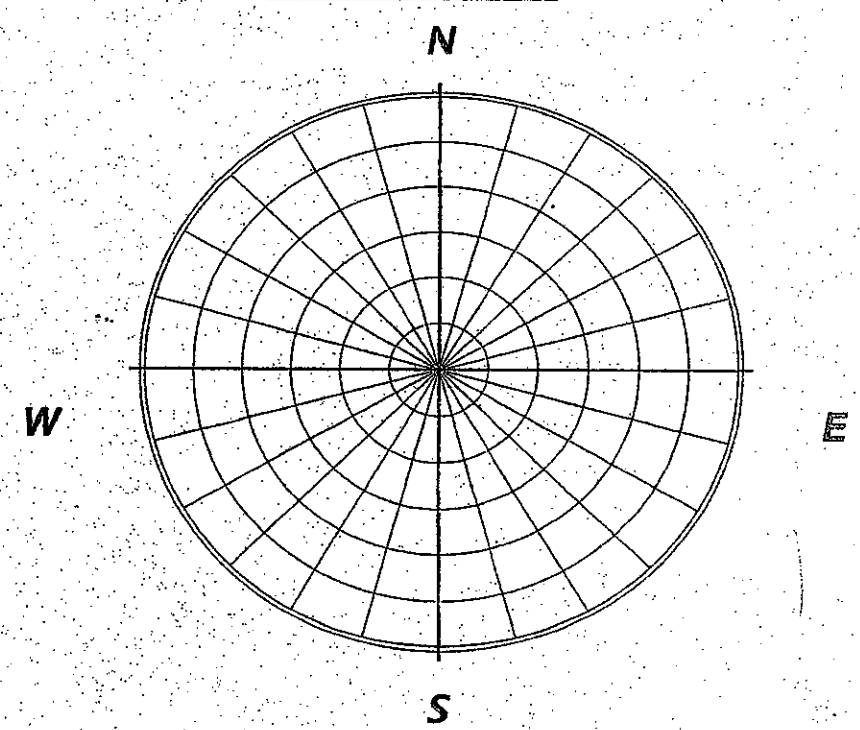


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-12-12.388 LONG: 112-26-37.689 HEIGHT: 1127.100 ft

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GPS STATION OBSERVATION SHEET

SHEET 1 of

PROJECT: RAINBOW VALLEY
STATION NAME: BI 53
STATION ID:

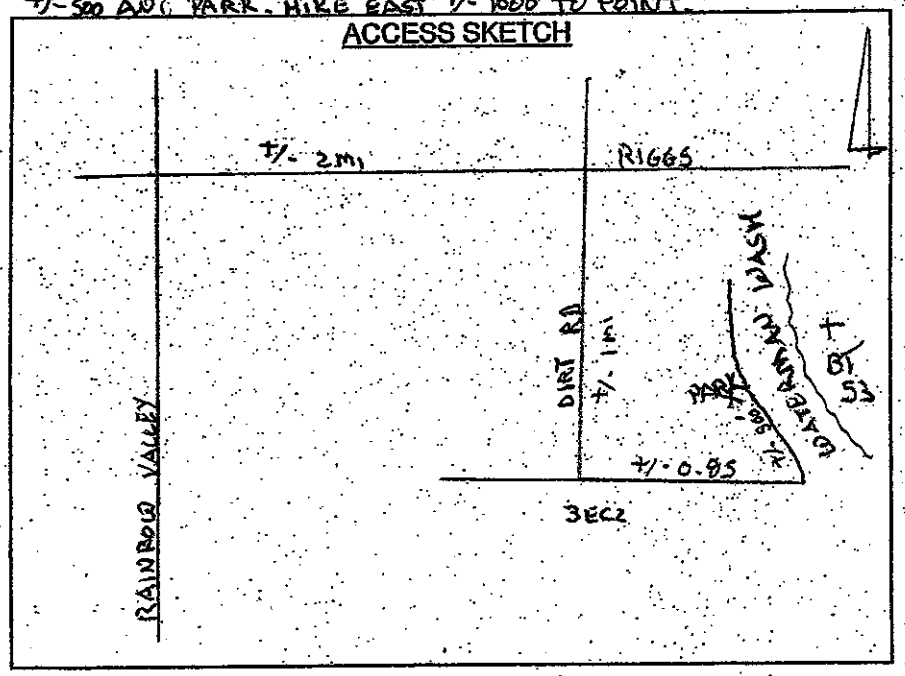
DATE FOUND/SET:

STATION DESCRIPTION: 1/2" REBAR FLUSH / RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM INTERSECTION OF RIGGS AND RAINBOW VALLEY GO EAST +/- 2 MI TO DIRT ROAD HEADING NORTH SOUTH. TAKE DIRT ROAD SOUTH TO DIRT ROAD HEADING EAST WEST. TAKE ROAD EAST WEST +/- 0.85 MI TO WATERMAN WASH FOLLOW ROAD HEADING NORTHWESTERLY +/- 500' AND PARK. HIKE EAST +/- 1000' TO POINT.

ACCESS SKETCH

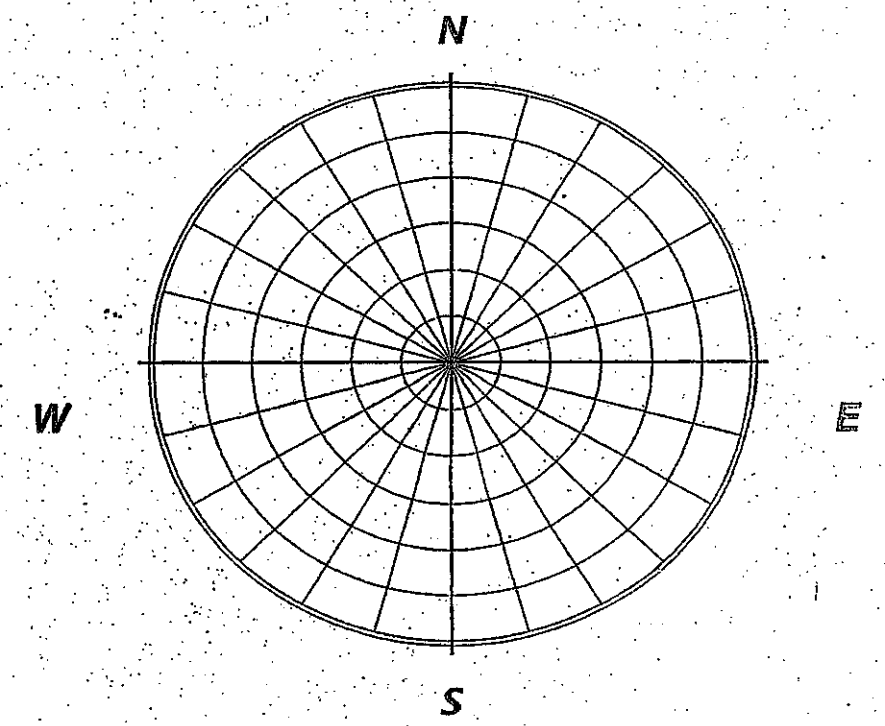


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-12-20.912 LONG: 112-23-33.433 HEIGHT: 1099.088 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 54

DATE FOUND/SET: 3/7/2005

STATION DESCRIPTION: SET 1/2" REBAR W/ PLASTIC LS CAP / FLUSH W/GROUND

STATION STAMPING: RLS # PEC CONTROL (RED CAP)

STATION ACCESS: FROM RIGGS ROAD & BOLLARD. SOUTH ON BOLLARD ±1.0 MILES, THEN EAST ON DIRT ROAD (SOUTH OF CONC DITCH) ±0.48 MILES TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

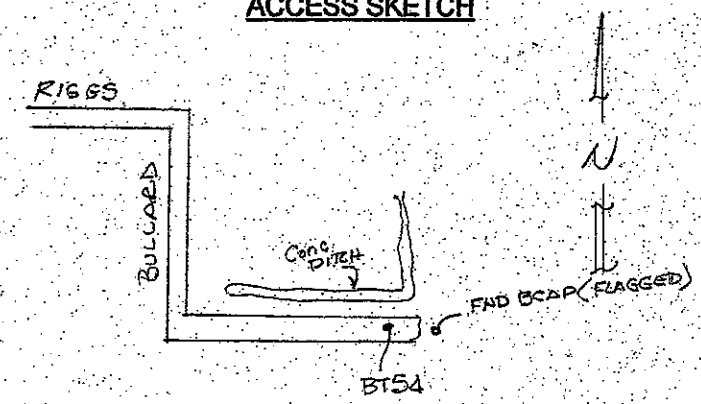
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

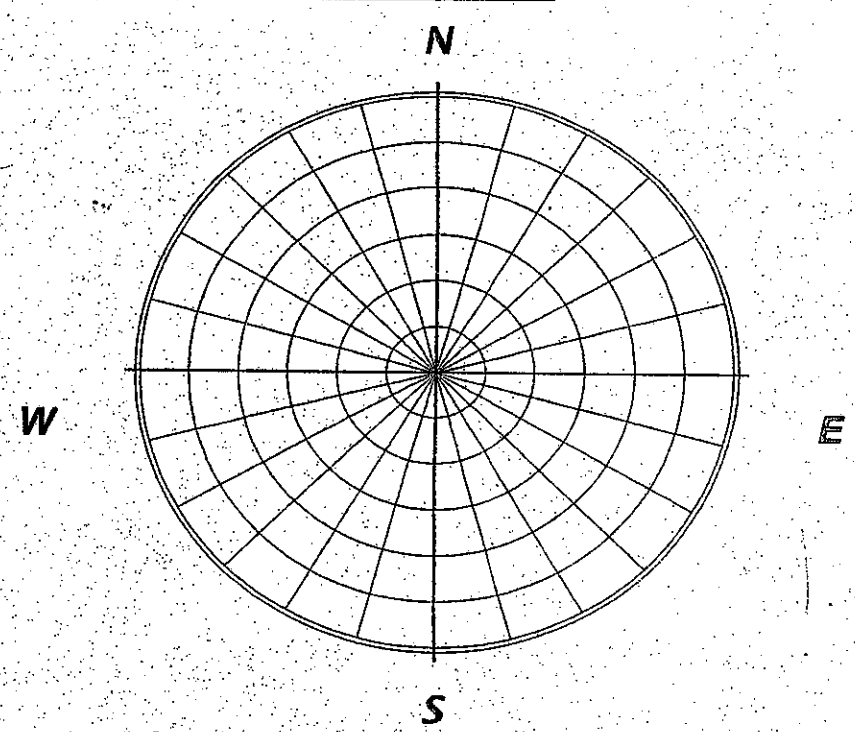
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-12-12.025 LONG: 112-22-00.022 HEIGHT: 1141.710 ft

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GPS STATION OBSERVATION SHEET

SH___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT SS

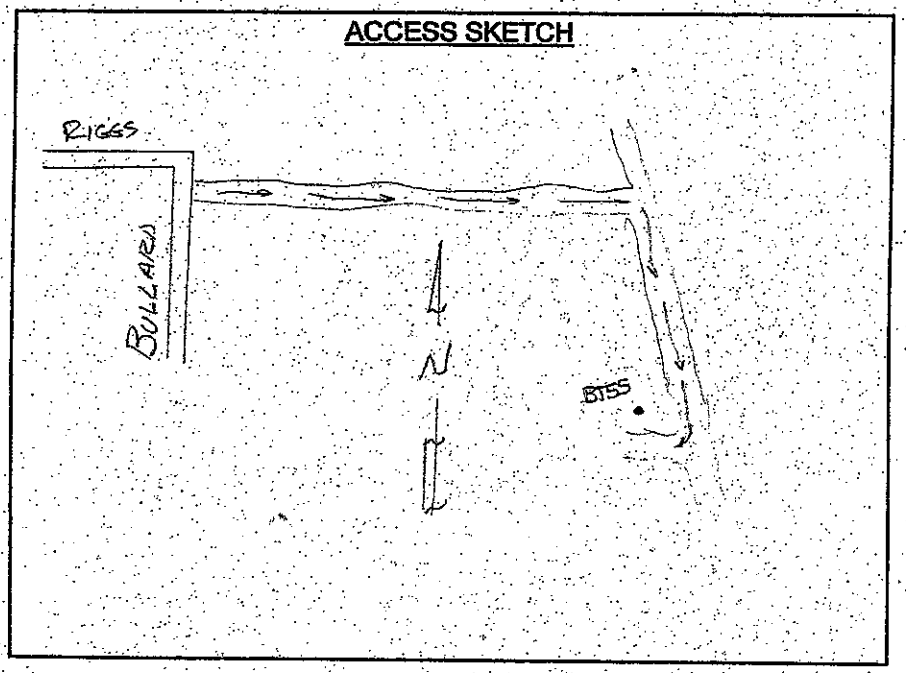
DATE FOUND/SET: 3/10/05

STATION DESCRIPTION: SET 1/2" REBAR W/ RED LS CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS & BULLARD - E ON DIRT RD ± 5.4 MILES TO POWERLINE RD - THEN S.E. ON POWERLINE RD ± 1.2 MILES TO STATION ON RT.

ACCESS SKETCH



OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA R200 ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

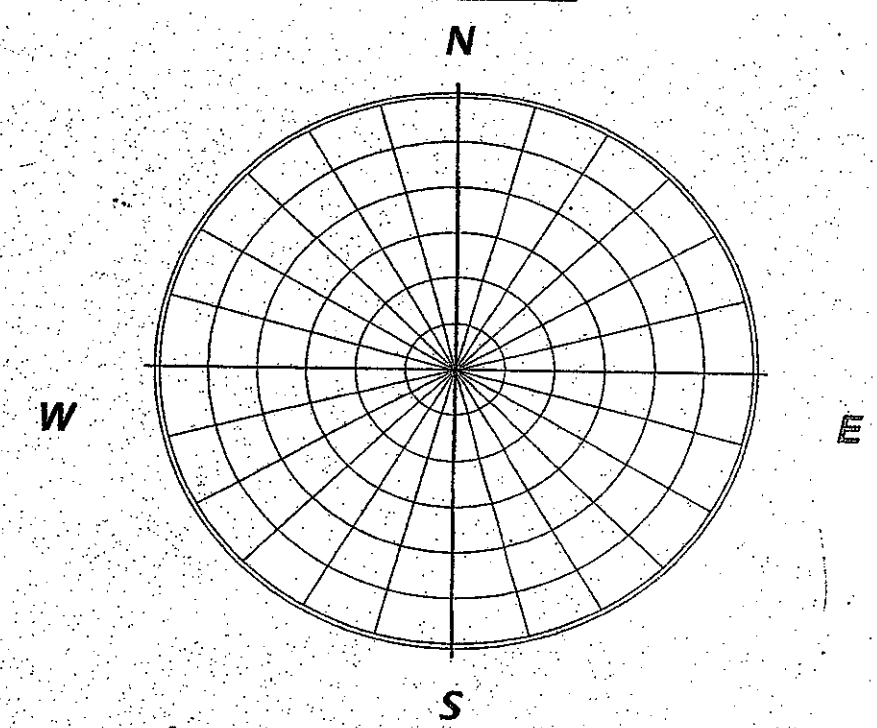
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st)___ (2nd)___ (3rd)___ (AVG)___

STOP (1st)___ (2nd)___ (3rd)___ (AVG)___

OBSTRUCTION CHART



LAT: 33-12-12.267 LONG: 112-16-17.327 HEIGHT: 1382.511 ft

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GPS STATION OBSERVATION SHEET

SH___of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 56

DATE FOUND/SET:

STATION DESCRIPTION: ½" REBAR/RED CAP

STATION STAMPING: PEC CONTROL

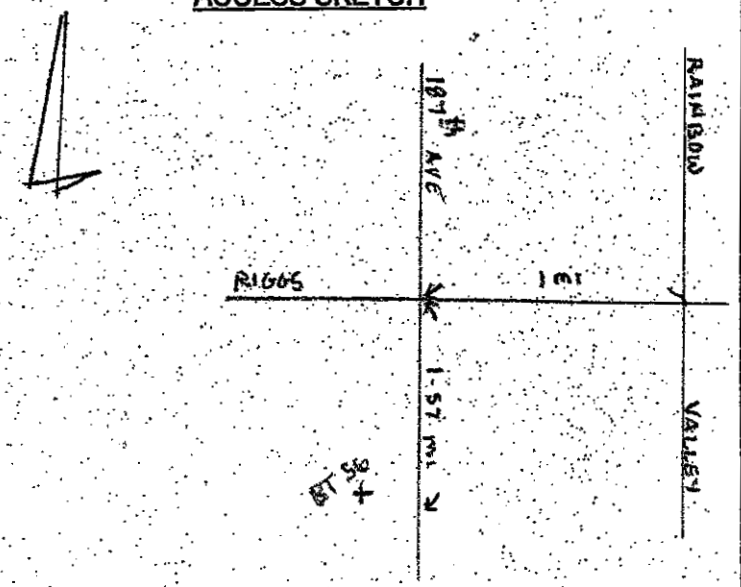
STATION ACCESS: FROM THE INTERSECTION OF RAINBOW VALLEY & RIGGS RD GO WEST 1 MI. TO 187th AVE. GO SOUTH ON 187th AVE 1.57 MI TO POINT ON RIGHT SIDE OF ROAD.

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

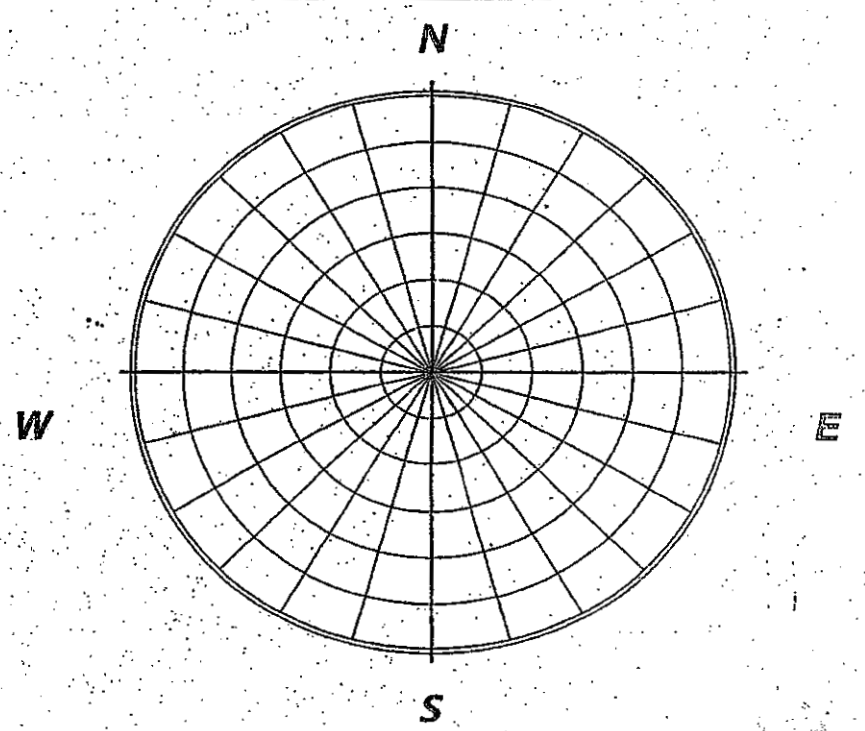
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-11-42.597 LONG: 112-27-39.945 HEIGHT: 1186.762 ft

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GPS STATION OBSERVATION SHEET

SH[illegible] ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 57
STATION ID:
DATE FOUND/SET: 05/02/05
STATION DESCRIPTION: 1/2" RB FLUSH

STATION STAMPING: RED CAP PEC CONTROL

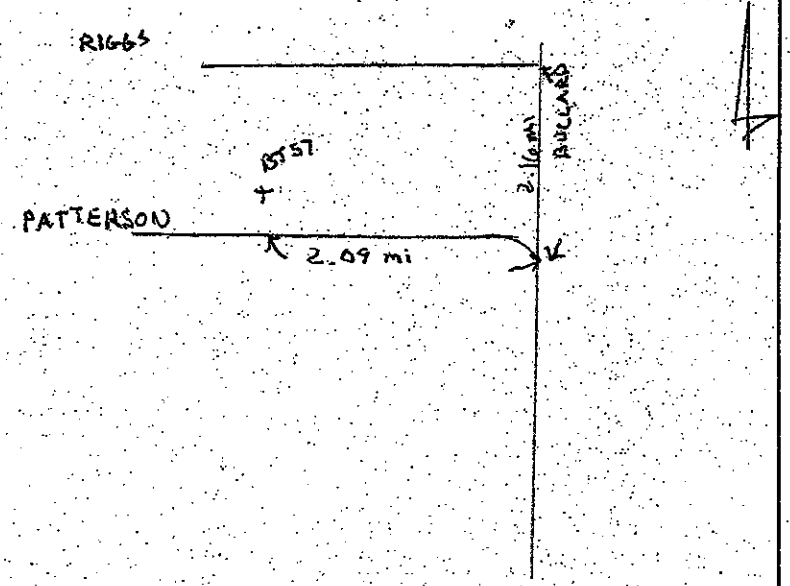
STATION ACCESS: FROM INTERSECTION OF RIGGS & BULLARD GO SOUTH FOR 2.16 MILES TO PATTERSON. GO 2.09 MI WEST TO POINT ON RIGHT.

OPERATOR: STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

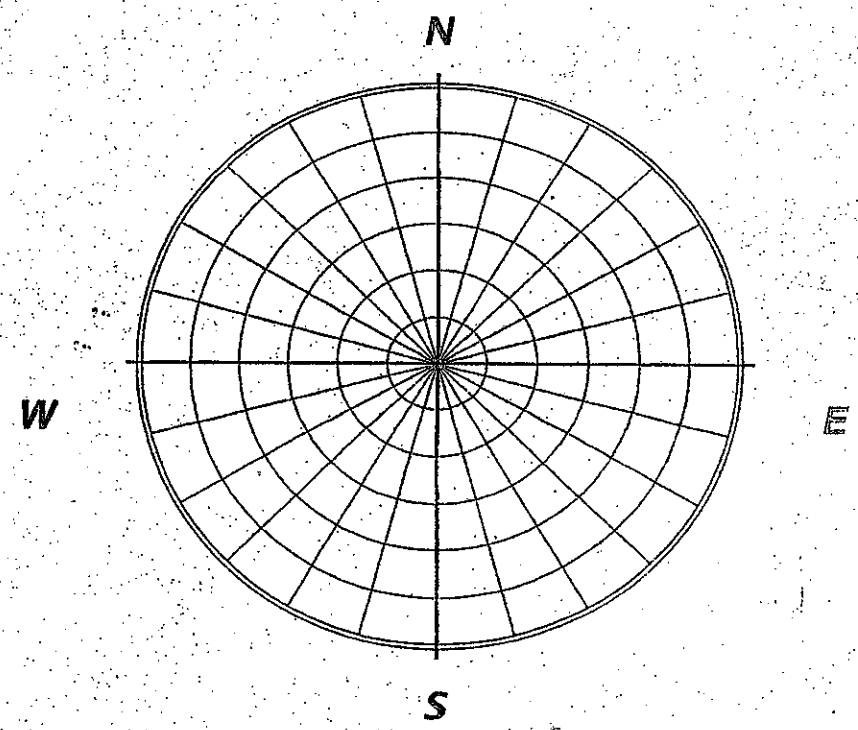
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-11-20.199 LONG: 112-24-34.587 HEIGHT: 1138.047 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT58
DATE FOUND/SET: 3/07/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED LS CAP FLUSH W/GROUND

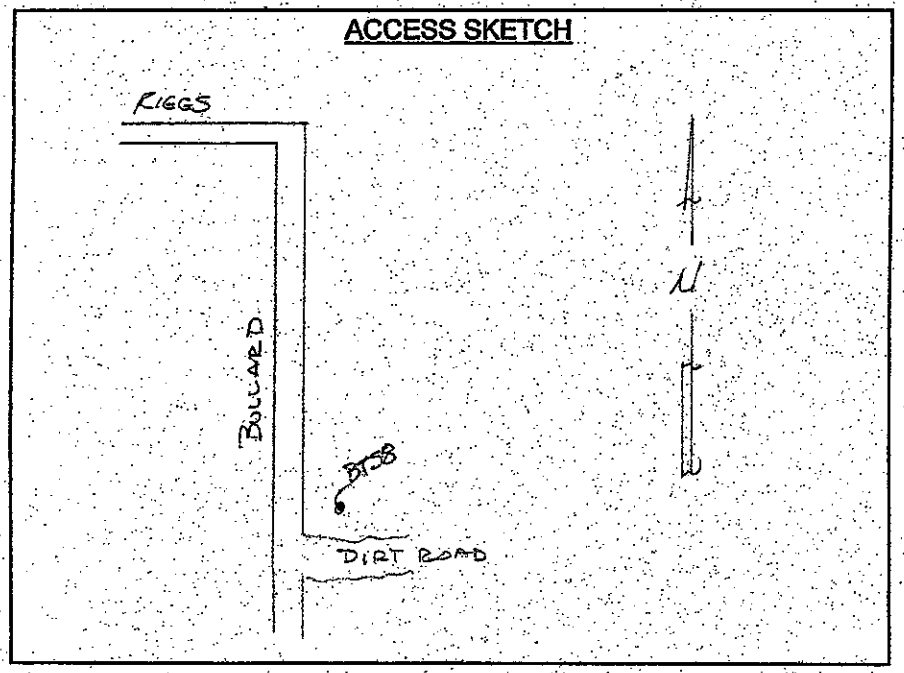
STATION STAMPING: LS # PEC CONTROL

STATION ACCESS: FROM RIGGS ROAD & BOLLARD. SOUTH ALONG BOLLARD 1.95± MILES TO THE POINT ON THE LEFT.

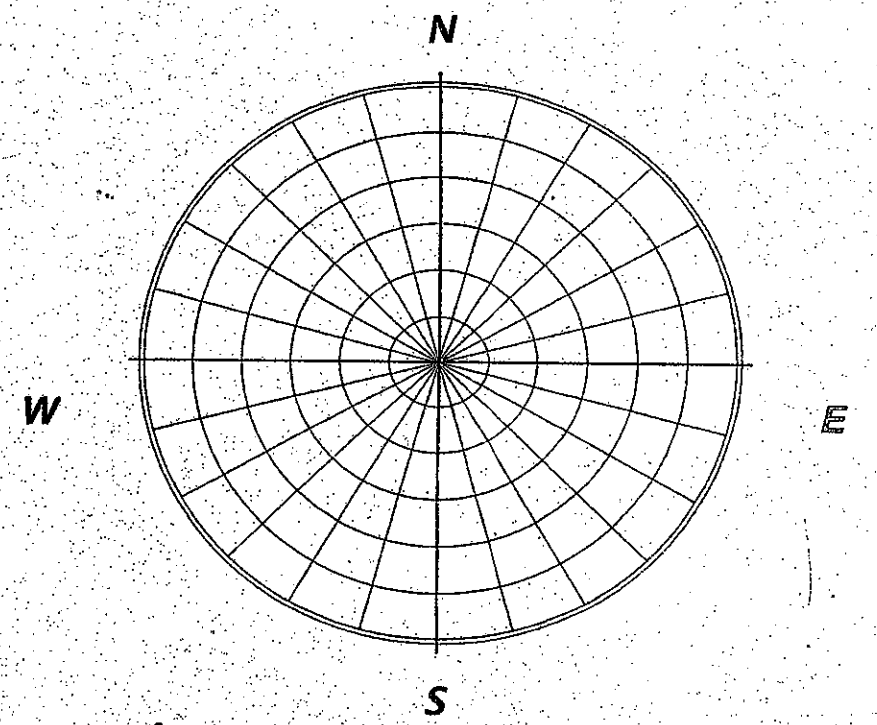
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-41-20.772 LONG: 112-22-29.428 HEIGHT: 1121.299 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 59
DATE FOUND/SET: 3/07/2005
STATION DESCRIPTION: SET ½" REBAR W/ RED LSCAP

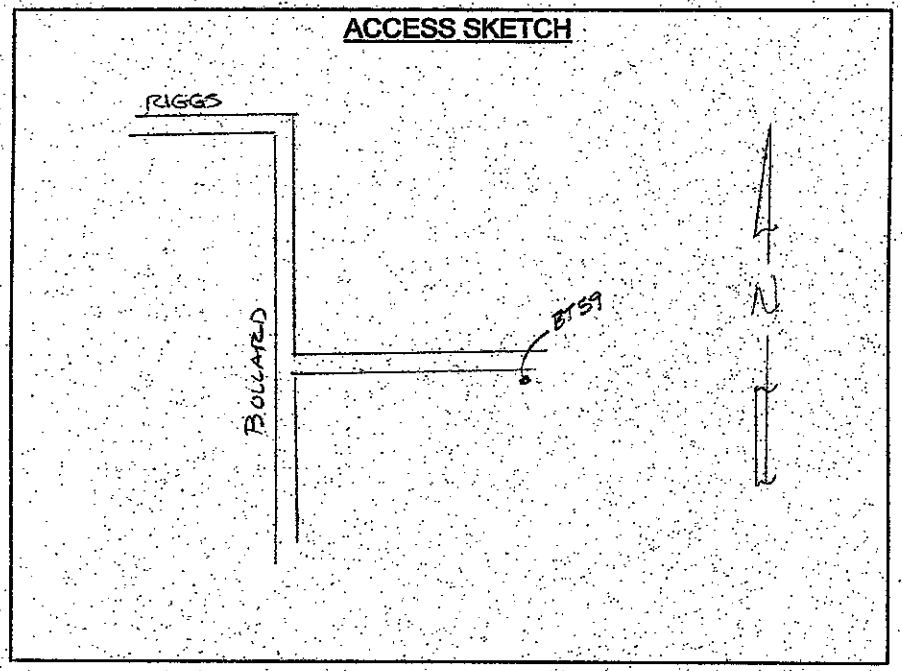
STATION STAMPING: LS# PEC CONTROL

STATION ACCESS: FROM RIGGS & BOLLARD, SOUTH ON BOLLARD TO A DIRT ROAD (±1.95 MILES) EAST. THEN EAST ALONG THE DIRT ROAD 1.39± MILES TO THE POINT

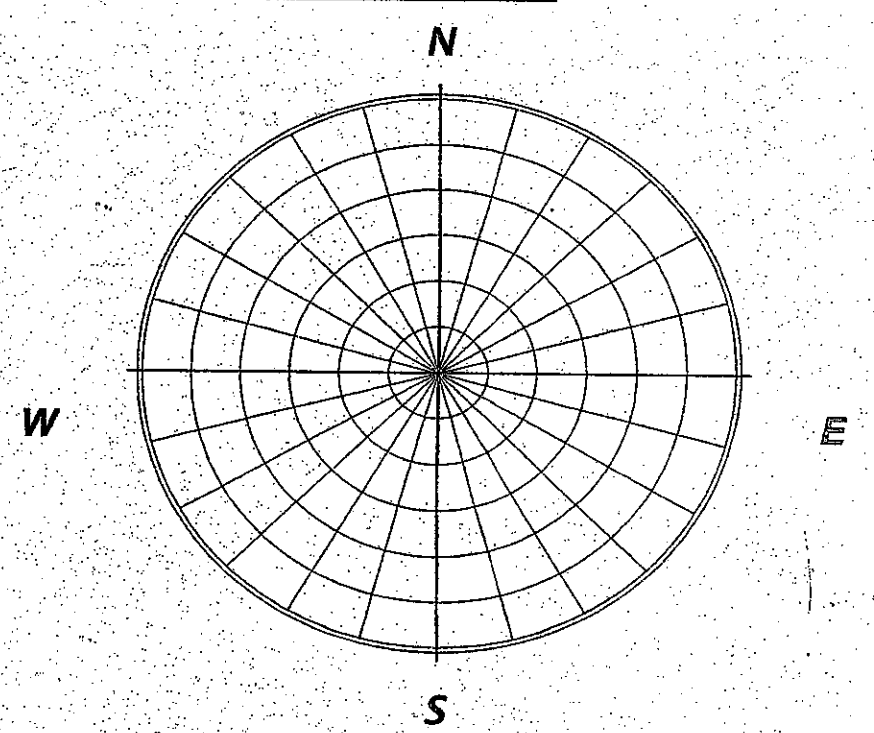
OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-11-19.385 LONG: 112-20-58.295 HEIGHT: 1168.807 ft

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GPS STATION OBSERVATION SHEET

SH. ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT60
DATE FOUND/SET: 3/8/2006
STATION DESCRIPTION: SOT 1/2" REBAR W/RED LS CAP

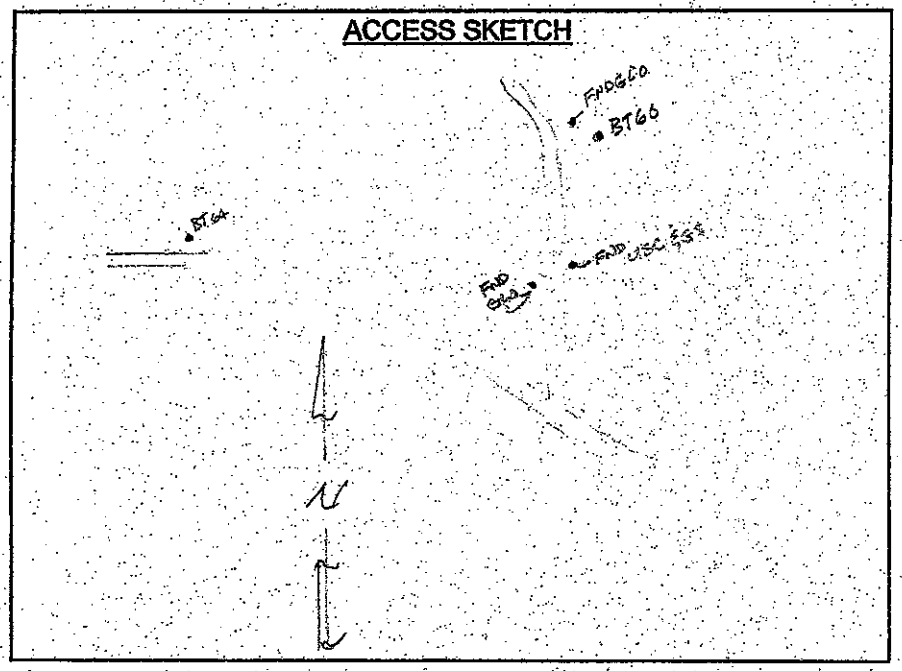
STATION STAMPING: LS PEC CONTROL

STATION ACCESS: FROM BT64 SOUTHEASTERLY ON DIRT ROAD ± 1.61 MILES. THEN NORTH ON DIRT ROAD ± 1.2 MILES TO THE STATION

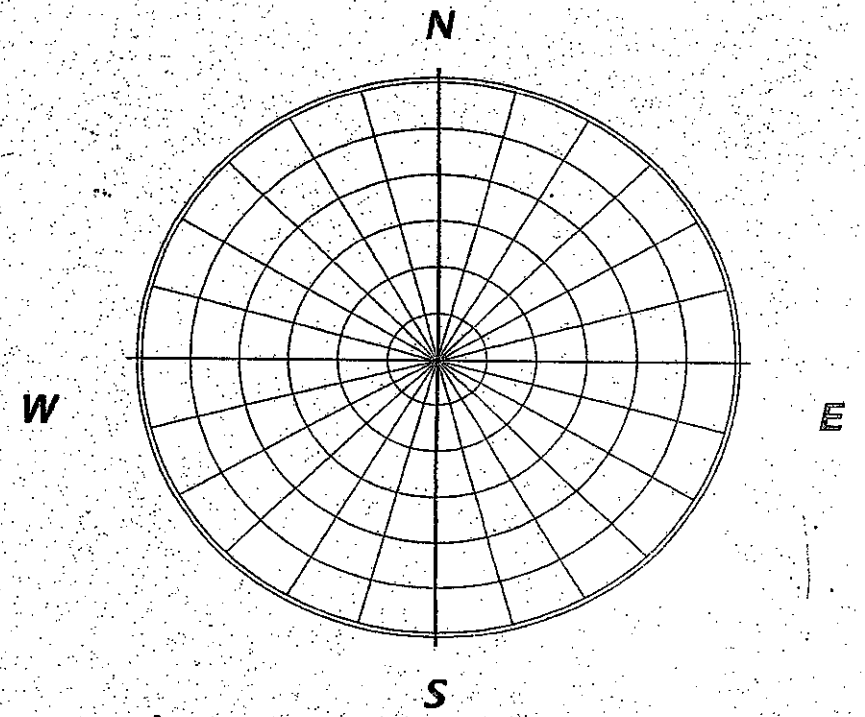
OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-11-19.129 LONG: 112-18-21.937 HEIGHT: 1268.972

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GPS STATION OBSERVATION SHEET

SHE___of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: B161

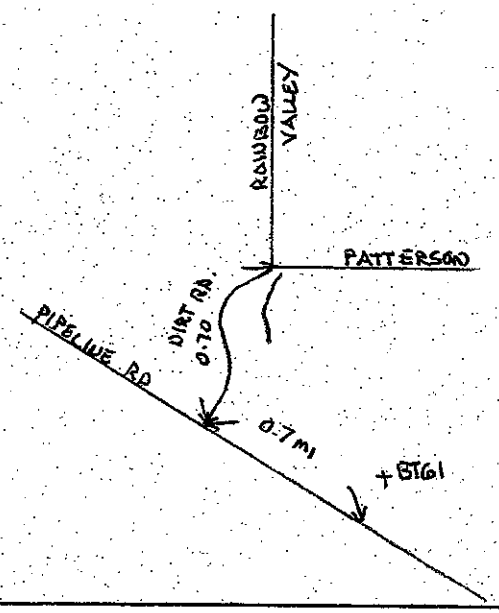
DATE FOUND/SET:

STATION DESCRIPTION: 1/2" RD PANEL POINT

STATION STAMPING: RED CAP PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY & PATTERSON ROAD TAKE DIRT ROAD SOUTH FOR 0.70 TO SOUTHWEST GAS LINE ROAD. TAKE GAS LINE RD SOUTH EAST FOR 0.70 MI TO POINT. POINT IS +/- 20' NORTH OF ROAD.

ACCESS SKETCH

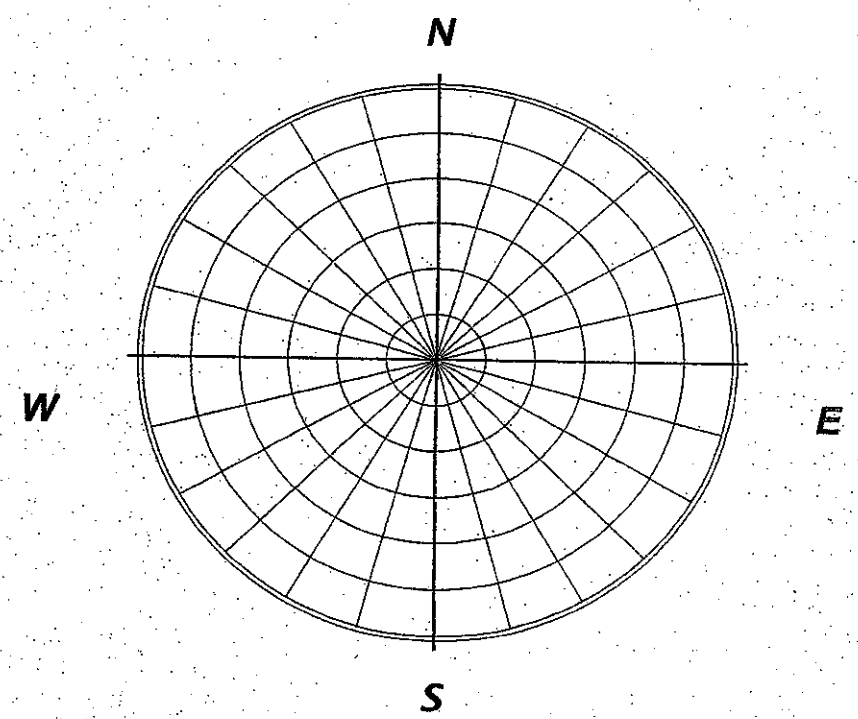


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)___(2nd)___(3rd)___(AVG)___
STOP (1st)___(2nd)___(3rd)___(AVG)___

OBSTRUCTION CHART



LAT: 33-10°-43.179 LONG: 112-26-37.221 HEIGHT: 1171.407 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 62
STATION ID: PANNEL

DATE FOUND/SET: 3-17-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEL CONTROL CAP < no pannel - Not shure what size

STATION STAMPING:

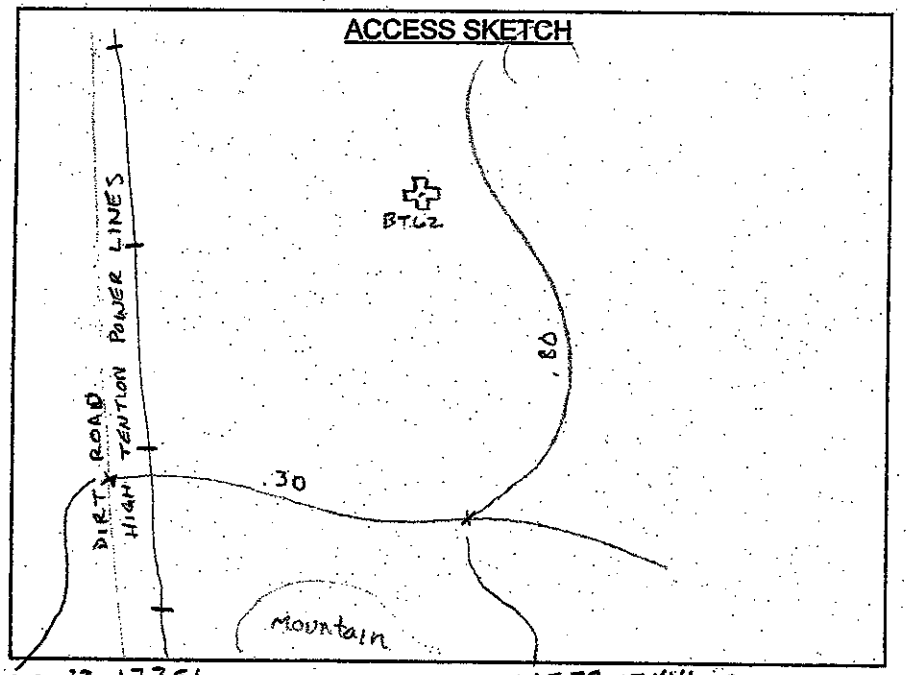
STATION ACCESS:

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

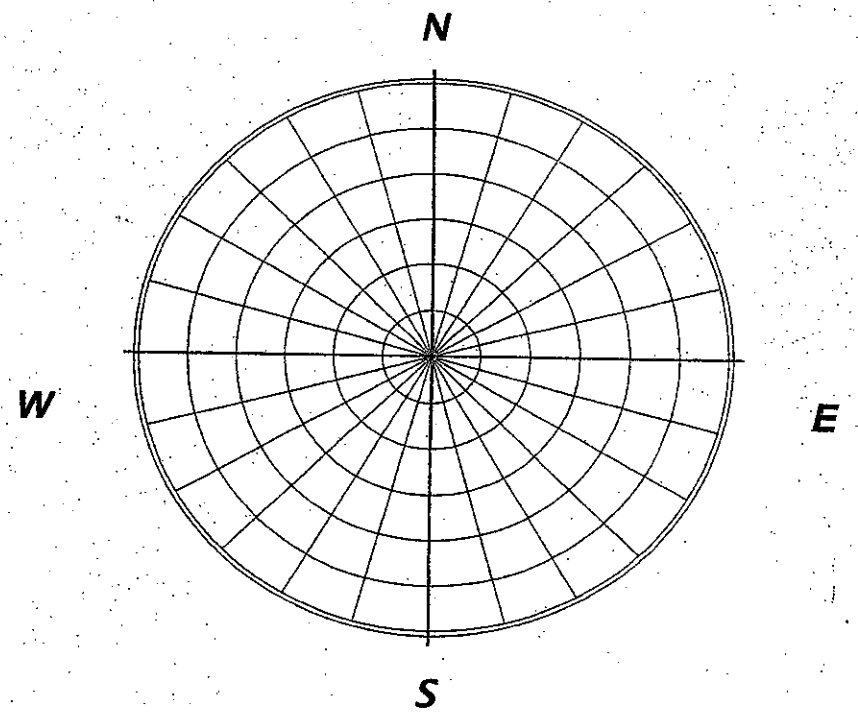
ACCESS SKETCH



LAT. 33.17356
LONG. 112.26668

LAT 33.17441
LONG 112.25691

OBSTRUCTION CHART



LAT: 33-10-58.798 LONG: 112-15-25.966 HEIGHT: 1421.507

DECIMAL DEGREE

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT63
DATE FOUND/SET: 03/23/05
STATION DESCRIPTION: ½ RB PANEL POINT

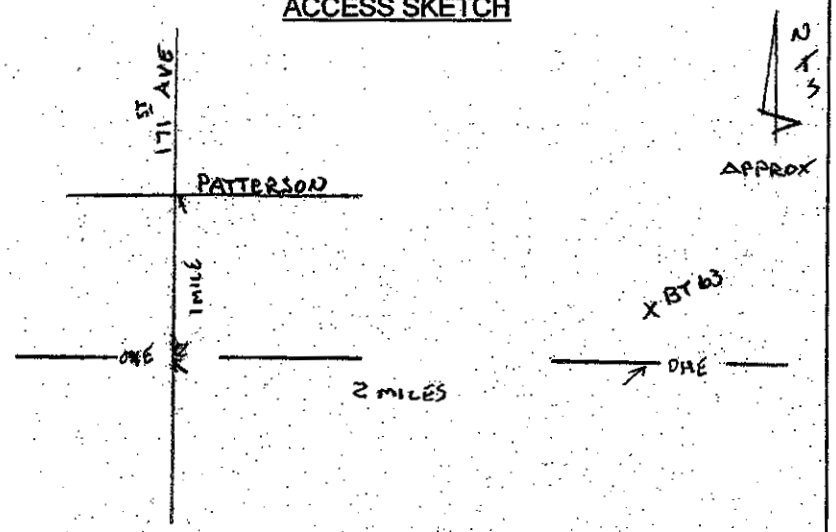
STATION STAMPING: RED CAP PEC CONTROL

STATION ACCESS: FROM 171ST AVE GO SOUTH FOR 1 MILE TO POWER LINE. FOLLOW POWER POLE LINE EAST FOR ½ POINT. POINT IS +/- 20' NORTH OF POWER LINE

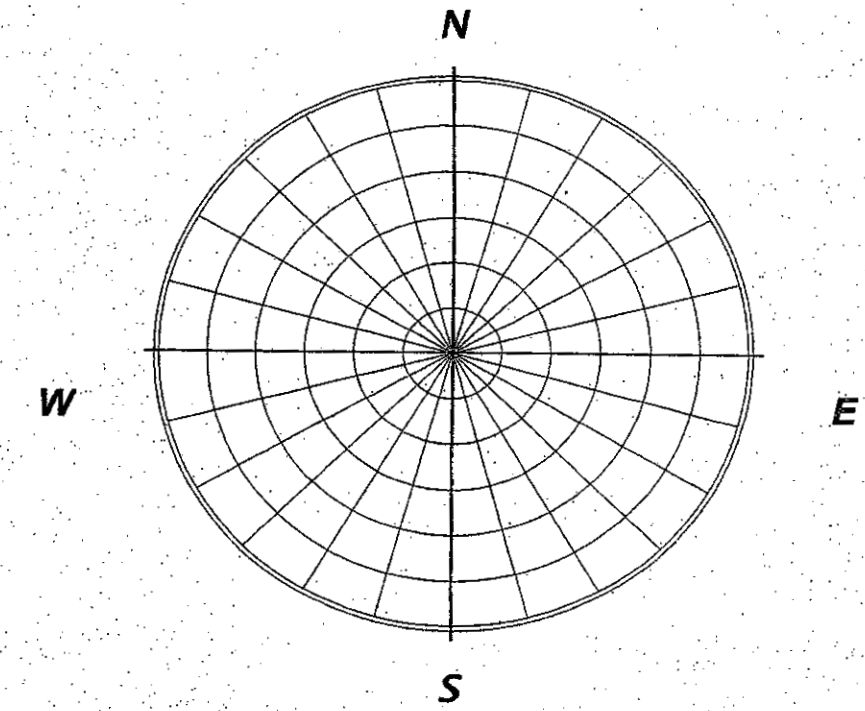
OPERATOR: JAMES DALE
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800
SESSION #: **FILE NAME:**
LOCAL DATE: 03/23/05 START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-10-27.453 LONG: 112-23-32.938 HEIGHT: 1161.950 ft

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GPS STATION OBSERVATION SHEET

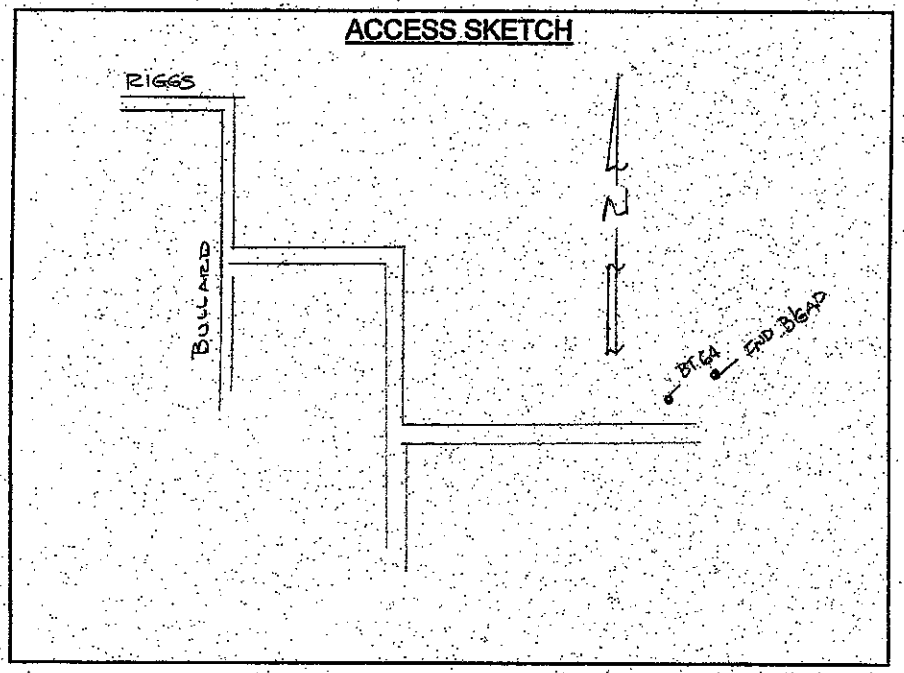
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT64
DATE FOUND/SET: 3/7/2005
STATION DESCRIPTION: SET 1/2" REBAR W/ LSCAP

STATION STAMPING: RLS# PEC CONTROL

STATION ACCESS: FROM RIGGS & BULLARD. SOUTH ON BULLARD ±1.95 MILES, THEN EAST ON DIRT ROAD 1.39± MILES, THEN SOUTH ON DIRT ROAD 1.0± MILES. THEN EAST ON DIRT ROAD 1.45± MILES TO THE POINT.

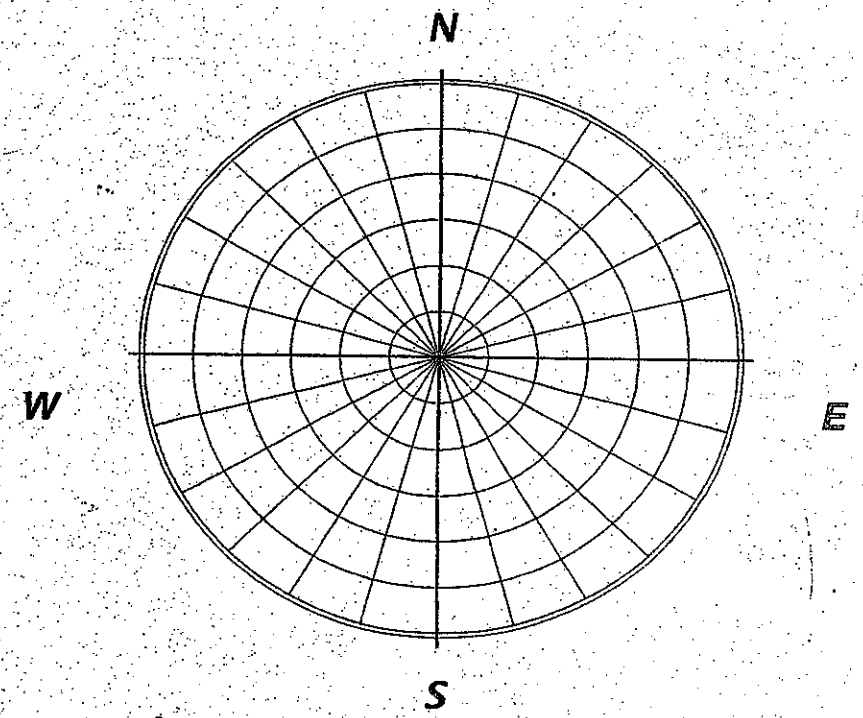
ACCESS SKETCH



OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-10-26.849 LONG: 112-19-25.391 HEIGHT: 1219.579

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 65
DATE FOUND/SET: 3/8/2005
STATION DESCRIPTION: Set ½" REBAR W/ RED LS CAP

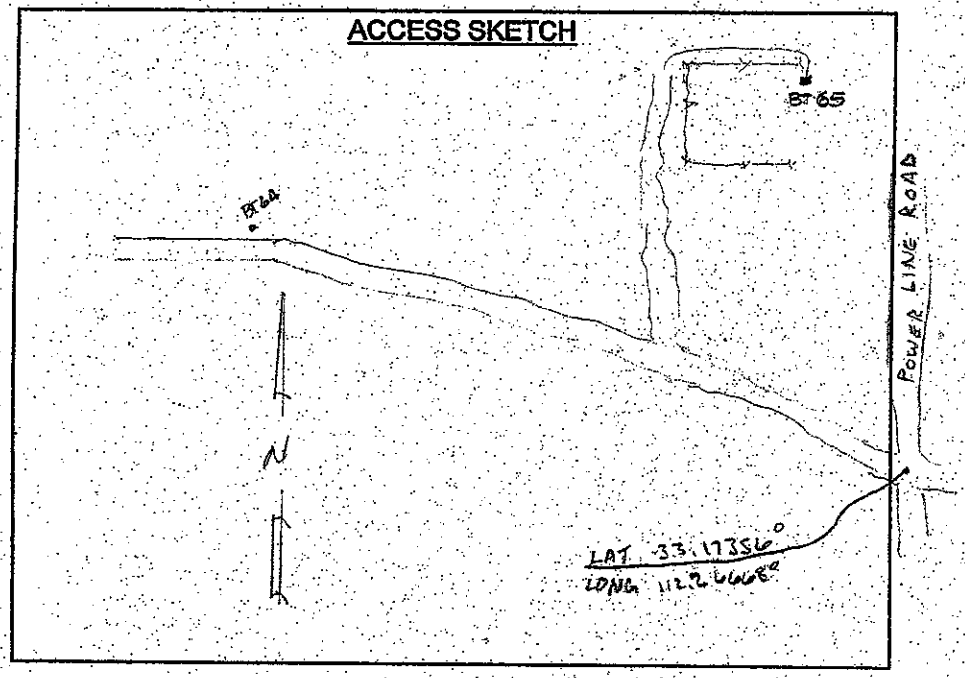
STATION STAMPING: LS PEC CONTROL

STATION ACCESS: FROM BT64 - SOUTHEASTERLY ON DIRT ROAD ± 2.2 MILES. THEN NORTHERLY ON DIRT ROAD ± 0.7 MILES (SEE SKETCH) ALONG A FENCE LINE (EAST) TO WOOD FENCE THEN EAST OF FOOT 0.25± MILES TO POINT.

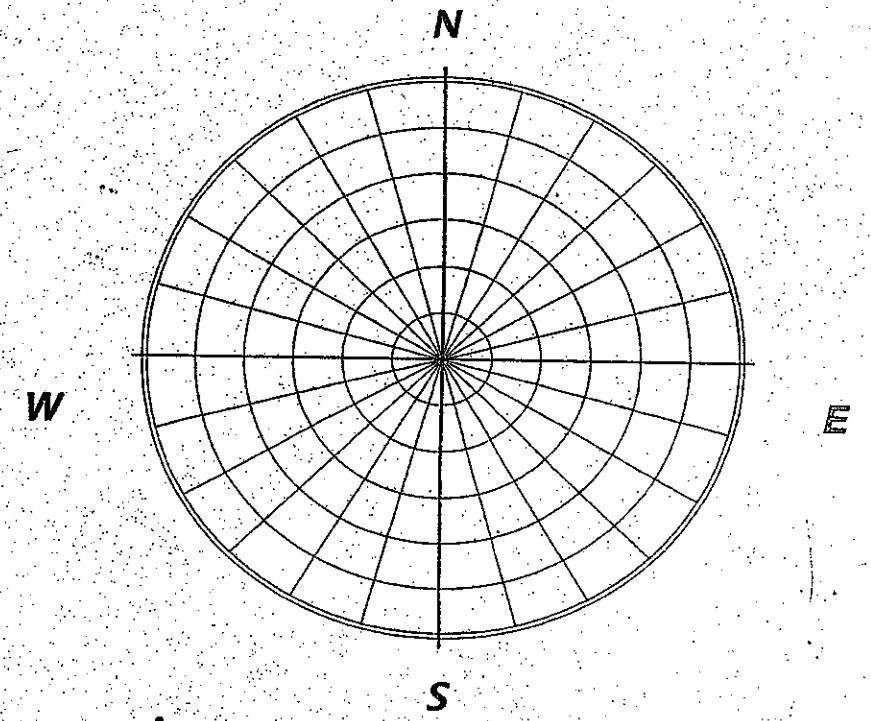
OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-10-27.030 LONG: 112-17-04.491 HEIGHT: 1319.247 ft

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GPS STATION OBSERVATION SHEET

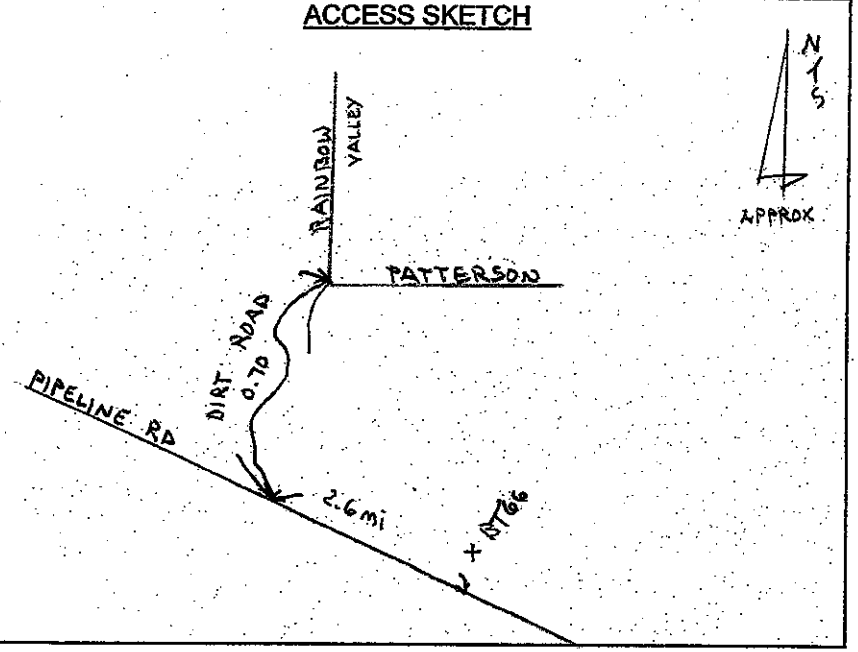
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 666
DATE FOUND/SET:
STATION DESCRIPTION: 1/2" RB WITH PANEL

STATION STAMPING: RED CAP PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY & PATTERSON ROAD TAKE DIRT ROAD SOUTH FOR 0.70 MILES TO GAS LINE ROAD. TAKE GAS LINE ROAD SOUTHEAST FOR 2.6 MILES TO POINT. POINT IS +/- 20' NORTH OF ROAD.

ACCESS SKETCH

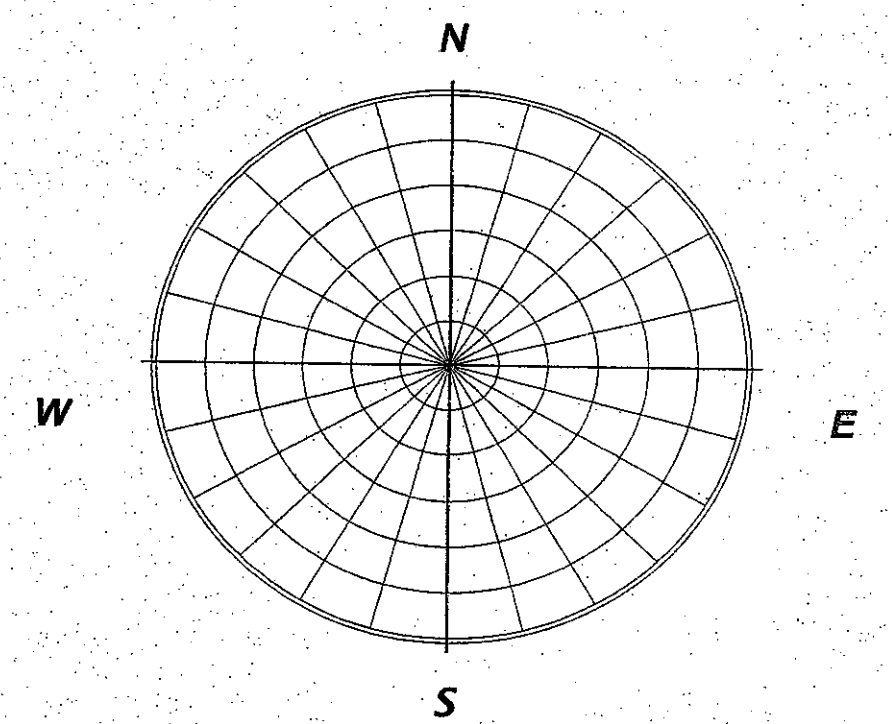


OPERATOR: C. STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-09-56.547 LONG: 112-24-50.813 HEIGHT: 1197.867 ft

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GPS STATION OBSERVATION SHEET

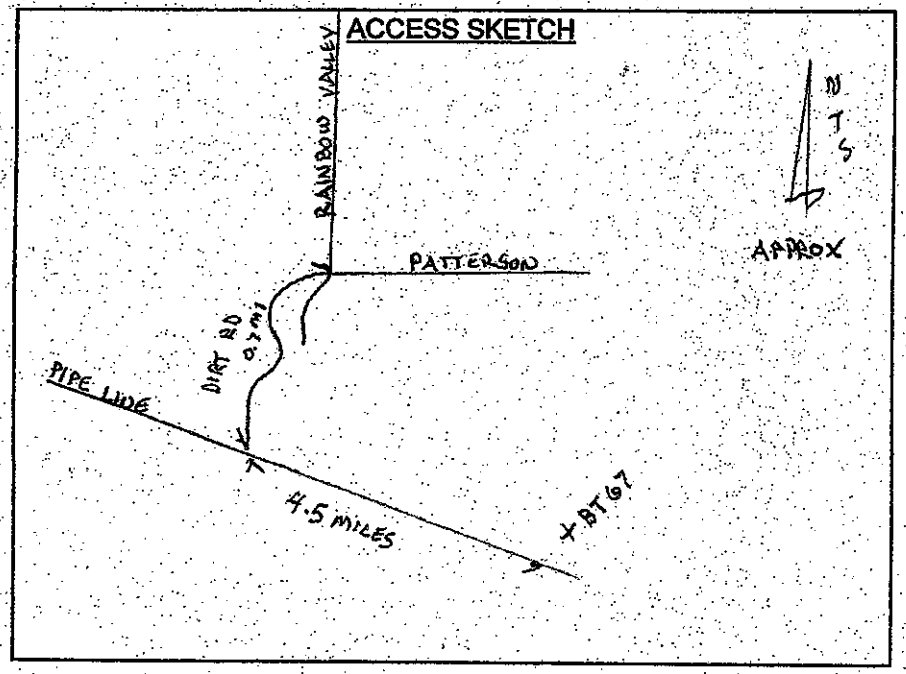
SH___of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 67
DATE FOUND/SET:
STATION DESCRIPTION: 1/2" REBAR PANEL POINT

STATION STAMPING: REP CAP PEC CONTROL

STATION ACCESS: FROM RAINBOW VALLEY AND PATTERSON TAKE DIRT ROAD 0.7 MILES SOUTH TO PIPE LINE RD. GO SOUTH EAST ON PIPE LINE ROAD 4.5 MILES TO POINT. POINT IS +/- 20' NORTH

ACCESS SKETCH

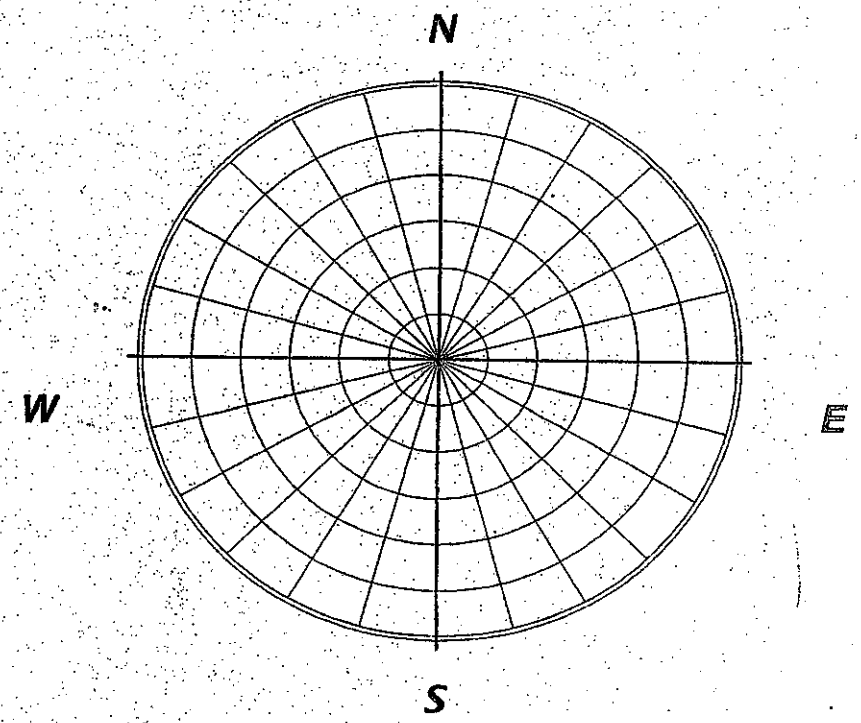


OPERATOR: JAMES DALE
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: **FILE NAME:**
LOCAL DATE: 03/23/05 START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)___(2nd)___(3rd)___(AVG)___
STOP (1st)___(2nd)___(3rd)___(AVG)___

OBSTRUCTION CHART



LAT: 33-08-59.617 LONG: 112-23-32.761 HEIGHT: 1208.059 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 68
STATION ID: PANEL

DATE FOUND/SET: 3-23-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEL CONTROL CAP

STATION STAMPING: 9'x1' PANEL

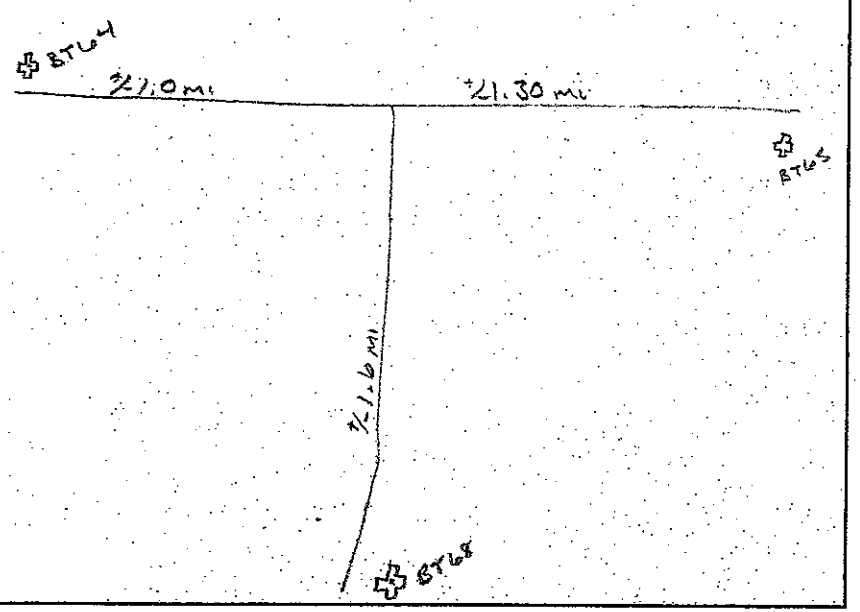
STATION ACCESS: FROM BT64 DRIVE EAST ON DIRT ROAD FOR +/- 1.0 mi. TO DIRT ROAD W/GLO CAP @ INTERSECTION DRIVE SOUTH FOR +/- 1.6 mi ON DIRT ROAD THAT IS A ROUGH RIDE TO STATION

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

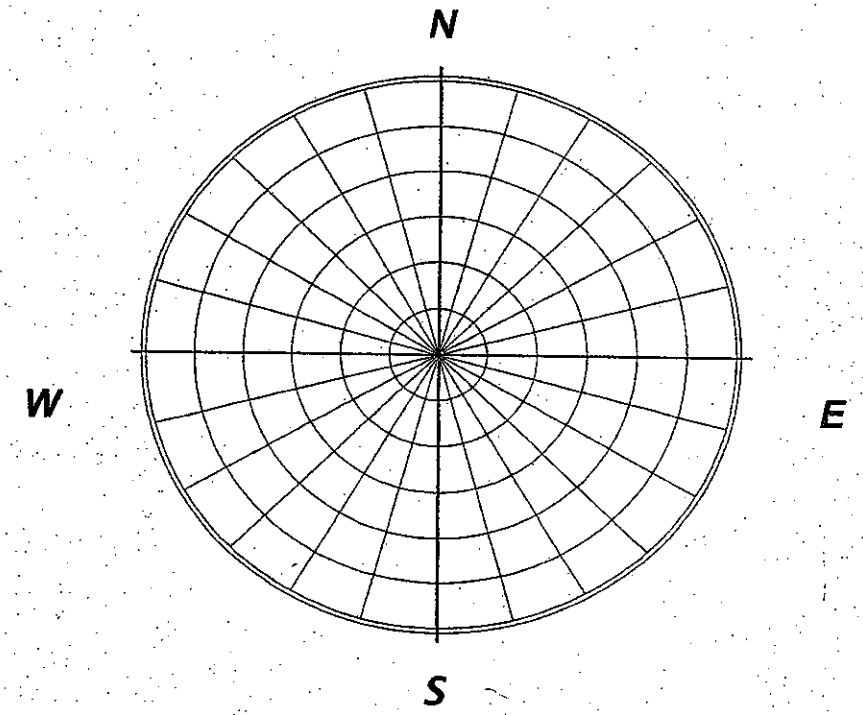
SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-09-11.010 LONG: 112-18-21.976 HEIGHT: 1238.299 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT 69
STATION ID: PANEL

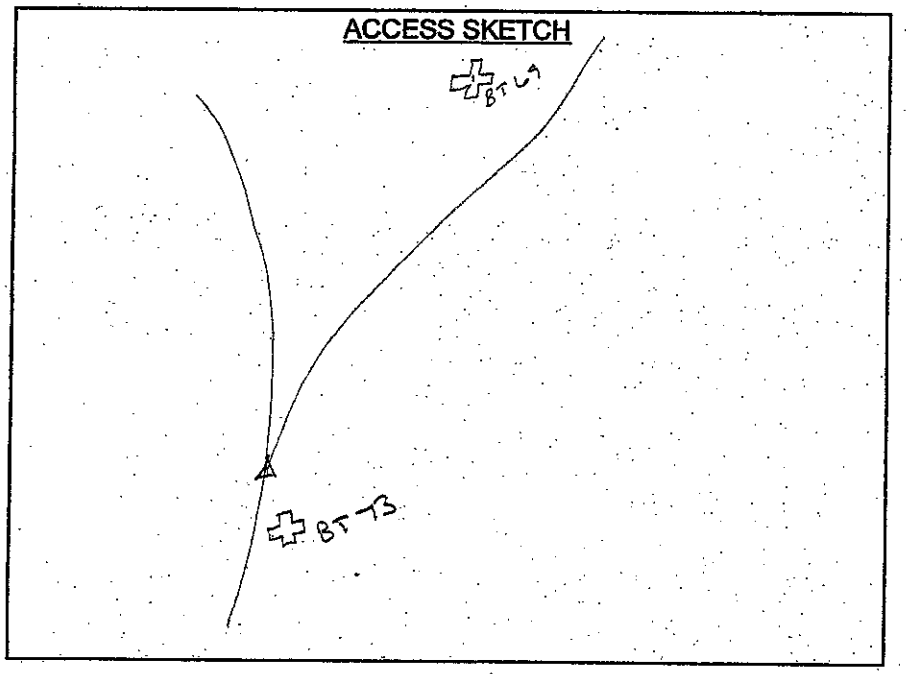
DATE FOUND/SET: 3-22-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEC CONTROL CAP

STATION STAMPING: 24'X3' PANEL

STATION ACCESS: FROM THE INTERSECTION OF TWO DIRT ROADS - <LAT: 33.13608° LONG: 112.21119°> TRAVEL NORTH EAST FOR +/- 1.35 MILE TO BT 1.9 ON THE WEST SIDE OF DIRT ROAD.

ACCESS SKETCH

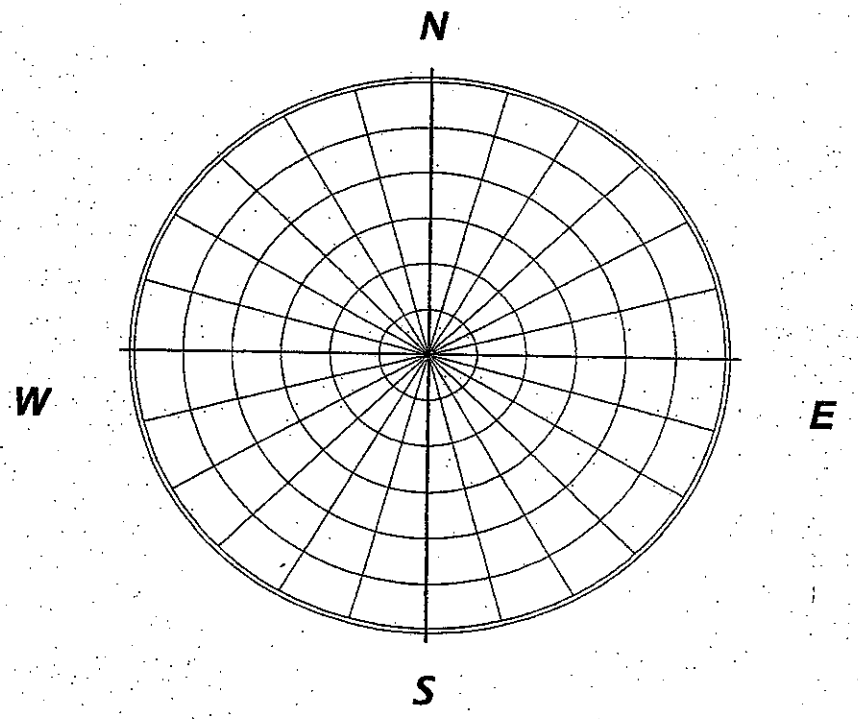


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

OBSTRUCTION CHART



LAT: 33-09-13.413 LONG: 112-13-15.548 HEIGHT: 1589.104 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 70
STATION ID: PANEL

DATE FOUND/SET: 3-22-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEC CONTROL CAP

STATION STAMPING: 9X1 PANEL

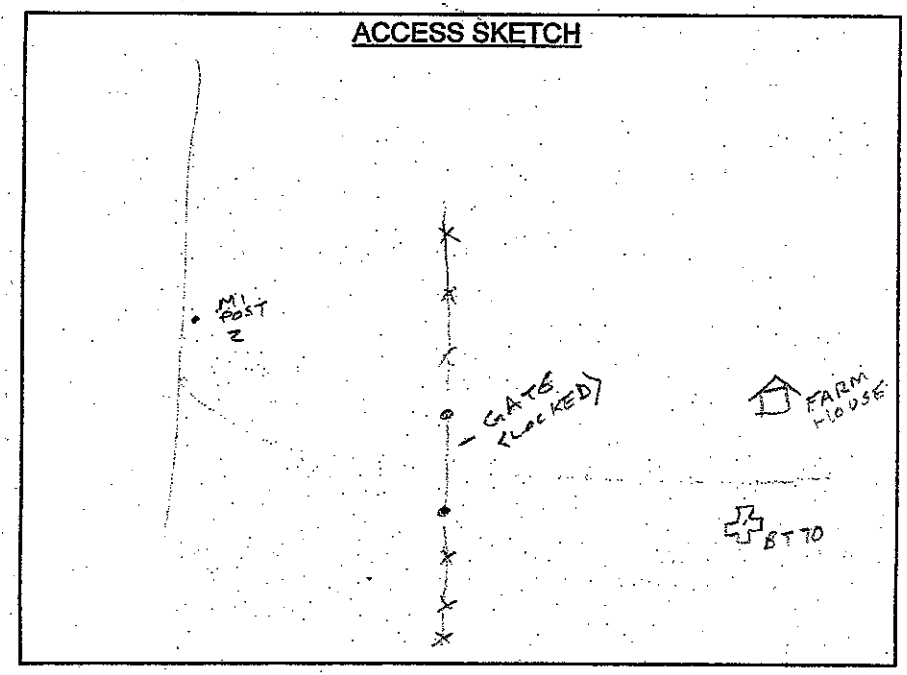
STATION ACCESS: FROM RIGGS + BOLLARD DRIVE SOUTH ON BOLLARD TO MILE POST 2 DRIVE WAY 100' SOUTH TURN LEFT (EAST) FOR 0.5 MI to BT 70

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX 1202

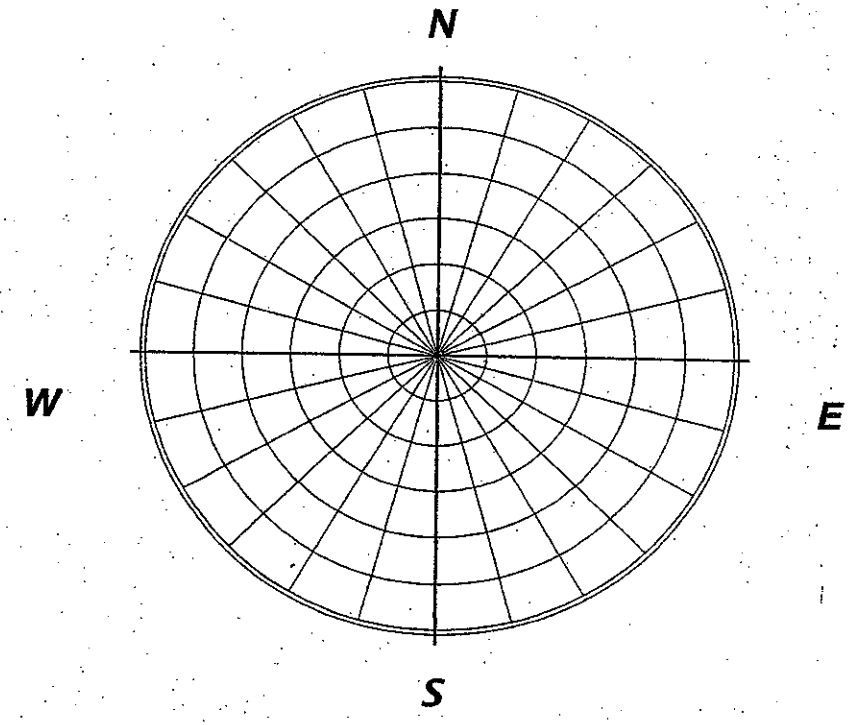
SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-08-42.493 LONG: 112-21-58.844 HEIGHT: 1185.006 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT 72
STATION ID: PANEL

DATE FOUND/SET: 3-22-05

STATION DESCRIPTION: SET 1/2" RB W/RED PEL CONTROL CAP

STATION STAMPING: 24" x 3" PANEL

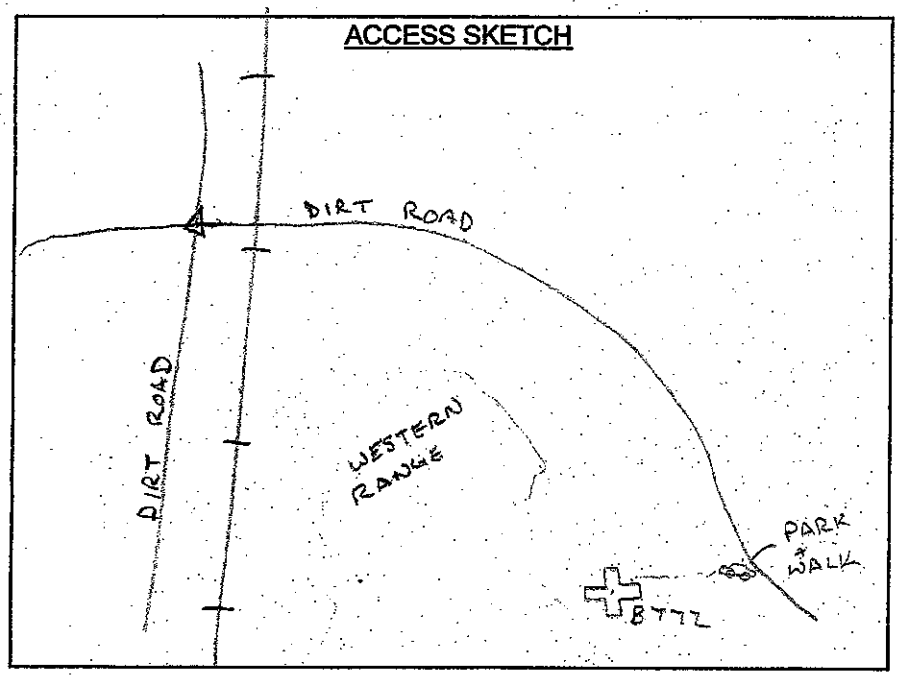
STATION ACCESS: FROM ~~BR~~ INTERSECTION OF TWO DIRT ROADS <LAT: 33.16464° LONG: 112.26545°> DRIVE SOUTH, SOUTHEAST FOR ~~22~~ 2 1/2 MILES AND PARK WALK WEST FOR +/- .30 MILES

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

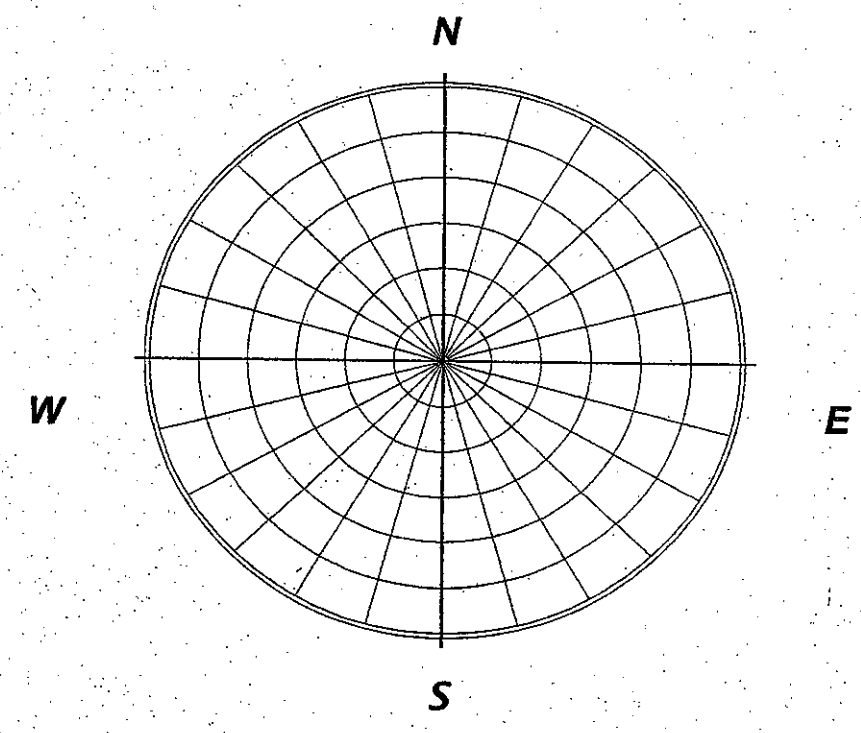
ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



2 1/2
.30

OBSTRUCTION CHART



LAT: 33-08-49.041 LONG: 112-14-23.369 HEIGHT: 1512.7549

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GPS STATION OBSERVATION SHEET

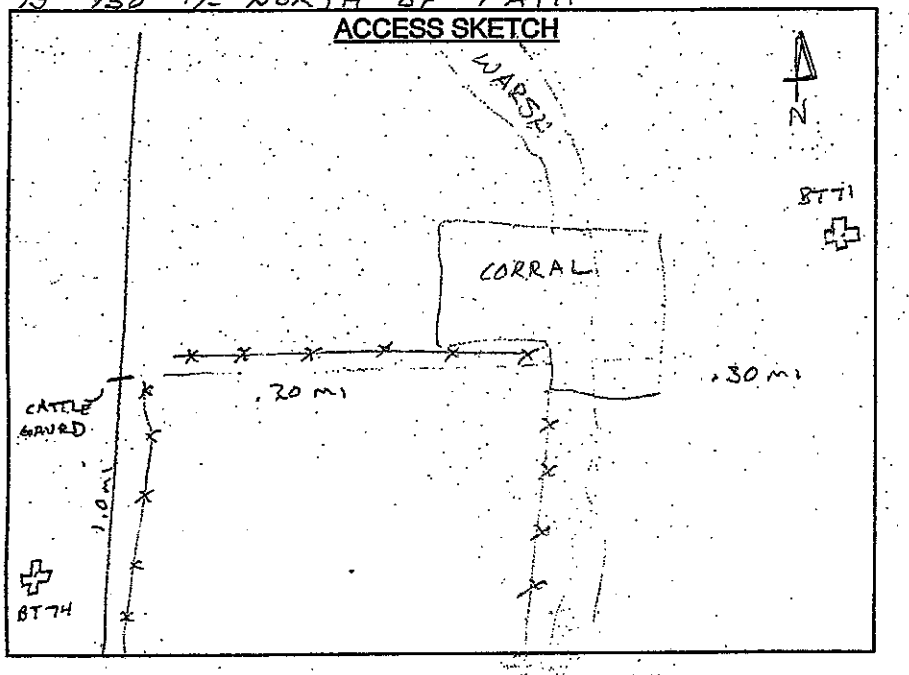
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 71
STATION ID: PANEL / GLO
DATE FOUND/SET: 3-22-05
STATION DESCRIPTION: FND GLO BC 1/2 S23 + S25 2" - 1.18 ABOVE N/G

STATION STAMPING: GLO S23 1/4 S25

STATION ACCESS: FROM BT74 FOLLOW DIRT ROAD NORTH TO CATTLE ~~GARD~~ GAURD TURN RIGHT (EAST) ALONG SOUTH SIDE OF E.-W. FENCE 0.20 TO WARSH & CONTINUEING THROUGH WARSH (EAST) TO FIND A PATH TO THE EAST FOR 0.30 MILES STATION IS 150' +/- NORTH OF PATH

ACCESS SKETCH

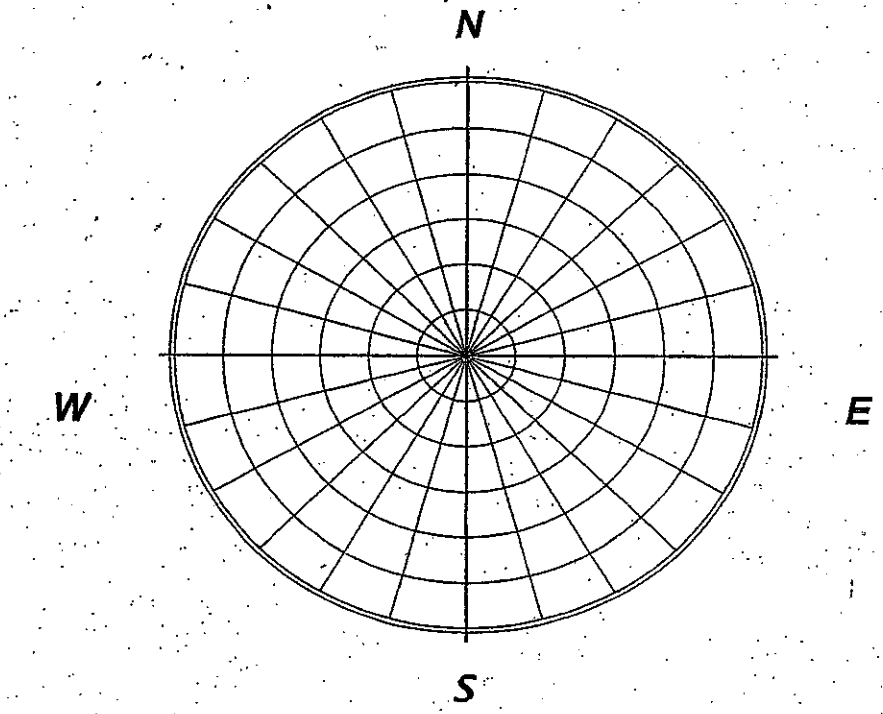


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

OBSTRUCTION CHART



LAT: 33-08-42.883 LONG: 112-19-55.446 HEIGHT: 1186.756 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAIN BOW VALLEY
STATION NAME: BT 73
STATION ID: PANEL

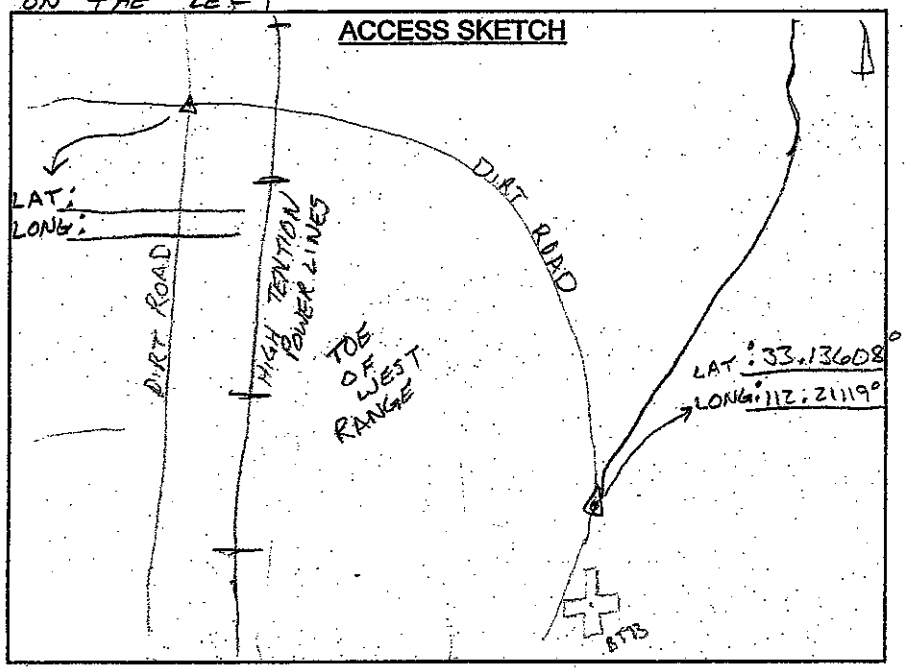
DATE FOUND/SET: 3-22-05

STATION DESCRIPTION: SET ½" RB W/RED PEC CONTROL CAP

STATION STAMPING: 24' x 3' PANEL

STATION ACCESS: FROM THE INTERSECTION OF TWO DIRT ROADS <LAT: 33.16464° LONG: 112.26545°> DRIVE EAST ON DIRT ROAD WHICH WILL TURN SOUTHEAST - FOLLOW TILL THE Y IN DIRT ROAD. FOLLOW TO THE RIGHT FOR ABOUT .06 MILE TO THE STATION ON THE LEFT

ACCESS SKETCH

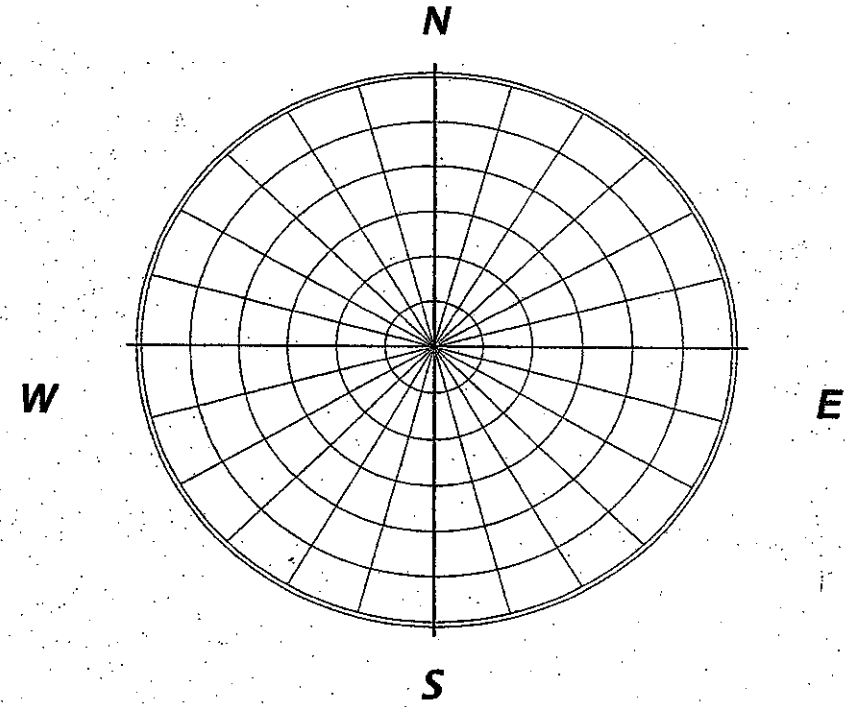


OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

OBSTRUCTION CHART



LAT: 33-08-09.198 LONG: 112-12-38.920 HEIGHT: 1586.869ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY
STATION NAME: BT 74
STATION ID:

DATE FOUND/SET: 3-~~3~~17-05

STATION DESCRIPTION: SET ½" RB W/PEC RED CONTROL CAP <COWS - NOT PANNELED - 3-17-05>

STATION STAMPING:

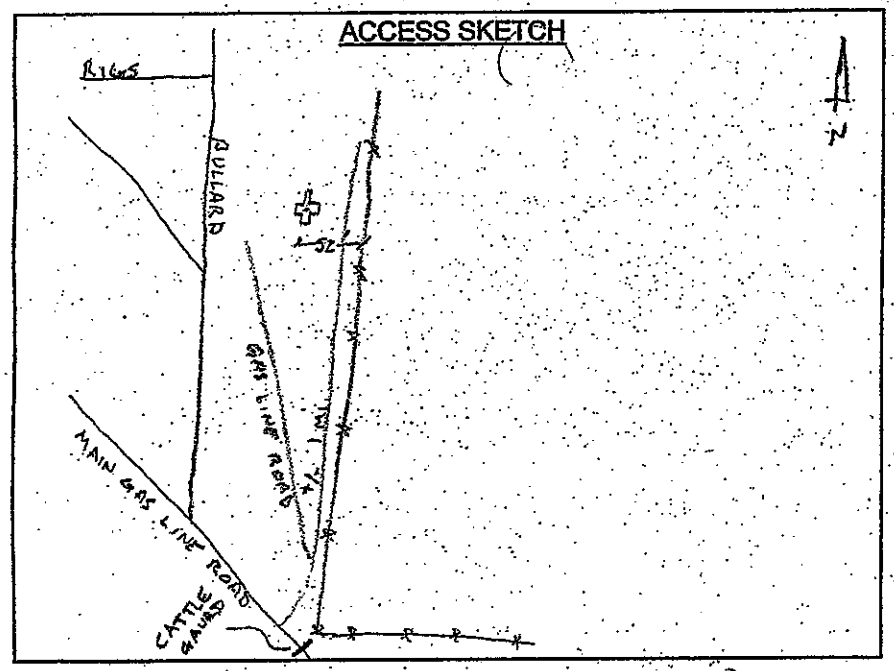
STATION ACCESS: FROM RIGGS ROAD + BULLARD DRIVE SOUTH TO MCCONTY RD (MAIN GAS LINE RD) turn LEFT till the CATTLE GUARD TURN LEFT (north) for 1.0 mile to BT 74 52' WEST OF N/S fence line

OPERATOR: KARL
RECEIVER TYPE: LEICA ANTENNA TYPE:

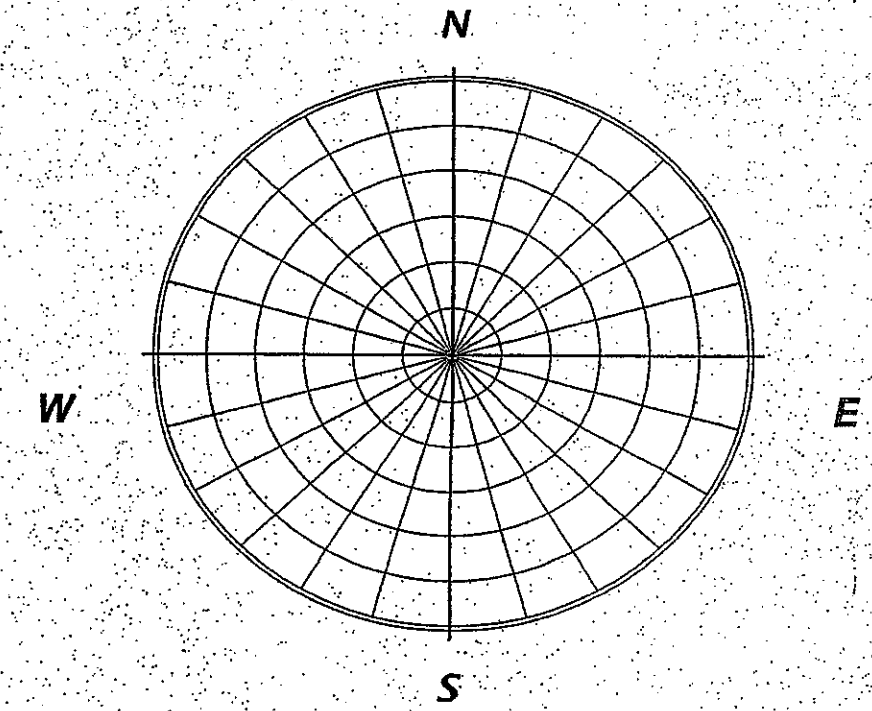
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33°07'49.737 LONG: 112°20'58.199" HEIGHT: 1219.525 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 75
STATION ID: PANEL

DATE FOUND/SET: 3-23-05

STATION DESCRIPTION: SET 1/2" RB W/PEC REC CONTROL CAP

STATION STAMPING: 24' x 3' PANEL (TO WINDY ON 3-23-05)

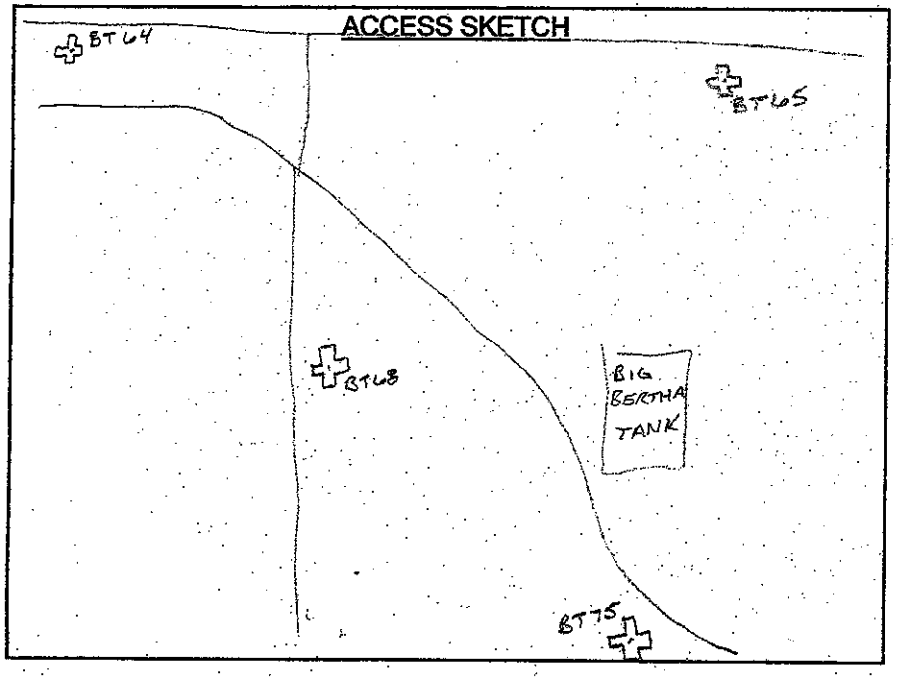
STATION ACCESS: FROM BT 64 (ROAD ON SOUTH SIDE) DRIVE EAST - SOUTHEAST FOR +/- 4.0 MILE TO STATION (NOTE: JEEP TRAIL IS ON 1973 MAP

OPERATOR: KARL VLIEGER
RECEIVER TYPE: LEICA ANTENNA TYPE: LEIAX1202

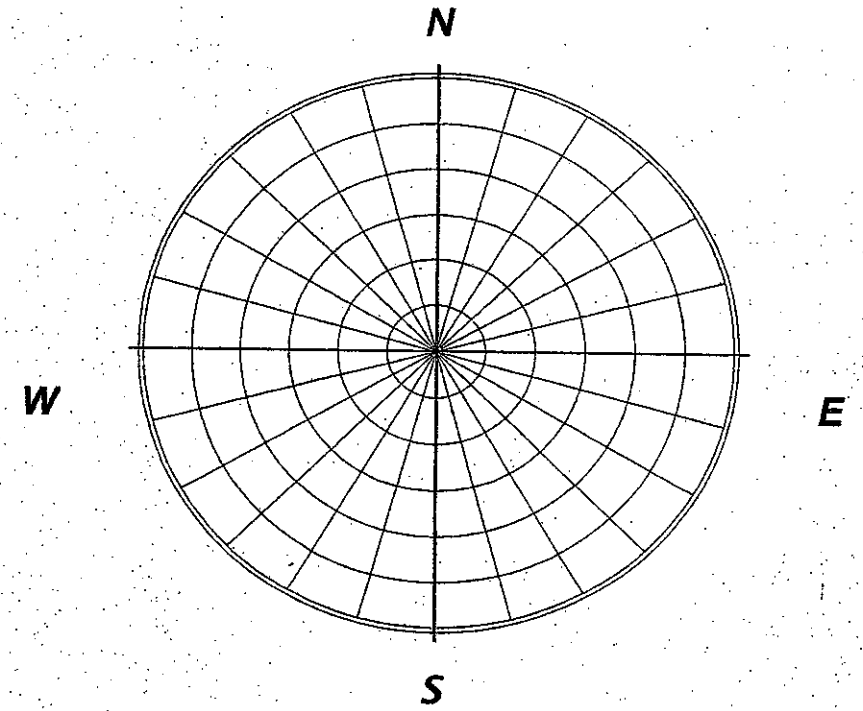
SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-07-49.474 LONG: 112-16-37.885 HEIGHT: 1245.937 ft

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GPS STATION OBSERVATION SHEET

SH. ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 76

DATE FOUND/SET: 3/14/2005

STATION DESCRIPTION: SET 1/2" REBAR W/ REDCAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA RD & SR 238, SOUTHWESTERLY ON SR 238 ± 13.5 MILES TO 99TH AVE (DIRT ROAD) THEN NORTH ON 99TH AVE ± 3.65 MILES, THEN EAST ON A DIRT RD ± 1.0 MILES, THEN NORTH ON A DIRT ROAD ± 0.92 MILES TO THE POINT.

OPERATOR: GLENN ANKRUM

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

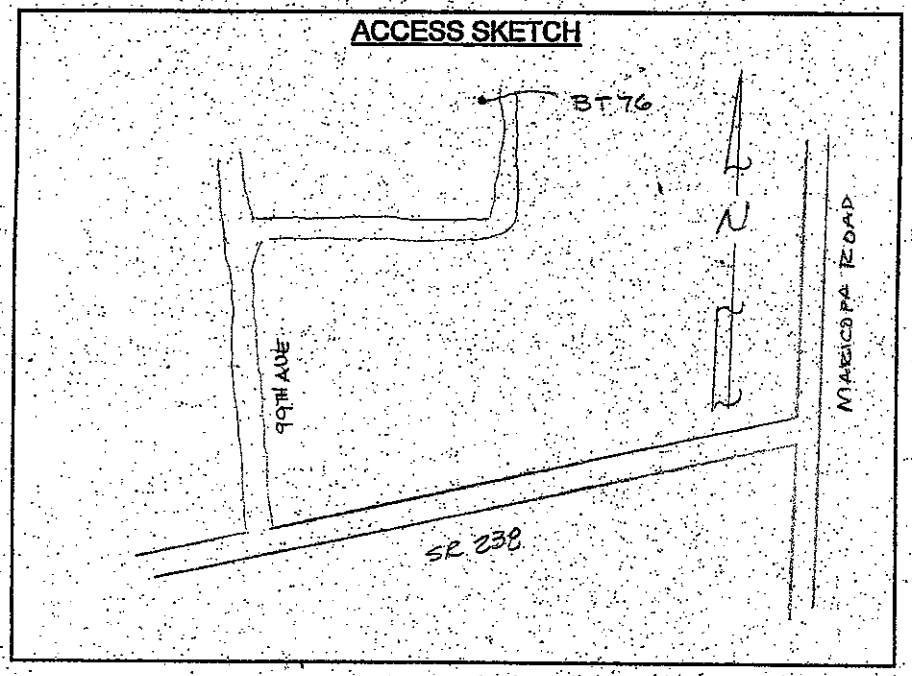
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

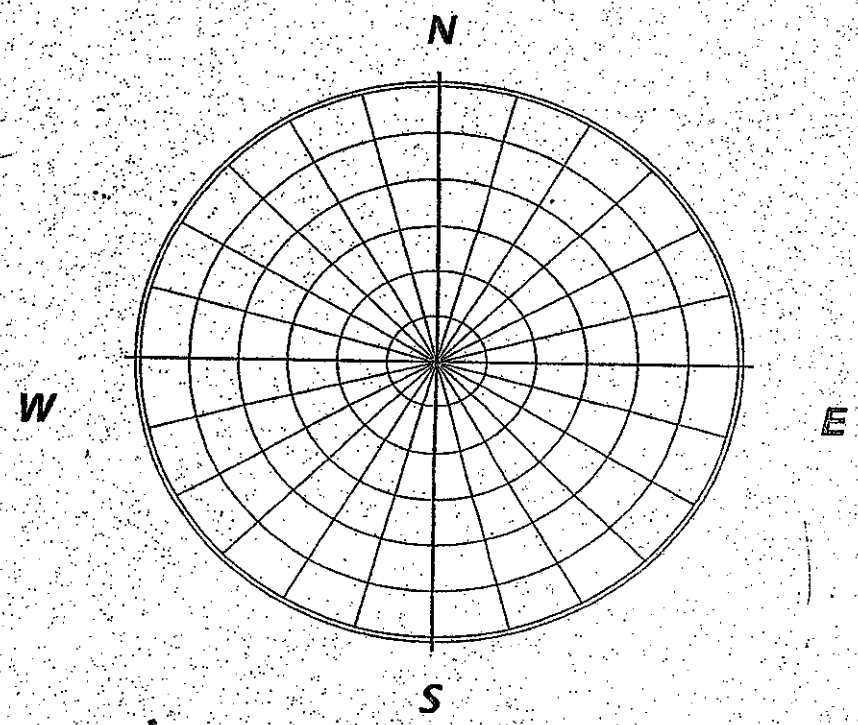
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-07-19.729 LONG: 112-15-16.692 HEIGHT: 1294.951 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT77
DATE FOUND/SET: 3/10/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

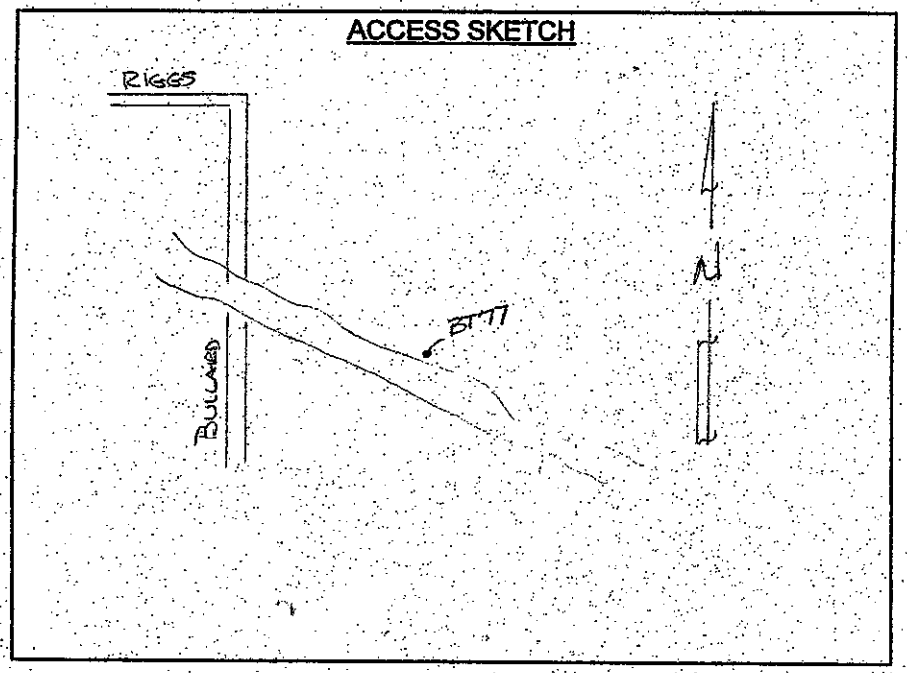
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS & BULLARD - SOUTHON BULLARD ± 5.5 MILES TO A PIPELINE RD, THEN S.E ALONG PIPELINE RD. ± 2.6 MILES TO THE POINT

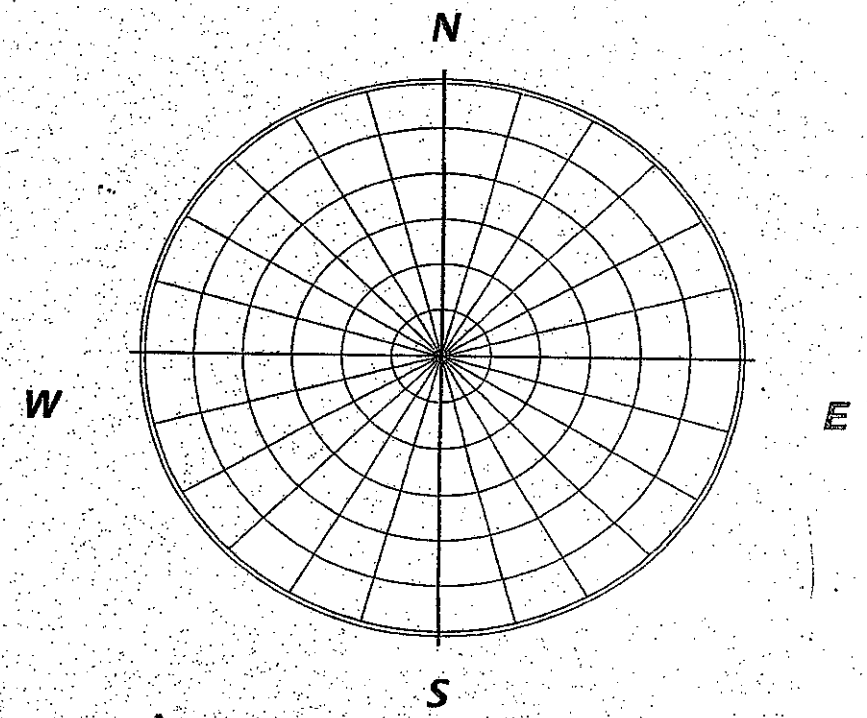
OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-06-41.704 LONG: 112-20-26.251 HEIGHT: 1252.073 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 78

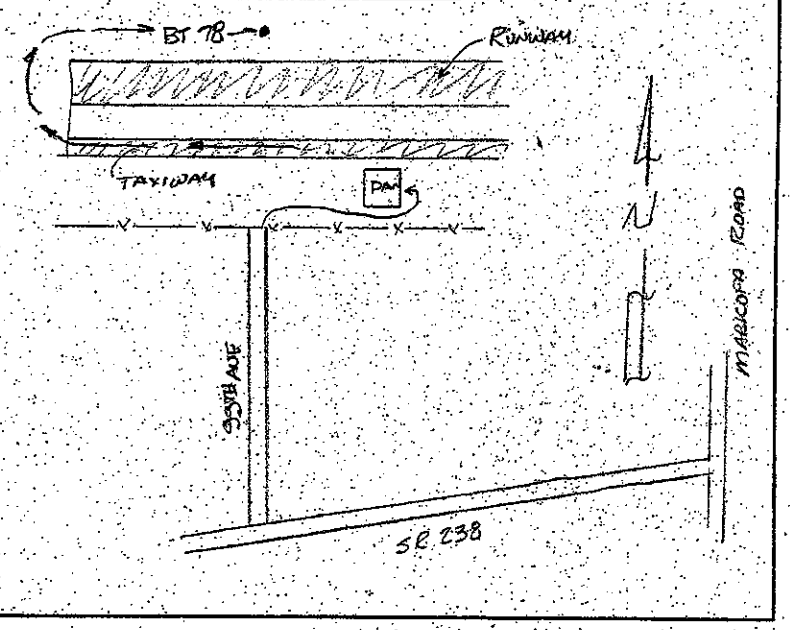
DATE FOUND/SET: 3/19/05

STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 99TH AVE & SR 238, N ON 99TH AVE ± 3.75 MILES TO GATE ENTRANCE TO AIRPORT. FIND DAN IN THE HANGER AREA TO ESCORT YOU ADDITIONAL 0.25± MILES ON 99TH AVE ALIGNMENT TO THE POINT.

ACCESS SKETCH



OPERATOR: GLENN ANKRUM

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

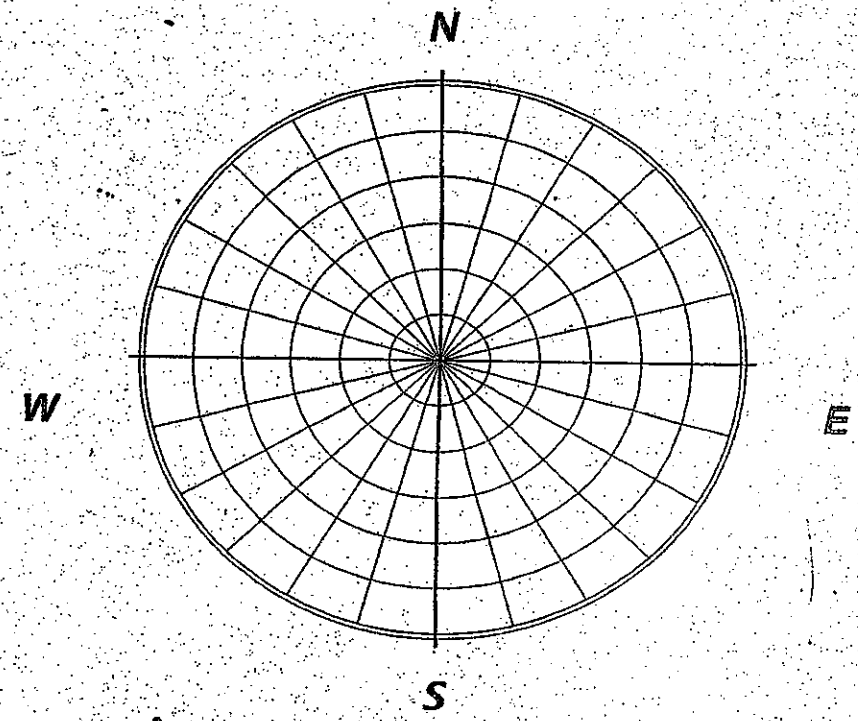
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-06-47.800 LONG: 112-16-18.604 HEIGHT: 1244.932 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 79

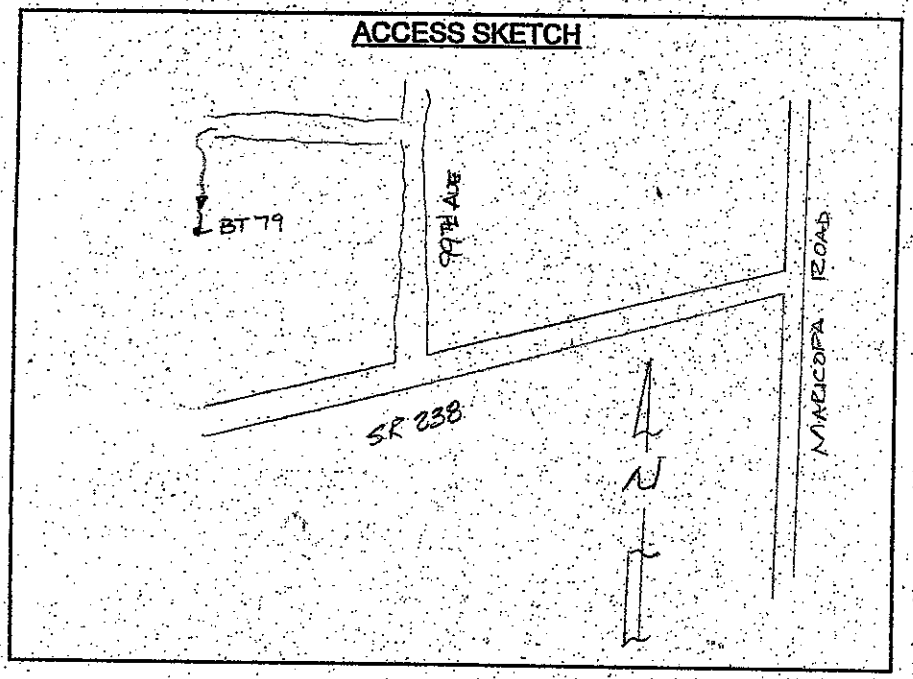
DATE FOUND/SET: 3/14/2005

STATION DESCRIPTION: SET ½" REBAR WITH RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA ROAD & SR 238, SOUTHWESTERLY ON SR 238 ± 13.5 MILES TO 99TH AVE (DIRT RD). THEN N. ON 99TH AVE ± 3.4 MILES. THEN WEST ON A DIRT ROAD ± 1.0 MILES. THEN SOUTH ACROSS COUNTRY ± 0.3 MILES TO THE POINT.

ACCESS SKETCH



OPERATOR: GLENN ANKRUM

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

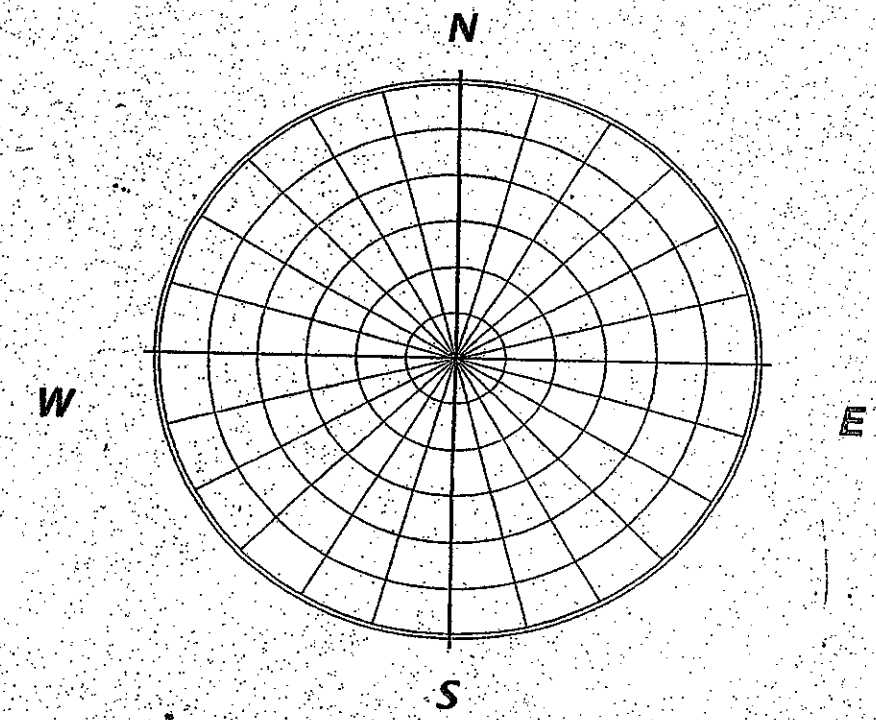
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-06-06.350 LONG: 112-17-19.504 HEIGHT: 1242.252 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 80

DATE FOUND/SET: 3/10/2005

STATION DESCRIPTION: SET 1/2" REBAR W/ REDCAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS & BULLARD, SOUTH ON BULLARD ± 5.5 MILES TO A PIPELINE RD. THEN S.E ALONG PIPELINE ROAD ± 4.2 MILES TO THE POINT

OPERATOR: GLENN ANKRUM

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

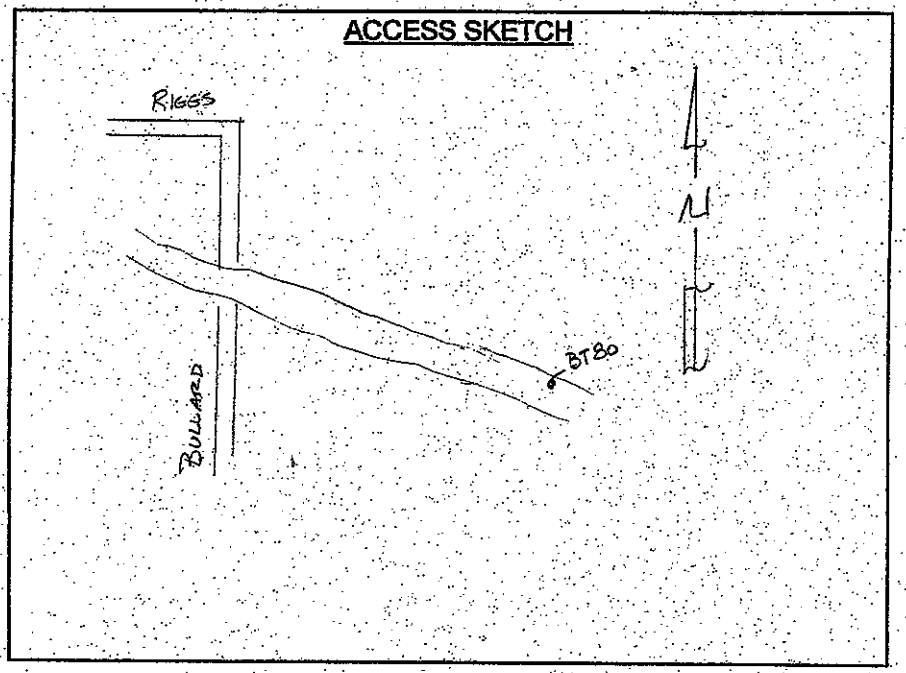
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

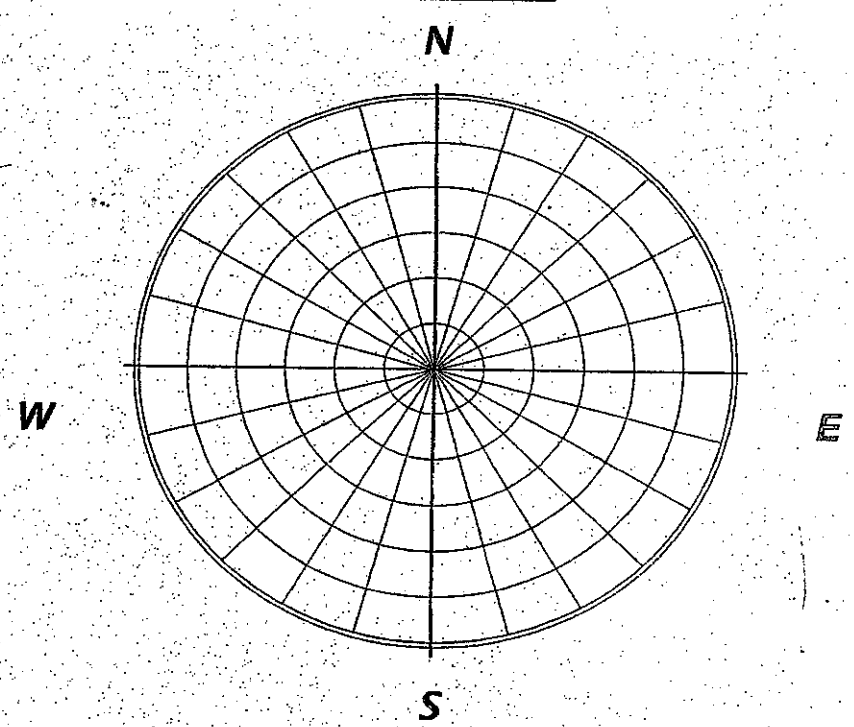
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-05-46.998 LONG: 112-19-12.942 HEIGHT: 1256.957 ft

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GPS STATION OBSERVATION SHEET

SH___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT81

DATE FOUND/SET: 13/15/2005

STATION DESCRIPTION: SET ½" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA RD & SR 238, SOUTHWESTERLY ALONG SR 238 ± 11.4 MILES, THEN N. THRU A GATE ± 2.2 MILES ON A DIRT ROAD & CROSS COUNTRY TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAK1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

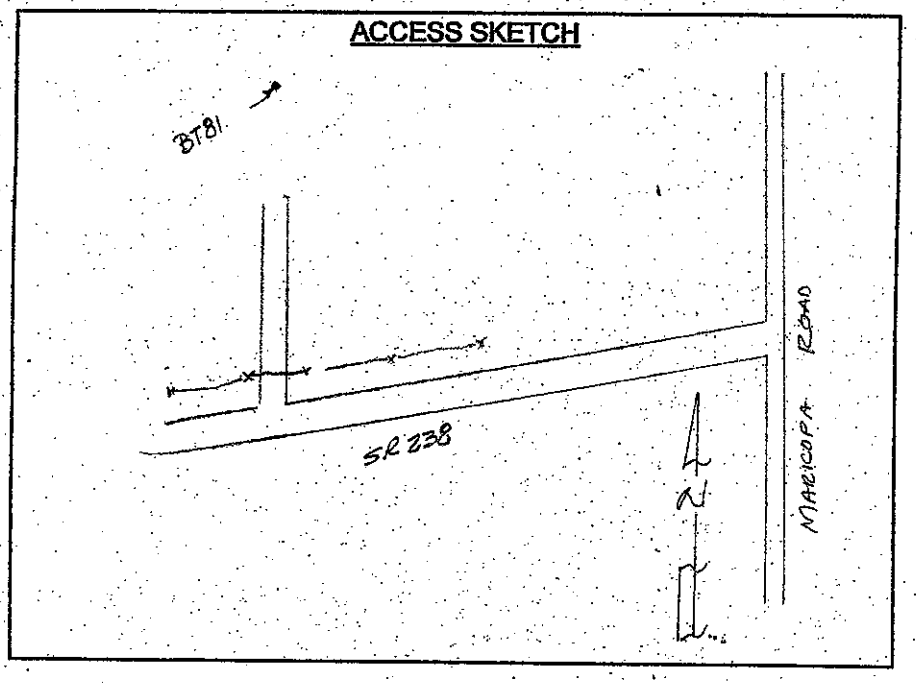
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

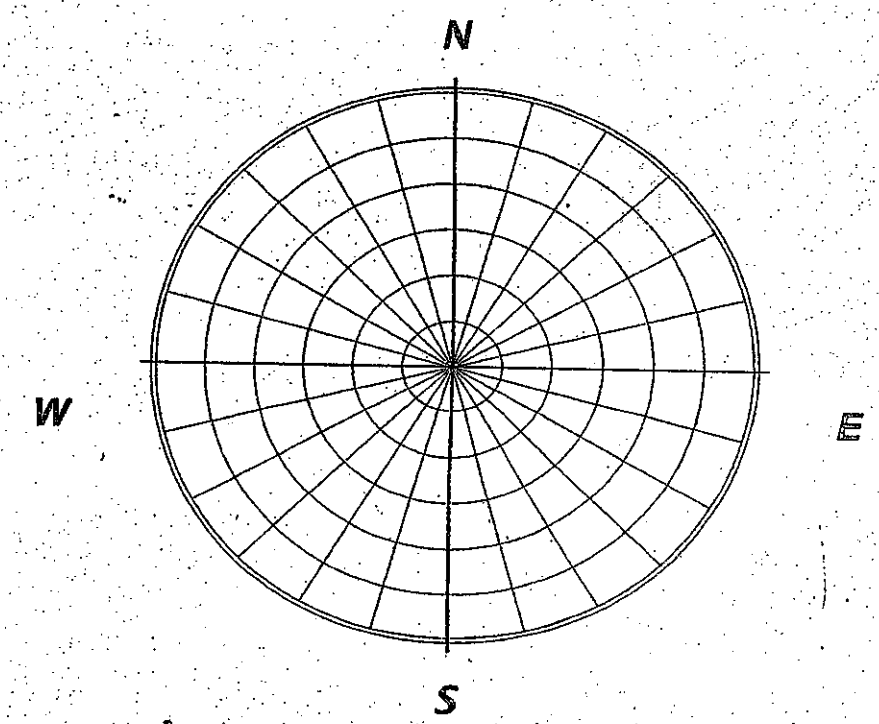
START (1st)____ (2nd)____ (3rd)____ (AVG)____

STOP (1st)____ (2nd)____ (3rd)____ (AVG)____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-05-46.239 LONG: 112-14-14.143 HEIGHT: 1311.899 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT82

DATE FOUND/SET: 3/14/2005

STATION DESCRIPTION: SET PK NAIL ℄ OF 99TH AVENUE

STATION STAMPING: NONE

STATION ACCESS: FROM MARICOPA RD & SR 238, THEN S.WESTERLY ON SR 238 ± 13.5 MILES TO 99TH AVE (DIRT RD) THEN N. ON 99TH AVE ± 2.15 MILES TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

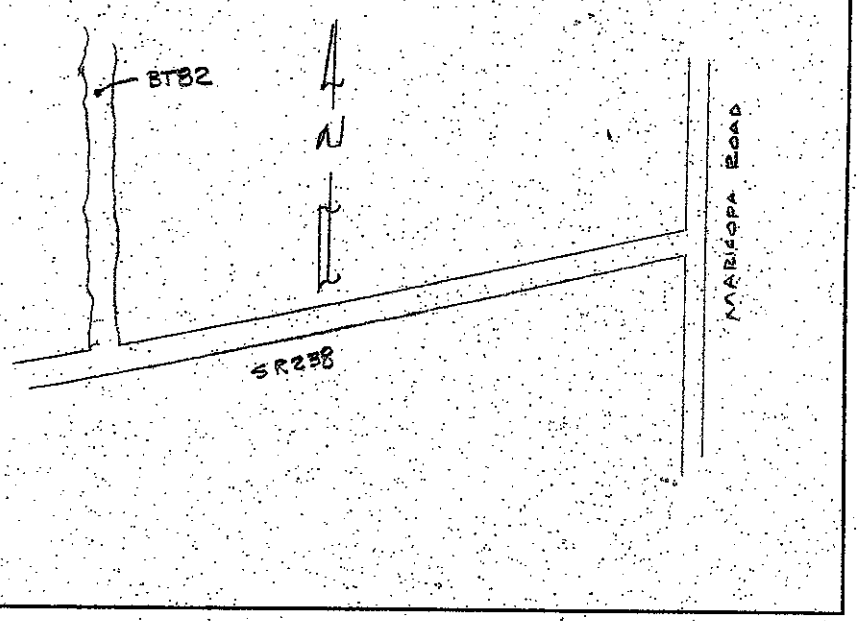
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

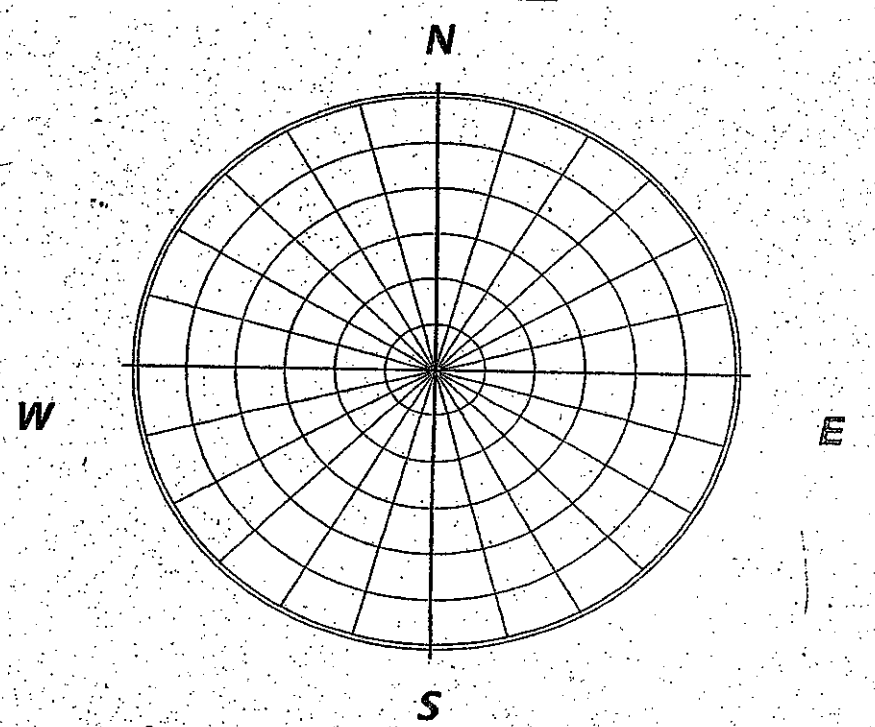
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-05-13.640 LONG: 112-16-18.704 HEIGHT: 1263.240 ft

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 83

DATE FOUND/SET: 3/15/2005

STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA RD & SR 238. THEN SOUTHWESTERLY ALONG SR 238 ± 9.2 MILES, THEN NORTH ON ROUGH DIRT ROAD ± 0.7 MILES THEN WEST ACROSS COUNTRY ± 0.18 MILES TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

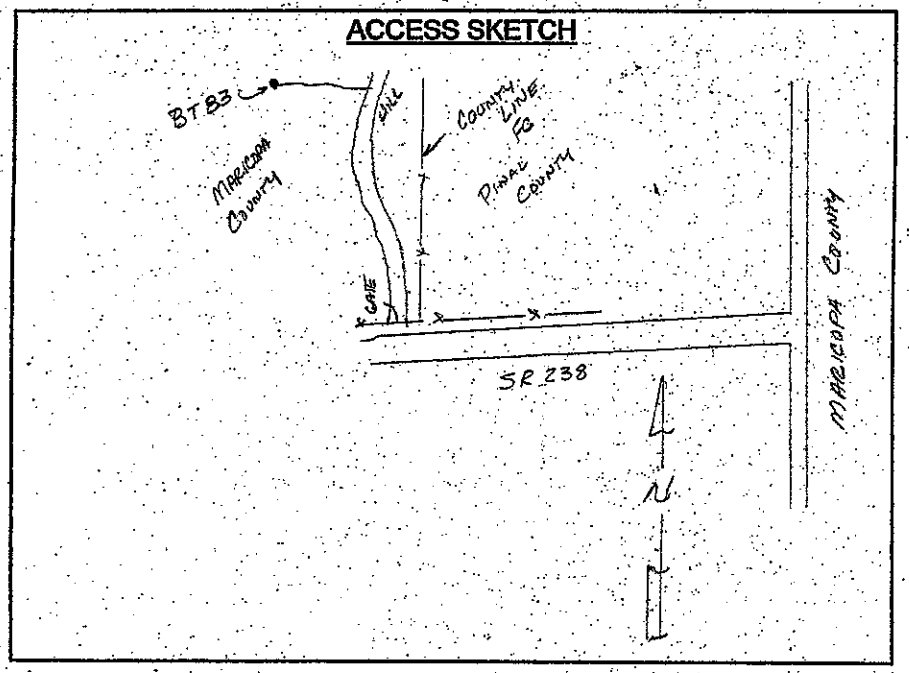
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

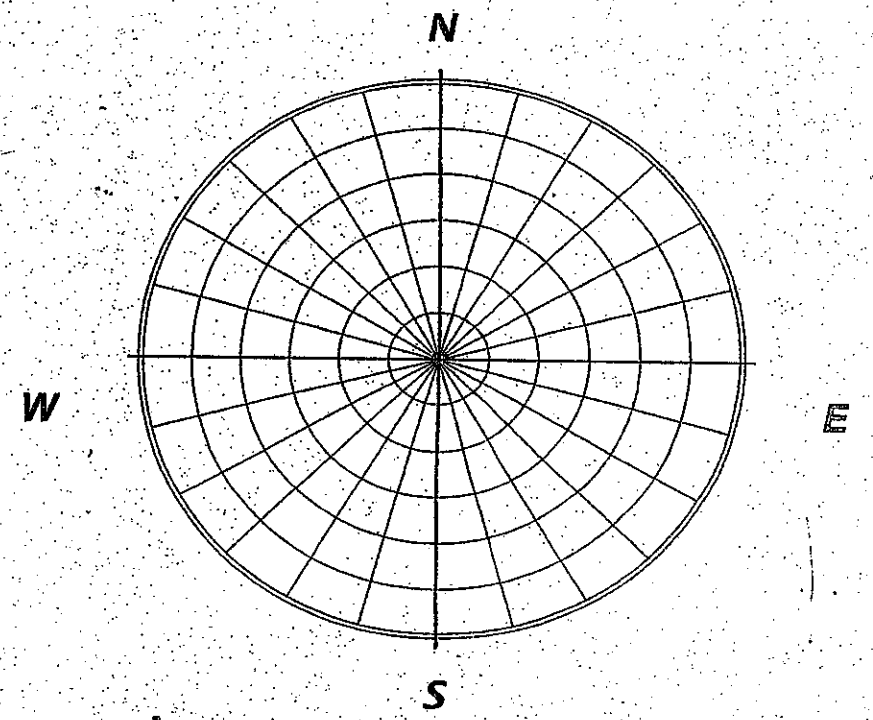
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-05-01.464 LONG: 112-12-18.297 HEIGHT: 1320.28857

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GPS STATION OBSERVATION SHEET

SH. 1 of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 84
DATE FOUND/SET: 3/10/05
STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

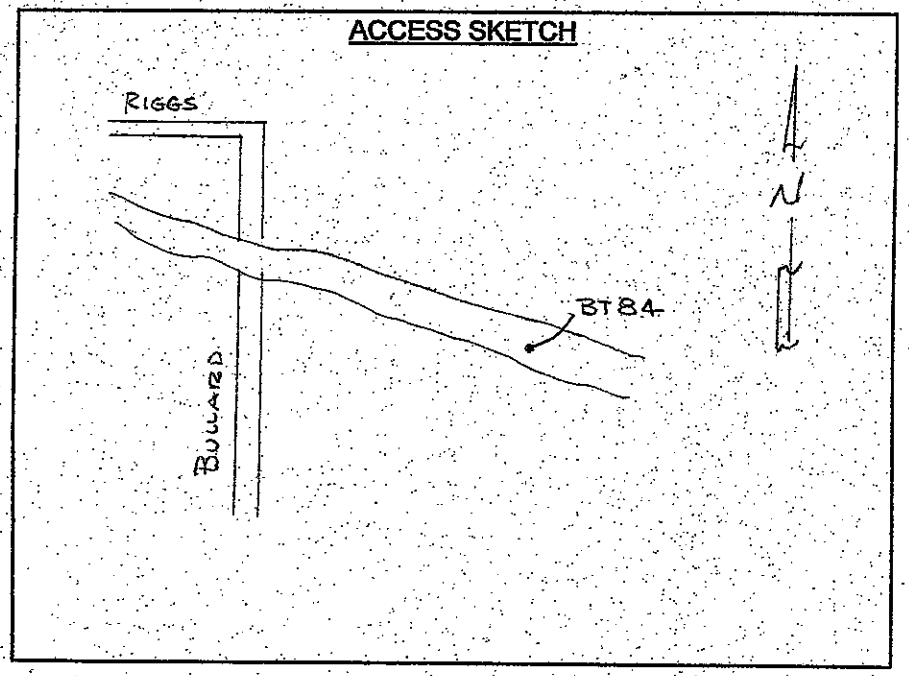
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS & BULLARD. SOUTH ON BULLARD ± 5.5 MILES TO A PIPELINE RD. THE SE ALONG PIPELINE RD ± 6.0 MILES TO THE POINT.

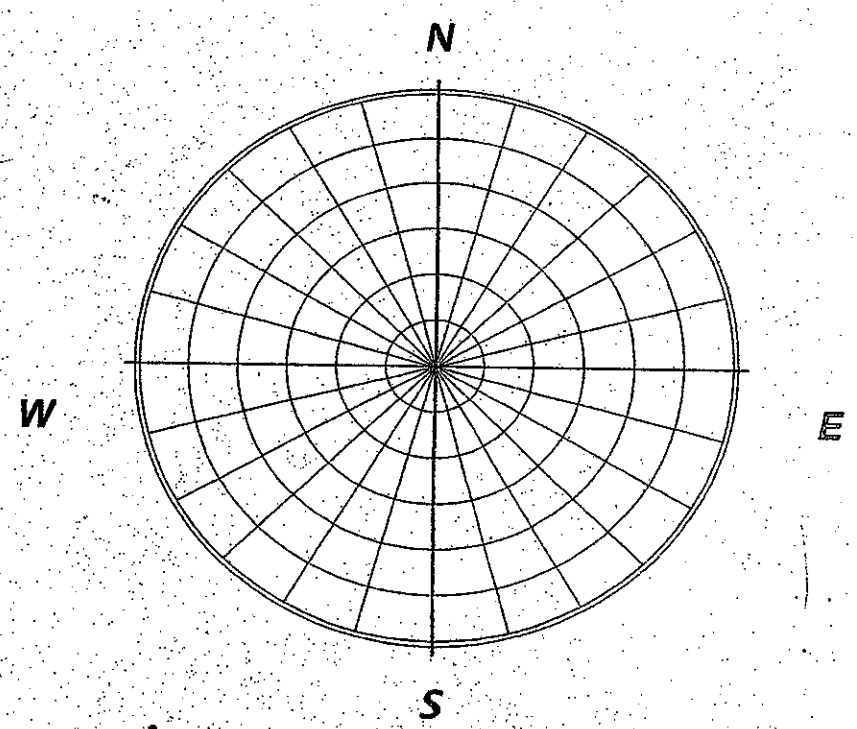
OPERATOR: GLENN ANKROM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-04-42.767 LONG: 112-17-47.028 HEIGHT: 1289.261 ft

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GPS STATION OBSERVATION SHEET

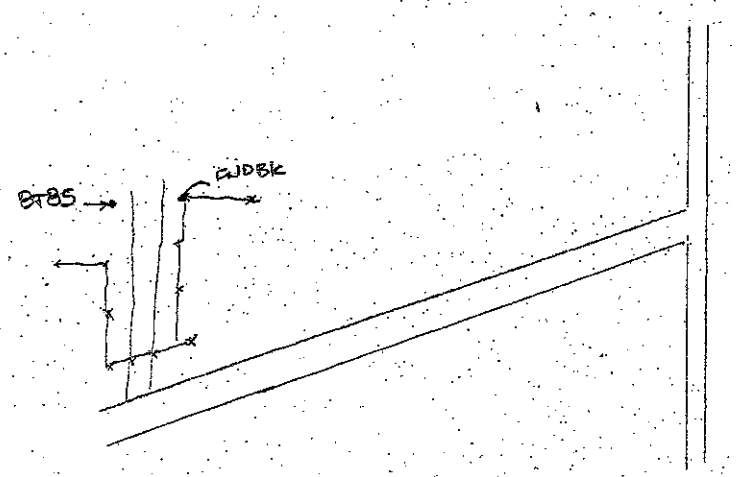
SH ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT85
DATE FOUND/SET: 3/15/05
STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA RD & SR 238, SOUTHWESTERLY ON SR 238 ± 11.5 MILES. THEN NORTH THRU GATE IN FENCE ±0.6 MILES TO THE POINT.

ACCESS SKETCH

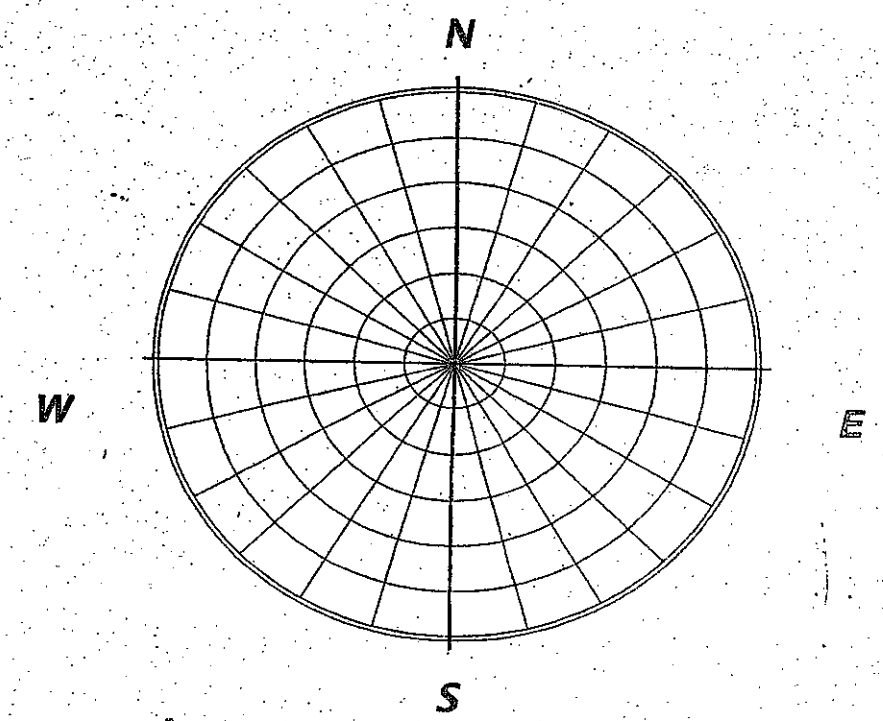


OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-04-21.782 LONG: 112-14-15.013 HEIGHT: 1285.526 ft

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GPS STATION OBSERVATION SHEET

SHE___of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 86
DATE FOUND/SET: 3/15/2005
STATION DESCRIPTION: SET PK ± ℄ SR 238

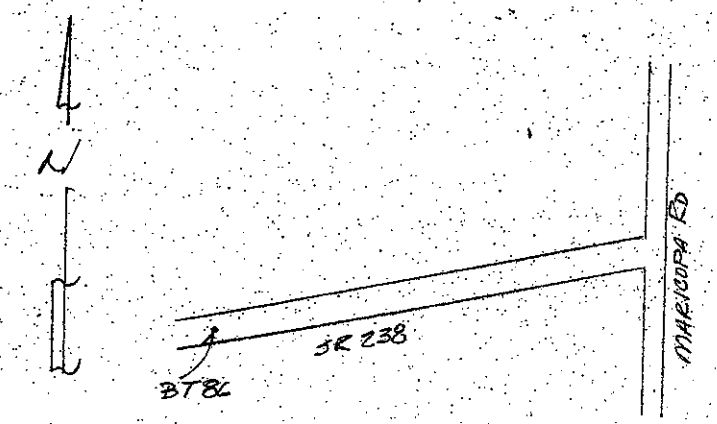
STATION STAMPING: NONE

STATION ACCESS: FROM MARICOPA RD & SR 238, THEN SOUTHWESTERLY ON SR 238 ± 10.1 MILES TO THE POINT.

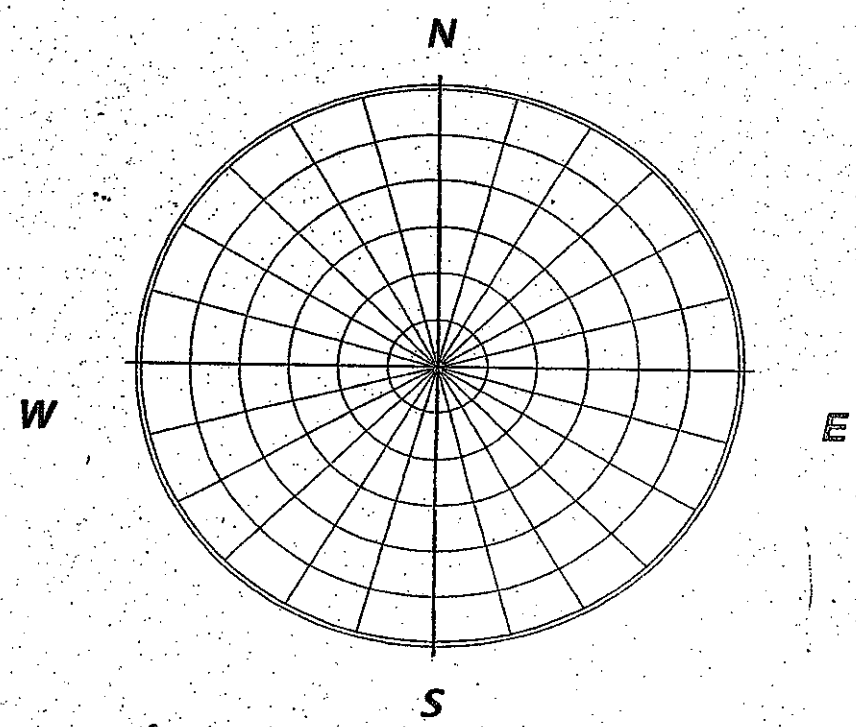
OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)_____(2nd)_____(3rd)_____(AVG)_____
STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-04-09.472 LONG: 112-13-01.070 HEIGHT: 1294.970 ft

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GPS STATION OBSERVATION SHEET

SH ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 87
DATE FOUND/SET: 3/10/2005
STATION DESCRIPTION: SET 1/2" REBAR W/ RED CAP

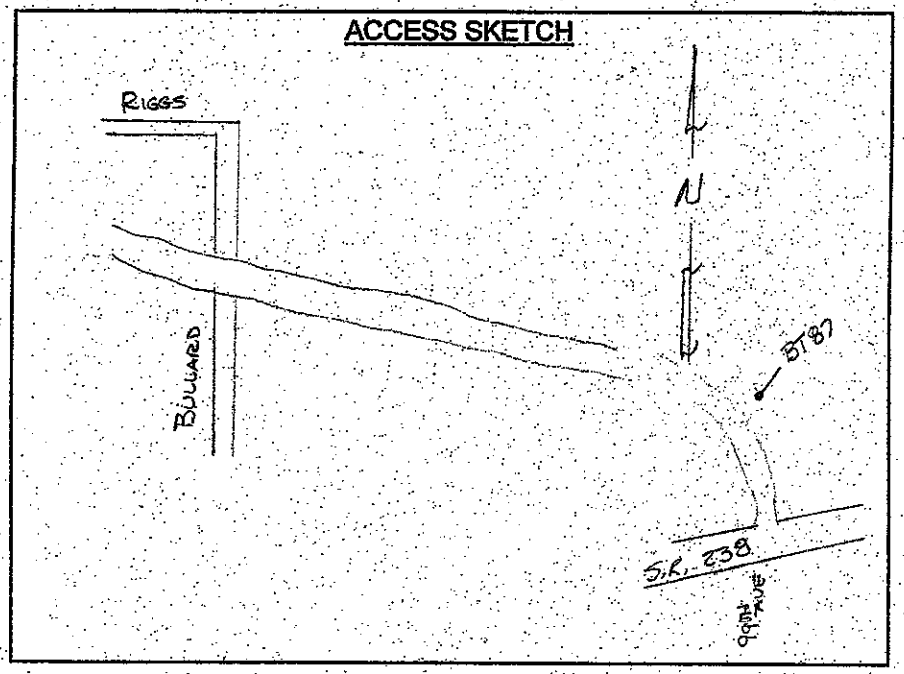
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM RIGGS & BOLLARD. SOUTH ON BOLLARD ±5.5 MILES TO A PIPELINE RD. THENCE ALONG THE PIPELINE ROAD ±1.9 MILES TO THE POINT

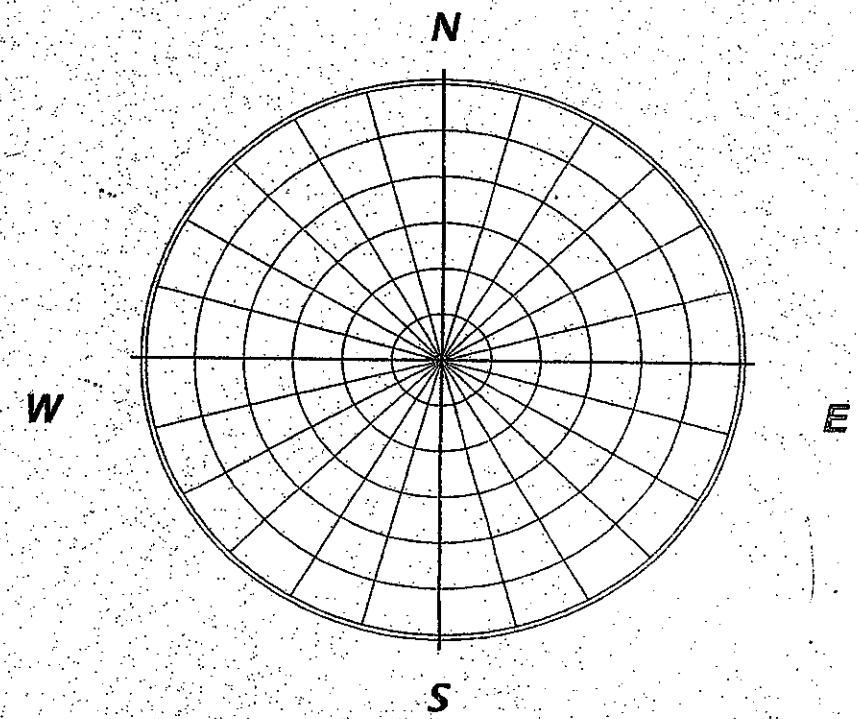
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-03-38.056 LONG: 112-16-19.300 HEIGHT: 1312.199 ft

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 88
DATE FOUND/SET: 3/15/05
STATION DESCRIPTION: SET PR ℄ ± SR 238

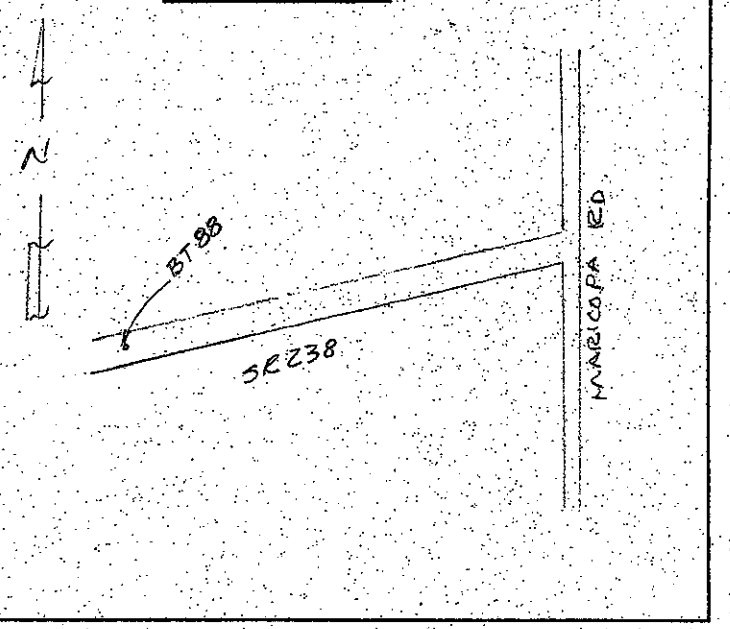
STATION STAMPING: NONE

STATION ACCESS: FROM MARICOPA Rd & SR 238; SOUTHWESTERLY ALONG SR 238 ± 12.2 MILES TO THE POINT

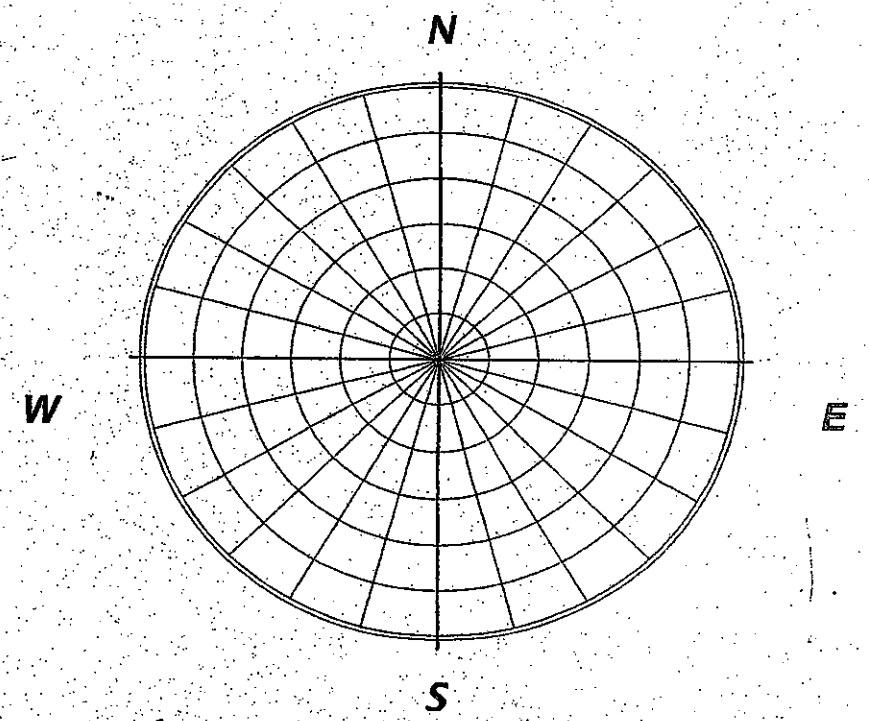
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-03-38.691 LONG: 112-15-02.595 HEIGHT: 1302.175 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 89

DATE FOUND/SET: 3/15/2005

STATION DESCRIPTION: SET 1/2" REBAR W/ RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM MARICOPA RD & SR 238, SOUTHWESTERLY ALONG SR 238 ± 11.4 MILES TO 83RD AVE, THEN SOUTH ALONG 83RD AVE ± 0.25 MILES THEN EAST ON KINNEY RD (DIRT) ± 1.26 MILES TO THE POINT.

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

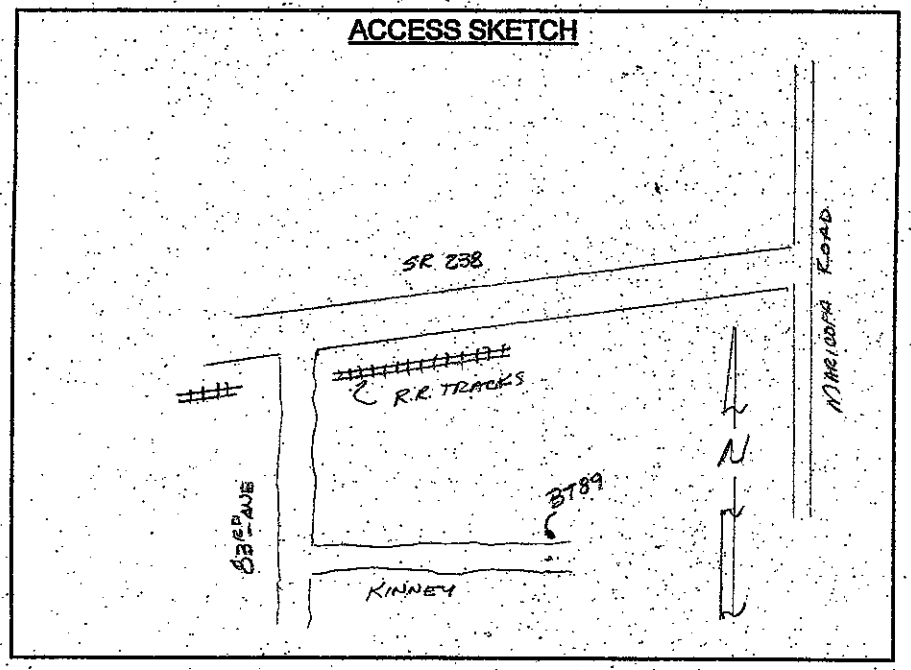
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

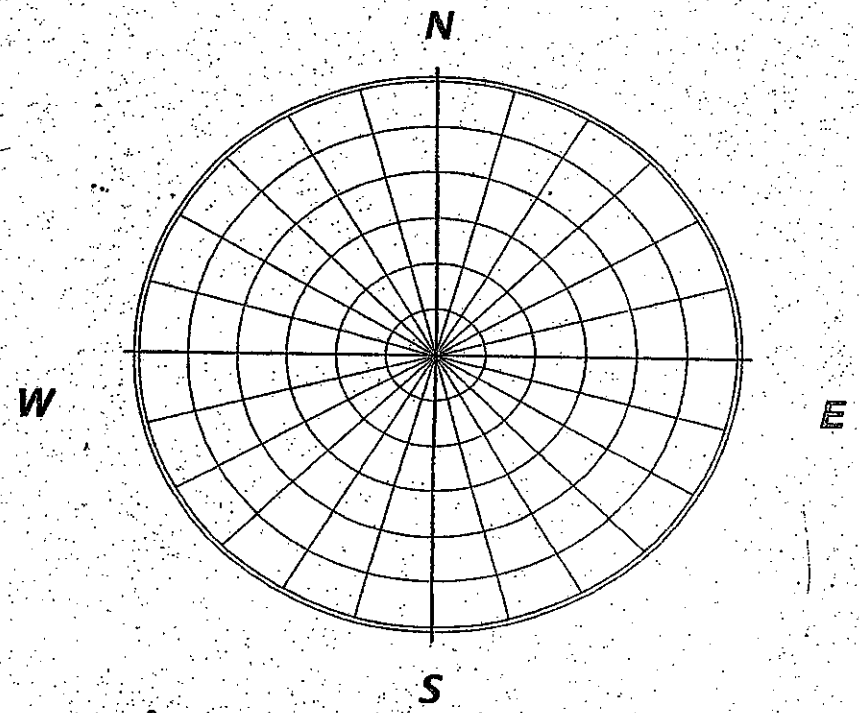
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-03-30.106 LONG: 112-12-56.488 HEIGHT: 1310.965 ft

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GPS STATION OBSERVATION SHEET

SHE ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 90

DATE FOUND/SET: 3/14/2005

STATION DESCRIPTION: SET PK NAIL @ SR 238

STATION STAMPING: NONE

STATION ACCESS: FROM MARICOPA RD & SR 238 SOUTHWESTERLY ON SR 238 ± 14.9 MILES TO THE POINT

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

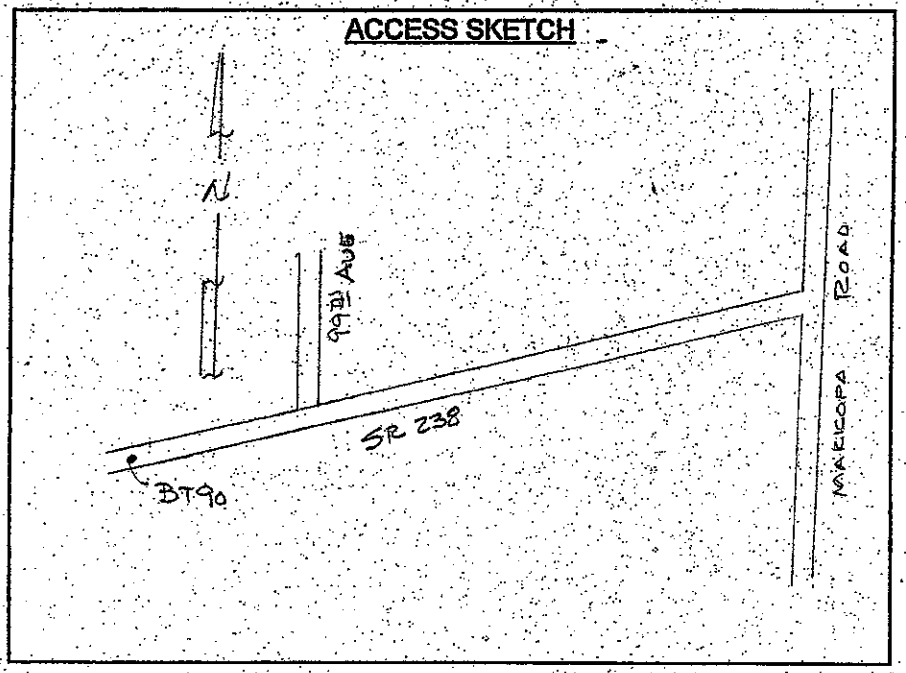
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

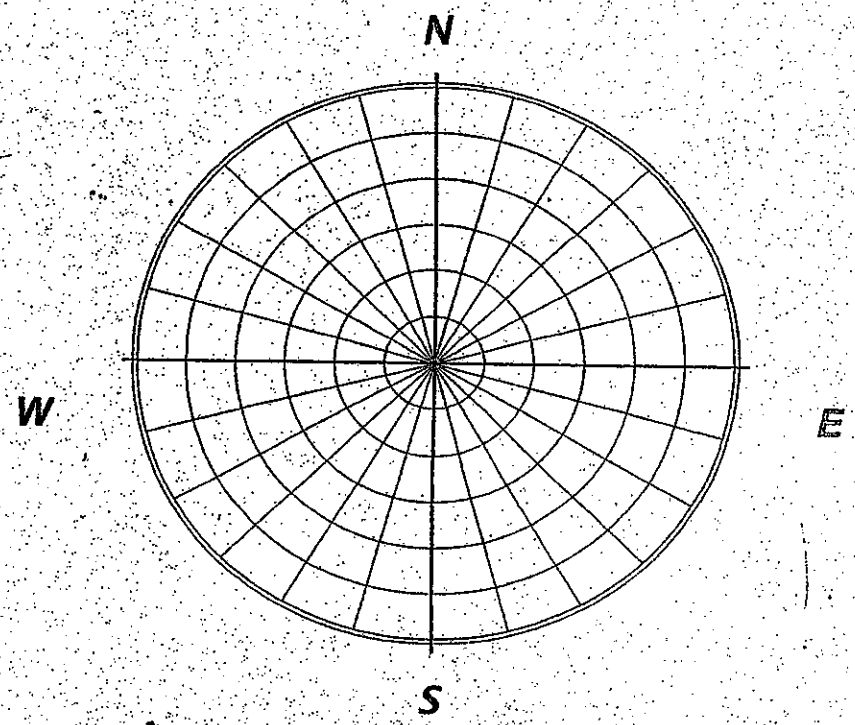
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-02-59.209 LONG: 112-17-32.828 HEIGHT: 1349.183 ft

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GPS STATION OBSERVATION SHEET

SH___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT91
DATE FOUND/SET: 3/16/2005
STATION DESCRIPTION: SET 1/2" REBAR W/ RED CAP

STATION STAMPING: PEC CONTROL

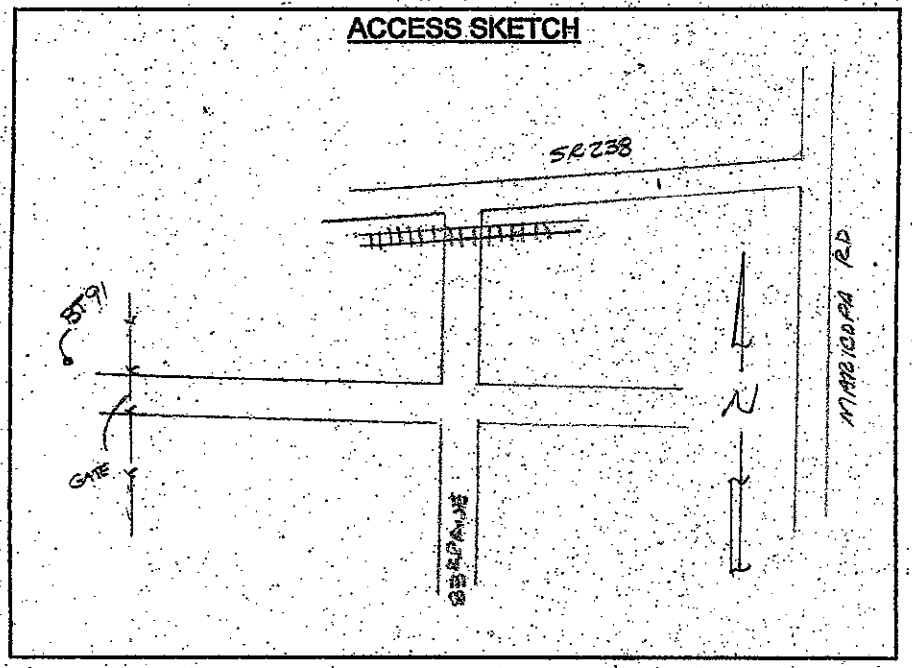
STATION ACCESS: FROM 83RD AVE & SR 238, SOUTH ON 83RD AVE ± 1.25 MILES. THEN WEST ON DIRT ROAD 2.0 ± MILES TO THE POINT

OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

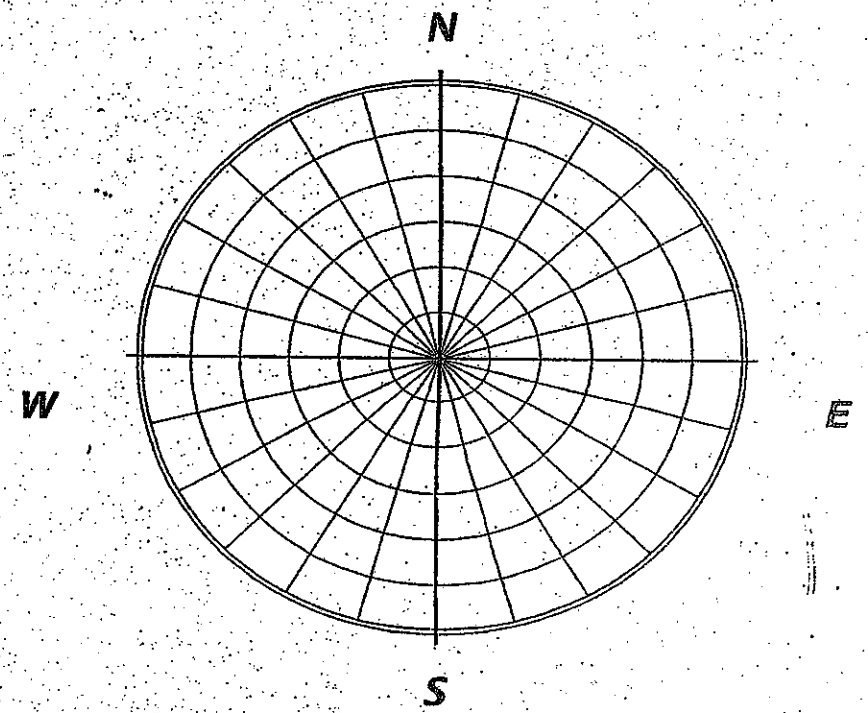
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-02-37.453 LONG: 112-16-16.873 HEIGHT: 1343.910ft

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GPS STATION OBSERVATION SHEET

SH___of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 92
DATE FOUND/SET: 3/16/2005
STATION DESCRIPTION: SET ½" REBAR W/ RED CAP

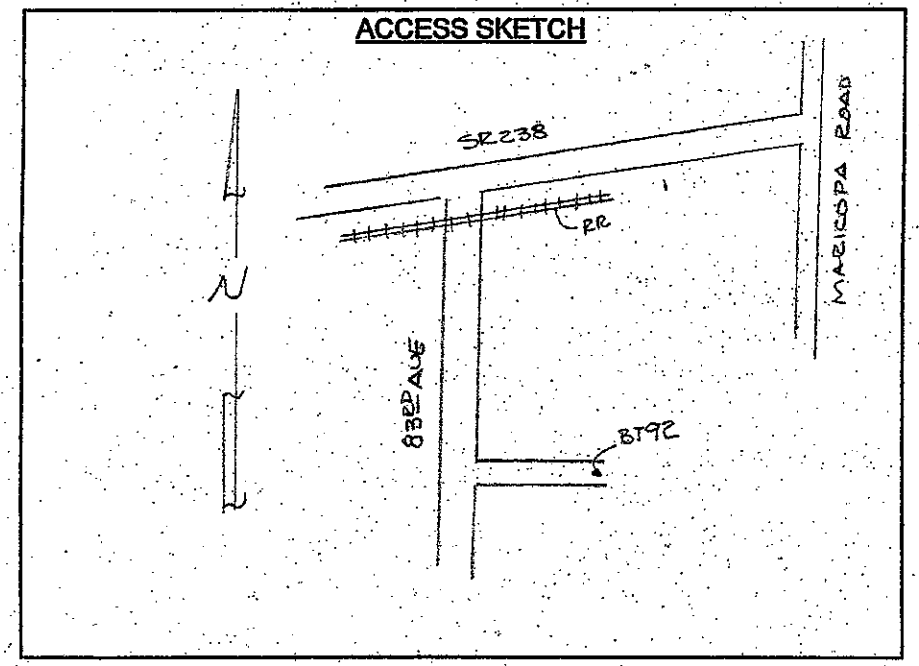
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE & SR 238. SOUTH ON 83RD AVE ± 1.25 MILES. THEN EAST ON DIRT ROAD ± 0.40 MILES TO THE POINT

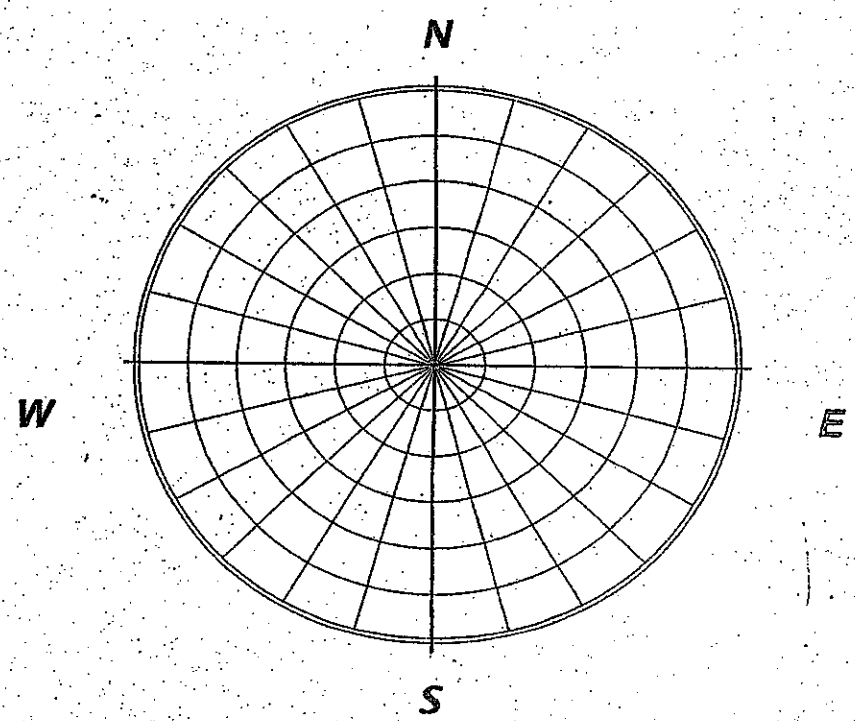
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 **ANTENNA TYPE:** LEIAX1202
SESSION #: **FILE NAME:**
LOCAL DATE: **START:** **END:**

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st)_____(2nd)_____(3rd)_____(AVG)_____
STOP (1st)_____(2nd)_____(3rd)_____(AVG)_____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-02-36.956 LONG: 112-13-51.946 HEIGHT: 1332.922 ft

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GPS STATION OBSERVATION SHEET

SH ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 93
DATE FOUND/SET: 3/16/2005
STATION DESCRIPTION: SET ½" REBAR W/ REDCAP

STATION STAMPING: PEC CONTROL

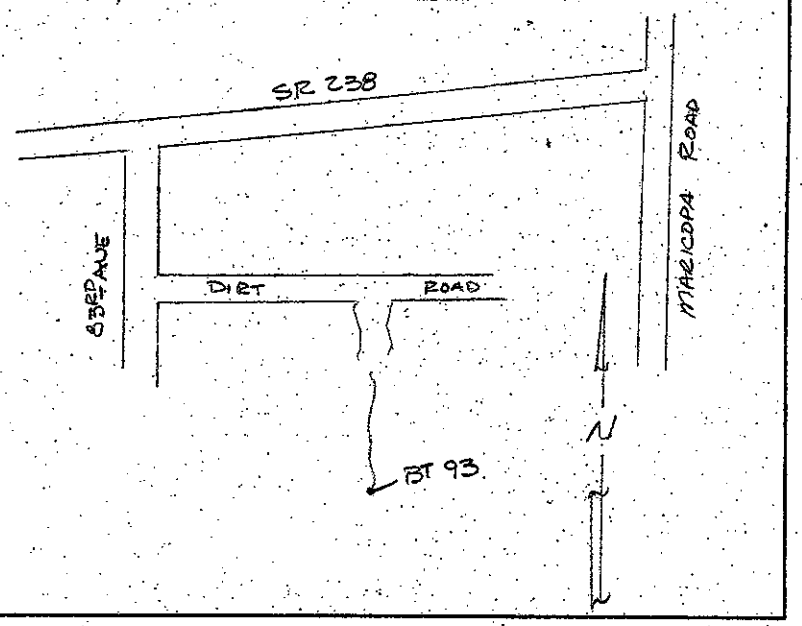
STATION ACCESS: FROM 83RD AVE & SR 238. SOUTH ON 83RD AVE ± 1.25 MILES, THEN E ON A DIRT ROAD ± 1.0 MILES. THEN SOUTH ON DIRT TRAIL & ACROSS COUNTRY ± 0.9 MILES TO THE POINT.

OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

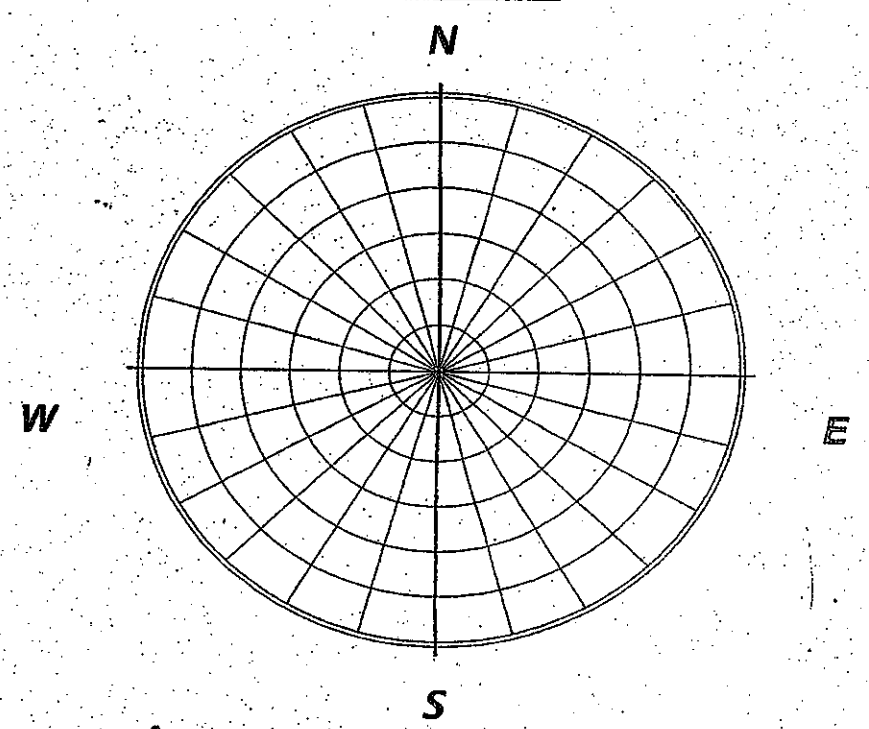
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-01-48.246 LONG: 112-13-12.127 HEIGHT: 1357.038 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of ___

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 94

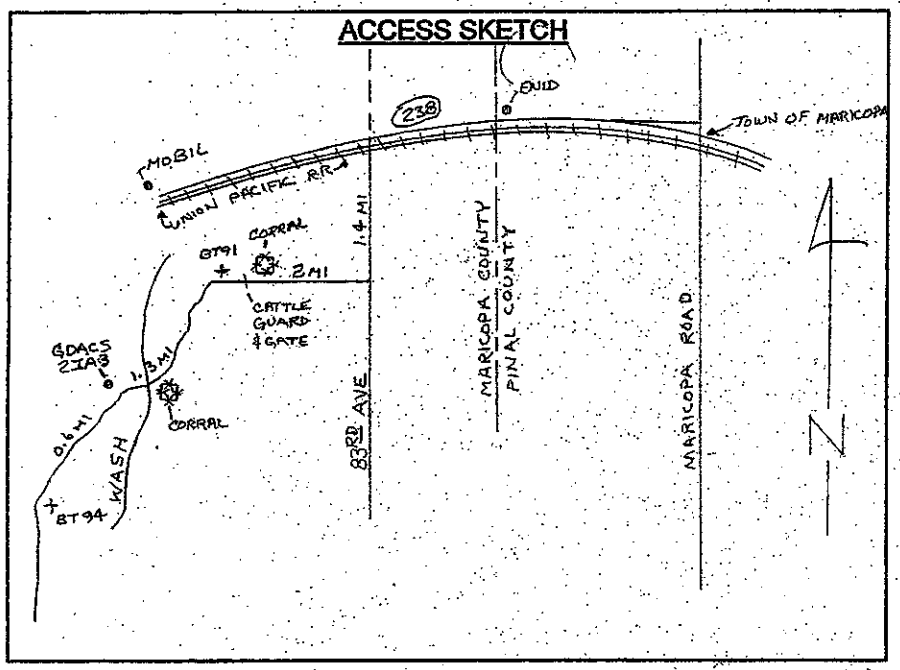
DATE FOUND/SET:

STATION DESCRIPTION: SET 1/2" RB W/ PEC CONTROL CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM SR 238 & 83RD AVE, SOUTH ON 83RD AVE FOR 1.4 MI TO A DIRT RD W/ A SIGN (END MARICOPA COUNT. ROAD MAINTENANCE) TURN WEST (RIGHT) FOR 2 MI TO BT91. DIRT ROAD TURNS SW PASSED CORRALS & A WASH FOR 1.3 MI TO GDACS 2IA3, THEN CONT. SW FOR 0.6 MI TO BT 94

ACCESS SKETCH



OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

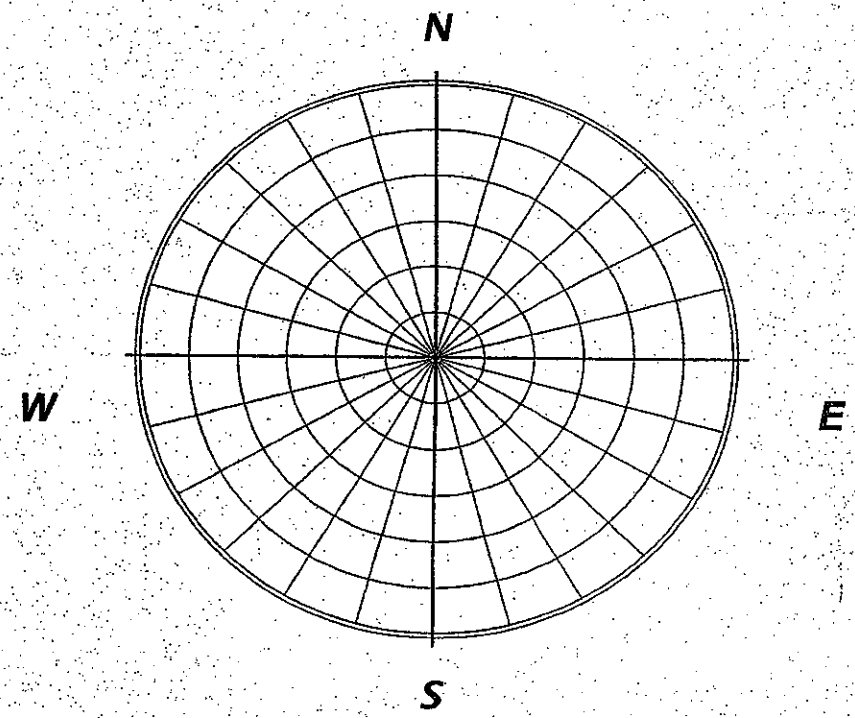
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 33-01-26.085 LONG: 112-17-56.378 HEIGHT: 1411.227 ft

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GPS STATION OBSERVATION SHEET

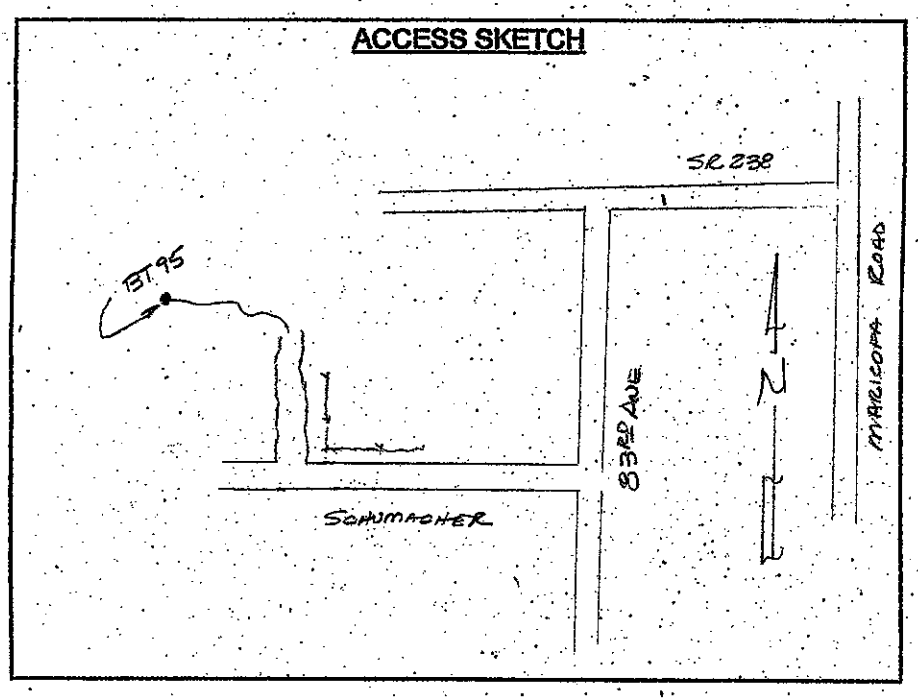
SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 95
DATE FOUND/SET: 3/17/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE & SR 238 SOUTH ON 83RD AVE ± 3.25 MILES TO SCHUMACHER RD. THEN WEST ON SCHUMACHER ± 1.8 MILES, THEN NORTH ON A DIRT TRAIL (WEST OF A BARB WIRE FENCE ± 0.35 MILES. THEN WESTERLY ACROSS COUNTRY ± 0.2 MILES TO THE POINT

ACCESS SKETCH

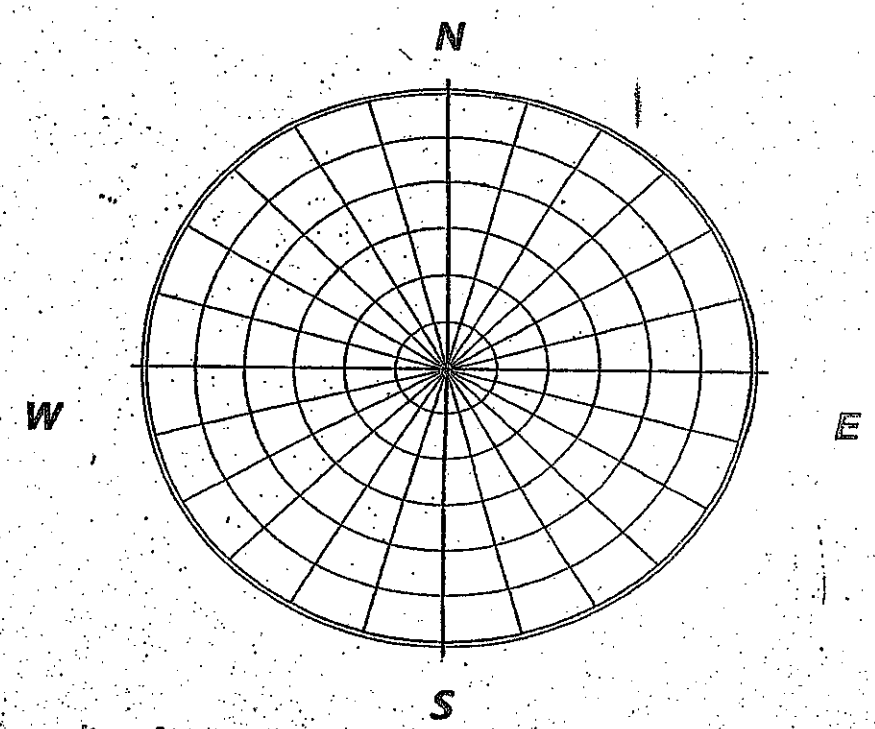


OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 **ANTENNA TYPE:** LEIAX1202

SESSION #: **FILE NAME:**
LOCAL DATE: **START:** **END:**

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___
STOP (1st) ___ (2nd) ___ (3rd) ___ (AVG) ___

OBSTRUCTION CHART



LAT: 33-01-18.127 **LONG:** 112-16-17.411 **HEIGHT:** 1389.413 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 96
DATE FOUND/SET: 3/15/2005
STATION DESCRIPTION: SET 1/2" REBAR W/ RED CAP

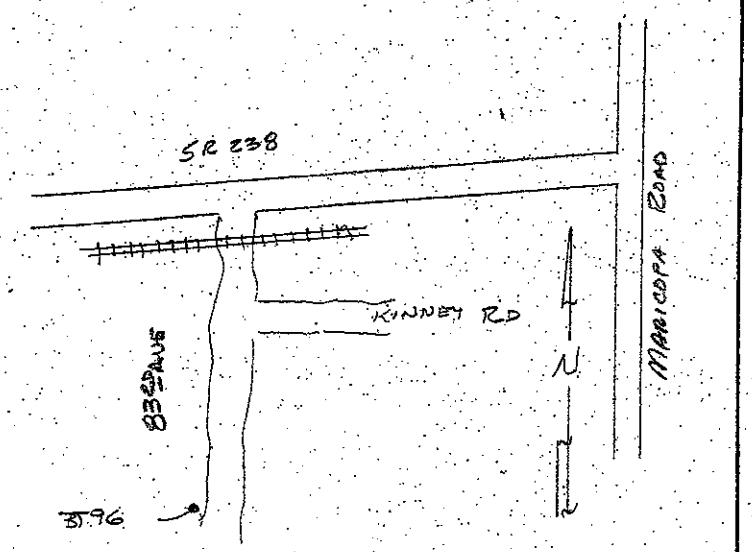
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE. & SR 238. SOUTH ALONG 83RD AVE ± 2.75 MILES TO THE POINT

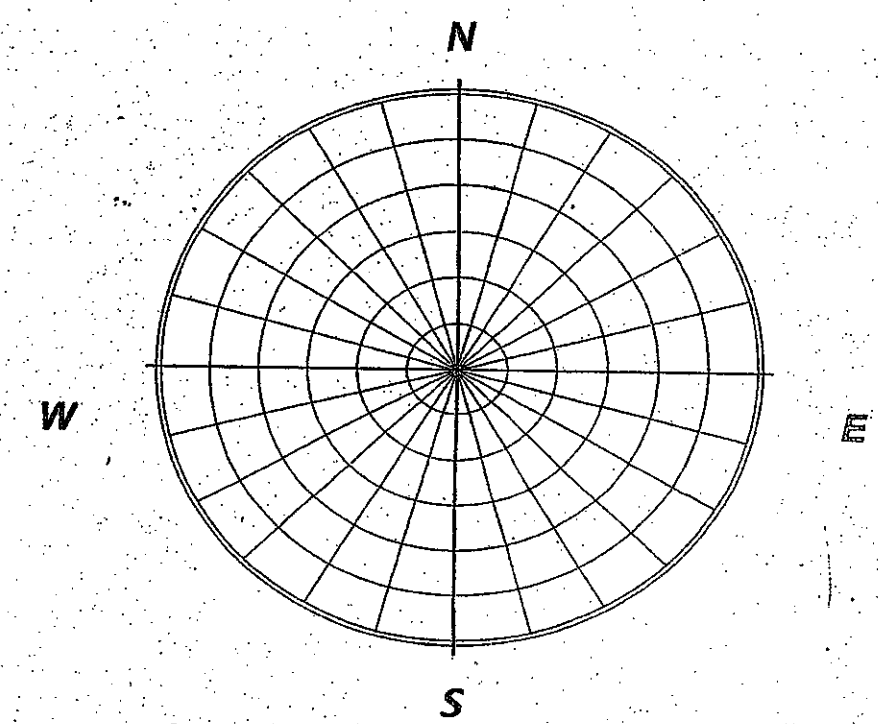
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-01-18.721 LONG: 112-14-16.323 HEIGHT: 1369.153 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 97

DATE FOUND/SET:

STATION DESCRIPTION: SET 1/2" RB W/ PEC CONTROL CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM SR 238 & 83RD AVE, SOUTH ON 83RD AVE. FOR 1.4 MI TO A DIRT ROAD W/A SIGN (END MARICOPA COUNTY ROAD MAINTENANCE) TURN WEST (RIGHT) FOR 2 MI. TO BT 91. DIRT ROAD TURNS SW PASSED CORRALS & A WASH PASSED GDACS 2IA3 AND HEADING SW FOR 0.6 MI. TO BT 94. THENCE CONT. SOUTH FOR 1.3 MI TO BT 97

OPERATOR: GLENN ANKRUM

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

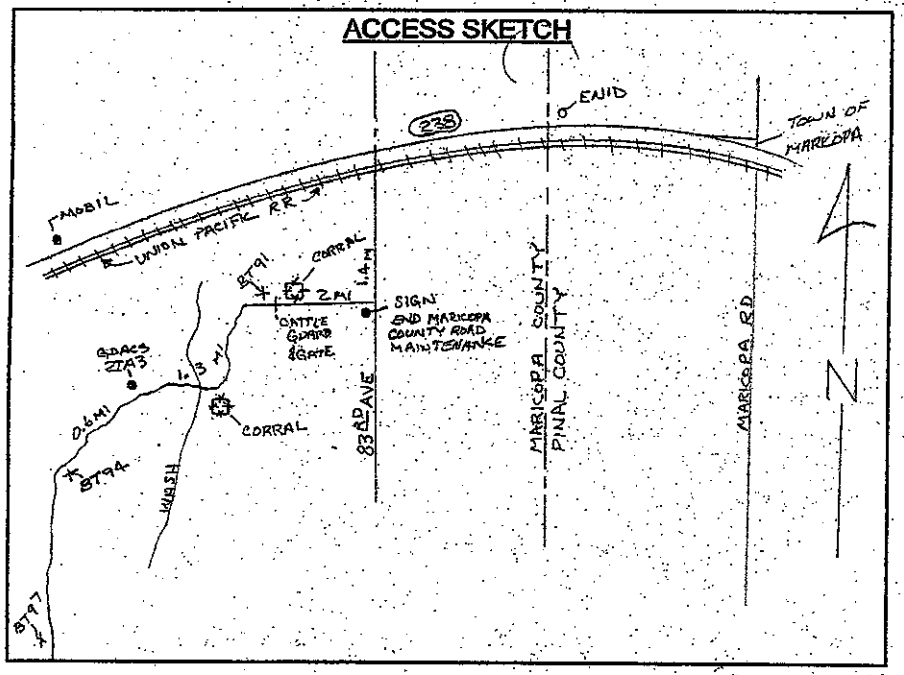
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

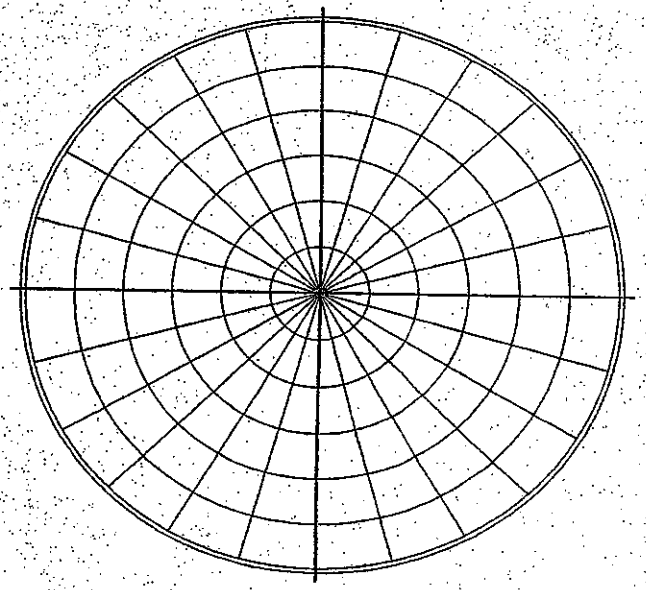
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-00-20.765 LONG: 112-18-04.847 HEIGHT: 1450.617 ft

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GPS STATION OBSERVATION SHEET

SH. 1 of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 98

DATE FOUND/SET: 3/17/2005

STATION DESCRIPTION: SET ½" REBAR W/ RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE & SR 238, SOUTH ON 83RD AVE ± 3.25 MILES TO SCHUMACHER RD, THEN WEST ON SCHUMACHER ± 2.0 MILES THEN SOUTH ON DIRT ROAD ± 0.85 MILES TO THE POINT.

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

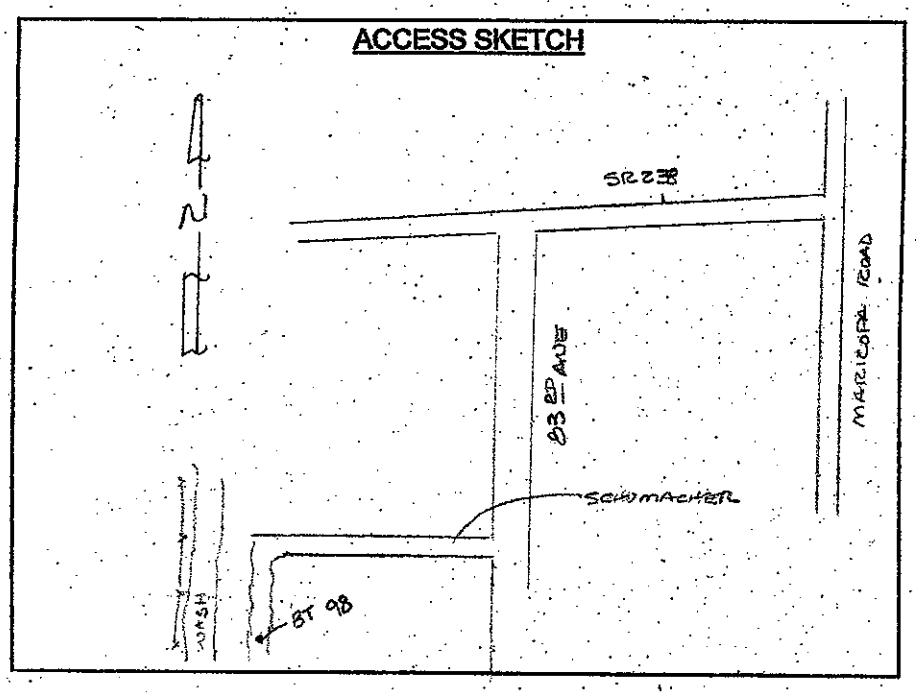
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

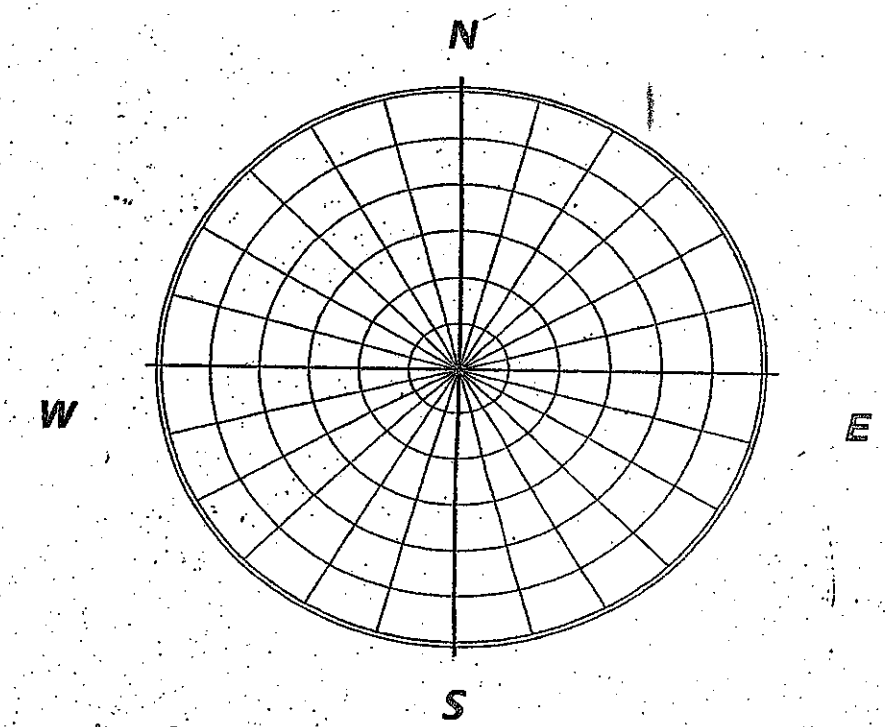
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-00-07.932 LONG: 112-16-17.505 HEIGHT: 1433.82

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GPS STATION OBSERVATION SHEET

SH ___ of

PROJECT: RAINBOW VALLEY

STATION NAME:

STATION ID: BT 99

DATE FOUND/SET: 3/16/2005

STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE & SR 238, SOUTH ON 83RD AVE ± 4.2 MILES TO THE POINT ON THE LEFT (EAST)

OPERATOR: JOHN ROSS

RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**

LOCAL DATE: START: END:

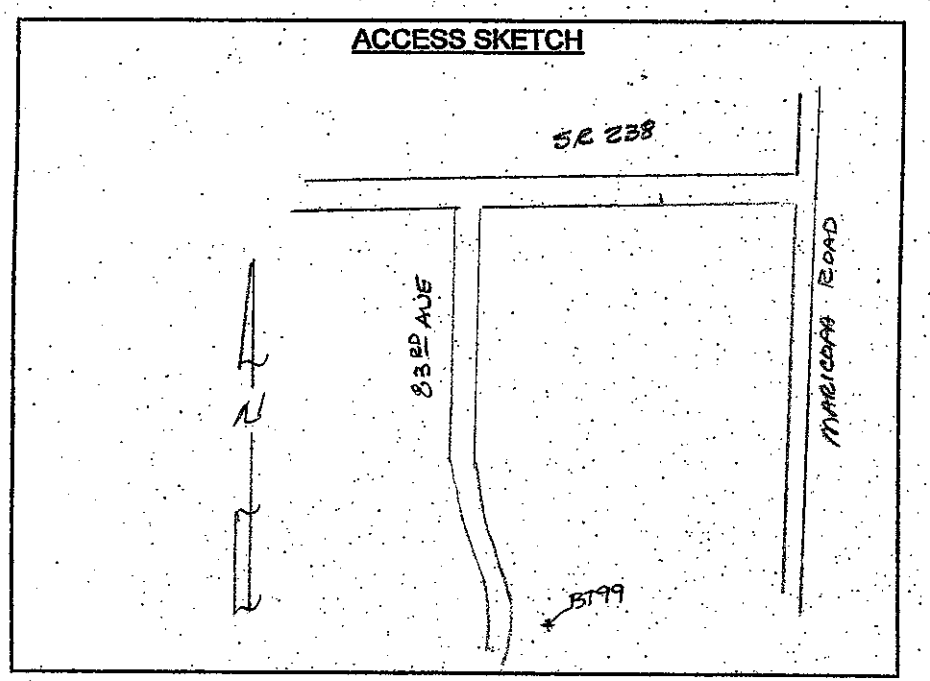
ANTENNA DETAILS:

MEASUREMENT TYPE (TRUE/UNCORRECTED):

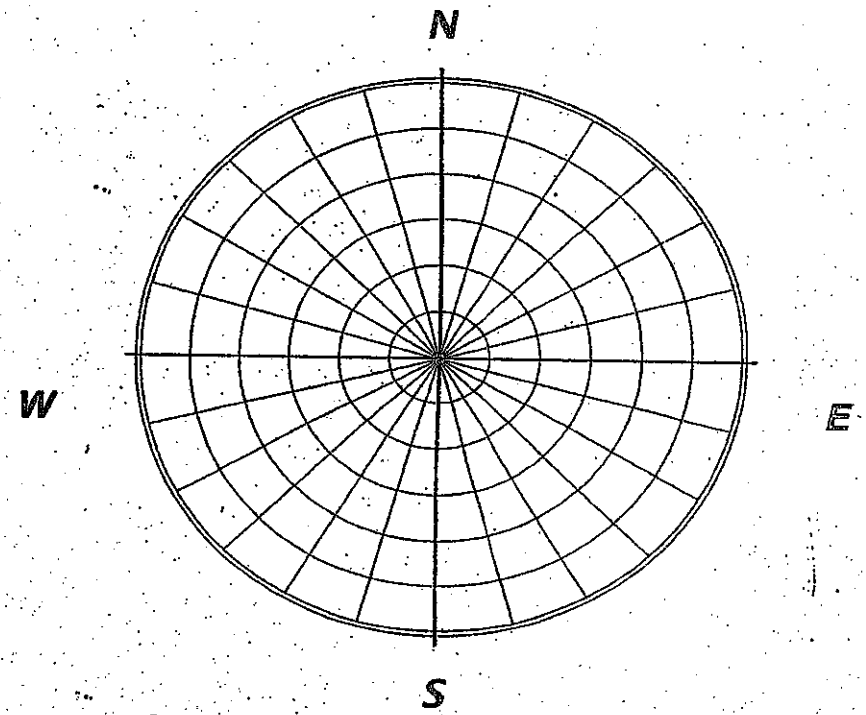
START (1st) (2nd) (3rd) (AVG)

STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-00-05.429 LONG: 112-14-01.451 HEIGHT: 1414.565 ft

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GPS STATION OBSERVATION SHEET

SH[illegible] of

PROJECT: RAINBOW VALLEY
STATION NAME:
STATION ID: BT 100
DATE FOUND/SET: 3/16/2005
STATION DESCRIPTION: SET 1/2" REBAR W/RED CAP

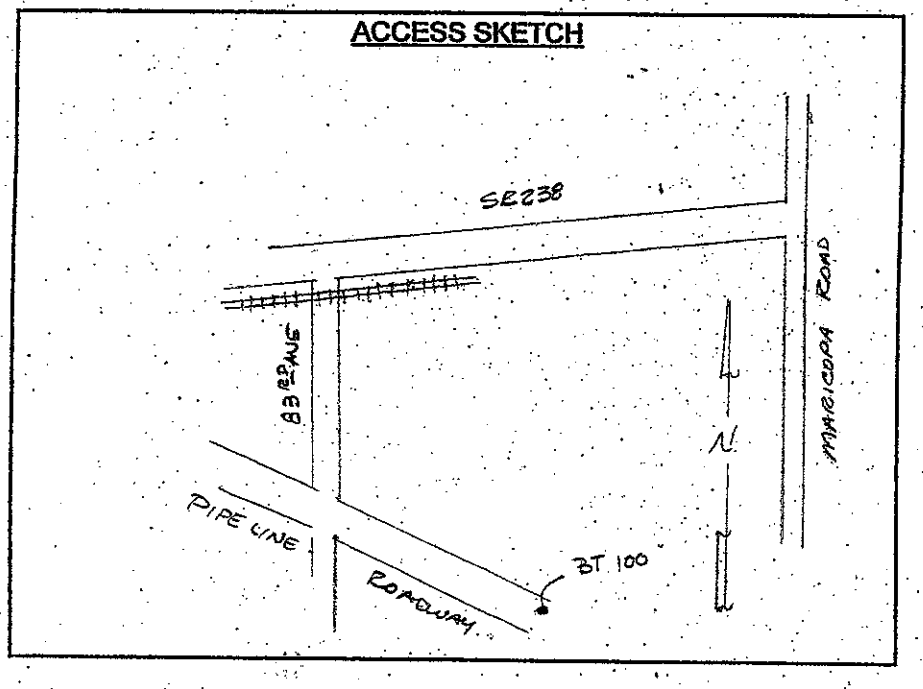
STATION STAMPING: PEC CONTROL

STATION ACCESS: FROM 83RD AVE & S.R. 238, SOUTHON 83RD AVE ± 2.0 MILES TO A PIPELINE ROAD CROSSING. THEN SOUTHEASTERLY ALONG THE PIPELINE ROAD ± 2.4 MILES TO THE POINT

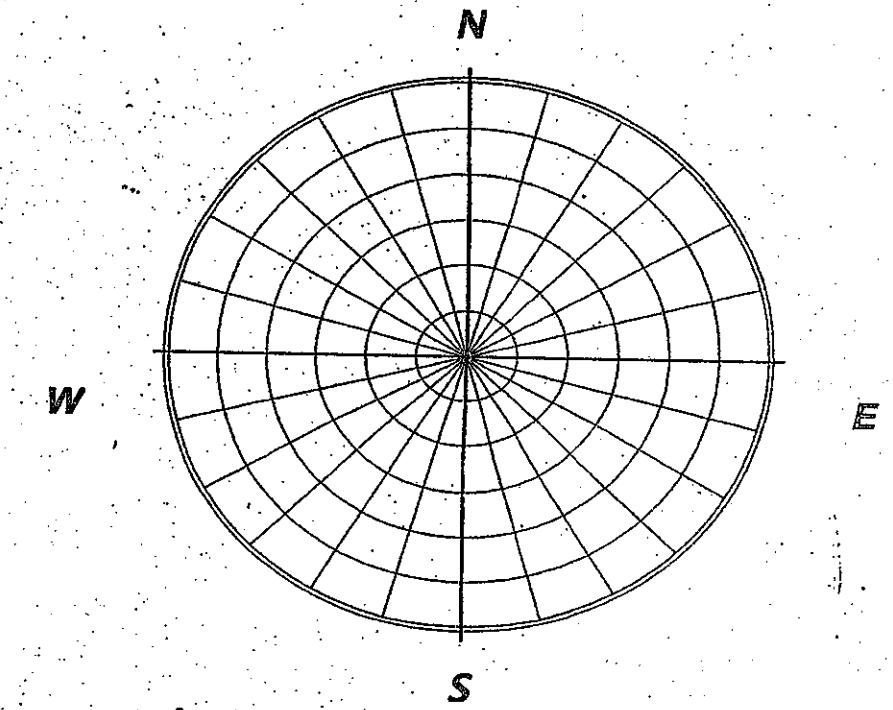
OPERATOR: JOHN ROSS
RECEIVER TYPE: LEICA 1200 **ANTENNA TYPE:** LEIAX 1202
SESSION #: **FILE NAME:**
LOCAL DATE: **START:** **END:**

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 33-00-41.024 **LONG:** 112-12-20.038 **HEIGHT:** 1387.427 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 101
STATION ID:

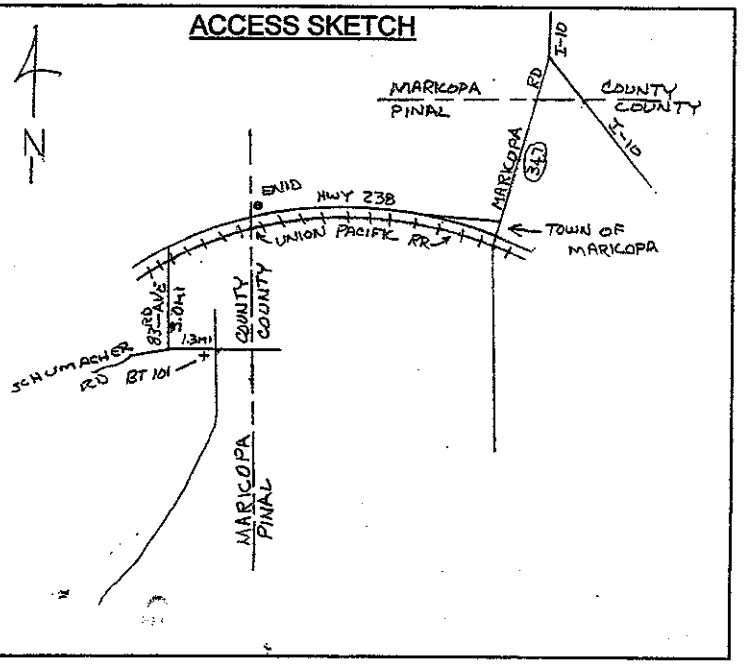
DATE FOUND/SET: 3-14-05

STATION DESCRIPTION: SET 1/2" RB W/PEC CONTROL CAP

STATION STAMPING: PEC CONTROL CAP

STATION ACCESS: TAKE I-10 SOUTH FROM PHOENIX TO MARICOPA RD (EXIT 162) SOUTH TO MARICOPA & HWY 238. THENCE WEST ON HWY 238 TO 83RD AVE. THENCE LEFT (SOUTH) ON 83RD AVE FOR 5.1 MI TO A 1" IN RD LEFT (EAST) FOR 1.3 MI TO A 4 WAY INTERSECTION. BT 101 IS ON SW CORNER

ACCESS SKETCH

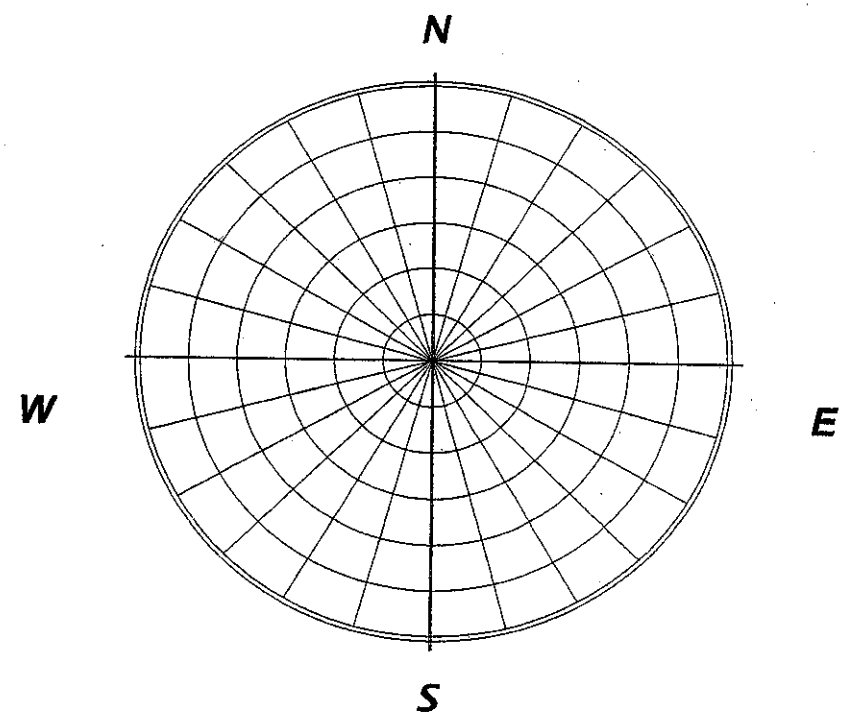


OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX 1202

SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

OBSTRUCTION CHART



LAT: 32-59-33.239 LONG: 112-12-57.843 HEIGHT: 1429.472 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: MRK 102
STATION ID: PANEL

DATE FOUND/SET: 3- -05

STATION DESCRIPTION: SET 1/2" RB W/RED PEC CONTROL CAP

STATION STAMPING: 27 x 3' PANEL

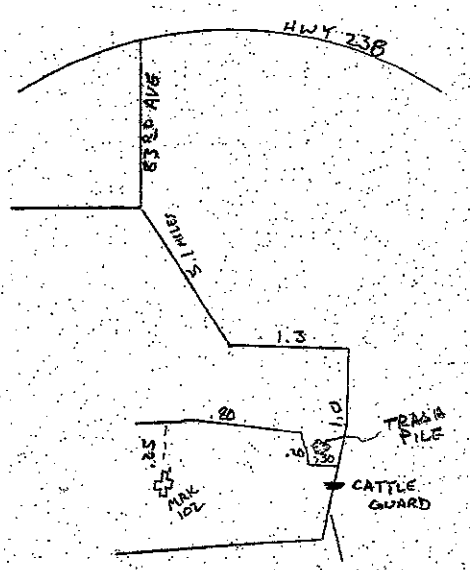
STATION ACCESS: FROM HWY 238 + 83rd AVE GO SOUTH FOR 5.1mi (TAKING BEND TO EAST) THEN TURN EAST FOR 1.3 miles THEN TURN SOUTH FOR 1.0 MILES TO DIRT ROAD WEST .30 mi GO PAST JUNK PILE TURN RIGHT FOLLOW ROAD 1.10 mi, then WALK to the SOUTH FOR .25 mi to STATION

OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

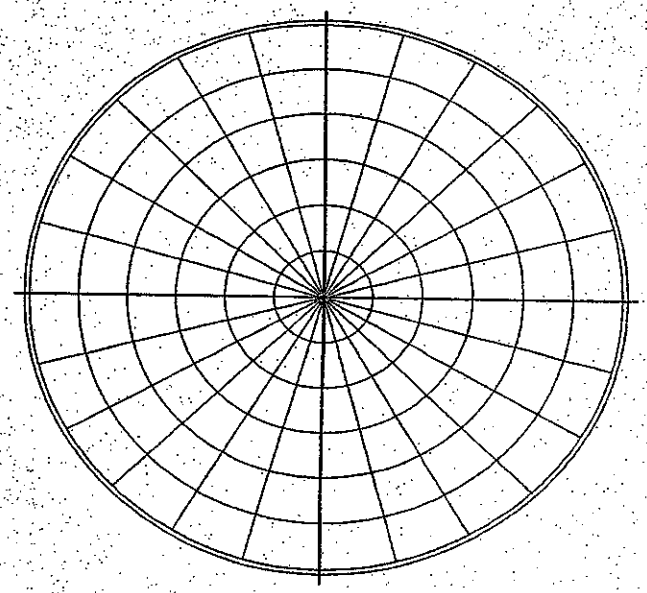
SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 32-59-15.605 LONG: 112-14-15.831 HEIGHT: 1455.807 ft

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GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 103
STATION ID:

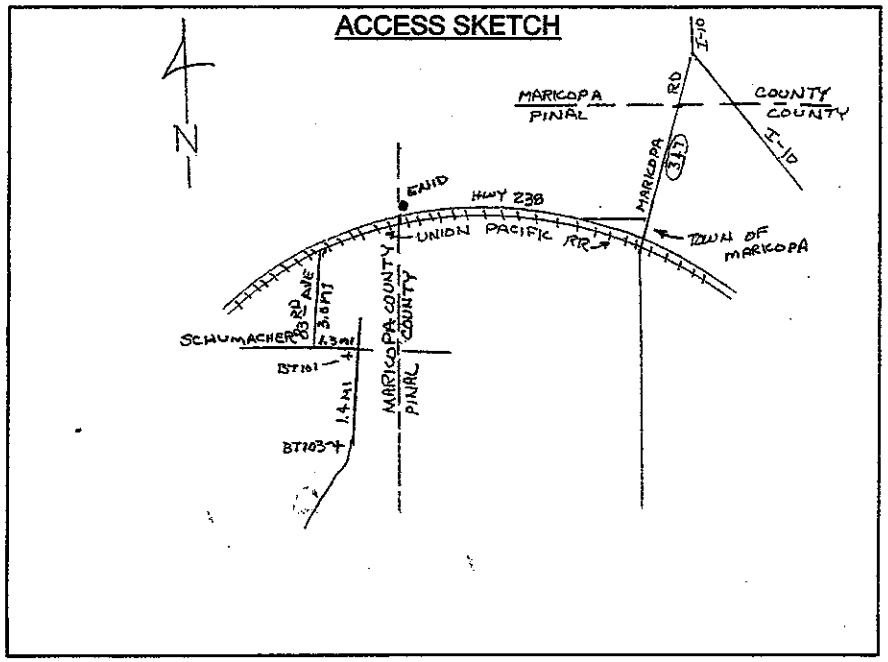
DATE FOUND/SET: 3-14-05

STATION DESCRIPTION: FD 3" ALUM. CAP FLUSH W/NG

STATION STAMPING: BT 103

STATION ACCESS: TAKE I-10 SOUTH FROM PHOENIX TO MARICOPA RD (EXIT 162) SOUTH TO MARICOPA & HWY 238. THENCE WEST ON HWY 238 TO 83RD AVE THENCE LEFT (SOUTH) ON 83RD AVE FOR 5.1 MI TO A T-INTERSECTION RD. THENCE LEFT (EAST) FOR 1.3 MI TO A 4 WAY INTERSECTION. THENCE RIGHT (SOUTH) PAST BT 101 FOR 1.4 MI TO BT 103 ON RIGHT SIDE OF ROAD (WEST

ACCESS SKETCH

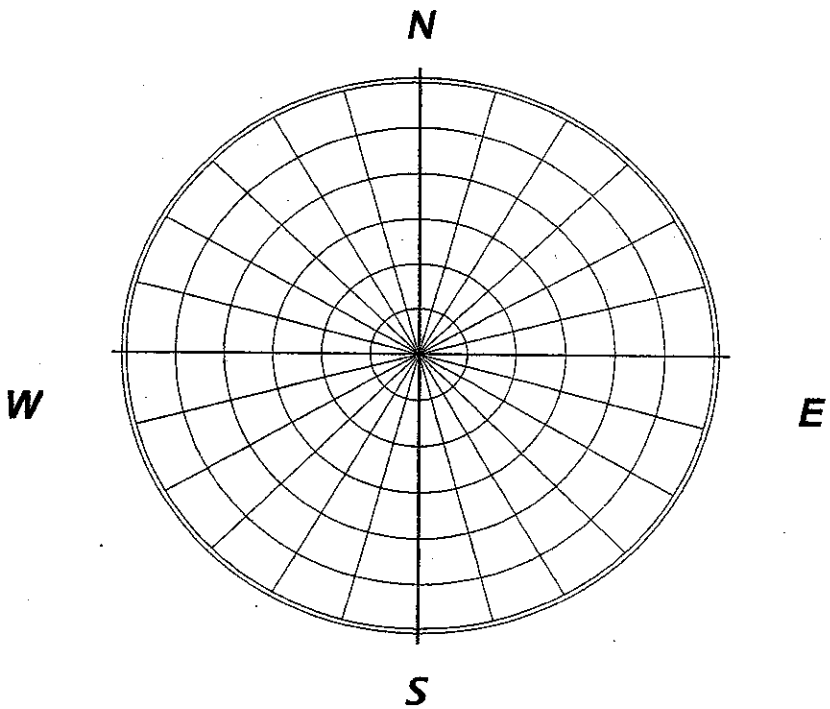


OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEICA 1202

SESSION #: ____ **FILE NAME:** ____
LOCAL DATE: ____ START: ____ END: ____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): ____
START (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____
STOP (1st) ____ (2nd) ____ (3rd) ____ (AVG) ____

OBSTRUCTION CHART



LAT: 32-58-20.658 LONG: 112-12-49.471 HEIGHT: 1459.582 ft

Project Engineering Consultants, Ltd.
2310 W. Mission Lane, Suite 4
Phoenix, Arizona 85021
Phone (602) 906-1901
Fax (602) 906-3080

GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: MRK 104
STATION ID: PANEL

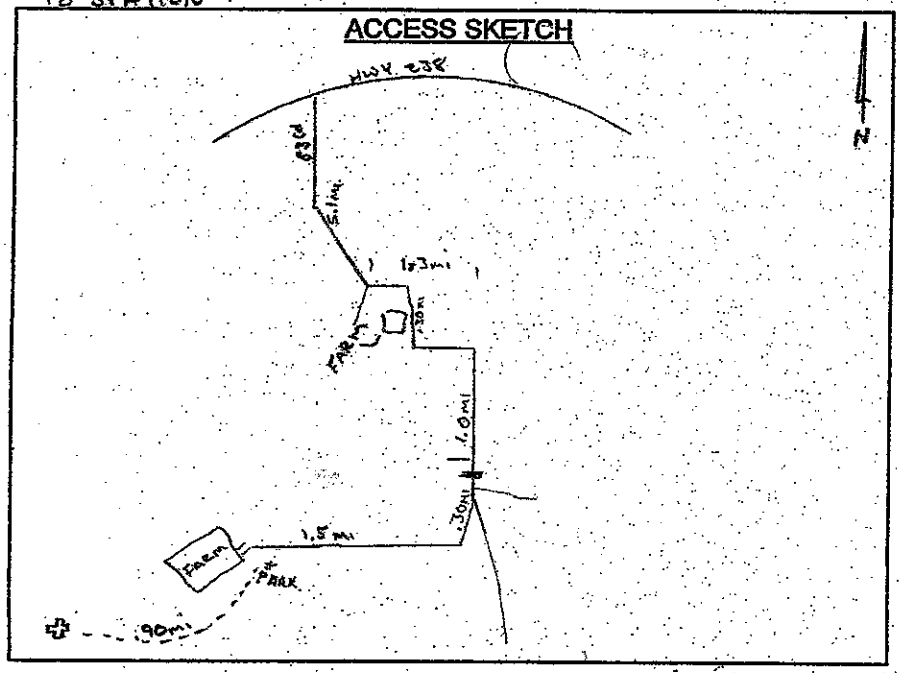
DATE FOUND/SET: 3- -05

STATION DESCRIPTION: SET 1/2" RB W/ RED PEC CONTROL CAP

STATION STAMPING: 27' X 3' PANEL

STATION ACCESS: FROM HWY 238 + 83rd AVE GO SOUTH 5.1 MILES VERING TO EAST THEN TURN EAST FOLLOWING ROAD PASS FARM 1.3 MILES TURN SOUTH FOR 1.1 MILES TO A Y IN ROAD FOLLOW TO WEST FORM +/- 1.5 MILES TO DRIVEWAY GATE LOCKED PARK WALK/QUAD SOUTH WESTERLY FOR .90 MI TO STATION

ACCESS SKETCH

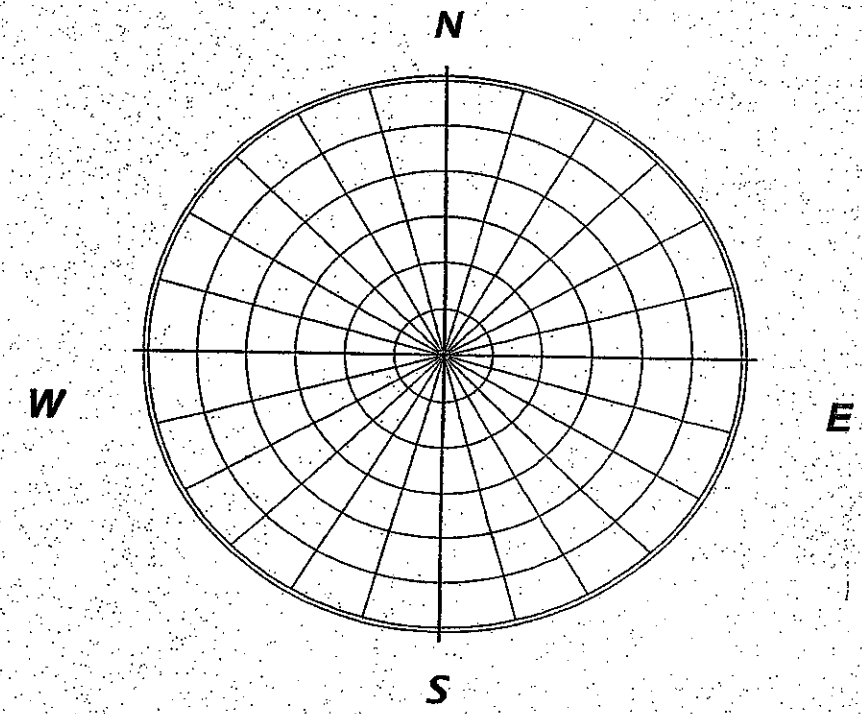


OPERATOR: CHUCK STUART
RECEIVER TYPE: TRIMBLE ANTENNA TYPE: 4800

SESSION #: _____ **FILE NAME:** _____
LOCAL DATE: _____ START: _____ END: _____

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED): _____
START (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____
STOP (1st) _____ (2nd) _____ (3rd) _____ (AVG) _____

OBSTRUCTION CHART



LAT: 32-57-43.878 LONG: 112-14-30.318 HEIGHT: 1501.276 ft

Project Engineering Consultants, Ltd.
2310 W. Mission Lane, Suite 4
Phoenix, Arizona 85021
Phone (602) 906-1901
Fax (602) 906-3080

GPS STATION OBSERVATION SHEET

SHEET ___ of

PROJECT: RAINBOW VALLEY
STATION NAME: BT 105
STATION ID:

DATE FOUND/SET: 3-14-05

STATION DESCRIPTION: SET 1/2" RB W/ PEC CONTROL CAP
20.7' SE OF GLO BC STAMPED T5S R1E
S35 | S36
S2 | S1
T6S R1E 1916

STATION STAMPING: PEC CONTROL CAP

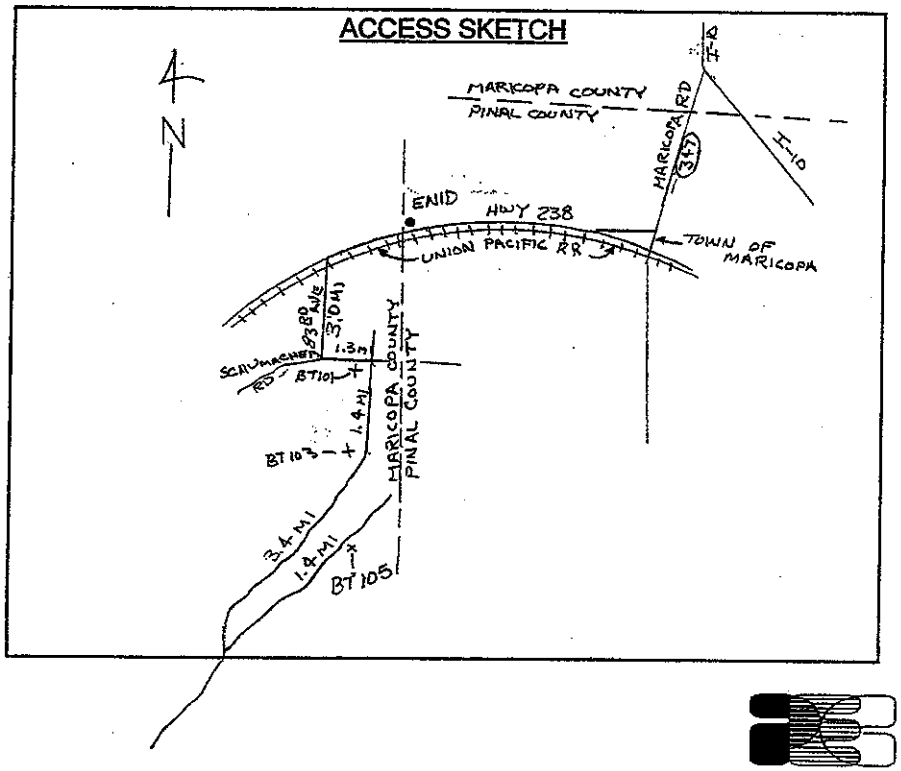
STATION ACCESS: TAKE I-10 SOUTH FROM PHOENIX TO MARICOPA RD. (EXIT 162) SOUTH TO MARICOPA & HWY 238. THENCE WEST ON HWY 238 TO 83RD AVE. THENCE SOUTH 5.1 MI TO [illegible]. THENCE LEFT (EAST) FOR 1.3 MI. TO 4WAY INTERSECTION. THENCE RIGHT PAST BT101 FOR 4.8MI TO A "Y" IN RD. THENCE A SHARP LEFT (NE) FOR 1.4MI TO BT 105

OPERATOR: GLENN ANKRUM
RECEIVER TYPE: LEICA 1200 ANTENNA TYPE: LEIAX1202

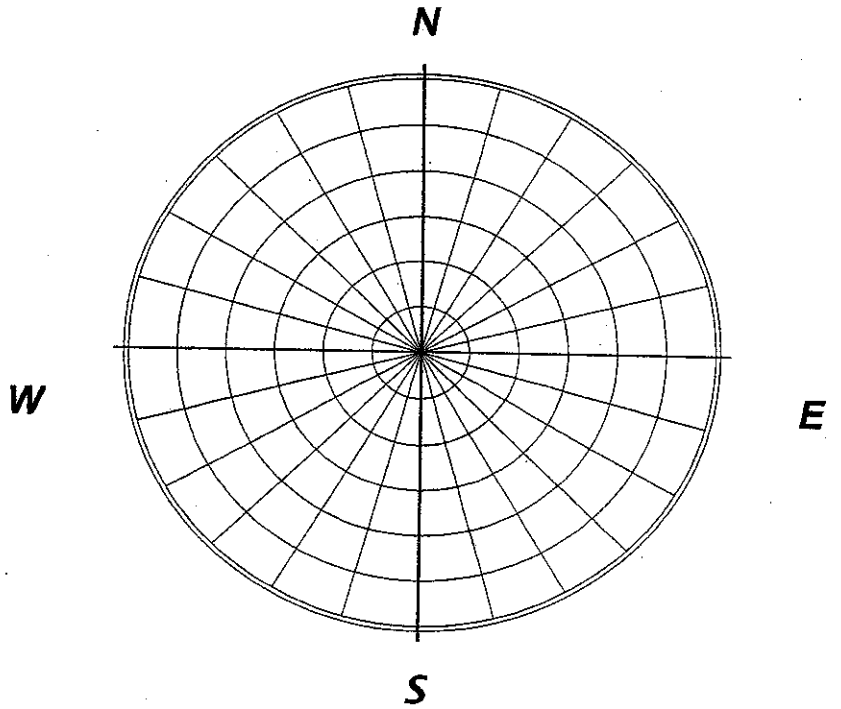
SESSION #: **FILE NAME:**
LOCAL DATE: START: END:

ANTENNA DETAILS:
MEASUREMENT TYPE (TRUE/UNCORRECTED):
START (1st) (2nd) (3rd) (AVG)
STOP (1st) (2nd) (3rd) (AVG)

ACCESS SKETCH



OBSTRUCTION CHART



LAT: 32-56-31.268 LONG: 112-13-14.140 HEIGHT: 1513.697

Project Engineering Consultants, Ltd.
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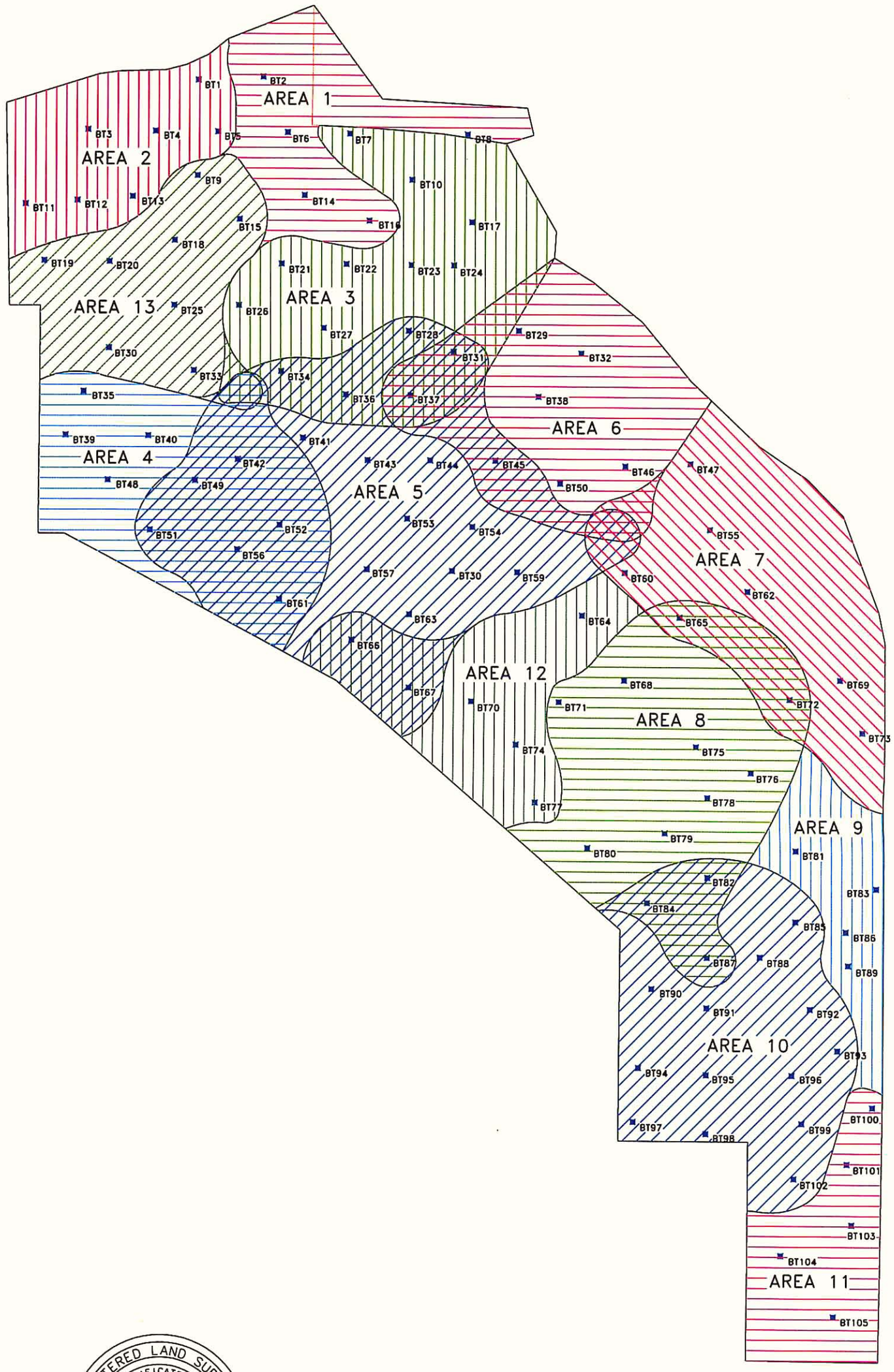
MAP OF BLIND TARGETS



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA, U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

BLIND POINT MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, &
PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST,
MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/06/05	1	1	

H.Z. JOB NO. 05-1487-01

G:\PROJ\05148701\MAPS\AREA-BLINDS.DWG

LIST OF COORDINATES

RAINBOW VALLEY ADMP MAPPING
POKE GLO MONUMENTS FOR ALL AREAS
7/6/2005 RAPII

AREA	POINT	NORTH	EAST	ELEV	DESC	T-R-S
13	10	833724.2993	517871.2634	1024.969	CLS COR	T2S R3W, S1, E 1/4 1 & T2S R2W, S6, W 1/4 6
13	11	833725.5171	517871.2748	1024.278	ACF	T2S R3W, S1, E 1/4 1 & T2S R2W, S6, W 1/4 6
8	100	769992.2183	591293.9586	1247.098	BCF	T3S R1E, S32/S33 & T4S R1E S5/S4
8	101	770002.1052	588653.8215	1230.114	BCF	T3S R1E, S32, S 1/4 32 & T4S R1E, S5, N 1/4 5
8	102	770012.4088	586013.4577	1220.532	BCF	T3S R1E, S31/S32 & T4S R1E, S6/S5
8	103	770023.4889	583372.6773	1219.419	BCF	T3S R1E, S31, S 1/4 31 & T4S R1E, S6, N 1/4 6
8	104	770032.5266	580733.0243	1218.198	BCF	T3S, T4S, R1E, R2E, S36/S31/S1/S6
8	105	770042.2865	578091.8450	1219.392	BCF	T3S R2E, S36, S 1/4 36 & T4S R2E, S1, N 1/4 1
8	106	770056.4062	575451.2147	1231.570	BCF	T3S R1W, S35/S36 & T4S R1W, S2/S1
8	107	770070.7497	568310.8601	1246.070	GMON	USGS BENCH "027 WP 1948"
8	108	770067.9570	572812.1865	1238.389	BCF	T3S R1W, S35, S 1/4 35 & T4S R1W, S2, N 1/4 2
5,8	109	791155.9486	580825.4132	1259.520	BCF	T3S R1W R1E, S7/S12/S13/S18
7,12	111	791134.2552	586099.4873	1308.964	BCF	T3S R1E, S7/S8/S17/S18
7,12	112	791122.6437	588739.5852	1331.663	BCF	T3S R1E, S8/S17
8	113	764740.5316	585978.8848	1243.230	BCF	T4S RIE, S5/S6/S7/S8
6	200	828299.2777	549426.9665	1095.691	BCF	T2S R1W, S6/S7 & T2S R2W, S1/S12
6	201	801863.1939	549276.4104	1105.953	GLO	T2S,T3S,R1W,R2W, S36/S31/S1/S6
6	202	801851.6066	551832.2315	1102.404	ACF	T2S R1W, S31, S 1/4 31 & T3S RIW, S1, N 1/4 1
6	203	812349.4382	565075.3805	1192.087	GLO	T2S R1W, S21/S22/S28/S27
5	300	807213.0080	538742.8204	1104.637	BCH	RAINBOW VALLEY & RIGGS RD.
5	301	807284.8299	528182.2692	1153.223	ACF	T2S R2W S29/S28/S32/S33
5	302	812494.4808	538773.2568	1076.626	BCH	RAINBOW VALLEY CHANDLER HEIGHTS
5	303	812478.3380	541412.5338	1064.220	ACF	T2S R2W, S23/S26, 1/4 COR.
5	304	815136.5078	538787.9215	1059.456	ACF	T2S R2W, S22/S23, 1/4 COR.
5	305	817774.9967	538803.5949	1042.562	BCH	RAINBOW VALLEY
5	306	809708.5782	565065.0909	1179.092	GLO	S28/S27, 1/4 COR
5	307	809784.7583	549318.3620	1073.822	BCF	T2S R1W, S30, W 1/4 30 & T2S R2W, S25, E 1/4 25
4	1000	807394.3399	512432.7115	1170.492	GLO	T2S R3W, S26/S25/S35/S36
4	1001	807358.0911	517718.0681	1163.525	GLO	T2S R3W, S25/S36, & T2S R2W, S30/S31
4	1002	817919.3763	517778.7222	1067.578	GLO	T2S R3W, S13/S24 & T2S R2W, S18/S19
10	1003	732996.6121	601677.577	1384.983	GLO	T5S R1E, S3/S2/S11/S10
10	1004	748846.6610	599125.6102	1306.296	GLO	T4S R1E, S 1/4 S22 & N 1/4 S27
10	1005	738285.9335	599079.2401	1357.648	GLO	T4S R1E, S 1/4 S34 & T5S
10	1006	738286.0114	599055.4457	1357.423	GLO	T5S R1E, N 1/4 S3 & T4S
10	1007	738295.3175	596415.5839	1360.966	GLO	T5S R1E, S4/S3 & T4S
10	1008	738295.1959	596439.3016	1361.260	GLO	T4S R1E, S33/S34 & T5S
10	1009	738303.4885	593774.5634	1368.015	GLO	T4S R1E, S 1/4 S33 & N 1/4 S4
10	1010	738311.6870	591156.7074	1374.697	GLO	T4S R1E, S32/S33 & T5S
10	1011	738311.5704	591133.5697	1374.851	GLO	T5S R1E, S5/S4 & T4S
11	1012	706579.0690	606873.8870	1513.872	GLO	T5S R1E, S35/S36
11	1013	706579.0690	606743.4450	1514.529	GLO	T5S R1E, S35/S36 & T6S R1E, S2/S1 CC
11	1014	698704.7990	596151.4300	1584.894	GLO	T6S R1E, E 1/4 S9 & W 1/4 S10
1	1015	854766.0564	531070.5215	919.760	BCH	T1S R2W, S8/S9/S16/S17
1	1016	852130.6881	531069.1149	931.022	BCH	T1S R2W, W 1/4 S16 & E 1/4 S17
1	1017	849490.1855	531052.6526	941.471	BCH	T1S R2W, S16/S17/S20/S21
1	1018	846849.3631	531036.0213	960.468	BCH	T1S R2W, E 1/4 S20 & W 1/4 S21
1	1019	844210.0395	531019.3291	980.440	BCH	T1S R2W S20/S21/S28/S29
1	1020	844174.2866	525761.2978	940.292	BCH	T1S R2W, S19/S20/S29/S30
1	1021	846824.5299	525778.1265	928.463	BCH	T1S R2W, E 1/4 S19 & W S20
1	1022	854769.2913	528404.0704	904.585	BCH	T1S R2W, S 1/4 S8 & N 1/4 S17
1	1023	854772.4453	525738.1115	888.705	BCH	T1S R2W, S7/S8/S17/S18
1	1024	854796.2111	523073.0316	878.606	ACH	T1S R2W, S 1/4 S7 & N 1/4 S18
1	1025	854819.0335	520475.7625	880.827	BCH	T1S R2W, S7/S12/S18/S13
1	1026	849553.5257	520523.6938	906.903	BCH	T1S R2W, S18/S19/S13/S24
1	1027	849531.2596	523167.0438	905.708	BCH	T1S R2W, S 1/4 S18 & N 1/4 S19
1	1028	852124.0458	525766.4903	901.896	BCH	T1S R2W, W 1/4 S17& E 1/4 S18

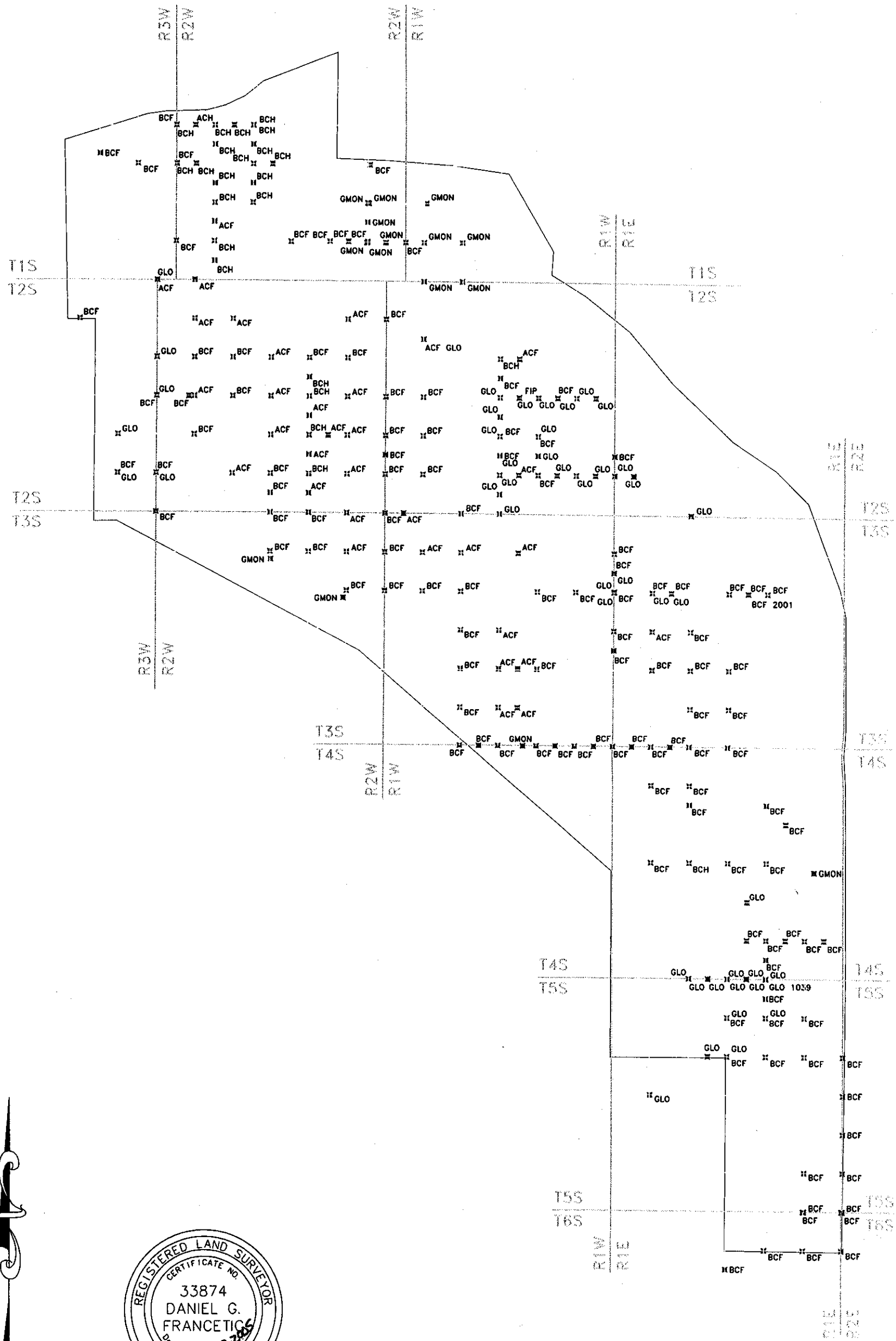
1	1029	841641.2054	525726.8223	950.291	ACF	T1S R2W, E 1/4 S30 W 1/4 S29
1	1030	838970.3472	525693.8108	949.540	BCH	T1S R2W, S29/S30/S31/S32
1	1031	836293.2579	525741.8152	956.143	BCH	T1S R2W, E 1/4 S31 & W 1/4 S32
1	1032	849479.4957	533692.9811	966.247	BCH	T1S R2W, S 1/4 S16 & N 1/4 S21
10	1033	722487.1844	585814.8055	1485.426	GLO	T5S R1E, S17/S18/S19/20
10	1034	733017.4160	596393.2590	1392.967	GLO	T5S R1E, S3/S4/S9/S10
10	1035	727735.9232	596377.0268	1426.967	GLO	T5S R1E, S9/S10/S15/S16
10	1036	727743.7631	593733.8536	1432.664	GLO	T5S R1E, S 1/4 S9 & N 1/4 16
10	1037	738278.4884	601695.1321	1356.807	GLO	T4S R1E, E 1/4 S3 & W 1/4 S2, T5S
10	1038	738278.4887	601695.1247	1354.472	GLO	T4S R1E, E 1/4 S34 & W 1/4 S35
6	1044	807046.5492	570335.5383	1213.022	BCF	T2S R1W, S26/S35/S34/S27
6	1045	807056.8742	567694.4296	1193.296	ACF	T2S R1W, S 1/4 S27 & N 1/4 S34
6	1046	807069.1928	565054.1328	1167.762	BCF	T2S R1W, S34/S27/S33/S28
6	1047	809708.6803	565065.1500	1179.082	GLO	T2S R1W, E 1/4 S28 & W 1/4 S27
6	1048	812349.4678	565075.4101	1192.082	GLO	T2S R1W, S28/S27/S21/S22
6	1049	814989.9415	565086.4826	1198.355	GLO	T2S R1W, E 1/4 S21 & W 1/4 S22
6	1050	817631.8001	565099.9293	1204.454	ACF	T2S R1W, S21/S22/S16/S15
6	1051	817619.5017	567742.7508	1233.405	ACF	T2S R1W, S 1/4 S15 & N 1/4 S22
6	1052	817576.1781	578298.2332	1358.086	GLO	T2S R1W, S 1/4 S13 & N 1/4 S24
6	1053	817585.0835	575659.9409	1320.723	GLO	T2S R1W, S13/S24/S14/S23
6	1054	817594.9117	573023.1832	1294.389	GLO	T2S R1W, S 1/4 S14 & N1/4 S23
6	1055	817597.7111	570385.5242	1262.085	BCF	T2S R1W, S14/S23/S22/S15
6	1056	812326.4038	570359.5736	1234.815	GLO	T2S R1W, S22/S23/S26/S27
6	1057	809656.2514	570347.1305	1222.946	GLO	T2S R1W, W 1/4 S26 & E 1/4 S27
6	1058	804428.5438	565043.8455	1166.511	ACF	T2S R1W W 1/4 S34 & E 1/4 S33
6	1059	801787.9780	565033.5209	1158.163	GLO	T2S R1W, S34/S33/S4/S3 & T3S
6	1060	822914.8005	585121.0202	1232.680	BCH	T2S R1W, S9/S10/S15/S16
10	1309	735636.6669	601687.4172	1370.009	BCF	T5S R1E, E 1/4 S3 & W 1/4 S2
10	1310	740918.0764	601730.0202	1343.778	BCF	T4S R1E, E 1/4 S34 & W 1/4 S35
10	1311	743557.9780	601741.2523	1331.236	BCF	T4S R1E, S27/S26/S34/S35
10	1312	743549.3244	604381.2092	1334.625	BCF	T4S R1E, S 1/4 S26 & N 1/4 S35
10	1313	743540.9399	607023.3271	1334.835	BCF	T4S R1E, S35/S36/S26/S25
10	1314	743531.2304	609663.6643	1333.374	BCF	T4S R1E, S 1/4 S25 & N 1/4 S36
10	1315	743567.0880	599102.3602	1330.357	BCF	T4S R1E, S 1/4 S27 & N 1/4 S34
10	1316	754119.8763	601785.6686	1286.537	BCF	T4S R1E, S14/S15/S22/S23
10	1317	759391.9594	604449.2358	1311.692	BCF	T4S R1E, S 1/4 S11 & N 1/4 S14
7	2001	791086.0947	599303.7635	1437.334	BCF	T3S R1E, S10/S15, S 1/4 10 & N 1/4 15
7	2002	791080.4088	601947.4381	1464.668	BCF	T3S R1E, S10/S11/S15/S14
7	2003	791122.7119	588739.5715	1331.635	GLO	T3S R1E, S8/S17, S 1/4 8 & N 1/4 17
7	2004	791134.3648	586099.4873	1308.949	GLO	T3S R1E, S7/S8/S18/17,
7	2005	791155.9450	580825.4550	1259.431	GLO	T3S R1E, S12/S7/S13/S18
7	2006	791239.0977	580864.0843	1259.815	GLO	USC&GS TRIANGULATION 1936
7	2007	793796.5549	580837.2992	1264.956	GLO	T3S R1E, S12, E 1/4 12 & T3S R2E, S7, W 1/4 7
7	2008	801679.9078	591433.2300	1382.154	GLO	T2S R1E, S32/S33/S5/S4
2	2009	850977.7487	509998.6169	875.872	GLO	T1S R3W, S1/16, S14 S15
5	2011	796462.4023	567632.3583	1170.862	ACF	T3S R1W, S 1/4 S3 & N 1/4 S10
5	2012	791276.7782	554425.8693	1162.998	GLO	T3S R1W, S7/S8/S17/S18
12	2013	770091.7447	567530.2652	1243.417	GMON	T3S,T4S R1W, N 1/4 S3 & S 1/4 S34
6	2014	817594.9560	573023.2081	1294.390	GLO	T2S R1W, S 1/4 S14 & N1/4 S23
6	2015	817593.9260	570385.6986	1262.033	GLO	T2S R1W, S15/S14/S22/S23
6	2016	820273.8905	565117.0625	1221.520	GLO	T2S R1W, W 1/4 S15 & E 1/4 S16
6	2017	822902.0144	567764.2520	1265.931	ACF	T2S R1W, S 1/4 S10 & N 1/4 S15
9	2018	762041.7552	601818.8937	1308.856	BCF	T4S R1E, E 1/4 S10 & W 1/4 S11
7	2020	791090.3757	596660.2742	1409.121	BCF	T3S R1E, S9/S10/S15/S16
7	2021	791086.0962	599303.7700	1437.343	BCF	T3S R1E,S 1/4 S10 & N 1/4 S15
3	2022	838931.6824	533655.3355	1008.249	BCF	T1S R2W, S 1/4 S28 & N 1/4 S33
3	2023	833552.7422	538876.8852	1015.008	BCF	T1S R2W, 1/4 S34
3	2024	833552.4029	538893.2896	1015.250	BCF	T2S R2W, E 1/4 S3 & W 1/4 S2
3	2025	833529.6634	541514.3582	1043.450	BCF	T1S R2W, E 1/4 S34 & W 1/4 S35
3	2026	833529.5663	541524.3637	1041.989	BCF	T2S R2W, N 1/4 S2
3	2027	833509.3955	544155.4397	1058.276	BCF	T1S R2W, S 1/4 S35

3	2028	833491.9467	546791.8299	1079.525	BCF	T1S R2W, E 1/4 S35 & W 1/4 S36
3	2029	833491.8117	546804.7978	1078.232	BCF	T2S R2W N 1/4 S1
3	2030	828230.5161	557232.6094	1171.805	BCF	T2S R1W, S 1/4 S5 & N 1/4 S8
3	2031	828246.0095	554595.3542	1144.019	BCF	T2S R1W, S5/S6/S7/S8
3	2032	828273.0555	551957.3125	1118.089	BCF	T2S R1W, S 1/4 S6 & N 1/4 S7
3	2033	828334.6686	538863.4273	1011.766	BCF	MC DOT BC FLUSH RAINBOW VALLEY RD.
3	2034	830975.5318	538878.3860	1017.322	BCF	T2S R1W, E 1/4 S3 & W 1/4 S2
3	2035	828370.2199	533582.6056	988.264	BCF	T2S R1W, S3/S4/S9/S10
3	2036	838702.0291	559914.9554	1258.939	BCF	T1S R1W, S29/S28/S33/S32
3	2046	844044.0272	547025.1709	1070.890	BCF	T1S R2W, S23/S24/S25/S26
3	2047	833445.5167	554622.9332	1162.146	BCF	T1S R1W S31/S32/S5/S6
3	2048	833425.6191	559900.2529	1222.040	BCF	T1S R1W, S32/S33/S4/S5
7	2200	791090.3757	596660.2742	1409.121	BCF	T2S R1E, S32/S33/S5/S4,& T3S
7	2201	791086.0962	599303.7700	1437.343	BCF	T2S R1E, S5/S4/S8/S9
7	2202	801679.5717	591432.9080	1383.062	BCF	T3S R1E, S8/S9/S17/S16
7	2203	796392.9599	591401.4831	1374.711	BCF	T3S R1E, E 1/4 S17 & W 1/4 S16
7	2204	791112.6697	591380.5533	1354.200	BCF	T3S R1E, S17/S16/S20/S21
7	2205	788472.2094	591369.9840	1356.470	BCF	T2S R1E, S31/S32/S6/S5
7	2207	785832.3298	591359.2353	1343.140	BCF	T2S R1W, R1E T3S, S36/S31/S1/S6
1	3000	801699.7464	586153.9235	1337.631	BCF	T1S R2W, S8/S9/S16/S17
1	3001	801719.0650	580874.4808	1288.070	BCF	T1S R2W, S13/S14/S23/S24
1,3	3002	838888.7537	544201.4868	1051.387	GLO	T1S R2W, 1/4, S26/S35
5	3005	801863.1504	549276.3682	1106.035	GLO	T2S T3S R2W R1W, S36/S31/S1/S6
5	3006	804572.6438	538727.7315	1118.247	ACF	T2S R2W, 1/4, S34/S35
5	3007	809853.9636	538758.0289	1092.687	ACF	T2S R2W, 1/4, S27/S26
12	3008	770128.8987	559608.5283	1233.879	BCF	T4S, T3S R1W, S32/S33/S4/S5
12	3009	770116.4219	562248.8295	1231.906	BCF	T3S,T4S R1W, 1/4, S33/S4
8,12	3010	770103.9629	564889.1712	1242.174	GLO	T3S, T4S R1W, S33/S34/S3/S4
8,12	3011	770079.7646	570171.3384	1241.174	BCF	T3S, T4S R1W, S34/S35/S2/S3
8,12	3012	775371.9751	567552.5876	1217.834	ACF	T3S R1W, 1/4, S27/S34
8,12	3013	780651.56	567571.9985	1188.572	ACF	T3S R1W, 1/4, S22/SS27
12	3014	775409.9755	559630.7528	1209.825	BCF	T3S R1W, S29/S28/S32/S33
12	3016	780690.0828	559654.2561	1183.904	BCF	T3S R1W, S20/S21/S28/S29
12	3017	785971.2511	559677.1438	1164.391	BCF	T3S R1W, S16/S17S20/S21
12	3018	780663.3447	564937.1511	1183.223	ACF	T3S R1W, S21/S22/S27/S28
5,12	3020	791251.5103	559701.2611	1147.261	BCF	T3S R1W, S8/S9/S16/S17
5,12	3022	796531.9849	559728.6202	1118.9	ACF	T3S R1W, S4/S5/S8/S9
5,6,12	3023	801812.9264	559752.6905	1125.031	BCF	T3S,T2S R1W, S32/S33/S4/S5
8,12	3024	775383.9076	564912.7544	1210.591	ACF	T3S R1W, S27/S28/S33/S34
8,12	3025	785944.8072	564961.93	1159.982	ACF	T3S R1W, S15/S16/S21/S22
12	3027	796462.3715	567632.3466	1170.837	ACF	T3S R1W,1/4, S3/S10
12	3028	791199.3213	570262.5211	1182.908	GLO	T3S R1W, S10/S11/S14/S15
12	3029	791176.6134	575541.2605	1221.492	GLO	T3S R1W, S10/S11/S14/S15
7	3030	793796.557	580837.2414	1264.931	GLO	T3S R1W,R1E, 1/4, S7/S12
7	3031	796557.6745	580850.586	1270.102	GLO	T3S R1W, R1E,S1/S6/S12/S7
5,.12	3032	796557.8257	554448.233	1129.894	ACF	T3S R1E, S5/S6/S7/S8
5,12	3033	796582.6363	549249.2274	1137.011	BCF	T3S R2W, R1W, S1/S6/S7/S12
5,12	3034	791276.704	554425.8143	1162.978	GLO	T3S R1W, S7/S8/S17/S18
5,12	3035	791301.0824	549222.6357	1178.191	GLO	T3S R1W, R2W, S12/S7/S13/S18
5	3036	791339.726	543939.9426	1170.191	GLO	T3S R2W, S12/S14 S13/S11
8,10	3040	754175.7260	585938.0260	1299.610	BCF	T4S R1E, S18/S17/S19/S20
8,10	3041	754160.3307	591219.941	1292.940	BCH	T4S R1E, S16/S17/S20/S21
9	3042	754129.7689	596514.2433	1284.555	GLO	T4S R1E, S16/S15/S21/S22
8	3043	762076.2274	591249.2225	1248.630	GLO	T4S R1E, 1/4, S8/S9
8	3044	764718.5257	591262.6471	1242.183	BCF	T4S R1E, S4/S5/S8/S9
9	3045	769974.2576	596574.4649	1290.805	GLO	T3S T4S R1E, S33/S34/S3/S4
9	3046	775255.6318	596595.7311	1300.146	GLO	T3S R1E, S28/S27/S33/S34
9	3047	780534.4830	596616.8912	1321.768	GLO	T3S R1E, S21/S22/S28/S27
8	3048	785832.3644	591359.1952	1343.100	GLO	T3S R1E, S16/S17/S20/S21
8	3049	780552.9181	591336.7779	1285.778	GLO	T3S R1E, S20/S21/S29/S28
8	3050	775271.4402	591315.2870	1255.505	GLO	T3S R1E, S28/S29/S32/S33

8	3051	780572.5925	586056.1253	1261.623	GLO	T3S R1E, S19/S20/S30/S29
8	3052	785853.1429	586079.8858	1292.488	ACF	T3S R1E, S17/S18/S19/S20
8	3053	783234.0211	580788.9043	1238.560	GLO	T3S R1E R1W, 1/4, S19/S24
8	3054	785874.6804	580800.7559	1248.704	GLO	T3S R1E R1W, S18/S19/S24/S13
12,8	3055	780638.9052	570218.1955	1184.298	BCF	T3S R1W, S22/S23/S26/S27
11	3060	701328.1618	601438.8177	1556.970	GLO	T6S R1E, S2/S3/S10/S11
11	3062	701312.2107	606724.6799	1537.165	GLO	T6S R1E, S1/S2/S11/S12
11	3063	701300.8784	611998.2227	1526.930	GLO	T6S R1E, R2E, S1/S6/S12/S7
11	3064	706563.3974	612153.5253	1538.348	GLO	T5S R1E, R2E, S31/S36
11	3065	706563.1428	612013.7197	1540.497	GLO	T6S R1E, R2E, S1/S6
11	3066	711857.5365	606889.3643	1491.928	GLO	T5S R1E, S25/S26/S35/S36
11	3067	711857.5365	606889.3643	1467.662	GLO	T5S R1E, R2E S24/S19/S25/S30
11	3068	711843.7627	612171.3017	1473.499	GLO	T5S R1E, R2E, S25/S30/S31/S36
11	3073	722399.6794	612206.5881	1514.228	GLO	T5S R1E, R2E, S13/S18/S24/S19
11	3077	727680.2457	612223.5355	1400.126	GLO	T5S R1E, R2E, S12/S7/S13/S18
11	3078	727698.5601	606937.6048	1413.183	GLO	T5S R1E, S11/S12/S14/S13
11	3079	732977.0574	606955.5787	1387.491	GLO	T5S R1E, S1/S2/S11/S12
9	3080	732996.5138	601677.4850	1384.947	GLO	T5S R1E, S2/S3/S10/S11
9	3081	733017.4073	596393.2862	1392.977	GLO	T5S R1E, S3/S4/S9/S10
9	3082	727735.9103	596377.0735	1426.488	GLO	T5S R1E, S9/.S10/S15/S16
11	3083	727714.7998	601657.5798	1460.264	GLO	T5S R1E, S10/S11/S15/S14
13	3300	828559.1662	507277.0286	1088.445	GLO	T2S R3W, S2/S3/S10/S11
13	3301	828408.7015	528296.1476	990.778	ACF	T2S R2W, S4/S5/S8/S9
13	3302	823127.2465	528265.5559	1025.41	GLO	T2S R2W, S8/S9/S17/S16
3	3303	823090.6741	533551.4563	1019.75	ACF	T2S R2W, S9/S10/S16/S15
3	3304	823058.5270	538833.0283	1021.951	BCF	T2S R2W, S10/S11/S14/S15
3,5	3305	817809.7320	533518.8243	1056.005	ACF	T2S R2W, S15/S16/S21/S22
4,13	3306	817845.9756	528242.4109	1064.508	GLO	T2S R2W, S16/S17/S20/S21
4,13	3307	817882.2646	522953.1496	1068.002	ACF	T2S R2W, S17/S18/S19/S20
4,13	3308	817919.3801	517778.6869	1067.542	GLO	T2S R2W, R3W, S13/S18/S24/S19
13	3309	823163.1119	522979.9175	1027.885	GLO	T2S R2W, S7/S8/S18/S17
13	3310	828442.6820	523008.5412	992.846	ACF	T2S R2W, S6/S5/S7/S8
13	3312	833705.1018	523034.3996	961.006	ACF	T1S,T2S R2W, S6/S5
4	3600	802077.2226	517687.462	1222.967	GLO	T2S, T3S R2W, R3W, S36/S31/S1/S6
4	3601	807358.0682	517718.0306	1163.542	GLO	T2S, R2W,R3W, S25/S30/S36/S31
4	3602	807394.3250	512432.7062	1170.544	GLO	T2S R3W, S26/S25/S35/S36
4	3604	812602.5741	522925.9882	1111.105	GLO	T2S R2W, S19/S20/S30/S29
5	3605	812529.2185	533487.8655	1095.15	ACF	T2S R2W, S21/S22/S28/S27
5	3607	804609.1722	533445.4031	1150.402	GLO	T2S R2W, 1/4, S33/S34
5	3608	801968.0000	533432.1734	1168.143	BCF	T2S R2W, S33/S34/S4/S3
5	3609	796682.9515	533412.6672	1199.069	GLO	T3S R2W, S4/S3/S9/S10
5	3750	801899.4765	543989.894	1101.628	BCF	T2S R2W, S35/S36/S2/S1
5	3751	807179.2169	544024.1018	1079.182	BCF	T2S R2W, S25/S26/S35/S36
5,6	3753	807142.9993	549304.1759	1079.069	ACF	T2S R2W,R1W, S25/S30/S31/S36
5,6	3754	807120.7361	554496.5503	1096.054	ACF	T2S R1W, S30/S29/S31/S32
5,6	3756	812402.0376	554520.8923	1103.256	BCF	T2S R1W, S19/S20/S29/S30
5,6	3757	812424.4085	549332.5218	1069.055	BCF	T2S R2W R1W, S24/S19/S25/S30
5	3758	812462.4440	544052.4198	1056.125	ACF	T2S R2W, S23/S24/S26/S25
5,3	3759	817740.9940	544079.7029	1041.83	ACF	T2S R2W, S14/S13/S23/S24
3,6,5	3761	817705.0322	549362.0594	1072.779	BCF	T2S R2W R1W, S13/S18/S24/S19
6,3	3764	817683.4615	554546.4123	1107.842	BCF	T2S R1W, S18/S17/S19/S20
5	3765	807248.3403	533459.374	1134.671	BCF	T2S R2W, S27/S28/S33/S34
5	3927	796620.1072	543968.7352	1131.999	ACF	T3S R2W, S1/S2/S11/S12
5	3928	796653.0289	538693.491	1148.494	BCF	T3S R2W, S2/S3/S10/S11
5	3929	801932.9834	538713.3903	1126.075	BCF	T2S T3S R2W, S34/S35/S2/S3
2	6200	849604.4496	515209.925	903.411	BCF	T1S R3W, S13/S14/S23/S24
2	6201	849553.5273	520523.7341	906.899	BCF	T1S R2W R3W, S7/S12/S13/S18
2	6202	854819.0414	520475.744	880.871	BCF	T1S R2W R3W, S13/S18/S19/S25
2,13	6205	838988.3518	520455.8262	952.222	BCF	T1S R2W R3W, S25/S30/S31/S36
3	6305	838739.0067	552090.3769	1128.626	BCF	T1S R1W R2W, S25/S30/S31/S36
3	6306	838767.3061	546833.0154	1073.907	BCF	T1S R2W, S25/S26/S35/S36

1,3	6308	838917.6363	541652.489	1042.957	BCF	T1S R2W, S26/S27/S34/S35
1,3	6309	838882.5704	536287.7569	1021.792	BCF	T1S R2W, S27/S28/S33/S34
3	6399	823022.2851	544108.9144	1045.542	BCF	T2S R2W, S11/S12/S13/S14
3	6400	828317.1211	5441140.104	1051.292	BCF	T2S R2W, S1/S2/S11/S12

MAP OF SECTION CORNERS



N.T.S.

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
33874
DANIEL G.
FRANCETIC
Date Signed 7-19-2005
ARIZONA, U.S.A.

HUITT-ZOLLARS
Huitt-Zollars, Inc. Phoenix
426 North 44th Street, Suite 300
Phoenix, Arizona 85008-6596
Phone (602) 952-9123 Fax (602) 952-9124

PLSS POINT MAP
"RAINBOW VALLEY ADMP"

PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1-3 WEST, & PART OF TOWNSHIPS 1-6 SOUTH, RANGE 1 EAST, MARICOPA COUNTY, ARIZONA

REVISION	BY	APP.	DATE

DESIGNED	DRAWN	CHECKED	DATE	SHEET NO.	TOTAL SHEETS	AS BUILT
PHIL	PHIL	FRANCETIC	07/06/05	1	1	

H.Z. JOB NO. 05-1487-01

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