LiDAR GROUND CONTROL SURVEY REPORT

73054 - NRCS LAUDERDALE MS 0.7M NPS LIDAR

WINSTON, NESHOBA, KEMPER, LAUDERDALE, NEWTON, CLARKE, MS

UNITED STATES GEOLOGICAL SURVEY (USGS)

April 2013

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SECTION 1: SURVEY REPORT

INTRODUCTION

Report Date:	April 2, 2013
Project Name:	NRCS Lauderdale MS 0.7m NPS LiDAR
Client Information:	United States Geological Survey (USGS) Attn: Robert Kelly, MS 665 1400 Independence Road, Rolla, MO 65401 573.308.3612
Contract Number:	G10PC00057
Requisition/Reference Number:	G13PD00125
Delivery Date:	03/31/2013
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Woolpert Project Number:	073054

This report contains a comprehensive outline of the LiDAR Ground Control Survey that supported the NRCS Lauderdale MS 0.7m NPS LiDAR Task Order. All surveys were performed in such a way as to achieve ground control accuracies that meet or exceed the National Mapping Accuracy Standards.

PROJECT AREA

The LiDAR data acquisition and processing for this project consisted of approximately 3,518 square miles of Mississippi. The Area of Interest (AOI) for this project includes Clarke, Newton, Lauderdale, Neshoba Counties and a portion of Kemper and Winston Counties.

PURPOSE

The purpose of this survey was to establish three-dimensional coordinates for 20 ground control points (GCPs) and a minimum of 20 quality control points (QCPs) in each of the land cover classifications in which there was more than 10% coverage.

The GCPs were located on open, bare earth surfaces with a level slope to enable effective assessment of swath-to-swath reproducibility and absolute accuracy. The QCPs were collected uniformly dispersed over the project area in the appropriate land cover categories to verify fundamental, supplemental, and consolidated vertical accuracies throughout the task order AOI.

DATE OF SURVEY

Ground control field operations took place between March 12, 2012, and March 18, 2013.

MONUMENTATION

Prior to aerial imagery acquisition, Woolpert field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) control stations. These existing control stations were utilized to ensure that quality *x, y,* and *z* coordinate values were computed for each of the newly established photogrammetric control stations. Recovery information sheets for the existing NGS control stations can be found in Section 5 of this report. A control diagram showing the ground control stations used to support this LiDAR mapping project can be found in Section 6 of this report.

ACCURACY

The data collected under this task order shall meet the National Standard for Spatial Database Accuracy (NSSDA) accuracy standards. The NSSDA standards specify that vertical accuracy be reported at the 95 percent confidence level, ($RMSE_z * 1.96$), for data tested by an independent source of higher accuracy. For example, the metadata statement will read, "Tested __ (meters, feet) vertical accuracy at the 95 percent confidence level."

The Fundamental Vertical Accuracy (FVA) of the Lidar Point Cloud: **18.13 cm** at a 95% confidence level, derived according to NSSDA, i.e., based on RMSE of **9.25 cm** in the "open terrain" land cover category.

Supplemental Vertical Accuracy (SVA): The SVA will be reported for each of the land cover classes within the task order AOI. The target SVA is **26.9 cm** at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for LiDAR Data, i.e., based on the 95th percentile error for each required land cover class.

Consolidated Vertical Accuracy (CVA): 26.9 cm at a 95th percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for LiDAR Data, i.e., based on the 95th percentile error in all land cover categories combined.

The relative accuracy will be <=7cm $RMSE_z$ within individual swaths: <=10cm $RMSE_z$ within swath overlap (between adjacent swaths).

The overall accuracy of the ground control survey is expressed in terms of standard deviation, at a 95% confidence level, based on the published NGS control monuments that were used throughout the task order AOI. The standard deviation of the ground control survey is 0.026 meters horizontally and 0.031 meters vertically at the 95% confidence level.

GPS EQUIPMENT

Woolpert utilized the following equipment for this project:

- four Trimble Navigation R8 Model 2 GNSS dual-frequency GPS receivers with Air Link Communications Raven CDMA cellular modems
- a Trimble Navigation R8 receiver with an Air Link Communications Raven CDMA cellular modem.
- a Trimble Navigation 5800 receiver with an Air Link Communications Raven CDMA cellular modem with
- three TSC2 data collectors as rovers for this project.

METHODOLOGY

REAL-TIME KINEMATIC (RTK) GPS

The field crew utilized Real-Time Kinematic (RTK) GPS surveying throughout most of the ground control data collection process. Using RTK GPS techniques, observations were performed on 45 ground control points and 146 quality control check points (26 Bare Earth, 25 urban, 26 Tall Grass, 27 Tall Brush, 42 Forested). The survey was conducted using a 1-second epoch rate, in a fixed solution RTK mode, with each observation lasting between 60 to 180 seconds. Each station was occupied twice to insure the necessary horizontal and vertical accuracies were being met for this photogrammetric project.

RAPID-STATIC GPS

In addition to the RTK GPS techniques, the project field crew utilized rapid-static (RS) GPS surveying techniques on those check points within areas lacking sufficient cellular coverage for RTK measurements.

Using RS GPS techniques, observations were performed on one (4) ground control point. The survey was conducted at a 5-second sync rate with each observation lasting between 20-40 minutes.

CONVENTIONAL TOTAL STATION

A Trimble 5600 total station in combination with a Trimble TSC2 data collector was used in areas where sufficient satellite coverage was not available for some quality control check points.

GPS DATA ANALYSIS AND PROCESSING

The field crew chief processed all GPS data each day using *Trimble Navigation's* Trimble Business Center (TBC) Version 2.81. Daily processing ensured the integrity of the network as it was constructed, and allowed the field crews to immediately reschedule observations of poor quality. Once the field work was complete, the processed observations were adjusted by using a site calibration to make it fit the local NGS control. Once this process was completed, the results were closely analyzed to be sure that it meets the requirements of the survey.

The GPS Control stations consisted of the following:

Dimension	NGS Control Stations
3-D (Orthometric Elevations Held	DEKA (DN3963), E 223 (CO0797), LOUISVILLE RESET (DJ1298), MSDC (CORS), MSME (CORS), QUIT (DN3999)
Vertical (Ellipsoid Elevations Held)	45 V 30 (CO0546), 60 31 (AA7110), SHUBUTA RESET (BV1123), W 107 (C00837), WILLI RM 1 (DJ2171)

DATUM REFERENCE AND FINAL COORDINATES

New horizontal GPS control was based on the UTM Zone 16, referenced to North American Datum 1983, national re-adjustment of 2011 (NAD83/2011), expressed in meters. Vertical control was based on the North American Vertical Datum of 1988 (NAVD88), also expressed in meters. using the geoid model of 2012 (GEID12A). These coordinates for the photogrammetric control survey can be found in Section 2 of this report.

QUALITY ASSURANCE

Existing NGS published control stations were surveyed to assure that there were no discrepancies in the field observation data. Close examinations of the residuals showed no distortions in orientation or scale.

SECTION 2: GEODETIC / GROUND CONTROL COORDINATE LISTINGS

COORDINATE SYSTEM: GRID

Coordinates in UTM Zone 16

HORIZONTAL DATUM: NAD83 (2011)
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID 12A
UNITS: Meters

NGS CONTROL POINTS

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
45 V 30	3544356.513	336730.141	74.737	CO0546
45 V 88	3660024.369	354020.657	53.381	DJ0699
60 31	3608268.139	388970.558	58.738	AA7110
D 223			111.098	CO0796
DEKA	3627415.513	347006.696		DN3963
E 223	3577250.250	298855.255	110.480	CO0797
F 353	3618258.183	360530.511	63.407	CO1129
KEY AZ MK	3579791.262	336355.519	90.290	CO0997
LOUISVILLE 2	3669038.944	307736.884	174.584	DJ1300
LOUISVILLE RESET	3669061.992	307719.826	174.081	DJ1298
MSDC	3591140.545	301416.519		DK6710
MSME	3582491.601	337007.296		DL7333
QUIT	3542544.320	336605.573		DN3999
S 100	3627918.335	302189.664	155.236	CO0718
SHUBUTA RESET	3527463.960	338861.869	58.117	BV1123
W 107	3583149.059	267151.869	144.252	CO0837
WILLI RM 1	3658223.011	263533.050	162.822	DJ2171
Z 100	3625267.502	323042.278	151.136	CO0657

TEMPORARY SURVEY MARKS (TSM)

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
100	3578975.994	335916.530	88.609	LIDAR BASE STA
101	3631191.999	301012.159	134.979	LIDAR BASE STA
200	3587102.094	355755.430	95.379	TSM
201	3587054.998	355610.313	95.650	TSM
202	3550077.579	345102.276	113.078	TSM
203	3549805.406	344951.558	110.891	TSM
204	3584479.801	300608.210	113.863	TSM
205	3584800.819	300660.852	114.265	TSM
206	3632263.312	301679.351	122.155	TSM
207	3632429.394	301731.254	122.431	TSM
208	3658448.203	307418.189	154.374	TSM
209	3658317.664	307456.603	151.580	TSM
250	3630169.091	350127.395	94.273	TSM
251	3630253.563	350028.771	98.172	TSM

LiDAR GROUND CONTROL

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
1000	3674454.334	299146.502	167.493	GCP
1001	3662057.510	285404.691	164.817	GCP
1002	3651896.775	291489.779	159.564	GCP
1003	3644159.778	288348.067	145.489	GCP
1004	3648467.432	284694.037	156.159	GCP
1005	3628293.725	293762.894	124.483	GCP
1006	3621599.246	292327.888	137.927	GCP
1007	3591823.940	301443.071	130.062	GCP
1008	3579950.723	298363.274	127.851	GCP
1009	3566729.794	299969.325	138.634	GCP
1010	3561326.687	327474.958	77.482	GCP
1011	3560271.844	326965.435	80.632	GCP
1012	3527883.275	322598.184	153.228	GCP
1013	3525077.556	337475.756	60.684	GCP
1014	3531513.514	355765.988	85.140	GCP
1015	3546789.540	336431.963	69.765	GCP
1016	3550539.783	360765.089	140.887	GCP
1017	3582612.368	340450.423	106.830	GCP
1018	3584412.190	335511.280	94.430	GCP
1019	3591112.527	368797.440	97.807	GCP
1020	3602062.615	349271.953	77.069	GCP
1021	3630445.328	349829.589	97.003	GCP

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
1022	3651077.551	320980.666	149.581	GCP
1023	3627460.086	308434.113	163.933	GCP
1024	3603787.388	319685.366	166.181	GCP
1025	3620328.722	331028.518	156.235	GCP
1026	3663706.935	324545.026	175.345	GCP
1027	3667100.382	308347.894	168.215	GCP
1028	3653506.294	307207.020	149.518	GCP
1029	3639598.397	329064.188	162.547	GCP
1030	3604251.199	285223.626	150.472	GCP
1031	3569911.357	353008.099	126.808	GCP
1032	3601449.590	346823.700	88.589	GCP
1034	3605924.790	300832.737	149.844	GCP
1035	3564066.638	341041.590	154.134	GCP
1036	3611350.305	369404.815	62.166	GCP
1037	3580353.757	282799.923	142.883	GCP
1038	3578390.557	318232.901	98.112	GCP
1039	3546361.156	322328.752	86.023	GCP
1040	3597168.893	326626.657	137.016	GCP
1041	3634303.356	319307.515	149.595	GCP
1042	3626719.447	345051.010	131.148	GCP
1043	3545307.894	346127.351	107.607	GCP
1050	3579725.118	330402.130	106.667	GCP
1090	3639743.881	328909.088	163.229	GCP

QUALITY CONTROL POINTS

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
2000	3588703.866	350209.161	164.915	Bare Earth/Open Terrain
2001	3581154.331	347974.104	156.854	Bare Earth/Open Terrain
2002	3559767.202	348301.907	162.656	Bare Earth/Open Terrain
2003	3537500.886	349926.831	88.579	Bare Earth/Open Terrain
2004	3591832.619	301551.880	132.073	Bare Earth/Open Terrain
2005	3623767.271	290570.911	151.913	Bare Earth/Open Terrain
2006	3603648.090	288560.407	154.342	Bare Earth/Open Terrain
2007	3610018.192	314707.356	156.038	Bare Earth/Open Terrain
2008	3618540.737	327847.312	182.781	Bare Earth/Open Terrain
2009	3663727.960	323910.495	175.462	Bare Earth/Open Terrain
2012	3527780.809	321378.072	135.218	Bare Earth/Open Terrain
2014	3599967.697	329113.933	110.883	Bare Earth/Open Terrain
2019	3549704.129	322591.647	80.925	Bare Earth/Open Terrain
2023	3610644.480	335244.765	146.214	Bare Earth/Open Terrain
2051	3563599.416	328372.383	76.442	Bare Earth/Open Terrain

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
2052	3540402.265	328352.975	96.836	Bare Earth/Open Terrain
2053	3525312.604	320725.732	137.611	Bare Earth/Open Terrain
2054	3572915.152	297459.381	127.936	Bare Earth/Open Terrain
2055	3634705.659	314832.903	148.723	Bare Earth/Open Terrain
2056	3638219.734	286905.341	121.553	Bare Earth/Open Terrain
2057	3647914.736	299219.143	158.918	Bare Earth/Open Terrain
2058	3659658.984	290141.279	140.682	Bare Earth/Open Terrain
2059	3672001.945	293850.156	148.174	Bare Earth/Open Terrain
2096	3642310.033	320933.491	158.393	Bare Earth/Open Terrain
2097	3614208.819	355917.493	100.639	Bare Earth/Open Terrain
2098	3634740.779	342816.526	168.915	Bare Earth/Open Terrain
3000	3596654.419	357458.648	76.024	Urban
3001	3579120.927	350645.898	148.023	Urban
3002	3561272.935	353967.970	131.197	Urban
3003	3539203.142	348129.396	109.635	Urban
3004	3591296.054	301433.674	128.449	Urban
3005	3625683.077	289663.260	153.278	Urban
3006	3611534.540	283526.339	149.808	Urban
3007	3611457.493	312556.075	166.813	Urban
3008	3625245.884	328596.705	162.469	Urban
3009	3661333.467	319230.960	155.425	Urban
3014	3599749.204	334206.161	111.907	Urban
3019	3546667.562	321697.086	87.062	Urban
3023	3604844.393	342638.372	117.045	Urban
3050	3579718.389	329953.454	106.543	Urban
3051	3580835.123	335859.727	93.385	Urban
3052	3567289.004	328476.232	92.938	Urban
3054	3525005.611	328354.787	111.450	Urban
3055	3577466.808	309381.667	99.598	Urban
3056	3627938.288	301500.303	129.513	Urban
3057	3642802.708	290768.421	139.168	Urban
3058	3652329.745	307257.868	150.884	Urban
3060	3666791.051	305546.419	167.844	Urban
3086	3639625.478	329009.141	162.620	Urban
3097	3617727.611	362013.445	62.123	Urban
3098	3626816.851	345099.220	135.434	Urban
4000	3596541.236	357340.567	78.420	Tall Weeds/Crops
4001	3580582.652	348280.397	144.412	Tall Weeds/Crops
4002	3562656.636	358176.754	120.196	Tall Weeds/Crops
4003	3537558.135	349869.188	88.432	Tall Weeds/Crops
4004	3592297.418	300924.235	120.757	Tall Weeds/Crops
4005	3626090.008	291394.325	152.816	Tall Weeds/Crops
4006	3603597.646	292672.812	153.527	Tall Weeds/Crops

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
4007	3608273.059	306341.993	174.177	Tall Weeds/Crops
4009	3662898.126	317444.532	158.246	Tall Weeds/Crops
4014	3604042.386	323418.932	146.763	Tall Weeds/Crops
4019	3544927.948	329153.631	74.508	Tall Weeds/Crops
4023	3608898.860	342270.221	87.954	Tall Weeds/Crops
4050	3580791.704	335948.915	93.755	Tall Weeds/Crops
4051	3563524.417	325008.599	112.805	Tall Weeds/Crops
4053	3533047.886	325871.904	83.063	Tall Weeds/Crops
4054	3588657.042	302578.039	138.588	Tall Weeds/Crops
4055	3631393.320	300439.880	136.011	Tall Weeds/Crops
4056	3636655.155	292284.785	132.194	Tall Weeds/Crops
4057	3651477.558	293375.334	158.520	Tall Weeds/Crops
4058	3655209.202	292272.649	171.427	Tall Weeds/Crops
4059	3663583.320	287837.033	159.673	Tall Weeds/Crops
4060	3672371.572	300587.580	162.565	Tall Weeds/Crops
4096	3638881.316	323984.844	142.137	Tall Weeds/Crops
4097	3616308.755	352106.129	108.249	Tall Weeds/Crops
4098	3630855.280	348138.983	86.238	Tall Weeds/Crops
5000	3592562.938	350637.960	158.644	Brush Lands/Trees
5001	3578001.604	352278.619	124.946	Brush Lands/Trees
5002	3559376.499	351306.138	97.558	Brush Lands/Trees
5003	3535747.530	350084.013	99.838	Brush Lands/Trees
5004	3593854.801	300555.995	130.458	Brush Lands/Trees
5006	3621408.654	291486.382	132.602	Brush Lands/Trees
5007	3612060.746	308265.501	180.926	Brush Lands/Trees
5008	3617369.221	325862.268	154.977	Brush Lands/Trees
5009	3664248.773	318710.135	138.972	Brush Lands/Trees
5012	3532656.995	324217.284	91.076	Brush Lands/Trees
5014	3599558.953	325938.699	140.647	Brush Lands/Trees
5019	3544075.792	325341.382	79.100	Brush Lands/Trees
5023	3607441.758	337598.522	147.140	Brush Lands/Trees
5050	3580493.387	324603.076	119.254	Brush Lands/Trees
5051	3563381.602	328202.663	73.970	Brush Lands/Trees
5052	3542012.184	322768.282	96.716	Brush Lands/Trees
5053	3532634.332	323392.345	93.252	Brush Lands/Trees
5054	3584010.170	294025.266	156.520	Brush Lands/Trees
5055	3635842.686	312025.479	134.938	Brush Lands/Trees
5056	3639246.866	293171.411	128.430	Brush Lands/Trees
5057	3652577.740	299056.799	162.259	Brush Lands/Trees
5058	3657069.548	285153.339	141.252	Brush Lands/Trees
5059	3665302.381	297288.048	162.535	Brush Lands/Trees
5086	3609245.134	284991.351	136.762	Brush Lands/Trees
5096	3645147.588	323683.877	131.433	Brush Lands/Trees

Station Name	Northing (meters)	Easting (meters)	Elevation (meters)	Description
5097	3617921.900	345485.663	99.037	Brush Lands/Trees
5098	3630042.453	338529.100	127.087	Brush Lands/Trees
6000	3587110.878	355782.855	93.872	Forested/Fully Grown
6001	3587120.662	355812.593	93.752	Forested/Fully Grown
6002	3587129.996	355841.687	93.840	Forested/Fully Grown
6003	3587141.280	355870.774	93.579	Forested/Fully Grown
6004	3587171.731	355849.891	93.618	Forested/Fully Grown
6005	3587153.810	355825.322	93.793	Forested/Fully Grown
6006	3587133.638	355798.179	93.938	Forested/Fully Grown
6007	3550019.055	345029.766	108.452	Forested/Fully Grown
6008	3550038.993	345041.613	109.150	Forested/Fully Grown
6009	3550059.551	345054.430	109.688	Forested/Fully Grown
6010	3550086.347	345071.106	110.997	Forested/Fully Grown
6011	3550098.559	345079.379	111.717	Forested/Fully Grown
6012	3550128.728	345054.379	112.194	Forested/Fully Grown
6013	3550161.267	345033.591	113.180	Forested/Fully Grown
6014	3584581.696	300677.692	112.596	Forested/Fully Grown
6015	3584552.110	300674.148	112.728	Forested/Fully Grown
6016	3584523.129	300671.826	112.542	Forested/Fully Grown
6017	3584489.636	300666.640	112.597	Forested/Fully Grown
6018	3584454.032	300654.596	112.647	Forested/Fully Grown
6019	3584435.765	300688.019	112.422	Forested/Fully Grown
6020	3584420.796	300720.401	112.429	Forested/Fully Grown
6021	3632305.744	301656.148	119.849	Forested/Fully Grown
6022	3632283.195	301640.191	119.886	Forested/Fully Grown
6023	3632258.626	301630.866	120.011	Forested/Fully Grown
6024	3632235.410	301618.208	119.916	Forested/Fully Grown
6025	3632215.081	301602.126	119.954	Forested/Fully Grown
6026	3632268.803	301729.288	120.169	Forested/Fully Grown
6027	3632239.814	301723.372	120.206	Forested/Fully Grown
6028	3632220.827	301719.249	120.217	Forested/Fully Grown
6035	3658322.078	307401.721	150.230	Forested/Fully Grown
6036	3658383.256	307377.857	151.637	Forested/Fully Grown
6037	3658418.058	307368.730	153.074	Forested/Fully Grown
6038	3658455.932	307357.539	154.506	Forested/Fully Grown
6039	3658491.373	307351.159	155.852	Forested/Fully Grown
6040	3658433.737	307367.434	153.792	Forested/Fully Grown
6041	3658425.405	307332.088	152.784	Forested/Fully Grown

COORDINATE SYSTEM: WGS84

HORIZONTAL DATUM: NAD83 (2011)
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOID 12A
UNITS: Meters

NGS CONTROL POINTS

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
45 V 30	N32 01 24.91081	W88 43 43.92199	47.532	CO0546
45 V 88	N33 04 08.42752	W88 33 49.76091	24.761	DJ0699
60 31	N32 36 22.92600	W88 10 59.83854	29.918	AA7110
D 223				CO0796
DEKA	N32 46 26.45513	W88 38 00.67969	122.893	DN3963
E 223	N32 18 50.52182	W89 08 11.84427	83.188	CO0797
F 353	N32 41 35.65180	W88 29 16.07494	34.733	CO1129
KEY AZ MK	N32 20 35.02119	W88 44 20.03084	62.427	CO0997
LOUISVILLE 2	N33 08 35.04279	W89 03 40.66535	146.484	DJ1300
LOUISVILLE RESET	N33 08 35.77984	W89 03 41.34082	145.979	DJ1298
MSDC	N32 26 22.97135	W89 06 44.44325	120.910	DK6710
MSME	N32 22 03.02207	W88 43 56.77907	103.230	DL7333
QUIT	N32 00 26.01577	W88 43 47.56309	46.037	DN3999
S 100	N32 46 17.02959	W89 06 42.82297	127.417	CO0718
SHUBUTA RESET	N31 52 17.60514	W88 42 12.56057	31.176	BV1123
W 107	N32 21 39.78365	W89 28 28.49745	117.215	CO0837
WILLI RM 1	N33 02 12.69726	W89 31 55.39284	135.633	DJ2171
Z 100	N32 45 03.78892	W88 53 19.93575	122.963	CO0657

TEMPORARY SURVEY MARKS (TSM)

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
100	N32 20 08.32447	W88 44 36.30959	60.761	LIDAR BASE STA
101	N32 48 02.50175	W89 07 30.58024	107.148	LIDAR BASE STA
200	N32 24 41.98943	W88 32 02.16275	67.15	TSM
201	N32 24 40.39283	W88 32 07.69072	67.424	TSM
202	N32 04 34.88343	W88 38 28.20227	85.686	TSM
203	N32 04 25.97291	W88 38 33.79098	83.504	TSM
204	N32 22 46.28271	W89 07 10.32147	86.435	TSM
205	N32 22 56.73498	W89 07 08.55145	86.833	TSM
206	N32 48 37.70265	W89 07 05.76853	94.301	TSM

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
207	N32 48 43.12611	W89 07 03.90184	94.575	TSM
208	N33 02 51.15118	W89 03 44.92539	126.274	TSM
209	N33 02 46.93940	W89 03 43.34645	123.479	TSM
250	N32 47 57.38904	W88 36 02.36976	65.714	TSM
251	N32 48 00.08267	W88 36 06.20960	69.614	TSM

LiDAR GROUND CONTROL

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
1000	N33 11 25.16139	W89 09 16.32335	139.543	GCP
1001	N33 04 33.43185	W89 17 56.13175	137.199	GCP
1002	N32 59 07.99624	W89 13 53.29183	131.849	GCP
1003	N32 54 54.76577	W89 15 47.84806	117.886	GCP
1004	N32 57 11.96959	W89 18 12.04153	128.623	GCP
1005	N32 46 23.63652	W89 12 06.80274	96.824	GCP
1006	N32 42 45.42595	W89 12 56.54116	110.342	GCP
1007	N32 26 45.16738	W89 06 43.94452	102.537	GCP
1008	N32 20 17.84436	W89 08 32.71110	100.517	GCP
1009	N32 13 09.80187	W89 07 21.31148	111.519	GCP
1010	N32 10 30.84191	W88 49 47.56173	50.095	GCP
1011	N32 09 56.31891	W88 50 06.32163	53.272	GCP
1012	N31 52 22.50765	W88 52 31.52572	126.553	GCP
1013	N31 50 59.42183	W88 43 03.85562	33.812	GCP
1014	N31 54 37.25053	W88 31 31.60117	57.989	GCP
1015	N32 02 43.74023	W88 43 56.77166	42.518	GCP
1016	N32 04 57.23612	W88 28 31.20217	113.406	GCP
1017	N32 22 08.73315	W88 41 45.15409	78.870	GCP
1018	N32 23 04.57715	W88 44 55.20096	66.502	GCP
1019	N32 26 57.99755	W88 23 45.01074	69.351	GCP
1020	N32 32 44.56832	W88 36 18.90589	48.705	GCP
1021	N32 48 06.20968	W88 36 13.97709	68.448	GCP
1022	N32 59 00.27620	W88 54 57.11505	121.312	GCP
1023	N32 46 06.13896	W89 02 42.61218	135.976	GCP
1024	N32 33 24.65047	W88 55 13.94254	138.228	GCP
1025	N32 42 28.00334	W88 48 09.95549	127.963	GCP
1026	N33 05 52.25649	W88 52 48.55969	147.012	GCP
1027	N33 07 32.52268	W89 03 15.62951	140.094	GCP
1028	N33 00 10.64124	W89 03 49.32261	121.438	GCP
1029	N32 52 52.36573	W88 49 38.15290	134.221	GCP
1030	N32 33 17.59204	W89 17 14.88257	123.113	GCP
1031	N32 15 22.60480	W88 33 37.72034	98.956	GCP

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
1032	N32 32 23.46005	W88 37 52.37937	60.269	GCP
1034	N32 34 22.39817	W89 07 18.04969	122.196	GCP
1035	N32 12 06.98822	W88 41 11.38511	126.541	GCP
1036	N32 37 55.29741	W88 23 31.88442	33.420	GCP
1037	N32 20 20.42622	W89 18 27.94927	115.752	GCP
1038	N32 19 39.47361	W88 55 52.00317	70.523	GCP
1039	N32 02 22.17071	W88 52 53.99726	59.000	GCP
1040	N32 29 53.80875	W88 50 43.51398	109.030	GCP
1041	N32 49 54.87087	W88 55 49.71671	121.401	GCP
1042	N32 46 02.87383	W88 39 15.40636	102.673	GCP
1043	N32 02 00.54000	W88 37 46.37092	80.285	GCP
1050	N32 20 29.67828	W88 48 07.63312	78.892	GCP
1090	N32 52 57.00054	W88 49 44.21604	134.905	GCP

QUALITY CONTROL POINTS

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
2000	N32 25 31.35496	W88 35 35.33711	136.74	Bare Earth/Open Terrain
2001	N32 21 25.18007	W88 36 56.51976	128.83	Bare Earth/Open Terrain
2002	N32 09 51.02198	W88 36 31.71903	135.07	Bare Earth/Open Terrain
2003	N31 57 48.91598	W88 35 17.19326	61.376	Bare Earth/Open Terrain
2004	N32 26 45.51888	W89 06 39.78657	104.54	Bare Earth/Open Terrain
2005	N32 43 54.58122	W89 14 05.73690	124.35	Bare Earth/Open Terrain
2006	N32 33 00.33020	W89 15 06.54177	126.93	Bare Earth/Open Terrain
2007	N32 36 43.92281	W88 58 29.15587	128.10	Bare Earth/Open Terrain
2008	N32 41 28.19591	W88 50 10.89847	154.57	Bare Earth/Open Terrain
2009	N33 05 52.56904	W88 53 13.04121	147.13	Bare Earth/Open Terrain
2012	N31 52 18.49429	W88 53 17.87120	108.56	Bare Earth/Open Terrain
2014	N32 31 26.04404	W88 49 10.07575	82.822	Bare Earth/Open Terrain
2019	N32 04 10.83466	W88 52 46.19735	53.836	Bare Earth/Open Terrain
2023	N32 37 15.95348	W88 45 21.92954	117.96	Bare Earth/Open Terrain
2051	N32 11 45.11158	W88 49 14.77886	48.997	Bare Earth/Open Terrain
2052	N31 59 12.08333	W88 49 00.59621	69.822	Bare Earth/Open Terrain
2053	N31 50 58.00354	W88 53 41.04639	111.00	Bare Earth/Open Terrain
2054	N32 16 28.92368	W89 09 01.86689	100.73	Bare Earth/Open Terrain
2055	N32 50 05.24075	W88 58 42.01930	120.59	Bare Earth/Open Terrain
2056	N32 51 41.01326	W89 16 38.41543	93.999	Bare Earth/Open Terrain
2057	N32 57 03.99892	W89 08 52.55744	131.03	Bare Earth/Open Terrain
2058	N33 03 18.93474	W89 14 51.60318	112.95	Bare Earth/Open Terrain
2059	N33 10 01.99978	W89 12 38.72139	120.31	Bare Earth/Open Terrain

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
2096	N32 54 15.69459	W88 54 52.79375	130.14	Bare Earth/Open Terrain
2097	N32 39 22.06030	W88 32 10.92445	72.075	Bare Earth/Open Terrain
2098	N32 50 22.10754	W88 40 46.15170	140.45	Bare Earth/Open Terrain
3000	N32 29 52.89250	W88 31 02.17418	47.609	Urban
3001	N32 20 20.46505	W88 35 13.17787	120.01	Urban
3002	N32 10 42.60576	W88 32 56.28961	103.53	Urban
3003	N31 58 43.31955	W88 36 26.60874	82.414	Urban
3004	N32 26 28.02927	W89 06 43.90445	100.93	Urban
3005	N32 44 56.12570	W89 14 42.14294	125.72	Urban
3006	N32 37 12.74141	W89 18 25.96967	122.43	Urban
3007	N32 37 29.33109	W88 59 52.68932	138.91	Urban
3008	N32 45 06.25329	W88 49 46.57757	134.19	Urban
3009	N33 04 32.08886	W88 56 11.77199	127.15	Urban
3014	N32 31 21.73273	W88 45 54.83260	83.784	Urban
3019	N32 02 31.75886	W88 53 18.27360	60.044	Urban
3023	N32 34 11.55164	W88 40 34.82437	88.746	Urban
3050	N32 20 29.21440	W88 48 24.78467	78.776	Urban
3051	N32 21 08.64484	W88 44 39.63966	65.506	Urban
3052	N32 13 44.93636	W88 49 13.20063	65.424	Urban
3054	N31 50 52.26898	W88 48 50.70728	84.729	Urban
3055	N32 19 04.18591	W89 01 29.68913	72.139	Urban
3056	N32 46 17.22979	W89 07 09.31820	101.69	Urban
3057	N32 54 12.40729	W89 14 13.62679	111.51	Urban
3058	N32 59 32.49197	W89 03 46.47539	122.80	Urban
3060	N33 07 20.68942	W89 05 03.43624	139.77	Urban
3086	N32 52 53.21377	W88 49 40.28842	134.29	Urban
3097	N32 41 19.09899	W88 28 18.85912	33.443	Urban
3098	N32 46 06.06014	W88 39 13.61258	106.95	Urban
4000	N32 29 49.16347	W88 31 06.63592	50.009	Tall Weeds/Crops
4001	N32 21 06.77115	W88 36 44.47557	116.40	Tall Weeds/Crops
4002	N32 11 29.46894	W88 30 16.36282	92.484	Tall Weeds/Crops
4003	N31 57 50.74715	W88 35 19.42053	61.228	Tall Weeds/Crops
4004	N32 27 00.19998	W89 07 04.16179	93.236	Tall Weeds/Crops
4005	N32 45 10.51704	W89 13 35.99943	125.22	Tall Weeds/Crops
4006	N32 33 01.48919	W89 12 28.93501	126.05	Tall Weeds/Crops
4007	N32 35 42.12668	W89 03 48.63642	146.41	Tall Weeds/Crops
4009	N33 05 21.79308	W88 57 21.75944	129.99	Tall Weeds/Crops
4014	N32 33 35.09134	W88 52 51.02344	118.74	Tall Weeds/Crops
4019	N32 01 39.43290	W88 48 32.98619	47.399	Tall Weeds/Crops
4023	N32 36 22.97716	W88 40 51.39445	59.617	Tall Weeds/Crops
4050	N32 21 07.28256	W88 44 36.20183	65.876	Tall Weeds/Crops

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
4051	N32 11 40.80952	W88 51 23.14126	85.413	Tall Weeds/Crops
4053	N31 55 11.98297	W88 50 30.32877	56.230	Tall Weeds/Crops
4054	N32 25 03.11429	W89 05 58.12194	111.07	Tall Weeds/Crops
4055	N32 48 08.66112	W89 07 52.72574	108.19	Tall Weeds/Crops
4056	N32 50 53.96237	W89 13 10.32274	104.52	Tall Weeds/Crops
4057	N32 58 55.68511	W89 12 40.35470	130.75	Tall Weeds/Crops
4058	N33 00 56.01851	W89 13 25.84724	143.67	Tall Weeds/Crops
4059	N33 05 24.65963	W89 16 23.66411	131.98	Tall Weeds/Crops
4060	N33 10 18.53596	W89 08 19.06449	134.58	Tall Weeds/Crops
4096	N32 52 26.19408	W88 52 53.04047	113.86	Tall Weeds/Crops
4097	N32 40 28.41565	W88 34 38.38249	79.731	Tall Weeds/Crops
4098	N32 48 18.68011	W88 37 19.19938	57.705	Tall Weeds/Crops
5000	N32 27 36.84209	W88 35 21.12275	130.40	Brush Lands/Trees
5001	N32 19 44.90797	W88 34 10.11507	96.934	Brush Lands/Trees
5002	N32 09 39.78154	W88 34 36.83888	69.954	Brush Lands/Trees
5003	N31 56 52.06590	W88 35 10.22862	72.666	Brush Lands/Trees
5004	N32 27 50.50567	W89 07 19.44162	102.92	Brush Lands/Trees
5006	N32 42 38.66905	W89 13 28.68825	105.03	Brush Lands/Trees
5007	N32 37 46.26042	W89 02 37.68509	153.09	Brush Lands/Trees
5008	N32 40 49.04882	W88 51 26.30502	126.80	Brush Lands/Trees
5009	N33 06 06.39037	W88 56 33.92990	110.70	Brush Lands/Trees
5012	N31 54 58.37638	W88 51 33.04867	64.278	Brush Lands/Trees
5014	N32 31 11.00008	W88 51 11.45591	112.63	Brush Lands/Trees
5019	N32 01 09.67459	W88 50 57.69622	52.066	Brush Lands/Trees
5023	N32 35 33.24517	W88 43 49.64785	118.89	Brush Lands/Trees
5050	N32 20 51.39339	W88 51 49.87674	91.551	Brush Lands/Trees
5051	N32 11 37.94773	W88 49 21.11700	46.532	Brush Lands/Trees
5052	N32 00 01.24733	W88 52 34.36856	69.765	Brush Lands/Trees
5053	N31 54 57.18007	W88 52 04.42966	66.468	Brush Lands/Trees
5054	N32 22 26.73772	W89 11 21.71412	129.20	Brush Lands/Trees
5055	N32 50 40.42259	W89 00 30.77464	106.85	Brush Lands/Trees
5056	N32 52 18.66656	W89 12 38.32512	100.72	Brush Lands/Trees
5057	N32 59 35.20853	W89 09 02.47401	134.35	Brush Lands/Trees
5058	N33 01 51.40959	W89 18 01.60673	113.66	Brush Lands/Trees
5059	N33 06 26.94058	W89 10 20.71987	134.62	Brush Lands/Trees
5086	N32 35 59.48074	W89 17 27.90423	109.37	Brush Lands/Trees
5096	N32 55 49.39935	W88 53 08.92681	103.14	Brush Lands/Trees
5097	N32 41 17.51439	W88 38 53.44828	70.588	Brush Lands/Trees
5098	N32 47 47.35900	W88 43 28.05852	98.675	Brush Lands/Trees
6000	N32 24 42.28737	W88 32 01.11798	65.642	Forested/Fully Grown
6001	N32 24 42.61887	W88 31 59.98524	65.522	Forested/Fully Grown

Station Name	Latitude	Longitude	Ellips. Hgt. (meters)	Description
6002	N32 24 42.93547	W88 31 58.87688	65.609	Forested/Fully Grown
6003	N32 24 43.31532	W88 31 57.76987	65.347	Forested/Fully Grown
6004	N32 24 44.29418	W88 31 58.58584	65.386	Forested/Fully Grown
6005	N32 24 43.70093	W88 31 59.51630	65.562	Forested/Fully Grown
6006	N32 24 43.03341	W88 32 00.54401	65.708	Forested/Fully Grown
6007	N32 04 32.94764	W88 38 30.93305	81.060	Forested/Fully Grown
6008	N32 04 33.60076	W88 38 30.49289	81.758	Forested/Fully Grown
6009	N32 04 34.27452	W88 38 30.01612	82.296	Forested/Fully Grown
6010	N32 04 35.15269	W88 38 29.39585	83.604	Forested/Fully Grown
6011	N32 04 35.55324	W88 38 29.08749	84.324	Forested/Fully Grown
6012	N32 04 36.52029	W88 38 30.05820	84.800	Forested/Fully Grown
6013	N32 04 37.56641	W88 38 30.86972	85.786	Forested/Fully Grown
6014	N32 22 49.63435	W89 07 07.74131	85.166	Forested/Fully Grown
6015	N32 22 48.67187	W89 07 07.85447	85.299	Forested/Fully Grown
6016	N32 22 47.72983	W89 07 07.92129	85.114	Forested/Fully Grown
6017	N32 22 46.63949	W89 07 08.09427	85.168	Forested/Fully Grown
6018	N32 22 45.47625	W89 07 08.52788	85.220	Forested/Fully Grown
6019	N32 22 44.90488	W89 07 07.23578	84.994	Forested/Fully Grown
6020	N32 22 44.43991	W89 07 05.98598	85.000	Forested/Fully Grown
6021	N32 48 39.06457	W89 07 06.69286	91.995	Forested/Fully Grown
6022	N32 48 38.32242	W89 07 07.28871	92.033	Forested/Fully Grown
6023	N32 48 37.51902	W89 07 07.62816	92.158	Forested/Fully Grown
6024	N32 48 36.75740	W89 07 08.09670	92.064	Forested/Fully Grown
6025	N32 48 36.08722	W89 07 08.69902	92.102	Forested/Fully Grown
6026	N32 48 37.91331	W89 07 03.85373	92.314	Forested/Fully Grown
6027	N32 48 36.96872	W89 07 04.05875	92.351	Forested/Fully Grown
6028	N32 48 36.34988	W89 07 04.20255	92.362	Forested/Fully Grown
6035	N33 02 47.04765	W89 03 45.46450	122.13	Forested/Fully Grown
6036	N33 02 49.01781	W89 03 46.43036	123.53	Forested/Fully Grown
6037	N33 02 50.14138	W89 03 46.80838	124.97	Forested/Fully Grown
6038	N33 02 51.36334	W89 03 47.26829	126.40	Forested/Fully Grown
6039	N33 02 52.50939	W89 03 47.54095	127.75	Forested/Fully Grown
6040	N33 02 50.64936	W89 03 46.87021	125.69	Forested/Fully Grown
6041	N33 02 50.35643	W89 03 48.22587	124.68	Forested/Fully Grown

SECTION 3: PART 1 GEODETIC/GROUND CONTROL LOGS AND PHOTOS FOR CLARKE, NEWTON, LAUDERDALE, NESHOBA, KEMPER AND WINSTON COUNTIES

This section contains the station recovery information sheets and photographs for the geodetic and ground control stations established for the project. The stations appear as they are ordered in the final coordinate listing of Section 2.

The data is assembled on the following pages.

NGS CONTROL SITE CALIBRATION POINT: 25 V 50 (CO1016)

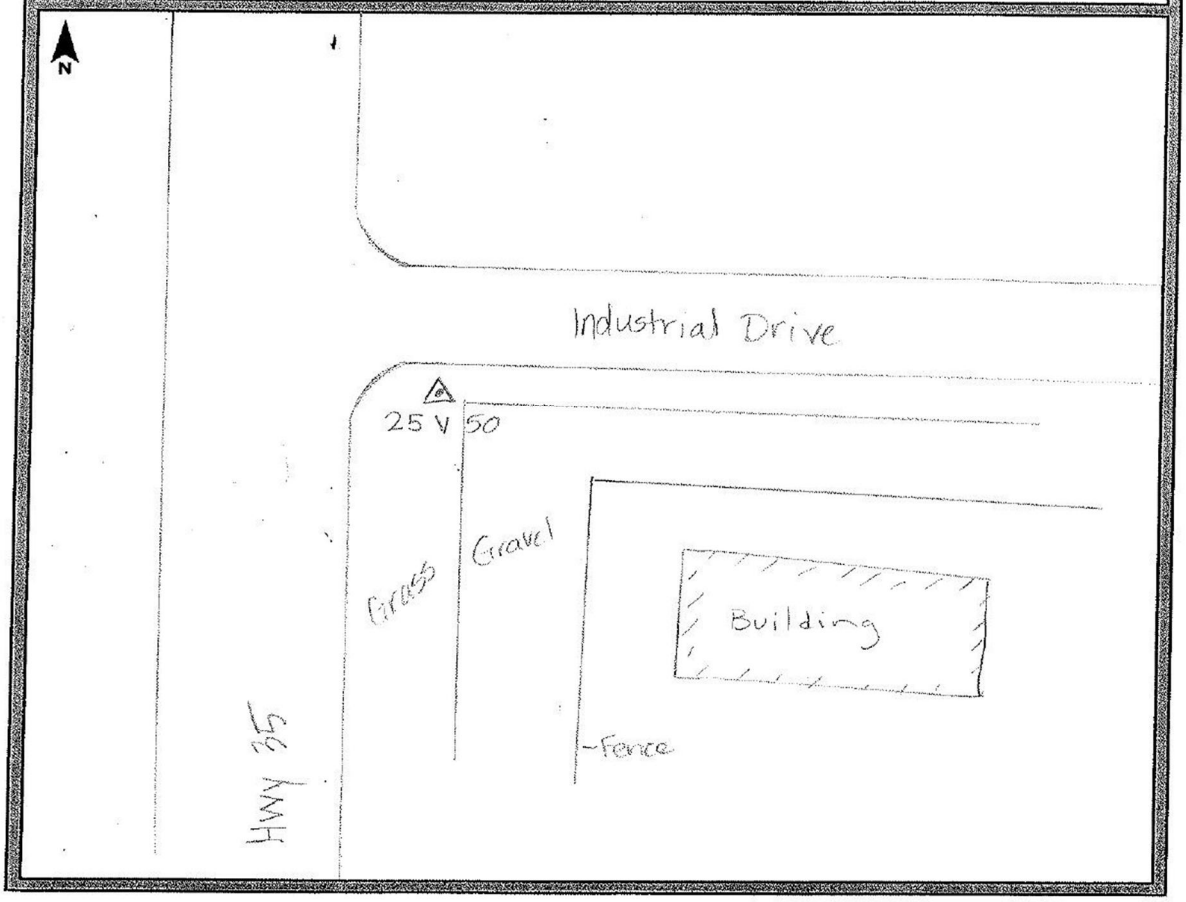
CBN
PID: CO1016

prs: 205 = S
206 = W
201 = 1
202 = 2
203 = N
204 = E

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number:	073054 Survey Date: 03/14/13
Station Name:	25 V 50	Operator Name:	RC + CT
Latitude:	32° 45' 16.3"	Julian Day:	73 Session No. 1
Longitude:	89° 32' 19.4"	Start Time:	0932 End Time: 1007
Ellip. Height:	87.1m	Data File Name:	87340730
Type of Mark:	Conc Mon w/ Brass disk	Type of Reciever:	R8
Stamping on Mark:	25 V 50 1975	Type of Antenna:	Internal
Weather Condition:	39°F, sunny	Antenna Height:	2.0m to bottom of antenna mount



25_V_50-C01016-CBN-1-14MAR2013


25_V_50-C01016-CBN-2-14MAR2013


25_V_50-C01016-CBN-3E-14MAR2013


25_V_50-C01016-CBN-3N-14MAR2013


25_V_50-C01016-CBN-3S-14MAR2013


25_V_50-C01016-CBN-3W-14MAR2013

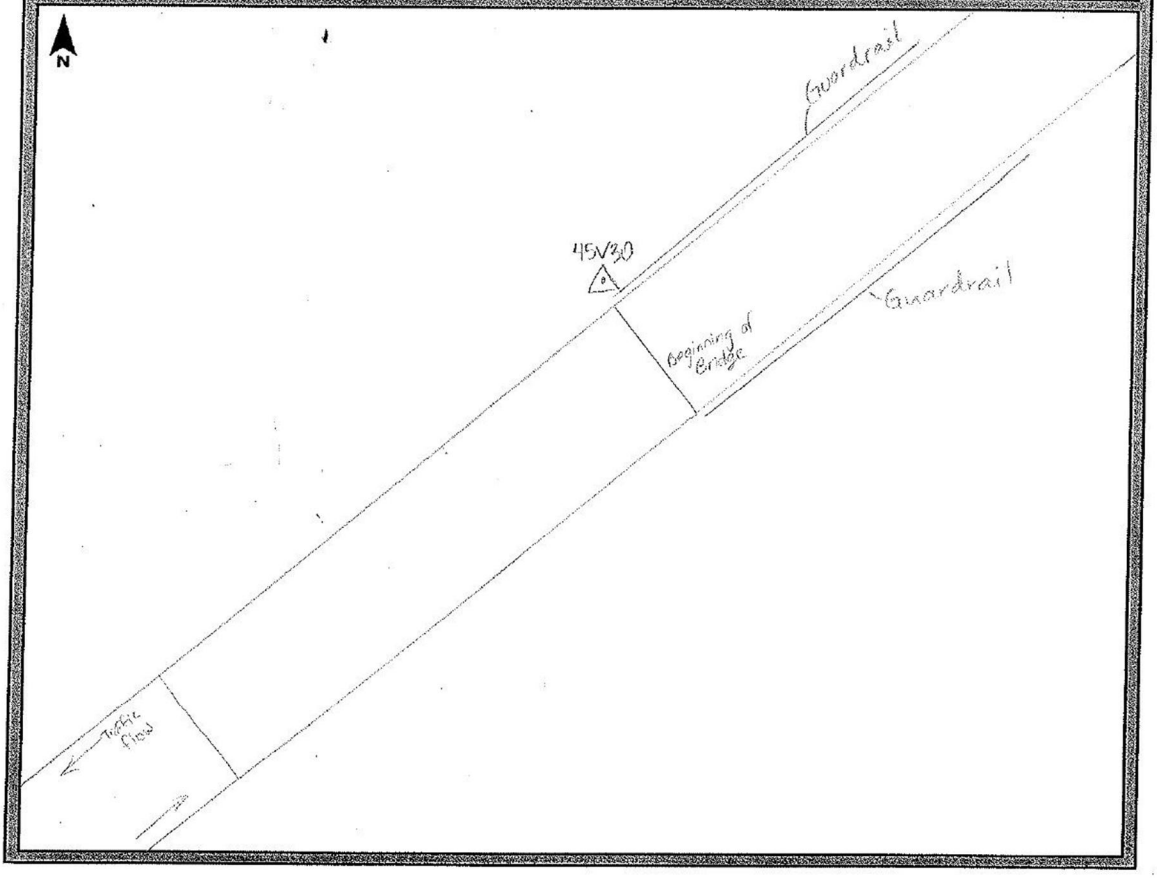
NGS CONTROL SITE CALIBRATION POINT: 45 V 30 (CO0546)

PID: CO0546
BM

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number:	073054
Survey Date:	03/13/13		
Station Name:	45 V 30	Operator Name:	RC + CT
Latitude:	32°01'25.0"	Julian Day:	72
Session No.	3		
Longitude:	88° 43' 44.0"	Start Time:	1452
End Time:	1531		
Ellip. Height:	47.1 m	Data File Name:	04650725
Type of Mark:	Con Mon w/ Brass Disk	Type of Reciever:	R8
Stamping on Mark:	45 V 30	Type of Antenna:	Internal
Weather Condition:	58° F / clear, breezy	Antenna Height:	2.0 m to bottom of antenna mount



45_V_30-C00546-BM-1-13MAR2013


45_V_30-C00546-BM-2-13MAR2013


45_V_30-C00546-BM-3E-13MAR2013


45_V_30-C00546-BM-3N-13MAR2013


45_V_30-C00546-BM-3S-13MAR2013

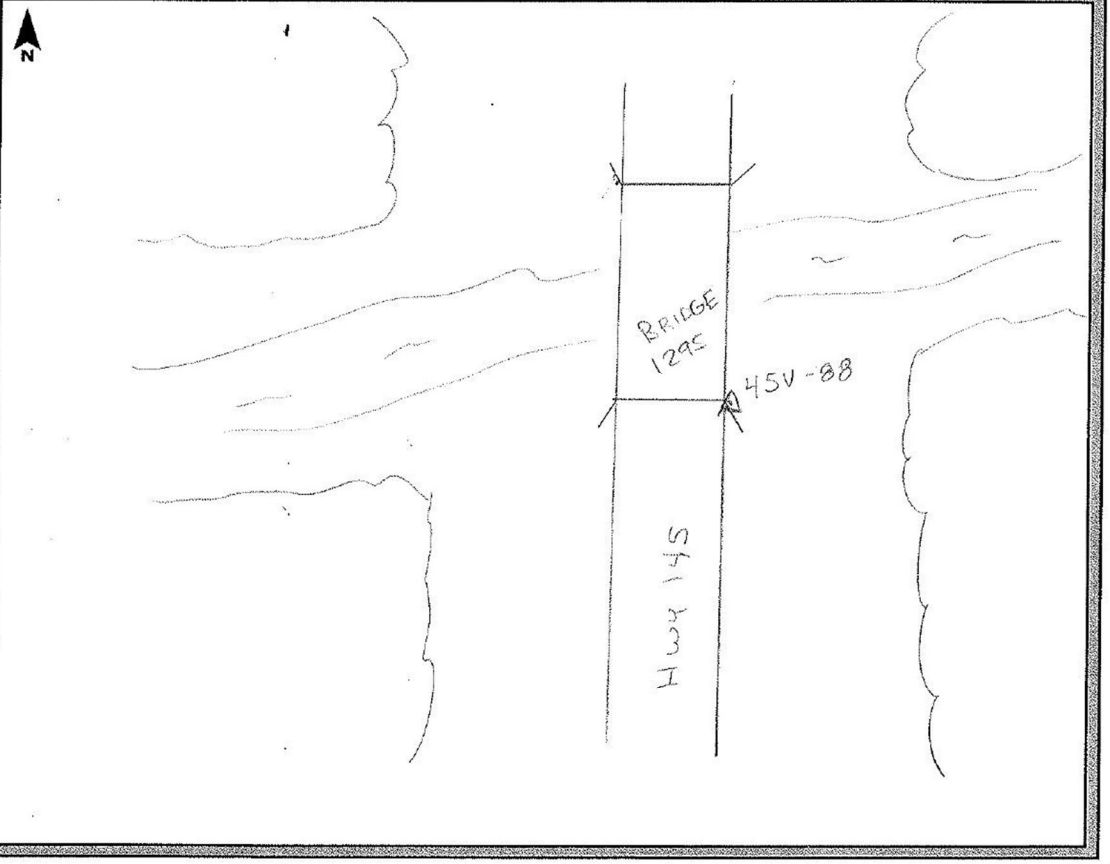

45_V_30-C00546-BM-3W-13MAR2013

NGS CONTROL SITE CALIBRATION POINT: 45 V 88 (DJ0699)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE	Project Number: 073054	Survey Date: 3-12-13
Station Name:	45V 88	Operator Name:	RC, CT
Latitude:	33-04-08.5	Julian Day: 71	Session No. 2
Longitude:	88-33-49.8	Start Time: 3:46	End Time: 4:26
Ellip. Height:	24.2m	Data File Name:	04656714.DAT
Type of Mark:	DISK ON BRIDGE ABUT	Type of Reciever:	R8/2
Stamping on Mark:	45 V 88 1964	Type of Antenna:	INTERNAL
Weather Condition:	60°/CLR	Antenna Height:	2.0m to bottom of antenna mount




45_V_88-DJ0699-BM-1-12MAR2013


45_V_88-DJ0699-BM-2-12MAR2013


45_V_88-DJ0699-BM-3E-12MAR2013


45_V_88-DJ0699-BM-3N-12MAR2013


45_V_88-DJ0699-BM-3S-12MAR2013

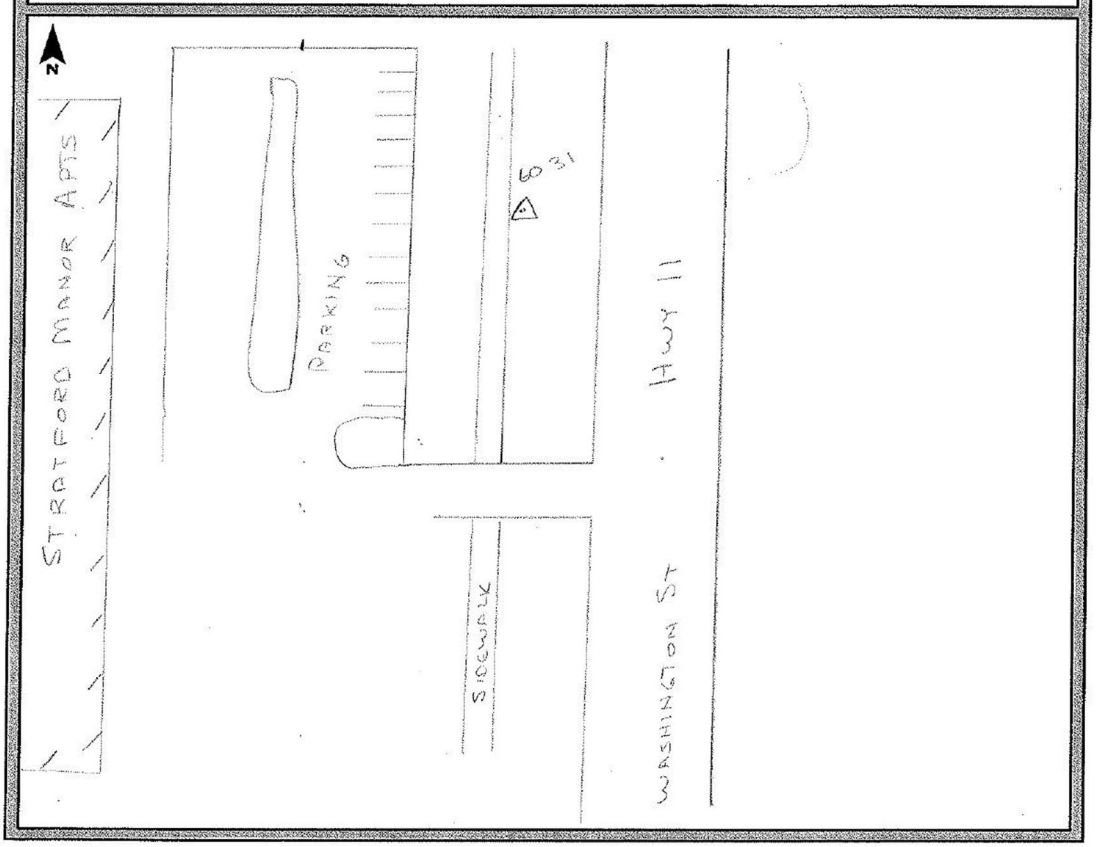

45_V_88-DJ0699-BM-3W-12MAR2013

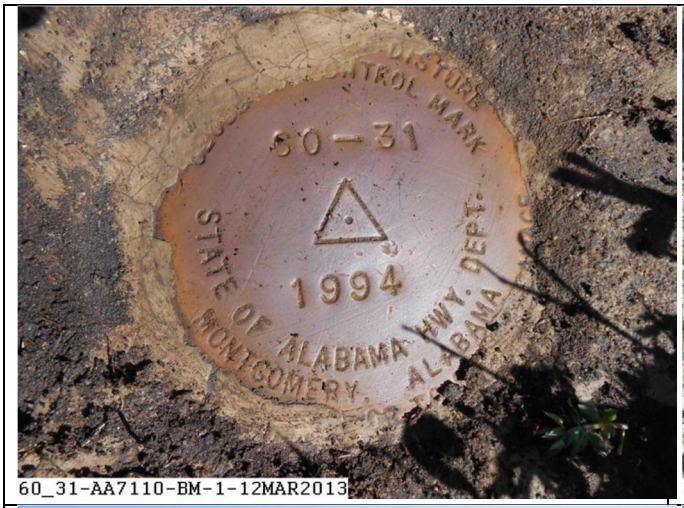
NGS CONTROL SITE CALIBRATION POINT: 60 31 (AA7110)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE	Project Number:	073054 Survey Date: 3-12-13
Station Name:	60 31	Operator Name:	CT, RC
Latitude:	32-36-23.0	Julian Day:	71 Session No. 1
Longitude:	88-10-59.8	Start Time:	10:58 End Time:
Ellip. Height:	31.5 m	Data File Name:	04650711
Type of Mark:	CONC MON W/ ALOOT BRASS DISK	Type of Reciever:	R8/2
Stamping on Mark:	60 31 1994	Type of Antenna:	INTERNAL
Weather Condition:	57°/ CLR	Antenna Height:	2.0m to bottom of antenna mount





60_31-AA7110-BM-1-12MAR2013


60_31-AA7110-BM-2-12MAR2013


60_31-AA7110-BM-3E-12MAR2013


60_31-AA7110-BM-3N-12MAR2013


60_31-AA7110-BM-3S-12MAR2013

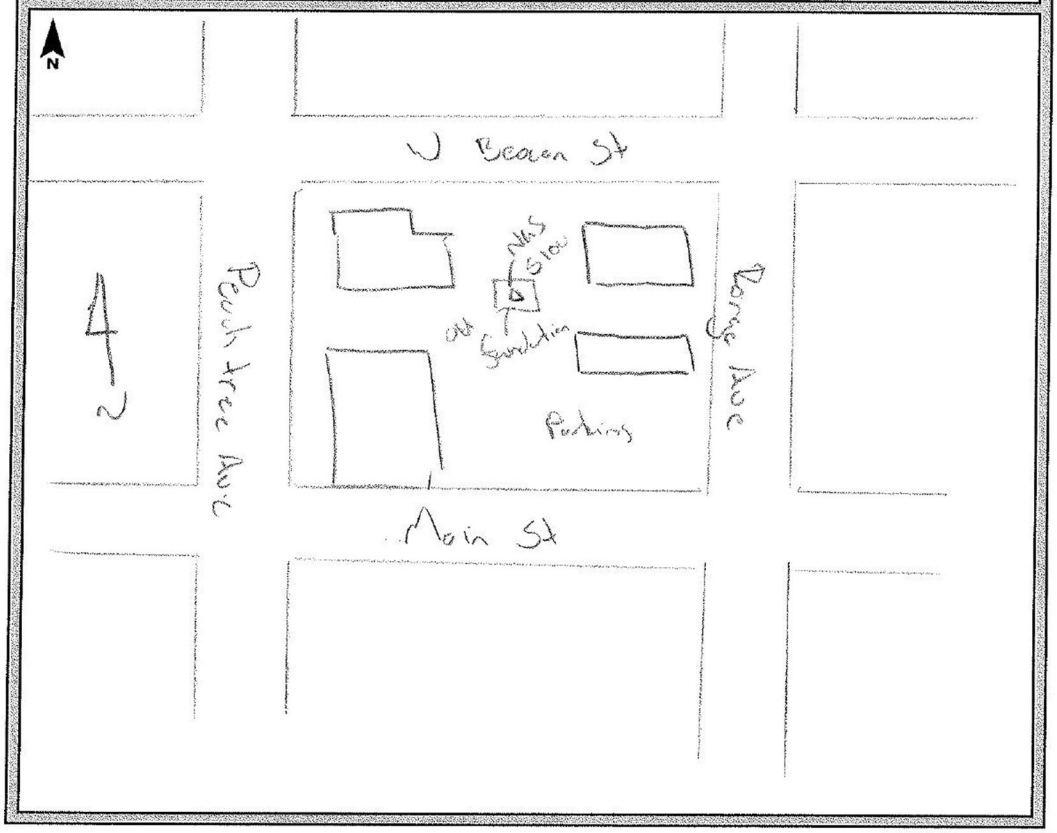

60_31-AA7110-BM-3W-12MAR2013

NGS CONTROL SITE CALIBRATION POINT: D 223 (CO0796)

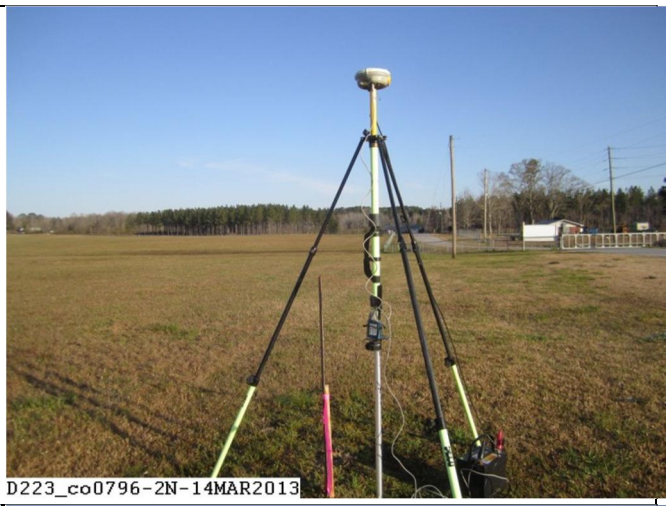
GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	Project Number: 07305A	Survey Date: 3/14/13
Station Name:	S100	Operator Name: SN/AC	
Latitude:	32°46'17.02959"N	Julian Day:	Session No.
Longitude:	89°06'42.82297"W	Start Time:	End Time:
Ellip. Height:	-27.417	Data File Name:	07305ASN03K13.job
Type of Mark:	NGS Mon	Type of Reciever:	TRIMBLE R8-2
Stamping on Mark:	S 100	Type of Antenna:	Internal
Weather Condition:	SUNNY	Antenna Height:	2.0m to bottom of antenna mount



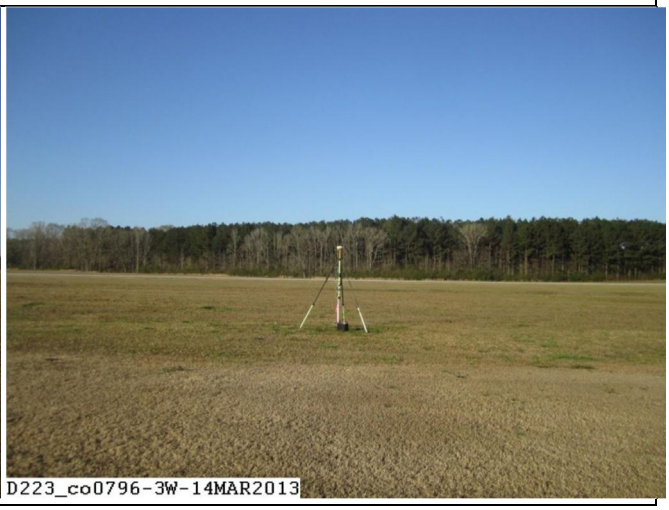

D223_co0796-1N-14MAR2013


D223_co0796-2N-14MAR2013


D223_co0796-3E-14MAR2013


D223_co0796-3N-14MAR2013


D223_co0796-3S-14MAR2013

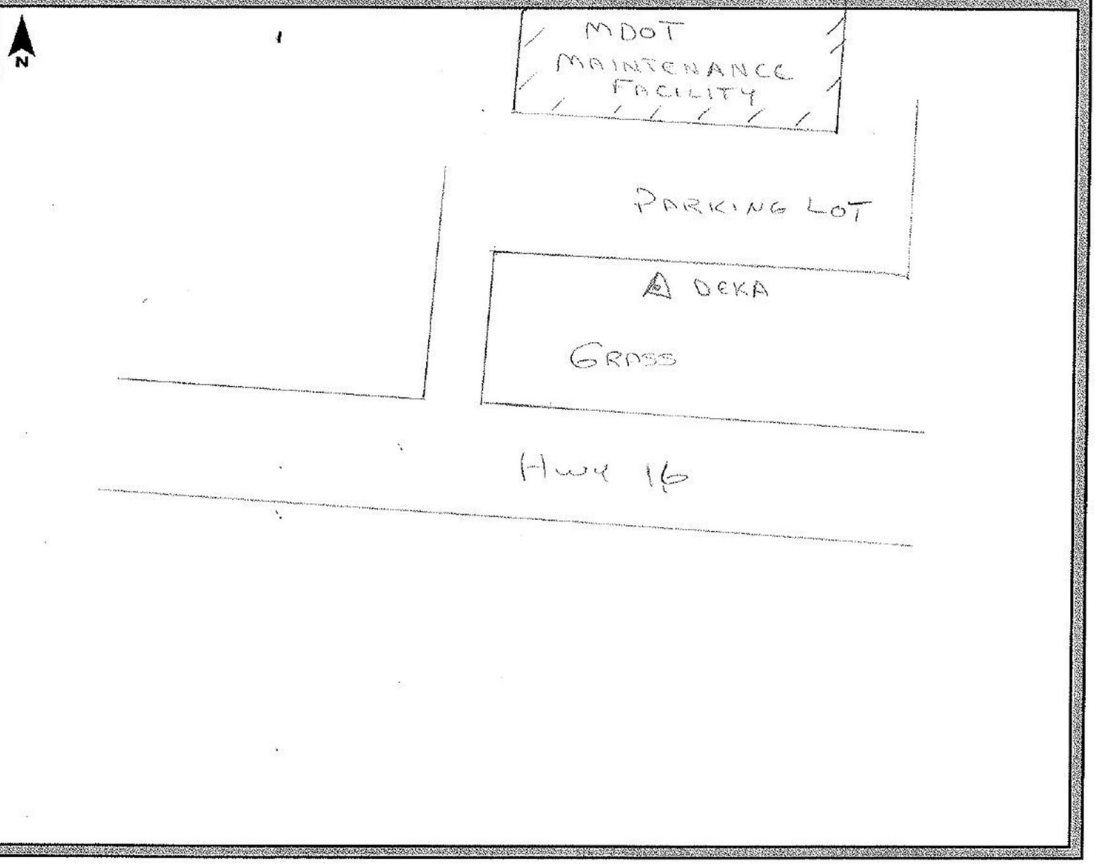

D223_co0796-3W-14MAR2013

NGS CONTROL SITE CALIBRATION POINT: DEKA (DN3963)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE	Project Number:	0730.54 Survey Date: 3-12
Station Name:	DEKA	Operator Name:	CT, RC
Latitude:	32-46-26.4	Julian Day:	71 Session No. 1
Longitude:	88-38-00.7	Start Time:	8:45 End Time:
Ellip. Height:	-23.9	Data File Name:	17150710.DAT
Type of Mark:	CONC MON W/BRASS	Type of Reciever:	TRIMBLE R8
Stamping on Mark:	DEKA 2008 DISK	Type of Antenna:	INTERNAL
Weather Condition:	45° / CLR	Antenna Height:	2.0 M to bottom of antenna mount



DEKA-DN3963-HTMOD-1-12MAR2013


DEKA-DN3963-HTMOD-2-12MAR2013


DEKA-DN3963-HTMOD-3E-12MAR2013


DEKA-DN3963-HTMOD-3N-12MAR2013


DEKA-DN3963-HTMOD-3S-12MAR2013

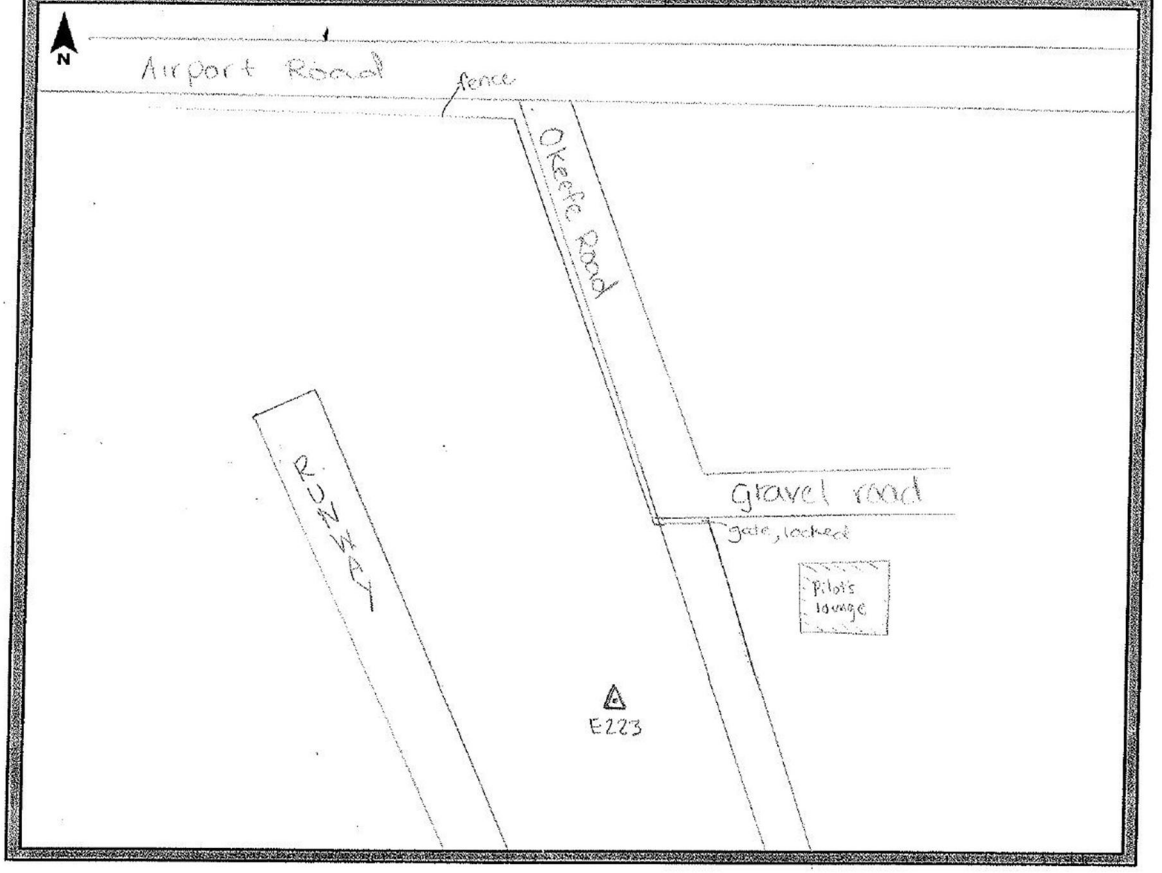

DEKA-DN3963-HTMOD-3W-12MAR2013

NGS CONTROL SITE CALIBRATION POINT: E 223 (CO0797)

GPS Observation Log Sheet

WOOLPERT

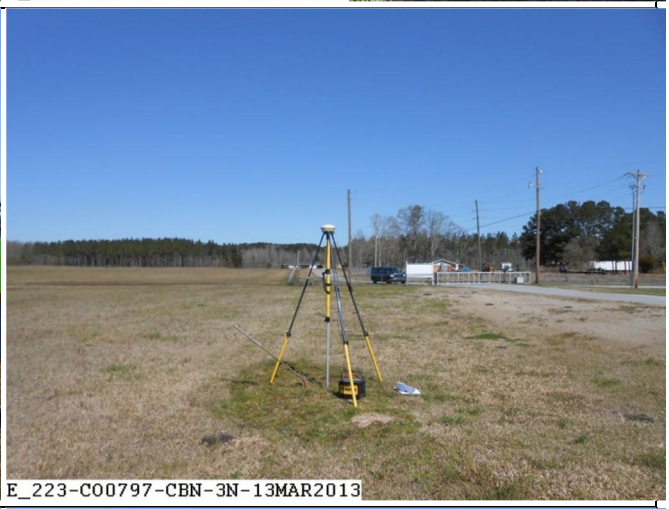
Project Name:	Lauderdale	Project Number: 073054	Survey Date: 03/13/13
Station Name:	E 223	Operator Name:	RC + CT
Latitude:	32° 18' 50.10"	Julian Day: 72	Session No. 2
Longitude:	89° 08' 11.8"	Start Time: 1112	End Time: 1345
Ellip. Height:	80.8 m	Data File Name:	04650723
Type of Mark:	Conc Mon w/ Brass disk	Type of Reciever:	R8
Stamping on Mark:	E 223 1968	Type of Antenna:	Internal
Weather Condition:	45°F, clear, breezy	Antenna Height: 2.0 m	to bottom of antenna mount

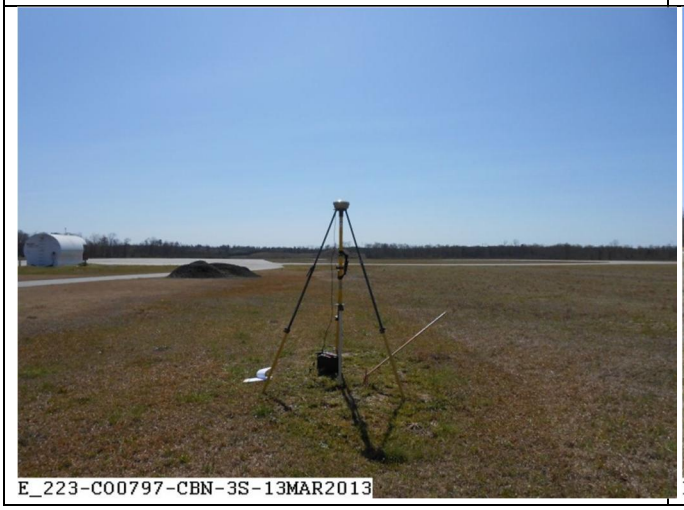


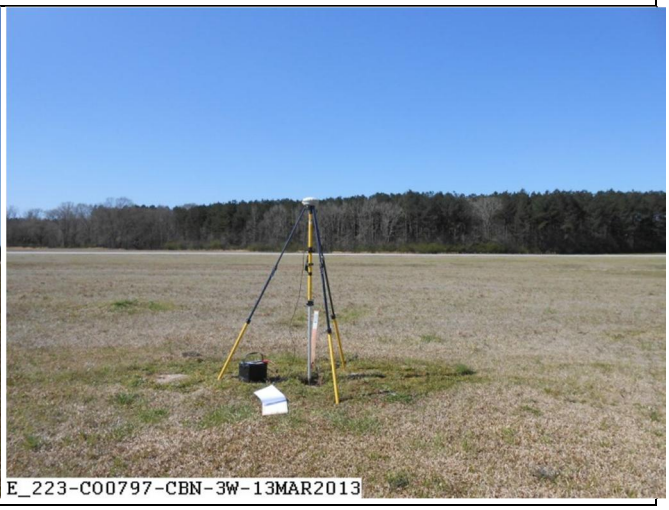
E_223-C00797-CBN-1-13MAR2013


E_223-C00797-CBN-2-13MAR2013


E_223-C00797-CBN-3E-13MAR2013


E_223-C00797-CBN-3N-13MAR2013


E_223-C00797-CBN-3S-13MAR2013

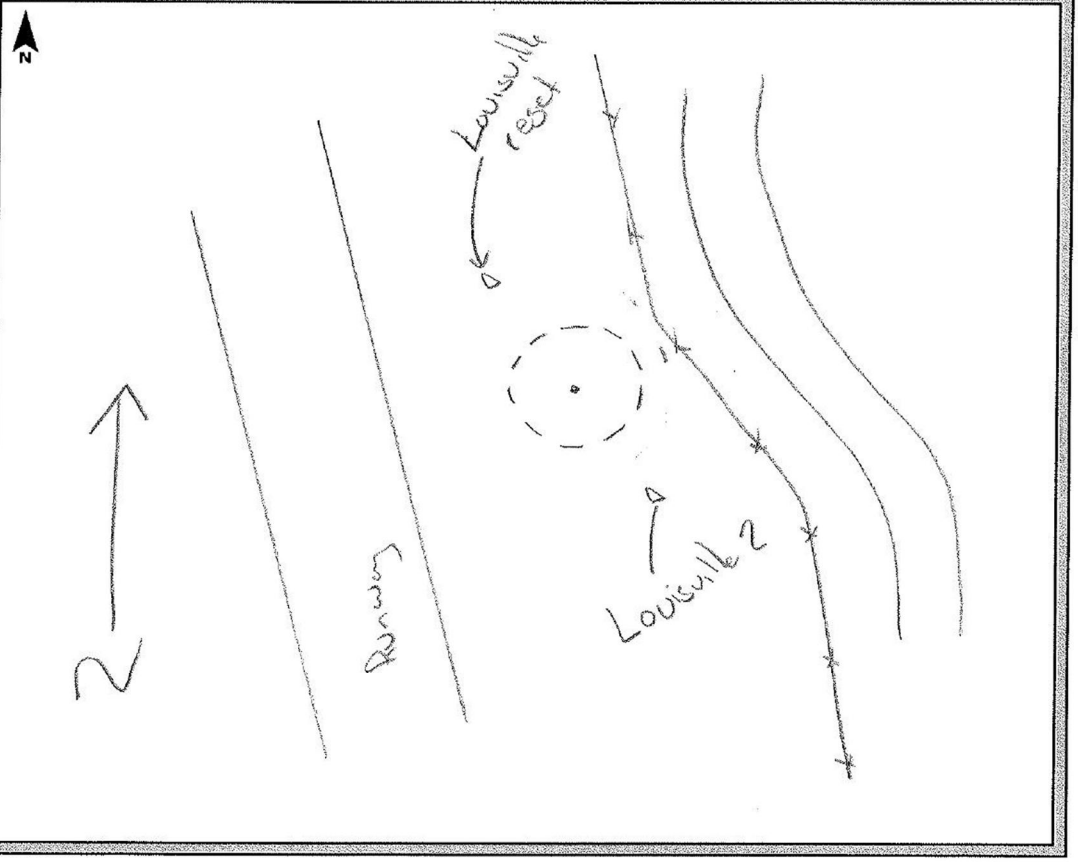

E_223-C00797-CBN-3W-13MAR2013

NGS CONTROL SITE CALIBRATION POINT: F 353 (CO1129)

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	Project Number: 073054	Survey Date: 3/16/13
Station Name:	LOUISVILLE 2	Operator Name:	SVIAC
Latitude:	33° 08' 35.04279 N	Julian Day:	Session No.
Longitude:	89° 03' 40.66535 W	Start Time:	End Time:
Ellip. Height:	146.484	Data File Name:	073054SN031613
Type of Mark:	NGS MON	Type of Reciever:	Trimble R8-2
Stamping on Mark:	LOUISVILLE 2	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount




F 353-CO1129-1-17MAR2013


F 353-CO1129-2-17MAR2013

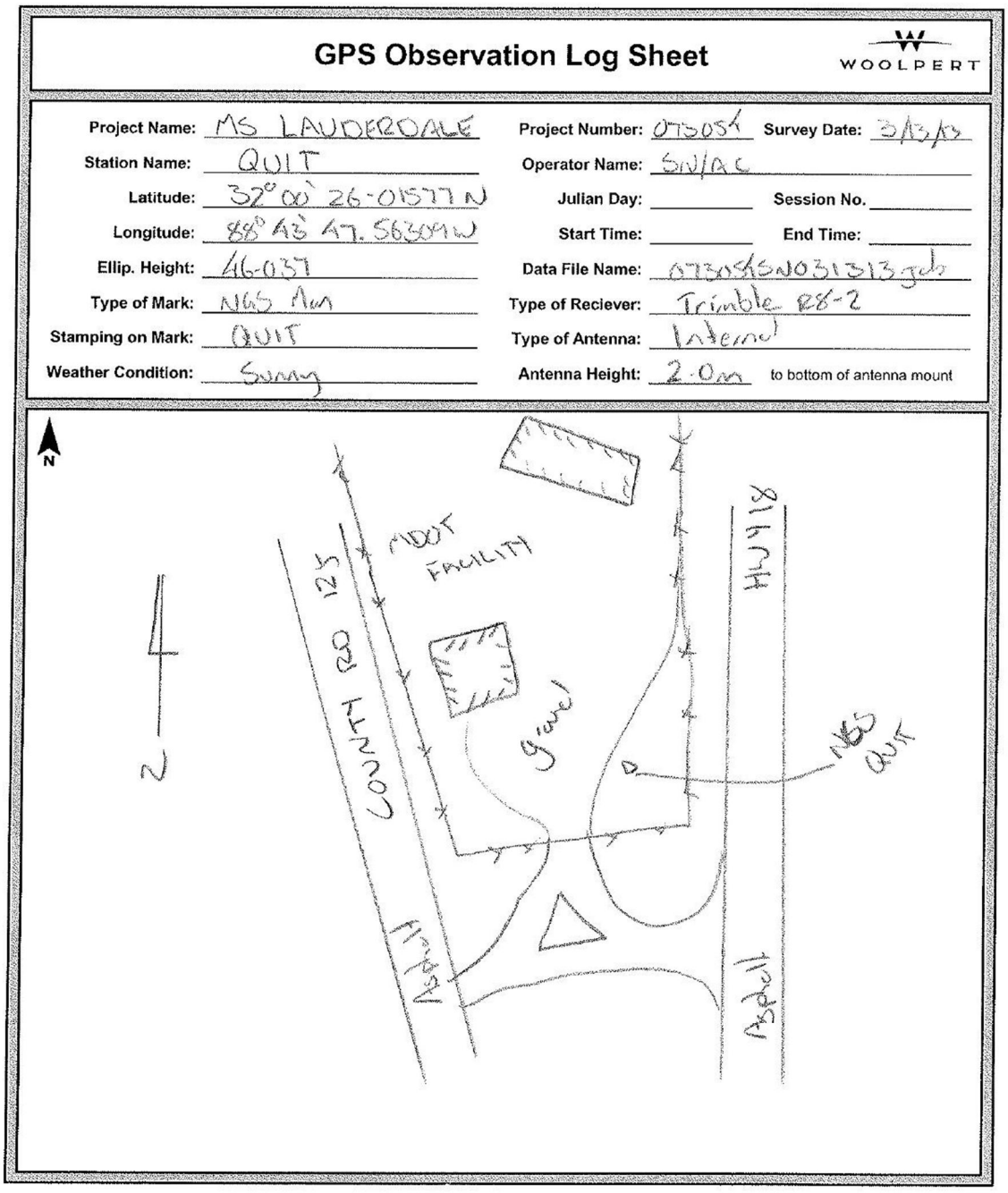

F 353-CO1129-3E-17MAR2013


F 353-CO1129-3N-17MAR2013


F 353-CO1129-3S-17MAR2013


F 353-CO1129-3W-17MAR2013

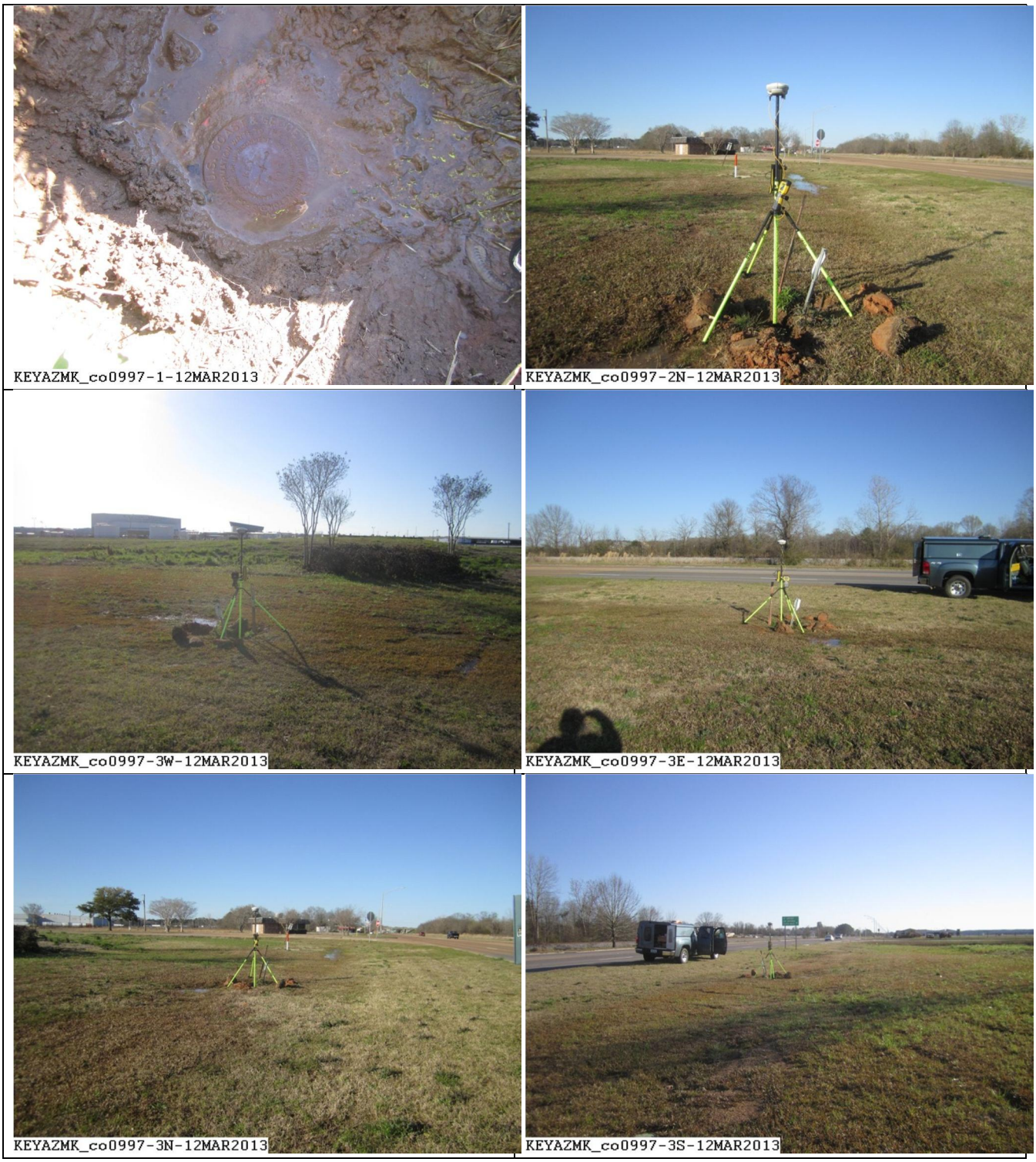
NGS CONTROL SITE CALIBRATION POINT: KEY AZ MK (COO997)



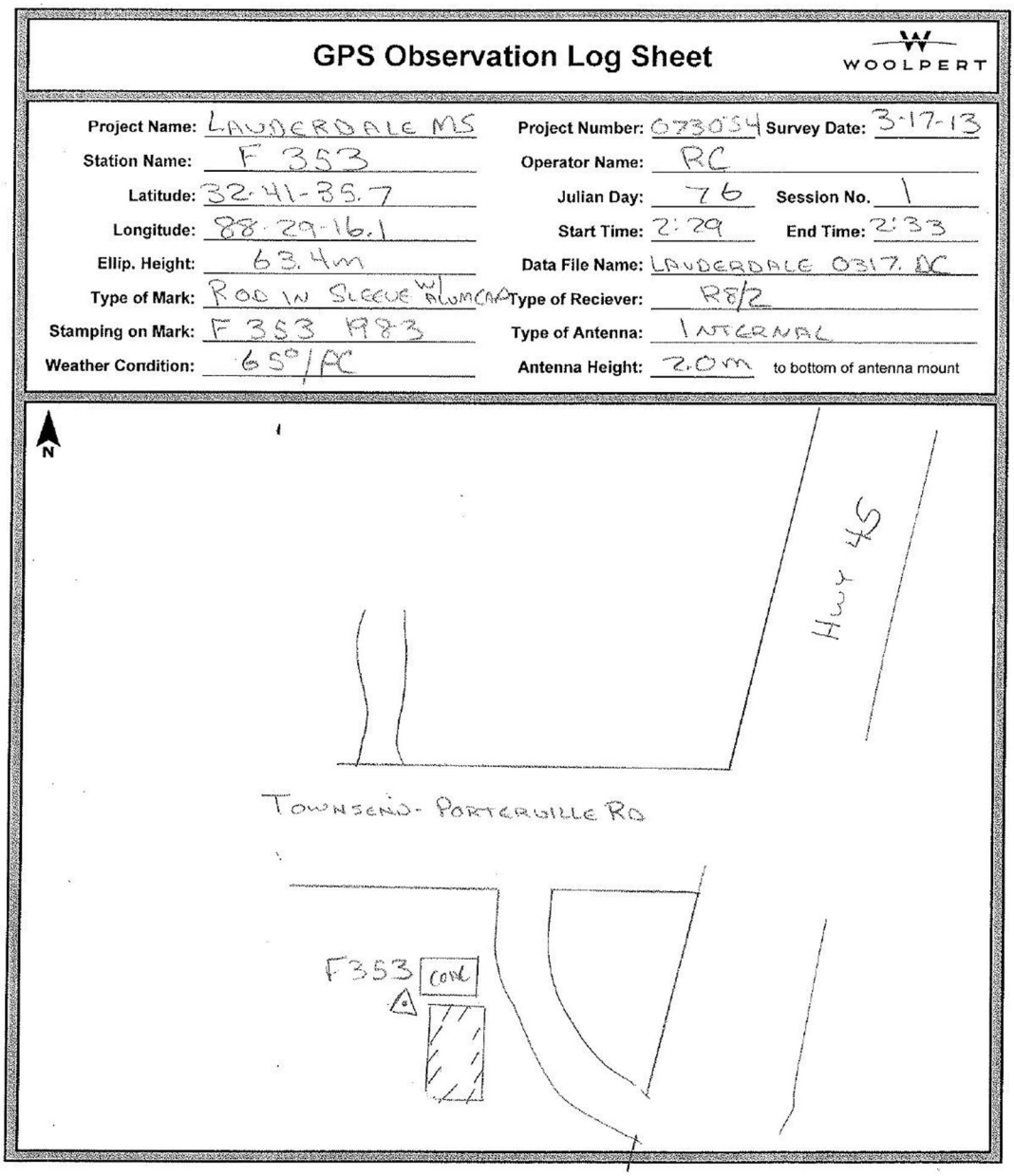
GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	Project Number: 075054	Survey Date: 3/13/13
Station Name:	QUIT	Operator Name: SN/AC	
Latitude:	32° 00' 26.01577 N	Julian Day:	Session No.
Longitude:	88° 43' 47.56309 W	Start Time:	End Time:
Ellip. Height:	46.037	Data File Name:	07305SN031313.gdb
Type of Mark:	NGS Aluminum	Type of Reciever:	Trimble R8-2
Stamping on Mark:	QUIT	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount


KEYAZMK_co0997-1-12MAR2013
KEYAZMK_co0997-2N-12MAR2013
KEYAZMK_co0997-3W-12MAR2013
KEYAZMK_co0997-3E-12MAR2013
KEYAZMK_co0997-3N-12MAR2013
KEYAZMK_co0997-3S-12MAR2013

NGS CONTROL SITE CALIBRATION POINT: LOUISVILLE 2 (DJ1300)



GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE MS	Project Number: 073054 Survey Date:	3-17-13
Station Name:	F 353	Operator Name:	RC
Latitude:	32-41-35.7	Julian Day: 76 Session No.	1
Longitude:	88-29-16.1	Start Time: 2:29 End Time:	2:33
Ellip. Height:	63.4m	Data File Name:	LAUDERDALE 0317.RC
Type of Mark:	ROD IN SLEEVE W/ ALUMCAP	Type of Reciever:	R8/2
Stamping on Mark:	F 353 1983	Type of Antenna:	INTERNAL
Weather Condition:	65°/AC	Antenna Height: 2.0m	to bottom of antenna mount

N

HWY 45

TOWNSEND-PORTERVILLE RD

F353 CONC

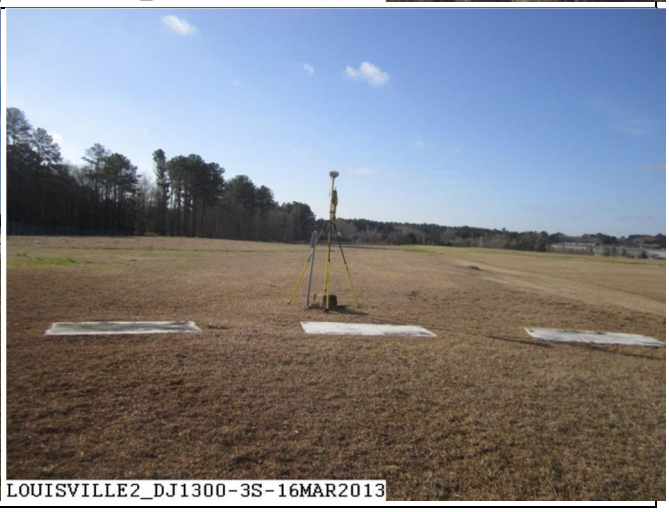
LOUISVILLE2_DJ1300-1E-16MAR2013


LOUISVILLE2_DJ1300-2N-16MAR2013


LOUISVILLE_DJ1300-3W-16MAR2013


LOUISVILLE2_DJ1300-3E-16MAR2013


LOUISVILLE2_DJ1300-3N-16MAR2013

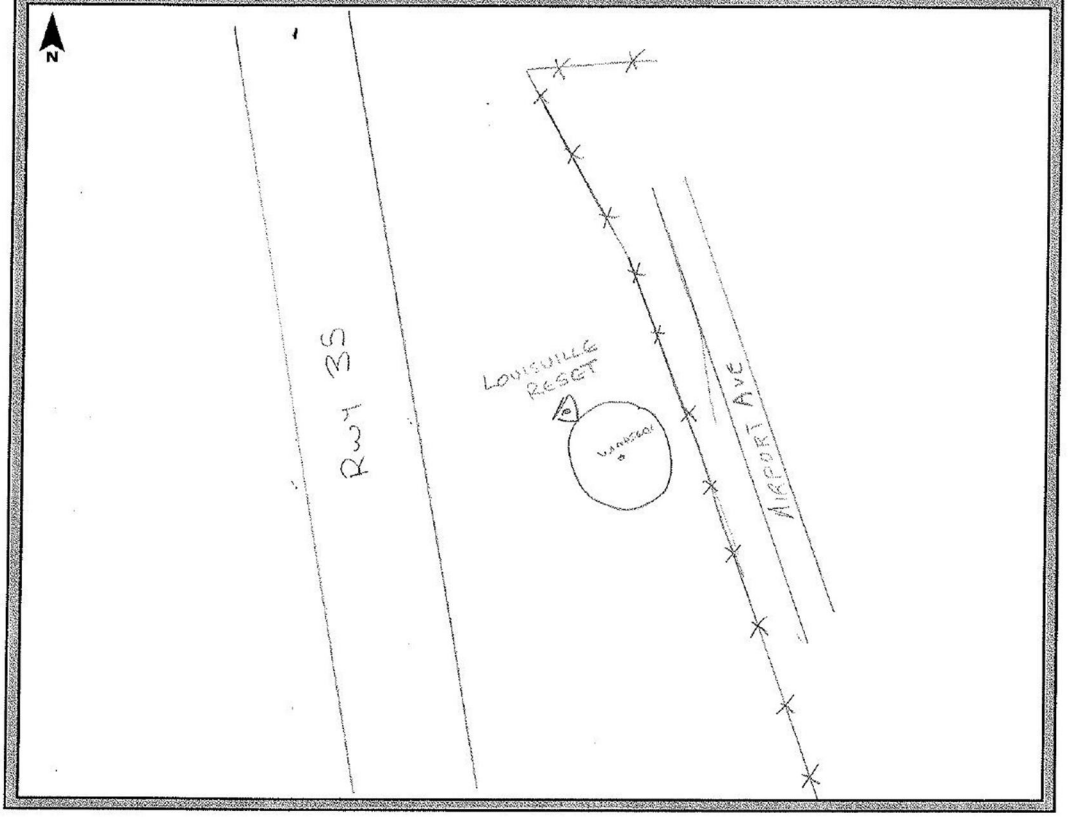

LOUISVILLE2_DJ1300-3S-16MAR2013

NGS CONTROL SITE CALIBRATION POINT: LOUISVILLE RESET (DJ1298)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDCRDALC	Project Number:	073054	Survey Date:	3-12-13
Station Name:	LOUISVILLE RESET	Operator Name:	RC, CT		
Latitude:	33-08-35.8	Julian Day:	71	Session No.	1
Longitude:	89-03-41.4	Start Time:	1:53	End Time:	
Ellip. Height:	140.6m	Data File Name:	87340710.DAT		
Type of Mark:	CONCMON w/VSCE65CAP	Type of Reciever:	R8		
Stamping on Mark:	LOUISVILLE 1958 1964	Type of Antenna:	INTERNAL		
Weather Condition:	60°/CLR	Antenna Height:	2.0m	to bottom of antenna mount	



LOUISVILLE_RESET-DJ1298-FBN-1-12MAR2013


LOUISVILLE_RESET-DJ1298-FBN-2-12MAR2013

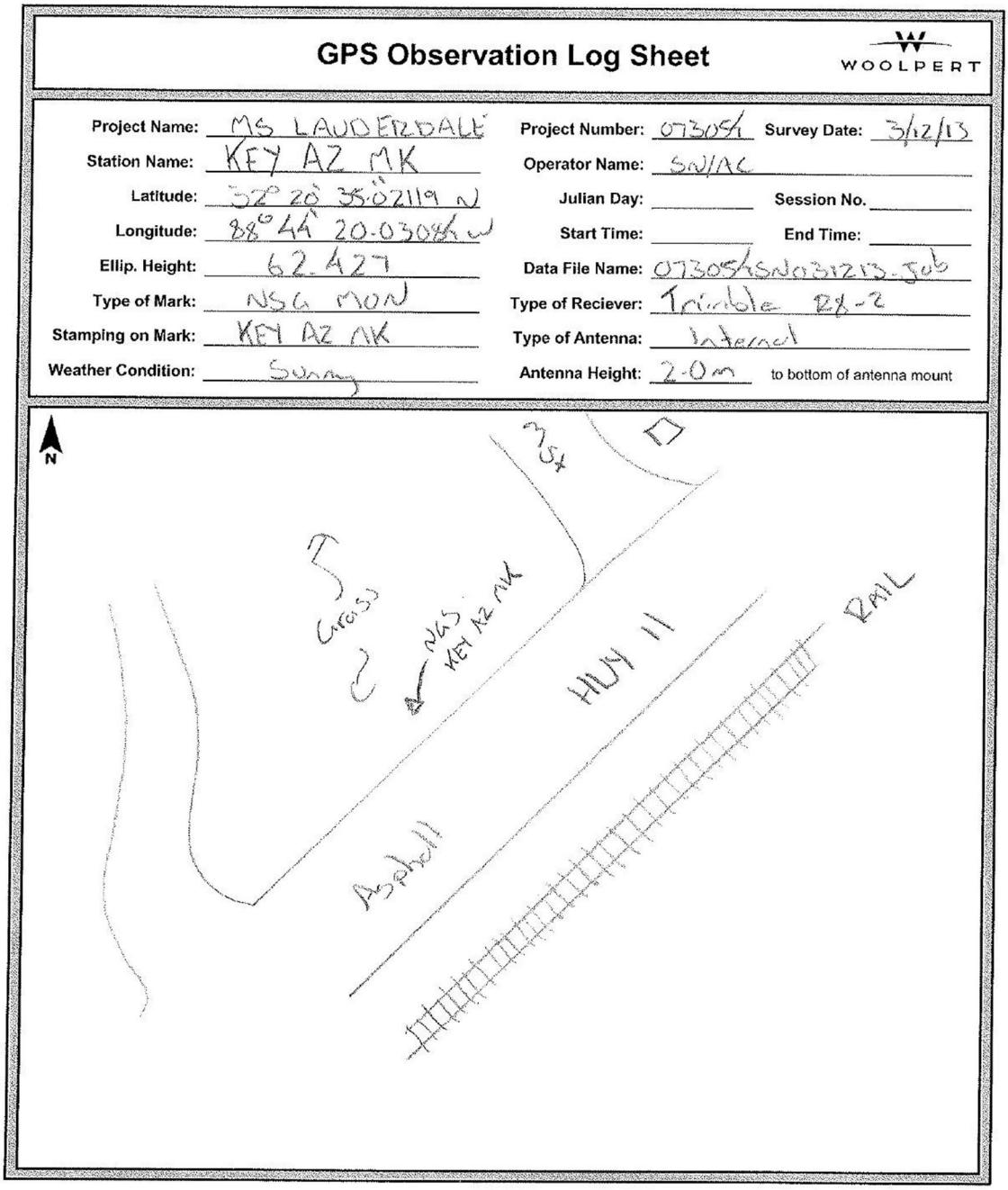

LOUISVILLE_RESET-DJ1298-FBN-3E-12MAR2013


LOUISVILLE_RESET-DJ1298-FBN-3N-12MAR2013


LOUISVILLE_RESET-DJ1298-FBN-3S-12MAR2013


LOUISVILLE_RESET-DJ1298-FBN-3W-12MAR2013

NGS CONTROL SITE CALIBRATION POINT: QUIT (DN3999)



GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	Project Number:	07305 Survey Date: 3/12/13
Station Name:	KEY AZ MK	Operator Name:	SN/AC
Latitude:	32° 20' 35.02119" N	Julian Day:	Session No.
Longitude:	88° 44' 20.03086" W	Start Time:	End Time:
Ellip. Height:	62.427	Data File Name:	07305\SN03212.job
Type of Mark:	NGS MON	Type of Reciever:	Trimble R8-2
Stamping on Mark:	KEY AZ MK	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount

QUIT_DN3999-1-13MAR2013


QUIT_DN3999-1N-13MAR2013


QUIT_DN3999-3W-13MAR2013


QUIT_DN3999-3E-13MAR2013


QUIT_DN3999-3N-13MAR2013

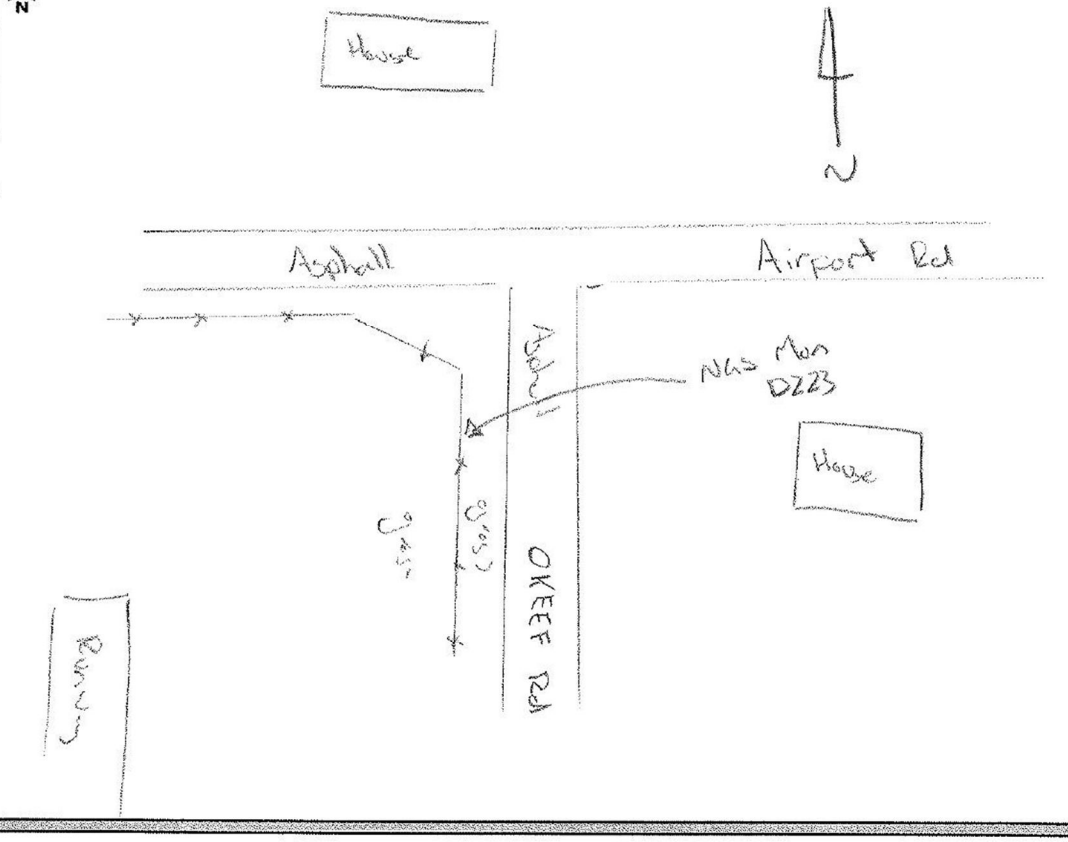

QUIT_DN3999-3S-13MAR2013

NGS CONTROL SITE CALIBRATION POINT: S 100 (COO718)

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	Project Number:	073054 Survey Date: 3/14/13
Station Name:	D223	Operator Name:	SA/AC
Latitude:	32°18' 58" N	Julian Day:	Session No.
Longitude:	89° 08' 15" W	Start Time:	End Time:
Ellip. Height:	-	Data File Name:	073054SNA031413.job
Type of Mark:	NGS - Disk	Type of Reciever:	Trimble R8-2
Stamping on Mark:	D 223	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount



S100_C00718-1E-14MAR2013


S100_C00718-2N-14MAR2013

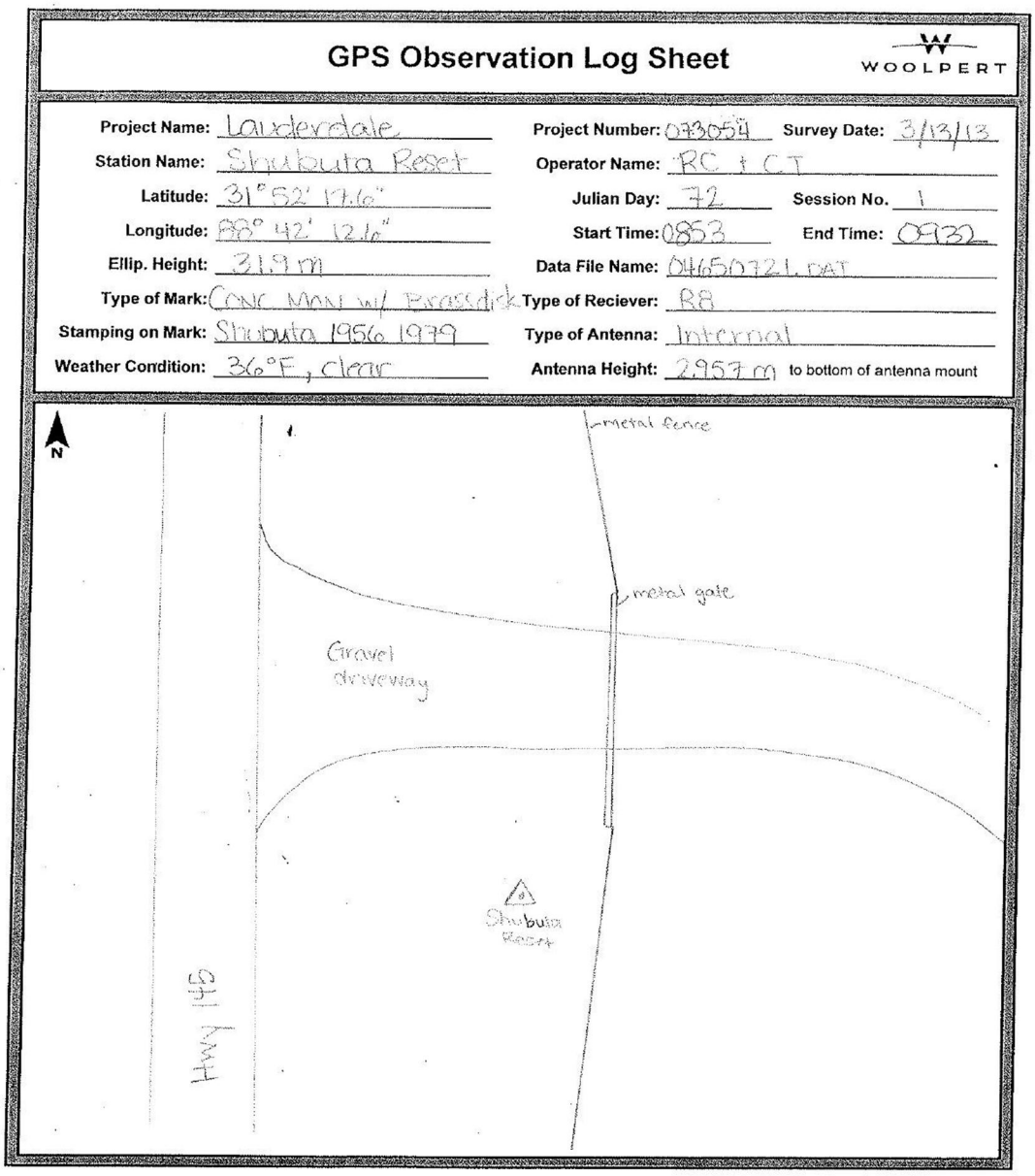

S100_C00718-3E-14MAR2013


S100_C00718-3N-14MAR2013


S100_C00718-3S-14MAR2013


S100_C00718-3W-14MAR2013

NGS CONTROL SITE CALIBRATION POINT: SHUBUTA RESET (BV1123)



GPS Observation Log Sheet

WOOLPERT

Project Name: Lauderdale
Project Number: 073054
Survey Date: 3/13/13
Station Name: Shubuta Reset
Operator Name: RC & CT
Latitude: 31° 52' 17.16"
Julian Day: 72
Session No. 1
Longitude: 88° 42' 12.16"
Start Time: 0853
End Time: 0932
Ellip. Height: 31.9 m
Data File Name: 04650721.DAT
Type of Mark: CONC MON w/ Brasscap
Type of Reciever: R8
Stamping on Mark: Shubuta 1956 1979
Type of Antenna: Internal
Weather Condition: 36°F, clear
Antenna Height: 2.957 m to bottom of antenna mount

N

metal fence

metal gate

Gravel driveway

Shubuta Reset

HWY 45


SHUBUTA_RESET-BV1123-CBN-1-13MAR2013


SHUBUTA_RESET-BV1123-CBN-2-13MAR2013

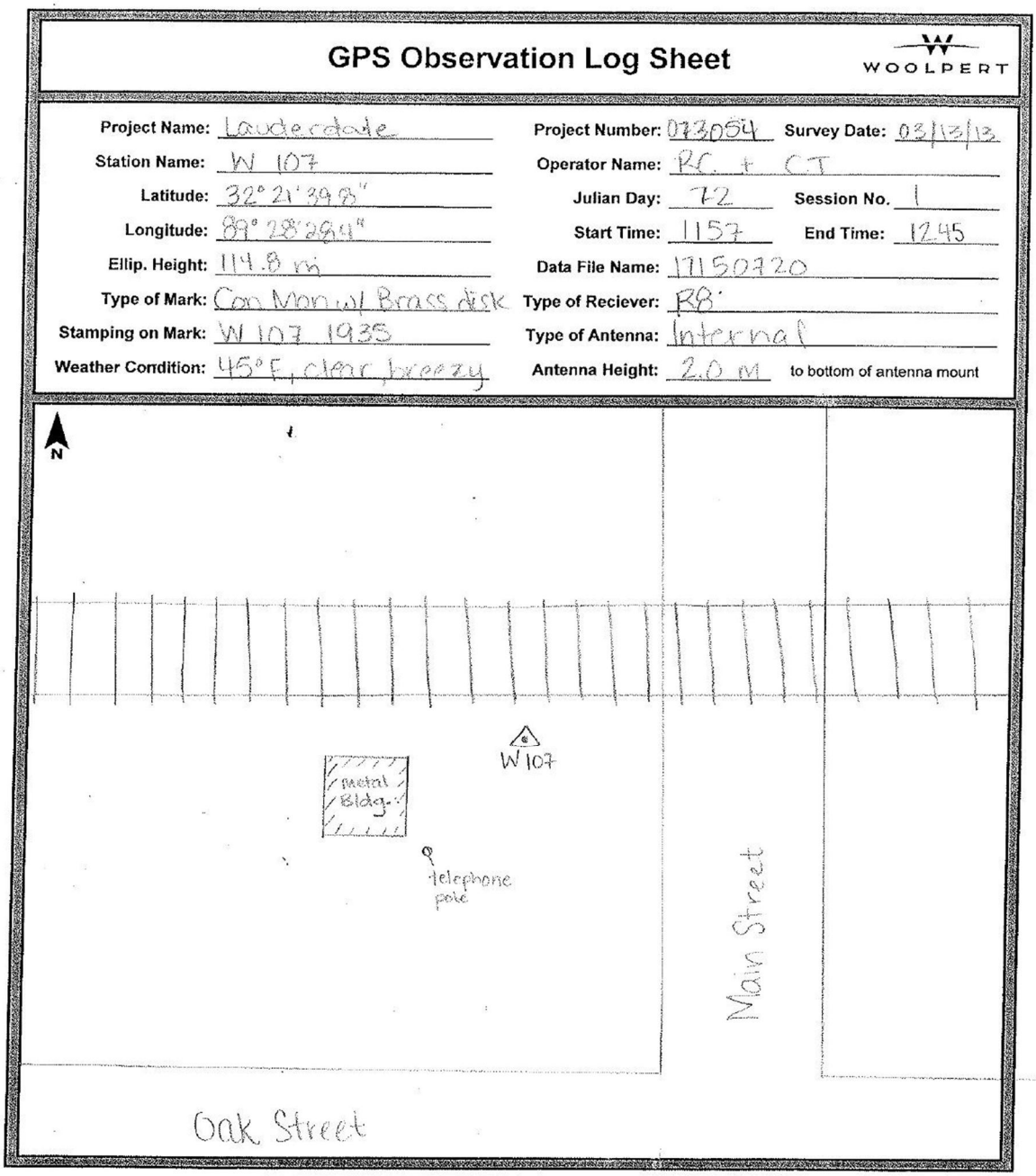
SHUBUTA_RESET-BV1123-CBN-3E-13MAR2013


SHUBUTA_RESET-BV1123-CBN-3N-13MAR2013

SHUBUTA_RESET-BV1123-CBN-3S-13MAR2013


SHUBUTA_RESET-BV1123-CBN-3W-13MAR2013

NGS CONTROL SITE CALIBRATION POINT: W 107 (COO837)



GPS Observation Log Sheet

WOOLPERT

Project Name: Lauderdale
Project Number: 073054
Survey Date: 03/13/13
Station Name: W 107
Operator Name: RC + CT
Latitude: 32° 21' 39.8"
Julian Day: 72
Session No. 1
Longitude: 89° 28' 29.4"
Start Time: 1157
End Time: 1245
Ellip. Height: 114.8 m
Data File Name: 17150720
Type of Mark: Con Mon w/ Brass disk
Type of Reciever: R8
Stamping on Mark: W 107 1935
Type of Antenna: Internal
Weather Condition: 45° F, clear breezy
Antenna Height: 2.0 m to bottom of antenna mount

W_107-C00837-CBN-1-13MAR2013


W_107-C00837-CBN-2-13MAR2013


W_107-C00837-CBN-3E-13MAR2013


W_107-C00837-CBN-3N-13MAR2013


W_107-C00837-CBN-3S-13MAR2013


W_107-C00837-CBN-3W-13MAR2013

NGS CONTROL SITE CALIBRATION POINT: WILLI RM 1 (DJ2171)

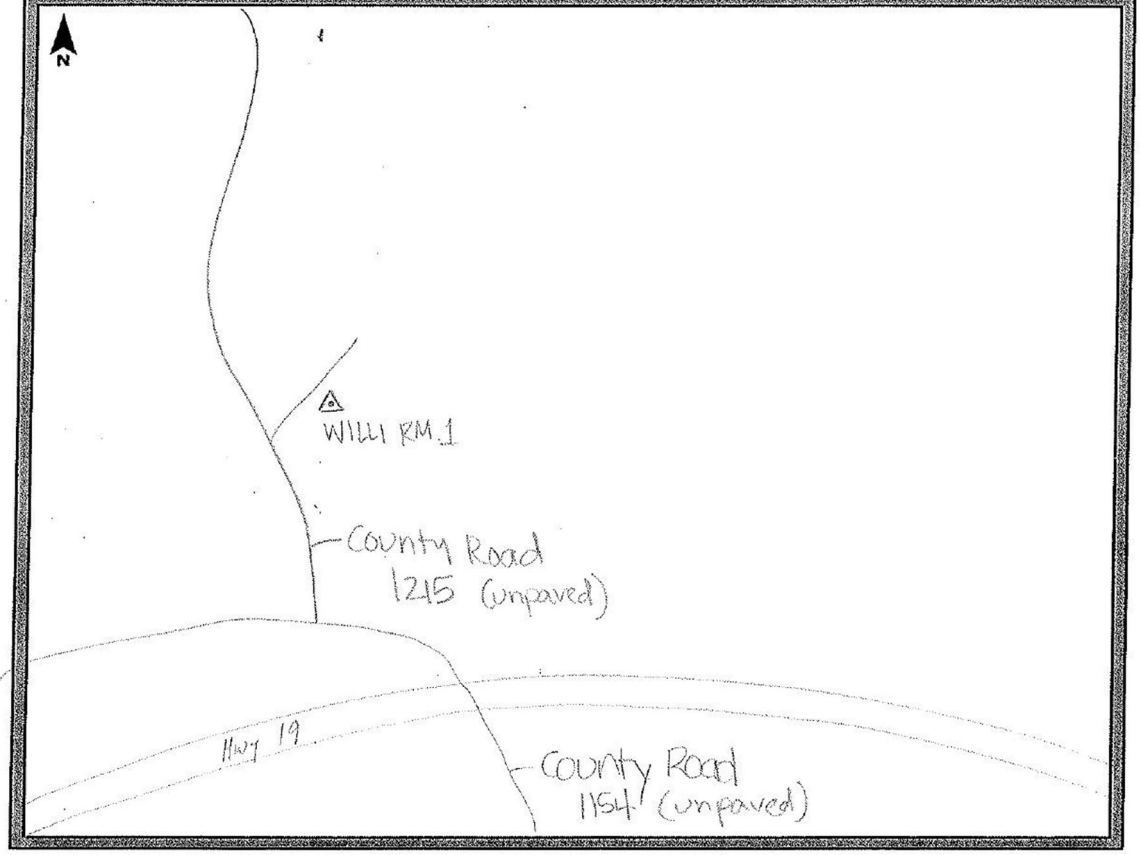
ROAD CR 1215 BM PID = DJ2171

6562
+3.14
9702

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number: 073057	Survey Date: 03/14/13
Station Name:	WILLI ~~NO1~~ RM 1	Operator Name:	RC + CT
Latitude:	33° 02' 12.7"	Julian Day: 73	Session No. 2
Longitude:	89° 31' 55.4"	Start Time: 1046	End Time: 1370
Ellip. Height:	134.9m	Data File Name:	87340731
Type of Mark:	cac	Type of Reciever:	R8
Stamping on Mark:	WILLI No 1 1958	Type of Antenna:	Internal
Weather Condition:	38°F, sunny	Antenna Height:	2.957m to bottom of antenna mount



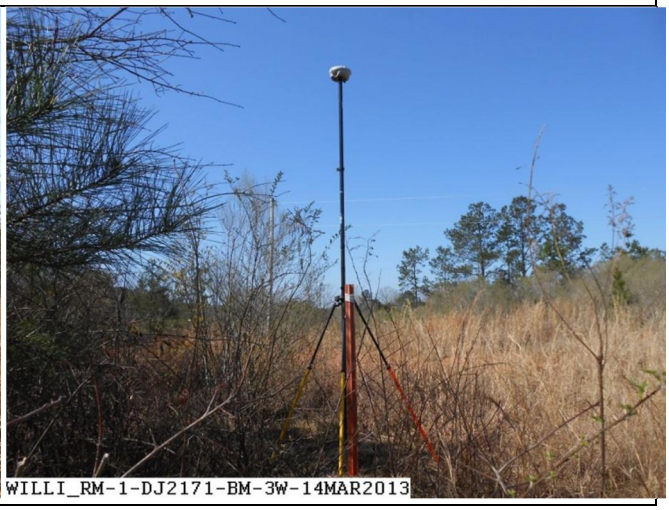
WILLI_RM-1-DJ2171-BM-1-14MAR2013


WILLI_RM-1-DJ2171-BM-2-14MAR2013


WILLI_RM-1-DJ2171-BM-3E-14MAR2013


WILLI_RM-1-DJ2171-BM-3N-14MAR2013


WILLI_RM-1-DJ2171-BM-3S-14MAR2013

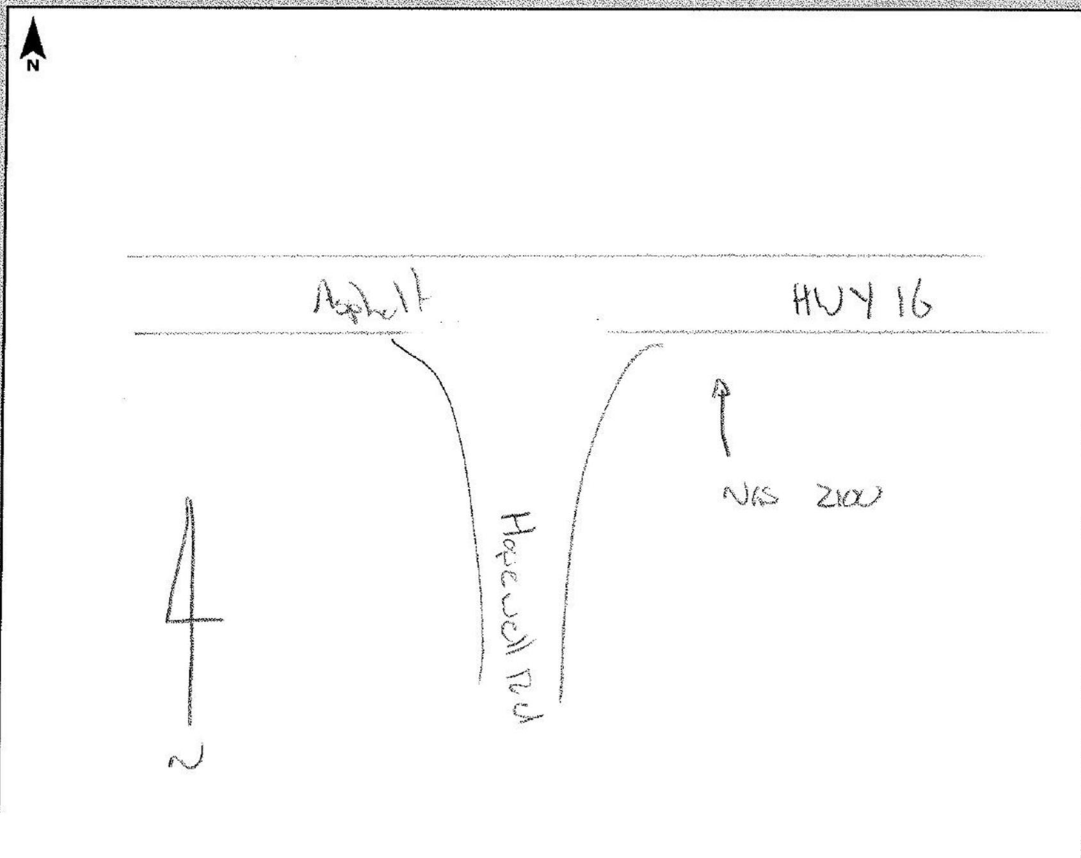

WILLI_RM-1-DJ2171-BM-3W-14MAR2013

NGS CONTROL SITE CALIBRATION POINT: Z 100 (CO0657)

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS LAUDERDALE	**Project Number:**	073054
Survey Date:	3/14/13		
Station Name:	Z100	**Operator Name:**	SN/AC
Latitude:	32°45' 03.78892"N	**Julian Day:**	
Session No.			
Longitude:	88°53' 19.93575"W	**Start Time:**	
End Time:			
Ellip. Height:	135.633	**Data File Name:**	073054 S N 03 K13 .Sch
Type of Mark:	NGS Mon	**Type of Reciever:**	Trimble R8-2
Stamping on Mark:	Z 100	**Type of Antenna:**	Internal
Weather Condition:	Sunny	**Antenna Height:**	2.0 to bottom of antenna mount



Z100_C00657-1N-14MAR2013


Z100_C00657-2N-14MAR2013

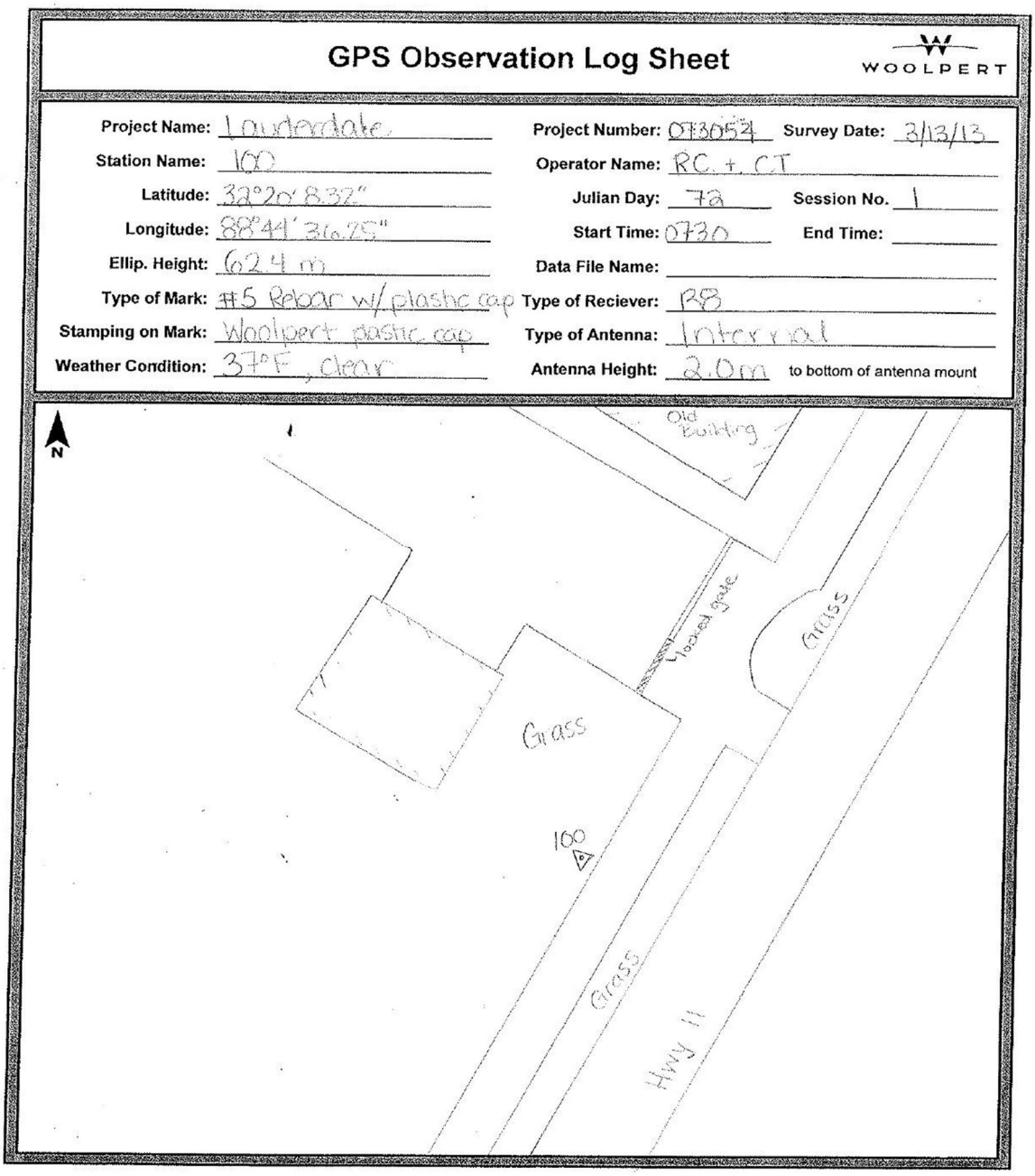

Z100_C00657-3E-14MAR2013


Z100_C00657-3N-14MAR2014


Z100_C00657-3S-14MAR2013


Z100_C00657-3W-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 100)



GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number:	073052
Survey Date:	3/13/13		
Station Name:	100	Operator Name:	RC + CT
Latitude:	32°20'8.32"	Julian Day:	72
Session No.	1		
Longitude:	88°41'36.75"	Start Time:	0730
End Time:			
Ellip. Height:	62.4 m	Data File Name:	
Type of Mark:	#5 Rebar w/ plastic cap	Type of Reciever:	R8
Stamping on Mark:	Woolpert plastic cap	Type of Antenna:	Internal
Weather Condition:	37°F, clear	Antenna Height:	2.0m to bottom of antenna mount


100-1-12MAR2013
100-2-12MAR2013
100-3NE-12MAR2013
100-3NW-12MAR2013
100-3SE-12MAR2013
100-3SW-12MAR2013

TEMPORARY SURVEY MARKS (TSM, 101)

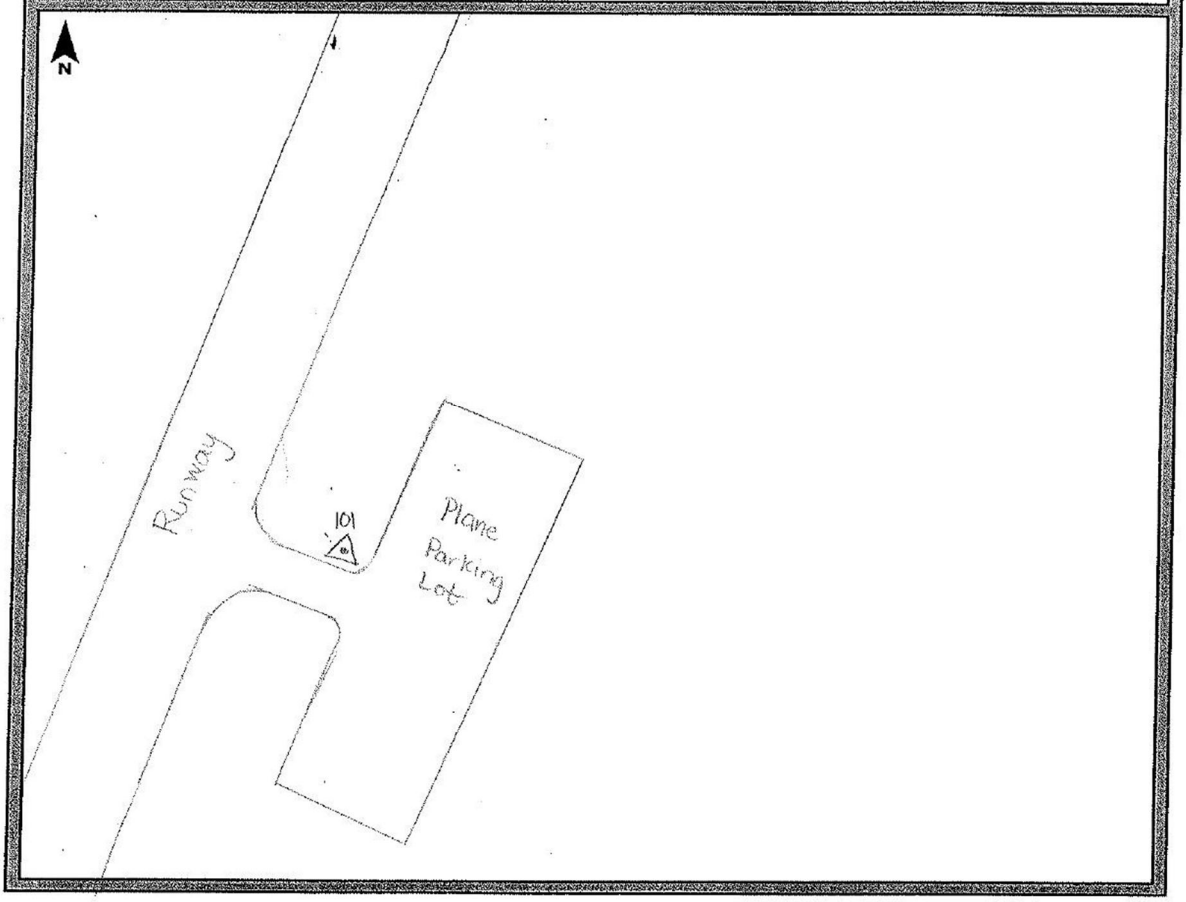
TSM
101

pics 194 = 1 200W
195 = 2
197 = N
198 = E
199 = S

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	**Project Number:** 073054	**Survey Date:** 3/14/13
Station Name:	101	**Operator Name:** RC + CT	
Latitude:	32° 48' 02.6"	**Julian Day:** 73	**Session No.** 1
Longitude:	89° 07' 30.6"	**Start Time:** 0835	**End Time:**
Ellip. Height:	109.3 m	**Data File Name:** CM60731	
Type of Mark:	Rebar w/ plastic cap	**Type of Reciever:** R82	
Stamping on Mark:	Woolpert	**Type of Antenna:** Internal	
Weather Condition:	33° F, Sunny	**Antenna Height:** 2.0 m	to bottom of antenna mount



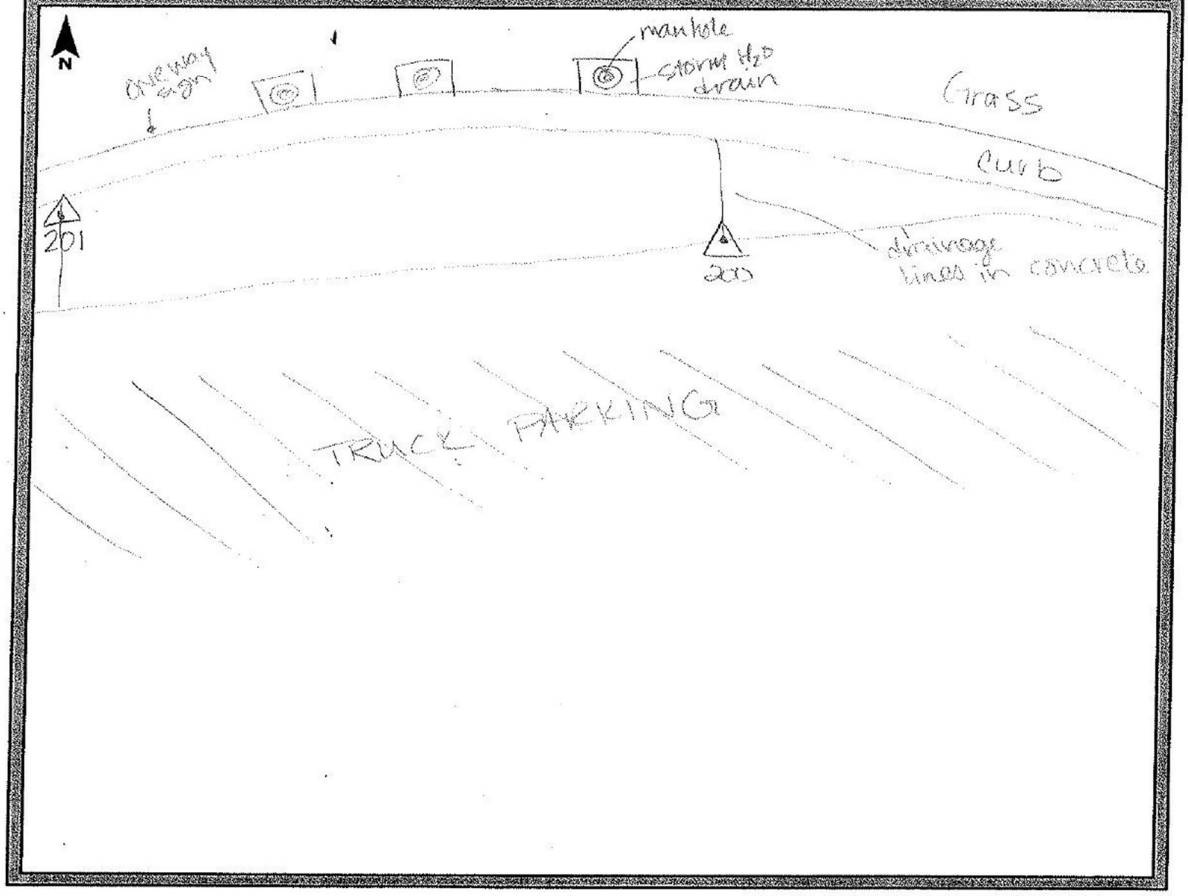

101-TSM-1-14MAR2013
101-TSM-2-14MAR2013
101-TSM-3E-14MAR2013
101-TSM-3N-14MAR2013
101-TSM-3S-14MAR2013
101-TSM-3W-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 200)

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number: 073057	Survey Date: 3/15/13
Station Name:	200 / 201	Operator Name: RC + CT	
Latitude:		Julian Day: 74	Session No.
Longitude:		Start Time:	End Time:
Ellip. Height:		Data File Name:	
Type of Mark:		Type of Reciever:	
Stamping on Mark:		Type of Antenna:	
Weather Condition:	38°F, clear	Antenna Height: 2.0m	to bottom of antenna mount



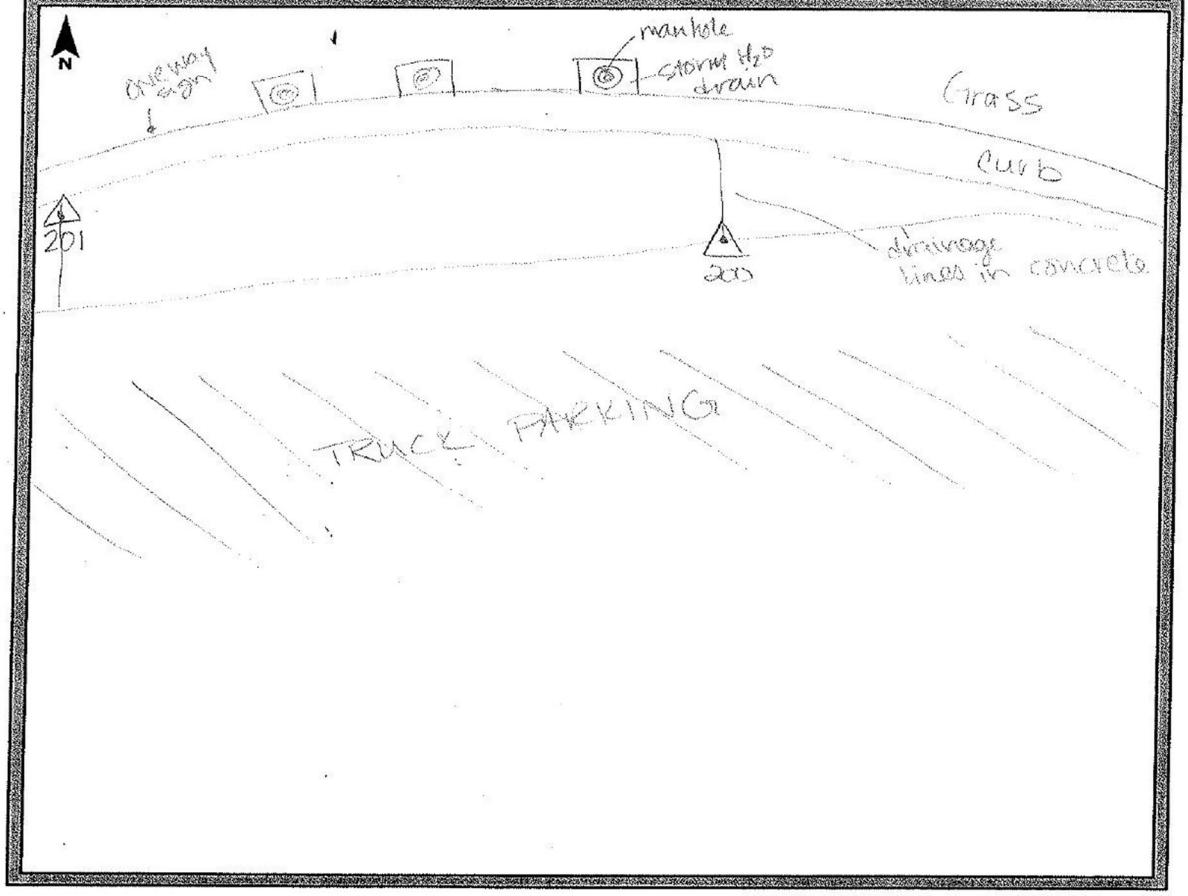

200-1-12MAR2013
200-2-12MAR2013
200
200-3NE-12MAR2013
200-3NW-12MAR2013
200-3SE-12MAR2013
200-3SW-12MAR2013

TEMPORARY SURVEY MARKS (TSM, 201)

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number:	073054 Survey Date: 3/15/13
Station Name:	200 / 201	Operator Name:	RC + CT
Latitude:		Julian Day:	74 Session No.
Longitude:		Start Time:	End Time:
Ellip. Height:		Data File Name:	
Type of Mark:		Type of Reciever:	
Stamping on Mark:		Type of Antenna:	
Weather Condition:	38°F, clear	Antenna Height:	2.0m to bottom of antenna mount



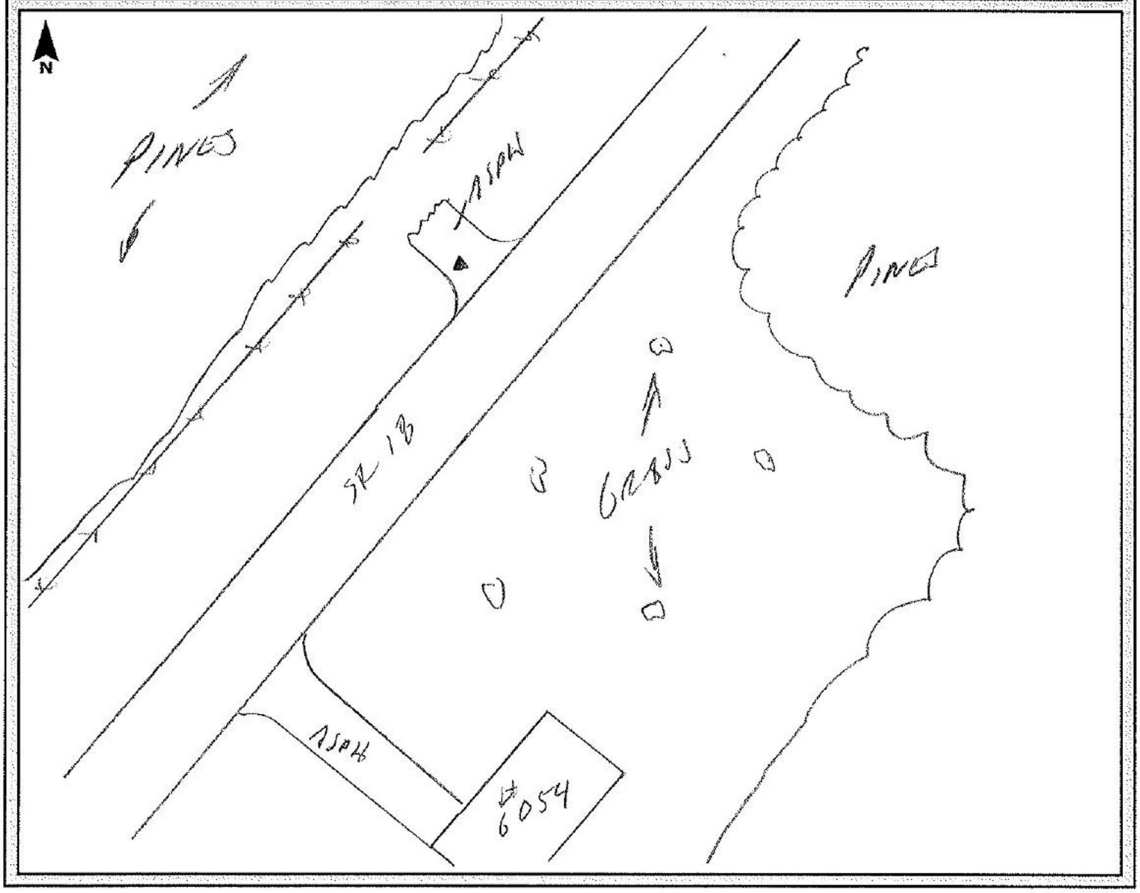

201-1-12MAR2013
201
201-2-12MAR2013
201-3NE-12MAR2013
201-3NW-12MAR2013
201-3SE-12MAR2013
201-3SW-12MAR2013

TEMPORARY SURVEY MARKS (TSM, 202)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054
Station Name:	202	**Survey Date:**	3-13-13
Latitude:	32° 09' 39.91"	**Operator Name:**	James Speelman
Longitude:	88° 30' 28.23"	**Julian Day:**	072
Ellip. Height:	274.208	**Session No.**	—
Type of Mark:	MAG NAIL	**Start Time:**	—
Stamping on Mark:	NO	**End Time:**	—
Weather Condition:	PC	**Data File Name:**	USVD 0313 JNJ.DC
		Type of Reciever:	TRIMBLE R8-2
		Type of Antenna:	TRM
		Antenna Height:	2.0 — to bottom of antenna mount



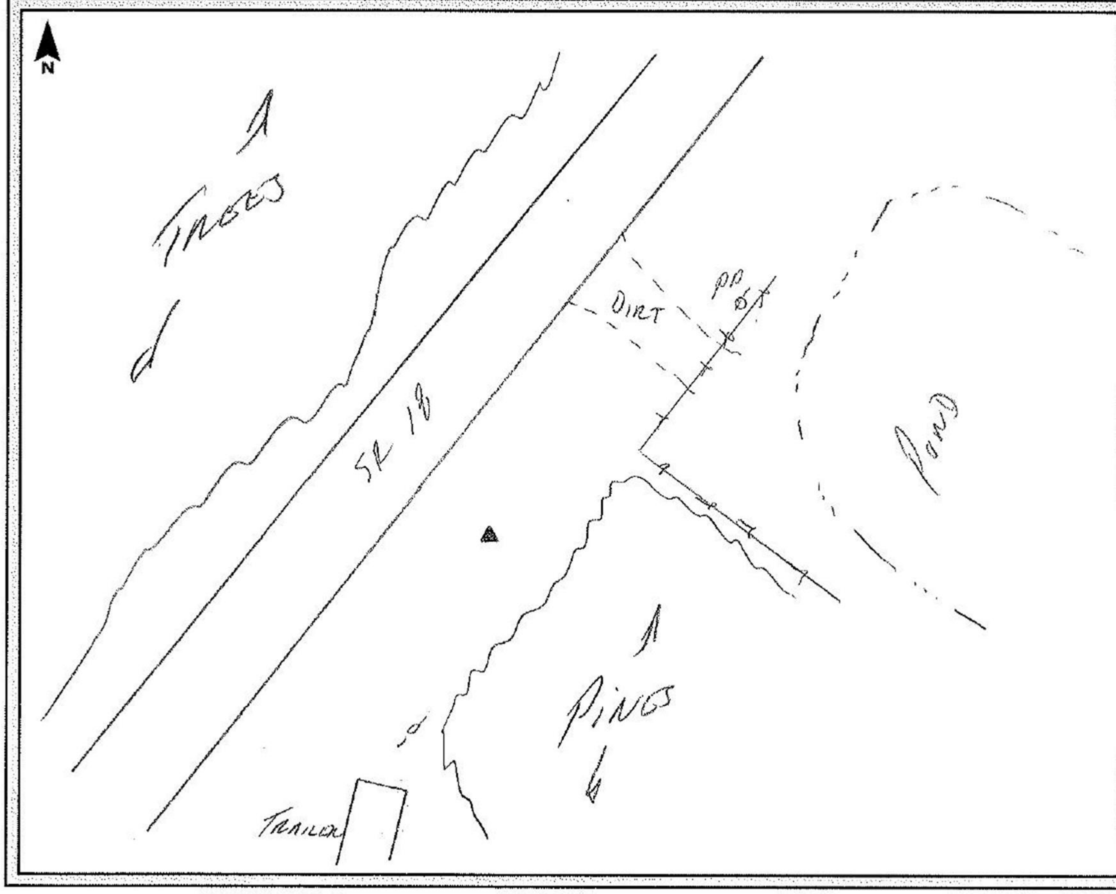

202-1-13MAR2013
202-2-13MAR2013
202
202-3NE-13MAR2013
202-3NW-13MAR2013
202-3SE-13MAR2013
202-3SW-13MAR2013

TEMPORARY SURVEY MARKS (TSM, 203)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054 **Survey Date:** 3-13-13
Station Name:	203	**Operator Name:**	James Speelman
Latitude:	32°09' 26.00"	**Julian Day:**	072 **Session No.** —
Longitude:	88° 38' 33.82"	**Start Time:**	— **End Time:** —
Ellip. Height:	267.116'	**Data File Name:**	LAUD0313JMS.DC
Type of Mark:	6" NAIL w/ DISC	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:**	2.0m to bottom of antenna mount



203-1-13MAR2013


203-2-13MAR2013


203-3SW-13MAR2013


203-3NW-13MAR2013


203-3SE-13MAR2013

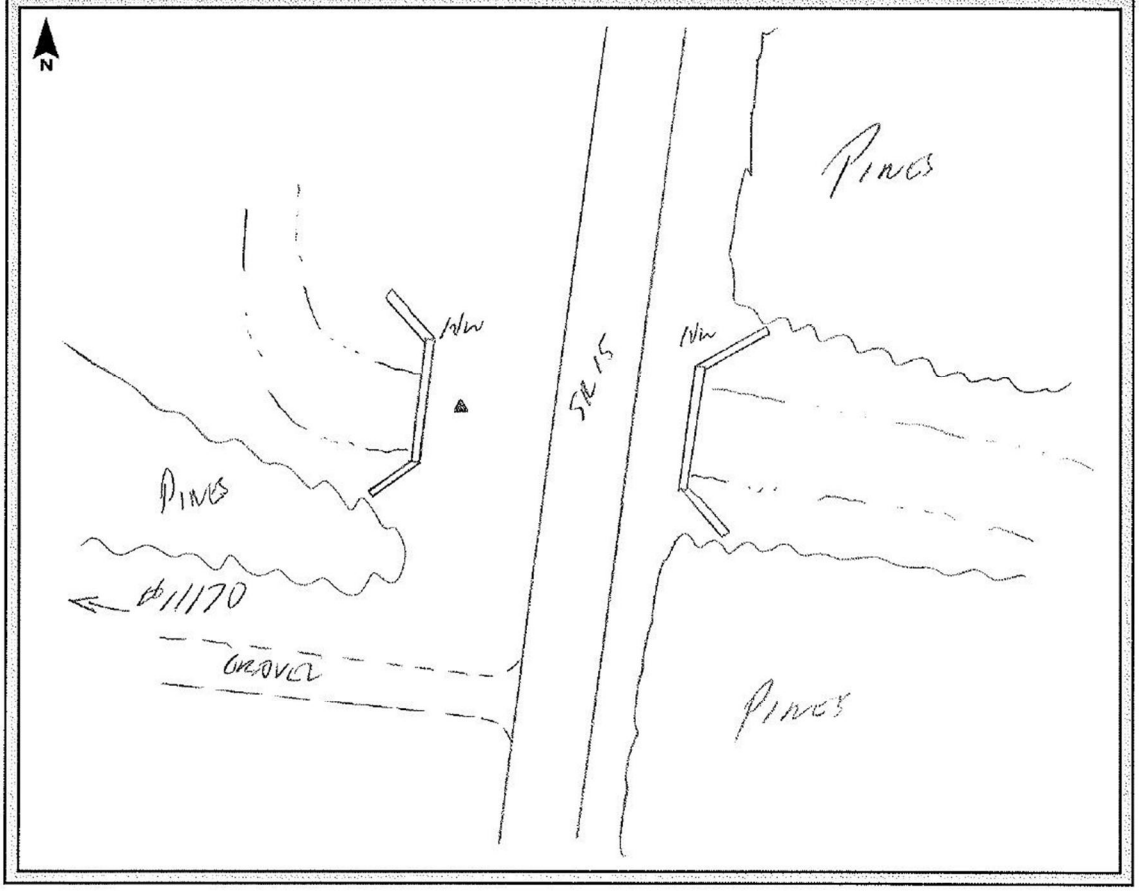

203-3SW-13MAR2013

TEMPORARY SURVEY MARKS (TSM, 204)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	204	**Operator Name:**	James Speelman		
Latitude:	32° 22' 96.30"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 07' 10.34"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	271.809'	**Data File Name:**	LAUD0314.073.dc		
Type of Mark:	6" NAIL w/WASHER	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	DC	**Antenna Height:**	2.0 —	to bottom of antenna mount	



204-1-14MAR2013

204-2-14MAR2013

204-3N-14MAR2013

204-3S-14MAR2013

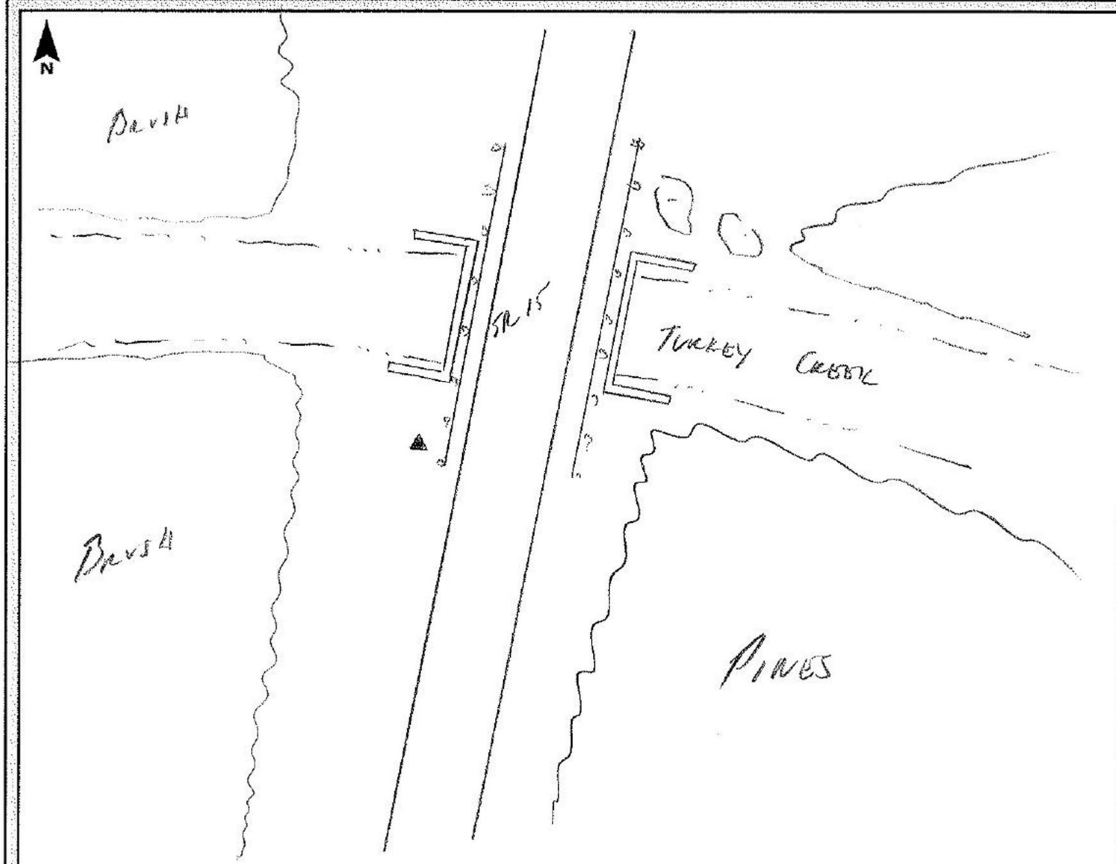
204-3SE-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 205)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054
Survey Date:	3-14-13		
Station Name:	205	**Operator Name:**	James Speelman
Latitude:	32° 22' 52.75"	**Julian Day:**	073
Session No.			
Longitude:	89° 07' 08.57"	**Start Time:**	
End Time:			
Ellip. Height:	279.087'	**Data File Name:**	LAUD0314JMO.RC
Type of Mark:	6" nail w/washer	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:**	2.0m to bottom of antenna mount



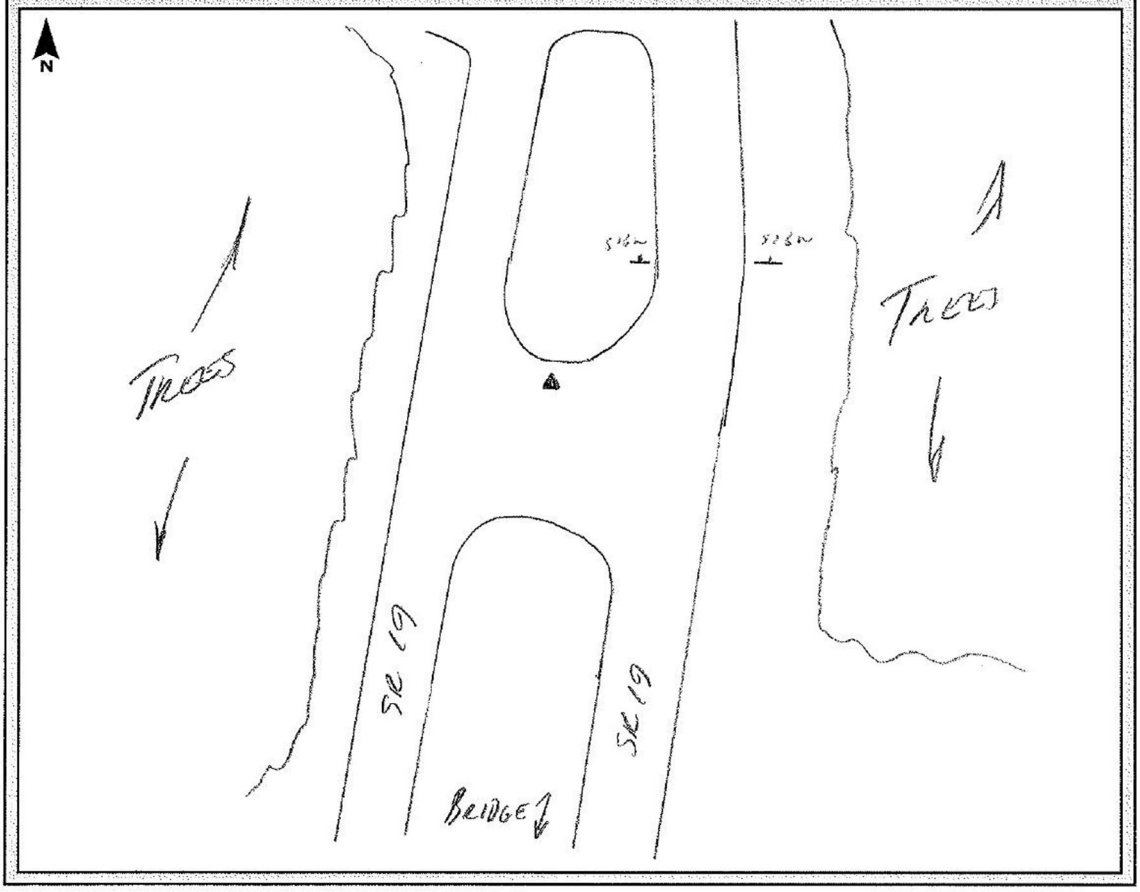

204-3SE-14MAR2013
205-2-14MAR2013
205-3E-14MAR2013
205-3N-14MAR2013
205-3S-14MAR2013
205-3W-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 206)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	206	**Operator Name:**	James Speelman		
Latitude:	32° 48' 39.70"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 07' 05.76"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	309.570'	**Data File Name:**	LAU0314JIM.DC		
Type of Mark:	MAG NAIL	**Type of Reciever:**	TRIMBLE R9-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	



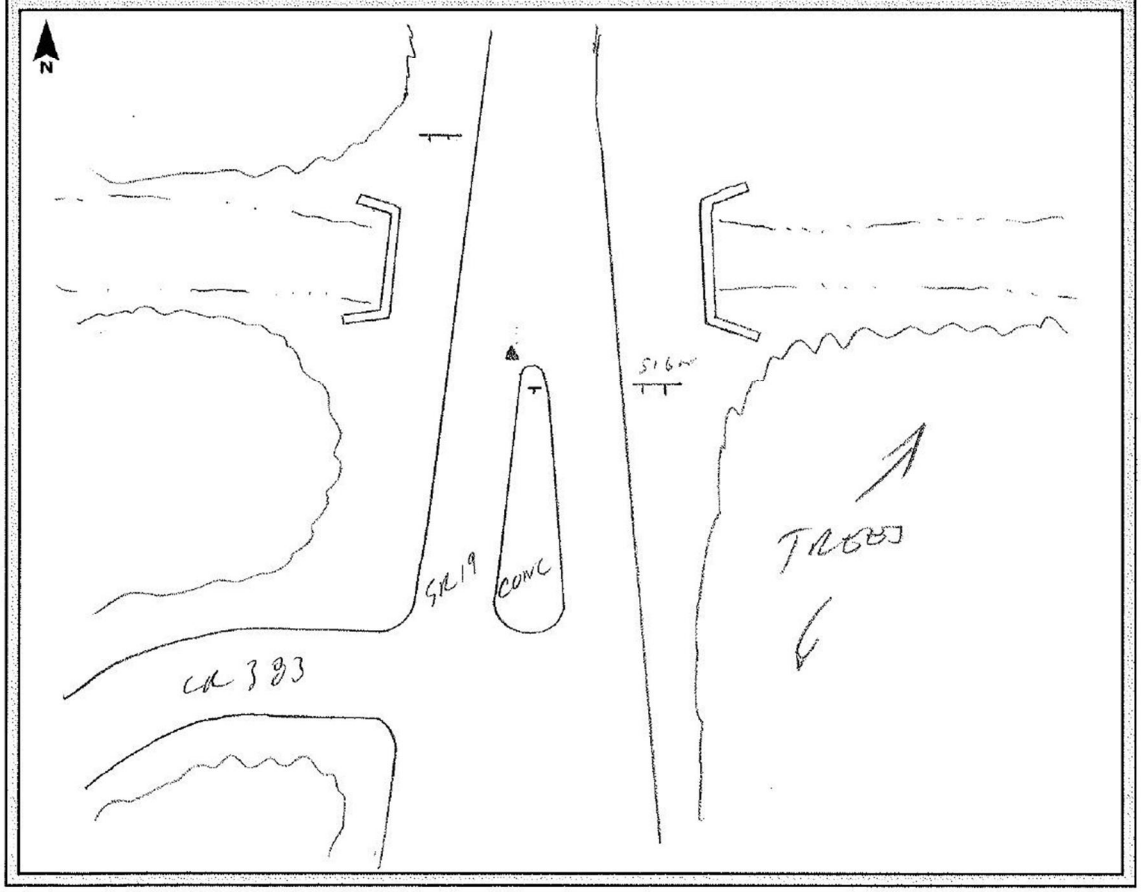

206-1-14MAR2013
206-2-14MAR2013
206-3NE-14MAR2013
206-3NW-14MAR2013
206-3SE-14MAR2013
206-3SW-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 207)

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:** 73054	**Survey Date:** 3-14-13
Station Name:	207	**Operator Name:**	James Speelman
Latitude:	32° 48' 43.12"	**Julian Day:** 073	**Session No.** —
Longitude:	89° 07' 03.90"	**Start Time:** —	**End Time:** —
Ellip. Height:	310.379'	**Data File Name:**	LAUD0734.DAT
Type of Mark:	MAG NAIL	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:** 2.0m	to bottom of antenna mount



207-1-14MAR2013

207-2-14MAR2013

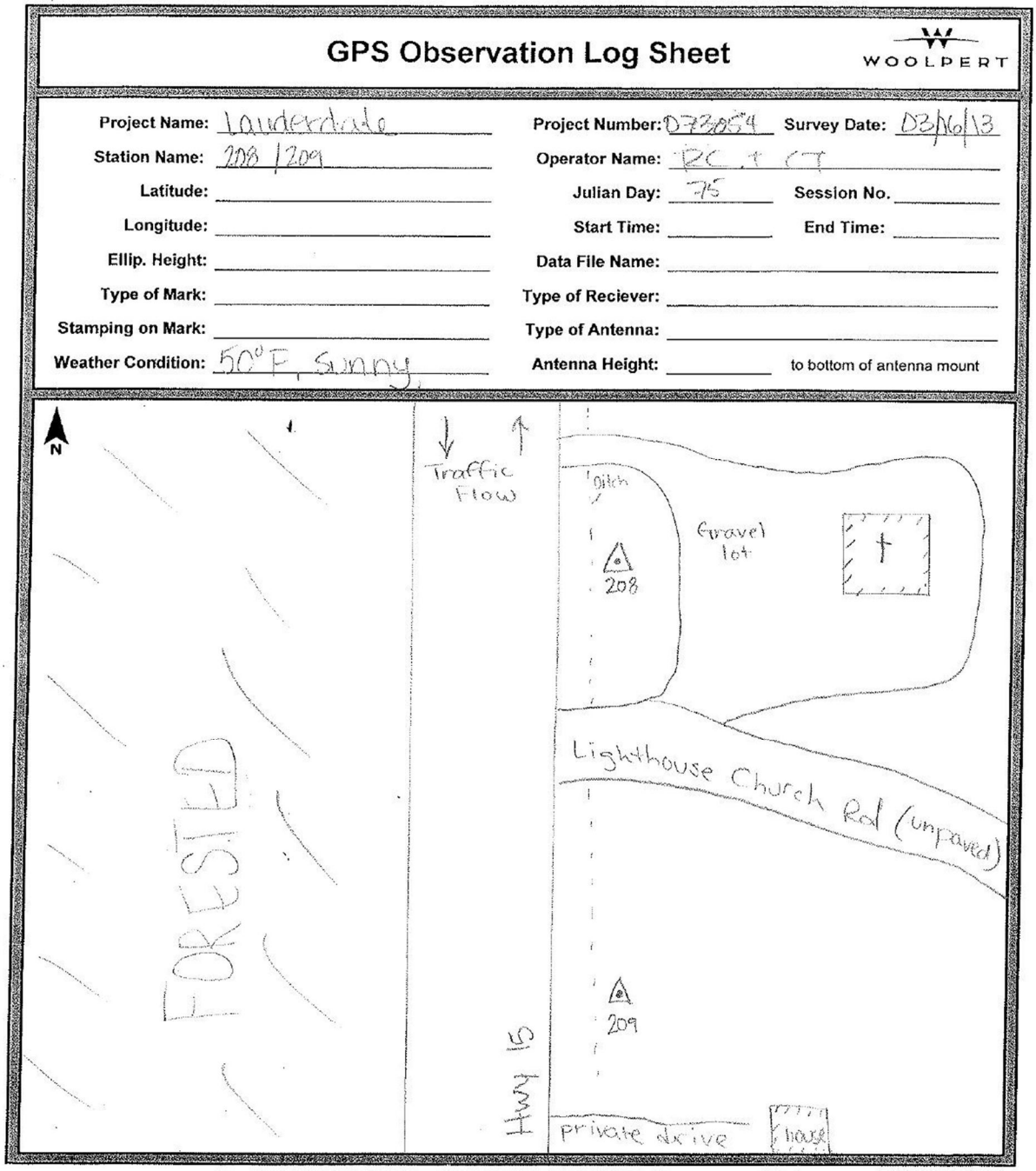

207-3NE-14MAR2013


207-3NW-14MAR2013


207-3SE-14MAR2013


207-3SW-14MAR2013

TEMPORARY SURVEY MARKS (TSM, 208)



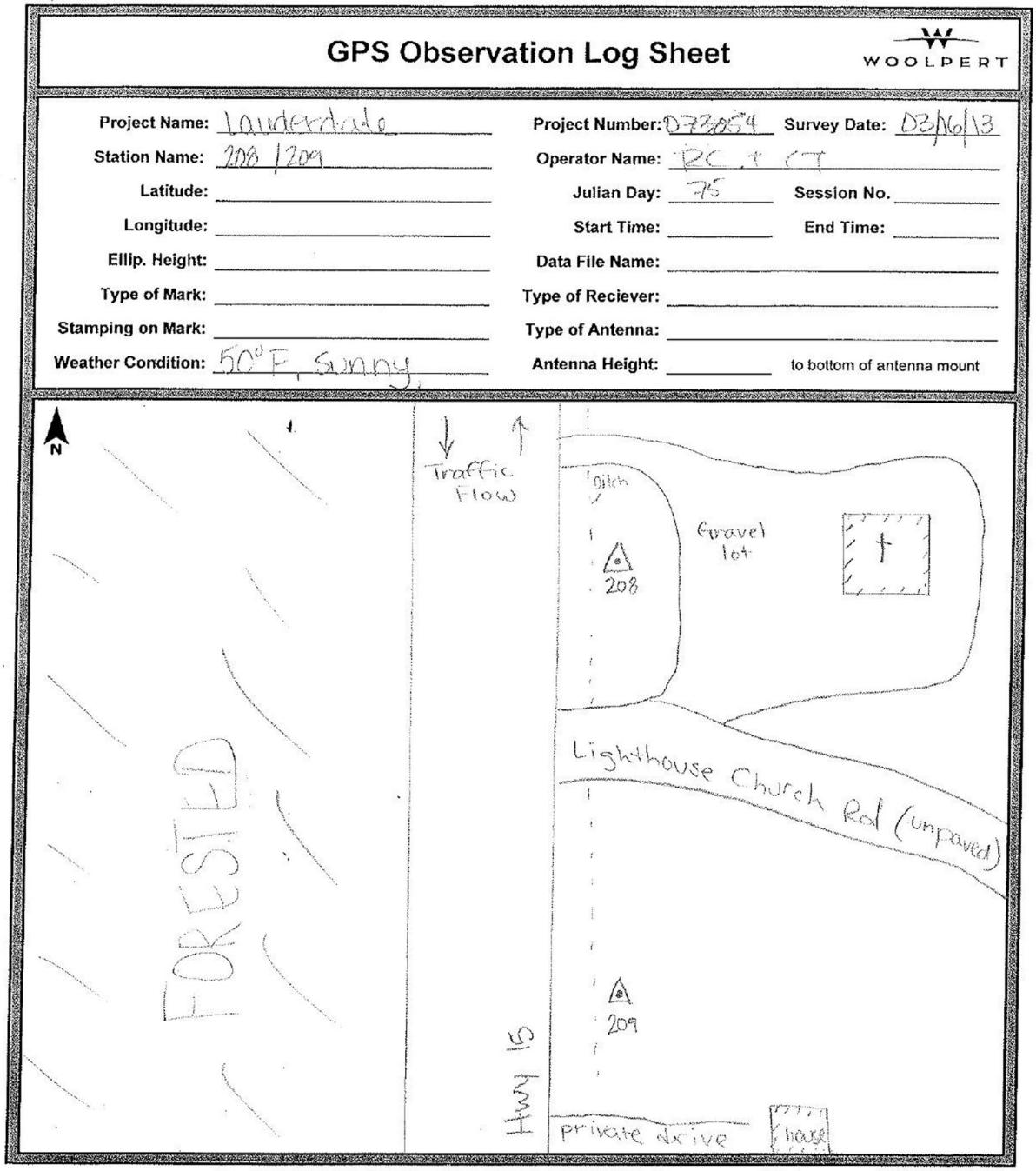
GPS Observation Log Sheet

WOOLPERT

Project Name: Lauderdale
Project Number: D73054
Survey Date: 03/06/13
Station Name: 208 / 209
Operator Name: RC + CT
Latitude:
Julian Day: 75
Session No.
Longitude:
Start Time:
End Time:
Ellip. Height:
Data File Name:
Type of Mark:
Type of Reciever:
Stamping on Mark:
Type of Antenna:
Weather Condition: 50°F, Sunny
Antenna Height: to bottom of antenna mount


208-1-16MAR2013
208-2-16MAR2013
208-3E-16MAR2013
208-3N-16MAR2013
208-3S-16MAR2013
208-3W-16MAR2013

TEMPORARY SURVEY MARKS (TSM, 209)



GPS Observation Log Sheet

WOOLPERT

Project Name: Lauderdale
Project Number: D73054
Survey Date: 03/06/13
Station Name: 208 / 209
Operator Name: RC + CT
Latitude:
Julian Day: 75
Session No.
Longitude:
Start Time:
End Time:
Ellip. Height:
Data File Name:
Type of Mark:
Type of Reciever:
Stamping on Mark:
Type of Antenna:
Weather Condition: 50°F, Sunny
Antenna Height: to bottom of antenna mount

209-1-16MAR2013


209-2-16MAR2013


209-3E-16MAR2013


209-3N-16MAR2013


209-3S-16MAR2013

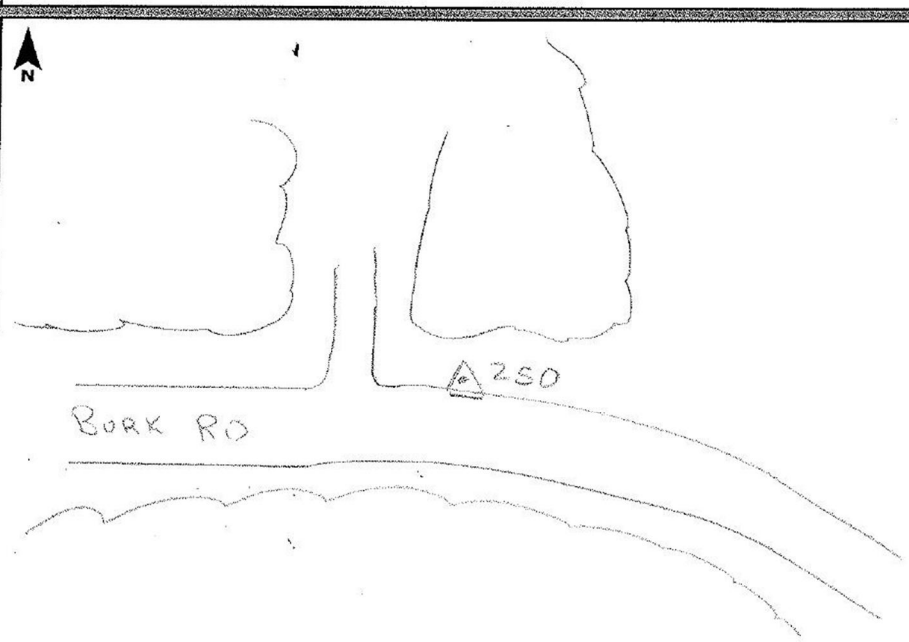

209-3W-16MAR2013

TEMPORARY SURVEY MARKS (TSM, 250)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE MS	Project Number:	073054
Station Name:	250 (TSM)	Survey Date:	3-17-13
Latitude:	32-47-57.4	Operator Name:	RC
Longitude:	88-36-02.4	Julian Day:	77
Ellip. Height:	65.7 m	Session No.	
Type of Mark:	60d nail	Start Time:	12:35
Stamping on Mark:	Set Nail 2' N. of PUMP	End Time:	12:38
Weather Condition:	70°/PC	Data File Name:	LAUDERDALE 0317
		Type of Reciever:	R82
		Type of Antenna:	INTERNAL
		Antenna Height:	2.0m to bottom of antenna mount




250-TSM-1-17MAR2013


250-TSM-3E-17MAR2013


250-TSM-3N-17MAR2013


250-TSM-3S-17MAR2013

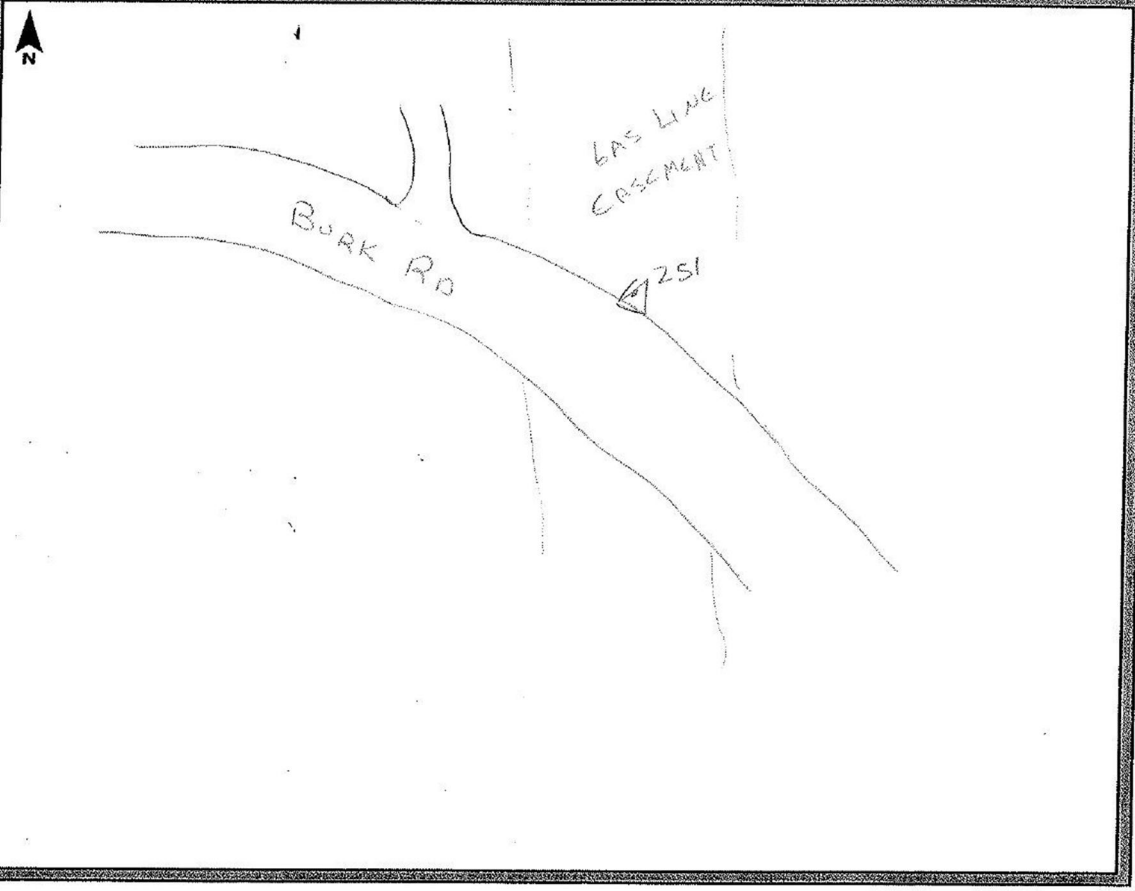

250-TSM-3W-17MAR2013

TEMPORARY SURVEY MARKS (TSM, 251)

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE MS	Project Number:	7.3054
Survey Date:	3-17-13		
Station Name:	251 (TSM)	Operator Name:	RC
Latitude:	32-48-20.1	Julian Day:	77
Session No.			
Longitude:	88-36-06.2	Start Time:	12:45
End Time:			
Ellip. Height:	69.6 m	Data File Name:	LAUDERDALE 0317
Type of Mark:	60d nail	Type of Reciever:	R8Z
Stamping on Mark:	SET 60d 3' N. of ⅋ EDGE of PVMT	Type of Antenna:	INTERNAL
Weather Condition:	65°/PC	Antenna Height:	2.0 m to bottom of antenna mount




251-TSM-1-17MAR2013


251-TSM-2-17MAR2013


251-TSM-3E-17MAR2013


251-TSM-3N-17MAR2013


251-TSM-3S-17MAR2013

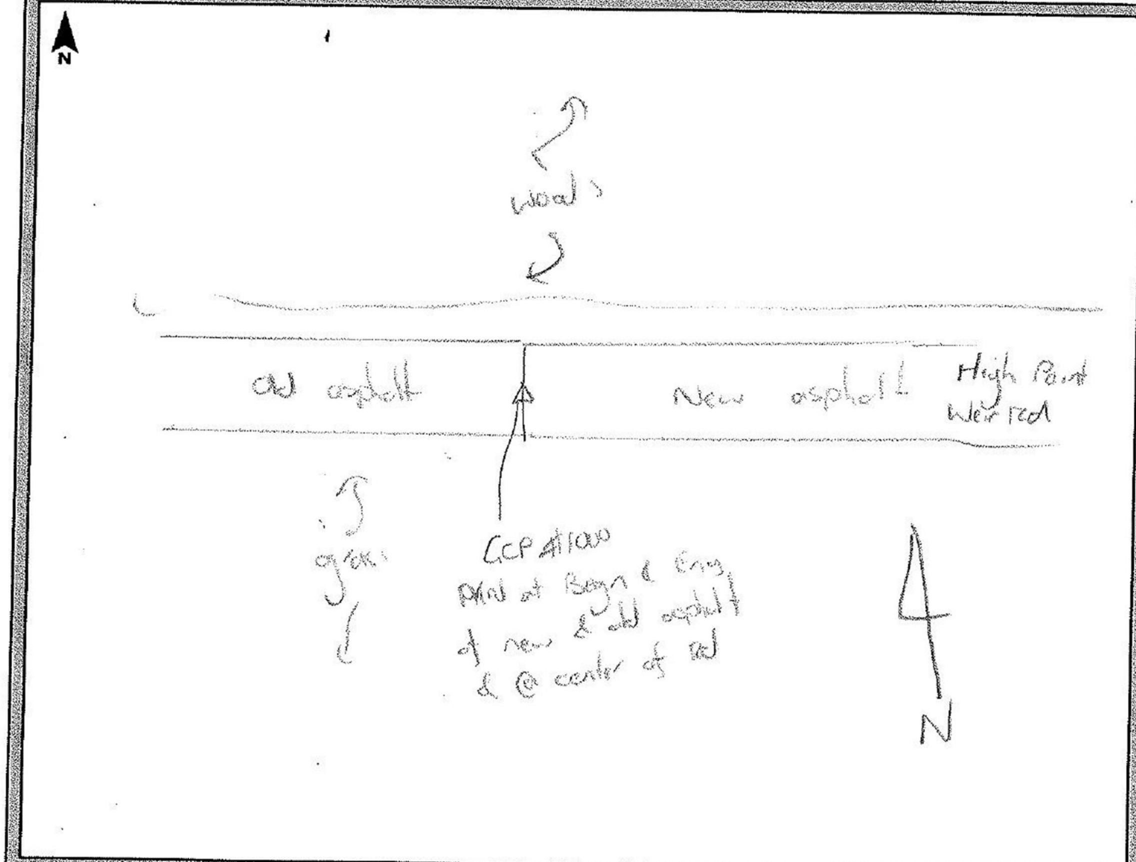

251-TSM-3W-17MAR2013

LiDAR GROUND CONTROL – 1000

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073054
Survey Date:	3/16/13		
Station Name:	1000	Operator Name:	SN/AC
Latitude:	33° 11' 25.16139" N	Julian Day:	75
		Session No.	
Longitude:	89° 09' 16.37335"	Start Time:	14:27
		End Time:	14:35
Ellip. Height:	139.543 m	Data File Name:	073054SN031613
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0 m to bottom of antenna mount




1000-1E-16MAR2013


1000-2N-16MAR2013


1000-3E-16MAR2013


1000-3N-16MAR2013

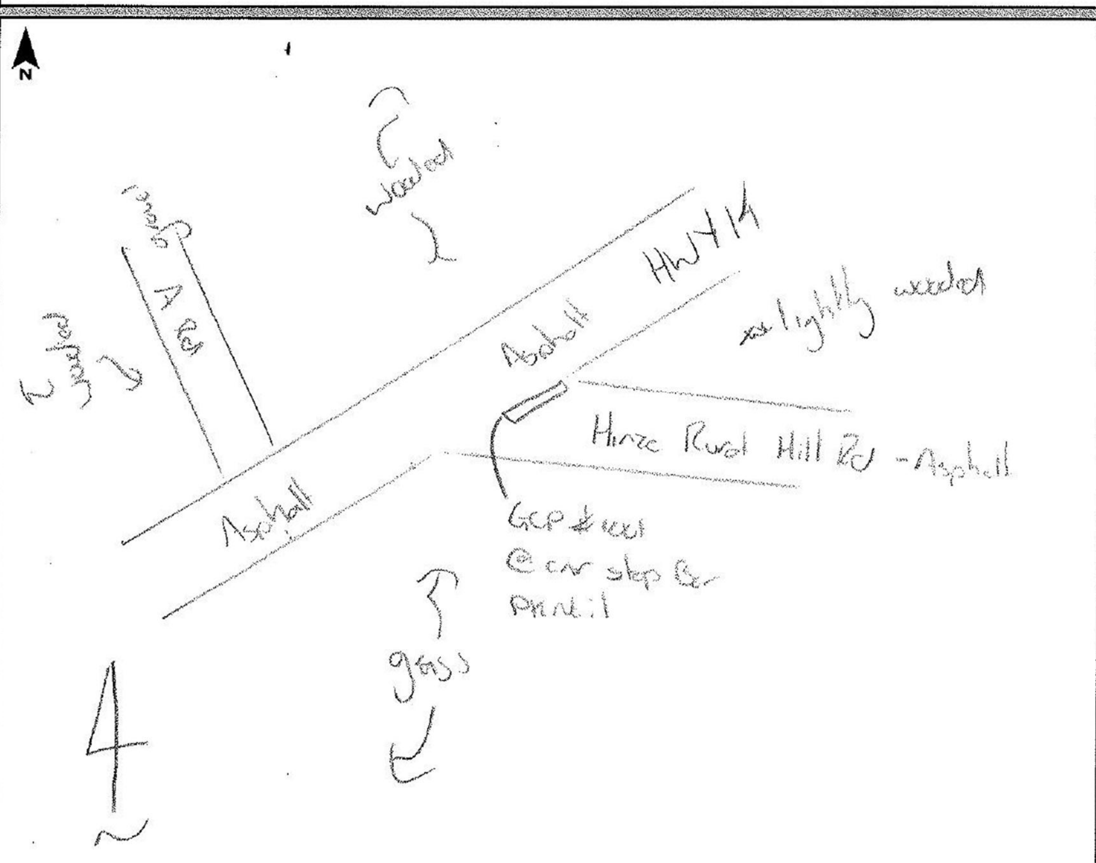

1000-3S-16MAR2013


1000-3W-16MAR2013

LiDAR GROUND CONTROL – 1001

GPS Observation Log Sheet WOOLPERT

Project Name:	MS Lauderdale LiDAR	**Project Number:**	073185
		Survey Date:	3/16/13
Station Name:	1001	**Operator Name:**	SW/AC
Latitude:	33° 04' 33.43186 N	**Julian Day:**	75
		Session No.	
Longitude:	89° 17' 56.13177 W	**Start Time:**	11:36
		End Time:	11:46
Ellip. Height:	137.199	**Data File Name:**	07305SW03161
Type of Mark:	GCP	**Type of Reciever:**	Trimble R8-2
Stamping on Mark:	—	**Type of Antenna:**	Internal
Weather Condition:	Sunny	**Antenna Height:**	2.0 m to bottom of antenna mount




1001-1N-16MAR2013


1001-2N-16MAR2013


1001-3E-16MAR2013


1001-3N-16MAR2013

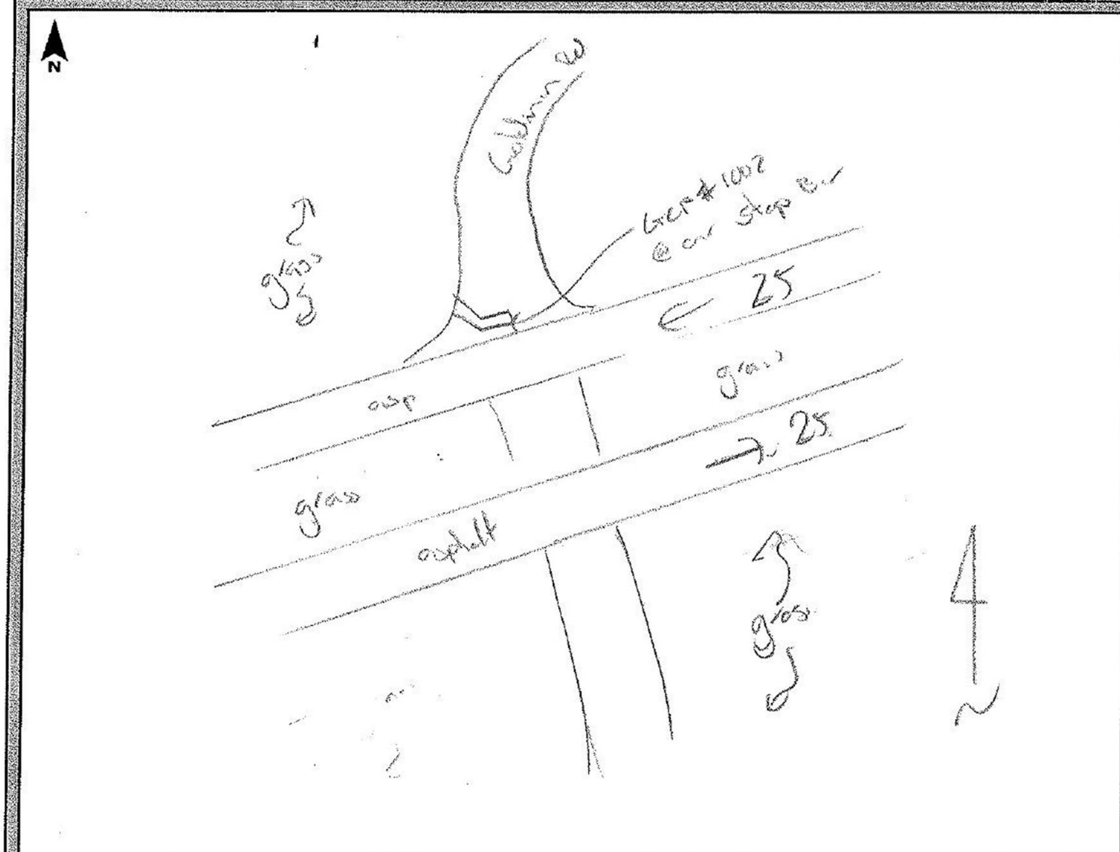

1001-3S-16MAR2013


1001-3W-16MAR2013

LiDAR GROUND CONTROL – 1002

GPS Observation Log Sheet WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073054
Survey Date:	3/15/13		
Station Name:	1002	Operator Name:	SN/AC
Latitude:	32°59'07.99624" N	Julian Day:	74
Session No.			
Longitude:	89°13'53.29163" W	Start Time:	1213
End Time:	1220		
Ellip. Height:	131.449	Data File Name:	0 1305#SN03151 3
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount



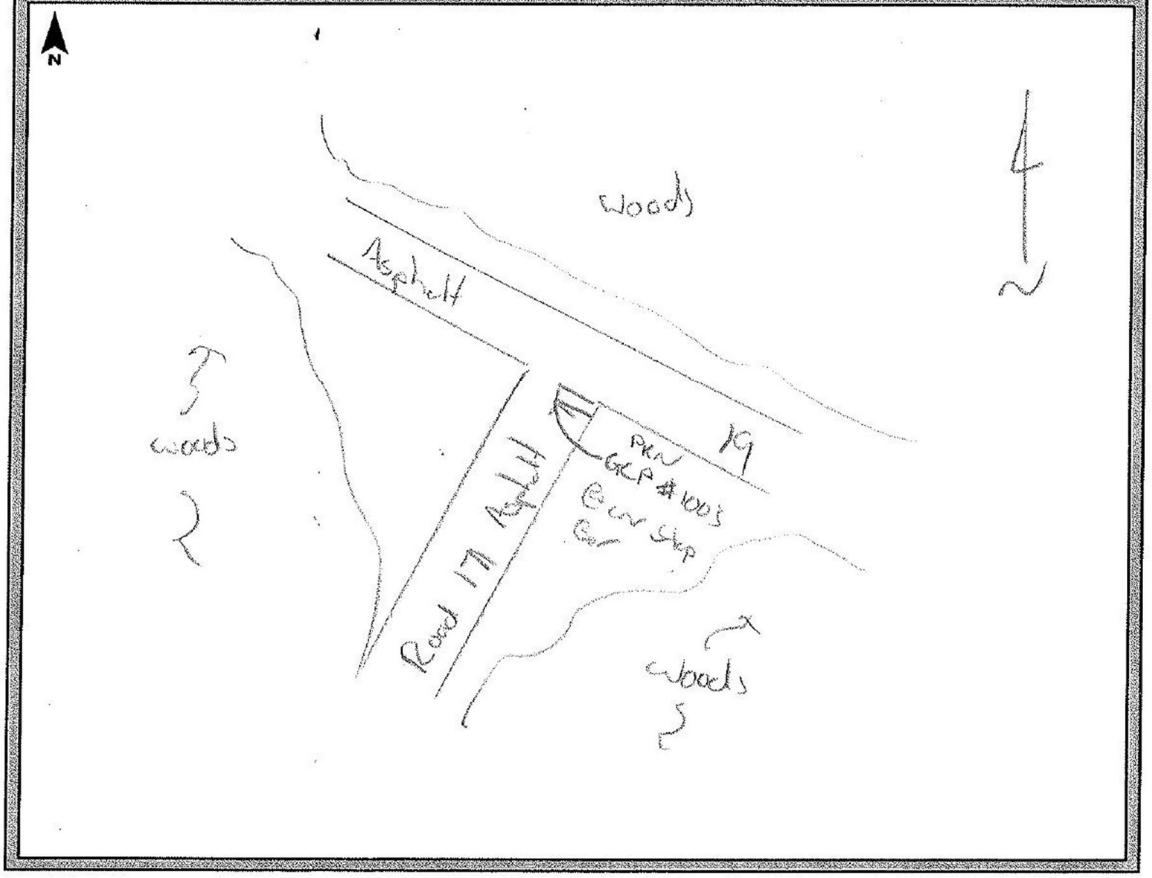

1002-1N-15MAR2013
1002-2N-15MAR2013
1002-3E-15MAR2013
1002-3N-15MAR2013
1002-3S-15MAR2013
1002-3W-15MAR2013

LiDAR GROUND CONTROL – 1003

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073054
Survey Date:	3/15/13		
Station Name:	1003	Operator Name:	SW/AC
Latitude:	32° 54' 54.76579N	Julian Day:	74
Session No.			
Longitude:	89° 15' 47.84807W	Start Time:	1053
End Time:	1105		
Ellip. Height:	117.446	Data File Name:	0730546N0631513.JL
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount




1003-1E-15MAR2013


1003-2N-15MAR2013


1003-3E-15MAR2013


1003-3N-15MAR2013


1003-3S-15MAR2013

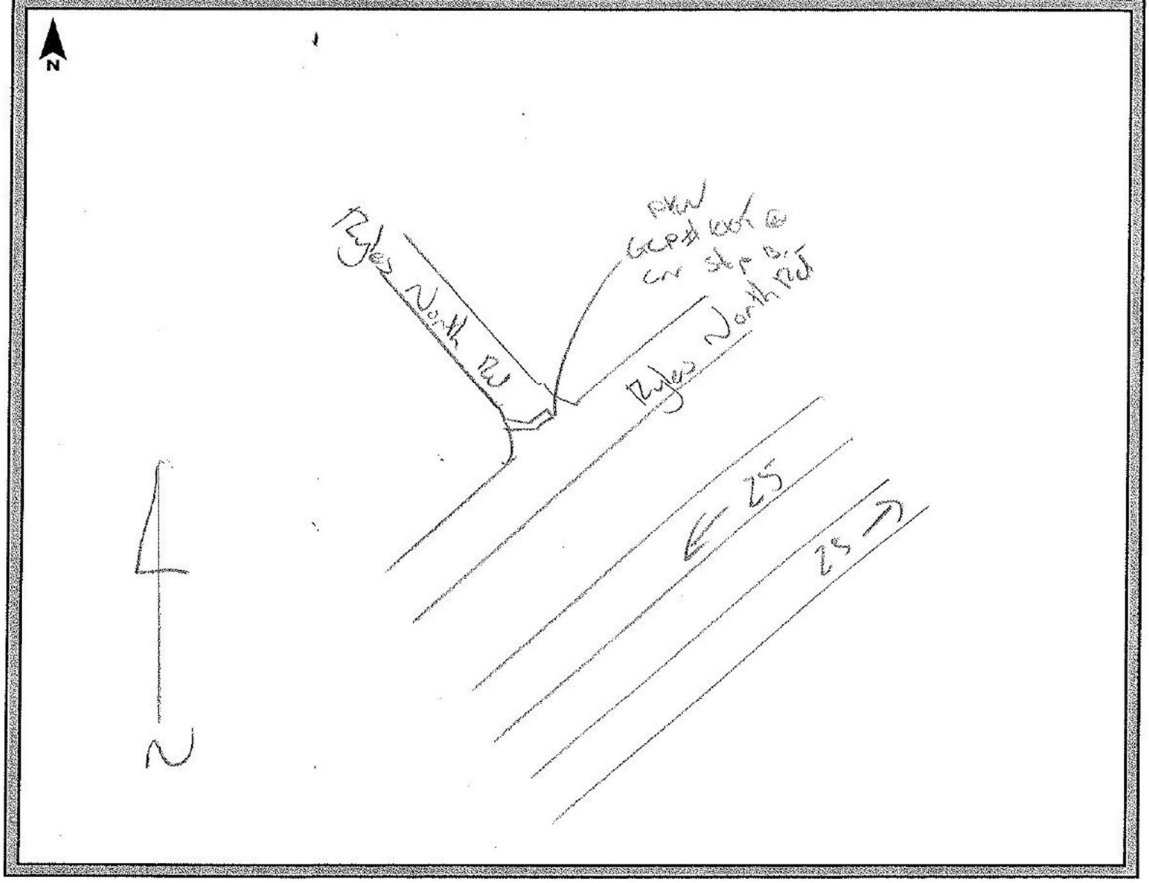

1003-3W-15MAR2013

LiDAR GROUND CONTROL – 1004

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number: 073054	Survey Date: 3/15/13
Station Name:	1004	Operator Name: SN/AC	
Latitude:	32° 57' 11.96958" N	Julian Day: 74	Session No.
Longitude:	89° 18' 12.04154" W	Start Time: 1230	End Time: 1237
Ellip. Height:	128.623	Data File Name: 07305sn074s13	
Type of Mark:	GCP	Type of Reciever: Trimble R8-2	
Stamping on Mark:	—	Type of Antenna: Internal	
Weather Condition:	Sunny	Antenna Height: 2.0m	to bottom of antenna mount




1004-1E-15MAR2013


1004-2N-15MAR2013


1004-3E-15MAR2013


1004-3N-15MAR2013


1004-3S-15MAR2013

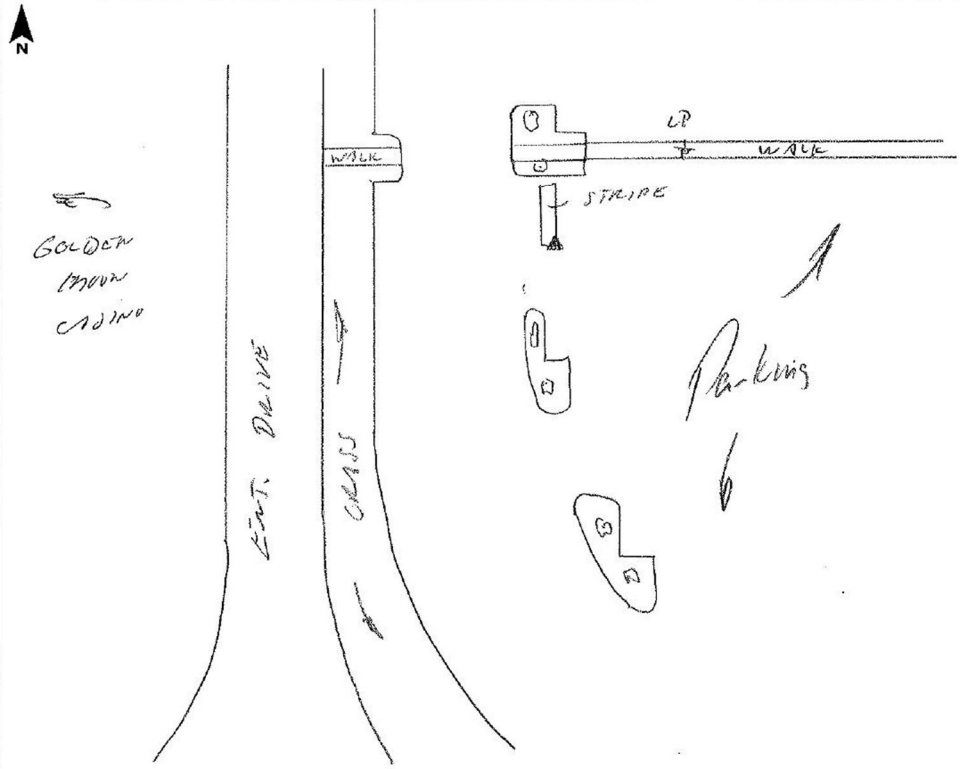

1004-3W-15MAR-2013

LiDAR GROUND CONTROL – 1005

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	1005	**Operator Name:**	James Speelman		
Latitude:	32° 46' 23.63"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 12' 06.80"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	317.761'	**Data File Name:**	LAUD0314.073 .RC		
Type of Mark:	MAG NAIL	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1005-2-14MAR2013


1005-3E-14MAR2013


1005-3N-14MAR2013


1005-3S-14MAR2013

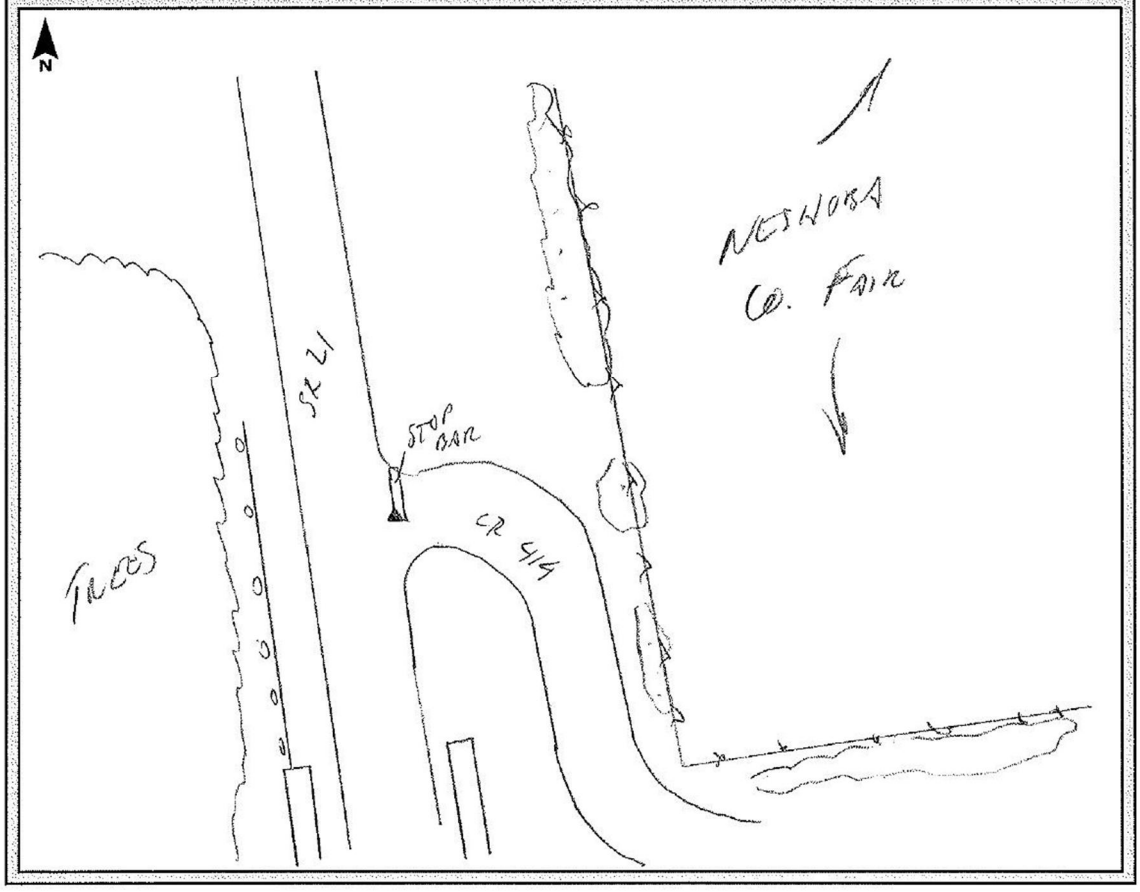

1005-3W-14MAR2013

LiDAR GROUND CONTROL – 1006

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	1006	**Operator Name:**	James Speelman		
Latitude:	32° 42' 45.42"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 12' 56.59"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	362.111'	**Data File Name:**	LAUD0314.T02		
Type of Mark:	MAG NAIL	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1006-2-14MAR2013


1006-3E-14MAR2013


1006-3N-14MAR2013


1006-3S-14MAR2013

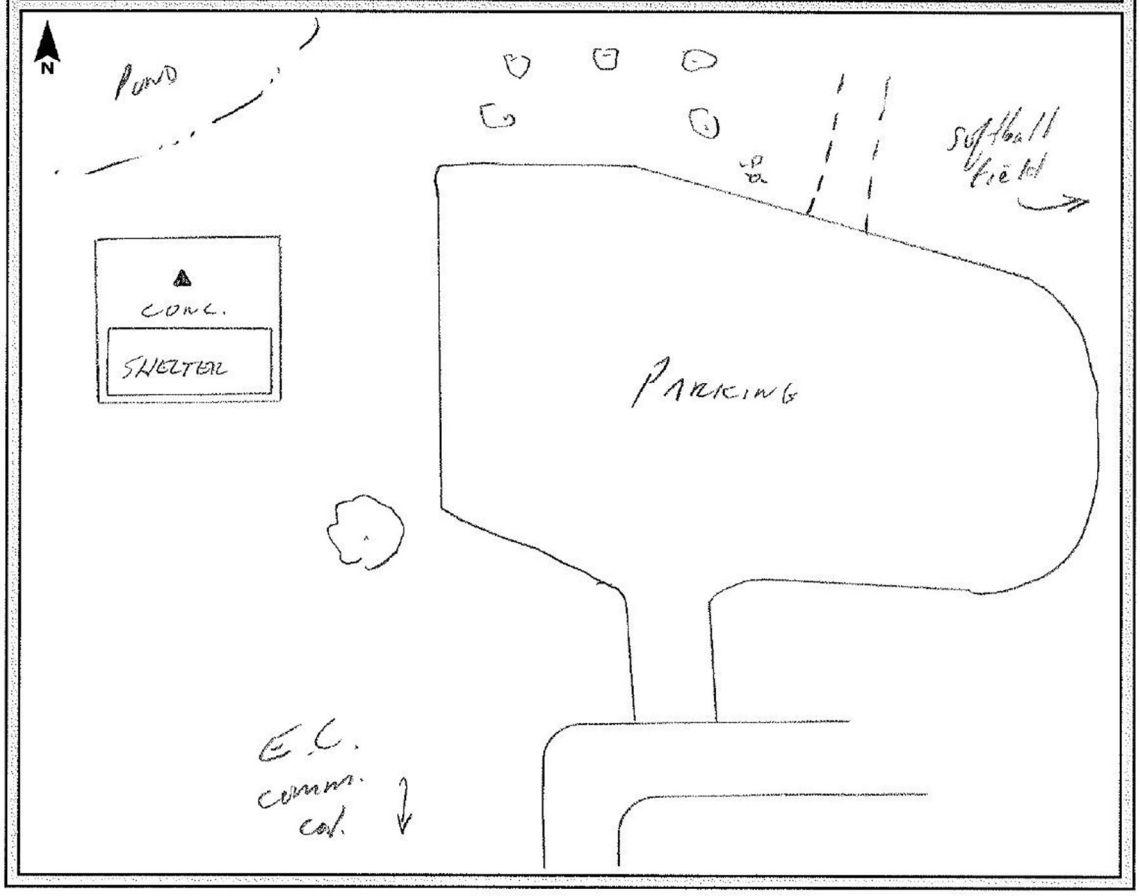

1006-3W-14MAR2013

LiDAR GROUND CONTROL – 1007

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	1007	**Operator Name:**	James Speelman		
Latitude:	32° 26' 45.13"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 06' 41.96"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	330.671'	**Data File Name:**	LAUD0314.7RS.DC		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1007-2-14MAR2013


1007-3E-14MAR2013


1007-3N-14MAR2013


1007-3S-14MAR2013

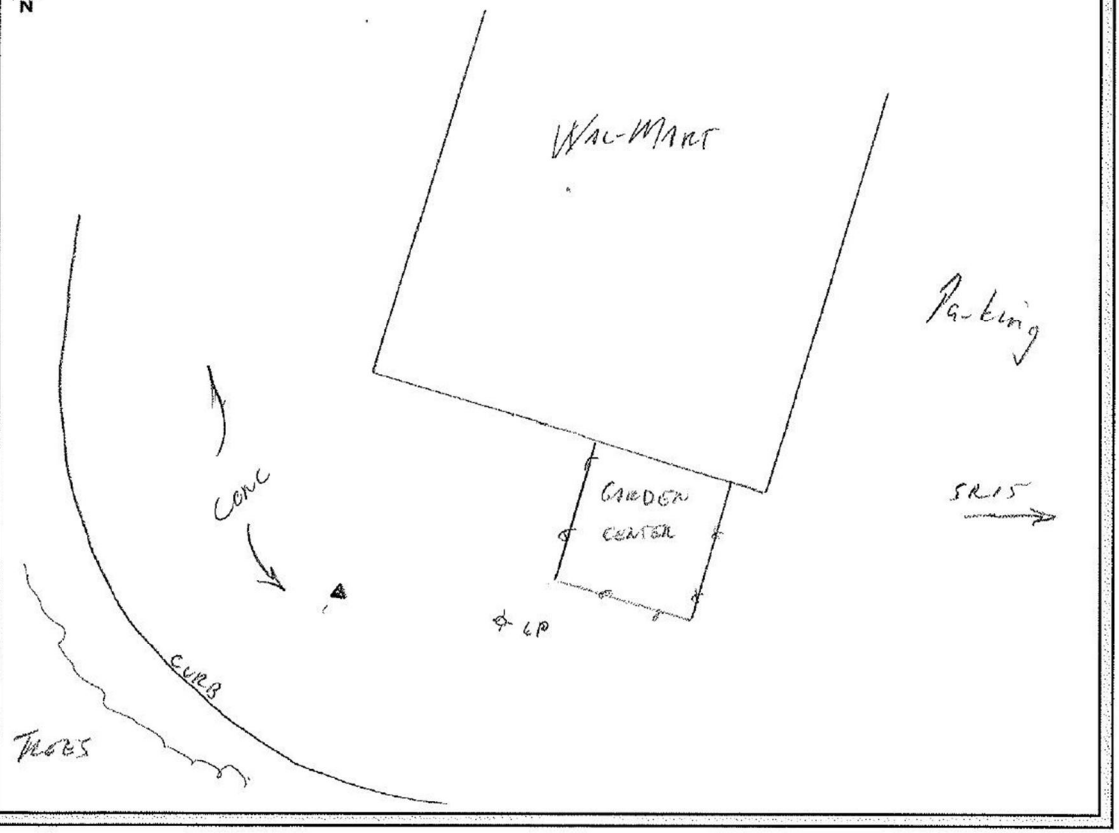

1007-3W-14MAR2013

LiDAR GROUND CONTROL – 1008

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	1008	**Operator Name:**	James Speelman		
Latitude:	32° 20' 17.86"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 08' 32.73"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	129.013'	**Data File Name:**	1460073A.08O		
Type of Mark:	NAIL	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	NONE	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0	to bottom of antenna mount	




1008-2-14MAR2013


1008-3E-14MAR2013


1008-3N-14MAR2013


1008-3S-14MAR2013

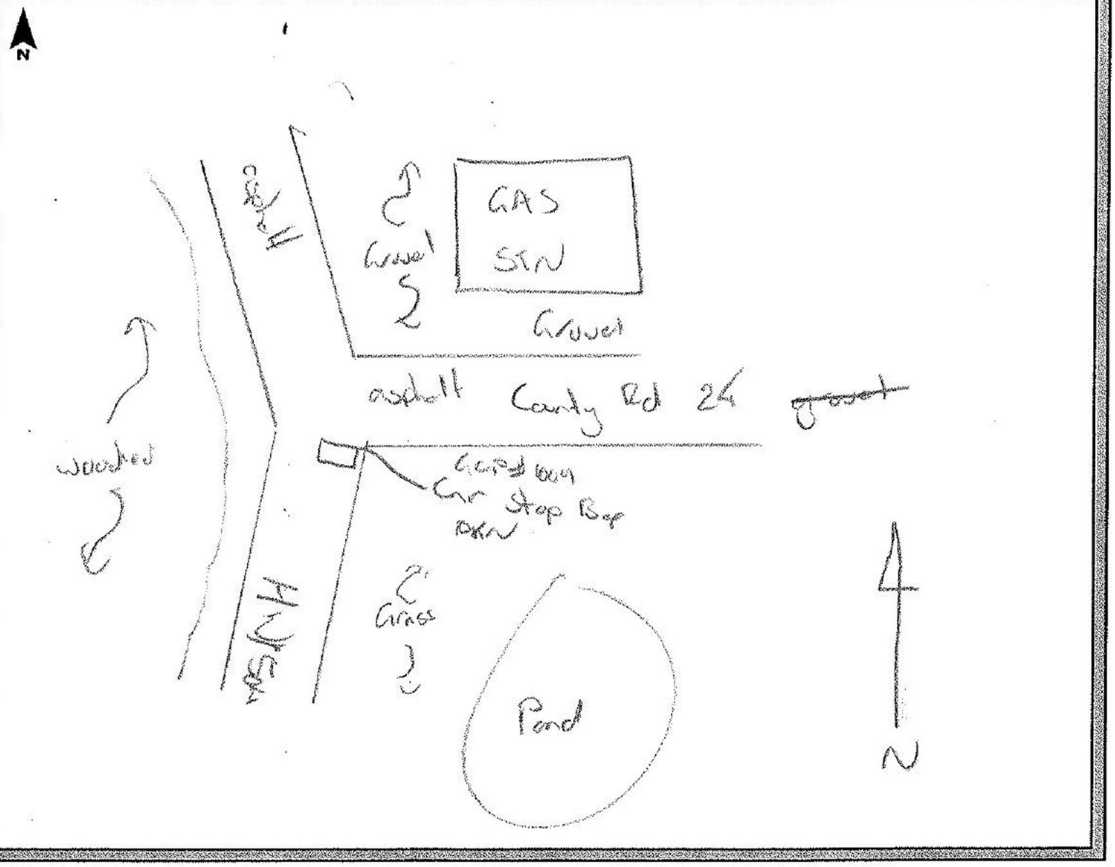

1008-3W-14MAR2013

LiDAR GROUND CONTROL – 1009

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	**Project Number:** 073059	**Survey Date:** 3/14/13
Station Name:	1009	**Operator Name:** SN/AC	
Latitude:	32° 13' 09.80487 N	**Julian Day:** 73	**Session No.**
Longitude:	89° 09' 21.31148 W	**Start Time:** 0907	**End Time:** 0915
Ellip. Height:	~~96.426~~ 111.519	**Data File Name:** 0730731SN03A.13	
Type of Mark:	GCP	**Type of Reciever:** Trimble R8-2	
Stamping on Mark:	—	**Type of Antenna:** Internal	
Weather Condition:	Sunny	**Antenna Height:** 2.0m	to bottom of antenna mount



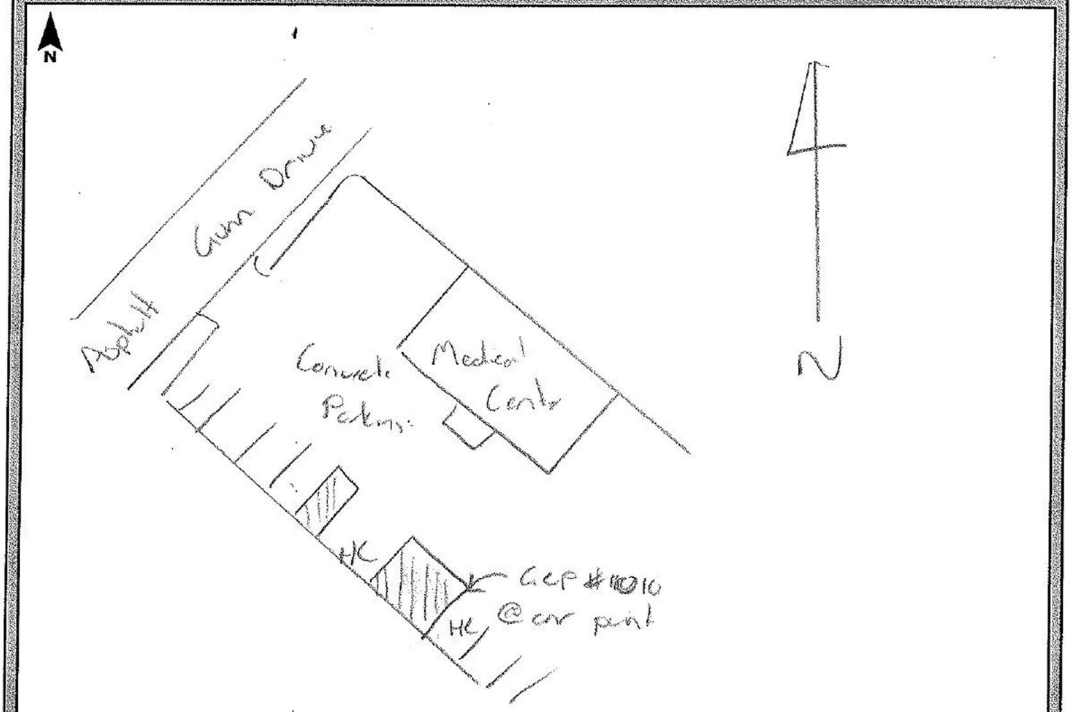

1009-1N-14MAR2013
1009-2N-14MAR2013
1009-3E-14MAR2013
STOP
1009-3N-14MAR2013
1009-3S-14MAR2013
1009-3W-14MAR2013

LiDAR GROUND CONTROL – 1010

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	07305A Survey Date: 3/12/13
Station Name:	1010	Operator Name:	SN / AC
Latitude:	32° 10' 30.84192" N	Julian Day:	71 Session No.
Longitude:	88° 49' 47.56178" W	Start Time:	15:09 End Time: 15:20
Ellip. Height:	~~-10.342~~ 50.095	Data File Name:	07305A SN031213
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount



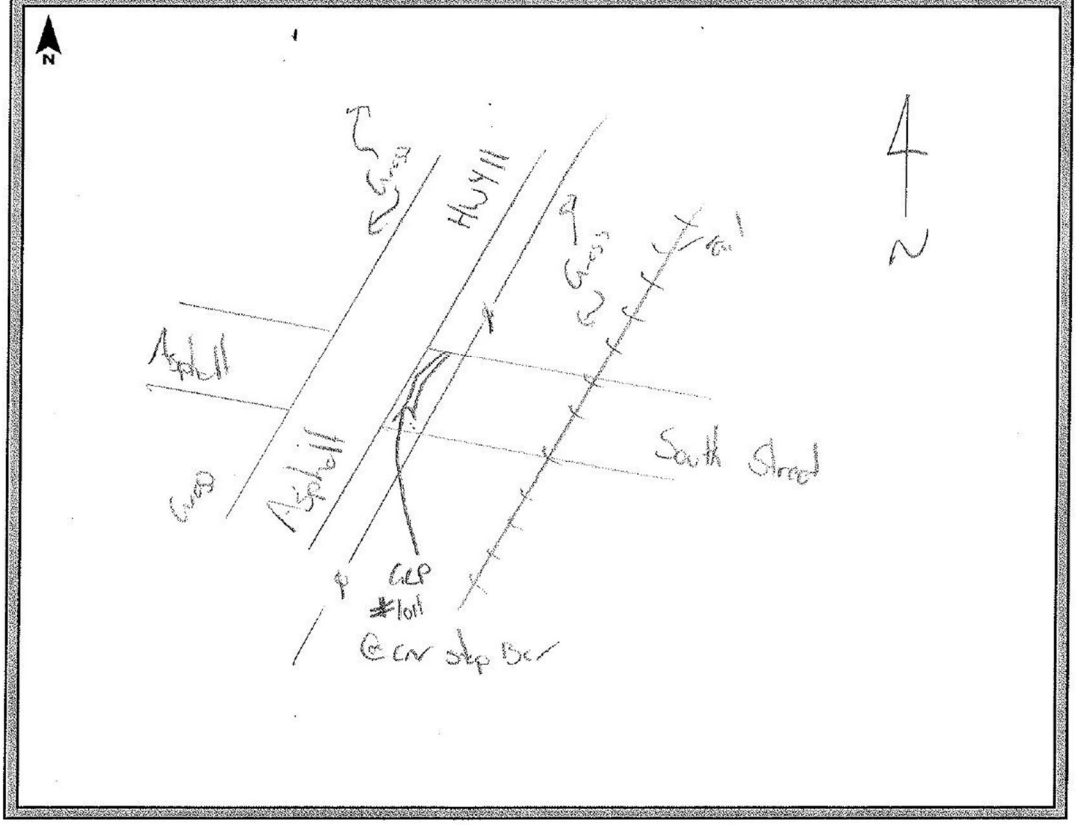

1010-1S-12MAR2013
1010-2S-12MAR2013
1010-3E-12MAR2013
ANDERSON
1010-3N-12MAR2013
1010-3S-12MAR2013
1010-3W-12MAR2013

LiDAR GROUND CONTROL – 1011

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number: 073054	Survey Date: 3/12/13
Station Name:	1011	Operator Name: SN/AC	
Latitude:	32° 09' 56.31892" N	Julian Day: 71	Session No.
Longitude:	88° 50' 06.32162" W	Start Time: 1452	End Time: 1459
Ellip. Height:	53.272	Data File Name: 073054SN031213	
Type of Mark:	GCP	Type of Reciever: Trimble R8-2	
Stamping on Mark:	—	Type of Antenna: Internal	
Weather Condition:	Sunny	Antenna Height: 2.0 m	to bottom of antenna mount




1011-1N-12MAR2013


1011-2N-12MAR2013


1011-3E-12MAR2013


1011-3N-12MAR2013


1011-3S-12MAR2013

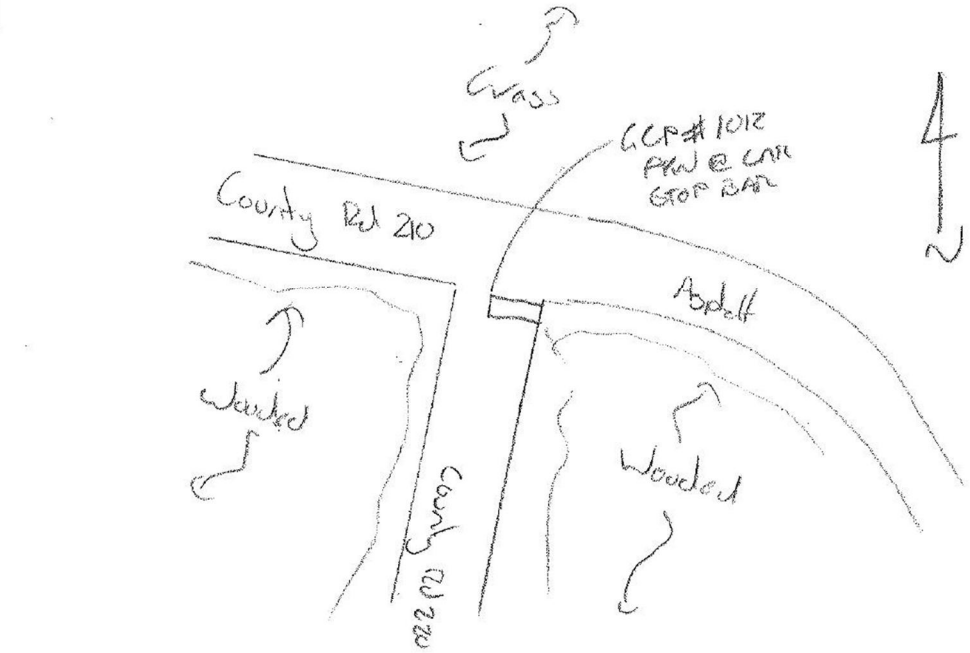

1011-3W-12MAR2013

LiDAR GROUND CONTROL – 1012

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number: 073079	Survey Date: 3/13/13
Station Name:	1012	Operator Name:	SN/AC
Latitude:	31° 52' 22.50766" N	Julian Day: 72	Session No.
Longitude:	88° 52' 31.57573" W	Start Time: 12:25	End Time: 1732
Ellip. Height:	126.553	Data File Name:	0730SHSN 0313 jab
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount




1012-1E-13MAR2013


1012-2N-13MAR2013


1012-3E-13MAR2013


1012-3N-13MAR2013


1012-3S-13MAR2013

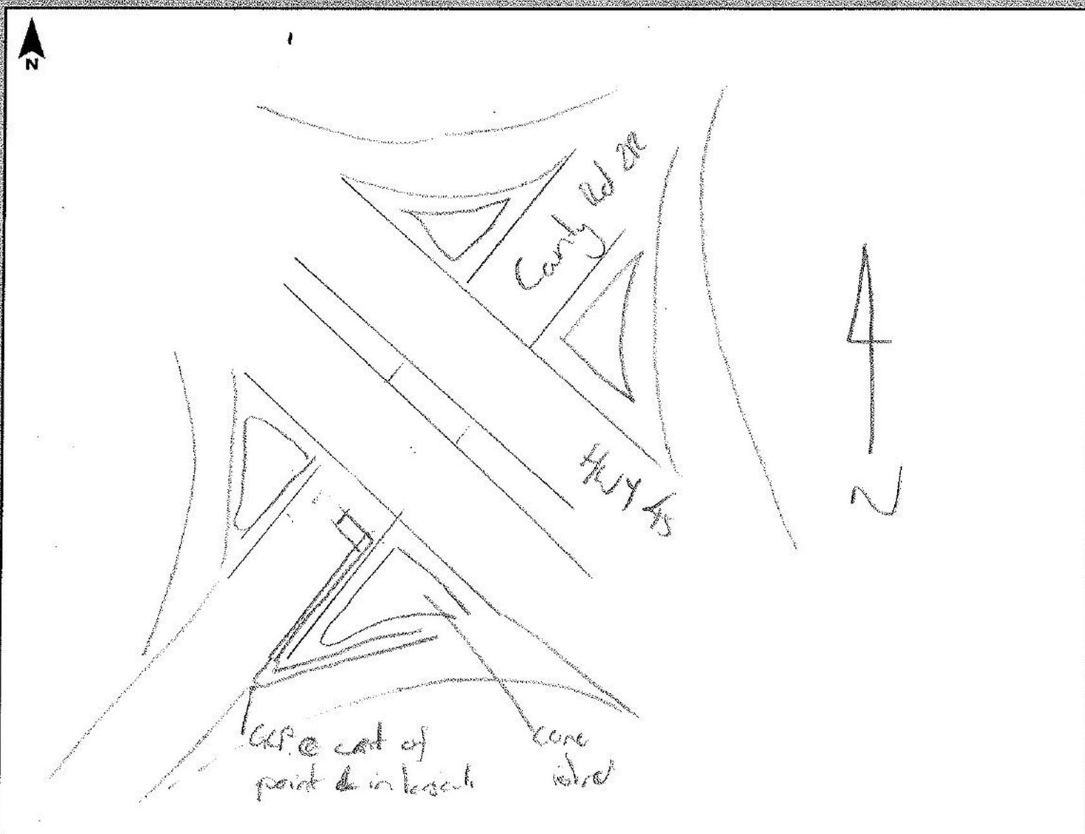

1012-3W-13MAR2013

LiDAR GROUND CONTROL – 1013

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale Lidar	**Project Number:**	073054
Survey Date:	3/13/13		
Station Name:	1013	**Operator Name:**	SN/AC
Latitude:	31° 50' 59".42182 N	**Julian Day:**	72
		Session No.	
Longitude:	88° 43' 03".85562 W	**Start Time:**	1647
		End Time:	1655
Ellip. Height:	33.812	**Data File Name:**	073054SN2031313-Job
Type of Mark:	GCP	**Type of Reciever:**	Trimble R8-2
Stamping on Mark:	—	**Type of Antenna:**	Internal
Weather Condition:	Sunny	**Antenna Height:**	2.0 m to bottom of antenna mount




1013-1N-13MAR2013


1013-2N-13MAR2013


1013-3E-13MAR2013


1013-3N-13MAR2013


1013-3S-13MAR2013

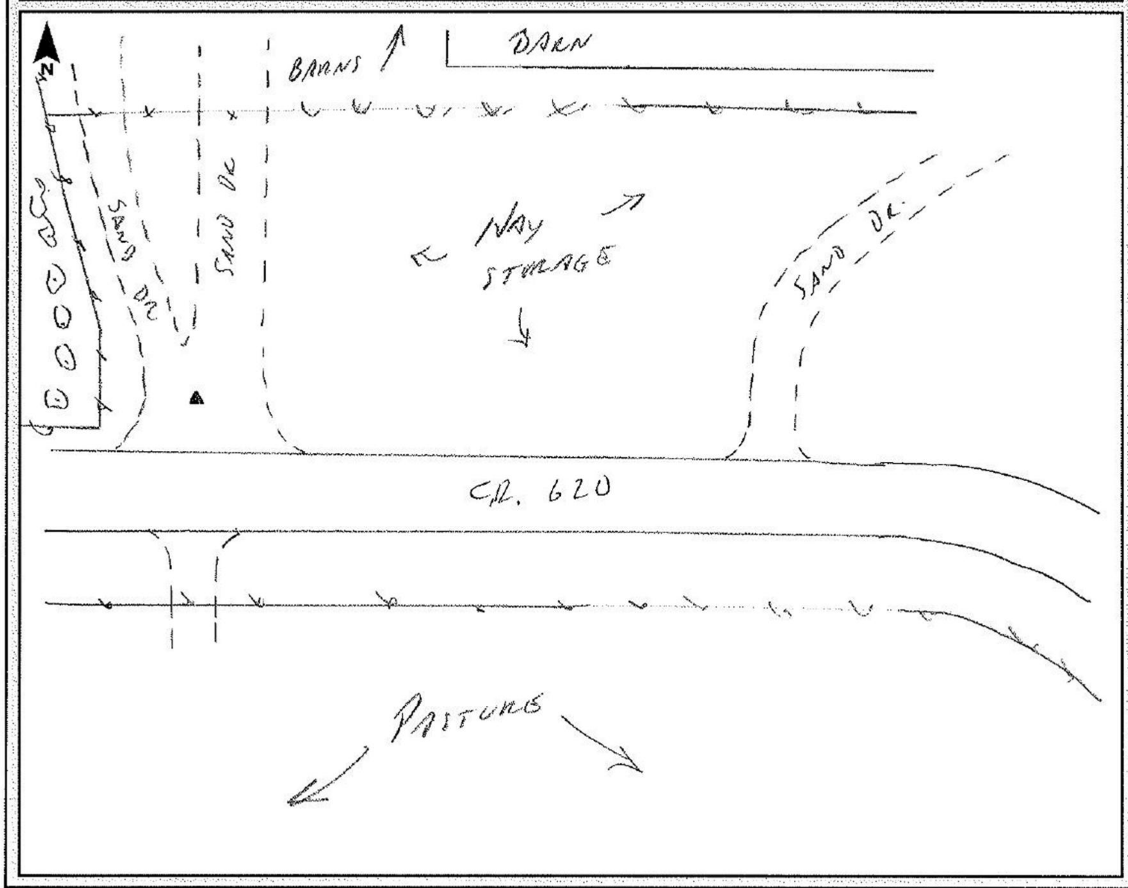

1013-3W-13MAR2013

LiDAR GROUND CONTROL – 1014

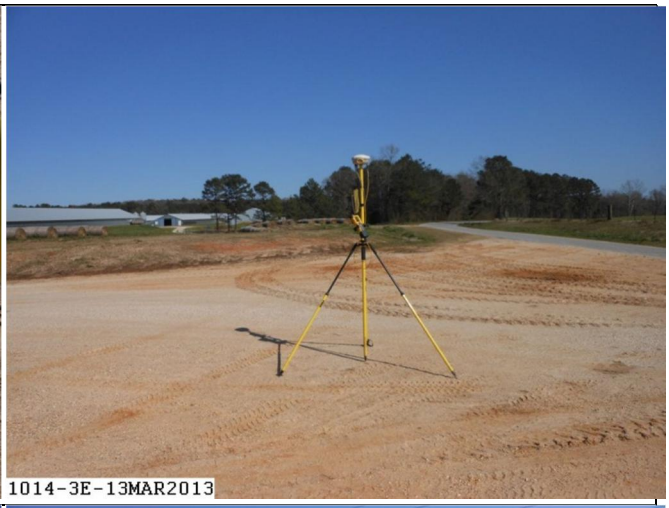
GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	Project Number:	73054
		Survey Date:	3-13-13
Station Name:	1014	Operator Name:	James Speelman
Latitude:	31° 54' 27.28"	Julian Day:	072
		Session No.	—
Longitude:	88° 31' 31.63"	Start Time:	—
		End Time:	—
Ellip. Height:	183.368'	Data File Name:	LAUD03133700.DC
Type of Mark:	6" NAIL w/DISC	Type of Reciever:	TRIMBLE R8-2
Stamping on Mark:	N/A	Type of Antenna:	INTERNAL
Weather Condition:	PC	Antenna Height:	2.0 m to bottom of antenna mount




1014-2-13MAR2013


1014-3E-13MAR2013


1014-3N-13MAR2013


1014-3S-13MAR2013

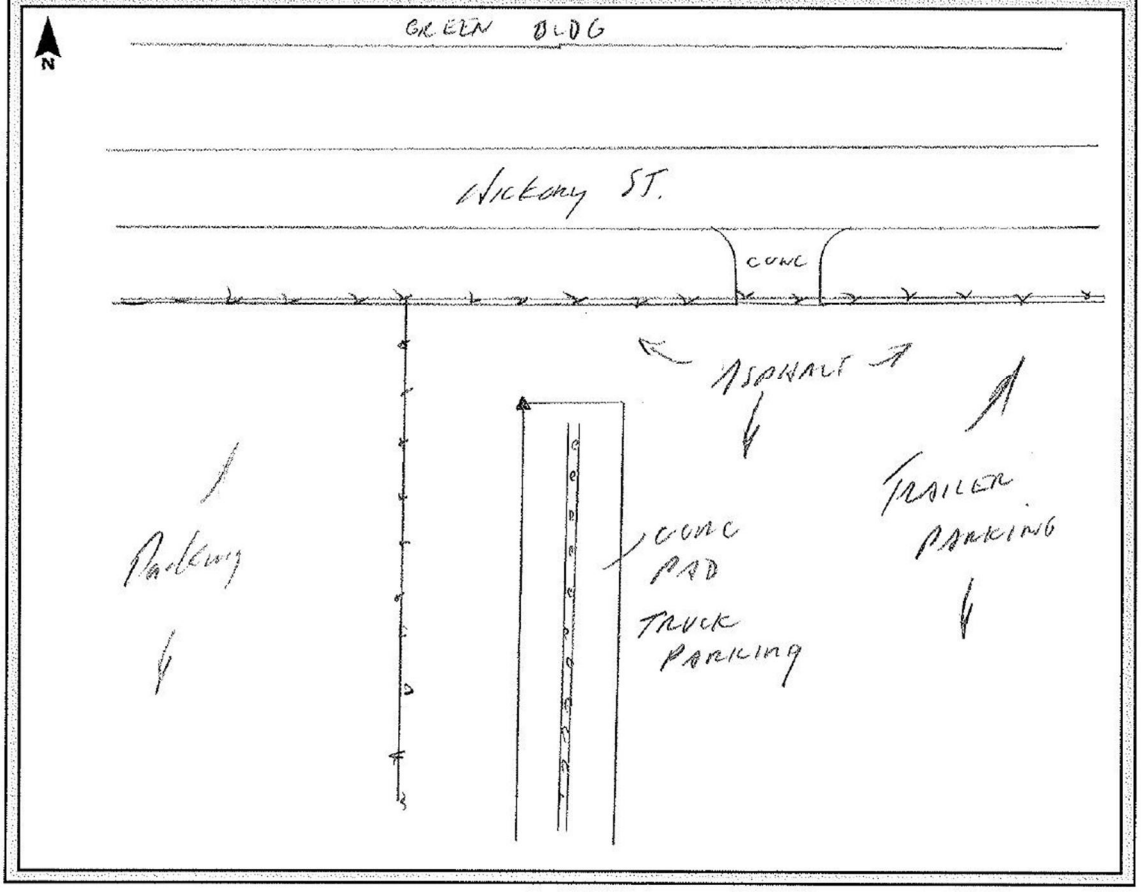

1014-3W-13MAR2013

LiDAR GROUND CONTROL – 1015

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-13-13
Station Name:	1015	**Operator Name:**	James Speelman		
Latitude:	32° 02' 43.77"	**Julian Day:**	072	**Session No.**	—
Longitude:	88° 43' 56.80"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	132.612'	**Data File Name:**	LAUD0313 JNS.DC		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1015-2-13MAR2013


1015-3E-13MAR2013


1015-3N-13MAR2013


1015-3S-13MAR2013

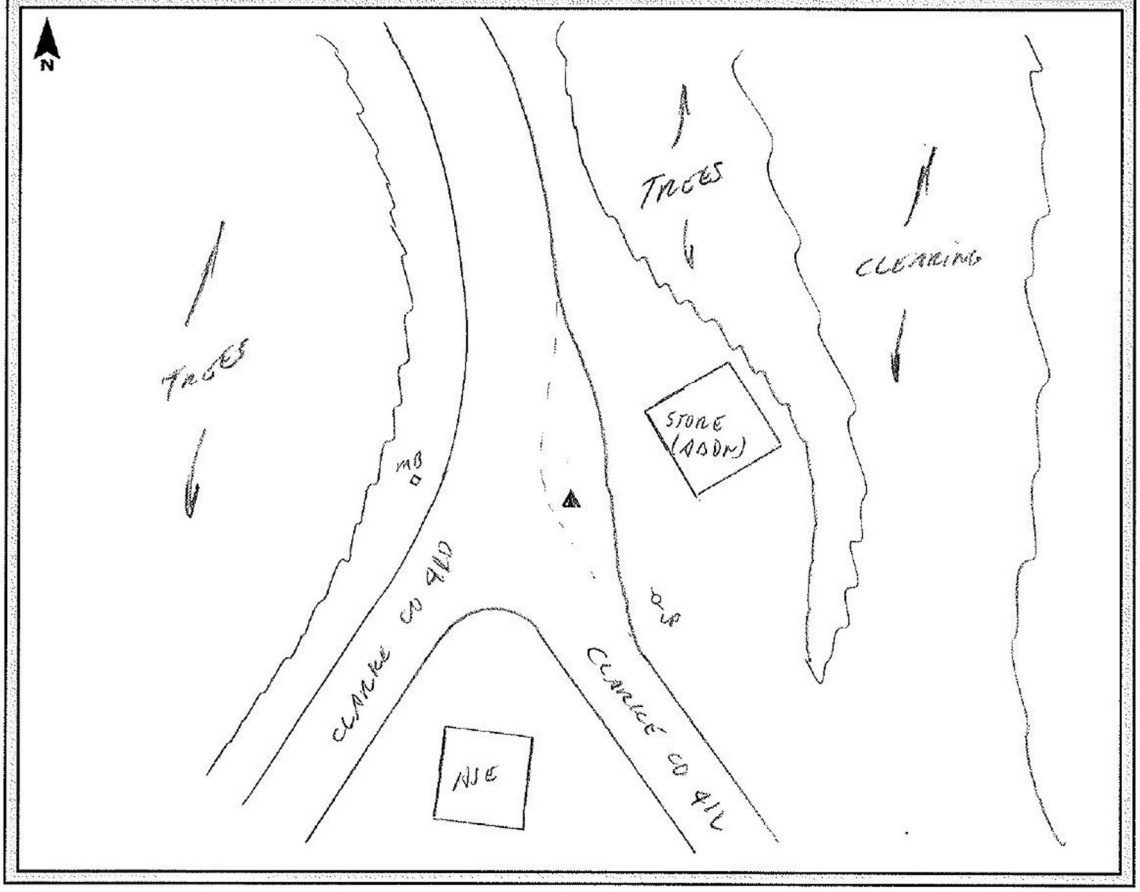

1015-3W-13MAR2013

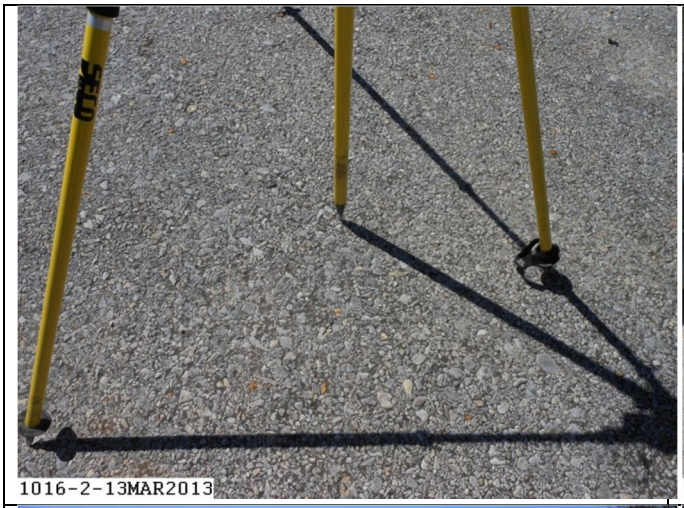
LiDAR GROUND CONTROL – 1016

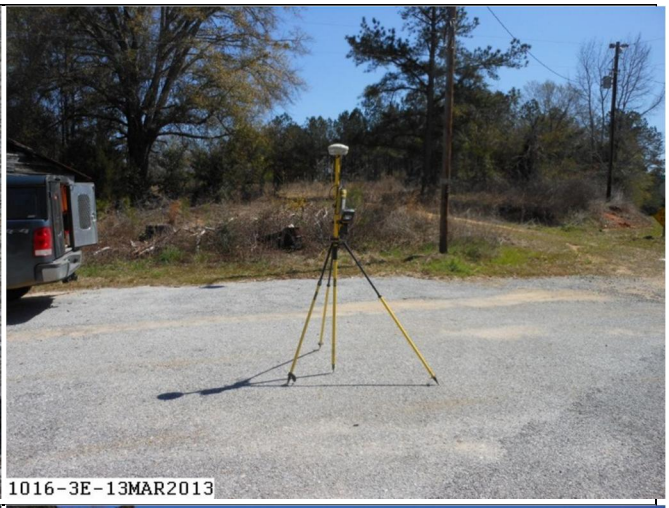
GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054
Station Name:	1016	**Survey Date:**	3-13-13
Latitude:	32° 09' 57.26"	**Operator Name:**	James Speelman
Longitude:	88° 28' 31.23"	**Julian Day:**	072
Ellip. Height:	365.222	**Session No.**	—
Type of Mark:	MAG NAIL w/washer	**Start Time:**	—
Stamping on Mark:	N/A	**End Time:**	—
Weather Condition:	PC	**Data File Name:**	LAUD0313.JPS
		Type of Reciever:	TRIMBLE R8-2
		Type of Antenna:	INTERNAL
		Antenna Height:	2.0 m to bottom of antenna mount




1016-2-13MAR2013


1016-3E-13MAR2013


1016-3N-13MAR2013


1016-3S-13MAR2013

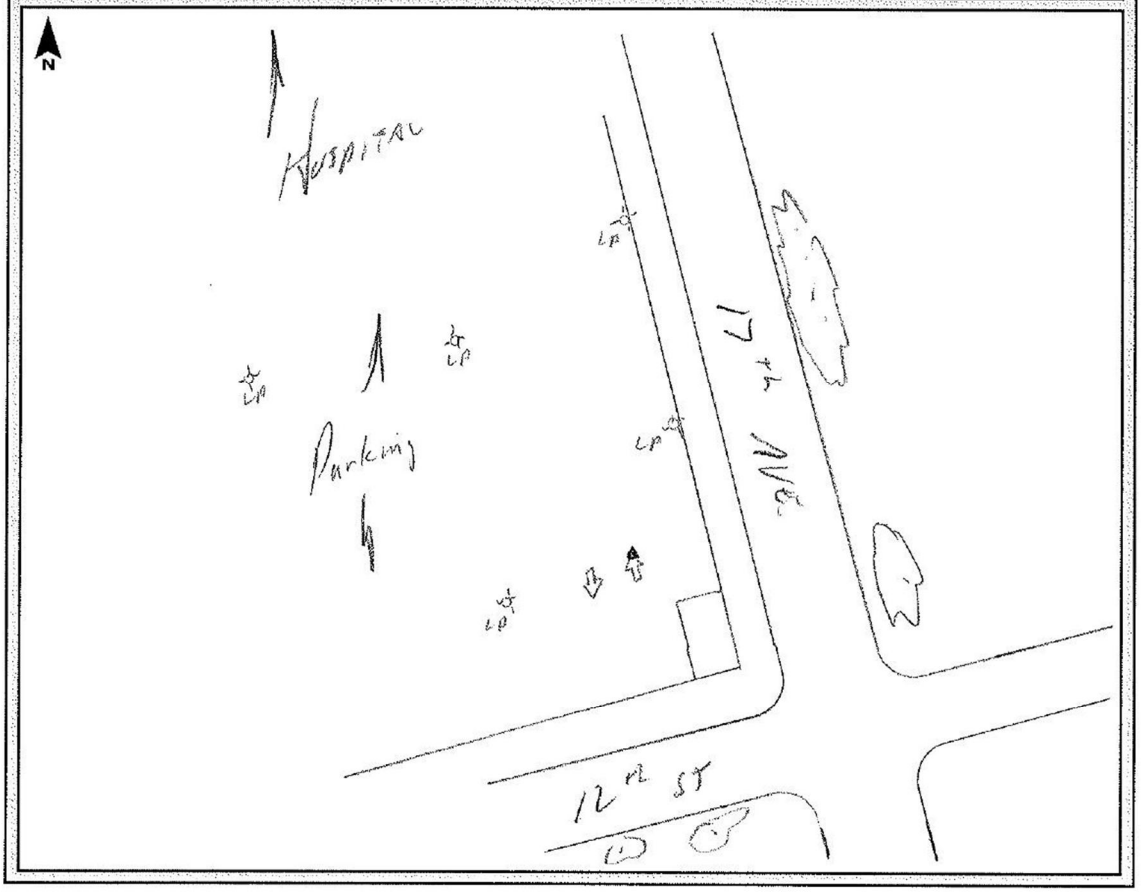

1016-3W-13MAR2013

LiDAR GROUND CONTROL – 1017

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054 **Survey Date:** 3-12-13
Station Name:	1017	**Operator Name:**	James Speelman
Latitude:	32° 22' 08.73"	**Julian Day:**	071 **Session No.** —
Longitude:	88° 41' 95.15"	**Start Time:**	— **End Time:** —
Ellip. Height:	258.691	**Data File Name:**	LAUD 0712.JPS
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	OC	**Antenna Height:**	2.0 m to bottom of antenna mount




1017-2-12MAR2013


1017-3E-12MAR2013


1017-3N-12MAR2013


1017-3S-12MAR2013

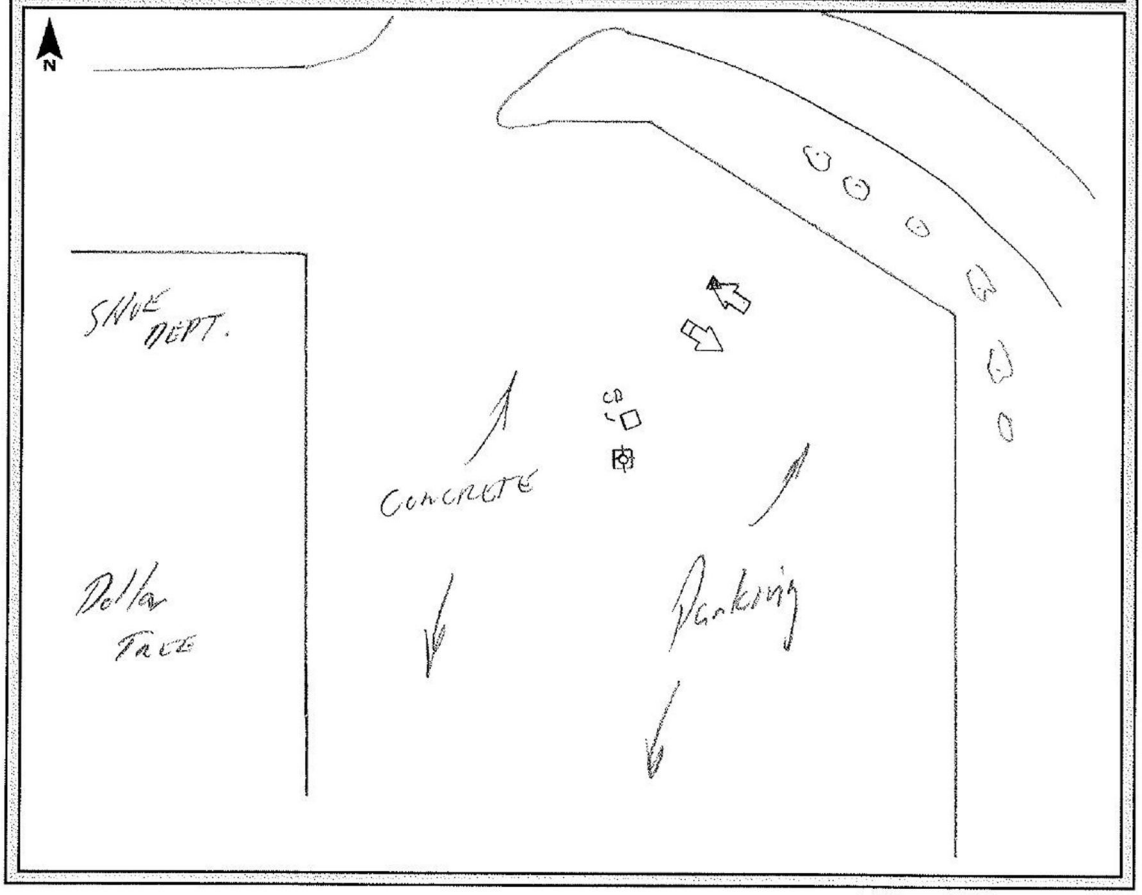

1017-3W-12MAR2013

LiDAR GROUND CONTROL – 1018

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:** 73054	**Survey Date:** 3-12-13
Station Name:	1018	**Operator Name:**	James Speelman
Latitude:	32° 23' 04.57"	**Julian Day:** 071	**Session No.** —
Longitude:	88° 49' 55.20"	**Start Time:** —	**End Time:** —
Ellip. Height:	218.191'	**Data File Name:**	1018071A.JPS
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:** 2.0 m	to bottom of antenna mount




1018-2-12MAR2013


1018-3NE-12MAR2013

1018-3NW-12MAR2013


1018-3S-12MAR2013

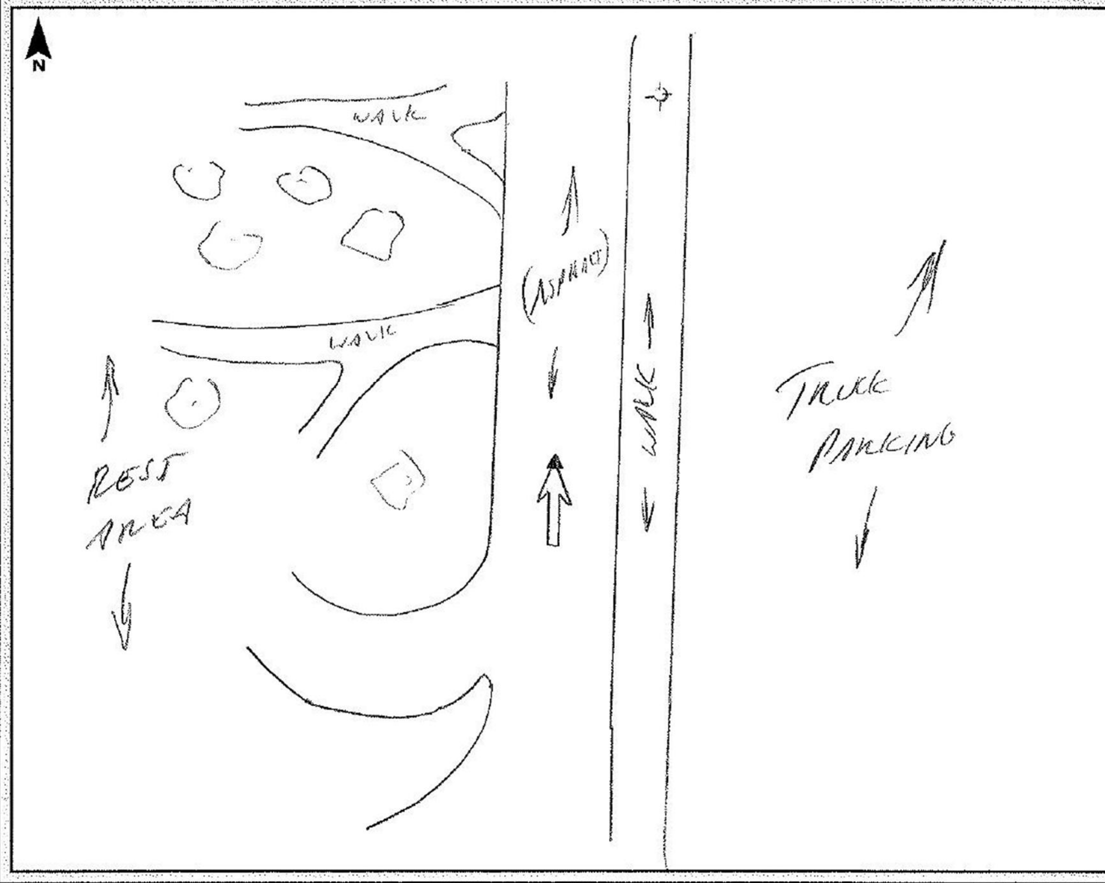
1018-3SW-12MAR2013

LiDAR GROUND CONTROL – 1019

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054
Survey Date:	3-12-13		
Station Name:	1019	**Operator Name:**	James Speelman
Latitude:	32° 26' 57.99"	**Julian Day:**	071
Session No.	—		
Longitude:	88° 23' 45.00"	**Start Time:**	—
End Time:	—		
Ellip. Height:	226.339'	**Data File Name:**	LAUD0312.JNS
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:**	2.0m to bottom of antenna mount




1019-2-12MAR2013


1019-3E-12MAR2013


1019-3N-12MAR2013


1019-3S-12MAR2013

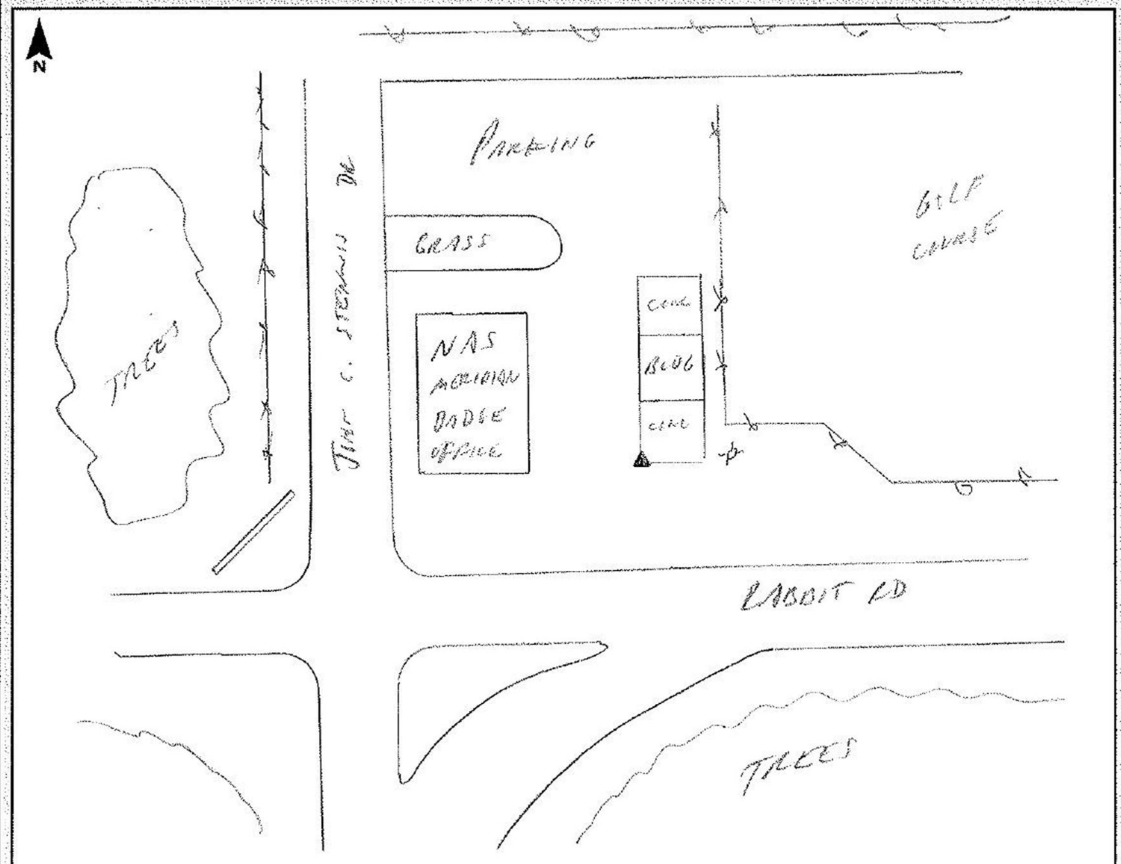

1019-3W-12MAR2013

LiDAR GROUND CONTROL – 1020

GPS Observation Log Sheet

WOOLPERT

Project Name: NRCS - LAUDERDALE, MS LiDAR
Project Number: 73054
Survey Date: 3-17-13
Station Name: 1020
Operator Name: James Speelman
Latitude: 32° 32' 44.57"
Julian Day: 076
Session No. —
Longitude: 88° 36' 10.90"
Start Time: —
End Time: —
Ellip. Height: 160.013'
Data File Name: LAU08317JAS.RC
Type of Mark: N/A
Type of Reciever: TRIMBLE R8-2
Stamping on Mark: N/A
Type of Antenna: INTERNAL
Weather Condition: Cloudy
Antenna Height: 2.0 m to bottom of antenna mount




1020-2-17MAR2013


1020-3E-17MAR2013


1020-3N-17MAR2013


1020-3S-17MAR2013


1020-3W-17MAR2013

LiDAR GROUND CONTROL – 1021

GPS Observation Log Sheet

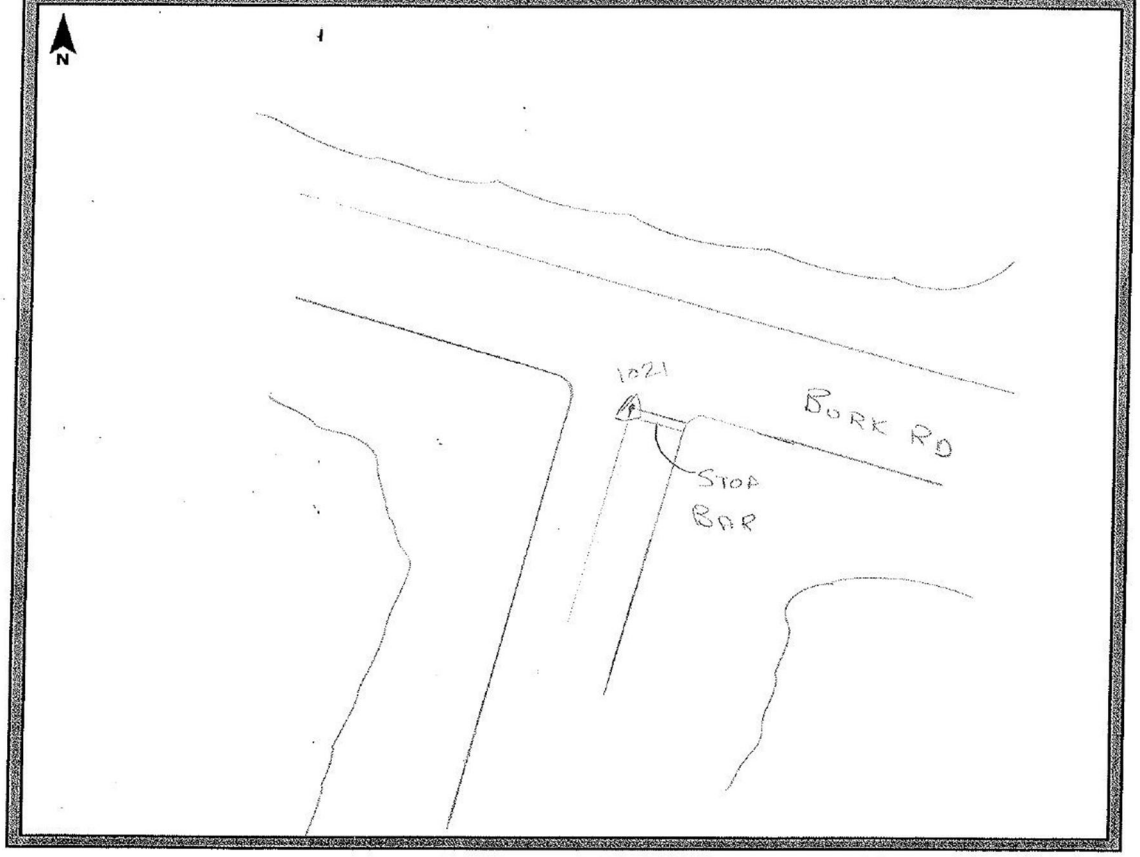
WOOLPERT

Project Name:	LAUDERDALE MS	Project Number:	073054
Station Name:	1021	Operator Name:	RC
Latitude:	32-48-06.2	Julian Day:	77
Longitude:	88-36-14.0	Start Time:	12:59
Ellip. Height:	68.4 m	Data File Name:	LAUDERDALE 0317
Type of Mark:	PK NAIL	Type of Reciever:	R8 2
Stamping on Mark:	PK @ NW COR. OF WHITE STOP BAR	Type of Antenna:	INTERNAL
Weather Condition:	70° / PC	Antenna Height:	2.0m to bottom of antenna mount

Survey Date: 3-17-13

Session No.:

End Time:



1021-2-17MAR2013


1021-3E-17MAR2013


1021-3N-17MAR2013


1021-3S-17MAR2013

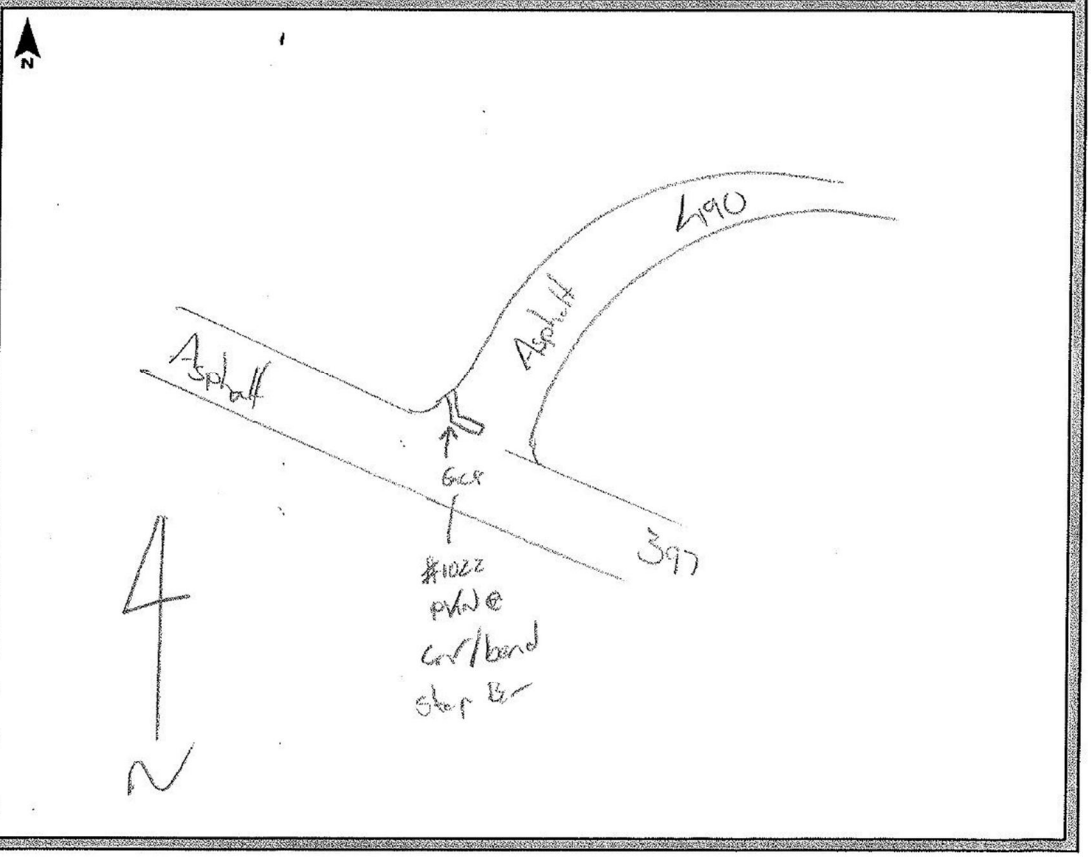

1021-3W-17MAR2013

LiDAR GROUND CONTROL – 1022

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073054
Survey Date:	03/15/13		
Station Name:	1022	Operator Name:	SNJAC
Latitude:	38° 59' 00.27619" N	Julian Day:	74
Session No.			
Longitude:	88° 54' 57.11503" W	Start Time:	1510
End Time:	1516		
Ellip. Height:	121.312	Data File Name:	073054SNJC1513
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0 m to bottom of antenna mount




1022-13-15MAR2013


1022-2N-15MAR2013


1022-3E-15MAR2013


1022-3N-15MAR2013


1022-3S-15MAR2013

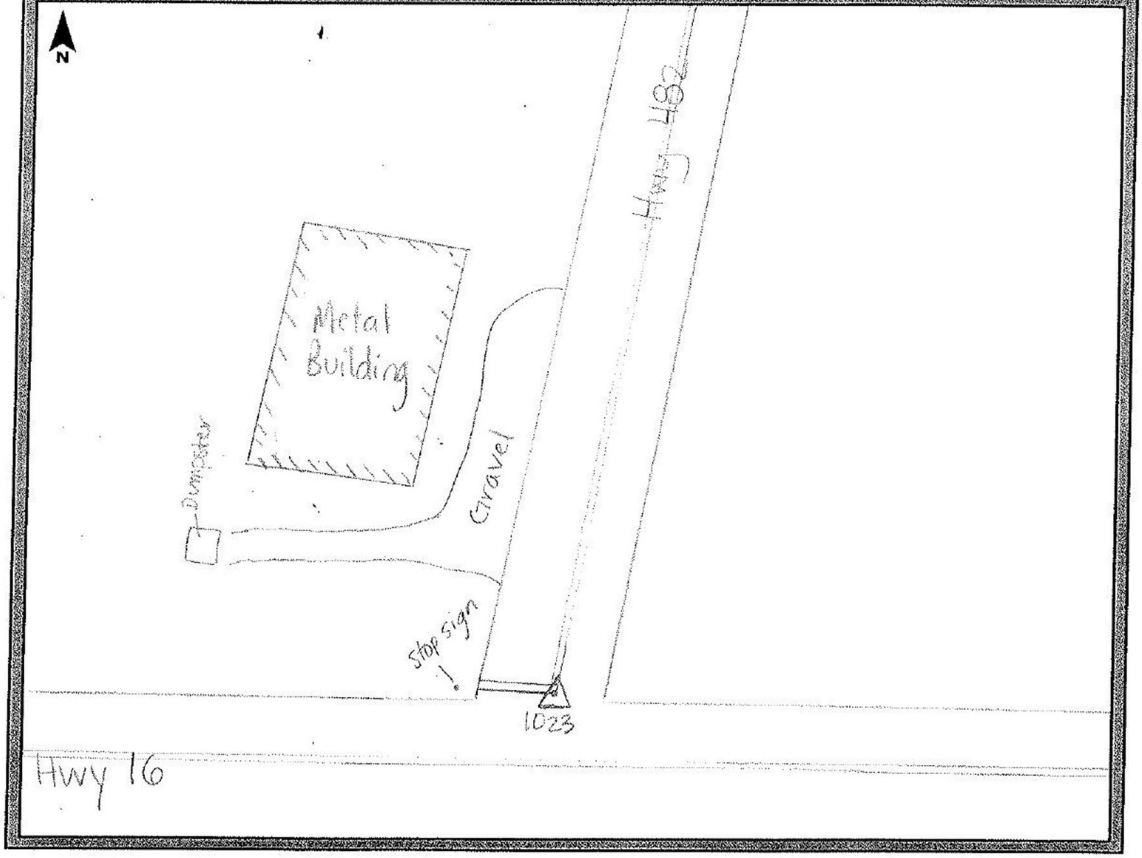

1022-3W-15MAR2013

LiDAR GROUND CONTROL – 1023

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	Project Number:	073054
Survey Date:	03/14/13		
Station Name:	1023	Operator Name:	RC + CT
Latitude:	32° 46' 06.2"	Julian Day:	73
Session No.	2		
Longitude:	89° 02' 42.16"	Start Time:	1446
End Time:	1511		
Ellip. Height:	135.1 m	Data File Name:	87340732
Type of Mark:	PK Nail	Type of Reciever:	R8
Stamping on Mark:	PK @ SE corner white stop bar	Type of Antenna:	Internal
Weather Condition:	56° F, Sunny, breezy	Antenna Height:	2.0m to bottom of antenna mount



1023-2-14MAR2013


1023-3E-14MAR2013


1023-3N-14MAR2013


1023-3S-14MAR2013

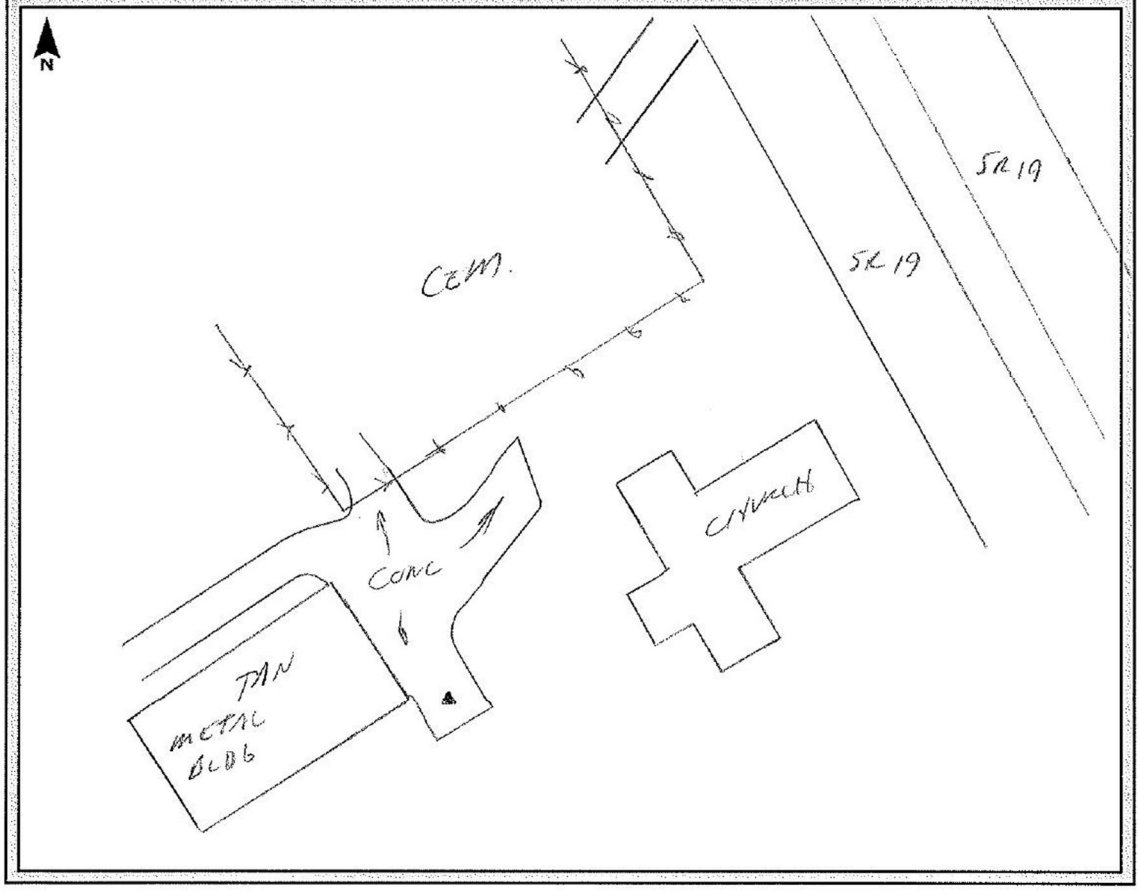

1023-3N-14MAR2013

LiDAR GROUND CONTROL – 1024

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	2-15-13
Station Name:	1024	**Operator Name:**	James Speelman		
Latitude:	32° 33' 29.65"	**Julian Day:**	074	**Session No.**	—
Longitude:	89° 55' 17.99"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	913.591'	**Data File Name:**	CALD0315ZN.DC		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	EXTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0m	to bottom of antenna mount	




1024-2-15MAR2013


1024-3E-15MAR2013


1024-3N-15MAR2013


1024-3N-15MAR2013

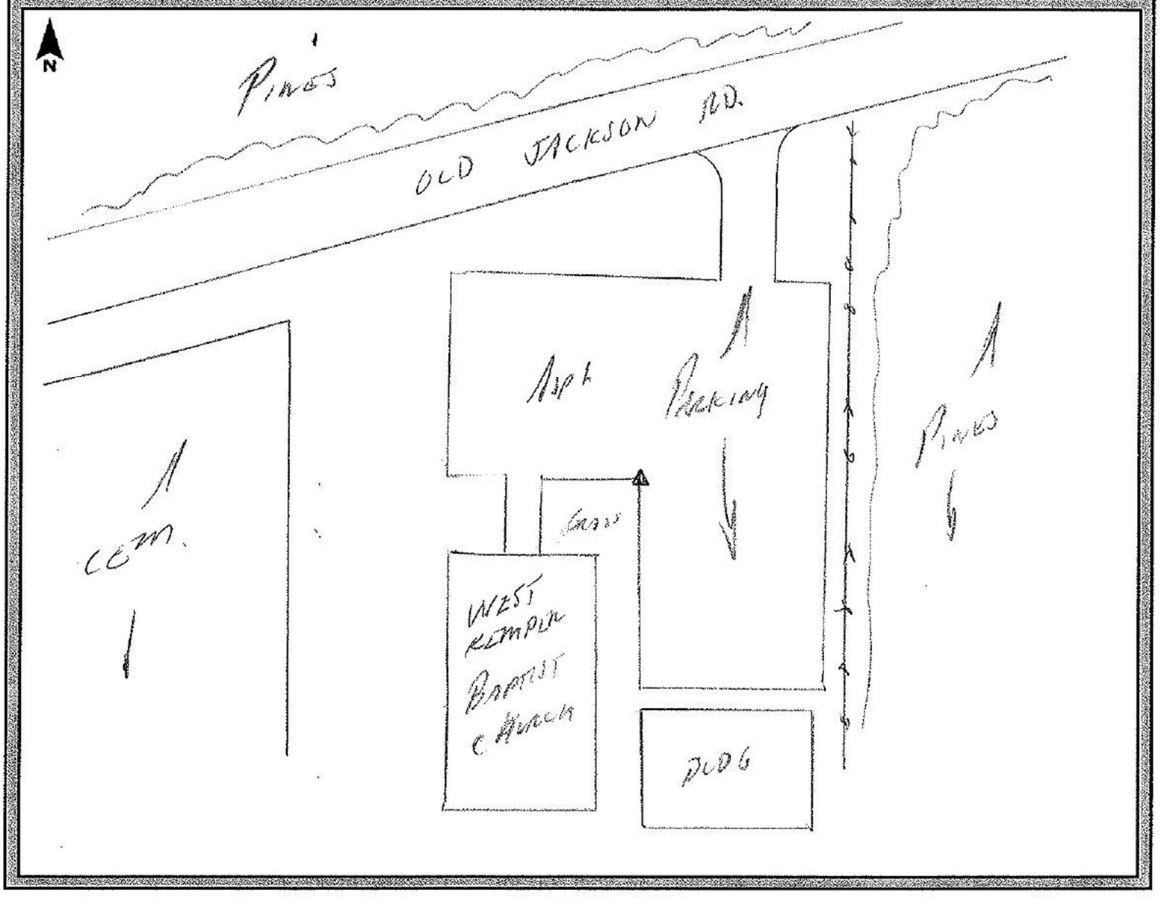

1024-3W-15MAR2013

LiDAR GROUND CONTROL – 1025

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS	Project Number:	73059
Survey Date:	7-11-13	Station Name:	1025
Operator Name:	JAMES SPEELMAN	Latitude:	32° 42' 28.00"
Julian Day:	074	Session No.	—
Longitude:	88° 48' 09.95"	Start Time:	—
End Time:	—	Ellip. Height:	419.903'
Data File Name:	LAUD0315.TRS DC	Type of Mark:	N/A
Type of Reciever:	TRIMBLE R8-2	Stamping on Mark:	N/A
Type of Antenna:	INTERNAL	Weather Condition:	PC
Antenna Height:	2.0m	to bottom of antenna mount	




1025-2-15MAR2013


1025-3E-15MAR2013


1025-3N-15MAR2013


1025-3S-15MAR2013

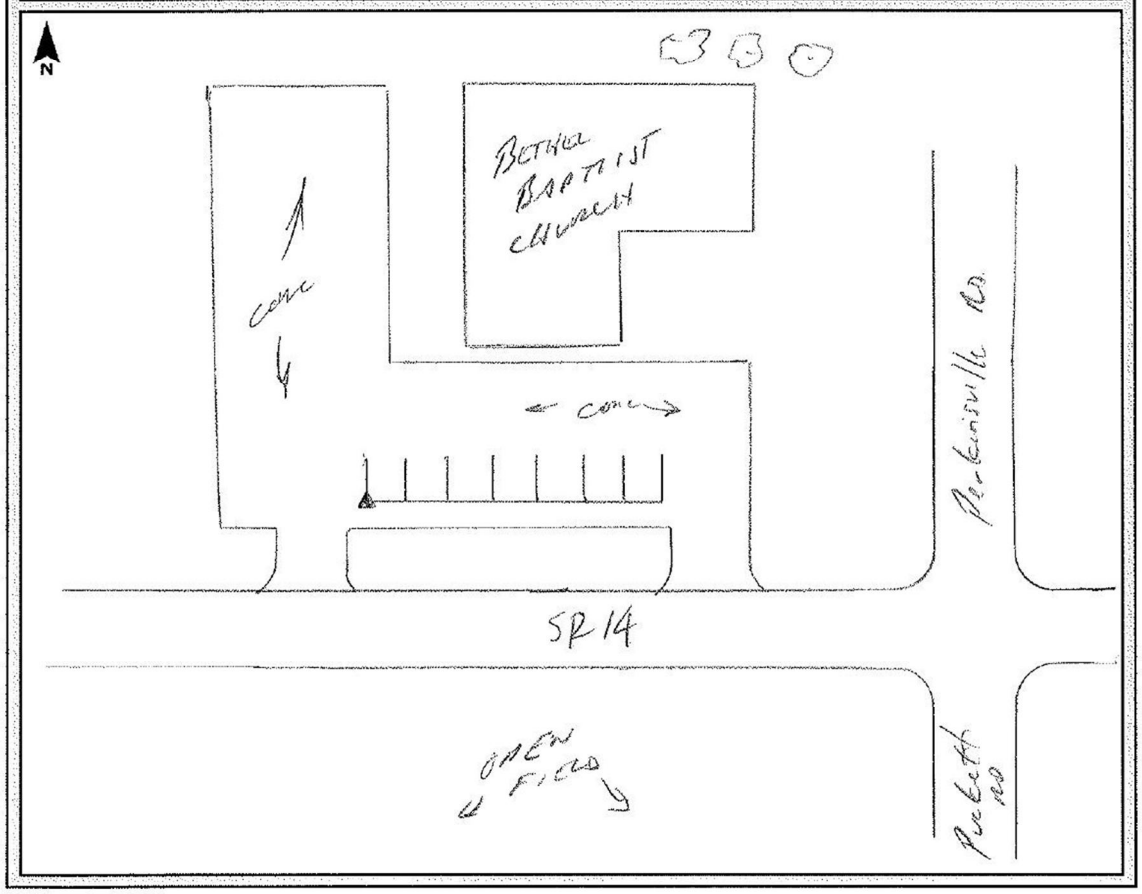

1025-3W-15MAR2013

LiDAR GROUND CONTROL – 1026

GPS Observation Log Sheet

WOOLPERT

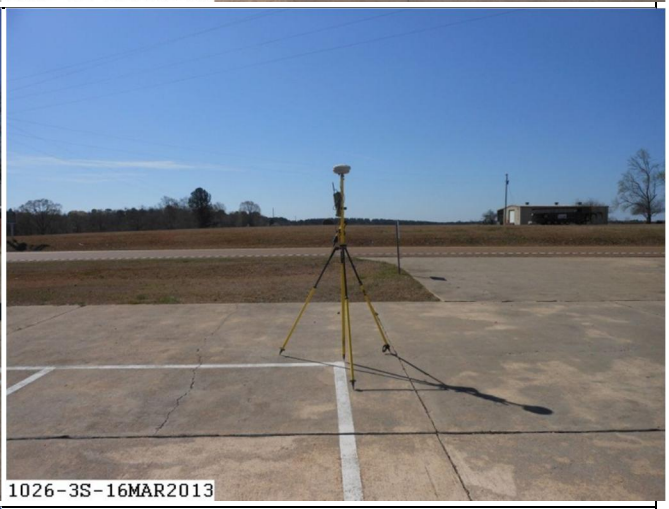
Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-16-13
Station Name:	1026	**Operator Name:**	James Speelman		
Latitude:	33° 05' 52.25"	**Julian Day:**	076	**Session No.**	—
Longitude:	88° 52' 98.56"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	574.592'	**Data File Name:**	LAUD0316.585.RL		
Type of Mark:	NAIL	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	NAIL	**Type of Antenna:**	ZEPHYR		
Weather Condition:	PC	**Antenna Height:**	2.0	to bottom of antenna mount	




1026-2-16MAR2013


1026-3E-16MAR2013


1026-3N-16MAR2013


1026-3S-16MAR2013

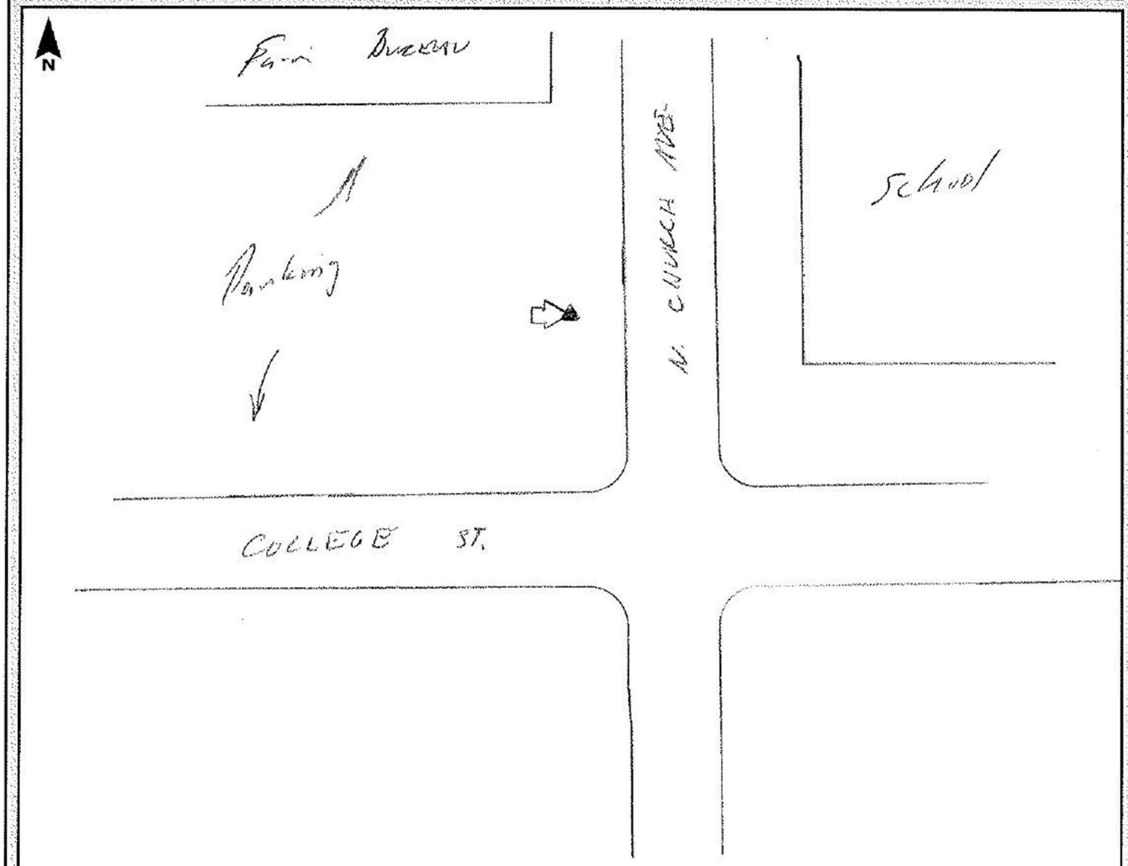

1026-3W-16MAR2013

LiDAR GROUND CONTROL – 1027

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054
		Survey Date:	3-16-13
Station Name:	1027	**Operator Name:**	James Speelman
Latitude:	33° 07' 32.52"	**Julian Day:**	075
		Session No.	—
Longitude:	89° 03' 15.62"	**Start Time:**	—
		End Time:	—
Ellip. Height:	551.849'	**Data File Name:**	L1600316549J.DC
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:**	2.0m to bottom of antenna mount




1027-2-16MAR2013


1027-3E-16MAR2013


1027-3N-16MAR2013


1027-3S-16MAR2013

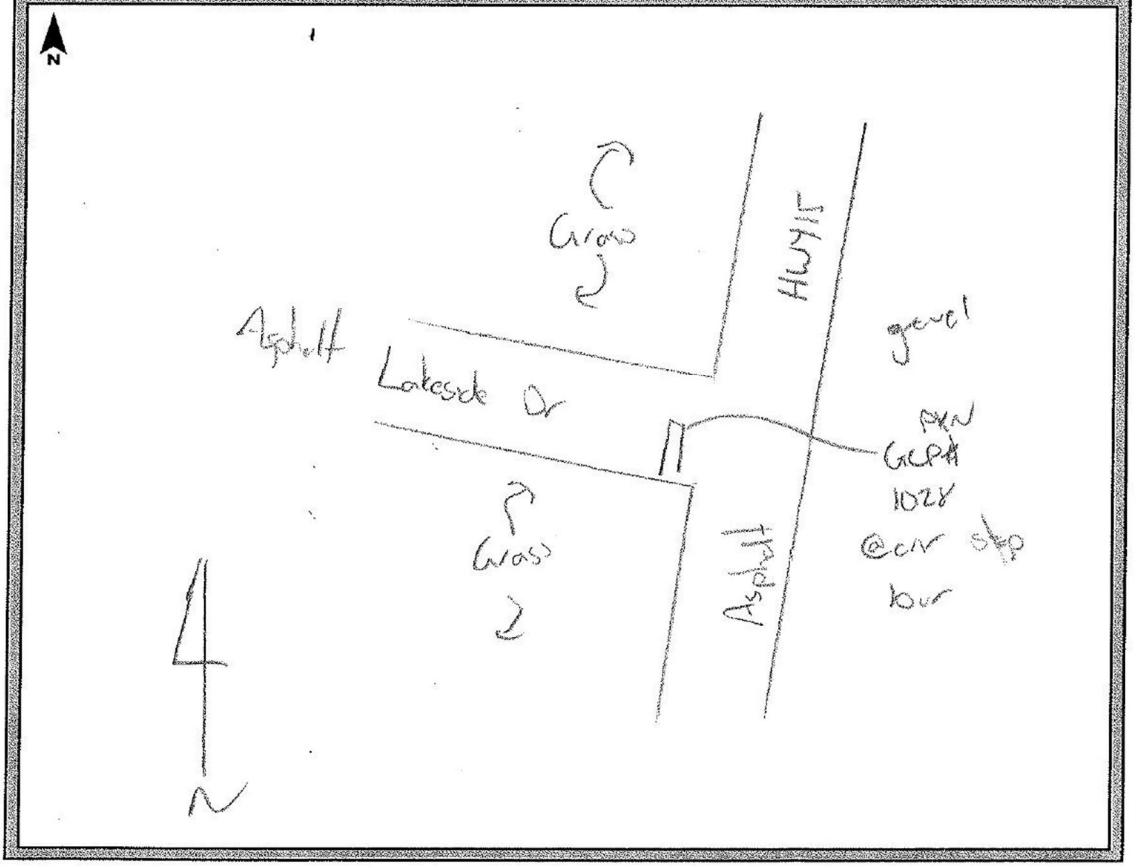

1027-3W-16MAR2013

LiDAR GROUND CONTROL – 1028

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	Survey Date: 03/15/13
Station Name:	1028	Operator Name:	SN/AC
Latitude:	33° 00' 10.64125 N	Julian Day:	74 Session No.
Longitude:	89° 03' 49.32261 W	Start Time:	1433 End Time: 1440
Ellip. Height:	121.438	Data File Name:	07305454N/0315/13
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0 m to bottom of antenna mount




1028-1E-15MAR2013


1028-2N-15MAR2013


1028-3E-15MAR2013


1028-3N-15MAR2013


1028-3S-15MAR2013

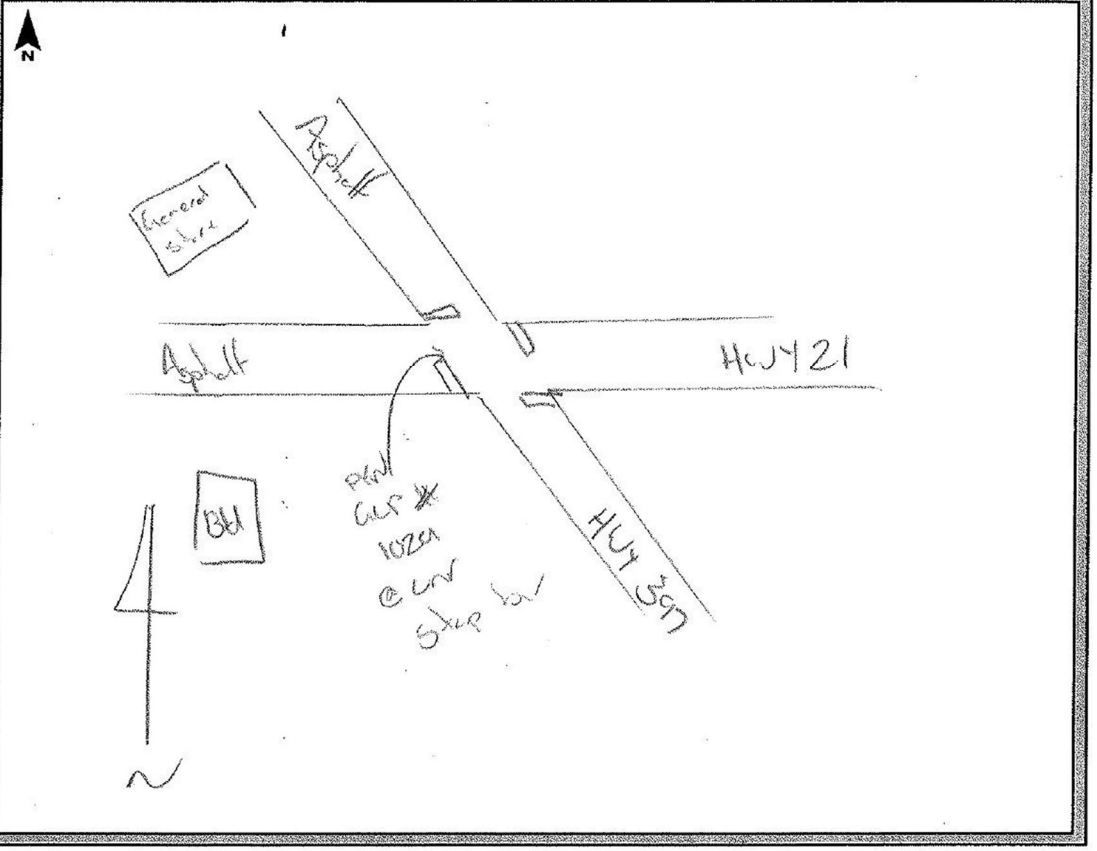

1028-3W-15MAR2013

LiDAR GROUND CONTROL – 1029

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number: 073054	Survey Date: 03/15/13
Station Name:	1029	Operator Name:	SN/AC
Latitude:	32°52'52.3657"N	Julian Day:	74
Longitude:	88°49'38.15291"W	Start Time:	1352
Ellip. Height:	134.221	Data File Name:	073054SN031513
Type of Mark:	GCP	Type of Reciever:	R Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount




1029-1E-15MAR2013


1029-2N-15MAR2013


1029-3E-15MAR2013


1029-3N-15MAR2013


1029-3S-15MAR2013

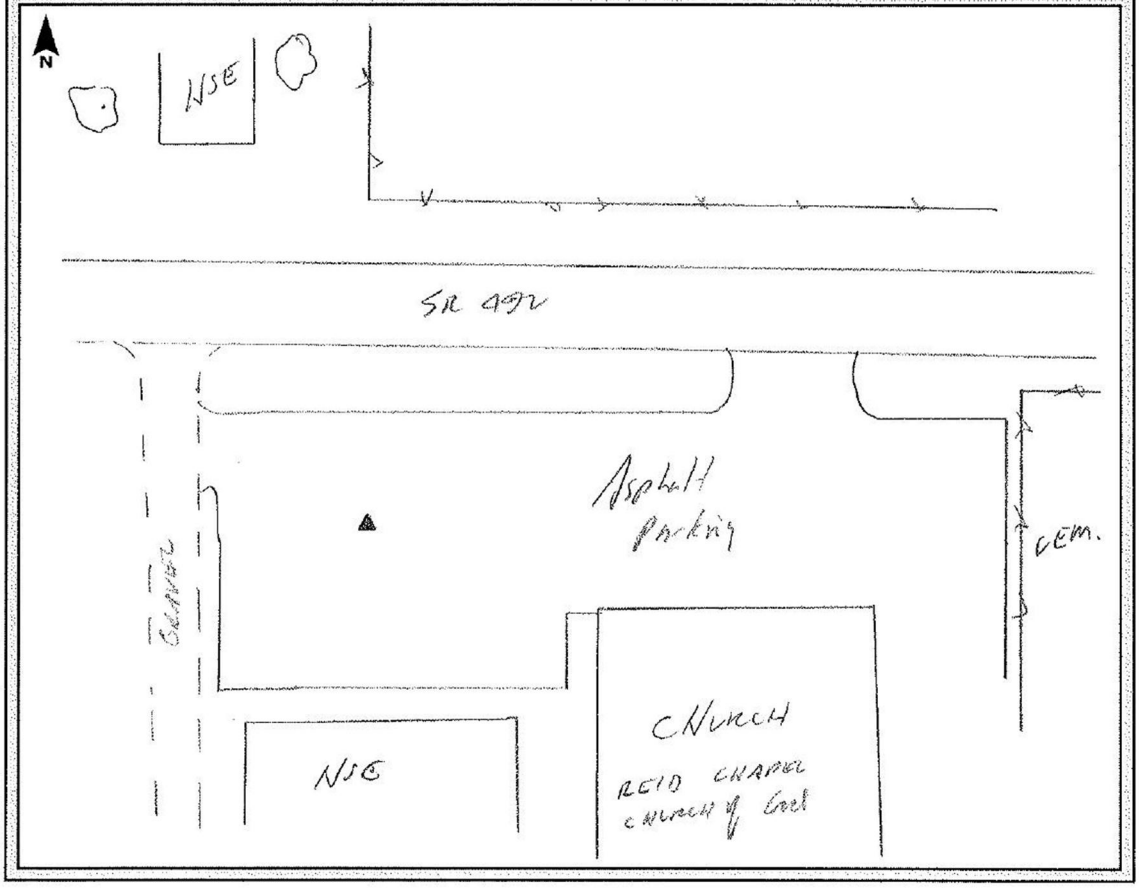

1029-3W-15MAR2013

LiDAR GROUND CONTROL – 1030

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-15-13
Station Name:	1030	**Operator Name:**	James Speelman		
Latitude:	32° 33' 17.53"	**Julian Day:**	074	**Session No.**	—
Longitude:	89° 17' 19.88"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	403.925'	**Data File Name:**	LAUD0715.13O		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	NA	**Type of Antenna:**	External		
Weather Condition:	PC	**Antenna Height:**	2.0 ~	to bottom of antenna mount	




1030-2-15MAR2013


1030-3E-15MAR2013


1030-3N-15MAR2013


1030-3S-15MAR2013

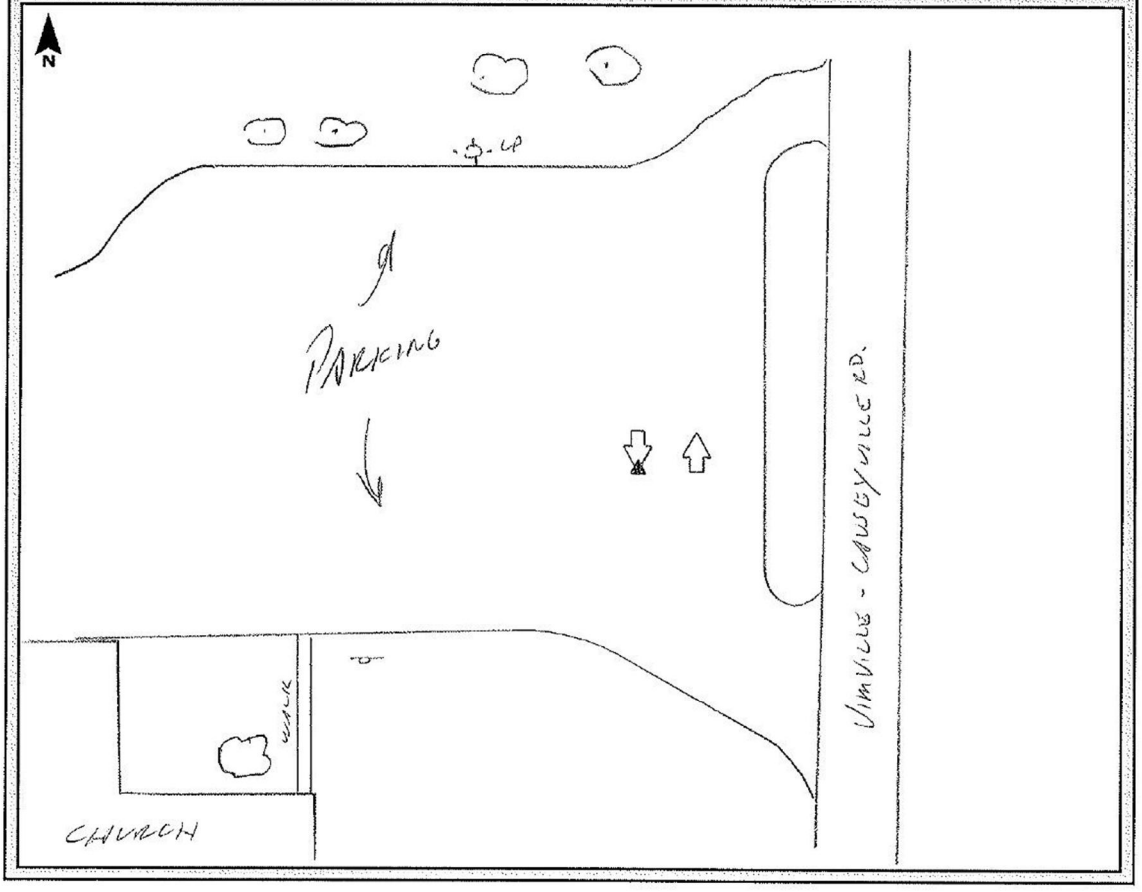

1030-3W-15MAR2013

LiDAR GROUND CONTROL – 1031

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:** 73054	**Survey Date:** 3-12-13
Station Name:	1031	**Operator Name:**	James Speelman
Latitude:	32° 15' 22.60"	**Julian Day:** 071	**Session No.** —
Longitude:	88° 33' 37.72"	**Start Time:** —	**End Time:** —
Ellip. Height:	329.594'	**Data File Name:**	LAUD071Z.JPS
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:** 2.0 m	to bottom of antenna mount




1031-2-12MAR2013


1031-3E-12MAR2013


1031-3N-12MAR2013


1031-3S-12MAR2013

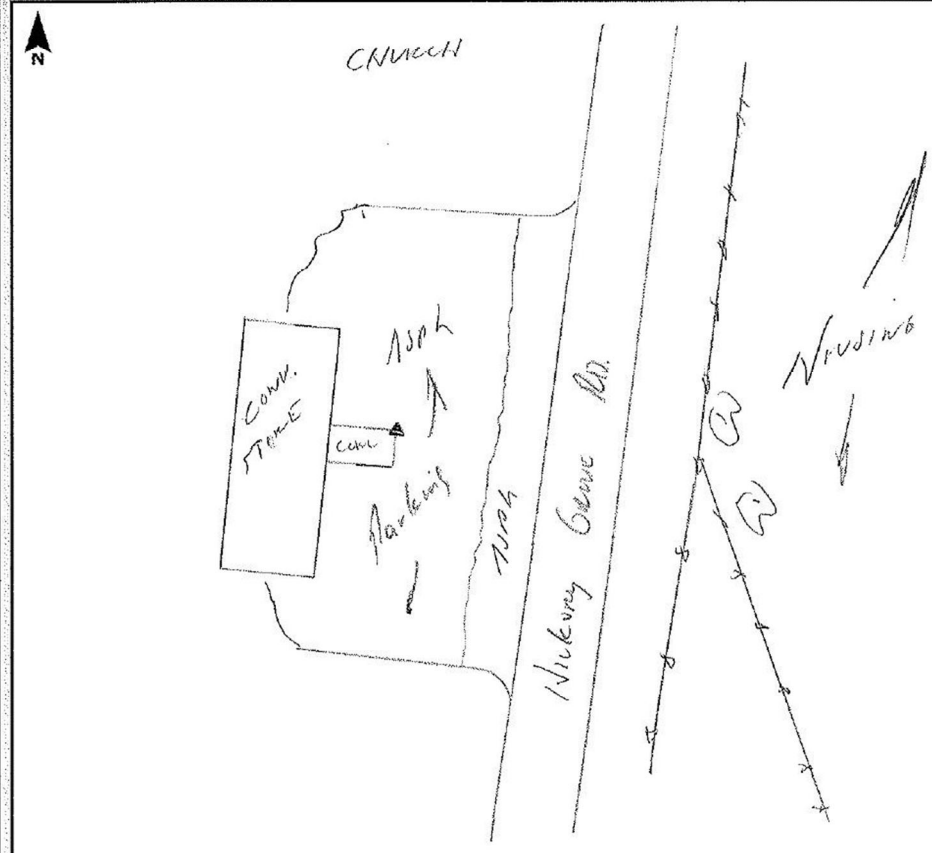

1031-3W-12MAR2013

LiDAR GROUND CONTROL – 1032

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-17-13
Station Name:	1032	**Operator Name:**	James Speelman		
Latitude:	32° 32' 23.96"	**Julian Day:**	076	**Session No.**	—
Longitude:	88° 37' 52.37"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	-97.677'	**Data File Name:**	LAUD0317076.DC		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8 2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	Cloudy	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1032-2-17MAR2013


1032-3E-17MAR2013


1032-3N-17MAR2013


1032-3S-17MAR2013

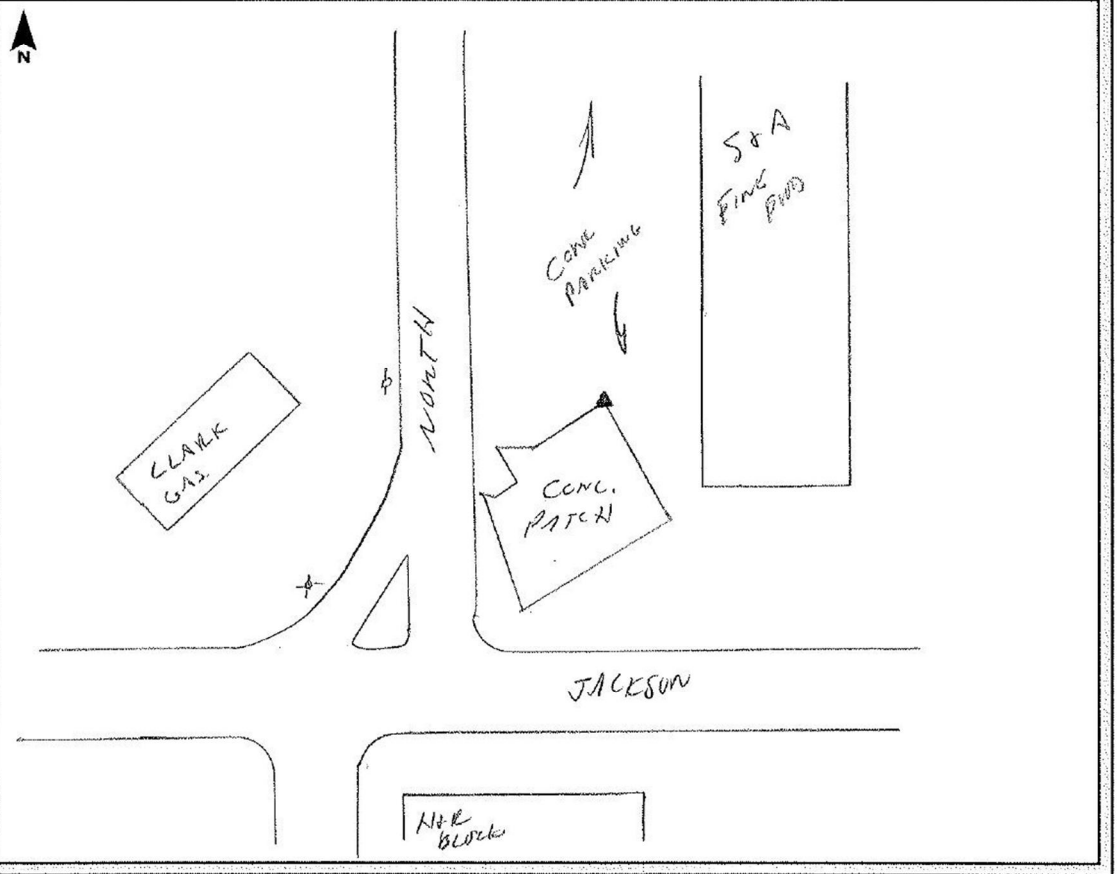

1032-3W-17MAR2013

LiDAR GROUND CONTROL – 1034

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-15-13
Station Name:	1034	**Operator Name:**	James Speelman		
Latitude:	32° 39' 22.39"	**Julian Day:**	074	**Session No.**	
Longitude:	88° 42' 12.09"	**Start Time:**		**End Time:**	
Ellip. Height:	400.915'	**Data File Name:**	LAUD1034.T02		
Type of Mark:	NAIL	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	NAIL	**Type of Antenna:**	TRIMBLE		
Weather Condition:	PC	**Antenna Height:**	2.02	to bottom of antenna mount	




1034-2-15MAR2013


1034-3E-15MAR2013


1034-3N-15MAR2013


1034-3S-15MAR2013

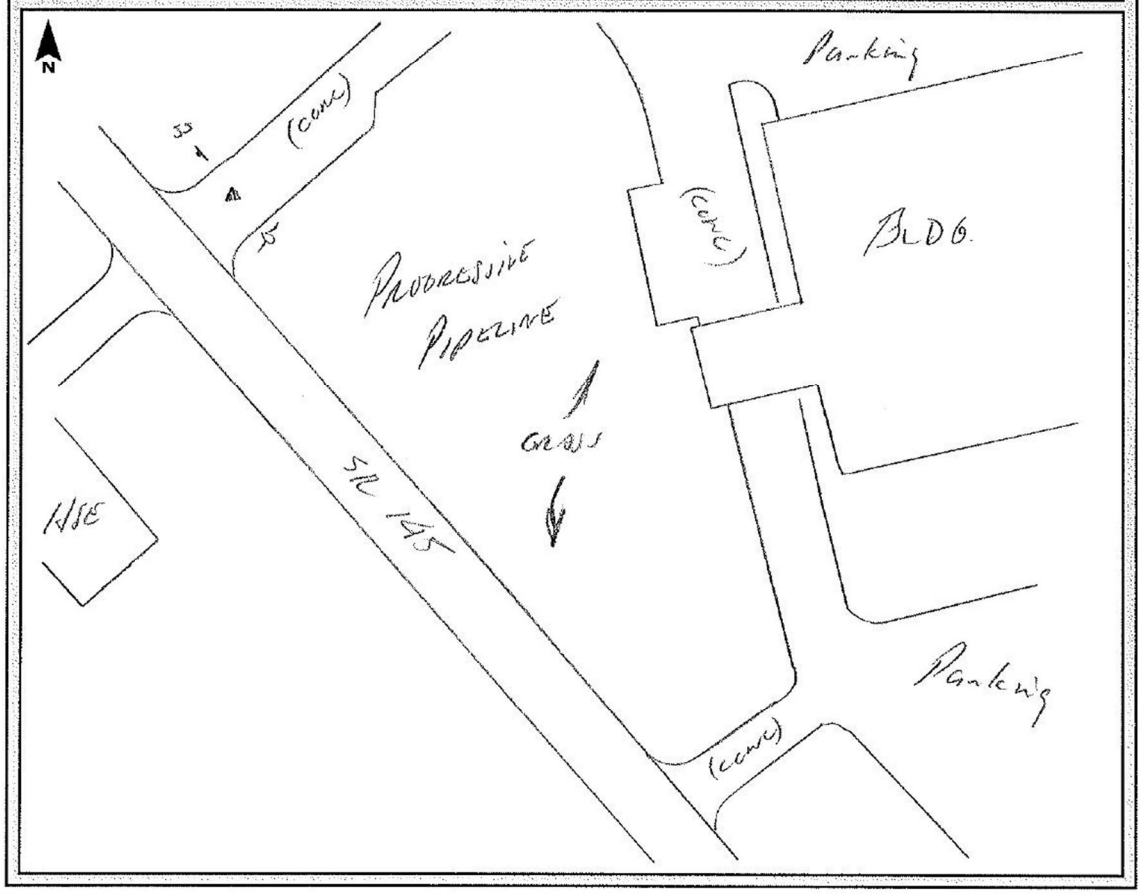

1034-3W-15MAR2013

LiDAR GROUND CONTROL – 1035

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054 **Survey Date:** 3-12-13
Station Name:	1035	**Operator Name:**	James Speelman
Latitude:	32° 12' 06.98"	**Julian Day:**	071 **Session No.** —
Longitude:	88° 41' 11.38"	**Start Time:** —	**End Time:** —
Ellip. Height:	95.045'	**Data File Name:**	LAUD0712.DAT
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL
Weather Condition:	PC	**Antenna Height:**	2.0m to bottom of antenna mount



1035-2-12MAR2013

1035-3E-12MAR2013

1035-3N-12MAR2013

1035-3S-12MAR2013

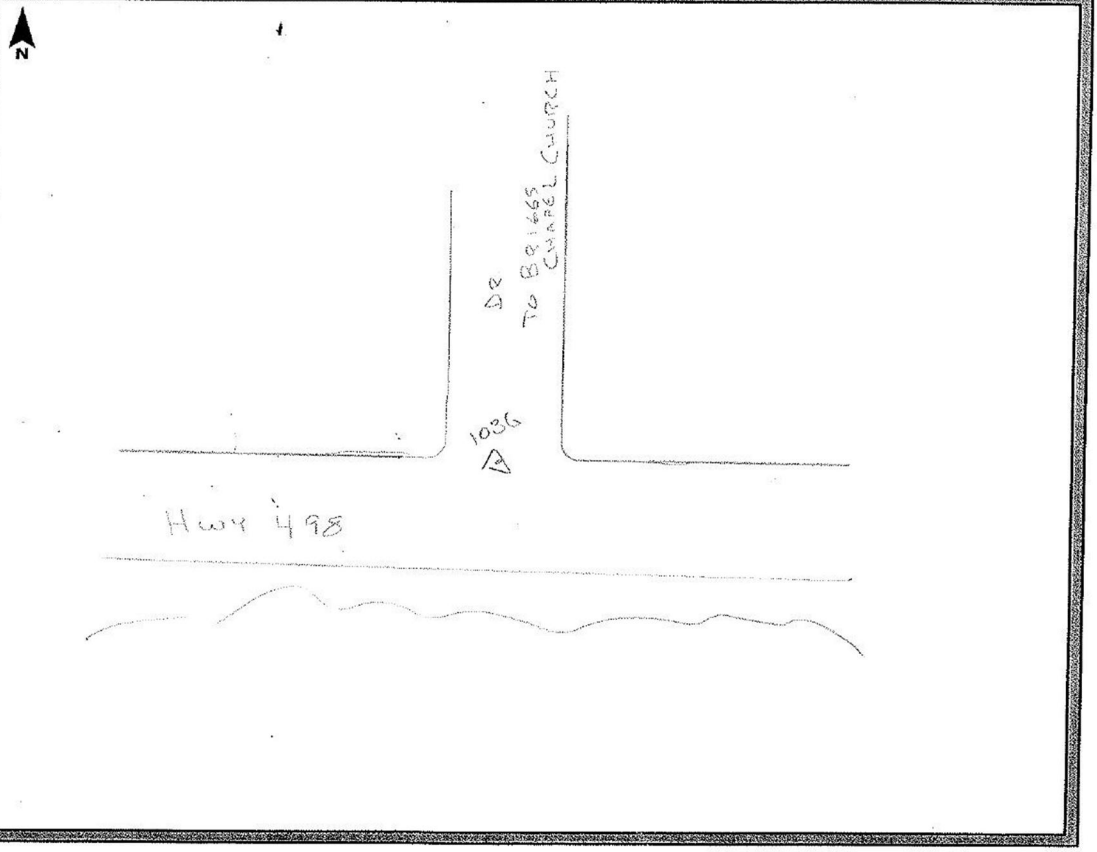
1035-3W-12MAR2013

LiDAR GROUND CONTROL – 1036

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE MS	Project Number: 023054	Survey Date: 3-17-13
Station Name:	1036	Operator Name: RC	
Latitude:	32-37-55.3	Julian Day: 77	Session No.
Longitude:	88-23-31.9	Start Time: 9:1[illegible]	End Time:
Ellip. Height:	109.5 sft	Data File Name: LAUDERDALE 0317	
Type of Mark:	PK NAIL	Type of Reciever: R82	
Stamping on Mark:	N COGC RD & E DR. N	Type of Antenna: INTERNAL	
Weather Condition:	65°/ CLDY	Antenna Height: 2.0m	to bottom of antenna mount




1036-2-17MAR2013


1036-3E-17MAR2013


1036-3N-17MAR2013


1036-3S-17MAR2013

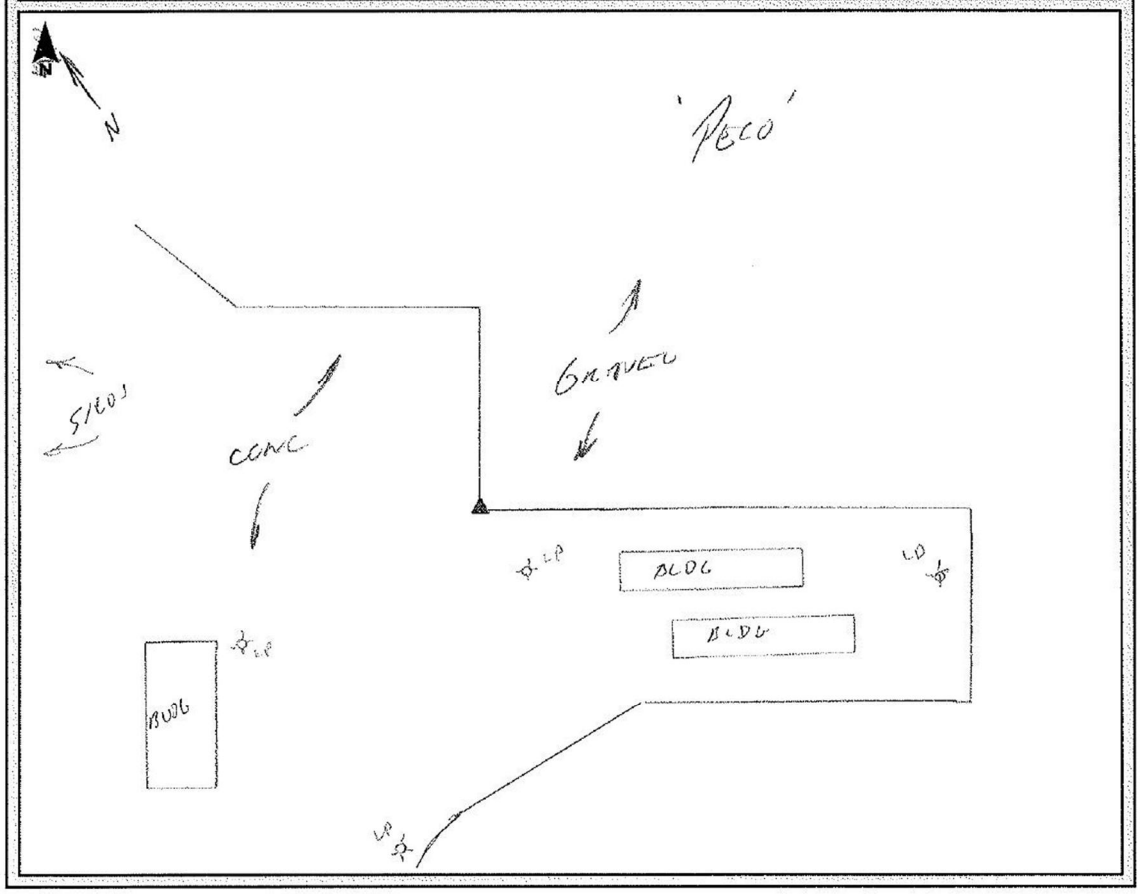

1036-3W-17MAR2013

LiDAR GROUND CONTROL – 1037

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-14-13
Station Name:	1037	**Operator Name:**	James Speelman		
Latitude:	32° 20' 20. 45"	**Julian Day:**	073	**Session No.**	—
Longitude:	89° 15' 27. 97"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	372. 896'	**Data File Name:**	LAUD0734.DAT		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0m	to bottom of antenna mount	




1037-2-14MAR2013


1037-3NE-14MAR2013


1037-3NW-14MAR2013


1037-3SE-14MAR2013

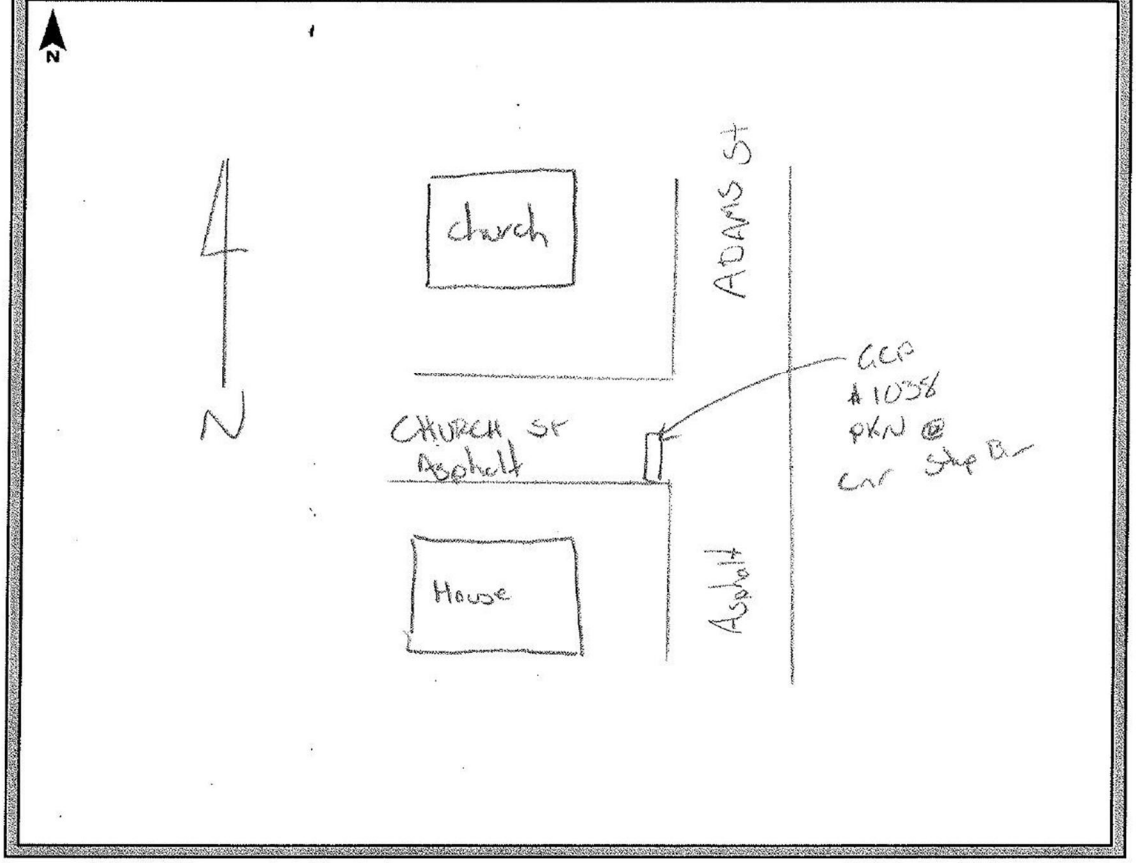

1037-3SW-14MAR2013

LiDAR GROUND CONTROL – 1038

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073074
Survey Date:	3/12/13		
Station Name:	1038	Operator Name:	SN/AC
Latitude:	32°19'39.47361 N	Julian Day:	71
Session No.			
Longitude:	88°55'52.00315 W	Start Time:	14:08
End Time:	14:15		
Ellip. Height:	70.523	Data File Name:	073074SN0312.13o
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0m to bottom of antenna mount



1038-1S-12MAR2013

1038-3E-12MAR2013

1038-3N-12MAR2013

1038-3S-12MAR2013

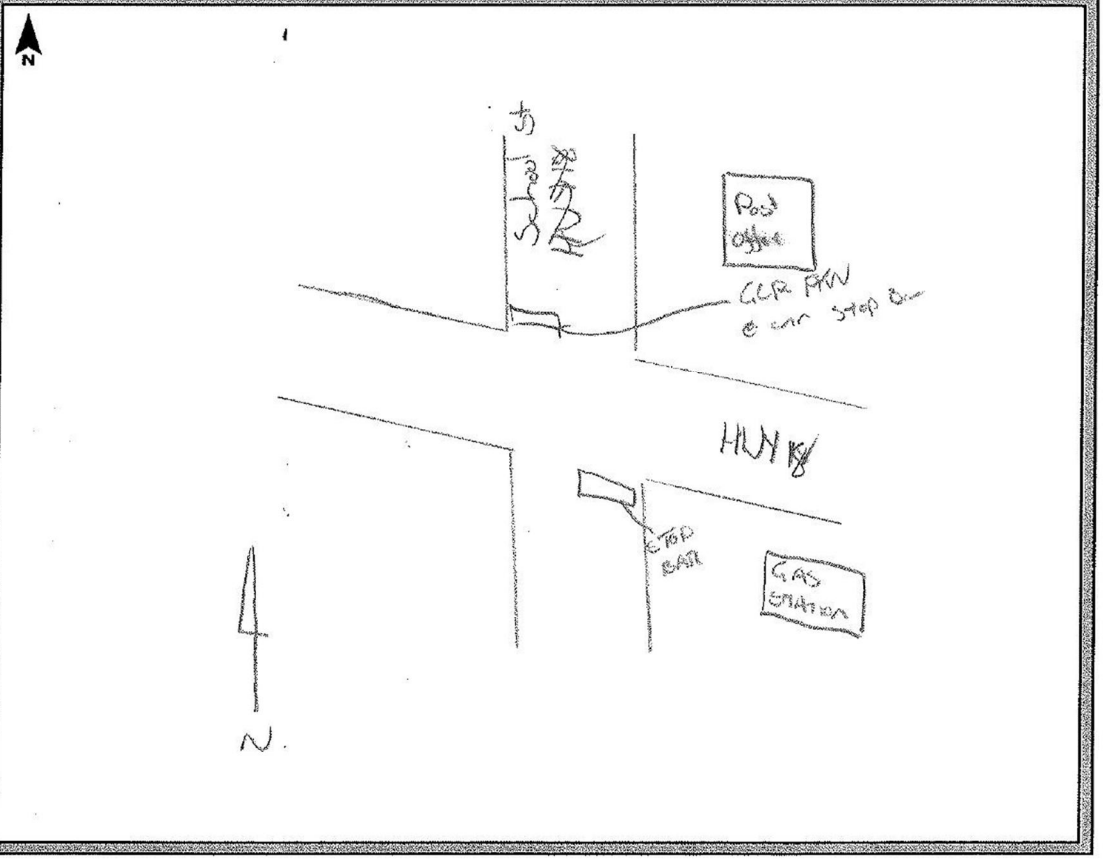
1038-3W-12MAR2013

LiDAR GROUND CONTROL – 1039

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale Lidar	Project Number:	073054 Survey Date: 3/13/13
Station Name:	1039- GCP	Operator Name:	SN / AC
Latitude:	32° 02' 22"-17073 N	Julian Day:	72 Session No.
Longitude:	88° 52' 53"-99775 W	Start Time:	9:41 End Time: 9:51
Ellip. Height:	59.00	Data File Name:	073054SN031313.J013
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.00m to bottom of antenna mount




1039-1N-13MAR2013

1039-2N-13MAR2013


1039-3E-13MAR2013


1039-3N-13MAR2013


1039-3S-13MAR2013

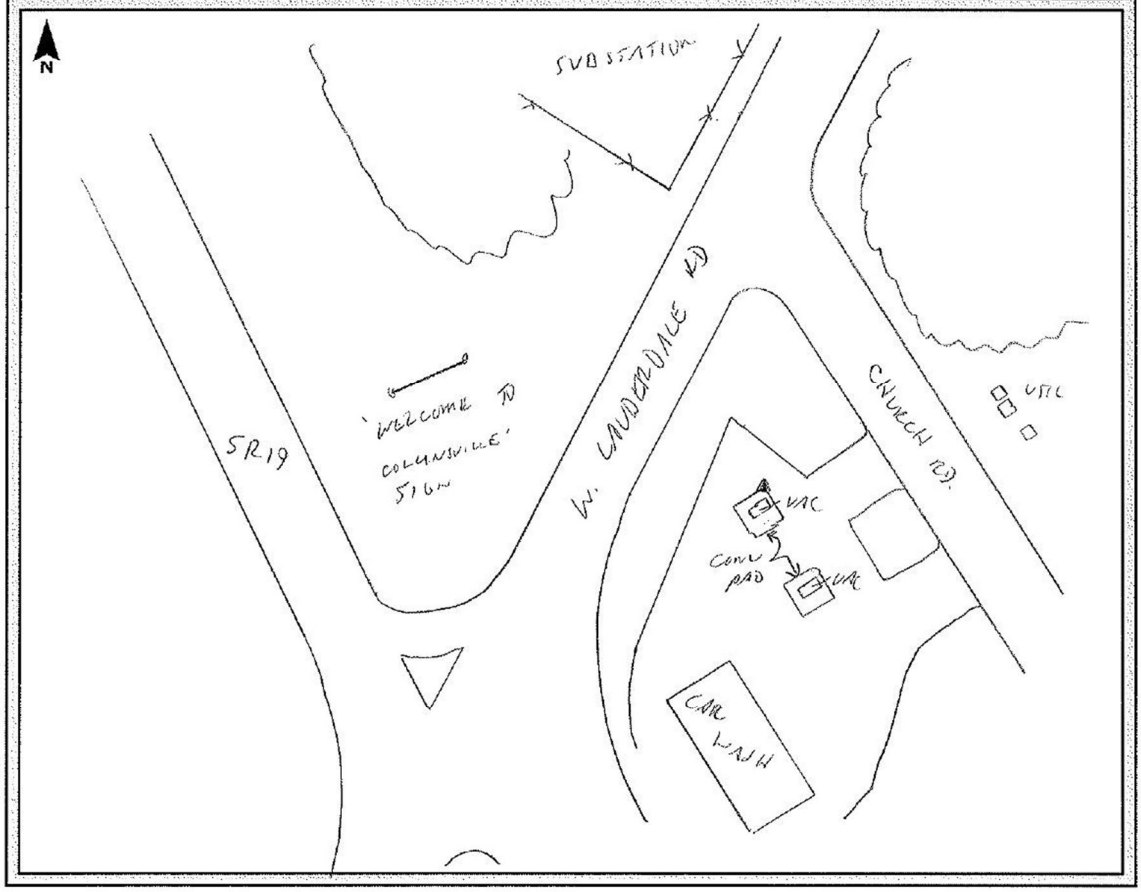
1039-3W-13MAR2013

LiDAR GROUND CONTROL – 1040

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-17-13
Station Name:	1640	**Operator Name:**	James Speelman		
Latitude:	32° 29' 53.80"	**Julian Day:**	076	**Session No.**	—
Longitude:	88° 50' 43.51"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	357.592'	**Data File Name:**	LAUD0376.08		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	Cloudy	**Antenna Height:**	2.0	to bottom of antenna mount	




1040-2-17MAR2013


1040-3NE-17MAR2013


1040-3NW-17MAR2013


1040-3SE-17MAR2013

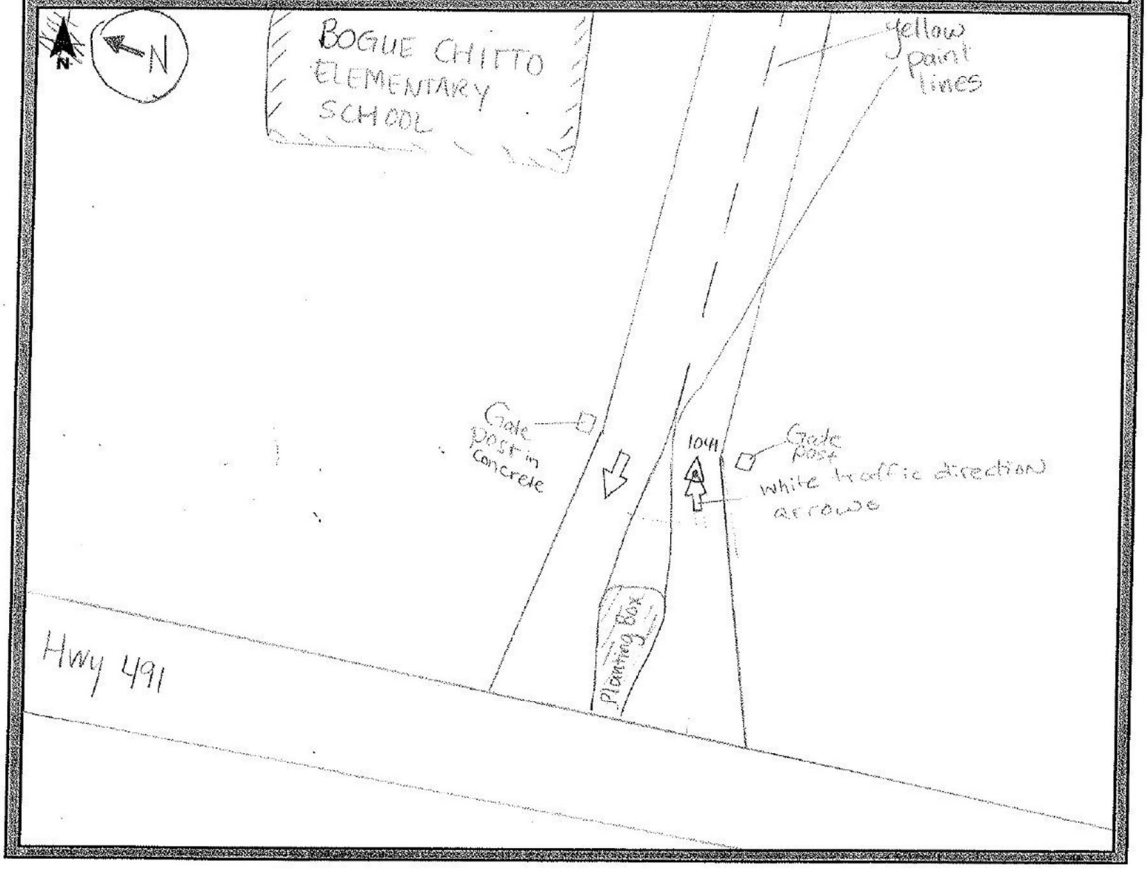

1040-3SW-17MAR2013

LiDAR GROUND CONTROL – 1041

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale.	Project Number:	0730054
Station Name:	1641	Survey Date:	03/14/13
Latitude:	32°49'54.9"	Operator Name:	RC + CT
Longitude:	88°55'49.7"	Julian Day:	73
Ellip. Height:	119.9 m	Session No.	4
Type of Mark:	PK nail	Start Time:	1532
Stamping on Mark:	nail at tip of white arrow	End Time:	1605
Weather Condition:	62°F, sunny	Data File Name:	87340733
		Type of Reciever:	R8
		Type of Antenna:	Internal
		Antenna Height:	2.0m to bottom of antenna mount




1041-3N-14MAR2013


1041-3S-14MAR2013


1041-2-14MAR2013


1041-3E-14MAR2013

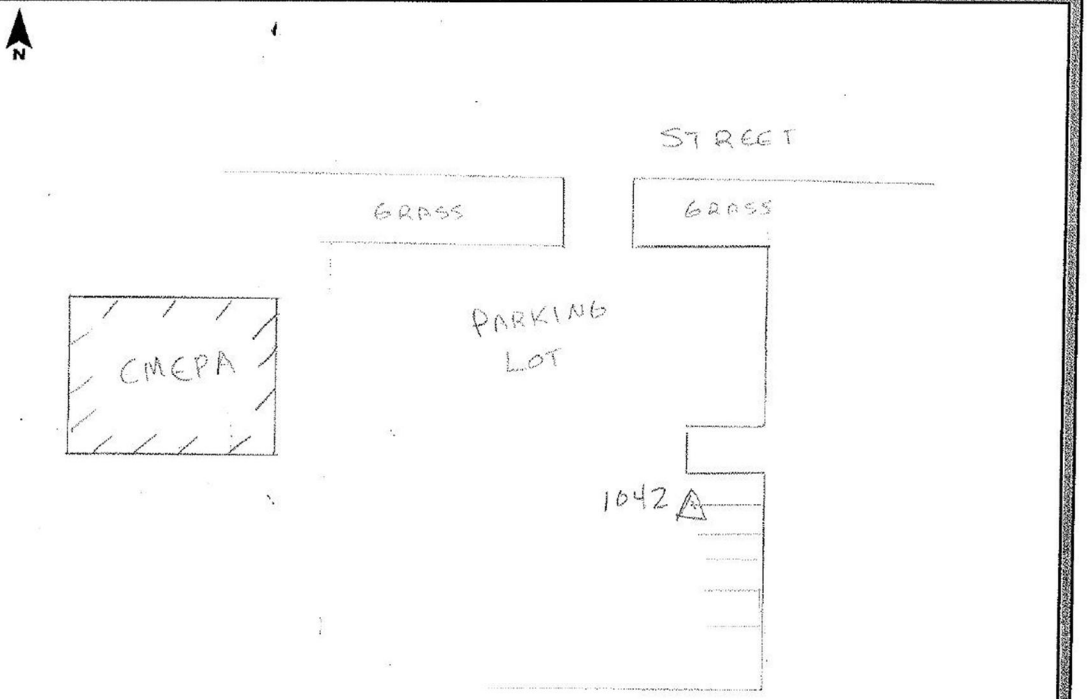

1041-3N-14MAR2013

LiDAR GROUND CONTROL – 1042

GPS Observation Log Sheet

WOOLPERT

Project Name:	LAUDERDALE MS	Project Number:	078054	Survey Date:	3-17-13
Station Name:	1042	Operator Name:	RC		
Latitude:	32-46-02.9	Julian Day:	77	Session No.	
Longitude:	88-39-15.4	Start Time:	10:53	End Time:	11:56
Ellip. Height:	102.7 m	Data File Name:	LAUDERDALE 0317		
Type of Mark:	PAINT "+"	Type of Reciever:	R8 2		
Stamping on Mark:	"+" AT W. END PAINT STRIPE	Type of Antenna:	INTERNAL		
Weather Condition:	65° / CLDY	Antenna Height:	2.0m	to bottom of antenna mount	




1042-2-17MAR2013


1042-3E-17MAR2013


1042-3N-17MAR2013


1042-3S-17MAR2013

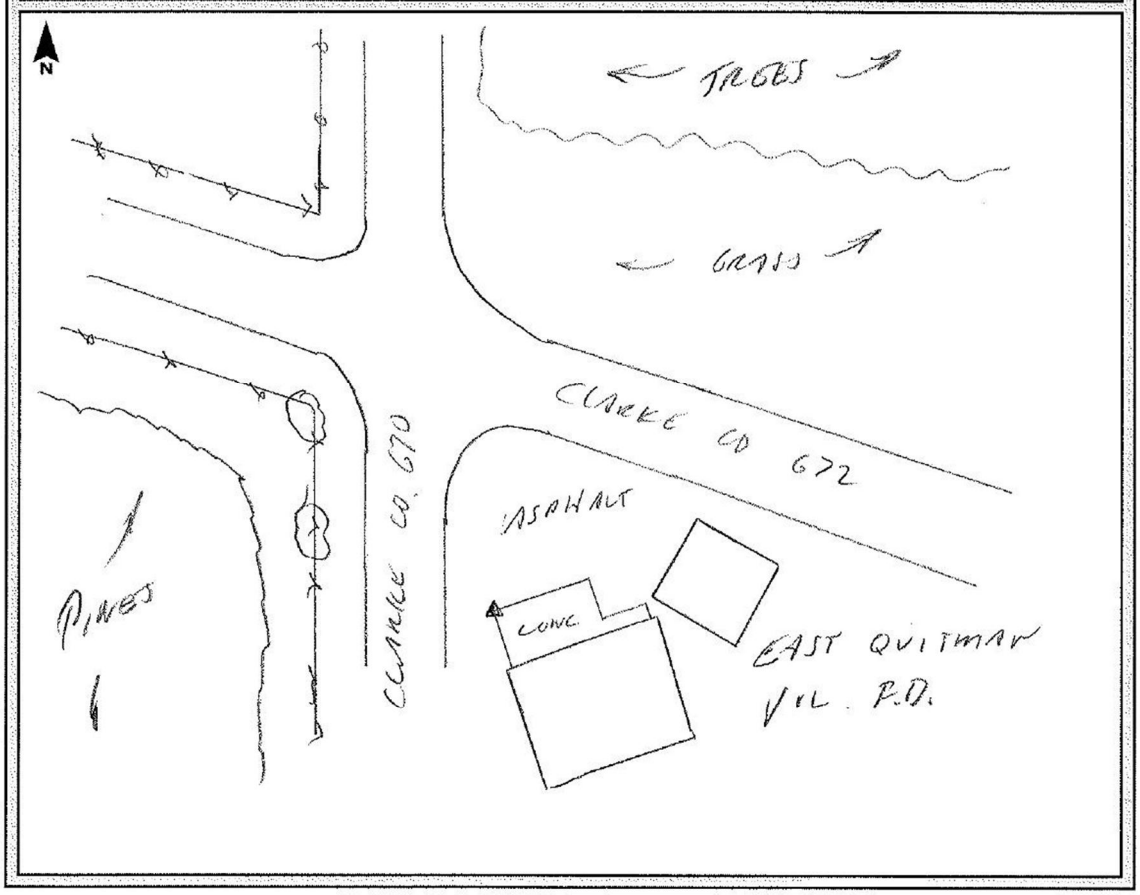

1042-3W-17MAR2013

LiDAR GROUND CONTROL – 1043

GPS Observation Log Sheet

WOOLPERT

Project Name:	NRCS - LAUDERDALE, MS LiDAR	**Project Number:**	73054	**Survey Date:**	3-13-13
Station Name:	1043	**Operator Name:**	James Speelman		
Latitude:	32° 02' 00.57"	**Julian Day:**	072	**Session No.**	—
Longitude:	88° 37' 46.40"	**Start Time:**	—	**End Time:**	—
Ellip. Height:	256.505'	**Data File Name:**	LAUD0313JM.06		
Type of Mark:	N/A	**Type of Reciever:**	TRIMBLE R8-2		
Stamping on Mark:	N/A	**Type of Antenna:**	INTERNAL		
Weather Condition:	PC	**Antenna Height:**	2.0 m	to bottom of antenna mount	




1043-2-13MAR2013


1043-3E-13MAR2013


1043-3N-13MAR2013


1043-3S-13MAR2013

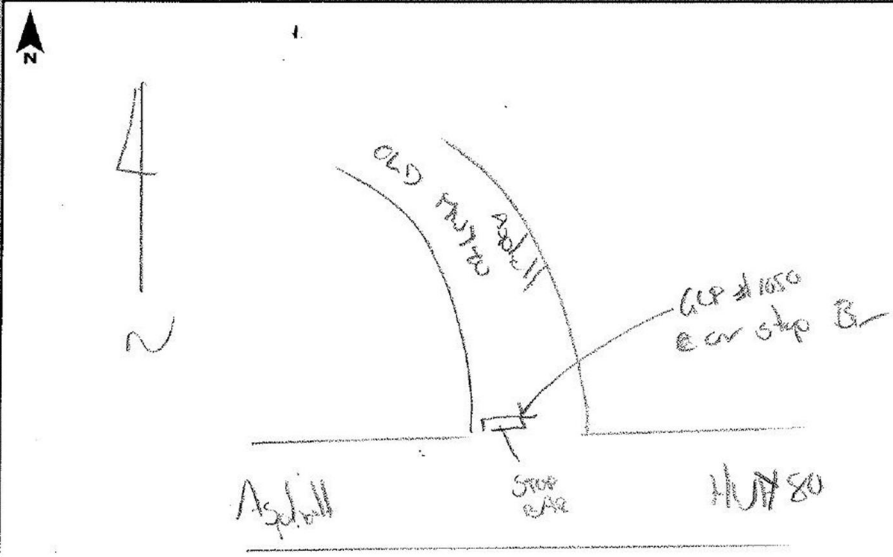

1043-3W-13MAR2013

LiDAR GROUND CONTROL – 1050

GPS Observation Log Sheet

WOOLPERT

Project Name:	MS Lauderdale LiDAR	Project Number:	073054
Survey Date:	3/13/13		
Station Name:	1050 - AKA 1033	Operator Name:	SN/AC
Latitude:	32° 20' 29".67830 N	Julian Day:	71
Session No.			
Longitude:	88° 46' 07".63364 W	Start Time:	09:57
End Time:	10:06		
Ellip. Height:	78.892	Data File Name:	073054SN0312131
Type of Mark:	GCP	Type of Reciever:	Trimble R8-2
Stamping on Mark:	—	Type of Antenna:	Internal
Weather Condition:	Sunny	Antenna Height:	2.0 m to bottom of antenna mount




1050-1N-12MAR2013


1050-2N-12MAR2013


1050-3E-12MAR2013


1050-3N-12MAR2013


1050-3S-12MAR2013

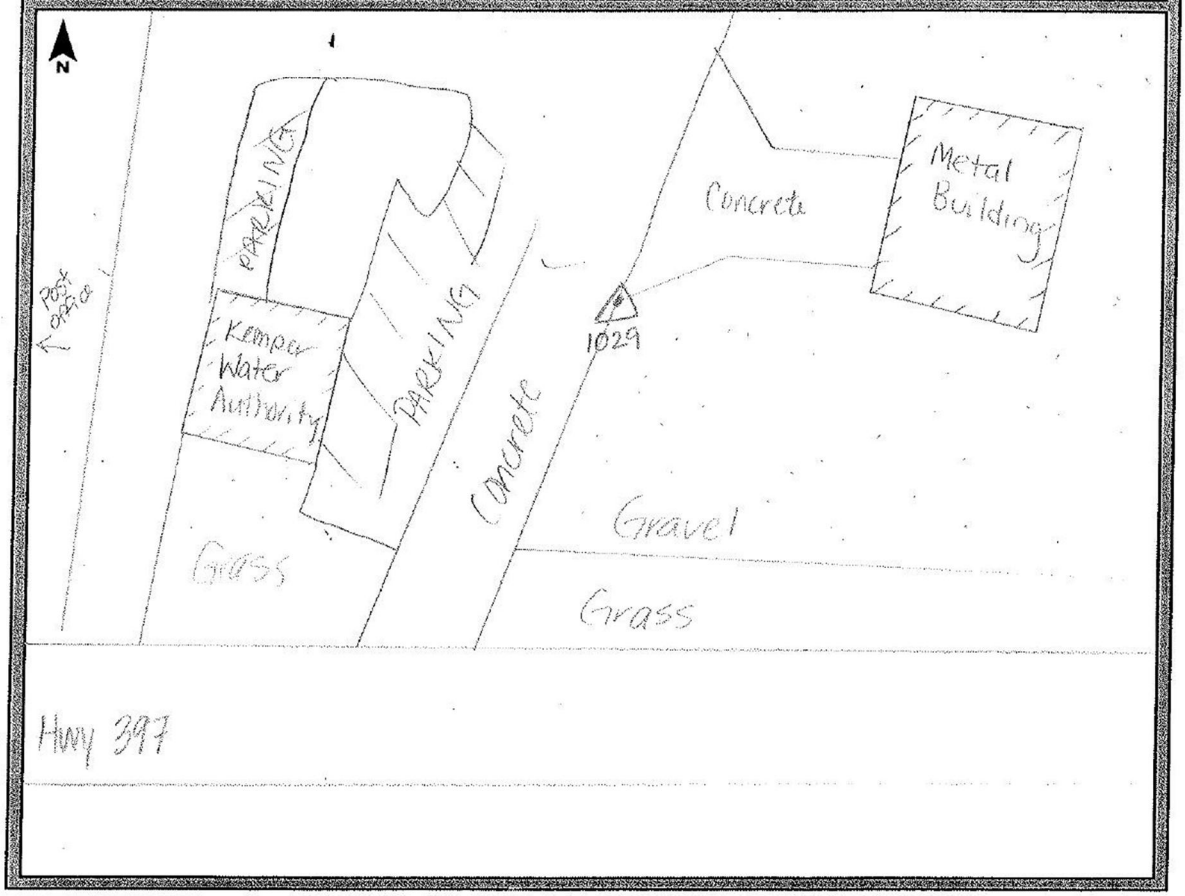

1050-3W-12MAR2013

LiDAR GROUND CONTROL – 1090

GPS Observation Log Sheet

WOOLPERT

Project Name:	Lauderdale	**Project Number:** 073054	**Survey Date:** 3/16/13
Station Name:	1029	**Operator Name:** RC + CT	
Latitude:	32° 52' 52.4"	**Julian Day:** 75	**Session No.** 3
Longitude:	88° 49' 38.2"	**Start Time:** 1352	**End Time:** 1413
Ellip. Height:	132.1m	**Data File Name:** 87340752	
Type of Mark:	PK nail	**Type of Reciever:** R8	
Stamping on Mark:	PK nail @ concrete seam	**Type of Antenna:** Internal	
Weather Condition:	72°F, Sunny	**Antenna Height:** 2.0m	to bottom of antenna mount




1090-2-16MAR2013


1090-3E-16MAR2013


1090-3N-16MAR2013


1090-3S-16MAR2013


1090-3W-16MAR2013

SECTION 4: SITE CALIBRATIONS

This section includes the site quality control and Quality checks on points surveyed. Points surveyed included existing National Geodetic Survey control stations and a percentage of survey points surveyed within the site.

Coordinate System:	UTM Zone 16 U.S. State Plane 1983
Project Datum:	UTM Zone 16, NAD83 (2011)
Vertical Datum:	NAVD88
Coordinate Units:	meters
Distance Units:	meters
Height Units:	Meters
Date	04/02/2013
Geoid Model:	Geoid 12A

Listed below are coordinates and differences between the northing, easting and elevation value for the RTK GPS observations taken on different days on the same point and times to verify accuracy of GPS observation.

Woolpert RTK Coordinate

Point	Northing (Meters)	Easting (Meters)	Elev (Meters)	Ellip. Height (Meters)
1002	3651896.775	291489.779	159.564	131.849
1022	3651077.551	320980.666	149.581	121.312
1023	3627460.086	308434.113	163.933	135.976
1023	3627460.086	308434.113	163.933	135.976
1024	3603787.388	319685.366	166.181	138.228
1026	3663706.935	324545.026	175.345	147.012
1029	3639598.397	329064.188	162.547	134.221
1031	3569911.357	353008.099	126.808	98.956
1035	3564066.638	341041.590	154.134	126.541
1038	3578390.557	318232.901	98.112	70.523
1041	3634303.356	319307.515	149.595	121.401
2003	3537500.886	349926.831	88.579	61.376
2096	3642310.033	320933.491	158.393	130.144
4002	3562656.636	358176.754	120.196	92.484
5014	3599558.953	325938.699	140.647	112.639

Woolpert RTK Check Coordinate

Point	Northing (Meters)	Easting (Meters)	Elev (Meters)	Ellip. Height (Meters)
1002 RTK CHK 0316 SN	3651896.792	291489.770	159.580	131.866
1022 RTK CHK 0316 JS	3651077.568	320980.669	149.571	121.302
1023 RTK CHK 0314 SN	3627460.072	308434.117	163.934	135.977
1023 RTK CHK 0315 JS	3627460.091	308434.127	163.937	135.98
1024 RTK CHK 0317 JS	3603787.363	319685.371	166.223	138.269
1026 RTK CHK 0316 JS	3663706.940	324544.984	175.348	147.015
1029 RTK CHK 0316 JS	3639598.419	329064.151	162.523	134.197
1031 RTK CHK 0313 JS	3569911.355	353008.107	126.797	98.945
1035 RTK CHK 0313 JS	3564066.612	341041.594	154.128	126.535
1038 RTK CHK 0314 SN	3578390.487	318232.997	97.966	70.377
1041 RTK CHK 0314 SN	3634303.366	319307.494	149.573	121.379
2003 RTK CHK	3537500.883	349926.833	88.576	61.373
2096 RTK CHK 0316 JS	3642310.069	320933.444	158.399	130.15
4002 RTK CHK 0313 JS	3562656.637	358176.762	120.206	92.493
5014 RTK CHK 0317 JS	3599558.855	325938.593	140.562	112.555

Differences

Point	Δ North	Δ Easting	Δ Elev
1002	0.017	-0.009	0.016
1022	0.017	0.003	-0.010
1023	-0.014	0.004	0.001
1023	0.005	0.014	0.004
1024	-0.025	0.005	0.042
1026	0.005	-0.042	0.003
1029	0.022	-0.037	-0.024
1031	-0.002	0.008	-0.011
1035	-0.026	0.004	-0.006
1038	-0.070	0.096	-0.146
1041	0.010	-0.021	-0.022
2003	-0.003	0.002	-0.003
2096	0.036	-0.047	0.006
4002	0.001	0.008	0.010
5014	-0.098	-0.106	-0.085

Listed below are coordinates and differences between the northing, easting and elevation coordinate for the Published NGS coordinate and the RTK GPS observations.

NGS Published Coordinates

Point	PID	Northing (Meters)	Easting (Meters)	Elev (Meters)	Ellip. Height (Meters)
D 223	CO0796	3577482.227	298777.311	111.098	
D 223	CO0796	3577482.227	298777.311	111.098	
D 223	CO0796	3577482.227	298777.311	111.098	
F 353	CO1129	3618258.183	360530.511	63.407	34.733
F 353	CO1129	3618258.183	360530.511	63.407	34.733
KEY AZ MK	CO0997	3579791.262	336355.519	90.290	62.427
KEY AZ MK	CO0997	3579791.262	336355.519	90.290	62.427
KEY AZ MK	CO0997	3579791.262	336355.519	90.290	62.427
KEY AZ MK	CO0997	3579791.262	336355.519	90.290	62.427
LOUISVILLE 2	DJ1300	3669038.944	307736.884	174.584	146.484
LOUISVILLE 2	DJ1300	3669038.944	307736.884	174.584	146.484
LOUISVILLE 2	DJ1300	3669038.944	307736.884	174.584	146.484
S 100	CO0718	3627918.335	302189.664	155.236	127.417
S 100	CO0718	3627918.335	302189.664	155.236	127.417
S 100	CO0718	3627918.335	302189.664	155.236	127.417
S 100	CO0718	3627918.335	302189.664	155.236	127.417
S 100	CO0718	3627918.335	302189.664	155.236	127.417
Z 100	CO0657	3625267.502	323042.278	151.136	122.963
45 V 30	CO0546	3544356.513	336730.141	74.737	47.532
45 V 30	CO0546	3544356.513	336730.141	74.737	47.532

Woolpert RTK Coordinate

Point	Northing (Meters)	Easting (Meters)	Elev (Meters)	Ellip. Height (Meters)	Description
D 223	3577460.865	298765.283	111.106	83.803	D 223 RTK CHK AM 0314 JS
D 223	3577460.890	298765.261	111.113	83.81	D 223 RTK CHK AM 0314 SN
D 223	3577460.879	298765.262	111.113	83.81	D 223 RTK CHK PM 0314 SN
F 353	3618258.183	360530.517	63.424	34.763	F 353 RTK CHK 0317 JS
F 353	3618258.182	360530.522	63.417	34.757	F 353 RTK CHK 0317 RC
KEY AZ MK	3579791.286	336355.505	90.312	62.445	KEY AZ MK RTK AM 0312 JS
KEY AZ MK	3579791.283	336355.518	90.315	62.448	KEY AZ MK RTK CHK AM 0312 SN
KEY AZ MK	3579791.269	336355.491	90.312	62.445	KEY AZ MK RTK CHK PM 0312 SN
KEY AZ MK	3579791.284	336355.516	90.311	62.444	KEY AZ MK RTK PM 0312 JS
LOUISVILLE 2	3669038.935	307736.871	174.595	146.488	LOUISVILLE 2 RTK CHK AM 0316 JS
LOUISVILLE 2	3669038.937	307736.893	174.589	146.482	LOUISVILLE 2 RTK CHK AM 0316 SN
LOUISVILLE 2	3669038.936	307736.870	174.588	146.481	LOUISVILLE 2 RTK CHK PM 0316 SN
S 100	3627918.325	302189.663	155.259	127.424	S 100 RTK CHK AM 0314 SN
S 100	3627918.348	302189.663	155.249	127.414	S 100 RTK CHK AM 0315 JS
S 100	3627918.318	302189.650	155.254	127.419	S 100 RTK CHK AM 0315 SN
S 100	3627918.340	302189.645	155.250	127.415	S 100 RTK CHK PM 0315 JS
S 100	3627918.333	302189.671	155.255	127.42	S 100 RTK CHK PM 0315 SN
Z 100	3625267.465	323042.231	151.139	122.95	Z 100 RTK CHK PM 0314 SN
45 V 30	3544356.523	336730.157	74.737	47.529	45 V 30 RTK CHK 0318 JS
45 V 30	3544356.534	336730.145	74.739	47.531	45 V 30 RTK CHK AM 0313 JS

Differences

Point	Δ North	Δ Easting	Δ Elev
D 223	-21.362	-12.028	0.008
D 223	-21.337	-12.050	0.015
D 223	-21.348	-12.049	0.015
F 353	0.000	0.006	0.017
F 353	-0.001	0.011	0.010
KEY AZ MK	0.024	-0.014	0.022
KEY AZ MK	0.021	-0.001	0.025
KEY AZ MK	0.007	-0.028	0.022
KEY AZ MK	0.022	-0.003	0.021
LOUISVILLE 2	-0.009	-0.013	0.011
LOUISVILLE 2	-0.007	0.009	0.005
LOUISVILLE 2	-0.008	-0.014	0.004
S 100	-0.010	-0.001	0.023
S 100	0.013	-0.001	0.013
S 100	-0.017	-0.014	0.018
S 100	0.005	-0.019	0.014
S 100	-0.002	0.007	0.019
Z 100	-0.037	-0.047	0.003
45 V 30	0.010	0.016	0.000
45 V 30	0.021	0.004	0.002

Listed below are coordinates and differences between the northing, easting and elevation value for the RTK and or Static GPS coordinate and the coordinated calculated from OPUS-RS.

Woolpert RTK Coordinate &/or Static Value

Point	Northing (US Ft)	Easting (US Ft)	Elev (US Ft)	Ellip. Height (US Ft)
100	3578975.994	335916.530	88.609	60.761
101	3631191.999	301012.159	134.979	107.148

OPUS Value

Point	Northing (US Ft)	Easting (US Ft)	Elev (US Ft)	Ellip. Height (US Ft)
100 OPUS	3578975.993	335916.536	88.588	60.741
101 OPUS	3631192.010	301012.152	135.011	107.179

Differences

Point	Δ North	Δ Easting	Δ Elev
1014	-0.001	0.006	-0.021
3014	0.011	-0.007	0.032

SECTION 5 PART 1: EXISTING NGS DATA SHEETS

This section contains the published National Geodetic Survey (NGS) Data Sheets used in the final control network for Clarke, Newton, Lauderdale, Neshoba, Kemper and Winston Counties.

```
CO1016 ***********************************************************************
CO1016  CBN         -  This is a Cooperative Base Network Control Station.
CO1016  DESIGNATION -  25 V 50
CO1016  PID         -  CO1016
CO1016  STATE/COUNTY-  MS/LEAKE
CO1016  COUNTRY     -  US
CO1016  USGS QUAD   -  CONWAY (1989)
CO1016
CO1016                        *CURRENT SURVEY CONTROL
CO1016 ______________________________________________________________________
CO1016* NAD 83(2011) POSITION- 32 45 16.34732(N) 089 32 19.35348(W)   ADJUSTED
CO1016* NAD 83(2011) ELLIP HT-    87.088 (meters)        (06/27/12)   ADJUSTED
CO1016* NAD 83(2011) EPOCH   -  2010.00
CO1016* NAVD 88 ORTHO HEIGHT -   114.326  (meters)     375.08  (feet) ADJUSTED
CO1016 ______________________________________________________________________
CO1016  NAD 83(2011) X  -     43,228.193 (meters)                    COMP
CO1016  NAD 83(2011) Y  - -5,369,151.210 (meters)                    COMP
CO1016  NAD 83(2011) Z  -  3,431,143.806 (meters)                    COMP
CO1016  LAPLACE CORR    -         -0.45  (seconds)                   DEFLEC12A
CO1016  GEOID HEIGHT    -        -27.23  (meters)                    GEOID12A
CO1016  DYNAMIC HEIGHT  -        114.196 (meters)      374.66  (feet) COMP
CO1016  MODELED GRAVITY -    979,506.7   (mgal)                      NAVD 88
CO1016
CO1016  VERT ORDER      -  SECOND    CLASS II
CO1016
CO1016  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
CO1016  Type                                          Horiz  Ellip  Dist(km)
CO1016  ----------------------------------------------------------------------
CO1016  NETWORK                                        0.76   0.86
CO1016  ----------------------------------------------------------------------
CO1016  MEDIAN LOCAL ACCURACY AND DIST (052 points)   1.08   2.16     81.76
CO1016  ----------------------------------------------------------------------
CO1016  NOTE: Click here for information on individual local accuracy
CO1016  values and other accuracy information.
CO1016
CO1016
CO1016.The horizontal coordinates were established by GPS observations
CO1016.and adjusted by the National Geodetic Survey in June 2012.
CO1016
CO1016.NAD 83(2011) refers to NAD 83 coordinates where the reference
CO1016.frame has been affixed to the stable North American tectonic plate. See
CO1016.NA2011 for more information. for more information.
CO1016
CO1016.The horizontal coordinates are valid at the epoch date displayed above
CO1016.which is a decimal equivalence of Year/Month/Day.
CO1016
CO1016.The orthometric height was determined by differential leveling and
CO1016.adjusted by the NATIONAL GEODETIC SURVEY
CO1016.in June 1991.
CO1016
CO1016.The X, Y, and Z were computed from the position and the ellipsoidal ht.
CO1016
CO1016.The Laplace correction was computed from DEFLEC12A derived deflections.
CO1016
CO1016.The ellipsoidal height was determined by GPS observations
CO1016.and is referenced to NAD 83.
CO1016
CO1016.The dynamic height is computed by dividing the NAVD 88
CO1016.geopotential number by the normal gravity value computed on the
CO1016.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
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CO1016.degrees latitude (g = 980.6199 gals.).
CO1016
CO1016.The modeled gravity was interpolated from observed gravity values.
CO1016
CO1016. The following values were computed from the NAD 83(2011) position.
CO1016
CO1016;                    North         East     Units Scale Factor Converg.
CO1016;SPC MS E     -   361,038.898   233,901.032   MT  1.00000385   -0 22 53.9
CO1016;SPC MS E     - 1,184,508.45    767,390.30   sFT  1.00000385   -0 22 53.9
CO1016;UTM  16      - 3,626,927.889   262,157.345   MT  1.00029759   -1 22 27.1
CO1016
CO1016!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO1016!SPC MS E     -   0.99998633  x   1.00000385  =   0.99999018
CO1016!UTM  16      -   0.99998633  x   1.00029759  =   1.00028391
CO1016
CO1016                          SUPERSEDED SURVEY CONTROL
CO1016
CO1016  NAD 83(2007)-  32 45 16.34755(N)    089 32 19.35408(W) AD(2002.00) A
CO1016  ELLIP H (09/06/11)   87.091  (m)                       GP(2002.00) 4 1
CO1016  NAD 83(2007)-  32 45 16.34733(N)    089 32 19.35416(W) AD(       ) 0
CO1016  ELLIP H (02/10/07)   87.118  (m)                       GP(       )
CO1016  ELLIP H (04/15/02)   87.083  (m)                       GP(       ) 4 2
CO1016  ELLIP H (02/15/02)   87.081  (m)                       GP(       ) 4 1
CO1016  NAD 83(1986)-  32 45 16.36079(N)    089 32 19.35147(W) AD(       ) 1
CO1016  NAD 83(1993)-  32 45 16.34712(N)    089 32 19.35403(W) AD(       ) B
CO1016  ELLIP H (01/12/94)   87.177  (m)                       GP(       ) 4 1
CO1016  NAVD 88 (01/12/94)  114.33   (m)          375.1    (f) LEVELING    3
CO1016  NGVD 29 (??/??/92)  114.345  (m)          375.15   (f) ADJ UNCH    2 2
CO1016
CO1016.Superseded values are not recommended for survey control.
CO1016
CO1016.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO1016.See file dsdata.txt to determine how the superseded data were derived.
CO1016
CO1016_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBB6215726927(NAD 83)
CO1016
CO1016_MARKER: DD = SURVEY DISK
CO1016_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
CO1016_SP_SET: CONCRETE POST
CO1016_STAMPING: BM 25V 50 1975
CO1016_MARK LOGO: MSHD
CO1016_PROJECTION: PROJECTING 3 CENTIMETERS
CO1016_MAGNETIC: N = NO MAGNETIC MATERIAL
CO1016_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO1016+STABILITY: SURFACE MOTION
CO1016_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO1016+SATELLITE: SATELLITE OBSERVATIONS - August 28, 2008
CO1016
CO1016  HISTORY     - Date     Condition        Report By
CO1016  HISTORY     - 1975     MONUMENTED       MSHD
CO1016  HISTORY     - 19880413 GOOD             MSHD
CO1016  HISTORY     - 19880601 GOOD             MSHD
CO1016  HISTORY     - 19921006 GOOD             MSHD
CO1016  HISTORY     - 19930503 GOOD
CO1016  HISTORY     - 19940220 GOOD             NOS
CO1016  HISTORY     - 20000220 GOOD             NGS
CO1016  HISTORY     - 20080828 GOOD             MSDOT
CO1016
CO1016                          STATION DESCRIPTION
CO1016
CO1016'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1988
CO1016'RECOVERED IN GOOD CONDITION.
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CO1016
CO1016                          STATION RECOVERY (1988)
CO1016
CO1016'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1988
CO1016'2.57 KM (1.6 MI) NORTH ALONG STATE HIGHWAY 35 FROM THE INTERSECTION
CO1016'OF STATE HIGHWAY 16 AND 35 IN CARTHAGE, TO A SIDE ROAD AND MARK, AT
CO1016'EAST RIGHT-OF-WAY OF STATE HIGHWAY 35 NEAR THE NORTHWEST CORNER OF THE
CO1016'CYCLONE FENCE AROUND TAYLORS MACHINE WORKS, 1.6 KM (1.0 MI) SOUTH
CO1016'OF THE JUNCTION OFR STATE HIGHWAY 35 IN THE 1/4 OF SECTION 1, T 10N,
CO1016'R 7E, 80.0 FT EAST OF THE CENTER OF HIGHWAY 35, 26.0 FT SOUTH OF THE
CO1016'CENTER OF A BLACK TOP STREET, 13.0 FT NORTHEAST OF POLE NUMBER 2 1/4,
CO1016'11.5 FT NORTHEAST OF A FIRE PLUG, 2.5 FT SOUTHWEST OF THE NORTHWEST
CO1016'CORNER OF A CYCLONE FENCE, 1.5 FT NORTH-NORTHWEST OF A METAL WITNESS
CO1016'POST, IN TOP OF A ROUND CONCRETE POST PROJECTING 1 INCH, AND
CO1016'LEVEL WITH THE HIGHWAY.
CO1016
CO1016                          STATION RECOVERY (1992)
CO1016
CO1016'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1992
CO1016'MARK IS LOCATED ABOUT 1.3 MI (2.1 KM) NORTH OF THE CENTER OF CARTHAGE
CO1016'IN THE SOUTHEAST ANGLE OF THE JUNCTION OF STATE HIGHWAY 35 AND
CO1016'INDUSTRIAL DRIVE, ON THE EAST R.O.W. OF HIGHWAY 35, 1 MI (1.6 KM)
CO1016'SOUTH OF THE INTERSECTION OF STATE HIGHWAYS 25 AND 35, NEAR THE
CO1016'NORTHWEST CORNER OF THE CHAIN LINK FENCE AROUND THE TAYLOR MACHINE
CO1016'WORKS AND IS IN SECTION 1, T 10N, R 7E.
CO1016'TO REACH FROM THE INTERSECTION OF STATE HIGHWAY 16 AND STATE HIGHWAY
CO1016'35 IN CARTHAGE, GO NORTH ON STATE HIGHWAY 35 FOR 1.6 MI (2.6 KM) TO A
CO1016'SIDE STREET AND THE MARK ON THE RIGHT.
CO1016'MARK IS A MSHD DISK SET IN THE TOP OF A ROUND CONCRETE POST, ABOUT
CO1016'LEVEL WITH THE HIGHWAY, PROJECTING 1 INCH, 80 FT (24.4 M) EAST OF THE
CO1016'CENTER OF HIGHWAY 35, 24 FT (7.3 M) SOUTH OF THE CENTER OF INDUSTRIAL
CO1016'DRIVE, 13 FT (4.0 M) NORTHEAST OF POLE NUMBER 2 1/4, 11.5 FT (3.5 M)
CO1016'NORTHEAST OF A FIRE PLUG, 2.5 FT (0.8 M) SOUTHWEST OF THE NORTHWEST
CO1016'CORNER OF THE CHAIN LINK FENCE AND 1.5 FT (0.5 M) NORTH NORTHWEST OF
CO1016'A METAL WITNESS POST.
CO1016
CO1016                          STATION RECOVERY (1993)
CO1016
CO1016'RECOVERED 1993
CO1016'RECOVERED IN GOOD CONDITION.
CO1016
CO1016                          STATION RECOVERY (1994)
CO1016
CO1016'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1994 (CSM)
CO1016'RECOVERED AS DESCRIBED.
CO1016
CO1016                          STATION RECOVERY (2000)
CO1016
CO1016'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
CO1016'RECOVERED AS DESCRIBED.
CO1016
CO1016                          STATION RECOVERY (2008)
CO1016
CO1016'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
CO1016'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: 45 V 30 (CO0546)

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CO0546 ***********************************************************************
 CO0546  DESIGNATION -  45 V 30
 CO0546  PID         -  CO0546
 CO0546  STATE/COUNTY-  MS/CLARKE
 CO0546  COUNTRY     -  US
 CO0546  USGS QUAD   -  QUITMAN (1983)
 CO0546
 CO0546                        *CURRENT SURVEY CONTROL
 CO0546  ______________________________________________________________________
 CO0546* NAD 83(2011) POSITION- 32 01 24.91081(N) 088 43 43.92199(W)   ADJUSTED
 CO0546* NAD 83(2011) ELLIP HT-    47.532 (meters)        (06/27/12)   ADJUSTED
 CO0546* NAD 83(2011) EPOCH   -  2010.00
 CO0546* NAVD 88 ORTHO HEIGHT -    74.737  (meters)     245.20  (feet) ADJUSTED
 CO0546* NAVD 88 EPOCH        -  2009.55
 CO0546  **This station is located in a suspected subsidence area (see below).
 CO0546  ______________________________________________________________________
 CO0546  NAD 83(2011) X  -    120,073.615 (meters)                    COMP
 CO0546  NAD 83(2011) Y  - -5,411,380.103 (meters)                    COMP
 CO0546  NAD 83(2011) Z  -  3,362,674.354 (meters)                    COMP
 CO0546  LAPLACE CORR    -         -1.64  (seconds)                   DEFLEC12A
 CO0546  GEOID HEIGHT    -        -27.21  (meters)                    GEOID12A
 CO0546  DYNAMIC HEIGHT  -         74.648 (meters)      244.91  (feet) COMP
 CO0546  MODELED GRAVITY -    979,458.2   (mgal)                      NAVD 88
 CO0546
 CO0546  VERT ORDER      -  FIRST     CLASS II
 CO0546
 CO0546  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0546  Type                                           Horiz  Ellip  Dist(km)
 CO0546  ----------------------------------------------------------------------
 CO0546  NETWORK                                         1.29   1.45
 CO0546  ----------------------------------------------------------------------
 CO0546  MEDIAN LOCAL ACCURACY AND DIST (001 points)   0.72   0.57      1.82
 CO0546  ----------------------------------------------------------------------
 CO0546  NOTE: Click here for information on individual local accuracy
 CO0546  values and other accuracy information.
 CO0546
 CO0546
 CO0546.The horizontal coordinates were established by GPS observations
 CO0546.and adjusted by the National Geodetic Survey in June 2012.
 CO0546
 CO0546.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0546.frame has been affixed to the stable North American tectonic plate. See
 CO0546.NA2011 for more information. for more information.
 CO0546
 CO0546.The horizontal coordinates are valid at the epoch date displayed above
 CO0546.which is a decimal equivalence of Year/Month/Day.
 CO0546
 CO0546 ** This station is in an area of known vertical motion.  Due to the
 CO0546 ** variability of land subsidence, uplift, and crustal motion, NGS has,
 CO0546 ** determined the orthometric heights for marks in these suspect
 CO0546 ** subsidence areas should be considered valid only at the epoch date
 CO0546 ** associated with the orthometric height.  These heights must always
 CO0546 ** be validated when used as control.  All previously superseded
 CO0546 ** orthometric heights are now considered suspect and are available
 CO0546 ** in the superseded section.  NGS does not recommend using suspect
 CO0546 ** or superseded heights as control.
 CO0546
 CO0546.The orthometric height was determined by differential leveling and
 CO0546.adjusted by the NATIONAL GEODETIC SURVEY
 CO0546.in July 2012.
 CO0546
```

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CO0546.The X, Y, and Z were computed from the position and the ellipsoidal ht.
CO0546
CO0546.The Laplace correction was computed from DEFLEC12A derived deflections.
CO0546
CO0546.The ellipsoidal height was determined by GPS observations
CO0546.and is referenced to NAD 83.
CO0546
CO0546.The dynamic height is computed by dividing the NAVD 88
CO0546.geopotential number by the normal gravity value computed on the
CO0546.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
CO0546.degrees latitude (g = 980.6199 gals.).
CO0546
CO0546.The modeled gravity was interpolated from observed gravity values.
CO0546
CO0546. The following values were computed from the NAD 83(2011) position.
CO0546
CO0546;                    North         East     Units Scale Factor Converg.
CO0546;SPC MS E     -   279,769.358   309,868.312   MT  0.99995120   +0 03 19.4
CO0546;SPC MS E     -   917,876.64  1,016,626.29   sFT  0.99995120   +0 03 19.4
CO0546;UTM  16      - 3,544,356.513   336,730.141   MT  0.99992875   -0 55 01.1
CO0546
CO0546!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0546!SPC MS E     -   0.99999254  x   0.99995120  =   0.99994374
CO0546!UTM  16      -   0.99999254  x   0.99992875  =   0.99992129
CO0546
CO0546                          SUPERSEDED SURVEY CONTROL
CO0546
CO0546  NAD 83(2007)-  32 01 24.91100(N)    088 43 43.92204(W) AD(2002.00) A
CO0546  ELLIP H (09/06/11)   47.522  (m)                        GP(2002.00) 4 1
CO0546  NAVD 88 (06/15/91)   74.753  (m)          245.25   (f) SUPERSEDED  1 2
CO0546  NGVD 29 (??/??/??)   74.734  (m)          245.19   (f) ADJUSTED    1 2
CO0546
CO0546.Superseded values are not recommended for survey control.
CO0546
CO0546.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0546.See file dsdata.txt to determine how the superseded data were derived.
CO0546
CO0546_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCA3673044356(NAD 83)
CO0546
CO0546_MARKER: DD = SURVEY DISK
CO0546_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE
CO0546_SP_SET: BRIDGE ABUTMENT
CO0546_STAMPING: BM 45V-30 1961
CO0546_MARK LOGO: MSHD
CO0546_MAGNETIC: N = NO MAGNETIC MATERIAL
CO0546_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
CO0546_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0546+SATELLITE: SATELLITE OBSERVATIONS - March 16, 2009
CO0546
CO0546  HISTORY     - Date     Condition        Report By
CO0546  HISTORY     - 1961     MONUMENTED       MSHD
CO0546  HISTORY     - 1964     GOOD             CGS
CO0546  HISTORY     - 1980     GOOD             NGS
CO0546  HISTORY     - 19900530 GOOD             MSHD
CO0546  HISTORY     - 20080324 GOOD             MSHD
CO0546  HISTORY     - 20080418 GOOD             MSDOT
CO0546  HISTORY     - 20090316 GOOD             MSDOT
CO0546
CO0546                          STATION DESCRIPTION
CO0546
CO0546'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1961
CO0546'1.0 MI S FROM QUITMAN.
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CO0546'THE MARK IS LOCATED ABOUT 1.0 MILE SOUTH OF QUITMAN, ON THE WEST SIDE
CO0546'OF U.S. HIGHWAY 45, IN THE BASE OF, AND AT THE NORTH END OF THE WEST
CO0546'RAILING OF A CONCRETE OVERPASS OVER THE G. M. AND O. RAILROAD. TO
CO0546'REACH FROM THE POST OFFICE IN QUITMAN GO SOUTH ON U.S. 45 FOR 1.1
CO0546'MILES TO THE OVERPASS AND THE MARK AS DESCRIBED.  THE MARK IS A
CO0546'STANDARD MSHD-USC AND GS BRONZE DISK STAMPED BM 45V-30 1961 AND IS SET
CO0546'IN A DRILL HOLE FLUSH WITH THE BASE OF THE RAILING.
CO0546
CO0546                          STATION RECOVERY (1964)
CO0546
CO0546'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1964
CO0546'RECOVERED IN GOOD CONDITION.
CO0546
CO0546                          STATION RECOVERY (1980)
CO0546
CO0546'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1980
CO0546'RECOVERED IN GOOD CONDITION.
CO0546
CO0546                          STATION RECOVERY (1990)
CO0546
CO0546'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1990
CO0546'THE MARK IS LOCATED ABOUT 1.15 MI (1.85 KM) SOUTH OF QUITMAN, IN THE
CO0546'U.S. HIGHWAY 45 BRIDGE OVER THE I.C.G. RAILROAD TRACK AND IS IN
CO0546'SECTION 11, T 2N, R 15E.
CO0546'TO REACH FROM THE COURTHOUSE IN QUITMAN, GO SOUTH ON U.S. HIGHWAY 45
CO0546'FOR 1.15 MI (1.85 KM) TO THE BRIDGE AND THE MARK ON THE RIGHT.
CO0546'MARK IS A MSHD DISK SET IN A DRILL HOLE IN THE NORTHWEST END OF THE
CO0546'NORTHEAST OF THE CONCRETE BRIDGE ABUTMENT, ABOUT LEVEL WITH THE
CO0546'HIGHWAY, 14.5 FT (4.4 M) NORTHWEST OF THE CENTER OF HIGHWAY 45 AND
CO0546'0.5 FT (0.2 M) NORTHEAST OF THE CONCRETE UPRIGHT OPPOSITE THE
CO0546'CONCRETE RAILING.
CO0546
CO0546                          STATION RECOVERY (2008)
CO0546
CO0546'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 2008 (BF)
CO0546'RECOVERED IN GOOD CONDITION.
CO0546
CO0546                          STATION RECOVERY (2008)
CO0546
CO0546'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)
CO0546'THE U.S. HWY. 45 MENTIONED IN THE DESCRIPTION IS NOW OLD U.S. HWY. 45
CO0546'OR HWY. 145.
CO0546
CO0546                          STATION RECOVERY (2009)
CO0546
CO0546'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)
CO0546'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: 45 V 88 (DJ0699)

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DJ0699 ************************************************************************
 DJ0699  DESIGNATION -  45 V 88
 DJ0699  PID         -  DJ0699
 DJ0699  STATE/COUNTY-  MS/NOXUBEE
 DJ0699  COUNTRY     -  US
 DJ0699  USGS QUAD   -  MACON (1982)
 DJ0699
 DJ0699                        *CURRENT SURVEY CONTROL
 DJ0699  ______________________________________________________________________
 DJ0699* NAD 83(2011) POSITION- 33 04 08.42752(N) 088 33 49.76091(W)   ADJUSTED
 DJ0699* NAD 83(2011) ELLIP HT-    24.761 (meters)        (06/27/12)   ADJUSTED
 DJ0699* NAD 83(2011) EPOCH   -  2010.00
 DJ0699* NAVD 88 ORTHO HEIGHT -    53.381  (meters)     175.13  (feet) ADJUSTED
 DJ0699  ______________________________________________________________________
 DJ0699  NAD 83(2011) X  -    134,097.304 (meters)                    COMP
 DJ0699  NAD 83(2011) Y  - -5,348,642.657 (meters)                    COMP
 DJ0699  NAD 83(2011) Z  -  3,460,388.236 (meters)                    COMP
 DJ0699  LAPLACE CORR    -         -1.09  (seconds)                   DEFLEC12A
 DJ0699  GEOID HEIGHT    -        -28.59  (meters)                    GEOID12A
 DJ0699  DYNAMIC HEIGHT  -         53.322 (meters)      174.94  (feet) COMP
 DJ0699  MODELED GRAVITY -    979,535.5   (mgal)                      NAVD 88
 DJ0699
 DJ0699  VERT ORDER      -  FIRST     CLASS II
 DJ0699
 DJ0699  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DJ0699  Type                                          Horiz  Ellip  Dist(km)
 DJ0699  ----------------------------------------------------------------------
 DJ0699  NETWORK                                        1.25   1.27
 DJ0699  ----------------------------------------------------------------------
 DJ0699  MEDIAN LOCAL ACCURACY AND DIST (001 points)   0.90   0.65      4.60
 DJ0699  ----------------------------------------------------------------------
 DJ0699  NOTE: Click here for information on individual local accuracy
 DJ0699  values and other accuracy information.
 DJ0699
 DJ0699
 DJ0699.The horizontal coordinates were established by GPS observations
 DJ0699.and adjusted by the National Geodetic Survey in June 2012.
 DJ0699
 DJ0699.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DJ0699.frame has been affixed to the stable North American tectonic plate. See
 DJ0699.NA2011 for more information.
 DJ0699
 DJ0699.The horizontal coordinates are valid at the epoch date displayed above
 DJ0699.which is a decimal equivalence of Year/Month/Day.
 DJ0699
 DJ0699.The orthometric height was determined by differential leveling and
 DJ0699.adjusted by the NATIONAL GEODETIC SURVEY
 DJ0699.in June 1991.
 DJ0699
 DJ0699.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DJ0699
 DJ0699.The Laplace correction was computed from DEFLEC12A derived deflections.
 DJ0699
 DJ0699.The ellipsoidal height was determined by GPS observations
 DJ0699.and is referenced to NAD 83.
 DJ0699
 DJ0699.The dynamic height is computed by dividing the NAVD 88
 DJ0699.geopotential number by the normal gravity value computed on the
 DJ0699.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 DJ0699.degrees latitude (g = 980.6199 gals.).
 DJ0699
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DJ0699.The modeled gravity was interpolated from observed gravity values.
DJ0699
DJ0699. The following values were computed from the NAD 83(2011) position.
DJ0699
DJ0699;                    North         East     Units Scale Factor Converg.
DJ0699;SPC MS E     -   395,724.575   325,165.810   MT  0.99995781   +0 08 49.4
DJ0699;SPC MS E     - 1,298,306.38  1,066,814.83   sFT  0.99995781   +0 08 49.4
DJ0699;UTM  16      - 3,660,024.369   354,020.657   MT  0.99986275   -0 51 12.4
DJ0699
DJ0699!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ0699!SPC MS E     -   0.99999611  x   0.99995781  =   0.99995392
DJ0699!UTM  16      -   0.99999611  x   0.99986275  =   0.99985886
DJ0699
DJ0699                          SUPERSEDED SURVEY CONTROL
DJ0699
DJ0699  NAD 83(2007)-  33 04 08.42794(N)    088 33 49.76159(W) AD(2002.00) A
DJ0699  ELLIP H (09/06/11)   24.777  (m)                       GP(2002.00) 4 1
DJ0699  NGVD 29 (??/??/92)   53.359  (m)          175.06   (f) ADJ UNCH    1 2
DJ0699
DJ0699.Superseded values are not recommended for survey control.
DJ0699
DJ0699.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ0699.See file dsdata.txt to determine how the superseded data were derived.
DJ0699
DJ0699_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB5402060024(NAD 83)
DJ0699
DJ0699_MARKER: DD = SURVEY DISK
DJ0699_SETTING: 36 = SET IN A MASSIVE STRUCTURE
DJ0699_SP_SET: ABUTMENT
DJ0699_STAMPING: 45V-88 1964
DJ0699_MARK LOGO: MSHD
DJ0699_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DJ0699+STABILITY: SURFACE MOTION
DJ0699_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DJ0699+SATELLITE: SATELLITE OBSERVATIONS - August 18, 2008
DJ0699
DJ0699  HISTORY     - Date     Condition        Report By
DJ0699  HISTORY     - 1964     MONUMENTED       MSHD
DJ0699  HISTORY     - 1983     GOOD             NGS
DJ0699  HISTORY     - 20080818 GOOD             MSDOT
DJ0699
DJ0699                          STATION DESCRIPTION
DJ0699
DJ0699'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1964
DJ0699'2.7 MI S FROM MACON.
DJ0699'TO REACH THE MARK FROM THE COURTHOUSE IN MACON GO 2.7 MILES SOUTH ON
DJ0699'U. S. HIGHWAY 45 TO A CONCRETE BRIDGE AND THE MARK ON THE LEFT.  THE
DJ0699'MARK IS A DISK SET IN CEMENT IN A DRILLED HOLE IN THE SOUTHEAST CORNER
DJ0699'OF A CONCRETE BRIDGE ABUTMENT, 15 FEET EAST OF THE CENTERLINE OF THE
DJ0699'HIGHWAY AND ABOUT LEVEL WITH THE HIGHWAY.
DJ0699
DJ0699                          STATION RECOVERY (1983)
DJ0699
DJ0699'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1983
DJ0699'RECOVERED IN GOOD CONDITION.  NOTE, DELETE 2.7 MILES SOUTH ON U.S.
DJ0699'HIGHWAY 45, ADD 4.1 KM (2.55 MI) SOUTH ALONG U.S. HIGHWAY 45 BUSINESS.
DJ0699
DJ0699                          STATION RECOVERY (2008)
DJ0699
DJ0699'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
DJ0699'RECOVERED AS DESCRIBED.
DJ0699'
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DJ0699'ADDITIONAL REFERENCES = THE STATION IS 40 M (131.2 FT) NORTHEAST OF A
DJ0699'WOOD POWER POLE AND 32.5 M (106.6 FT) NORTHWEST OF A METAL POWER POLE.
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NGS DATA SHEET: 60 31 (AA7110)

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AA7110 ********************************************************************
 AA7110  DESIGNATION -  60 31
 AA7110  PID         -  AA7110
 AA7110  STATE/COUNTY-  AL/SUMTER
 AA7110  COUNTRY     -  US
 AA7110  USGS QUAD   -  LIVINGSTON (1986)
 AA7110
 AA7110                        *CURRENT SURVEY CONTROL
 AA7110  ______________________________________________________________________
 AA7110* NAD 83(2011) POSITION- 32 36 22.92600(N) 088 10 59.83854(W)   ADJUSTED
 AA7110* NAD 83(2011) ELLIP HT-    29.918 (meters)        (06/27/12)   ADJUSTED
 AA7110* NAD 83(2011) EPOCH    -  2010.00
 AA7110* NAVD 88 ORTHO HEIGHT -    58.738  (meters)     192.71  (feet) ADJUSTED
 AA7110  ______________________________________________________________________
 AA7110  NAD 83(2011) X  -    170,499.636 (meters)                    COMP
 AA7110  NAD 83(2011) Y  - -5,375,446.491 (meters)                    COMP
 AA7110  NAD 83(2011) Z  -  3,417,281.946 (meters)                    COMP
 AA7110  LAPLACE CORR    -         -0.23  (seconds)                   DEFLEC12A
 AA7110  GEOID HEIGHT    -        -28.82  (meters)                    GEOID12A
 AA7110  DYNAMIC HEIGHT  -         58.670 (meters)      192.49  (feet) COMP
 AA7110  MODELED GRAVITY -    979,495.8   (mgal)                      NAVD 88
 AA7110
 AA7110  VERT ORDER      -  SECOND    CLASS I
 AA7110
 AA7110  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 AA7110  Type                                          Horiz  Ellip  Dist(km)
 AA7110  ----------------------------------------------------------------------
 AA7110  NETWORK                                        1.25   2.35
 AA7110  ----------------------------------------------------------------------
 AA7110  MEDIAN LOCAL ACCURACY AND DIST (006 points)   1.08   1.97     11.57
 AA7110  ----------------------------------------------------------------------
 AA7110  NOTE: Click here for information on individual local accuracy
 AA7110  values and other accuracy information.
 AA7110
 AA7110
 AA7110.The horizontal coordinates were established by GPS observations
 AA7110.and adjusted by the National Geodetic Survey in June 2012.
 AA7110
 AA7110.NAD 83(2011) refers to NAD 83 coordinates where the reference
 AA7110.frame has been affixed to the stable North American tectonic plate. See
 AA7110.NA2011 for more information. for more information.
 AA7110
 AA7110.The horizontal coordinates are valid at the epoch date displayed above
 AA7110.which is a decimal equivalence of Year/Month/Day.
 AA7110
 AA7110.The orthometric height was determined by differential leveling and
 AA7110.adjusted by the NATIONAL GEODETIC SURVEY
 AA7110.in March 2010.
 AA7110
 AA7110.No vertical observational check was made to the station.
 AA7110
 AA7110.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 AA7110
 AA7110.The Laplace correction was computed from DEFLEC12A derived deflections.
 AA7110
 AA7110.The ellipsoidal height was determined by GPS observations
 AA7110.and is referenced to NAD 83.
 AA7110
 AA7110.The dynamic height is computed by dividing the NAVD 88
 AA7110.geopotential number by the normal gravity value computed on the
 AA7110.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
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AA7110.degrees latitude (g = 980.6199 gals.).
AA7110
AA7110.The modeled gravity was interpolated from observed gravity values.
AA7110
AA7110. The following values were computed from the NAD 83(2011) position.
AA7110
AA7110;                    North         East     Units Scale Factor Converg.
AA7110;SPC AL W     -   289,167.327   535,866.089   MT  0.99998403   -0 22 05.6
AA7110;UTM  16      - 3,608,268.139   388,970.558   MT  0.99975201   -0 38 15.7
AA7110
AA7110!             -  Elev Factor  x  Scale Factor =   Combined Factor
AA7110!SPC AL W     -   0.99999530  x   0.99998403  =   0.99997933
AA7110!UTM  16      -   0.99999530  x   0.99975201  =   0.99974731
AA7110
AA7110:                Primary Azimuth Mark                    Grid Az
AA7110:SPC AL W     -  60 32                                   359 40 41.8
AA7110:UTM  16      -  60 32                                   359 56 51.9
AA7110
AA7110|---------------------------------------------------------------------|
AA7110| PID    Reference Object                    Distance      Geod. Az   |
AA7110|                                                          dddmmss.s |
AA7110| AA7111 60 32                             478.397 METERS 3591836.2 |
AA7110|---------------------------------------------------------------------|
AA7110
AA7110                          SUPERSEDED SURVEY CONTROL
AA7110
AA7110  NAD 83(2007)-  32 36 22.92605(N)    088 10 59.83918(W) AD(       ) 0
AA7110  ELLIP H (02/10/07)   29.944  (m)                       GP(       )
AA7110  ELLIP H (07/29/02)   29.843  (m)                       GP(       ) 4 1
AA7110  NAD 83(1992)-  32 36 22.92809(N)    088 10 59.83586(W) AD(       ) 1
AA7110  ELLIP H (07/21/95)   29.889  (m)                       GP(       ) 3 2
AA7110  NGVD 29 (07/21/95)   58.7    (m)  GEOID93 model used   GPS OBS
AA7110
AA7110.Superseded values are not recommended for survey control.
AA7110
AA7110.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
AA7110.See file dsdata.txt to determine how the superseded data were derived.
AA7110
AA7110_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB8897008268(NAD 83)
AA7110
AA7110_MARKER: DD = SURVEY DISK
AA7110_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
AA7110_STAMPING: 60-31 1994
AA7110_MARK LOGO: ALHD
AA7110_PROJECTION: FLUSH
AA7110_MAGNETIC: R = STEEL ROD IMBEDDED IN MONUMENT
AA7110_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
AA7110+STABILITY: SURFACE MOTION
AA7110_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AA7110+SATELLITE: SATELLITE OBSERVATIONS - January 03, 2006
AA7110
AA7110  HISTORY     - Date     Condition        Report By
AA7110  HISTORY     - 1994     MONUMENTED       ALHD
AA7110  HISTORY     - 19980713 GOOD             JCLS
AA7110  HISTORY     - 20050718 GOOD             ALDOT
AA7110  HISTORY     - 20060103 GOOD             BROOKS
AA7110
AA7110                          STATION DESCRIPTION
AA7110
AA7110'DESCRIBED BY ALABAMA HIGHWAY DEPARTMENT 1994 (JDS)
AA7110'THE STATION IS LOCATED IN SUMTER COUNTY ON THE WEST RIGHT OF WAY OF
AA7110'U.S. 11 IN LIVINGSTON. TO REACH THE STATION FROM THE JUNCTION OF U.S.
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AA7110'11 NORTH AND ALA 28 WEST (MILE POST 19.50 ON U.S. 11 AND MILE POST
AA7110'7.65 ON ALA 28) IN LIVINGSTON, DRIVE SOUTH ON U.S. 11 FOR 0.45 MI
AA7110'(0.72 KM) TO MILE POST 19.05 AND THE STATION ON THE RIGHT. THE STATION
AA7110'IS LOCATED IN FRONT OF STRATFORD MANOR APARTMENT BUILDING, 10.7 FT
AA7110'(3.3 M) EAST OF THE EAST EDGE OF A CONCRETE SIDEWALK, 22.1 FT (6.7 M)
AA7110'EAST OF TELEPHONE CABLE PEDESTAL NO. 50, 38.4 FT (11.7 M) WEST OF THE
AA7110'CENTERLINE OF THE SOUTH BOUND LANES OF U.S. 11, 47.0 FT (14.3 M)
AA7110'SOUTH-SOUTHEAST OF CABLE POLE NO. 50, 76.0 FT (23.2 M) SOUTH OF THE
AA7110'SOUTH CONCRETE CURB OF A CONCRETE DRIVEWAY, 103.0 FT (31.4 M) NORTH OF
AA7110'POWER AND CABLE POLE NO. 49, AND SET FLUSH WITH THE GROUND. STATION
AA7110'60-32 1994 MAY BE USED AS AN AZIMUTH FOR THIS STATION.
AA7110
AA7110                          STATION RECOVERY (1998)
AA7110
AA7110'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 1998
AA7110'RECOVERED IN GOOD CONDITION.
AA7110
AA7110                          STATION RECOVERY (2005)
AA7110
AA7110'RECOVERY NOTE BY ALABAMA DEPARTMENT OF TRANSPORTATION 2005
AA7110'MARK IS 1.0 FEET WEST OF A METAL WITNESS POST, REST OF DESCRIPTION IS
AA7110'OK
AA7110
AA7110                          STATION RECOVERY (2006)
AA7110
AA7110'RECOVERY NOTE BY BROOKS AND BROOKS INCORPORATED 2006 (JAH)
AA7110'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: D 223 (CO0796)

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CO0796 **********************************************************************
 CO0796  DESIGNATION -  D 223
 CO0796  PID         -  CO0796
 CO0796  STATE/COUNTY-  MS/NEWTON
 CO0796  COUNTRY     -  US
 CO0796  USGS QUAD   -  NEWTON (1982)
 CO0796
 CO0796                        *CURRENT SURVEY CONTROL
 CO0796  ______________________________________________________________________
 CO0796* NAD 83(1986) POSITION- 32 18 58.     (N) 089 08 15.     (W)   SCALED
 CO0796* NAVD 88 ORTHO HEIGHT -   111.098  (meters)     364.49  (feet) ADJUSTED
 CO0796  ______________________________________________________________________
 CO0796  GEOID HEIGHT    -        -27.30  (meters)                    GEOID12A
 CO0796  DYNAMIC HEIGHT  -        110.968 (meters)      364.07  (feet) COMP
 CO0796  MODELED GRAVITY -    979,467.3   (mgal)                      NAVD 88
 CO0796
 CO0796  VERT ORDER      -  FIRST     CLASS I
 CO0796
 CO0796.The horizontal coordinates were scaled from a topographic map and have
 CO0796.an estimated accuracy of +/- 6 seconds.
 CO0796.
 CO0796.The orthometric height was determined by differential leveling and
 CO0796.adjusted by the NATIONAL GEODETIC SURVEY
 CO0796.in June 1991.
 CO0796
 CO0796.The dynamic height is computed by dividing the NAVD 88
 CO0796.geopotential number by the normal gravity value computed on the
 CO0796.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO0796.degrees latitude (g = 980.6199 gals.).
 CO0796
 CO0796.The modeled gravity was interpolated from observed gravity values.
 CO0796
 CO0796;                     North         East     Units  Estimated Accuracy
 CO0796;SPC MS E     -   312,240.      271,360.      MT  (+/- 180 meters Scaled)
 CO0796
 CO0796                         SUPERSEDED SURVEY CONTROL
 CO0796
 CO0796  NGVD 29 (??/??/??)  111.091  (m)          364.47   (f) ADJUSTED    1 1
 CO0796
 CO0796.Superseded values are not recommended for survey control.
 CO0796
 CO0796.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 CO0796.See file dsdata.txt to determine how the superseded data were derived.
 CO0796
 CO0796_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBA987774(NAD 83)
 CO0796
 CO0796_MARKER: DB = BENCH MARK DISK
 CO0796_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 CO0796_SP_SET: CONCRETE POST
 CO0796_STAMPING: D 223 1968
 CO0796_MARK LOGO: CGS
 CO0796_MAGNETIC: N = NO MAGNETIC MATERIAL
 CO0796_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 CO0796+STABILITY: SURFACE MOTION
 CO0796_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR
 CO0796+SATELLITE: SATELLITE OBSERVATIONS - August 09, 1989
 CO0796
 CO0796  HISTORY     - Date     Condition        Report By
 CO0796  HISTORY     - 1968     MONUMENTED       CGS
 CO0796  HISTORY     - 19890809 GOOD             MSHD
 CO0796
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CO0796                          STATION DESCRIPTION
CO0796
CO0796'DESCRIBED BY COAST AND GEODETIC SURVEY 1968
CO0796'4.15 MI SE FROM NEWTON.
CO0796'ABOUT 0.25 MILE WEST ALONG THE ILLINOIS CENTRAL RAILROAD FROM THE
CO0796'STATION AT NEWTON, THENCE 0.8 MILE NORTH ALONG THE GULF, MOBILE AND
CO0796'OHIO RAILROAD, THENCE 1.5 MILES EAST ALONG U.S. HIGHWAY 80, THENCE
CO0796'0.15 MILE SOUTH ALONG A GRADED DIRT ROAD, THENCE 0.1 MILE EAST ALONG A
CO0796'GRADED DIRT ROAD, THENCE 0.9 MILE SOUTH ALONG A GRADED DIRT ROAD,
CO0796'THENCE 0.45 MILE WEST ALONG A PAVED ROAD, IN SECTION 35, T 6 N, R 11
CO0796'E, 67 FEET SOUTH OF THE CENTERLINE OF THE PAVED ROAD, 39 FEET WEST OF
CO0796'THE CENTERLINE OF THE PAVED ENTRANCE ROAD WHICH LEADS TO OKEEFE
CO0796'AIRPORT, 68 1/2 FEET SOUTHWEST AND ACROSS THE PAVED ROAD FROM A POWER
CO0796'POLE WHICH IS BRACED BY A GUY WIRE, 41 FEET SOUTH OF A CORNER FENCE
CO0796'POST, 2 FEET EAST OF A FENCE, 1.4 FEET SOUTHWEST OF A METAL WITNESS
CO0796'POST, ABOUT 1 FOOT ABOVE THE LEVEL OF THE ROAD, AND SET IN THE TOP OF
CO0796'A CONCRETE POST WHICH PROJECTS 7 INCHES.
CO0796
CO0796                          STATION RECOVERY (1989)
CO0796
CO0796'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1989
CO0796'MARK IS LOCATED 2.74 KM (1.70 MI) EAST SOUTHEAST OF NEWTON IN THE
CO0796'SOUTHWEST ANGLE OF THE JUNCTION OF THE ENTRANCE ROAD TO OKEEFE AIRPORT
CO0796'WITH A PAVED ROAD, 0.24 KM (0.15 MI) NORTH OF THE AIRPORT IN SECTION
CO0796'35, T6N, R11E.  TO REACH FROM THE INTERSECTION OF THE STATE HIGHWAY 15
CO0796'BYPASS AND U.S. HIGHWAY 80 AT THE NORTHEAST EDGE OF NEWTON, GO SOUTH
CO0796'ON STATE HIGHWAY 15 FOR 2.09 KM (1.30 MI) TO A CROSSROAD, TURN LEFT
CO0796'AND GO EAST ON A PAVED ROAD FOR 1.13 KM (0.70 MI) TO A SIDE ROAD AND
CO0796'THE MARK ON THE RIGHT.  MARK IS A STANDARD DISK SET IN THE TOP OF A
CO0796'ROUND CONCRETE POST PROJECTING 0.12 M (0.4 FT) .  IT IS 19.81 M
CO0796'(65.0 FT) SOUTH OF THE CENTER OF A PAVED ROAD, 18.75 M (61.5 FT)
CO0796'SOUTHWEST OF A UTILITY POLE WITH GUY WIRES, 11.28 M (37.0 FT) WEST OF
CO0796'THE CENTER OF A PAVED ROAD, 7.01 M (23.0 FT) SOUTH OF A TELEPHONE
CO0796'CABLE POLE, 0.46 M (1.5 FT) EAST OF A FENCE, 0.43 M (1.4 FT) SOUTHWEST
CO0796'OF A METAL WITNESS POST AND IS ABOUT 0.3 M (1.0 FT) ABOVE THE LEVEL OF
CO0796'THE ROAD.
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NGS DATA SHEET: DECATUR CORS ARP (DK6710)

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DK6710 ************************************************************************
 DK6710  HT_MOD      -  This is a Height Modernization Survey Station.
 DK6710  CORS        -  This is a GPS Continuously Operating Reference Station.
 DK6710  DESIGNATION -  DECATUR CORS ARP
 DK6710  CORS_ID     -  MSDC
 DK6710  PID         -  DK6710
 DK6710  STATE/COUNTY-  MS/NEWTON
 DK6710  COUNTRY     -  US
 DK6710  USGS QUAD   -  DECATUR (1966)
 DK6710
 DK6710                        *CURRENT SURVEY CONTROL
 DK6710  ______________________________________________________________________
 DK6710* NAD 83(2011) POSITION- 32 26 22.97135(N) 089 06 44.44325(W)   ADJUSTED
 DK6710* NAD 83(2011) ELLIP HT-   120.910 (meters)        (08/??/11)   ADJUSTED
 DK6710* NAD 83(2011) EPOCH   -  2010.00
 DK6710* NAVD 88 ORTHO HEIGHT -   148.43   (meters)     487.0   (feet) GPS OBS
 DK6710  ______________________________________________________________________
 DK6710  GEOID HEIGHT    -        -27.52  (meters)                    GEOID12A
 DK6710  NAD 83(2011) X  -     83,472.754 (meters)                    COMP
 DK6710  NAD 83(2011) Y  - -5,387,516.255 (meters)                    COMP
 DK6710  NAD 83(2011) Z  -  3,401,747.736 (meters)                    COMP
 DK6710  HORZ ORDER      -  SPECIAL (CORS)
 DK6710  ELLP ORDER      -  SPECIAL (CORS)
 DK6710
 DK6710.Formal positional accuracy estimates are not available for this CORS
 DK6710.because its coordinates were determined in part using modeled
 DK6710.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DK6710.and ellipsoid height can be obtained from the short-term time series.
 DK6710.Additional information regarding modeled velocities is available on
 DK6710.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DK6710
 DK6710.The coordinates were established by GPS observations
 DK6710.and adjusted by the National Geodetic Survey in August 2011.
 DK6710
 DK6710.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DK6710.frame has been affixed to the stable North American Tectonic Plate.
 DK6710
 DK6710.The coordinates are valid at the epoch date displayed above
 DK6710.which is a decimal equivalence of Year/Month/Day.
 DK6710
 DK6710.The orthometric height was determined by GPS observations and a
 DK6710.high-resolution geoid model using precise GPS observation and
 DK6710.processing techniques.
 DK6710
 DK6710.The PID for the CORS L1 Phase Center is DL3085.
 DK6710
 DK6710.The XYZ, and position/ellipsoidal ht. are equivalent.
 DK6710
 DK6710.The ellipsoidal height was determined by GPS observations
 DK6710.and is referenced to NAD 83.
 DK6710
 DK6710. The following values were computed from the NAD 83(2011) position.
 DK6710
 DK6710;                    North         East     Units Scale Factor Converg.
 DK6710;SPC MS E     -   325,941.337   273,763.145   MT  0.99995849   -0 08 58.8
 DK6710;SPC MS E     - 1,069,359.20    898,171.25   sFT  0.99995849   -0 08 58.8
 DK6710
 DK6710!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DK6710!SPC MS E     -   0.99998102  x   0.99995849  =   0.99993951
 DK6710
 DK6710                         SUPERSEDED SURVEY CONTROL
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DK6710
DK6710  NAD 83(CORS)-  32 26 22.97193(N)    089 06 44.44409(W) AD(2002.00) c
DK6710  ELLIP H (09/??/08)  120.896  (m)                       GP(2002.00) c c
DK6710
DK6710.Superseded values are not recommended for survey control.
DK6710
DK6710.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DK6710.See file dsdata.txt to determine how the superseded data were derived.
DK6710
DK6710_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCA0141691140(NAD 83)
DK6710
DK6710_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DK6710
DK6710                          STATION DESCRIPTION
DK6710
DK6710'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DK6710'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DK6710'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DK6710'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DK6710'   ftp://cors.ngs.noaa.gov/cors/README.txt
DK6710'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DK6710'   ftp://cors.ngs.noaa.gov/cors/station_log
DK6710'   http://geodesy.noaa.gov/CORS
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NGS DATA SHEET: DEKA (DN3963)

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DN3963 ***********************************************************************
 DN3963  HT_MOD      -  This is a Height Modernization Survey Station.
 DN3963  DESIGNATION -  DEKA
 DN3963  PID         -  DN3963
 DN3963  STATE/COUNTY-  MS/KEMPER
 DN3963  COUNTRY     -  US
 DN3963  USGS QUAD   -  DE KALB (1982)
 DN3963
 DN3963                        *CURRENT SURVEY CONTROL
 DN3963  ______________________________________________________________________
 DN3963* NAD 83(2011) POSITION- 32 46 26.45513(N) 088 38 00.67969(W)   ADJUSTED
 DN3963* NAD 83(2011) ELLIP HT-   122.893 (meters)        (06/27/12)   ADJUSTED
 DN3963* NAD 83(2011) EPOCH   -  2010.00
 DN3963* NAVD 88 ORTHO HEIGHT -   151.40   (meters)     496.7   (feet) GPS OBS
 DN3963  ______________________________________________________________________
 DN3963  GEOID HEIGHT    -        -28.50  (meters)                    GEOID12A
 DN3963  NAD 83(2011) X  -    128,016.631 (meters)                    COMP
 DN3963  NAD 83(2011) Y  - -5,366,659.872 (meters)                    COMP
 DN3963  NAD 83(2011) Z  -  3,432,979.327 (meters)                    COMP
 DN3963  LAPLACE CORR    -         -1.81  (seconds)                   DEFLEC12A
 DN3963
 DN3963  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DN3963  Type                                          Horiz  Ellip  Dist(km)
 DN3963  ----------------------------------------------------------------------
 DN3963  NETWORK                                        0.61   0.78
 DN3963  ----------------------------------------------------------------------
 DN3963  MEDIAN LOCAL ACCURACY AND DIST (004 points)   0.64   0.64     21.82
 DN3963  ----------------------------------------------------------------------
 DN3963  NOTE: Click here for information on individual local accuracy
 DN3963  values and other accuracy information.
 DN3963
 DN3963
 DN3963.The horizontal coordinates were established by GPS observations
 DN3963.and adjusted by the National Geodetic Survey in June 2012.
 DN3963
 DN3963.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DN3963.frame has been affixed to the stable North American tectonic plate. See
 DN3963.NA2011 for more information. for more information.
 DN3963
 DN3963.The horizontal coordinates are valid at the epoch date displayed above
 DN3963.which is a decimal equivalence of Year/Month/Day.
 DN3963
 DN3963.The orthometric height was determined by GPS observations and a
 DN3963.high-resolution geoid model using precise GPS observation and
 DN3963.processing techniques.
 DN3963
 DN3963.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DN3963
 DN3963.The Laplace correction was computed from DEFLEC12A derived deflections.
 DN3963
 DN3963.The ellipsoidal height was determined by GPS observations
 DN3963.and is referenced to NAD 83.
 DN3963
 DN3963. The following values were computed from the NAD 83(2011) position.
 DN3963
 DN3963;                   North         East      Units Scale Factor Converg.
 DN3963;SPC MS E     -   362,996.032   318,719.536   MT  0.99995432   +0 06 29.4
 DN3963;SPC MS E     - 1,190,929.48  1,045,665.68   sFT  0.99995432   +0 06 29.4
 DN3963;UTM  16      - 3,627,415.513   347,006.696   MT  0.99988862   -0 53 04.0
 DN3963
 DN3963!             -  Elev Factor  x  Scale Factor =   Combined Factor
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DN3963!SPC MS E     -   0.99998071  x   0.99995432  =   0.99993503
DN3963!UTM  16      -   0.99998071  x   0.99988862  =   0.99986933
DN3963
DN3963|---------------------------------------------------------------------|
DN3963| PID    Reference Object                    Distance      Geod. Az   |
DN3963|                                                          dddmmss.s  |
DN3963| CO1288 DEKALB                            219.841 METERS 11420      |
DN3963|---------------------------------------------------------------------|
DN3963
DN3963                          SUPERSEDED SURVEY CONTROL
DN3963
DN3963  NAD 83(2007)-  32 46 26.45552(N)    088 38 00.68032(W) AD(2002.00) A
DN3963  ELLIP H (09/06/11)  122.901  (m)                      GP(2002.00) 4 1
DN3963
DN3963.Superseded values are not recommended for survey control.
DN3963
DN3963.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DN3963.See file dsdata.txt to determine how the superseded data were derived.
DN3963
DN3963_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB4700627415(NAD 83)
DN3963
DN3963_MARKER: DD = SURVEY DISK
DN3963_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DN3963_STAMPING: DEKA 2008
DN3963_MARK LOGO: MSDOT
DN3963_PROJECTION: FLUSH
DN3963_MAGNETIC: N = NO MAGNETIC MATERIAL
DN3963_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DN3963+STABILITY: SURFACE MOTION
DN3963_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DN3963+SATELLITE: SATELLITE OBSERVATIONS - December 20, 2008
DN3963
DN3963  HISTORY     - Date     Condition        Report By
DN3963  HISTORY     - 20081220 MONUMENTED       MSDOT
DN3963
DN3963                          STATION DESCRIPTION
DN3963
DN3963'DESCRIBED BY MS DEPT TRANS 2008 (SOL)
DN3963'THE STATION IS LOCATED ABOUT 6.0 MI (9.7 KM) NORTH OF PORTERVILLE, 4.9
DN3963'MI (7.9 KM) EAST-NORTHEAST OF TOWNSEND AND 3.8 MI (6.1 KM) SOUTH OF
DN3963'SCOOBA.
DN3963'
DN3963'TO REACH FROM THE INTERSECTIONS OF HIGHWAY 16 AND HIGHWAY 39 GO EAST
DN3963'ALONG HIGHWAY 16 EAST FOR 1 MI (1.6 KM) TO THE DEKALB MS DEPARTMENT OF
DN3963'TRANSPORTATION MAINTENANCE OFFICE ON THE LEFT AND THE MARK ON THE
DN3963'LEFT.
DN3963'
DN3963'THE STATION IS 30.5 M (100.1 FT) NORTHEAST OF A CONCRETE R.O.W.
DN3963'MARKER, 29 M (95.1 FT) NORTHEAST OF A MANHOLE, 27.5 M (90.2 FT)
DN3963'SOUTHEAST OF THE SOUTHWEST CORNER OF THE MAINTENANCE OFFICE, 26 M
DN3963'(85.3 FT) NORTH OF THE CENTERLINE OF HIGHWAY 16, AND 2.4 M (7.9 FT)
DN3963'SOUTH OF THE EDGE OF THE PARKING LOT.
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NGS DATA SHEET: E 223 (CO0797)

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CO0797 ***********************************************************************
 CO0797  CBN         -  This is a Cooperative Base Network Control Station.
 CO0797  DESIGNATION -  E 223
 CO0797  PID         -  CO0797
 CO0797  STATE/COUNTY-  MS/NEWTON
 CO0797  COUNTRY     -  US
 CO0797  USGS QUAD   -  NEWTON (1982)
 CO0797
 CO0797                        *CURRENT SURVEY CONTROL
 CO0797  ______________________________________________________________________
 CO0797* NAD 83(2011) POSITION- 32 18 50.52182(N) 089 08 11.84427(W)   ADJUSTED
 CO0797* NAD 83(2011) ELLIP HT-    83.188 (meters)        (06/27/12)   ADJUSTED
 CO0797* NAD 83(2011) EPOCH    -  2010.00
 CO0797* NAVD 88 ORTHO HEIGHT -   110.480  (meters)     362.47  (feet) ADJUSTED
 CO0797  ______________________________________________________________________
 CO0797  NAD 83(2011) X  -     81,301.861 (meters)                    COMP
 CO0797  NAD 83(2011) Y  - -5,394,981.697 (meters)                    COMP
 CO0797  NAD 83(2011) Z  -  3,389,956.826 (meters)                    COMP
 CO0797  LAPLACE CORR    -         -1.86  (seconds)                   DEFLEC12A
 CO0797  GEOID HEIGHT    -        -27.30  (meters)                    GEOID12A
 CO0797  DYNAMIC HEIGHT  -        110.351 (meters)      362.04  (feet) COMP
 CO0797  MODELED GRAVITY -    979,467.2   (mgal)                      NAVD 88
 CO0797
 CO0797  VERT ORDER      -  FIRST     CLASS I
 CO0797
 CO0797  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0797  Type                                           Horiz  Ellip  Dist(km)
 CO0797  ----------------------------------------------------------------------
 CO0797  NETWORK                                         0.84   1.20
 CO0797  ----------------------------------------------------------------------
 CO0797  MEDIAN LOCAL ACCURACY AND DIST (023 points)   1.08   1.39     48.13
 CO0797  ----------------------------------------------------------------------
 CO0797  NOTE: Click here for information on individual local accuracy
 CO0797  values and other accuracy information.
 CO0797
 CO0797
 CO0797.This mark is at James H Eason Field Airport (M23)
 CO0797
 CO0797.The horizontal coordinates were established by GPS observations
 CO0797.and adjusted by the National Geodetic Survey in June 2012.
 CO0797
 CO0797.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0797.frame has been affixed to the stable North American tectonic plate. See
 CO0797.NA2011 for more information. for more information.
 CO0797
 CO0797.The horizontal coordinates are valid at the epoch date displayed above
 CO0797.which is a decimal equivalence of Year/Month/Day.
 CO0797
 CO0797.The orthometric height was determined by differential leveling and
 CO0797.adjusted by the NATIONAL GEODETIC SURVEY
 CO0797.in June 1991.
 CO0797
 CO0797.Photographs are available for this station.
 CO0797
 CO0797.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO0797
 CO0797.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO0797
 CO0797.The ellipsoidal height was determined by GPS observations
 CO0797.and is referenced to NAD 83.
 CO0797
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CO0797.The dynamic height is computed by dividing the NAVD 88
CO0797.geopotential number by the normal gravity value computed on the
CO0797.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
CO0797.degrees latitude (g = 980.6199 gals.).
CO0797
CO0797.The modeled gravity was interpolated from observed gravity values.
CO0797
CO0797. The following values were computed from the NAD 83(2011) position.
CO0797
CO0797;                    North         East     Units Scale Factor Converg.
CO0797;SPC MS E     -   312,011.040   271,440.648   MT  0.99996005   -0 09 43.7
CO0797;SPC MS E     - 1,023,656.22    890,551.53   sFT  0.99996005   -0 09 43.7
CO0797;UTM  16      - 3,577,250.250   298,855.255   MT  1.00009896   -1 08 33.1
CO0797
CO0797!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0797!SPC MS E     -   0.99998694  x   0.99996005  =   0.99994699
CO0797!UTM  16      -   0.99998694  x   1.00009896  =   1.00008590
CO0797
CO0797                          SUPERSEDED SURVEY CONTROL
CO0797
CO0797  NAD 83(2007)-  32 18 50.52206(N)    089 08 11.84466(W) AD(2002.00) A
CO0797  ELLIP H (09/06/11)   83.180  (m)                       GP(2002.00) 4 1
CO0797  NAD 83(2007)-  32 18 50.52184(N)    089 08 11.84483(W) AD(       ) 0
CO0797  ELLIP H (02/10/07)   83.183  (m)                       GP(       )
CO0797  ELLIP H (04/15/02)   83.182  (m)                       GP(       ) 4 2
CO0797  NAD 83(1993)-  32 18 50.52172(N)    089 08 11.84452(W) AD(       ) B
CO0797  ELLIP H (02/15/02)   83.180  (m)                       GP(       ) 4 1
CO0797  NAVD 88 (02/15/02)  110.48   (m)          362.5    (f) LEVELING    3
CO0797  NGVD 29 (??/??/??)  110.473  (m)          362.44   (f) ADJUSTED    1 1
CO0797
CO0797.Superseded values are not recommended for survey control.
CO0797
CO0797.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0797.See file dsdata.txt to determine how the superseded data were derived.
CO0797
CO0797_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBA9885577250(NAD 83)
CO0797
CO0797_MARKER: DB = BENCH MARK DISK
CO0797_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
CO0797_SP_SET: CONCRETE POST
CO0797_STAMPING: E 223 1968
CO0797_MARK LOGO: CGS
CO0797_PROJECTION: RECESSED 15 CENTIMETERS
CO0797_MAGNETIC: T = STEEL SPIKE ADJACENT TO MONUMENT
CO0797_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO0797+STABILITY: SURFACE MOTION
CO0797_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0797+SATELLITE: SATELLITE OBSERVATIONS - August 10, 2008
CO0797
CO0797  HISTORY     - Date     Condition        Report By
CO0797  HISTORY     - 1968     MONUMENTED       CGS
CO0797  HISTORY     - 19890809 GOOD             MSHD
CO0797  HISTORY     - 20000501 GOOD             NGS
CO0797  HISTORY     - 20080809 GOOD             JCLS
CO0797  HISTORY     - 20080810 GOOD             MSDOT
CO0797
CO0797                          STATION DESCRIPTION
CO0797
CO0797'DESCRIBED BY COAST AND GEODETIC SURVEY 1968
CO0797'4.25 MI SE FROM NEWTON.
CO0797'ABOUT 0.25 MILE WEST ALONG THE ILLINOIS CENTRAL RAILROAD FROM THE
CO0797'STATION AT NEWTON, THENCE 0.8 MILE NORTH ALONG THE GULF, MOBILE AND
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CO0797'OHIO RAILROAD, THENCE 1.5 MILES EAST ALONG U.S. HIGHWAY 80, THENCE
CO0797'0.15 MILE SOUTH ALONG A GRADED DIRT ROAD, THENCE 0.1 MILE EAST ALONG A
CO0797'GRADED DIRT ROAD, THENCE 0.9 MILE SOUTH ALONG A GRADED DIRT ROAD,
CO0797'THENCE 0.45 MILE WEST ALONG A PAVED ROAD, THENCE 0.1 MILE SOUTH ALONG
CO0797'A PAVED ENTRANCE ROAD TO OKEEFE AIRPORT, IN SECTION 35, T 6 N, R 11 E,
CO0797'59 FEET WEST OF THE CENTERLINE OF THE ENTRANCE ROAD, 276 FEET
CO0797'NORTHEAST OF THE NORTHEAST EDGE OF A PAVED RUNWAY, 241 FEET NORTHWEST
CO0797'OF THE WEST CORNER OF A CONCRETE BLOCK BUILDING, 34 1/2 FEET NORTHWEST
CO0797'OF AN ENCLOSURE FOR A WATER METER, 5 FEET NORTH OF A CORNER FENCE
CO0797'POST, 1 FOOT WEST OF A FENCE, AND SET IN THE TOP OF A CONCRETE POST
CO0797'ABOUT LEVEL WITH THE SURFACE OF THE GROUND.
CO0797
CO0797                          STATION RECOVERY (1989)
CO0797
CO0797'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1989
CO0797'MARK IS LOCATED 2.74 KM (1.70 MI) EAST SOUTHEAST OF NEWTON OPPOSITE A
CO0797'GATE AT THE ENTRANCE TO THE OKEEFE AIRPORT IN SECTION 35,K T6N, R11E.
CO0797'TO REACH FROM THE INTERSECTION OF THE STATE HIGHWAY 15 BYPASS AND U.S.
CO0797'HIGHWAY 80 AT THE NORTHEAST EDGE OF NEWTON, GO SOUTH ON STATE HIGHWAY
CO0797'15 FOR 2.09 KM (1.30 MI) TO A CROSSROAD, TURN LEFT AND GO EAST ON A
CO0797'PAVED ROAD FOR 1.13 KM (0.70 MI) TO A SIDE ROAD RIGHT, TURN RIGHT AND
CO0797'GO SOUTH ON A PAVED ROAD FOR 0.16 KM (0.10 MI) TO A GATE AND THE MARK
CO0797'ON THE RIGHT.  MARK IS A STANDARD DISK SET IN THE TOP OF A ROUND
CO0797'CONCRETE POST 0.15 M (0.5 FT) BELOW THE GROUND.  IT IS 84.12 M
CO0797'(276.0 FT) NORTHEAST OF THE NORTHEAST EDGE OF A PAVED RUNWAY, 74.07 M
CO0797'(243.0 FT) WEST OF THE WEST CORNER OF A CONCRETE BLOCK BUILDING USED
CO0797'AS A PILOTS LOUNGE, 59.28 M (194.5 FT) WEST OF A POWER POLE WITH A
CO0797'TRANSFORMER, GUY WIRES AND A LAMP, 41.61 M (136.5 FT) SOUTH OF A POWER
CO0797'POLE WITH A LAMP, 17.07 M (56.0 FT) SOUTHWEST OF THE CENTER OF THE
CO0797'ENTRANCE ROAD, 15.85 M (52.0 FT) WEST OF THE SOUTHWEST GATE POST,
CO0797'10.61 M (34.8 FT) NORTHWEST OF THE ENTER OF A WATER METER AND 0.3 M
CO0797'(1.0 FT) NORTHEAST OF A CARSONITE WITNESS POST.
CO0797
CO0797                          STATION RECOVERY (2000)
CO0797
CO0797'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
CO0797'RECOVERED AS DESCRIBED.
CO0797
CO0797                          STATION RECOVERY (2008)
CO0797
CO0797'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2008
CO0797'RECOVERED IN GOOD CONDITION.
CO0797
CO0797                          STATION RECOVERY (2008)
CO0797
CO0797'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
CO0797'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: F 353 (CO1129)

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CO1129 **********************************************************************
 CO1129  CBN         -  This is a Cooperative Base Network Control Station.
 CO1129  DESIGNATION -  F 353
 CO1129  PID         -  CO1129
 CO1129  STATE/COUNTY-  MS/KEMPER
 CO1129  COUNTRY     -  US
 CO1129  USGS QUAD   -  PORTERVILLE (1987)
 CO1129
 CO1129                        *CURRENT SURVEY CONTROL
 CO1129  ______________________________________________________________________
 CO1129* NAD 83(2011) POSITION- 32 41 35.65180(N) 088 29 16.07494(W)   ADJUSTED
 CO1129* NAD 83(2011) ELLIP HT-    34.733 (meters)        (06/27/12)   ADJUSTED
 CO1129* NAD 83(2011) EPOCH    -  2010.00
 CO1129* NAVD 88 ORTHO HEIGHT -    63.407  (meters)     208.03  (feet) ADJUSTED
 CO1129  ______________________________________________________________________
 CO1129  NAD 83(2011) X  -    141,791.405 (meters)                    COMP
 CO1129  NAD 83(2011) Y  - -5,371,085.239 (meters)                    COMP
 CO1129  NAD 83(2011) Z  -  3,425,395.868 (meters)                    COMP
 CO1129  LAPLACE CORR    -         -2.13  (seconds)                   DEFLEC12A
 CO1129  GEOID HEIGHT    -        -28.66  (meters)                    GEOID12A
 CO1129  DYNAMIC HEIGHT  -         63.334 (meters)      207.79  (feet) COMP
 CO1129  MODELED GRAVITY -    979,491.4   (mgal)                      NAVD 88
 CO1129
 CO1129  VERT ORDER      -  FIRST     CLASS II
 CO1129
 CO1129  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO1129  Type                                           Horiz  Ellip  Dist(km)
 CO1129  ----------------------------------------------------------------------
 CO1129  NETWORK                                         1.45   5.04
 CO1129  ----------------------------------------------------------------------
 CO1129  MEDIAN LOCAL ACCURACY AND DIST (019 points)   1.65   5.19     61.08
 CO1129  ----------------------------------------------------------------------
 CO1129  NOTE: Click here for information on individual local accuracy
 CO1129  values and other accuracy information.
 CO1129
 CO1129
 CO1129.The horizontal coordinates were established by GPS observations
 CO1129.and adjusted by the National Geodetic Survey in June 2012.
 CO1129
 CO1129.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO1129.frame has been affixed to the stable North American tectonic plate. See
 CO1129.NA2011 for more information. for more information.
 CO1129
 CO1129.The horizontal coordinates are valid at the epoch date displayed above
 CO1129.which is a decimal equivalence of Year/Month/Day.
 CO1129
 CO1129.The orthometric height was determined by differential leveling and
 CO1129.adjusted by the NATIONAL GEODETIC SURVEY
 CO1129.in June 1991.
 CO1129
 CO1129.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO1129
 CO1129.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO1129
 CO1129.The ellipsoidal height was determined by GPS observations
 CO1129.and is referenced to NAD 83.
 CO1129
 CO1129.The dynamic height is computed by dividing the NAVD 88
 CO1129.geopotential number by the normal gravity value computed on the
 CO1129.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO1129.degrees latitude (g = 980.6199 gals.).
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CO1129
CO1129.The modeled gravity was interpolated from observed gravity values.
CO1129
CO1129. The following values were computed from the NAD 83(2011) position.
CO1129
CO1129;                    North         East     Units Scale Factor Converg.
CO1129;SPC MS E     -   354,073.246   332,401.076   MT  0.99996294   +0 11 11.9
CO1129;SPC MS E     - 1,161,655.31  1,090,552.53   sFT  0.99996294   +0 11 11.9
CO1129;UTM  16      - 3,618,258.183   360,530.511   MT  0.99983986   -0 48 13.5
CO1129
CO1129!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO1129!SPC MS E     -   0.99999455  x   0.99996294  =   0.99995749
CO1129!UTM  16      -   0.99999455  x   0.99983986  =   0.99983441
CO1129
CO1129                          SUPERSEDED SURVEY CONTROL
CO1129
CO1129  NAD 83(2007)-  32 41 35.65178(N)    088 29 16.07557(W) AD(       ) 0
CO1129  ELLIP H (02/10/07)   34.744  (m)                       GP(       )
CO1129  ELLIP H (04/15/02)   34.740  (m)                       GP(       ) 4 2
CO1129  NAD 83(1993)-  32 41 35.65167(N)    088 29 16.07539(W) AD(       ) B
CO1129  ELLIP H (02/15/02)   34.737  (m)                       GP(       ) 4 1
CO1129  NAVD 88 (02/15/02)   63.41   (m)          208.0    (f) LEVELING    3
CO1129
CO1129.Superseded values are not recommended for survey control.
CO1129
CO1129.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO1129.See file dsdata.txt to determine how the superseded data were derived.
CO1129
CO1129_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB6053018258(NAD 83)
CO1129
CO1129_MARKER: F = FLANGE-ENCASED ROD
CO1129_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)
CO1129_SP_SET: STAINLESS STEEL ROD IN SLEEVE
CO1129_STAMPING: F 353 1983
CO1129_MARK LOGO: NGS
CO1129_PROJECTION: FLUSH
CO1129_MAGNETIC: N = NO MAGNETIC MATERIAL
CO1129_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD
CO1129+STABILITY: POSITION/ELEVATION WELL
CO1129_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO1129+SATELLITE: SATELLITE OBSERVATIONS - May 01, 2000
CO1129_ROD/PIPE-DEPTH: 9.9  meters
CO1129_SLEEVE-DEPTH  : 6.1 meters
CO1129
CO1129  HISTORY     - Date     Condition        Report By
CO1129  HISTORY     - 1983     MONUMENTED       NGS
CO1129  HISTORY     - 20000501 GOOD             NGS
CO1129
CO1129                          STATION DESCRIPTION
CO1129
CO1129'DESCRIBED BY NATIONAL GEODETIC SURVEY 1983
CO1129'15.8 KM (9.8 MI) SOUTH FROM SCOOBA.
CO1129'15.8 KM (9.8 MI) SOUTHWEST ALONG U.S. HIGHWAY 45 FROM THE JUNCTION OF
CO1129'STATE HIGHWAY 16 IN SCOOBA, SET IN THE LAWN AND AT THE NORTHWEST
CO1129'CORNER OF THE HERRINGTONS HIGHWAY 45 QUICK STOP GROCERY STORE,
CO1129'59.44 METERS (195.0 FT) WEST OF THE CENTERLINE OF THE HIGHWAY,
CO1129'26.21 METERS (86.0 FT) SOUTH OF THE CENTER OF AN ASPHALT ROAD LEADING
CO1129'WEST, 20.73 METERS (68.0 FT) NORTH OF THE SOUTHWEST CORNER OF THE
CO1129'BUILDING, 2.43 METERS (8.0 FT) WEST OF THE NORTHWEST CORNER OF THE
CO1129'BUILDING, 23.92 METERS (78.5 FT) NORTHEAST OF A LIGHT POLE, AND
CO1129'17.06 METERS (56.0 FT) SOUTHEAST OF A POWER POLE WITH TRANSFORMER.
CO1129'THE MARK IS ABOVE LEVEL WITH HIGHWAY.
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CO1129
CO1129                          STATION RECOVERY (2000)
CO1129
CO1129'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
CO1129'RECOVERED AS UPDATED HERE.  THE STATION IS SET NEAR THE NORTHEAST
CO1129'CORNER OF A 1 STORY FRAME COMMERCIAL BUILDING AT THE CORNER OF US 45
CO1129'AND PORTERVILLE-TOWNSEND RD.  BUILDING WAS NOT OCCUPIED ON THIS DATE.
CO1129'STATION IS 10.0 FT (3.0 M) SOUTH OF THE SOUTHWEST CORNER OF A CONCRETE
CO1129'PAD ON THE NORTH SIDE OF THE BUILDING.
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NGS DATA SHEET: KEY AZ MK (COO997)

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CO0997 ***********************************************************************
 CO0997  DESIGNATION -  KEY AZ MK
 CO0997  PID         -  CO0997
 CO0997  STATE/COUNTY-  MS/LAUDERDALE
 CO0997  COUNTRY     -  US
 CO0997  USGS QUAD   -  MERIDIAN SOUTH (1982)
 CO0997
 CO0997                        *CURRENT SURVEY CONTROL
 CO0997  ______________________________________________________________________
 CO0997* NAD 83(2011) POSITION- 32 20 35.02119(N) 088 44 20.03084(W)   ADJUSTED
 CO0997* NAD 83(2011) ELLIP HT-    62.427 (meters)        (06/27/12)   ADJUSTED
 CO0997* NAD 83(2011) EPOCH   -  2010.00
 CO0997* NAVD 88 ORTHO HEIGHT -    90.290  (meters)     296.23  (feet) ADJUSTED
 CO0997  ______________________________________________________________________
 CO0997  NAD 83(2011) X  -    118,711.282 (meters)                    COMP
 CO0997  NAD 83(2011) Y  - -5,392,548.805 (meters)                    COMP
 CO0997  NAD 83(2011) Z  -  3,392,665.750 (meters)                    COMP
 CO0997  LAPLACE CORR    -         -1.43  (seconds)                   DEFLEC12A
 CO0997  GEOID HEIGHT    -        -27.87  (meters)                    GEOID12A
 CO0997  DYNAMIC HEIGHT  -         90.184 (meters)      295.88  (feet) COMP
 CO0997  MODELED GRAVITY -    979,466.4   (mgal)                      NAVD 88
 CO0997
 CO0997  VERT ORDER      -  FIRST     CLASS I
 CO0997
 CO0997  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0997  Type                                           Horiz  Ellip  Dist(km)
 CO0997  ----------------------------------------------------------------------
 CO0997  NETWORK                                         0.73   0.82
 CO0997  ----------------------------------------------------------------------
 CO0997  MEDIAN LOCAL ACCURACY AND DIST (003 points)   0.60   0.45      1.46
 CO0997  ----------------------------------------------------------------------
 CO0997  NOTE: Click here for information on individual local accuracy
 CO0997  values and other accuracy information.
 CO0997
 CO0997
 CO0997.The horizontal coordinates were established by GPS observations
 CO0997.and adjusted by the National Geodetic Survey in June 2012.
 CO0997
 CO0997.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0997.frame has been affixed to the stable North American tectonic plate. See
 CO0997.NA2011 for more information.
 CO0997
 CO0997.The horizontal coordinates are valid at the epoch date displayed above
 CO0997.which is a decimal equivalence of Year/Month/Day.
 CO0997
 CO0997.The orthometric height was determined by differential leveling and
 CO0997.adjusted by the NATIONAL GEODETIC SURVEY
 CO0997.in June 1991.
 CO0997
 CO0997.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO0997
 CO0997.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO0997
 CO0997.The ellipsoidal height was determined by GPS observations
 CO0997.and is referenced to NAD 83.
 CO0997
 CO0997.The dynamic height is computed by dividing the NAVD 88
 CO0997.geopotential number by the normal gravity value computed on the
 CO0997.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO0997.degrees latitude (g = 980.6199 gals.).
 CO0997
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CO0997.The modeled gravity was interpolated from observed gravity values.
CO0997
CO0997. The following values were computed from the NAD 83(2011) position.
CO0997
CO0997;                    North         East     Units Scale Factor Converg.
CO0997;SPC MS E     -   315,193.338   308,889.714   MT  0.99995097   +0 03 01.9
CO0997;SPC MS E     - 1,034,096.81  1,013,415.67   sFT  0.99995097   +0 03 01.9
CO0997;UTM  16      - 3,579,791.262   336,355.519   MT  0.99993024   -0 55 49.8
CO0997
CO0997!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0997!SPC MS E     -   0.99999020  x   0.99995097  =   0.99994117
CO0997!UTM  16      -   0.99999020  x   0.99993024  =   0.99992044
CO0997
CO0997                          SUPERSEDED SURVEY CONTROL
CO0997
CO0997  NAD 83(2007)-  32 20 35.02145(N)    088 44 20.03128(W) AD(2002.00) A
CO0997  ELLIP H (09/06/11)   62.419  (m)                       GP(2002.00) 4 1
CO0997  NGVD 29 (??/??/??)   90.278  (m)          296.19   (f) ADJUSTED    1 1
CO0997
CO0997.Superseded values are not recommended for survey control.
CO0997
CO0997.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0997.See file dsdata.txt to determine how the superseded data were derived.
CO0997
CO0997_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCA3635579791(NAD 83)
CO0997
CO0997_MARKER: DZ = AZIMUTH MARK DISK
CO0997_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
CO0997_SP_SET: CONCRETE POST
CO0997_STAMPING: KEY 1954
CO0997_MARK LOGO: CGS
CO0997_PROJECTION: PROJECTING 3 CENTIMETERS
CO0997_MAGNETIC: N = NO MAGNETIC MATERIAL
CO0997_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO0997+STABILITY: SURFACE MOTION
CO0997_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0997+SATELLITE: SATELLITE OBSERVATIONS - August 07, 2008
CO0997
CO0997  HISTORY     - Date     Condition        Report By
CO0997  HISTORY     - 1954     MONUMENTED       CGS
CO0997  HISTORY     - 19900205 GOOD             MSHD
CO0997  HISTORY     - 20080807 GOOD             MSDOT
CO0997  HISTORY     - 20090411 GOOD             MSSU
CO0997
CO0997                          STATION DESCRIPTION
CO0997
CO0997'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1990
CO0997'MARK IS LOCATED ABOUT 2.8 MI (4.5 KM) SOUTHWEST OF MERIDIAN IN THE
CO0997'SOUTHWEST ANGLE OF THE JUNCTION OF U.S. HIGHWAY 11 AND A PAVED ROAD
CO0997'LEADING TO THE AIR NATIONAL GUARD AT KEY FIELD AND IS IN SECTION 23,
CO0997'T 6N, R 15E.
CO0997'TO REACH FROM THE I-20 I-59 BRIDGE OVER U.S. HIGHWAY 11 IN MERIDIAN,
CO0997'GO SOUTH ON U.S. HIGHWAY 11 FOR 0.55 MI (0.89 KM) TO THE MARK ON THE
CO0997'RIGHT.
CO0997'MARK IS A STANDARD DISK SET IN THE TOP OF A SQUARE CONCRETE POST,
CO0997'ABOUT 1 FT (0.3 M) BELOW THE LEVEL OF THE HIGHWAY, PROJECTING 1 INCH,
CO0997'309 FT (94.2 M) NORTH OF THE NORTHEAST CORNER OF THE CYCLONE FENCE
CO0997'AROUND KEY FIELD, 157.5 FT (48.0 M) SOUTH OF THE CENTER OF THE EXIT
CO0997'LANE TO KEY FIELD, 97.5 FT (29.7 M) WEST SOUTHWEST OF A LAMP POLE, 59
CO0997'FT (18.0 M) WEST OF THE CENTER OF HIGHWAY 11 AND 0.9 FT (0.3 M) SOUTH
CO0997'OF A CARSONITE WITNESS POST.
CO0997
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CO0997                          STATION RECOVERY (2008)
CO0997
CO0997'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
CO0997'RECOVERED AS DESCRIBED.
CO0997'
CO0997'ADDITIONAL REFERENCE = STATION IS 68 FT (20.7 M) SOUTHEAST OF A SEWER
CO0997'MANHOLE.
CO0997
CO0997                          STATION RECOVERY (2009)
CO0997
CO0997'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2009 (KHB)
CO0997'RECOVERED IN GOOD CONDITION.
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NGS DATA SHEET: LOUISVILLE 2 (DJ1300)

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DJ1300 ********************************************************************
 DJ1300  DESIGNATION -  LOUISVILLE 2
 DJ1300  PID         -  DJ1300
 DJ1300  STATE/COUNTY-  MS/WINSTON
 DJ1300  COUNTRY     -  US
 DJ1300  USGS QUAD   -  LOUISVILLE NORTH (1982)
 DJ1300
 DJ1300                        *CURRENT SURVEY CONTROL
 DJ1300  ______________________________________________________________________
 DJ1300* NAD 83(2011) POSITION- 33 08 35.04279(N) 089 03 40.66535(W)   ADJUSTED
 DJ1300* NAD 83(2011) ELLIP HT-   146.484 (meters)        (06/27/12)   ADJUSTED
 DJ1300* NAD 83(2011) EPOCH   -  2010.00
 DJ1300* NAVD 88 ORTHO HEIGHT -   174.584  (meters)     572.78  (feet) ADJUSTED
 DJ1300  ______________________________________________________________________
 DJ1300  NAD 83(2011) X  -     87,581.150 (meters)                    COMP
 DJ1300  NAD 83(2011) Y  - -5,345,221.589 (meters)                    COMP
 DJ1300  NAD 83(2011) Z  -  3,467,335.111 (meters)                    COMP
 DJ1300  LAPLACE CORR    -         -2.30  (seconds)                   DEFLEC12A
 DJ1300  GEOID HEIGHT    -        -28.11  (meters)                    GEOID12A
 DJ1300  DYNAMIC HEIGHT  -        174.388 (meters)      572.14  (feet) COMP
 DJ1300  MODELED GRAVITY -    979,512.2   (mgal)                      NAVD 88
 DJ1300
 DJ1300  VERT ORDER      -  SECOND    CLASS II
 DJ1300
 DJ1300  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DJ1300  Type                                          Horiz  Ellip  Dist(km)
 DJ1300  ----------------------------------------------------------------------
 DJ1300  NETWORK                                        0.87   0.90
 DJ1300  ----------------------------------------------------------------------
 DJ1300  MEDIAN LOCAL ACCURACY AND DIST (001 points)   0.74   0.63      4.06
 DJ1300  ----------------------------------------------------------------------
 DJ1300  NOTE: Click here for information on individual local accuracy
 DJ1300  values and other accuracy information.
 DJ1300
 DJ1300
 DJ1300.The horizontal coordinates were established by GPS observations
 DJ1300.and adjusted by the National Geodetic Survey in June 2012.
 DJ1300
 DJ1300.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DJ1300.frame has been affixed to the stable North American tectonic plate. See
 DJ1300.NA2011 for more information.
 DJ1300
 DJ1300.The horizontal coordinates are valid at the epoch date displayed above
 DJ1300.which is a decimal equivalence of Year/Month/Day.
 DJ1300
 DJ1300.The orthometric height was determined by differential leveling and
 DJ1300.adjusted by the NATIONAL GEODETIC SURVEY
 DJ1300.in June 1991.
 DJ1300
 DJ1300.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DJ1300
 DJ1300.The Laplace correction was computed from DEFLEC12A derived deflections.
 DJ1300
 DJ1300.The ellipsoidal height was determined by GPS observations
 DJ1300.and is referenced to NAD 83.
 DJ1300
 DJ1300.The dynamic height is computed by dividing the NAVD 88
 DJ1300.geopotential number by the normal gravity value computed on the
 DJ1300.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 DJ1300.degrees latitude (g = 980.6199 gals.).
 DJ1300
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DJ1300.The modeled gravity was interpolated from observed gravity values.
DJ1300
DJ1300. The following values were computed from the NAD 83(2011) position.
DJ1300
DJ1300;                    North         East     Units Scale Factor Converg.
DJ1300;SPC MS E     -   403,928.702   278,731.652   MT  0.99995558   -0 07 28.7
DJ1300;SPC MS E     - 1,325,222.75    914,472.09   sFT  0.99995558   -0 07 28.7
DJ1300;UTM  16      - 3,669,038.944   307,736.884   MT  1.00005578   -1 07 38.4
DJ1300
DJ1300!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ1300!SPC MS E     -   0.99997700  x   0.99995558  =   0.99993258
DJ1300!UTM  16      -   0.99997700  x   1.00005578  =   1.00003278
DJ1300
DJ1300                          SUPERSEDED SURVEY CONTROL
DJ1300
DJ1300  NAD 83(2007)-  33 08 35.04322(N)    089 03 40.66597(W) AD(2002.00) A
DJ1300  ELLIP H (09/06/11)  146.493  (m)                       GP(2002.00) 4 1
DJ1300  NGVD 29 (??/??/92)  174.560  (m)          572.70   (f) ADJ UNCH    2 2
DJ1300
DJ1300.Superseded values are not recommended for survey control.
DJ1300
DJ1300.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ1300.See file dsdata.txt to determine how the superseded data were derived.
DJ1300
DJ1300_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB0773669038(NAD 83)
DJ1300
DJ1300_MARKER: DR = REFERENCE MARK DISK
DJ1300_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DJ1300_SP_SET: SET IN TOP OF CONCRETE MONUMENT
DJ1300_STAMPING: LOUISVILLE NO 2 1958
DJ1300_MARK LOGO: CGS
DJ1300_PROJECTION: PROJECTING 30 CENTIMETERS
DJ1300_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DJ1300+STABILITY: SURFACE MOTION
DJ1300_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DJ1300+SATELLITE: SATELLITE OBSERVATIONS - December 05, 2008
DJ1300
DJ1300  HISTORY     - Date     Condition        Report By
DJ1300  HISTORY     - 1958     MONUMENTED       CGS
DJ1300  HISTORY     - 1975     GOOD             MSHD
DJ1300  HISTORY     - 20081107 GOOD             MSDOT
DJ1300  HISTORY     - 20081205 GOOD             MSSU
DJ1300
DJ1300                          STATION DESCRIPTION
DJ1300
DJ1300'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1975
DJ1300'1.5 MI N FROM LOUISIVLLE.
DJ1300'THE MARK IS LOCATED 1.5 MILES NORTH OF LOUISVILLE ON THE WEST SIDE OF
DJ1300'THE ROAD LEADING TO THE LOUISVILLE AIRPORT ABOUT 0.1 MILE SOUTH OF THE
DJ1300'TERMINAL BUILDING IN THE SOUTHEAST 1/4 OF SECTION 21, T 15N, R 12E. IT
DJ1300'IS 90.06 FEET SOUTHEAST OF THE STATION, 130 FEET SOUTHWEST OF A
DJ1300'TELEPHONE CABLE POLE WITH A GUY WIRE, 35.5 FEET EAST OF A FENCE, 1
DJ1300'FOOT WEST OF A METAL WITNESS POST SET IN THE TOP OF A SQUARE CONCRETE
DJ1300'POST AND PROJECTS 4 INCHES.  TO REACH FROM THE U.S. POST OFFICE IN
DJ1300'LOUISVILLE GO WEST ON MAIN STREET (STATE HIGHWAY 14) FOR 0.1 MILE TO
DJ1300'THE INTERSECTION OF CHURCH AVENUE (STATE HIGHWAY 15). TURN RIGHT AND
DJ1300'GO NORTH ON CHURCH AVENUE (STATE HIGHWAY 15).  TURN RIGHT AND GO NORTH
DJ1300'ON CHURCH AVENUE FOR 0.9 MILE TO A SIDE ROAD RIGHT. TURN RIGHT AND GO
DJ1300'NORTH ON AIRPORT ROAD FOR 0.65 MILE TO THE MARK ON THE LEFT.
DJ1300
DJ1300                          STATION RECOVERY (2008)
DJ1300
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DJ1300'RECOVERY NOTE BY MS DEPT TRANS 2008 (MH)
DJ1300'RECOVERED AS DESCRIBED.
DJ1300
DJ1300                          STATION RECOVERY (2008)
DJ1300
DJ1300'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2008 (BH)
DJ1300'RECOVERED IN GOOD CONDITION.
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NGS DATA SHEET: LOUISVILLE RESET (DJ1298)

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DJ1298 ********************************************************************
 DJ1298  FBN         -  This is a Federal Base Network Control Station.
 DJ1298  DESIGNATION -  LOUISVILLE RESET
 DJ1298  PID         -  DJ1298
 DJ1298  STATE/COUNTY-  MS/WINSTON
 DJ1298  COUNTRY     -  US
 DJ1298  USGS QUAD   -  LOUISVILLE NORTH (1982)
 DJ1298
 DJ1298                        *CURRENT SURVEY CONTROL
 DJ1298  ______________________________________________________________________
 DJ1298* NAD 83(2011) POSITION- 33 08 35.77984(N) 089 03 41.34082(W)   ADJUSTED
 DJ1298* NAD 83(2011) ELLIP HT-   145.979 (meters)        (06/27/12)   ADJUSTED
 DJ1298* NAD 83(2011) EPOCH   -  2010.00
 DJ1298* NAVD 88 ORTHO HEIGHT -   174.081  (meters)     571.13  (feet) ADJUSTED
 DJ1298  ______________________________________________________________________
 DJ1298  NAD 83(2011) X  -     87,563.435 (meters)                    COMP
 DJ1298  NAD 83(2011) Y  - -5,345,209.040 (meters)                    COMP
 DJ1298  NAD 83(2011) Z  -  3,467,353.847 (meters)                    COMP
 DJ1298  LAPLACE CORR    -         -2.31  (seconds)                   DEFLEC12A
 DJ1298  GEOID HEIGHT    -        -28.11  (meters)                    GEOID12A
 DJ1298  DYNAMIC HEIGHT  -        173.885 (meters)      570.49  (feet) COMP
 DJ1298  MODELED GRAVITY -    979,512.2   (mgal)                      NAVD 88
 DJ1298
 DJ1298  VERT ORDER      -  SECOND    CLASS II
 DJ1298
 DJ1298  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DJ1298  Type                                           Horiz  Ellip  Dist(km)
 DJ1298  ----------------------------------------------------------------------
 DJ1298  NETWORK                                         0.30   0.61
 DJ1298  ----------------------------------------------------------------------
 DJ1298  MEDIAN LOCAL ACCURACY AND DIST (040 points)   0.69   1.11     97.09
 DJ1298  ----------------------------------------------------------------------
 DJ1298  NOTE: Click here for information on individual local accuracy
 DJ1298  values and other accuracy information.
 DJ1298
 DJ1298
 DJ1298.This mark is at Louisville Winston County Airport (LMS)
 DJ1298
 DJ1298.The horizontal coordinates were established by GPS observations
 DJ1298.and adjusted by the National Geodetic Survey in June 2012.
 DJ1298
 DJ1298.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DJ1298.frame has been affixed to the stable North American tectonic plate. See
 DJ1298.NA2011 for more information. for more information.
 DJ1298
 DJ1298.The horizontal coordinates are valid at the epoch date displayed above
 DJ1298.which is a decimal equivalence of Year/Month/Day.
 DJ1298
 DJ1298.The orthometric height was determined by differential leveling and
 DJ1298.adjusted by the NATIONAL GEODETIC SURVEY
 DJ1298.in June 1991.
 DJ1298
 DJ1298.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DJ1298
 DJ1298.The Laplace correction was computed from DEFLEC12A derived deflections.
 DJ1298
 DJ1298.The ellipsoidal height was determined by GPS observations
 DJ1298.and is referenced to NAD 83.
 DJ1298
 DJ1298.The dynamic height is computed by dividing the NAVD 88
 DJ1298.geopotential number by the normal gravity value computed on the
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DJ1298.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DJ1298.degrees latitude (g = 980.6199 gals.).
DJ1298
DJ1298.The modeled gravity was interpolated from observed gravity values.
DJ1298
DJ1298. The following values were computed from the NAD 83(2011) position.
DJ1298
DJ1298;                    North         East     Units Scale Factor Converg.
DJ1298;SPC MS E     -   403,951.446   278,714.196   MT  0.99995558   -0 07 29.1
DJ1298;SPC MS E     - 1,325,297.37    914,414.82   sFT  0.99995558   -0 07 29.1
DJ1298;UTM  16      - 3,669,061.992   307,719.826   MT  1.00005586   -1 07 38.7
DJ1298
DJ1298!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ1298!SPC MS E     -   0.99997708  x   0.99995558  =   0.99993266
DJ1298!UTM  16      -   0.99997708  x   1.00005586  =   1.00003294
DJ1298
DJ1298:                Primary Azimuth Mark                    Grid Az
DJ1298:SPC MS E     -  LOUISVILLE AZ MK RESET                  332 51 13.4
DJ1298:UTM  16      -  LOUISVILLE AZ MK RESET                  333 51 23.0
DJ1298
DJ1298|---------------------------------------------------------------------|
DJ1298| PID    Reference Object                    Distance      Geod. Az   |
DJ1298|                                                          dddmmss.s  |
DJ1298| CG1537 LOUISVILLE RM 1                     28.357 METERS 06805      |
DJ1298| CG1538 LOUISVILLE RM 2                     28.669 METERS 14223      |
DJ1298| DJ1960 LOUISVILLE SOU NAT GAS RAD MST     APPROX. 1.2 KM 2132103.0  |
DJ1298| DJ1301 LOUISVILLE AZ MK RESET                            3324344.3  |
DJ1298| CG1536 LOUISVILLE AZ MK                                  3481356.0  |
DJ1298| DJ2109 LOUISVILLE AZ MK 2                APPROX. 0.6 KM 3493824.2  |
DJ1298|---------------------------------------------------------------------|
DJ1298
DJ1298                          SUPERSEDED SURVEY CONTROL
DJ1298
DJ1298  NAD 83(2007)-  33 08 35.78036(N)    089 03 41.34135(W) AD(2002.00) A
DJ1298  ELLIP H (09/06/11)  145.980  (m)                       GP(2002.00) 4 1
DJ1298  NAD 83(2007)-  33 08 35.77979(N)    089 03 41.34163(W) AD(       ) 0
DJ1298  ELLIP H (02/10/07)  145.991  (m)                       GP(       )
DJ1298  ELLIP H (02/15/02)  145.981  (m)                       GP(       ) 4 1
DJ1298  NAD 83(1993)-  33 08 35.77991(N)    089 03 41.34073(W) AD(       ) B
DJ1298  ELLIP H (01/12/94)  146.038  (m)                       GP(       ) 4 1
DJ1298  NAD 83(1986)-  33 08 35.79036(N)    089 03 41.33969(W) AD(       ) 1
DJ1298  NAD 27      -  33 08 35.34120(N)    089 03 41.11660(W) AD(       ) 1
DJ1298  NAVD 88 (01/12/94)  174.08   (m)          571.1    (f) LEVELING    3
DJ1298  NAVD 88 (01/12/94)  174.08   (m)          571.1    (f) LEVELING    3
DJ1298  NGVD 29 (??/??/92)  174.056  (m)          571.05   (f) ADJ UNCH    2 2
DJ1298
DJ1298.Superseded values are not recommended for survey control.
DJ1298
DJ1298.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ1298.See file dsdata.txt to determine how the superseded data were derived.
DJ1298
DJ1298_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB0771969061(NAD 83)
DJ1298
DJ1298_MARKER: DS = TRIANGULATION STATION DISK
DJ1298_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DJ1298_SP_SET: CONCRETE POST
DJ1298_STAMPING: LOUISVILLE 1958 1964
DJ1298_MARK LOGO: CGS
DJ1298_PROJECTION: FLUSH
DJ1298_MAGNETIC: N = NO MAGNETIC MATERIAL
DJ1298_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DJ1298+STABILITY: SURFACE MOTION
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DJ1298_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DJ1298+SATELLITE: SATELLITE OBSERVATIONS - November 07, 2008
DJ1298
DJ1298  HISTORY     - Date     Condition        Report By
DJ1298  HISTORY     - 1964     MONUMENTED       CGS
DJ1298  HISTORY     - 1974     GOOD             MSSU
DJ1298  HISTORY     - 1975     GOOD             MSHD
DJ1298  HISTORY     - 1976     GOOD             MSHD
DJ1298  HISTORY     - 1988     GOOD             NGS
DJ1298  HISTORY     - 19921006 GOOD             MSHD
DJ1298  HISTORY     - 19930511 GOOD
DJ1298  HISTORY     - 19980202 GOOD             NGS
DJ1298  HISTORY     - 20000802 GOOD             MSHD
DJ1298  HISTORY     - 20060908 GOOD             INDIV
DJ1298  HISTORY     - 20081107 GOOD             MSDOT
DJ1298
DJ1298                          STATION DESCRIPTION
DJ1298
DJ1298'DESCRIBED BY COAST AND GEODETIC SURVEY 1964 (AKH)
DJ1298'THE STATION WAS VISITED 5-13-64 AND THE STATION SUB-SURFACE
DJ1298'MARK, REFERENCE MARKS NO. 1 AND NO. 2 AND THE AZIMUTH MARK
DJ1298'RESET 1960 WERE FOUND IN GOOD CONDITION.  A NEW SURFACE MARK WAS
DJ1298'ESTABLISHED OVER THE SUB-SURFACE MARK, AT THIS DATE.
DJ1298'A NEW DESCRIPTION FOLLOWS-
DJ1298'
DJ1298'THE STATION IS LOCATED 1.5 MILES NORTHWEST OF THE TOWN OF
DJ1298'LOUISVILLE, ON LAND OWNED BY MR. J.L. MC GEE AND LEASTED TO THE
DJ1298'WINSTON COUNTY AS AN AIRFIELD.  IT IS ON THE EAST SIDE OF A
DJ1298'NORTH-SOUTH RUNWAY, 220 FEET SOUTHWEST OF THE SOUTHWEST CORNER
DJ1298'OF A LARGE HANGER, 119 FEET EAST OF THE CENTER OF THE NORTH-SOUTH
DJ1298'RUNWAY, 84 FEET WEST OF THE CENTERLINE OF THE ROAD LEADING
DJ1298'HANGER, AND ABOUT 20 FEET WEST OF A BANK.  IT IS A STANDARD
DJ1298'DISK, STAMPED LOUISVILLE 1958 1964, FLUSH WITH THE GROUND.
DJ1298'
DJ1298'REFERENCE MARK NO. 1 IS 93.15 FEET EAST OF THE STATION,
DJ1298'212 FEET EAST OF THE CENTER OF THE NORTH-SOUTH RUNWAY, 1.5 FEET
DJ1298'EAST OF A METAL WITNESS POST, 13 FEET EAST OF THE CENTER
DJ1298'OF THE ROAD TO THE HANGER, 8 FEET WEST OF A POST WITH CABLE TO
DJ1298'BLOCK OFF DRIVEWAY TO HANGER, 31 FEET EAST OF ANOTHER POST
DJ1298'AND IN LINE WITH THE TWO ABOVE MENTIONED POSTS.  IT IS A
DJ1298'STANDARD DISK STAMPED LOUISVILLE, NO 1 1958, FLUSH WITH
DJ1298'THE GROUND.
DJ1298'
DJ1298'REFERENCE MARK NO. 2 IS 94.06 FEET SOUTHEAST OF THE STATION,
DJ1298'163 FEET EAST OF THE CENTER OF THE RUNWAY, 88 FEET SOUTHWEST OF
DJ1298'THE CENTER OF THE ROAD TO THE HANGER, AND 1.5 FEET SOUTHWEST
DJ1298'OF A METAL WITNESS POST.  IT IS A STANDARD DISK, STAMPED
DJ1298'LOUISVILLE NO 2 1958, PROJECTING 2 INCHES.
DJ1298'
DJ1298'THE AZIMUTH MARK IS 0.2 MILE NORTH-NORTHWEST OF THE STATION
DJ1298'ON THE WEST SIDE OF THE NORTH-SOUTH RUNWAY, 247 FEET WEST OF
DJ1298'THE CENTER OF THE RUNWAY, 152 FEET SOUTH OF THE CENTER OF A
DJ1298'GRAVELED ROAD WHICH ENDS AT THE WEST SIDE OF THE AIRPORT,
DJ1298'111 EAST-NORTHEAST OF A POWER POLE, 1.5 FEET EAST OF A FENCE
DJ1298'CORNER AND 1.5 FEET NORTH OF A WITNESS POST.  IT IS A STANDARD
DJ1298'DISK, STAMPED LOUISVILLE 1958, RESET 1960, PROJECTING 6 INCHES.
DJ1298'
DJ1298'TO REACH THE STATION FROM THE JUNCTIONS OF STATE HIGHWAYS
DJ1298'14 AND 15 IN LOUISVILLE, GO NORTH ON STATE HIGHWAY 15 FOR 0.95 MILE
DJ1298'TO THE JUNCTION WITH AIRPORT AVENUE, TURN RIGHT, AND GO 0.7 MILE
DJ1298'TO THE AIRPORT AND THE STATION ON THE LEFT.
DJ1298'
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DJ1298'TO REACH THE AZIMUTH MARK FROM THE STATION GO NORTH-NORTHWEST
DJ1298'ALONG THE RUNWAY FOR 0.2 MILE TO THE MARK ON THE LEFT AS
DJ1298'DESCRIBED.
DJ1298
DJ1298                          STATION RECOVERY (1974)
DJ1298
DJ1298'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 1974 (KD)
DJ1298'LOUISVILLE 1958 1964 RECOVERED GOOD.
DJ1298'
DJ1298'LOUISVILLE NO 1 1958 RECOVERED GOOD.
DJ1298'
DJ1298'LOUISVILLE NO 2 1958 RECOVERED GOOD.
DJ1298'
DJ1298'LOUISVILLE (AZ MK) 1958 RESET 1960 RECOVERED GOOD.
DJ1298'
DJ1298'1964 DESCRIPTION IS STILL ADEQUATE FOR RECOVERY.
DJ1298
DJ1298                          STATION RECOVERY (1975)
DJ1298
DJ1298'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1975
DJ1298'1.5 MI N FROM LOUISVILLE.
DJ1298'THE MARK IS LOCATED 1.5 MILES NORTH OF LOUISVILLE ABOUT MIDWAY AND ON
DJ1298'THE EAST SIDE OF A NORTH-SOUTH RUNWAY AT THE LOUISVILLE AIRPORT ABOUT
DJ1298'0.1 MILE SOUTH OF THE TERMINAL BUILDING IN THE SOUTHEAST 1/4 OF
DJ1298'SECTION 21, T 15N, R 12E.  IT IS 131 FEET WEST-SOUTHWEST OF A
DJ1298'TELEPHONE CABLE POLE WITH A GUY WIRE, 83 FEET EAST OF THE EAST EDGE OF
DJ1298'A RUNWAY, 81.5 FEET SOUTHEAST OF A LANDING LIGHT, 78 FEET SOUTHWEST OF
DJ1298'THE CENTER OF AIRPORT ROAD, 9.5 FEET WEST OF A FENCE SET IN THE TOP OF
DJ1298'A ROUND CONCRETE POST ABOUT 1 FOOT BELOW THE LEVEL OF THE RUNWAY AND
DJ1298'IS FLUSH WITH THE GROUND.  TO REACH FROM THE U.S. POST OFFICE IN
DJ1298'LOUISVILLE GO WEST ON MAIN STREET (STATE HIGHWAY 14) FOR 0.1 MILE TO
DJ1298'THE INTERSECTION OF CHURCH AVENUE (STATE HIGHWAY 15). TURN RIGHT AND
DJ1298'GO NORTH ON CHURCH AVENUE FOR 0.9 MILE TO A SIDE ROAD RIGHT. TURN
DJ1298'RIGHT AND GO NORTH ON AIRPORT ROAD FOR 0.65 MILE TO THE MARK ON THE
DJ1298'LEFT.
DJ1298
DJ1298                          STATION RECOVERY (1976)
DJ1298
DJ1298'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1976 (RLW)
DJ1298'THE STATION WAS VISITED 6-9-76 AND THE STATION MARK RM NO 1, RM NO
DJ1298'2, AND THE AZIMUTH MARK WERE FOUND IN GOOD CONDITION.  THE AZIMUTH
DJ1298'MARK IS VISIBLE FROM THE STATION.  (NOTE) THE HANGER MENTIONED IN
DJ1298'THE 1964 DESCRIPTION NO LONGER EXISTS.
DJ1298'
DJ1298'THE STATION IS LOCATED 1.5 MILES NORTH OF LOUISVILLE ABOUT MIDWAY AND
DJ1298'ON THE EAST SIDE OF A NORTH-SOUTH RUNWAY AT THE LOUISVILLE AIRPORT
DJ1298'ABOUT 0.1 MILE SOUTH OF THE TERMINAL BUILDING IN THE SOUTHEAST 1/4
DJ1298'OF SECTION 21, T 15N, R 12E.  IT IS 131 FEET WEST-SOUTHWEST OF A
DJ1298'TELEPHONE CABLE POLE WITH A GUY WRIE, 78 FEET SOUTHWEST OF THE
DJ1298'CENTER OF THE ENTRANCE DRIVE, 83 FEET EAST OF THE EAST EDGE OF A
DJ1298'NORTH-SOUTH RUNWAY, 81.5 FEET SOUTHEAST OF A LANDING LIGHT, 9.5
DJ1298'FEET WEST OF A FENCE ABOUT 1 FOOT BELOW THE LEVEL OF THE RUNWAY AND
DJ1298'IS FLUSH WITH THE GROUND.  IT IS A TRIANGULATION DISK, STAMPED
DJ1298'LOUISVILLE 1958 1964.
DJ1298'
DJ1298'REFERENCE MARK NO 1 IS 93.15 FEET EAST-NORTHEAST OF THE STATION.  IT
DJ1298'IS 15 FEET EAST-NORTHEAST OF THE CENTER OF THE ENTRANCE ROAD TO THE
DJ1298'AIRPORT, 38.5 FEET WEST OF A TELEPHONE CABLE POLE, 1.5 FEET
DJ1298'NORTHWEST OF A METAL WITNESS POST ABOUT 1 FOOT BELOW THE LEVEL OF
DJ1298'THE ROAD AND IS FLUSH WITH THE GROUND.  IT IS A REFERENCE MARK
DJ1298'DISK, STAMPED LOUISVILLE NO 1 1958.
DJ1298'
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DJ1298'REFERENCE MARK NO 2 IS 90.06 FEET SOUTHEAST OF THE STATION.  IT IS 77
DJ1298'FEET WEST-SOUTHWEST OF THE CENTER OF THE AIRPORT ENTRANCE ROAD, 130
DJ1298'FEET SOUTHWEST OF A TELEPHONE CABLE POLE WITH A GUY WIRE, 35.5 FEET
DJ1298'EAST OF A FENCE, 1 FOOT WEST OF A METAL WITNESS POST AND PROJECTS
DJ1298'4 INCHES.  IT IS A REFERENCE MARK DISK, STAMPED LOUISVILLE NO 2
DJ1298'1958.
DJ1298'
DJ1298'THE AZIMUTH MARK IS 0.2 MILE NORTHWEST OF THE STATION.  IT IS 247
DJ1298'FEET WEST OF THE CENTER OF A NORTH-SOUTH RUNWAY, 148 FEET WEST OF A
DJ1298'FENCE, 152 FEET SOUTH OF THE CENTER OF AN ABANDONED GRAVELED ROAD,
DJ1298'111 FEET EAST-NORTHEAST OF A POWER POLE WITH A GUY WIRE, 1.5 FEET
DJ1298'NORTH OF A METAL WITNESS POST AT THE TOP OF A SLOPE ABOUT 4 FEET
DJ1298'ABOVE THE LEVEL OF THE RUNWAY AND PROJECTS 5 INCHES.  IT IS AN
DJ1298'AZIMUTH MARK DISK, STAMPED LOUISVILLE RESET 1960.
DJ1298'
DJ1298'TO REACH FROM THE STATION FROM THE U.S. POST OFFICE IN LOUISVILLE GO
DJ1298'WEST ON MAIN STREET (STATE HIGHWAY 14) FOR 0.1 MILE TO THE
DJ1298'INTERSECTION OF CHURCH AVENUE (STATE HIGHWAY 15).  TURN RIGHT AND
DJ1298'GO NORTH ON CHURCH AVENUE FOR 0.9 MILE TO A SIDE ROAD RIGHT.  TURN
DJ1298'RIGHT AND GO NORTH ON AIRPORT ROAD FOR 0.65 MILE TO THE STATION ON
DJ1298'THE LEFT.  TO REACH THE AZIMUTH CONTINUE NORTH ON AIRPORT ROAD
DJ1298'FOR 0.15 MILE TO A TAXI STRIP.  TURN LEFT AND GO WEST ON A TAXI
DJ1298'STRIP FOR 100 YARDS TO A NORTH-SOUTH RUNWAY.  TURN RIGHT AND GO
DJ1298'NORTH ON THE RUNWAY FOR 0.15 MILE TO THE MARK ON THE LEFT.
DJ1298'
DJ1298'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN--1.5 MILES NORTH
DJ1298'OF LOUISVILLE.
DJ1298
DJ1298                          STATION RECOVERY (1988)
DJ1298
DJ1298'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 (AJL)
DJ1298'THE STATION WAS RECOVERED AT THIS DATE.
DJ1298'REFERENCE MARK NO. 2 AND THE AZIMUTH MARK 1960 WERE FOUND IN GOOD
DJ1298'CONDITION.  THE REFERENCE MARK NO. 1 WAS NOT FOUND AND BELIEVED
DJ1298'DESTROYED.  A NEW DESCRIPTION FOLLOWS.
DJ1298'
DJ1298'THE STATION IS LOCATED ABOUT 2.4 KM (1.5 MI)
DJ1298'NORTHWEST OF LOUISVILLE, AT THE LOUISVILLE-WINSTON COUNTY AIRPORT,
DJ1298'NEAR THE WINDSOCK ON THE SOUTHEAST SIDE OF THE SINGLE RUNWAY.
DJ1298'OWNERSHIP--CITY OF LOUISVILLE, C/O AIRPORT MANAGER BAKER CLARK,
DJ1298'ROUTE 1, BOX 12A, LOUISVILLE, MS 39339.  PHONE (601) 773-2906.
DJ1298'
DJ1298'TO REACH THE STATION FROM THE POST OFFICE IN LOUISVILLE, GO
DJ1298'WEST FOR 0.2 KM (0.1 MI) ON STATE HIGHWAY 14 TO THE JUNCTION OF
DJ1298'CHURCH AVENUE (OLD HIGHWAY 15).
DJ1298'TURN RIGHT AND GO NORTH THEN NORTHWEST FOR 1.4 KM (0.9 MI) ON
DJ1298'CHURCH AVENUE TO A PAVED SIDE ROAD ON THE RIGHT.
DJ1298'TURN RIGHT AND GO NORTH FOR 1.0 KM (0.65 MI) ON THE PAVED ROAD TO
DJ1298'THE AIRPORT ENTRANCE.
DJ1298'CONTINUE STRAIGHT AHEAD AND GO NORTH FOR 0.1 KM (0.05 MI) ON THE
DJ1298'DRIVE PASSING THE OFFICE TO THE PARKING PAD.
DJ1298'TURN LEFT AND GO WEST FOR 0.1 KM (0.05 MI) ON THE PARKING PAD AND
DJ1298'RAMP TO THE RUNWAY.
DJ1298'TURN LEFT AND GO SOUTH FOR 0.2 KM (0.1 MI) ON THE RUNWAY TO THE
DJ1298'STATION ON THE LEFT NEAR THE WIND SOCK.
DJ1298'
DJ1298'THE STATION IS A STANDARD CGS DISK
DJ1298'STAMPED---LOUISVILLE 1958 1964---,
DJ1298'SET INTO THE TOP OF A ROUND CONCRETE MONUMENT
DJ1298'32 CM IN DIAMETER RECESSED 3 CM BELOW GROUND.  LOCATED
DJ1298'24.8 METERS (81.4 FT) EAST-SOUTHEAST FROM THE SECOND RUNWAY LIGHT
DJ1298'SOUTH OF THE RAMP,
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DJ1298'24.5 METERS (80.5 FT) EAST FROM THE EAST EDGE OF THE RUNWAY,
DJ1298'16.6 METERS (54.5 FT) WEST FROM THE FENCE,
DJ1298'15.7 METERS (51.5 FT) NORTHWEST FROM THE METAL WIND SOCK POLE, AND
DJ1298'11.3 METERS (37.0 FT) EAST-NORTHEAST FROM THE METAL POLE WITH A
DJ1298'BEAM LIGHT.
DJ1298'
DJ1298'DESCRIBED BY D.D. REXRODE, TYPED BY C.L. SMITH.
DJ1298
DJ1298 STATION RECOVERY (1992)
DJ1298
DJ1298'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1992
DJ1298'THE STATION IS LOCATED ABOUT 1.5 MI (2.4 KM) NORTH-NORTHWEST OF
DJ1298'LOUISVILLE ABOUT MIDWAY AND ON THE EAST SIDE OF A NORTH-SOUTH RUNWAY
DJ1298'AT THE LOUISVILLE-WINSTON COUNTY AIRPORT, 0.1 MI (0.2 KM) SOUTH OF
DJ1298'THE AIRPORT OFFICE AND IS IN SECTION 21, T 15N, R 12E.
DJ1298'OWNERSHIP---CITY OF LOUISVILLE, RAY REED AIRPORT MANAGER, TELEPHONE
DJ1298'(601) 773-5243.
DJ1298'TO REACH FROM THE POST OFFICE IN LOUISVILLE, GO WEST ON MAIN STREET
DJ1298'(STATE HIGHWAY 14) FOR 0.1 MI (0.2 KM) TO THE INTERSECTION OF CHURCH
DJ1298'AVENUE, TURN RIGHT AND GO NORTH ON CHURCH AVENUE (OLD HIGHWAY 15) FOR
DJ1298'0.9 MI (1.4 KM) TO A SIDE ROAD RIGHT, TURN RIGHT AND GO NORTH ON
DJ1298'AIRPORT ROAD FOR 0.65 MI (1.05 KM) TO THE MARK ON THE LEFT.
DJ1298'MARK IS A STANDARD DISK SET IN THE TOP OF A ROUND CONCRETE POST, ABOUT
DJ1298'1 FT (0.3 M) BELOW THE LEVEL OF THE RUNWAY, FLUSH WITH THE GROUND,
DJ1298'81.4 FT (24.8 M) EAST SOUTHEAST OF THE SECOND RUNWAY LIGHT SOUTH OF
DJ1298'THE RAMP, 80.5 FT (24.5 M) EAST OF THE EAST EDGE OF THE RUNWAY, 78 FT
DJ1298'(23.8 M) SOUTHWEST OF THE CENTER OF AIRPORT ROAD, 54.5 FT (16.6 M)
DJ1298'WEST OF A FENCE, 51.5 FT (15.7 M) NORTHWEST OF A METAL WIND SOCK POLE
DJ1298'AND 37 FT (11.3 M) EAST NORTHEAST OF A METAL POLE WITH A BEAM LIGHT.
DJ1298
DJ1298 STATION RECOVERY (1993)
DJ1298
DJ1298'RECOVERED 1993
DJ1298'RECOVERED IN GOOD CONDITION.
DJ1298
DJ1298 STATION RECOVERY (1998)
DJ1298
DJ1298'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1998 (CSM)
DJ1298'THE STATION IS LOCATED ABOUT 2.4 KM (1.50 MI) NORTH-NORTHWEST OF
DJ1298'LOUISVILLE, AT THE LOUISVILLE-WINSTON COUNTY AIRPORT, ABOUT MIDFIELD
DJ1298'ALONG THE EAST SIDE OF THE RUNWAY, ALONG THE WEST-SOUTHWEST SIDE OF
DJ1298'THE CURVED AIRPORT ENTRANCE ROAD, SOUTH OF THE AIRPORT OFFICE, NEAR
DJ1298'THE NORTHWEST PERIMETER OF THE SEGMENTED CIRCLE AND LIGHTED WINDSOCK.
DJ1298'OWNERSHIP--LOUISVILLE-WINSTON COUNTY AIRPORT BOARD, PO BOX 1022,
DJ1298'LOUISVILLE MS 39339. NOTE--THE AIRPORT HAS A LOCKED GATE, THE STATION
DJ1298'MAY BE ACCESSED THROUGH FENCE FROM AIRPORT AVENUE AT THE SEGMENTED
DJ1298'CIRCLE. AIRPORT MANAGED BY COUNTY AIRPORT BOARD. TO ACCESS THE
DJ1298'AIRPORT, PHONE ONE OF THE FUEL NUMBERS AT 601-773-7262 773-5233 OR
DJ1298'773-8304. TO REACH THE STATION FROM THE INTERSECTION OF STATE HIGHWAY
DJ1298'14 (MAIN ST) AND BUSINESS HIGHWAY 15 (N CHURCH AV) NEAR THE CENTER OF
DJ1298'LOUISVILLE, GO NORTHERLY FOR 1.45 KM (0.90 MI) ON N CHURCH AVENUE TO
DJ1298'AIRPORT AV ON THE RIGHT. TURN RIGHT, NORTHERLY FOR 1.04 KM (0.65 MI)
DJ1298'ALONG AIRPORT AV TO THE STATION ON THE LEFT, JUST NORTHWEST OF THE
DJ1298'CIRCLE. STATION IS 37.4 M (122.7 FT) SOUTHEAST OF THE 3RD RUNWAY
DJ1298'LIGHT SOUTH OF THE TAXI/RAMP, 36.2 M (118.8 FT) EAST OF THE CENTER OF
DJ1298'RUNWAY, 32.8 M (107.6 FT) NORTH-NORTHEAST OF THE 4TH RUNWAY LIGHT
DJ1298'SOUTH OF THE TAXI/RAMP, 28.7 M (94.2 FT) NORTHWEST OF LOUISVILLE RM 2
DJ1298'AND METAL WITNESS POST, 24.2 M (79.4 FT) WEST-SOUTHWEST OF THE CENTER
DJ1298'OF AIRPORT AVENUE, 15.65 M (51.35 FT) NORTHWEST OF THE LIGHTED
DJ1298'WINDSOCK POLE, 3.55 M (11.65 FT) NORTHWEST OF THE NORTHWEST PERIMETER
DJ1298'OF THE SEGMENTED CIRCLE, ABOUT 0.5 M (1.6 FT) BELOW THE RUNWAY LEVEL
DJ1298'AND FLUSH WITH GROUND.

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DJ1298
DJ1298                          STATION RECOVERY (2000)
DJ1298
DJ1298'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 2000
DJ1298'RECOVERED AS DESCRIBED.
DJ1298
DJ1298                          STATION RECOVERY (2006)
DJ1298
DJ1298'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2006 (PWW)
DJ1298'DESCRIPTION IS ADEQUATE
DJ1298
DJ1298                          STATION RECOVERY (2008)
DJ1298
DJ1298'RECOVERY NOTE BY MS DEPT TRANS 2008 (MH)
DJ1298'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: MERIDIAN 2010 CORS ARP (DL7333)

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DL7333 ***********************************************************************
 DL7333  CORS         -  This is a GPS Continuously Operating Reference Station.
 DL7333  DESIGNATION  -  MERIDIAN 2010 CORS ARP
 DL7333  CORS_ID      -  MSME
 DL7333  PID          -  DL7333
 DL7333  STATE/COUNTY-  MS/LAUDERDALE
 DL7333  COUNTRY      -  US
 DL7333  USGS QUAD    -  MERIDIAN SOUTH (1982)
 DL7333
 DL7333                        *CURRENT SURVEY CONTROL
 DL7333  ______________________________________________________________________
 DL7333* NAD 83(2011) POSITION- 32 22 03.02207(N) 088 43 56.77907(W)   ADJUSTED
 DL7333* NAD 83(2011) ELLIP HT-   103.230 (meters)        (08/??/11)   ADJUSTED
 DL7333* NAD 83(2011) EPOCH    -  2010.00
 DL7333* NAVD 88 ORTHO HEIGHT -          **(meters)           **(feet)
 DL7333  ______________________________________________________________________
 DL7333  NAD 83(2011) X  -    119,287.842 (meters)                      COMP
 DL7333  NAD 83(2011) Y  - -5,391,119.481 (meters)                      COMP
 DL7333  NAD 83(2011) Z  -  3,394,977.507 (meters)                      COMP
 DL7333  GEOID HEIGHT    -        -27.92  (meters)                      GEOID12A
 DL7333  HORZ ORDER      -  SPECIAL (CORS)
 DL7333  ELLP ORDER      -  SPECIAL (CORS)
 DL7333
 DL7333.Formal positional accuracy estimates are not available for this CORS
 DL7333.because its coordinates were determined in part using modeled
 DL7333.velocities. Approximate one-sigma accuracies for latitude, longitude,
 DL7333.and ellipsoid height can be obtained from the short-term time series.
 DL7333.Additional information regarding modeled velocities is available on
 DL7333.the CORS Coordinates and Multi-Year CORS Solution FAQ web pages.
 DL7333
 DL7333.The coordinates were established by GPS observations
 DL7333.and adjusted by the National Geodetic Survey in August 2011.
 DL7333
 DL7333.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DL7333.frame has been affixed to the stable North American Tectonic Plate.
 DL7333
 DL7333.The coordinates are valid at the epoch date displayed above
 DL7333.which is a decimal equivalence of Year/Month/Day.
 DL7333
 DL7333.The PID for the CORS L1 Phase Center is DM7290.
 DL7333
 DL7333.The XYZ, and position/ellipsoidal ht. are equivalent.
 DL7333
 DL7333.The ellipsoidal height was determined by GPS observations
 DL7333.and is referenced to NAD 83.
 DL7333
 DL7333. The following values were computed from the NAD 83(2011) position.
 DL7333
 DL7333;                    North         East     Units Scale Factor Converg.
 DL7333;SPC MS E     -   317,904.504   309,495.161   MT  0.99995111   +0 03 14.4
 DL7333;SPC MS E     - 1,042,991.69  1,015,402.04   sFT  0.99995111   +0 03 14.4
 DL7333
 DL7333!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DL7333!SPC MS E     -   0.99998379  x   0.99995111  =   0.99993490
 DL7333
 DL7333                          SUPERSEDED SURVEY CONTROL
 DL7333
 DL7333  NAD 83(CORS)-  32 22 03.02229(N)    088 43 56.77987(W) AD(2002.00) c
 DL7333  ELLIP H (04/??/10)  103.201  (m)                       GP(2002.00) c c
 DL7333
 DL7333.Superseded values are not recommended for survey control.
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DL7333
DL7333.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DL7333.See file dsdata.txt to determine how the superseded data were derived.
DL7333
DL7333_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCA3700782491(NAD 83)
DL7333
DL7333_MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA
DL7333
DL7333                          STATION DESCRIPTION
DL7333
DL7333'DESCRIBED BY NATIONAL GEODETIC SURVEY 2011
DL7333'STATION IS A GPS CORS.  LATEST INFORMATION INCLUDING POSITIONS AND
DL7333'VELOCITIES ARE AVAILABLE IN THE COORDINATE AND LOG FILES ACCESSIBLE
DL7333'BY ANONYMOUS FTP OR THE WORLDWIDE WEB.
DL7333'   ftp://cors.ngs.noaa.gov/cors/README.txt
DL7333'   ftp://cors.ngs.noaa.gov/cors/coord/coord_08
DL7333'   ftp://cors.ngs.noaa.gov/cors/station_log
DL7333'   http://geodesy.noaa.gov/CORS
```

NGS DATA SHEET: QUIT (DN3999)

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DN3999 ***********************************************************************
 DN3999  HT_MOD      -  This is a Height Modernization Survey Station.
 DN3999  DESIGNATION -  QUIT
 DN3999  PID         -  DN3999
 DN3999  STATE/COUNTY-  MS/CLARKE
 DN3999  COUNTRY     -  US
 DN3999  USGS QUAD   -  QUITMAN (1983)
 DN3999
 DN3999                        *CURRENT SURVEY CONTROL
 DN3999  ______________________________________________________________________
 DN3999* NAD 83(2011) POSITION- 32 00 26.01577(N) 088 43 47.56309(W)   ADJUSTED
 DN3999* NAD 83(2011) ELLIP HT-    46.037 (meters)        (06/27/12)   ADJUSTED
 DN3999* NAD 83(2011) EPOCH    -  2010.00
 DN3999* NAVD 88 ORTHO HEIGHT -    73.21   (meters)     240.2   (feet) GPS OBS
 DN3999* NAVD 88 EPOCH        -  2009.55
 DN3999  **This station is located in a suspected subsidence area (see below).
 DN3999  ______________________________________________________________________
 DN3999  GEOID HEIGHT    -        -27.17  (meters)                    GEOID12A
 DN3999  NAD 83(2011) X  -    119,999.380 (meters)                    COMP
 DN3999  NAD 83(2011) Y  - -5,412,342.457 (meters)                    COMP
 DN3999  NAD 83(2011) Z  -  3,361,135.379 (meters)                    COMP
 DN3999  LAPLACE CORR    -         -1.76  (seconds)                   DEFLEC12A
 DN3999
 DN3999  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DN3999  Type                                          Horiz  Ellip  Dist(km)
 DN3999  ----------------------------------------------------------------------
 DN3999  NETWORK                                        1.08   1.33
 DN3999  ----------------------------------------------------------------------
 DN3999  MEDIAN LOCAL ACCURACY AND DIST (005 points)   1.02   1.16     20.46
 DN3999  ----------------------------------------------------------------------
 DN3999  NOTE: Click here for information on individual local accuracy
 DN3999  values and other accuracy information.
 DN3999
 DN3999
 DN3999.The horizontal coordinates were established by GPS observations
 DN3999.and adjusted by the National Geodetic Survey in June 2012.
 DN3999
 DN3999.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DN3999.frame has been affixed to the stable North American tectonic plate. See
 DN3999.NA2011 for more information. for more information.
 DN3999
 DN3999.The horizontal coordinates are valid at the epoch date displayed above
 DN3999.which is a decimal equivalence of Year/Month/Day.
 DN3999
 DN3999 ** This station is in an area of known vertical motion.  Due to the
 DN3999 ** variability of land subsidence, uplift, and crustal motion, NGS has,
 DN3999 ** determined the orthometric heights for marks in these suspect
 DN3999 ** subsidence areas should be considered valid only at the epoch date
 DN3999 ** associated with the orthometric height.  These heights must always
 DN3999 ** be validated when used as control.  All previously superseded
 DN3999 ** orthometric heights are now considered suspect and are available
 DN3999 ** in the superseded section.  NGS does not recommend using suspect
 DN3999 ** or superseded heights as control.
 DN3999
 DN3999.The orthometric height was determined by GPS observations and a
 DN3999.high-resolution geoid model using precise GPS observation and
 DN3999.processing techniques.
 DN3999
 DN3999.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DN3999
 DN3999.The Laplace correction was computed from DEFLEC12A derived deflections.
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DN3999
DN3999.The ellipsoidal height was determined by GPS observations
DN3999.and is referenced to NAD 83.
DN3999
DN3999. The following values were computed from the NAD 83(2011) position.
DN3999
DN3999;                    North         East     Units Scale Factor Converg.
DN3999;SPC MS E     -   277,955.273   309,774.506   MT  0.99995118   +0 03 17.4
DN3999;SPC MS E     -   911,924.92  1,016,318.53   sFT  0.99995118   +0 03 17.4
DN3999;UTM  16      - 3,542,544.320   336,605.573   MT  0.99992926   -0 55 01.5
DN3999
DN3999!             -  Elev Factor  x  Scale Factor =   Combined Factor
DN3999!SPC MS E     -   0.99999277  x   0.99995118  =   0.99994395
DN3999!UTM  16      -   0.99999277  x   0.99992926  =   0.99992203
DN3999
DN3999                          SUPERSEDED SURVEY CONTROL
DN3999
DN3999  NAD 83(2007)-  32 00 26.01596(N)    088 43 47.56314(W) AD(2002.00) A
DN3999  ELLIP H (09/06/11)   46.026  (m)                       GP(2002.00) 4 1
DN3999
DN3999.Superseded values are not recommended for survey control.
DN3999
DN3999.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DN3999.See file dsdata.txt to determine how the superseded data were derived.
DN3999
DN3999_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCA3660542544(NAD 83)
DN3999
DN3999_MARKER: DD = SURVEY DISK
DN3999_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DN3999_STAMPING: QUIT 2008
DN3999_MARK LOGO: MSDOT
DN3999_PROJECTION: FLUSH
DN3999_MAGNETIC: N = NO MAGNETIC MATERIAL
DN3999_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DN3999+STABILITY: SURFACE MOTION
DN3999_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DN3999+SATELLITE: SATELLITE OBSERVATIONS - December 16, 2008
DN3999
DN3999  HISTORY     - Date     Condition        Report By
DN3999  HISTORY     - 20081216 MONUMENTED       MSDOT
DN3999
DN3999                           STATION DESCRIPTION
DN3999
DN3999'DESCRIBED BY MS DEPT TRANS 2008 (PAB)
DN3999'THE MARK IS LOCATED ABOUT 3 MI (4.8 KM) SOUTH OF QUITMAN ALONG THE
DN3999'WEST SIDE OF S.R. 145 IN THE SOUTHEAST CORNER OF THE M.D.O.T. CLARKE
DN3999'COUNTY MAINTENANCE FACILITY.
DN3999'
DN3999'TO REACH FROM THE INTERSECTION OF S.R. 145 (OLD U.S. HIGHWAY 45) AND
DN3999'S.R. 18, SOUTH OF QUITMAN, TRAVEL NORTH ALONG S.R. 145 FOR 0.1 MI (0.2
DN3999'KM) TO THE MARK ON THE LEFT.
DN3999'
DN3999'THE MARK IS A M.D.O.T. DISK SET IN THE TOP OF A 12-INCH ROUND CONCRETE
DN3999'POST FLUSH WITH THE GROUND.  IT IS 43.5 FT (13.3 M) NORTHWEST OF A
DN3999'FENCE CORNER, 31.5 FT (9.6 M) WEST OF A NORTH-SOUTH CHAIN-LINK FENCE,
DN3999'35.0 FT (10.7 M) EAST OF THE WEST EDGE OF A PARKING AREA, 31.0 FT (9.4
DN3999'M) NORTH OF AN EAST-WEST CHAIN-LINK FENCE AND 1.5 FT (0.5 M) EAST OF A
DN3999'FIBERGLASS WITNESS POST.
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NGS DATA SHEET: S 100 (COO718)

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CO0718 ***********************************************************************
 CO0718  DESIGNATION -  S 100
 CO0718  PID         -  CO0718
 CO0718  STATE/COUNTY-  MS/NESHOBA
 CO0718  COUNTRY     -  US
 CO0718  USGS QUAD   -  PHILADELPHIA (1982)
 CO0718
 CO0718                        *CURRENT SURVEY CONTROL
 CO0718  ______________________________________________________________________
 CO0718* NAD 83(2011) POSITION- 32 46 17.02959(N) 089 06 42.82297(W)   ADJUSTED
 CO0718* NAD 83(2011) ELLIP HT-   127.417 (meters)        (06/27/12)   ADJUSTED
 CO0718* NAD 83(2011) EPOCH    -  2010.00
 CO0718* NAVD 88 ORTHO HEIGHT -   155.236  (meters)     509.30  (feet) ADJUSTED
 CO0718  ______________________________________________________________________
 CO0718  NAD 83(2011) X  -     83,207.942 (meters)                    COMP
 CO0718  NAD 83(2011) Y  - -5,367,702.605 (meters)                    COMP
 CO0718  NAD 83(2011) Z  -  3,432,737.629 (meters)                    COMP
 CO0718  LAPLACE CORR    -         -2.70  (seconds)                   DEFLEC12A
 CO0718  GEOID HEIGHT    -        -27.84  (meters)                    GEOID12A
 CO0718  DYNAMIC HEIGHT  -        155.059 (meters)      508.72  (feet) COMP
 CO0718  MODELED GRAVITY -    979,490.1   (mgal)                      NAVD 88
 CO0718
 CO0718  VERT ORDER      -  SECOND    CLASS 0
 CO0718
 CO0718  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0718  Type                                           Horiz  Ellip  Dist(km)
 CO0718  ----------------------------------------------------------------------
 CO0718  NETWORK                                         0.77   0.92
 CO0718  ----------------------------------------------------------------------
 CO0718  MEDIAN LOCAL ACCURACY AND DIST (004 points)   0.58   0.49      4.01
 CO0718  ----------------------------------------------------------------------
 CO0718  NOTE: Click here for information on individual local accuracy
 CO0718  values and other accuracy information.
 CO0718
 CO0718
 CO0718.The horizontal coordinates were established by GPS observations
 CO0718.and adjusted by the National Geodetic Survey in June 2012.
 CO0718
 CO0718.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0718.frame has been affixed to the stable North American tectonic plate. See
 CO0718.NA2011 for more information. for more information.
 CO0718
 CO0718.The horizontal coordinates are valid at the epoch date displayed above
 CO0718.which is a decimal equivalence of Year/Month/Day.
 CO0718
 CO0718.The orthometric height was determined by differential leveling and
 CO0718.adjusted by the NATIONAL GEODETIC SURVEY
 CO0718.in June 1991.
 CO0718
 CO0718.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO0718
 CO0718.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO0718
 CO0718.The ellipsoidal height was determined by GPS observations
 CO0718.and is referenced to NAD 83.
 CO0718
 CO0718.The dynamic height is computed by dividing the NAVD 88
 CO0718.geopotential number by the normal gravity value computed on the
 CO0718.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO0718.degrees latitude (g = 980.6199 gals.).
 CO0718
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CO0718.The modeled gravity was interpolated from observed gravity values.
CO0718
CO0718. The following values were computed from the NAD 83(2011) position.
CO0718
CO0718;                    North         East     Units Scale Factor Converg.
CO0718;SPC MS E     -   362,722.357   273,901.828   MT  0.99995840   -0 09 02.8
CO0718;SPC MS E     - 1,190,031.60    898,626.25   sFT  0.99995840   -0 09 02.8
CO0718;UTM  16      - 3,627,918.335   302,189.664   MT  1.00008250   -1 08 36.7
CO0718
CO0718!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0718!SPC MS E     -   0.99998000  x   0.99995840  =   0.99993840
CO0718!UTM  16      -   0.99998000  x   1.00008250  =   1.00006249
CO0718
CO0718                          SUPERSEDED SURVEY CONTROL
CO0718
CO0718  NAD 83(2007)-  32 46 17.02987(N)    089 06 42.82360(W) AD(2002.00) A
CO0718  ELLIP H (09/06/11)  127.421  (m)                       GP(2002.00) 4 1
CO0718  NGVD 29 (??/??/92)  155.230  (m)          509.28   (f) ADJ UNCH    2 0
CO0718
CO0718.Superseded values are not recommended for survey control.
CO0718
CO0718.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0718.See file dsdata.txt to determine how the superseded data were derived.
CO0718
CO0718_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB0218927918(NAD 83)
CO0718
CO0718_MARKER: DB = BENCH MARK DISK
CO0718_SETTING: 35 = SET IN A MAT FOUNDATION OR CONCRETE SLAB OTHER THAN
CO0718+WITH SETTING: PAVEMENT
CO0718_SP_SET: BASE OF WATER TANK LEG
CO0718_STAMPING: S 100 1935
CO0718_MARK LOGO: CGS
CO0718_MAGNETIC: N = NO MAGNETIC MATERIAL
CO0718_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO0718+STABILITY: SURFACE MOTION
CO0718_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0718+SATELLITE: SATELLITE OBSERVATIONS - December 19, 2011
CO0718
CO0718  HISTORY     - Date     Condition        Report By
CO0718  HISTORY     - 1935     MONUMENTED       CGS
CO0718  HISTORY     - 1964     GOOD             MSHD
CO0718  HISTORY     - 19821129 GOOD             MSHD
CO0718  HISTORY     - 19911009 GOOD             MSHD
CO0718  HISTORY     - 19940204 GOOD             NOS
CO0718  HISTORY     - 20080804 GOOD             MSDOT
CO0718  HISTORY     - 20111219 GOOD             MSSU
CO0718
CO0718                          STATION DESCRIPTION
CO0718
CO0718'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1964
CO0718'IN PHILADELPHIA.
CO0718'AT PHILADELPHIA, NESHOBA COUNTY, ABOUT 400 FEET WEST OF THE
CO0718'COURTHOUSE, IN THE NORTH CORNER OF THE NORTHEAST BASE OF THE MUNICIPAL
CO0718'WATER TANK, AND ABOUT 115 FEET SOUTH OF THE CENTERLINE OF STATE
CO0718'HIGHWAY 16.  A STANDARD DISK, STAMPED S 100 1935.
CO0718
CO0718                          STATION RECOVERY (1982)
CO0718
CO0718'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1982
CO0718'THE MARK IS 0.16 KM (0.10 MI) WEST OF THE COURTHOUSE IN THE CONCRETE
CO0718'FOOTING FOR THE NORTHEAST LEG OF THE MUNICIPAL WATER TANK, THE OLDEST
CO0718'TANK IN THE VICINITY.  IT IS 28.65 M (94.0 FT) SOUTH OF CENTER OF
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CO0718'BEACON ST, 23.77 M (78.0 FT) WEST OF CENTER OF RANGE AVE IN THE BASE
CO0718'OF NORTHEAST LEG OF WATER TANK.
CO0718
CO0718                          STATION RECOVERY (1991)
CO0718
CO0718'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1991
CO0718'MARK IS LOCATED ABOUT 0.1 MI (0.2 KM) WEST OF THE COURTHOUSE IN
CO0718'PHILADELPHIA, IN THE OLDEST WATER TANK IN THE VICINITY AND IS NEAR
CO0718'THE SOUTHEAST CORNER OF SECTION 25, T 11N, R 11E.
CO0718'MASRK IS A STANDARD DISK SET IN A DRILL HOLE IN THE NORTH CORNER OF
CO0718'THE NORTHEAST LEG OF THE WATER TANK, 94 FT (28.7 M) SOUTH OF THE
CO0718'CENTER OF BEACON STREET AND IS 78 FT (23.8 M) WEST OF THE CENTER OF
CO0718'RANGE AVENUE.
CO0718
CO0718                          STATION RECOVERY (1994)
CO0718
CO0718'RECOVERY NOTE BY NATIONAL OCEAN SERVICE 1994 (CSM)
CO0718'RECOVERED AS DESCRIBED.  THE TANK HAS BEEN DISMANTLED AND IS NO LONGER
CO0718'PRESENT BUT THE CONCRETE FOOTINGS REMAIN INTACT.
CO0718
CO0718                          STATION RECOVERY (2008)
CO0718
CO0718'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
CO0718'RECOVERED AS DESCRIBED.
CO0718'
CO0718'ADDITIONAL REFERENCES = THE STATION IS 90 FT (27.4 M) WEST OF A POWER
CO0718'POLE WITH THREE TRANSFORMERS, 40 FT (12.2 M) NORTHEAST OF A POWER POLE
CO0718'WITH A LOUDSPEAKER ATTACHED, AND 29 FT (8.8 M) WEST OF THE SOUTHWEST
CO0718'CORNER OF THE CASH FOR TITLE BUILDING.
CO0718
CO0718                          STATION RECOVERY (2011)
CO0718
CO0718'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2011 (HK)
CO0718'RECOVERED IN GOOD CONDITION.
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NGS DATA SHEET: SHUBUTA RESET (BV1123)

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BV1123 ***********************************************************************
 BV1123  CBN         -  This is a Cooperative Base Network Control Station.
 BV1123  DESIGNATION -  SHUBUTA RESET
 BV1123  PID         -  BV1123
 BV1123  STATE/COUNTY-  MS/CLARKE
 BV1123  COUNTRY     -  US
 BV1123  USGS QUAD   -  SHUBUTA (1964)
 BV1123
 BV1123                        *CURRENT SURVEY CONTROL
 BV1123  ______________________________________________________________________
 BV1123* NAD 83(2011) POSITION- 31 52 17.60514(N) 088 42 12.56057(W)   ADJUSTED
 BV1123* NAD 83(2011) ELLIP HT-    31.176 (meters)        (06/27/12)   ADJUSTED
 BV1123* NAD 83(2011) EPOCH    -  2010.00
 BV1123* NAVD 88 ORTHO HEIGHT -    58.117  (meters)     190.67  (feet) ADJUSTED
 BV1123* NAVD 88 EPOCH        -  2009.55
 BV1123  **This station is located in a suspected subsidence area (see below).
 BV1123  ______________________________________________________________________
 BV1123  NAD 83(2011) X  -    122,672.001 (meters)                    COMP
 BV1123  NAD 83(2011) Y  - -5,420,230.528 (meters)                    COMP
 BV1123  NAD 83(2011) Z  -  3,348,361.128 (meters)                    COMP
 BV1123  LAPLACE CORR    -         -1.68  (seconds)                   DEFLEC12A
 BV1123  GEOID HEIGHT    -        -26.93  (meters)                    GEOID12A
 BV1123  DYNAMIC HEIGHT  -         58.048 (meters)      190.45  (feet) COMP
 BV1123  MODELED GRAVITY -    979,458.1   (mgal)                      NAVD 88
 BV1123
 BV1123  VERT ORDER      -  FIRST     CLASS II
 BV1123
 BV1123  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 BV1123  Type                                           Horiz  Ellip  Dist(km)
 BV1123  ----------------------------------------------------------------------
 BV1123  NETWORK                                         1.60   5.92
 BV1123  ----------------------------------------------------------------------
 BV1123  MEDIAN LOCAL ACCURACY AND DIST (025 points)   1.81   4.70    113.60
 BV1123  ----------------------------------------------------------------------
 BV1123  NOTE: Click here for information on individual local accuracy
 BV1123  values and other accuracy information.
 BV1123
 BV1123
 BV1123.The horizontal coordinates were established by GPS observations
 BV1123.and adjusted by the National Geodetic Survey in June 2012.
 BV1123
 BV1123.NAD 83(2011) refers to NAD 83 coordinates where the reference
 BV1123.frame has been affixed to the stable North American tectonic plate. See
 BV1123.NA2011 for more information. for more information.
 BV1123
 BV1123.The horizontal coordinates are valid at the epoch date displayed above
 BV1123.which is a decimal equivalence of Year/Month/Day.
 BV1123
 BV1123 ** This station is in an area of known vertical motion.  Due to the
 BV1123 ** variability of land subsidence, uplift, and crustal motion, NGS has,
 BV1123 ** determined the orthometric heights for marks in these suspect
 BV1123 ** subsidence areas should be considered valid only at the epoch date
 BV1123 ** associated with the orthometric height.  These heights must always
 BV1123 ** be validated when used as control.  All previously superseded
 BV1123 ** orthometric heights are now considered suspect and are available
 BV1123 ** in the superseded section.  NGS does not recommend using suspect
 BV1123 ** or superseded heights as control.
 BV1123
 BV1123.The orthometric height was determined by differential leveling and
 BV1123.adjusted by the NATIONAL GEODETIC SURVEY
 BV1123.in July 2012.
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BV1123
BV1123.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BV1123
BV1123.The Laplace correction was computed from DEFLEC12A derived deflections.
BV1123
BV1123.The ellipsoidal height was determined by GPS observations
BV1123.and is referenced to NAD 83.
BV1123
BV1123.The dynamic height is computed by dividing the NAVD 88
BV1123.geopotential number by the normal gravity value computed on the
BV1123.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BV1123.degrees latitude (g = 980.6199 gals.).
BV1123
BV1123.The modeled gravity was interpolated from observed gravity values.
BV1123
BV1123. The following values were computed from the NAD 83(2011) position.
BV1123
BV1123;                    North         East     Units Scale Factor Converg.
BV1123;SPC MS E     -   262,914.871   312,285.858   MT  0.99995186   +0 04 06.8
BV1123;SPC MS E     -   862,579.87  1,024,557.85   sFT  0.99995186   +0 04 06.8
BV1123;UTM  16      - 3,527,463.960   338,861.869   MT  0.99992024   -0 53 58.8
BV1123
BV1123!             -  Elev Factor  x  Scale Factor =   Combined Factor
BV1123!SPC MS E     -   0.99999510  x   0.99995186  =   0.99994697
BV1123!UTM  16      -   0.99999510  x   0.99992024  =   0.99991535
BV1123
BV1123:                Primary Azimuth Mark                    Grid Az
BV1123:SPC MS E     -  SHUBUTA MUNICIPAL WATER TANK            160 22 22.6
BV1123:UTM  16      -  SHUBUTA MUNICIPAL WATER TANK            161 20 28.2
BV1123
BV1123|-----------------------------------------------------------------------|
BV1123| PID    Reference Object                    Distance      Geod. Az   |
BV1123|                                                          dddmmss.s  |
BV1123| BV0430 SHUBUTA RM 1                        27.634 METERS 07632      |
BV1123| BV1124 SHUBUTA RM 3                        28.668 METERS 09406      |
BV1123| BV1544 SHUBUTA MUNICIPAL WATER TANK       APPROX. 1.3 KM 1602629.4  |
BV1123| BV0428 SHUBUTA AZ MK                                     1614831.7  |
BV1123| BV0431 SHUBUTA RM 2                        23.667 METERS 16215      |
BV1123|-----------------------------------------------------------------------|
BV1123
BV1123                          SUPERSEDED SURVEY CONTROL
BV1123
BV1123  NAD 83(2007)-  31 52 17.60519(N)    088 42 12.56162(W) AD(       ) 0
BV1123  ELLIP H (02/10/07)   31.214  (m)                       GP(       )
BV1123  ELLIP H (04/15/02)   31.185  (m)                       GP(       ) 4 2
BV1123  ELLIP H (02/15/02)   31.180  (m)                       GP(       ) 4 1
BV1123  NAD 83(1993)-  31 52 17.62052(N)    088 42 12.56189(W) AD(       ) 1
BV1123  NAD 83(1993)-  31 52 17.60497(N)    088 42 12.56223(W) AD(       ) B
BV1123  ELLIP H (01/12/94)   31.275  (m)                       GP(       ) 4 1
BV1123  NAD 83(1992)-  31 52 17.61587(N)    088 42 12.56119(W) AD(       ) 3
BV1123  NAD 83(1986)-  31 52 17.62052(N)    088 42 12.56189(W) AD(       ) 3
BV1123  NAD 27      -  31 52 17.06100(N)    088 42 12.42700(W) AD(       ) 3
BV1123  NAVD 88 (01/12/94)   58.15   (m)          190.8    (f) LEVELING    3
BV1123  NAVD 88 (06/15/91)   58.146  (m)          190.77   (f) SUPERSEDED  1 2
BV1123  NGVD 29 (??/??/??)   58.123  (m)          190.69   (f) ADJUSTED    1 2
BV1123
BV1123.Superseded values are not recommended for survey control.
BV1123
BV1123.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BV1123.See file dsdata.txt to determine how the superseded data were derived.
BV1123
BV1123_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCA3886127463(NAD 83)
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BV1123
BV1123_MARKER: DS = TRIANGULATION STATION DISK
BV1123_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
BV1123_SP_SET: CONCRETE POST
BV1123_STAMPING: SHUBUTA 1956 1979
BV1123_MARK LOGO: NGS
BV1123_PROJECTION: RECESSED 25 CENTIMETERS
BV1123_MAGNETIC: N = NO MAGNETIC MATERIAL
BV1123_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
BV1123+STABILITY: SURFACE MOTION
BV1123_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
BV1123+SATELLITE: SATELLITE OBSERVATIONS - May 01, 2000
BV1123
BV1123  HISTORY     - Date     Condition        Report By
BV1123  HISTORY     - 1979     MONUMENTED       NGS
BV1123  HISTORY     - 1980     GOOD             NGS
BV1123  HISTORY     - 19910403 GOOD             MSHD
BV1123  HISTORY     - 19921120 GOOD             MSHD
BV1123  HISTORY     - 19930503 GOOD
BV1123  HISTORY     - 20000501 GOOD             NGS
BV1123
BV1123                          STATION DESCRIPTION
BV1123
BV1123'DESCRIBED BY NATIONAL GEODETIC SURVEY 1980
BV1123'1.2 KM NW FROM SHUBUTA.
BV1123'1.2 KILOMETERS (0.75 MILE) NORTHWEST ALONG US HIGHWAY 45 FROM THE
BV1123'INTERSECTION OF MAIN STREET AT SHUBUTA, AT THE JUNCTION OF A GRAVEL
BV1123'DRIVE LEADING TO A WOODYARD, 36 METERS (118 FEET) NORTHEAST OF THE
BV1123'CENTER LINE OF THE HIGHWAY, 33 METERS (108 FEET) WEST-NORTHWEST OF A
BV1123'POWER POLE, 27.4 METERS (90 FEET) WEST OF THE WEST STEEL GUARD POST
BV1123'AROUND A GAS METER, 31.1 METERS (102 FEET) EAST-SOUTHEAST OF A LONE
BV1123'8-INCH PINE TREE, 7.2 METERS (23.5 FEET) SOUTH-SOUTHEAST OF THE CENTER
BV1123'OF THE GRAVEL DRIVE.
BV1123'THE MARK IS 1 METERS  NW FROM A WITNESS POST.
BV1123'THE MARK IS 1 M BELOW HIGHWAY.
BV1123
BV1123                          STATION RECOVERY (1991)
BV1123
BV1123'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1991
BV1123'THE STATION IS LOCATED ABOUT 0.75 MI (1.21 KM) NORTH OF SHUBUTA, IN
BV1123'THE EDGE OF THE ENTRANCE TO A WOOD YARD AND IS IN SECTION 4, T 10N,
BV1123'R7W.
BV1123'TO REACH FROM THE INTERSECTION OF U.S. HIGHWAY 45 AND EUCUTTA STREET
BV1123'IN SHUBUTA, GO NORTH ON U.S. HIGHWAY 45 FOR 0.75 MI (1.21 KM) TO THE
BV1123'ENTRANCE TO THE WOOD YARD AND THE MARK ON THE RIGHT.
BV1123'MARK IS A STANDARD DISK SET IN THE TOP OF A ROUND CONCRETE POST, ABOUT
BV1123'6.0 FT (1.8 M) BELOW THE LEVEL OF THE HIGHWAY, 10 INCHES BELOW THE
BV1123'GROUND, 117.0 FT (35.7 M) EAST-NORTHEAST OF THE CENTER OF HIGHWAY 45,
BV1123'108.0 FT (32.9 M) NORTHWEST OF A POWER POLE, 103.5 FT (31.5 M)
BV1123'SOUTHEAST OF AN 18 INCH OAK, 89.5 FT (27.3 M) WEST OF THE NORTHWEST
BV1123'STEEL GUARD POST FOR A GAS METER, 85.5 FT (26.1 M) EAST-NORTHEAST OF
BV1123'TELEPHONE CABLE POLE NO F1126 AND 14.0 FT (4.3 M) SOUTHEAST OF THE
BV1123'CENTER OF THE ENTRANCE TO THE WOOD YARD.
BV1123
BV1123                          STATION RECOVERY (1992)
BV1123
BV1123'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1992
BV1123'STATION IS LOCATED ABOUT 12.0 MI (19.3 KM) SOUTH OF QUITMAN, 0.75 MI
BV1123'(1.21 KM) NORTHWEST OF SHUBUTA, AT SITE OF A LARGE WOODYARD, ON
BV1123'NORTHEAST RIGHT OF WAY OF U.S. HIGHWAY 45.
BV1123'TO REACH FROM THE COURTHOUSE IN QUITMAN, GO SOUTH ON U.S. HIGHWAY 45
BV1123'FOR 12.3 MI (19.8 KM) TO A SIDE ROAD TO WOODYARD AND STATION ON THE
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BV1123'LEFT.
BV1123'STATION IS A STANDARD NGS DISK, STAMPED---SHUBUTA 1956 1979---SET IN
BV1123'TOP OF A ROUND CONCRETE MONUMENT, 10 INCHES BELOW THE SURFACE OF THE
BV1123'GROUND.  IT IS 118.0 FT (36.0 M) NORTHEAST OF THE CENTER OF HIGHWAY
BV1123'45, 108.0 FT (32.9 M) WEST NORTHWEST OF A POWER POLE, 90.0 FT
BV1123'(27.4 M) WEST OF THE WEST STEEL GUARD POST AROUND GAS METER, 25.0 FT
BV1123'(7.6 M) SOUTH SOUTHEAST OF THE CENTER OF GRAVEL ROAD, 17.0 FT
BV1123'(5.2 M) SOUTH SOUTHWEST OF SOUTH IRON GATE POST, 9.5 FT (2.9 M) WEST
BV1123'SOUTHWEST OF IRON FENCE AND CARSONITE WITNESS POST.
BV1123
BV1123                          STATION RECOVERY (1993)
BV1123
BV1123'RECOVERED 1993
BV1123'RECOVERED IN GOOD CONDITION.
BV1123
BV1123                          STATION RECOVERY (2000)
BV1123
BV1123'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
BV1123'RECOVERED AS DESCRIBED.  TURN EAST OFF OF THE HIGHWAY ON TO HALL
BV1123'STREET.
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NGS DATA SHEET: W 107 (CO0837)

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CO0837 **********************************************************************
 CO0837  CBN         -  This is a Cooperative Base Network Control Station.
 CO0837  DESIGNATION -  W 107
 CO0837  PID         -  CO0837
 CO0837  STATE/COUNTY-  MS/SCOTT
 CO0837  COUNTRY     -  US
 CO0837  USGS QUAD   -  FOREST (1982)
 CO0837
 CO0837                        *CURRENT SURVEY CONTROL
 CO0837  ______________________________________________________________________
 CO0837* NAD 83(2011) POSITION- 32 21 39.78365(N) 089 28 28.49745(W)   ADJUSTED
 CO0837* NAD 83(2011) ELLIP HT-   117.215 (meters)        (06/27/12)   ADJUSTED
 CO0837* NAD 83(2011) EPOCH   -  2010.00
 CO0837* NAVD 88 ORTHO HEIGHT -   144.252  (meters)     473.27  (feet) ADJUSTED
 CO0837  ______________________________________________________________________
 CO0837  NAD 83(2011) X  -     49,453.014 (meters)                    COMP
 CO0837  NAD 83(2011) Y  - -5,392,607.296 (meters)                    COMP
 CO0837  NAD 83(2011) Z  -  3,394,380.350 (meters)                    COMP
 CO0837  LAPLACE CORR    -         -1.06  (seconds)                   DEFLEC12A
 CO0837  GEOID HEIGHT    -        -27.02  (meters)                    GEOID12A
 CO0837  DYNAMIC HEIGHT  -        144.083 (meters)      472.71  (feet) COMP
 CO0837  MODELED GRAVITY -    979,463.5   (mgal)                      NAVD 88
 CO0837
 CO0837  VERT ORDER      -  FIRST     CLASS I
 CO0837
 CO0837  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0837  Type                                           Horiz  Ellip  Dist(km)
 CO0837  ----------------------------------------------------------------------
 CO0837  NETWORK                                         0.71   0.86
 CO0837  ----------------------------------------------------------------------
 CO0837  MEDIAN LOCAL ACCURACY AND DIST (026 points)   0.94   1.20     57.42
 CO0837  ----------------------------------------------------------------------
 CO0837  NOTE: Click here for information on individual local accuracy
 CO0837  values and other accuracy information.
 CO0837
 CO0837
 CO0837.The horizontal coordinates were established by GPS observations
 CO0837.and adjusted by the National Geodetic Survey in June 2012.
 CO0837
 CO0837.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0837.frame has been affixed to the stable North American tectonic plate. See
 CO0837.NA2011 for more information. for more information.
 CO0837
 CO0837.The horizontal coordinates are valid at the epoch date displayed above
 CO0837.which is a decimal equivalence of Year/Month/Day.
 CO0837
 CO0837.The orthometric height was determined by differential leveling and
 CO0837.adjusted by the NATIONAL GEODETIC SURVEY
 CO0837.in June 1991.
 CO0837
 CO0837.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO0837
 CO0837.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO0837
 CO0837.The ellipsoidal height was determined by GPS observations
 CO0837.and is referenced to NAD 83.
 CO0837
 CO0837.The dynamic height is computed by dividing the NAVD 88
 CO0837.geopotential number by the normal gravity value computed on the
 CO0837.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO0837.degrees latitude (g = 980.6199 gals.).
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CO0837
CO0837.The modeled gravity was interpolated from observed gravity values.
CO0837
CO0837. The following values were computed from the NAD 83(2011) position.
CO0837
CO0837;                    North         East     Units Scale Factor Converg.
CO0837;SPC MS E     -   317,365.012   239,647.462   MT  0.99999490   -0 20 35.7
CO0837;SPC MS E     - 1,041,221.71    786,243.38   sFT  0.99999490   -0 20 35.7
CO0837;UTM  16      - 3,583,149.059   267,151.869   MT  1.00026865   -1 19 30.4
CO0837
CO0837!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0837!SPC MS E     -   0.99998160  x   0.99999490  =   0.99997650
CO0837!UTM  16      -   0.99998160  x   1.00026865  =   1.00025024
CO0837
CO0837                          SUPERSEDED SURVEY CONTROL
CO0837
CO0837  NAD 83(2007)-  32 21 39.78376(N)    089 28 28.49790(W) AD(2002.00) A
CO0837  ELLIP H (09/06/11)  117.216  (m)                       GP(2002.00) 4 1
CO0837  NAD 83(2007)-  32 21 39.78370(N)    089 28 28.49794(W) AD(       ) 0
CO0837  ELLIP H (02/10/07)  117.191  (m)                       GP(       )
CO0837  ELLIP H (04/15/02)  117.183  (m)                       GP(       ) 4 2
CO0837  NAD 83(1993)-  32 21 39.78357(N)    089 28 28.49769(W) AD(       ) B
CO0837  ELLIP H (02/15/02)  117.182  (m)                       GP(       ) 4 1
CO0837  NAVD 88 (02/15/02)  144.2    (m)  GEOID99 model used   GPS OBS
CO0837  NGVD 29 (??/??/??)  144.247  (m)          473.25   (f) ADJUSTED    1 1
CO0837
CO0837.Superseded values are not recommended for survey control.
CO0837
CO0837.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0837.See file dsdata.txt to determine how the superseded data were derived.
CO0837
CO0837_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBA6715183149(NAD 83)
CO0837
CO0837_MARKER: DB = BENCH MARK DISK
CO0837_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
CO0837_SP_SET: SET IN TOP OF CONCRETE MONUMENT
CO0837_STAMPING: W 107 1935
CO0837_MARK LOGO: CGS
CO0837_PROJECTION: PROJECTING 10 CENTIMETERS
CO0837_MAGNETIC: N = NO MAGNETIC MATERIAL
CO0837_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO0837+STABILITY: SURFACE MOTION
CO0837_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0837+SATELLITE: SATELLITE OBSERVATIONS - August 10, 2008
CO0837
CO0837  HISTORY     - Date     Condition        Report By
CO0837  HISTORY     - 1935     MONUMENTED       CGS
CO0837  HISTORY     - 1968     GOOD             CGS
CO0837  HISTORY     - 20000202 GOOD             NGS
CO0837  HISTORY     - 20080810 GOOD             MSDOT
CO0837
CO0837                          STATION DESCRIPTION
CO0837
CO0837'DESCRIBED BY COAST AND GEODETIC SURVEY 1968
CO0837'0.15 MI S FROM FOREST.
CO0837'ABOUT 0.15 MILE SOUTH ALONG SOUTH MAIN STREET FROM THE SCOTT COUNTY
CO0837'COURTHOUSE AT FOREST, 112 FEET SOUTHWEST AND ACROSS THE STREET FROM
CO0837'THE SOUTHWEST CORNER OF THE ILLINOIS CENTRAL RAILROAD STATION, 31 FEET
CO0837'SOUTH OF THE SOUTH RAIL OF THE MAIN TRACK, 44 FEET WEST OF THE
CO0837'CENTERLINE OF THE STREET, 95 FEET NORTH OF THE CENTERLINE OF OAK
CO0837'STREET, 4 FEET EAST OF A TELEPHONE POLE, 1.0 FOOT WEST OF A METAL
CO0837'WITNESS POST, ABOUT 1 FOOT BELOW THE LEVEL OF THE TRACK, AND SET IN
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CO0837'THE TOP OF A CONCRETE POST WHICH IS 8 INCHES BELOW THE SURFACE OF THE
CO0837'GROUND.  SEC 16, T 6N, R 8E.
CO0837
CO0837                          STATION RECOVERY (2000)
CO0837
CO0837'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
CO0837'RECOVERED AS MODIFIED HERE.  THE TELEPHONE POLE AND STEEL WITNESS POST
CO0837'ARE GONE.  THE MARK IS NOW 0.72 M (2.36 FT) BELOW THE LEVEL OF THE RR
CO0837'TRACK, AND NOW PROJECTS 0.1 M (0.3 FT) ABOVE THE GROUND.  IT IS 3.75 M
CO0837'(12.30 FT) SOUTH OF THE SOUTH MOST RAIL OF THREE TRACKS, 10.75 M
CO0837'(35.27 FT) EAST NORTHEAST OF A 2.1 M (6.9 FT) HIGH STEEL ELECTRICAL
CO0837'EQUIPMENT SHELTER, AND IS MARKED BY AN ORANGE WITNESS POST.
CO0837
CO0837                          STATION RECOVERY (2008)
CO0837
CO0837'RECOVERY NOTE BY MS DEPT TRANS 2008 (SOL)
CO0837'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: WILLI RM 1 (DJ2171)

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DJ2171 ************************************************************************
 DJ2171  DESIGNATION -  WILLI RM 1
 DJ2171  PID         -  DJ2171
 DJ2171  STATE/COUNTY-  MS/ATTALA
 DJ2171  COUNTRY     -  US
 DJ2171  USGS QUAD   -  KOSCIUSKO (1982)
 DJ2171
 DJ2171                        *CURRENT SURVEY CONTROL
 DJ2171  ______________________________________________________________________
 DJ2171* NAD 83(2011) POSITION- 33 02 12.69726(N) 089 31 55.39284(W)   ADJUSTED
 DJ2171* NAD 83(2011) ELLIP HT-   135.633 (meters)        (06/27/12)   ADJUSTED
 DJ2171* NAD 83(2011) EPOCH    -  2010.00
 DJ2171* NAVD 88 ORTHO HEIGHT -   162.822  (meters)     534.19  (feet) ADJUSTED
 DJ2171  ______________________________________________________________________
 DJ2171  NAD 83(2011) X  -     43,713.348 (meters)                    COMP
 DJ2171  NAD 83(2011) Y  - -5,352,182.401 (meters)                    COMP
 DJ2171  NAD 83(2011) Z  -  3,457,460.345 (meters)                    COMP
 DJ2171  LAPLACE CORR    -         -1.45  (seconds)                   DEFLEC12A
 DJ2171  GEOID HEIGHT    -        -27.19  (meters)                    GEOID12A
 DJ2171  DYNAMIC HEIGHT  -        162.642 (meters)      533.60  (feet) COMP
 DJ2171  MODELED GRAVITY -    979,532.1   (mgal)                      NAVD 88
 DJ2171
 DJ2171  VERT ORDER      -  SECOND    CLASS II
 DJ2171
 DJ2171  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 DJ2171  Type                                          Horiz  Ellip  Dist(km)
 DJ2171  ----------------------------------------------------------------------
 DJ2171  NETWORK                                        1.02   1.18
 DJ2171  ----------------------------------------------------------------------
 DJ2171  MEDIAN LOCAL ACCURACY AND DIST (002 points)   0.76   0.88      5.43
 DJ2171  ----------------------------------------------------------------------
 DJ2171  NOTE: Click here for information on individual local accuracy
 DJ2171  values and other accuracy information.
 DJ2171
 DJ2171
 DJ2171.The horizontal coordinates were established by GPS observations
 DJ2171.and adjusted by the National Geodetic Survey in June 2012.
 DJ2171
 DJ2171.NAD 83(2011) refers to NAD 83 coordinates where the reference
 DJ2171.frame has been affixed to the stable North American tectonic plate. See
 DJ2171.NA2011 for more information. for more information.
 DJ2171
 DJ2171.The horizontal coordinates are valid at the epoch date displayed above
 DJ2171.which is a decimal equivalence of Year/Month/Day.
 DJ2171
 DJ2171.The orthometric height was determined by differential leveling and
 DJ2171.adjusted by the NATIONAL GEODETIC SURVEY
 DJ2171.in May 1996.
 DJ2171
 DJ2171.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 DJ2171
 DJ2171.The Laplace correction was computed from DEFLEC12A derived deflections.
 DJ2171
 DJ2171.The ellipsoidal height was determined by GPS observations
 DJ2171.and is referenced to NAD 83.
 DJ2171
 DJ2171.The dynamic height is computed by dividing the NAVD 88
 DJ2171.geopotential number by the normal gravity value computed on the
 DJ2171.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 DJ2171.degrees latitude (g = 980.6199 gals.).
 DJ2171
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DJ2171.The modeled gravity was interpolated from observed gravity values.
DJ2171
DJ2171. The following values were computed from the NAD 83(2011) position.
DJ2171
DJ2171;                    North         East     Units Scale Factor Converg.
DJ2171;SPC MS E     -   392,344.120   234,732.115   MT  1.00000250   -0 22 51.4
DJ2171;SPC MS E     - 1,287,215.67    770,116.95   sFT  1.00000250   -0 22 51.4
DJ2171;UTM  16      - 3,658,223.011   263,533.050   MT  1.00028950   -1 22 51.8
DJ2171
DJ2171!             -  Elev Factor  x  Scale Factor =   Combined Factor
DJ2171!SPC MS E     -   0.99997871  x   1.00000250  =   0.99998121
DJ2171!UTM  16      -   0.99997871  x   1.00028950  =   1.00026820
DJ2171
DJ2171                          SUPERSEDED SURVEY CONTROL
DJ2171
DJ2171  NAD 83(2007)-  33 02 12.69759(N)    089 31 55.39341(W) AD(2002.00) A
DJ2171  ELLIP H (09/06/11)  135.630  (m)                      GP(2002.00) 4 1
DJ2171
DJ2171.Superseded values are not recommended for survey control.
DJ2171
DJ2171.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
DJ2171.See file dsdata.txt to determine how the superseded data were derived.
DJ2171
DJ2171_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SBB6353358223(NAD 83)
DJ2171
DJ2171_MARKER: DR = REFERENCE MARK DISK
DJ2171_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DJ2171_SP_SET: CONCRETE POST
DJ2171_STAMPING: WILLI NO 1 1958
DJ2171_MARK LOGO: CGS
DJ2171_PROJECTION: FLUSH
DJ2171_MAGNETIC: N = NO MAGNETIC MATERIAL
DJ2171_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DJ2171+STABILITY: SURFACE MOTION
DJ2171_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
DJ2171+SATELLITE: SATELLITE OBSERVATIONS - October 28, 2008
DJ2171
DJ2171  HISTORY     - Date     Condition        Report By
DJ2171  HISTORY     - 1958     MONUMENTED       CGS
DJ2171  HISTORY     - 19810301 GOOD             MSSU
DJ2171  HISTORY     - 19811001 GOOD             MSSU
DJ2171  HISTORY     - 19911107 GOOD             MSHD
DJ2171  HISTORY     - 20080604 GOOD             MSDOT
DJ2171  HISTORY     - 20081028 GOOD             MSDOT
DJ2171
DJ2171                          STATION DESCRIPTION
DJ2171
DJ2171'DESCRIBED BY MISSISSIPPI STATE UNIVERSITY 1981 (RB)
DJ2171'RECOVERED IN GOOD CONDITION.
DJ2171
DJ2171                          STATION RECOVERY (1981)
DJ2171
DJ2171'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 1981 (RB)
DJ2171'RECOVERED IN GOOD CONDITION.
DJ2171
DJ2171                          STATION RECOVERY (1991)
DJ2171
DJ2171'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1991
DJ2171'MARK IS LOCATED ABOUT 3.7 MI (6.0 KM) SOUTHEAST OF KOSCIUSKO, ON THE
DJ2171'EAST SIDE OF A COUNTY ROAD, 2.2 MI (3.5 KM) EAST OF WILLIAMSVILLE AND
DJ2171'IS IN SECTION 25, T 14N, R 7E.
DJ2171'TO REACH FROM THE JUNCTION OF STATE HIGHWAYS 14, 19 AND 35, 2.5 NI
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DJ2171'SOUTH OF KOSCIUSKO, GO EAST ON STATE HIGHWAYS 14 AND 19 FOR 2.3 MI
DJ2171'(3.7 KM) TO THE JUNCTION OF THE OLD HIGHWAY ON THE LEFT, TURN LEFT
DJ2171'AND GO NORTHEAST ON THE OLD HIGHWAY FOR 0.55 MI (0.89 KM) TO A SIDE
DJ2171'ROAD LEFT, TURN LEFT AND GO NORTH ON A GRAVEL ROAD FOR 0.15 MI
DJ2171'(0.24 KM) TO THE MARK ON THE RIGHT.
DJ2171'MARK IS A STANDARD DISK SET IN THE TOP OF A SQUARE CONCRETE POST,
DJ2171'PROJECTING 4 INCHES, 104 FT (31.7 M) EAST OF THE CENTER OF A GRAVEL
DJ2171'ROAD, 57.5 FT (17.5 M) NORTH NORTHEAST OF A POWER POLE, 44.4 FT
DJ2171'(13.5 M) SOUTH SOUTHEAST OF A POWER POLE WITH A GUY WIRE, 11.2 FT
DJ2171'(3.4 M) WEST OF A 7 INCH OAK AND 1 FT (0.3 M) NORTH OF A CARSONITE
DJ2171'WITNESS POST.
DJ2171
DJ2171                          STATION RECOVERY (2008)
DJ2171
DJ2171'RECOVERY NOTE BY MS DEPT TRANS 2008 (HDB)
DJ2171'WILLI RM 1 APPEARS TO BE IN GOOD CONDITION ALONG WITH RM 2. THE
DJ2171'TRIANGULATION STATION WILLI WAS FOUND LYING ON ITS SIDE.
DJ2171
DJ2171                          STATION RECOVERY (2008)
DJ2171
DJ2171'RECOVERY NOTE BY MS DEPT TRANS 2008 (LKK)
DJ2171'RECOVERED AS DESCRIBED.
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NGS DATA SHEET: Z 100 (CO0657)

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CO0657 ***********************************************************************
 CO0657  CBN         -  This is a Cooperative Base Network Control Station.
 CO0657  DESIGNATION -  Z 100
 CO0657  PID         -  CO0657
 CO0657  STATE/COUNTY-  MS/KEMPER
 CO0657  COUNTRY     -  US
 CO0657  USGS QUAD   -  OWL CREEK (1982)
 CO0657
 CO0657                        *CURRENT SURVEY CONTROL
 CO0657  ______________________________________________________________________
 CO0657* NAD 83(2011) POSITION- 32 45 03.78892(N) 088 53 19.93575(W)   ADJUSTED
 CO0657* NAD 83(2011) ELLIP HT-   122.963 (meters)        (06/27/12)   ADJUSTED
 CO0657* NAD 83(2011) EPOCH    -  2010.00
 CO0657* NAVD 88 ORTHO HEIGHT -   151.136  (meters)     495.85  (feet) ADJUSTED
 CO0657  ______________________________________________________________________
 CO0657  NAD 83(2011) X  -    104,124.683 (meters)                     COMP
 CO0657  NAD 83(2011) Y  - -5,368,555.035 (meters)                     COMP
 CO0657  NAD 83(2011) Z  -  3,430,837.848 (meters)                     COMP
 CO0657  LAPLACE CORR    -         -2.06  (seconds)                    DEFLEC12A
 CO0657  GEOID HEIGHT    -        -28.19  (meters)                     GEOID12A
 CO0657  DYNAMIC HEIGHT  -        150.960 (meters)      495.27  (feet) COMP
 CO0657  MODELED GRAVITY -    979,472.7   (mgal)                       NAVD 88
 CO0657
 CO0657  VERT ORDER      -  SECOND    CLASS 0
 CO0657
 CO0657  FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm)
 CO0657  Type                                           Horiz  Ellip  Dist(km)
 CO0657  ----------------------------------------------------------------------
 CO0657  NETWORK                                         1.05   3.25
 CO0657  ----------------------------------------------------------------------
 CO0657  MEDIAN LOCAL ACCURACY AND DIST (134 points)   1.27   3.68    251.49
 CO0657  ----------------------------------------------------------------------
 CO0657  NOTE: Click here for information on individual local accuracy
 CO0657  values and other accuracy information.
 CO0657
 CO0657
 CO0657.The horizontal coordinates were established by GPS observations
 CO0657.and adjusted by the National Geodetic Survey in June 2012.
 CO0657
 CO0657.NAD 83(2011) refers to NAD 83 coordinates where the reference
 CO0657.frame has been affixed to the stable North American tectonic plate. See
 CO0657.NA2011 for more information. for more information.
 CO0657
 CO0657.The horizontal coordinates are valid at the epoch date displayed above
 CO0657.which is a decimal equivalence of Year/Month/Day.
 CO0657
 CO0657.The orthometric height was determined by differential leveling and
 CO0657.adjusted by the NATIONAL GEODETIC SURVEY
 CO0657.in June 1991.
 CO0657
 CO0657.The X, Y, and Z were computed from the position and the ellipsoidal ht.
 CO0657
 CO0657.The Laplace correction was computed from DEFLEC12A derived deflections.
 CO0657
 CO0657.The ellipsoidal height was determined by GPS observations
 CO0657.and is referenced to NAD 83.
 CO0657
 CO0657.The dynamic height is computed by dividing the NAVD 88
 CO0657.geopotential number by the normal gravity value computed on the
 CO0657.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
 CO0657.degrees latitude (g = 980.6199 gals.).
```

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CO0657
CO0657.The modeled gravity was interpolated from observed gravity values.
CO0657
CO0657. The following values were computed from the NAD 83(2011) position.
CO0657
CO0657;                    North         East     Units Scale Factor Converg.
CO0657;SPC MS E     -   360,433.270   294,795.556   MT  0.99995033   -0 01 48.2
CO0657;SPC MS E     - 1,182,521.49    967,175.09   sFT  0.99995033   -0 01 48.2
CO0657;UTM  16      - 3,625,267.502   323,042.278   MT  0.99998613   -1 01 19.7
CO0657
CO0657!             -  Elev Factor  x  Scale Factor =   Combined Factor
CO0657!SPC MS E     -   0.99998069  x   0.99995033  =   0.99993103
CO0657!UTM  16      -   0.99998069  x   0.99998613  =   0.99996682
CO0657
CO0657                          SUPERSEDED SURVEY CONTROL
CO0657
CO0657  NAD 83(2007)-  32 45 03.78889(N)    088 53 19.93624(W) AD(       ) 0
CO0657  ELLIP H (02/10/07)  122.953  (m)                       GP(       )
CO0657  ELLIP H (08/29/05)  122.986  (m)                       GP(       ) 4 1
CO0657  ELLIP H (04/15/02)  122.909  (m)                       GP(       ) 4 2
CO0657  NAD 83(1993)-  32 45 03.78885(N)    088 53 19.93607(W) AD(       ) B
CO0657  ELLIP H (02/15/02)  122.908  (m)                       GP(       ) 4 1
CO0657  NAVD 88 (08/29/05)  151.2    (m)  GEOID03 model used   GPS OBS
CO0657  NAVD 88 (02/15/02)  151.14   (m)          495.9    (f) LEVELING    3
CO0657  NGVD 29 (??/??/92)  151.117  (m)          495.79   (f) ADJ UNCH    2 0
CO0657
CO0657.Superseded values are not recommended for survey control.
CO0657
CO0657.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
CO0657.See file dsdata.txt to determine how the superseded data were derived.
CO0657
CO0657_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SCB2304225267(NAD 83)
CO0657
CO0657_MARKER: DB = BENCH MARK DISK
CO0657_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
CO0657_SP_SET: SET IN TOP OF CONCRETE MONUMENT
CO0657_STAMPING: Z 100 1935
CO0657_MARK LOGO: CGS
CO0657_MAGNETIC: T = STEEL SPIKE ADJACENT TO MONUMENT
CO0657_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
CO0657+STABILITY: SURFACE MOTION
CO0657_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
CO0657+SATELLITE: SATELLITE OBSERVATIONS - November 11, 2011
CO0657
CO0657  HISTORY     - Date     Condition        Report By
CO0657  HISTORY     - 1935     MONUMENTED       CGS
CO0657  HISTORY     - 20000501 GOOD             NGS
CO0657  HISTORY     - 20040622 GOOD             MSDOT
CO0657  HISTORY     - 20111111 GOOD             NOGUCO
CO0657
CO0657                          STATION DESCRIPTION
CO0657
CO0657'DESCRIBED BY COAST AND GEODETIC SURVEY 1935
CO0657'13.6 MI E FROM PHILADELPHIA.
CO0657'13.6 MILES EAST OF CITY WATER TOWER AT PHILADELPHIA 225 FEET SOUTHEAST
CO0657'OF FARM HOUSE BELONGING TO E. G. GEORGE, 45 FEET SOUTH OF CENTER LINE
CO0657'OF HIGHWAY FROM PHILADELPHIA TO ELECTRIC MILLS, AT EAST END OF HIGHWAY
CO0657'CUT, AT WEST SIDE OF TIMBER.
CO0657
CO0657                          STATION RECOVERY (2000)
CO0657
CO0657'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2000
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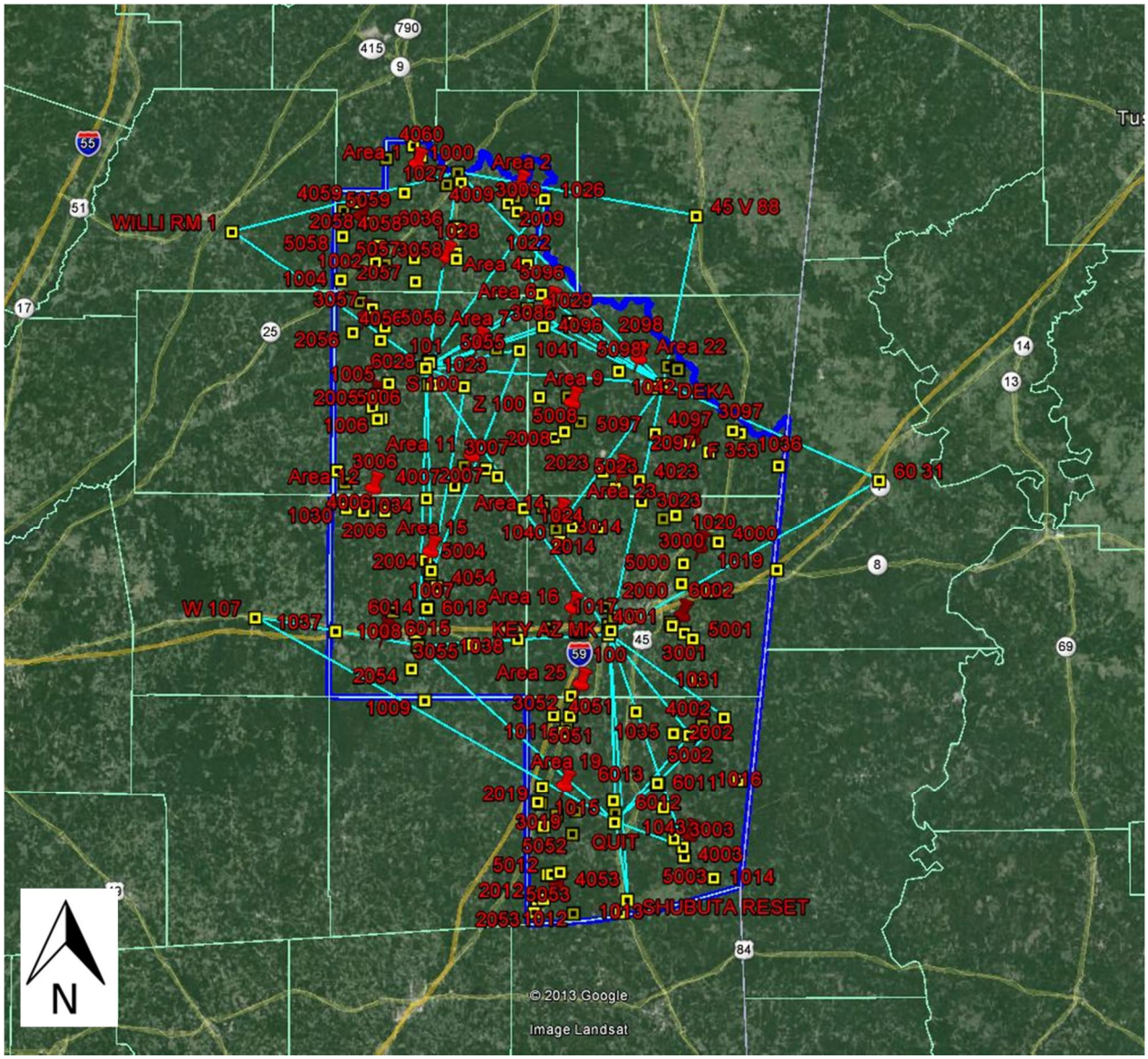
CO0657'STATION Z 100 IS LOCATED ABOUT 13 MI (20.9 KM) EAST OF PHILADELPHIA,
CO0657'MS, ALONG STATE ROUTE 16.  TO REACH THE STATION FROM THE INTERSECTION
CO0657'OF RTE 16 WITH RTE 19 ON THE EAST SIDE OF PHILADELPHIA, DRIVE EAST ON
CO0657'RTE 16 FOR 13.15 MI (21.16 KM) TO THE STATION ON THE RIGHT (SOUTH)
CO0657'SIDE OF THE HIGHWAY, IN THE SOUTHEAST QUADRANT OF THE INTERSECTION
CO0657'WITH HOPEWELL ROAD.  (THE STATION IS ALSO 1.55 MI (2.49 KM) EAST OF
CO0657'THE KEMPER COUNTY LINE, AND 3.55 MI (5.71 KM) EAST OF THE INTERSECTION
CO0657'OF RTE 491 WITH RTE 16.) THE STATION IS 54.0 FT (16.5 M) EAST OF THE
CO0657'HOPEWELL RD SIGN POST, 24.5 FT (7.5 M) NE OF A WOODEN UTILITY POLE
CO0657'WITH THREE GUYS AND A CROSS TREE, 19.0 FT (5.8 M) SOUTH OF THE SOUTH
CO0657'EOP OF THE HWY, 1.0 FT (0.3 M) SOUTH OF A STEEL WITNESS POST, AND
CO0657'ACROSS THE HWY FROM THE DRIVEWAY TO A 1 STORY BRICK DWELLING.  THE
CO0657'MARK IS SET IN THE TOP OF A ROUND CONCRETE POST PROJECTING ABOUT 0.4
CO0657'FT (12.2 CM) ABOVE THE GROUND SURFACE.
CO0657
CO0657                          STATION RECOVERY (2004)
CO0657
CO0657'RECOVERY NOTE BY MS DEPT TRANS 2004 (SKP)
CO0657'RECOVERED AS DESCRIBED.
CO0657
CO0657                          STATION RECOVERY (2011)
CO0657
CO0657'RECOVERY NOTE BY NORTHROP GRUMMON CORPORATION 2011 (CLR)
CO0657'RECOVERED IN GOOD CONDITION.
```

SECTION 6 PART 1: GPS CONTROL DIAGRAM

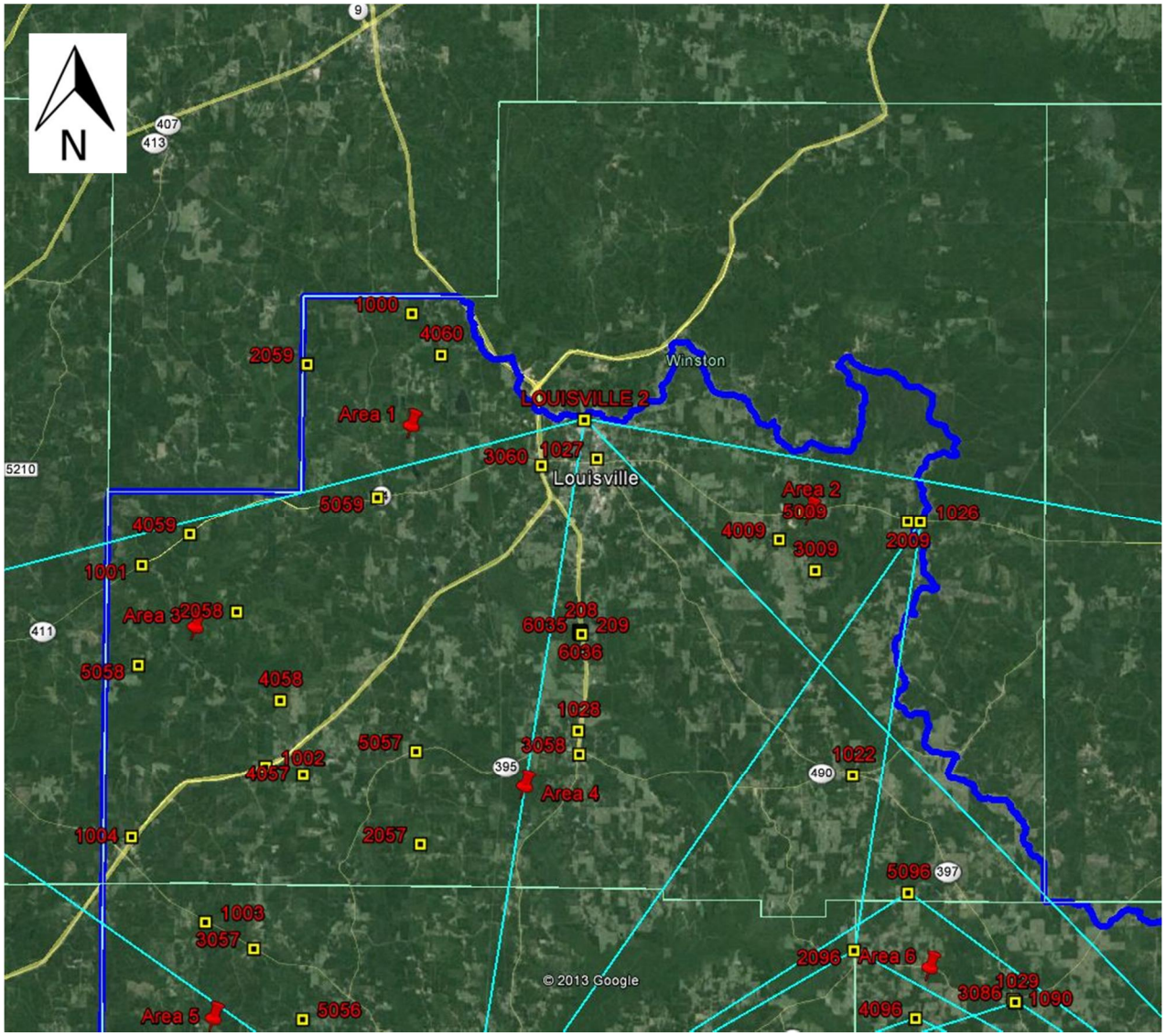
This section contains a graphical representation of the new and existing control stations used for Winston, Neshoba, Kemper, Lauderdale, Newton, and Clarke Counties.



Not to Scale

SECTION 6 PART 2: GPS CONTROL DIAGRAM

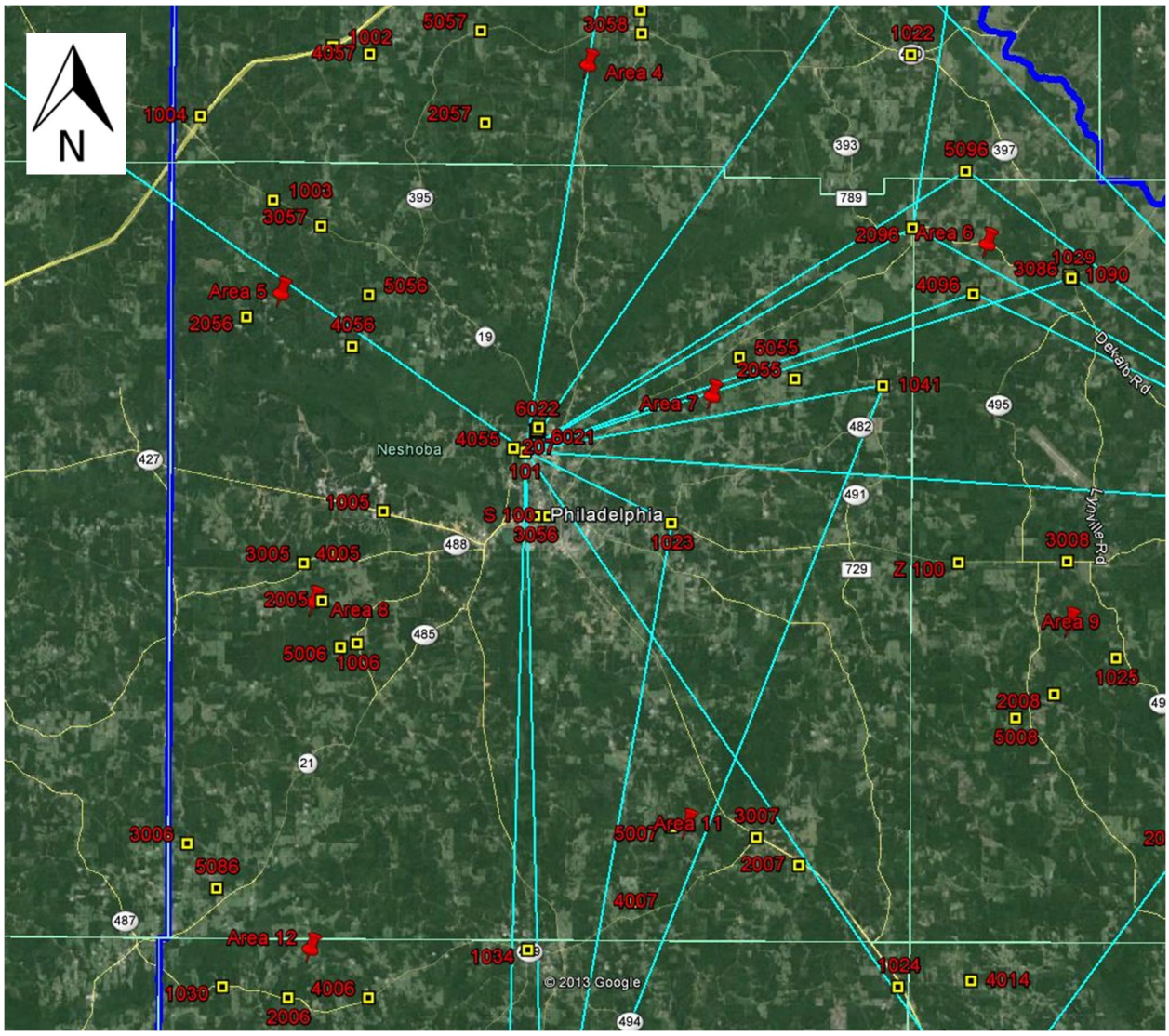
This section contains a graphical representation of the new and existing control stations used for Winston County.



Not to Scale

SECTION 6 PART 3: GPS CONTROL DIAGRAM

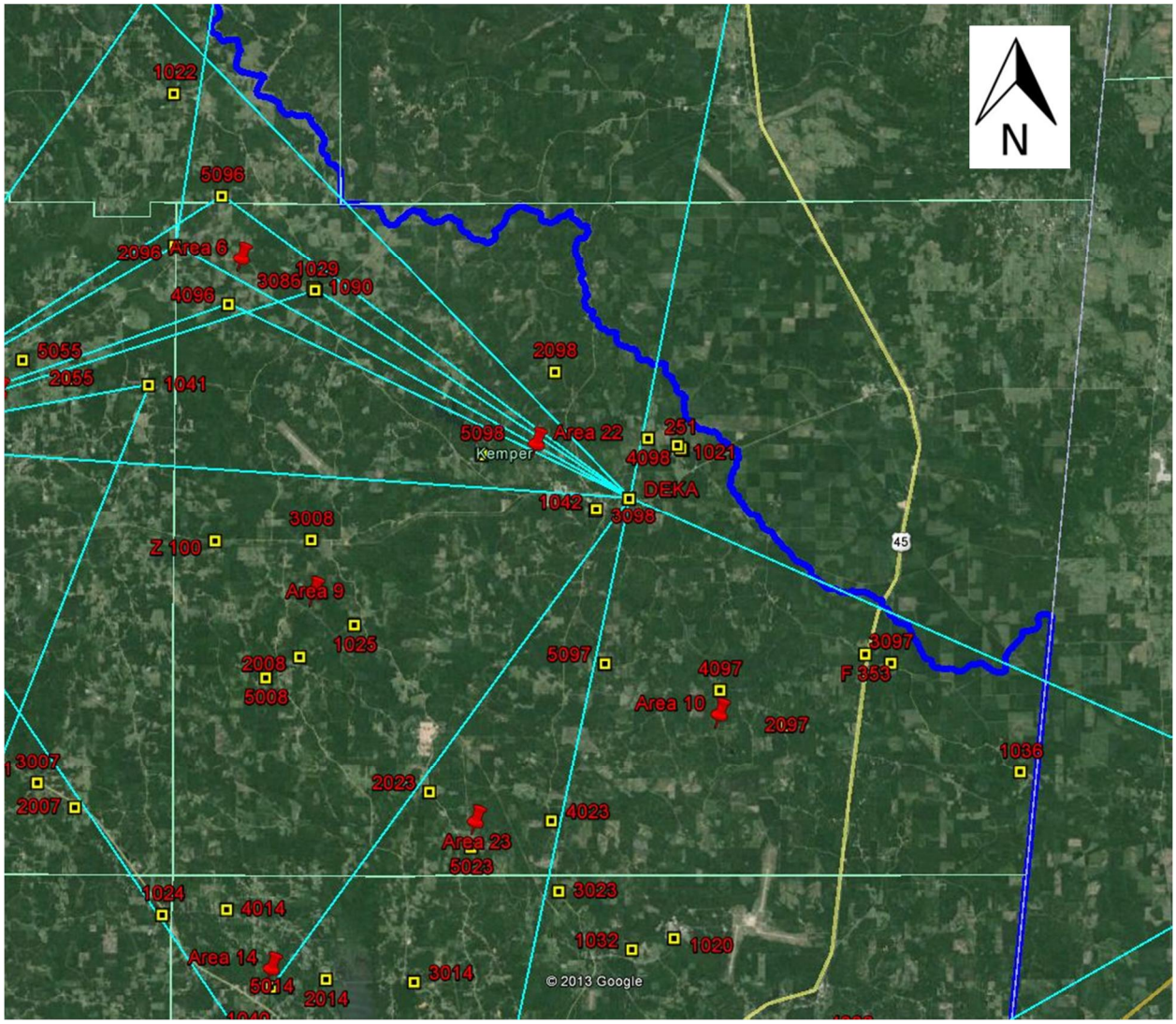
This section contains a graphical representation of the new and existing control stations used for Hancock County.



Not to Scale

SECTION 6 PART 4: GPS CONTROL DIAGRAM

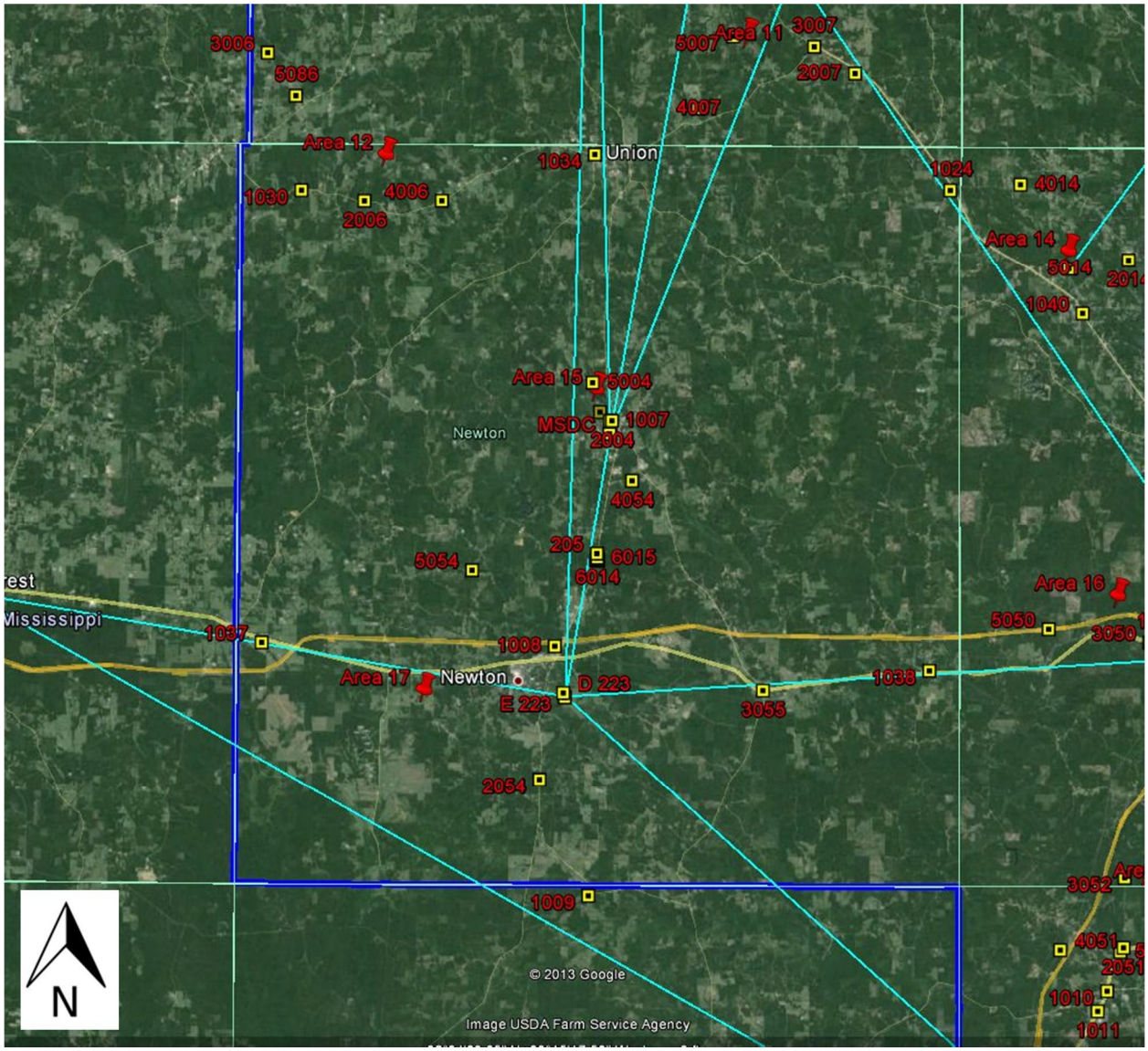
This section contains a graphical representation of the new and existing control stations used for Kemper County.



Not to Scale

SECTION 6 PART 5: GPS CONTROL DIAGRAM

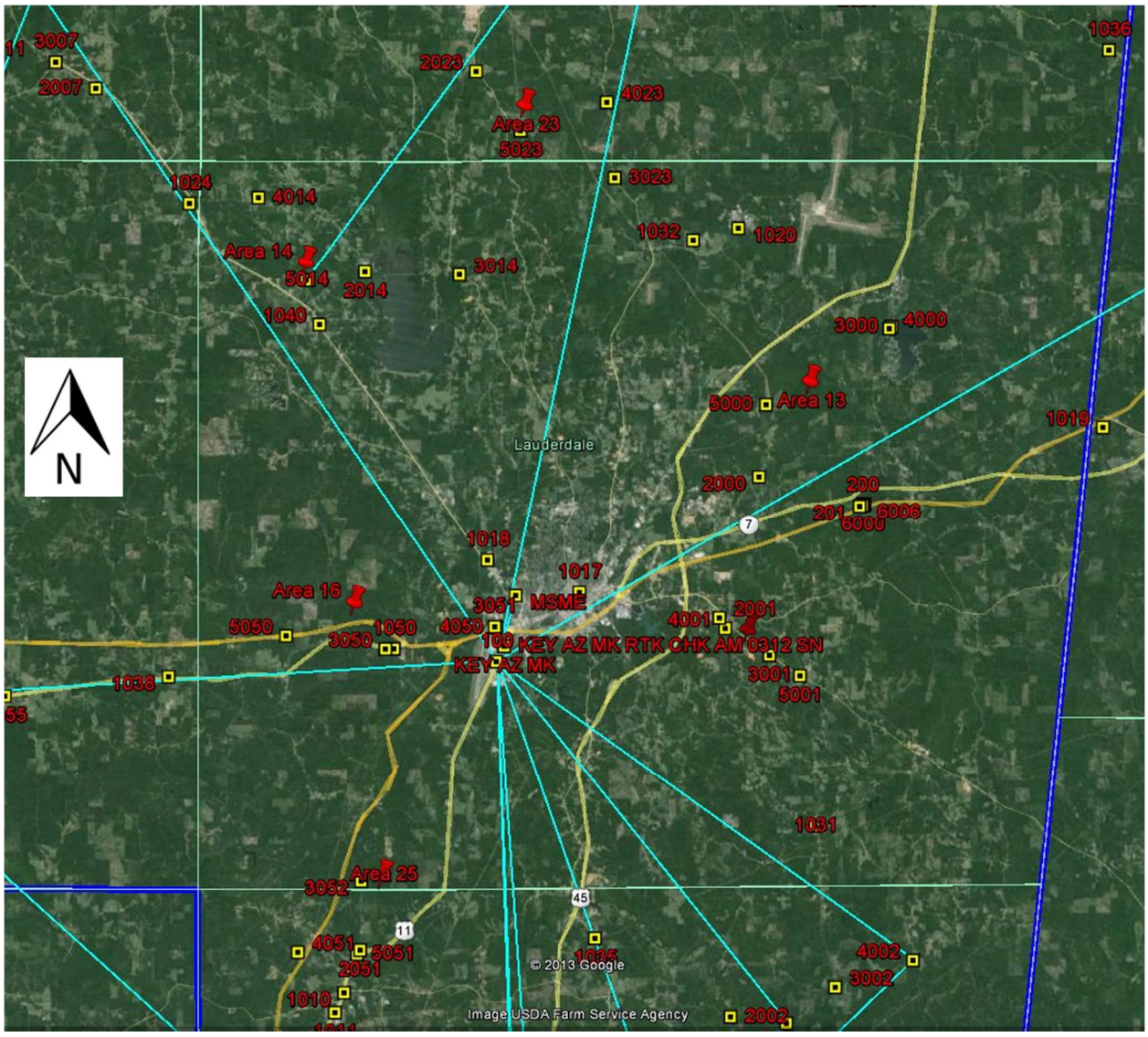
This section contains a graphical representation of the new and existing control stations used for Newton County.



Not to Scale

SECTION 6 PART 6: GPS CONTROL DIAGRAM

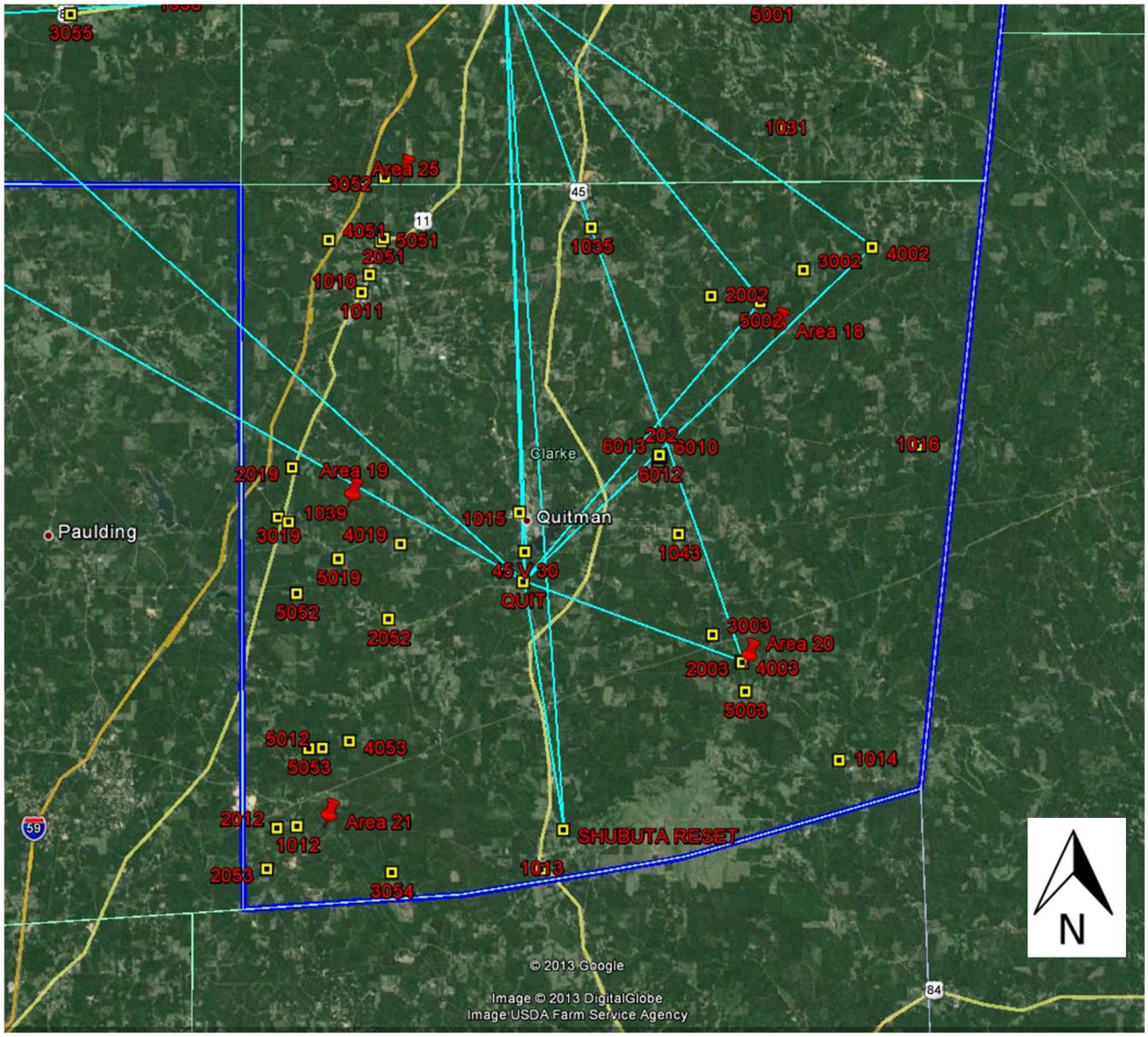
This section contains a graphical representation of the new and existing control stations used for Lauderdale County.



Not to Scale

SECTION 6 PART 7: GPS CONTROL DIAGRAM

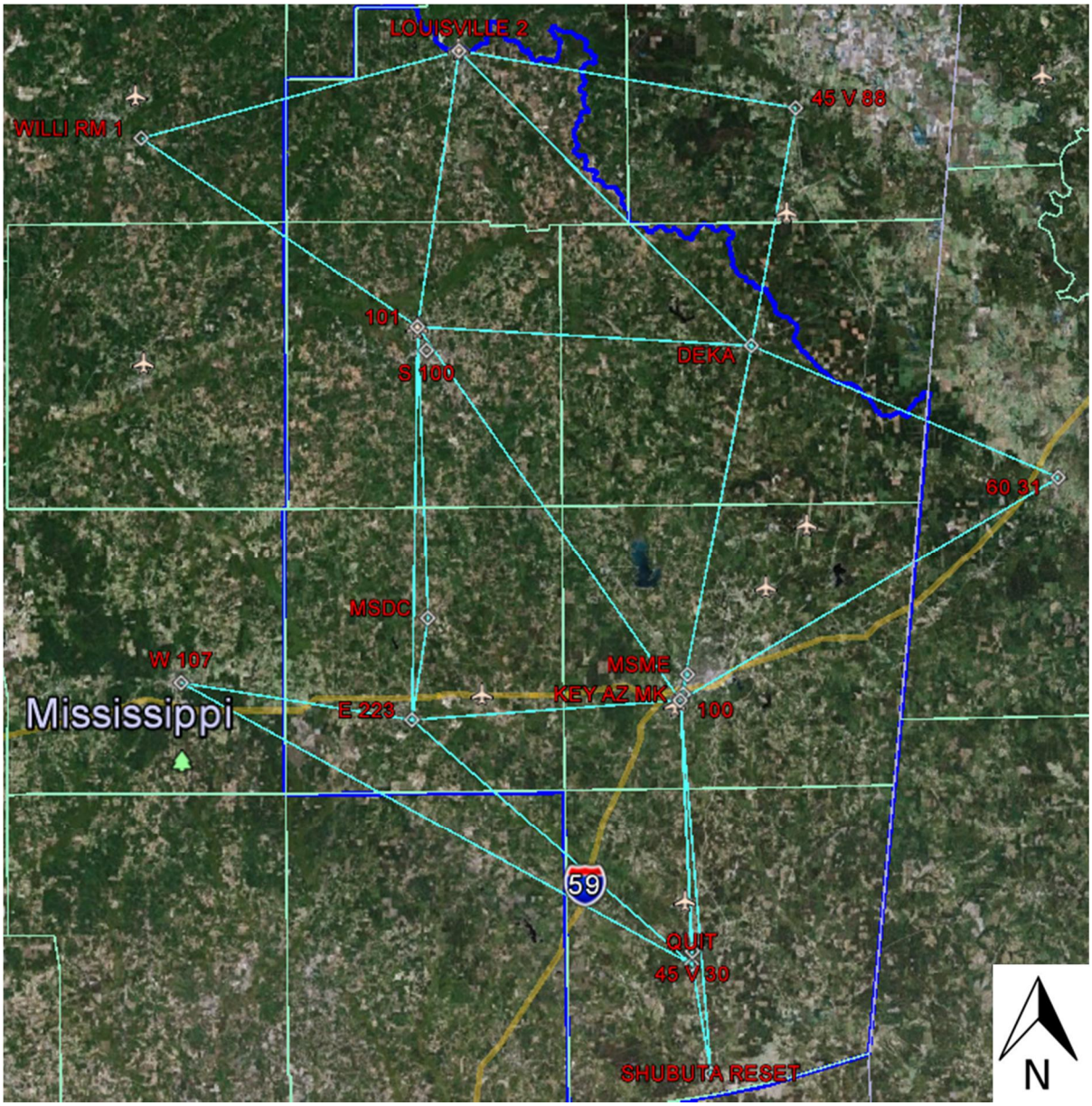
This section contains a graphical representation of the new and existing control stations used for Clarke County.



Not to Scale

SECTION 6 PART 8: GPS CONTROL DIAGRAM

This section contains a graphical representation of the LIDAR base stations (100 & 101) and existing NGS control stations utilized used in the AOI.


LOUISVILLE 2
45 V 88
WILLI RM 1
101
S 100
DEKA
60 31
MSDC
W 107
MSME
KEY AZ MK
100
Mississippi
E 223
59
QUIT
45 V 30
SHUBUTA RESET
N

Not to Scale