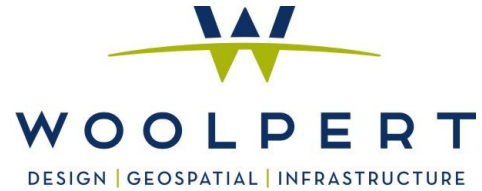
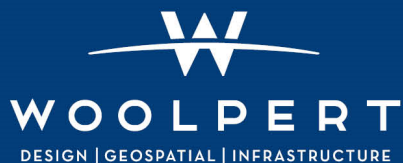


# GROUND CONTROL SURVEY REPORT



## MISSISSIPPI COASTAL QL2 LIDAR WITH 3DEP EXTENSION

APRIL 2016





## QUALITY

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# SECTION 1: SURVEY REPORT

## INTRODUCTION

Report Date: 4/11/2016

Project Name: Mississippi Coastal QL2 LiDAR With 3DEp Extension  
Client Information: USGS / NGTOC  
Contract Number: G10PC00057  
Requisition/Reference Number: G15PD00091  
Date of Contract: 1/25/2015  
Delivery Date: 4/18/2016

Prepared By: David Kuxhausen, PLS  
Woolpert Project Number: 75157

This report contains a comprehensive outline of the LiDAR Ground Control Survey that supported the Mississippi Coastal QL2 LiDAR. 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 project area consists of approximately 5981 square miles encompassing the Mississippi Coastal Region and 2395 square miles encompassing Pike, Lincoln, Copiah and portions of Simpson and Lawrence Counties MS as a 3DEP Extension.

## PURPOSE

The purpose of this survey was to establish three-dimensional coordinates for 89 ground control points (GCPs) and 504 quality control (QC) points spread over 2 land cover classifications Vegetated Vertical Accuracies (VVA) and Non-Vegetated Vertical Accuracies (NVA).

The QC points 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 on February 17 through February 28, 2015 for the MS Coastal Region and March 5 through March 10, 2015, and April 6 through April 7, 2016 for the 3DEP Extension AOI.

## 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 bench marks were utilized as checks 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 STANDARDS

The data collected under this task order shall meet the National Standard for spatial Database Accuracy (NSSDA) standards. The NSSDA standards specify that vertical accuracy be reported at the 95 percent confidence level for data tested by an independent source of higher accuracy.

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

**The 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 95<sup>th</sup> percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for LiDAR Data, i.e., based on the 95<sup>th</sup> percentile error for each required land cover class.

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

Automated and manual filtering for LiDAR products shall use the following minimum performance for artifact/feature removal from the bare earth model: The bare earth surface model shall have a minimum of 95% of surface canopy artifacts, including buildings, vegetation, bridges or overpass structures removed.

## GPS EQUIPMENT

Woolpert utilized 2 Trimble Navigation R8 Model 4 GNSS dual-frequency GPS receivers, 2 Trimble Navigation Model R10 GNSS dual-frequency GPS receivers, and 2 TSC3 data collectors 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 a total of 89 LiDAR control points and 504 ground control quality check points. 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 ensure the necessary horizontal and vertical accuracies were being met for this photogrammetric project.

## VRS (VIRTUAL REFERENCE STATION) OR RTN (REAL-TIME NETWORK) GPS

The “Virtual Reference Station” (VRS) concept is based on having a network (spaced at 50-60kms) of GNSS (GPS or GPS/GLONASS) reference stations permanently connected to the control center via the Internet. The networked stations collectively and precisely, model ionospheric errors for the individual GNSS rover in the network coverage area. The rover interprets and uses the VRS network-correction data as if it is operating with a single physical base station on a very short baseline which increases the RTK performance. Corrections (vectors) are from the closest base, but because the ionospheric error (which is traditionally baseline dependent) is practically negated, the rover's degradation in accuracy due to baseline length starts when the rover is first initialized, that is, at the work site. Thus accuracies are increased and more consistent throughout the working region

## GPS DATA ANALYSIS AND PROCESSING

The field crew chief processed all session baselines each day using Trimble Navigation's Trimble Business Center (TBC) Version 3.61 baseline processor with the accompanying broadcast ephemeris. Daily processing ensured the integrity of the network as it was constructed, and allowed the field crews to immediately reschedule observations of poor baselines.

## DATUM REFERENCE AND FINAL COORDINATES

The spatial reference system for the Coastal Counties AOI is Mississippi State Plane East Zone, NAD83 (2011), U.S. Survey Feet, horizontal and NAVD88 U.S. Survey Feet vertical using the geoid model of 2012 (GEOID12A). Units for both the horizontal and vertical datums will be expressed in U.S. Survey Feet to two (2) decimal places.

The spatial reference system for the 3DEP Extension AOI is UTM Zone 16 North, NAD83 (2011), meters, horizontal and NAVD88 meters vertical using the geoid model of 2012 (GEOID12A). Units for both the horizontal and vertical datums will be expressed in meters to two (2) decimal places.

# QUALITY ASSURANCE

Existing NGS published bench marks 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.

The ground control data meets positional accuracies necessary to support 1.0 point per 0.7 meters squared (1' GSD) data at 95% confidence level as outlined in the *Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy (NSSDA)*, published by the Federal Geographic Data Committee (FGDC-STD-007.3-1998).

# SECTION 2: GROUND/GEODETIC CONTROL COORDINATE LISTINGS

## COORDINATE SYSTEM: GRID

MS Coastal Region

HORIZONTAL DATUM: NAD83 (2011) Mississippi State Plane East Zone

VERTICAL DATUM: NAVD88

GEOID MODEL: GEOID 12A

UNITS: US Survey Feet

### LiDAR GROUND CONTROL

Points	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
1	258033.09	771103.50	2.93	CONTROL
2	295282.14	852776.54	3.34	CONTROL
3	313020.81	901061.46	7.02	CONTROL
4	322484.13	928613.03	16.62	CONTROL
5	323691.90	976542.21	4.89	CONTROL
6	312955.52	1006079.56	4.29	CONTROL
7	309160.57	1029270.01	11.27	CONTROL
8	311310.69	1065063.31	10.70	CONTROL
9	307291.18	1078664.24	8.51	CONTROL
10	300943.06	1087643.46	8.84	CONTROL
11	439182.64	665387.19	62.82	CONTROL
12	481078.98	691416.50	88.94	CONTROL
13	527959.31	724389.15	201.57	CONTROL
14	491634.85	761289.31	340.67	CONTROL
15	537628.23	798203.15	285.33	CONTROL
16	479589.36	836724.12	354.60	CONTROL
17	511895.85	878549.53	304.93	CONTROL
18	437675.40	911090.61	208.66	CONTROL
19	503245.61	960194.26	128.27	CONTROL
20	436416.06	1013606.74	126.85	CONTROL
21	528184.21	1058499.82	225.49	CONTROL
22	443455.42	1116762.77	172.80	CONTROL
23	351222.62	1094941.20	11.90	CONTROL
24	391958.68	1033049.11	71.12	CONTROL
25	375499.91	985813.81	41.61	CONTROL
26	411736.21	939565.39	123.95	CONTROL
27	363900.26	864336.44	69.86	CONTROL
28	438316.83	820236.25	195.71	CONTROL



Points	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
29	344016.00	784883.22	62.95	CONTROL
30	296726.05	742539.25	19.74	CONTROL
31	445830.55	748593.61	186.57	CONTROL
32	372727.57	713646.77	57.70	CONTROL
33	292009.89	776809.81	18.05	CONTROL
34	272798.72	781783.86	10.74	CONTROL
35	293133.50	810064.12	12.56	CONTROL
36	405966.39	699207.40	115.24	CONTROL
37	426053.21	731088.33	242.75	CONTROL
38	370393.86	761087.97	96.72	CONTROL
39	466211.68	787204.53	318.88	CONTROL
40	404627.06	810774.88	220.13	CONTROL
41	341297.41	826645.48	81.52	CONTROL
42	408170.05	889859.52	141.42	CONTROL
43	358364.47	914031.50	71.77	CONTROL
44	477043.81	915047.47	184.46	CONTROL
45	538591.30	1001487.78	59.19	CONTROL
46	490709.54	997495.03	162.07	CONTROL
47	476204.63	1073744.41	135.45	CONTROL
48	419439.44	1075587.26	55.03	CONTROL
49	373009.03	1076329.41	19.52	CONTROL
50	355435.79	1026705.88	31.47	CONTROL
51	462162.10	958857.41	85.28	CONTROL
52	448557.07	1055298.62	63.73	CONTROL
53	541953.40	1109484.79	193.83	CONTROL

#### QUALITY CONTROL POINTS

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2001	481129.81	691476.77	89.28	NVA
2001A	481230.22	691509.91	88.80	NVA
2002	527940.17	724287.60	198.72	NVA
2002A	527951.41	724455.89	202.55	NVA
2003	491887.09	760795.16	335.69	NVA
2003A	491823.01	761147.76	340.48	NVA
2004	518632.33	786107.28	369.89	NVA
2004A	518719.17	786104.45	368.55	NVA
2005	479583.31	836663.50	354.60	NVA
2005A	479691.99	836683.10	354.68	NVA
2006	512055.43	878428.51	304.19	NVA
2006A	512123.95	878513.68	302.72	NVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2007	437649.96	911028.38	209.28	NVA
2007A	437719.55	911113.37	209.02	NVA
2008	503324.01	960181.39	127.52	NVA
2008A	503180.75	960205.36	128.38	NVA
2009	436454.54	1013534.95	126.23	NVA
2009A	436414.11	1013704.06	125.28	NVA
2010	528269.29	1058439.18	228.64	NVA
2010A	528137.16	1058439.31	220.51	NVA
2011	441752.88	1112157.37	132.32	NVA
2011A	441766.36	1112156.80	132.29	NVA
2012	306286.12	1082298.16	4.44	NVA
2012A	306298.07	1082223.51	4.32	NVA
2013	391889.32	1033061.58	71.98	NVA
2013A	391827.49	1032971.58	77.21	NVA
2014	375494.87	986555.22	48.61	NVA
2014A	375485.11	986427.87	48.39	NVA
2015	411652.26	939579.79	125.41	NVA
2015A	411752.20	939639.73	123.49	NVA
2016	363899.63	864486.94	70.02	NVA
2016A	363900.75	864271.31	69.89	NVA
2017	438349.40	820192.21	195.28	NVA
2017A	438262.71	820287.75	195.85	NVA
2018	343979.81	784879.09	62.68	NVA
2018A	344075.96	784889.19	62.86	NVA
2019	296696.96	742644.64	19.13	NVA
2019A	296549.76	742609.60	21.53	NVA
2020	373250.96	711974.56	57.45	NVA
2020A	373153.87	711973.78	57.43	NVA
2021	445858.67	748458.45	186.82	NVA
2021A	445841.15	748510.59	186.81	NVA
2022	351086.68	1094939.51	11.87	NVA
2022A	350783.08	1094947.91	11.35	NVA
2023	257993.54	771118.65	3.16	NVA
2023A	258060.81	771076.12	3.05	NVA
2024	439624.11	665535.34	66.44	NVA
2024A	439513.50	665550.75	65.89	NVA
2025	537650.17	798221.58	286.43	NVA
2025A	537702.90	798243.56	286.60	NVA
2026	507511.04	734111.12	186.63	NVA
2026A	507656.97	733448.03	185.96	NVA
2027	431455.16	705185.27	192.41	NVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2027A	431333.01	705147.41	194.75	NVA
2028	405382.06	748007.50	159.53	NVA
2028A	405441.06	747969.61	157.99	NVA
2029	335992.44	749599.42	36.68	NVA
2029A	336279.41	749744.31	35.07	NVA
2030	280222.10	755281.48	16.17	NVA
2030A	280103.50	755355.98	16.17	NVA
2031	289176.66	794926.56	15.66	NVA
2031A	289192.53	794829.32	15.58	NVA
2032	326446.40	763877.63	27.62	NVA
2032A	326343.29	763738.28	22.83	NVA
2033	370380.82	761153.97	96.57	NVA
2033A	370453.93	761077.08	96.18	NVA
2034	404585.80	810838.88	220.01	NVA
2034A	404684.80	810781.72	218.34	NVA
2035	473704.50	725649.21	131.47	NVA
2035A	473771.72	725550.87	130.89	NVA
2036	466183.81	787154.78	319.04	NVA
2036A	466287.09	787189.98	318.47	NVA
2037	507893.20	817148.19	356.64	NVA
2037A	507858.05	817091.65	358.54	NVA
2038	544386.60	756884.27	354.37	NVA
2038A	544446.67	756853.23	353.18	NVA
2039	524746.77	758916.55	366.11	NVA
2039A	524858.44	758874.32	362.79	NVA
2040	435089.18	783226.94	258.23	NVA
2040A	435124.60	783164.97	260.59	NVA
2041	406254.72	791311.13	175.91	NVA
2041A	406306.46	791160.89	173.02	NVA
2042	366491.39	805412.35	106.22	NVA
2042A	366330.35	805479.30	106.26	NVA
2043	341301.98	826569.86	79.69	NVA
2043A	341212.00	826630.67	80.62	NVA
2044	322123.11	855995.64	20.21	NVA
2044A	322221.96	855920.28	18.02	NVA
2045	299556.90	849681.52	11.66	NVA
2045A	299597.70	849810.82	11.06	NVA
2046	315453.49	901749.87	22.51	NVA
2046A	315533.72	901801.66	22.08	NVA
2047	306896.08	781596.36	13.03	NVA
2047A	306991.79	781830.67	14.25	NVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2048	358337.62	914034.54	71.44	NVA
2048A	358365.02	914116.72	70.76	NVA
2049	408169.78	889944.65	141.70	NVA
2049A	408102.40	889945.57	142.48	NVA
2050	403860.83	861393.22	171.37	NVA
2050A	403946.08	861590.13	179.45	NVA
2051	451358.10	863274.67	227.46	NVA
2051A	451352.42	863377.04	227.01	NVA
2052	477111.86	915031.28	184.74	NVA
2052A	477025.42	915169.05	183.52	NVA
2053	462253.68	958884.06	83.69	NVA
2053A	462367.07	958826.00	74.71	NVA
2054	490605.25	997602.17	161.67	NVA
2054A	490707.36	997536.20	161.94	NVA
2055	538551.06	1001397.44	57.14	NVA
2055A	538579.40	1001588.22	56.97	NVA
2056	513150.68	1026547.66	177.88	NVA
2056A	513223.00	1026569.93	176.16	NVA
2057	541980.14	1109569.53	193.88	NVA
2057A	541967.46	1109385.01	192.64	NVA
2058	513832.19	1092319.34	239.57	NVA
2058A	513843.55	1092428.52	241.08	NVA
2059	497110.25	1058252.20	253.07	NVA
2059A	497221.52	1058255.38	253.64	NVA
2060	476614.29	1036950.56	53.58	NVA
2060A	476607.30	1036993.53	53.76	NVA
2061	462534.00	999098.29	80.17	NVA
2061A	462572.81	999152.65	78.93	NVA
2062	417073.88	984850.92	115.74	NVA
2062A	416993.41	984862.63	116.58	NVA
2063	388331.75	918396.91	142.48	NVA
2063A	388479.83	918530.44	136.94	NVA
2064	347048.95	961885.30	17.48	NVA
2064A	347049.96	961946.20	17.59	NVA
2065	347874.05	894125.27	39.17	NVA
2065A	347875.15	894193.26	41.61	NVA
2066	323681.73	976445.20	4.39	NVA
2066A	323667.65	976368.61	3.50	NVA
2067	340323.66	935722.29	14.86	NVA
2067A	340287.48	935763.45	14.49	NVA
2068	313040.84	1006095.42	3.13	NVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2068A	313151.09	1006105.08	3.08	NVA
2069	355524.93	1026762.35	31.75	NVA
2069A	355513.17	1026627.61	30.74	NVA
2071	346550.10	996959.74	48.02	NVA
2071A	346509.15	996947.26	47.97	NVA
2072	335039.86	1102417.39	8.80	NVA
2072A	334917.32	1102346.63	7.91	NVA
2073	373088.23	1076312.85	19.48	NVA
2073A	373200.11	1076284.40	19.59	NVA
2074	413114.13	1116733.71	102.75	NVA
2074A	413219.95	1116734.24	103.17	NVA
2075	419412.38	1075567.79	54.90	NVA
2075A	419308.56	1075664.86	51.55	NVA
2076	448519.76	1055348.98	62.54	NVA
2076A	448496.32	1055445.79	60.14	NVA
2077	495173.50	1111135.40	84.97	NVA
2077A	495158.82	1111238.25	84.06	NVA
2078	458759.70	1091430.24	97.12	NVA
2078A	458776.66	1091494.43	96.88	NVA
2079	416186.08	1036325.46	142.34	NVA
2079A	416168.06	1036373.43	143.05	NVA
2080	392987.60	1102096.38	32.34	NVA
2080A	392871.89	1102111.92	33.01	NVA
2081	384607.59	961575.66	74.23	NVA
2081A	384683.53	961611.85	74.47	NVA
2082	441459.08	945358.74	162.98	NVA
2082A	441609.34	945421.76	158.61	NVA
2083	476237.92	1073684.60	132.88	NVA
2083A	476232.51	1073782.04	136.76	NVA
2084	443341.44	1090242.18	111.66	NVA
2084A	443340.23	1090200.88	112.23	NVA
2085	405818.35	1018309.51	147.50	NVA
2085A	405837.61	1018396.38	146.18	NVA
2086	395310.50	1069545.03	31.96	NVA
2086A	395351.58	1069616.63	31.67	NVA
2087	423012.71	1092727.53	94.21	NVA
2087A	423073.15	1092717.37	94.30	NVA
2088	369784.62	1103613.21	21.67	NVA
2088A	369822.15	1103540.59	21.23	NVA
2089	505290.52	925534.44	197.81	NVA
2089A	505361.58	925495.80	198.63	NVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2090	473519.73	816407.81	175.49	NVA
2090A	473416.13	816316.11	175.03	NVA
2091	491395.63	790732.86	268.80	NVA
2091A	491316.60	790793.57	259.17	NVA
2092	510804.24	849277.77	223.73	NVA
2092A	510669.88	849305.15	221.95	NVA
2093	482307.88	944319.03	194.03	NVA
2093A	482378.98	944209.73	197.04	NVA
2094	439258.67	973374.24	168.67	NVA
2094A	439279.30	973257.61	168.22	NVA
2095	491811.45	869990.42	156.61	NVA
2095A	491766.02	869921.05	155.32	NVA
2096	406004.43	699210.93	114.16	NVA
2096A	406043.52	699168.43	110.93	NVA
2097	386646.86	685946.20	43.63	NVA
2097A	386534.31	685937.46	43.51	NVA
2098	426017.87	731033.83	242.22	NVA
2098A	426054.56	730955.85	242.81	NVA
2099	385281.03	839812.16	126.51	NVA
2099A	385171.87	839820.22	123.39	NVA
2100	466313.10	887451.59	138.34	NVA
2100A	466252.82	887502.52	136.66	NVA
2101	319080.18	813551.18	41.77	NVA
2101A	318812.27	813917.87	42.36	NVA
2102	481642.56	893013.89	241.08	NVA
2102A	481818.57	892859.78	243.10	NVA
3001	481275.29	691037.81	84.95	VVA
3001A	481429.97	691250.71	85.24	VVA
3002	526861.10	716906.62	164.06	VVA
3002A	526784.85	716897.63	163.91	VVA
3003	489371.50	771250.24	256.07	VVA
3003A	489468.82	771263.89	257.39	VVA
3004	518988.66	786766.08	355.93	VVA
3004A	518999.90	786705.18	357.99	VVA
3005	479804.37	836690.99	353.03	VVA
3005A	479774.54	836604.60	354.45	VVA
3006	511196.73	877698.93	260.44	VVA
3006A	511219.63	877608.61	258.11	VVA
3007	437778.24	910984.94	212.82	VVA
3007A	437743.70	911166.88	210.57	VVA
3008	490646.45	997546.90	159.99	VVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3008A	490774.65	997493.95	161.86	VVA
3009	434565.88	1017309.63	118.88	VVA
3009A	434524.88	1017262.88	119.37	VVA
3010	527154.50	1058755.62	161.85	VVA
3010A	527259.87	1058675.44	168.54	VVA
3011	445904.14	1105803.28	59.14	VVA
3011A	445880.31	1105740.83	58.90	VVA
3012	308438.87	1028375.82	8.15	VVA
3012A	308308.72	1028403.51	10.16	VVA
3013	391897.30	1033037.89	72.54	VVA
3013A	391816.95	1033010.71	78.66	VVA
3014	375531.25	987941.97	59.49	VVA
3014A	375437.49	987931.76	57.73	VVA
3015	411690.64	939673.52	127.52	VVA
3015A	411646.86	939504.77	128.88	VVA
3016	363878.21	864506.86	69.80	VVA
3016A	363931.74	864519.40	67.82	VVA
3017	438346.14	820249.28	195.29	VVA
3017A	438278.96	820160.06	194.19	VVA
3018	344925.99	784910.14	59.96	VVA
3018A	344877.49	784977.42	59.36	VVA
3019	292116.90	747475.63	22.68	VVA
3019A	292000.24	747468.77	24.62	VVA
3020	370725.91	716009.72	58.00	VVA
3020A	370597.13	715925.89	57.43	VVA
3021	445770.06	748957.84	177.59	VVA
3021A	445747.34	749016.77	175.86	VVA
3022	350956.66	1094953.61	10.38	VVA
3022A	351102.19	1094910.58	11.44	VVA
3023	258078.54	771168.99	2.45	VVA
3023A	258074.70	771238.92	2.31	VVA
3024	544407.69	756943.84	352.74	VVA
3024A	544410.66	756834.03	353.03	VVA
3025	537570.81	798178.08	283.34	VVA
3025A	537601.59	798143.59	281.63	VVA
3026	473656.41	725102.71	129.12	VVA
3026A	473575.25	725042.65	129.26	VVA
3027	431308.28	705188.91	192.72	VVA
3027A	431425.46	705209.24	191.11	VVA
3028	405476.06	747937.10	155.76	VVA
3028A	405541.56	748004.93	148.78	VVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3029	336197.47	749696.94	33.13	VVA
3029A	336241.04	749849.02	33.36	VVA
3030	289235.58	794705.09	14.96	VVA
3030A	289207.55	794659.29	14.92	VVA
3031	322016.20	856033.17	20.62	VVA
3031A	322251.89	855903.56	18.01	VVA
3032	385155.81	839788.21	123.97	VVA
3032A	385240.99	839842.41	125.65	VVA
3033	388271.03	918460.31	136.78	VVA
3033A	388181.22	918512.44	139.81	VVA
3034	451410.98	863377.61	229.06	VVA
3034A	451419.81	863237.40	231.28	VVA
3035	406289.52	791290.04	175.49	VVA
3035A	406352.32	791145.34	172.40	VVA
3036	466156.75	787206.77	317.04	VVA
3036A	466331.54	787205.37	316.47	VVA
3037	507933.96	817131.32	356.15	VVA
3037A	507803.09	817137.08	357.67	VVA
3038	481600.81	892594.83	240.68	VVA
3038A	481719.22	892599.40	243.65	VVA
3039	505323.46	925564.68	194.84	VVA
3039A	505389.21	925510.84	196.86	VVA
3040	462454.86	958801.68	66.36	VVA
3040A	462558.12	958769.93	63.47	VVA
3041	482410.35	944218.47	196.08	VVA
3041A	482295.06	944300.36	192.35	VVA
3042	538598.85	1001391.09	52.86	VVA
3042A	538465.78	1001544.88	54.52	VVA
3043	513106.36	1026570.50	177.05	VVA
3043A	513190.88	1026599.14	176.22	VVA
3044	542000.90	1109565.37	193.10	VVA
3044A	542015.86	1109412.82	192.94	VVA
3045	513929.33	1092164.34	230.29	VVA
3045A	513839.57	1092140.30	223.53	VVA
3046	497213.79	1058374.17	249.40	VVA
3046A	497097.40	1058371.21	248.97	VVA
3047	476672.13	1036916.47	54.13	VVA
3047A	476686.49	1036983.86	53.82	VVA
3048	476206.07	1073687.86	130.34	VVA
3048A	476278.46	1073779.49	138.80	VVA
3049	462535.93	999146.83	77.49	VVA



Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3049A	462616.62	999096.10	78.43	VVA
3050	448542.28	1055413.51	61.53	VVA
3050A	448597.15	1055285.44	64.18	VVA
3051	423102.51	1092836.92	93.53	VVA
3051A	423108.76	1092718.66	93.59	VVA
3052	413227.49	1116794.63	103.33	VVA
3052A	413220.12	1116706.52	103.73	VVA
3053	393032.44	1102131.61	30.48	VVA
3053A	392876.35	1102141.38	33.05	VVA
3054	395245.60	1069467.47	28.61	VVA
3054A	395213.26	1069533.49	31.19	VVA
3055	373193.26	1076208.03	19.49	VVA
3055A	373087.77	1076234.34	19.10	VVA
3056	369767.15	1103520.04	19.45	VVA
3056A	369542.06	1103596.95	20.97	VVA
3057	306271.63	1082038.51	5.25	VVA
3057A	306359.27	1081947.04	6.22	VVA
3058	334928.67	1102292.26	7.12	VVA
3058A	334800.97	1102285.68	8.07	VVA
3059	355516.00	1026687.39	30.92	VVA
3059A	355499.39	1026799.14	31.46	VVA
3060	346462.98	996974.79	46.57	VVA
3060A	346375.12	996995.25	46.67	VVA
3061	416978.24	984819.85	112.82	VVA
3061A	417071.31	984786.79	113.39	VVA
3062	384641.66	961640.00	73.42	VVA
3062A	384546.79	961537.68	74.02	VVA
3063	346999.71	961797.45	22.84	VVA
3063A	346928.30	961780.24	23.00	VVA
3064	358412.21	914135.51	71.08	VVA
3064A	358447.02	914008.28	72.53	VVA
3065	337496.89	899421.07	20.24	VVA
3065A	337506.22	899255.44	19.94	VVA
3066	408037.45	889927.83	141.35	VVA
3066A	407986.76	889758.56	138.80	VVA
3067	441468.19	945313.77	165.57	VVA
3067A	441648.31	945369.50	161.78	VVA
3068	341274.27	826561.51	79.67	VVA
3068A	341163.43	826585.17	79.80	VVA
3069	370424.51	761016.12	96.66	VVA
3069A	370329.98	760987.61	95.96	VVA

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3070	406042.00	699128.82	106.50	VVA
3070A	405969.12	699159.68	113.10	VVA
3071	386501.38	685975.79	42.72	VVA
3071A	386513.93	685891.18	43.17	VVA
3072	435063.60	783305.08	261.52	VVA
3072A	435115.85	783114.31	258.45	VVA
3073	507475.22	734051.15	181.92	VVA
3073A	507646.86	733389.39	182.67	VVA
3074	524907.48	758849.77	362.36	VVA
3074A	525010.19	758855.25	357.47	VVA
3075	366501.19	805384.67	103.40	VVA
3075A	366280.04	805521.08	104.40	VVA
3076	439320.76	973378.43	168.75	VVA
3076A	439255.79	973258.84	165.37	VVA
3077	318945.49	814128.21	44.38	VVA
3077A	319104.92	814142.27	54.15	VVA
3078	403943.08	861539.88	177.66	VVA
3078A	403851.25	861542.70	174.60	VVA
3079	495217.10	1111186.90	86.21	VVA
3079A	495107.41	1111137.20	79.03	VVA

### NGS STATION CHECK POINTS

Point	Grid Deltas Published vs. Surveyed		
	Δ Northing (m)	Δ Easting (m)	Δ Elev. (m)
49 V 9 A	-0.09	-0.01	0.10
49 V 13 A	-0.10	0.04	0.08
49 V 188	N/A	N/A	-0.04
63 V 4	N/A	N/A	-0.07
63 V 20	-0.01	0.11	-0.05
ARIADNE	-0.07	-0.01	-0.06
B 112 RESET 1982	0.01	-0.02	N/A
B 365	0.00	0.00	0.11
BILO	-0.25	0.07	N/A
C 189	-0.05	-0.04	-0.03
C 369	-0.02	0.11	-0.04
D 190	N/A	N/A	0.07
E 379	-0.01	0.12	-0.20
F 369	N/A	N/A	-0.04
FORKS 2	0.04	0.05	-0.20
G 379	-0.01	0.18	-0.37
H 379	N/A	N/A	-0.10

Point	Grid Deltas Published vs. Surveyed		
	$\Delta$ Northing (m)	$\Delta$ Easting (m)	$\Delta$ Elev. (m)
HY 49	-0.08	0.00	N/A
K 369	N/A	N/A	-0.05
KLN 1	0.07	0.08	N/A
P 369	0.03	0.07	-0.03
Q 189	-0.01	-0.05	-0.11
Q 234	N/A	N/A	0.16
ROBINSON RM 1	-0.10	0.14	-0.10
TT 85 T RESET	N/A	N/A	-0.24
V 364	-0.05	0.06	-0.02
W 191	N/A	N/A	0.12
W 234	-0.07	0.05	0.12
Z 376	-0.08	0.06	-0.05

## COORDINATE SYSTEM: GEODETIC

HORIZONTAL DATUM: NAD83 (2011) Epoch 2010.00

VERTICAL DATUM: NAVD88

GEOID MODEL: GEOID 12A

UNITS: US Survey Feet

### LiDAR GROUND CONTROL

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
1	30°12'28.09489"	-89°30'29.16114"	-85.05	CONTROL
2	30°18'40.67443"	-89°14'59.94281"	-86.99	CONTROL
3	30°21'37.69217"	-89°05'49.55098"	-84.46	CONTROL
4	30°23'11.89397"	-89°00'35.23483"	-75.33	CONTROL
5	30°23'24.26978"	-88°51'28.00685"	-87.27	CONTROL
6	30°21'37.93787"	-88°45'50.82719"	-87.63	CONTROL
7	30°21'00.15892"	-88°41'26.17550"	-80.59	CONTROL
8	30°21'20.81852"	-88°34'37.60493"	-81.26	CONTROL
9	30°20'40.70192"	-88°32'02.48798"	-83.35	CONTROL
10	30°19'37.61985"	-88°30'20.22235"	-82.85	CONTROL
11	30°42'13.16550"	-89°50'52.37246"	-27.73	CONTROL
12	30°49'10.03143"	-89°45'58.25407"	-2.31	CONTROL
13	30°56'56.56089"	-89°39'44.14736"	110.38	CONTROL
14	30°50'59.58397"	-89°32'37.77289"	248.88	CONTROL
15	30°58'36.91869"	-89°25'37.13222"	193.95	CONTROL
16	30°49'04.30856"	-89°18'11.84558"	262.29	CONTROL
17	30°54'25.55821"	-89°10'13.31272"	212.71	CONTROL
18	30°42'11.76432"	-89°03'58.01134"	115.29	CONTROL
19	30°53'01.43934"	-88°54'36.06430"	35.25	CONTROL
20	30°41'59.92947"	-88°44'23.74137"	32.9	CONTROL
21	30°57'07.57421"	-88°35'47.30204"	132.5	CONTROL
22	30°43'07.26033"	-88°24'41.88284"	78.9	CONTROL
23	30°27'55.08571"	-88°28'55.17223"	-80.97	CONTROL
24	30°34'39.67380"	-88°40'41.74707"	-22.47	CONTROL
25	30°31'57.09313"	-88°49'42.11854"	-51.7	CONTROL
26	30°37'55.48816"	-88°58'31.46951"	30.37	CONTROL
27	30°30'00.27507"	-89°12'50.69476"	-22.4	CONTROL
28	30°42'15.08916"	-89°21'18.71926"	103.49	CONTROL
29	30°26'39.93429"	-89°27'57.58979"	-27.47	CONTROL
30	30°18'49.28238"	-89°35'57.64663"	-68.77	CONTROL
31	30°43'25.43556"	-89°34'59.88540"	95.05	CONTROL

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
32	30°31'19.44958"	-89°41'33.83244"	-32.08	CONTROL
33	30°18'04.72883"	-89°29'26.37005"	-70.91	CONTROL
34	30°14'54.85749"	-89°28'28.39526"	-77.79	CONTROL
35	30°18'17.60315"	-89°23'07.10060"	-77.03	CONTROL
36	30°36'47.29569"	-89°44'21.95847"	24.93	CONTROL
37	30°40'08.49666"	-89°38'18.79957"	151.7	CONTROL
38	30°30'59.61513"	-89°32'31.30373"	6.26	CONTROL
39	30°46'49.50085"	-89°27'38.85711"	226.9	CONTROL
40	30°36'41.19251"	-89°23'05.19800"	128.28	CONTROL
41	30°26'15.09618"	-89°20'00.37278"	-9.66	CONTROL
42	30°37'19.22297"	-89°08'00.29972"	48.33	CONTROL
43	30°29'06.79567"	-89°03'22.52590"	-20.97	CONTROL
44	30°48'41.50625"	-89°03'13.57463"	91.38	CONTROL
45	30°58'51.31864"	-88°46'41.97863"	-33.28	CONTROL
46	30°50'57.41729"	-88°47'28.05404"	68.52	CONTROL
47	30°48'32.74645"	-88°32'53.75651"	41.63	CONTROL
48	30°39'10.84653"	-88°32'34.31088"	-38.86	CONTROL
49	30°31'31.25663"	-88°32'27.19498"	-73.8	CONTROL
50	30°28'38.24180"	-88°41'54.81154"	-61.5	CONTROL
51	30°46'14.79303"	-88°54'51.06506"	-8.36	CONTROL
52	30°43'59.51285"	-88°36'25.91523"	-30.27	CONTROL
53	30°59'22.41161"	-88°26'01.22359"	101.06	CONTROL

## QUALITY CONTROL POINTS

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2001	30°49'10.53945"	-89°45'57.56790"	-1.96	NVA
2001A	30°49'11.53589"	-89°45'57.19747"	-2.45	NVA
2002	30°56'56.36391"	-89°39'45.31178"	107.53	NVA
2002A	30°56'56.48762"	-89°39'43.38034"	111.37	NVA
2003	30°51'02.04928"	-89°32'43.45977"	243.91	NVA
2003A	30°51'01.43728"	-89°32'39.41033"	248.69	NVA
2004	30°55'28.25650"	-89°27'54.83370"	278.19	NVA
2004A	30°55'29.11584"	-89°27'54.87178"	276.85	NVA
2005	30°49'04.24618"	-89°18'12.54043"	262.29	NVA
2005A	30°49'05.32267"	-89°18'12.32095"	262.37	NVA
2006	30°54'27.13409"	-89°10'14.70740"	211.97	NVA
2006A	30°54'27.81481"	-89°10'13.73214"	210.51	NVA
2007	30°42'11.51125"	-89°03'58.72355"	115.92	NVA
2007A	30°42'12.20173"	-89°03'57.75164"	115.65	NVA
2008	30°53'02.21525"	-88°54'36.21260"	34.51	NVA
2008A	30°53'00.79745"	-88°54'35.93639"	35.37	NVA
2009	30°42'00.31095"	-88°44'24.56328"	32.28	NVA
2009A	30°41'59.90936"	-88°44'22.62671"	31.33	NVA
2010	30°57'08.41760"	-88°35'47.99632"	135.66	NVA
2010A	30°57'07.10984"	-88°35'47.99805"	127.52	NVA
2011	30°42'50.57747"	-88°25'34.71367"	38.41	NVA
2011A	30°42'50.71087"	-88°25'34.71964"	38.38	NVA
2012	30°20'30.65661"	-88°31'21.04744"	-87.39	NVA
2012A	30°20'30.77694"	-88°31'21.89902"	-87.50	NVA
2013	30°34'38.98711"	-88°40'41.60557"	-21.62	NVA
2013A	30°34'38.37631"	-88°40'42.63609"	-16.38	NVA
2014	30°31'57.04281"	-88°49'33.64093"	-44.70	NVA
2014A	30°31'56.94635"	-88°49'35.09708"	-44.92	NVA
2015	30°37'54.65734"	-88°58'31.30352"	31.82	NVA
2015A	30°37'55.64731"	-88°58'30.61886"	29.90	NVA
2016	30°30'00.27387"	-89°12'48.97440"	-22.24	NVA
2016A	30°30'00.27773"	-89°12'51.43919"	-22.36	NVA
2017	30°42'15.40950"	-89°21'19.22551"	103.06	NVA
2017A	30°42'14.55591"	-89°21'18.12653"	103.63	NVA
2018	30°26'39.57582"	-89°27'57.63469"	-27.74	NVA
2018A	30°26'40.52808"	-89°27'57.52550"	-27.55	NVA
2019	30°18'49.00148"	-89°35'56.44210"	-69.38	NVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2019A	30°18'47.54222"	-89°35'56.83044"	-66.98	NVA
2020	30°31'24.50311"	-89°41'52.99499"	-32.32	NVA
2020A	30°31'23.54220"	-89°41'52.99539"	-32.34	NVA
2021	30°43'25.70484"	-89°35'01.43600"	95.30	NVA
2021A	30°43'25.53489"	-89°35'00.83736"	95.30	NVA
2022	30°27'53.74025"	-88°28'55.19640"	-81.00	NVA
2022A	30°27'50.73492"	-88°28'55.11121"	-81.51	NVA
2023	30°12'27.70429"	-89°30'28.98584"	-84.82	NVA
2023A	30°12'28.36765"	-89°30'29.47509"	-84.93	NVA
2024	30°42'17.54772"	-89°50'50.72145"	-24.13	NVA
2024A	30°42'16.45454"	-89°50'50.53354"	-24.67	NVA
2025	30°58'37.13684"	-89°25'36.92189"	195.05	NVA
2025A	30°58'37.65990"	-89°25'36.67266"	195.22	NVA
2026	30°53'34.89258"	-89°37'50.83374"	95.11	NVA
2026A	30°53'36.28987"	-89°37'58.45534"	94.45	NVA
2027	30°41'00.02711"	-89°43'15.85996"	101.55	NVA
2027A	30°40'58.81528"	-89°43'16.28242"	103.90	NVA
2028	30°36'45.06935"	-89°35'03.50188"	68.64	NVA
2028A	30°36'45.65077"	-89°35'03.93995"	67.09	NVA
2029	30°25'18.39344"	-89°34'40.04648"	-52.88	NVA
2029A	30°25'21.24318"	-89°34'38.41329"	-54.51	NVA
2030	30°16'06.75759"	-89°33'31.07993"	-72.13	NVA
2030A	30°16'05.58834"	-89°33'30.22175"	-72.13	NVA
2031	30°17'37.67804"	-89°25'59.54289"	-73.54	NVA
2031A	30°17'37.83002"	-89°26'00.65290"	-73.63	NVA
2032	30°23'44.81098"	-89°31'56.30609"	-62.00	NVA
2032A	30°23'43.78195"	-89°31'57.88987"	-66.78	NVA
2033	30°30'59.49020"	-89°32'30.54824"	6.10	NVA
2033A	30°31'00.20902"	-89°32'31.43251"	5.71	NVA
2034	30°36'40.78714"	-89°23'04.46323"	128.16	NVA
2034A	30°36'41.76428"	-89°23'05.12290"	126.49	NVA
2035	30°47'59.70858"	-89°39'25.08256"	39.91	NVA
2035A	30°48'00.36665"	-89°39'26.21569"	39.34	NVA
2036	30°46'49.22229"	-89°27'39.42560"	227.06	NVA
2036A	30°46'50.24642"	-89°27'39.02872"	226.50	NVA
2037	30°53'43.57338"	-89°21'57.88503"	264.61	NVA
2037A	30°53'43.22282"	-89°21'58.53206"	266.51	NVA
2038	30°59'41.38190"	-89°33'32.24181"	263.37	NVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2038A	30°59'41.97435"	-89°33'32.60289"	262.18	NVA
2039	30°56'27.14050"	-89°33'07.43771"	274.68	NVA
2039A	30°56'28.24295"	-89°33'07.93079"	271.36	NVA
2040	30°41'41.24796"	-89°28'22.41684"	166.53	NVA
2040A	30°41'41.59503"	-89°28'23.12897"	168.89	NVA
2041	30°36'56.30525"	-89°26'48.02668"	84.36	NVA
2041A	30°36'56.80918"	-89°26'49.74917"	81.48	NVA
2042	30°30'23.47116"	-89°24'04.36348"	14.98	NVA
2042A	30°30'21.88058"	-89°24'03.58897"	15.02	NVA
2043	30°26'15.13808"	-89°20'01.23684"	-11.48	NVA
2043A	30°26'14.25016"	-89°20'00.53764"	-10.55	NVA
2044	30°23'06.47006"	-89°14'24.31623"	-70.99	NVA
2044A	30°23'07.44574"	-89°14'25.18067"	-73.18	NVA
2045	30°19'22.87365"	-89°15'35.43545"	-78.77	NVA
2045A	30°19'23.28232"	-89°15'33.96191"	-79.37	NVA
2046	30°22'01.78765"	-89°05'41.75728"	-69.05	NVA
2046A	30°22'02.58296"	-89°05'41.16816"	-69.48	NVA
2047	30°20'32.34301"	-89°28'32.73178"	-76.41	NVA
2047A	30°20'33.30344"	-89°28'30.06412"	-75.21	NVA
2048	30°29'06.52997"	-89°03'22.49054"	-21.30	NVA
2048A	30°29'06.80274"	-89°03'21.55195"	-21.98	NVA
2049	30°37'19.22258"	-89°07'59.32537"	48.61	NVA
2049A	30°37'18.55565"	-89°07'59.31285"	49.40	NVA
2050	30°36'35.70568"	-89°13'25.91985"	78.69	NVA
2050A	30°36'36.55623"	-89°13'23.66997"	86.77	NVA
2051	30°44'25.88976"	-89°13'06.25337"	134.72	NVA
2051A	30°44'25.83703"	-89°13'05.08011"	134.27	NVA
2052	30°48'42.17945"	-89°03'13.76184"	91.66	NVA
2052A	30°48'41.32658"	-89°03'12.18000"	90.44	NVA
2053	30°46'15.69966"	-88°54'50.76032"	-9.95	NVA
2053A	30°46'16.82156"	-88°54'51.42683"	-18.93	NVA
2054	30°50'56.38464"	-88°47'26.82534"	68.12	NVA
2054A	30°50'57.39559"	-88°47'27.58169"	68.39	NVA
2055	30°58'50.92080"	-88°46'43.01661"	-35.33	NVA
2055A	30°58'51.20045"	-88°46'40.82480"	-35.50	NVA
2056	30°54'39.30556"	-88°41'54.45391"	84.61	NVA
2056A	30°54'40.02112"	-88°41'54.19725"	82.89	NVA
2057	30°59'22.67323"	-88°26'00.24902"	101.11	NVA



Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2057A	30°59'22.55430"	-88°26'02.36938"	99.87	NVA
2058	30°54'44.65161"	-88°29'19.42718"	146.26	NVA
2058A	30°54'44.76065"	-88°29'18.17347"	147.77	NVA
2059	30°52'00.02136"	-88°35'50.90030"	159.50	NVA
2059A	30°52'01.12264"	-88°35'50.86109"	160.08	NVA
2060	30°48'37.53839"	-88°39'55.66702"	-40.26	NVA
2060A	30°48'37.46864"	-88°39'55.17444"	-40.08	NVA
2061	30°46'18.53383"	-88°47'09.79815"	-13.71	NVA
2061A	30°46'18.91772"	-88°47'09.17489"	-14.96	NVA
2062	30°38'48.60035"	-88°49'53.12067"	21.94	NVA
2062A	30°38'47.80381"	-88°49'52.98661"	22.78	NVA
2063	30°34'03.50086"	-89°02'33.26931"	49.26	NVA
2063A	30°34'04.96907"	-89°02'31.74510"	43.72	NVA
2064	30°27'15.40688"	-88°54'15.52525"	-75.23	NVA
2064A	30°27'15.41729"	-88°54'14.82941"	-75.11	NVA
2065	30°27'22.51486"	-89°07'09.72814"	-53.17	NVA
2065A	30°27'22.52749"	-89°07'08.95137"	-50.73	NVA
2066	30°23'24.16893"	-88°51'29.11442"	-87.78	NVA
2066A	30°23'24.02938"	-88°51'29.98886"	-88.66	NVA
2067	30°26'08.57983"	-88°59'14.34228"	-77.62	NVA
2067A	30°26'08.22217"	-88°59'13.87151"	-77.99	NVA
2068	30°21'38.78237"	-88°45'50.64553"	-88.80	NVA
2068A	30°21'39.87356"	-88°45'50.53446"	-88.85	NVA
2069	30°28'39.12353"	-88°41'54.16496"	-61.22	NVA
2069A	30°28'39.00866"	-88°41'55.70500"	-62.23	NVA
2071	30°27'10.51614"	-88°47'34.78835"	-44.72	NVA
2071A	30°27'10.11091"	-88°47'34.93118"	-44.78	NVA
2072	30°25'14.66773"	-88°27'30.35914"	-83.71	NVA
2072A	30°25'13.45716"	-88°27'31.17195"	-84.59	NVA
2073	30°31'32.04100"	-88°32'27.38203"	-73.84	NVA
2073A	30°31'33.14912"	-88°32'27.70396"	-73.74	NVA
2074	30°38'06.94991"	-88°24'43.51962"	8.99	NVA
2074A	30°38'07.99723"	-88°24'43.50897"	9.41	NVA
2075	30°39'10.57919"	-88°32'34.53452"	-38.99	NVA
2075A	30°39'09.54910"	-88°32'33.42628"	-42.34	NVA
2076	30°43'59.14256"	-88°36'25.33906"	-31.46	NVA
2076A	30°43'58.90857"	-88°36'24.23036"	-33.86	NVA
2077	30°51'39.35192"	-88°25'44.21015"	-8.64	NVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2077A	30°51'39.20301"	-88°25'43.03077"	-9.56	NVA
2078	30°45'39.59135"	-88°29'31.56344"	3.19	NVA
2078A	30°45'39.75734"	-88°29'30.82707"	2.95	NVA
2079	30°38'39.43316"	-88°40'03.85847"	48.50	NVA
2079A	30°38'39.25410"	-88°40'03.30962"	49.20	NVA
2080	30°34'48.25142"	-88°27'31.82991"	-61.23	NVA
2080A	30°34'47.10561"	-88°27'31.65652"	-60.57	NVA
2081	30°33'27.17183"	-88°54'19.33681"	-19.20	NVA
2081A	30°33'27.92378"	-88°54'18.92352"	-18.96	NVA
2082	30°42'49.75393"	-88°57'25.53259"	69.32	NVA
2082A	30°42'51.24189"	-88°57'24.81258"	64.96	NVA
2083	30°48'33.07740"	-88°32'54.44136"	39.06	NVA
2083A	30°48'33.02138"	-88°32'53.32411"	42.94	NVA
2084	30°43'07.02033"	-88°29'45.71178"	17.70	NVA
2084A	30°43'07.00966"	-88°29'46.18503"	18.28	NVA
2085	30°36'57.02949"	-88°43'30.21264"	53.77	NVA
2085A	30°36'57.21936"	-88°43'29.21824"	52.44	NVA
2086	30°35'12.16703"	-88°33'44.15124"	-61.69	NVA
2086A	30°35'12.57193"	-88°33'43.33101"	-61.98	NVA
2087	30°39'45.73475"	-88°29'17.95483"	0.32	NVA
2087A	30°39'46.33326"	-88°29'18.06911"	0.41	NVA
2088	30°30'58.53726"	-88°27'15.37011"	-71.54	NVA
2088A	30°30'58.91120"	-88°27'16.19892"	-71.98	NVA
2089	30°53'21.27371"	-89°01'13.85938"	105.15	NVA
2089A	30°53'21.97644"	-89°01'14.30427"	105.98	NVA
2090	30°48'03.33175"	-89°22'04.49482"	83.27	NVA
2090A	30°48'02.30202"	-89°22'05.54059"	82.81	NVA
2091	30°50'58.94712"	-89°27'00.00334"	176.79	NVA
2091A	30°50'58.16825"	-89°26'59.30189"	167.16	NVA
2092	30°54'13.75756"	-89°15'49.26153"	131.59	NVA
2092A	30°54'12.42881"	-89°15'48.94127"	129.81	NVA
2093	30°49'34.05917"	-88°57'37.97495"	100.75	NVA
2093A	30°49'34.76170"	-88°57'39.22939"	103.76	NVA
2094	30°42'28.16999"	-88°52'04.58349"	74.85	NVA
2094A	30°42'28.37380"	-88°52'05.91953"	74.40	NVA
2095	30°51'06.50568"	-89°11'50.80735"	64.10	NVA
2095A	30°51'06.05380"	-89°11'51.60147"	62.81	NVA
2096	30°36'47.67248"	-89°44'21.92163"	23.86	NVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2096A	30°36'48.05598"	-89°44'22.41150"	20.62	NVA
2097	30°33'35.01195"	-89°46'51.83853"	-46.10	NVA
2097A	30°33'33.89733"	-89°46'51.92772"	-46.22	NVA
2098	30°40'08.14299"	-89°38'19.42063"	151.17	NVA
2098A	30°40'08.50060"	-89°38'20.31642"	151.77	NVA
2099	30°33'30.99858"	-89°17'32.01152"	34.35	NVA
2099A	30°33'29.91844"	-89°17'31.91431"	31.24	NVA
2100	30°46'54.65098"	-89°08'29.68607"	45.41	NVA
2100A	30°46'54.05576"	-89°08'29.10026"	43.73	NVA
2101	30°22'34.59272"	-89°22'28.73462"	-48.61	NVA
2101A	30°22'31.95821"	-89°22'24.53403"	-48.02	NVA
2102	30°49'26.52510"	-89°07'26.37768"	148.28	NVA
2102A	30°49'28.26323"	-89°07'28.15040"	150.30	NVA
3001	30°49'11.94291"	-89°46'02.61526"	-6.30	VVA
3001A	30°49'13.49132"	-89°46'00.18878"	-6.00	VVA
3002	30°56'45.13346"	-89°41'09.96954"	72.89	VVA
3002A	30°56'44.37818"	-89°41'10.06603"	72.75	VVA
3003	30°50'37.79630"	-89°30'43.35178"	164.20	VVA
3003A	30°50'38.76027"	-89°30'43.20198"	165.52	VVA
3004	30°55'31.82006"	-89°27'47.29366"	264.24	VVA
3004A	30°55'31.92785"	-89°27'47.99347"	266.29	VVA
3005	30°49'06.43529"	-89°18'12.23579"	260.73	VVA
3005A	30°49'06.13645"	-89°18'13.22513"	262.14	VVA
3006	30°54'18.61318"	-89°10'23.05202"	168.21	VVA
3006A	30°54'18.83704"	-89°10'24.08955"	165.88	VVA
3007	30°42'12.77997"	-89°03'59.22416"	119.45	VVA
3007A	30°42'12.44192"	-89°03'57.13930"	117.20	VVA
3008	30°50'56.79266"	-88°47'27.45922"	66.44	VVA
3008A	30°50'58.06176"	-88°47'28.06611"	68.32	VVA
3009	30°41'41.58391"	-88°43'41.34765"	24.93	VVA
3009A	30°41'41.17862"	-88°43'41.88349"	25.43	VVA
3010	30°56'57.37724"	-88°35'44.38959"	68.84	VVA
3010A	30°56'58.42187"	-88°35'45.30773"	75.53	VVA
3011	30°43'31.88815"	-88°26'47.33964"	-34.80	VVA
3011A	30°43'31.65447"	-88°26'48.05611"	-35.04	VVA
3012	30°20'53.02621"	-88°41'36.39120"	-83.69	VVA
3012A	30°20'51.73754"	-88°41'36.07702"	-81.68	VVA
3013	30°34'39.06638"	-88°40'41.87648"	-21.05	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3013A	30°34'38.27149"	-88°40'42.18861"	-14.93	VVA
3014	30°31'57.40183"	-88°49'17.78402"	-33.81	VVA
3014A	30°31'56.47370"	-88°49'17.90084"	-35.58	VVA
3015	30°37'55.03838"	-88°58'30.23114"	33.94	VVA
3015A	30°37'54.60298"	-88°58'32.16208"	35.30	VVA
3016	30°30'00.06252"	-89°12'48.74589"	-22.45	VVA
3016A	30°30'00.59275"	-89°12'48.60459"	-24.43	VVA
3017	30°42'15.37989"	-89°21'18.57158"	103.07	VVA
3017A	30°42'14.71081"	-89°21'19.58992"	101.98	VVA
3018	30°26'48.94263"	-89°27'57.34049"	-30.47	VVA
3018A	30°26'48.46638"	-89°27'56.56876"	-31.08	VVA
3019	30°18'03.98850"	-89°35'00.98468"	-65.79	VVA
3019A	30°18'02.83332"	-89°35'01.05409"	-63.85	VVA
3020	30°30'59.81616"	-89°41'06.64635"	-31.78	VVA
3020A	30°30'58.53533"	-89°41'07.59348"	-32.34	VVA
3021	30°43'24.86091"	-89°34'55.70814"	86.07	VVA
3021A	30°43'24.63997"	-89°34'55.03135"	84.34	VVA
3022	30°27'52.45284"	-88°28'55.03994"	-82.48	VVA
3022A	30°27'53.89464"	-88°28'55.52640"	-81.42	VVA
3023	30°12'28.54862"	-89°30'28.41791"	-85.53	VVA
3023A	30°12'28.51471"	-89°30'27.62073"	-85.68	VVA
3024	30°59'41.59443"	-89°33'31.55895"	261.74	VVA
3024A	30°59'41.61672"	-89°33'32.82071"	262.03	VVA
3025	30°58'36.34913"	-89°25'37.41666"	191.95	VVA
3025A	30°58'36.65191"	-89°25'37.81477"	190.24	VVA
3026	30°47'59.19279"	-89°39'31.34412"	37.57	VVA
3026A	30°47'58.38518"	-89°39'32.02582"	37.71	VVA
3027	30°40'58.57378"	-89°43'15.80503"	101.87	VVA
3027A	30°40'59.73505"	-89°43'15.58281"	100.25	VVA
3028	30°36'45.99510"	-89°35'04.31463"	64.86	VVA
3028A	30°36'46.64786"	-89°35'03.54344"	57.88	VVA
3029	30°25'20.42909"	-89°34'38.94807"	-56.44	VVA
3029A	30°25'20.87028"	-89°34'37.21453"	-56.21	VVA
3030	30°17'38.24958"	-89°26'02.07257"	-74.25	VVA
3030A	30°17'37.96978"	-89°26'02.59319"	-74.28	VVA
3031	30°23'05.41309"	-89°14'23.88328"	-70.58	VVA
3031A	30°23'07.74145"	-89°14'25.37268"	-73.19	VVA
3032	30°33'29.75820"	-89°17'32.27968"	31.82	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3032A	30°33'30.60349"	-89°17'31.66370"	33.49	VVA
3033	30°34'02.90105"	-89°02'32.54274"	43.56	VVA
3033A	30°34'02.01304"	-89°02'31.94466"	46.60	VVA
3034	30°44'26.41666"	-89°13'05.07590"	136.32	VVA
3034A	30°44'26.49928"	-89°13'06.68287"	138.54	VVA
3035	30°36'56.64849"	-89°26'48.27015"	83.95	VVA
3035A	30°36'57.26232"	-89°26'49.93006"	80.86	VVA
3036	30°46'48.95733"	-89°27'38.82788"	225.06	VVA
3036A	30°46'50.68722"	-89°27'38.85521"	224.49	VVA
3037	30°53'43.97602"	-89°21'58.08084"	264.12	VVA
3037A	30°53'42.68102"	-89°21'58.00762"	265.64	VVA
3038	30°49'26.10111"	-89°07'31.18248"	147.88	VVA
3038A	30°49'27.27324"	-89°07'31.13365"	150.85	VVA
3039	30°53'21.60029"	-89°01'13.51293"	102.19	VVA
3039A	30°53'22.25016"	-89°01'14.13212"	104.21	VVA
3040	30°46'17.69040"	-88°54'51.70630"	-27.28	VVA
3040A	30°46'18.71222"	-88°54'52.07109"	-30.17	VVA
3041	30°49'35.07233"	-88°57'39.12957"	102.81	VVA
3041A	30°49'33.93209"	-88°57'38.18890"	99.07	VVA
3042	30°58'51.39387"	-88°46'43.08930"	-39.60	VVA
3042A	30°58'50.07601"	-88°46'41.32338"	-37.95	VVA
3043	30°54'38.86659"	-88°41'54.19239"	83.78	VVA
3043A	30°54'39.70282"	-88°41'53.86247"	82.94	VVA
3044	30°59'22.87887"	-88°26'00.29590"	100.33	VVA
3044A	30°59'23.03230"	-88°26'02.04784"	100.17	VVA
3045	30°54'45.61774"	-88°29'21.20313"	136.98	VVA
3045A	30°54'44.73010"	-88°29'21.48221"	130.22	VVA
3046	30°52'01.04366"	-88°35'49.49827"	155.84	VVA
3046A	30°51'59.89172"	-88°35'49.53505"	155.40	VVA
3047	30°48'38.11142"	-88°39'56.05694"	-39.71	VVA
3047A	30°48'38.25251"	-88°39'55.28392"	-40.02	VVA
3048	30°48'32.76208"	-88°32'54.40483"	36.52	VVA
3048A	30°48'33.47633"	-88°32'53.35204"	44.98	VVA
3049	30°46'18.55268"	-88°47'09.24174"	-16.40	VVA
3049A	30°46'19.35154"	-88°47'09.82291"	-15.46	VVA
3050	30°43'59.36418"	-88°36'24.59914"	-32.47	VVA
3050A	30°43'59.90977"	-88°36'26.06536"	-29.83	VVA
3051	30°39'46.62023"	-88°29'16.69922"	-0.36	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3051A	30°39'46.68570"	-88°29'18.05303"	-0.30	VVA
3052	30°38'08.06967"	-88°24'42.81739"	9.57	VVA
3052A	30°38'07.99994"	-88°24'43.82623"	9.97	VVA
3053	30°34'48.69409"	-88°27'31.42513"	-63.10	VVA
3053A	30°34'47.14874"	-88°27'31.31928"	-60.53	VVA
3054	30°35'11.52655"	-88°33'45.04044"	-65.03	VVA
3054A	30°35'11.20480"	-88°33'44.28592"	-62.46	VVA
3055	30°31'33.08331"	-88°32'28.57729"	-73.84	VVA
3055A	30°31'32.03843"	-88°32'28.27961"	-74.22	VVA
3056	30°30'58.36753"	-88°27'16.43599"	-73.76	VVA
3056A	30°30'56.13697"	-88°27'15.56537"	-72.24	VVA
3057	30°20'30.52023"	-88°31'24.01111"	-86.58	VVA
3057A	30°20'31.39021"	-88°31'25.05216"	-85.61	VVA
3058	30°25'13.57125"	-88°27'31.79251"	-85.38	VVA
3058A	30°25'12.30750"	-88°27'31.87245"	-84.43	VVA
3059	30°28'39.03595"	-88°41'55.02170"	-62.05	VVA
3059A	30°28'38.87026"	-88°41'53.74487"	-61.51	VVA
3060	30°27'09.65381"	-88°47'34.61675"	-46.17	VVA
3060A	30°27'08.78401"	-88°47'34.38339"	-46.07	VVA
3061	30°38'47.65372"	-88°49'53.47640"	19.02	VVA
3061A	30°38'48.57487"	-88°49'53.85489"	19.59	VVA
3062	30°33'27.50949"	-88°54'18.60118"	-20.01	VVA
3062A	30°33'26.56985"	-88°54'19.77080"	-19.41	VVA
3063	30°27'14.91895"	-88°54'16.52863"	-69.87	VVA
3063A	30°27'14.21202"	-88°54'16.72469"	-69.71	VVA
3064	30°29'07.27026"	-89°03'21.33819"	-21.66	VVA
3064A	30°29'07.61225"	-89°03'22.79310"	-20.22	VVA
3065	30°25'39.92734"	-89°06'08.93894"	-71.92	VVA
3065A	30°25'40.01578"	-89°06'10.83096"	-72.21	VVA
3066	30°37'17.91234"	-89°07'59.51391"	48.26	VVA
3066A	30°37'17.40605"	-89°08'01.44960"	45.72	VVA
3067	30°42'49.84361"	-88°57'26.04798"	71.91	VVA
3067A	30°42'51.62702"	-88°57'25.41180"	68.12	VVA
3068	30°26'14.86351"	-89°20'01.33083"	-11.50	VVA
3068A	30°26'13.76744"	-89°20'01.05494"	-11.37	VVA
3069	30°30'59.91406"	-89°32'32.12728"	6.20	VVA
3069A	30°30'58.97668"	-89°32'32.44645"	5.50	VVA
3070	30°36'48.03773"	-89°44'22.86462"	16.20	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3070A	30°36'47.31887"	-89°44'22.50475"	22.79	VVA
3071	30°33'33.57462"	-89°46'51.48618"	-47.00	VVA
3071A	30°33'33.69176"	-89°46'52.45501"	-46.55	VVA
3072	30°41'40.99924"	-89°28'21.52026"	169.82	VVA
3072A	30°41'41.50563"	-89°28'23.70854"	166.75	VVA
3073	30°53'34.53393"	-89°37'51.51899"	90.41	VVA
3073A	30°53'36.18571"	-89°37'59.12743"	91.16	VVA
3074	30°56'28.72674"	-89°33'08.21636"	270.93	VVA
3074A	30°56'29.74363"	-89°33'08.16107"	266.04	VVA
3075	30°30'23.56685"	-89°24'04.68053"	12.16	VVA
3075A	30°30'21.38466"	-89°24'03.10843"	13.15	VVA
3076	30°42'28.78456"	-88°52'04.53564"	74.92	VVA
3076A	30°42'28.14110"	-88°52'05.90540"	71.55	VVA
3077	30°22'33.28671"	-89°22'22.14005"	-46.01	VVA
3077A	30°22'34.86547"	-89°22'21.98819"	-36.24	VVA
3078	30°36'36.52480"	-89°13'24.24481"	84.98	VVA
3078A	30°36'35.61591"	-89°13'24.20890"	81.92	VVA
3079	30°51'39.78161"	-88°25'43.61748"	-7.40	VVA
3079A	30°51'38.69777"	-88°25'44.19218"	-14.58	VVA

# COORDINATE SYSTEM: GRID

## 3DEP Extension AOI

HORIZONTAL DATUM: NAD83 (2011) UTM Zone 16 North

VERTICAL DATUM: NAVD88

GEOID MODEL: GEOID 12A

UNITS: Meters

### LiDAR GROUND CONTROL

Points	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
1	3551500.59	157463.28	61.25	CONTROL
2	3545114.72	176886.17	133.66	CONTROL
3	3539064.29	194530.54	100.62	CONTROL
4	3542805.14	207876.29	98.21	CONTROL
5	3533908.12	150615.72	129.92	CONTROL
6	3534291.98	219674.81	83.54	CONTROL
7	3531551.27	178526.47	128.34	CONTROL
8	3526229.87	163652.78	141.96	CONTROL
9	3543160.55	156249.35	66.45	CONTROL
10	3523381.86	149278.84	95.85	CONTROL
11	3517982.37	217751.24	120.58	CONTROL
12	3525722.03	206996.09	94.21	CONTROL
13	3525363.92	225492.91	164.85	CONTROL
14	3522545.60	238863.22	163.64	CONTROL
15	3528929.08	234558.14	169.83	CONTROL
16	3519313.15	248790.64	118.79	CONTROL
17	3533990.25	247365.30	136.73	CONTROL
18	3542860.53	242017.87	134.28	CONTROL
19	3547629.72	243535.30	126.62	CONTROL
20	3544116.20	249121.15	164.98	CONTROL
21	3499544.48	180997.45	153.82	CONTROL
22	3515750.66	163005.80	152.38	CONTROL
23	3509703.75	151176.12	148.44	CONTROL
24	3497188.26	160647.58	121.17	CONTROL
25	3512600.09	178114.95	140.76	CONTROL
26	3522477.27	189624.95	136.02	CONTROL
27	3510716.66	196693.83	93.30	CONTROL
28	3499572.77	215347.85	84.56	CONTROL
29	3483446.58	171237.74	133.84	CONTROL
30	3473455.21	191363.34	139.22	CONTROL
31	3475408.17	154745.75	138.69	CONTROL
32	3461345.68	175210.22	125.67	CONTROL



Points	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
33	3453979.79	186194.32	93.25	CONTROL
34	3450946.01	168561.70	118.19	CONTROL
35	3435694.77	188252.80	103.99	CONTROL
36	3435338.92	161216.87	85.75	CONTROL

### QUALITY CONTROL POINTS

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
2001	3551510.68	157424.35	61.44	NVA
2002	3545113.97	176870.14	133.14	NVA
2003	3539086.56	194500.51	101.85	NVA
2004	3542809.09	207838.97	96.07	NVA
2005	3533892.65	150616.34	129.45	NVA
2006	3534304.10	219667.97	83.55	NVA
2007	3531419.46	178722.87	128.13	NVA
2008	3526236.81	163653.68	142.06	NVA
2009	3543209.68	156244.21	69.49	NVA
2010	3523389.69	149282.76	96.35	NVA
2011	3517991.81	217765.12	119.86	NVA
2012	3525729.37	206992.10	94.58	NVA
2013	3525363.66	225527.02	165.62	NVA
2014	3522614.46	238858.77	162.14	NVA
2015	3528919.67	234528.49	169.84	NVA
2016	3519387.82	248761.79	120.04	NVA
2017	3534014.67	247394.45	133.80	NVA
2018	3543075.41	243168.02	117.34	NVA
2019	3547637.12	243540.79	126.58	NVA
2020	3544144.59	249125.17	164.20	NVA
2021	3499539.80	181002.49	153.98	NVA
2022	3515750.43	163017.01	152.79	NVA
2023	3509694.75	151177.59	148.46	NVA
2024	3497184.46	160616.65	120.22	NVA
2025	3513298.45	178390.57	140.05	NVA
2026	3522471.18	189642.25	136.21	NVA
2027	3510702.96	196692.08	93.20	NVA
2028	3499542.28	215364.18	84.48	NVA
2029	3483436.26	171270.00	134.07	NVA
2030	3473484.00	191339.55	139.31	NVA
2031	3475398.29	154745.84	138.68	NVA
2032	3461341.94	175192.97	125.74	NVA
2033	3453998.80	186181.59	94.04	NVA

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
2034	3450939.90	168577.62	117.78	NVA
2035	3435709.84	188263.48	103.16	NVA
2036	3435341.14	161199.11	85.14	NVA
2037	3546803.61	154498.40	80.98	NVA
2038	3531924.23	166923.16	83.38	NVA
2039	3522520.64	199575.40	72.25	NVA
2040	3501132.59	199180.87	77.72	NVA
2041	3546023.42	213611.48	117.67	NVA
2042	3439423.16	182083.45	113.14	NVA
2043	3508774.89	211943.36	110.08	NVA
2044	3550175.88	190476.69	81.05	NVA
2045	3447617.32	179109.41	115.27	NVA
2046	3442012.44	169508.55	99.10	NVA
2047	3472669.18	174541.66	116.52	NVA
2048	3488155.74	187145.82	147.74	NVA
2049	3487362.14	162676.39	128.02	NVA
2050	3495325.33	175333.43	145.48	NVA
2051	3508569.11	161795.25	152.85	NVA
2052	3521752.69	178808.34	134.82	NVA
2053	3540381.59	166948.26	70.49	NVA
2054	3539383.68	187969.74	140.84	NVA
2055	3548498.57	165295.84	75.45	NVA
2056	3530858.71	200554.29	71.71	NVA
2057	3532726.00	190290.03	96.07	NVA
2058	3520054.34	229664.01	140.74	NVA
2059	3528830.28	247379.20	149.96	NVA
2060	3481462.15	184790.13	128.29	NVA
2061SG	3546695.20	183071.50	131.22	NVA
2062SG	3528087.86	178443.39	135.39	NVA
2063SG	3502234.19	172894.78	147.16	NVA
2064SG	3492027.72	170987.12	134.63	NVA
2065SG	3479181.86	169958.52	118.81	NVA
2066SG	3467320.40	169935.96	125.83	NVA
2067SG	3455543.99	171668.97	100.54	NVA
2068SG	3447131.98	168042.90	85.92	NVA
2069SG	3435513.84	168408.61	80.05	NVA
2070SG	3494679.06	169266.25	132.16	NVA
2071SG	3493690.86	164878.63	147.14	NVA
2072SG	3492432.10	156548.03	136.58	NVA
2073SG	3495601.97	178662.89	147.49	NVA
2074SG	3495521.73	186173.17	117.78	NVA

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
2075SG	3458458.50	175841.11	131.66	NVA
2076SG	3459882.42	170193.59	118.40	NVA
2077SG	3458357.15	164259.01	105.22	NVA
2078SG	3511810.86	186287.92	108.80	NVA
2079SG	3437942.10	175049.24	79.44	NVA
2080SG	3455887.17	181981.41	126.95	NVA
2081SG	3537940.60	179544.47	144.38	NVA
3001	3551530.25	157439.63	61.42	VVA
3002	3545103.40	176852.70	132.49	VVA
3003	3539055.58	194561.98	99.09	VVA
3004	3542783.39	207810.66	94.89	VVA
3005	3533938.28	150613.88	130.25	VVA
3006	3534265.88	219677.46	83.04	VVA
3007	3531545.51	178508.58	128.27	VVA
3008	3526214.94	163655.83	142.48	VVA
3009	3543223.87	156246.15	69.88	VVA
3010	3523385.22	149294.45	95.70	VVA
3011	3517958.06	217793.28	119.31	VVA
3012	3525716.82	206981.82	93.99	VVA
3013	3525361.80	225471.15	163.56	VVA
3014	3522584.22	238858.03	163.30	VVA
3015	3528925.12	234506.60	169.56	VVA
3016	3519364.97	248781.66	120.41	VVA
3017	3534024.22	247413.63	132.35	VVA
3018	3543039.70	243196.40	114.55	VVA
3019	3547643.91	243534.65	126.74	VVA
3020	3544157.04	249137.30	164.21	VVA
3021	3499546.88	180965.39	153.25	VVA
3022	3515763.34	163020.66	152.80	VVA
3023	3509707.14	151214.52	147.75	VVA
3024	3497145.91	160632.31	119.26	VVA
3025	3513342.19	178405.46	142.08	VVA
3026	3522508.93	189673.93	136.05	VVA
3027	3510738.89	196693.97	93.98	VVA
3028	3499573.49	215375.45	83.95	VVA
3029	3483414.82	171216.90	132.24	VVA
3030	3473492.57	191353.47	138.68	VVA
3031	3475417.35	154761.53	138.01	VVA
3032	3461368.73	175197.04	123.88	VVA
3033	3454005.75	186132.91	95.74	VVA
3034	3450917.28	168615.53	116.83	VVA

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
3035	3435727.32	188285.35	101.97	VVA
3036	3435295.73	161234.32	84.79	VVA
3037	3546812.02	154503.53	81.28	VVA
3038	3531951.09	166936.60	84.67	VVA
3039	3522534.15	199592.95	72.24	VVA
3040	3501117.23	199171.88	76.60	VVA
3041	3546012.58	213598.08	116.71	VVA
3042	3439408.28	182084.02	112.59	VVA
3043	3508784.99	211913.54	109.73	VVA
3044	3550193.91	190459.69	80.87	VVA
3045	3543203.87	156272.44	69.89	VVA
3046	3435365.28	161214.76	84.79	VVA
3047	3435711.04	188252.81	102.92	VVA
3048	3512946.90	178315.35	133.52	VVA
3049	3531382.04	178656.36	127.44	VVA
3050	3461353.39	175157.55	124.47	VVA
3051SG	3546744.01	183084.63	130.65	VVA
3052SG	3528129.41	178465.24	133.03	VVA
3053SG	3502031.15	173025.83	148.35	VVA
3054SG	3492448.71	156501.25	135.56	VVA
3055SG	3495507.92	186148.81	115.88	VVA
3056SG	3492009.27	170971.48	134.19	VVA
3057SG	3467358.98	169890.27	122.52	VVA
3058SG	3458369.14	164253.35	104.57	VVA
3059SG	3455547.77	171736.10	99.61	VVA
3060SG	3447117.55	168000.02	83.01	VVA
3061SG	3437972.84	175015.23	78.59	VVA
3062SG	3435495.18	168398.48	80.92	VVA
3063SG	3493824.84	165063.78	146.98	VVA

## NGS STATION CHECK POINTS

Point	Grid Deltas Published vs. Surveyed		
	$\Delta$ Northing (sFT)	$\Delta$ Easting (sFT)	$\Delta$ Elev. (sFT)*
AP 21	-0.09	-0.01	N/A
AP 42	-0.10	0.04	N/A
AP 44	N/A	N/A	N/A
L 109	N/A	N/A	N/A
MEND	-0.01	0.11	N/A
MIA 1	-0.07	-0.01	N/A
P 375	0.04	0.01	N/A
S 375	0.01	0.00	N/A
X 361	-0.01	0.00	N/A

\*Noted subsidence on the local vertical control rendered elevation checks obsolete.

# COORDINATE SYSTEM: GEODETIC

## 3DEP Extension AOI

**HORIZONTAL DATUM: NAD83 (2011) Epoch 2010.00**

**VERTICAL DATUM: NAVD88**

**GEOID MODEL: GEOID 12A**

**UNITS: Meters**

### LiDAR GROUND CONTROL

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
1	32°02'52.35586"	-90°37'38.13967"	34.99	CONTROL
2	31°59'45.90372"	-90°25'11.16476"	107.43	CONTROL
3	31°56'47.32834"	-90°13'52.94541"	74.42	CONTROL
4	31°59'01.29603"	-90°05'29.42551"	71.98	CONTROL
5	31°53'14.62781"	-90°41'35.84204"	103.87	CONTROL
6	31°54'35.89662"	-89°57'51.57092"	57.47	CONTROL
7	31°52'27.83599"	-90°23'52.55457"	102.29	CONTROL
8	31°49'19.86659"	-90°33'10.98763"	115.97	CONTROL
9	31°58'20.70589"	-90°38'13.64322"	40.29	CONTROL
10	31°47'31.97866"	-90°42'12.97145"	69.89	CONTROL
11	31°45'45.17701"	-89°58'47.68450"	94.69	CONTROL
12	31°49'46.44940"	-90°05'44.33722"	68.22	CONTROL
13	31°49'51.40578"	-89°54'01.24743"	138.94	CONTROL
14	31°48'31.28234"	-89°45'30.48581"	137.75	CONTROL
15	31°51'54.78863"	-89°48'20.30156"	143.88	CONTROL
16	31°46'54.43089"	-89°39'10.32095"	92.89	CONTROL
17	31°54'49.48202"	-89°40'18.18503"	110.67	CONTROL
18	31°59'32.92511"	-89°43'50.08996"	108.11	CONTROL
19	32°02'08.88655"	-89°42'56.89134"	100.38	CONTROL
20	32°00'19.40655"	-89°39'20.85549"	138.79	CONTROL
21	31°35'12.56127"	-90°21'41.10232"	127.85	CONTROL
22	31°43'39.47631"	-90°33'22.53078"	126.46	CONTROL
23	31°40'10.72619"	-90°40'43.41984"	122.51	CONTROL
24	31°33'35.23498"	-90°34'28.89774"	95.17	CONTROL
25	31°42'12.97745"	-90°23'45.68088"	114.81	CONTROL
26	31°47'44.69106"	-90°16'40.42577"	110.04	CONTROL
27	31°41'30.14511"	-90°11'58.89628"	67.34	CONTROL
28	31°35'45.90881"	-89°59'59.69059"	58.58	CONTROL

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
29	31°26'20.75831"	-90°27'31.50071"	107.72	CONTROL
30	31°21'16.68950"	-90°14'39.18006"	112.95	CONTROL
31	31°21'42.90660"	-90°37'45.03214"	112.47	CONTROL
32	31°14'28.19344"	-90°24'35.37411"	99.22	CONTROL
33	31°10'40.14820"	-90°17'32.53682"	66.58	CONTROL
34	31°08'44.27931"	-90°28'33.91851"	91.50	CONTROL
35	31°00'49.14439"	-90°15'54.57357"	76.91	CONTROL
36	31°00'10.72262"	-90°32'51.96044"	58.75	CONTROL

### QUALITY CONTROL POINTS

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2001	32°02'52.64046"	-90°37'39.63414"	35.18	NVA
2002	31°59'45.86301"	-90°25'11.77402"	106.91	NVA
2003	31°56'48.02119"	-90°13'54.11252"	75.66	NVA
2004	31°59'01.38936"	-90°05'30.84989"	69.84	NVA
2005	31°53'14.12702"	-90°41'35.79827"	103.41	NVA
2006	31°54'36.28378"	-89°57'51.84350"	57.48	NVA
2007	31°52'23.76226"	-90°23'44.93566"	102.08	NVA
2008	31°49'20.09241"	-90°33'10.96199"	116.07	NVA
2009	31°58'22.29266"	-90°38'13.90138"	43.33	NVA
2010	31°47'32.23673"	-90°42'12.83283"	70.39	NVA
2011	31°45'45.49578"	-89°58'47.16731"	93.98	NVA
2012	31°49'46.68388"	-90°05'44.49671"	68.58	NVA
2013	31°49'51.42683"	-89°53'59.95116"	139.70	NVA
2014	31°48'33.51276"	-89°45'30.72109"	136.25	NVA
2015	31°51'54.45850"	-89°48'21.41947"	143.89	NVA
2016	31°46'56.83091"	-89°39'11.48583"	94.13	NVA
2017	31°54'50.29757"	-89°40'17.09939"	107.74	NVA
2018	31°59'40.83670"	-89°43'06.51314"	91.17	NVA
2019	32°02'09.13133"	-89°42'56.68922"	100.34	NVA
2020	32°00'20.33060"	-89°39'20.72904"	138.00	NVA
2021	31°35'12.41473"	-90°21'40.90587"	128.00	NVA
2022	31°43'39.48056"	-90°33'22.10528"	126.87	NVA
2023	31°40'10.43612"	-90°40'43.35273"	122.53	NVA
2024	31°33'35.07906"	-90°34'30.06407"	94.22	NVA
2025	31°42'35.89870"	-90°23'36.05350"	114.11	NVA
2026	31°47'44.51046"	-90°16'39.76182"	110.24	NVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2027	31°41'29.69938"	-90°11'58.94733"	67.24	NVA
2028	31°35'44.93431"	-89°59'59.04032"	58.50	NVA
2029	31°26'20.45690"	-90°27'30.26865"	107.95	NVA
2030	31°21'17.60029"	-90°14'40.11139"	113.04	NVA
2031	31°21'42.58657"	-90°37'45.01637"	112.47	NVA
2032	31°14'28.05506"	-90°24'36.02068"	99.29	NVA
2033	31°10'40.75228"	-90°17'33.03817"	67.37	NVA
2034	31°08'44.09751"	-90°28'33.31108"	91.09	NVA
2035	31°00'49.64346"	-90°15'54.18784"	76.08	NVA
2036	31°00'10.77628"	-90°32'52.63157"	58.13	NVA
2037	32°00'16.87051"	-90°39'24.91202"	54.78	NVA
2038	31°52'27.91969"	-90°31'13.83827"	57.32	NVA
2039	31°47'55.67900"	-90°10'22.66246"	46.26	NVA
2040	31°36'21.68913"	-90°10'14.00222"	51.72	NVA
2041	32°00'50.94307"	-90°01'54.62614"	91.42	NVA
2042	31°02'44.11127"	-90°19'51.07394"	86.18	NVA
2043	31°40'41.32586"	-90°02'18.41211"	84.16	NVA
2044	32°02'43.67176"	-90°16'39.93281"	54.70	NVA
2045	31°07'06.91529"	-90°21'52.45175"	88.48	NVA
2046	31°03'55.58503"	-90°27'47.69489"	72.21	NVA
2047	31°20'34.67755"	-90°25'13.87019"	90.26	NVA
2048	31°29'09.33311"	-90°17'35.21673"	121.67	NVA
2049	31°28'18.83203"	-90°33'00.02284"	101.93	NVA
2050	31°32'50.06518"	-90°25'10.63995"	119.48	NVA
2051	31°39'45.38757"	-90°33'59.52405"	126.92	NVA
2052	31°47'10.43035"	-90°23'30.20811"	108.85	NVA
2053	31°57'02.11192"	-90°31'23.34189"	44.34	NVA
2054	31°56'51.26093"	-90°18'02.81471"	114.66	NVA
2055	32°01'23.48499"	-90°32'36.28986"	49.22	NVA
2056	31°52'27.00570"	-90°09'54.72799"	45.64	NVA
2057	31°53'17.66845"	-90°16'26.91863"	69.98	NVA
2058	31°47'02.75602"	-89°51'17.46103"	114.88	NVA
2059	31°52'02.08470"	-89°40'12.82062"	123.97	NVA
2060	31°25'29.97771"	-90°18'56.69842"	102.15	NVA
2061SG	32°00'43.43627"	-90°21'17.71111"	104.95	NVA
2062SG	31°50'35.46127"	-90°23'51.58770"	109.37	NVA
2063SG	31°36'31.58107"	-90°26'51.21816"	121.19	NVA
2064SG	31°30'58.71706"	-90°27'51.23534"	108.59	NVA



Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2065SG	31°24'01.17909"	-90°28'14.77533"	92.64	NVA
2066SG	31°17'36.58223"	-90°28'01.49670"	99.50	NVA
2067SG	31°11'16.51415"	-90°26'42.18026"	73.96	NVA
2068SG	31°06'40.08876"	-90°28'48.95533"	59.14	NVA
2069SG	31°00'23.76182"	-90°28'21.46692"	53.05	NVA
2070SG	31°32'22.90531"	-90°28'59.55618"	106.14	NVA
2071SG	31°31'46.30951"	-90°31'44.43650"	121.11	NVA
2072SG	31°30'56.68811"	-90°36'58.14610"	110.54	NVA
2073SG	31°33'02.39269"	-90°23'04.90679"	121.49	NVA
2074SG	31°33'07.23918"	-90°18'20.43851"	91.76	NVA
2075SG	31°12'55.20820"	-90°24'08.20698"	105.15	NVA
2076SG	31°13'35.68493"	-90°27'42.95305"	91.93	NVA
2077SG	31°12'40.14575"	-90°31'25.01976"	78.70	NVA
2078SG	31°41'55.54541"	-90°18'34.79737"	82.84	NVA
2079SG	31°01'49.16445"	-90°24'14.28519"	52.47	NVA
2080SG	31°11'37.90376"	-90°20'13.60445"	100.35	NVA
2081SG	31°55'56.02442"	-90°23'21.47456"	118.25	NVA
3001	32°02'53.29122"	-90°37'39.07761"	35.15	VVA
3002	31°59'45.50247"	-90°25'12.42458"	106.27	VVA
3003	31°56'47.07628"	-90°13'51.73962"	72.90	VVA
3004	31°59'00.52977"	-90°05'31.89923"	68.65	VVA
3005	31°53'15.60335"	-90°41'35.95102"	104.20	VVA
3006	31°54'35.05232"	-89°57'51.44284"	56.97	VVA
3007	31°52'27.63112"	-90°23'53.22738"	102.22	VVA
3008	31°49'19.38593"	-90°33'10.85326"	116.49	VVA
3009	31°58'22.75474"	-90°38'13.84585"	43.72	VVA
3010	31°47'32.10470"	-90°42'12.38375"	69.74	VVA
3011	31°45'44.42613"	-89°58'46.06304"	93.43	VVA
3012	31°49'46.26730"	-90°05'44.87384"	68.00	VVA
3013	31°49'51.31793"	-89°54'02.07196"	137.64	VVA
3014	31°48'32.53123"	-89°45'30.71993"	137.41	VVA
3015	31°51'54.61681"	-89°48'22.25671"	143.61	VVA
3016	31°46'56.10506"	-89°39'10.71008"	94.50	VVA
3017	31°54'50.62276"	-89°40'16.37858"	106.29	VVA
3018	31°59'39.70146"	-89°43'05.39855"	88.38	VVA
3019	32°02'09.34648"	-89°42'56.92955"	100.50	VVA
3020	32°00'20.74423"	-89°39'20.27912"	138.01	VVA
3021	31°35'12.60711"	-90°21'42.31940"	127.28	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3022	31°43'39.90294"	-90°33'21.98278"	126.88	VVA
3023	31°40'10.87824"	-90°40'41.96895"	121.83	VVA
3024	31°33'33.84599"	-90°34'29.42316"	93.26	VVA
3025	31°42'37.33179"	-90°23'35.54067"	116.14	VVA
3026	31°47'45.76545"	-90°16'38.60252"	110.07	VVA
3027	31°41'30.86637"	-90°11'58.91561"	68.02	VVA
3028	31°35'45.95649"	-89°59'58.64567"	57.97	VVA
3029	31°26'19.70743"	-90°27'32.25106"	106.12	VVA
3030	31°21'17.89176"	-90°14'39.59457"	112.40	VVA
3031	31°21'43.22108"	-90°37'44.44764"	111.80	VVA
3032	31°14'28.92776"	-90°24'35.89810"	97.43	VVA
3033	31°10'40.93082"	-90°17'34.88204"	69.07	VVA
3034	31°08'43.40261"	-90°28'31.85522"	90.14	VVA
3035	31°00'50.23101"	-90°15'53.38367"	74.89	VVA
3036	31°00'09.34066"	-90°32'51.25164"	57.78	VVA
3037	32°00'17.14884"	-90°39'24.72744"	55.08	VVA
3038	31°52'28.80434"	-90°31'13.36073"	58.62	VVA
3039	31°47'56.13350"	-90°10'22.01101"	46.26	VVA
3040	31°36'21.18268"	-90°10'14.32574"	50.60	VVA
3041	32°00'50.57939"	-90°01'55.12472"	90.46	VVA
3042	31°02'43.62933"	-90°19'51.03567"	85.63	VVA
3043	31°40'41.62628"	-90°02'19.55401"	83.81	VVA
3044	32°02'44.23968"	-90°16'40.60108"	54.52	VVA
3045	31°58'22.13535"	-90°38'12.82051"	43.73	VVA
3046	31°00'11.57505"	-90°32'52.07131"	57.79	VVA
3047	31°00'49.67214"	-90°15'54.59110"	75.84	VVA
3048	31°42'24.42443"	-90°23'38.49072"	107.58	VVA
3049	31°52'22.48126"	-90°23'47.41791"	101.39	VVA
3050	31°14'28.39061"	-90°24'37.37078"	98.02	VVA
3051SG	32°00'45.03207"	-90°21'17.26942"	104.38	VVA
3052SG	31°50'36.83059"	-90°23'50.80711"	107.01	VVA
3053SG	31°36'25.13232"	-90°26'46.01065"	122.39	VVA
3054SG	31°30'57.17628"	-90°36'59.93718"	109.52	VVA
3055SG	31°33'06.76754"	-90°18'21.34507"	89.87	VVA
3056SG	31°30'58.10296"	-90°27'51.80510"	108.16	VVA
3057SG	31°17'37.78619"	-90°28'03.26754"	96.18	VVA
3058SG	31°12'40.52859"	-90°31'25.24771"	78.06	VVA
3059SG	31°11'16.70461"	-90°26'39.65281"	73.03	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
3060SG	31°06'39.57744"	-90°28'50.55435"	56.23	VVA
3061SG	31°01'50.12723"	-90°24'15.60125"	51.63	VVA
3062SG	31°00'23.14670"	-90°28'21.82622"	53.92	VVA
3063SG	31°31'50.84661"	-90°31'37.59239"	120.96	VVA


## SECTION 3: GROUND CONTROL LOGS AND PHOTOS

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

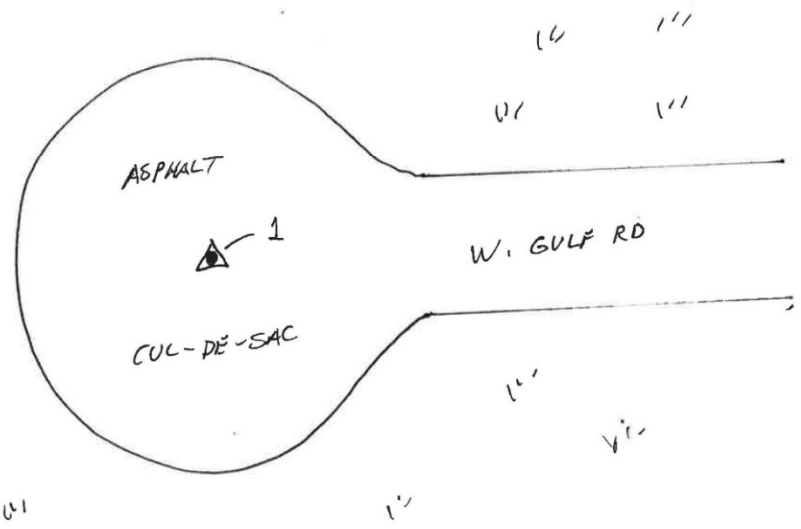
The data is assembled on the following pages.

# MS COASTAL AOI

## LiDAR Control Points:

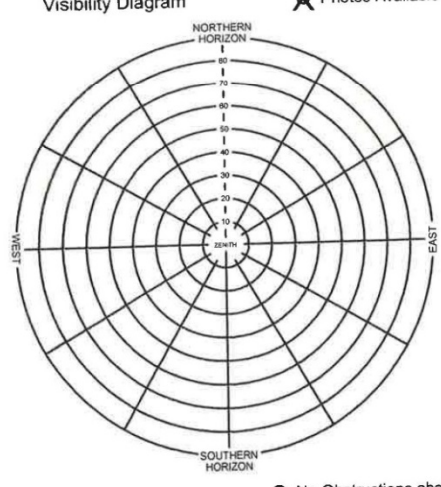
Mississippi Coastal LiDAR Survey - LiDAR Control			 <b>WOOLPERT</b> <small>DESIGN · GEOSPATIAL INFRASTRUCTURE</small>
Aerial Control point # <b>1</b>	General location <b>ANSLEY, MS</b>	Airport LID	
Latitude <b>N 30° 12' 28"</b>	Longitude <b>W 89° 30' 29"</b>	Calendar Date <b>02/20/15</b>	Observer Initials <b>DJK</b>



Visibility Diagram  Photos Available



● No Obstructions above 10°

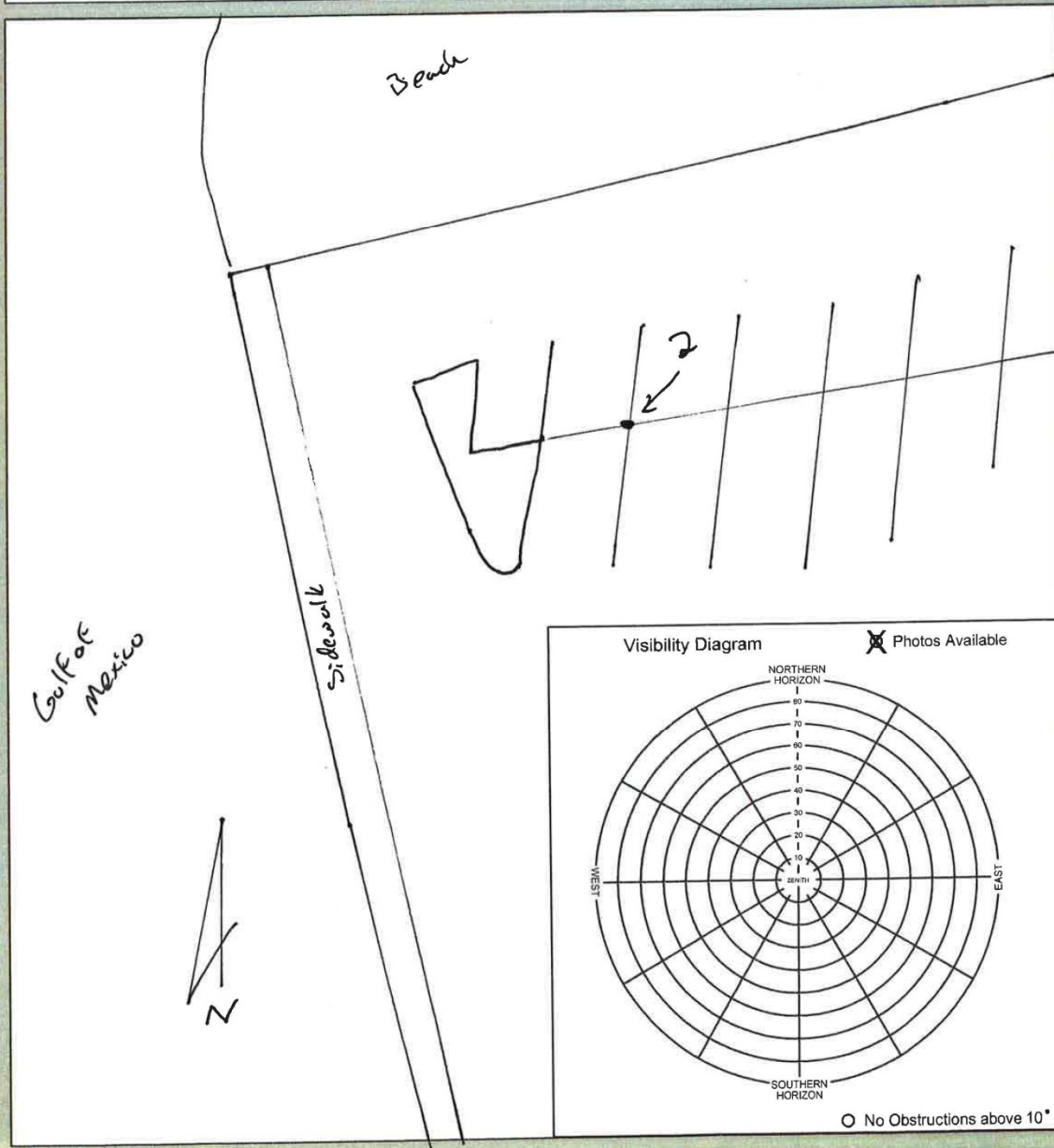


**1, S, 20FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>2</b>	General location <b>Pass Christian, MS</b>	Airport LID	
Latitude <b>N 30° 18' 40" "</b>	Longitude <b>W 89° 14' 59" "</b>	Calendar Date <b>2/20/15</b>	Observer Initials <b>DJK</b>





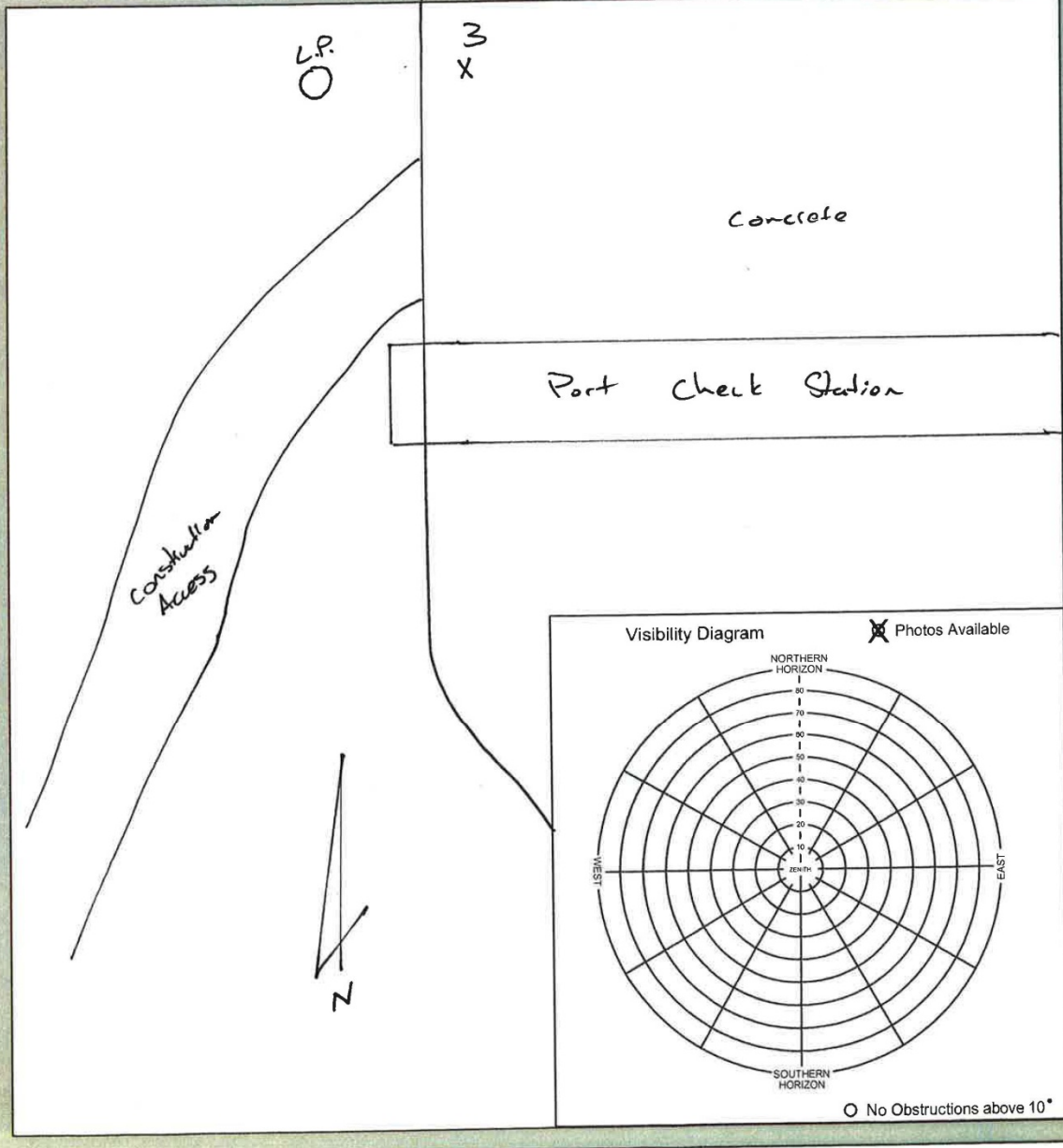
**2, S, 20FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>3</b>	General location <b>Gulf Port, MS</b>	Airport LID	
Latitude <b>N 30° 21' 37"</b>	Longitude <b>W 89° 05' 49"</b>	Calendar Date <b>2/20/15</b>	Observer Initials <b>DJK</b>



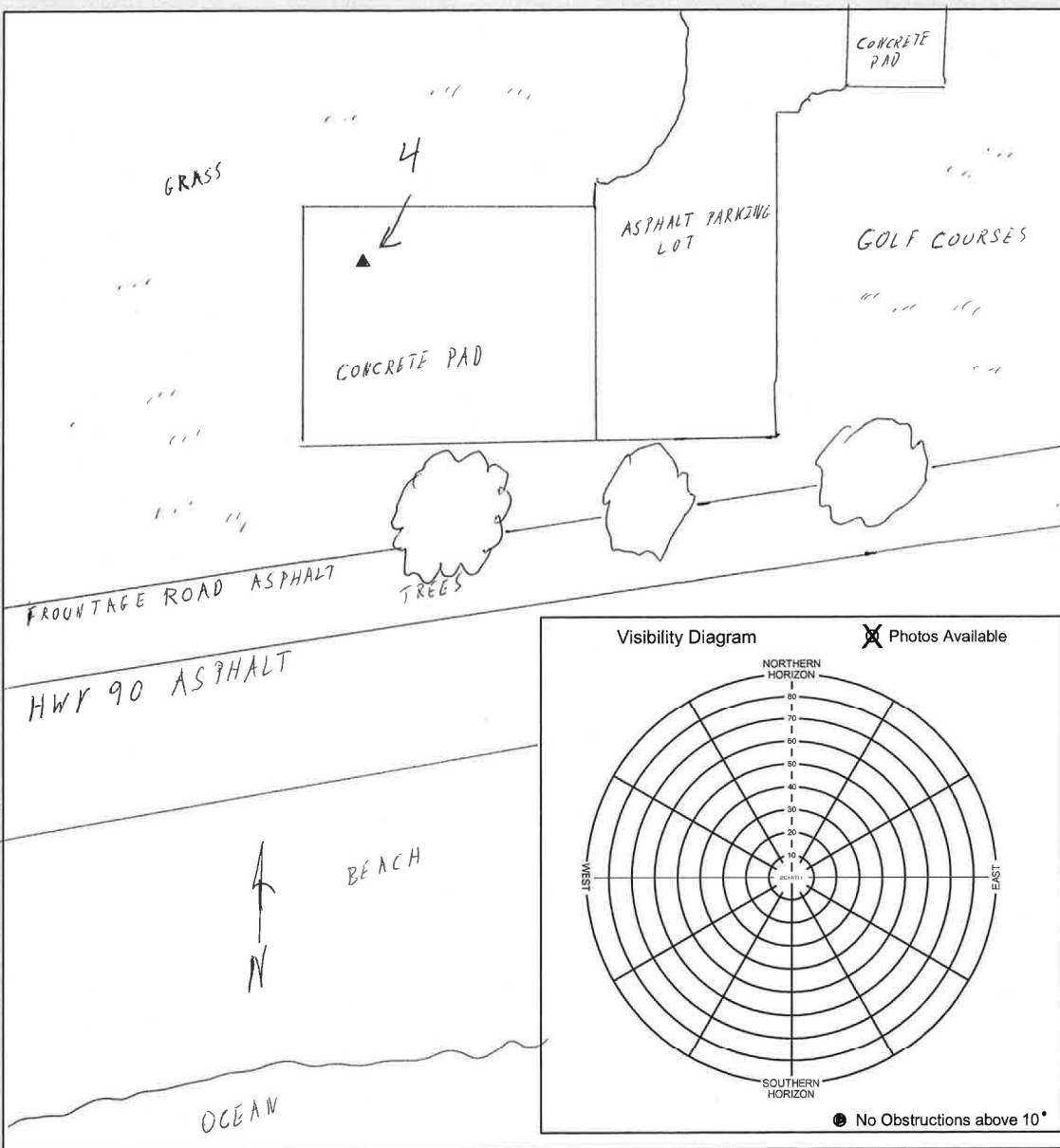


**3, S, 20FEB2015**

# LiDAR Survey - LiDAR Control



LiDAR Control point #	4	General location	MISSISSIPPI CITY, MS	Ground Class	
Latitude	N 30° 23' 11.58"	Longitude	W 89° 0' 34.77"	Calendar Date	2/12/2015
				Observer Initials	CPR



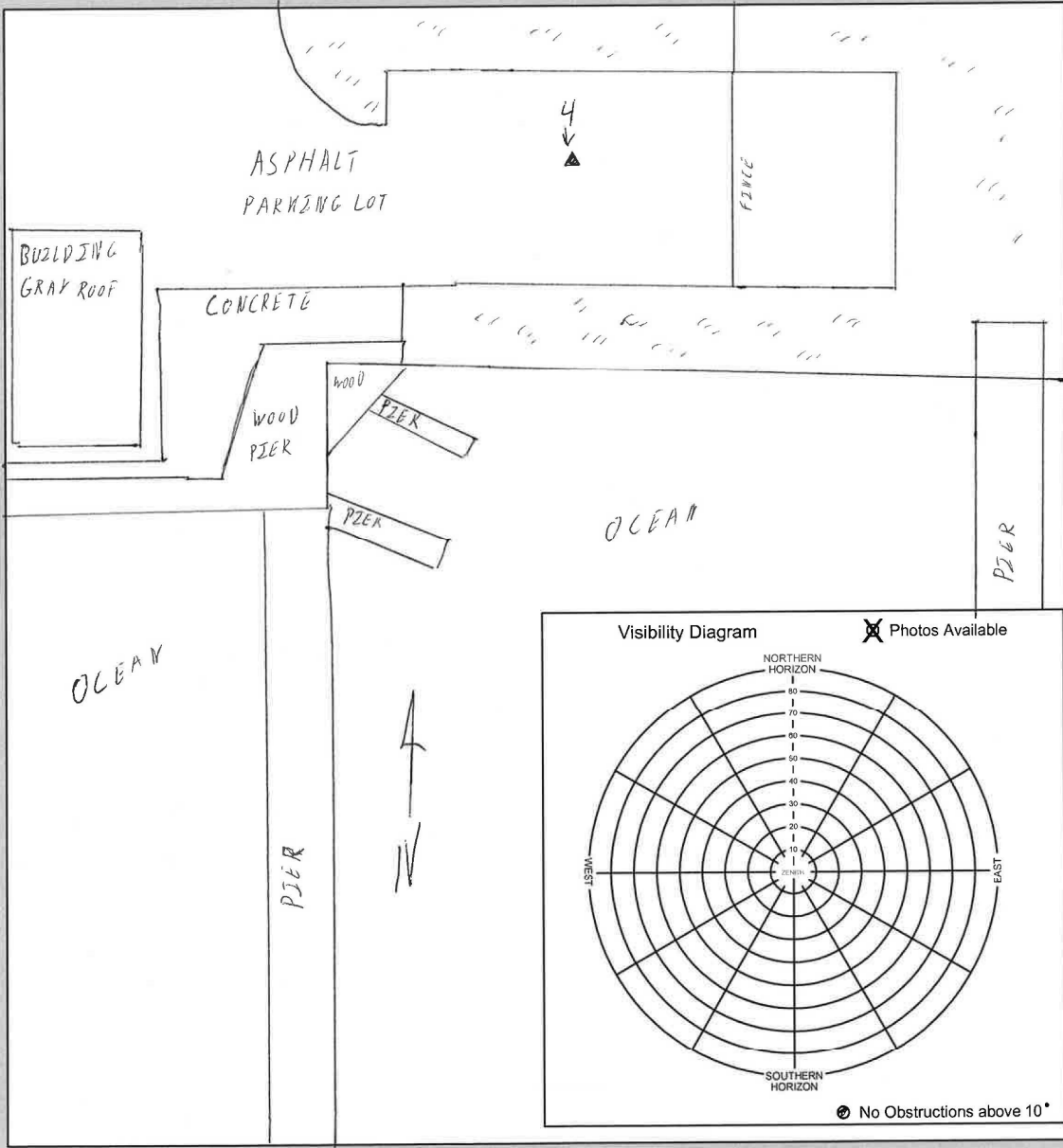


**4, S, 21FEB2015**

# LiDAR Survey - LiDAR Control



LiDAR Control point #	5	General location	BILOXI, MS
Latitude	N 30° 23' 24.45"	Longitude	W 88° 51' 27.93"
Calendar Date	2/21/2015		Observer Initials
			CPR



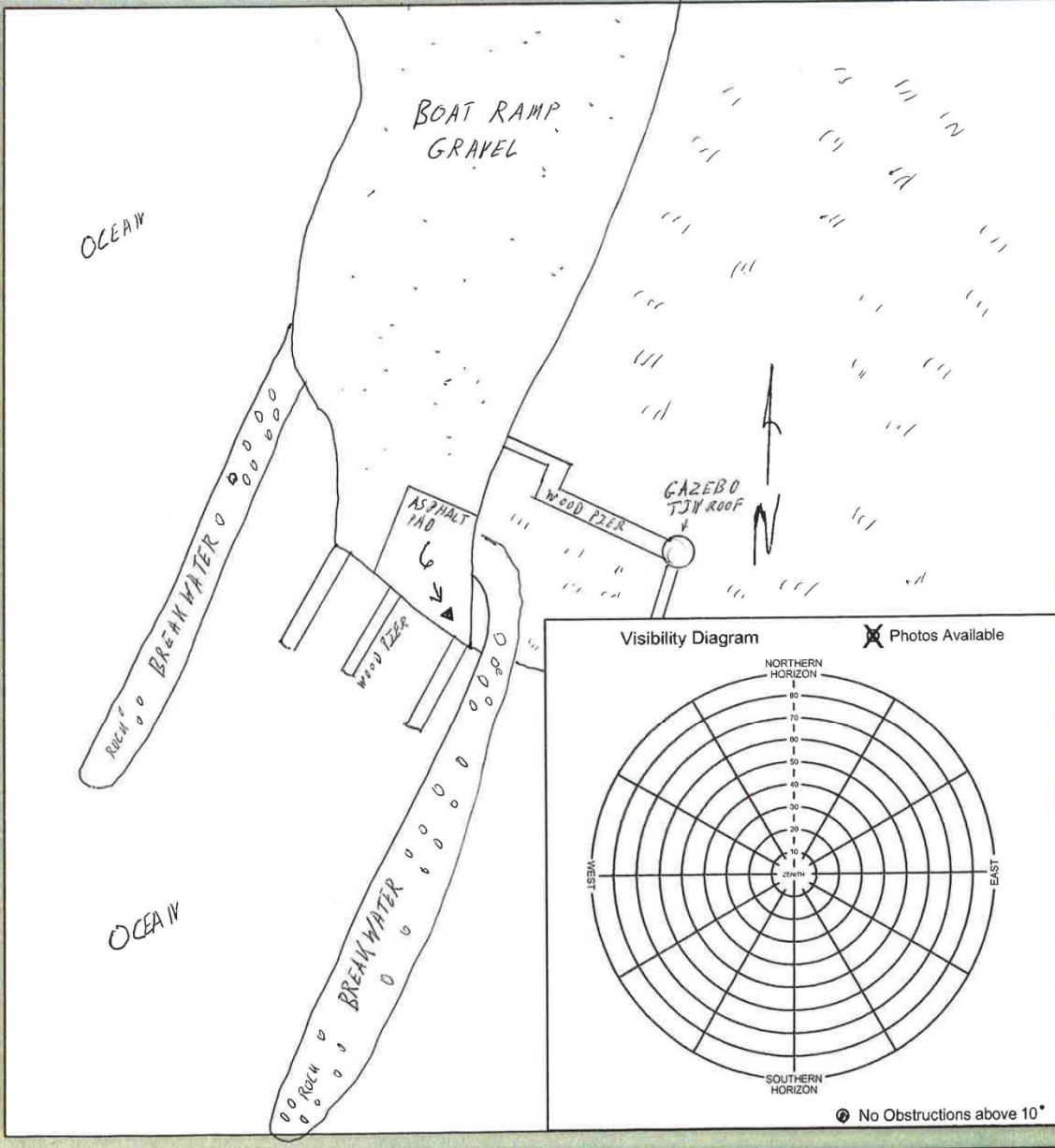


**5, S, 21FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point #	6	General location	GULF PARK ESTATES, MS	Airport LID	
Latitude	N 30 ° 21 ' 38.74 "	Longitude	W 88 ° 45 ' 51.17 "	Calendar Date	2 12/31/2015
				Observer Initials	DJK





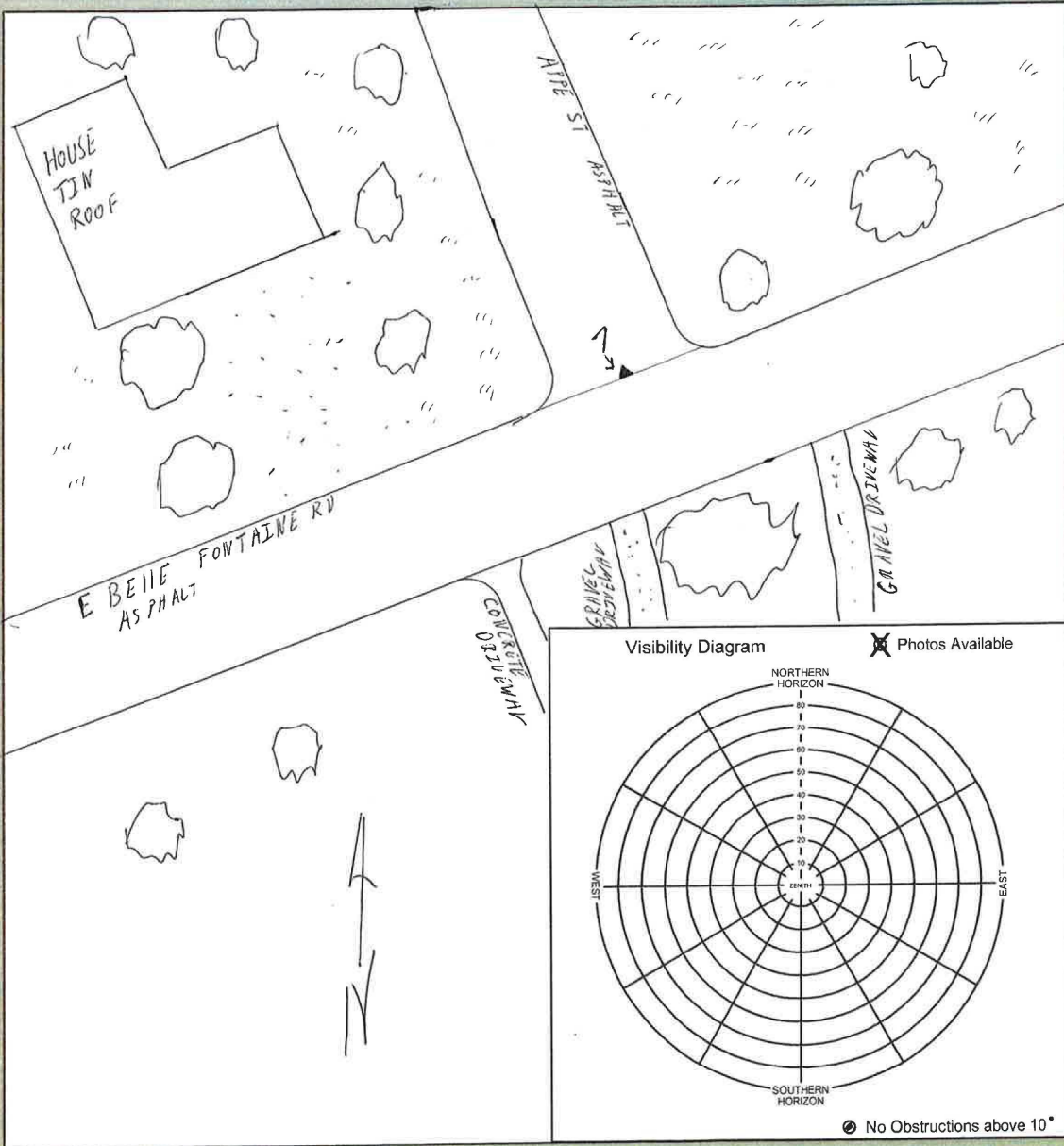
**6, S, 23FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 7	General location GULF PARK ESTATES, MS	Airport LID
Latitude N 30° 21' 0.79"	Longitude W 88° 41' 26.55"	Calendar Date 2/23/2015
		Observer Initials DJK



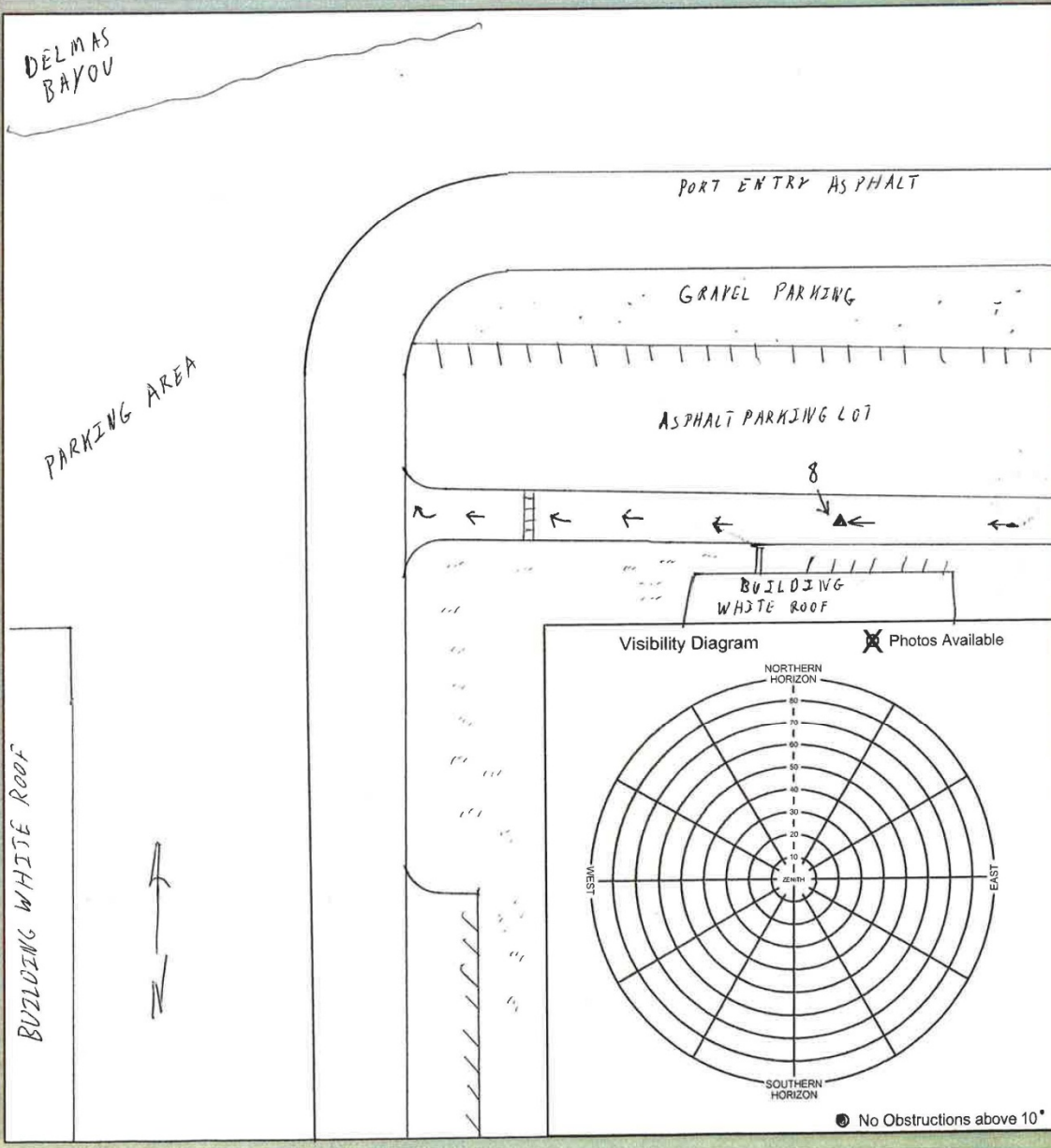


**7, S, 23FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 8	General location PASCAGOULA, MS	Airport LID
Latitude N 30° 21' 21.05"	Longitude W 88° 34' 37.65"	Calendar Date 2/23/2015
		Observer Initials DJK



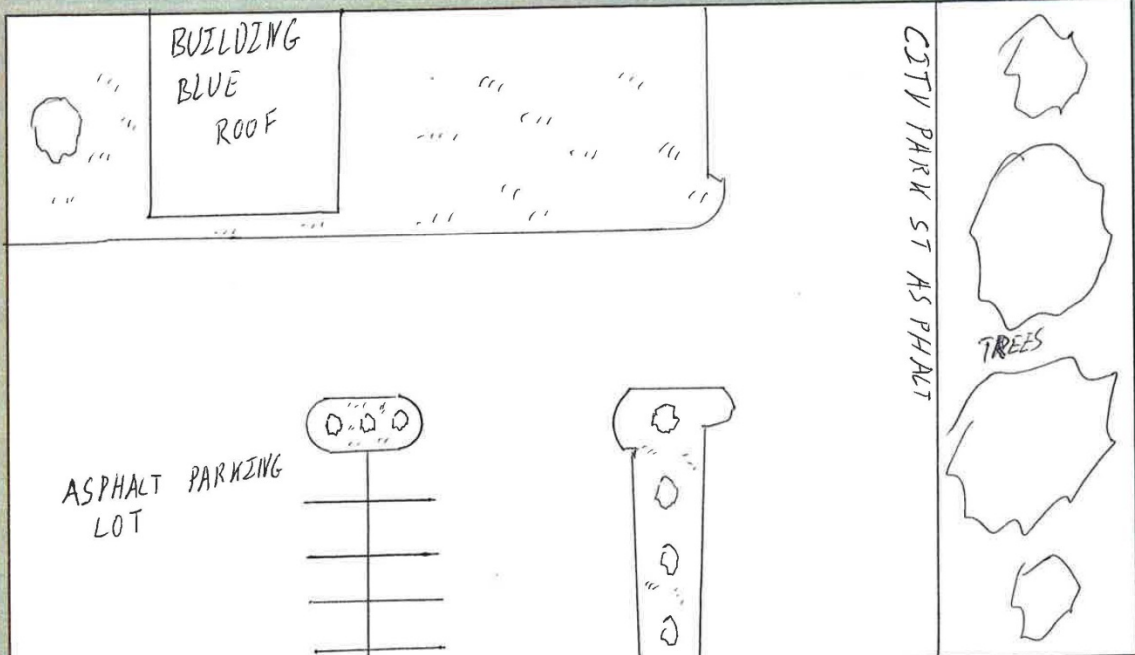


**8, W, 23FEB2015**

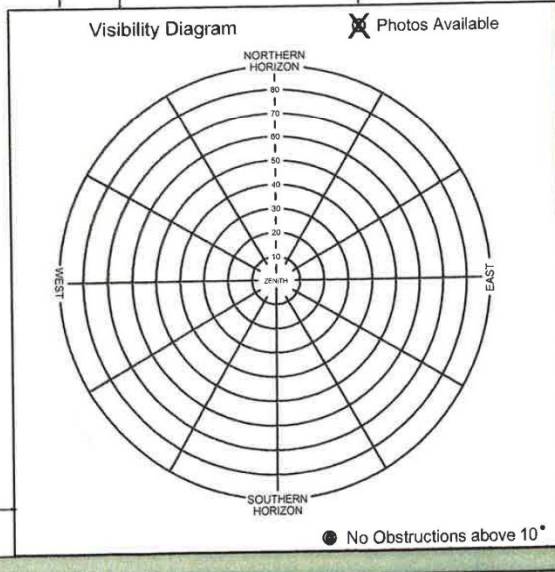
# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point #	9	General location	PASCAGOULA, MS	Airport LID	
Latitude	N 30° 20' 41.13 "	Longitude	W 88° 32' 22.9 "	Calendar Date	2/23/2015
				Observer Initials	DJK



ASPHALT PARKING LOT



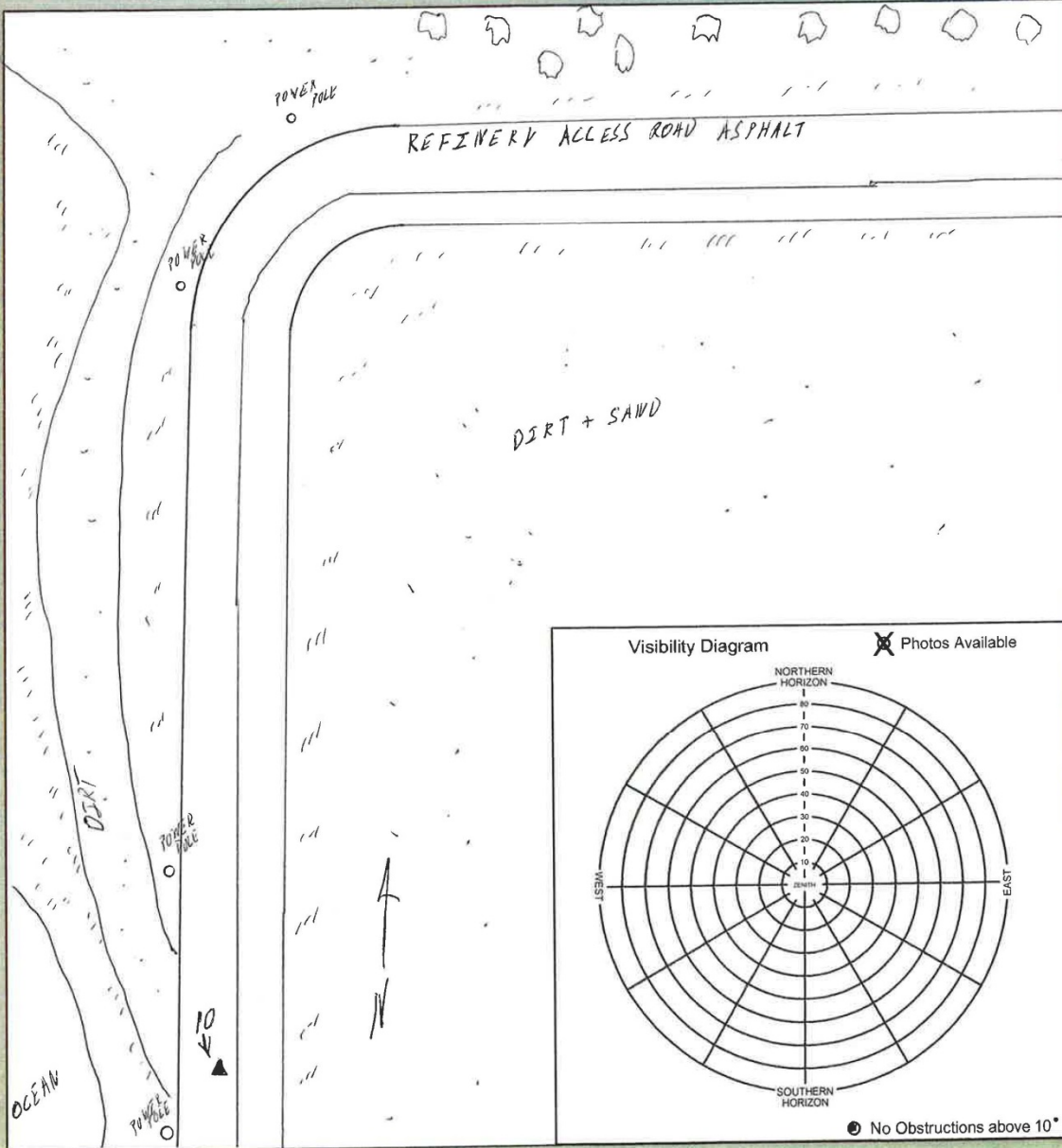


**9, W, 23FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>10</b>	General location <b>PASCAGOULA, MS</b>	Airport LID
Latitude <b>N 30° 19' 37.73"</b>	Longitude <b>W 88° 30' 20.70"</b>	Calendar Date <b>2/23/2015</b>
		Observer Initials <b>DJK</b>





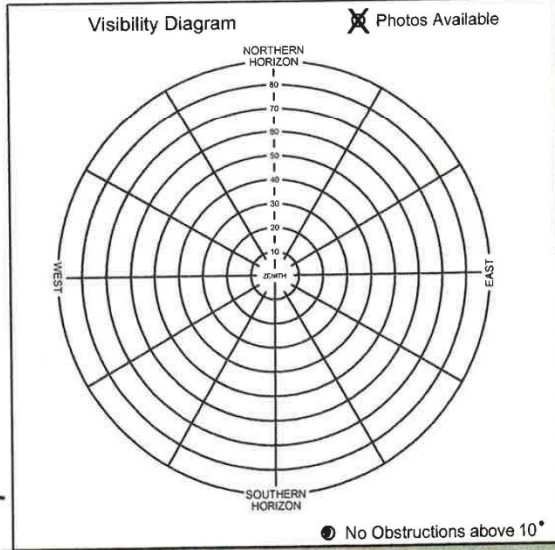
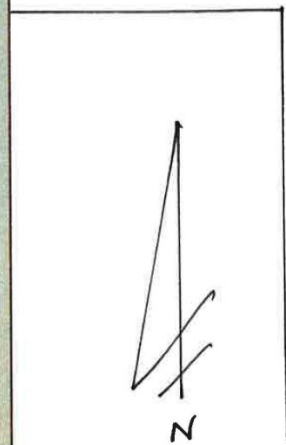
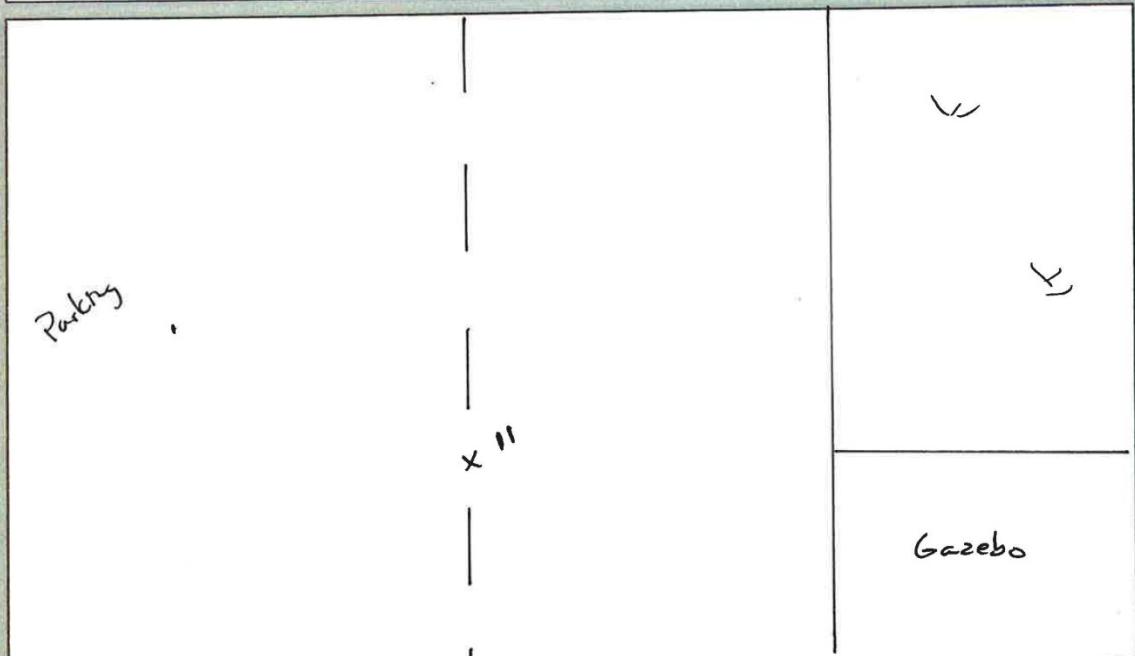
**10, N, 23FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>11</b>	General location <b>Bogalusa, LA</b>	Airport LID
Latitude <b>N 30° 42' 12"</b>	Longitude <b>W 89° 50' 52"</b>	Calendar Date <b>2/19/15</b>
		Observer Initials <b>DJK</b>



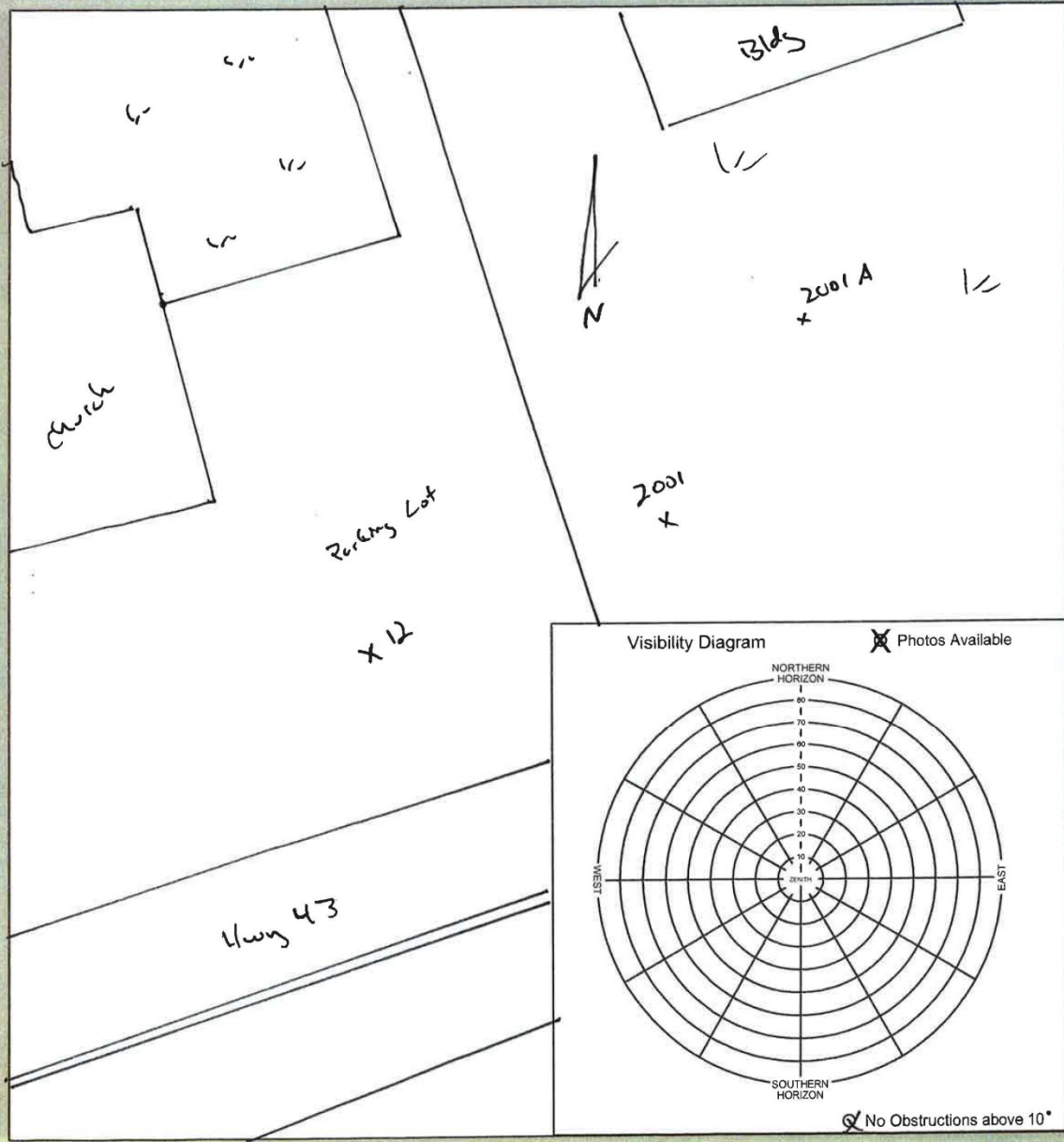


**11, S, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 12	General location Poplarville MS	Airport LID	
Latitude N 30° 49' 10" "	Longitude W 89° 45' 58" "	Calendar Date 2/19/15	Observer Initials DJK



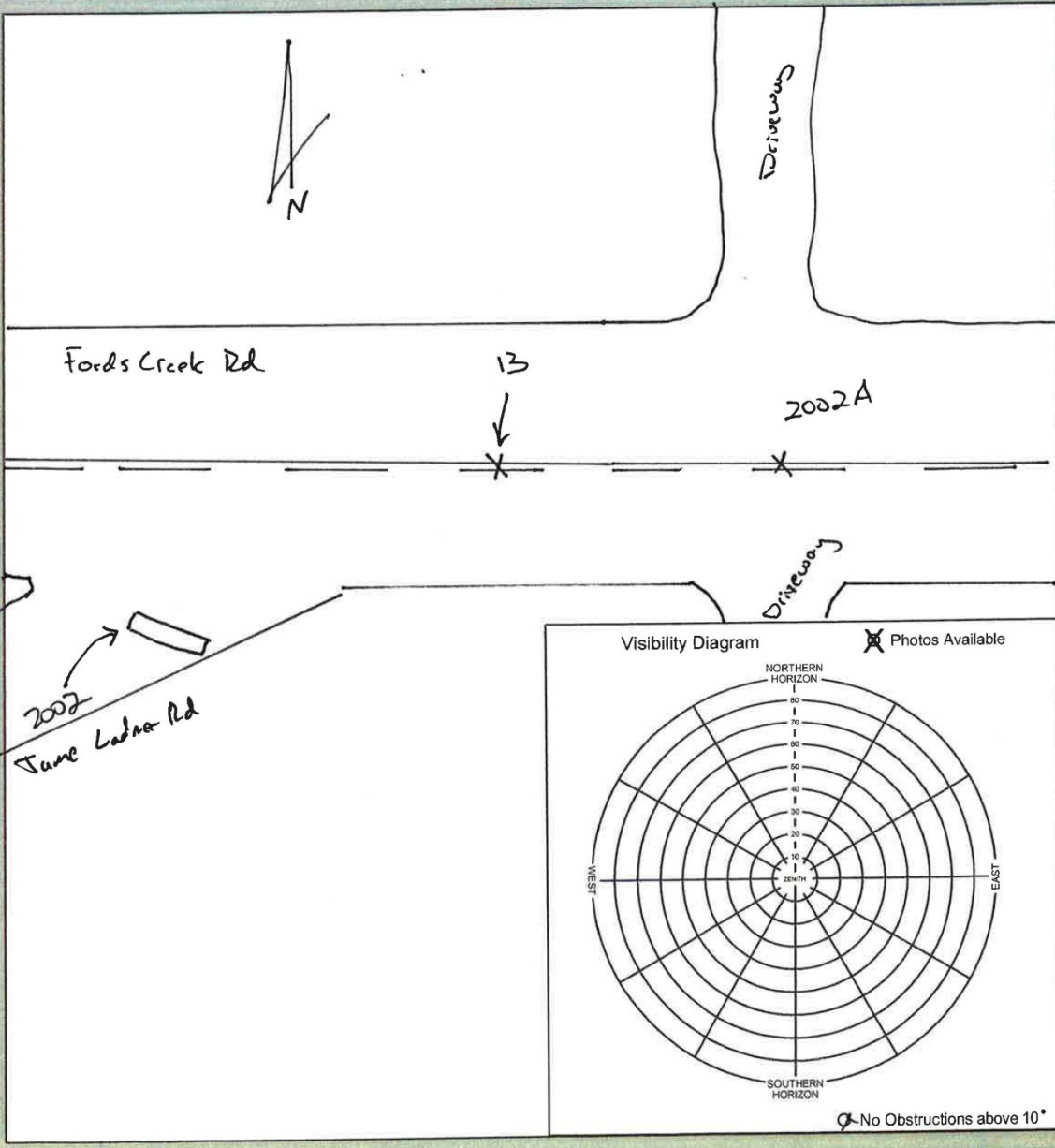


**12, W, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 13	General location Fords Creek, MS	Airport LID
Latitude N 30° 56' 56" "	Longitude W 89° 39' 44" "	Calendar Date 2/19/15
		Observer Initials DJK





**13, W, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>14</b>	General location <b>Poplarville MS</b>	Airport LID	
Latitude <b>N 30 ° 50 ' 59 "</b>	Longitude <b>W 89 ° 32 ' 37 "</b>	Calendar Date <b>2 / 19 / 15</b>	Observer Initials <b>DJK</b>

14 end of white line

School Parkings

N

Visibility Diagram  Photos Available

No Obstructions above 10\*



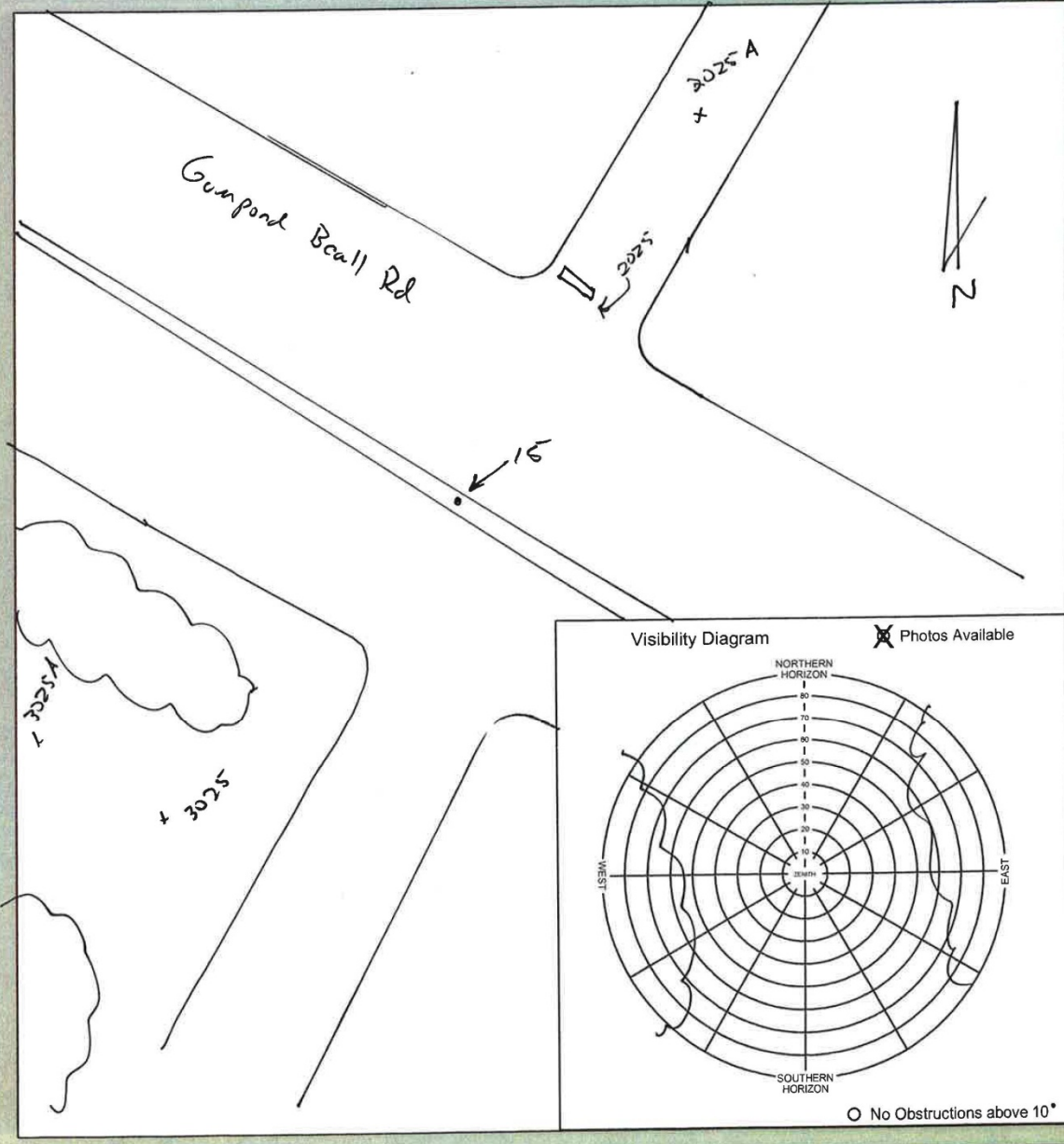
**14, N, 19FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>15</b>	General location <b>Lumberton MS</b>	Airport LID	
Latitude <b>N 30 ° 58 ' 36 "</b>	Longitude <b>W 89 ° 25 ' 37 "</b>	Calendar Date <b>2 / 19 / 15</b>	Observer Initials <b>DJK</b>



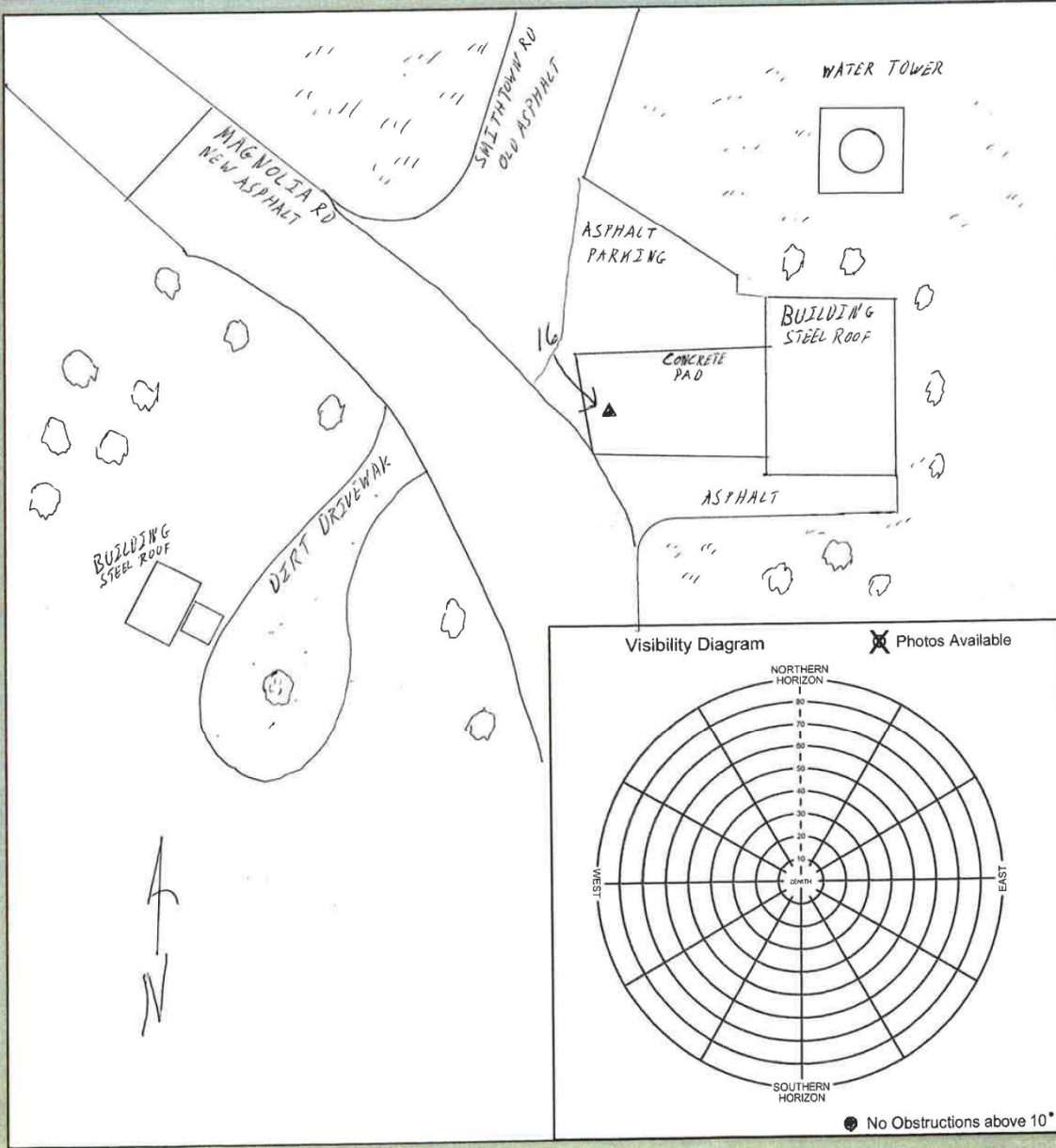


**15, N, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>16</b>	General location <b>WIGGINS, MS</b>	Airport LID
Latitude <b>N 30° 49' 5.16 "</b>	Longitude <b>W 89° 18' 11.81 "</b>	Calendar Date <b>2/22/2015</b>
		Observer Initials <b>DJK</b>



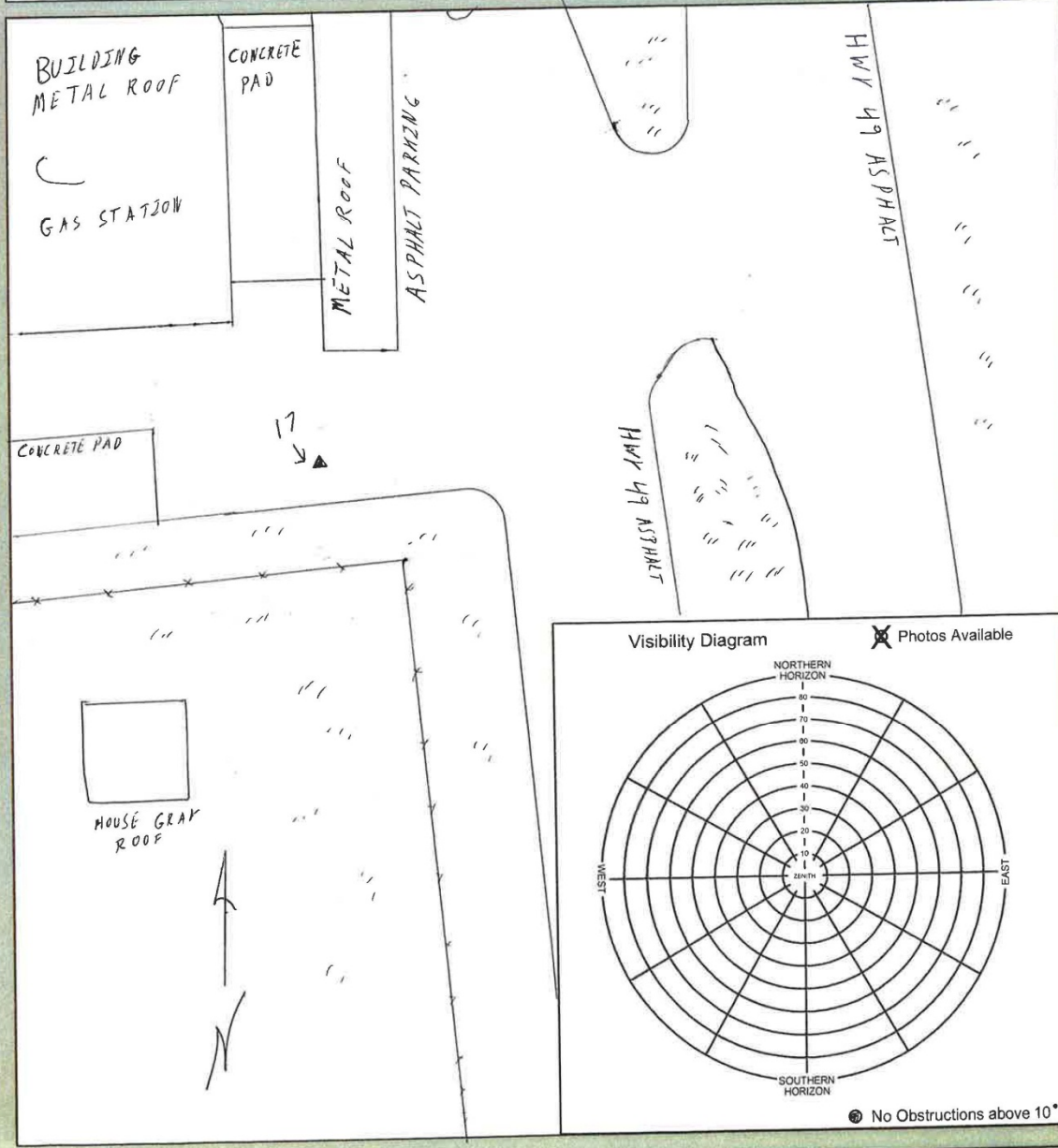


**16, E, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>17</b>	General location <b>WIGGINS MS</b>	Airport LID	
Latitude <b>N 30° 54' 26.36"</b>	Longitude <b>W 89° 10' 12.98"</b>	Calendar Date <b>2 12/2015</b>	Observer Initials <b>DJK</b>



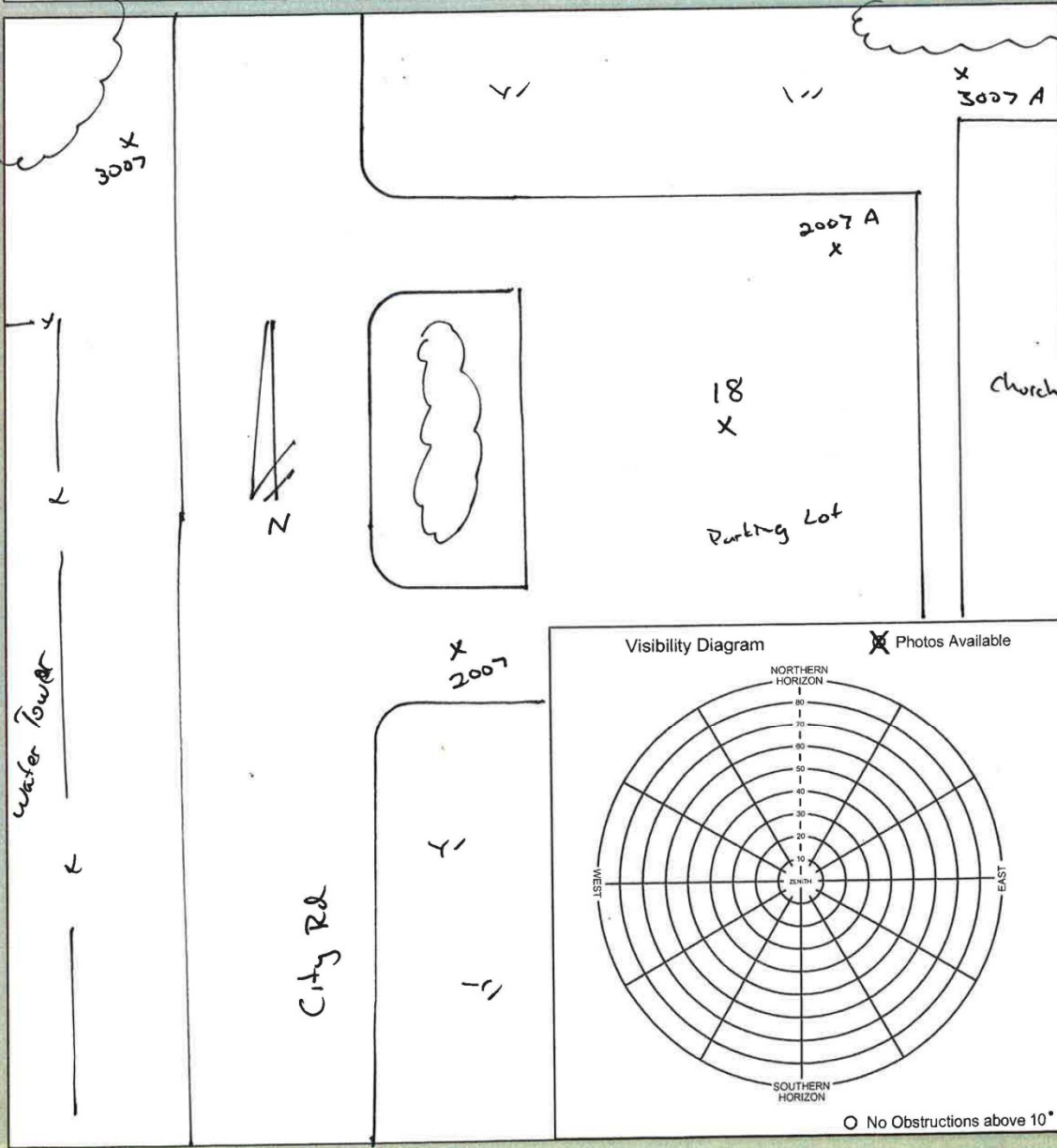


**17, W, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>18</b>	General location <b>Pertinston, MS</b>	Airport LID	
Latitude <b>N 30° 42' 11"</b>	Longitude <b>W 89° 03' 58"</b>	Calendar Date <b>2/21/15</b>	Observer Initials <b>DJK</b>





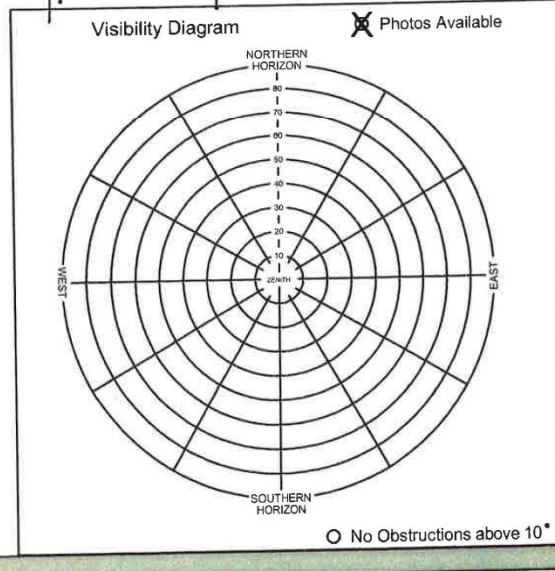
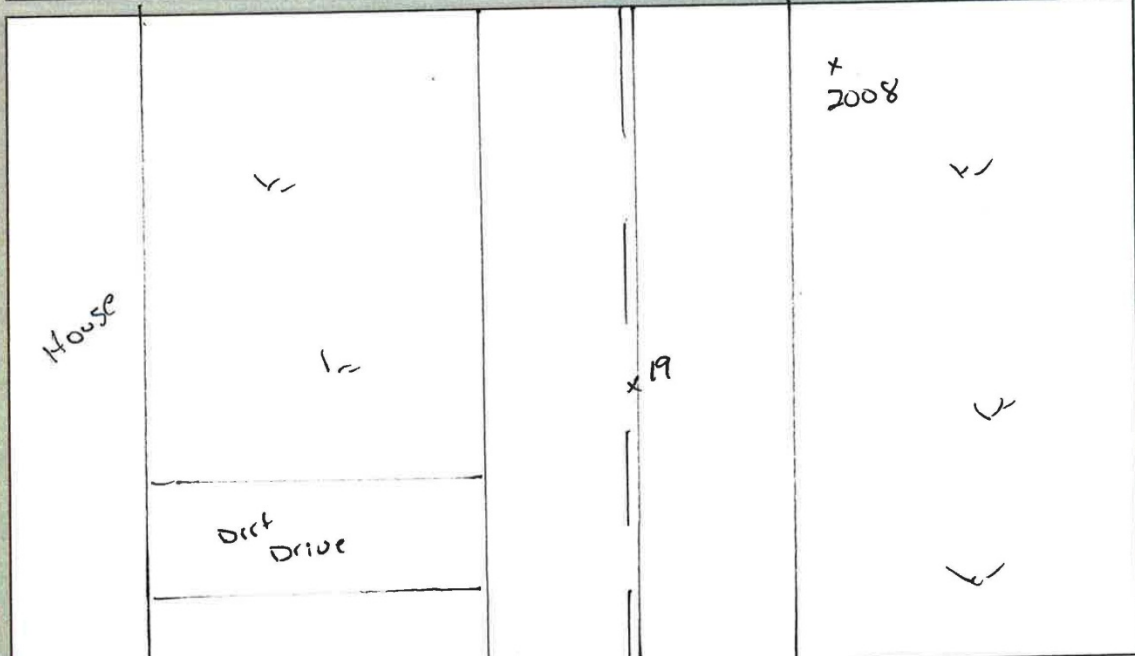
**18, N, 21FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 19	General location Wiggins MS	Airport LID
Latitude N 30° 53' 01 "	Longitude W 88° 54' 36 "	Calendar Date 2/22/15
		Observer Initials DJK



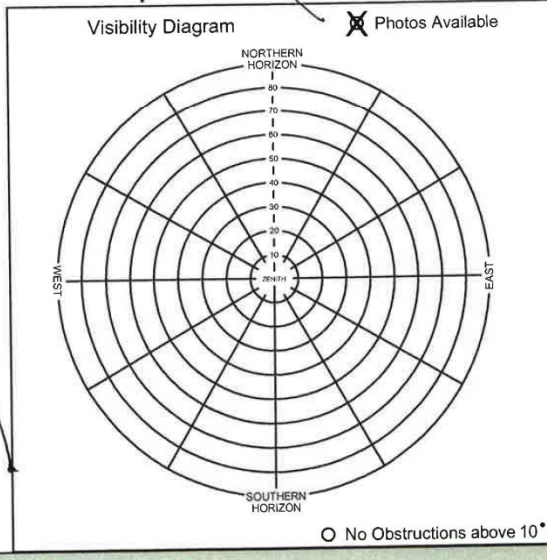
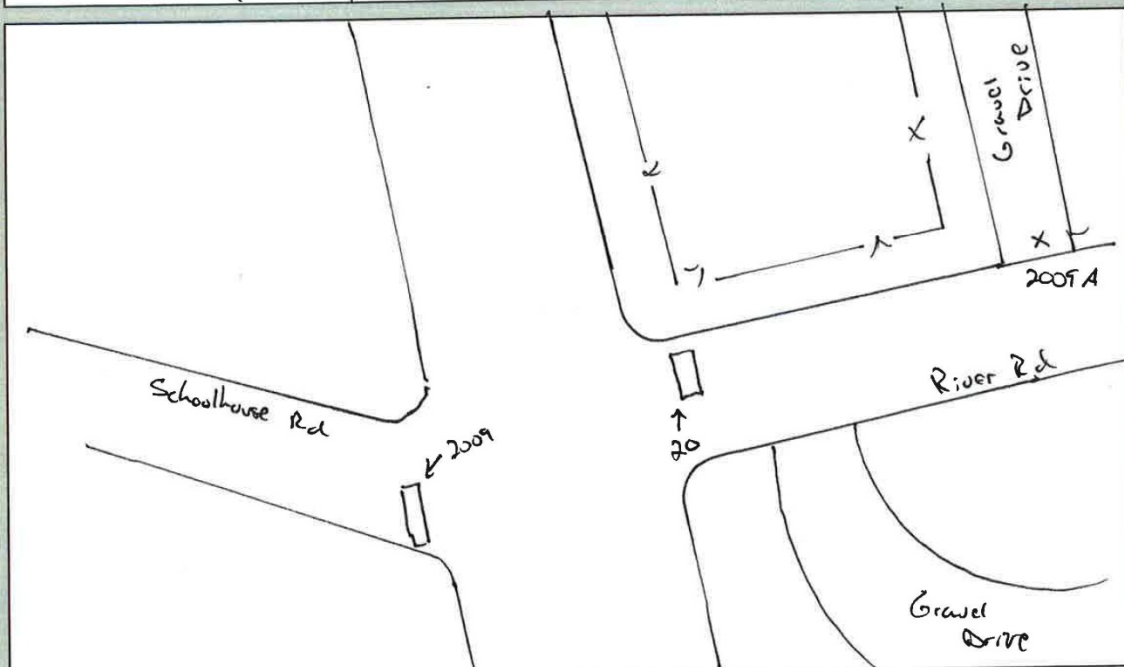


**19, W, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>20</b>	General location <b>Vandœuvre, MS</b>	Airport LID
Latitude <b>N 30° 41' 59" "</b>	Longitude <b>W 88° 44' 23" "</b>	Calendar Date <b>2/23/15</b>
		Observer Initials <b>DJK</b>



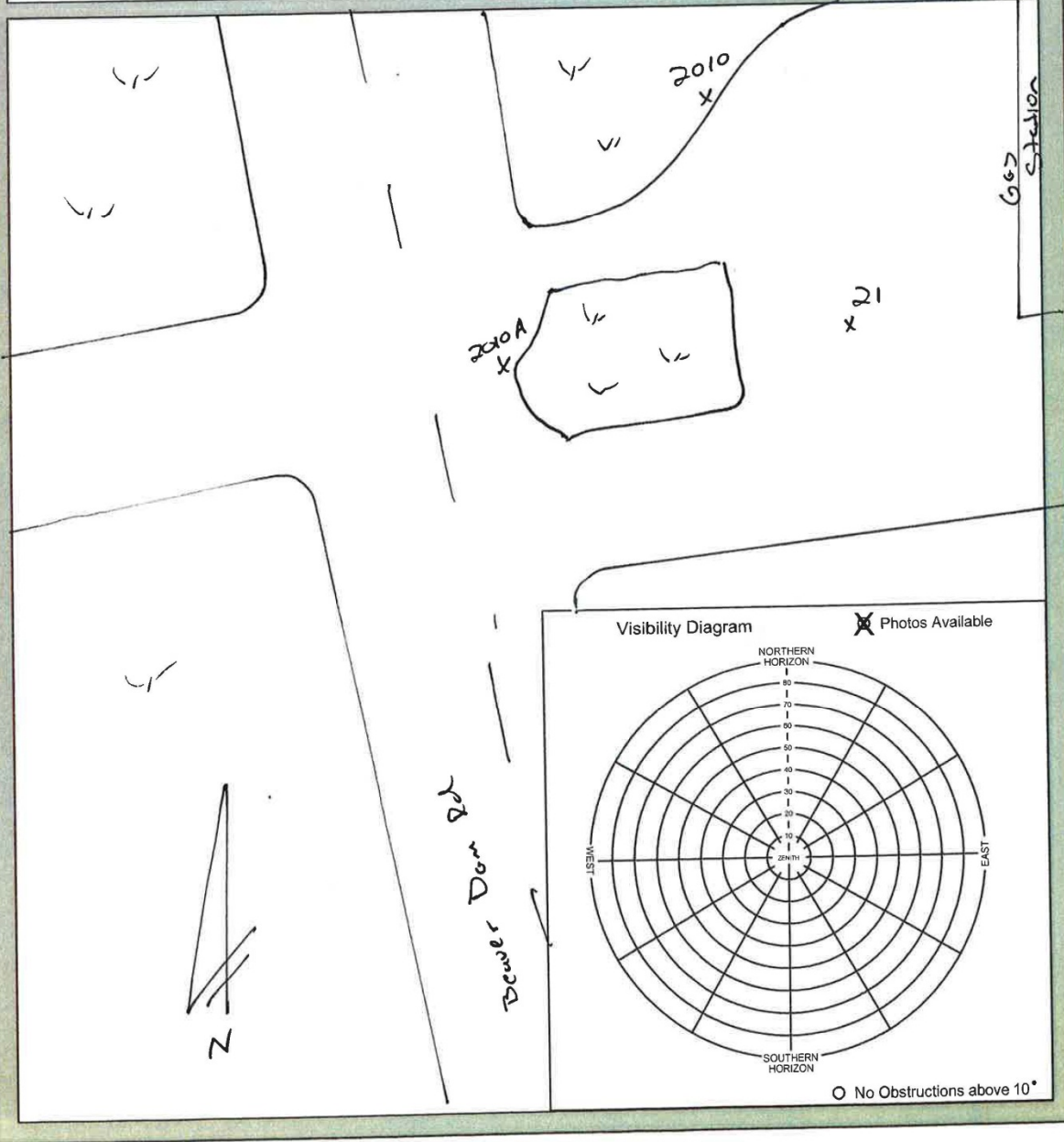


**20, W, 23FEB2014**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>21</b>	General location <b>Lucaedale, MS</b>	Airport LID	
Latitude <b>N 30° 57' 07"</b>	Longitude <b>W 88° 35' 47"</b>	Calendar Date <b>2/22/15</b>	Observer Initials <b>DJK</b>



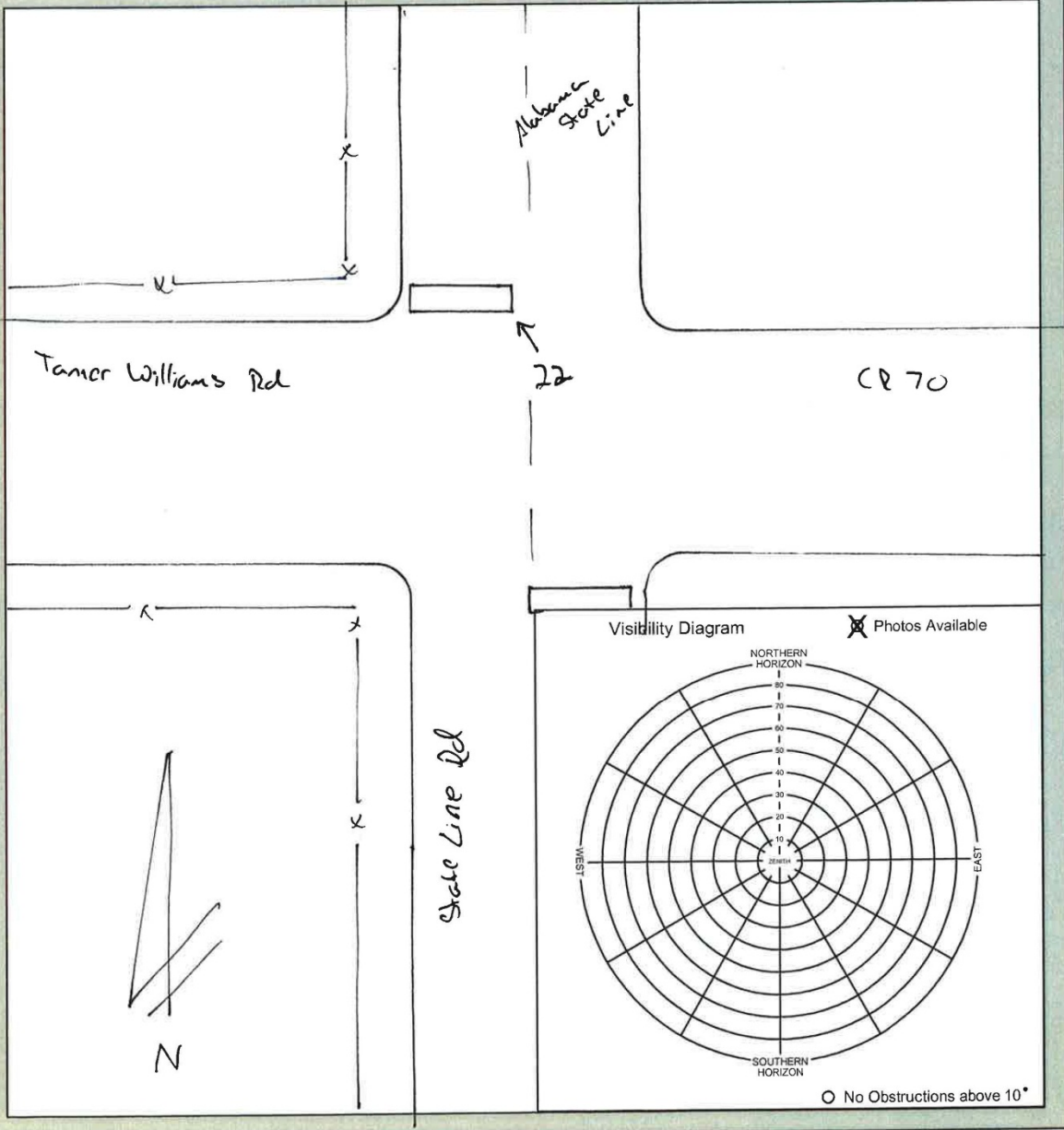


**21, N, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>22</b>	General location <b>Loceadal, MS</b>	Airport LID	
Latitude <b>N 30° 43' 06"</b>	Longitude <b>W 88° 24' 41"</b>	Calendar Date <b>2/23/15</b>	Observer Initials <b>DJK</b>

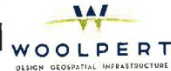




**22, W, 23FEB2014**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 23	General location Moss Point, MS	Airport LID
Latitude N 30° 27' 52" "	Longitude W 88° 28' 54" "	Calendar Date 2/23/15
		Observer Initials DJK

Hyacinth Way

23  
x

3022 A  
x

Sagecine Way

2022  
x

3022  
x

N

Visibility Diagram  Photos Available

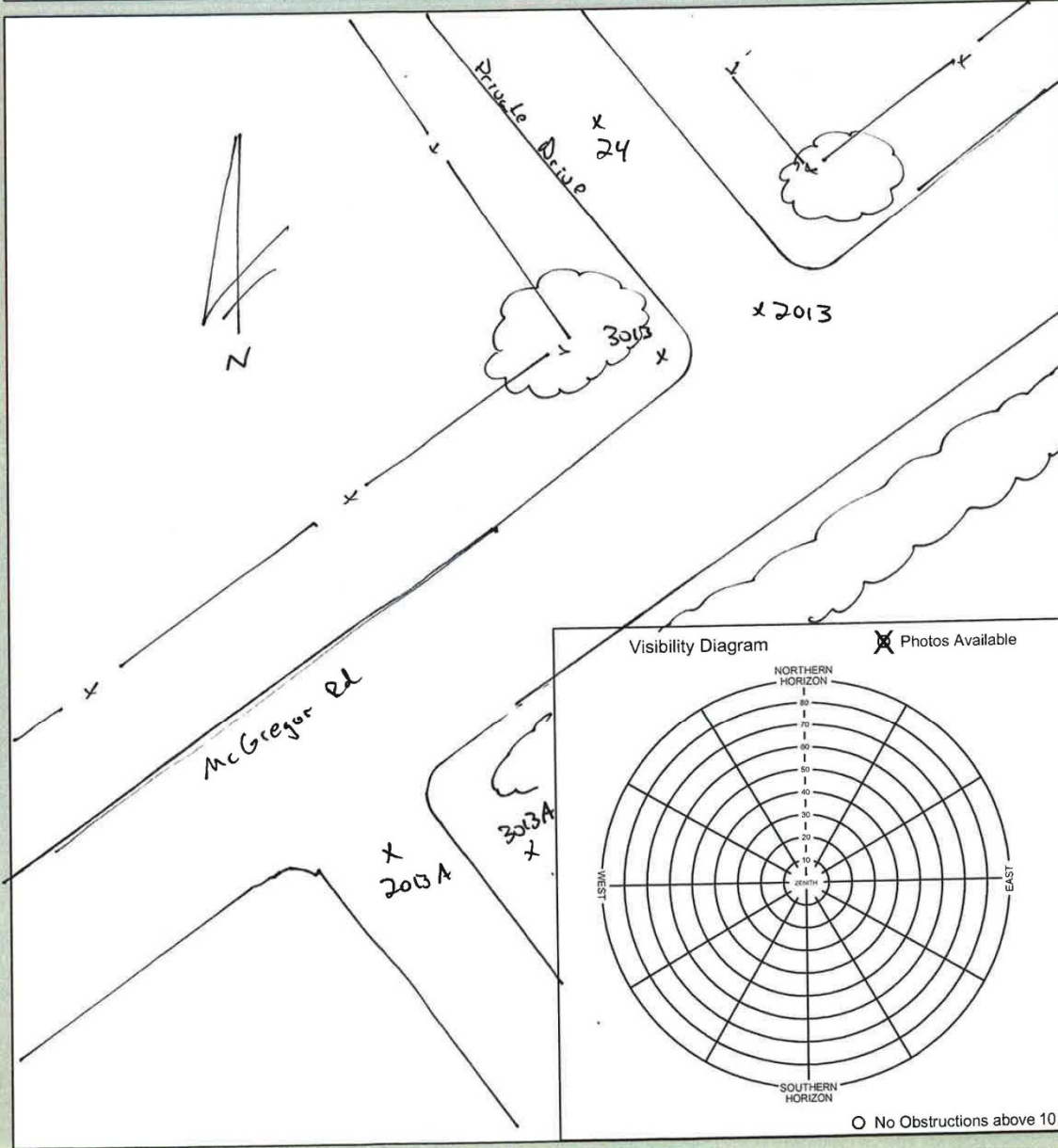


**23, E, 23FEB2014**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>24</b>	General location <b>VanLeve, MS</b>	Airport LID	
Latitude <b>N 30° 34' 38"</b>	Longitude <b>W 88° 40' 41"</b>	Calendar Date <b>2/23/15</b>	Observer Initials <b>DJK</b>



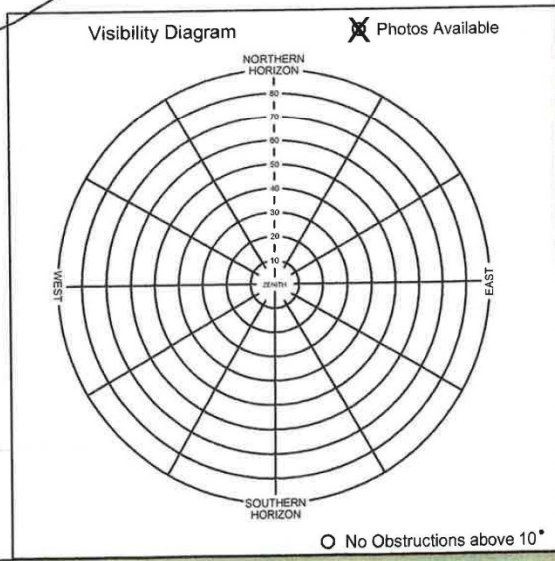
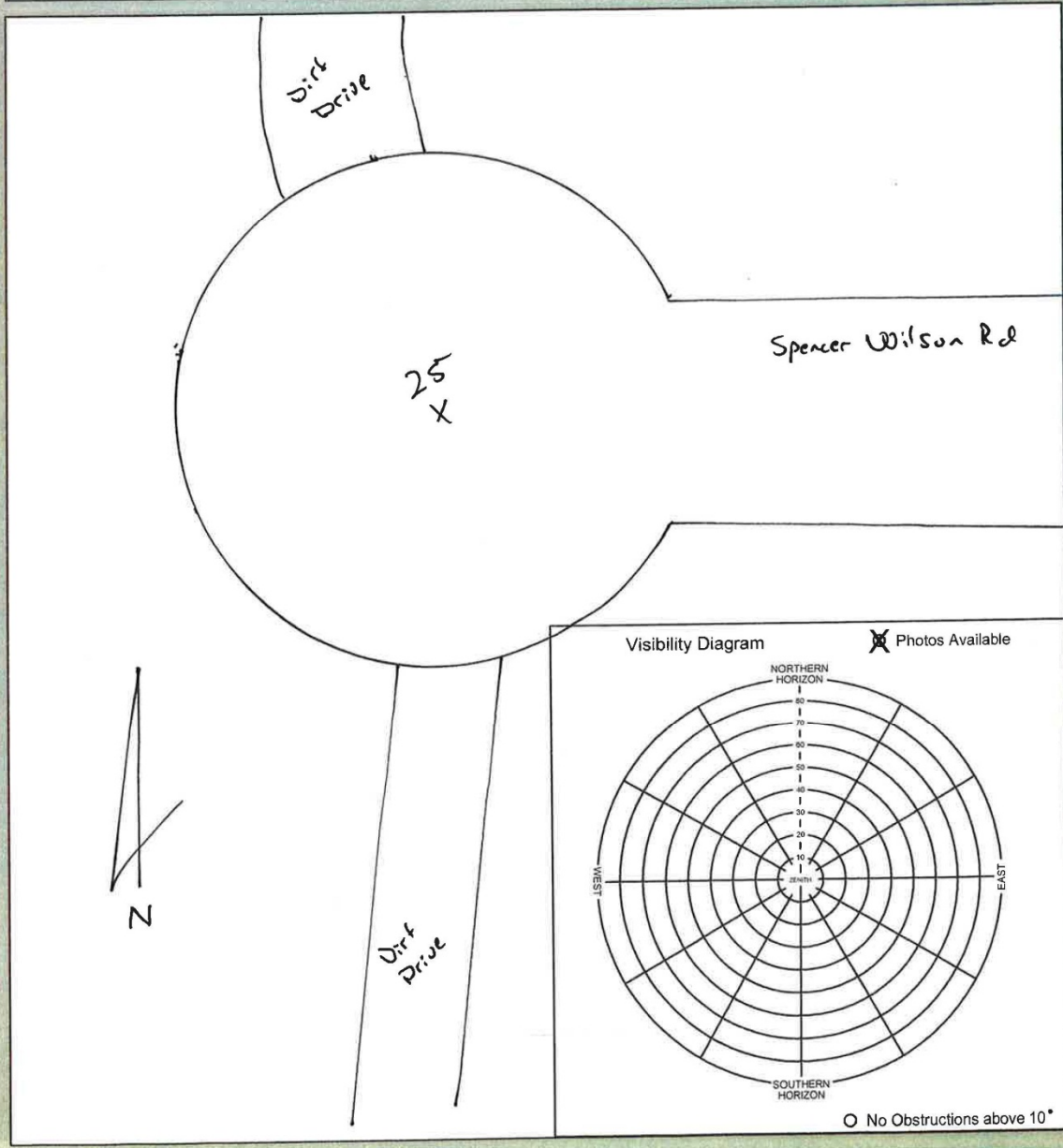


**24, N, 23FEB2014**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>25</b>	General location <b>Vandewee, MS</b>	Airport LID
Latitude <b>N 30° 31' 57" "</b>	Longitude <b>W 88° 49' 42" "</b>	Calendar Date <b>2 / 21 / 15</b>
		Observer Initials <b>DJK</b>



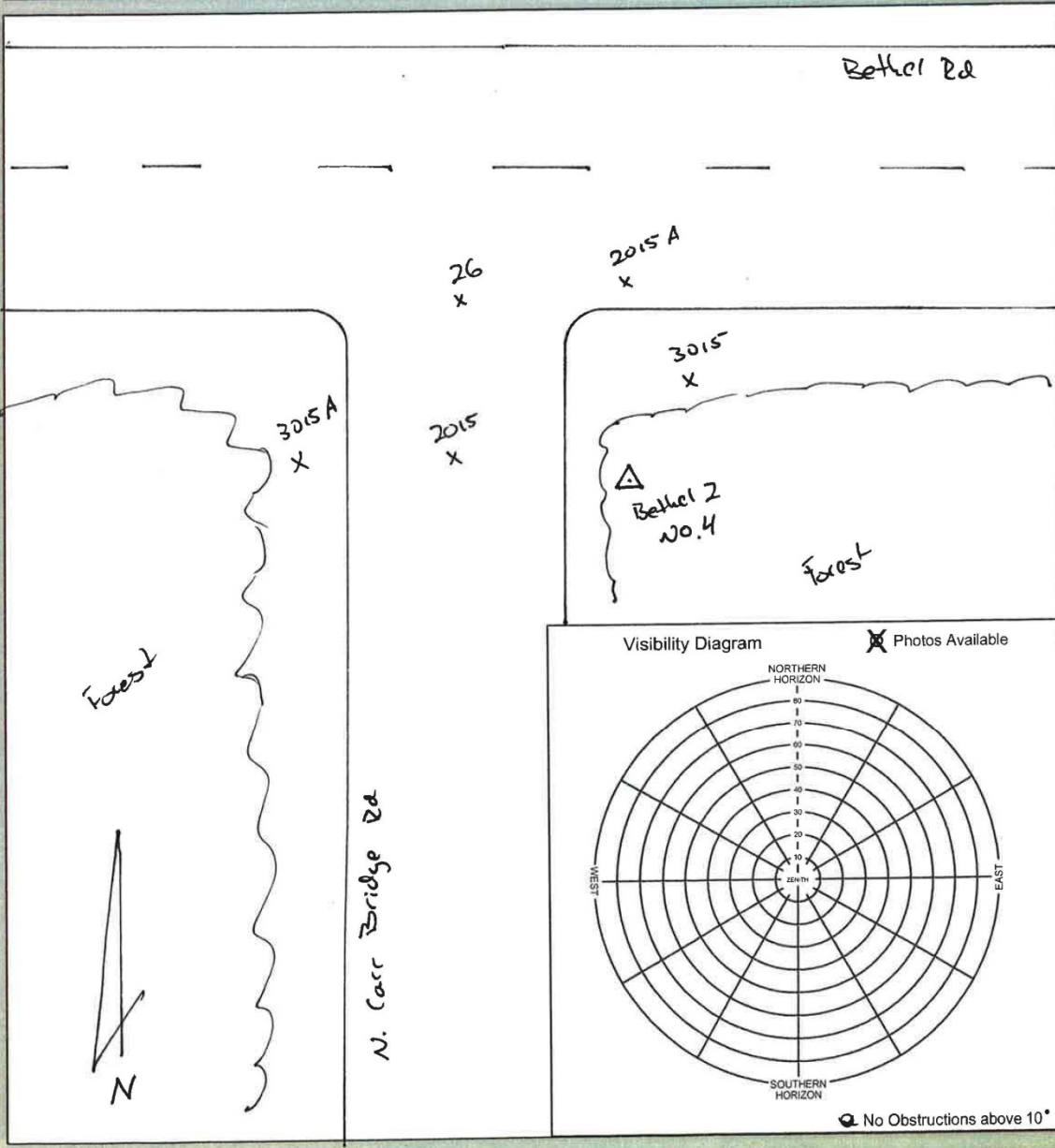


**25, N, 21FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>26</b>	General location <b>Saucier, MS</b>	Airport LID
Latitude <b>N 30° 37' 55" "</b>	Longitude <b>W 88° 58' 30" "</b>	Calendar Date <b>2/21/15</b>
		Observer Initials <b>DJK</b>





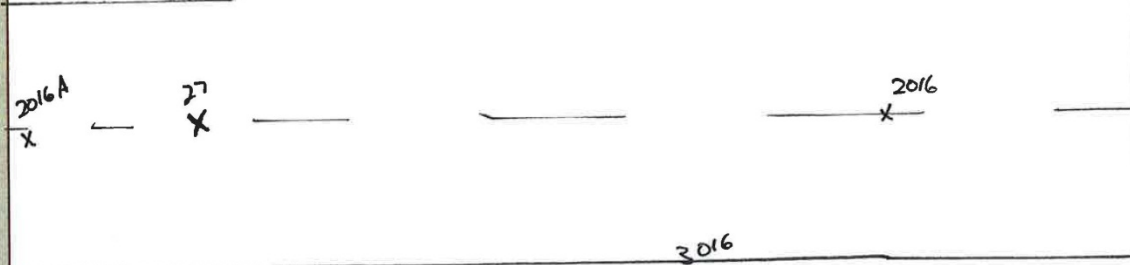
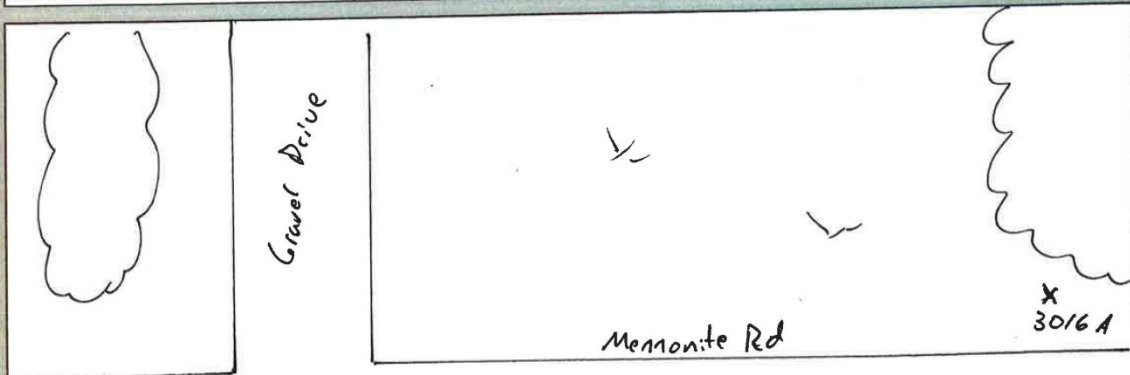
**26, W, 21FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>27</b>	General location <b>Gulf Port MS</b>	Airport LID
Latitude <b>N 30° 30' 00"</b>	Longitude <b>W 89° 12' 51"</b>	Calendar Date <b>2/21/15</b>
		Observer Initials <b>DJK</b>



Hand-drawn sketch of an open field with a north arrow and control points marked 'X'.

open field

N

Visibility Diagram

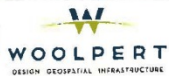
Photos Available

○ No Obstructions above 10°

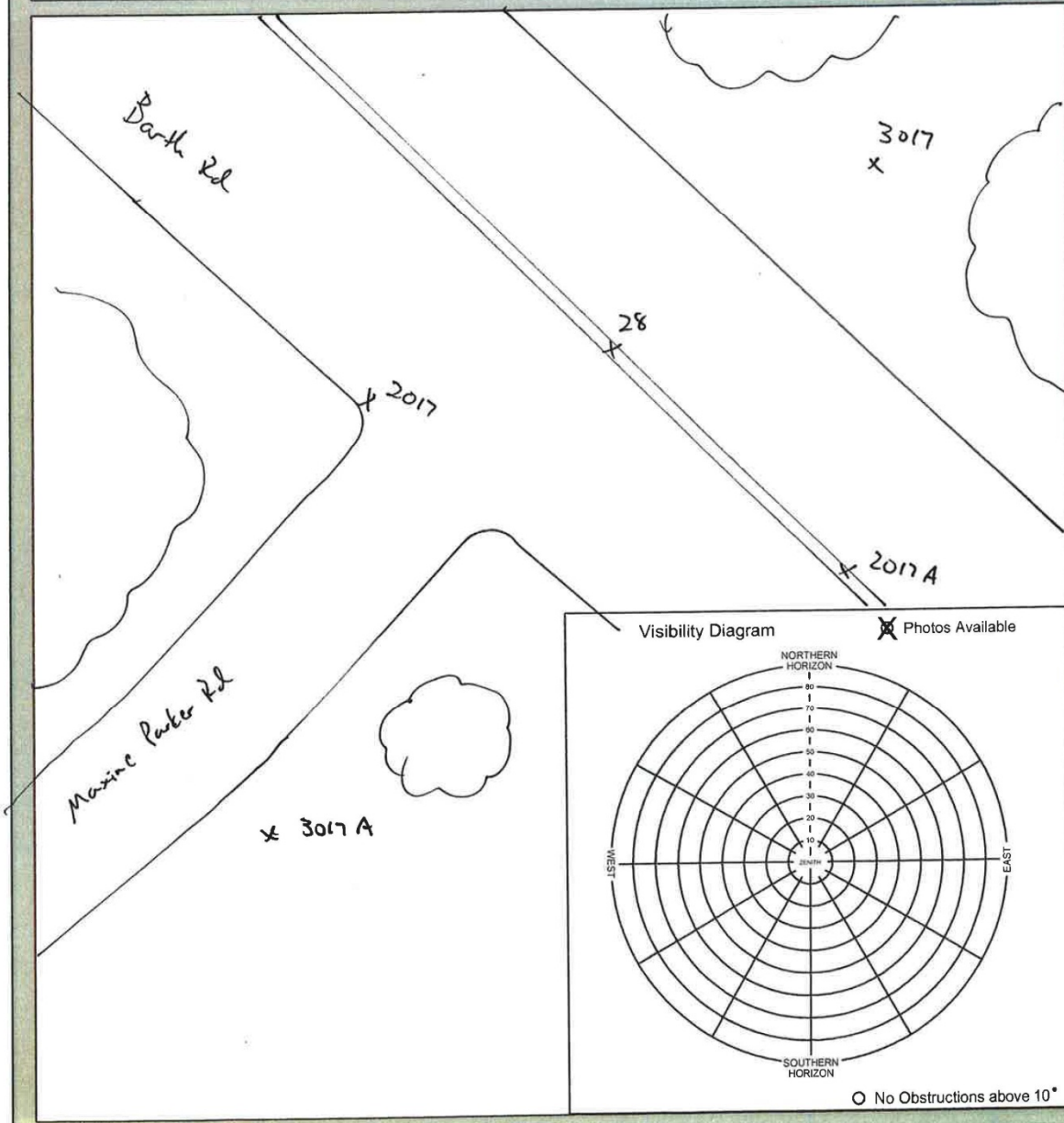


**27, N, 21FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control

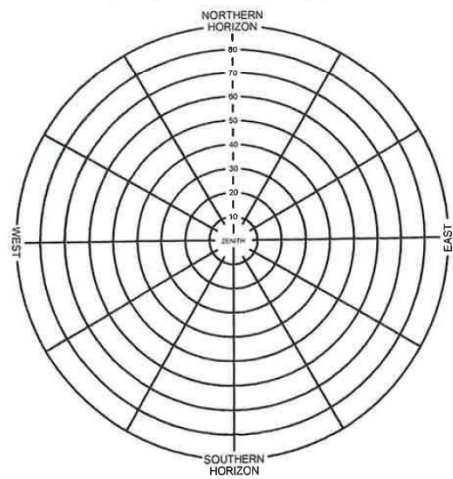


Aerial Control point # <b>28</b>	General location <b>Poplarville MS</b>	Airport LID	
Latitude <b>N 30° 42' 14"</b>	Longitude <b>W 89° 21' 18"</b>	Calendar Date <b>2/19/15</b>	Observer Initials <b>DJK</b>



Visibility Diagram

Photos Available



No Obstructions above 10'

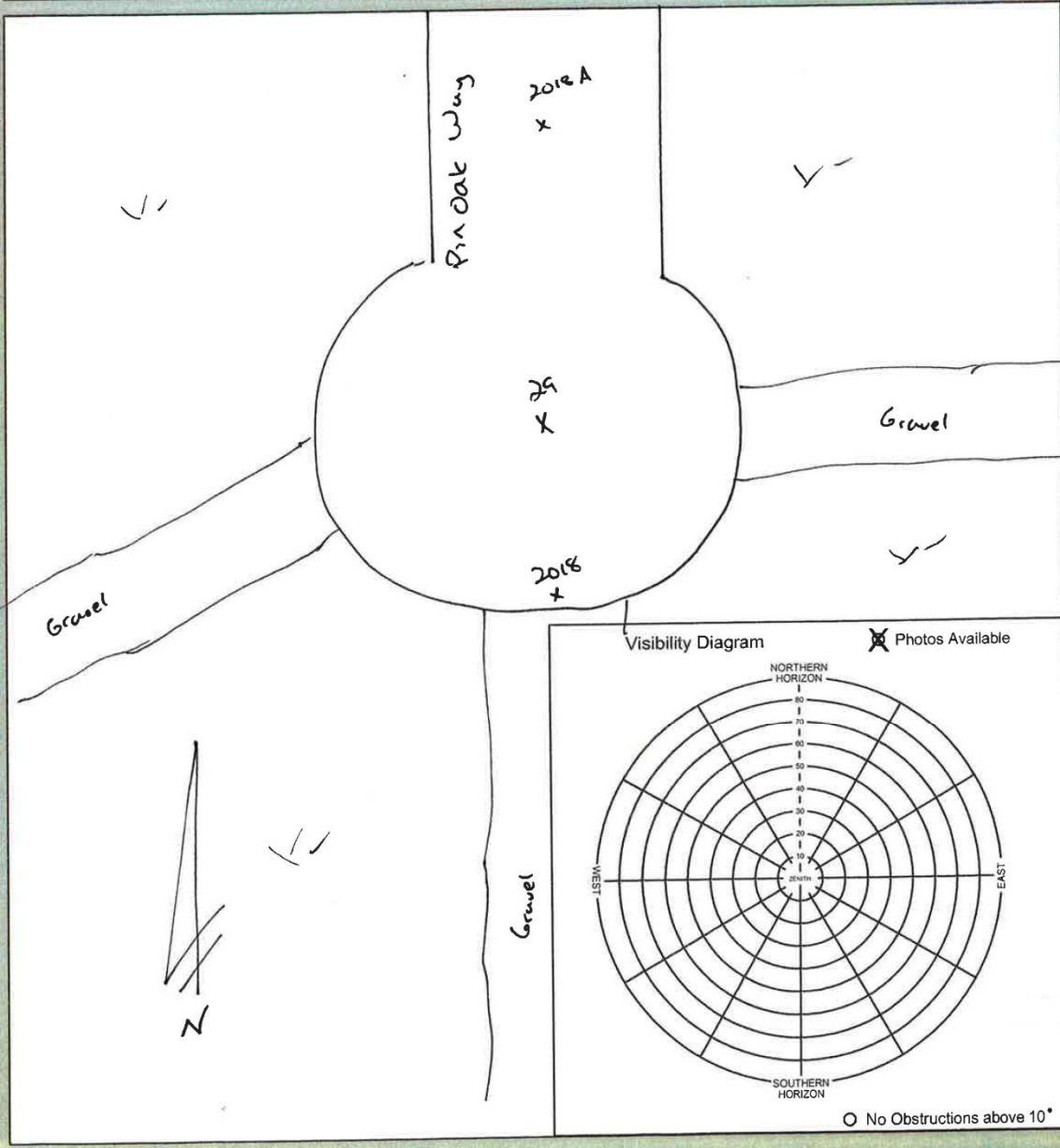


**28, W, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>29</b>	General location <b>Picayune MS</b>	Airport LID
Latitude <b>N 30° 26' 39" "</b>	Longitude <b>W 89° 27' 57" "</b>	Calendar Date <b>2/20/15</b>
		Observer Initials <b>DJK</b>



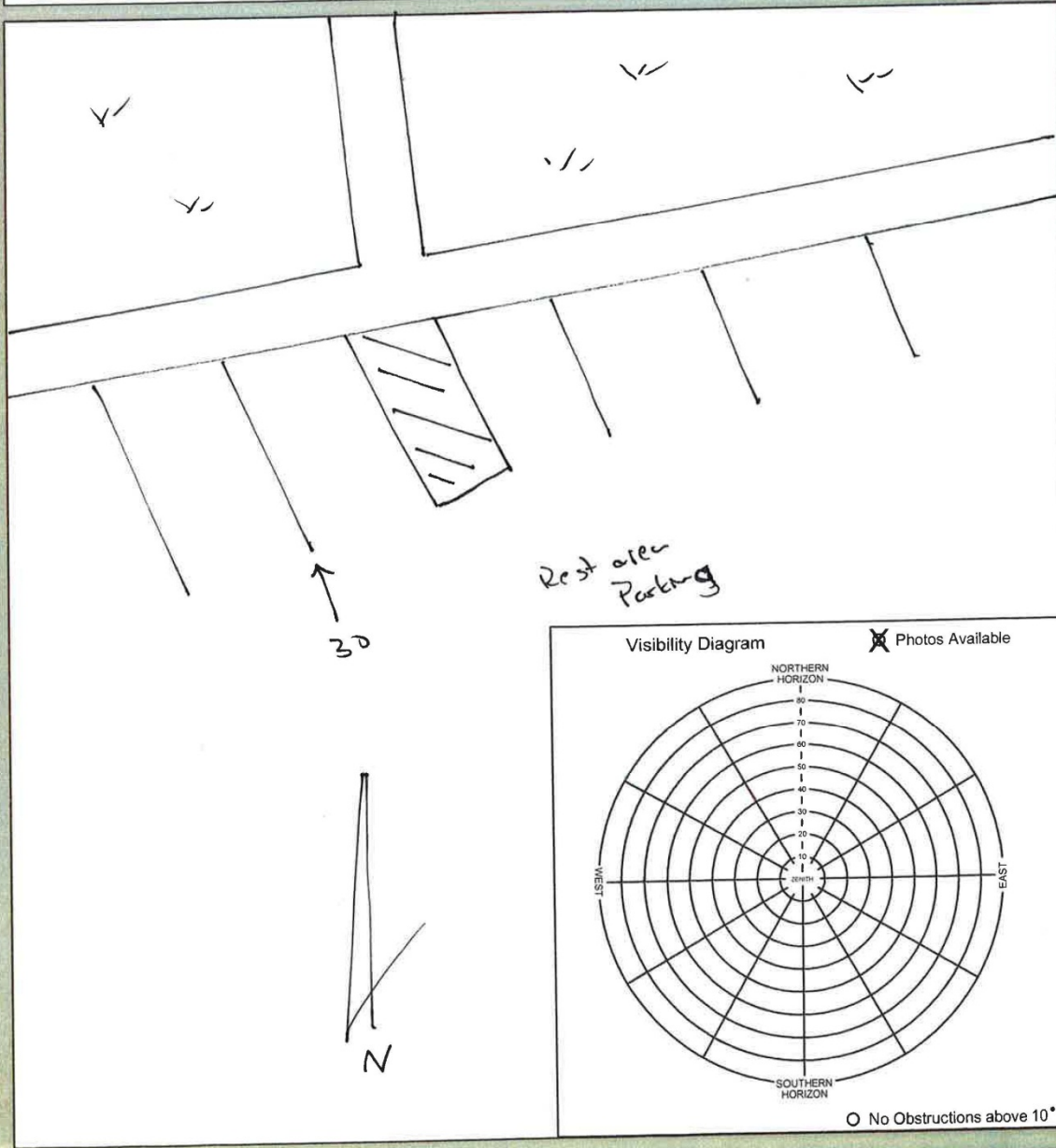


**29, E, 20FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 30	General location Stennis Space Center, MS	Airport LID
Latitude N 30° 18' 49"	Longitude W 89° 35' 57"	Calendar Date 2/20/15
		Observer Initials DJK





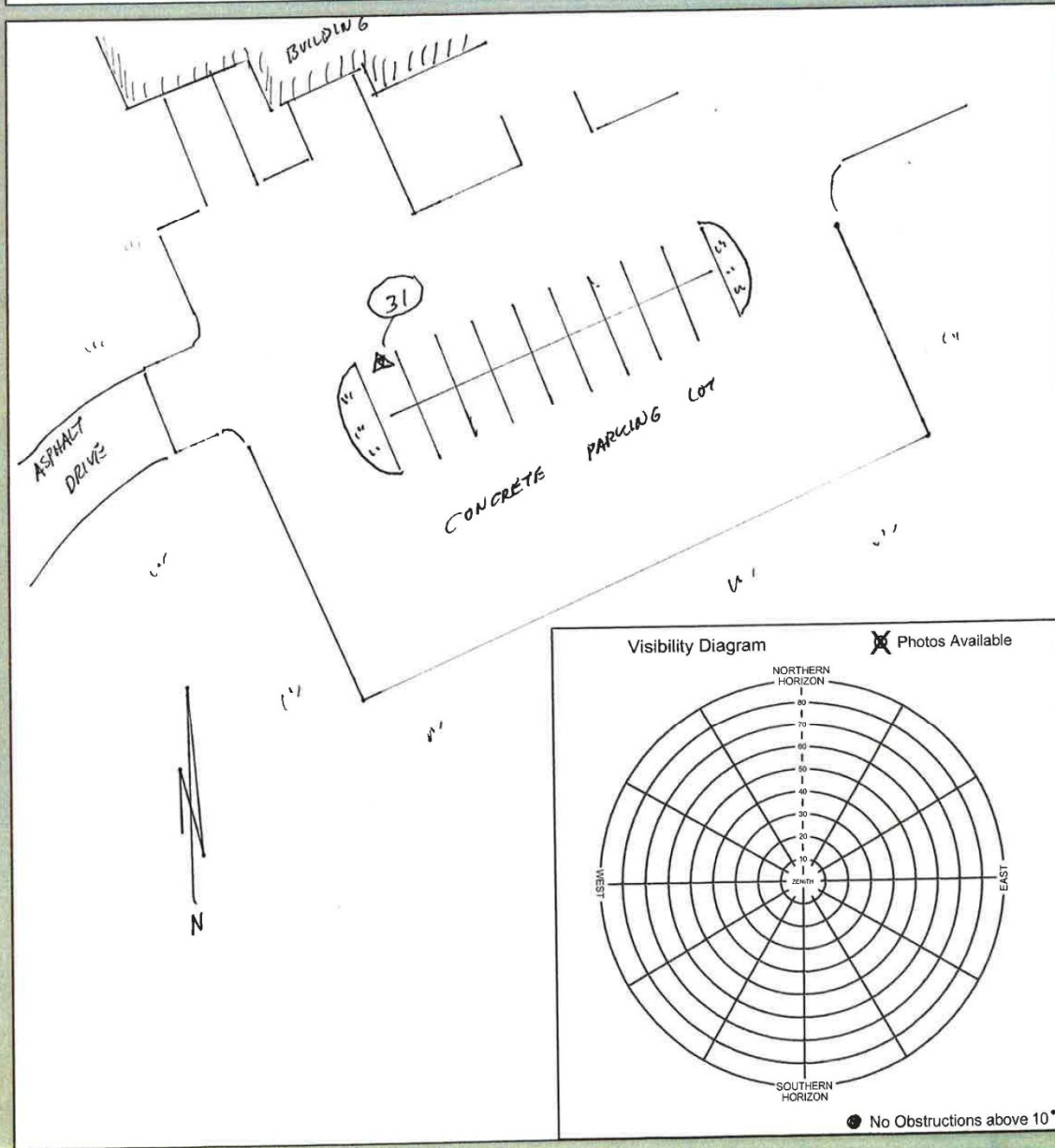
**30, W, 20FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>31</b>	General location <b>DERBY, MS</b>	Airport LID	
Latitude <b>N 30° 43' 25"</b>	Longitude <b>W 89° 34' 59"</b>	Calendar Date <b>02 19 15</b>	Observer Initials <b>DJK</b>



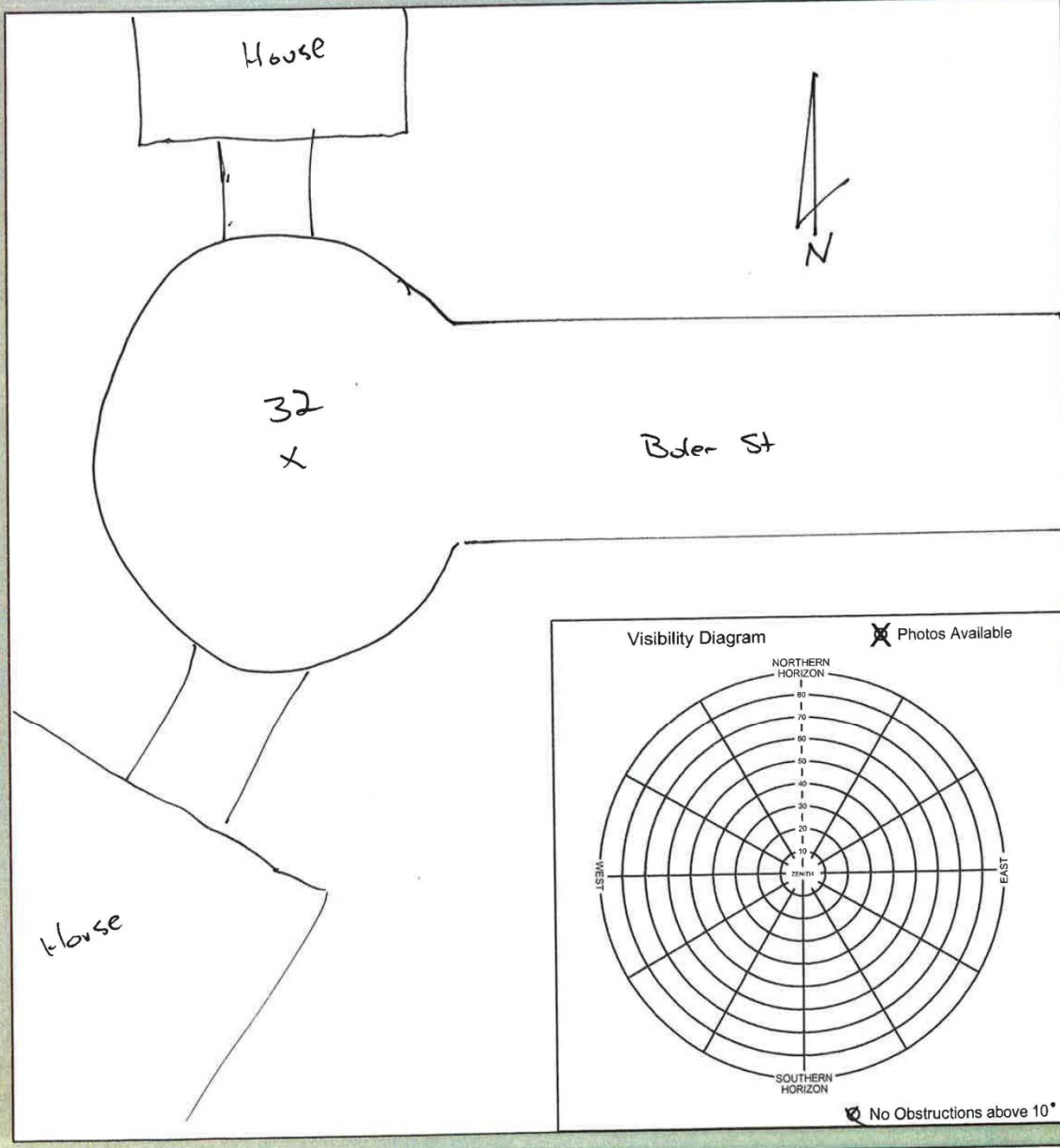


**31, N, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>32</b>	General location <b>Picayune, MS</b>	Airport LID
Latitude <b>N 30° 31' 19"</b>	Longitude <b>W 89° 41' 34"</b>	Calendar Date <b>2/29/15</b>
		Observer Initials <b>DJK</b>



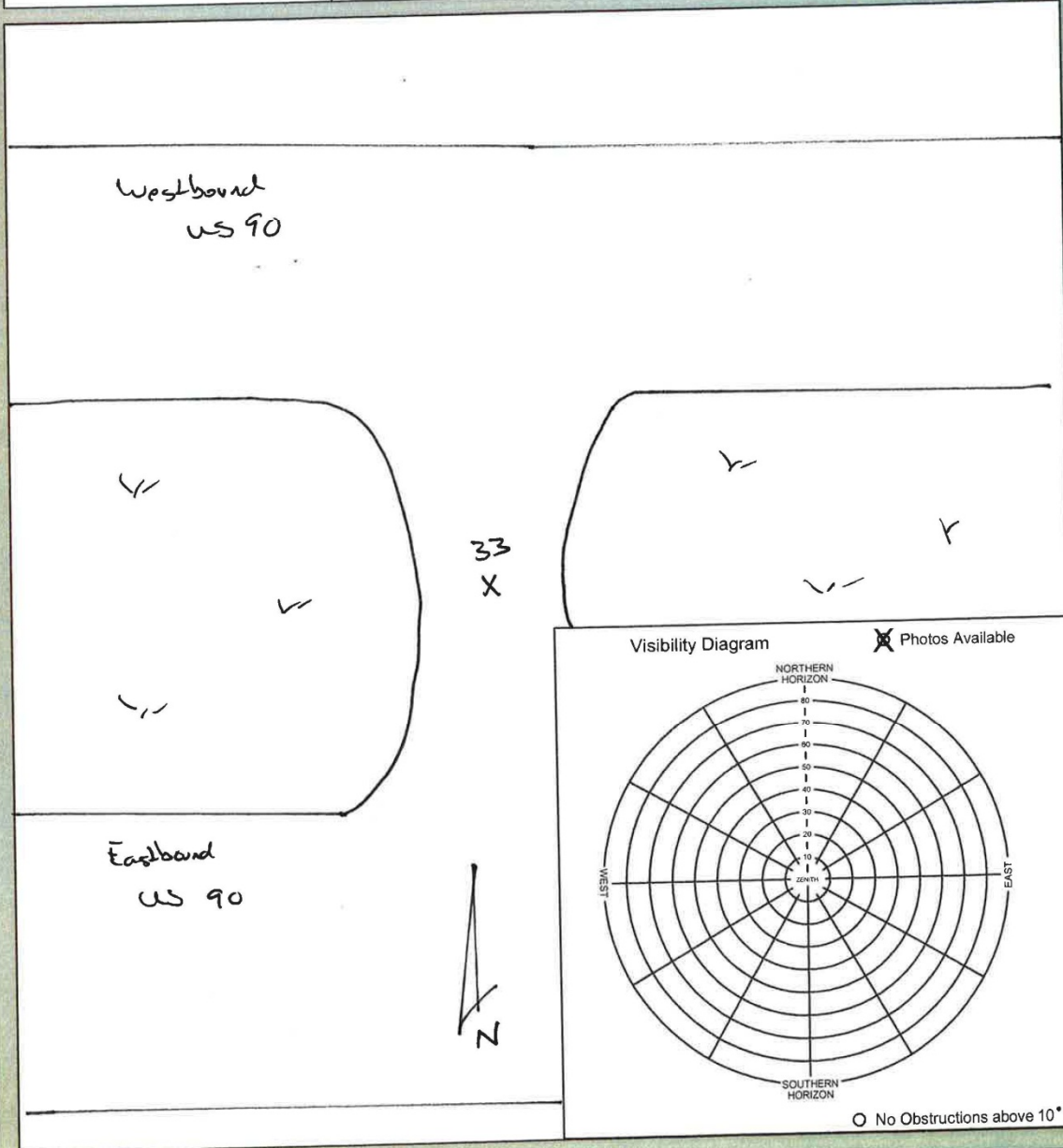


**32, E, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>33</b>	General location <b>Bay Saint Louis, MS</b>	Airport LID
Latitude <b>N 30° 18' 04" "</b>	Longitude <b>W 89° 29' 26" "</b>	Calendar Date <b>2/20/15</b>
		Observer Initials <b>DJK</b>



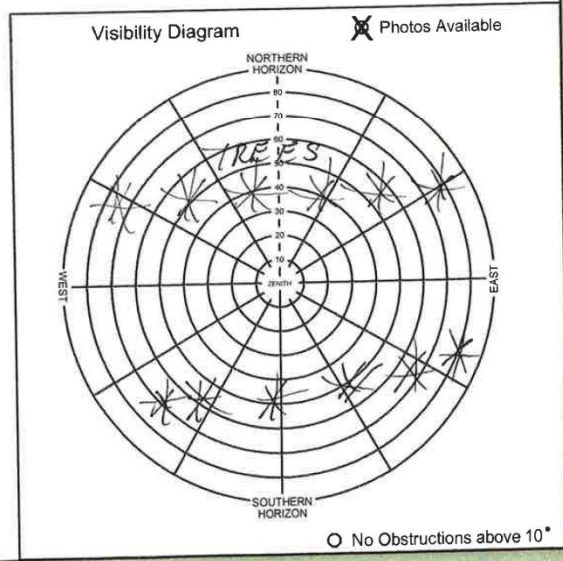
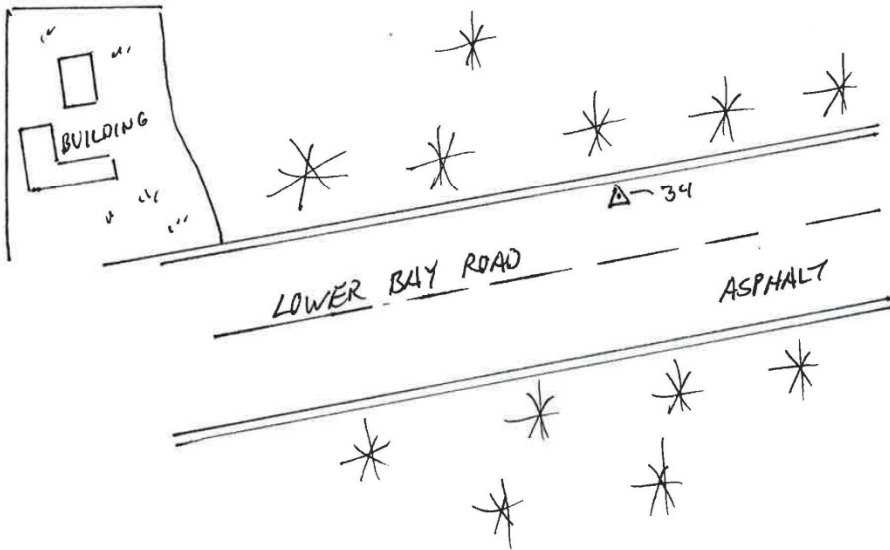


**33, W, 20FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 34	General location WAVELAND, MS	Airport LID	
Latitude N 30° 14' 55" "	Longitude W 89° 28' 28" "	Calendar Date 02/20/15	Observer Initials DJK

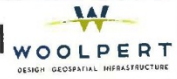




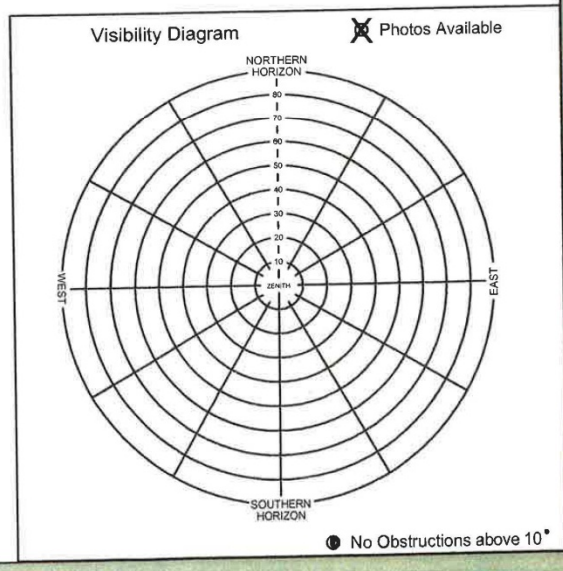
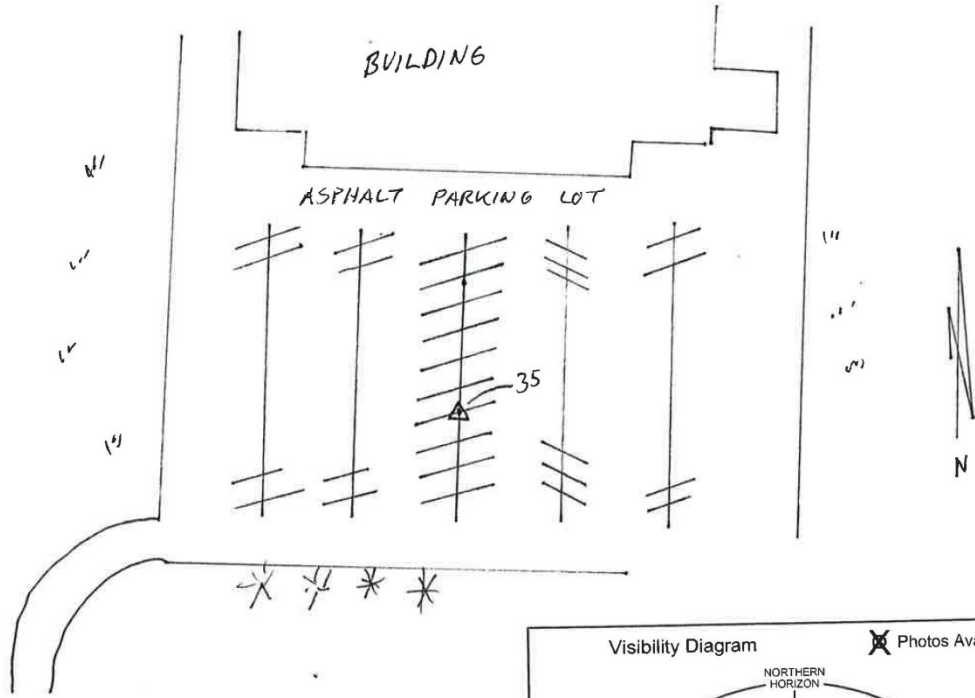
**34, E, 20EFB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 35	General location WAVELAND, MS	Airport LID
Latitude N 30° 18' 18"	Longitude W 89° 23' 07"	Calendar Date 02/20/15
		Observer Initials DJK



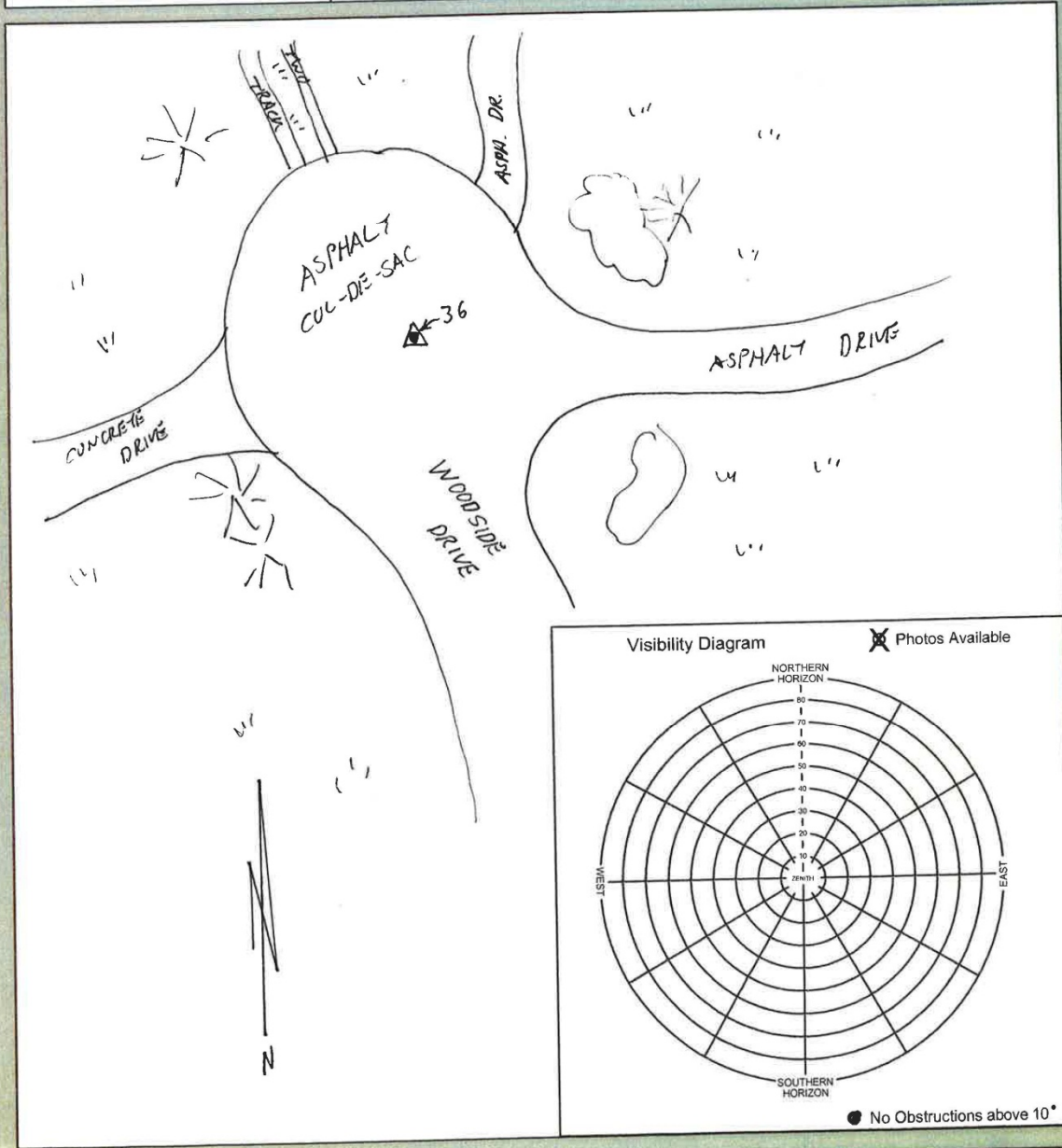


**35, E, 20FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 36	General location OZONA, MS	Airport LID	
Latitude N 30° 36' 47"	Longitude W 89° 44' 21"	Calendar Date 02/19/15	Observer Initials DJK



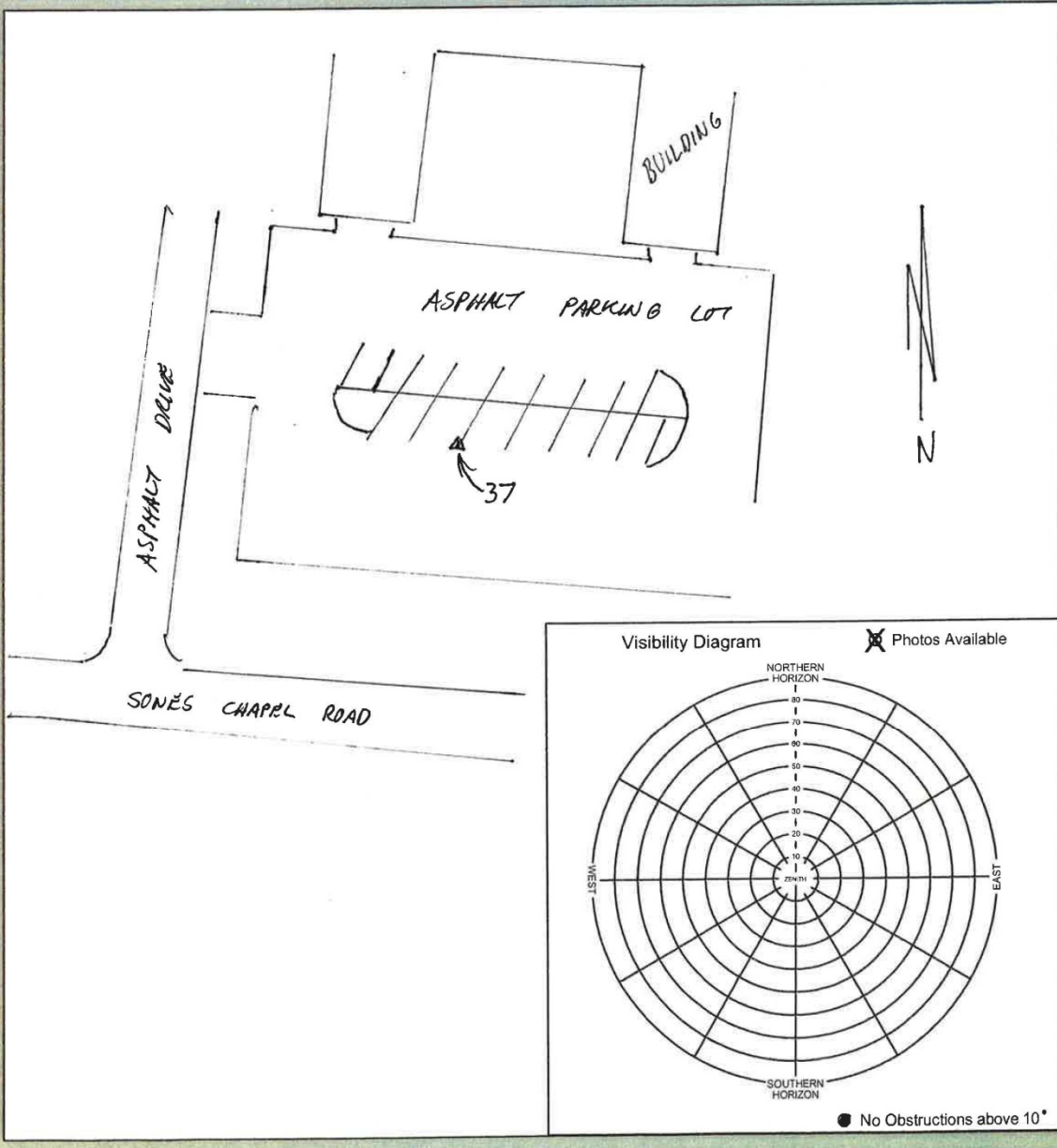


**36, N, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>37</b>	General location <b>McNEIL, MS</b>	Airport LID
Latitude <b>N 30° 40' 08"</b>	Longitude <b>W 89° 38' 18"</b>	Calendar Date <b>02/19/15</b>
		Observer Initials <b>DJK</b>





**37, E, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 38	General location Picayune MS	Airport LID
Latitude N 30 ° 30 ' 59 " "	Longitude W 89 ° 32 ' 31 " "	Calendar Date 2/20/15
		Observer Initials DJK

May 43

x  
3069

3069 A  
x

2033 A  
x

38  
x

CGR Wash

✓

✓

2033  
x

Visibility Diagram x Photos Available



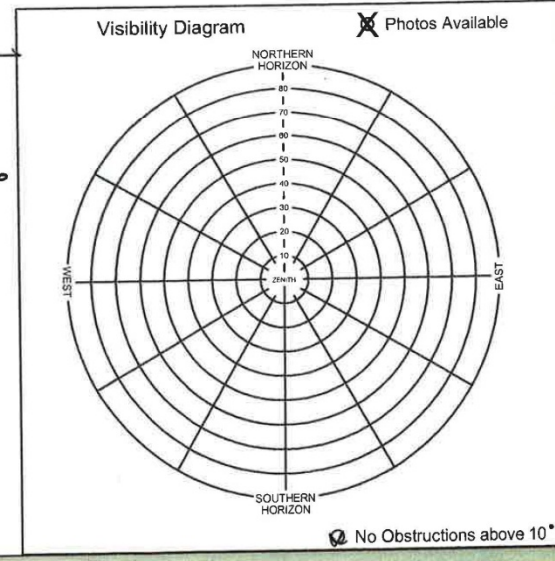
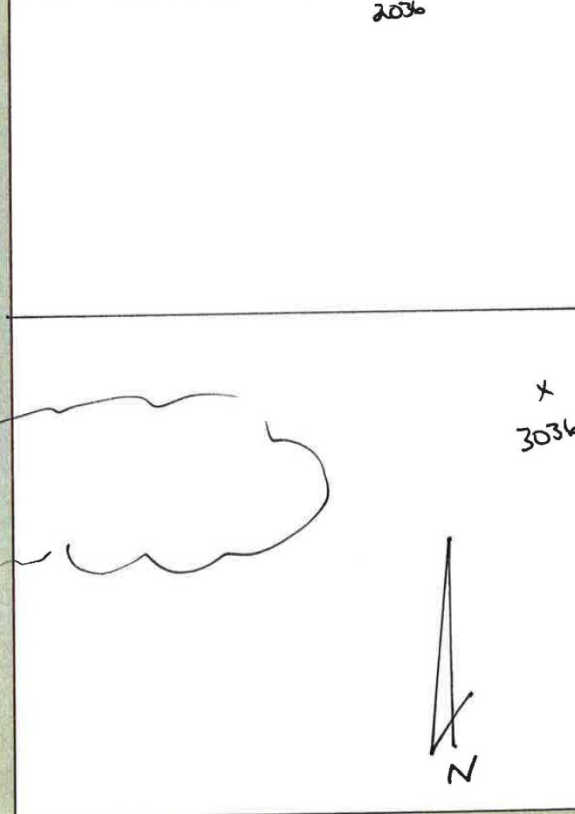
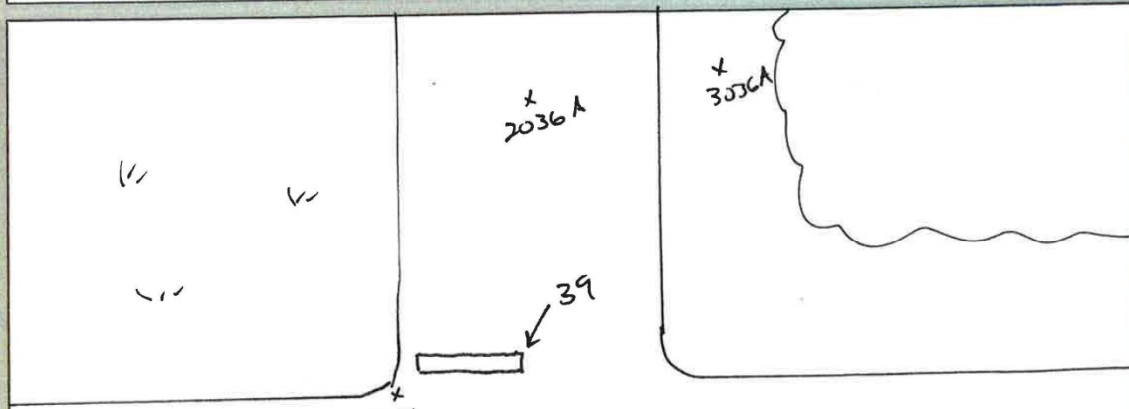
**38, S, 20FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>39</b>	General location <b>Poplarville, MS</b>	Airport LID	
Latitude <b>N 30° 46' 49" "</b>	Longitude <b>W 89° 27' 38" "</b>	Calendar Date <b>2/19/15</b>	Observer Initials <b>DJK</b>



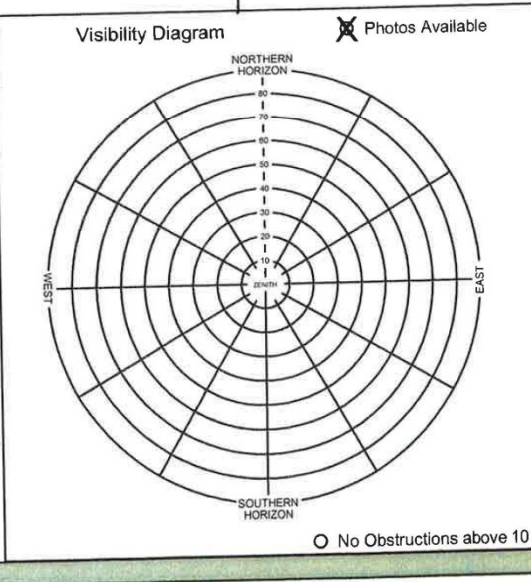
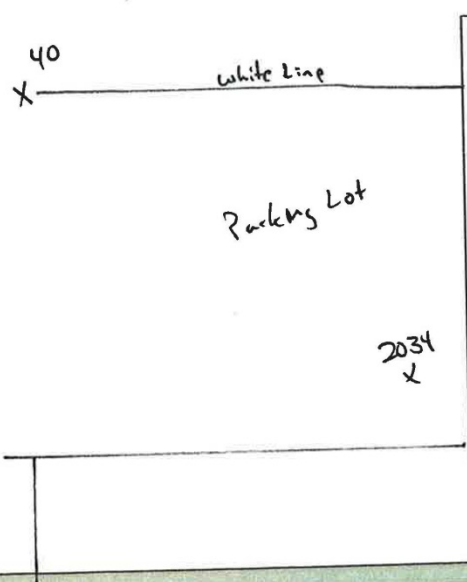
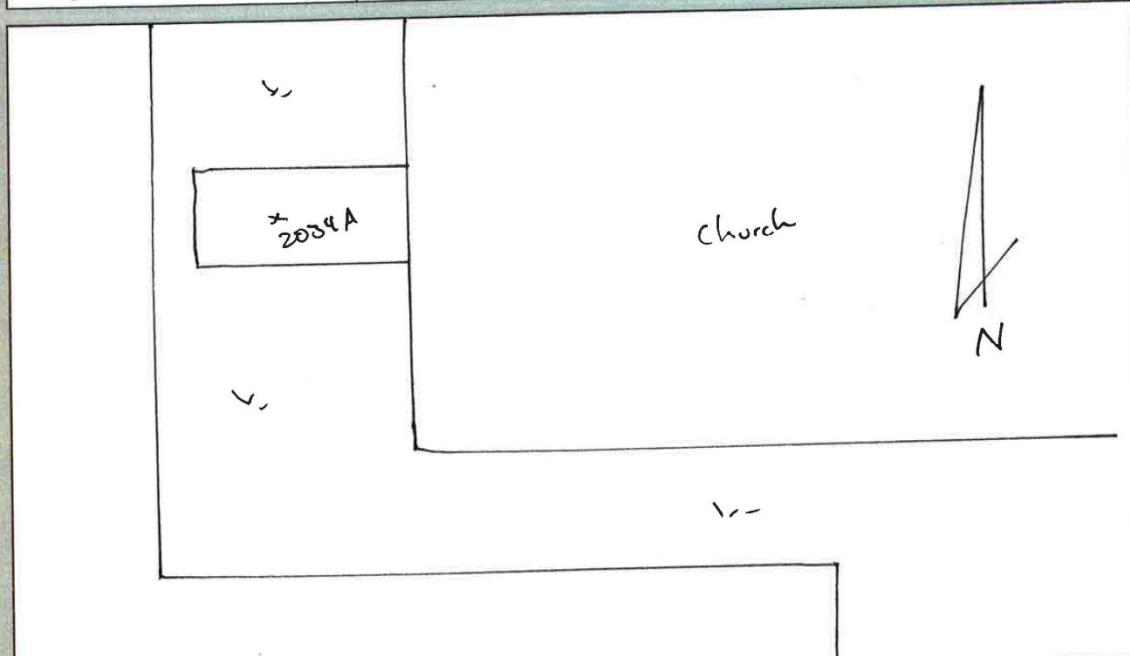


**39, W, 19FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 40	General location Crane Creek, MS	Airport LID	
Latitude N 30° 36' 41"	Longitude W 89° 23' 04"	Calendar Date 2/20/15	Observer Initials DJK



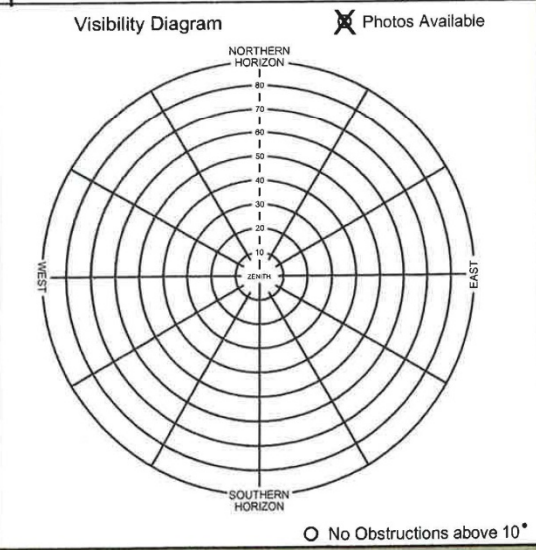
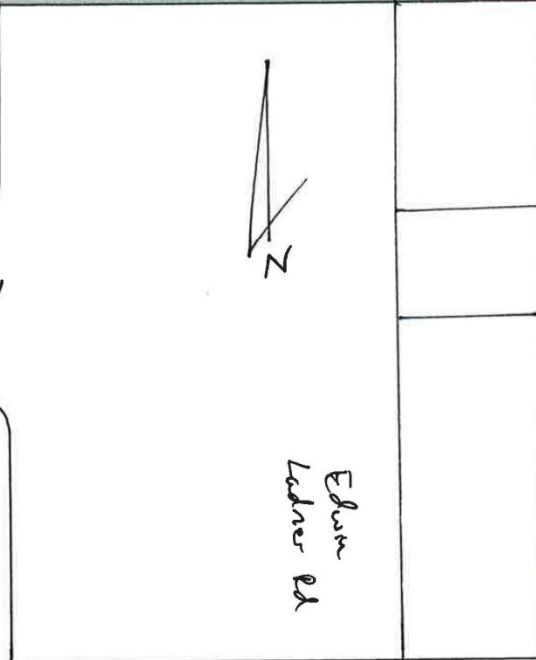
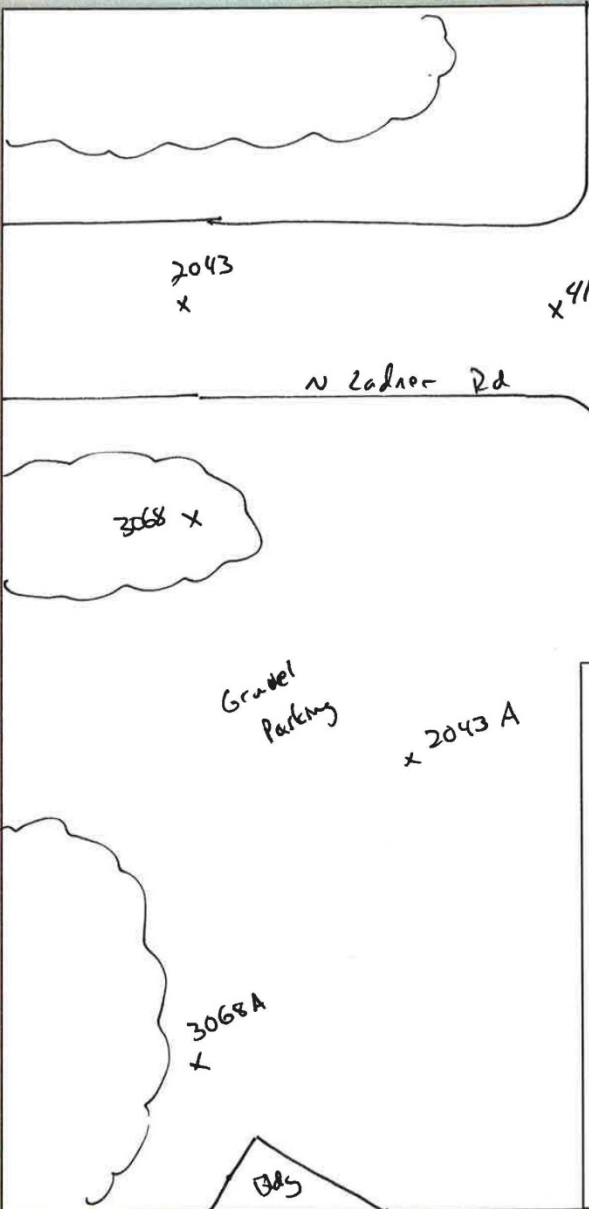


**40, W, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



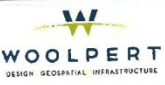
Aerial Control point # <b>41</b>	General location <b>Pass Christian, MS</b>	Airport LID	
Latitude <b>N 30° 26' 14" "</b>	Longitude <b>W 89° 20' 00" "</b>	Calendar Date <b>2/20/15</b>	Observer Initials <b>DJK</b>



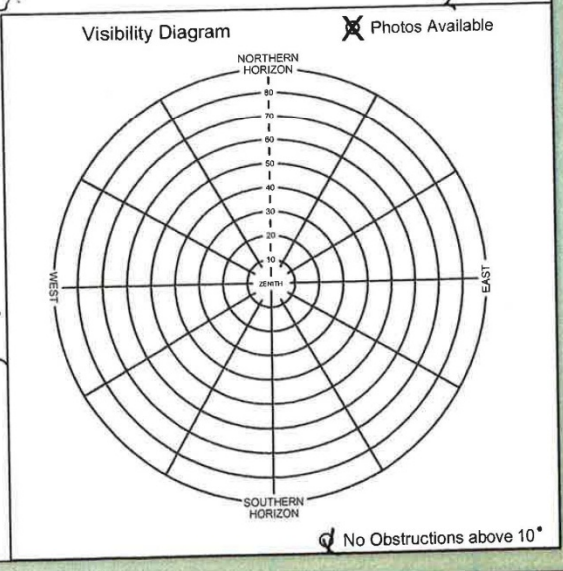
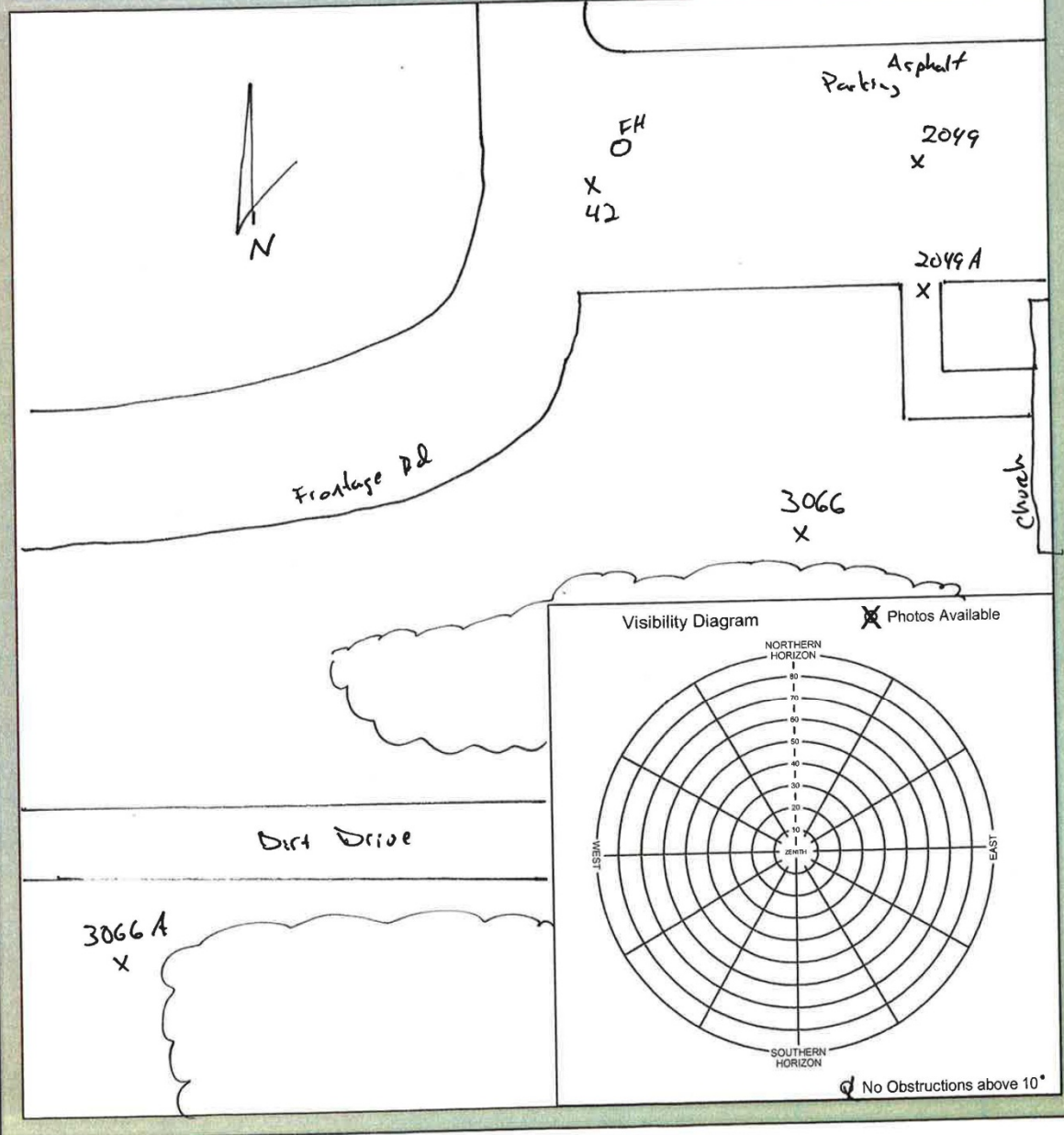


**41, E, 20FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>42</b>	General location <b>Sawcier, MS</b>	Airport LID
Latitude <b>N 30° 37' 18"</b>	Longitude <b>W 89° 07' 59"</b>	Calendar Date <b>2/21/15</b>
		Observer Initials <b>DJK</b>





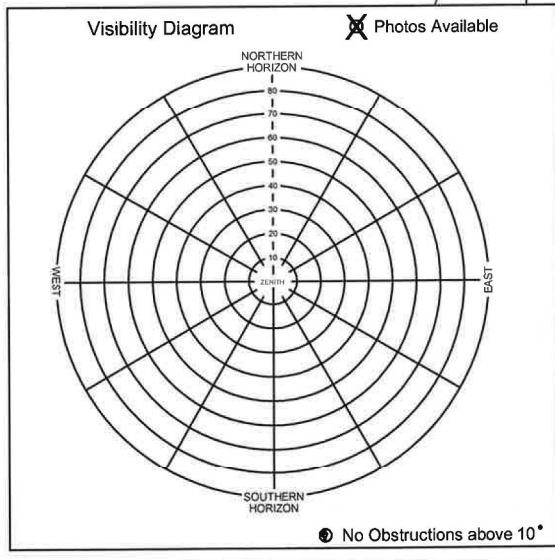
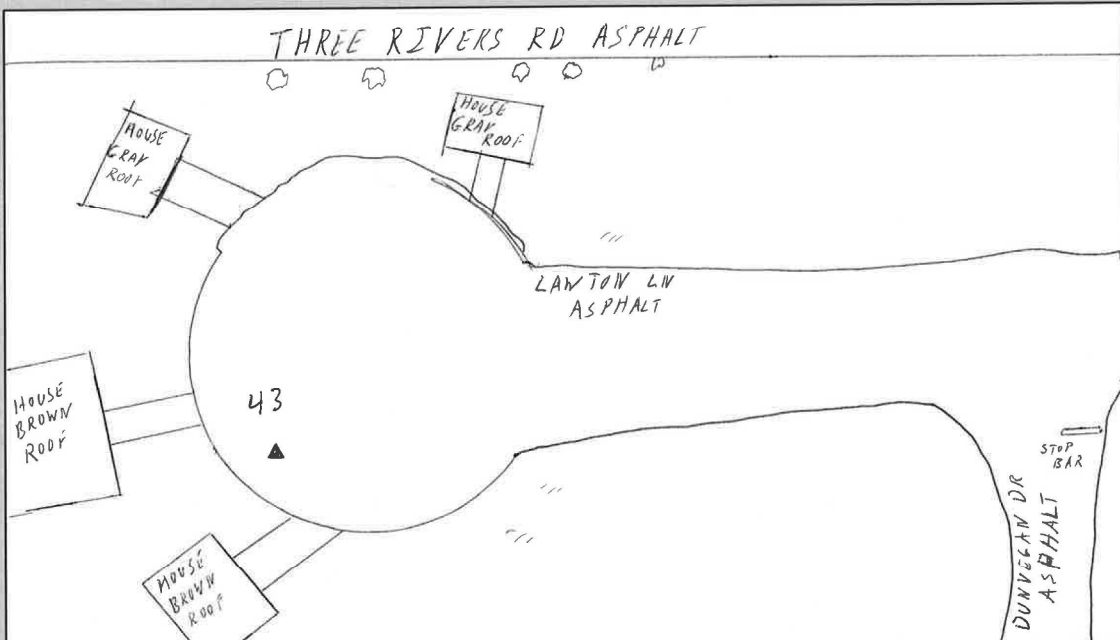
**42, N, 21FEB2015**



# LiDAR Survey - LiDAR Control



LiDAR Control point #	43	General location	BILOXI, MS	Ground Class	
Latitude	N 30° 29' 6.95"	Longitude	W 89° 3' 22.56"	Calendar Date	2/21/2015
				Observer Initials	CPR



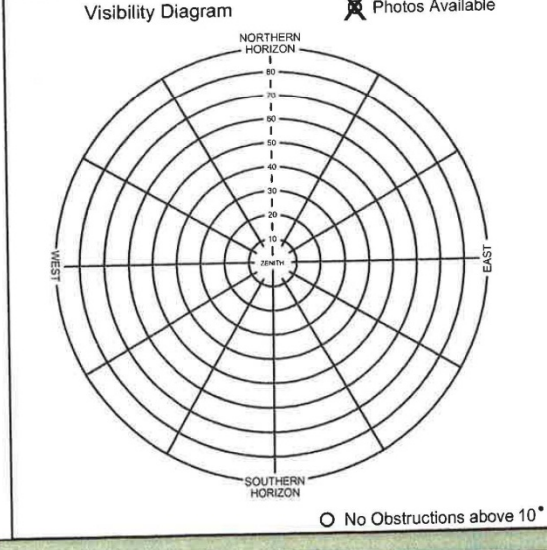
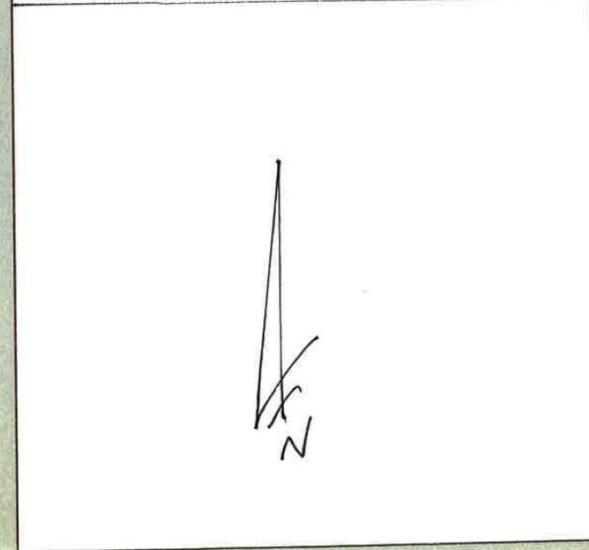
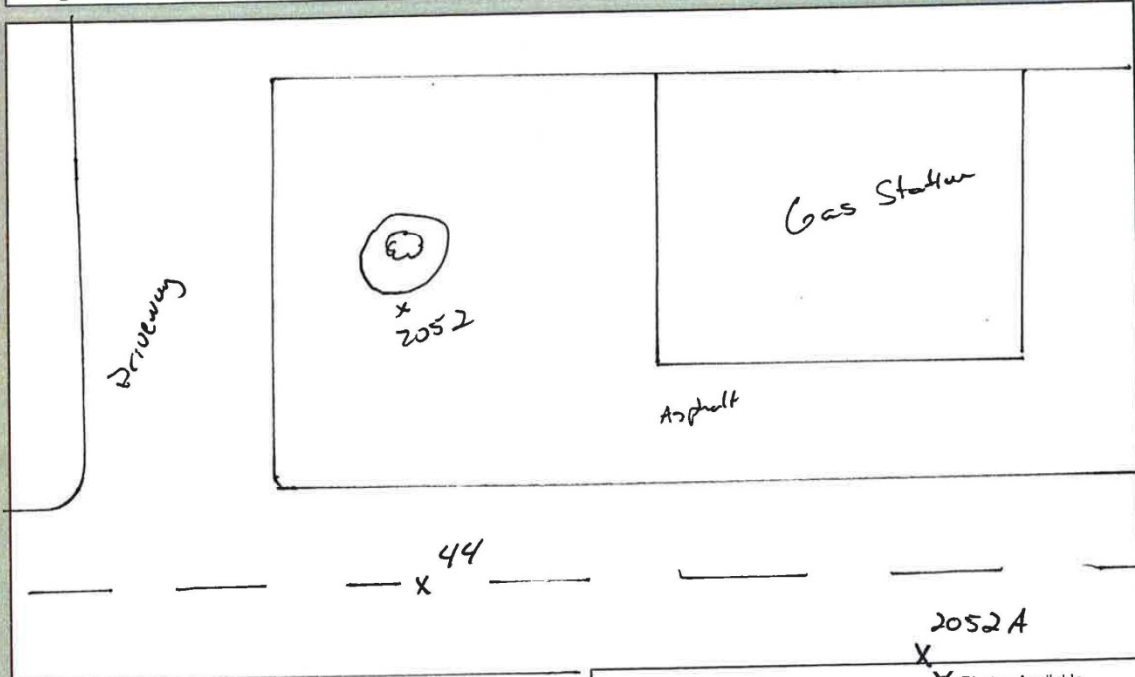


**43, W, 21FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>44</b>	General location <b>Pertinaton, MS</b>	Airport LID	
Latitude <b>N 30° 48' 41"</b>	Longitude <b>W 89° 03' 13"</b>	Calendar Date <b>2/28/15</b>	Observer Initials <b>DJK</b>



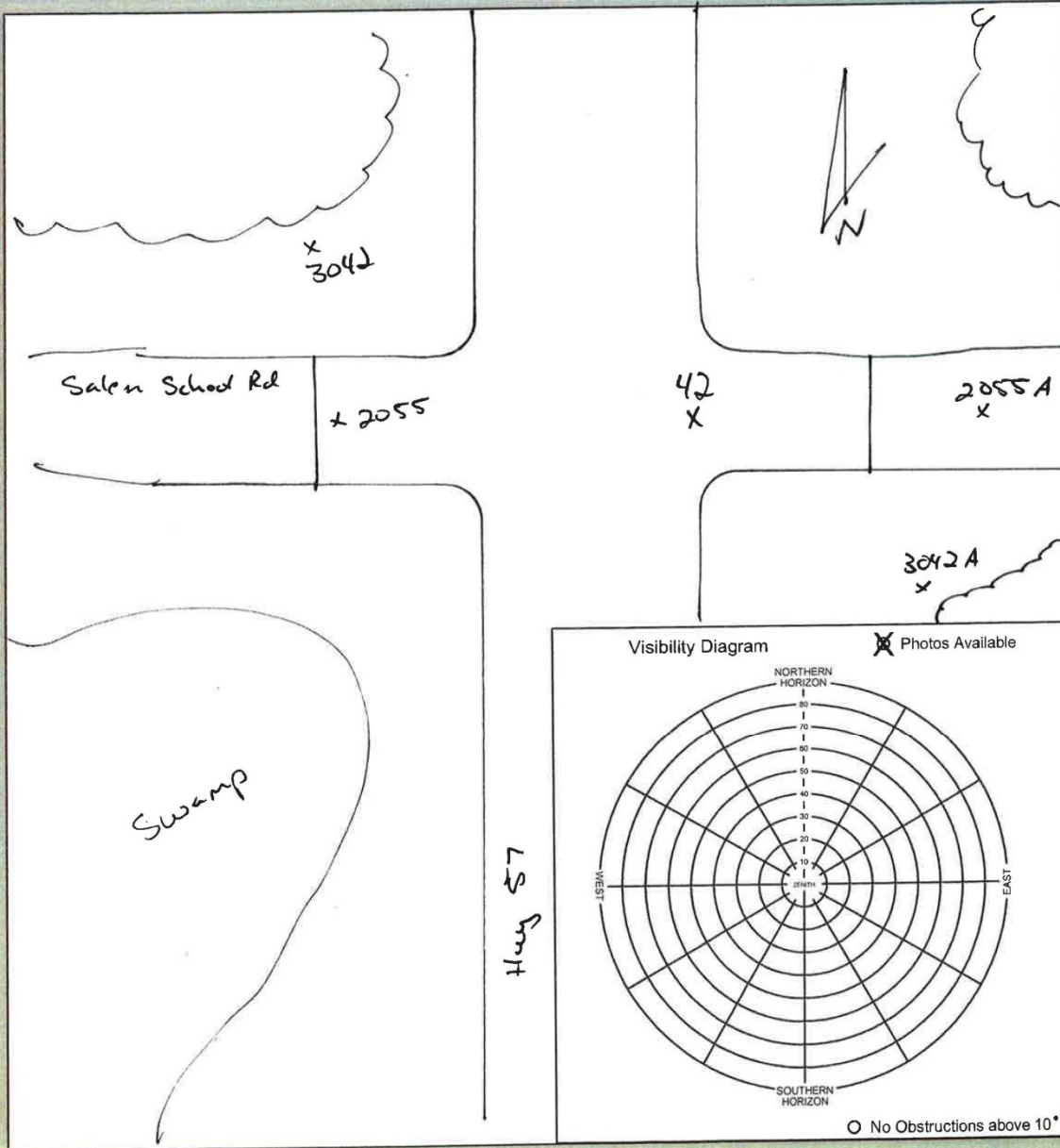


**44, S, 22FEB2014**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 45	General location McLain, MS	Airport LID
Latitude N 30° 58' 51" "	Longitude W 88° 46' 41" "	Calendar Date 2/22/15
		Observer Initials DJK



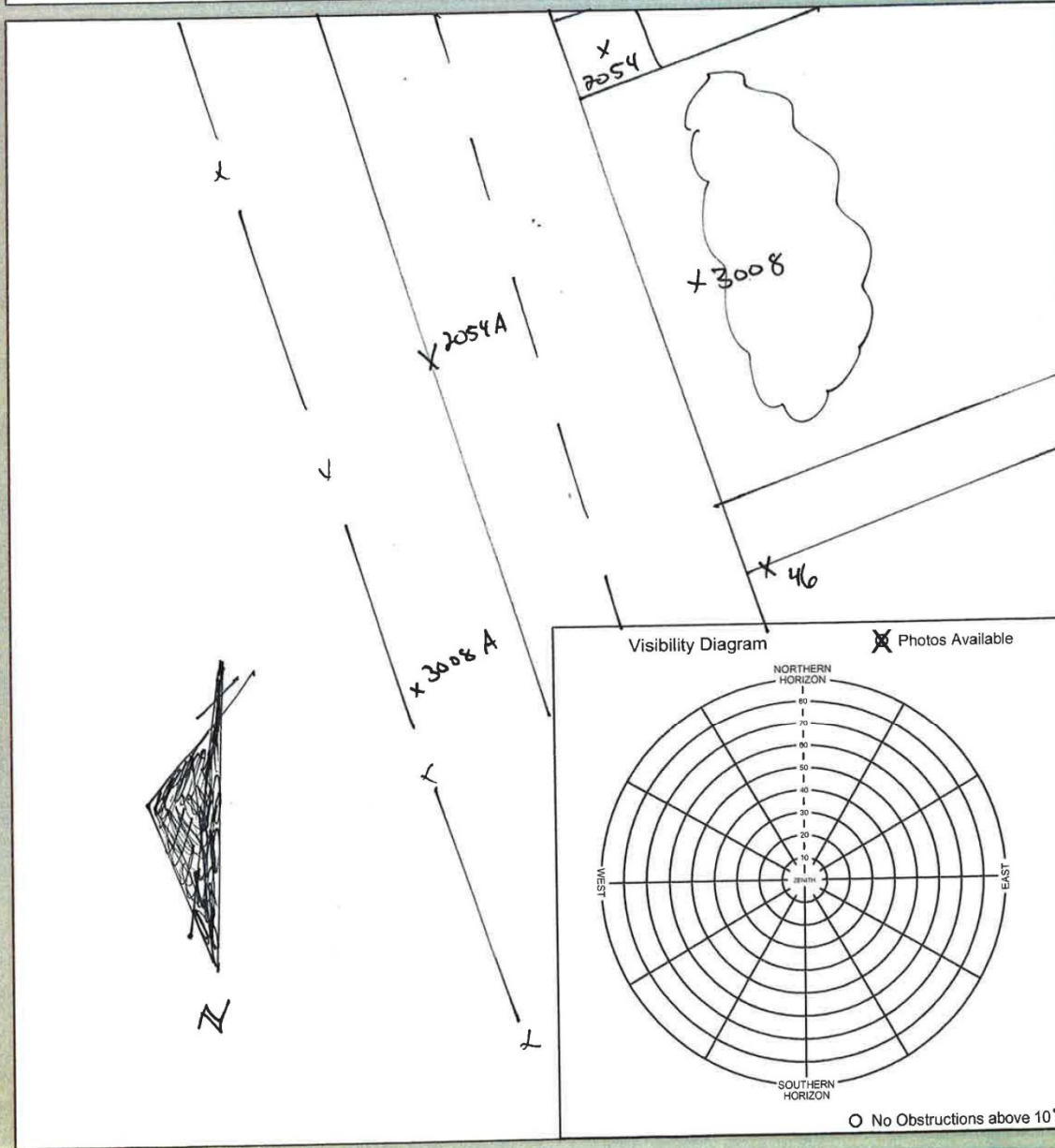


**45, W, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>46</b>	General location <b>McLain, MS</b>	Airport LID	
Latitude <b>N 30° 50' 57" "</b>	Longitude <b>W 88° 47' 28" "</b>	Calendar Date <b>2/22/15</b>	Observer Initials <b>DJK</b>

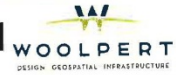




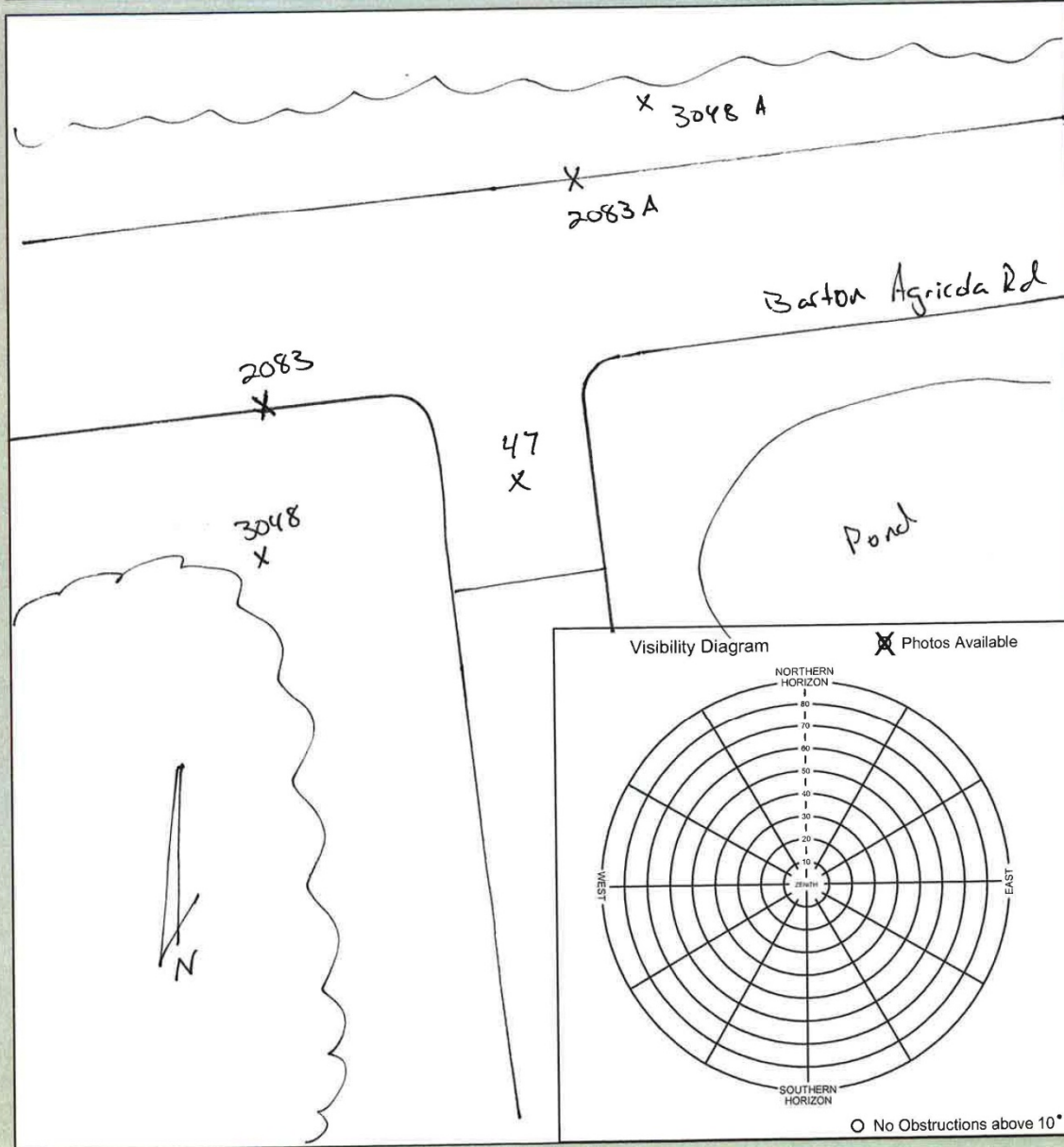
**46, N, 22FEB2015**



# Mississippi Coastal LiDAR Survey - LiDAR Control



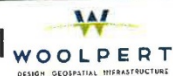
Aerial Control point # 47	General location Lucedale, MS	Airport LID
Latitude N 30° 48' 32"	Longitude W 88° 32' 53"	Calendar Date 2/22/15
		Observer Initials DJK



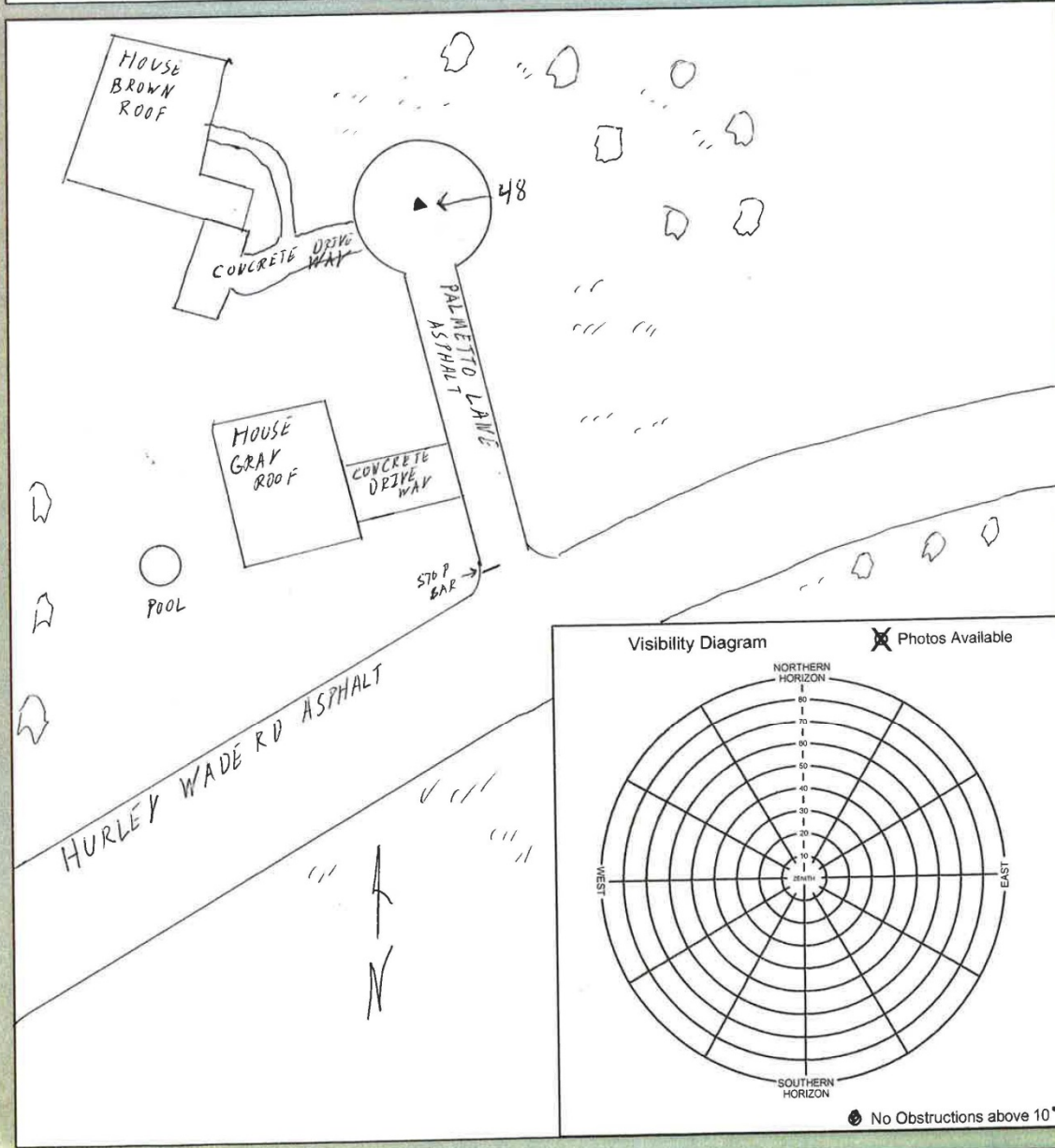


**47, N, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>48</b>	General location <b>WADE, MS</b>	Airport LID	
Latitude <b>N 30° 39' 11.11 "</b>	Longitude <b>W 88° 32' 34.23 "</b>	Calendar Date <b>2/22/2015</b>	Observer Initials <b>DJK</b>



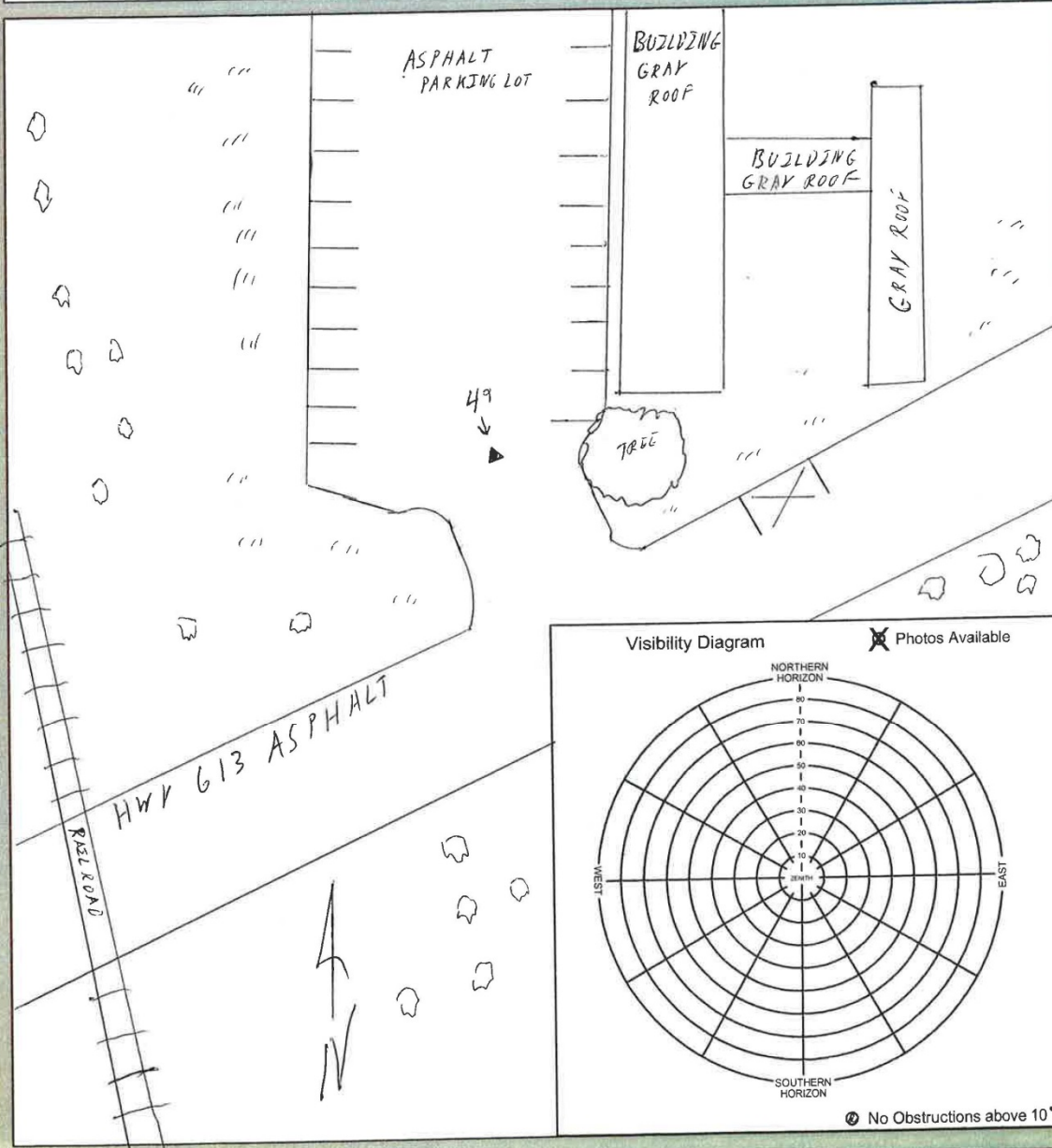


**48, W, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>49</b>	General location <b>ESCATAWPA, MS</b>	Airport LID
Latitude <b>N 30°31'31.54"</b>	Longitude <b>W 88°32'27.69"</b>	Calendar Date <b>2/22/2015</b>
		Observer Initials <b>DJK</b>



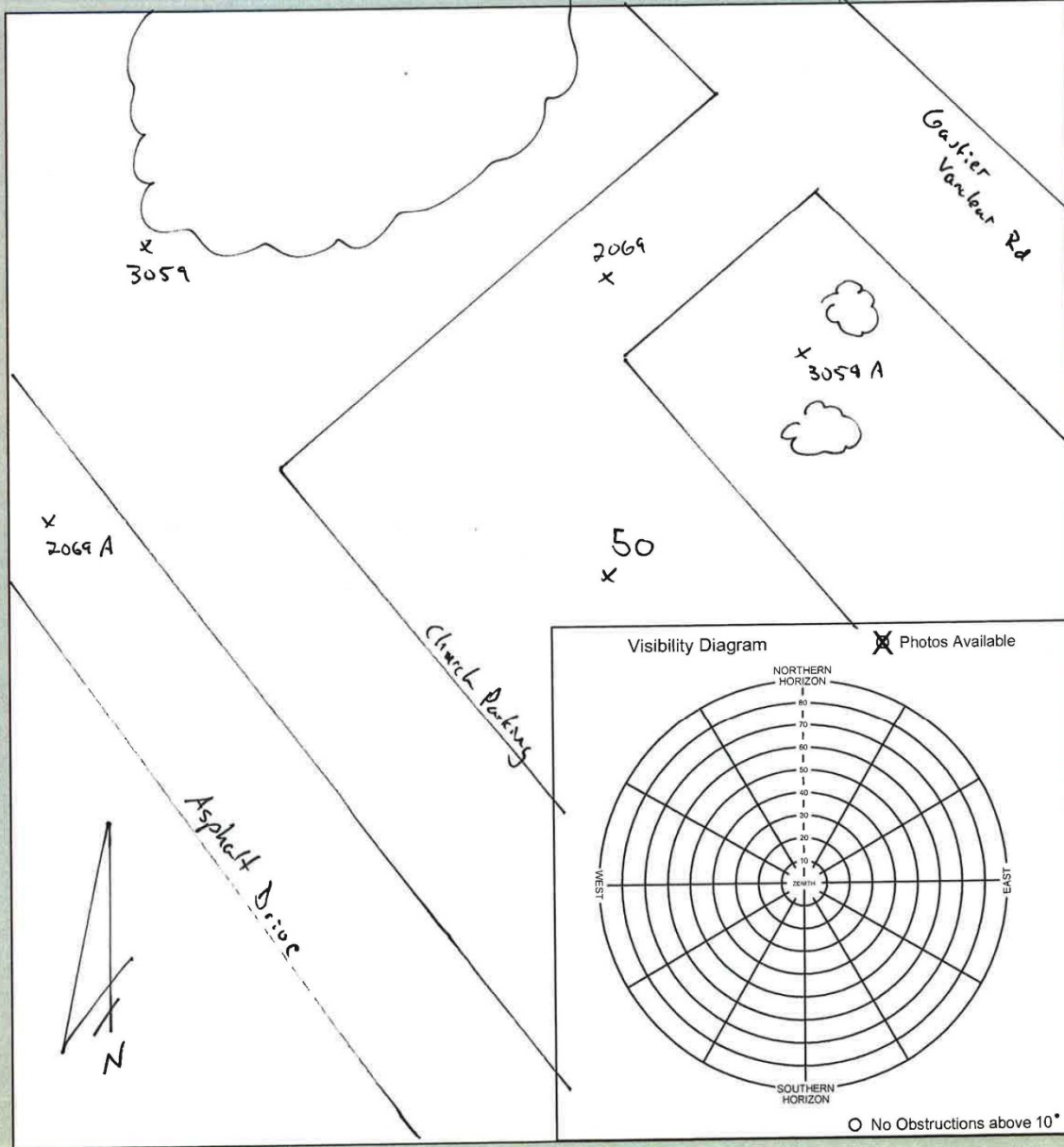


**49, S, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 50	General location Vancelease, MS	Airport LID
Latitude N 30° 28' 38" "	Longitude W 88° 41' 53" "	Calendar Date 2/23/15
		Observer Initials DJK





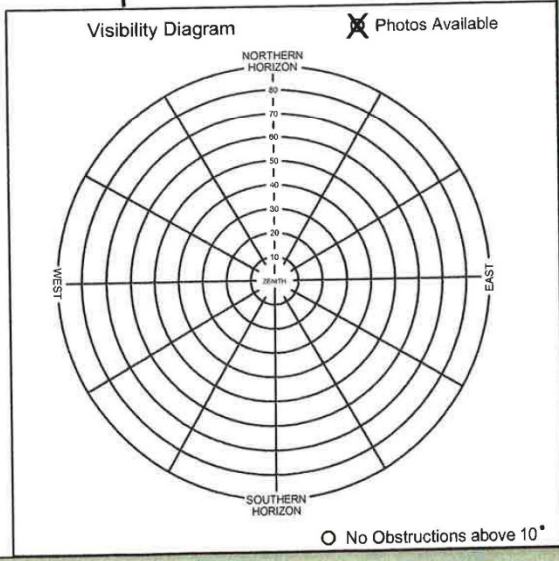
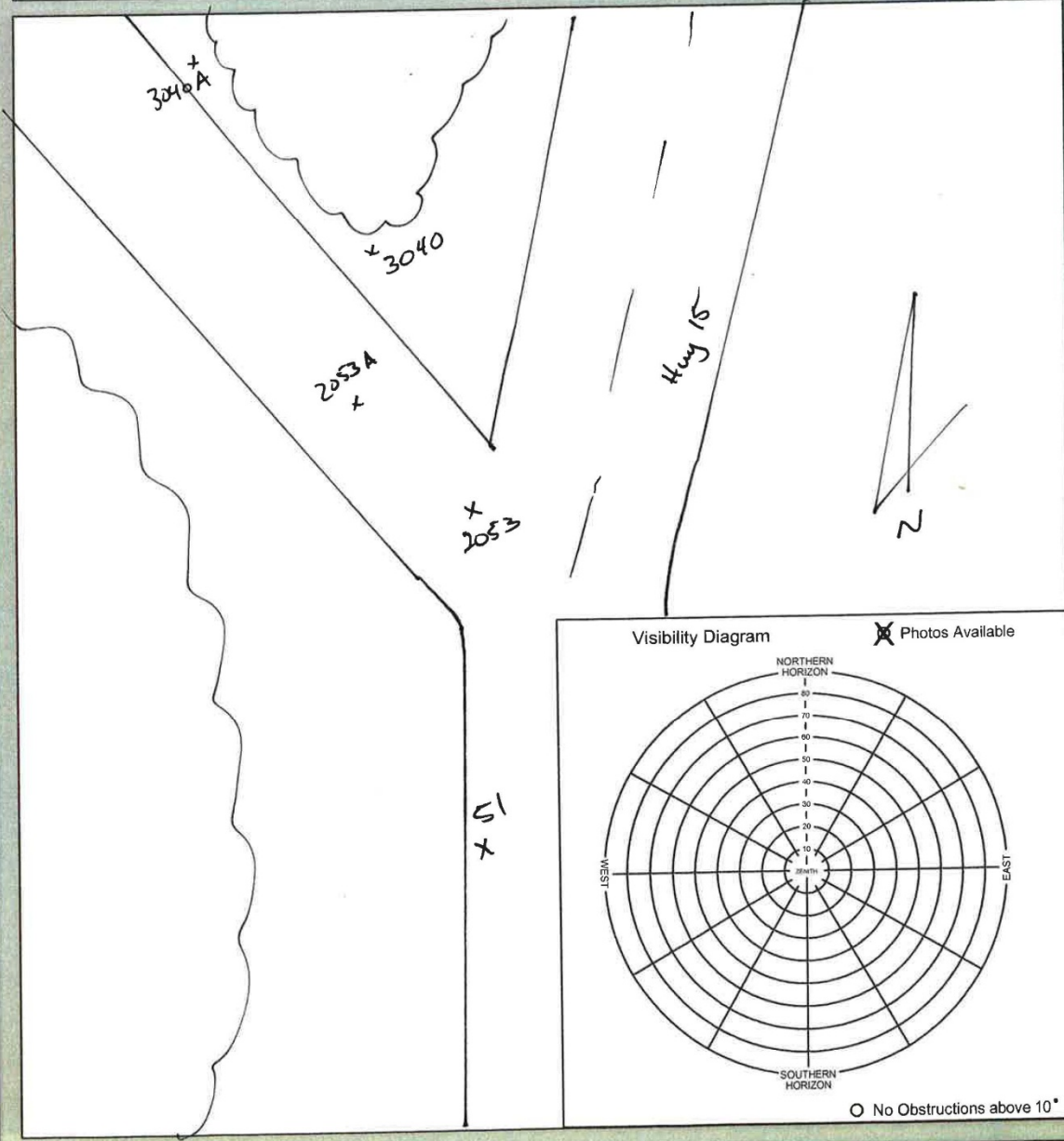
**50, N, 23FEB2014**



# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>51</b>	General location <b>Perkinston, MS</b>	Airport LID	
Latitude <b>N 30° 46' 14" "</b>	Longitude <b>W 88° 54' 51" "</b>	Calendar Date <b>2/22/15</b>	Observer Initials <b>DJK</b>



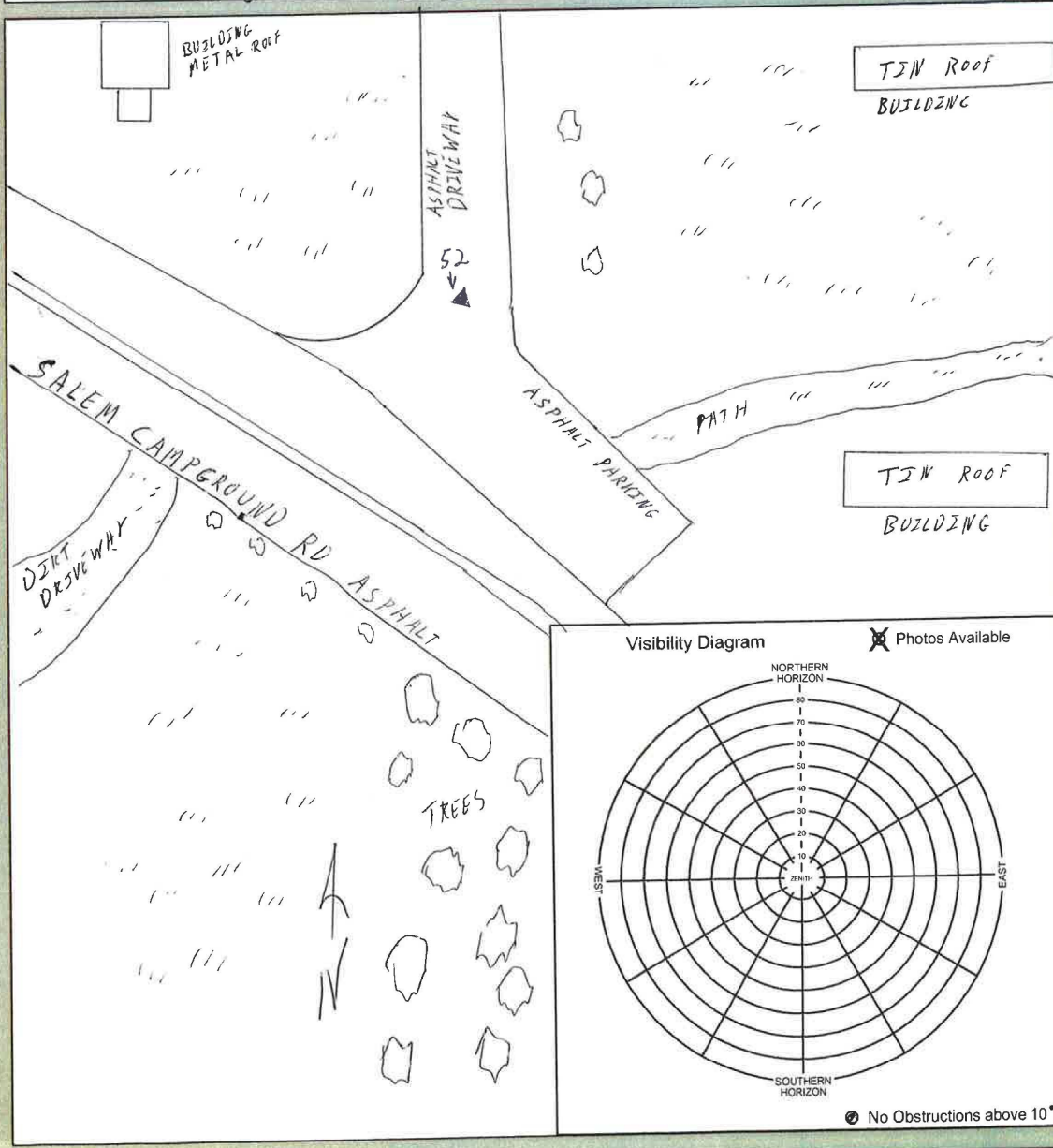


**51, N, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # <b>52</b>	General location <b>LUCEDALE, MS</b>	Airport LID
Latitude <b>N 30° 43' 59.03"</b>	Longitude <b>W 88° 36' 25.72"</b>	Calendar Date <b>2/22/2015</b>
		Observer Initials <b>DJK</b>



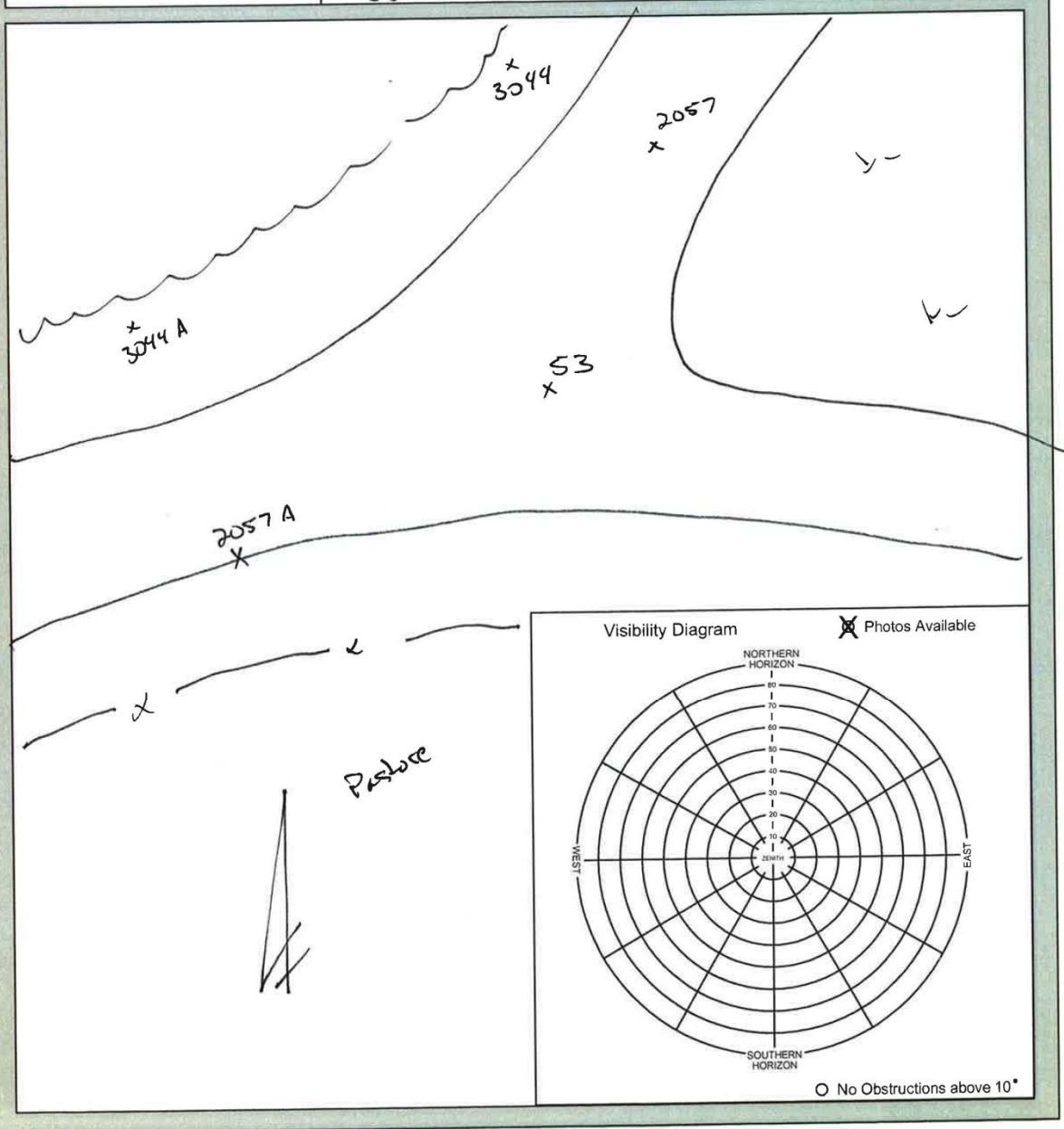


**52, N, 22FEB2015**

# Mississippi Coastal LiDAR Survey - LiDAR Control



Aerial Control point # 53	General location Lucedale, MS	Airport LID
Latitude N 30° 59' 21" "	Longitude W 88° 26' 01" "	Calendar Date 2/22/15
		Observer Initials DJK

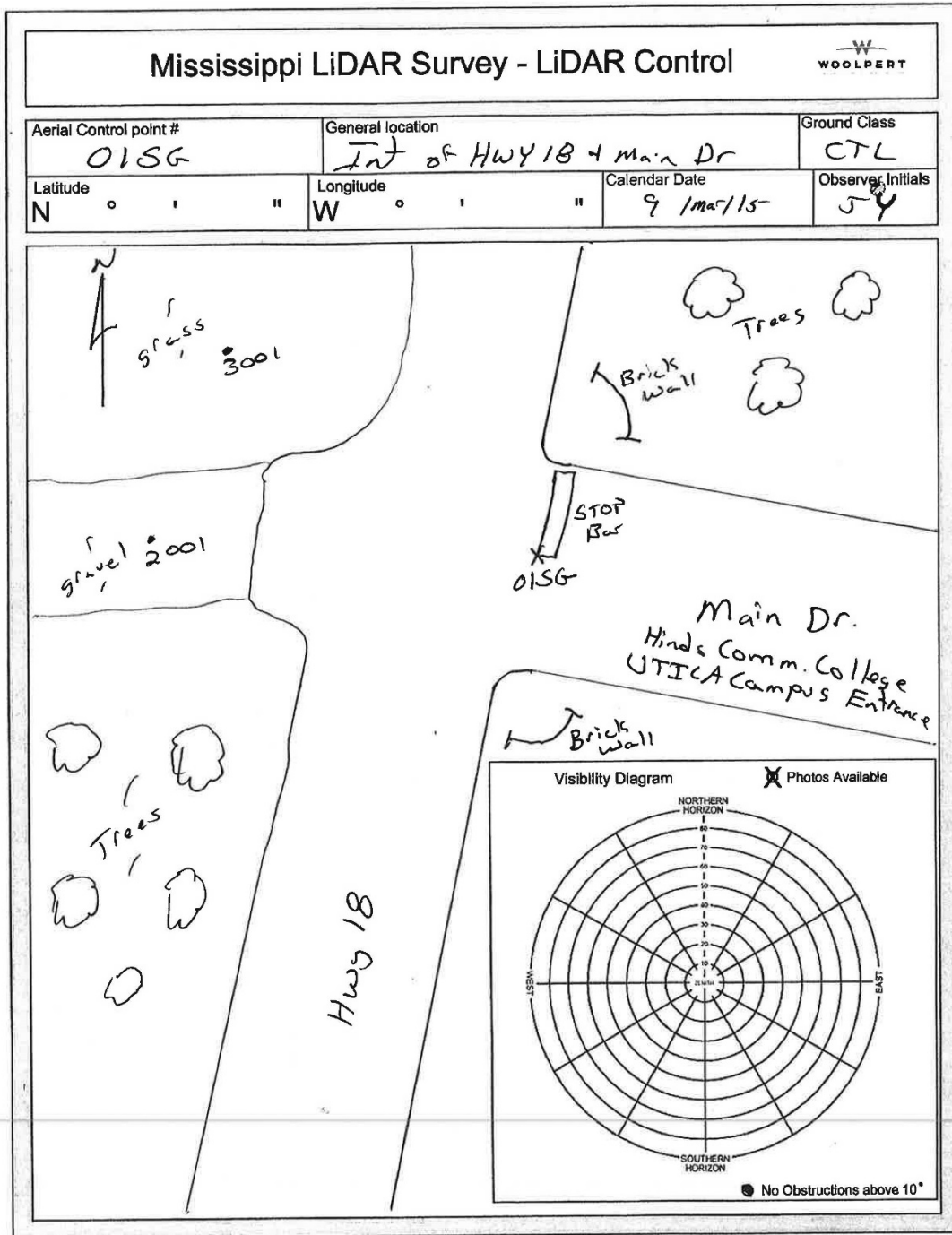




**53, NE, 22FEB2015**

# 3DEP EXTENSION AOI

LiDAR Control Points:





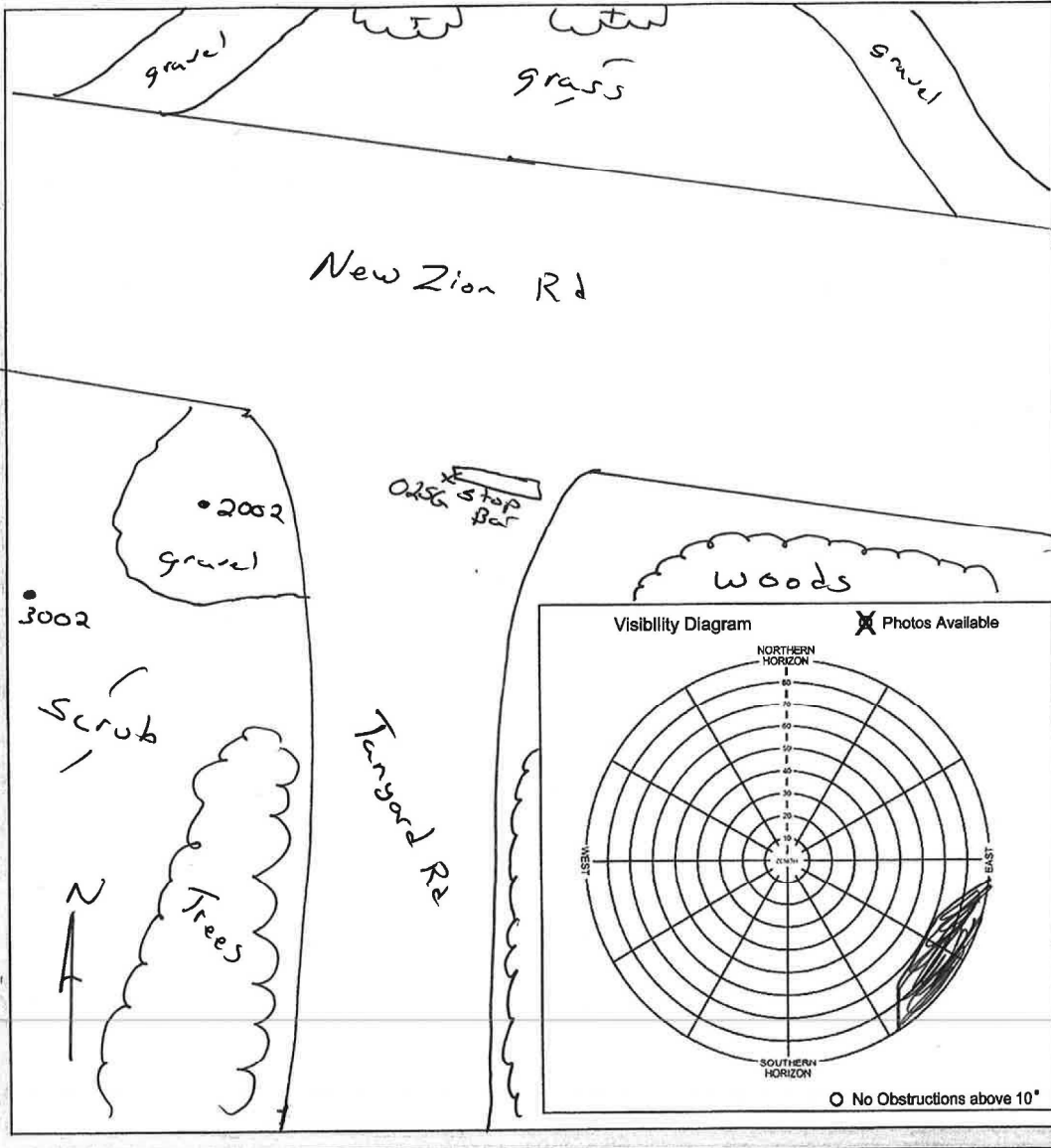
**0001SG, N, 09MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <i>02 SG</i>	General location <i>Int of New Zion Rd + Tanyard Rd</i>	Ground Class <i>CTL</i>
Latitude <i>N 31° 59' 45.8"</i>	Longitude <i>W 90° 25' 11.2"</i>	Calendar Date <i>9 Mar 15</i>
		Observer Initials <i>JY</i>



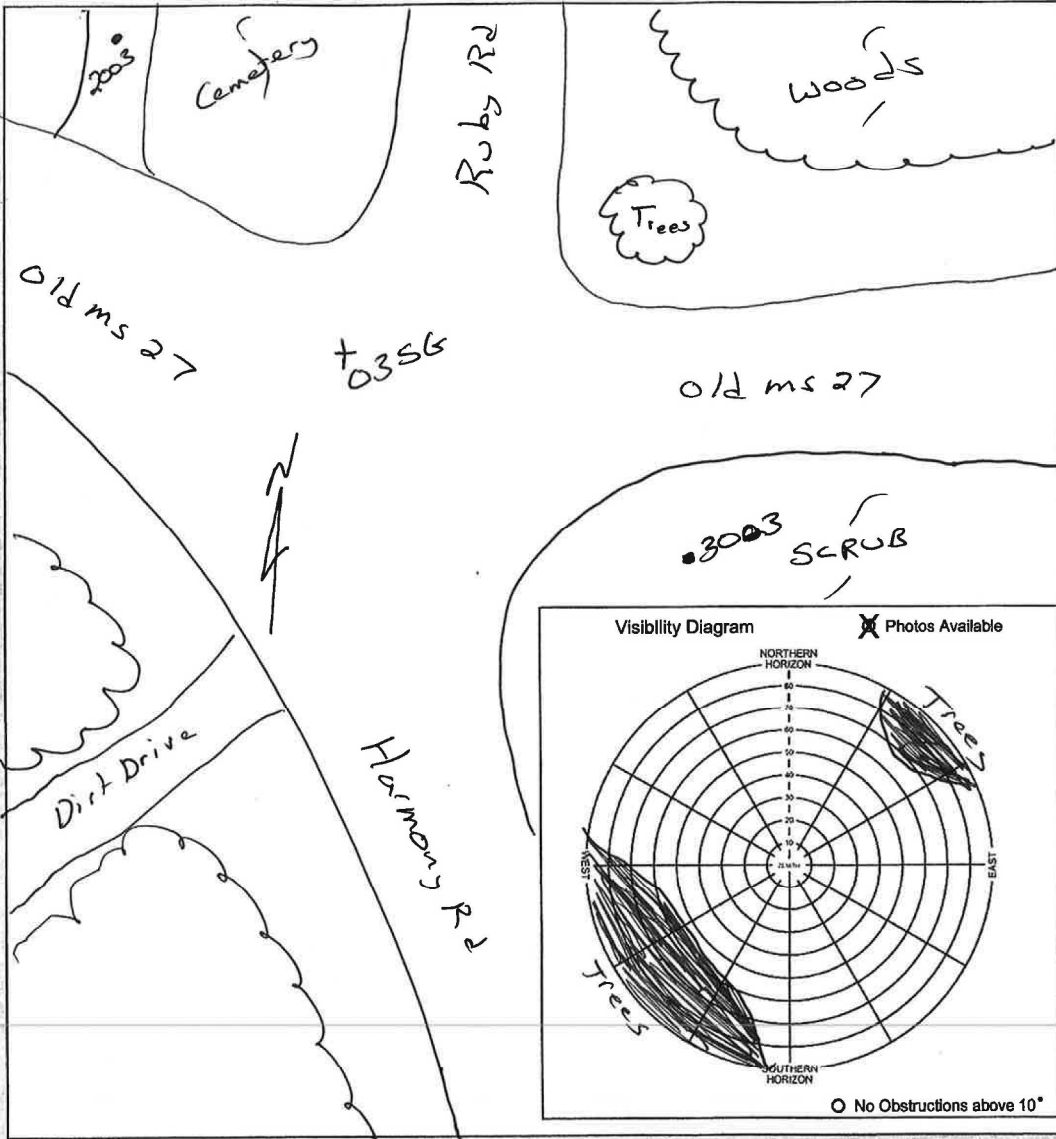


**0002SG, N, 09MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 03SG	General location Int of OLD ms 27 and Harmony	Ground Class CTL
Latitude N 31° 56' 47.2 "	Longitude W 90° 13' 52.8 "	Calendar Date 7 / Mar / 15
		Observer Initials JY



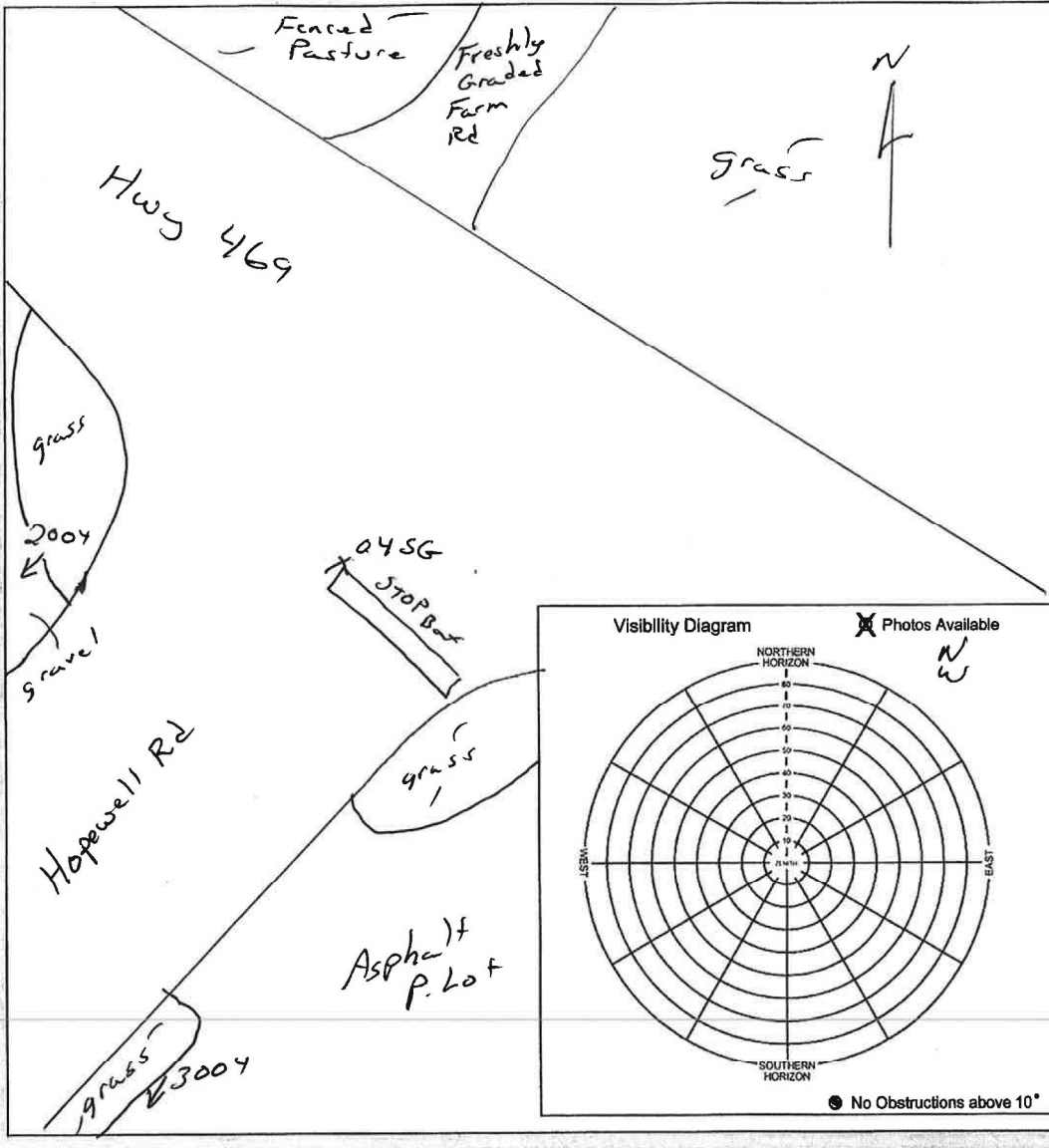


**0003SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>04 SG</b>	General location <b>Int of HWY 469 &amp; Hopewell Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 0 ' "</b>	Longitude <b>W 0 ' "</b>	Calendar Date <b>6 /mar /15</b>
		Observer Initials <b>JY</b>



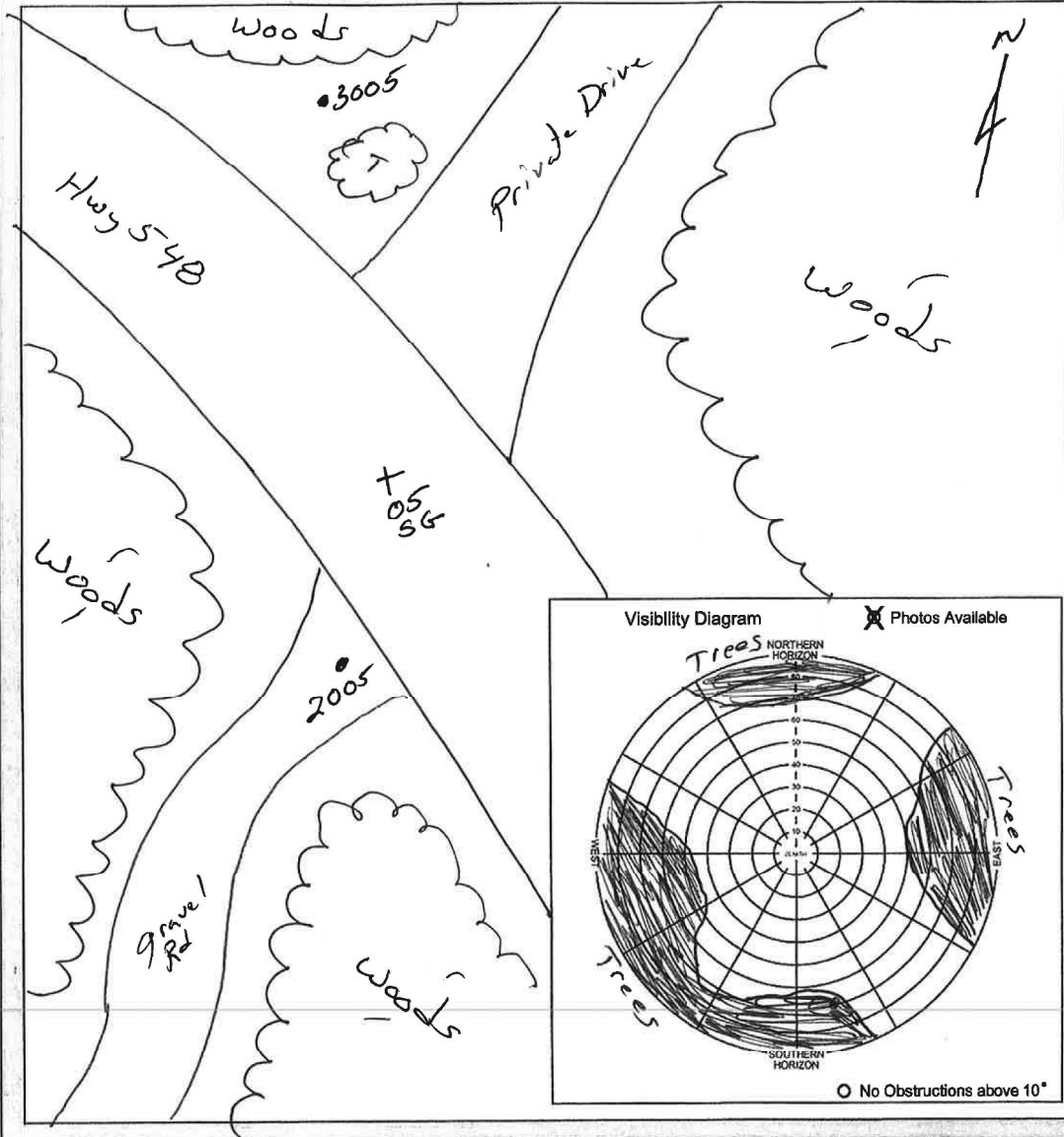


**04SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 0556	General location Int of HWY548 & Private Drive	Ground Class CTL
Latitude N 31° 53' 14.8 "	Longitude W 90° 41' 35.7 "	Calendar Date 9 Mar/15
		Observer Initials JY





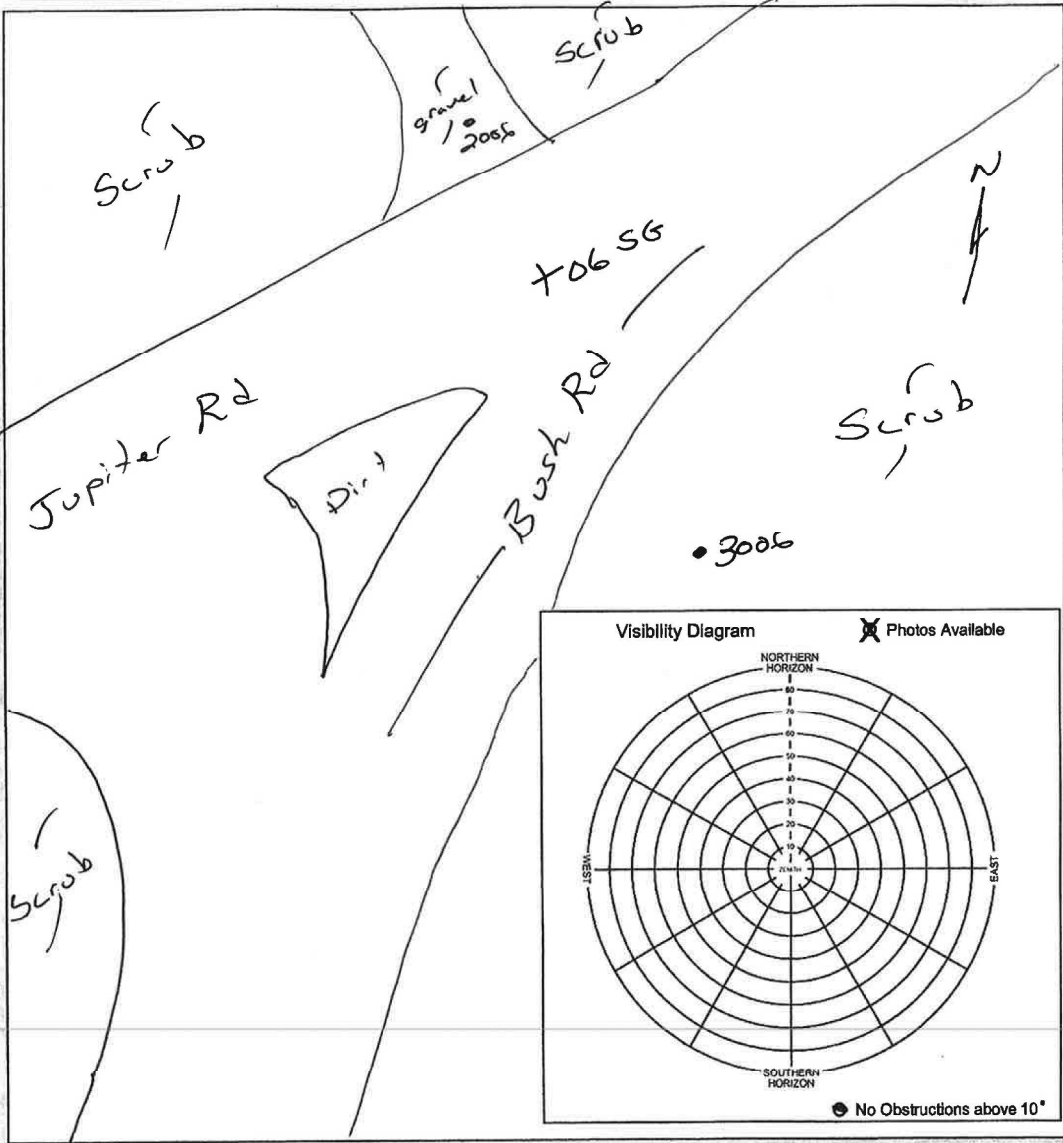
**0005SG, W, 09MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 06 SG	General location Int of Bush & Jupiter Rd	Ground Class CTL
Latitude N 31° 54' 35.9 "	Longitude W 89° 57' 51.7 "	Calendar Date 6 Mar/15
		Observer Initials JY



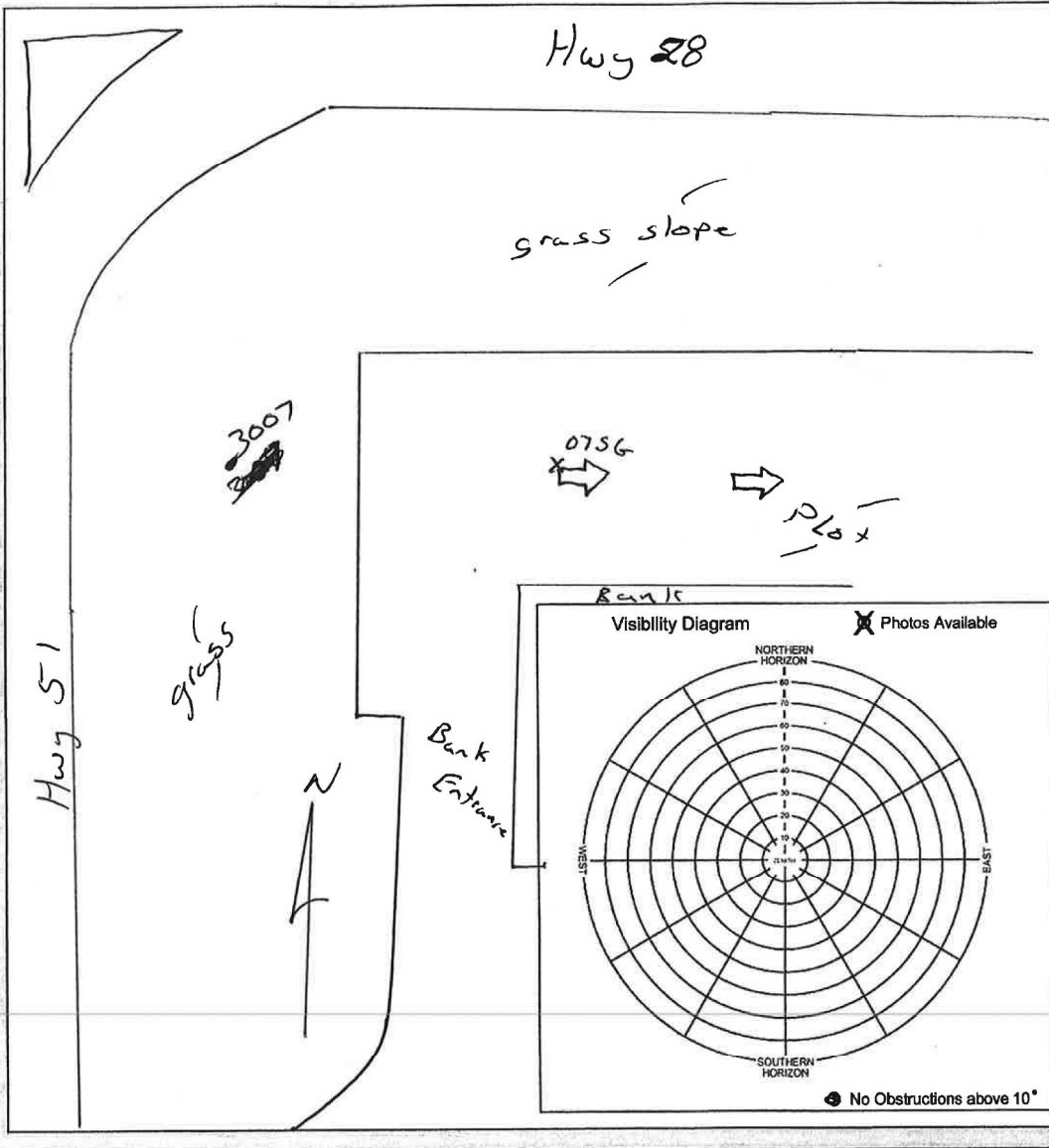


**06SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>075G</b>	General location <b>P. Lot @ SE Corner of Intos Hwy's 28 + 51</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 52' 28.0"</b>	Longitude <b>W 90° 23' 52.6"</b>	Calendar Date <b>7/16/15</b>
		Observer Initials <b>JY</b>



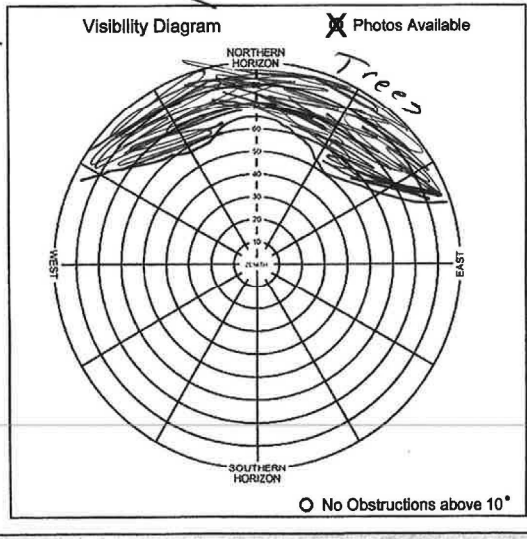
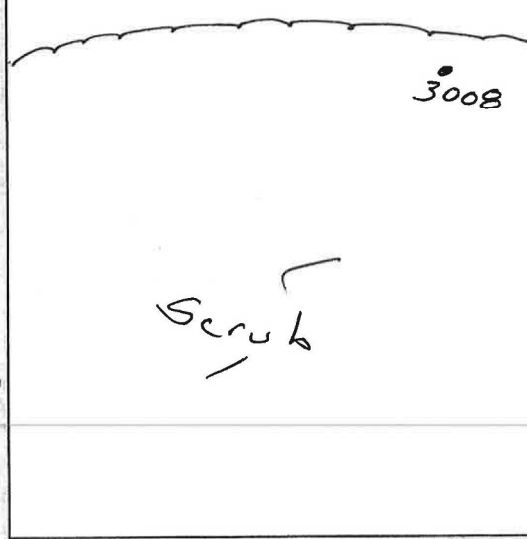
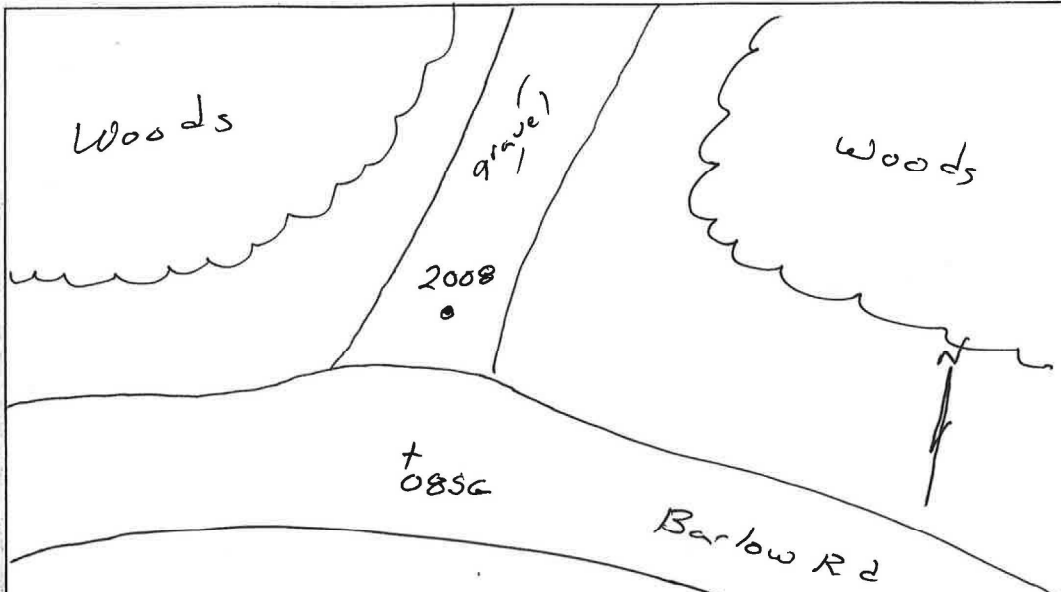


**0007SG, W, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>085G</b>	General location <b>Int of Barlow Rd + Logging Rd</b>	Ground Class <b>CT2</b>
Latitude <b>N 31° 49' 19.7 "</b>	Longitude <b>W 90° 33' 11.0 "</b>	Calendar Date <b>9 Mar 15</b>
		Observer Initials <b>JY</b>



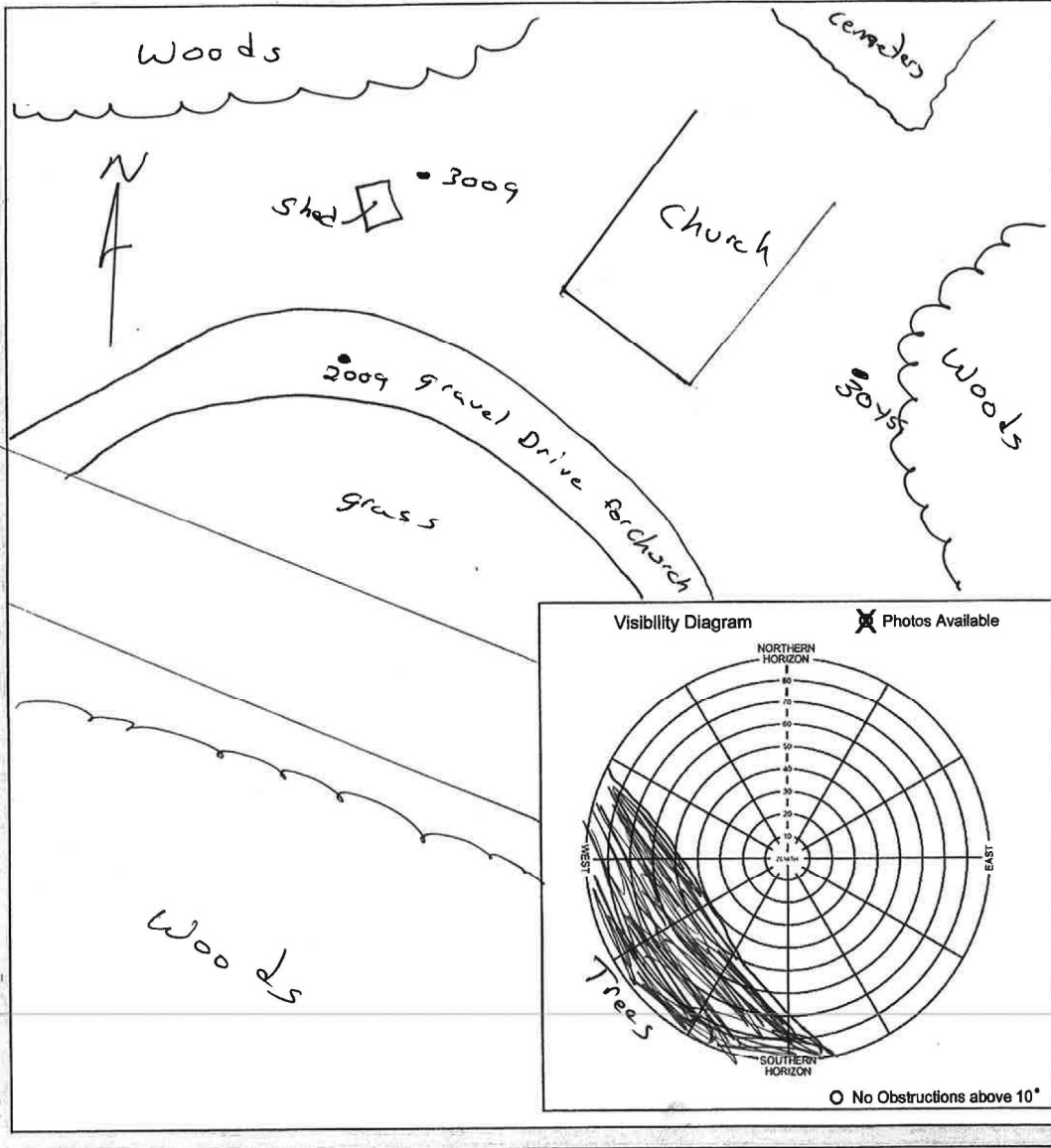


**0008SG, W, 09MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>09SG</b>	General location <b>Dentville Rd + Church entrance</b>	Ground Class <b>CTL</b>
Latitude <b>N 0 ' "</b>	Longitude <b>W 0 ' "</b>	Calendar Date <b>9/11/15</b>
		Observer Initials <b>JY</b>





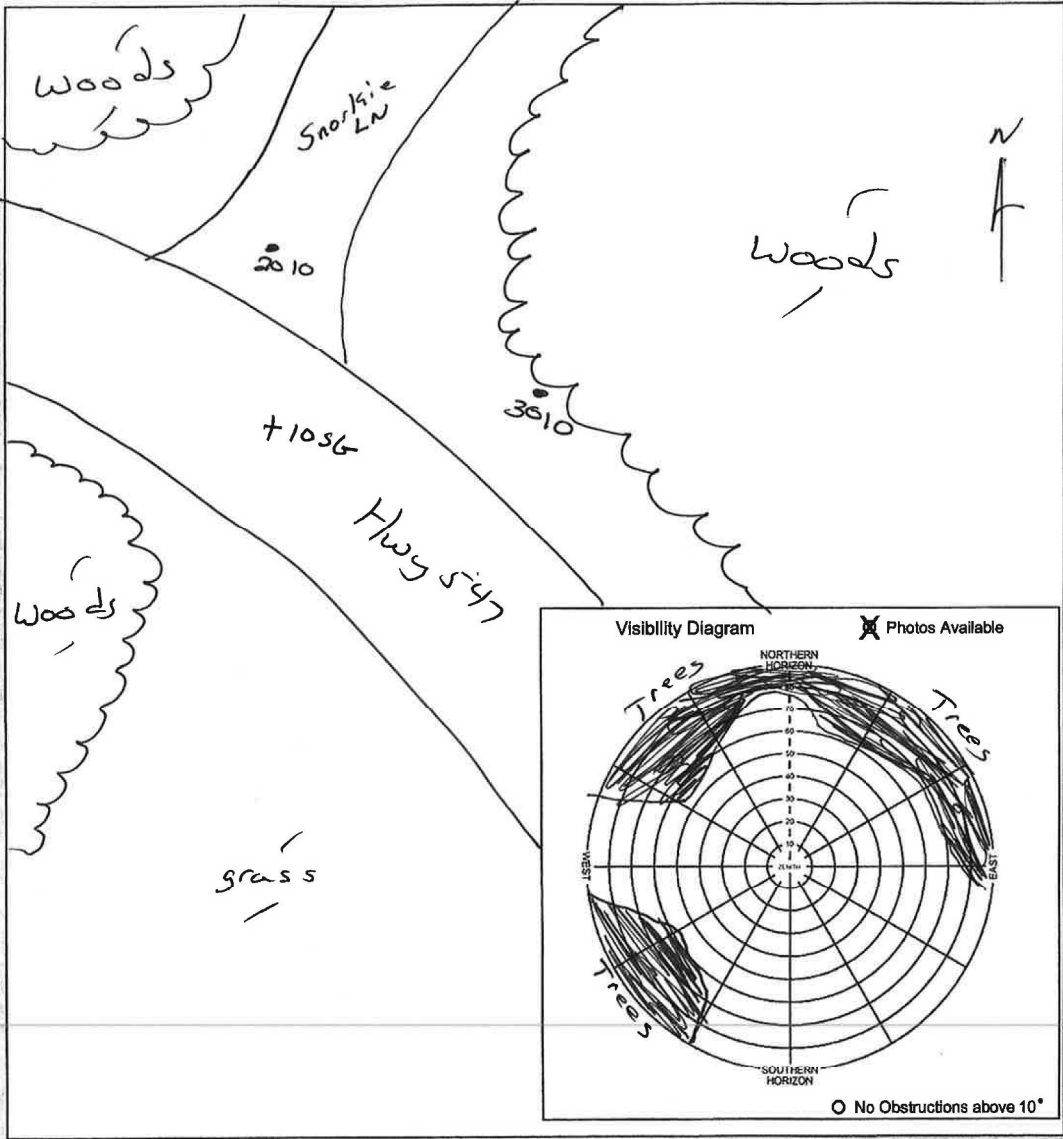
**0009SG, N, 09MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>105G</b>	General location <b>Int of Hwy 547 &amp; Snorkie LN</b>	Ground Class <b>CTL</b>
Latitude <b>N</b> ° ' "	Longitude <b>W</b> ° ' "	Calendar Date <b>8 Mar/15</b>
		Observer Initials <b>JY</b>



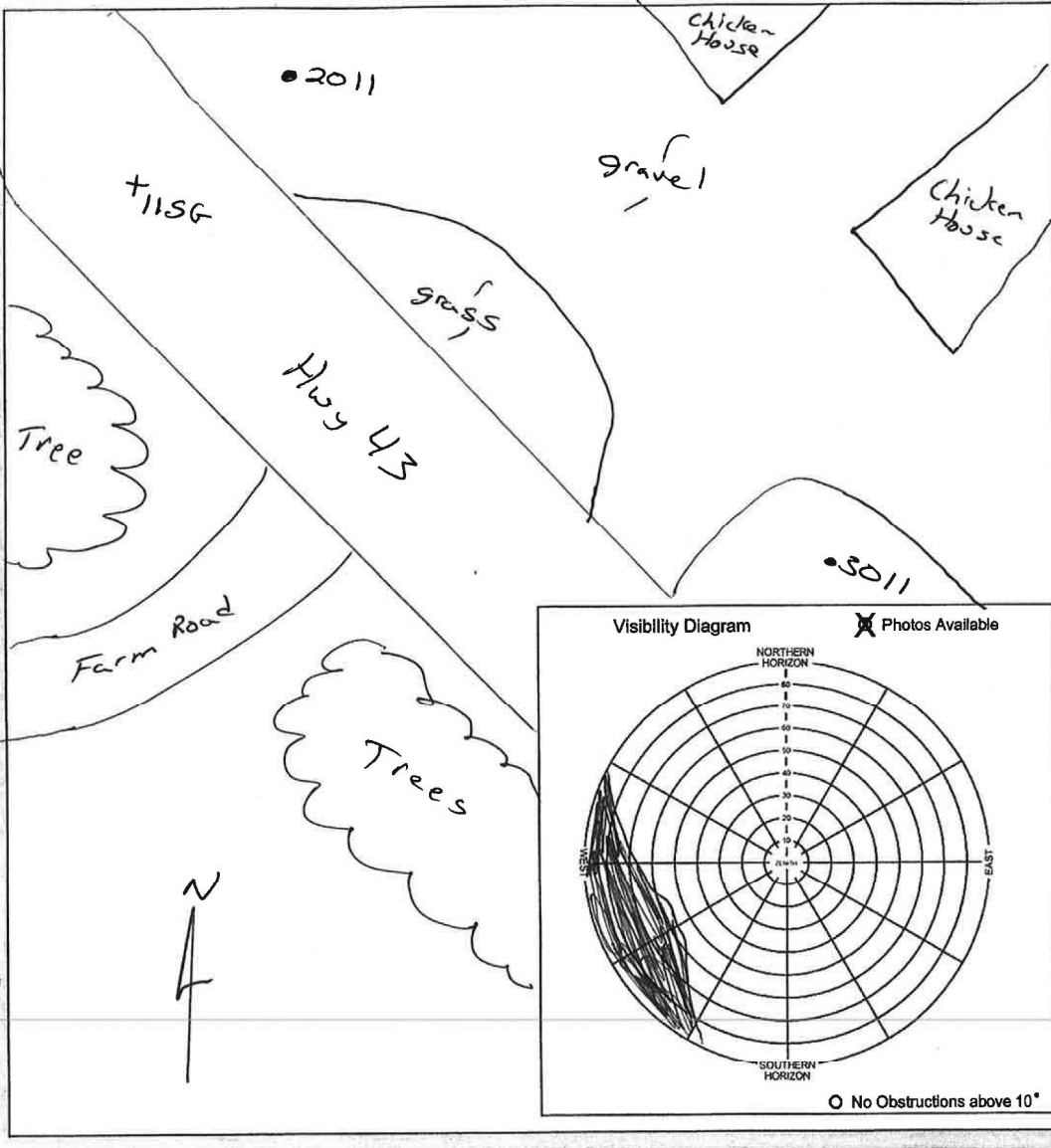


**0010SG, W, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 11 SG	General location Chicken Farm on Hwy 43	Ground Class CTL
Latitude N 31° 45' 45.2"	Longitude W 89° 58' 47.8"	Calendar Date 7 Mar 15
		Observer Initials JY



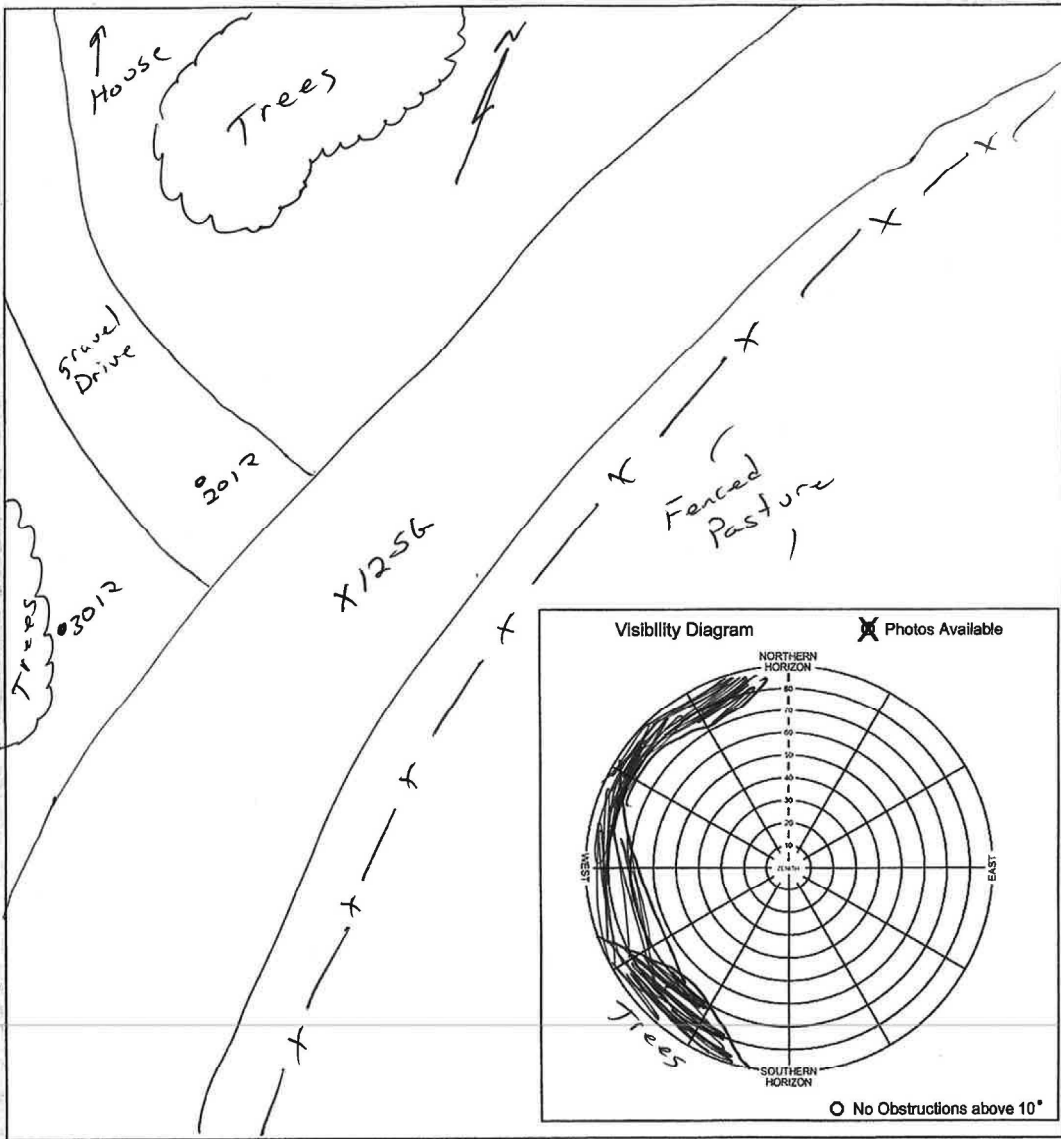


**0011SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>12 5G</b>	General location <b>Along Bridge Port Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 49' 46.7"</b>	Longitude <b>W 90° 05' 44.3"</b>	Calendar Date <b>7 Mar 15</b>
		Observer Initials <b>JY</b>



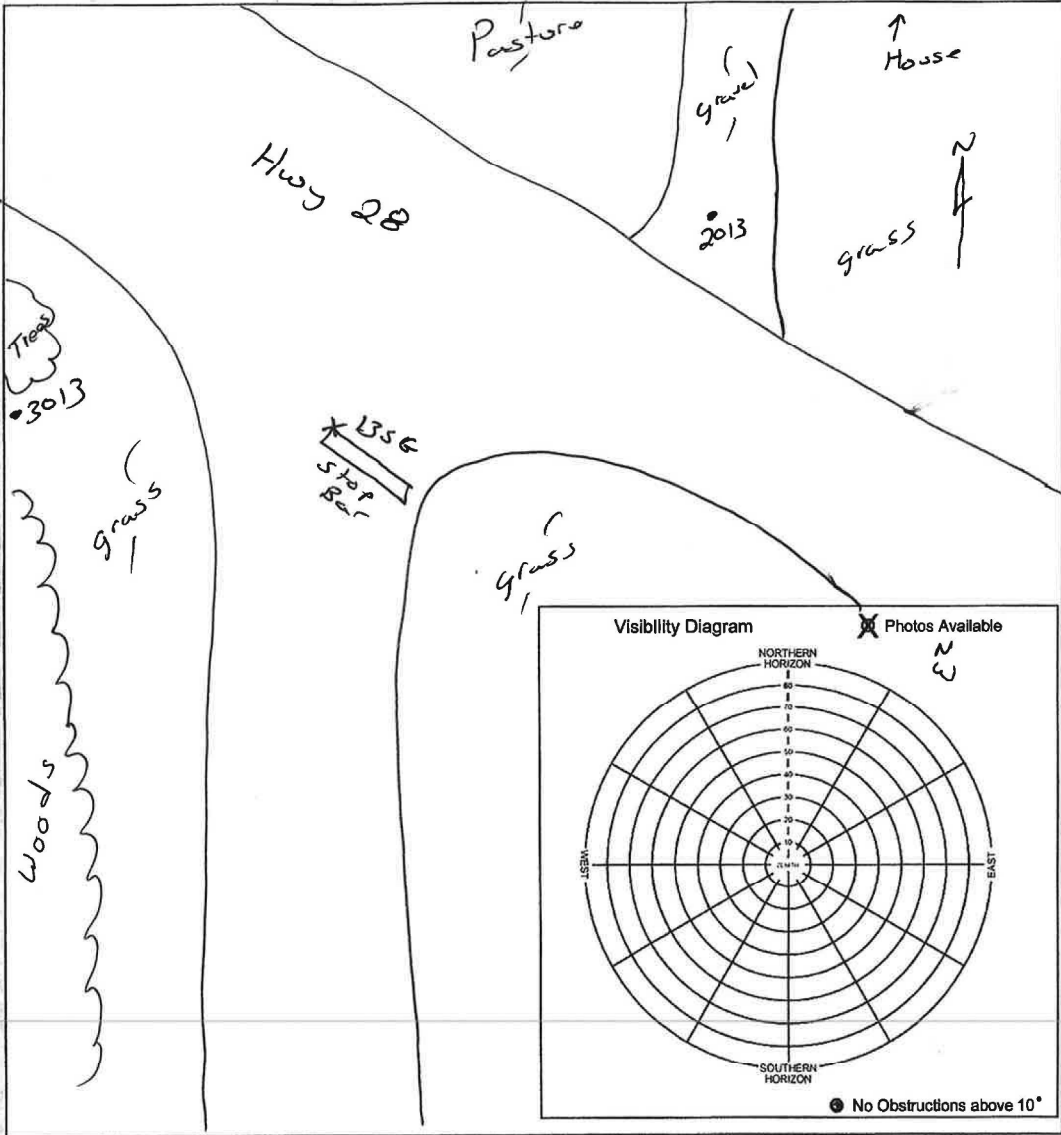


**0012SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 13 SG	General location Int of Hwy 28 & Williams Rd	Ground Class CTL
Latitude N 31° 49' 51.3 "	Longitude W 89° 54' 01.3 "	Calendar Date 6 Mar/15
		Observer Initials JY





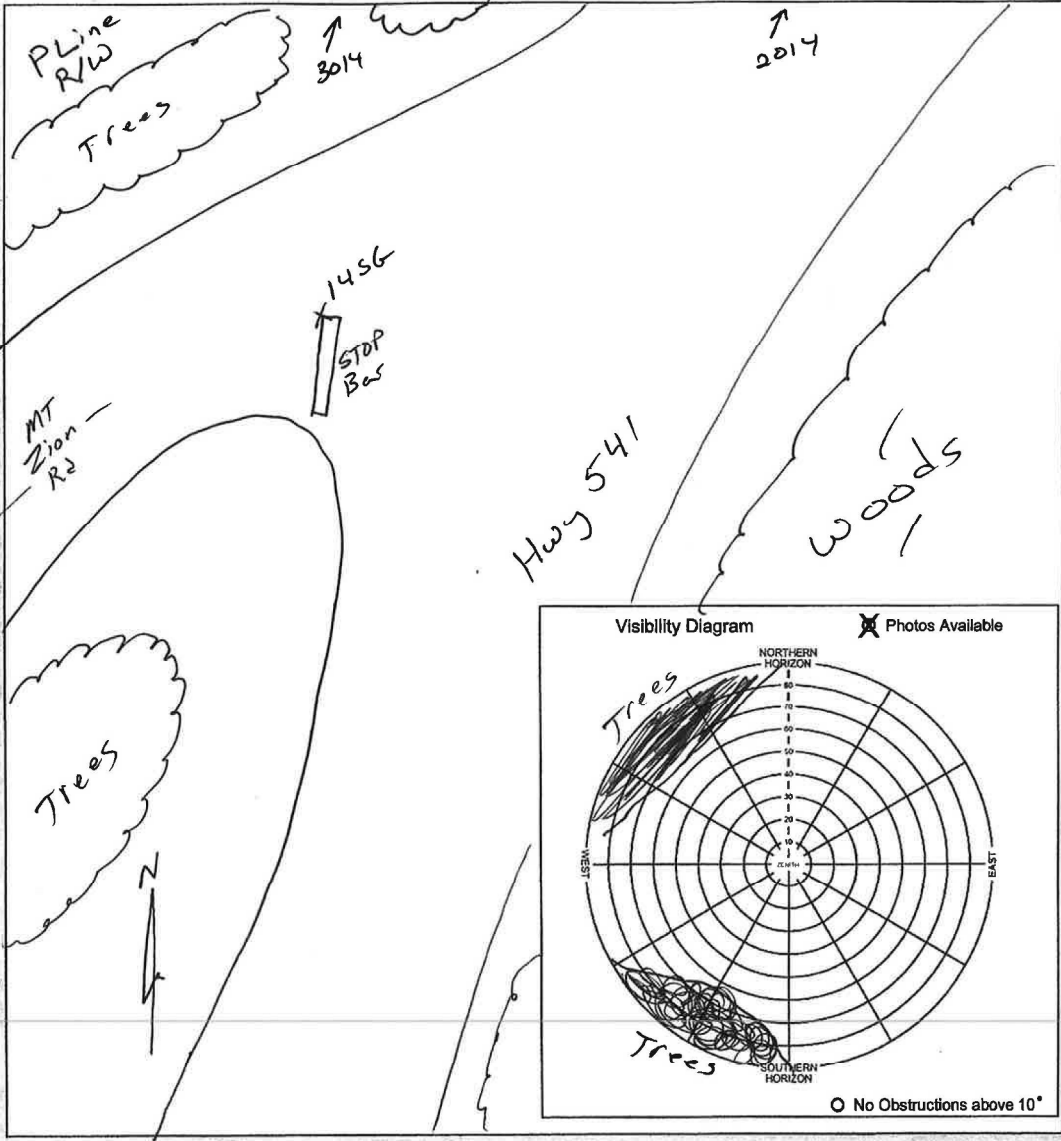
**13SG, N, 06MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>1456</b>	General location <b>Int of HWY 541 &amp; MT Zion Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 48' 31.3 "</b>	Longitude <b>W 89° 45' 30.6 "</b>	Calendar Date <b>6 Mar 15</b>
		Observer Initials <b>JY</b>



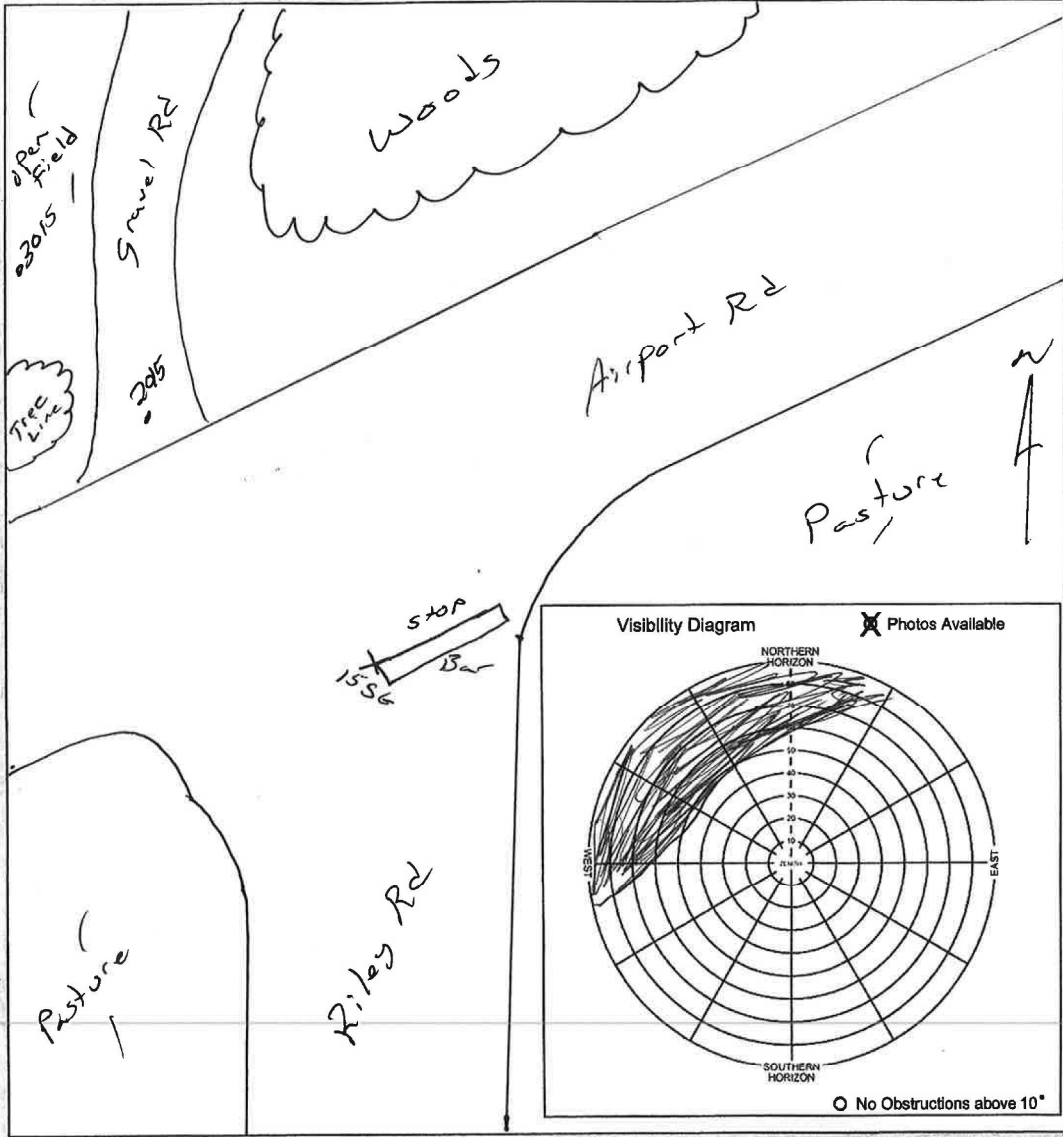


**14SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>1556</b>	General location <b>Int of Riley Rd + Airport Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 51' 54.8 "</b>	Longitude <b>W 89° 48' 20.3 "</b>	Calendar Date <b>6 Mar 15</b>
		Observer Initials <b>JS</b>



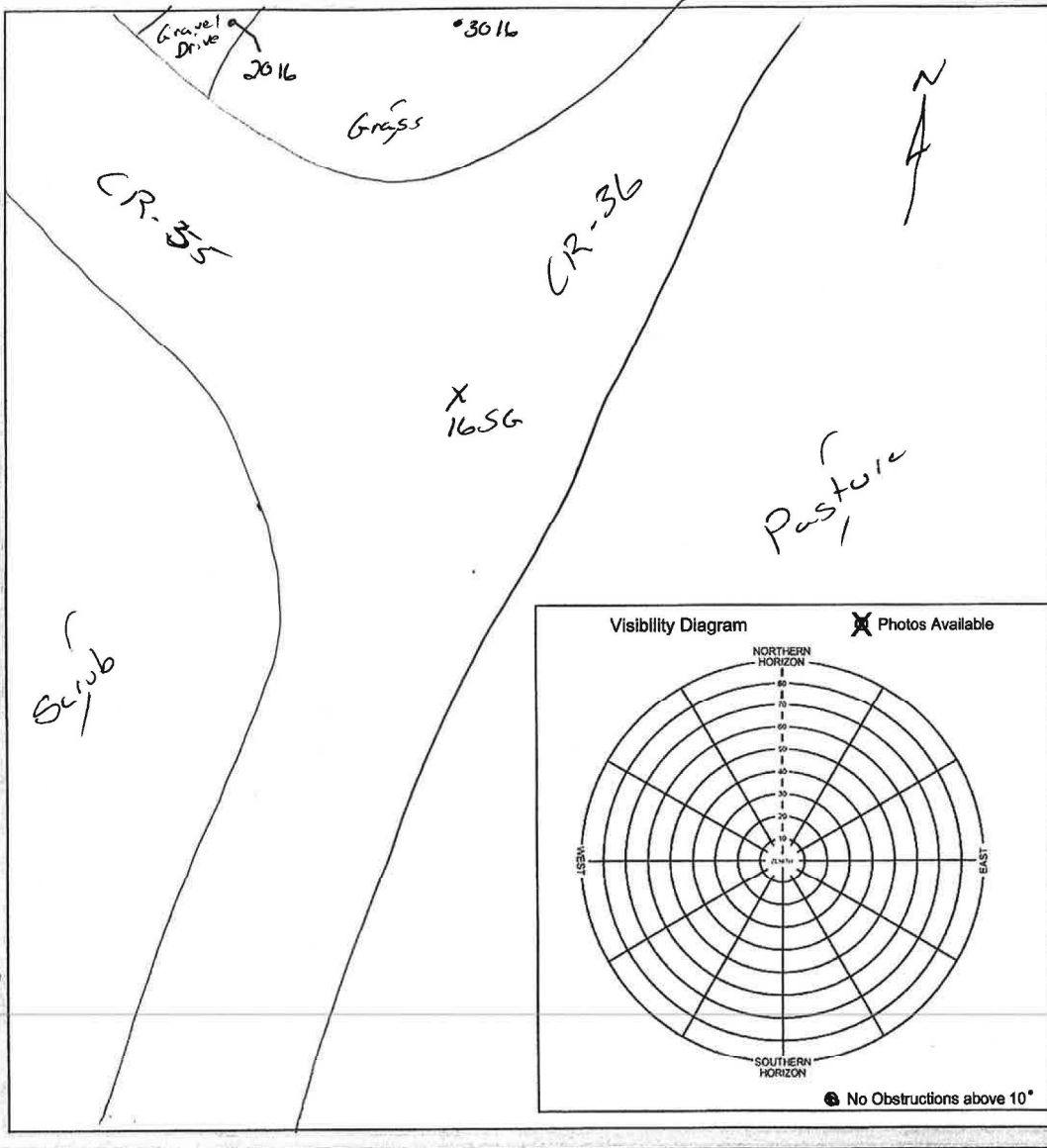


**15SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>16 SG</b>	General location <b>INT of CR36 &amp; CR 55</b>	Ground Class <b>CTL</b>
Latitude <b>N31°46'54.5"</b>	Longitude <b>W89°39'10.5"</b>	Calendar Date <b>6/16/15</b>
		Observer Initials <b>JY</b>



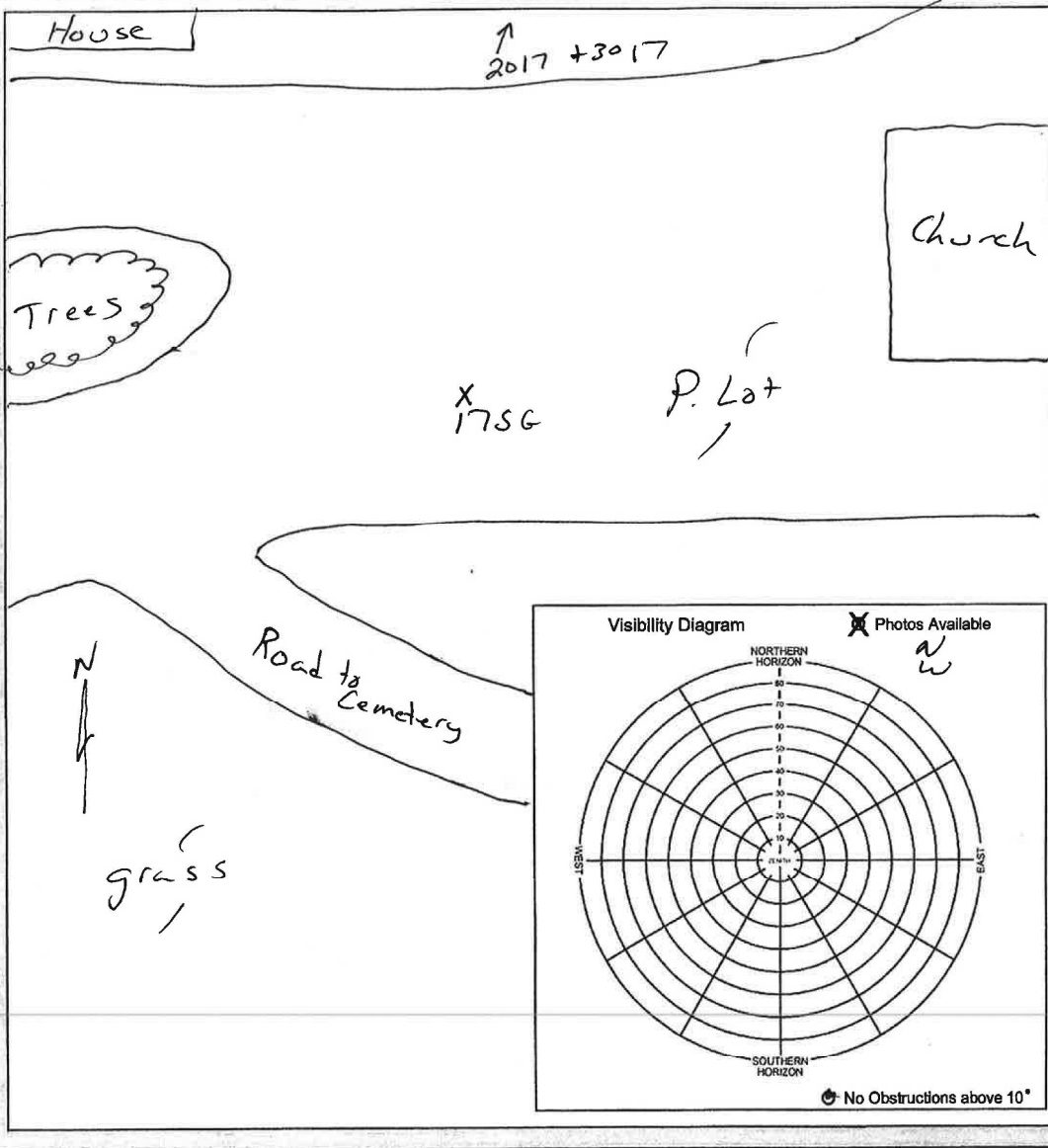


**16SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 17 SG	General location Church P. Lot on Johnson Rd	Ground Class CTL
Latitude N 31° 54' 49.5 "	Longitude W 89° 40' 18.0 "	Calendar Date 6 Mar 15
		Observer Initials JY





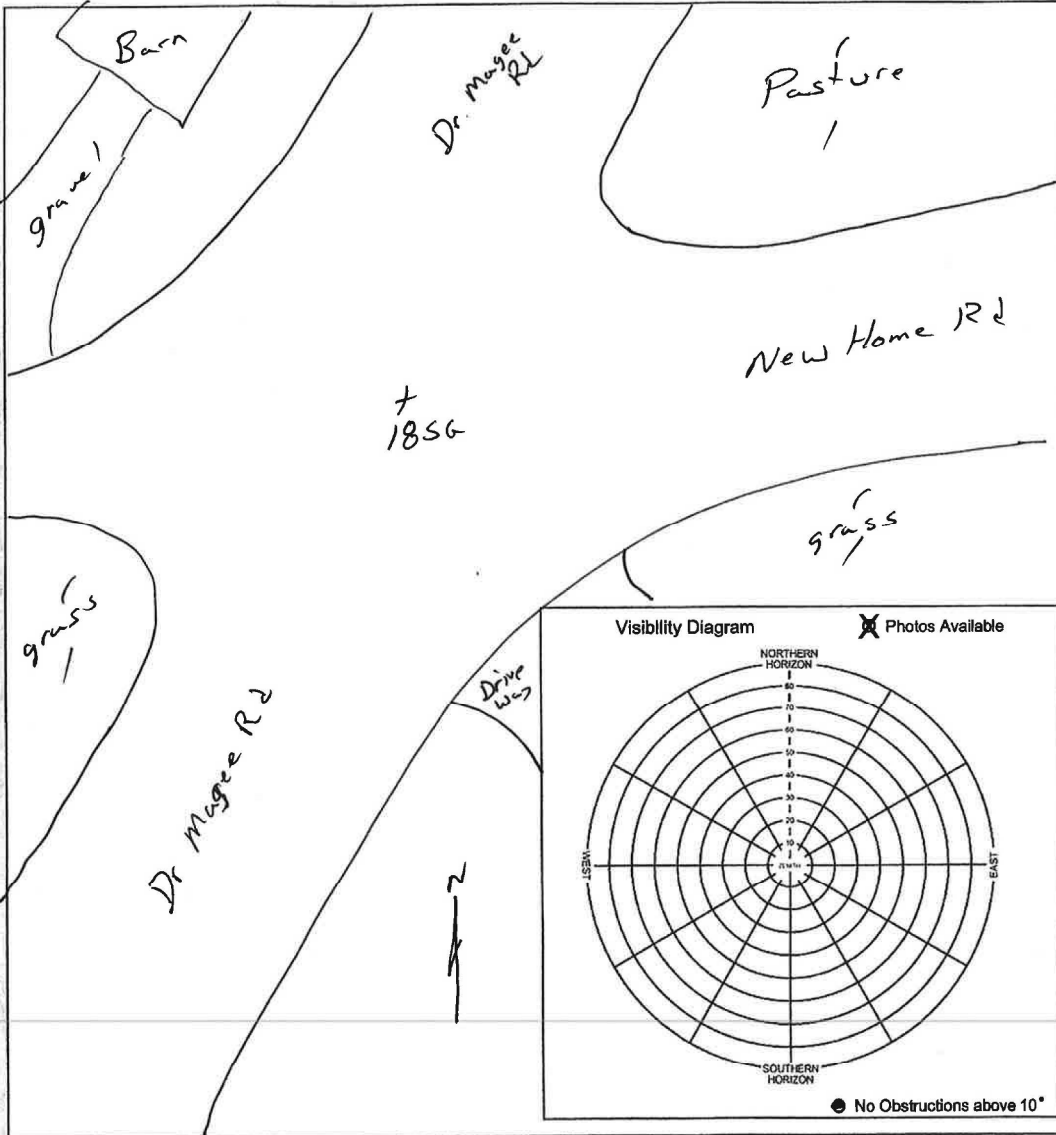
**17SG, N, 06MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>18 SG</b>	General location <b>Int of Dr Magee + New Home Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 59' 33.0 "</b>	Longitude <b>W 09° 43' 50.0 "</b>	Calendar Date <b>6 Mar 15</b>
		Observer Initials <b>JY</b>



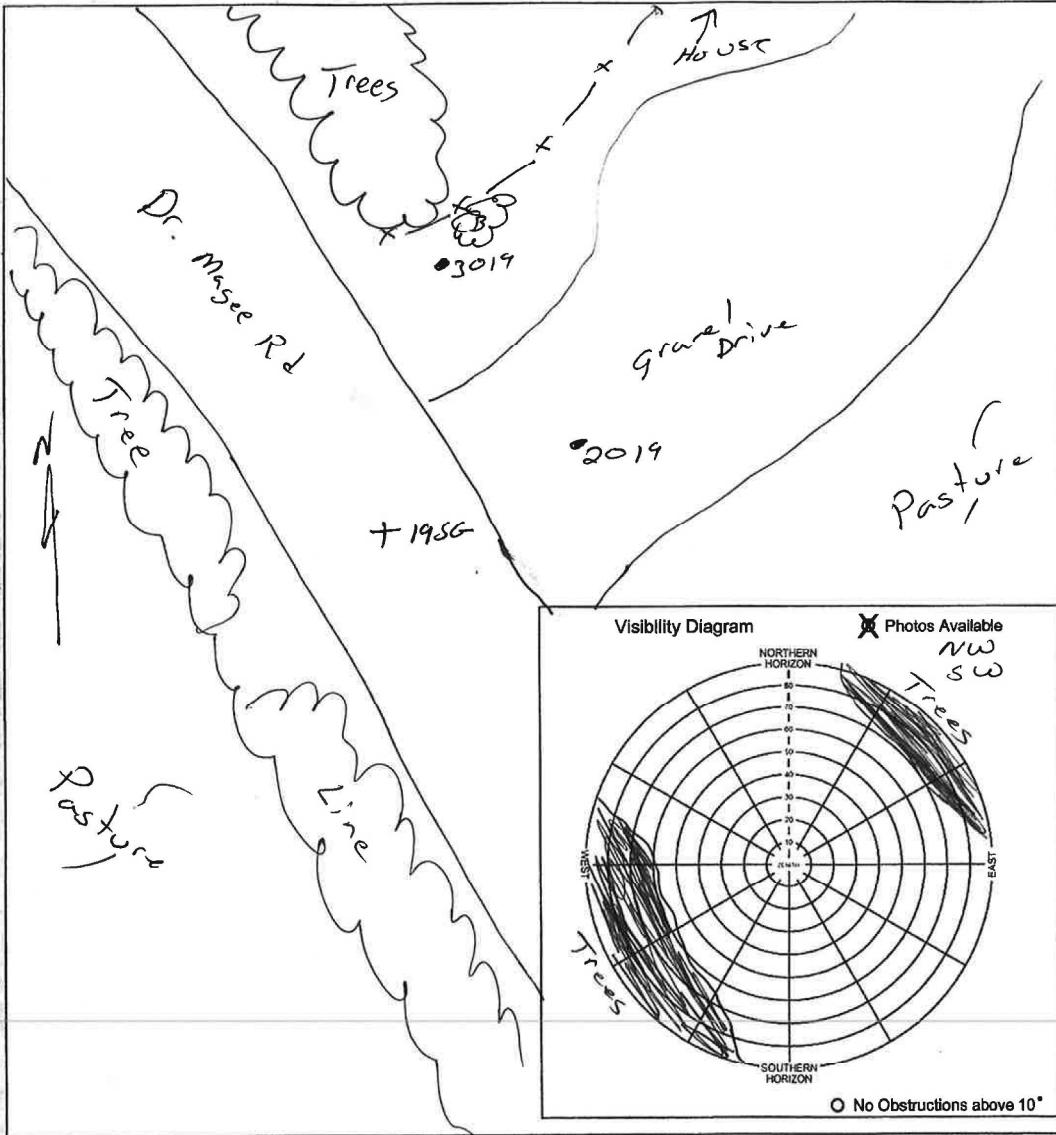


**18SG, N, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>19 SG</b>	General location <b>Along Dr. Magee Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 32° 02' 08.8 "</b>	Longitude <b>W 89 ° 42 ' 56.8 "</b>	Calendar Date <b>6 Mar 15</b>
		Observer Initials <b>JY</b>



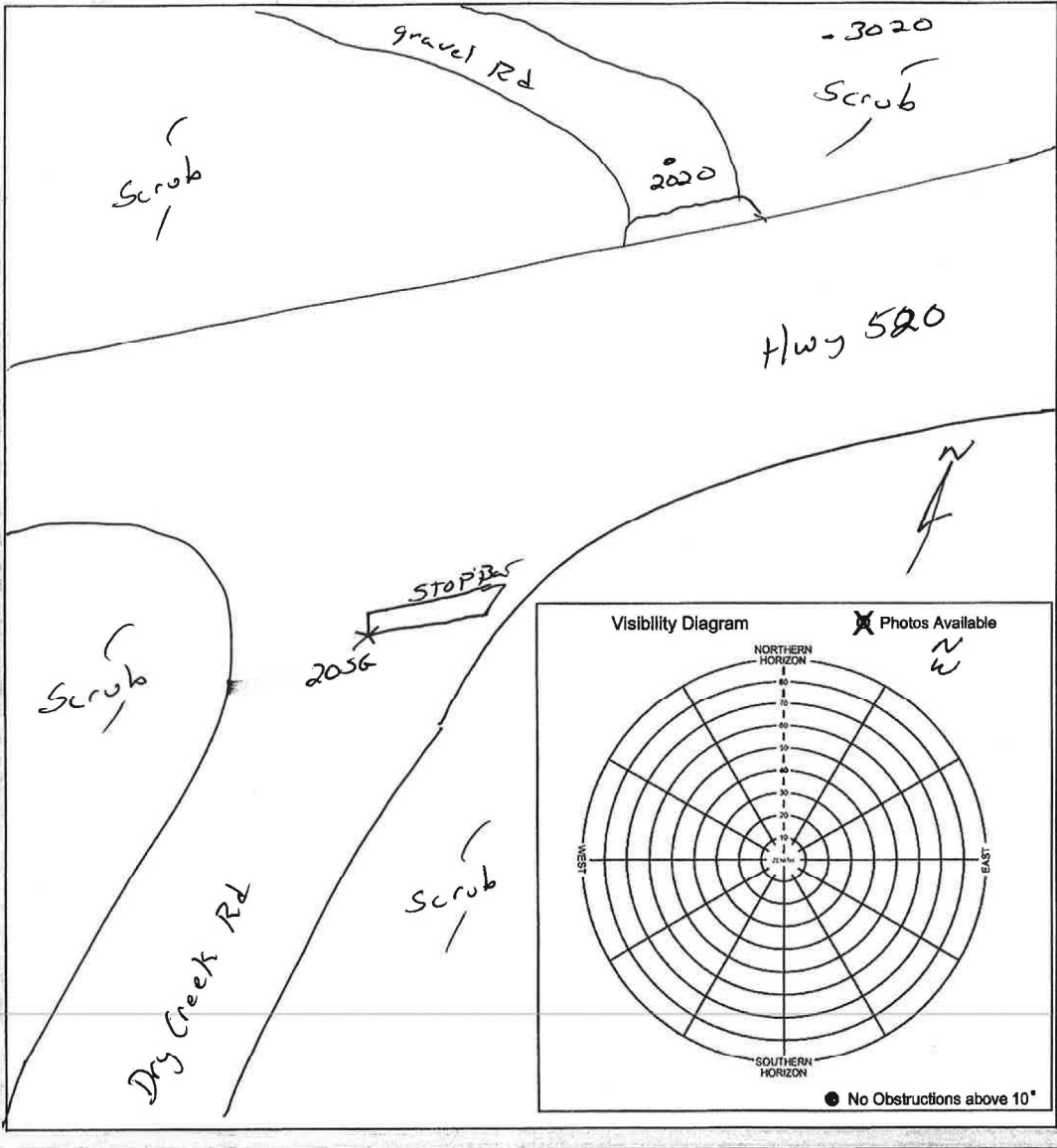


**19SG, W, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>20 SG</b>	General location <b>Int of HWY <del>520</del><sup>520</sup> + Dry Creek Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N32°00'19.5"</b>	Longitude <b>W89°39'20.9"</b>	Calendar Date <b>6 Mar 15</b>
		Observer Initials <b>JY</b>



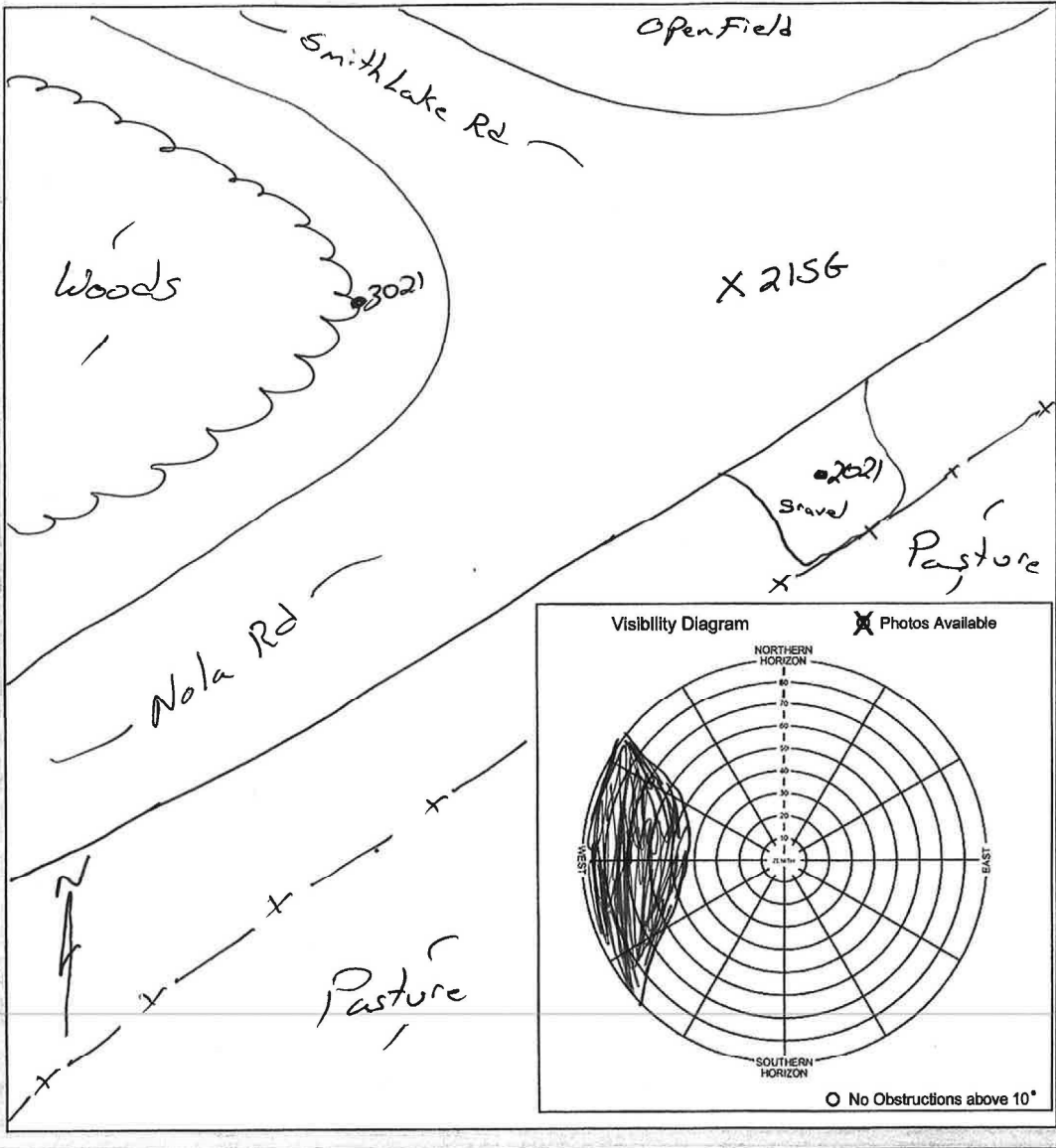


**20SG, W, 06MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>2156</b>	General location <b>Int of Nola + Smith Lake Rds</b>	Ground Class <b>CTL</b>
Latitude <b>N31°35'12.4"</b>	Longitude <b>W90°21'41.4"</b>	Calendar Date <b>8 Mar 15</b>
		Observer Initials <b>JY</b>





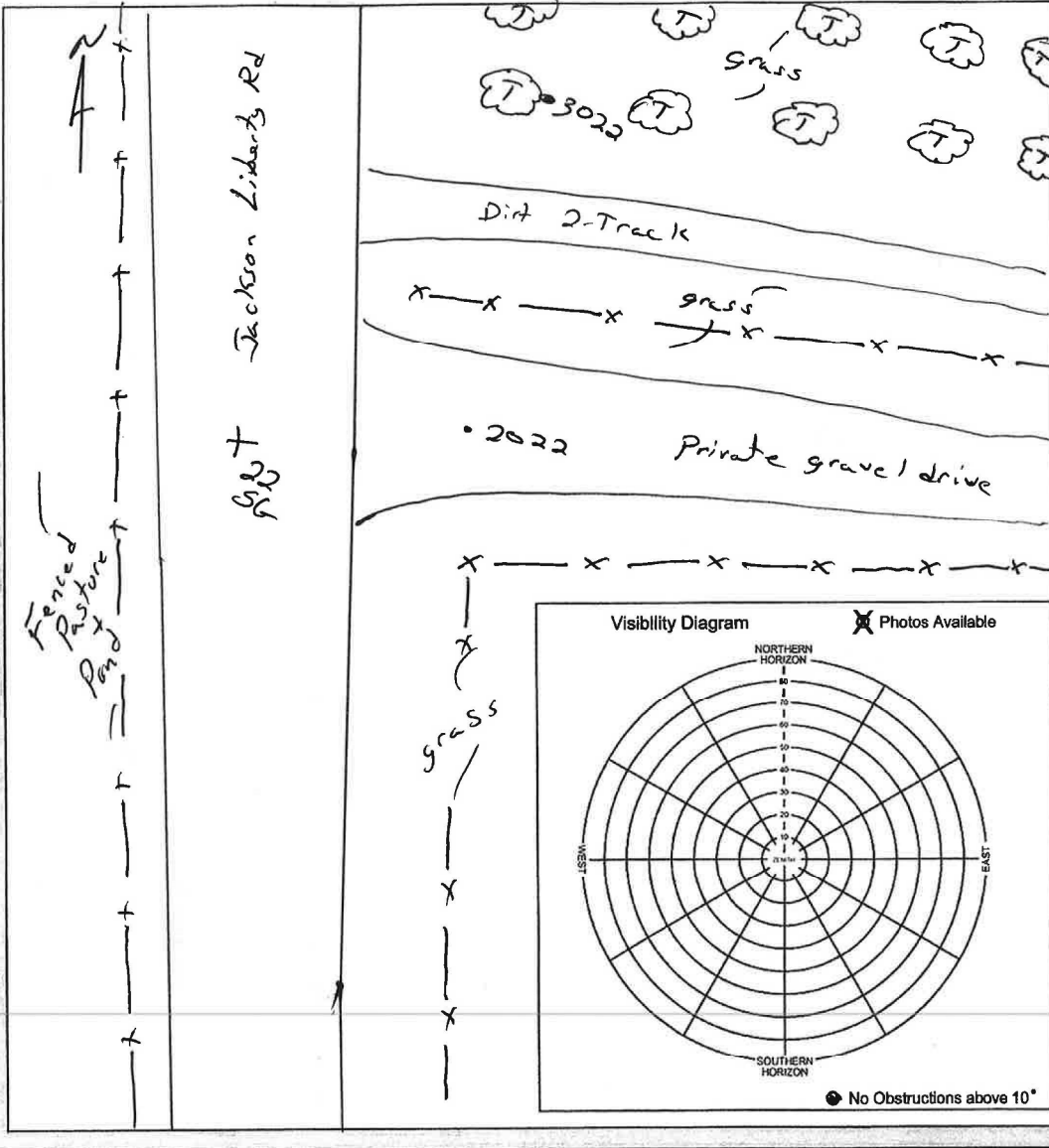
**0021SG, N, 08MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>225G</b>	General location <b>Int of Jackson-Liberty Rd + Drive</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 43' 29.3 "</b>	Longitude <b>W 90° 33' 22.7 "</b>	Calendar Date <b>8 Mar/15</b>
		Observer Initials <b>JY</b>



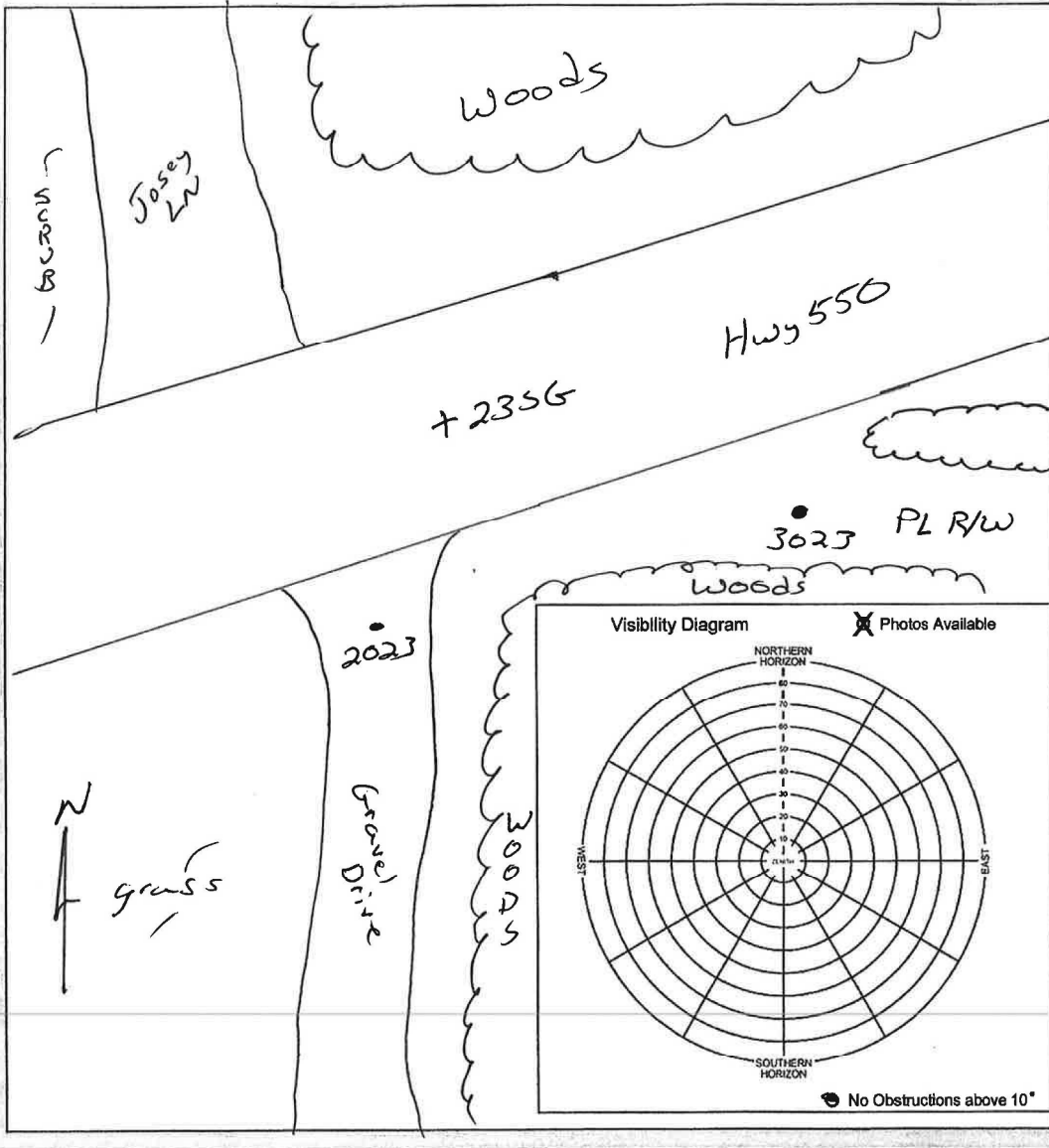


**0022SG, W, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>23 SG</b>	General location <b>Int of Hwy 550 + Josey LN</b>	Ground Class <b>CTL</b>
Latitude <b>N31°40'10.9"</b>	Longitude <b>W90°40'43.5"</b>	Calendar Date <b>9/16/15</b>
		Observer Initials <b>JY</b>



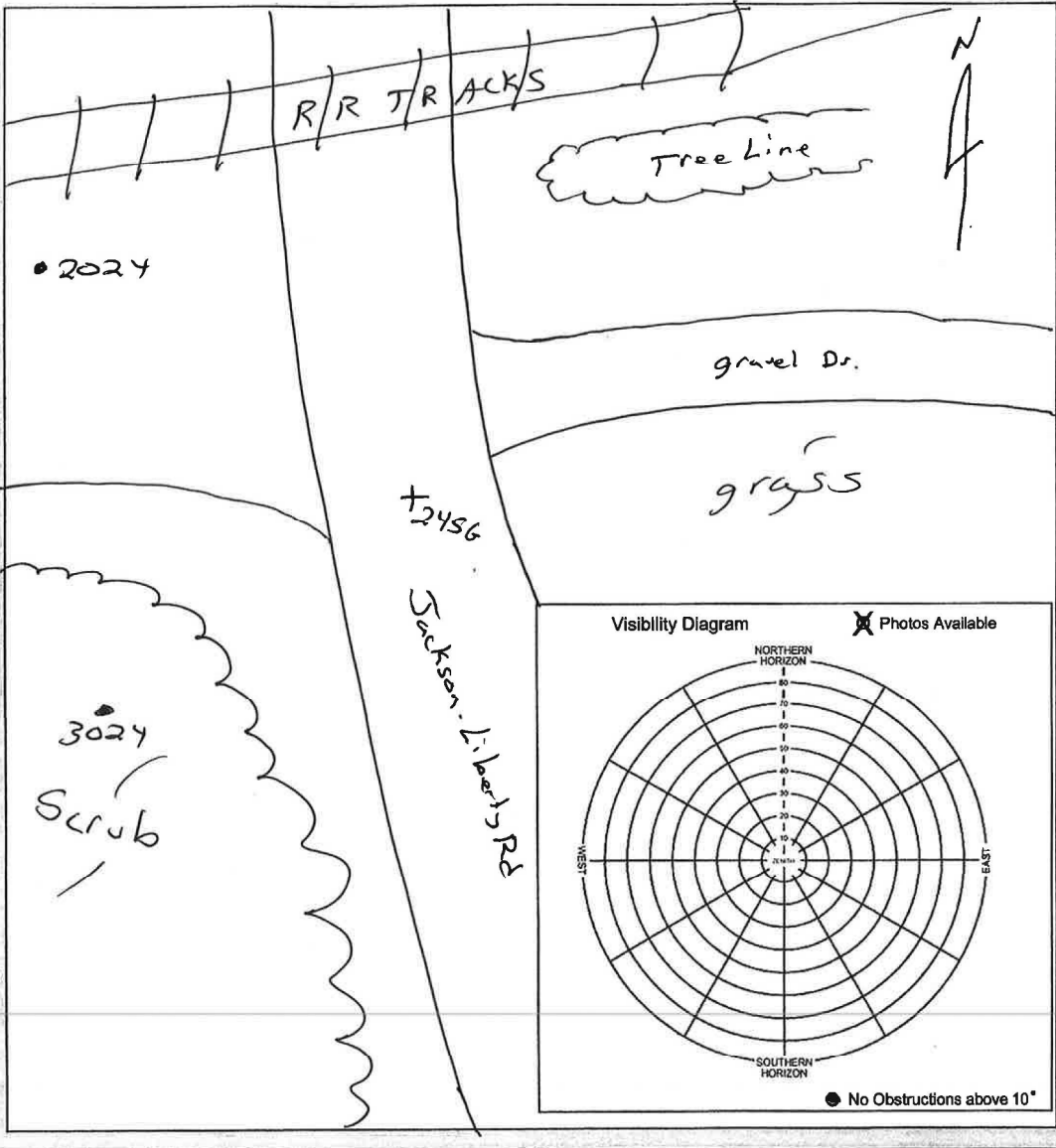


**0023SG, N, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 2456	General location Int of Jackson-Liberty Dr. → RR Tracks	Ground Class CTL
Latitude N ° ' "	Longitude W ° ' "	Calendar Date 7 Mar 15
		Observer Initials JY



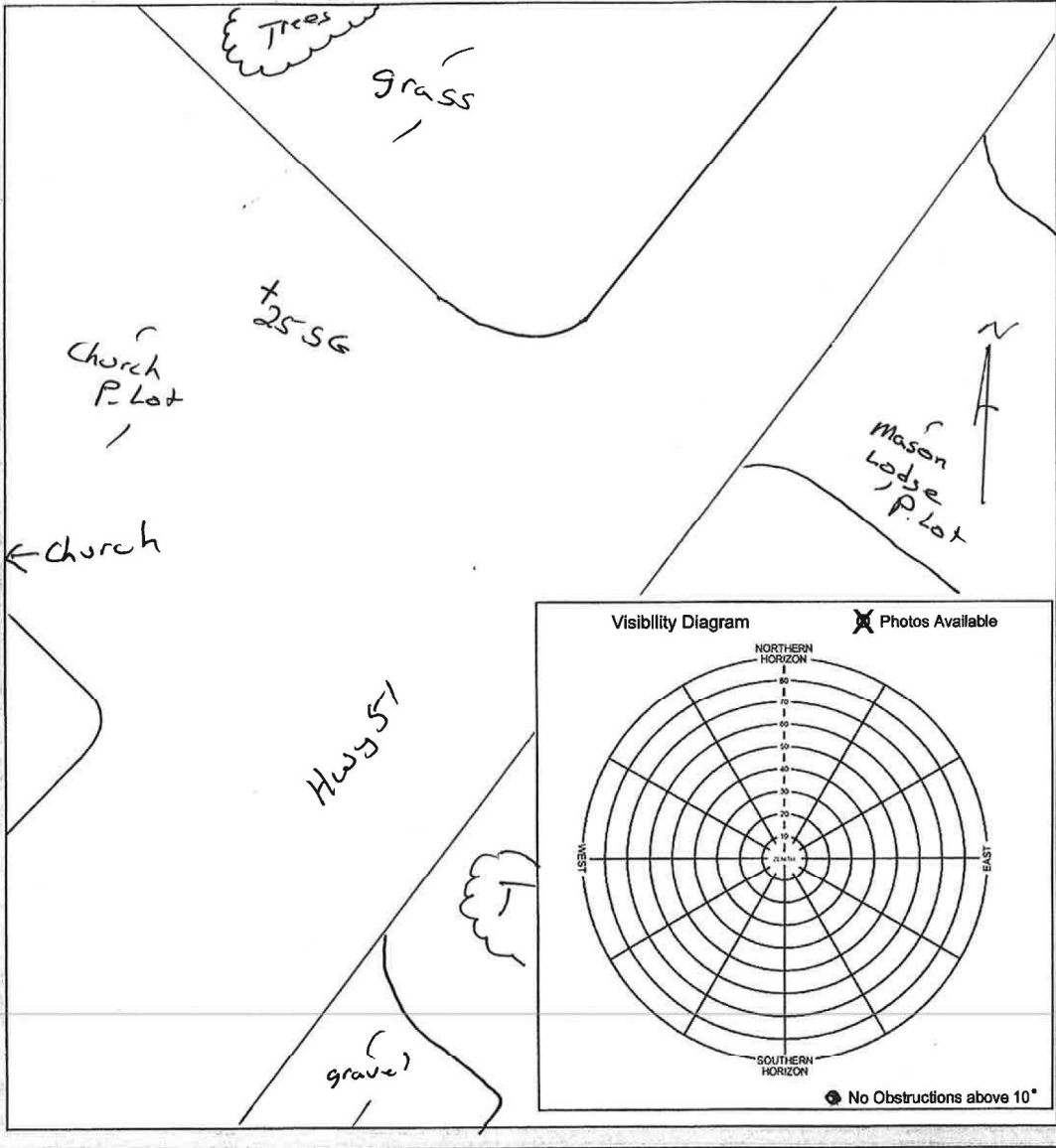


**0024SG, N, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>255G</b>	General location <b>Church P. Lot on Hwy 51</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 42' 13.1 "</b>	Longitude <b>W 90° 23' 45.6 "</b>	Calendar Date <b>8/16/15</b>
		Observer Initials <b>JY</b>





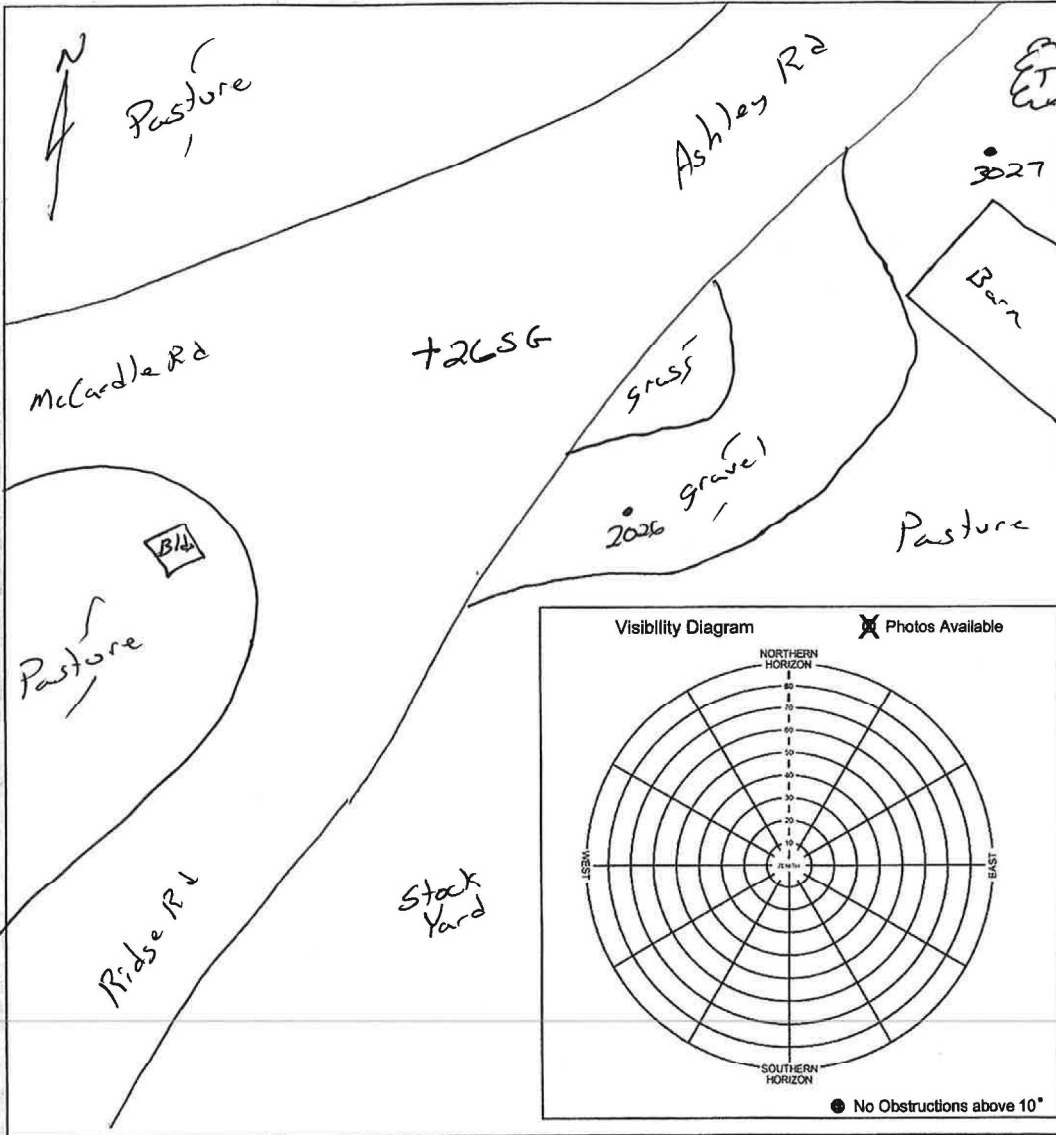
**0025SG, N, 08MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>26SG</b>	General location <b>Int of McCardle &amp; Ashley Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N 31° 47' 45.0 "</b>	Longitude <b>W 90° 16' 40.3 "</b>	Calendar Date <b>7/mc/15</b>
		Observer Initials <b>JY</b>



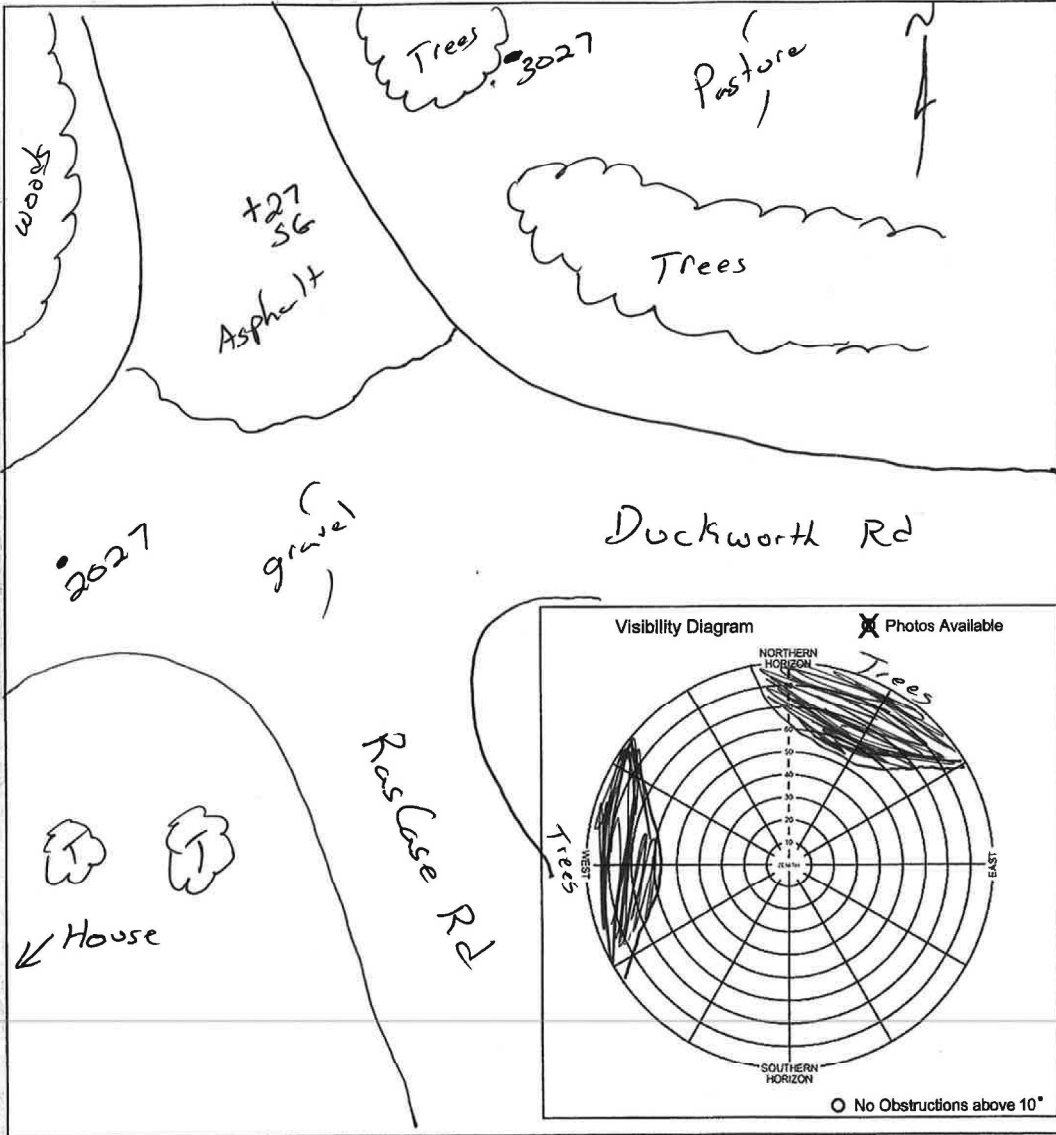


**0026SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>2756</b>	General location <b>Int of Ras Case Rd + Duckworth</b>	Ground Class <b>CTL</b>
Latitude <b>N31°41'30.2"</b>	Longitude <b>W90°11'58.7"</b>	Calendar Date <b>7/mar/15</b>
		Observer Initials <b>JY</b>



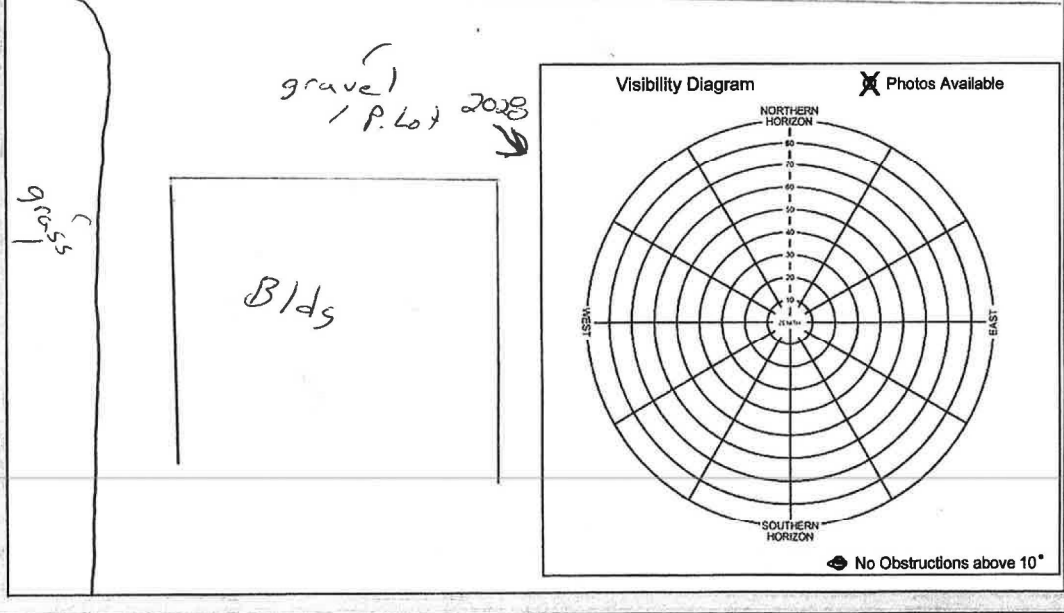
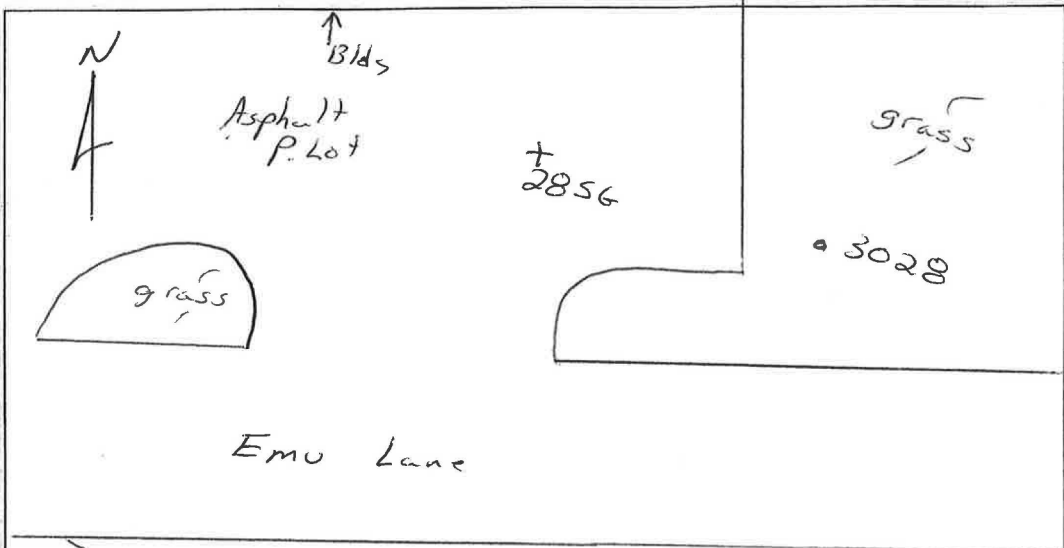


**0027SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>285G</b>	General location <b>P. Lot on EMU Lane</b>	Ground Class <b>CTL</b>
Latitude <b>N31°35'45.7"</b>	Longitude <b>W89°59'59.6"</b>	Calendar Date <b>7/mar/15</b>
		Observer Initials <b>JY</b>



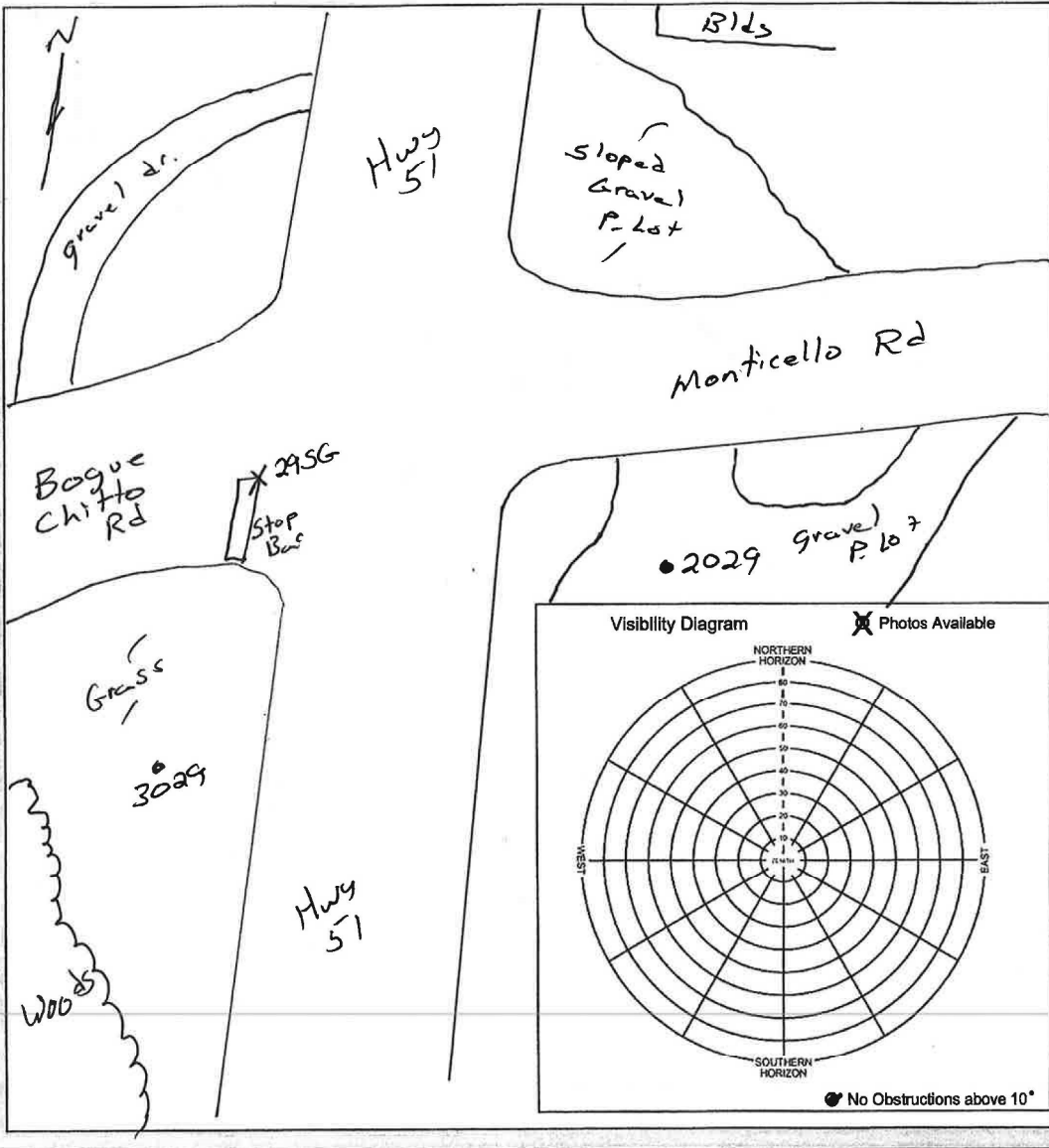


**0028SG, N, 07MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>295G</b>	General location <b>Int of Hwy 51 + Monticello Rd</b>	Ground Class
Latitude N ° ' "	Longitude W ° ' "	Calendar Date / /
		Observer Initials





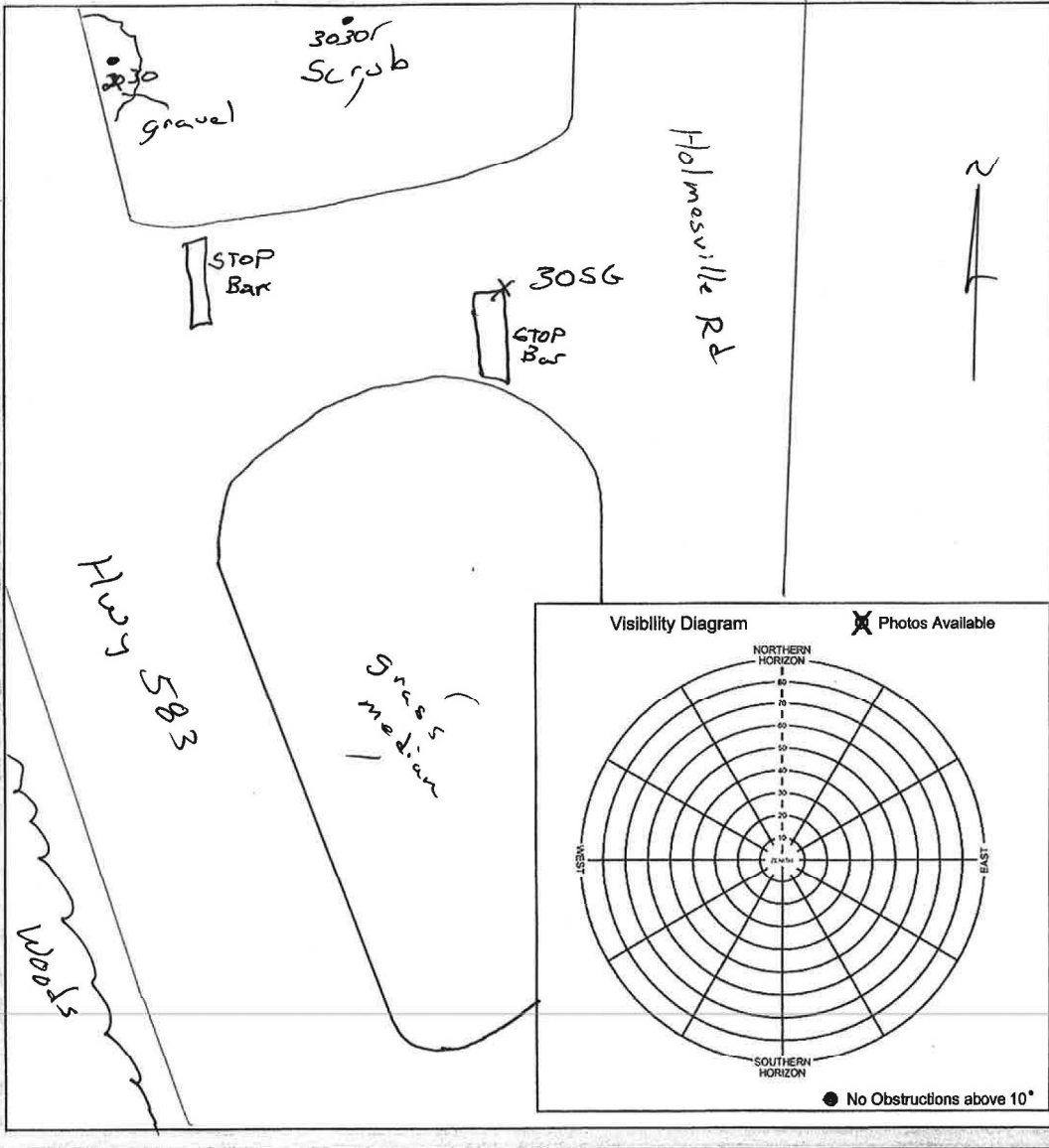
**0029SG, N, 08MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>3056</b>	General location <b>Int of Hwy 583 &amp; Holmesville Rd</b>	Ground Class <b>CTL</b>
Latitude <b>N31°21'16.7"</b>	Longitude <b>W90°14'39.2"</b>	Calendar Date <b>8 Mar/15</b>
		Observer Initials <b>JY</b>



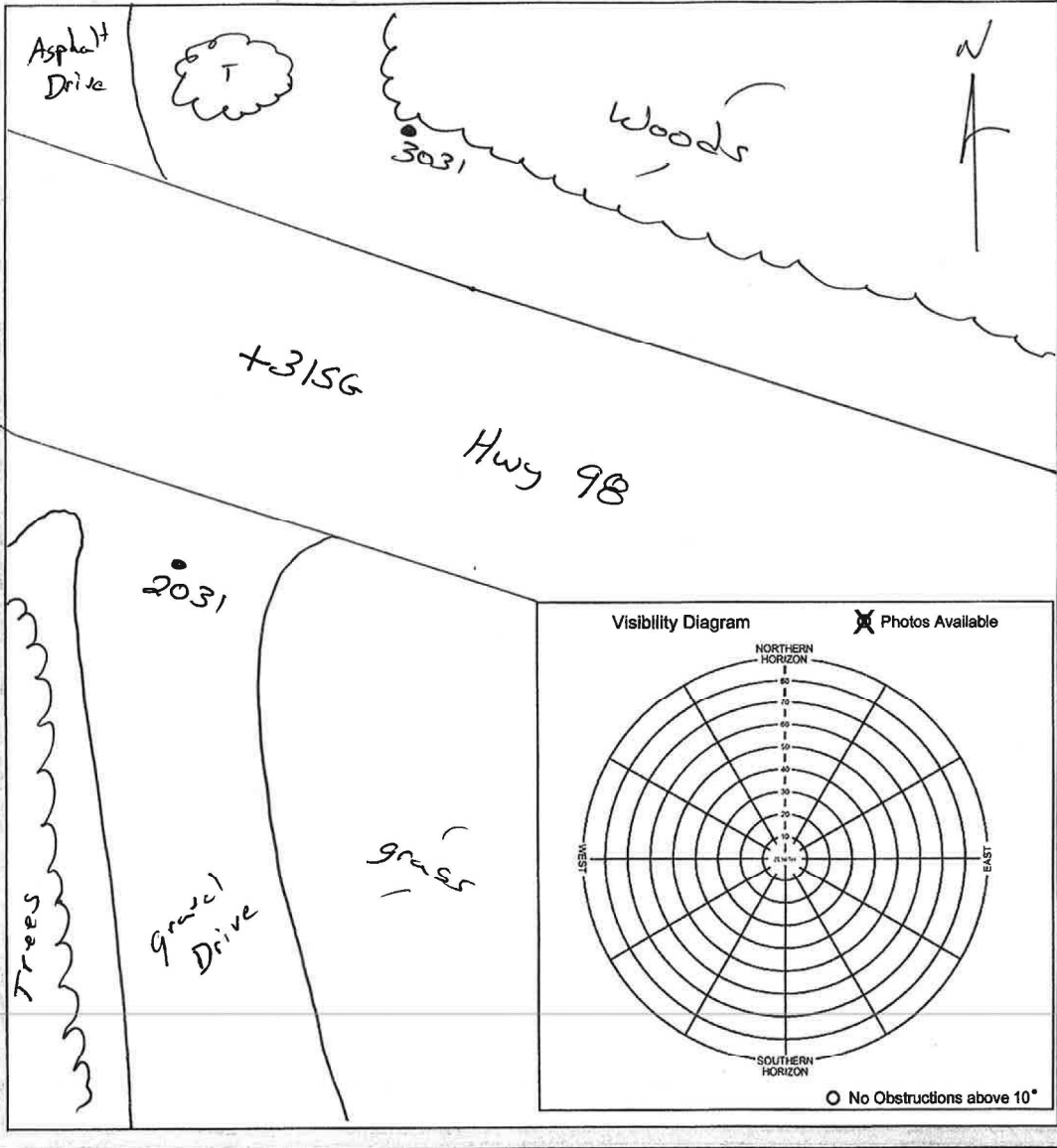


**0030SG, W, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>315G</b>	General location <b>Int of Hwy 98 + Private Drive</b>	Ground Class <b>CTL</b>
Latitude <b>N 0 ' "</b>	Longitude <b>W 0 ' "</b>	Calendar Date <b>7 / Mar / 15</b>
		Observer Initials <b>JY</b>



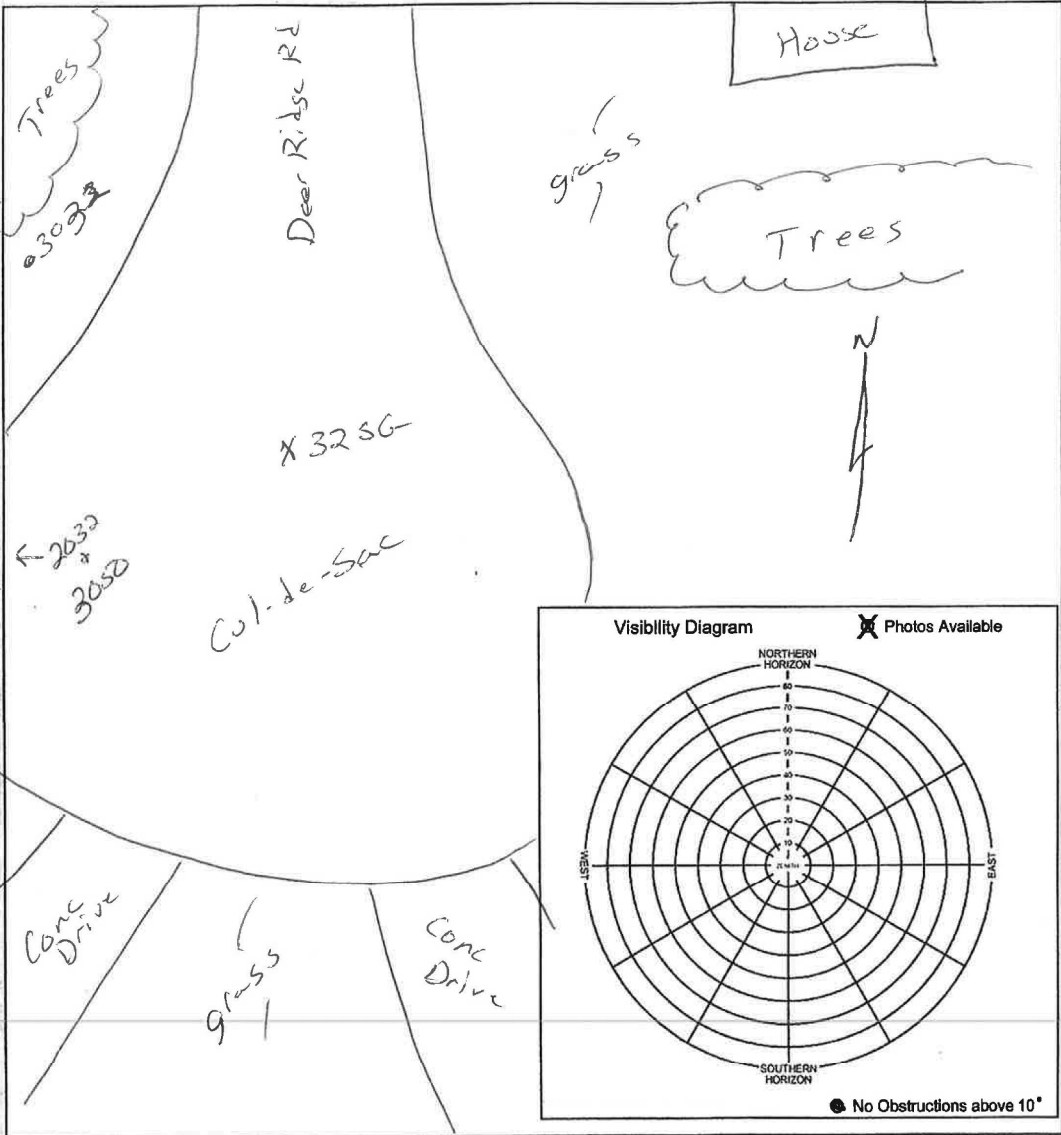


**0031SG, N, 08MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # <b>32 SG</b>	General location <i>Deer Ridge Rd Col-de-Sac</i>	Ground Class <b>CTL</b>
Latitude <b>N31°14'28.2"</b>	Longitude <b>W90°24'35.4"</b>	Calendar Date <b>5/15/15</b>
		Observer Initials <b>JU</b>



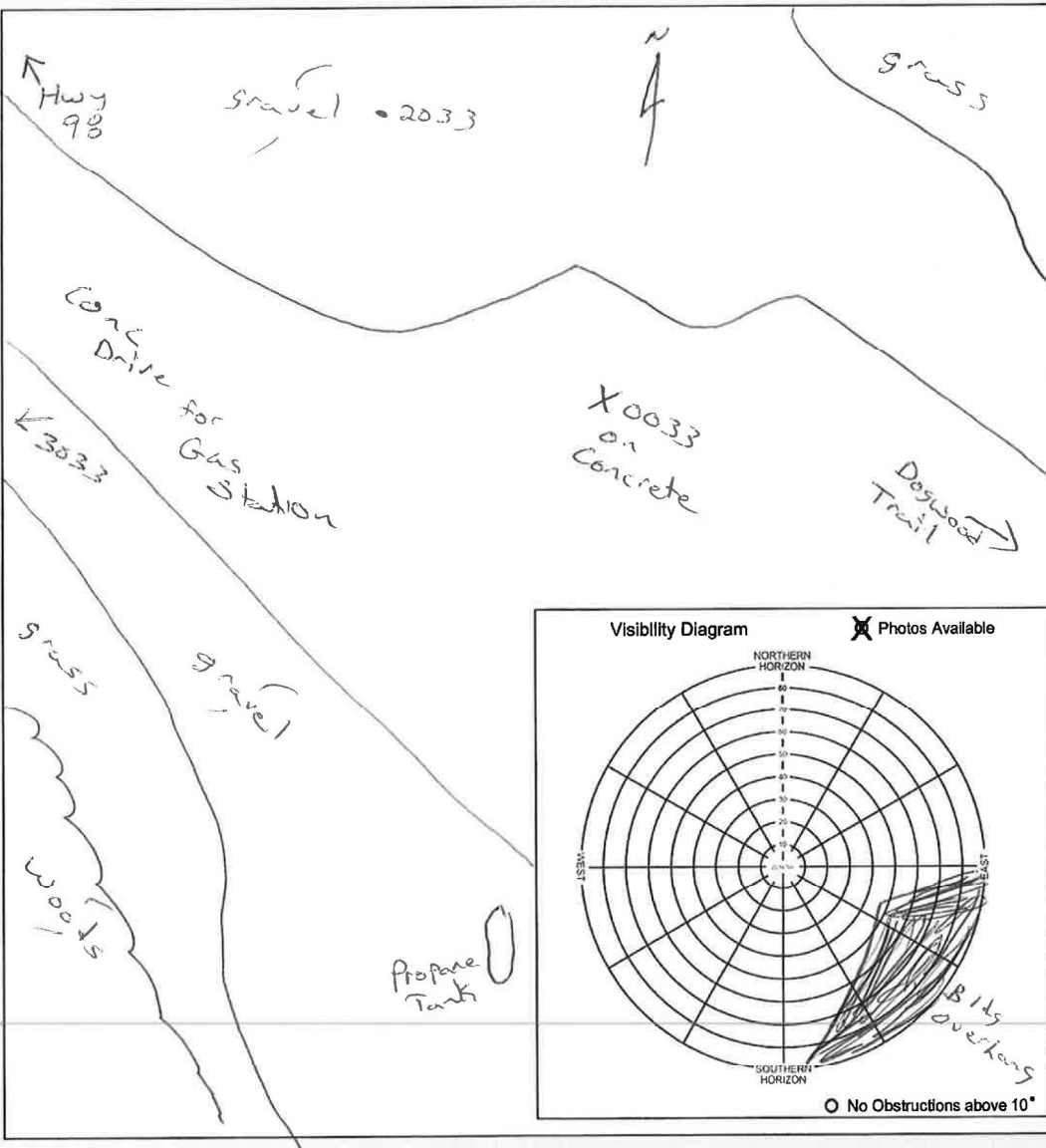


**32SG, N, 05MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 33 SG	General location HW 98 / Dogwood Trail	Ground Class	
Latitude N 31° 10' 40.1"	Longitude W 90° 17' 32.5"	Calendar Date 5 Mar 14	Observer Initials JY





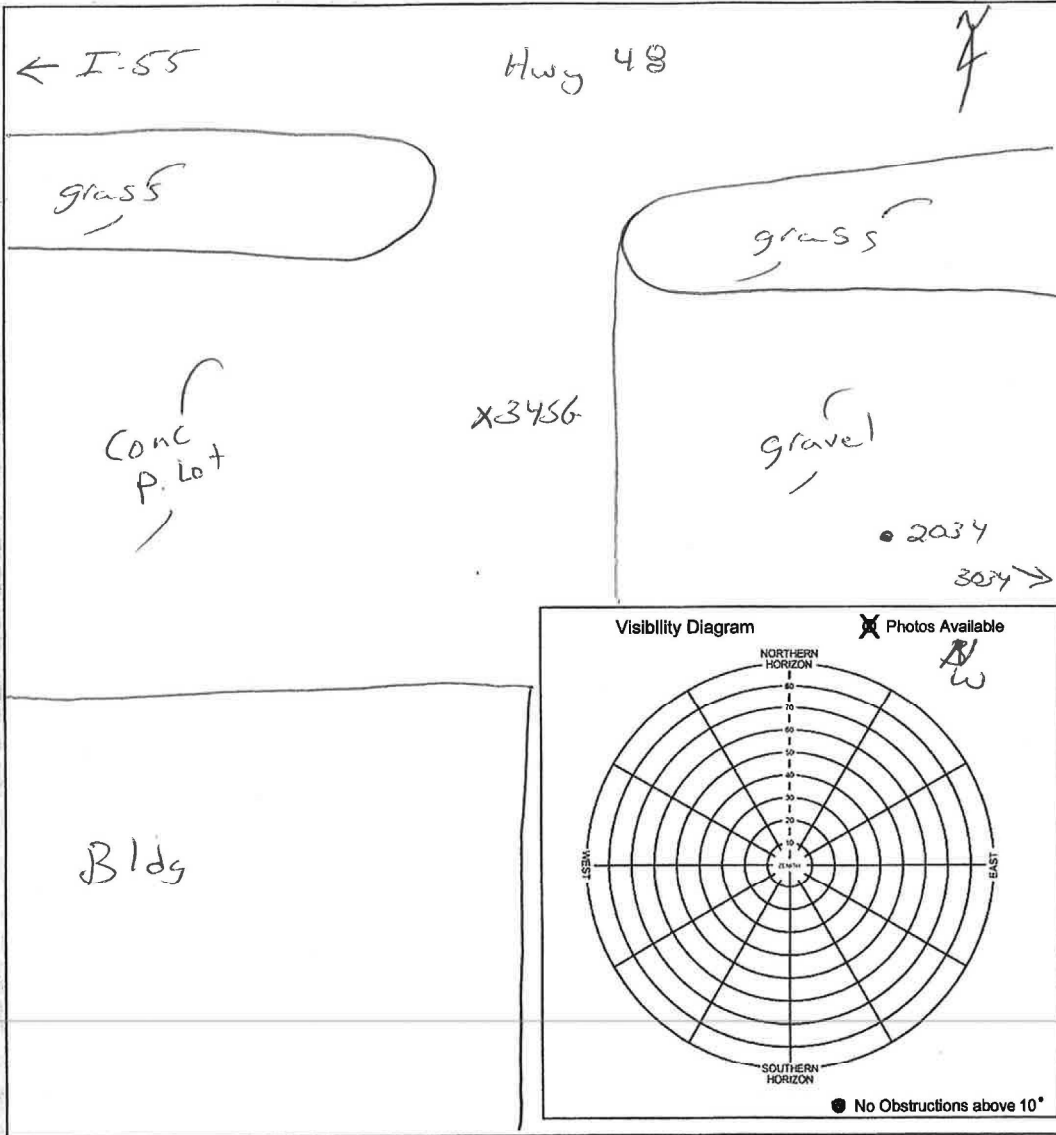
**33SG, N, 05MAR2015**



# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 3456	General location Hwy 48/E of I-55/in a P. lot	Ground Class CTL
Latitude N 31°08'44.3"	Longitude W 90°28'34.1"	Calendar Date 5/16/14
		Observer Initials JY



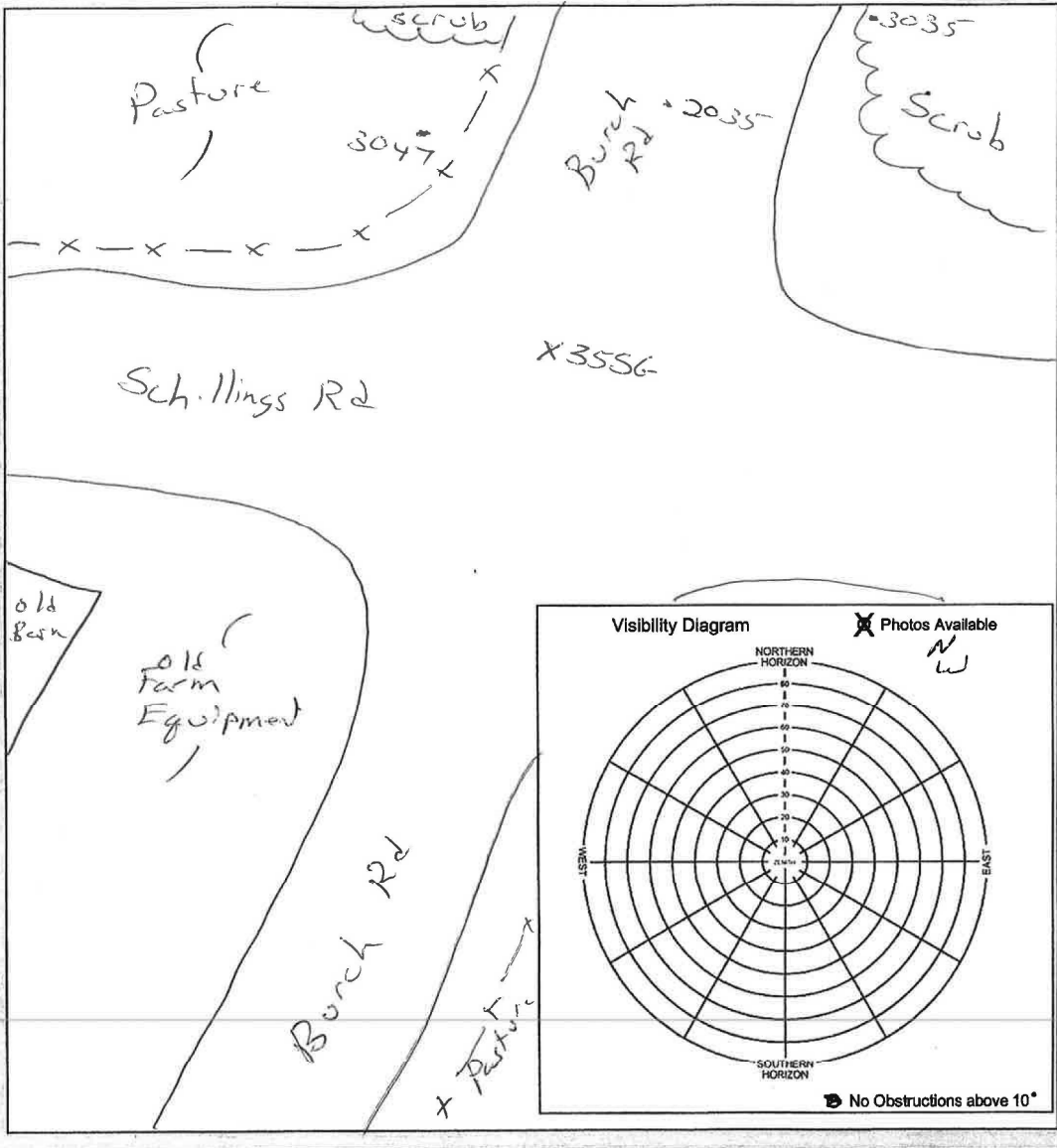


**34SG, N, 05MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 3556	General location Int. of Burch Rd and Schillings	Ground Class CTL
Latitude N 31° 00' 49.1"	Longitude W 90° 15' 54.6"	Calendar Date 5/11/15
		Observer Initials JY



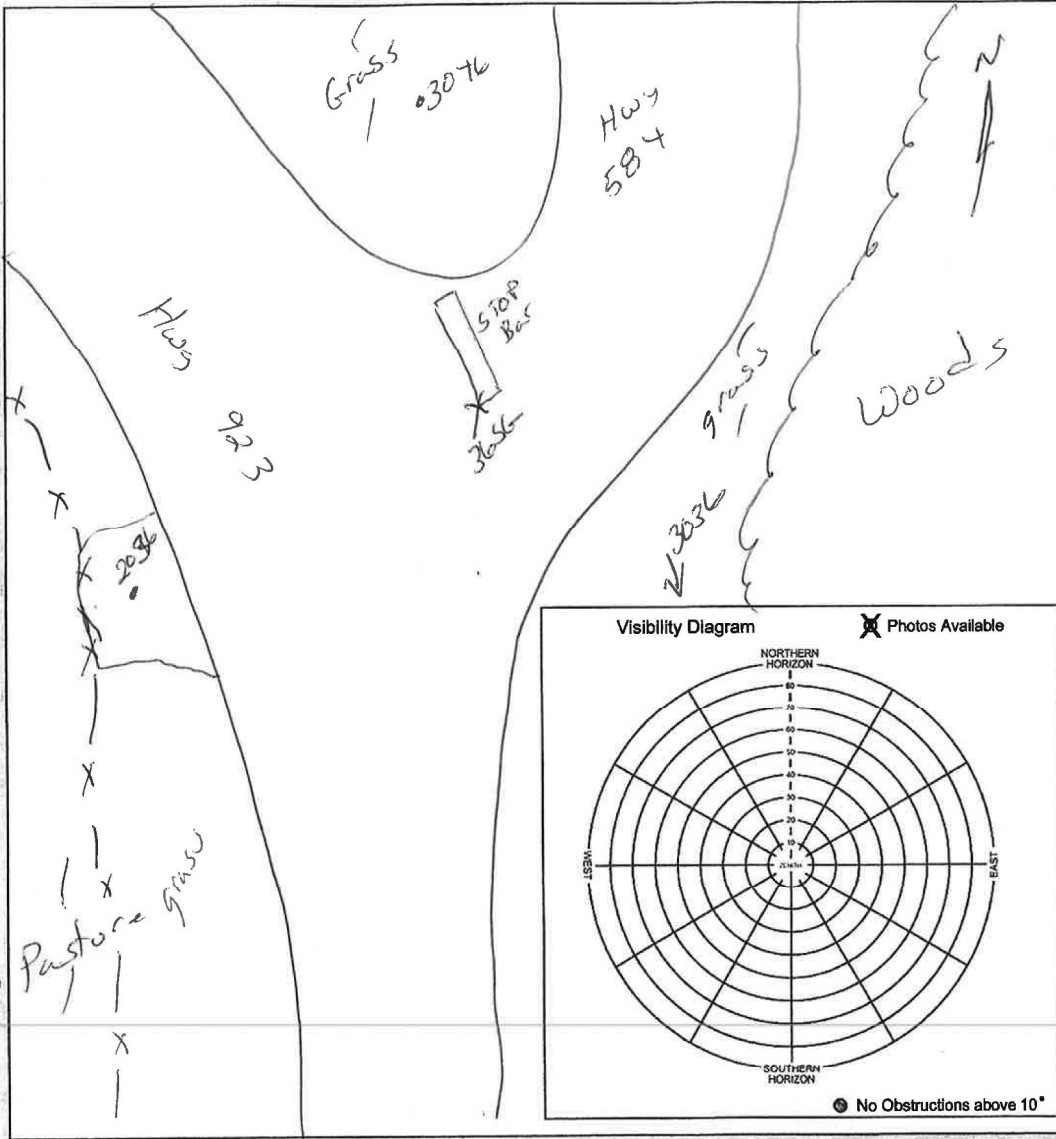


**35SG, W, 05MAR2015**

# Mississippi LiDAR Survey - LiDAR Control



Aerial Control point # 3656	General location Int of 923 + SB4 W	Ground Class CTZ	
Latitude N 31° 00' 10.7 "	Longitude W 90° 32' 51.9 "	Calendar Date 5 Mar 15	Observer Initials JY





**36SG, N, 05MAR2015**

# SECTION 4: EXISTING NGS DATA SHEETS

This section contains the published National Geodetic Survey (NGS) Data Sheets used in the final control network for this project.

## MS COASTAL AOI

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PROGRAM = datasheet95, VERSION = 8.6.1
1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015
BH3312 *****
BH3312 DESIGNATION - 49 V 9 A
BH3312 PID - BH3312
BH3312 STATE/COUNTY- MS/HARRISON
BH3312 COUNTRY - US
BH3312 USGS QUAD - SUCCESS (1982)
BH3312
BH3312 *CURRENT SURVEY CONTROL
BH3312
BH3312* NAD 83(2011) POSITION- 30 32 59.64236(N) 089 07 11.88012(W) ADJUSTED
BH3312* NAD 83(2011) ELLIP HT- -3.036 (meters) (06/27/12) ADJUSTED
BH3312* NAD 83(2011) EPOCH - 2010.00
BH3312* NAVD 88 ORTHO HEIGHT - 25.284 (meters) 82.95 (feet) ADJUSTED
BH3312* NAVD 88 EPOCH - 2009.55
BH3312 **This station is located in a suspected subsidence area (see below).
BH3312
BH3312 NAD 83(2011) X - 84,435.735 (meters) COMP
BH3312 NAD 83(2011) Y - -5,496,872.496 (meters) COMP
BH3312 NAD 83(2011) Z - 3,223,018.358 (meters) COMP
BH3312 LAPLACE CORR - -1.44 (seconds) DEFLEC12A
BH3312 GEOD HEIGHT - -28.32 (meters) GEOD12A
BH3312 DYNAMIC HEIGHT - 25.250 (meters) 82.84 (feet) COMP
BH3312 MODELED GRAVITY - 979,309.6 (mgal) NAVD 88
BH3312
BH3312 VERT ORDER - FIRST CLASS II
BH3312
BH3312 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BH3312 Standards:
BH3312 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BH3312 Horiz Ellip SD_N SD_E SD_h (unitless)
BH3312 -----
BH3312 NETWORK 1.62 2.25 0.70 0.62 1.15 0.11728414
BH3312 -----
BH3312 Click here for local accuracies and other accuracy information.
BH3312
BH3312
BH3312.The horizontal coordinates were established by GPS observations
BH3312.and adjusted by the National Geodetic Survey in June 2012.
BH3312
BH3312.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH3312.frame has been affixed to the stable North American tectonic plate. See
BH3312.NA2011 for more information.
BH3312
BH3312.The horizontal coordinates are valid at the epoch date displayed above
BH3312.which is a decimal equivalence of Year/Month/Day.
BH3312
BH3312 ** This station is in an area of known vertical motion. Due to the
BH3312 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH3312 ** determined the orthometric heights for marks in these suspect

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BH3312 \*\* subsidence areas should be considered valid only at the epoch date  
 BH3312 \*\* associated with the orthometric height. These heights must always  
 BH3312 \*\* be validated when used as control. All previously superseded  
 BH3312 \*\* orthometric heights are now considered suspect and are available  
 BH3312 \*\* in the superseded section. NGS does not recommend using suspect  
 BH3312 \*\* or superseded heights as control.  
 BH3312  
 BH3312.The orthometric height was determined by differential leveling and  
 BH3312.adjusted by the NATIONAL GEODETIC SURVEY  
 BH3312.in July 2012.  
 BH3312  
 BH3312.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
 BH3312  
 BH3312.The Laplace correction was computed from DEFLEC12A derived deflections.  
 BH3312  
 BH3312.The ellipsoidal height was determined by GPS observations  
 BH3312.and is referenced to NAD 83.  
 BH3312  
 BH3312.The dynamic height is computed by dividing the NAVD 88  
 BH3312.geopotential number by the normal gravity value computed on the  
 BH3312.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 BH3312.degrees latitude (g = 980.6199 gals.).  
 BH3312  
 BH3312.The modeled gravity was interpolated from observed gravity values.  
 BH3312  
 BH3312. The following values were computed from the NAD 83(2011) position.  
 BH3312  
 BH3312;  

	North	East	Units	Scale	Factor	Converg.
BH3312;SPC MS E	- 116,413.656	272,498.880	MT	0.99995933	-0 08	44.5
BH3312;SPC MS E	- 381,933.80	894,023.41	sFT	0.99995933	-0 08	44.5
BH3312;UTM 16	- 3,381,634.111	296,648.208	MT	1.00011015	-1 04	40.5

 BH3312  
 BH3312!  

	Elev Factor	x	Scale Factor	=	Combined Factor
BH3312!SPC MS E	- 1.00000048	x	0.99995933	=	0.99995981
BH3312!UTM 16	- 1.00000048	x	1.00011015	=	1.00011063

 BH3312  
 BH3312  

SUPERSEDED SURVEY CONTROL

 BH3312  
 BH3312  
 BH3312 NAD 83(2007)- 30 32 59.64252(N) 089 07 11.88037(W) AD(2002.00) A  
 BH3312 ELLIP H (09/06/11) -3.055 (m) GP(2002.00) 4 1  
 BH3312 NAVD 88 (05/22/96) 25.413 (m) 83.38 (f) SUPERSEDED 2 2  
 BH3312  
 BH3312.Superseded values are not recommended for survey control.  
 BH3312  
 BH3312.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH3312.See file dsdata.txt to determine how the superseded data were derived.  
 BH3312  
 BH3312\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU9664881634(NAD 83)  
 BH3312  
 BH3312\_MARKER: DR = REFERENCE MARK DISK  
 BH3312\_SETTING: 34 = SET IN THE FOOTINGS OF SMALL/MEDIUM STRUCTURES  
 BH3312\_SP\_SET: BOX CULVERT  
 BH3312\_STAMPING: BM 49 V 9A 1988  
 BH3312\_MARK LOGO: MSHD  
 BH3312\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 BH3312\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 BH3312+STABILITY: SURFACE MOTION  
 BH3312+SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH3312+SATELLITE: SATELLITE OBSERVATIONS - March 19, 2009  
 BH3312  

BH3312	HISTORY	- Date	Condition	Report By
BH3312	HISTORY	- 1988	MONUMENTED	MSHD
BH3312	HISTORY	- 20090116	GOOD	MAPTEC



BH3312 HISTORY - 20090319 GOOD MSDOT

BH3312

BH3312 STATION DESCRIPTION

BH3312

BH3312'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1988

BH3312'MARK IS LOCATED ABOUT 12.8 MI (20.6 KM) NORTH OF GULFPORT IN A

BH3312'CULVERT UNDER THE NORTH BOUND LANE OF U.S. HIGHWAY 49, 5.8 MI (9.3

BH3312'KM) SOUTH OF SAUCIER, 3.65 MI (5.87 KM) NORTH OF LYMAN AND IS IN

BH3312'SECTION 6, T 6S, R 11W. TO REACH FROM THE I-10 BRIDGE OVER U.S.

BH3312'HIGHWAY 49, 4.6 MI (7.4 KM) NORTH OF GULFPORT, GO NORTH ON U.S.

BH3312'HIGHWAY 49 FOR 4.65 MI (7.48 KM) TO THE JUNCTION OF STATE HIGHWAY 53

BH3312'AT LORMAN, CONTINUE NORTH ON U.S. HIGHWAY 49 FOR 3.65 MI (5.87 KM)

BH3312'TO THE MARK ON THE RIGHT. MARK IS A MSHD REFERENCE MARK DISK SET IN

BH3312'A DRILL HOLE IN THE NORTH END OF THE EAST HEADWALL OF A 3 X 5 FOOT

BH3312'CONCRETE BOX CULVERT, 40.5 FT (12.3 M) EAST OF THE CENTER OF THE

BH3312'NORTH BOUND LANE OF HIGHWAY 49 AND IS ABOUT 3 FT (0.9 M) BELOW THE

BH3312'LEVEL OF THE HIGHWAY.

BH3312

BH3312 STATION RECOVERY (2009)

BH3312

BH3312'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH3312'RECOVERED IN GOOD CONDITION. NOTE--MARK IS 120.0 FT (36.6 M) SOUTH OF

BH3312'CENTER OF GRAVEL DRIVE GOING EAST AND SOUTH OF A 6 FT (1.8 M) CHAIN

BH3312'LINK FENCE, 91 FT (27.7 M) SOUTHWEST OF A WOODEN UTILITY POLE WITH 2

BH3312'GUY ANCHORS, 5.3 FT (1.6 M) NORTH OF THE SOUTH END OF THE BOX CULVERT

BH3312'AND 1.3 FT (0.4 M) SOUTH OF A CARSONITE WITNESS POST.

BH3312

BH3312 STATION RECOVERY (2009)

BH3312

BH3312'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)

BH3312'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH3316 *****
BH3316 DESIGNATION - 49 V 13 A
BH3316 PID - BH3316
BH3316 STATE/COUNTY- MS/HARRISON
BH3316 COUNTRY - US
BH3316 USGS QUAD - WORTHAM (1983)
BH3316
BH3316 *CURRENT SURVEY CONTROL
BH3316
BH3316* NAD 83(2011) POSITION- 30 35 55.04048(N) 089 07 37.92029(W) ADJUSTED
BH3316* NAD 83(2011) ELLIP HT- -1.072 (meters) (06/27/12) ADJUSTED
BH3316* NAD 83(2011) EPOCH - 2010.00
BH3316* NAVD 88 ORTHO HEIGHT - 27.303 (meters) 89.58 (feet) ADJUSTED
BH3316* NAVD 88 EPOCH - 2009.55
BH3316 **This station is located in a suspected subsidence area (see below).
BH3316
BH3316 NAD 83(2011) X - 83,699.950 (meters) COMP
BH3316 NAD 83(2011) Y - -5,494,137.678 (meters) COMP
BH3316 NAD 83(2011) Z - 3,227,669.796 (meters) COMP
BH3316 LAPLACE CORR - -1.48 (seconds) DEFLEC12A
BH3316 GEOID HEIGHT - -28.37 (meters) GEOID12A
BH3316 DYNAMIC HEIGHT - 27.267 (meters) 89.46 (feet) COMP
BH3316 MODELED GRAVITY - 979,311.5 (mgal) NAVD 88
BH3316
BH3316 VERT ORDER - FIRST CLASS II
BH3316
BH3316 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BH3316 Standards:
BH3316 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BH3316 Horiz Ellip SD_N SD_E SD_h (unitless)
BH3316 -----
BH3316 NETWORK 1.19 1.80 0.51 0.46 0.92 0.14360973
BH3316 -----
BH3316 Click here for local accuracies and other accuracy information.
BH3316
BH3316
BH3316.The horizontal coordinates were established by GPS observations
BH3316.and adjusted by the National Geodetic Survey in June 2012.
BH3316
BH3316.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH3316.frame has been affixed to the stable North American tectonic plate. See
BH3316.NA2011 for more information.
BH3316
BH3316.The horizontal coordinates are valid at the epoch date displayed above
BH3316.which is a decimal equivalence of Year/Month/Day.
BH3316
BH3316 ** This station is in an area of known vertical motion. Due to the
BH3316 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH3316 ** determined the orthometric heights for marks in these suspect
BH3316 ** subsidence areas should be considered valid only at the epoch date
BH3316 ** associated with the orthometric height. These heights must always
BH3316 ** be validated when used as control. All previously superseded
BH3316 ** orthometric heights are now considered suspect and are available
BH3316 ** in the superseded section. NGS does not recommend using suspect
BH3316 ** or superseded heights as control.
BH3316
BH3316.The orthometric height was determined by differential leveling and
BH3316.adjusted by the NATIONAL GEODETIC SURVEY
BH3316.in July 2012.
BH3316
BH3316.The X, Y, and Z were computed from the position and the ellipsoidal ht.

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BH3316  
 BH3316.The Laplace correction was computed from DEFLECI2A derived deflections.  
 BH3316  
 BH3316.The ellipsoidal height was determined by GPS observations  
 BH3316.and is referenced to NAD 83.  
 BH3316  
 BH3316.The dynamic height is computed by dividing the NAVD 88  
 BH3316.geopotential number by the normal gravity value computed on the  
 BH3316.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 BH3316.degrees latitude (g = 980.6199 gals.).  
 BH3316  
 BH3316.The modeled gravity was interpolated from observed gravity values.  
 BH3316  
 BH3316. The following values were computed from the NAD 83(2011) position.  
 BH3316  
 BH3316;  

	North	East	Units	Scale Factor	Converg.
BH3316;SPC MS E	- 121,816.601	271,818.959	MT	0.99995979	-0 08 58.5
BH3316;SPC MS E	- 399,659.97	891,792.70	sFT	0.99995979	-0 08 58.5
BH3316;UTM 16	- 3,387,048.233	296,056.255	MT	1.00011312	-1 04 59.4

 BH3316  
 BH3316!  

	Elev Factor	x	Scale Factor	=	Combined Factor
BH3316!SPC MS E	- 1.00000017	x	0.99995979	=	0.99995996
BH3316!UTM 16	- 1.00000017	x	1.00011312	=	1.00011329

 BH3316  
 BH3316  
 SUPERSEDED SURVEY CONTROL  
 BH3316  
 BH3316  
 BH3316 NAD 83(2007)- 30 35 55.04064(N) 089 07 37.92052(W) AD(2002.00) A  
 BH3316 ELLIP H (09/06/11) -1.092 (m) GP(2002.00) 4 1  
 BH3316 NAVD 88 (05/22/96) 27.443 (m) 90.04 (f) SUPERSEDED 2 2  
 BH3316  
 BH3316.Superseded values are not recommended for survey control.  
 BH3316  
 BH3316.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH3316.See file dsdata.txt to determine how the superseded data were derived.  
 BH3316  
 BH3316\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU9605687048(NAD 83)  
 BH3316  
 BH3316\_MARKER: DR = REFERENCE MARK DISK  
 BH3316\_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE  
 BH3316\_SP\_SET: BOX CULVERT HEADWALL  
 BH3316\_STAMPING: BM 49 V 13A 1988  
 BH3316\_MARK LOGO: MSHD  
 BH3316\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 BH3316\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 BH3316+STABILITY: SURFACE MOTION  
 BH3316\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH3316+SATELLITE: SATELLITE OBSERVATIONS - March 19, 2009  
 BH3316  

HISTORY	Date	Condition	Report By
BH3316 HISTORY	- 1988	MONUMENTED	MSHD
BH3316 HISTORY	- 20080418	GOOD	MSDOT
BH3316 HISTORY	- 20090116	GOOD	MAPTEC
BH3316 HISTORY	- 20090319	GOOD	MSDOT

 BH3316  
 BH3316  
 STATION DESCRIPTION  
 BH3316  
 BH3316'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1988  
 BH3316'MARK IS LOCATED ABOUT 16.0 MI (25.7 KM) NORTH OF GULFPORT, IN A  
 BH3316'CULVERT UNDER THE NORTH BOUND LANE OF U.S. HIGHWAY 49, 7.1 MI  
 BH3316'(11.4 KM) NORTH OF THE JUNCTION OF U.S. HIGHWAY 49 AND STATE HIGHWAY  
 BH3316'53 AT LYMAN, 2.5 MI (4.0 KM) SOUTH OF SAUCIER AND IN SECTION 19, T  
 BH3316'5S, R 11W.  
 BH3316'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY 49 AND STATE HIGHWAY 67, AT

BH3316'THE EAST EDGE OF SAUCIER, GO SOUTH ON U.S. HIGHWAY 49 FOR 2.15 MI  
BH3316'(3.46 KM) TO A CROSSROAD, CONTINUE SOUTH ON U.S. HIGHWAY 49 FOR 0.35  
BH3316'MI (0.56 KM) TO THE MARK ON THE LEFT.  
BH3316'MARK IS A MSHD REFERENCE MARK DISK SET IN A DRILL HOLE IN THE SOUTH  
BH3316'END OF EAST HEADWALL OF AN 8 X 6 FOOT (1.8 M) CONCRETE BOX CULVERT,  
BH3316'31.0 FT (9.4 M) EAST OF THE CENTER OF THE NORTH BOUND LANE OF HIGHWAY  
BH3316'49 AND ABOUT 5.0 FT (1.5 M) BELOW THE LEVEL OF THE HIGHWAY.  
BH3316  
BH3316 STATION RECOVERY (2008)  
BH3316  
BH3316'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)  
BH3316'THE INTERSECTION OF U.S. 49 AND S.R. 67 MENTIONED IN THE ORIGINAL  
BH3316'DESCRIPTION IS 1.5 MILES SOUTH OF THE NEW INTERSECTION.  
BH3316  
BH3316 STATION RECOVERY (2009)  
BH3316  
BH3316'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)  
BH3316'RECOVERED IN GOOD CONDITION. NOTE-THE MARK IS 120.5 FT (36.7 M)  
BH3316'SOUTHWEST OF A WOOD UTILITY POLE NORTH OF AN EAST-WEST DITCH, 52.0 FT  
BH3316'(15.8 M) WEST OF NORTH-SOUTH TREE LINE ON THE EAST RIGHT OF WAY OF  
BH3316'HIGHWAY 49.  
BH3316  
BH3316 STATION RECOVERY (2009)  
BH3316  
BH3316'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)  
BH3316'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH3331 *****
BH3331 DESIGNATION - 49 V 188
BH3331 PID - BH3331
BH3331 STATE/COUNTY- MS/STONE
BH3331 COUNTRY - US
BH3331 USGS QUAD - WIGGINS (1983)
BH3331
BH3331 *CURRENT SURVEY CONTROL
BH3331
BH3331* NAD 83(1986) POSITION- 30 47 35.0 (N) 089 08 08.6 (W) HD_HELD2
BH3331* NAVD 88 ORTHO HEIGHT - 37.379 (meters) 122.63 (feet) ADJUSTED
BH3331* NAVD 88 EPOCH - 2009.55
BH3331 **This station is located in a suspected subsidence area (see below).
BH3331
BH3331 GEOID HEIGHT - -28.32 (meters) GEOID12A
BH3331 DYNAMIC HEIGHT - 37.330 (meters) 122.47 (feet) COMP
BH3331 MODELED GRAVITY - 979,327.0 (mgal) NAVD 88
BH3331
BH3331 VERT ORDER - FIRST CLASS II
BH3331
BH3331.The horizontal coordinates were established by autonomous hand held GPS
BH3331.observations and have an estimated accuracy of +/- 10 meters.
BH3331.
BH3331 ** This station is in an area of known vertical motion. Due to the
BH3331 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH3331 ** determined the orthometric heights for marks in these suspect
BH3331 ** subsidence areas should be considered valid only at the epoch date
BH3331 ** associated with the orthometric height. These heights must always
BH3331 ** be validated when used as control. All previously superseded
BH3331 ** orthometric heights are now considered suspect and are available
BH3331 ** in the superseded section. NGS does not recommend using suspect
BH3331 ** or superseded heights as control.
BH3331
BH3331.The orthometric height was determined by differential leveling and
BH3331.adjusted by the NATIONAL GEODETIC SURVEY
BH3331.in July 2012.
BH3331
BH3331.The dynamic height is computed by dividing the NAVD 88
BH3331.geopotential number by the normal gravity value computed on the
BH3331.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH3331.degrees latitude (g = 980.6199 gals.).
BH3331
BH3331.The modeled gravity was interpolated from observed gravity values.
BH3331
BH3331; North East Units Estimated Accuracy
BH3331;SPC MS E - 143,374. 271,060. MT (+/- 10 meters HH2 GPS)
BH3331
BH3331 SUPERSEDED SURVEY CONTROL
BH3331
BH3331 NAVD 88 (05/22/96) 37.524 (m) 123.11 (f) SUPERSEDED 2 2
BH3331
BH3331.Superseded values are not recommended for survey control.
BH3331
BH3331.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH3331.See file dsdata.txt to determine how the superseded data were derived.
BH3331
BH3331_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV9564908618(NAD 83)
BH3331
BH3331_MARKER: DD = SURVEY DISK
BH3331_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE
BH3331_SP_SET: BRIDGE ABUTMENT
BH3331_STAMPING: BM 49V 188 1988

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BH3331\_MARK LOGO: MSHD  
BH3331\_MAGNETIC: N = NO MAGNETIC MATERIAL  
BH3331\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
BH3331\_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR  
BH3331+SATELLITE: SATELLITE OBSERVATIONS - January 17, 2009

BH3331  
BH3331 HISTORY - Date Condition Report By  
BH3331 HISTORY - 1988 MONUMENTED MSHD  
BH3331 HISTORY - 20090117 GOOD MAPTEC

BH3331  
BH3331 STATION DESCRIPTION

BH3331'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1988  
BH3331'MARK IS LOCATED ABOUT 4.5 MI (7.2 KM) SOUTH OF WIGGINS, IN THE U.S.  
BH3331'HIGHWAY 49 NORTH BOUND BRIDGE OVER RED CREEK, 0.8 MI (1.3 KM)  
BH3331'NORTHEAST OF PERKINSTON, 0.9 MI (1.4 KM) NORTH OF THE RAILROAD  
BH3331'OVERPASS AND IS IN THE SOUTHWEST CORNER OF SECTION 7, T 3S, R 11W.  
BH3331'TO REACH THE U.S. HIGHWAY 49 BRIDGE OVER STATE HIGHWAY 26, AT THE  
BH3331'WEST EDGE OF WIGGINS, GO SOUTHEAST ON U.S. HIGHWAY 49 FOR 4.6 MI  
BH3331'(7.4 KM) TO THE MARK ON THE LEFT. MARK IS A MSHD REFERENCE MARK DISK  
BH3331'SET IN A DRILL HOLE IN THE EAST END OF THE NORTH ABUTMENT OF THE  
BH3331'CONCRETE BRIDGE, 30 FT (9.1 M) EAST OF THE CENTER OF THE NORTH BOUND  
BH3331'LANE OF HIGHWAY 49 AND IS ABOUT 3 FT (0.9 M) BELOW THE LEVEL OF THE  
BH3331'HIGHWAY.

BH3331  
BH3331 STATION RECOVERY (2009)

BH3331'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)  
BH3331'RECOVERED IN GOOD CONDITION. NOTE-THE MARK IS 22.3 FT (6.8 M)  
BH3331'SOUTH-SOUTHEAST OF THE SOUTHEAST CORNER OF THE ASPHALT EMERGENCY LANE,  
BH3331'9.7 FT (3.0 M) SOUTHEAST OF THE NORTHEAST CORNER OF THE CONCRETE GUARD  
BH3331'RAIL, 1.2 FT (0.4 M) NORTHWEST OF THE SOUTHEAST CORNER OF THE  
BH3331'ABUTMENT.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0432 *****
BH0432 DESIGNATION - 63 V 4
BH0432 PID - BH0432
BH0432 STATE/COUNTY- MS/JACKSON
BH0432 COUNTRY - US
BH0432 USGS QUAD - PASCAGOULA NORTH (1982)
BH0432
BH0432 *CURRENT SURVEY CONTROL
BH0432
BH0432* NAD 83(1986) POSITION- 30 26 43.5 (N) 088 32 32.8 (W) HD_HELD2
BH0432* NAVD 88 ORTHO HEIGHT - 3.066 (meters) 10.06 (feet) ADJUSTED
BH0432* NAVD 88 EPOCH - 2009.55
BH0432 **This station is located in a suspected subsidence area (see below).
BH0432
BH0432 GEOID HEIGHT - -28.27 (meters) GEOID12A
BH0432 DYNAMIC HEIGHT - 3.062 (meters) 10.05 (feet) COMP
BH0432 MODELED GRAVITY - 979,325.3 (mgal) NAVD 88
BH0432
BH0432 VERT ORDER - FIRST CLASS II
BH0432
BH0432.The horizontal coordinates were established by autonomous hand held GPS
BH0432.observations and have an estimated accuracy of +/- 10 meters.
BH0432.
BH0432 ** This station is in an area of known vertical motion. Due to the
BH0432 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0432 ** determined the orthometric heights for marks in these suspect
BH0432 ** subsidence areas should be considered valid only at the epoch date
BH0432 ** associated with the orthometric height. These heights must always
BH0432 ** be validated when used as control. All previously superseded
BH0432 ** orthometric heights are now considered suspect and are available
BH0432 ** in the superseded section. NGS does not recommend using suspect
BH0432 ** or superseded heights as control.
BH0432
BH0432.The orthometric height was determined by differential leveling and
BH0432.adjusted by the NATIONAL GEODETIC SURVEY
BH0432.in July 2012.
BH0432
BH0432.The dynamic height is computed by dividing the NAVD 88
BH0432.geopotential number by the normal gravity value computed on the
BH0432.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0432.degrees latitude (g = 980.6199 gals.).
BH0432
BH0432.The modeled gravity was interpolated from observed gravity values.
BH0432
BH0432; North East Units Estimated Accuracy
BH0432;SPC MS E - 104,832. 327,939. MT (+/- 10 meters HH2 GPS)
BH0432
BH0432 SUPERSEDED SURVEY CONTROL
BH0432
BH0432 NGVD 29 (??/??/??) 3.248 (m) 10.66 (f) ADJUSTED 2 2
BH0432
BH0432.Superseded values are not recommended for survey control.
BH0432
BH0432.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH0432.See file dsdata.txt to determine how the superseded data were derived.
BH0432
BH0432_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU5189469153(NAD 83)
BH0432
BH0432_MARKER: DD = SURVEY DISK
BH0432_SETTING: 30 = SET IN A LIGHT STRUCTURE
BH0432_SP_SET: FLAG POLE BASE
BH0432_STAMPING: BM 63V 4 1973

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BH0432\_MARK LOGO: MSHD  
BH0432\_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY  
BH0432\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
BH0432+SATELLITE: SATELLITE OBSERVATIONS - January 18, 2009

BH0432	HISTORY	- Date	Condition	Report By
BH0432	HISTORY	- 1973	MONUMENTED	MSHD
BH0432	HISTORY	- 20080925	GOOD	MSDOT
BH0432	HISTORY	- 20090118	GOOD	MAPTEC

BH0432  
BH0432 STATION DESCRIPTION

BH0432'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1973  
BH0432'IN ESCATAWPA.  
BH0432'THE MARK IS LOCATED 0.4 MILE NORTH OF THE CROSSING OF I-10 AT  
BH0432'ESCATAWPA IN A WALK CONNECTING TWO OTHER WALKS DIRECTLY OVER THE BASE  
BH0432'OF THE FLAG POLE IN FRONT OF THE U.S. POST OFFICE AT ESCATAWPA. THE  
BH0432'POST OFFICE AND TWIN CITIES BANK ARE IN THE SAME BUILDING OWNED BY THE  
BH0432'BANK. IT IS 116 FEET EAST OF THE CENTER OF HIGHWAY 63, 57 FEET SOUTH  
BH0432'OF THE CENTER OF RABBY STREET, 41 FEET ENE OF THE NW CORNER OF THE  
BH0432'BANK, 43.5 FEET WNW OF THE NE CORNER OF THE POST OFFICE, 41.5 FEET  
BH0432'WEST OF THE PROJECTED PLANE OF THE EAST WALL OF THE POST OFFICE, 72  
BH0432'FEET ESE OF THE TWIN CITIES SIGN, 30 FEET WSW OF A POLE WITH A LAMP ON  
BH0432'IT, 2.5 FEET NORTH OF THE SOUTH EDGE OF A WALK CONNECTING TWO OTHER  
BH0432'WALKS, 1 FOOT WEST OF THE CENTER OF THE ENTRANCE TO THE POST OFFICE,  
BH0432'0.6 FEET WEST OF THE FLAG POLE SET IN A DRILL HOLE IN THE BASE OF THE  
BH0432'FLAG POLE AND IS ABOUT LEVEL WITH THE HIGHWAY.

BH0432  
BH0432 STATION RECOVERY (2008)

BH0432  
BH0432'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)  
BH0432'RECOVERED AS DESCRIBED.

BH0432  
BH0432 STATION RECOVERY (2009)

BH0432  
BH0432'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)  
BH0432'RECOVERED IN GOOD CONDITION. NOTE-HIGHWAY 63 IS NOW HIGHWAY 613.



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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
AJ7793 *****
AJ7793 CBN - This is a Cooperative Base Network Control Station.
AJ7793 DESIGNATION - ARIADNE
AJ7793 PID - AJ7793
AJ7793 STATE/COUNTY- MS/PEARL RIVER
AJ7793 COUNTRY - US
AJ7793 USGS QUAD - POPLARVILLE (1986)
AJ7793
AJ7793 *CURRENT SURVEY CONTROL
AJ7793
AJ7793* NAD 83(2011) POSITION- 30 50 03.68637(N) 089 32 14.74054(W) ADJUSTED
AJ7793* NAD 83(2011) ELLIP HT- 71.248 (meters) (06/27/12) ADJUSTED
AJ7793* NAD 83(2011) EPOCH - 2010.00
AJ7793* NAVD 88 ORTHO HEIGHT - 99.239 (meters) 325.59 (feet) ADJUSTED
AJ7793* NAVD 88 EPOCH - 2009.55
AJ7793 **This station is located in a suspected subsidence area (see below).
AJ7793
AJ7793 NAD 83(2011) X - 44,253.795 (meters) COMP
AJ7793 NAD 83(2011) Y - -5,481,309.335 (meters) COMP
AJ7793 NAD 83(2011) Z - 3,250,174.954 (meters) COMP
AJ7793 LAPLACE CORR - -0.79 (seconds) DEFLEC12A
AJ7793 GEOID HEIGHT - -27.99 (meters) GEOID12A
AJ7793 DYNAMIC HEIGHT - 99.108 (meters) 325.16 (feet) COMP
AJ7793 MODELED GRAVITY - 979,325.5 (mgal) NAVD 88
AJ7793
AJ7793 VERT ORDER - FIRST CLASS II
AJ7793
AJ7793 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
AJ7793 Standards:
AJ7793 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
AJ7793 Horiz Ellip SD_N SD_E SD_h (unitless)
AJ7793 -----
AJ7793 NETWORK 0.94 6.98 0.40 0.37 3.56 0.01303956
AJ7793 -----
AJ7793 Click here for local accuracies and other accuracy information.
AJ7793
AJ7793
AJ7793.The horizontal coordinates were established by GPS observations
AJ7793.and adjusted by the National Geodetic Survey in June 2012.
AJ7793
AJ7793.NAD 83(2011) refers to NAD 83 coordinates where the reference
AJ7793.frame has been affixed to the stable North American tectonic plate. See
AJ7793.NA2011 for more information.
AJ7793
AJ7793.The horizontal coordinates are valid at the epoch date displayed above
AJ7793.which is a decimal equivalence of Year/Month/Day.
AJ7793
AJ7793 ** This station is in an area of known vertical motion. Due to the
AJ7793 ** variability of land subsidence, uplift, and crustal motion, NGS has,
AJ7793 ** determined the orthometric heights for marks in these suspect
AJ7793 ** subsidence areas should be considered valid only at the epoch date
AJ7793 ** associated with the orthometric height. These heights must always
AJ7793 ** be validated when used as control. All previously superseded
AJ7793 ** orthometric heights are now considered suspect and are available
AJ7793 ** in the superseded section. NGS does not recommend using suspect
AJ7793 ** or superseded heights as control.
AJ7793
AJ7793.The orthometric height was determined by differential leveling and
AJ7793.adjusted by the NATIONAL GEODETIC SURVEY
AJ7793.in July 2012.
AJ7793
AJ7793.The X, Y, and Z were computed from the position and the ellipsoidal ht.

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AJ7793  
 AJ7793.The Laplace correction was computed from DEFLEC12A derived deflections.  
 AJ7793  
 AJ7793.The ellipsoidal height was determined by GPS observations  
 AJ7793.and is referenced to NAD 83.  
 AJ7793  
 AJ7793.The dynamic height is computed by dividing the NAVD 88  
 AJ7793.geopotential number by the normal gravity value computed on the  
 AJ7793.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 AJ7793.degrees latitude (g = 980.6199 gals.).  
 AJ7793  
 AJ7793.The modeled gravity was interpolated from observed gravity values.  
 AJ7793  
 AJ7793. The following values were computed from the NAD 83(2011) position.  
 AJ7793  
 AJ7793;  

	North	East	Units	Scale Factor	Converg.
AJ7793;SPC MS E	- 148,125.311	232,642.570	MT	1.00000595	-0 21 39.3
AJ7793;SPC MS E	- 485,974.46	763,261.50	sFT	1.00000595	-0 21 39.3
AJ7793;UTM 16	- 3,414,000.427	257,306.120	MT	1.00032663	-1 18 04.4

 AJ7793  
 AJ7793!  

	Elev Factor	x	Scale Factor	=	Combined Factor
AJ7793!SPC MS E	- 0.99998881	x	1.00000595	=	0.99999476
AJ7793!UTM 16	- 0.99998881	x	1.00032663	=	1.00031544

 AJ7793  
 AJ7793  
 SUPERSEDED SURVEY CONTROL  
 AJ7793  
 AJ7793  

AJ7793	NAD 83(2007)-	30 50	03.68629(N)	089 32	14.74130(W)	AD(2002.00)	0
AJ7793	ELLIP H (04/15/02)		71.250 (m)			GP( )	4 2
AJ7793	NAD 83(1993)-	30 50	03.68606(N)	089 32	14.74110(W)	AD( )	B
AJ7793	ELLIP H (02/15/02)		71.244 (m)			GP( )	4 1
AJ7793	NAVD 88 (02/15/02)		99.4 (m)		GEOID99 model used	GPS OBS	

 AJ7793  
 AJ7793.Superseded values are not recommended for survey control.  
 AJ7793  
 AJ7793.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 AJ7793.See file dsdata.txt to determine how the superseded data were derived.  
 AJ7793  
 AJ7793\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV5730614000(NAD 83)  
 AJ7793  
 AJ7793\_MARKER: DV = VERTICAL CONTROL DISK  
 AJ7793\_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE  
 AJ7793\_SP\_SET: BRIDGE ABUTMENT  
 AJ7793\_STAMPING: ARIADNE 2000  
 AJ7793\_MARK LOGO: NGS  
 AJ7793\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 AJ7793\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 AJ7793\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 AJ7793+SATELLITE: SATELLITE OBSERVATIONS - February 18, 2009  
 AJ7793  

	HISTORY	- Date	Condition	Report By
AJ7793	HISTORY	- 2000	MONUMENTED	NGS
AJ7793	HISTORY	- 20090218	GOOD	MAPTEC
AJ7793	HISTORY	- 20090218	GOOD	MAPTEC

 AJ7793  
 AJ7793  
 STATION DESCRIPTION  
 AJ7793  
 AJ7793'DESCRIBED BY NATIONAL GEODETIC SURVEY 2000 (KDS)  
 AJ7793'THE STATION IS LOCATED ON THE WESTERN SIDE OF POPLARVILLE, MS, EAST OF  
 AJ7793'THE INTERESECTION OF US 11 AND ROUTE 26. TO REACH THE STATION FROM  
 AJ7793'THE NORTHERN INTESECTION OF ROUTES 53 AND 26 IN POPLARVILLE, DRIVE 0.3  
 AJ7793'MILES (0.5 KM) WEST ON ROUTE 26, PAST A PARK ON THE LEFT, THEN ACROSS  
 AJ7793'THE BRIDGE 0.1 MILES (0.2 KM) TO THE WESTERN END AND THE STATION ON  
 AJ7793'THE LEFT (SOUTH). THE STATION CAN ALSO BE REACHED FROM THE

AJ7793'INTERSECTION OF ROUTE 26 WITH US 11 BY DRIVING EAST ON ROUTE 26 0.4  
AJ7793'MILE (0.6 KM), PAST THE WATER TREATMENT PLANT ON THE RIGHT, TO THE  
AJ7793'STATION ON THE RIGHT BEFORE CROSSING THE BRIDGE. THE MARK IS AN NGS  
AJ7793'DISK SET IN THE SOUTHWEST END OF THE NORTHWEST ABUTMENT OF THE BRIDGE  
AJ7793'CARRYING ROUTE 26 OVER A RAILROAD TRACK. IT IS 1.6 FEET (0.5 M) FROM  
AJ7793'THE SW END OF THE ABUTMENT, 1.5 FEET (0.5 M) FROM THE SE FACE, 1.3  
AJ7793'FEET (0.4 M) SE OF THE SE FACE OF THE WING WALL, ABOUT 4.8 FEET (1.5  
AJ7793'M) BELOW THE LEVEL OF THE HIGHWAY, 14.1 FEET (4.3 M) SOUTH OF THE  
AJ7793'STEEL GUIDERAIL ALONG THE EDGE OF PAVEMENT, AND 47.9 FEET (14.6 M)  
AJ7793'EAST OF A WOODEN UTILITY POLE SUPPORTING ONE END OF A STOP AHEAD SIGN  
AJ7793'SUSPENDED OVER THE HIGHWAY.

AJ7793

AJ7793 STATION RECOVERY (2009)

AJ7793

AJ7793'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (RCW)

AJ7793'RECOVERED AS DESCRIBED.

AJ7793

AJ7793 STATION RECOVERY (2009)

AJ7793

AJ7793'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (RCW)

AJ7793'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,   Retrieval Date = MARCH 4, 2015
BH2400 *****
BH2400 DESIGNATION - BILO
BH2400 PID - BH2400
BH2400 STATE/COUNTY- MS/HARRISON
BH2400 COUNTRY - US
BH2400 USGS QUAD - BILOXI (1992)
BH2400
BH2400
BH2400 *CURRENT SURVEY CONTROL
BH2400
BH2400* NAD 83(1993) POSITION- 30 23 38.03233(N) 088 54 04.58904(W) ADJUSTED
BH2400* NAVD 88 ORTHO HEIGHT - ** (meters) ** (feet) NOT PUB
BH2400 **This station is located in a suspected subsidence area (see below).
BH2400
BH2400 GEOID HEIGHT - -28.09 (meters) GEOID12A
BH2400 LAPLACE CORR - -0.34 (seconds) DEFLEC12A
BH2400 HORZ ORDER - SECOND
BH2400
BH2400.The horizontal coordinates were established by classical geodetic methods
BH2400.and adjusted by the National Geodetic Survey in May 1994.
BH2400.
BH2400 ** This station is in an area of known vertical motion. If an
BH2400 ** orthometric height was ever established but is not available
BH2400 ** in the current survey control section, the orthometric height
BH2400 ** is considered suspect. Suspect heights are available in the
BH2400 ** superseded section only if requested.
BH2400
BH2400.Photographs are available for this station.
BH2400
BH2400.The Laplace correction was computed from DEFLEC12A derived deflections.
BH2400
BH2400. The following values were computed from the NAD 83(1993) position.
BH2400
BH2400;
BH2400;          North      East      Units Scale Factor Converg.
BH2400;SPC LA S - 212,409.495 1,233,698.603 MT 0.99994919 +1 12 57.8
BH2400;SPC LA S - 696,880.15 4,047,559.50 sFT 0.99994919 +1 12 57.8
BH2400;SPC MS E - 99,086.978 293,470.956 MT 0.99995053 -0 02 03.7
BH2400;SPC MS E - 325,087.86 962,829.29 sFT 0.99995053 -0 02 03.7
BH2400;UTM 16 - 3,363,967.437 317,338.478 MT 1.00001163 -0 57 43.9
BH2400
BH2400!          - Elev Factor x Scale Factor = Combined Factor
BH2400!SPC LA S - 1.00000411 x 0.99994919 = 0.99995330
BH2400!SPC MS E - 1.00000411 x 0.99995053 = 0.99995464
BH2400!UTM 16 - 1.00000411 x 1.00001163 = 1.00001574
BH2400
BH2400:          Primary Azimuth Mark          Grid Az
BH2400:SPC LA S - BILO AZ MK          278 37 09.3
BH2400:SPC MS E - BILO AZ MK          279 52 10.8
BH2400:UTM 16 - BILO AZ MK          280 47 51.0
BH2400
BH2400|-----|
BH2400| PID      Reference Object          Distance          Geod. Az
BH2400|          |          |          |          |          |
BH2400| BH2410 BILOXI RAD STA WLOX MAST          APPROX. 0.7 KM 1002458.4
BH2400| DD7572 BILO RM 1          13.618 METERS 11242
BH2400| DD7573 BILO RM 2          13.090 METERS 26048
BH2400| DD7571 BILO AZ MK          2795007.1
BH2400|-----|
BH2400
BH2400
BH2400 SUPERSEDED SURVEY CONTROL
BH2400
BH2400 NAD 83(1992)- 30 23 38.04658(N) 088 54 04.57948(W) AD( ) 2
BH2400 NAD 83(1986)- 30 23 38.05087(N) 088 54 04.58044(W) AD( ) 2

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BH2400 NAD 27 - 30 23 37.34178(N) 088 54 04.47209(W) AD( ) 2  
 BH2400  
 BH2400.Superseded values are not recommended for survey control.  
 BH2400  
 BH2400.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH2400.See file dsdata.txt to determine how the superseded data were derived.  
 BH2400  
 BH2400\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU1733863967(NAD 83)  
 BH2400  
 BH2400\_MARKER: DS = TRIANGULATION STATION DISK  
 BH2400\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 BH2400\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH2400+SATELLITE: SATELLITE OBSERVATIONS - March 24, 2007  
 BH2400  

BH2400	HISTORY	- Date	Condition	Report By
BH2400	HISTORY	- 1955	MONUMENTED	CGS
BH2400	HISTORY	- 1966	GOOD	CGS
BH2400	HISTORY	- 1966	GOOD	CGS
BH2400	HISTORY	- 1967	GOOD	CGS
BH2400	HISTORY	- 1969	GOOD	CGS
BH2400	HISTORY	- 1970	GOOD	NGS
BH2400	HISTORY	- 1976	GOOD	NGS
BH2400	HISTORY	- 20070324	GOOD	NGS
BH2400	HISTORY	- 20100402	GOOD	MSSU

BH2400  
 BH2400  
 BH2400 STATION DESCRIPTION  
 BH2400  
 BH2400'DESCRIBED BY COAST AND GEODETIC SURVEY 1955 (NET)  
 BH2400'THE STATION IS IN THE CITY OF BILOXI ON THE SOUTH SIDE OF WEST BEACH  
 BH2400'BOULEVARD, (WHICH IS ALSO U.S. HIGHWAY 90), AT THE FOOT OF  
 BH2400'PORTER AVENUE AND APPROXIMATELY 60 YARDS SOUTH OF THE BILOXI  
 BH2400'LIGHTHOUSE. THE LIGHTHOUSE IS ON THE LAWN IN THE CENTER OF THE  
 BH2400'BOULEVARD, BETWEEN THE TWO LANES OF TRAFFIC.  
 BH2400'  
 BH2400'THE STATION MARK, STAMPED BILO 1955, IS ACROSS THE STREET FROM THE  
 BH2400'BILOXI CHAMBER OF COMMERCE BUILDING, 15.2 FEET NORTH OF THE  
 BH2400'NORTH EDGE OF THE CONCRETE SEA WALL, 4 FEET SOUTH-SOUTHEAST OF A  
 BH2400'WITNESS POST AND ABOUT 3 INCHES HIGHER THAN THE TOP OF THE SEA  
 BH2400'WALL.  
 BH2400'  
 BH2400'REFERENCE MARK NO. 1, STAMPED BILO NO 1 1955, IS A STANDARD DISK SET  
 BH2400'IN THE TOP OF THE CONCRETE SEA WALL AT THE APPROXIMATE  
 BH2400'CENTER OF A BULGE IN THE WALL. IT IS 7 FEET EAST OF A 1268 PAINTED  
 BH2400'ON THE TOP OF THE WALL.  
 BH2400'  
 BH2400'REFERENCE MARK NO. 2, STAMPED BILO NO 2 1955, IS A STANDARD DISK SET  
 BH2400'IN THE TOP OF THE CONCRETE SEA WALL, 23 FEET EAST OF A 1267 PAINTED  
 BH2400'ON THE TOP OF THE WALL.  
 BH2400'  
 BH2400'THE AZIMUTH MARK, STAMPED BILO 1955, IS A STANDARD DISK SET IN THE  
 BH2400'TOP OF THE CONCRETE SEA WALL. IT IS ABOUT 200 FEET WEST OF  
 BH2400'THE HOTEL BILOXI SIGN, 53.5 FEET SOUTH OF THE CENTER OF THE  
 BH2400'INTERSECTION OF A NORTHWEST-SOUTHEAST ROAD WHICH JOINS THE TWO  
 BH2400'LANES OF TRAFFIC, 40.5 FEET SOUTH OF THE CENTER OF THE TWO SOUTHERN  
 BH2400'LANES OF THE DIVIDED HIGHWAY AND 12.6 FEET SOUTH OF THE SOUTHWEST  
 BH2400'CORNER OF A PARKING BAY.  
 BH2400'  
 BH2400'TO REACH THE AZIMUTH MARK FROM THE STATION, GO WEST ON U.S. HIGHWAY  
 BH2400'90 FOR ABOUT 0.3 MILE TO A HOUSE NO. 1318 ON THE NORTH AND THE  
 BH2400'MARK IN THE SEA WALL ON THE SOUTH.  
 BH2400'  
 BH2400'HEIGHT OF LIGHT ABOVE STATION MARK - 14 METERS.  
 BH2400

BH2400 STATION RECOVERY (1966)  
BH2400  
BH2400'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1966 (JKW)  
BH2400'STATION MARK, ASIMUTH MARK AND R.M.S 1 AND 2 WERE RECOVERED IN GOOD  
BH2400'CONDITION. ORIGINAL DESCRIPTION IS GOOD WITH THE FOLLOWING  
BH2400'CHANGE-  
BH2400'  
BH2400'STATION MARK IS NOW IN AN ASPHALT PARKING AREA FLUSH WITH THE PAVING.  
BH2400'DISTANCES TO R.M.S WERE VERIFIED.

BH2400 STATION RECOVERY (1966)  
BH2400  
BH2400'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1966 (LMC)  
BH2400'THE STATION AND ALL MARKS WERE RECOVERED AND FOUND IN GOOD CONDITION.  
BH2400'THE DISTANCE TO REFERENCE MARK NO. 1 CHECKED BUT THE DIRECTION  
BH2400'WAS FOUND TO BE 1 MINUTE AND 54 SECONDS HIGHER THAN THE PREVIOUS  
BH2400'VALUE. THE DISTANCE AND DIRECTION TO REFERENCE MARK NO. 2  
BH2400'CHECKED. THE DIRECTION TO THE AZIMUTH MARK CHECKED BUT THE DISTANCE  
BH2400'WAS FOUND TO BE 0.25 MILE INSTEAD OF 0.3 MILE AS PREVIOUSLY  
BH2400'MEASURED.  
BH2400'  
BH2400'DUE TO SOME MINOR CHANGES A COMPLETE NEW DESCRIPTION FOLLOWS.  
BH2400'  
BH2400'THE STATION IS LOCATED IN THE SOUTHWEST SECTION OF BILOXI. IT IS IN  
BH2400'A PAVED PARKING AREA JUST NORTH OF A SEA WALL, ABOUT 200 FEET  
BH2400'SOUTH OF THE BILOXI LIGHTHOUSE AND 200 FEET SOUTHEAST OF THE  
BH2400'INTERSECTION OF PORTER AVENUE AND U.S. HIGHWAY 90.  
BH2400'  
BH2400'THE STATION IS A STANDARD DISK STAMPED BILO 1955, SET IN THE TOP OF  
BH2400'AN 8 INCH SQUARE CONCRETE MONUMENT WHICH IS FLUSH WITH THE  
BH2400'SURFACE OF THE PAVEMENT. IT IS 15.3 FEET NORTH OF THE SEAWALL, 153  
BH2400'FEET SOUTH OF THE CENTERLINE OF THE EAST BOUND LANE OF U.S. HIGHWAY  
BH2400'90 AND 181 FEET SOUTH OF THE BILOXI LIGHTHOUSE.  
BH2400'  
BH2400'REFERENCE MARK NO. 1 IS A STANDARD DISK STAMPED BILO NO 1 1955, IS  
BH2400'CEMENTED IN A DRILL HOLE IN THE TOP OF THE CONCRETE  
BH2400'SEAWALL. IT IS 170 FEET SOUTH OF THE CENTERLINE OF THE EAST BOUND  
BH2400'LANE OF U.S. HIGHWAY 90.  
BH2400'  
BH2400'REFERENCE MARK NO. 2 IS A STANDARD DISK STAMPED BILO NO 2 1955, IS  
BH2400'CEMENTED IN A DRILL HOLE IN THE TOP OF THE CONCRETE  
BH2400'SEAWALL. IT IS 166 FEET SOUTH OF THE CENTERLINE OF THE EAST LANE OF  
BH2400'U.S. HIGHWAY 90.  
BH2400'  
BH2400'AZIMUTH MARK IS A STANDARD DISK STAMPED BILO 1955, IS CEMENTED IN A  
BH2400'DRILL HOLE IN THE TOP OF A CONCRETE SEAWALL. IT IS 41 FEET WEST  
BH2400'OF AN 8 INCH LIVE OAK TREE AND 203 FEET WEST OF A LARGE BILOXI HOTEL  
BH2400'SIGN.  
BH2400'  
BH2400'TO REACH THE AZIMUTH MARK FROM THE STATION GO WEST ON U.S. HIGHWAY 90  
BH2400'FOR 0.25 MILE TO THE MARK ON THE LEFT.

BH2400  
BH2400 STATION RECOVERY (1967)  
BH2400  
BH2400'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1967 (WRC)  
BH2400'STATION, REFERENCE MARKS, AND AZIMUTH MARKS WERE RECOVERED IN GOOD  
BH2400'CONDITION. DESCRIPTION IS ADEQUATE.

BH2400  
BH2400 STATION RECOVERY (1969)  
BH2400  
BH2400'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1969 (JCV)

BH2400'RECOVERED. STATION, REFERENCE MARKS AND AZIMUTH MARK WERE RECOVERED  
BH2400'IN GOOD CONDITION. DESCRIPTION IS ADEQUATE. DISTANCES TO RMS  
BH2400'WERE VERIFIED.

BH2400

STATION RECOVERY (1970)

BH2400

BH2400'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1970 (JLC)

BH2400'THE STATION MARK, REFERENCE MARKS 1 AND 2 AND THE AZIMUTH MARK WERE

BH2400'RECOVERED IN GOOD CONDITION. THE 1966 DESCRIPTION IS ADEQUATE.

BH2400'

BH2400'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN- IN THE SOUTHWEST

BH2400'SECTION OF BILOXI.

BH2400

BH2400

STATION RECOVERY (1976)

BH2400

BH2400'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976

BH2400'STATION, REFERENCE MARKS, AZIMUTH MARK RECOVERED AND FOUND IN

BH2400'GOOD CONDITION. THE AZIMUTH MARK IS AT THE W END OF A PARKING

BH2400'AREA.

BH2400'

BH2400'THE 1966 DESCRIPTION IS ADEQUATE.

BH2400'

BH2400'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN

BH2400'SW PART OF BILOXI.

BH2400

BH2400

STATION RECOVERY (2007)

BH2400

BH2400'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2007 (TS)

BH2400'RECOVERED AS DESCRIBED

BH2400

BH2400

STATION RECOVERY (2010)

BH2400

BH2400'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2010 (JC)

BH2400'THE STATION IS IN THE SAME LOCATION BUT THE PARKING LOT HAS BEEN PAVED

BH2400'ONCE MORE. THE

BH2400'STATION IS STILL SET IN CONCRETE BUT NOW IN A SMALL PVC PIPE. IT IS NO

BH2400'LONGER EXACTLY FLUSH WITH

BH2400'THE PAVEMENT. THE SURFACE OF THE PAVEMENT IS SLIGHTLY ABOVE THE LEVEL

BH2400'OF THE STATION.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

BH1529 \*\*\*\*\*

BH1529 HT\_MOD - This is a Height Modernization Survey Station.

BH1529 DESIGNATION - B 112 RESET 1982

BH1529 PID - BH1529

BH1529 STATE/COUNTY- MS/PEARL RIVER

BH1529 COUNTRY - US

BH1529 USGS QUAD - POPLARVILLE (1986)

BH1529

BH1529 \*CURRENT SURVEY CONTROL

BH1529

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BH1529\* NAD 83(2011) POSITION- 30 50 21.34587(N) 089 32 02.19032(W) ADJUSTED

BH1529\* NAD 83(2011) ELLIP HT- 68.448 (meters) (06/27/12) ADJUSTED

BH1529\* NAD 83(2011) EPOCH - 2010.00

BH1529\* NAVD 88 ORTHO HEIGHT - 96.44 (meters) 316.4 (feet) GPS OBS

BH1529\* NAVD 88 EPOCH - 2009.55

BH1529 \*\*This station is located in a suspected subsidence area (see below).

BH1529

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BH1529 GEOID HEIGHT - -27.99 (meters) GEOID12A

BH1529 NAD 83(2011) X - 44,585.019 (meters) COMP

BH1529 NAD 83(2011) Y - -5,481,025.461 (meters) COMP

BH1529 NAD 83(2011) Z - 3,250,640.488 (meters) COMP

BH1529 LAPLACE CORR - -0.83 (seconds) DEFLEC12A

BH1529

BH1529 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

BH1529 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
NETWORK	1.64	1.94	0.70	0.64	0.99	0.09877858

BH1529

BH1529 Click here for local accuracies and other accuracy information.

BH1529

BH1529

BH1529.The horizontal coordinates were established by GPS observations

BH1529.and adjusted by the National Geodetic Survey in June 2012.

BH1529

BH1529.NAD 83(2011) refers to NAD 83 coordinates where the reference

BH1529.frame has been affixed to the stable North American tectonic plate. See

BH1529.NA2011 for more information.

BH1529

BH1529.The horizontal coordinates are valid at the epoch date displayed above

BH1529.which is a decimal equivalence of Year/Month/Day.

BH1529

BH1529 \*\* This station is in an area of known vertical motion. Due to the

BH1529 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

BH1529 \*\* determined the orthometric heights for marks in these suspect

BH1529 \*\* subsidence areas should be considered valid only at the epoch date

BH1529 \*\* associated with the orthometric height. These heights must always

BH1529 \*\* be validated when used as control. All previously superseded

BH1529 \*\* orthometric heights are now considered suspect and are available

BH1529 \*\* in the superseded section. NGS does not recommend using suspect

BH1529 \*\* or superseded heights as control.

BH1529

BH1529.The orthometric height was determined by GPS observations and a

BH1529.high-resolution geoid model using precise GPS observation and

BH1529.processing techniques.

BH1529

BH1529.The X, Y, and Z were computed from the position and the ellipsoidal ht.

BH1529

BH1529.The Laplace correction was computed from DEFLEC12A derived deflections.

BH1529



BH1529.The ellipsoidal height was determined by GPS observations  
 BH1529.and is referenced to NAD 83.  
 BH1529  
 BH1529. The following values were computed from the NAD 83(2011) position.  
 BH1529  
 BH1529;  

	North	East	Units	Scale	Factor	Converg.
BH1529;SPC MS E	- 148,667.055	232,979.493	MT	1.00000539	-0 21	33.0
BH1529;SPC MS E	- 487,751.83	764,366.89	sFT	1.00000539	-0 21	33.0
BH1529;UTM 16	- 3,414,536.740	257,651.999	MT	1.00032456	-1 17	58.6

 BH1529  
 BH1529!  

BH1529!SPC MS E	- 0.99998925	x	1.00000539	=	0.99999464
BH1529!UTM 16	- 0.99998925	x	1.00032456	=	1.00031381

 BH1529  
 BH1529  

SUPERSEDED SURVEY CONTROL

 BH1529  
 BH1529 NAD 83(2007)- 30 50 21.34607(N) 089 32 02.19061(W) AD(2002.00) A  
 BH1529 ELLIP H (09/06/11) 68.436 (m) GP(2002.00) 4 1  
 BH1529 NGVD 29 (??/??/??) 96.60 (m) 316.9 (f) RESET 3  
 BH1529  
 BH1529.Superseded values are not recommended for survey control.  
 BH1529  
 BH1529.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH1529.See file dsdata.txt to determine how the superseded data were derived.  
 BH1529  
 BH1529\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV5765114536(NAD 83)  
 BH1529  
 BH1529\_MARKER: DV = VERTICAL CONTROL DISK  
 BH1529\_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE  
 BH1529\_SP\_SET: ABUTMENT  
 BH1529\_STAMPING: B 112 RESET 1982  
 BH1529\_MARK LOGO: NGS  
 BH1529\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 BH1529\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH1529+SATELLITE: SATELLITE OBSERVATIONS - April 01, 2009  
 BH1529  

BH1529	HISTORY	- Date	Condition	Report By
BH1529	HISTORY	- 1982	MONUMENTED	NGS
BH1529	HISTORY	- 20071007	GOOD	GEOCAC
BH1529	HISTORY	- 20080418	GOOD	MSDOT
BH1529	HISTORY	- 20090401	GOOD	MSDOT

 BH1529  

STATION DESCRIPTION

 BH1529  
 BH1529'DESCRIBED BY NATIONAL GEODETIC SURVEY 1982  
 BH1529'IN POPLARVILLE.  
 BH1529'0.25 MILE SOUTH ALONG STATE HIGHWAY 26 FROM THE COURTHOUSE IN  
 BH1529'POPLARVILLE, ON RAILROAD OVERPASS AND MARK ON LEFT, 13.72 METERS  
 BH1529'(45.0 FEET) NORTH OF THE CENTER OF HIGHWAY, 2.29 METERS (7.5 FEET)  
 BH1529'WEST OF THE WEST RAIL OF SPUR TRACK, 0.15 METERS (0.5 FEET) NORTH  
 BH1529'OF THE NORTH END OF IRON BRIDGE RAILING AND IN THE TOP OF THE  
 BH1529'NORTHWEST CONCRETE WINGWALL.  
 BH1529  

STATION RECOVERY (2007)

 BH1529  
 BH1529'RECOVERY NOTE BY GEOCACHING 2007 (MM)  
 BH1529'RECOVERED IN GOOD CONDITION.  
 BH1529  

STATION RECOVERY (2008)

 BH1529  
 BH1529'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)  
 BH1529'THE STATE HIGHWAY 26 MENTIONED IN THE PREVIOUS DESCRIPTION IS NOW S.  
 BH1529'MAIN STREET. THE MARK CAN ALSO BE REACHED FROM THE S.R. 53 AND S.R.

BH1529'26 INTERCHANGE BY TRAVELING NORTH ALONG S. MAIN FOR .3 MILES TO THE  
BH1529'RAILROAD AND MARK ON THE RIGHT.

BH1529

STATION RECOVERY (2009)

BH1529

BH1529'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)

BH1529'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH3280 *****
BH3280 DESIGNATION - B 365
BH3280 PID - BH3280
BH3280 STATE/COUNTY- MS/HANCOCK
BH3280 COUNTRY - US
BH3280 USGS QUAD - KILN (1976)
BH3280
BH3280 *CURRENT SURVEY CONTROL
BH3280
BH3280* NAD 83(2011) POSITION- 30 23 14.45469(N) 089 26 29.22988(W) ADJUSTED
BH3280* NAD 83(2011) ELLIP HT- -21.827 (meters) (06/27/12) ADJUSTED
BH3280* NAD 83(2011) EPOCH - 2010.00
BH3280* NAVD 88 ORTHO HEIGHT - 5.627 (meters) 18.46 (feet) ADJUSTED
BH3280* NAVD 88 EPOCH - 2009.55
BH3280 **This station is located in a suspected subsidence area (see below).
BH3280
BH3280 NAD 83(2011) X - 53,680.590 (meters) COMP
BH3280 NAD 83(2011) Y - -5,506,380.719 (meters) COMP
BH3280 NAD 83(2011) Z - 3,207,476.792 (meters) COMP
BH3280 LAPLACE CORR - -2.28 (seconds) DEFLEC12A
BH3280 GEOID HEIGHT - -27.46 (meters) GEOID12A
BH3280 DYNAMIC HEIGHT - 5.619 (meters) 18.43 (feet) COMP
BH3280 MODELED GRAVITY - 979,330.9 (mgal) NAVD 88
BH3280
BH3280 VERT ORDER - FIRST CLASS II
BH3280
BH3280 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BH3280 Standards:
BH3280 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BH3280 Horiz Ellip SD_N SD_E SD_h (unitless)
BH3280 -----
BH3280 NETWORK 0.84 1.33 0.30 0.38 0.68 0.04456021
BH3280 -----
BH3280 Click here for local accuracies and other accuracy information.
BH3280
BH3280
BH3280.The horizontal coordinates were established by GPS observations
BH3280.and adjusted by the National Geodetic Survey in June 2012.
BH3280
BH3280.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH3280.frame has been affixed to the stable North American tectonic plate. See
BH3280.NA2011 for more information.
BH3280
BH3280.The horizontal coordinates are valid at the epoch date displayed above
BH3280.which is a decimal equivalence of Year/Month/Day.
BH3280
BH3280 ** This station is in an area of known vertical motion. Due to the
BH3280 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH3280 ** determined the orthometric heights for marks in these suspect
BH3280 ** subsidence areas should be considered valid only at the epoch date
BH3280 ** associated with the orthometric height. These heights must always
BH3280 ** be validated when used as control. All previously superseded
BH3280 ** orthometric heights are now considered suspect and are available
BH3280 ** in the superseded section. NGS does not recommend using suspect
BH3280 ** or superseded heights as control.
BH3280
BH3280.The orthometric height was determined by differential leveling and
BH3280.adjusted by the NATIONAL GEODETIC SURVEY
BH3280.in July 2012.
BH3280
BH3280.Photographs are available for this station.
BH3280

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BH3280.The X, Y, and Z were computed from the position and the ellipsoidal ht.  
 BH3280  
 BH3280.The Laplace correction was computed from DEFLEC12A derived deflections.  
 BH3280  
 BH3280.The ellipsoidal height was determined by GPS observations  
 BH3280.and is referenced to NAD 83.  
 BH3280  
 BH3280.The dynamic height is computed by dividing the NAVD 88  
 BH3280.geopotential number by the normal gravity value computed on the  
 BH3280.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 BH3280.degrees latitude (g = 980.6199 gals.).  
 BH3280  
 BH3280.The modeled gravity was interpolated from observed gravity values.  
 BH3280  
 BH3280. The following values were computed from the NAD 83(2011) position.  
 BH3280  
 BH3280;  

		North	East	Units	Scale Factor	Converg.
BH3280;SPC MS E	-	98,515.893	241,556.410	MT	0.99999212	-0 18 27.4
BH3280;SPC MS E	-	323,214.23	792,506.32	sFT	0.99999212	-0 18 27.4
BH3280;UTM 16	-	3,364,237.167	265,412.460	MT	1.00027896	-1 14 08.0

 BH3280  
 BH3280!  

		Elev Factor	x	Scale Factor	=	Combined Factor
BH3280!SPC MS E	-	1.00000343	x	0.99999212	=	0.99999555
BH3280!UTM 16	-	1.00000343	x	1.00027896	=	1.00028239

 BH3280  
 BH3280  

SUPERSEDED SURVEY CONTROL

 BH3280  
 BH3280  

BH3280	NAD 83(2007)-	30 23 14.45483(N)	089 26 29.23012(W)	AD(2002.00)	A
BH3280	ELLIP H (09/06/11)	-21.842 (m)		GP(2002.00)	4 1
BH3280	NAVD 88 (02/14/94)	5.761 (m)	18.90 (f)	SUPERSEDED	1 2

 BH3280  
 BH3280.Superseded values are not recommended for survey control.  
 BH3280  
 BH3280.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH3280.See file dsdata.txt to determine how the superseded data were derived.  
 BH3280  
 BH3280\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU6541264237(NAD 83)  
 BH3280  
 BH3280\_MARKER: DV = VERTICAL CONTROL DISK  
 BH3280\_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE  
 BH3280\_SP\_SET: ABUTMENT  
 BH3280\_STAMPING: B 365 1993  
 BH3280\_MARK LOGO: NGS  
 BH3280\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 BH3280\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 BH3280\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH3280+SATELLITE: SATELLITE OBSERVATIONS - March 19, 2009  
 BH3280  

BH3280	HISTORY	-	Date	Condition	Report By
BH3280	HISTORY	-	1993	MONUMENTED	NGS
BH3280	HISTORY	-	20090319	GOOD	MSDOT
BH3280	HISTORY	-	20100915	GOOD	USGS
BH3280	HISTORY	-	20121224	GOOD	USGS

 BH3280  

STATION DESCRIPTION

 BH3280  
 BH3280'DESCRIBED BY NATIONAL GEODETIC SURVEY 1993  
 BH3280'12.5 KM (7.75 MI) NORTHERLY ALONG STATE HIGHWAY 43 FROM THE JUNCTION  
 BH3280'OF U.S. HIGHWAY 90 IN WAVELAND, IN TOP OF AND 2.1 M (6.9 FT)  
 BH3280'SOUTHWEST OF THE NORTHEAST END OF THE NORTHWEST CONCRETE ABUTMENT OF  
 BH3280'THE HIGHWAY BRIDGE SPANNING THE JOURDAN RIVER, AND 4.9 M (16.1 FT)  
 BH3280'NORTHEAST OF AND LEVEL WITH THE CENTERLINE OF THE HIGHWAY.  
 BH3280

BH3280 STATION RECOVERY (2009)  
BH3280  
BH3280'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)  
BH3280'RECOVERED AS DESCRIBED  
BH3280  
BH3280 STATION RECOVERY (2010)  
BH3280  
BH3280'RECOVERY NOTE BY US GEOLOGICAL SURVEY 2010 (JME)  
BH3280'RECOVERED IN GOOD CONDITION. BENCHMARK IS LOCATED NEXT TO NORTH SIDE  
BH3280'OF USGS GAGE HOUSE.  
BH3280  
BH3280 STATION RECOVERY (2012)  
BH3280  
BH3280'RECOVERY NOTE BY US GEOLOGICAL SURVEY 2012 (JME)  
BH3280'PHOTOGRAPHS OF BM 365 AND WITNESS POST ON ABUTMENT TAKEN ON DEC 24,  
BH3280'2012.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

BH0309 \*\*\*\*\*

BH0309 DESIGNATION - C 189

BH0309 PID - BH0309

BH0309 STATE/COUNTY- MS/JACKSON

BH0309 COUNTRY - US

BH0309 USGS QUAD - PASCAGOULA NORTH (1982)

BH0309

BH0309 \*CURRENT SURVEY CONTROL

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BH0309\* NAD 83(2011) POSITION- 30 23 45.00768(N) 088 32 12.16891(W) ADJUSTED

BH0309\* NAD 83(2011) ELLIP HT- -22.560 (meters) (06/27/12) ADJUSTED

BH0309\* NAD 83(2011) EPOCH - 2010.00

BH0309\* NAVD 88 ORTHO HEIGHT - 5.577 (meters) 18.30 (feet) ADJUSTED

BH0309\* NAVD 88 EPOCH - 2009.55

BH0309 \*\*This station is located in a suspected subsidence area (see below).

BH0309

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BH0309 NAD 83(2011) X - 140,607.594 (meters) COMP

BH0309 NAD 83(2011) Y - -5,504,370.160 (meters) COMP

BH0309 NAD 83(2011) Z - 3,208,287.989 (meters) COMP

BH0309 LAPLACE CORR - 0.15 (seconds) DEFLEC12A

BH0309 GEOID HEIGHT - -28.14 (meters) GEOID12A

BH0309 DYNAMIC HEIGHT - 5.570 (meters) 18.27 (feet) COMP

BH0309 MODELED GRAVITY - 979,323.6 (mgal) NAVD 88

BH0309

BH0309 VERT ORDER - FIRST CLASS II

BH0309

BH0309 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

BH0309 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE	
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)	
BH0309	-----	-----	-----	-----	-----	-----	
BH0309	NETWORK	3.83	4.76	1.57	1.54	2.43	0.23789318
BH0309	-----	-----	-----	-----	-----	-----	

BH0309 Click here for local accuracies and other accuracy information.

BH0309

BH0309

BH0309.The horizontal coordinates were established by GPS observations

BH0309.and adjusted by the National Geodetic Survey in June 2012.

BH0309

BH0309.NAD 83(2011) refers to NAD 83 coordinates where the reference

BH0309.frame has been affixed to the stable North American tectonic plate. See

BH0309.NA2011 for more information.

BH0309

BH0309.The horizontal coordinates are valid at the epoch date displayed above

BH0309.which is a decimal equivalence of Year/Month/Day.

BH0309

BH0309 \*\* This station is in an area of known vertical motion. Due to the

BH0309 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

BH0309 \*\* determined the orthometric heights for marks in these suspect

BH0309 \*\* subsidence areas should be considered valid only at the epoch date

BH0309 \*\* associated with the orthometric height. These heights must always

BH0309 \*\* be validated when used as control. All previously superseded

BH0309 \*\* orthometric heights are now considered suspect and are available

BH0309 \*\* in the superseded section. NGS does not recommend using suspect

BH0309 \*\* or superseded heights as control.

BH0309

BH0309.The orthometric height was determined by differential leveling and

BH0309.adjusted by the NATIONAL GEODETIC SURVEY

BH0309.in July 2012.

BH0309

BH0309.The X, Y, and Z were computed from the position and the ellipsoidal ht.

BH0309

BH0309.The Laplace correction was computed from DEFLEC12A derived deflections.  
BH0309  
BH0309.The ellipsoidal height was determined by GPS observations  
BH0309.and is referenced to NAD 83.  
BH0309  
BH0309.The dynamic height is computed by dividing the NAVD 88  
BH0309.geopotential number by the normal gravity value computed on the  
BH0309.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
BH0309.degrees latitude (g = 980.6199 gals.).  
BH0309  
BH0309.The modeled gravity was interpolated from observed gravity values.  
BH0309  
BH0309. The following values were computed from the NAD 83(2011) position.  
BH0309  
BH0309;  

	North	East	Units	Scale	Factor	Converg.
BH0309;SPC MS E	- 99,337.141	328,504.110	MT	0.99996002	+0 09 00.3	
BH0309;SPC MS E	- 325,908.60	1,077,767.23	sFT	0.99996002	+0 09 00.3	
BH0309;UTM 16	- 3,363,650.306	352,370.563	MT	0.99986887	-0 46 39.6	

BH0309  
BH0309!  

	Elev Factor	x	Scale Factor	=	Combined Factor
BH0309!SPC MS E	- 1.00000354	x	0.99996002	=	0.99996356
BH0309!UTM 16	- 1.00000354	x	0.99986887	=	0.99987241

BH0309  
BH0309  

SUPERSEDED SURVEY CONTROL

BH0309  
BH0309  
BH0309 NAD 83(2007)- 30 23 45.00788(N) 088 32 12.16907(W) AD(2002.00) A  
BH0309 ELLIP H (09/06/11) -22.559 (m) GP(2002.00) 4 1  
BH0309 NGVD 29 (??/??/??) 5.795 (m) 19.01 (f) ADJUSTED 1 2  
BH0309  
BH0309.Superseded values are not recommended for survey control.  
BH0309  
BH0309.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
BH0309.See file dsdata.txt to determine how the superseded data were derived.  
BH0309  
BH0309\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU5237063650(NAD 83)  
BH0309  
BH0309\_MARKER: DB = BENCH MARK DISK  
BH0309\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
BH0309\_SP\_SET: SET IN TOP OF CONCRETE MONUMENT  
BH0309\_STAMPING: C 189 1955  
BH0309\_MARK LOGO: CGS  
BH0309\_PROJECTION: PROJECTING 10 CENTIMETERS  
BH0309\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
BH0309+STABILITY: SURFACE MOTION  
BH0309\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
BH0309+SATELLITE: SATELLITE OBSERVATIONS - January 18, 2009  
BH0309  

BH0309	HISTORY	- Date	Condition	Report By
BH0309	HISTORY	- 1955	MONUMENTED	CGS
BH0309	HISTORY	- 1973	GOOD	MSHD
BH0309	HISTORY	- 20030503	GOOD	USPSQD
BH0309	HISTORY	- 20090118	GOOD	MAPTEC
BH0309	HISTORY	- 20090118	GOOD	MAPTEC

BH0309  
BH0309  

STATION DESCRIPTION

BH0309  
BH0309'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1973  
BH0309'1.35 MI S FROM MOSS POINT.  
BH0309'THE MARK IS LOCATED 1.35 MILES SOUTH OF THE CENTER OF THE BUSINESS  
BH0309'SECTION OF MOSS POINT IN THE NE ANGLE OF THE CROSSING OF THE  
BH0309'MISSISSIPPI EXPORT RAILROAD TRACK WITH MERIDIAN STREET NEAR THE SW  
BH0309'CORNER OF THE GROUNDS OF THE WEATHERBY MATERIALS CO. IT IS 24 FEET  
BH0309'NORTH OF THE CENTER OF MERIDIAN STREET, 17.5 FEET EAST OF THE EAST

BH0309'RAIL, 30 FEET NE OF THE CENTER OF THE CROSSING, 41.5 FEET EAST OF THE  
BH0309'SE CORNER OF A CONCRETE BUILDING ON THE WEST SIDE OF THE TRACK, 42  
BH0309'FEET NNW OF A GAS METER, 85 FEET WEST OF THE CENTER OF THE ENTRANCE TO  
BH0309'THE READY MIX CO., 2 FEET NORTH OF THE SW CORNER OF A CYCLONE FENCE, 1  
BH0309'FOOT EAST OF A METAL WITNESS POST, 0.5 FEET WEST OF A FENCE SET IN THE  
BH0309'TOP OF A 12 INCH CONCRETE CYLINDER ABOUT LEVEL WITH THE TRACK AND IS  
BH0309'FLUSH WITH THE GROUND. TO REACH FROM THE PASCAGOULA MOSS POINT BANK  
BH0309'IN MOSS POINT GO SOUTH ON MAIN STREET (STATE HIGHWAY 63) FOR 1.4 MILES  
BH0309'TO THE JUNCTION OF MERIDIAN STREET. TURN LEFT AND GO EAST ON MERIDIAN  
BH0309'STREET FOR 100 YARDS TO THE MARK ON THE LEFT JUST BEYOND THE CROSSING  
BH0309'OF THE MISSISSIPPI EXPORT RAILROAD TRACK.

BH0309

BH0309

STATION RECOVERY (2003)

BH0309

BH0309'RECOVERY NOTE BY US POWER SQUADRON 2003 (RLR)

BH0309'EARTH AROUND MARKER IS BEING ERODED AWAY SINCE MARKER IS LOCATED ON

BH0309'THE EDGE OF A DRAINAGE DITCH.

BH0309

BH0309

STATION RECOVERY (2009)

BH0309

BH0309'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0309'RECOVERED AS DESCRIBED.

BH0309

BH0309

STATION RECOVERY (2009)

BH0309

BH0309'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0309'RECOVERED AS DESCRIBED.



1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

DL8881 \*\*\*\*\*

DL8881 DESIGNATION - C 369

DL8881 PID - DL8881

DL8881 STATE/COUNTY- MS/PEARL RIVER

DL8881 COUNTRY - US

DL8881 USGS QUAD - MILLARD (1986)

DL8881

DL8881 \*CURRENT SURVEY CONTROL

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DL8881\* NAD 83(2011) POSITION- 30 41 08.84923(N) 089 37 26.23433(W) ADJUSTED

DL8881\* NAD 83(2011) ELLIP HT- 21.317 (meters) (06/27/12) ADJUSTED

DL8881\* NAD 83(2011) EPOCH - 2010.00

DL8881\* NAVD 88 ORTHO HEIGHT - 49.122 (meters) 161.16 (feet) ADJUSTED

DL8881\* NAVD 88 EPOCH - 2009.55

DL8881 \*\*This station is located in a suspected subsidence area (see below).

DL8881

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DL8881 NAD 83(2011) X - 36,031.076 (meters) COMP

DL8881 NAD 83(2011) Y - -5,489,750.786 (meters) COMP

DL8881 NAD 83(2011) Z - 3,235,995.682 (meters) COMP

DL8881 LAPLACE CORR - -1.17 (seconds) DEFLEC12A

DL8881 GEOID HEIGHT - -27.80 (meters) GEOID12A

DL8881 DYNAMIC HEIGHT - 49.057 (meters) 160.95 (feet) COMP

DL8881 MODELED GRAVITY - 979,328.4 (mgal) NAVD 88

DL8881

DL8881 VERT ORDER - FIRST CLASS II

DL8881

DL8881 Network accuracy estimates per FGDC Geospatial Positioning Accuracy Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE	
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)	
DL8881	-----	-----	-----	-----	-----	-----	
DL8881	NETWORK	1.37	1.92	0.57	0.55	0.98	0.14233801
DL8881	-----	-----	-----	-----	-----	-----	

DL8881 Click here for local accuracies and other accuracy information.

DL8881

DL8881

DL8881.The horizontal coordinates were established by GPS observations

DL8881.and adjusted by the National Geodetic Survey in June 2012.

DL8881

DL8881.NAD 83(2011) refers to NAD 83 coordinates where the reference

DL8881.frame has been affixed to the stable North American tectonic plate. See

DL8881.NA2011 for more information.

DL8881

DL8881.The horizontal coordinates are valid at the epoch date displayed above

DL8881.which is a decimal equivalence of Year/Month/Day.

DL8881

DL8881 \*\* This station is in an area of known vertical motion. Due to the

DL8881 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DL8881 \*\* determined the orthometric heights for marks in these suspect

DL8881 \*\* subsidence areas should be considered valid only at the epoch date

DL8881 \*\* associated with the orthometric height. These heights must always

DL8881 \*\* be validated when used as control. All previously superseded

DL8881 \*\* orthometric heights are now considered suspect and are available

DL8881 \*\* in the superseded section. NGS does not recommend using suspect

DL8881 \*\* or superseded heights as control.

DL8881

DL8881.The orthometric height was determined by differential leveling and

DL8881.adjusted by the NATIONAL GEODETIC SURVEY

DL8881.in July 2012.

DL8881

DL8881.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DL8881

DL8881.The Laplace correction was computed from DEFLEC12A derived deflections.  
DL8881  
DL8881.The ellipsoidal height was determined by GPS observations  
DL8881.and is referenced to NAD 83.  
DL8881  
DL8881.The dynamic height is computed by dividing the NAVD 88  
DL8881.geopotential number by the normal gravity value computed on the  
DL8881.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL8881.degrees latitude (g = 980.6199 gals.).  
DL8881  
DL8881.The modeled gravity was interpolated from observed gravity values.  
DL8881  
DL8881. The following values were computed from the NAD 83(2011) position.  
DL8881  
DL8881;  

	North	East	Units	Scale	Factor	Converg.
DL8881;SPC MS E	- 131,709.920	224,248.543	MT	1.00002076	-0 24	12.6
DL8881;SPC MS E	- 432,118.30	735,722.09	sFT	1.00002076	-0 24	12.6
DL8881;UTM 16	- 3,397,719.166	248,641.462	MT	1.00037947	-1 20	23.2

DL8881  
DL8881!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DL8881!SPC MS E	- 0.99999665	x	1.00002076	=	1.00001741
DL8881!UTM 16	- 0.99999665	x	1.00037947	=	1.00037612

DL8881  
DL8881  

SUPERSEDED SURVEY CONTROL

DL8881  
DL8881  
DL8881 NAD 83(2007)- 30 41 08.84946(N) 089 37 26.23459(W) AD(2002.00) A  
DL8881 ELLIP H (09/06/11) 21.300 (m) GP(2002.00) 4 1  
DL8881  
DL8881.Superseded values are not recommended for survey control.  
DL8881  
DL8881.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL8881.See file dsdata.txt to determine how the superseded data were derived.  
DL8881  
DL8881\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU4864197719(NAD 83)  
DL8881  
DL8881\_MARKER: DD = SURVEY DISK  
DL8881\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
DL8881\_STAMPING: C 369 2009  
DL8881\_MARK LOGO: MSDOT  
DL8881\_PROJECTION: FLUSH  
DL8881\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL8881\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL8881+STABILITY: SURFACE MOTION  
DL8881\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL8881+SATELLITE: SATELLITE OBSERVATIONS - April 07, 2009  
DL8881  
DL8881 HISTORY - Date Condition Report By  
DL8881 HISTORY - 20090407 MONUMENTED EMCINC  
DL8881  
DL8881  

STATION DESCRIPTION

DL8881  
DL8881'DESCRIBED BY EMC INCORPORATED 2009  
DL8881'THE MARK IS LOCATED IN MCNEILL ABOUT 18.8 MI (30.3 KM) NORTH OF  
DL8881'GULFPORT, 15.0 MI (24.1 KM) NORTH-NORTHEAST OF NICHOLSON AND 11.4 MI  
DL8881'(18.3 KM) NORTH-NORTHEAST OF PICAYUNE.  
DL8881'  
DL8881'TO REACH FROM THE POST OFFICE IN MCNEILL PROCEED NORTH ON HIGHWAY 11  
DL8881'1.4 MI (2.3 KM) TO THE MARK ON THE LEFT.  
DL8881'  
DL8881'THE MARK IS 132.5 FT (40.4 M) NORTHEAST OF PROPERTY FENCE CORNER,  
DL8881'124.6 FT (38.0 M) SOUTHWEST OF OF BELL SOUTH FIBER OPTIC MARKER, 40.7  
DL8881'FT (12.4 M) WEST OF THE CENTERLINE OF HIGHWAY 11, 39.3 FT (12.0 M)  
DL8881'SOUTHEAST OF FENCE LINE, 31.5 FT (9.6 M) SOUTHEAST OF POWER POLE.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0982 *****
BH0982 DESIGNATION - D 190
BH0982 PID - BH0982
BH0982 STATE/COUNTY- MS/HANCOCK
BH0982 COUNTRY - US
BH0982 USGS QUAD - WAVELAND (1976)
BH0982
BH0982 *CURRENT SURVEY CONTROL
BH0982
BH0982* NAD 83(1986) POSITION- 30 18 03.9 (N) 089 29 41.4 (W) HD_HELD2
BH0982* NAVD 88 ORTHO HEIGHT - 5.363 (meters) 17.60 (feet) ADJUSTED
BH0982* NAVD 88 EPOCH - 2009.55
BH0982 **This station is located in a suspected subsidence area (see below).
BH0982
BH0982 GEOID HEIGHT - -27.11 (meters) GEOID12A
BH0982 DYNAMIC HEIGHT - 5.355 (meters) 17.57 (feet) COMP
BH0982 MODELED GRAVITY - 979,335.6 (mgal) NAVD 88
BH0982
BH0982 VERT ORDER - FIRST CLASS II
BH0982
BH0982.The horizontal coordinates were established by autonomous hand held GPS
BH0982.observations and have an estimated accuracy of +/- 10 meters.
BH0982.
BH0982 ** This station is in an area of known vertical motion. Due to the
BH0982 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0982 ** determined the orthometric heights for marks in these suspect
BH0982 ** subsidence areas should be considered valid only at the epoch date
BH0982 ** associated with the orthometric height. These heights must always
BH0982 ** be validated when used as control. All previously superseded
BH0982 ** orthometric heights are now considered suspect and are available
BH0982 ** in the superseded section. NGS does not recommend using suspect
BH0982 ** or superseded heights as control.
BH0982
BH0982.The orthometric height was determined by differential leveling and
BH0982.adjusted by the NATIONAL GEODETIC SURVEY
BH0982.in July 2012.
BH0982
BH0982.The dynamic height is computed by dividing the NAVD 88
BH0982.geopotential number by the normal gravity value computed on the
BH0982.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0982.degrees latitude (g = 980.6199 gals.).
BH0982
BH0982.The modeled gravity was interpolated from observed gravity values.
BH0982
BH0982; North East Units Estimated Accuracy
BH0982;SPC MS E - 88,982. 236,370. MT (+/- 10 meters HH2 GPS)
BH0982
BH0982 SUPERSEDED SURVEY CONTROL
BH0982
BH0982 NAVD 88 (02/14/94) 5.500 (m) 18.04 (f) SUPERSEDED 1 1
BH0982 NAVD 88 (06/15/91) 5.500 (m) 18.04 (f) SUPERSEDED 1 1
BH0982 NGVD 29 (??/??/??) 5.455 (m) 17.90 (f) ADJUSTED 1 1
BH0982
BH0982.Superseded values are not recommended for survey control.
BH0982
BH0982.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH0982.See file dsdata.txt to determine how the superseded data were derived.
BH0982
BH0982_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU6007154785(NAD 83)
BH0982
BH0982_MARKER: DB = BENCH MARK DISK
BH0982_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

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BH0982\_SP\_SET: CONCRETE POST  
 BH0982\_STAMPING: D 190 1955  
 BH0982\_MARK LOGO: CGS  
 BH0982\_PROJECTION: PROJECTING 15 CENTIMETERS  
 BH0982\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 BH0982\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 BH0982+STABILITY: SURFACE MOTION  
 BH0982\_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR  
 BH0982+SATELLITE: SATELLITE OBSERVATIONS - January 15, 2009

BH0982	HISTORY	- Date	Condition	Report By
BH0982	HISTORY	- 1955	MONUMENTED	CGS
BH0982	HISTORY	- 1970	GOOD	NGS
BH0982	HISTORY	- 1976	GOOD	NGS
BH0982	HISTORY	- 19930318	GOOD	NGS
BH0982	HISTORY	- 20050706	GOOD	NGS
BH0982	HISTORY	- 20090115	GOOD	MAPTEC

BH0982 STATION DESCRIPTION

BH0982'DESCRIBED BY NATIONAL GEODETIC SURVEY 1970  
 BH0982'10.65 MI W FROM BAY ST LOUIS.  
 BH0982'ABOUT 10.65 MILES WEST ALONG U.S. HIGHWAY 90 FROM THE WEST END OF THE  
 BH0982'HIGHWAY BRIDGE OVER ST. LOUIS BAY AT BAY ST. LOUIS, 0.5 MILE EAST OF  
 BH0982'THE JUNCTION OF STATE HIGHWAY 607 WHICH LEADS WEST, NEAR THE JUNCTION  
 BH0982'OF A DIRT ROAD WHICH LEADS SOUTH, 115 FEET SOUTH OF THE CENTER LINE OF  
 BH0982'THE SOUTH LANES OF THE HIGHWAY, 86 FEET SOUTHEAST OF THE EAST END OF A  
 BH0982'1 1/2-FOOT CONCRETE TUBULAR CULVERT UNDER THE DIRT ROAD, 33 FEET EAST  
 BH0982'OF THE CENTER LINE OF THE ROAD, 2.0 FEET SOUTHEAST OF A METAL WITNESS  
 BH0982'POST, ABOUT LEVEL WITH THE HIGHWAY, AND SET IN THE TOP OF A CONCRETE  
 BH0982'POST WHICH PROJECTS 3 INCHES. SEC 34 T 8S, R 15W. NOTE-- THIS MARK  
 BH0982'IS ALSO 8.4 MILES NORTHEAST ALONG U.S. HIGHWAY 90 FROM THE EAST END OF  
 BH0982'THE HIGHWAY BRIDGE OVER THE PEARL RIVER AT PEARLINGTON.

BH0982 STATION RECOVERY (1976)

BH0982'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976  
 BH0982'RECOVERED IN GOOD CONDITION.

BH0982 STATION RECOVERY (1993)

BH0982'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993  
 BH0982'11.3 KM (7.00 MI) WESTERLY ALONG U.S. HIGHWAY 90 FROM THE JUNCTION  
 BH0982'OF STATE HIGHWAY 43 IN WAVELAND, 35.1 M (115.2 FT) SOUTH OF THE  
 BH0982'CENTERLINE OF THE EASTBOUND LANES OF THE HIGHWAY, 10.0 M (32.8 FT)  
 BH0982'EAST OF AND LEVEL WITH THE CENTER OF A DIRT ROAD, 2.6 M (8.5 FT)  
 BH0982'NORTH OF AN 18-INCH PINE TREE, 0.3 M (1.0 FT) WEST OF A WITNESS POST,  
 BH0982'AND THE MONUMENT PROJECTS 0.1 M (0.3 FT) ABOVE THE GROUND SURFACE.

BH0982 STATION RECOVERY (2005)

BH0982'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (KS)  
 BH0982'AT N 30 18 4.0 BY W 089 29 41.4  
 BH0982'

BH0982 STATION RECOVERY (2009)

BH0982'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (CLK)  
 BH0982'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL9661 *****
DL9661 DESIGNATION - E 379
DL9661 PID - DL9661
DL9661 STATE/COUNTY- MS/GEORGE
DL9661 COUNTRY - US
DL9661 USGS QUAD - HARLESTON (1982)
DL9661
DL9661 *CURRENT SURVEY CONTROL
DL9661
DL9661* NAD 83(2011) POSITION- 30 44 51.51513(N) 088 35 52.90256(W) ADJUSTED
DL9661* NAD 83(2011) ELLIP HT- 3.992 (meters) (06/27/12) ADJUSTED
DL9661* NAD 83(2011) EPOCH - 2010.00
DL9661* NAVD 88 ORTHO HEIGHT - 32.636 (meters) 107.07 (feet) ADJUSTED
DL9661* NAVD 88 EPOCH - 2009.55
DL9661 **This station is located in a suspected subsidence area (see below).
DL9661
DL9661 NAD 83(2011) X - 134,232.243 (meters) COMP
DL9661 NAD 83(2011) Y - -5,484,709.184 (meters) COMP
DL9661 NAD 83(2011) Z - 3,241,881.964 (meters) COMP
DL9661 LAPLACE CORR - 0.13 (seconds) DEFLEC12A
DL9661 GEOID HEIGHT - -28.64 (meters) GEOID12A
DL9661 DYNAMIC HEIGHT - 32.593 (meters) 106.93 (feet) COMP
DL9661 MODELED GRAVITY - 979,326.4 (mgal) NAVD 88
DL9661
DL9661 VERT ORDER - FIRST CLASS II
DL9661
DL9661 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL9661 Standards:
DL9661 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DL9661 Horiz Ellip SD_N SD_E SD_h (unitless)
DL9661 -----
DL9661 NETWORK 2.04 2.82 0.83 0.84 1.44 0.13531903
DL9661 -----
DL9661 Click here for local accuracies and other accuracy information.
DL9661
DL9661
DL9661.The horizontal coordinates were established by GPS observations
DL9661.and adjusted by the National Geodetic Survey in June 2012.
DL9661
DL9661.NAD 83(2011) refers to NAD 83 coordinates where the reference
DL9661.frame has been affixed to the stable North American tectonic plate. See
DL9661.NA2011 for more information.
DL9661
DL9661.The horizontal coordinates are valid at the epoch date displayed above
DL9661.which is a decimal equivalence of Year/Month/Day.
DL9661
DL9661 ** This station is in an area of known vertical motion. Due to the
DL9661 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL9661 ** determined the orthometric heights for marks in these suspect
DL9661 ** subsidence areas should be considered valid only at the epoch date
DL9661 ** associated with the orthometric height. These heights must always
DL9661 ** be validated when used as control. All previously superseded
DL9661 ** orthometric heights are now considered suspect and are available
DL9661 ** in the superseded section. NGS does not recommend using suspect
DL9661 ** or superseded heights as control.
DL9661
DL9661.The orthometric height was determined by differential leveling and
DL9661.adjusted by the NATIONAL GEODETIC SURVEY
DL9661.in July 2012.
DL9661
DL9661.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DL9661

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DL9661.The Laplace correction was computed from DEFLECI2A derived deflections.  
DL9661  
DL9661.The ellipsoidal height was determined by GPS observations  
DL9661.and is referenced to NAD 83.  
DL9661  
DL9661.The dynamic height is computed by dividing the NAVD 88  
DL9661.geopotential number by the normal gravity value computed on the  
DL9661.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL9661.degrees latitude (g = 980.6199 gals.).  
DL9661  
DL9661.The modeled gravity was interpolated from observed gravity values.  
DL9661  
DL9661. The following values were computed from the NAD 83(2011) position.  
DL9661  
DL9661;  

	North	East	Units	Scale	Factor	Converg.
DL9661;SPC MS E	- 138,323.656	322,530.481	MT	0.99995626	+0 07	13.1
DL9661;SPC MS E	- 453,816.86	1,058,168.75	sFT	0.99995626	+0 07	13.1
DL9661;UTM 16	- 3,402,725.785	347,032.712	MT	0.99988865	-0 49	01.8

DL9661  
DL9661!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DL9661!SPC MS E	- 0.99999937	x	0.99995626	=	0.9999563
DL9661!UTM 16	- 0.99999937	x	0.99988865	=	0.99988802

DL9661  
DL9661  

SUPERSEDED SURVEY CONTROL

DL9661  
DL9661  
DL9661 NAD 83(2007)- 30 44 51.51534(N) 088 35 52.90274(W) AD(2002.00) A  
DL9661 ELLIP H (09/06/11) 3.991 (m) GP(2002.00) 4 1  
DL9661  
DL9661.Superseded values are not recommended for survey control.  
DL9661  
DL9661.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL9661.See file dsdata.txt to determine how the superseded data were derived.  
DL9661  
DL9661\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCV4703202725(NAD 83)  
DL9661  
DL9661\_MARKER: DD = SURVEY DISK  
DL9661\_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE  
DL9661\_SP\_SET: BOX CULVERT HEADWALL  
DL9661\_STAMPING: E 379 2009  
DL9661\_MARK LOGO: MSDOT  
DL9661\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL9661\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL9661+STABILITY: SURFACE MOTION  
DL9661\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL9661+SATELLITE: SATELLITE OBSERVATIONS - August 25, 2009  
DL9661  
DL9661 HISTORY - Date Condition Report By  
DL9661 HISTORY - 20090825 MONUMENTED GCT  
DL9661  
DL9661  

STATION DESCRIPTION

DL9661  
DL9661'DESCRIBED BY GUSTIN, COTHERN, AND TUCKER, I 2009  
DL9661'THE MARK IS LOCATED IN LUCEDALE 33.0 MI (53.1 KM) EAST-SOUTHEAST OF  
DL9661'WIGGINS, 28.3 FT (8.6 M) SOUTH-SOUTHEAST OF MCCLAIN, 20.2 MI (32.5 KM)  
DL9661'WEST-SOUTHWEST OF SEMMES.  
DL9661'  
DL9661'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 26 AND STATE  
DL9661'ROAD 63 IN LUCEDALE PROCEED SOUTH ALONG STATE ROAD 63 FOR 11.4 MI  
DL9661'(18.3 KM) TO THE MARK ON THE LEFT.  
DL9661'  
DL9661'THE MARK IS 265.0 FT (80.8 M) NORTH OF A POWER POLE, 106.1 FT (32.3 M)  
DL9661'SOUTH OF A FIBER OPTIC CABLE MARKER POST, 62.6 FT (19.1 M) SOUTH OF A  
DL9661'POWER POLE, 17.0 FT (5.2 M) EAST OF THE EAST EDGE OF PAVEMENT OF THE

DL9661'NORTHBOUND LANES OF HIGHWAY 63, 0.5 FT (0.2 M) NORTH OF THE SOUTH END  
DL9661'OF CONCRETE HEADWALL OVER A 10 FT (3.0 M) WIDE BOX CULVERT.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL8884 *****
DL8884 DESIGNATION - F 369
DL8884 PID - DL8884
DL8884 STATE/COUNTY- MS/PEARL RIVER
DL8884 COUNTRY - US
DL8884 USGS QUAD - MILLARD (1986)
DL8884
DL8884 *CURRENT SURVEY CONTROL
DL8884
DL8884* NAD 83(1986) POSITION- 30 43 34.9 (N) 089 35 40.4 (W) HD_HELD2
DL8884* NAVD 88 ORTHO HEIGHT - 50.138 (meters) 164.49 (feet) ADJUSTED
DL8884* NAVD 88 EPOCH - 2009.55
DL8884 **This station is located in a suspected subsidence area (see below).
DL8884
DL8884 GEOID HEIGHT - -27.89 (meters) GEOID12A
DL8884 DYNAMIC HEIGHT - 50.072 (meters) 164.28 (feet) COMP
DL8884 MODELED GRAVITY - 979,328.3 (mgal) NAVD 88
DL8884
DL8884 VERT ORDER - FIRST CLASS II
DL8884
DL8884.The horizontal coordinates were established by autonomous hand held GPS
DL8884.observations and have an estimated accuracy of +/- 10 meters.
DL8884.
DL8884 ** This station is in an area of known vertical motion. Due to the
DL8884 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL8884 ** determined the orthometric heights for marks in these suspect
DL8884 ** subsidence areas should be considered valid only at the epoch date
DL8884 ** associated with the orthometric height. These heights must always
DL8884 ** be validated when used as control. All previously superseded
DL8884 ** orthometric heights are now considered suspect and are available
DL8884 ** in the superseded section. NGS does not recommend using suspect
DL8884 ** or superseded heights as control.
DL8884
DL8884.The orthometric height was determined by differential leveling and
DL8884.adjusted by the NATIONAL GEODETIC SURVEY
DL8884.in July 2012.
DL8884
DL8884.The dynamic height is computed by dividing the NAVD 88
DL8884.geopotential number by the normal gravity value computed on the
DL8884.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DL8884.degrees latitude (g = 980.6199 gals.).
DL8884
DL8884.The modeled gravity was interpolated from observed gravity values.
DL8884
DL8884; North East Units Estimated Accuracy
DL8884;SPC MS E - 136,188. 227,096. MT (+/- 10 meters HH2 GPS)
DL8884
DL8884 SUPERSEDED SURVEY CONTROL
DL8884
DL8884.No superseded survey control is available for this station.
DL8884
DL8884_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV5156202151(NAD 83)
DL8884
DL8884_MARKER: DD = SURVEY DISK
DL8884_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE
DL8884_SP_SET: BOX CULVERT HEADWALL
DL8884_STAMPING: F 369 2009
DL8884_MARK LOGO: MSDOT
DL8884_MAGNETIC: N = NO MAGNETIC MATERIAL
DL8884_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DL8884+STABILITY: SURFACE MOTION
DL8884_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

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DL8884+SATELLITE: SATELLITE OBSERVATIONS - April 13, 2009

DL8884

DL8884	HISTORY	- Date	Condition	Report By
DL8884	HISTORY	- 20090413	MONUMENTED	EMCINC

DL8884

DL8884

STATION DESCRIPTION

DL8884

DL8884'DESCRIBED BY EMC INCORPORATED 2009

DL8884'THE MARK IS LOCATED IN MILLARD ABOUT 21.9 MI (35.2 KM) NORTH-NORTHEAST

DL8884'OF GULFPORT, 18.2 MI (29.3 KM) NORTH-NORTHEAST OF NICHOLSON AND 14.6

DL8884'MI (23.5 KM) NORTH-NORTHEAST OF PICAYUNE.

DL8884'

DL8884'TO REACH THE STATION FROM THE INTERSECTION OF SAVANNAH MILLARD ROAD

DL8884'AND HIGHWAY 11 (CONVENIENCE STORE ON CORNER) PROCEED NORTH ON HIGHWAY

DL8884'11 0.2 MILES TO THE MARK ON THE LEFT.

DL8884'

DL8884'THE MARK IS 164.6 FT (50.2 M) SOUTHWEST OF ELECTRIC POWER POLE, 152.3

DL8884'FT (46.4 M) SOUTHWEST OF NORTHWEST END OF GUARD RAIL, 64.6 FT (19.7 M)

DL8884'SOUTHWEST OF NORTHEAST END OF GUARD RAIL, 39.7 FT (12.1 M) NORTHWEST

DL8884'OF CENTERLINE OF BOW CULVERT ON EAST SIDE OF HIGHWAY, 16.4 FT (5.0 M)

DL8884'WEST OF THE CENTERLINE OF HIGHWAY 11.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0619 *****
BH0619 DESIGNATION - FORKS 2
BH0619 PID - BH0619
BH0619 STATE/COUNTY- MS/JACKSON
BH0619 COUNTRY - US
BH0619 USGS QUAD - HARLESTON (1982)
BH0619
BH0619 *CURRENT SURVEY CONTROL
BH0619
BH0619* NAD 83(1993) POSITION- 30 41 38.54668(N) 088 34 36.80837(W) ADJUSTED
BH0619* NAVD 88 ORTHO HEIGHT - 15.781 (meters) 51.77 (feet) ADJUSTED
BH0619* NAVD 88 EPOCH - 2009.55
BH0619 **This station is located in a suspected subsidence area (see below).
BH0619
BH0619 LAPLACE CORR - 0.21 (seconds) DEFLEC12A
BH0619 GEOID HEIGHT - -28.65 (meters) GEOID12A
BH0619 DYNAMIC HEIGHT - 15.760 (meters) 51.71 (feet) COMP
BH0619 MODELED GRAVITY - 979,324.8 (mgal) NAVD 88
BH0619
BH0619 HORZ ORDER - SECOND
BH0619 VERT ORDER - FIRST CLASS II
BH0619
BH0619.The horizontal coordinates were established by classical geodetic methods
BH0619.and adjusted by the National Geodetic Survey in May 1994.
BH0619.
BH0619 ** This station is in an area of known vertical motion. Due to the
BH0619 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0619 ** determined the orthometric heights for marks in these suspect
BH0619 ** subsidence areas should be considered valid only at the epoch date
BH0619 ** associated with the orthometric height. These heights must always
BH0619 ** be validated when used as control. All previously superseded
BH0619 ** orthometric heights are now considered suspect and are available
BH0619 ** in the superseded section. NGS does not recommend using suspect
BH0619 ** or superseded heights as control.
BH0619
BH0619.The orthometric height was determined by differential leveling and
BH0619.adjusted by the NATIONAL GEODETIC SURVEY
BH0619.in July 2012.
BH0619
BH0619.The Laplace correction was computed from DEFLEC12A derived deflections.
BH0619
BH0619.The dynamic height is computed by dividing the NAVD 88
BH0619.geopotential number by the normal gravity value computed on the
BH0619.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0619.degrees latitude (g = 980.6199 gals.).
BH0619
BH0619.The modeled gravity was interpolated from observed gravity values.
BH0619
BH0619. The following values were computed from the NAD 83(1993) position.
BH0619
BH0619; North East Units Scale Factor Converg.
BH0619;SPC MS E - 132,385.758 324,567.972 MT 0.99995744 +0 07 51.2
BH0619;SPC MS E - 434,335.61 1,064,853.42 sFT 0.99995744 +0 07 51.2
BH0619;UTM 16 - 3,396,755.800 348,972.717 MT 0.99988138 -0 48 18.3
BH0619
BH0619! - Elev Factor x Scale Factor = Combined Factor
BH0619!SPC MS E - 1.00000202 x 0.99995744 = 0.99995946
BH0619!UTM 16 - 1.00000202 x 0.99988138 = 0.99988340
BH0619
BH0619|-----|
BH0619| PID Reference Object Distance Geod. Az |
BH0619| | | | | dddmmss.s |

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BH0619	DD8810 FORKS 2 RM 4	25.192 METERS	00926
BH0619	BH0621 FORKS 2 RM 6	25.216 METERS	00926
BH0619	BH0620 FORKS 2 RM 5	26.482 METERS	18926
BH0619	BH0618 TT 46 T USGS	182.848 METERS	24423
BH0619	BH2483 FORKS	12.471 METERS	28029

BH0619 |-----|

BH0619

BH0619 SUPERSEDED SURVEY CONTROL

BH0619

BH0619	NAD 83(1992)-	30 41 38.55437(N)	088 34 36.80142(W)	AD( )	2
BH0619	NAD 83(1986)-	30 41 38.56712(N)	088 34 36.80483(W)	AD( )	2
BH0619	NAD 27	- 30 41 37.87130(N)	088 34 36.72590(W)	AD( )	2
BH0619	NGVD 29 (??/??/??)	15.922 (m)	52.24 (f)	ADJUSTED	2 2

BH0619

BH0619.Superseded values are not recommended for survey control.

BH0619

BH0619.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

BH0619.See file dsdata.txt to determine how the superseded data were derived.

BH0619

BH0619\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU4897296755(NAD 83)

BH0619

BH0619\_MARKER: DS = TRIANGULATION STATION DISK

BH0619\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

BH0619\_SP\_SET: SET IN TOP OF CONCRETE MONUMENT

BH0619\_STAMPING: FORKS 2 1958

BH0619\_MARK LOGO: CGS

BH0619\_PROJECTION: PROJECTING 5 CENTIMETERS

BH0619\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

BH0619+STABILITY: SURFACE MOTION

BH0619\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

BH0619+SATELLITE: SATELLITE OBSERVATIONS - January 26, 2009

BH0619

BH0619	HISTORY	- Date	Condition	Report By
BH0619	HISTORY	- 1958	MONUMENTED	CGS
BH0619	HISTORY	- 1968	GOOD	MSHD
BH0619	HISTORY	- 1973	GOOD	MSHD
BH0619	HISTORY	- 20080301	GOOD	NGS
BH0619	HISTORY	- 20090126	GOOD	MAPTEC

BH0619

BH0619 STATION DESCRIPTION

BH0619

BH0619'DESCRIBED BY COAST AND GEODETIC SURVEY 1958 (RAG)

BH0619'THE STATION IS LOCATED 18 MILES SOUTH OF LUCEDALE, 4.5 MILES

BH0619'SOUTHWEST OF HARLESTON AND 3.75 MILES NORTH OF THE WADE POST

BH0619'OFFICE, AT THE JUNCTION OF STATE HIGHWAY 613 AND A BLACK TOP ROAD

BH0619'LEADING NORTHEAST TO HARLESTON. IT IS 79 FEET EAST OF STATE

BH0619'HIGHWAY 613, 80 FEET SOUTHEAST OF THE CENTERLINE OF THE INTERSECTION

BH0619'OF THE TWO ROADS, 87 FEET SOUTH OF AN 18-INCH LONE PINE

BH0619'TREE, 23 FEET NORTHWEST OF A 12-INCH PINE TREE, AND 2 FEET SOUTHEAST

BH0619'OF A WITNESS POST. IT IS A STANDARD DISK STAMPED FORKS 2

BH0619'1958, PROJECTING 4 INCHES.

BH0619'

BH0619'REFERENCE MARK NO. 4 IS 82.65 FEET NORTH OF THE STATION, 7 FEET

BH0619'SOUTHWEST OF AN 18-INCH PINE TREE, 101 FEET EAST OF THE

BH0619'CENTERLINE OF STATE HIGHWAY 613, AND 49 FEET SOUTHEAST OF THE

BH0619'CENTERLINE OF THE BLACK TOP ROAD LEADING NORTHEAST. IT IS A

BH0619'STANDARD DISK STAMPED, FORKS 2 NO 4 1958, PROJECTING 6 INCHES.

BH0619'

BH0619'REFERENCE MARK NO. 5 IS 84.78 FEET SOUTH OF THE STATION AND IN LINE

BH0619'WITH THE STATION AND REFERENCE MARK NO. 4. IT IS 59 FEET EAST OF

BH0619'THE CENTERLINE OF STATE HIGHWAY 613 AND 66 FEET SOUTH-SOUTHWEST OF A

BH0619'12-INCH PINE TREE. IT IS A STANDARD DISK STAMPED, FORKS 2 NO

BH0619'5 1958, PROJECTING 6 INCHES.

BH0619'  
BH0619'A TRAVERSE CONNECTION WAS MADE TO U.S. GEOLOGICAL TRAVERSE MARK TT 46  
BH0619'T 1940 WHICH WILL SERVE AS REFERENCE MARK NO. 3. IT IS 251.58 FEET  
BH0619'SOUTHWEST OF THE STATION, 126 FEET WEST OF THE CENTERLINE OF STATE  
BH0619'HIGHWAY 613, 35 FEET SOUTH-SOUTHEAST OF A 12-INCH PINE  
BH0619'TREE, 3 FEET SOUTHEAST OF THE PROJECTED CENTERLINE OF THE BLACK TOP  
BH0619'ROAD LEADING NORTHEAST AND ON THE TOP OF A 3-FOOT BANK. IT IS  
BH0619'A STANDARD U.S. GEOLOGICAL TRAVERSE DISK STAMPED TT 46 T 1940, SET IN  
BH0619'THE TOP OF AN 8-INCH SQUARE CONCRETE POST PROJECTING 4 INCHES.

BH0619'  
BH0619'NO AZIMUTH MARK WAS ESTABLISHED FOR THIS STATION.

BH0619'  
BH0619'TO REACH THE STATION FROM THE POST OFFICE IN HARLESTON (17.5 MILES  
BH0619'SOUTH OF LUCEDALE ON STATE HIGHWAY 63) GO SOUTH ON STATE  
BH0619'HIGHWAY 63 FOR 0.25 MILE TO A SIDE ROAD RIGHT, TURN RIGHT AND GO WEST  
BH0619'FOR 2.1 MILES TO A T INTERSECTION, TURN LEFT AND GO SOUTHWEST  
BH0619'FOR 2.8 MILES TO THE JUNCTION WITH STATE HIGHWAY 613 AND THE MARK ON  
BH0619'THE LEFT.

BH0619'  
BH0619'  
BH0619' STATION RECOVERY (1968)

BH0619'  
BH0619'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1968 (HBT)  
BH0619'THE STATION WAS VISITED 9-12-68 AND THE STATION MARK, REFERENCE MARK  
BH0619'NO. 5 AND TT 46 T (USGS) WERE FOUND IN GOOD CONDITION. RM 4  
BH0619'WAS FOUND TO BE LEANING APPROXIMATELY 10 DEG. IT WAS MOVED BACK NEAR  
BH0619'ITS ORIGINAL POSITION AND RESTAMPED FORKS 2 NO 6 1958 1968.

BH0619'  
BH0619'THE STATION IS LOCATED 3.7 MILES NORTH NORTHWEST OF WADE, 4.5 MILES  
BH0619'SOUTHWEST OF HARLESTON IN THE SOUTHEAST ANGLE OF A CROSSROADS  
BH0619'IN THE SOUTHWEST 1/4 OF SECTION 15, T 4S, R 6W. IT IS 153 FEET  
BH0619'SOUTHEAST OF THE CENTER OF A CROSSROADS, 80 FEET EAST OF  
BH0619'THE CENTER OF HIGHWAY 63, 151 FEET SOUTH SOUTHEAST OF THE CENTER OF A  
BH0619'BLACKTOP ROAD, 26 FEET EAST OF THE EDGE OF A 10 FOOT BANK, 71.5  
BH0619'FEET SOUTHEAST OF A POWER LINE POLE, 24 FEET NORTHWEST OF A 12 INCH  
BH0619'PINE AND 1 FOOT NORTHEAST OF A METAL WITNESS POST.

BH0619'  
BH0619'IT IS A STANDARD TRIANGULATION DISK, STAMPED FORKS 2 1958 PROJECTING  
BH0619'4 INCHES.

BH0619'  
BH0619'REFERENCE MARK NO. 5 IS 84.85 FEET SOUTH OF THE STATION. IT IS 59.5  
BH0619'FEET EAST OF THE CENTER OF HIGHWAY 63, 6 FEET NORTH NORTHWEST  
BH0619'OF A RIGHT-OF-WAY MARKER, 3 FEET EAST OF THE EDGE OF AN 8 FOOT BANK,  
BH0619'149.5 FEET SOUTH OF A POWER LINE POLE, 1 FOOT EAST OF A METAL  
BH0619'WITNESS POST. IT IS A STANDARD DISK, STAMPED FORKS 2 NO 5 1958 AND  
BH0619'PROJECTS 8 INCHES.

BH0619'  
BH0619'REFERENCE MARK NO. 6 IS 82.73 FEET NORTH OF THE STATION. IT IS 101  
BH0619'FEET EAST OF THE CENTER OF HIGHWAY 63, 70 FEET SOUTH SOUTHEAST  
BH0619'OF THE CENTER OF A BLACKTOP ROAD, 47 FEET EAST NORTHEAST OF A POWER  
BH0619'LINE POLE, 56 FEET SOUTHWEST OF A FENCE CORNER, 1.5 FEET SOUTH  
BH0619'OF A METAL WITNESS POST. IT IS A STANDARD REFERENCE MARK DISK  
BH0619'STAMPED FORKS 2 NO 6 1958 1968 PROJECTING 3 INCHES.

BH0619'  
BH0619'TT 46 T (USGS) IS 251.58 FEET SOUTHWEST OF TRIANGULATION FORKS 2, 126  
BH0619'FEET WEST OF THE CENTER OF HIGHWAY 63, 31 FEET WEST OF THE CENTER  
BH0619'OF THE OLD HIGHWAY, 169 FEET SOUTHWEST OF A POWER LINE POLE WITH A  
BH0619'TRANSFORMER AND A GUY WIRE, 59.5 FEET WEST NORTHWEST OF A  
BH0619'POWER POLE. IT IS A STANDARD USGS BENCH MARK DISK, SET IN THE TOP OF  
BH0619'AN 8 INCH SQUARE CONCRETE POST PROJECTING 4 INCHES AND  
BH0619'STAMPED TT 46 T 1940.

BH0619'  
BH0619'TO REACH FROM THE U.S. POST OFFICE JUST NORTH OF THE CROSSROADS IN  
BH0619'WADE GO NORTH ON MISSISSIPPI HIGHWAY 63 FOR 3.75 MILES TO A

BH0619'CROSSROADS AND THE MARK ON THE RIGHT IN THE SOUTHEAST ANGLE.

BH0619

BH0619

STATION RECOVERY (1973)

BH0619

BH0619'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1973

BH0619'3.7 MI N FROM WADE.

BH0619'THE MARK IS LOCATED 3.7 MILES NORTH OF WADE IN THE SE ANGLE OF A  
BH0619'CROSSROAD, 5.5 MILES NW OF HURLEY, 16 MILES SOUTH OF LUCEDALE IN THE  
BH0619'SW 1/4 OF SECTION 15, T 4S, R 6W. IT IS 153 FEET SE OF THE CENTER OF  
BH0619'A CROSSROAD, 80 FEET EAST OF THE CENTER OF HIGHWAY 63, 151 FEET SSE OF  
BH0619'THE CENTER OF A BLACK TOP ROAD, 26 FEET EAST OF THE EDGE OF A 7 FOOT  
BH0619'BANK, 71.5 FEET SE OF POWER POLE NO. 70, 90.5 FEET NNE OF A ROW  
BH0619'MARKER, 24 FEET NW OF A 12 INCH PINE, 1 FOOT NE OF A METAL WITNESS  
BH0619'POST SET IN THE TOP OF A 9 INCH ROUND CONCRETE POST ABOUT 2 FEET ABOVE  
BH0619'THE LEVEL OF THE HIGHWAY AND PROJECTS 4 INCHES. TO REACH FROM THE  
BH0619'JUNCTION OF STATE HIGHWAY 614 AND 63 AT WADE GO NORTH ON STATE HIGHWAY  
BH0619'63 FOR 3.8 MILES TO A CROSSROAD AND THE MARK ON THE RIGHT.

BH0619

BH0619

STATION RECOVERY (2008)

BH0619

BH0619'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2008 (DW)

BH0619'REFERENCES TO MS ROUTE 63 REFER TO CURRENT NORTH BOUND LANES.

BH0619

BH0619

STATION RECOVERY (2009)

BH0619

BH0619'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0619'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

DL9663 \*\*\*\*\*

DL9663 DESIGNATION - G 379

DL9663 PID - DL9663

DL9663 STATE/COUNTY- MS/GEORGE

DL9663 COUNTRY - US

DL9663 USGS QUAD - AGRICOLA (1982)

DL9663

DL9663 \*CURRENT SURVEY CONTROL

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DL9663\* NAD 83(2011) POSITION- 30 49 19.06773(N) 088 35 52.51434(W) ADJUSTED

DL9663\* NAD 83(2011) ELLIP HT- 21.925 (meters) (06/27/12) ADJUSTED

DL9663\* NAD 83(2011) EPOCH - 2010.00

DL9663\* NAVD 88 ORTHO HEIGHT - 50.503 (meters) 165.69 (feet) ADJUSTED

DL9663\* NAVD 88 EPOCH - 2009.55

DL9663 \*\*This station is located in a suspected subsidence area (see below).

DL9663

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DL9663 NAD 83(2011) X - 134,139.757 (meters) COMP

DL9663 NAD 83(2011) Y - -5,480,508.456 (meters) COMP

DL9663 NAD 83(2011) Z - 3,248,969.730 (meters) COMP

DL9663 LAPLACE CORR - 0.05 (seconds) DEFLEC12A

DL9663 GEOID HEIGHT - -28.58 (meters) GEOID12A

DL9663 DYNAMIC HEIGHT - 50.437 (meters) 165.48 (feet) COMP

DL9663 MODELED GRAVITY - 979,331.5 (mgal) NAVD 88

DL9663

DL9663 VERT ORDER - FIRST CLASS II

DL9663

DL9663 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

DL9663 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE	
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)	
DL9663	-----	-----	-----	-----	-----	-----	
DL9663	NETWORK	2.30	3.19	0.96	0.92	1.63	0.14752185
DL9663	-----	-----	-----	-----	-----	-----	

DL9663 Click here for local accuracies and other accuracy information.

DL9663

DL9663

DL9663.The horizontal coordinates were established by GPS observations

DL9663.and adjusted by the National Geodetic Survey in June 2012.

DL9663

DL9663.NAD 83(2011) refers to NAD 83 coordinates where the reference

DL9663.frame has been affixed to the stable North American tectonic plate. See

DL9663.NA2011 for more information.

DL9663

DL9663.The horizontal coordinates are valid at the epoch date displayed above

DL9663.which is a decimal equivalence of Year/Month/Day.

DL9663

DL9663 \*\* This station is in an area of known vertical motion. Due to the

DL9663 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DL9663 \*\* determined the orthometric heights for marks in these suspect

DL9663 \*\* subsidence areas should be considered valid only at the epoch date

DL9663 \*\* associated with the orthometric height. These heights must always

DL9663 \*\* be validated when used as control. All previously superseded

DL9663 \*\* orthometric heights are now considered suspect and are available

DL9663 \*\* in the superseded section. NGS does not recommend using suspect

DL9663 \*\* or superseded heights as control.

DL9663

DL9663.The orthometric height was determined by differential leveling and

DL9663.adjusted by the NATIONAL GEODETIC SURVEY

DL9663.in July 2012.

DL9663

DL9663.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DL9663

DL9663.The Laplace correction was computed from DEFLEC12A derived deflections.  
DL9663  
DL9663.The ellipsoidal height was determined by GPS observations  
DL9663.and is referenced to NAD 83.  
DL9663  
DL9663.The dynamic height is computed by dividing the NAVD 88  
DL9663.geopotential number by the normal gravity value computed on the  
DL9663.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL9663.degrees latitude (g = 980.6199 gals.).  
DL9663  
DL9663.The modeled gravity was interpolated from observed gravity values.  
DL9663  
DL9663. The following values were computed from the NAD 83(2011) position.  
DL9663  
DL9663;  

	North	East	Units	Scale	Factor	Converg.
DL9663;SPC MS E	- 146,562.862	322,523.480	MT	0.99995626	+0 07	14.2
DL9663;SPC MS E	- 480,848.32	1,058,145.78	sFT	0.99995626	+0 07	14.2
DL9663;UTM 16	- 3,410,963.442	347,160.653	MT	0.99988816	-0 49	08.0

DL9663  
DL9663!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DL9663!SPC MS E	- 0.99999656	x	0.99995626	=	0.99995282
DL9663!UTM 16	- 0.99999656	x	0.99988816	=	0.99988472

DL9663  
DL9663  

SUPERSEDED SURVEY CONTROL

DL9663  
DL9663  
DL9663 NAD 83(2007)- 30 49 19.06794(N) 088 35 52.51452(W) AD(2002.00) A  
DL9663 ELLIP H (09/06/11) 21.924 (m) GP(2002.00) 4 1  
DL9663  
DL9663.Superseded values are not recommended for survey control.  
DL9663  
DL9663.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL9663.See file dsdata.txt to determine how the superseded data were derived.  
DL9663  
DL9663\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCV4716010963(NAD 83)  
DL9663  
DL9663\_MARKER: DD = SURVEY DISK  
DL9663\_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE  
DL9663\_SP\_SET: BOX CULVERT HEADWALL  
DL9663\_STAMPING: G 379 2009  
DL9663\_MARK LOGO: MSHD  
DL9663\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL9663\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL9663+STABILITY: SURFACE MOTION  
DL9663\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL9663+SATELLITE: SATELLITE OBSERVATIONS - August 25, 2009  
DL9663  
DL9663 HISTORY - Date Condition Report By  
DL9663 HISTORY - 20090825 MONUMENTED GCT  
DL9663  
DL9663  

STATION DESCRIPTION

DL9663  
DL9663'DESCRIBED BY GUSTIN, COTHERN, AND TUCKER, I 2009  
DL9663'THE MARK IS LOCATED IN LUCEDALE 32.2 MI (51.8 KM) EAST OF WIGGINS,  
DL9663'24.0 MI (38.6 KM) SOUTHEAST OF MCCLAIN, 20.2 MI (32.5 KM) WEST OF  
DL9663'SEMMES.  
DL9663'  
DL9663'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 26 AND STATE  
DL9663'ROAD 63 SOUTH IN LUCEDALE PROCEED SOUTH ON STATE ROAD 63 FOR 6.2 MI  
DL9663'(10.0 KM) TO THE MARK ON THE LEFT.  
DL9663'  
DL9663'THE MARK IS 191.4 FT (58.3 M) SOUTH OF A ONE WAY SIGN, 59.6 FT (18.2  
DL9663'M) EAST-SOUTHEAST OF A DO NOT ENTER SIGN, 43.0 FT (13.1 M) NORTHWEST  
DL9663'OF A POWER POLE 137, 15.8 FT (4.8 M) EAST OF THE EAST EDGE OF PAVEMENT

DL9663' OF THE NORTHBOUND LANES OF HIGHWAY 63, 0.5 FT (0.2 M) NORTH OF THE  
DL9663' SOUTH END OF HEADWALL OVER A 10 FT (3.0 M) WIDE BOX CULVERT.



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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL9664 *****
DL9664 DESIGNATION - H 379
DL9664 PID - DL9664
DL9664 STATE/COUNTY- MS/GEORGE
DL9664 COUNTRY - US
DL9664 USGS QUAD - AGRICOLA (1982)
DL9664
DL9664 *CURRENT SURVEY CONTROL
DL9664
DL9664* NAD 83(1986) POSITION- 30 51 59.9 (N) 088 35 52.0 (W) HD_HELD2
DL9664* NAVD 88 ORTHO HEIGHT - 77.151 (meters) 253.12 (feet) ADJUSTED
DL9664* NAVD 88 EPOCH - 2009.55
DL9664 **This station is located in a suspected subsidence area (see below).
DL9664
DL9664 GEOID HEIGHT - -28.52 (meters) GEOID12A
DL9664 DYNAMIC HEIGHT - 77.050 (meters) 252.79 (feet) COMP
DL9664 MODELED GRAVITY - 979,335.2 (mgal) NAVD 88
DL9664
DL9664 VERT ORDER - FIRST CLASS II
DL9664
DL9664.The horizontal coordinates were established by autonomous hand held GPS
DL9664.observations and have an estimated accuracy of +/- 10 meters.
DL9664.
DL9664 ** This station is in an area of known vertical motion. Due to the
DL9664 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL9664 ** determined the orthometric heights for marks in these suspect
DL9664 ** subsidence areas should be considered valid only at the epoch date
DL9664 ** associated with the orthometric height. These heights must always
DL9664 ** be validated when used as control. All previously superseded
DL9664 ** orthometric heights are now considered suspect and are available
DL9664 ** in the superseded section. NGS does not recommend using suspect
DL9664 ** or superseded heights as control.
DL9664
DL9664.The orthometric height was determined by differential leveling and
DL9664.adjusted by the NATIONAL GEODETIC SURVEY
DL9664.in July 2012.
DL9664
DL9664.The dynamic height is computed by dividing the NAVD 88
DL9664.geopotential number by the normal gravity value computed on the
DL9664.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DL9664.degrees latitude (g = 980.6199 gals.).
DL9664
DL9664.The modeled gravity was interpolated from observed gravity values.
DL9664
DL9664; North East Units Estimated Accuracy
DL9664;SPC MS E - 151,516. 322,527. MT (+/- 10 meters HH2 GPS)
DL9664
DL9664 SUPERSEDED SURVEY CONTROL
DL9664
DL9664.No superseded survey control is available for this station.
DL9664
DL9664_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCV4724515915(NAD 83)
DL9664
DL9664_MARKER: DD = SURVEY DISK
DL9664_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DL9664_STAMPING: H 379 2009
DL9664_MARK LOGO: MSDOT
DL9664_PROJECTION: RECESSED 5 CENTIMETERS
DL9664_MAGNETIC: N = NO MAGNETIC MATERIAL
DL9664_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DL9664+STABILITY: SURFACE MOTION
DL9664_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

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DL9664+SATELLITE: SATELLITE OBSERVATIONS - September 03, 2009

DL9664

DL9664	HISTORY	- Date	Condition	Report By
DL9664	HISTORY	- 20090903	MONUMENTED	GCT

DL9664

DL9664 STATION DESCRIPTION

DL9664

DL9664'DESCRIBED BY GUSTIN, COTHERN, AND TUCKER, I 2009

DL9664'THE MARK IS LOCATED ABOUT 10.6 MI (17.1 KM) SOUTHEAST OF MERRILL, 6.2

DL9664'MI (10.0 KM) NORTHWEST OF AGRICOLA AND 4.0 MI (6.4 KM) SOUTH OF

DL9664'LUCEDALE.

DL9664'

DL9664'TO REACH THE MARK FROM THE INTERSECTION OF STATE ROAD 63 AND STATE

DL9664'ROAD 26 IN LUCEDALE PROCEED SOUTH ALONG STATE ROAD 63 FOR 3.2 MI (5.1

DL9664'KM) TO THE INTERSECTION WITH JOHN COOLEY ROAD AND THE MARK ON THE LEFT

DL9664'IN THE NORTHEAST CORNER OF THE INTERSECTION.

DL9664'

DL9664'THE MARK IS 47.5 FT (14.5 M) SOUTH-SOUTHEAST OF A WOODEN POWER POLE,

DL9664'42.0 FT (12.8 M) NORTH OF A STREET SIGN FOR JOHN COOLEY ROAD, 40.3 FT

DL9664'(12.3 M) SOUTH OF WOODEN POWER POLE NO. 67, 37.4 FT (11.4 M) EAST OF

DL9664'THE EAST EDGE OF PAVEMENT OF HIGHWAY 63, 8.7 FT (2.7 M) WEST OF A

DL9664'WATER VALVE.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

DN4016 \*\*\*\*\*

DN4016 HT\_MOD - This is a Height Modernization Survey Station.

DN4016 DESIGNATION - HY 49

DN4016 PID - DN4016

DN4016 STATE/COUNTY- MS/HARRISON

DN4016 COUNTRY - US

DN4016 USGS QUAD - MC HENRY (1982)

DN4016

DN4016 \*CURRENT SURVEY CONTROL

DN4016

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DN4016\* NAD 83(2011) POSITION- 30 39 10.24554(N) 089 07 58.67953(W) ADJUSTED

DN4016\* NAD 83(2011) ELLIP HT- 37.050 (meters) (06/27/12) ADJUSTED

DN4016\* NAD 83(2011) EPOCH - 2010.00

DN4016\* NAVD 88 ORTHO HEIGHT - 65.44 (meters) 214.7 (feet) GPS OBS

DN4016\* NAVD 88 EPOCH - 2009.55

DN4016 \*\*This station is located in a suspected subsidence area (see below).

DN4016

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DN4016 GEOID HEIGHT - -28.38 (meters) GEOID12A

DN4016 NAD 83(2011) X - 83,101.156 (meters) COMP

DN4016 NAD 83(2011) Y - -5,491,116.843 (meters) COMP

DN4016 NAD 83(2011) Z - 3,232,862.118 (meters) COMP

DN4016 LAPLACE CORR - -1.61 (seconds) DEFLEC12A

DN4016

DN4016 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

DN4016 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
NETWORK	0.71	1.25	0.28	0.30	0.64	0.09883129

DN4016

DN4016 Click here for local accuracies and other accuracy information.

DN4016

DN4016

DN4016.The horizontal coordinates were established by GPS observations

DN4016.and adjusted by the National Geodetic Survey in June 2012.

DN4016

DN4016.NAD 83(2011) refers to NAD 83 coordinates where the reference

DN4016.frame has been affixed to the stable North American tectonic plate. See

DN4016.NA2011 for more information.

DN4016

DN4016.The horizontal coordinates are valid at the epoch date displayed above

DN4016.which is a decimal equivalence of Year/Month/Day.

DN4016

DN4016 \*\* This station is in an area of known vertical motion. Due to the

DN4016 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DN4016 \*\* determined the orthometric heights for marks in these suspect

DN4016 \*\* subsidence areas should be considered valid only at the epoch date

DN4016 \*\* associated with the orthometric height. These heights must always

DN4016 \*\* be validated when used as control. All previously superseded

DN4016 \*\* orthometric heights are now considered suspect and are available

DN4016 \*\* in the superseded section. NGS does not recommend using suspect

DN4016 \*\* or superseded heights as control.

DN4016

DN4016.The orthometric height was determined by GPS observations and a

DN4016.high-resolution geoid model using precise GPS observation and

DN4016.processing techniques.

DN4016

DN4016.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DN4016

DN4016.The Laplace correction was computed from DEFLEC12A derived deflections.

DN4016

DN4016.The ellipsoidal height was determined by GPS observations

DN4016.and is referenced to NAD 83.  
 DN4016  
 DN4016. The following values were computed from the NAD 83(2011) position.  
 DN4016  
 DN4016;  

	North	East	Units	Scale Factor	Converg.
DN4016;SPC MS E	- 127,829.196	271,281.984	MT	0.99996017	-0 09 10.0
DN4016;SPC MS E	- 419,386.29	890,030.98	sFT	0.99996017	-0 09 10.0
DN4016;UTM 16	- 3,393,069.713	295,617.327	MT	1.00011533	-1 05 16.2

 DN4016  
 DN4016!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DN4016!SPC MS E	- 0.99999418	x	0.99996017	=	0.99995435
DN4016!UTM 16	- 0.99999418	x	1.00011533	=	1.00010951

 DN4016  
 DN4016  
 SUPERSEDED SURVEY CONTROL  
 DN4016  
 DN4016  
 DN4016 NAD 83(2007)- 30 39 10.24572(N) 089 07 58.67976(W) AD(2002.00) A  
 DN4016 ELLIP H (09/06/11) 37.030 (m) GP(2002.00) 4 1  
 DN4016  
 DN4016.Superseded values are not recommended for survey control.  
 DN4016  
 DN4016.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN4016.See file dsdata.txt to determine how the superseded data were derived.  
 DN4016  
 DN4016\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU9561793069(NAD 83)  
 DN4016  
 DN4016\_MARKER: DD = SURVEY DISK  
 DN4016\_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE  
 DN4016\_SP\_SET: ABUTMENT  
 DN4016\_STAMPING: HY49 2008  
 DN4016\_MARK LOGO: MSDOT  
 DN4016\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN4016\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 DN4016\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN4016+SATELLITE: SATELLITE OBSERVATIONS - November 27, 2014  
 DN4016  

DN4016	HISTORY	- Date	Condition	Report By
DN4016	HISTORY	- 20081223	MONUMENTED	MSDOT
DN4016	HISTORY	- 20141127	GOOD	MSSU
DN4016	HISTORY	- 20141127	GOOD	MSSU

 DN4016  
 DN4016  
 STATION DESCRIPTION  
 DN4016  
 DN4016'DESCRIBED BY MS DEPT TRANS 2008 (PAB)  
 DN4016'THE MARK IS LOCATED ABOUT 1 MI (1.6 KM) NORTH OF SAUCIER AND ABOUT 1  
 DN4016'MI (1.6 KM) SOUTH OF THE HARRISON/STONE COUNTY LINE ON THE SOUTH SIDE  
 DN4016'OF THE EAST END OF A BRIDGE AT THE S.R. 67 AND U.S. HIGHWAY 49  
 DN4016'INTERCHANGE.  
 DN4016'  
 DN4016'TO REACH FROM THE INTERSECTION OF U.S. HIGHWAY 49 AND OLD S.R. 67 IN  
 DN4016'SAUCIER, TRAVEL NORTH ALONG U.S. HIGHWAY 49 FOR 1.0 MI (1.6 KM) TO THE  
 DN4016'MARK ON THE RIGHT.  
 DN4016'  
 DN4016'THE MARK IS A M.D.O.T. DISK SET IN A DRILL HOLE ON THE SOUTH SIDE OF  
 DN4016'THE EAST END OF THE SOUTH BRIDGE ON S.R. 67 SPANNING OVER U.S. HIGHWAY  
 DN4016'49. IT IS 210.0 FT (64.0 M) EAST OF THE CENTER OF THE EAST  
 DN4016'(NORTH-BOUND) LANE OF U.S. HIGHWAY 49, 31.0 FT (9.4 M) SOUTH OF THE  
 DN4016'SOUTHEAST CORNER OF A BRIDGE RAILING. 28.0 FT (8.5 M) SOUTHWEST OF THE  
 DN4016'SOUTHWEST EDGE OF PAVEMENT OF S.R. 67, 1.0 FT (0.3 M) NORTH OF A  
 DN4016'FIBERGLASS WITNESS POST AND ABOUT 8 FT (2.4 M) BELOW THE SURFACE OF  
 DN4016'S.R. 67.  
 DN4016  
 DN4016  
 STATION RECOVERY (2014)  
 DN4016

DN4016'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2014 (BH)  
DN4016'RECOVERED IN GOOD CONDITION.  
DN4016  
DN4016 STATION RECOVERY (2014)  
DN4016  
DN4016'RECOVERY NOTE BY MISSISSIPPI STATE UNIVERSITY 2014 (BH)  
DN4016'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

DN3991 \*\*\*\*\*

DN3991 HT\_MOD - This is a Height Modernization Survey Station.

DN3991 DESIGNATION - KLN 1

DN3991 PID - DN3991

DN3991 STATE/COUNTY- MS/HANCOCK

DN3991 COUNTRY - US

DN3991 USGS QUAD - KILN (1976)

DN3991

DN3991 \*CURRENT SURVEY CONTROL

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DN3991\* NAD 83(2011) POSITION- 30 25 30.60076(N) 089 26 04.68046(W) ADJUSTED

DN3991\* NAD 83(2011) ELLIP HT- -10.773 (meters) (06/27/12) ADJUSTED

DN3991\* NAD 83(2011) EPOCH - 2010.00

DN3991\* NAVD 88 ORTHO HEIGHT - 16.80 (meters) 55.1 (feet) GPS OBS

DN3991\* NAVD 88 EPOCH - 2009.55

DN3991 \*\*This station is located in a suspected subsidence area (see below).

DN3991

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DN3991 GEOID HEIGHT - -27.57 (meters) GEOID12A

DN3991 NAD 83(2011) X - 54,315.110 (meters) COMP

DN3991 NAD 83(2011) Y - -5,504,261.983 (meters) COMP

DN3991 NAD 83(2011) Z - 3,211,098.249 (meters) COMP

DN3991 LAPLACE CORR - -2.34 (seconds) DEFLEC12A

DN3991

DN3991 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

DN3991 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
NETWORK	1.08	1.55	0.41	0.47	0.79	0.04637711

DN3991

DN3991 Click here for local accuracies and other accuracy information.

DN3991

DN3991

DN3991.The horizontal coordinates were established by GPS observations

DN3991.and adjusted by the National Geodetic Survey in June 2012.

DN3991

DN3991.NAD 83(2011) refers to NAD 83 coordinates where the reference

DN3991.frame has been affixed to the stable North American tectonic plate. See

DN3991.NA2011 for more information.

DN3991

DN3991.The horizontal coordinates are valid at the epoch date displayed above

DN3991.which is a decimal equivalence of Year/Month/Day.

DN3991

DN3991 \*\* This station is in an area of known vertical motion. Due to the

DN3991 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DN3991 \*\* determined the orthometric heights for marks in these suspect

DN3991 \*\* subsidence areas should be considered valid only at the epoch date

DN3991 \*\* associated with the orthometric height. These heights must always

DN3991 \*\* be validated when used as control. All previously superseded

DN3991 \*\* orthometric heights are now considered suspect and are available

DN3991 \*\* in the superseded section. NGS does not recommend using suspect

DN3991 \*\* or superseded heights as control.

DN3991

DN3991.The orthometric height was determined by GPS observations and a

DN3991.high-resolution geoid model using precise GPS observation and

DN3991.processing techniques.

DN3991

DN3991.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DN3991

DN3991.The Laplace correction was computed from DEFLEC12A derived deflections.

DN3991

DN3991.The ellipsoidal height was determined by GPS observations

DN3991.and is referenced to NAD 83.  
 DN3991  
 DN3991. The following values were computed from the NAD 83(2011) position.  
 DN3991  
 DN3991;  

	North	East	Units	Scale Factor	Converg.
DN3991;SPC MS E	- 102,704.814	242,234.061	MT	0.99999115	-0 18 16.3
DN3991;SPC MS E	- 336,957.38	794,729.58	sFT	0.99999115	-0 18 16.3
DN3991;UTM 16	- 3,368,415.749	266,158.112	MT	1.00027464	-1 14 00.6

 DN3991  
 DN3991!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DN3991!SPC MS E	- 1.00000169	x	0.99999115	=	0.99999284
DN3991!UTM 16	- 1.00000169	x	1.00027464	=	1.00027633

 DN3991  
 DN3991  
 SUPERSEDED SURVEY CONTROL  
 DN3991  
 DN3991  
 DN3991 NAD 83(2007)- 30 25 30.60092(N) 089 26 04.68070(W) AD(2002.00) A  
 DN3991 ELLIP H (09/06/11) -10.789 (m) GP(2002.00) 4 1  
 DN3991  
 DN3991.Superseded values are not recommended for survey control.  
 DN3991  
 DN3991.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN3991.See file dsdata.txt to determine how the superseded data were derived.  
 DN3991  
 DN3991\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU6615868415(NAD 83)  
 DN3991  
 DN3991\_MARKER: DD = SURVEY DISK  
 DN3991\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN3991\_STAMPING: KLN1 2008  
 DN3991\_MARK LOGO: MSDOT  
 DN3991\_PROJECTION: FLUSH  
 DN3991\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN3991\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 DN3991+STABILITY: SURFACE MOTION  
 DN3991\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN3991+SATELLITE: SATELLITE OBSERVATIONS - December 15, 2008  
 DN3991  

DN3991	HISTORY	- Date	Condition	Report By
DN3991	HISTORY	- 20081215	MONUMENTED	MSDOT

 DN3991  
 DN3991  
 STATION DESCRIPTION  
 DN3991  
 DN3991'DESCRIBED BY MS DEPT TRANS 2008 (PAB)  
 DN3991'THE MARK IS LOCATED NEAR THE NORTHEAST CORNER OF THE M.D.O.T. HANCOCK  
 DN3991'COUNTY MAINTENANCE FACILITY ABOUT 2 MI (3.2 KM) NORTH OF KILN.  
 DN3991'  
 DN3991'TO REACH FROM THE INTERSECTION OF S.R. 603 AND S.R. 43, NORTH OF KILN,  
 DN3991'TRAVEL SOUTH ALONG S.R. 603 FOR 0.3 MI (0.5 KM) TO THE MARK ON THE  
 DN3991'RIGHT.  
 DN3991'  
 DN3991'THE MARK IS SET IN THE TOP OF A 12-INCH ROUND CONCRETE POST FLUSH WITH  
 DN3991'THE GROUND. IT IS 148.7 FT (45.3 M) EAST OF THE FUEL PUMPS, 89.9 FT  
 DN3991'(27.4 M) NORTH-NORTHEAST OF THE NORTHWEST CORNER OF A METAL BUILDING,  
 DN3991'46.0 FT (14.0 M) SOUTH OF AN EAST-WEST FENCE, 6.6 FT (2.0 M) NORTHWEST  
 DN3991'OF A FENCE CORNER AND 1.2 FT (0.4 M) SOUTH OF A FIBERGLASS WITNESS  
 DN3991'POST.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL8888 *****
DL8888 DESIGNATION - K 369
DL8888 PID - DL8888
DL8888 STATE/COUNTY- MS/PEARL RIVER
DL8888 COUNTRY - US
DL8888 USGS QUAD - POPLARVILLE (1986)
DL8888
DL8888 *CURRENT SURVEY CONTROL
DL8888
DL8888* NAD 83(1986) POSITION- 30 47 11.6 (N) 089 34 39.6 (W) HD_HELD2
DL8888* NAVD 88 ORTHO HEIGHT - 61.757 (meters) 202.61 (feet) ADJUSTED
DL8888* NAVD 88 EPOCH - 2009.55
DL8888 **This station is located in a suspected subsidence area (see below).
DL8888
DL8888 GEOID HEIGHT - -27.96 (meters) GEOID12A
DL8888 DYNAMIC HEIGHT - 61.676 (meters) 202.35 (feet) COMP
DL8888 MODELED GRAVITY - 979,326.9 (mgal) NAVD 88
DL8888
DL8888 VERT ORDER - FIRST CLASS II
DL8888
DL8888.The horizontal coordinates were established by autonomous hand held GPS
DL8888.observations and have an estimated accuracy of +/- 10 meters.
DL8888.
DL8888 ** This station is in an area of known vertical motion. Due to the
DL8888 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL8888 ** determined the orthometric heights for marks in these suspect
DL8888 ** subsidence areas should be considered valid only at the epoch date
DL8888 ** associated with the orthometric height. These heights must always
DL8888 ** be validated when used as control. All previously superseded
DL8888 ** orthometric heights are now considered suspect and are available
DL8888 ** in the superseded section. NGS does not recommend using suspect
DL8888 ** or superseded heights as control.
DL8888
DL8888.The orthometric height was determined by differential leveling and
DL8888.adjusted by the NATIONAL GEODETIC SURVEY
DL8888.in July 2012.
DL8888
DL8888.The dynamic height is computed by dividing the NAVD 88
DL8888.geopotential number by the normal gravity value computed on the
DL8888.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
DL8888.degrees latitude (g = 980.6199 gals.).
DL8888
DL8888.The modeled gravity was interpolated from observed gravity values.
DL8888
DL8888; North East Units Estimated Accuracy
DL8888;SPC MS E - 142,851. 228,758. MT (+/- 10 meters HH2 GPS)
DL8888
DL8888 SUPERSEDED SURVEY CONTROL
DL8888
DL8888.No superseded survey control is available for this station.
DL8888
DL8888_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV5333408788(NAD 83)
DL8888
DL8888_MARKER: DD = SURVEY DISK
DL8888_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
DL8888_STAMPING: K 369 2009
DL8888_MARK LOGO: MSDOT
DL8888_PROJECTION: FLUSH
DL8888_MAGNETIC: N = NO MAGNETIC MATERIAL
DL8888_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
DL8888+STABILITY: SURFACE MOTION
DL8888_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

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DL8888+SATELLITE: SATELLITE OBSERVATIONS - April 14, 2009

DL8888

DL8888	HISTORY	- Date	Condition	Report By
DL8888	HISTORY	- 20090414	MONUMENTED	EMCINC

DL8888

DL8888

STATION DESCRIPTION

DL8888

DL8888'DESCRIBED BY EMC INCORPORATED 2009

DL8888'THE MARK IS LOCATED IN DERBY ABOUT 26.1 MI (42.1 KM) NORTH-NORTHEAST

DL8888'OF GULFPORT, 22.4 MI (36.1 KM) NORTH-NORTHEAST OF NICHOLSON AND 18.8

DL8888'MI (30.3 KM) NORTH-NORTHEAST OF PICAYUNE.

DL8888'

DL8888'TO REACH THE MARK FROM THE INTERSECTION OF DERBY WHITE SANDS ROAD AND

DL8888'AND HIGHWAY 11 AT THE DERBY FIRE STATION PROCEED NORTH ON HIGHWAY 11

DL8888'1.9 MI (3.1 KM) TO JIMMY REYER ROAD AND THE MARK ON THE LEFT IN THE

DL8888'SOUTHWEST CORNER OF THE INTERSECTION.

DL8888'

DL8888'THE MARK IS 75.8 FT (23.1 M) EAST OF THE NORTHEAST CORNER OF A

DL8888'RESIDENCE, 33.5 FT (10.2 M) WEST OF THE CENTERLINE OF HIGHWAY 11, 31.0

DL8888'FT (9.4 M) SOUTH OF THE CENTERLINE OF JIMMY REYER ROAD, 29.5 FT (9.0

DL8888'M) SOUTHEAST OF A MAILBOX, 11.5 FT (3.5 M) SOUTHWEST OF THE STOP SIGN.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL8892 *****
DL8892 DESIGNATION - P 369
DL8892 PID - DL8892
DL8892 STATE/COUNTY- MS/PEARL RIVER
DL8892 COUNTRY - US
DL8892 USGS QUAD - POPLARVILLE (1986)
DL8892
DL8892 *CURRENT SURVEY CONTROL
DL8892
DL8892* NAD 83(2011) POSITION- 30 50 09.15969(N) 089 31 53.04474(W) ADJUSTED
DL8892* NAD 83(2011) ELLIP HT- 73.114 (meters) (06/27/12) ADJUSTED
DL8892* NAD 83(2011) EPOCH - 2010.00
DL8892* NAVD 88 ORTHO HEIGHT - 101.106 (meters) 331.71 (feet) ADJUSTED
DL8892* NAVD 88 EPOCH - 2009.55
DL8892 **This station is located in a suspected subsidence area (see below).
DL8892
DL8892 NAD 83(2011) X - 44,829.649 (meters) COMP
DL8892 NAD 83(2011) Y - -5,481,219.856 (meters) COMP
DL8892 NAD 83(2011) Z - 3,250,320.644 (meters) COMP
DL8892 LAPLACE CORR - -0.84 (seconds) DEFLEC12A
DL8892 GEOID HEIGHT - -27.99 (meters) GEOID12A
DL8892 DYNAMIC HEIGHT - 100.973 (meters) 331.28 (feet) COMP
DL8892 MODELED GRAVITY - 979,325.3 (mgal) NAVD 88
DL8892
DL8892 VERT ORDER - FIRST CLASS II
DL8892
DL8892 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL8892 Standards:
DL8892 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DL8892 Horiz Ellip SD_N SD_E SD_h (unitless)
DL8892 -----
DL8892 NETWORK 0.67 1.23 0.28 0.27 0.63 0.04236666
DL8892 -----
DL8892 Click here for local accuracies and other accuracy information.
DL8892
DL8892
DL8892.The horizontal coordinates were established by GPS observations
DL8892.and adjusted by the National Geodetic Survey in June 2012.
DL8892
DL8892.NAD 83(2011) refers to NAD 83 coordinates where the reference
DL8892.frame has been affixed to the stable North American tectonic plate. See
DL8892.NA2011 for more information.
DL8892
DL8892.The horizontal coordinates are valid at the epoch date displayed above
DL8892.which is a decimal equivalence of Year/Month/Day.
DL8892
DL8892 ** This station is in an area of known vertical motion. Due to the
DL8892 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL8892 ** determined the orthometric heights for marks in these suspect
DL8892 ** subsidence areas should be considered valid only at the epoch date
DL8892 ** associated with the orthometric height. These heights must always
DL8892 ** be validated when used as control. All previously superseded
DL8892 ** orthometric heights are now considered suspect and are available
DL8892 ** in the superseded section. NGS does not recommend using suspect
DL8892 ** or superseded heights as control.
DL8892
DL8892.The orthometric height was determined by differential leveling and
DL8892.adjusted by the NATIONAL GEODETIC SURVEY
DL8892.in July 2012.
DL8892
DL8892.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DL8892

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DL8892.The Laplace correction was computed from DEFLEC12A derived deflections.  
DL8892  
DL8892.The ellipsoidal height was determined by GPS observations  
DL8892.and is referenced to NAD 83.  
DL8892  
DL8892.The dynamic height is computed by dividing the NAVD 88  
DL8892.geopotential number by the normal gravity value computed on the  
DL8892.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL8892.degrees latitude (g = 980.6199 gals.).  
DL8892  
DL8892.The modeled gravity was interpolated from observed gravity values.  
DL8892  
DL8892. The following values were computed from the NAD 83(2011) position.  
DL8892  
DL8892;  

	North	East	Units	Scale	Factor	Converg.
DL8892;SPC MS E	- 148,290.251	233,220.174	MT	1.00000499	-0 21	28.2
DL8892;SPC MS E	- 486,515.60	765,156.52	sFT	1.00000499	-0 21	28.2
DL8892;UTM 16	- 3,414,155.914	257,886.538	MT	1.00032316	-1 17	53.4

DL8892  
DL8892!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DL8892!SPC MS E	- 0.99998852	x	1.00000499	=	0.99999351
DL8892!UTM 16	- 0.99998852	x	1.00032316	=	1.00031167

DL8892  
DL8892  

SUPERSEDED SURVEY CONTROL

DL8892  
DL8892  
DL8892 ELLIP H (10/11/11) 73.118 (m) GP( ) 4 1  
DL8892 NAD 83(2007)- 30 50 09.15991(N) 089 31 53.04502(W) AD(2002.00) A  
DL8892 ELLIP H (09/06/11) 73.096 (m) GP(2002.00) 4 1  
DL8892  
DL8892.Superseded values are not recommended for survey control.  
DL8892  
DL8892.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL8892.See file dsdata.txt to determine how the superseded data were derived.  
DL8892  
DL8892\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV5788614155(NAD 83)  
DL8892  
DL8892\_MARKER: DD = SURVEY DISK  
DL8892\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
DL8892\_STAMPING: P 369 2009  
DL8892\_MARK LOGO: MSDOT  
DL8892\_PROJECTION: FLUSH  
DL8892\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL8892\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL8892+STABILITY: SURFACE MOTION  
DL8892\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL8892+SATELLITE: SATELLITE OBSERVATIONS - September 09, 2010  
DL8892  
DL8892 HISTORY - Date Condition Report By  
DL8892 HISTORY - 20090415 MONUMENTED EMCINC  
DL8892 HISTORY - 20090218 GOOD MAPTEC  
DL8892 HISTORY - 20100909 GOOD NGS  
DL8892  
DL8892  

STATION DESCRIPTION

DL8892  
DL8892'DESCRIBED BY EMC INCORPORATED 2009  
DL8892'THE MARK IS LOCATED IN POPLARVILLE ABOUT 29.7 MI (47.8 KM) NORTH OF  
DL8892'KILN, 26.5 MI (42.7 KM) NORTH-NORTHEAST OF NICHOLSON AND 23.0 MI (37.0  
DL8892'KM) NORTH-NORTHEAST OF PICAYUNE.  
DL8892'  
DL8892'TO REACH THE MARK FROM THE INTERSECTION OF HWY 53 AND HIGHWAY 26  
DL8892'PROCEED TO THE NORTHWEST CORNER OF THE INTERSECTION.  
DL8892'  
DL8892'THE MARK IS 63.6 FT (19.4 M) EAST OF A BILLBOARD, 55.6 FT (16.9 M)

DL8892'SOUTHEAST OF ELECTRIC POWER POLE, 55.0 FT (16.8 M) NORTHWEST OF  
DL8892'INTERSECTION SIGNAL LIGHT, 24.0 FT (7.3 M) SOUTH OF FIRE HYDRANT, 23.5  
DL8892'FT (7.2 M) NORTHEAST OF ELECTRIC SIGNAL BOX.

DL8892

STATION RECOVERY (2009)

DL8892

DL8892'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

DL8892'RECOVERED AS DESCRIBED.

DL8892

STATION RECOVERY (2010)

DL8892

DL8892'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2010 (RWA)

DL8892'MARK RECOVERED AS DESCRIBED AND IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

BH0227 \*\*\*\*\*

BH0227 DESIGNATION - Q 189

BH0227 PID - BH0227

BH0227 STATE/COUNTY- MS/JACKSON

BH0227 COUNTRY - US

BH0227 USGS QUAD - KREOLE (1986)

BH0227

BH0227 \*CURRENT SURVEY CONTROL

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BH0227\* NAD 83(2011) POSITION- 30 25 02.39298(N) 088 27 52.50026(W) ADJUSTED

BH0227\* NAD 83(2011) ELLIP HT- -25.964 (meters) (06/27/12) ADJUSTED

BH0227\* NAD 83(2011) EPOCH - 2010.00

BH0227\* NAVD 88 ORTHO HEIGHT - 2.220 (meters) 7.28 (feet) ADJUSTED

BH0227\* NAVD 88 EPOCH - 2009.55

BH0227 \*\*This station is located in a suspected subsidence area (see below).

BH0227

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BH0227 NAD 83(2011) X - 147,504.586 (meters) COMP

BH0227 NAD 83(2011) Y - -5,502,980.163 (meters) COMP

BH0227 NAD 83(2011) Z - 3,210,341.509 (meters) COMP

BH0227 LAPLACE CORR - 0.17 (seconds) DEFLEC12A

BH0227 GEOID HEIGHT - -28.19 (meters) GEOID12A

BH0227 DYNAMIC HEIGHT - 2.217 (meters) 7.27 (feet) COMP

BH0227 MODELED GRAVITY - 979,326.4 (mgal) NAVD 88

BH0227

BH0227 VERT ORDER - FIRST CLASS II

BH0227

BH0227 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

BH0227 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE	
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)	
BH0227	-----	-----	-----	-----	-----	-----	
BH0227	NETWORK	1.52	2.18	0.66	0.58	1.11	0.09011523
BH0227	-----	-----	-----	-----	-----	-----	

BH0227 Click here for local accuracies and other accuracy information.

BH0227

BH0227

BH0227.The horizontal coordinates were established by GPS observations

BH0227.and adjusted by the National Geodetic Survey in June 2012.

BH0227

BH0227.NAD 83(2011) refers to NAD 83 coordinates where the reference

BH0227.frame has been affixed to the stable North American tectonic plate. See

BH0227.NA2011 for more information.

BH0227

BH0227.The horizontal coordinates are valid at the epoch date displayed above

BH0227.which is a decimal equivalence of Year/Month/Day.

BH0227

BH0227 \*\* This station is in an area of known vertical motion. Due to the

BH0227 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

BH0227 \*\* determined the orthometric heights for marks in these suspect

BH0227 \*\* subsidence areas should be considered valid only at the epoch date

BH0227 \*\* associated with the orthometric height. These heights must always

BH0227 \*\* be validated when used as control. All previously superseded

BH0227 \*\* orthometric heights are now considered suspect and are available

BH0227 \*\* in the superseded section. NGS does not recommend using suspect

BH0227 \*\* or superseded heights as control.

BH0227

BH0227.The orthometric height was determined by differential leveling and

BH0227.adjusted by the NATIONAL GEODETIC SURVEY

BH0227.in July 2012.

BH0227

BH0227.The X, Y, and Z were computed from the position and the ellipsoidal ht.

BH0227

BH0227.The Laplace correction was computed from DEFLEC12A derived deflections.

BH0227

BH0227.The ellipsoidal height was determined by GPS observations

BH0227.and is referenced to NAD 83.

BH0227

BH0227.The dynamic height is computed by dividing the NAVD 88

BH0227.geopotential number by the normal gravity value computed on the

BH0227.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

BH0227.degrees latitude (g = 980.6199 gals.).

BH0227

BH0227.The modeled gravity was interpolated from observed gravity values.

BH0227

BH0227. The following values were computed from the NAD 83(2011) position.

BH0227

BH0227;		North	East	Units	Scale	Factor	Converg.
BH0227;SPC MS E	-	101,740.433	335,427.846	MT	0.99996548	+0 11	12.1
BH0227;SPC MS E	-	333,793.40	1,100,482.86	sFT	0.99996548	+0 11	12.1
BH0227;UTM 16	-	3,365,940.898	359,331.576	MT	0.99984411	-0 44	29.9

BH0227

BH0227! - Elev Factor x Scale Factor = Combined Factor

BH0227!SPC MS E - 1.00000408 x 0.99996548 = 0.99996956

BH0227!UTM 16 - 1.00000408 x 0.99984411 = 0.99984819

BH0227

SUPERSEDED SURVEY CONTROL

BH0227

BH0227	NAD 83(2007)-	30 25 02.39308(N)	088 27 52.50038(W)	AD(2002.00)	A
BH0227	ELLIP H (09/06/11)	-25.957 (m)		GP(2002.00)	4 1
BH0227	NAVD 88 (06/15/91)	2.307 (m)	7.57 (f)	SUPERSEDED	1 1
BH0227	NGVD 29 (??/??/??)	2.265 (m)	7.43 (f)	ADJUSTED	1 1

BH0227

BH0227.Superseded values are not recommended for survey control.

BH0227

BH0227.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

BH0227.See file dsdata.txt to determine how the superseded data were derived.

BH0227

BH0227\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU5933165940(NAD 83)

BH0227

BH0227\_MARKER: DB = BENCH MARK DISK

BH0227\_SETTING: 30 = SET IN A LIGHT STRUCTURE

BH0227\_SP\_SET: CULVERT

BH0227\_STAMPING: Q 189 1955

BH0227\_MARK LOGO: CGS

BH0227\_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY

BH0227\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

BH0227+SATELLITE: SATELLITE OBSERVATIONS - September 30, 2008

BH0227

BH0227	HISTORY	- Date	Condition	Report By
BH0227	HISTORY	- 1955	MONUMENTED	CGS
BH0227	HISTORY	- 1968	GOOD	CGS
BH0227	HISTORY	- 20080418	GOOD	MSDOT
BH0227	HISTORY	- 20080818	GOOD	MSDOT
BH0227	HISTORY	- 20080930	GOOD	MAPTEC

BH0227

STATION DESCRIPTION

BH0227

BH0227'DESCRIBED BY COAST AND GEODETIC SURVEY 1968

BH0227'3.2 MI NE FROM KREOLE.

BH0227'ABOUT 3.2 MILES NORTHEAST ALONG THE LOUISVILLE AND NASHVILLE RAILROAD

BH0227'FROM THE CROSSING OF STATE HIGHWAY 611 AT KREOLE, 0.2 MILE NORTHEAST

BH0227'OF MILEPOST 700, 86 FEET NORTHWEST OF THE NORTHWEST RAIL OF THE MAIN

BH0227'TRACK, 34 FEET SOUTHEAST OF THE CENTER LINE OF THE EAST-BOUND LANE OF

BH0227'THE HIGHWAY, 1.4 FEET SOUTHWEST OF A METAL WITNESS POST, AND SET IN

BH0227'TOP OF THE NORTHEAST END OF THE SOUTHEAST CONCRETE HEAD WALL FOR A

BH0227'6-FOOT BOX CULVERT UNDER THE HIGHWAY AND ABOUT 2 1/2 FEET BELOW THE  
BH0227'LEVEL OF THE HIGHWAY. SEC 22, T 7S, R 5W.

BH0227

STATION RECOVERY (2008)

BH0227

BH0227'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)

BH0227'RECOVERED IN GOOD CONDITION.

BH0227

BH0227

STATION RECOVERY (2008)

BH0227

BH0227'RECOVERY NOTE BY MS DEPT TRANS 2008 (KLH)

BH0227'RECOVERED AS DESCRIBED.

BH0227

BH0227

STATION RECOVERY (2008)

BH0227

BH0227'RECOVERY NOTE BY MAPTECH INCORPORATED 2008 (CLK)

BH0227'RECOVERED IN GOOD CONDITION. NOTE-THE MARK IS 394.0 FT (120.1 M) EAST

BH0227'OF GRAVEL DRIVE TO THE BARREL HOUSE TAVERN WHICH IS NORTH OF THE

BH0227'WESTBOUND LANE ON HIGHWAY 90, 200 FT (61.0 M) WEST OF POWER POLE FOR

BH0227'POWER LINE WHICH RUNS NORTH AND EAST PARALLEL TO HIGHWAY 90.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0283 *****
BH0283 DESIGNATION -  Q 234
BH0283 PID - BH0283
BH0283 STATE/COUNTY-  MS/HARRISON
BH0283 COUNTRY -  US
BH0283 USGS QUAD -  BILOXI (1992)
BH0283
BH0283 *CURRENT SURVEY CONTROL
BH0283
BH0283* NAD 83(1986) POSITION- 30 23 55.9 (N) 088 53 26.8 (W) HD_HELD2
BH0283* NAVD 88 ORTHO HEIGHT - 6.999 (meters) 22.96 (feet) ADJUSTED
BH0283* NAVD 88 EPOCH - 2009.55
BH0283 **This station is located in a suspected subsidence area (see below).
BH0283
BH0283 GEOID HEIGHT - -28.11 (meters) GEOID12A
BH0283 DYNAMIC HEIGHT - 6.989 (meters) 22.93 (feet) COMP
BH0283 MODELED GRAVITY - 979,316.9 (mgal) NAVD 88
BH0283
BH0283 VERT ORDER - FIRST CLASS II
BH0283
BH0283.The horizontal coordinates were established by autonomous hand held GPS
BH0283.observations and have an estimated accuracy of +/- 10 meters.
BH0283.
BH0283 ** This station is in an area of known vertical motion. Due to the
BH0283 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0283 ** determined the orthometric heights for marks in these suspect
BH0283 ** subsidence areas should be considered valid only at the epoch date
BH0283 ** associated with the orthometric height. These heights must always
BH0283 ** be validated when used as control. All previously superseded
BH0283 ** orthometric heights are now considered suspect and are available
BH0283 ** in the superseded section. NGS does not recommend using suspect
BH0283 ** or superseded heights as control.
BH0283
BH0283.The orthometric height was determined by differential leveling and
BH0283.adjusted by the NATIONAL GEODETIC SURVEY
BH0283.in July 2012.
BH0283
BH0283.WARNING-Repeat measurements at this control monument indicate possible
BH0283.vertical movement.
BH0283
BH0283.The dynamic height is computed by dividing the NAVD 88
BH0283.geopotential number by the normal gravity value computed on the
BH0283.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0283.degrees latitude (g = 980.6199 gals.).
BH0283
BH0283.The modeled gravity was interpolated from observed gravity values.
BH0283
BH0283; North East Units Estimated Accuracy
BH0283;SPC MS E - 99,637. 294,480. MT (+/- 10 meters HH2 GPS)
BH0283
BH0283 SUPERSEDED SURVEY CONTROL
BH0283
BH0283 NAVD 88 (06/15/91) 7.149 (m) 23.45 (f) SUPERSEDED 1 1
BH0283 NGVD 29 (??/??/??) 7.110 (m) 23.33 (f) ADJUSTED 1 1
BH0283
BH0283.Superseded values are not recommended for survey control.
BH0283
BH0283.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH0283.See file dsdata.txt to determine how the superseded data were derived.
BH0283
BH0283_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU1835664500(NAD 83)
BH0283

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BH0283\_MARKER: DB = BENCH MARK DISK  
 BH0283\_SETTING: 56 = COPPER-CLAD ROD IN SLEEVE (10 FT.+)  
 BH0283\_SP\_SET: COPPER-CLAD STEEL ROD IN SLEEVE  
 BH0283\_STAMPING: Q 234 1968  
 BH0283\_MARK LOGO: CGS  
 BH0283\_PROJECTION: FLUSH  
 BH0283\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL  
 BH0283\_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR  
 BH0283+SATELLITE: SATELLITE OBSERVATIONS - September 30, 2008

BH0283	HISTORY	- Date	Condition	Report By
BH0283	HISTORY	- 1968	MONUMENTED	CGS
BH0283	HISTORY	- 1969	GOOD	CGS
BH0283	HISTORY	- 1974	GOOD	NGS
BH0283	HISTORY	- 1976	GOOD	NGS
BH0283	HISTORY	- 19860212	GOOD	MSHD
BH0283	HISTORY	- 20050720	GOOD	NGS
BH0283	HISTORY	- 20080930	GOOD	MAPTEC

BH0283  
 BH0283 STATION DESCRIPTION

BH0283'DESCRIBED BY COAST AND GEODETIC SURVEY 1969  
 BH0283'IN BILOXI.  
 BH0283'AT BILOXI, ALONG THE LOUISVILLE AND NASHVILLE RAILROAD, NEAR THE  
 BH0283'PASSENGER STATION, BETWEEN CAILLAVET AND REYNOIR STREET, NEAR THE  
 BH0283'SOUTHWEST CORNER OF A SMALL PARK, 53.8 FEET SOUTH OF THE SOUTH RAIL OF  
 BH0283'THE MAIN TRACK, 15.0 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF THE  
 BH0283'STATION, 2 FEET NORTH OF THE NORTH EDGE OF A SIDEWALK 1 FOOT EAST OF  
 BH0283'THE EAST EDGE OF A SIDEWALK AND IS A DISK ON THE TOP OF A COPPER  
 BH0283'COATED STEEL ROD FLUSH WITH THE GROUND AND PROTECTED BY A 4 INCH STEEL  
 BH0283'PIPE WHICH IS FLUSH WITH THE GROUND. THE ROD WAS DRIVEN TO A DEPTH OF  
 BH0283'120 FEET.

BH0283  
 BH0283 STATION RECOVERY (1974)

BH0283  
 BH0283'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974  
 BH0283'RECOVERED IN GOOD CONDITION.

BH0283  
 BH0283 STATION RECOVERY (1976)

BH0283  
 BH0283'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976  
 BH0283'RECOVERED IN GOOD CONDITION.

BH0283  
 BH0283 STATION RECOVERY (1986)

BH0283  
 BH0283'RECOVERY NOTE BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1986  
 BH0283'RECOVERED IN GOOD CONDITION, EXCEPT IS 0.3 M (1.0 FT) WEST OF A  
 BH0283'CARSONITE WITNESS POST. THE RAILROAD STATION IS NOW ABANDONED.

BH0283  
 BH0283 STATION RECOVERY (2005)

BH0283  
 BH0283'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005  
 BH0283'MARK IS ON A FOUNDATION, THE BUILDING IS GONE. ON ESTERS BLVD.

BH0283  
 BH0283 STATION RECOVERY (2008)

BH0283  
 BH0283'RECOVERY NOTE BY MAPTECH INCORPORATED 2008 (SEM)  
 BH0283'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0428 *****
BH0428 DESIGNATION -  ROBINSON RM 1
BH0428 PID -  BH0428
BH0428 STATE/COUNTY-  MS/JACKSON
BH0428 COUNTRY -  US
BH0428 USGS QUAD -  PASCAGOULA NORTH (1982)
BH0428
BH0428 *CURRENT SURVEY CONTROL
BH0428
BH0428* NAD 83(2011) POSITION- 30 29 01.36080(N) 088 33 04.47161(W) ADJUSTED
BH0428* NAD 83(2011) ELLIP HT- -23.927 (meters) (06/27/12) ADJUSTED
BH0428* NAD 83(2011) EPOCH - 2010.00
BH0428* NAVD 88 ORTHO HEIGHT - 4.436 (meters) 14.55 (feet) ADJUSTED
BH0428* NAVD 88 EPOCH - 2009.55
BH0428 **This station is located in a suspected subsidence area (see below).
BH0428
BH0428 NAD 83(2011) X - 139,087.028 (meters) COMP
BH0428 NAD 83(2011) Y - -5,499,470.488 (meters) COMP
BH0428 NAD 83(2011) Z - 3,216,686.370 (meters) COMP
BH0428 LAPLACE CORR - 0.06 (seconds) DEFLEC12A
BH0428 GEOID HEIGHT - -28.36 (meters) GEOID12A
BH0428 DYNAMIC HEIGHT - 4.430 (meters) 14.53 (feet) COMP
BH0428 MODELED GRAVITY - 979,326.1 (mgal) NAVD 88
BH0428
BH0428 VERT ORDER - FIRST CLASS II
BH0428
BH0428 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BH0428 Standards:
BH0428 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BH0428 Horiz Ellip SD_N SD_E SD_h (unitless)
BH0428 -----
BH0428 NETWORK 2.90 3.80 1.16 1.20 1.94 0.21017564
BH0428 -----
BH0428 Click here for local accuracies and other accuracy information.
BH0428
BH0428
BH0428.The horizontal coordinates were established by GPS observations
BH0428.and adjusted by the National Geodetic Survey in June 2012.
BH0428
BH0428.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH0428.frame has been affixed to the stable North American tectonic plate. See
BH0428.NA2011 for more information.
BH0428
BH0428.The horizontal coordinates are valid at the epoch date displayed above
BH0428.which is a decimal equivalence of Year/Month/Day.
BH0428
BH0428 ** This station is in an area of known vertical motion. Due to the
BH0428 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0428 ** determined the orthometric heights for marks in these suspect
BH0428 ** subsidence areas should be considered valid only at the epoch date
BH0428 ** associated with the orthometric height. These heights must always
BH0428 ** be validated when used as control. All previously superseded
BH0428 ** orthometric heights are now considered suspect and are available
BH0428 ** in the superseded section. NGS does not recommend using suspect
BH0428 ** or superseded heights as control.
BH0428
BH0428.The orthometric height was determined by differential leveling and
BH0428.adjusted by the NATIONAL GEODETIC SURVEY
BH0428.in July 2012.
BH0428
BH0428.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BH0428

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BH0428.The Laplace correction was computed from DEFLEC12A derived deflections.  
BH0428  
BH0428.The ellipsoidal height was determined by GPS observations  
BH0428.and is referenced to NAD 83.  
BH0428  
BH0428.The dynamic height is computed by dividing the NAVD 88  
BH0428.geopotential number by the normal gravity value computed on the  
BH0428.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
BH0428.degrees latitude (g = 980.6199 gals.).  
BH0428  
BH0428.The modeled gravity was interpolated from observed gravity values.  
BH0428  
BH0428. The following values were computed from the NAD 83(2011) position.  
BH0428  
BH0428;  

	North	East	Units	Scale	Factor	Converg.
BH0428;SPC MS E	- 109,075.053	327,083.665	MT	0.99995905	+0 08	35.2
BH0428;SPC MS E	- 357,857.07	1,073,106.99	sFT	0.99995905	+0 08	35.2
BH0428;UTM 16	- 3,373,409.106	351,108.296	MT	0.99987349	-0 47	13.5

BH0428  
BH0428!  

	Elev Factor	x	Scale Factor	=	Combined Factor
BH0428!SPC MS E	- 1.00000376	x	0.99995905	=	0.99996281
BH0428!UTM 16	- 1.00000376	x	0.99987349	=	0.99987725

BH0428  
BH0428  

SUPERSEDED SURVEY CONTROL

BH0428  
BH0428  
BH0428 NAD 83(2007)- 30 29 01.36101(N) 088 33 04.47179(W) AD(2002.00) A  
BH0428 ELLIP H (09/06/11) -23.927 (m) GP(2002.00) 4 1  
BH0428 NGVD 29 (??/??/??) 4.638 (m) 15.22 (f) ADJUSTED 2 2  
BH0428  
BH0428.Superseded values are not recommended for survey control.  
BH0428  
BH0428.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
BH0428.See file dsdata.txt to determine how the superseded data were derived.  
BH0428  
BH0428\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU5110873409(NAD 83)  
BH0428  
BH0428\_MARKER: DR = REFERENCE MARK DISK  
BH0428\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
BH0428\_SP\_SET: SET IN TOP OF CONCRETE MONUMENT  
BH0428\_STAMPING: ROBINSON NO 1 1943  
BH0428\_MARK LOGO: CGS  
BH0428\_PROJECTION: PROJECTING 5 CENTIMETERS  
BH0428\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
BH0428+STABILITY: SURFACE MOTION  
BH0428\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
BH0428+SATELLITE: SATELLITE OBSERVATIONS - January 18, 2009  
BH0428  
BH0428 HISTORY - Date Condition Report By  
BH0428 HISTORY - 1943 MONUMENTED CGS  
BH0428 HISTORY - 1973 GOOD MSHD  
BH0428 HISTORY - 20090118 GOOD MAPTEC  
BH0428 HISTORY - 20090118 GOOD MAPTEC  
BH0428  
BH0428  

STATION DESCRIPTION

BH0428  
BH0428'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1973  
BH0428'3.3 MI N FROM ESCATAWPA.  
BH0428'THE MARK IS LOCATED 3.3 MILES NORTH OF THE CROSSING OF I-10 AT  
BH0428'ESCATAWPA, 5.35 MILES NORTH OF MOSS POINT, 0.45 MILE NORTH OF THE FOUR  
BH0428'MILE CREEK BAPTIST CHURCH, 0.6 MILE SOUTH OF A WATER TANK NEAR THE  
BH0428'SOUTH EDGE OF A CONCRETE DRIVEWAY AT THE THIRD BRICK HOUSE FROM THE  
BH0428'NORTH OF A ROW OF HOUSES IN THE NE 1/4 OF SECTION 35, T 6S, R 6W. IT  
BH0428'IS 89.00 FEET SSE OF THE STATION, 51.5 FEET WEST OF THE CENTER OF

BH0428'HIGHWAY 63, 293 FEET SOUTH OF THE CENTER OF JONES ROAD, 41 FEET ESE OF  
BH0428'THE NE CORNER OF THE THIRD BRICK HOUSE, 12.5 FEET SOUTH OF THE  
BH0428'PROJECTED PLANE OF THE NORTH WALL OF THE SAME HOUSE, 67.5 FEET SOUTH  
BH0428'OF POLE NO. 49 1/2, 52 FEET NW OF POLE NO. 49 1/4, 2.5 FEET SOUTH OF  
BH0428'THE SOUTH EDGE OF A CONCRETE DRIVEWAY SET IN THE TOP OF AN 11 INCH  
BH0428'SQUARE CONCRETE POST ABOUT LEVEL WITH THE HIGHWAY AND PROJECTS 5  
BH0428'INCHES. TO REACH FROM THE TWIN CITIES BANK AND POST OFFICE AT  
BH0428'ESCATAWPA GO NORTH ON STATE HIGHWAY 63 FOR 2.4 MILES TO A SIDE ROAD  
BH0428'AND THE FOUR MILE CREEK BAPTIST CHURCH. CONTINUE NORTH ON HIGHWAY 63  
BH0428'FOR 0.45 MILE TO THE MARK ON THE LEFT JUST BEFORE REACHING A SIDE  
BH0428'STREET LEFT.

BH0428

BH0428

BH0428

STATION RECOVERY (2009)

BH0428'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0428'RECOVERED IN GOOD CONDITION. NOTE-THIS PORTION OF HIGHWAY 63 IS NOW

BH0428'HIGHWAY 163.

BH0428

BH0428

BH0428

STATION RECOVERY (2009)

BH0428'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0428'RECOVERED AS DESCRIBED EXCEPT THIS PORTION OF HIGHWAY 63 IS NOW

BH0428'HIGHWAY 163.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0641 *****
BH0641 DESIGNATION -  TT 85 T RESET
BH0641 PID - BH0641
BH0641 STATE/COUNTY-  MS/GEORGE
BH0641 COUNTRY - US
BH0641 USGS QUAD - LUCEDALE (1982)
BH0641
BH0641 *CURRENT SURVEY CONTROL
BH0641
BH0641* NAD 83(1986) POSITION- 30 52 51.8 (N) 088 35 51.8 (W) HD_HELD2
BH0641* NAVD 88 ORTHO HEIGHT - 75.010 (meters) 246.10 (feet) ADJUSTED
BH0641* NAVD 88 EPOCH - 2009.55
BH0641 **This station is located in a suspected subsidence area (see below).
BH0641
BH0641 GEOID HEIGHT - -28.49 (meters) GEOID12A
BH0641 DYNAMIC HEIGHT - 74.912 (meters) 245.77 (feet) COMP
BH0641 MODELED GRAVITY - 979,336.4 (mgal) NAVD 88
BH0641
BH0641 VERT ORDER - FIRST CLASS II
BH0641
BH0641.The horizontal coordinates were established by autonomous hand held GPS
BH0641.observations and have an estimated accuracy of +/- 10 meters.
BH0641.
BH0641 ** This station is in an area of known vertical motion. Due to the
BH0641 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0641 ** determined the orthometric heights for marks in these suspect
BH0641 ** subsidence areas should be considered valid only at the epoch date
BH0641 ** associated with the orthometric height. These heights must always
BH0641 ** be validated when used as control. All previously superseded
BH0641 ** orthometric heights are now considered suspect and are available
BH0641 ** in the superseded section. NGS does not recommend using suspect
BH0641 ** or superseded heights as control.
BH0641
BH0641.The orthometric height was determined by differential leveling and
BH0641.adjusted by the NATIONAL GEODETIC SURVEY
BH0641.in July 2012.
BH0641
BH0641.The dynamic height is computed by dividing the NAVD 88
BH0641.geopotential number by the normal gravity value computed on the
BH0641.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0641.degrees latitude (g = 980.6199 gals.).
BH0641
BH0641.The modeled gravity was interpolated from observed gravity values.
BH0641
BH0641; North East Units Estimated Accuracy
BH0641;SPC MS E - 153,114. 322,529. MT (+/- 10 meters HH2 GPS)
BH0641
BH0641 SUPERSEDED SURVEY CONTROL
BH0641
BH0641 NGVD 29 (??/??/??) 75.133 (m) 246.50 (f) ADJUSTED 2 2
BH0641
BH0641.Superseded values are not recommended for survey control.
BH0641
BH0641.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH0641.See file dsdata.txt to determine how the superseded data were derived.
BH0641
BH0641_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCV4727317513(NAD 83)
BH0641
BH0641_MARKER: DD = SURVEY DISK
BH0641_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
BH0641_SP_SET: SET IN TOP OF CONCRETE MONUMENT
BH0641_STAMPING: TT 85T RESET 1957

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BH0641\_MARK LOGO: CGS  
BH0641\_PROJECTION: FLUSH  
BH0641\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
BH0641+STABILITY: SURFACE MOTION  
BH0641\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
BH0641+SATELLITE: SATELLITE OBSERVATIONS - January 27, 2009

BH0641  
BH0641 HISTORY - Date Condition Report By  
BH0641 HISTORY - 1957 MONUMENTED USGS  
BH0641 HISTORY - 1973 GOOD MSHD  
BH0641 HISTORY - 20090127 GOOD MAPTEC

BH0641

BH0641 STATION DESCRIPTION

BH0641

BH0641'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1973

BH0641'3.2 MI S FROM LUCEDALE.

BH0641'THE MARK IS LOCATED 3.2 MILES SOUTH OF IN THE SE ANGLE OF A CROSSROAD  
BH0641'ON THE EAST ROW OF STATE HIGHWAY 63 IN THE NW 1/4 OF SECTION 16, T 2S,  
BH0641'R 6W. IT IS 55 FEET EAST OF THE CENTER OF HIGHWAY 63, 35 FEET SOUTH  
BH0641'OF THE CENTER OF A GRAVELED ROAD, 107.5 FEET SW AND ACROSS THE ROAD  
BH0641'FROM THE SW CORNER OF A FRAME HOUSE, 79 FEET SW OF A POLE WITH A LAMP  
BH0641'ON IT, 27.5 FEET NORTH OF A GAS METER, 91.5 FEET NW OF A 12 INCH TWIN  
BH0641'OAK, 1 FOOT SOUTH OF A METAL WITNESS POST SET IN THE TOP OF A 12 INCH  
BH0641'CONCRETE CYLINDER ABOUT LEVEL WITH THE HIGHWAY AND IS FLUSH WITH THE  
BH0641'GROUND. TO REACH FROM THE JUNCTION OF STATE HIGHWAY 26 AND U.S.  
BH0641'HIGHWAY 98 AT LUCEDALE GO SOUTH ON STATE HIGHWAY 26 FOR 1.1 MILES TO  
BH0641'THE JUNCTION OF STATE HIGHWAY 63. TURN LEFT AND GO SOUTH ON STATE  
BH0641'HIGHWAY 63 FOR 2.2 MILES TO A CROSSROAD AND THE MARK ON THE LEFT.

BH0641

BH0641 STATION RECOVERY (2009)

BH0641

BH0641'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)

BH0641'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = MARCH 4, 2015

BH3281 \*\*\*\*\*

BH3281 DESIGNATION - V 364

BH3281 PID - BH3281

BH3281 STATE/COUNTY- MS/HANCOCK

BH3281 COUNTRY - US

BH3281 USGS QUAD - WAVELAND (1976)

BH3281

BH3281 \*CURRENT SURVEY CONTROL

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BH3281\* NAD 83(2011) POSITION- 30 22 30.30036(N) 089 26 06.63550(W) ADJUSTED

BH3281\* NAD 83(2011) ELLIP HT- -22.880 (meters) (06/27/12) ADJUSTED

BH3281\* NAD 83(2011) EPOCH - 2010.00

BH3281\* NAVD 88 ORTHO HEIGHT - 4.552 (meters) 14.93 (feet) ADJUSTED

BH3281\* NAVD 88 EPOCH - 2009.55

BH3281 \*\*This station is located in a suspected subsidence area (see below).

BH3281

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BH3281 NAD 83(2011) X - 54,290.532 (meters) COMP

BH3281 NAD 83(2011) Y - -5,507,061.528 (meters) COMP

BH3281 NAD 83(2011) Z - 3,206,303.283 (meters) COMP

BH3281 LAPLACE CORR - -2.26 (seconds) DEFLEC12A

BH3281 GEOID HEIGHT - -27.43 (meters) GEOID12A

BH3281 DYNAMIC HEIGHT - 4.546 (meters) 14.91 (feet) COMP

BH3281 MODELED GRAVITY - 979,330.5 (mgal) NAVD 88

BH3281

BH3281 VERT ORDER - FIRST CLASS II

BH3281

BH3281 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

BH3281 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
-----	-----	-----	-----	-----	-----	-----
BH3281 NETWORK	1.62	2.10	0.62	0.70	1.07	-0.05719947
-----	-----	-----	-----	-----	-----	-----

BH3281 Click here for local accuracies and other accuracy information.

BH3281

BH3281

BH3281.The horizontal coordinates were established by GPS observations

BH3281.and adjusted by the National Geodetic Survey in June 2012.

BH3281

BH3281.NAD 83(2011) refers to NAD 83 coordinates where the reference

BH3281.frame has been affixed to the stable North American tectonic plate. See

BH3281.NA2011 for more information.

BH3281

BH3281.The horizontal coordinates are valid at the epoch date displayed above

BH3281.which is a decimal equivalence of Year/Month/Day.

BH3281

BH3281 \*\* This station is in an area of known vertical motion. Due to the

BH3281 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

BH3281 \*\* determined the orthometric heights for marks in these suspect

BH3281 \*\* subsidence areas should be considered valid only at the epoch date

BH3281 \*\* associated with the orthometric height. These heights must always

BH3281 \*\* be validated when used as control. All previously superseded

BH3281 \*\* orthometric heights are now considered suspect and are available

BH3281 \*\* in the superseded section. NGS does not recommend using suspect

BH3281 \*\* or superseded heights as control.

BH3281

BH3281.The orthometric height was determined by differential leveling and

BH3281.adjusted by the NATIONAL GEODETIC SURVEY

BH3281.in July 2012.

BH3281

BH3281.The X, Y, and Z were computed from the position and the ellipsoidal ht.

BH3281

BH3281.The Laplace correction was computed from DEFLEC12A derived deflections.

BH3281

BH3281.The ellipsoidal height was determined by GPS observations

BH3281.and is referenced to NAD 83.

BH3281

BH3281.The dynamic height is computed by dividing the NAVD 88

BH3281.geopotential number by the normal gravity value computed on the

BH3281.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

BH3281.degrees latitude (g = 980.6199 gals.).

BH3281

BH3281.The modeled gravity was interpolated from observed gravity values.

BH3281

BH3281. The following values were computed from the NAD 83(2011) position.

BH3281

BH3281;		North	East	Units	Scale	Factor	Converg.
BH3281;SPC MS E	-	97,153.008	242,152.376	MT	0.99999127	-0 18	15.6
BH3281;SPC MS E	-	318,742.83	794,461.59	sFT	0.99999127	-0 18	15.6
BH3281;UTM 16	-	3,362,864.419	265,986.444	MT	1.00027564	-1 13	54.9
BH3281!	-	Elev Factor	x	Scale Factor	=	Combined Factor	
BH3281!SPC MS E	-	1.00000359	x	0.99999127	=	0.99999486	
BH3281!UTM 16	-	1.00000359	x	1.00027564	=	1.00027923	

BH3281

SUPERSEDED SURVEY CONTROL

BH3281

BH3281	NAD 83(2007)-	30 22 30.30052(N)	089 26 06.63575(W)	AD(2002.00)	A
BH3281	ELLIP H (09/06/11)	-22.896 (m)		GP(2002.00)	4 1
BH3281	NAVD 88 (02/14/94)	4.686 (m)	15.37 (f)	SUPERSEDED	1 2

BH3281

BH3281.Superseded values are not recommended for survey control.

BH3281

BH3281.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

BH3281.See file dsdata.txt to determine how the superseded data were derived.

BH3281

BH3281\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU6598662864(NAD 83)

BH3281

BH3281\_MARKER: F = FLANGE-ENCASED ROD

BH3281\_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

BH3281\_SP\_SET: STAINLESS STEEL ROD

BH3281\_STAMPING: V 364 1993

BH3281\_MARK LOGO: NGS

BH3281\_PROJECTION: FLUSH

BH3281\_MAGNETIC: I = MARKER IS A STEEL ROD

BH3281\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

BH3281\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

BH3281+SATELLITE: SATELLITE OBSERVATIONS - March 19, 2009

BH3281\_ROD/PIPE-DEPTH: 22.7 meters

BH3281

BH3281	HISTORY	-	Date	Condition	Report By
BH3281	HISTORY	-	1993	MONUMENTED	NGS
BH3281	HISTORY	-	20090319	GOOD	MSDOT

BH3281

STATION DESCRIPTION

BH3281

BH3281'DESCRIBED BY NATIONAL GEODETIC SURVEY 1993

BH3281'11.0 KM (6.85 MI) NORTHERLY ALONG STATE HIGHWAY 43 FROM THE JUNCTION  
 BH3281'OF U.S. HIGHWAY 90 IN WAVELAND, IN A MEDIAN OF A ROAD LEADING TO THE  
 BH3281'STENNIS INTERNATIONAL AIRPORT, 58.4 M (191.6 FT) SOUTHWEST OF THE  
 BH3281'CENTER OF THE HIGHWAY, 5.1 M (16.7 FT) NORTHEAST OF THE SOUTHWEST END  
 BH3281'OF THE MEDIAN CURB, 4.7 M (15.4 FT) SOUTHEAST OF THE CENTER OF THE  
 BH3281'WESTBOUND LANE OF THE ROAD, 4.2 M (13.8 FT) NORTHWEST OF THE CENTER  
 BH3281'OF THE EASTBOUND LANE OF THE ROAD, AND 0.3 M (1.0 FT) BELOW THE LEVEL  
 BH3281'OF THE ROAD. NOTE--ACCESS TO THE DATUM POINT IS THROUGH A 5-INCH



BH3281'LOGO CAP.  
BH3281  
BH3281 STATION RECOVERY (2009)  
BH3281  
BH3281'RECOVERY NOTE BY MS DEPT TRANS 2009 (KLH)  
BH3281'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0297 *****
BH0297 DESIGNATION - W 191
BH0297 PID - BH0297
BH0297 STATE/COUNTY- MS/HARRISON
BH0297 COUNTRY - US
BH0297 USGS QUAD - BILOXI (1992)
BH0297
BH0297 *CURRENT SURVEY CONTROL
BH0297
BH0297* NAD 83(1986) POSITION- 30 23 52.0 (N) 088 56 19.2 (W) HD_HELD2
BH0297* NAVD 88 ORTHO HEIGHT - 8.384 (meters) 27.51 (feet) ADJUSTED
BH0297* NAVD 88 EPOCH - 2009.55
BH0297 **This station is located in a suspected subsidence area (see below).
BH0297
BH0297 GEOID HEIGHT - -28.09 (meters) GEOID12A
BH0297 DYNAMIC HEIGHT - 8.373 (meters) 27.47 (feet) COMP
BH0297 MODELED GRAVITY - 979,315.8 (mgal) NAVD 88
BH0297
BH0297 VERT ORDER - FIRST CLASS II
BH0297
BH0297.The horizontal coordinates were established by autonomous hand held GPS
BH0297.observations and have an estimated accuracy of +/- 10 meters.
BH0297.
BH0297 ** This station is in an area of known vertical motion. Due to the
BH0297 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0297 ** determined the orthometric heights for marks in these suspect
BH0297 ** subsidence areas should be considered valid only at the epoch date
BH0297 ** associated with the orthometric height. These heights must always
BH0297 ** be validated when used as control. All previously superseded
BH0297 ** orthometric heights are now considered suspect and are available
BH0297 ** in the superseded section. NGS does not recommend using suspect
BH0297 ** or superseded heights as control.
BH0297
BH0297.The orthometric height was determined by differential leveling and
BH0297.adjusted by the NATIONAL GEODETIC SURVEY
BH0297.in July 2012.
BH0297
BH0297.The dynamic height is computed by dividing the NAVD 88
BH0297.geopotential number by the normal gravity value computed on the
BH0297.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
BH0297.degrees latitude (g = 980.6199 gals.).
BH0297
BH0297.The modeled gravity was interpolated from observed gravity values.
BH0297
BH0297;
BH0297;SPC MS E - North East Units Estimated Accuracy
BH0297; 99,520. 289,878. MT (+/- 10 meters HH2 GPS)
BH0297
BH0297 SUPERSEDED SURVEY CONTROL
BH0297
BH0297 NAVD 88 (06/15/91) 8.527 (m) 27.98 (f) SUPERSEDED 1 1
BH0297 NGVD 29 (??/??/??) 8.489 (m) 27.85 (f) ADJUSTED 1 1
BH0297
BH0297.Superseded values are not recommended for survey control.
BH0297
BH0297.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
BH0297.See file dsdata.txt to determine how the superseded data were derived.
BH0297
BH0297_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RCU1375264458(NAD 83)
BH0297
BH0297_MARKER: DB = BENCH MARK DISK
BH0297_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

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BH0297\_SP\_SET: SET IN TOP OF CONCRETE MONUMENT  
BH0297\_STAMPING: W 191 1955  
BH0297\_MARK LOGO: CGS  
BH0297\_PROJECTION: FLUSH  
BH0297\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
BH0297+STABILITY: SURFACE MOTION  
BH0297\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
BH0297+SATELLITE: SATELLITE OBSERVATIONS - October 01, 2008

BH0297	HISTORY	- Date	Condition	Report By
BH0297	HISTORY	- 1955	MONUMENTED	CGS
BH0297	HISTORY	- 1971	GOOD	NGS
BH0297	HISTORY	- 1976	GOOD	NGS
BH0297	HISTORY	- 20050721	GOOD	NGS
BH0297	HISTORY	- 20081001	GOOD	MAPTEC

BH0297  
BH0297 STATION DESCRIPTION

BH0297  
BH0297'DESCRIBED BY COAST AND GEODETIC SURVEY 1955  
BH0297'2.9 MI W FROM BILOXI.  
BH0297'ABOUT 2.9 MILES WEST ALONG THE LOUISVILLE AND NASHVILLE RAILROAD FROM  
BH0297'THE STATION AT BILOXI, ABOUT 375 YARDS EAST OF MILE POST 730, AT THE  
BH0297'CROSSING OF RODENBERG AVENUE, 78 FEET SOUTHWEST OF CENTER OF CROSSING,  
BH0297'47 FEET SOUTH OF SOUTH RAIL, 1 FOOT NORTH OF A FENCE LINE, 58 FEET  
BH0297'WEST OF CENTER LINE OF AVENUE, 21 1/2 FEET SOUTHEAST OF THE FIRST  
BH0297'TELEPHONE POLE WEST OF CROSSING, 183 FEET SOUTHEAST AND ACROSS TRACK  
BH0297'FROM THE SOUTHEAST CORNER OF CONCRETE BASE OF SEMAPHORE NO. 7291, 2  
BH0297'FEET WEST OF A WHITE WOODEN WITNESS POST, ABOUT 2 FEET BELOW LEVEL OF  
BH0297'TRACK AND SET IN THE TOP OF A CONCRETE POST PROJECTING 3 INCHES.

BH0297  
BH0297 STATION RECOVERY (1971)

BH0297  
BH0297'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1971  
BH0297'RECOVERED IN GOOD CONDITION.

BH0297  
BH0297 STATION RECOVERY (1976)

BH0297  
BH0297'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976  
BH0297'RECOVERED IN GOOD CONDITION.

BH0297  
BH0297 STATION RECOVERY (2005)

BH0297  
BH0297'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (KS)  
BH0297'7.4 FT N OF N EOP OF IRISH HILL RD. 21.6 FT W OF W FACE OF TALL CONC.  
BH0297'POWER POLE. JUST SE OF E MOST OF 5 GUY ANCHORS W OF POLE. 0.3 FT BELOW  
BH0297'SURFACE AND ON NW SIDE OF ROTTING TREE STUMP.

BH0297  
BH0297 STATION RECOVERY (2008)

BH0297  
BH0297'RECOVERY NOTE BY MAPTECH INCORPORATED 2008 (SEM)  
BH0297'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
BH0959 *****
BH0959 DESIGNATION - W 234
BH0959 PID - BH0959
BH0959 STATE/COUNTY- MS/HANCOCK
BH0959 COUNTRY - US
BH0959 USGS QUAD - WAVELAND (1976)
BH0959
BH0959 *CURRENT SURVEY CONTROL
BH0959
BH0959* NAD 83(2011) POSITION- 30 18 09.57371(N) 089 23 19.68663(W) ADJUSTED
BH0959* NAD 83(2011) ELLIP HT- -23.387 (meters) (06/27/12) ADJUSTED
BH0959* NAD 83(2011) EPOCH - 2010.00
BH0959* NAVD 88 ORTHO HEIGHT - 3.899 (meters) 12.79 (feet) ADJUSTED
BH0959* NAVD 88 EPOCH - 2009.55
BH0959 **This station is located in a suspected subsidence area (see below).
BH0959
BH0959 NAD 83(2011) X - 58,791.136 (meters) COMP
BH0959 NAD 83(2011) Y - -5,511,070.552 (meters) COMP
BH0959 NAD 83(2011) Z - 3,199,373.773 (meters) COMP
BH0959 LAPLACE CORR - -2.07 (seconds) DEFLEC12A
BH0959 GEOID HEIGHT - -27.29 (meters) GEOID12A
BH0959 DYNAMIC HEIGHT - 3.894 (meters) 12.78 (feet) COMP
BH0959 MODELED GRAVITY - 979,327.7 (mgal) NAVD 88
BH0959
BH0959 VERT ORDER - FIRST CLASS II
BH0959
BH0959 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BH0959 Standards:
BH0959 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BH0959 Horiz Ellip SD_N SD_E SD_h (unitless)
BH0959 -----
BH0959 NETWORK 1.73 2.31 0.71 0.70 1.18 0.03758479
BH0959 -----
BH0959 Click here for local accuracies and other accuracy information.
BH0959
BH0959
BH0959.The horizontal coordinates were established by GPS observations
BH0959.and adjusted by the National Geodetic Survey in June 2012.
BH0959
BH0959.NAD 83(2011) refers to NAD 83 coordinates where the reference
BH0959.frame has been affixed to the stable North American tectonic plate. See
BH0959.NA2011 for more information.
BH0959
BH0959.The horizontal coordinates are valid at the epoch date displayed above
BH0959.which is a decimal equivalence of Year/Month/Day.
BH0959
BH0959 ** This station is in an area of known vertical motion. Due to the
BH0959 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BH0959 ** determined the orthometric heights for marks in these suspect
BH0959 ** subsidence areas should be considered valid only at the epoch date
BH0959 ** associated with the orthometric height. These heights must always
BH0959 ** be validated when used as control. All previously superseded
BH0959 ** orthometric heights are now considered suspect and are available
BH0959 ** in the superseded section. NGS does not recommend using suspect
BH0959 ** or superseded heights as control.
BH0959
BH0959.The orthometric height was determined by differential leveling and
BH0959.adjusted by the NATIONAL GEODETIC SURVEY
BH0959.in July 2012.
BH0959
BH0959.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BH0959

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BH0959.The Laplace correction was computed from DEFLEC12A derived deflections.  
 BH0959  
 BH0959.The ellipsoidal height was determined by GPS observations  
 BH0959.and is referenced to NAD 83.  
 BH0959  
 BH0959.The dynamic height is computed by dividing the NAVD 88  
 BH0959.geopotential number by the normal gravity value computed on the  
 BH0959.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
 BH0959.degrees latitude (g = 980.6199 gals.).  
 BH0959  
 BH0959.The modeled gravity was interpolated from observed gravity values.  
 BH0959  
 BH0959. The following values were computed from the NAD 83(2011) position.  
 BH0959  
 BH0959;  

	North	East	Units	Scale	Factor	Converg.
BH0959;SPC MS E	- 89,101.658	246,570.547	MT	0.99998520	-0 16	49.0
BH0959;SPC MS E	- 292,327.69	808,956.87	sFT	0.99998520	-0 16	49.0
BH0959;UTM 16	- 3,354,740.441	270,275.017	MT	1.00025111	-1 12	21.0

 BH0959  
 BH0959!  

	Elev Factor	x	Scale Factor	=	Combined Factor
BH0959!SPC MS E	- 1.00000367	x	0.99998520	=	0.99998887
BH0959!UTM 16	- 1.00000367	x	1.00025111	=	1.00025478

 BH0959  
 BH0959  

SUPERSEDED SURVEY CONTROL

 BH0959  
 BH0959  

BH0959	NAD 83(2007)-	30 18 09.57388(N)	089 23 19.68687(W)	AD(2002.00)	A
BH0959	ELLIP H (09/06/11)	-23.399 (m)		GP(2002.00)	4 1
BH0959	NAVD 88 (02/14/94)	4.032 (m)		13.23 (f)	SUPERSEDED 1 1
BH0959	NAVD 88 (06/15/91)	4.030 (m)		13.22 (f)	SUPERSEDED 1 1
BH0959	NGVD 29 (??/??/??)	3.986 (m)		13.08 (f)	ADJUSTED 1 1

 BH0959  
 BH0959.Superseded values are not recommended for survey control.  
 BH0959  
 BH0959.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BH0959.See file dsdata.txt to determine how the superseded data were derived.  
 BH0959  
 BH0959\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBU7027554740(NAD 83)  
 BH0959  
 BH0959\_MARKER: DB = BENCH MARK DISK  
 BH0959\_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE  
 BH0959\_SP\_SET: HEADWALL  
 BH0959\_STAMPING: W 234 1969  
 BH0959\_MARK LOGO: CGS  
 BH0959\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 BH0959\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 BH0959+STABILITY: SURFACE MOTION  
 BH0959\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BH0959+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2009  
 BH0959  

HISTORY	- Date	Condition	Report By
BH0959	- 1969	MONUMENTED	CGS
BH0959	- 1972	GOOD	MSHD
BH0959	- 1974	GOOD	NGS
BH0959	- 1976	GOOD	NGS
BH0959	- 19930315	GOOD	NGS
BH0959	- 20050705	GOOD	NGS
BH0959	- 20090114	GOOD	MAPTEC
BH0959	- 20090706	GOOD	EMCINC

 BH0959  
 BH0959  

STATION DESCRIPTION

 BH0959  
 BH0959  
 BH0959'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1972  
 BH0959'3.3 MI W FROM BAY ST LOUIS.

BH0959'THE MARK IS LOCATED 3.3 MILES WEST OF BAY ST. LOUIS IN THE EAST END OF  
BH0959'THE NORTH HEADWALL OF A LARGE BOX CULVERT. IT IS 33.5 FEET NORTH OF  
BH0959'THE CENTER OF THE WESTBOUND LANE OF HIGHWAY 90, 11.5 FEET NORTH OF A  
BH0959'CURB, 43 FEET WEST OF THE PROJECTED PLANE OF THE EAST WALL OF THE  
BH0959'OFFICE OF THE TRAVELREST MOTEL, 75.5 FEET WEST OF A POWER POLE, 68  
BH0959'FEET SOUTHWEST OF THE SOUTHWEST CORNER OF PEST CONTROL OFFICE, 1.5  
BH0959'FEET WEST OF A METAL WITNESS POST SET IN A DRILL HOLE IN THE EAST END  
BH0959'OF THE NORTH HEADWALL OF A 15 FOOT BOX CULVERT WITH A DIVIDING PIER  
BH0959'AND EXTENDED HEADWALLS AND IS ABOUT 1 FOOT BELOW THE LEVEL OF THE  
BH0959'HIGHWAY. TO REACH FROM THE WEST END OF THE BRIDGE OVER ST. LOUIS BAY  
BH0959'AT BAY ST. LOUIS GO WEST ON U.S. HIGHWAY 90 FOR 3.5 MILES TO THE  
BH0959'JUNCTION OF STATE HIGHWAY 603 AND 43. CONTINUE WEST ON U.S. HIGHWAY  
BH0959'90 FOR 0.7 MILES TO THE TRAVELREST MOTEL ON THE LEFT AND THE MARK ON  
BH0959'THE RIGHT.

BH0959

BH0959 STATION RECOVERY (1974)

BH0959

BH0959'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1974

BH0959'RECOVERED IN GOOD CONDITION.

BH0959

BH0959 STATION RECOVERY (1976)

BH0959

BH0959'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976

BH0959'RECOVERED IN GOOD CONDITION.

BH0959

BH0959 STATION RECOVERY (1993)

BH0959

BH0959'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1993

BH0959'1.1 KM (0.70 MI) WESTERLY ALONG U.S. HIGHWAY 90 FROM THE JUNCTION OF

BH0959'STATE HIGHWAY 43 IN WAVELAND, IN TOP OF AND 0.4 M (1.3 FT) SOUTHWEST

BH0959'OF THE NORTHEAST END OF THE CONCRETE HEADWALL OF A BOX CULVERT, 16.7

BH0959'M (54.8 FT) NORTHEAST OF A UTILITY LIGHT POLE, 10.2 M (33.5 FT)

BH0959'NORTHWEST OF THE CENTERLINE OF THE WESTBOUND LANES OF THE HIGHWAY,

BH0959'1.6 M (5.2 FT) SOUTHEAST OF A WITNESS POST, AND 0.3 M (1.0 FT) BELOW

BH0959'THE LEVEL OF THE HIGHWAY.

BH0959

BH0959 STATION RECOVERY (2005)

BH0959

BH0959'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (KS)

BH0959'16.0 FT DUE SO. OF POLE W/2 TRANSFORMERS AND WP SIGN. 11.1 FT MW OF

BH0959'EOP. 55.0 FT NE OF POLE W/LIGHT. JUST SW OF TURN OUT FOR A DRIVEWAY

BH0959'THAT DOESN'T EXIST.

BH0959

BH0959 STATION RECOVERY (2009)

BH0959

BH0959'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (CLK)

BH0959'RECOVERED AS DESCRIBED.

BH0959

BH0959 STATION RECOVERY (2009)

BH0959

BH0959'RECOVERY NOTE BY EMC INCORPORATED 2009 (JBP)

BH0959'RECOVERED AS DESCRIBED.

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1      National Geodetic Survey,  Retrieval Date = MARCH  4, 2015
DL8848 *****
DL8848 DESIGNATION -  Z 376
DL8848 PID - DL8848
DL8848 STATE/COUNTY-  MS/STONE
DL8848 COUNTRY -  US
DL8848 USGS QUAD -  MC HENRY (1982)
DL8848
DL8848 *CURRENT SURVEY CONTROL
DL8848
DL8848* NAD 83(2011) POSITION- 30 44 05.32350(N) 089 08 04.59554(W) ADJUSTED
DL8848* NAD 83(2011) ELLIP HT- 48.885 (meters) (06/27/12) ADJUSTED
DL8848* NAD 83(2011) EPOCH - 2010.00
DL8848* NAVD 88 ORTHO HEIGHT - 77.246 (meters) 253.43 (feet) ADJUSTED
DL8848* NAVD 88 EPOCH - 2009.55
DL8848 **This station is located in a suspected subsidence area (see below).
DL8848
DL8848 NAD 83(2011) X - 82,873.758 (meters) COMP
DL8848 NAD 83(2011) Y - -5,486,491.382 (meters) COMP
DL8848 NAD 83(2011) Z - 3,240,682.281 (meters) COMP
DL8848 LAPLACE CORR - -1.31 (seconds) DEFLEC12A
DL8848 GEOID HEIGHT - -28.36 (meters) GEOID12A
DL8848 DYNAMIC HEIGHT - 77.144 (meters) 253.10 (feet) COMP
DL8848 MODELED GRAVITY - 979,317.9 (mgal) NAVD 88
DL8848
DL8848 VERT ORDER - FIRST CLASS II
DL8848
DL8848 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL8848 Standards:
DL8848 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DL8848 Horiz Ellip SD_N SD_E SD_h (unitless)
DL8848 -----
DL8848 NETWORK 1.25 1.86 0.51 0.51 0.95 0.06145030
DL8848 -----
DL8848 Click here for local accuracies and other accuracy information.
DL8848
DL8848
DL8848.The horizontal coordinates were established by GPS observations
DL8848.and adjusted by the National Geodetic Survey in June 2012.
DL8848
DL8848.NAD 83(2011) refers to NAD 83 coordinates where the reference
DL8848.frame has been affixed to the stable North American tectonic plate. See
DL8848.NA2011 for more information.
DL8848
DL8848.The horizontal coordinates are valid at the epoch date displayed above
DL8848.which is a decimal equivalence of Year/Month/Day.
DL8848
DL8848 ** This station is in an area of known vertical motion. Due to the
DL8848 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL8848 ** determined the orthometric heights for marks in these suspect
DL8848 ** subsidence areas should be considered valid only at the epoch date
DL8848 ** associated with the orthometric height. These heights must always
DL8848 ** be validated when used as control. All previously superseded
DL8848 ** orthometric heights are now considered suspect and are available
DL8848 ** in the superseded section. NGS does not recommend using suspect
DL8848 ** or superseded heights as control.
DL8848
DL8848.The orthometric height was determined by differential leveling and
DL8848.adjusted by the NATIONAL GEODETIC SURVEY
DL8848.in July 2012.
DL8848
DL8848.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DL8848

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DL8848.The Laplace correction was computed from DEFLEC12A derived deflections.  
DL8848  
DL8848.The ellipsoidal height was determined by GPS observations  
DL8848.and is referenced to NAD 83.  
DL8848  
DL8848.The dynamic height is computed by dividing the NAVD 88  
DL8848.geopotential number by the normal gravity value computed on the  
DL8848.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL8848.degrees latitude (g = 980.6199 gals.).  
DL8848  
DL8848.The modeled gravity was interpolated from observed gravity values.  
DL8848  
DL8848. The following values were computed from the NAD 83(2011) position.  
DL8848  
DL8848;  

	North	East	Units	Scale	Factor	Converg.
DL8848;SPC MS E	- 136,916.331	271,148.869	MT	0.99996026	-0 09	14.3
DL8848;SPC MS E	- 449,199.66	889,594.25	sFT	0.99996026	-0 09	14.3
DL8848;UTM 16	- 3,402,159.219	295,632.708	MT	1.00011524	-1 05	28.7

DL8848  
DL8848!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DL8848!SPC MS E	- 0.99999232	x	0.99996026	=	0.99995258
DL8848!UTM 16	- 0.99999232	x	1.00011524	=	1.00010756

DL8848  
DL8848  

SUPERSEDED SURVEY CONTROL

DL8848  
DL8848  
DL8848 NAD 83(2007)- 30 44 05.32370(N) 089 08 04.59588(W) AD(2002.00) A  
DL8848 ELLIP H (09/06/11) 48.864 (m) GP(2002.00) 4 1  
DL8848  
DL8848.Superseded values are not recommended for survey control.  
DL8848  
DL8848.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL8848.See file dsdata.txt to determine how the superseded data were derived.  
DL8848  
DL8848\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBV9563202159(NAD 83)  
DL8848  
DL8848\_MARKER: DD = SURVEY DISK  
DL8848\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
DL8848\_STAMPING: Z 376 2009  
DL8848\_MARK LOGO: MSDOT  
DL8848\_PROJECTION: FLUSH  
DL8848\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL8848\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL8848+STABILITY: SURFACE MOTION  
DL8848\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL8848+SATELLITE: SATELLITE OBSERVATIONS - May 21, 2009  
DL8848  
DL8848 HISTORY - Date Condition Report By  
DL8848 HISTORY - 20090521 MONUMENTED GCT  
DL8848  
DL8848  

STATION DESCRIPTION

DL8848  
DL8848'DESCRIBED BY GUSTIN, COTHERN, AND TUCKER, I 2009  
DL8848'THE STATION IS LOCATED ABOUT 34.5 KM (21.4 MI) WEST SOUTHWEST OF  
DL8848'LUCEDALE, 40.2 KM (25.0 MI) EAST SOUTHEAST OF POPLARVILLE AND 13.4 KM  
DL8848'(8.3 MI) SOUTH OF WIGGINS. OWNERSHIP--MISSISSIPPI DEPARTMENT OF  
DL8848'TRANSPORTATION.  
DL8848'  
DL8848'TO REACH FROM THE INTERSECTION OF STATE ROAD 49 AND STATE ROAD 26  
DL8848'PROCEED SOUTH ON STATE 49 FOR 14.5 KM (9.0 MI) TO THE MARK ON THE LEFT  
DL8848'LOCATED ON THE EAST SIDE OF THE NORTH BOUND LANES OF SR-49.  
DL8848'  
DL8848'IT IS 149.6 M (490.8 FT) SOUTHWEST OF THE CENTERLINE OF E. WIRE ROAD,  
DL8848'138.0 M (452.8 FT) SOUTHEAST OF STOP SIGN, 95.1 M (312.0 FT) SOUTHEAST



DL8848' OF POWER POLE, 80.0 M (262.5 FT) NORTHEAST OF NORTH END OF A GUARD  
DL8848' RAIL ON THE EAST SIDE OF SR-49 AND 25.4 M (83.3 FT) SOUTHEAST OF THE  
DL8848' CENTERLINE OF THE NORTH BOUND LANES OF SR-49.

### 3DEP EXTENSION AOI

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PROGRAM = datasheet95, VERSION = 8.6.1
1 National Geodetic Survey, Retrieval Date = MARCH 7, 2015
DN3844 *****
DN3844 HT_MOD - This is a Height Modernization Survey Station.
DN3844 DESIGNATION - AP 21
DN3844 PID - DN3844
DN3844 STATE/COUNTY- MS/COPIAH
DN3844 COUNTRY - US
DN3844 USGS QUAD - GEORGETOWN (1971)
DN3844
DN3844 *CURRENT SURVEY CONTROL
DN3844
DN3844* NAD 83(2011) POSITION- 31 47 25.22014(N) 090 08 37.79481(W) ADJUSTED
DN3844* NAD 83(2011) ELLIP HT- 42.234 (meters) (06/27/12) ADJUSTED
DN3844* NAD 83(2011) EPOCH - 2010.00
DN3844* NAVD 88 ORTHO HEIGHT - 68.21 (meters) 223.8 (feet) GPS OBS
DN3844* NAVD 88 EPOCH - 2009.55
DN3844 **This station is located in a suspected subsidence area (see below).
DN3844
DN3844 GEOID HEIGHT - -25.98 (meters) GEOID12A
DN3844 NAD 83(2011) X - -13,622.039 (meters) COMP
DN3844 NAD 83(2011) Y - -5,426,360.622 (meters) COMP
DN3844 NAD 83(2011) Z - 3,340,715.542 (meters) COMP
DN3844 LAPLACE CORR - 0.30 (seconds) DEFLEC12A
DN3844
DN3844 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DN3844 Standards:
DN3844 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DN3844 Horiz Ellip SD_N SD_E SD_h (unitless)
DN3844 -----
DN3844 NETWORK 1.16 1.45 0.54 0.38 0.74 0.13108659
DN3844 -----
DN3844 Click here for local accuracies and other accuracy information.
DN3844
DN3844
DN3844.The horizontal coordinates were established by GPS observations
DN3844.and adjusted by the National Geodetic Survey in June 2012.
DN3844
DN3844.NAD 83(2011) refers to NAD 83 coordinates where the reference
DN3844.frame has been affixed to the stable North American tectonic plate. See
DN3844.NA2011 for more information.
DN3844
DN3844.The horizontal coordinates are valid at the epoch date displayed above
DN3844.which is a decimal equivalence of Year/Month/Day.
DN3844
DN3844 ** This station is in an area of known vertical motion. Due to the
DN3844 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DN3844 ** determined the orthometric heights for marks in these suspect
DN3844 ** subsidence areas should be considered valid only at the epoch date
DN3844 ** associated with the orthometric height. These heights must always
DN3844 ** be validated when used as control. All previously superseded
DN3844 ** orthometric heights are now considered suspect and are available
DN3844 ** in the superseded section. NGS does not recommend using suspect
DN3844 ** or superseded heights as control.
DN3844
DN3844.The orthometric height was determined by GPS observations and a
DN3844.high-resolution geoid model using precise GPS observation and
DN3844.processing techniques.
DN3844
DN3844.The X, Y, and Z were computed from the position and the ellipsoidal ht.

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DN3844  
 DN3844.The Laplace correction was computed from DEFLEC12A derived deflections.  
 DN3844  
 DN3844.The ellipsoidal height was determined by GPS observations  
 DN3844.and is referenced to NAD 83.  
 DN3844  
 DN3844. The following values were computed from the NAD 83(2011) position.  
 DN3844  
 DN3844;  

	North	East	Units	Scale Factor	Converg.
DN3844;SPC MS W	- 253,917.834	717,946.331	MT	0.99995397	+0 05 59.4
DN3844;SPC MS W	- 833,062.09	2,355,462.25	sFT	0.99995397	+0 05 59.4
DN3844;UTM 15	- 3,520,749.642	770,442.638	MT	1.00050214	+1 30 20.1

 DN3844  
 DN3844!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DN3844!SPC MS W	- 0.99999337	x	0.99995397	=	0.99994734
DN3844!UTM 15	- 0.99999337	x	1.00050214	=	1.00049551

 DN3844  
 DN3844  
 SUPERSEDED SURVEY CONTROL  
 DN3844  
 DN3844 NAD 83(2007)- 31 47 25.22010(N) 090 08 37.79523(W) AD(2002.00) A  
 DN3844 ELLIP H (09/06/11) 42.227 (m) GP(2002.00) 4 1  
 DN3844  
 DN3844.Superseded values are not recommended for survey control.  
 DN3844  
 DN3844.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN3844.[See file dsdata.txt](#) to determine how the superseded data were derived.  
 DN3844  
 DN3844\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYR7044220749(NAD 83)  
 DN3844  
 DN3844\_MARKER: DD = SURVEY DISK  
 DN3844\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN3844\_STAMPING: AP 21 2008  
 DN3844\_MARK LOGO: MSDOT  
 DN3844\_PROJECTION: FLUSH  
 DN3844\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN3844\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 DN3844+STABILITY: SURFACE MOTION  
 DN3844\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN3844+SATELLITE: SATELLITE OBSERVATIONS - August 14, 2008  
 DN3844  

DN3844	HISTORY	- Date	Condition	Report By
DN3844	HISTORY	- 20080814	MONUMENTED	MSDOT

 DN3844  
 DN3844  
 STATION DESCRIPTION  
 DN3844  
 DN3844'DESCRIBED BY MS DEPT TRANS 2008 (ST)  
 DN3844'THE MARK IS LOCATED IN CRYSTAL SPRINGS, COPIAH COUNTY. ABOUT  
 DN3844'OWNERSHIP--ROAD RIGHT-OF-WAY.  
 DN3844'  
 DN3844'TO REACH THE MARK FROM THE INTERSECTION OF I-55 AND HIGHWAY 27 AT  
 DN3844'CRYSTAL SPRINGS, PROCEED EAST 21 MI (33.8 KM) ON HIGHWAY 27, TURN LEFT  
 DN3844'AND PROCEED ON NEW ROCKPORT ROAD AT THE PLUM CREEK TIMBER CO. SIGN  
 DN3844'AND PROCEED 0.6 MI (1.0 KM) TO A BRIDGE AT THE COPIAH AND SIMPSON  
 DN3844'COUNTY LINE, THE MARK IS SOUTHEAST OF THE BRIDGE.  
 DN3844'  
 DN3844'THE MARK IS 11 FT (3.4 M) SOUTHWEST OF A GUARD RAIL, 19 FT (5.8 M)  
 DN3844'SOUTHEAST FROM THE EDGE OF PAVEMENT, 31.3 FT (9.5 M) FROM THE  
 DN3844'CENTERLINE OF ROCKPORT ROAD, 99.6 FT (30.4 M) FROM THE INTERSECTION OF  
 DN3844'PLUM CREEK ROAD AND NEW ROCKPORT ROAD, 234 FT (71.3 M) FROM THE BRIDGE  
 DN3844'ABUTMENT, SET IN THE TOP OF A 10 INCH (25 CM) ROUND CONCRETE POST  
 DN3844'FLUSH WITH THE GROUND.

PROGRAM = datasheet95, VERSION = 8.6.1

1 National Geodetic Survey, Retrieval Date = MARCH 8, 2015

DN3856

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DN3856 HT\_MOD - This is a Height Modernization Survey Station.

DN3856 DESIGNATION - AP 42

DN3856 PID - DN3856

DN3856 STATE/COUNTY- MS/LINCOLN

DN3856 COUNTRY - US

DN3856 USGS QUAD - BOGUE CHITTO (1972)

DN3856

\*CURRENT SURVEY CONTROL

DN3856

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DN3856\* NAD 83(2011) POSITION- 31 22 37.96057(N) 090 26 02.41266(W)  
ADJUSTED

DN3856\* NAD 83(2011) ELLIP HT- 89.490 (meters) (06/27/12)  
ADJUSTED

DN3856\* NAD 83(2011) EPOCH - 2010.00

DN3856\* [NAVD 88](#) ORTHO HEIGHT - 115.69 (meters) 379.6 (feet) GPS  
OBS

DN3856\* [NAVD 88](#) EPOCH - 2009.55

DN3856 \*\*This station is located in a suspected subsidence area (see  
below).

DN3856

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DN3856 GEOID HEIGHT - -26.20 (meters)

GEOID12A

DN3856 NAD 83(2011) X - -41,285.315 (meters) COMP

DN3856 NAD 83(2011) Y - -5,450,253.198 (meters) COMP

DN3856 NAD 83(2011) Z - 3,301,717.772 (meters) COMP

DN3856 LAPLACE CORR - 0.04 (seconds)

DEFLEC12A

DN3856

DN3856 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

DN3856 Standards:

DN3856	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
DN3856	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)

DN3856	-----	-----	-----	-----	-----	-----	
DN3856	NETWORK	0.75	1.00	0.28	0.33	0.51	0.08431575
DN3856	-----	-----	-----	-----	-----	-----	

DN3856 Click [here](#) for local accuracies and other accuracy information.

DN3856

DN3856

DN3856.The horizontal coordinates were established by GPS observations

DN3856.and adjusted by the National Geodetic Survey in June 2012.

DN3856

DN3856.NAD 83(2011) refers to NAD 83 coordinates where the reference

DN3856.frame has been affixed to the stable North American tectonic plate.

See

DN3856.[NA2011](#) for more information.

DN3856

DN3856.The horizontal coordinates are valid at the epoch date displayed  
above

DN3856.which is a decimal equivalence of Year/Month/Day.

DN3856

DN3856 \*\* This station is in an area of known vertical motion. Due to the

DN3856 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DN3856 \*\* determined the orthometric heights for marks in these suspect  
 DN3856 \*\* subsidence areas should be considered valid only at the epoch date  
 DN3856 \*\* associated with the orthometric height. These heights must always  
 DN3856 \*\* be validated when used as control. All previously superseded  
 DN3856 \*\* orthometric heights are now considered suspect and are available  
 DN3856 \*\* in the superseded section. NGS does not recommend using suspect  
 DN3856 \*\* or superseded heights as control.

DN3856  
 DN3856.The orthometric height was determined by GPS observations and a  
 DN3856.high-resolution geoid model using precise GPS observation and  
 DN3856.processing techniques.

DN3856  
 DN3856.The X, Y, and Z were computed from the position and the ellipsoidal  
 ht.

DN3856  
 DN3856.The Laplace correction was computed from DEFLEC12A derived  
 deflections.

DN3856  
 DN3856.The ellipsoidal height was determined by GPS observations  
 DN3856.and is referenced to NAD 83.

DN3856  
 DN3856. The following values were computed from the NAD 83(2011) position.

DN3856  
 DN3856;  
 North East Units Scale Factor  
 Converg.

DN3856;SPC MS W	-	208,101.459	690,424.099	MT	0.99995113	-0 03
08.7						
DN3856;SPC MS W	-	682,746.20	2,265,166.40	sFT	0.99995113	-0 03
08.7						
DN3856;UTM 15	-	3,474,254.042	744,033.634	MT	1.00033459	+1 20
12.1						

DN3856  
 DN3856!  
 DN3856!SPC MS W  
 DN3856!UTM 15

-	Elev Factor	x	Scale Factor	=	Combined Factor
-	0.99998595	x	0.99995113	=	0.99993708
-	0.99998595	x	1.00033459	=	1.00032053

DN3856  
 DN3856  
 SUPERSEDED SURVEY CONTROL  
 DN3856  
 DN3856  
 DN3856 NAD 83(2007)- 31 22 37.96044(N) 090 26 02.41316(W) AD(2002.00) A  
 DN3856 ELLIP H (09/06/11) 89.481 (m) GP(2002.00) 4

1

DN3856  
 DN3856.Superseded values are not recommended for survey control.  
 DN3856  
 DN3856.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN3856.[See file dsdata.txt](#) to determine how the superseded data were  
 derived.

DN3856  
 DN3856\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYQ4403374254(NAD 83)  
 DN3856  
 DN3856\_MARKER: DD = SURVEY DISK  
 DN3856\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN3856\_STAMPING: AP42 2008  
 DN3856\_MARK LOGO: MSDOT  
 DN3856\_PROJECTION: FLUSH

DN3856\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DN3856\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DN3856+STABILITY: SURFACE MOTION  
DN3856\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DN3856+SATELLITE: SATELLITE OBSERVATIONS - November 11, 2008

DN3856  
DN3856 HISTORY - Date Condition Report By  
DN3856 HISTORY - 20081111 MONUMENTED MSDOT

DN3856

DN3856 STATION DESCRIPTION

DN3856

DN3856'DESCRIBED BY MS DEPT TRANS 2008

DN3856'THE STATION IS LOCATED IN LINCOLN COUNTY MS IN FRONT OF MOAKS CREEK  
DN3856'BAPTIST CHURCH, ON MOAKS CREEK ROAD, 4.5 MI (7.2 KM) SOUTHEAST OF THE  
DN3856'VILLAGE BOGUE CHITTO, 14.6 MI (23.5 KM) SOUTH OF THE CITY OF  
DN3856'BROOKHAVEN, AND 6.8 MI (10.9 KM) NORTH OF THE TOWN OF SUMMIT.

DN3856'

DN3856'TO REACH THE STATION FROM THE INTERSECTION OF WINDMILL DRIVE SE AND  
DN3856'MOAKS CREEK ROAD GO WEST.23 MI TO MOAKS CREEK CHURCH AND THE STATION  
DN3856'ON THE LEFT.

DN3856'

DN3856'THE STATION IS 100 FT (30.5 M) NORTH OF MOAKS CREEK CHURCH, 60 FT  
DN3856'(18.3 M) SOUTH OF THE CENTER OF A PAVED ROAD, 30 FT (9.1 M) WEST OF A  
DN3856'SIGN, AND 50 FT (15.2 M) SOUTH OF A FIBERGLASS WITNESS POST.

PROGRAM = datasheet95, VERSION = 8.6.1

1 National Geodetic Survey, Retrieval Date = MARCH 5, 2015

DN3858 \*\*\*\*\*

DN3858 HT\_MOD - This is a Height Modernization Survey Station.

DN3858 DESIGNATION - AP 44

DN3858 PID - DN3858

DN3858 STATE/COUNTY- MS/COVINGTON

DN3858 COUNTRY - US

DN3858 USGS QUAD - LONE STAR (1982)

DN3858

DN3858 \*CURRENT SURVEY CONTROL

DN3858

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DN3858\* NAD 83(2011) POSITION- 31 44 54.99836(N) 089 39 06.21763(W) ADJUSTED

DN3858\* NAD 83(2011) ELLIP HT- 84.738 (meters) (06/27/12) ADJUSTED

DN3858\* NAD 83(2011) EPOCH - 2010.00

DN3858\* [NAVD 88](#) ORTHO HEIGHT - 110.63 (meters) 363.0 (feet) GPS OBS

DN3858\* [NAVD 88](#) EPOCH - 2009.55

DN3858 \*\*This station is located in a suspected subsidence area (see below).

DN3858

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DN3858 GEOID HEIGHT - -25.89 (meters) GEOID12A

DN3858 NAD 83(2011) X - 32,999.107 (meters) COMP

DN3858 NAD 83(2011) Y - -5,428,749.689 (meters) COMP

DN3858 NAD 83(2011) Z - 3,336,804.174 (meters) COMP

DN3858 LAPLACE CORR - -0.52 (seconds) DEFLEC12A

DN3858

DN3858 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

DN3858 Standards:

	FGDC (95% conf, cm)		Standard deviation (cm)			CorrNE
	Horiz	Ellip	SD_N	SD_E	SD_h	(unitless)
NETWORK	0.86	1.04	0.35	0.35	0.53	0.10009660

DN3858

DN3858 Click [here](#) for local accuracies and other accuracy information.

DN3858

DN3858

DN3858.The horizontal coordinates were established by GPS observations

DN3858.and adjusted by the National Geodetic Survey in June 2012.

DN3858

DN3858.NAD 83(2011) refers to NAD 83 coordinates where the reference

DN3858.frame has been affixed to the stable North American tectonic plate. See

DN3858.[NA2011](#) for more information.

DN3858

DN3858.The horizontal coordinates are valid at the epoch date displayed above

DN3858.which is a decimal equivalence of Year/Month/Day.

DN3858

DN3858 \*\* This station is in an area of known vertical motion. Due to the

DN3858 \*\* variability of land subsidence, uplift, and crustal motion, NGS has,

DN3858 \*\* determined the orthometric heights for marks in these suspect

DN3858 \*\* subsidence areas should be considered valid only at the epoch date

DN3858 \*\* associated with the orthometric height. These heights must always

DN3858 \*\* be validated when used as control. All previously superseded

DN3858 \*\* orthometric heights are now considered suspect and are available

DN3858 \*\* in the superseded section. NGS does not recommend using suspect

DN3858 \*\* or superseded heights as control.

DN3858

DN3858.The orthometric height was determined by GPS observations and a

DN3858.high-resolution geoid model using precise GPS observation and

DN3858.processing techniques.

DN3858

DN3858.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DN3858

DN3858.The Laplace correction was computed from DEFLEC12A derived deflections.

DN3858

DN3858.The ellipsoidal height was determined by GPS observations  
 DN3858.and is referenced to NAD 83.  
 DN3858  
 DN3858. The following values were computed from the NAD 83(2011) position.  
 DN3858  
 DN3858;  

	North	East	Units	Scale Factor	Converg.
DN3858;SPC MS E	- 249,566.891	222,459.840	MT	1.00002413	-0 25 50.4
DN3858;SPC MS E	- 818,787.37	729,853.66	sFT	1.00002413	-0 25 50.4
DN3858;UTM 16	- 3,515,631.604	248,808.909	MT	1.00037826	-1 23 45.8

 DN3858  
 DN3858!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DN3858!SPC MS E	- 0.99998669	x	1.00002413	=	1.00001082
DN3858!UTM 16	- 0.99998669	x	1.00037826	=	1.00036495

 DN3858  
 DN3858  

SUPERSEDED SURVEY CONTROL

 DN3858  
 DN3858 NAD 83(2007)- 31 44 54.99844(N) 089 39 06.21791(W) AD(2002.00) A  
 DN3858 ELLIP H (09/06/11) 84.739 (m) GP(2002.00) 4 1  
 DN3858  
 DN3858.Superseded values are not recommended for survey control.  
 DN3858  
 DN3858.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN3858.[See file dsdata.txt](#) to determine how the superseded data were derived.  
 DN3858  
 DN3858\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBA4880815631(NAD 83)  
 DN3858  
 DN3858\_MARKER: DD = SURVEY DISK  
 DN3858\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN3858\_STAMPING: AP44 2008  
 DN3858\_MARK LOGO: MSDOT  
 DN3858\_PROJECTION: FLUSH  
 DN3858\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN3858\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 DN3858+STABILITY: SURFACE MOTION  
 DN3858\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN3858+SATELLITE: SATELLITE OBSERVATIONS - September 29, 2008  
 DN3858  

DN3858	HISTORY	- Date	Condition	Report By
DN3858	HISTORY	- 20080929	MONUMENTED	MSDOT

 DN3858  

STATION DESCRIPTION

 DN3858  
 DN3858'DESCRIBED BY MS DEPT TRANS 2008  
 DN3858'THE STATION IS LOCATED IN COVINGTON CO. AT THE INTERSECTION OF  
 DN3858'HIGHWAY 49 AND HIGHWAY 35. IT IS.78 MI SOUTH OF THE TOWN OF MOUNT  
 DN3858'OLIVE, 9.23 MI (14.9 KM) NORTHWEST OF HE TOWN OF COLLINS, AND 9.14 MI  
 DN3858'(14.7 KM) NORTHEAST OF THE LONE STAR COMMUNITY.  
 DN3858'  
 DN3858'TO REACH FROM THE INTERSECTION OF HIGHWAY 84 AND HIGHWAY 35 GO NORTH  
 DN3858'ON HIGHWAY 35 9.88 MI (15.9 KM) TO THE INTERSECTION OF HIGHWAY 49 AND  
 DN3858'HIGHWAY 35. THE STATION IS LOCATED IN THE ISLAND IN THE SOUTHEAST  
 DN3858'QUADRANT OF THE INTERSECTION.  
 DN3858'  
 DN3858'THE STATION IS 150 FT (45.7 M) SOUTH OF A POWER POLE, 60 FT (18.3 M)  
 DN3858'EAST OF THE CENTER OF THE NORTH BOUND LANE OF HIGHWAY 49, 40 FT (12.2  
 DN3858'M) SOUTH OF THE CENTER OF HIGHWAY 35, AND 1 FT (0.3 M) SOUTH OF A  
 DN3858'FIBERGLASS WITNESS POST.



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PROGRAM = datasheet95, VERSION = 8.6.1
1      National Geodetic Survey,  Retrieval Date = MARCH  7, 2015
BW0191 *****
BW0191 HT_MOD      -  This is a Height Modernization Survey Station.
BW0191 DESIGNATION -  L 109
BW0191 PID         -  BW0191
BW0191 STATE/COUNTY-  MS/LAWRENCE
BW0191 COUNTRY     -  US
BW0191 USGS QUAD   -  OMA (1971)
BW0191
BW0191                                *CURRENT SURVEY CONTROL
BW0191
BW0191* NAD 83(2011) POSITION- 31 39 04.32694(N) 090 12 13.12804(W)  ADJUSTED
BW0191* NAD 83(2011) ELLIP HT- 52.113 (meters) (06/27/12)  ADJUSTED
BW0191* NAD 83(2011) EPOCH   - 2010.00
BW0191* NAVD 88 ORTHO HEIGHT - 78.09 (meters) 256.2 (feet) GPS OBS
BW0191* NAVD 88 EPOCH       - 2009.55
BW0191 **This station is located in a suspected subsidence area (see below).
BW0191
BW0191 GEOID HEIGHT      -      -25.97 (meters)  GEOID12A
BW0191 NAD 83(2011) X    -      -19,315.822 (meters)  COMP
BW0191 NAD 83(2011) Y    -      -5,434,463.474 (meters)  COMP
BW0191 NAD 83(2011) Z    -      3,327,597.455 (meters)  COMP
BW0191 LAPLACE CORR      -      -0.08 (seconds)  DEFLEC12A
BW0191
BW0191 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BW0191 Standards:
BW0191      FGDC (95% conf, cm)      Standard deviation (cm)      CorrNE
BW0191      Horiz  Ellip              SD_N   SD_E   SD_h      (unitless)
BW0191 -----
BW0191 NETWORK      1.21  1.47              0.48  0.51  0.75      0.12617406
BW0191 -----
BW0191 Click here for local accuracies and other accuracy information.
BW0191
BW0191
BW0191.The horizontal coordinates were established by GPS observations
BW0191.and adjusted by the National Geodetic Survey in June 2012.
BW0191
BW0191.NAD 83(2011) refers to NAD 83 coordinates where the reference
BW0191.frame has been affixed to the stable North American tectonic plate. See
BW0191.NA2011 for more information.
BW0191
BW0191.The horizontal coordinates are valid at the epoch date displayed above
BW0191.which is a decimal equivalence of Year/Month/Day.
BW0191
BW0191 ** This station is in an area of known vertical motion. Due to the
BW0191 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BW0191 ** determined the orthometric heights for marks in these suspect
BW0191 ** subsidence areas should be considered valid only at the epoch date
BW0191 ** associated with the orthometric height. These heights must always
BW0191 ** be validated when used as control. All previously superseded
BW0191 ** orthometric heights are now considered suspect and are available
BW0191 ** in the superseded section. NGS does not recommend using suspect
BW0191 ** or superseded heights as control.
BW0191
BW0191.The orthometric height was determined by GPS observations and a
BW0191.high-resolution geoid model using precise GPS observation and
BW0191.processing techniques.
BW0191
BW0191.The X, Y, and Z were computed from the position and the ellipsoidal ht.
BW0191
BW0191.The Laplace correction was computed from DEFLEC12A derived deflections.
BW0191

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BW0191.The ellipsoidal height was determined by GPS observations  
 BW0191.and is referenced to NAD 83.  
 BW0191  
 BW0191. The following values were computed from the NAD 83(2011) position.  
 BW0191  
 BW0191;  

	North	East	Units	Scale Factor	Converg.
BW0191;SPC MS W	- 238,482.495	712,300.053	MT	0.99995187	+0 04 05.0
BW0191;SPC MS W	- 782,421.32	2,336,937.76	sFT	0.99995187	+0 04 05.0
BW0191;UTM 15	- 3,505,172.407	765,173.169	MT	1.00046734	+1 28 05.6

 BW0191  
 BW0191!  

BW0191!SPC MS W	-	0.99999182	x	0.99995187	=	0.99994369
BW0191!UTM 15	-	0.99999182	x	1.00046734	=	1.00045915

 BW0191  
 BW0191  

SUPERSEDED SURVEY CONTROL

 BW0191  
 BW0191 NAD 83(2007)- 31 39 04.32696(N) 090 12 13.12851(W) AD(2002.00) A  
 BW0191 ELLIP H (09/06/11) 52.105 (m) GP(2002.00) 4 1  
 BW0191 NGVD 29 (??/??/92) 78.218 (m) 256.62 (f) ADJ UNCH 2 0  
 BW0191  
 BW0191.Superseded values are not recommended for survey control.  
 BW0191  
 BW0191.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 BW0191.[See file dsdata.txt](#) to determine how the superseded data were derived.  
 BW0191  
 BW0191\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYR6517305172(NAD 83)  
 BW0191  
 BW0191\_MARKER: DB = BENCH MARK DISK  
 BW0191\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 BW0191\_SP\_SET: SET IN TOP OF CONCRETE MONUMENT  
 BW0191\_STAMPING: L 10 1935  
 BW0191\_MARK LOGO: CGS  
 BW0191\_PROJECTION: FLUSH  
 BW0191\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 BW0191+STABILITY: SURFACE MOTION  
 BW0191\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 BW0191+SATELLITE: SATELLITE OBSERVATIONS - September 10, 2008  
 BW0191  

BW0191	HISTORY	- Date	Condition	Report By
BW0191	HISTORY	- 1935	MONUMENTED	CGS
BW0191	HISTORY	- 1972	GOOD	MSHD
BW0191	HISTORY	- 20040109	GOOD	DUNGAN
BW0191	HISTORY	- 20080910	GOOD	MSDOT

 BW0191  
 BW0191  

STATION DESCRIPTION

 BW0191  
 BW0191'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1972  
 BW0191'8.8 MI NW FROM MONTICELLO.  
 BW0191'THE MARK IS LOCATED 8.8 MILES NORTHWEST OF MONTICELLO IN THE SOUTHEAST  
 BW0191'ANGLE OF THE CROSSING OF THE ILLINOIS CENTRAL RAILROAD TRACK WITH A  
 BW0191'BLACK TOP ROAD IN SONTAG IN THE NORTHWEST 1/4 OF SECTION 21, T 8N, R  
 BW0191'10E. IT IS 65.5 FEET NORTH-NORTHWEST OF THE NORTHWEST CORNER OF THE  
 BW0191'PORCH OF THE SONTAG POST OFFICE, 37 FEET NORTH OF THE CENTER OF A  
 BW0191'BLACK TOP ROAD, 31 FEET SOUTH OF THE SOUTH RAIL, 240 FEET  
 BW0191'EAST-SOUTHEAST OF THE CENTER OF THE CROSSING, 34 FEET EAST-NORTHEAST  
 BW0191'OF A TELEPHONE POLE NO. 304, 42 FEET WEST OF THE PROJECTED PLANE OF  
 BW0191'THE EAST WALL OF THE POST OFFICE, 1 FOOT EAST OF A METAL WITNESS POST  
 BW0191'SET IN THE TOP OF A 10 INCH SQUARE CONCRETE POST ABOUT 1 1/2 FOOT  
 BW0191'BELOW THE LEVEL OF THE TRACK AND PROJECTS 5 INCHES. TO REACH FROM THE  
 BW0191'COURTHOUSE IN MONTICELLO GO WEST ON U.S. HIGHWAY 84 AND STATE HIGHWAY  
 BW0191'27 FOR 1.5 MILES TO THE JUNCTION OF STATE HIGHWAY 27. TURN RIGHT AND  
 BW0191'GO NORTH ON STATE HIGHWAY 27 FOR 5.8 MILES TO A CROSSROAD JUST BEYOND  
 BW0191'A RAILROAD CROSSING TURN LEFT AND GO WEST ON A BLACK TOP ROAD FOR 4.2

BW0191'MILES TO A T INTERSECTION, TURN LEFT AND GO SOUTH ON A BLACK TOP ROAD  
BW0191'FOR 0.6 MILES TO A RAILROAD CROSSING AND THE MARK ON THE LEFT. NOTE--  
BW0191'PART OF THE DISK WAS FOUND TO BE MISSING THEREFORE SOME OF THE  
BW0191'STAMPING IS MISSING.  
BW0191  
BW0191 STATION RECOVERY (2004)  
BW0191  
BW0191'RECOVERY NOTE BY DUNGAN ENGINEERING 2004 (JC)  
BW0191'RECOVERED IN GOOD CONDITION.  
BW0191  
BW0191 STATION RECOVERY (2008)  
BW0191  
BW0191'RECOVERY NOTE BY MS DEPT TRANS 2008 (JAM)  
BW0191'RECOVERED AS DESCRIBED.

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PROGRAM = datasheet95, VERSION = 8.6.1
1      National Geodetic Survey,  Retrieval Date = MARCH 6, 2015
DN4044 *****
DN4044 HT_MOD - This is a Height Modernization Survey Station.
DN4044 DESIGNATION - MEND
DN4044 PID - DN4044
DN4044 STATE/COUNTY- MS/SIMPSON
DN4044 COUNTRY - US
DN4044 USGS QUAD - MENDENHALL EAST (1970)
DN4044
DN4044 *CURRENT SURVEY CONTROL
DN4044
DN4044* NAD 83(2011) POSITION- 31 55 30.72302(N) 089 49 09.25439(W) ADJUSTED
DN4044* NAD 83(2011) ELLIP HT- 99.233 (meters) (06/27/12) ADJUSTED
DN4044* NAD 83(2011) EPOCH - 2010.00
DN4044* NAVD 88 ORTHO HEIGHT - 125.29 (meters) 411.1 (feet) GPS OBS
DN4044* NAVD 88 EPOCH - 2009.55
DN4044 **This station is located in a suspected subsidence area (see below).
DN4044
DN4044 GEOID HEIGHT - -26.05 (meters) GEOID12A
DN4044 NAD 83(2011) X - 17,094.922 (meters) COMP
DN4044 NAD 83(2011) Y - -5,418,506.135 (meters) COMP
DN4044 NAD 83(2011) Z - 3,353,447.169 (meters) COMP
DN4044 LAPLACE CORR - 0.13 (seconds) DEFLEC12A
DN4044
DN4044 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DN4044 Standards:
DN4044 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DN4044 Horiz Ellip SD_N SD_E SD_h (unitless)
DN4044 -----
DN4044 NETWORK 0.70 1.02 0.29 0.28 0.52 0.08450987
DN4044 -----
DN4044 Click here for local accuracies and other accuracy information.
DN4044
DN4044
DN4044.The horizontal coordinates were established by GPS observations
DN4044.and adjusted by the National Geodetic Survey in June 2012.
DN4044
DN4044.NAD 83(2011) refers to NAD 83 coordinates where the reference
DN4044.frame has been affixed to the stable North American tectonic plate. See
DN4044.NA2011 for more information.
DN4044
DN4044.The horizontal coordinates are valid at the epoch date displayed above
DN4044.which is a decimal equivalence of Year/Month/Day.
DN4044
DN4044 ** This station is in an area of known vertical motion. Due to the
DN4044 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DN4044 ** determined the orthometric heights for marks in these suspect
DN4044 ** subsidence areas should be considered valid only at the epoch date
DN4044 ** associated with the orthometric height. These heights must always
DN4044 ** be validated when used as control. All previously superseded
DN4044 ** orthometric heights are now considered suspect and are available
DN4044 ** in the superseded section. NGS does not recommend using suspect
DN4044 ** or superseded heights as control.
DN4044
DN4044.The orthometric height was determined by GPS observations and a
DN4044.high-resolution geoid model using precise GPS observation and
DN4044.processing techniques.
DN4044
DN4044.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DN4044
DN4044.The Laplace correction was computed from DEFLEC12A derived deflections.
DN4044

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DN4044.The ellipsoidal height was determined by GPS observations  
 DN4044.and is referenced to NAD 83.  
 DN4044  
 DN4044. The following values were computed from the NAD 83(2011) position.  
 DN4044  
 DN4044;  

	North	East	Units	Scale	Factor	Converg.
DN4044;SPC MS W	- 268,970.863	748,615.801	MT	0.99997914	+0 16	18.7
DN4044;SPC MS W	- 882,448.57	2,456,083.67	sFT	0.99997914	+0 16	18.7
DN4044;UTM 16	- 3,535,614.458	233,444.252	MT	1.00047636	-1 29	30.2

 DN4044  
 DN4044!  

DN4044!SPC MS W	- 0.99998442	x	0.99997914	=	0.99996356
DN4044!UTM 16	- 0.99998442	x	1.00047636	=	1.00046077

 DN4044  
 DN4044  

SUPERSEDED SURVEY CONTROL

 DN4044  
 DN4044  
 DN4044 NAD 83(2007)- 31 55 30.72303(N) 089 49 09.25481(W) AD(2002.00) A  
 DN4044 ELLIP H (09/06/11) 99.229 (m) GP(2002.00) 4 1  
 DN4044  
 DN4044.Superseded values are not recommended for survey control.  
 DN4044  
 DN4044.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN4044.[See file dsdata.txt](#) to determine how the superseded data were derived.  
 DN4044  
 DN4044\_U.S. NATIONAL GRID SPATIAL ADDRESS: 16RBA3344435614(NAD 83)  
 DN4044  
 DN4044\_MARKER: DD = SURVEY DISK  
 DN4044\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN4044\_STAMPING: MEND 2008  
 DN4044\_MARK LOGO: MSDOT  
 DN4044\_PROJECTION: FLUSH  
 DN4044\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN4044\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 DN4044+STABILITY: SURFACE MOTION  
 DN4044\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN4044+SATELLITE: SATELLITE OBSERVATIONS - December 14, 2008  
 DN4044  

DN4044	HISTORY	- Date	Condition	Report By
DN4044	HISTORY	- 20081214	MONUMENTED	MSDOT

 DN4044  

STATION DESCRIPTION

 DN4044  
 DN4044'DESCRIBED BY MS DEPT TRANS 2008 (RDB)  
 DN4044'THE STATION IS LOCATED IN SIMPSON CO. AT THE MDOT MAINTENANCE  
 DN4044'FACILITY IN MENDENHALL. IT IS 2.9 MI (4.7 KM) NORTHWEST OF  
 DN4044'SANATORIUM, 3.8 MI (6.1 KM) SOUTHEAST OF MENDENHALL, AND 6.2 MI (10.0  
 DN4044'KM) NORTHWEST OF MAGEE.  
 DN4044'  
 DN4044'TO REACH FROM THE INTERSECTION OF HIGHWAY 28 AND HIGHWAY 49 GO NORTH  
 DN4044'ON HIGHWAY 49 FOR A DISTANCE OF 6.54 MI (10.5 KM) TO A CROSS OVER,  
 DN4044'TURN LEFT. GO ACROSS THE SOUTH BOUND LANE OF HIGHWAY 49 TO THE  
 DN4044'FRONTAGE ROAD TURN RIGHT ON FRONTAGE ROAD AND GO 0.12 MI (0.2 KM) TO  
 DN4044'THE ENTRANCE OF THE MDOT MAINTENANCE FACILITY, TURN LEFT THEN GO 190  
 DN4044'FT (57.9 M) TO THE STATION BEHIND THE MAIN OFFICE.  
 DN4044'  
 DN4044'THE STATION IS 130 FT (39.6 M) SOUTH OF A BRICK BUILDING, 100 FT (30.5  
 DN4044'M) EAST OF A CHAIN LINK FENCE, 30 FT (9.1 M) WEST OF A CHAIN LINK  
 DN4044'FENCE, AND 1 FT (0.3 M) SOUTH OF A FIBERGLASS WITNESS POST.

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PROGRAM = datasheet95, VERSION = 8.6.1
1      National Geodetic Survey,  Retrieval Date = MARCH  5, 2015
DN4052 *****
DN4052 HT_MOD      -   This is a Height Modernization Survey Station.
DN4052 DESIGNATION -   MIA 1
DN4052 PID        -   DN4052
DN4052 STATE/COUNTY-  MS/PIKE
DN4052 COUNTRY    -   US
DN4052 USGS QUAD   -   OSYKA (1972)
DN4052
DN4052                                *CURRENT SURVEY CONTROL
DN4052
DN4052* NAD 83(2011) POSITION- 31 00 13.89695(N) 090 28 13.54714(W)  ADJUSTED
DN4052* NAD 83(2011) ELLIP HT-  49.930 (meters)          (06/27/12)  ADJUSTED
DN4052* NAD 83(2011) EPOCH   - 2010.00
DN4052* NAVD 88 ORTHO HEIGHT -  76.93 (meters)          252.4 (feet) GPS OBS
DN4052* NAVD 88 EPOCH       - 2009.55
DN4052 **This station is located in a suspected subsidence area (see below).
DN4052
DN4052 GEOID HEIGHT      -          -27.00 (meters)          GEOID12A
DN4052 NAD 83(2011) X    -          -44,926.084 (meters)      COMP
DN4052 NAD 83(2011) Y    -          -5,471,629.080 (meters)    COMP
DN4052 NAD 83(2011) Z    -           3,266,286.083 (meters)    COMP
DN4052 LAPLACE CORR      -              -0.13 (seconds)      DEFLEC12A
DN4052
DN4052 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DN4052 Standards:
DN4052          FGDC (95% conf, cm)      Standard deviation (cm)      CorrNE
DN4052          Horiz Ellip              SD_N   SD_E   SD_h          (unitless)
DN4052 -----
DN4052 NETWORK      0.60   1.10              0.25   0.24   0.56          0.11591769
DN4052 -----
DN4052 Click here for local accuracies and other accuracy information.
DN4052
DN4052
DN4052.The horizontal coordinates were established by GPS observations
DN4052.and adjusted by the National Geodetic Survey in June 2012.
DN4052
DN4052.NAD 83(2011) refers to NAD 83 coordinates where the reference
DN4052.frame has been affixed to the stable North American tectonic plate. See
DN4052.NA2011 for more information.
DN4052
DN4052.The horizontal coordinates are valid at the epoch date displayed above
DN4052.which is a decimal equivalence of Year/Month/Day.
DN4052
DN4052 ** This station is in an area of known vertical motion.  Due to the
DN4052 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DN4052 ** determined the orthometric heights for marks in these suspect
DN4052 ** subsidence areas should be considered valid only at the epoch date
DN4052 ** associated with the orthometric height.  These heights must always
DN4052 ** be validated when used as control.  All previously superseded
DN4052 ** orthometric heights are now considered suspect and are available
DN4052 ** in the superseded section.  NGS does not recommend using suspect
DN4052 ** or superseded heights as control.
DN4052
DN4052.The orthometric height was determined by GPS observations and a
DN4052.high-resolution geoid model using precise GPS observation and
DN4052.processing techniques.
DN4052
DN4052.The X, Y, and Z were computed from the position and the ellipsoidal ht.
DN4052
DN4052.The Laplace correction was computed from DEFLEC12A derived deflections.
DN4052

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DN4052.The ellipsoidal height was determined by GPS observations  
 DN4052.and is referenced to NAD 83.  
 DN4052  
 DN4052. The following values were computed from the NAD 83(2011) position.  
 DN4052  
 DN4052;  

	North	East	Units	Scale Factor	Converg.
DN4052;SPC MS W	- 166,712.765	686,907.883	MT	0.99995211	-0 04 14.2
DN4052;SPC MS W	- 546,956.80	2,253,630.28	sFT	0.99995211	-0 04 14.2
DN4052;UTM 15	- 3,432,777.029	741,515.476	MT	1.00031956	+1 18 13.0

 DN4052  
 DN4052!  

	Elev Factor	x	Scale Factor	=	Combined Factor
DN4052!SPC MS W	- 0.99999216	x	0.99995211	=	0.99994427
DN4052!UTM 15	- 0.99999216	x	1.00031956	=	1.00031172

 DN4052  
 DN4052  

SUPERSEDED SURVEY CONTROL

 DN4052  
 DN4052  
 DN4052 NAD 83(2007)- 31 00 13.89691(N) 090 28 13.54778(W) AD(2002.00) A  
 DN4052 ELLIP H (09/06/11) 49.921 (m) GP(2002.00) 4 1  
 DN4052  
 DN4052.Superseded values are not recommended for survey control.  
 DN4052  
 DN4052.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
 DN4052.[See file dsdata.txt](#) to determine how the superseded data were derived.  
 DN4052  
 DN4052\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYQ4151532777(NAD 83)  
 DN4052  
 DN4052\_MARKER: DD = SURVEY DISK  
 DN4052\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
 DN4052\_STAMPING: MIA1 2008  
 DN4052\_MARK LOGO: MSDOT  
 DN4052\_PROJECTION: FLUSH  
 DN4052\_MAGNETIC: N = NO MAGNETIC MATERIAL  
 DN4052\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
 DN4052+STABILITY: SURFACE MOTION  
 DN4052\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
 DN4052+SATELLITE: SATELLITE OBSERVATIONS - December 18, 2008  
 DN4052  

DN4052 HISTORY	- Date	Condition	Report By
DN4052 HISTORY	- 20081218	MONUMENTED	MSDOT

 DN4052  

STATION DESCRIPTION

 DN4052  
 DN4052'DESCRIBED BY MS DEPT TRANS 2008 (RDB)  
 DN4052'THE STATION LOCATED IN THE TOWN OF OSYKA MS, NEAR THE MIA MEMORIAL ON  
 DN4052'W RAILROAD AVENUE, 60 FT (18.3 M) WEST OF RAILROAD TRACKS, 977 FT  
 DN4052'(297.8 M) EAST OF HIGHWAY 51, 162 FT (49.4 M) SOUTH OF THE  
 DN4052'INTERSECTION OF PIKE STREET AND W RAILROAD AVENUE.  
 DN4052'  
 DN4052'TO REACH THE STATION FROM THE INTERSECTION OF LIBERTY STREET AND W  
 DN4052'RAILROAD AVENUE GO SOUTHWEST.13 MI TO THE STATION ON THE LEFT.  
 DN4052'  
 DN4052'THE STATION IS 60 FT (18.3 M) WEST OF THE RAILROAD TRACKS, 20 FT (6.1  
 DN4052'M) EAST OF THE CENTER OF A PAVED ROAD, 12 FT (3.7 M) SOUTHWEST OF THE  
 DN4052'SOUTHWEST CORNER OF A CONCRETE PAD, AND 1 FT (0.3 M) SOUTH OF A  
 DN4052'FIBERGLASS WITNESS POST.

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PROGRAM = datasheet95, VERSION = 8.6.1
1      National Geodetic Survey,  Retrieval Date = MARCH  5, 2015
DL9094 *****
DL9094 DESIGNATION - P 375
DL9094 PID - DL9094
DL9094 STATE/COUNTY- MS/PIKE
DL9094 COUNTRY - US
DL9094 USGS QUAD - HOLMESVILLE (1972)
DL9094
DL9094 *CURRENT SURVEY CONTROL
DL9094
DL9094* NAD 83(2011) POSITION- 31 11 58.79842(N) 090 21 14.70351(W) ADJUSTED
DL9094* NAD 83(2011) ELLIP HT- 97.855 (meters) (06/27/12) ADJUSTED
DL9094* NAD 83(2011) EPOCH - 2010.00
DL9094* NAVD 88 ORTHO HEIGHT - 124.399 (meters) 408.13 (feet) ADJUSTED
DL9094* NAVD 88 EPOCH - 2009.55
DL9094 **This station is located in a suspected subsidence area (see below).
DL9094
DL9094 NAD 83(2011) X - -33,746.198 (meters) COMP
DL9094 NAD 83(2011) Y - -5,460,536.030 (meters) COMP
DL9094 NAD 83(2011) Z - 3,284,899.613 (meters) COMP
DL9094 LAPLACE CORR - -0.73 (seconds) DEFLEC12A
DL9094 GEOID HEIGHT - -26.58 (meters) GEOID12A
DL9094 DYNAMIC HEIGHT - 124.243 (meters) 407.62 (feet) COMP
DL9094 MODELED GRAVITY - 979,387.5 (mgal) NAVD 88
DL9094
DL9094 VERT ORDER - FIRST CLASS II
DL9094
DL9094 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL9094 Standards:
DL9094 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DL9094 Horiz Ellip SD_N SD_E SD_h (unitless)
DL9094 -----
DL9094 NETWORK 1.90 2.31 0.78 0.77 1.18 0.18932909
DL9094 -----
DL9094 Click here for local accuracies and other accuracy information.
DL9094
DL9094
DL9094.The horizontal coordinates were established by GPS observations
DL9094.and adjusted by the National Geodetic Survey in June 2012.
DL9094
DL9094.NAD 83(2011) refers to NAD 83 coordinates where the reference
DL9094.frame has been affixed to the stable North American tectonic plate. See
DL9094.NA2011 for more information.
DL9094
DL9094.The horizontal coordinates are valid at the epoch date displayed above
DL9094.which is a decimal equivalence of Year/Month/Day.
DL9094
DL9094 ** This station is in an area of known vertical motion. Due to the
DL9094 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL9094 ** determined the orthometric heights for marks in these suspect
DL9094 ** subsidence areas should be considered valid only at the epoch date
DL9094 ** associated with the orthometric height. These heights must always
DL9094 ** be validated when used as control. All previously superseded
DL9094 ** orthometric heights are now considered suspect and are available
DL9094 ** in the superseded section. NGS does not recommend using suspect
DL9094 ** or superseded heights as control.
DL9094
DL9094.The orthometric height was determined by differential leveling and
DL9094.adjusted by the NATIONAL GEODETTIC SURVEY
DL9094.in July 2012.
DL9094
DL9094.The X, Y, and Z were computed from the position and the ellipsoidal ht.

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DL9094  
DL9094.The Laplace correction was computed from DEFLEC12A derived deflections.  
DL9094  
DL9094.The ellipsoidal height was determined by GPS observations  
DL9094.and is referenced to NAD 83.  
DL9094  
DL9094.The dynamic height is computed by dividing the NAVD 88  
DL9094.geopotential number by the normal gravity value computed on the  
DL9094.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45  
DL9094.degrees latitude (g = 980.6199 gals.).  
DL9094  
DL9094.The modeled gravity was interpolated from observed gravity values.  
DL9094  
DL9094. The following values were computed from the NAD 83(2011) position.  
DL9094  
DL9094;  
DL9094;SPC MS W - North East Units Scale Factor Converg.  
DL9094;SPC MS W - 188,413.042 698,022.434 MT 0.99995005 -0 00 38.7  
DL9094;UTM 15 - 618,151.79 2,290,095.27 sFT 0.99995005 -0 00 38.7  
DL9094;UTM 15 - 3,454,747.150 752,109.136 MT 1.00038405 +1 22 16.9  
DL9094  
DL9094!  
DL9094!SPC MS W - Elev Factor x Scale Factor = Combined Factor  
DL9094!SPC MS W - 0.99998463 x 0.99995005 = 0.99993468  
DL9094!UTM 15 - 0.99998463 x 1.00038405 = 1.00036868  
DL9094  
DL9094 SUPERSEDED SURVEY CONTROL  
DL9094  
DL9094 NAD 83(2007)- 31 11 58.79842(N) 090 21 14.70420(W) AD(2002.00) A  
DL9094 ELLIP H (09/06/11) 97.852 (m) GP(2002.00) 4 1  
DL9094  
DL9094.Superseded values are not recommended for survey control.  
DL9094  
DL9094.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.  
DL9094.[See file dsdata.txt](#) to determine how the superseded data were derived.  
DL9094  
DL9094\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYQ5210954747(NAD 83)  
DL9094  
DL9094\_MARKER: DD = SURVEY DISK  
DL9094\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT  
DL9094\_STAMPING: P 375 2009  
DL9094\_MARK LOGO: MSDOT  
DL9094\_PROJECTION: FLUSH  
DL9094\_MAGNETIC: N = NO MAGNETIC MATERIAL  
DL9094\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO  
DL9094+STABILITY: SURFACE MOTION  
DL9094\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR  
DL9094+SATELLITE: SATELLITE OBSERVATIONS - May 14, 2009  
DL9094  
DL9094 HISTORY - Date Condition Report By  
DL9094 HISTORY - 20090514 MONUMENTED EMCINC  
DL9094  
DL9094 STATION DESCRIPTION  
DL9094  
DL9094'DESCRIBED BY EMC INCORPORATED 2009  
DL9094'THE MARK IS LOCATED ABOUT 7.2 MI (11.5 KM) SOUTH-SOUTHWEST OF  
DL9094'PRICEDALE, 6.6 MI (10.6 KM) EAST-SOUTHEAST OF MCCOMB AND 2.7 MI (4.4  
DL9094'KM) WEST OF HOLMESVILLE.  
DL9094'  
DL9094'TO REACH FROM THE INTERSECTION OF HIGHWAY 51 AND HIGHWAY 98 PROCEED  
DL9094'EAST ON HIGHWAY 98 6.3 MI (10.1 KM) TO THE MARK ON THE LEFT.  
DL9094'  
DL9094'THE MARK IS LOCATED 194.0 FT (59.1 M) SOUTHEAST OF ELECTRIC POWER  
DL9094'POLE, 69.0 FT (21.0 M) NORTH-NORTHEAST OF CENTERLINE OF HIGHWAY 98  
DL9094'WESTBOUND LANES, 56.5 FT (17.2 M) NORTH OF NORTH EDGE OF HIGHWAY 98,

DL9094'33.7 FT (10.3 M) NORTHWEST OF ELECTRIC POWER POLE, 9.6 FT (2.9 M)  
DL9094'NORTHWEST OF SOUTH CENTRAL BELL MARKER.

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PROGRAM = datasheet95, VERSION = 8.8
1      National Geodetic Survey,  Retrieval Date = APRIL  7, 2016
DL9097 *****
DL9097 DESIGNATION - S 375
DL9097 PID - DL9097
DL9097 STATE/COUNTY- MS/PIKE
DL9097 COUNTRY - US
DL9097 USGS QUAD - MC COMB SOUTH (1972)
DL9097
DL9097 *CURRENT SURVEY CONTROL
DL9097
DL9097* NAD 83(2011) POSITION- 31 13 56.28358(N) 090 26 23.24090(W) ADJUSTED
DL9097* NAD 83(2011) ELLIP HT- 101.109 (meters) (06/27/12) ADJUSTED
DL9097* NAD 83(2011) EPOCH - 2010.00
DL9097* NAVD 88 ORTHO HEIGHT - 127.563 (meters) 418.51 (feet) ADJUSTED
DL9097* NAVD 88 EPOCH - 2009.55
DL9097 **This station is located in a suspected subsidence area (see below).
DL9097
DL9097 NAD 83(2011) X - -41,899.826 (meters) COMP
DL9097 NAD 83(2011) Y - -5,458,607.000 (meters) COMP
DL9097 NAD 83(2011) Z - 3,287,995.807 (meters) COMP
DL9097 LAPLACE CORR - -0.07 (seconds) DEFLEC12B
DL9097 GEOID HEIGHT - -26.467 (meters) GEOID12B
DL9097 DYNAMIC HEIGHT - 127.403 (meters) 417.99 (feet) COMP
DL9097 MODELED GRAVITY - 979,384.1 (mgal) NAVD 88
DL9097
DL9097 VERT ORDER - FIRST CLASS II
DL9097
DL9097 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
DL9097 Standards:
DL9097 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
DL9097 Horiz Ellip SD_N SD_E SD_h (unitless)
DL9097 -----
DL9097 NETWORK 0.92 1.33 0.40 0.34 0.68 0.19280344
DL9097 -----
DL9097 Click here for local accuracies and other accuracy information.
DL9097
DL9097
DL9097.The horizontal coordinates were established by GPS observations
DL9097.and adjusted by the National Geodetic Survey in June 2012.
DL9097
DL9097.NAD 83(2011) refers to NAD 83 coordinates where the reference
DL9097.frame has been affixed to the stable North American tectonic plate. See
DL9097.NA2011 for more information.
DL9097
DL9097.The horizontal coordinates are valid at the epoch date displayed above
DL9097.which is a decimal equivalence of Year/Month/Day.
DL9097
DL9097 ** This station is in an area of known vertical motion. Due to the
DL9097 ** variability of land subsidence, uplift, and crustal motion, NGS has,
DL9097 ** determined the orthometric heights for marks in these suspect
DL9097 ** subsidence areas should be considered valid only at the epoch date
DL9097 ** associated with the orthometric height. These heights must always
DL9097 ** be validated when used as control. All previously superseded
DL9097 ** orthometric heights are now considered suspect and are available
DL9097 ** in the superseded section. NGS does not recommend using suspect
DL9097 ** or superseded heights as control.
DL9097
DL9097.The orthometric height was determined by differential leveling and
DL9097.adjusted by the NATIONAL GEODETIC SURVEY
DL9097.in July 2012.
DL9097
DL9097.Significant digits in the geoid height do not necessarily reflect accuracy.

```

DL9097.GEOID12B height accuracy estimate available [here](#).

DL9097

DL9097.The X, Y, and Z were computed from the position and the ellipsoidal ht.

DL9097

DL9097.The Laplace correction was computed from DEFLEC12B derived deflections.

DL9097

DL9097.The ellipsoidal height was determined by GPS observations

DL9097.and is referenced to NAD 83.

DL9097

DL9097.The dynamic height is computed by dividing the NAVD 88

DL9097.geopotential number by the normal gravity value computed on the

DL9097.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

DL9097.degrees latitude (g = 980.6199 gals.).

DL9097

DL9097.The modeled gravity was interpolated from observed gravity values.

DL9097

DL9097. The following values were computed from the NAD 83(2011) position.

DL9097

DL9097;	North	East	Units	Scale	Factor	Converg.
DL9097;SPC MS W	- 192,035.882	689,858.251	MT	0.99995127	-0 03	18.7
DL9097;SPC MS W	- 630,037.72	2,263,309.95	sFT	0.99995127	-0 03	18.7
DL9097;UTM 15	- 3,458,173.323	743,856.542	MT	1.00033355	+1 19	41.3

DL9097

DL9097! - Elev Factor x Scale Factor = Combined Factor

DL9097!SPC MS W - 0.99998412 x 0.99995127 = 0.99993539

DL9097!UTM 15 - 0.99998412 x 1.00033355 = 1.00031767

DL9097

DL9097

SUPERSEDED SURVEY CONTROL

DL9097

DL9097	NAD 83(2007)-	31 13 56.28351(N)	090 26 23.24165(W)	AD(2002.00)	A
DL9097	ELLIP H (09/06/11)	101.103 (m)		GP(2002.00)	4 1

DL9097

DL9097.Superseded values are not recommended for survey control.

DL9097

DL9097.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

DL9097.[See file dsdata.txt](#) to determine how the superseded data were derived.

DL9097

DL9097\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYQ4385658173(NAD 83)

DL9097

DL9097\_MARKER: DD = SURVEY DISK

DL9097\_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

DL9097\_STAMPING: S 375 2009

DL9097\_MARK LOGO: MSDOT

DL9097\_PROJECTION: FLUSH

DL9097\_MAGNETIC: N = NO MAGNETIC MATERIAL

DL9097\_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

DL9097+STABILITY: SURFACE MOTION

DL9097\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

DL9097+SATELLITE: SATELLITE OBSERVATIONS - May 15, 2009

DL9097

DL9097	HISTORY	- Date	Condition	Report By
DL9097	HISTORY	- 20090515	MONUMENTED	EMC

DL9097

STATION DESCRIPTION

DL9097

DL9097'DESCRIBED BY EMC ENGINEERING SERV INC 2009

DL9097'THE STATION IS LOCATED IN MCCOMB, MISSISSIPPI, ABOUT 121.5 MI (195.5

DL9097'KM) WEST OF COPELAND, 120.5 MI (193.9 KM) WEST OF FRUITDALE AND 119.5

DL9097'MI (192.3 KM) WEST OF YELLOW PINE. OWNERSHIP--MISSISSIPPI DEPARTMENT

DL9097'OF TRANSPORTATION.

DL9097'

DL9097'TO REACH THE MARK FROM THE INTERSTATE OF HIGHWAY 51 AND HIGHWAY 98,

DL9097'PROCEED EAST ON HIGHWAY 98 FOR 0.8 MI (1.3 KM) TO THE MARK ON THE

DL9097'RIGHT.

DL9097'

DL9097'THE MARK IS 62.0 FT (18.9 M) SOUTH-SOUTHWEST OF THE CENTERLINE OF  
DL9097'HIGHWAY 98 EAST BOUND LANES, 54.4 FT (16.6 M) SOUTHEAST OF ADOPT A  
DL9097'HIGHWAY SIGN, 51.3 FT (15.6 M) SOUTHEAST OF A LAMP POLE, 48.8 FT (14.9  
DL9097'M) NORTHWEST OF A DROP BASIN STORM SEWER, AND 2.3 FT (0.7 M)  
DL9097'NORTH-NORTHEAST OF PVC RAIL FENCE.

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PROGRAM = datasheet95, VERSION = 8.8
1      National Geodetic Survey, Retrieval Date = APRIL 7, 2016
BW2588 *****
BW2588 DESIGNATION - X 361
BW2588 PID - BW2588
BW2588 STATE/COUNTY- MS/LINCOLN
BW2588 COUNTRY - US
BW2588 USGS QUAD - BROOKHAVEN (1972)
BW2588
BW2588 *CURRENT SURVEY CONTROL
BW2588
BW2588* NAD 83(2011) POSITION- 31 35 07.71482(N) 090 27 22.88525(W) ADJUSTED
BW2588* NAD 83(2011) ELLIP HT- 120.374 (meters) (06/27/12) ADJUSTED
BW2588* NAD 83(2011) EPOCH - 2010.00
BW2588* NAVD 88 ORTHO HEIGHT - 146.346 (meters) 480.14 (feet) ADJUSTED
BW2588* NAVD 88 EPOCH - 2009.55
BW2588 **This station is located in a suspected subsidence area (see below).
BW2588
BW2588 NAD 83(2011) X - -43,315.844 (meters) COMP
BW2588 NAD 83(2011) Y - -5,438,204.095 (meters) COMP
BW2588 NAD 83(2011) Z - 3,321,427.281 (meters) COMP
BW2588 LAPLACE CORR - 0.23 (seconds) DEFLEC12B
BW2588 GEOID HEIGHT - -25.980 (meters) GEOID12B
BW2588 DYNAMIC HEIGHT - 146.168 (meters) 479.55 (feet) COMP
BW2588 MODELED GRAVITY - 979,419.3 (mgal) NAVD 88
BW2588
BW2588 VERT ORDER - FIRST CLASS II
BW2588
BW2588 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
BW2588 Standards:
BW2588 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
BW2588 Horiz Ellip SD_N SD_E SD_h (unitless)
BW2588 -----
BW2588 NETWORK 1.45 1.86 0.66 0.50 0.95 0.07014800
BW2588 -----
BW2588 Click here for local accuracies and other accuracy information.
BW2588
BW2588
BW2588.The horizontal coordinates were established by GPS observations
BW2588.and adjusted by the National Geodetic Survey in June 2012.
BW2588
BW2588.NAD 83(2011) refers to NAD 83 coordinates where the reference
BW2588.frame has been affixed to the stable North American tectonic plate. See
BW2588.NA2011 for more information.
BW2588
BW2588.The horizontal coordinates are valid at the epoch date displayed above
BW2588.which is a decimal equivalence of Year/Month/Day.
BW2588
BW2588 ** This station is in an area of known vertical motion. Due to the
BW2588 ** variability of land subsidence, uplift, and crustal motion, NGS has,
BW2588 ** determined the orthometric heights for marks in these suspect
BW2588 ** subsidence areas should be considered valid only at the epoch date
BW2588 ** associated with the orthometric height. These heights must always
BW2588 ** be validated when used as control. All previously superseded
BW2588 ** orthometric heights are now considered suspect and are available
BW2588 ** in the superseded section. NGS does not recommend using suspect
BW2588 ** or superseded heights as control.
BW2588
BW2588.The orthometric height was determined by differential leveling and
BW2588.adjusted by the NATIONAL GEODETIC SURVEY
BW2588.in July 2012.
BW2588
BW2588.Significant digits in the geoid height do not necessarily reflect accuracy.

```

BW2588.GEOID12B height accuracy estimate available [here](#).

BW2588

BW2588.The X, Y, and Z were computed from the position and the ellipsoidal ht.

BW2588

BW2588.The Laplace correction was computed from DEFLEC12B derived deflections.

BW2588

BW2588.The ellipsoidal height was determined by GPS observations

BW2588.and is referenced to NAD 83.

BW2588

BW2588.The dynamic height is computed by dividing the NAVD 88

BW2588.geopotential number by the normal gravity value computed on the

BW2588.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

BW2588.degrees latitude (g = 980.6199 gals.).

BW2588

BW2588.The modeled gravity was interpolated from observed gravity values.

BW2588

BW2588. The following values were computed from the NAD 83(2011) position.

BW2588

	North	East	Units	Scale	Factor	Converg.
BW2588;SPC MS W	- 231,194.458	688,323.690	MT	0.99995168	-0 03 52.0	
BW2588;SPC MS W	- 758,510.48	2,258,275.31	sFT	0.99995168	-0 03 52.0	
BW2588;UTM 15	- 3,497,297.787	741,371.359	MT	1.00031862	+1 19 58.5	

BW2588

BW2588! Elev Factor x Scale Factor = Combined Factor

BW2588!SPC MS W - 0.99998110 x 0.99995168 = 0.99993278

BW2588!UTM 15 - 0.99998110 x 1.00031862 = 1.00029971

BW2588

SUPERSEDED SURVEY CONTROL

BW2588

BW2588	NAD 83(2007)-	31 35 07.71473(N)	090 27 22.88571(W)	AD(2002.00)	A	
BW2588	ELLIP H (09/06/11)	120.365 (m)		GP(2002.00)	4 1	
BW2588	NAVD 88 (02/14/94)	146.400 (m)	480.31 (f)	SUPERSEDED	1 2	

BW2588

BW2588.Superseded values are not recommended for survey control.

BW2588

BW2588.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

BW2588.[See file dsdata.txt](#) to determine how the superseded data were derived.

BW2588

BW2588\_U.S. NATIONAL GRID SPATIAL ADDRESS: 15RYQ4137197297(NAD 83)

BW2588

BW2588\_MARKER: I = METAL ROD

BW2588\_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)

BW2588\_STAMPING: X 361 1992

BW2588\_MARK LOGO: NGS

BW2588\_PROJECTION: FLUSH

BW2588\_MAGNETIC: I = MARKER IS A STEEL ROD

BW2588\_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

BW2588\_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

BW2588+SATELLITE: SATELLITE OBSERVATIONS - August 13, 2012

BW2588\_ROD/PIPE-DEPTH: 22.7 meters

BW2588

	History	Date	Condition	Report By
BW2588	HISTORY	- 1992	MONUMENTED	NGS
BW2588	HISTORY	- 20081023	GOOD	MSDOT
BW2588	HISTORY	- 20120813	GOOD	INDIV

BW2588

STATION DESCRIPTION

BW2588

BW2588'DESCRIBED BY NATIONAL GEODETIC SURVEY 1992

BW2588'IN BROOKHAVEN, AT THE INTERSECTION OF U.S. HIGHWAY 51 AND STATE

BW2588'HIGHWAY 550, 30.6 M (100.4 FT) NORTH-NORTHEAST OF THE CENTERLINE OF

BW2588'THE STATE HIGHWAY, 24.9 M (81.7 FT) EAST OF AND LEVEL WITH THE

BW2588'CENTERLINE OF THE U.S. HIGHWAY, 16.2 M (53.1 FT) NORTH OF THE NEAR

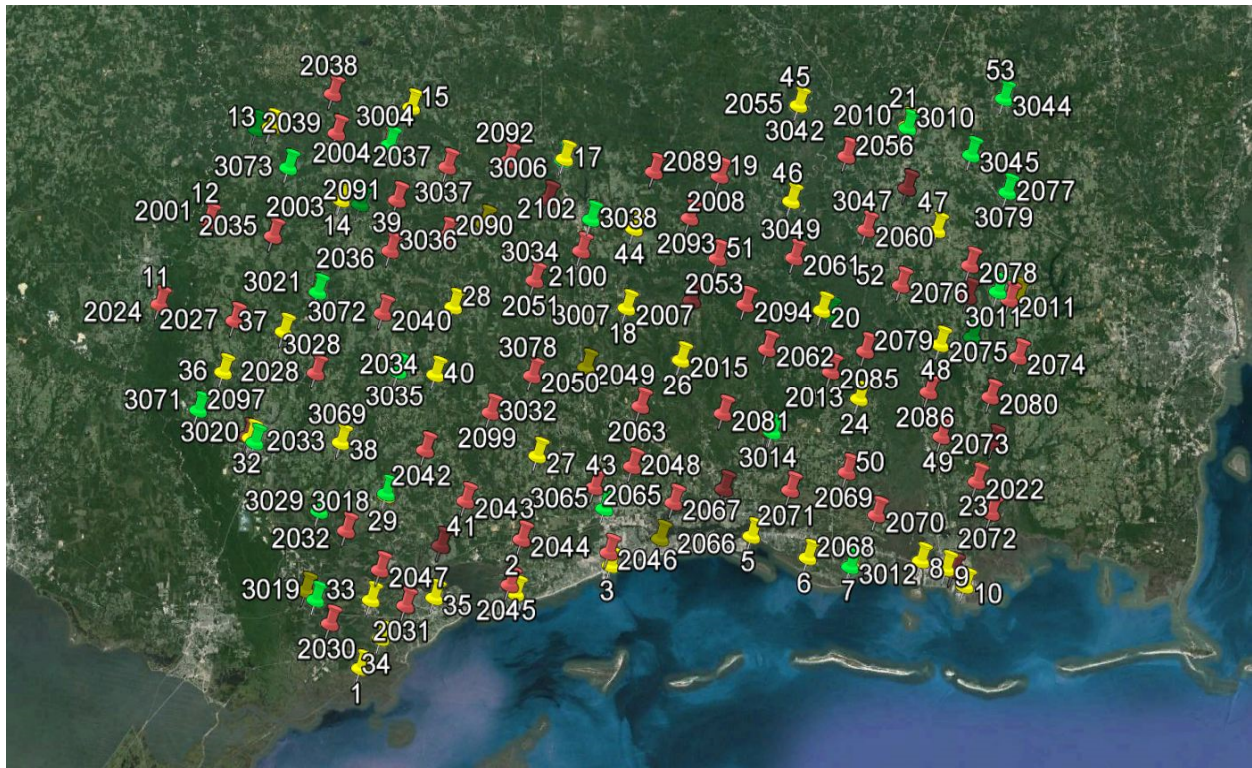
BW2588'RAIL OF AN ILLINOIS CENTRAL RAILROAD SPUR TRACK, 6.9 M (22.6 FT)  
BW2588'NORTH OF A WITNESS POST, 2.5 M (8.2 FT) SOUTH OF A UTILITY POLE, AND  
BW2588'0.7 M (2.3 FT) WEST OF THE WEST EDGE OF A PARKING LOT. NOTE--ACCESS  
BW2588'TO THE DATUM POINT IS THROUGH A 5-INCH LOGO CAP.  
BW2588  
BW2588 STATION RECOVERY (2008)  
BW2588  
BW2588'RECOVERY NOTE BY MS DEPT TRANS 2008 (JAM)  
BW2588'RECOVERED AS DESCRIBED.  
BW2588  
BW2588 STATION RECOVERY (2012)  
BW2588  
BW2588'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2012 (PRM)  
BW2588'RECOVERED IN GOOD CONDITION.



# SECTION 5: GPS CONTROL DIAGRAM

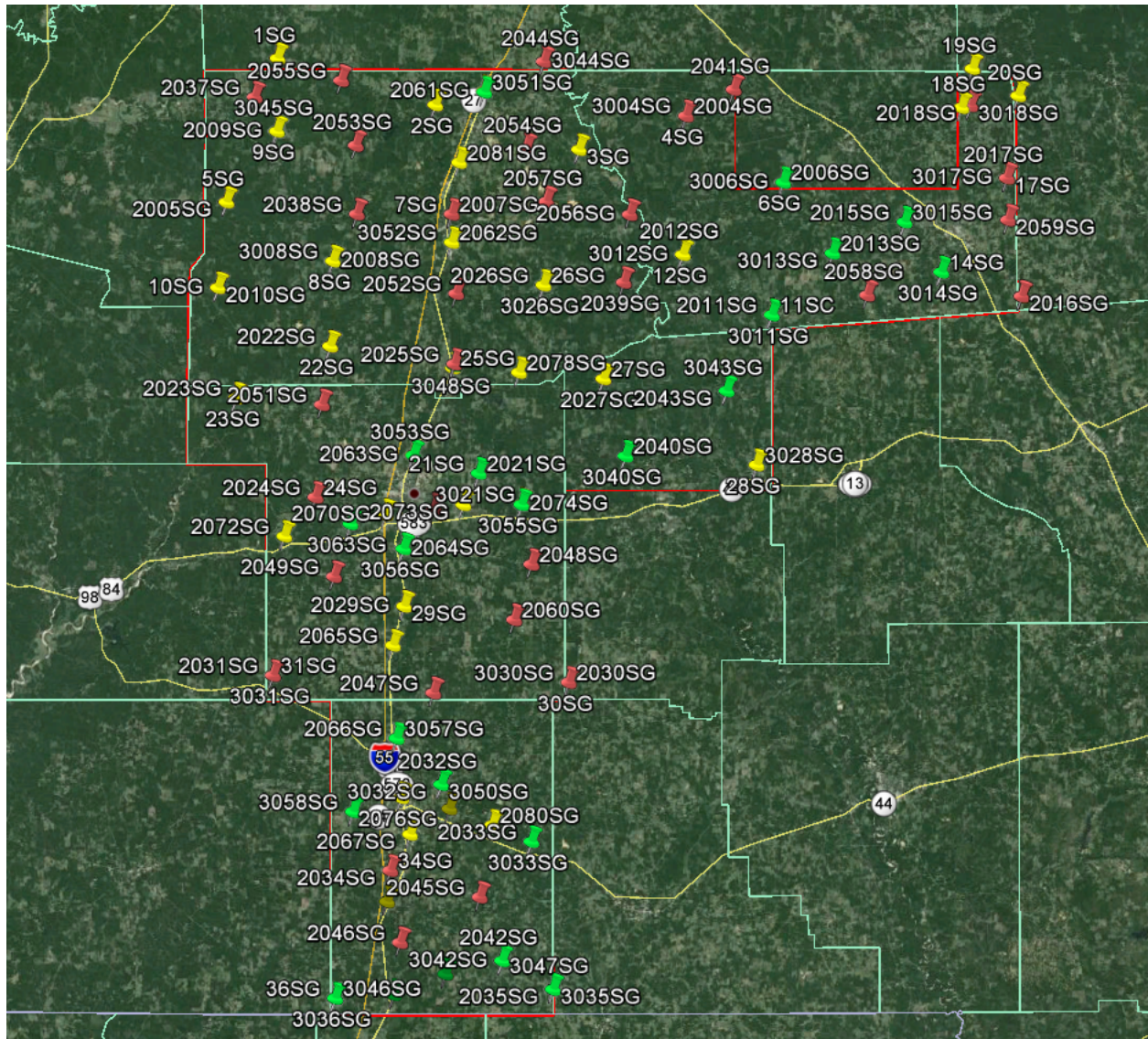
This section contains a graphical representation of the new and existing control stations used for the project.

MS Coastal AOI



Not to Scale

3DEP Extension AOI



Not to Scale