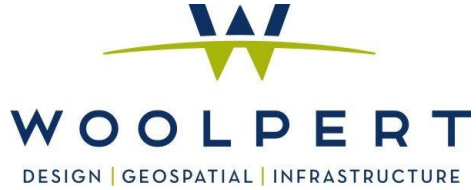
GROUND CONTROL SURVEY REPORT



MISSISSIPPI COASTAL QL2 LIDAR WITH 3DEP EXTENSION

7/31/2015

WOOLPERT

DESIGN | GEOSPATIAL | INFRASTRUCTURE

QUALITY

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SECTION 1: SURVEY REPORT

INTRODUCTION

Report Date:	3/5/2015
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:	6/30/2015
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 291 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 thru February 28, 2015 for the MS Coastal Region and March 5 thru March 10, 2015 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^{th} percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95^{th} percentile error for each required land cover class.

The Consolidated Vertical Accuracy (CVA): 26.9 cm at a 95^{th} percentile level, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95^{th} 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 470 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 insure the necessary horizontal and vertical accuracies were being met for this photogrammetric project.

VRS VIRTUAL REFERENCE SYSTEM OR RTN REAL TIME NETWORK.

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 3.51 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	CONTOL

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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2006	512055.43	878428.51	304.19	NVA
2006A	512123.95	878513.68	302.72	NVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2026A	507656.97	733448.03	185.96	NVA
2027	431455.16	705185.27	192.41	NVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2047	306896.08	781596.36	13.03	NVA
2047A	306991.79	781830.67	14.25	NVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2067A	340287.48	935763.45	14.49	NVA
2068	313040.84	1006095.42	3.13	NVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
2089	505290.52	925534.44	197.81	NVA
2089A	505361.58	925495.80	198.63	NVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3007A	437743.70	911166.88	210.57	VVA
3008	490646.45	997546.90	159.99	VVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3028	405476.06	747937.10	155.76	VVA
3028A	405541.56	748004.93	148.78	VVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3048A	476278.46	1073779.49	138.80	VVA
3049	462535.93	999146.83	77.49	VVA
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

Point	State Plane Mississippi East Geoid 12A			Description
	Northing (sFT)	Easting (sFT)	Elevation (sFT)	
3069	370424.51	761016.12	96.66	VVA
3069A	370329.98	760987.61	95.96	VVA
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

Point	Grid Deltas Published vs. Surveyed		
	Δ Northing (m)	Δ Easting (m)	Δ Elev. (m)
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
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: GEOOID 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	CONTOL
29	30°26'39.93429"	-89°27'57.58979"	-27.47	CONTROL

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
30	30°18'49.28238"	-89°35'57.64663"	-68.77	CONTROL
31	30°43'25.43556"	-89°34'59.88540"	95.05	CONTROL
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

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
2032	3461341.94	175192.97	125.74	NVA
2033	3453998.80	186181.59	94.04	NVA
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
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

Point	UTM Zone 16 North Geoid 12A			Description
	Northing (m)	Easting (m)	Elevation (m)	
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
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

NGS STATION CHECK POINTS

Point	Grid Deltas Published vs. Surveyed		
	Δ Northing (sFT)	Δ Easting (sFT)	Δ 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

COORDINATE SYSTEM: GEODETIC

3DEP Extension AOI

HORIZONTAL DATUM: NAD83 (2011) Epoch 2010.00
VERTICAL DATUM: NAVD88
GEOID MODEL: GEOOID 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

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
2025	31°42'35.89870"	-90°23'36.05350"	114.11	NVA
2026	31°47'44.51046"	-90°16'39.76182"	110.24	NVA
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
3001	32°02'53.29122"	-90°37'39.07761"	35.15	VVA
3002	31°59'45.50247"	-90°25'12.42458"	106.27	VVA

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
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
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

Point	NAD 83 (2011) Epoch 2010.00		Ellipsoid Ht. (sFT)	Description
	N Latitude	W Longitude		
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

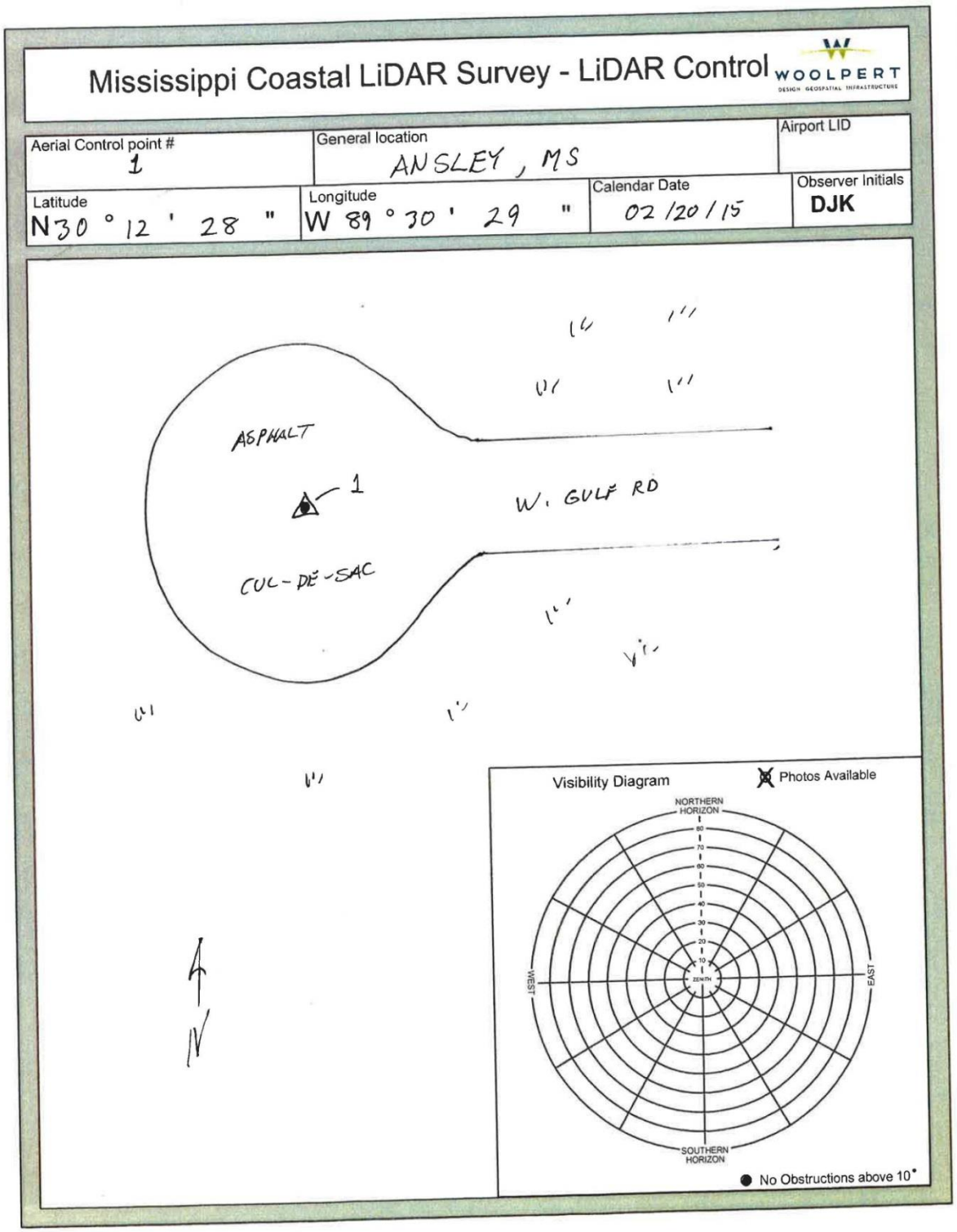
SECTION 3: GROUND/GEODETIC CONTROL LOGS AND PHOTOS

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.

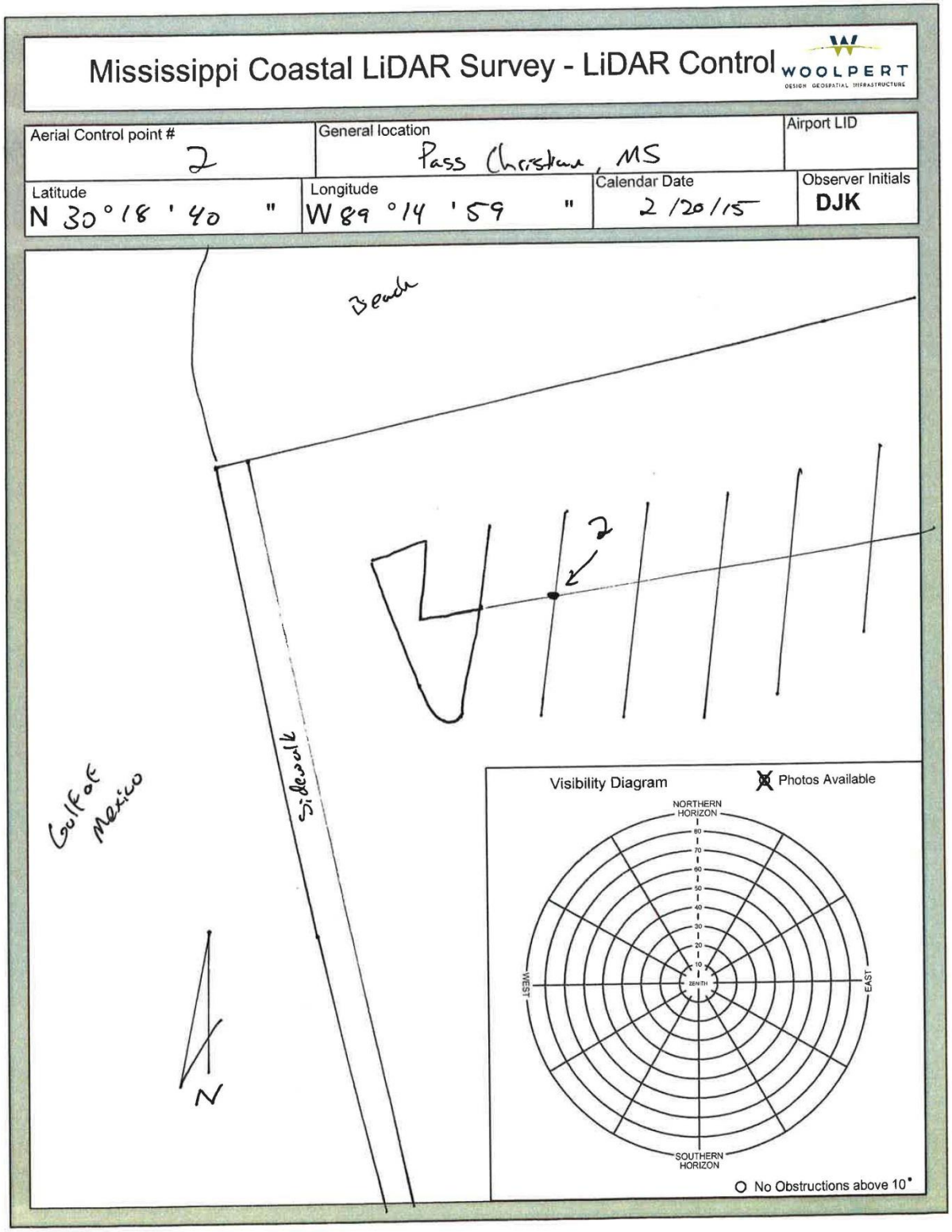
The data is assembled on the following pages.

MS COASTAL AOI

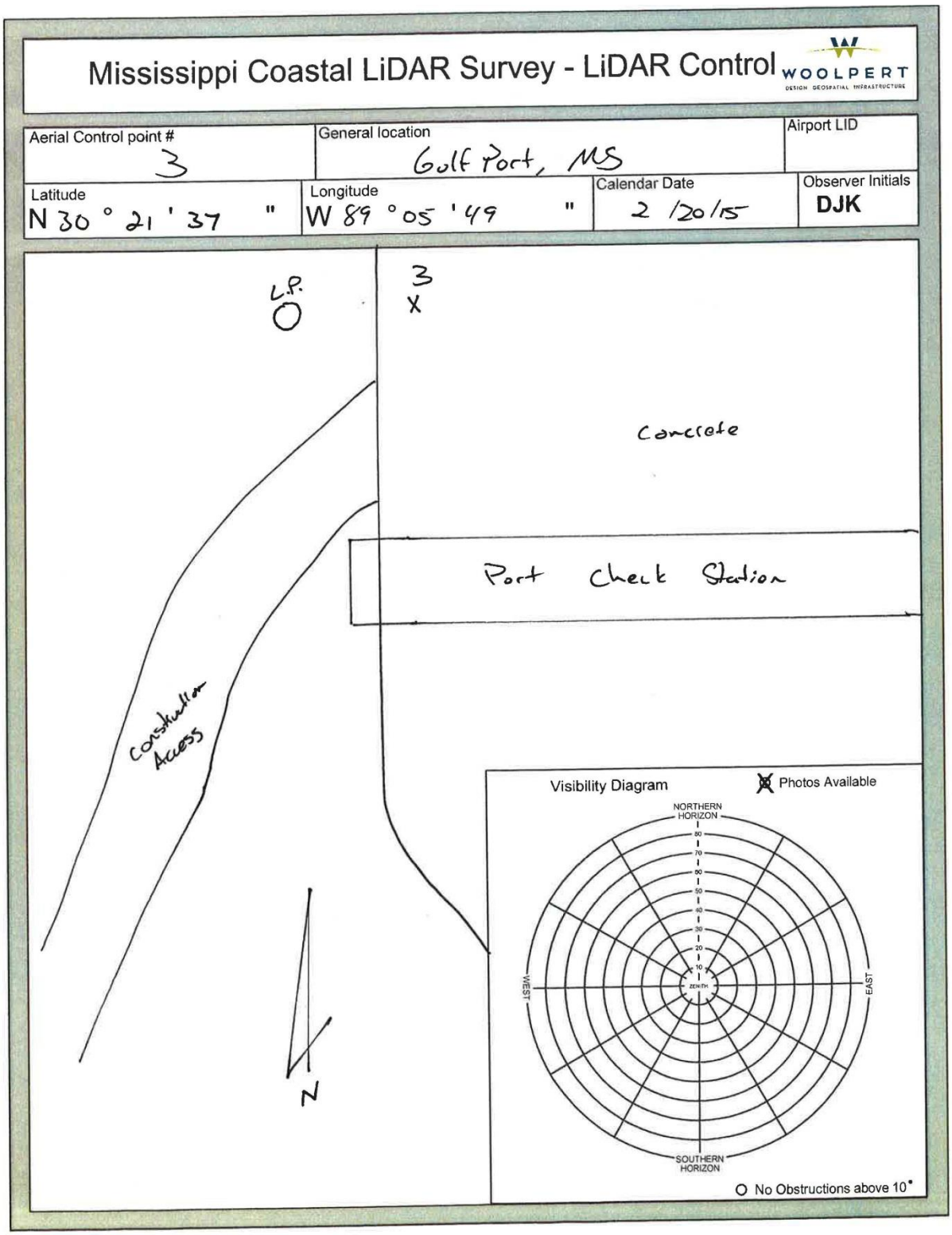
LiDAR Control Points:



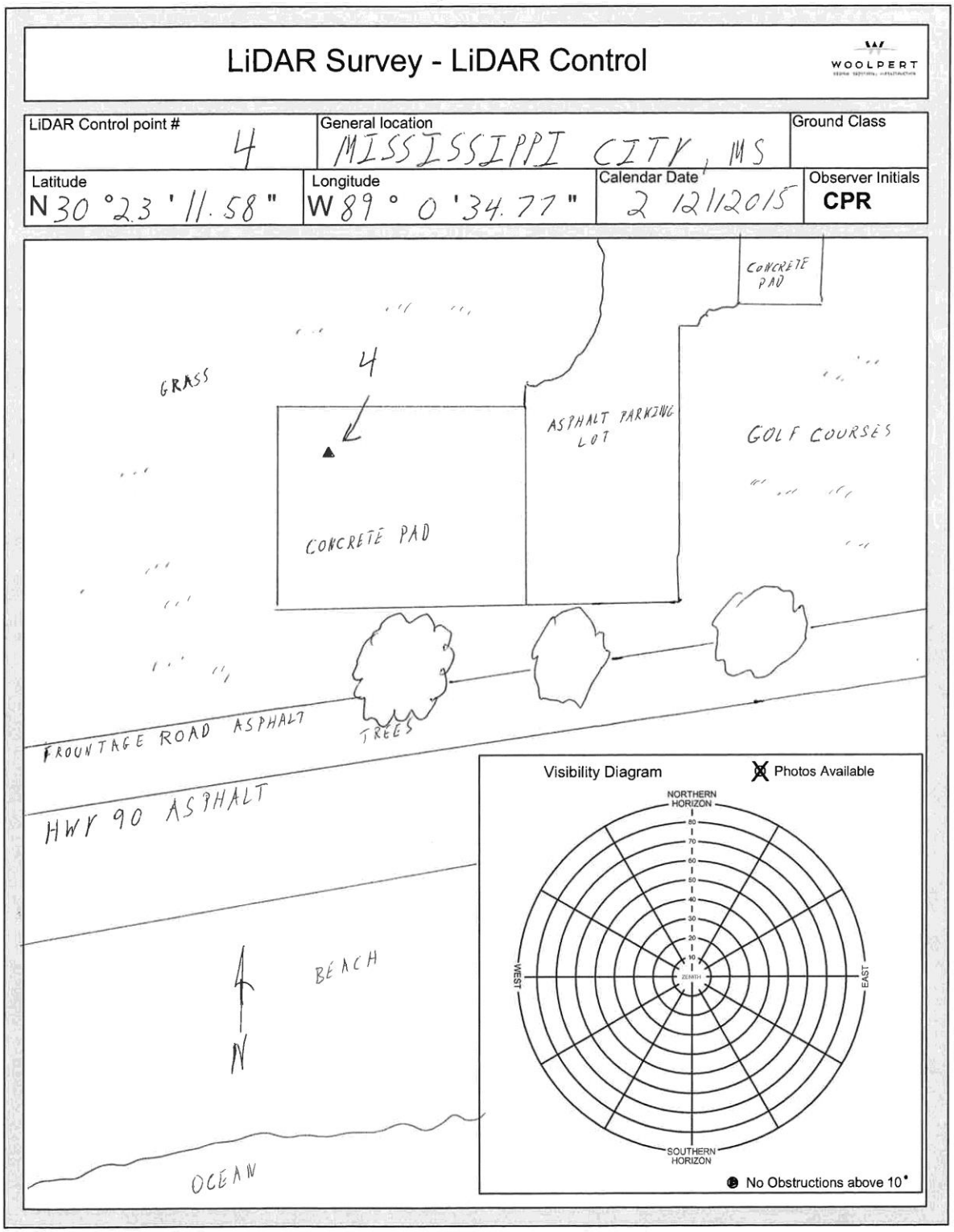
1, S, 20FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 2
General location Pass Christian, MS
Airport LID
Latitude N 30 ° 18 ' 40 "
Longitude W 89 ° 14 ' 59 "
Calendar Date 2/20/15
Observer Initials DJK
Beach
2
Sidewalk
Gulf of Mexico
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
80
70
60
50
40
30
20
10
ZENITH
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

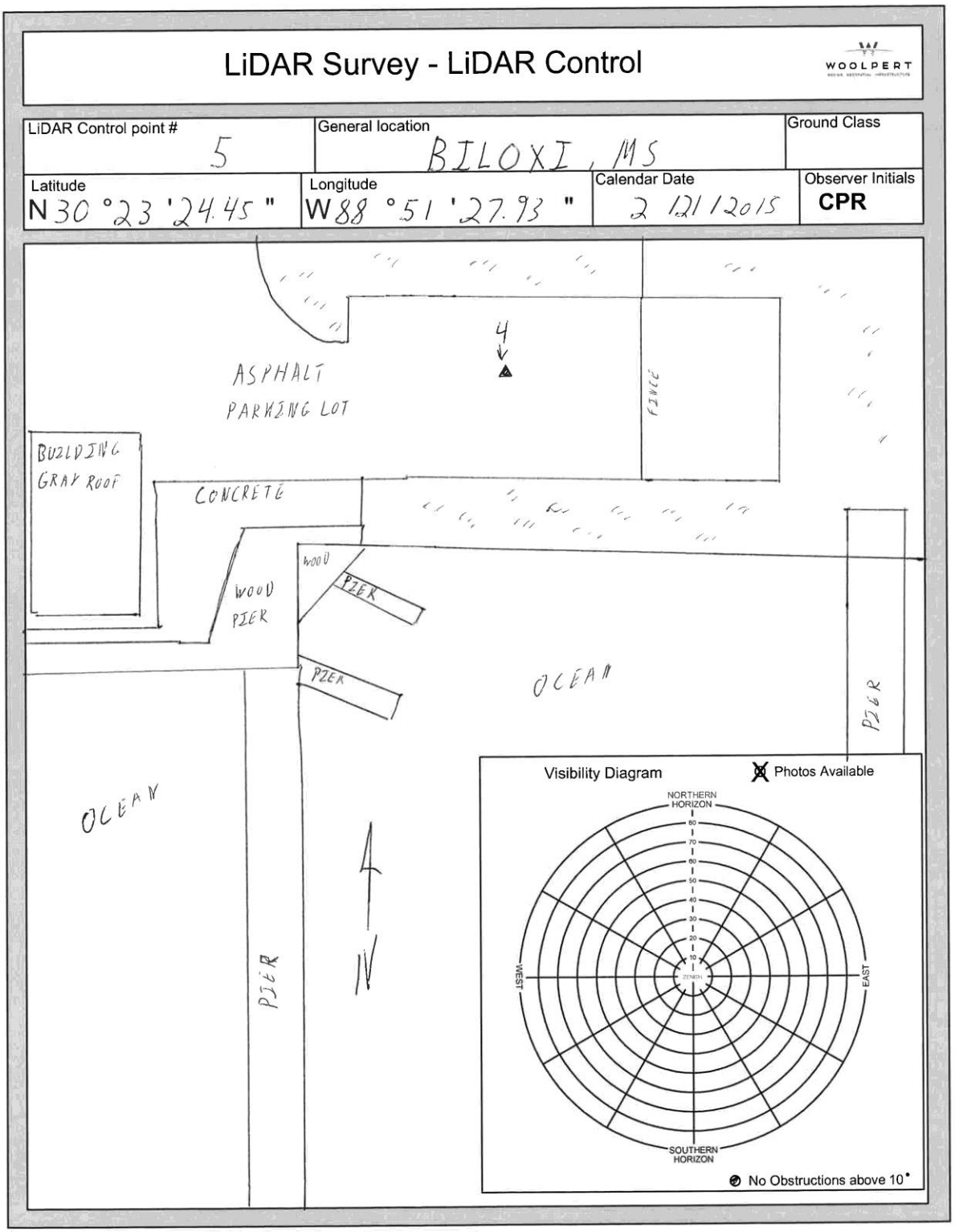
2, S, 20FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
3
General location
Gulf Port, MS
Airport LID
Latitude
N 30 ° 21 ' 37 "
Longitude
W 89 °05 '49 "
Calendar Date
2 /20/15
Observer Initials
DJK
L.P.
3
Concrete
Port Check Station
Construction Access
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

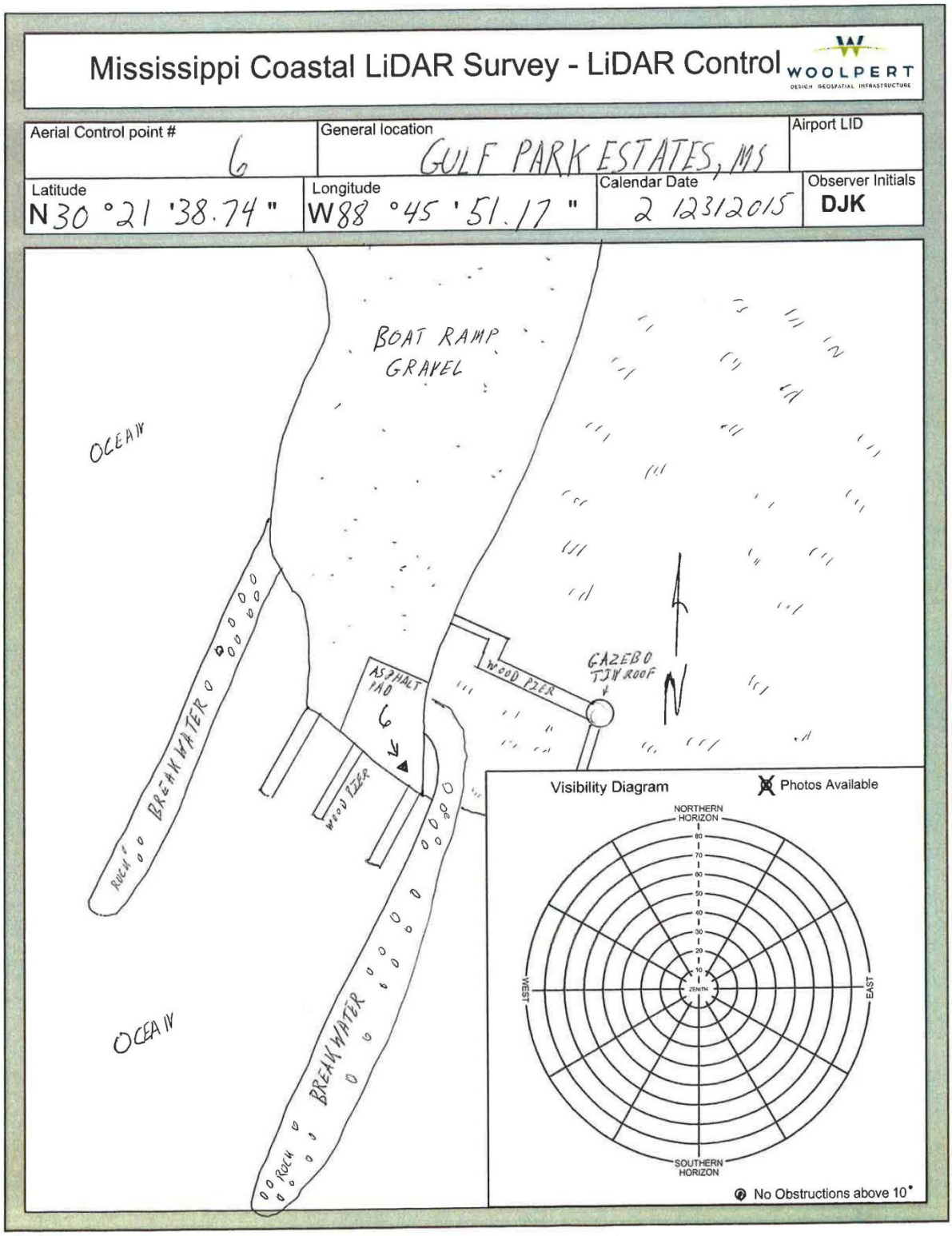
3, S, 20FEB2015


LiDAR Survey - LiDAR Control
WOOLPERT
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
CONCRETE PAD
GRASS
4
ASPHALT PARKING LOT
GOLF COURSES
CONCRETE PAD
FRONTAGE ROAD ASPHALT
TREES
HWY 90 ASPHALT
BEACH
N
OCEAN
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

4, S, 21FEB2015


LiDAR Survey - LiDAR Control
WOOLPERT
LiDAR Control point # 5
General location BILOXI, MS
Ground Class
Latitude N 30 °23 '24.45 "
Longitude W 88 °51 '27.93 "
Calendar Date 2 12/1/2015
Observer Initials CPR
4
ASPHALT PARKING LOT
FENCE
BUILDING GRAY ROOF
CONCRETE
WOOD PIER
WOOD PIER
WOOD PIER
OCEAN
OCEAN
PIER
PIER
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EASTERN HORIZON
SOUTHERN HORIZON
WESTERN HORIZON
No Obstructions above 10°

5, S, 21FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 6
General location GULF PARK ESTATES, MS
Airport LID
Latitude N30 °21 '38.74 "
Longitude W88 °45 '51.17 "
Calendar Date 2 12312015
Observer Initials DJK
BOAT RAMP
GRAVEL
OCEAN
BREAKWATER
ROCK
ASPHALT PAD
6
WOOD PIER
GAZEBO TIN ROOF
N
OCEAN
BREAKWATER
ROCK
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

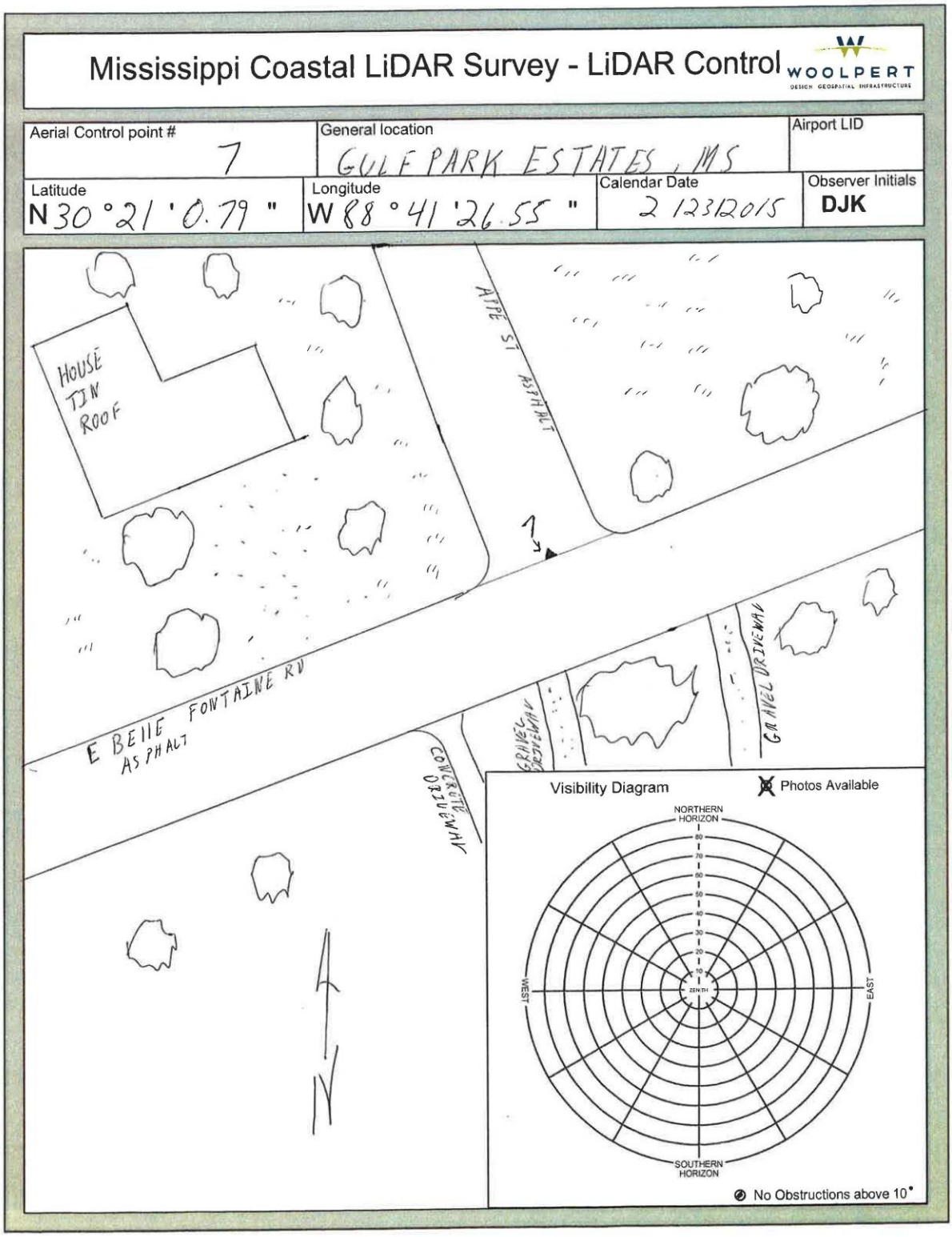
6, S, 23FEB2015

Mississippi Coastal LiDAR Survey - LiDAR Control

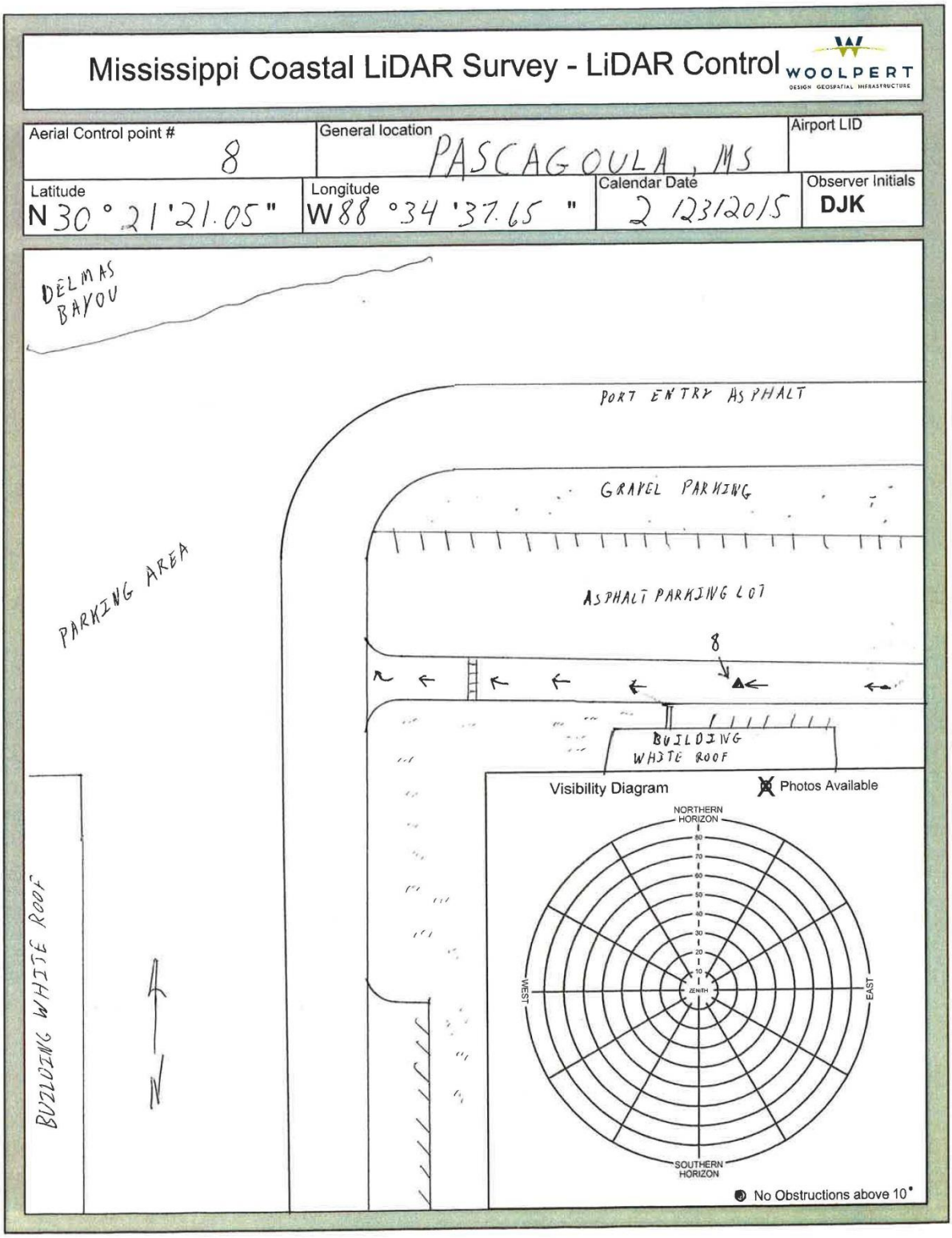
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
7	GULF PARK ESTATES, MS	

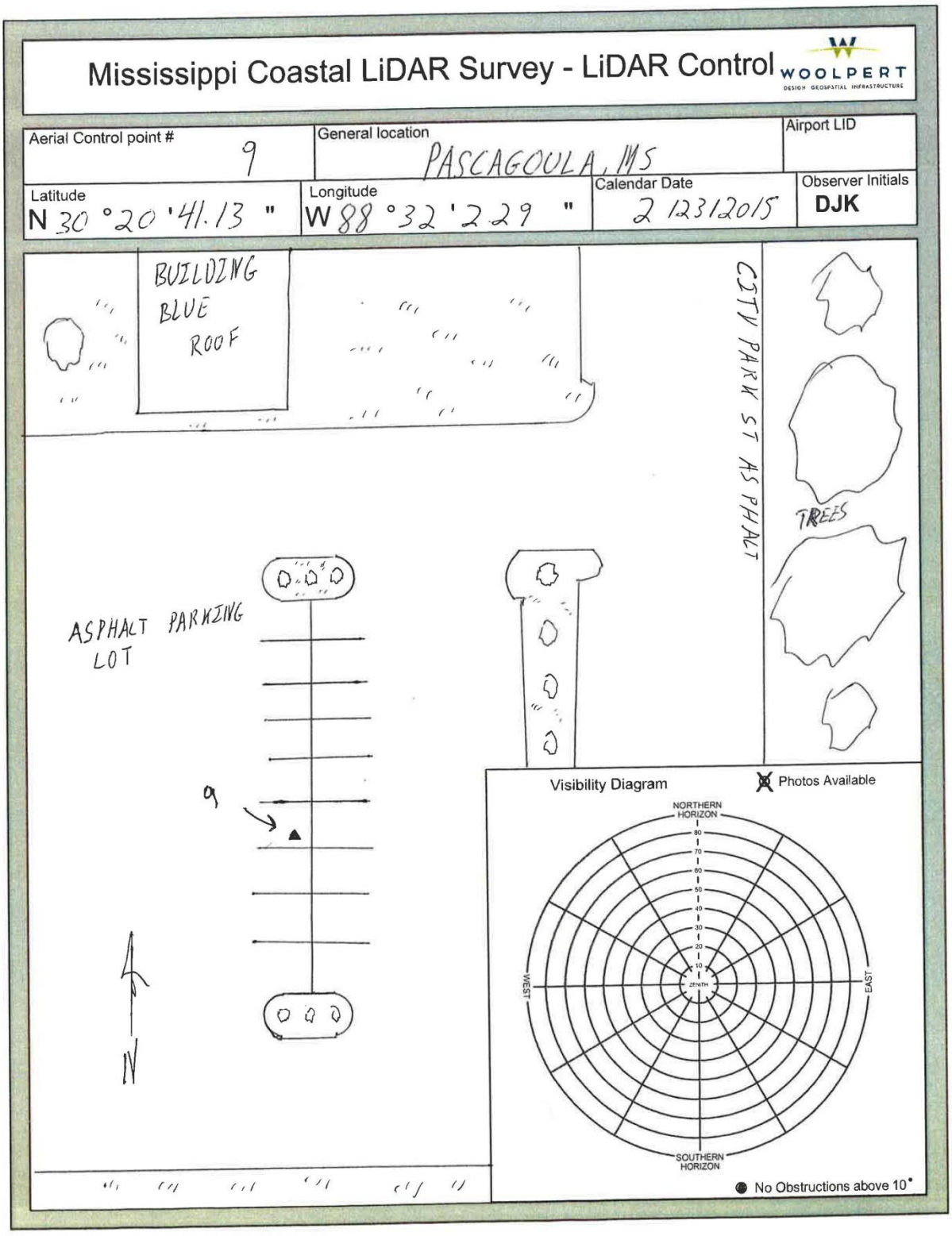
Latitude	Longitude	Calendar Date	Observer Initials
N 30 °21 '0.79 "	W 88 °41 '26.55 "	2 12312015	DJK



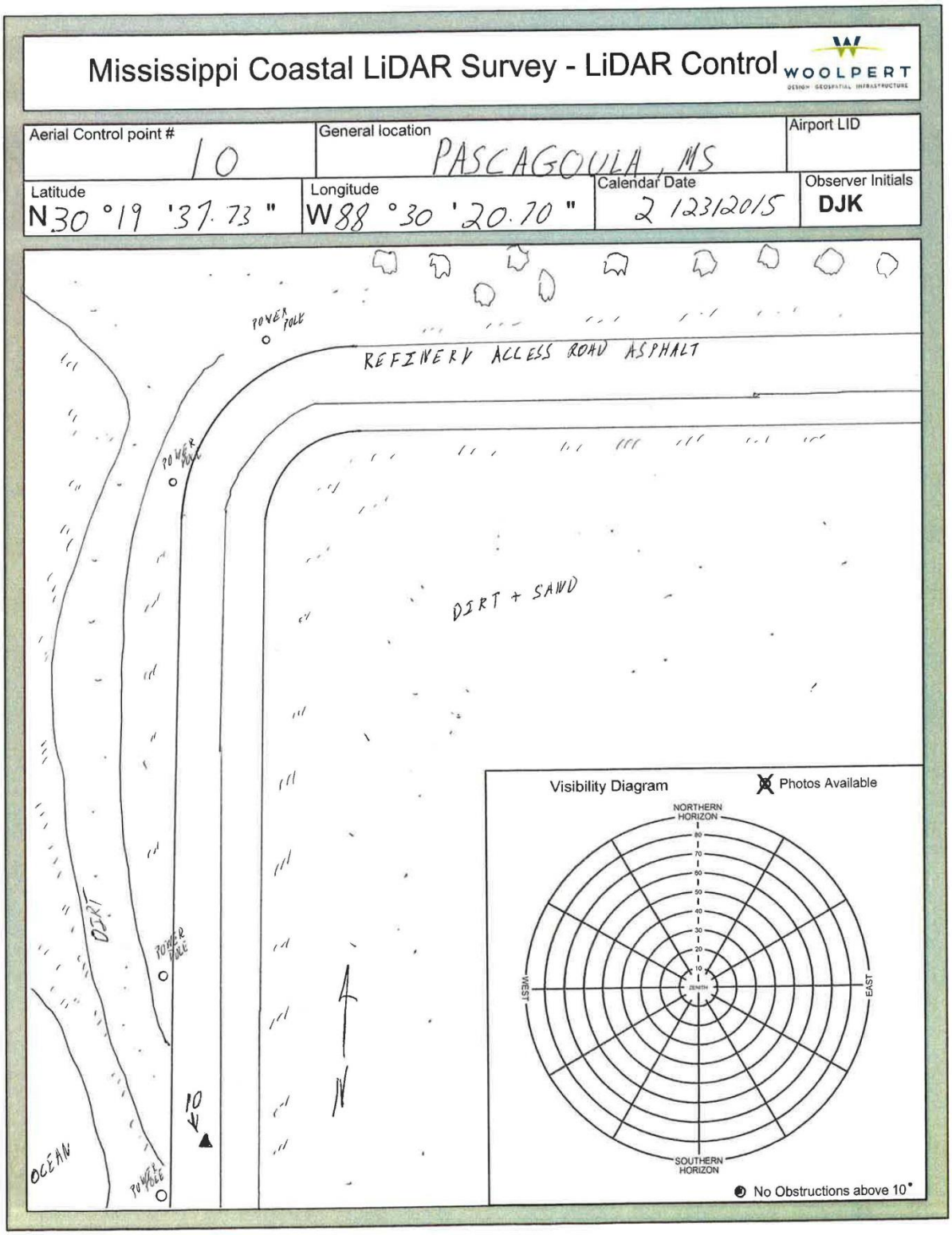
7, S, 23FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
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 12312015
Observer Initials DJK
DELMAS BAYOU
PORT ENTRY ASPHALT
GRAVEL PARKING
PARKING AREA
ASPHALT PARKING LOT
8
BUILDING WHITE ROOF
BUILDING WHITE ROOF
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

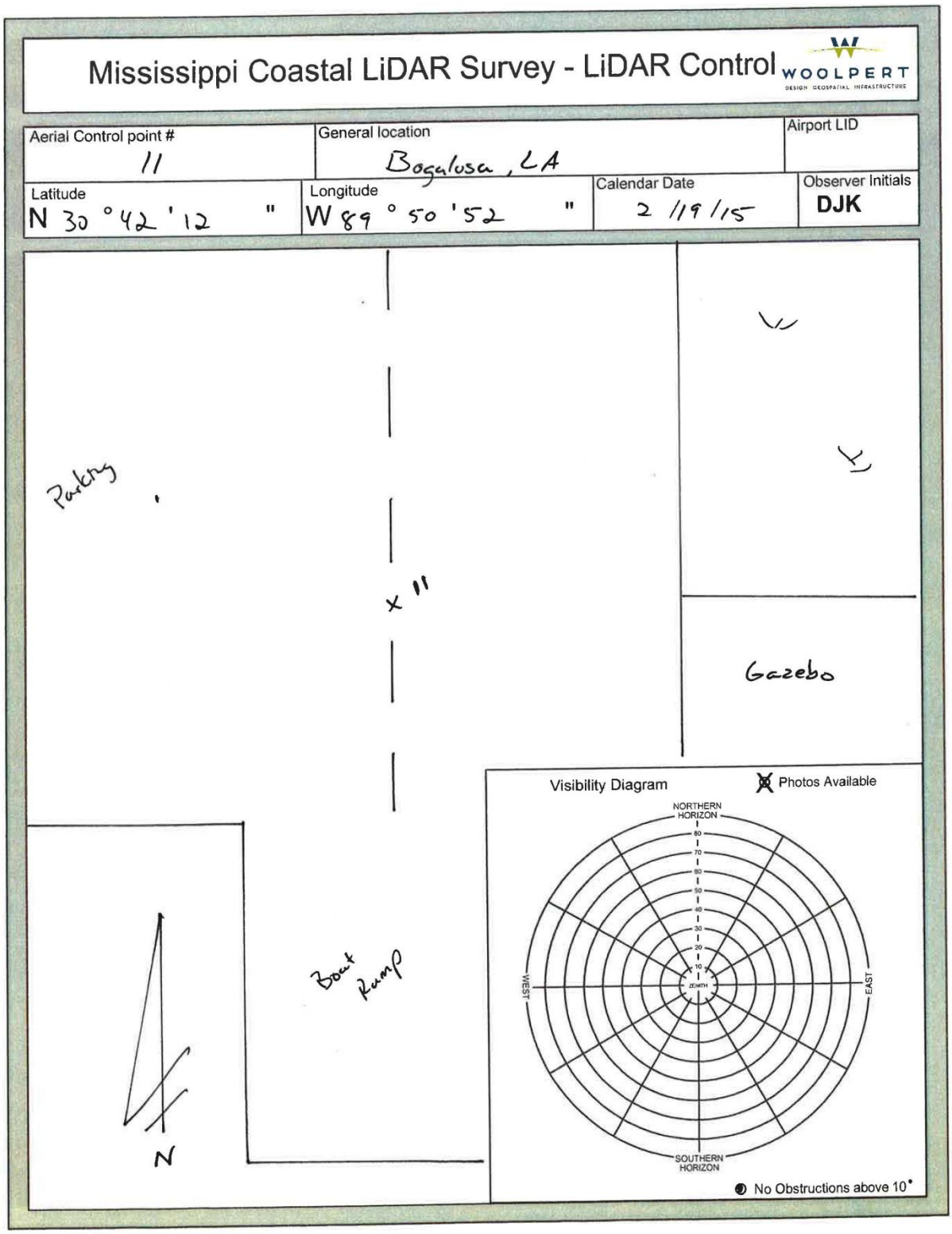
8, W, 23FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 9
General location PASCAGOULA, MS
Airport LID
Latitude N 30 °20 '41.13 "
Longitude W 88 °32 '2.29 "
Calendar Date 2 12312015
Observer Initials DJK
BUILDING BLUE ROOF
CITY PARK ST AS PHALT
TREES
ASPHALT PARKING LOT
9
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
EAST
WEST
ZENITH
No Obstructions above 10°

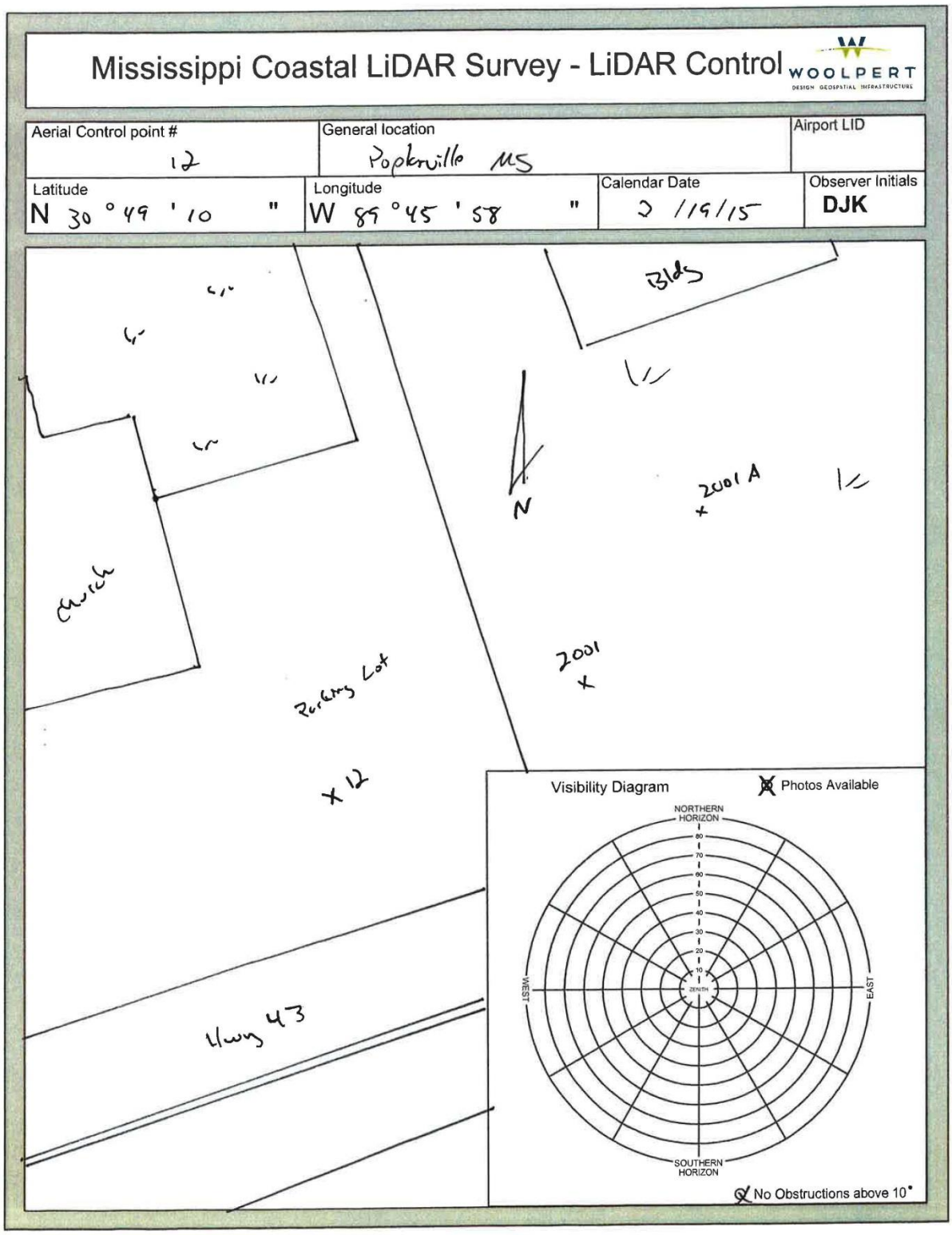
9, W, 23FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 10
General location PASCAGOULA, MS
Airport LID
Latitude N30 °19 '37.73 "
Longitude W88 °30 '20.70 "
Calendar Date 2 12312015
Observer Initials DJK
POWER POLE
REFINERY ACCESS ROAD ASPHALT
POWER POLE
DIRT + SAND
DIRT
POWER POLE
10
OCEAN
POWER POLE
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

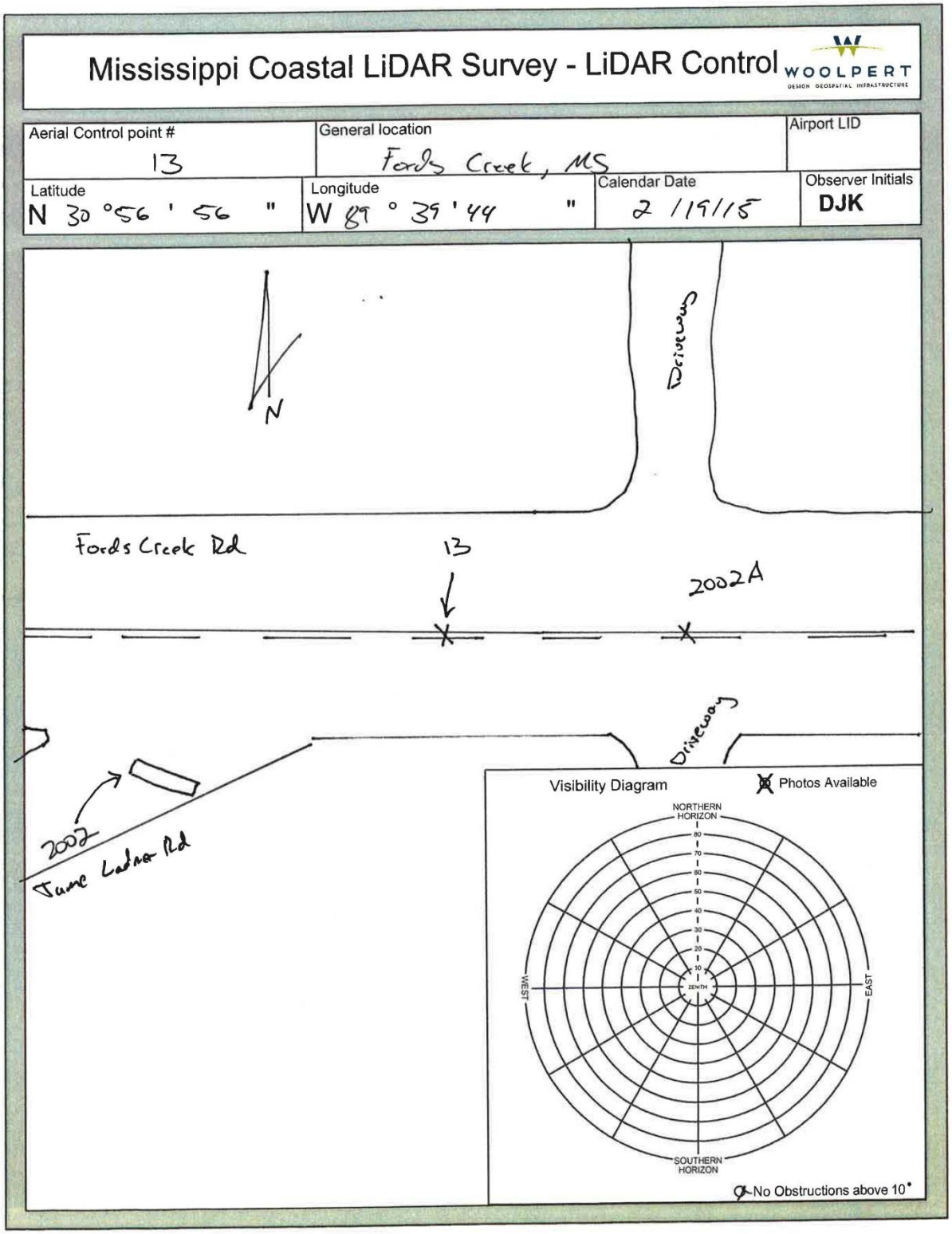
10, N, 23FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
11
General location
Bogalusa, LA
Airport LID
Latitude
N 30 °42 '12 "
Longitude
W 89 ° 50 '52 "
Calendar Date
2/19/15
Observer Initials
DJK
Parking
x 11
Gazebo
Boat Ramp
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
ZENITH
No Obstructions above 10°

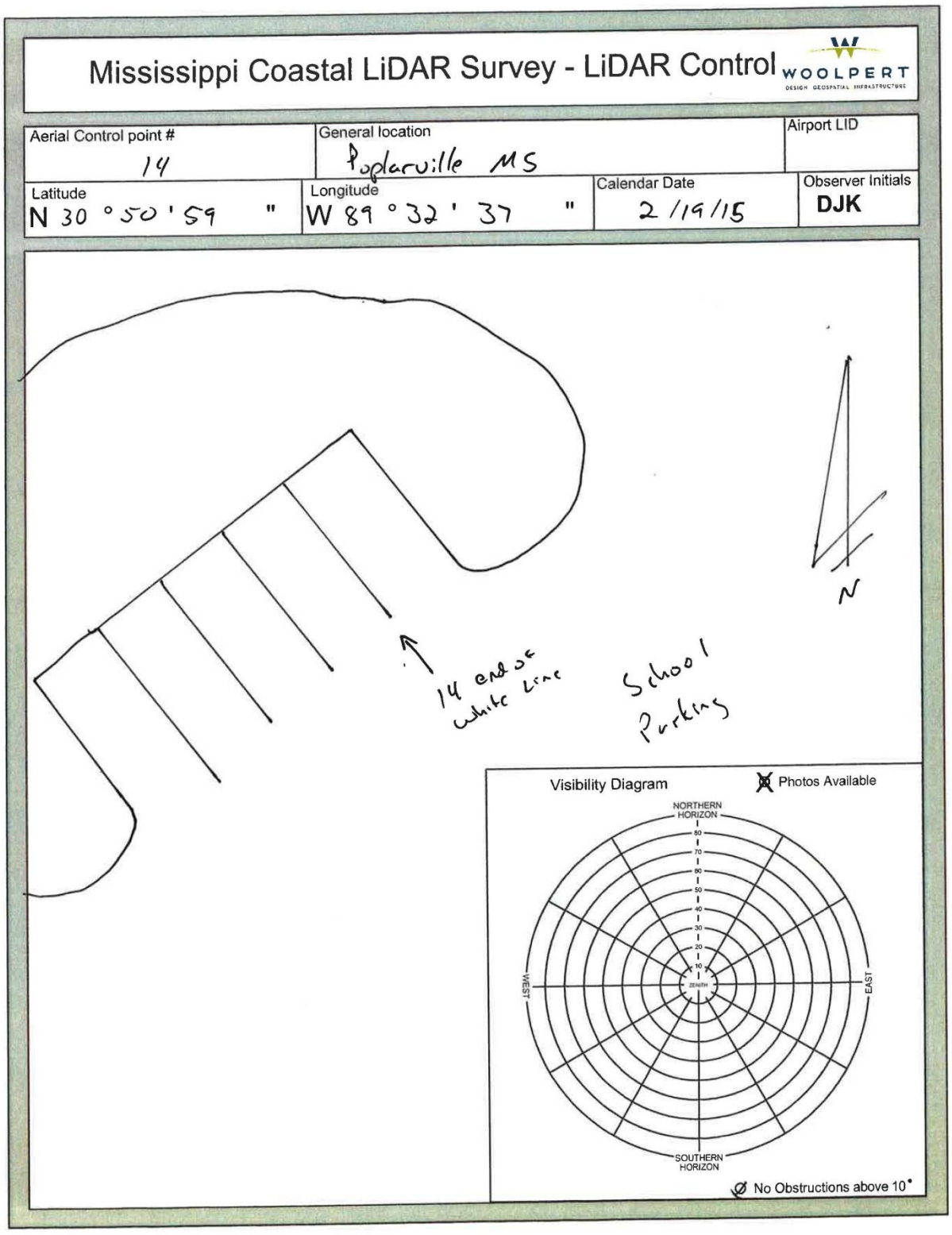
11, S, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
Bldg
N
2001 A
Church
Parking Lot
2001
X 12
Hwy 43
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

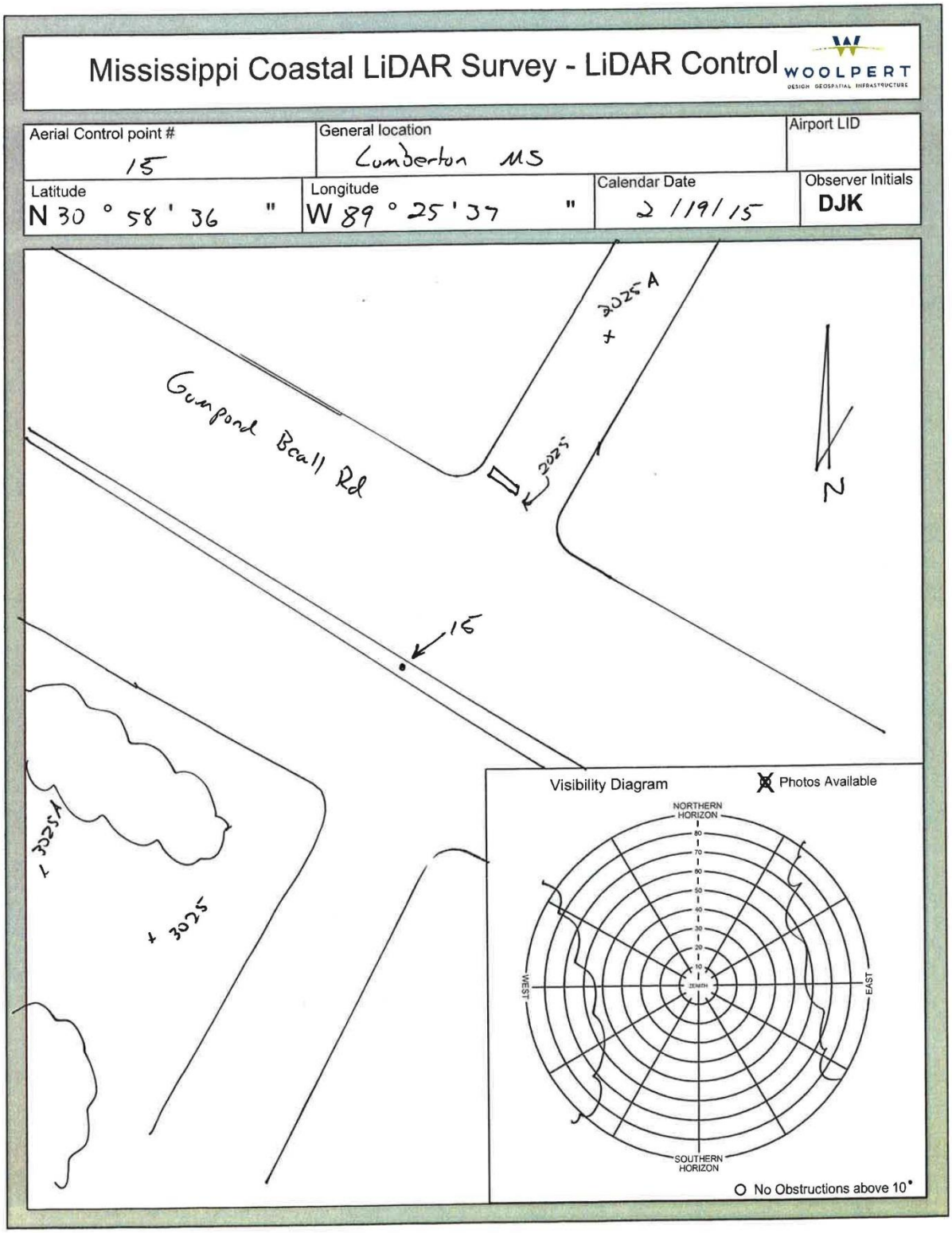
12, W, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
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
N
Driveway
Fords Creek Rd
13
2002A
Driveway
2002
Jane Lahar Rd
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

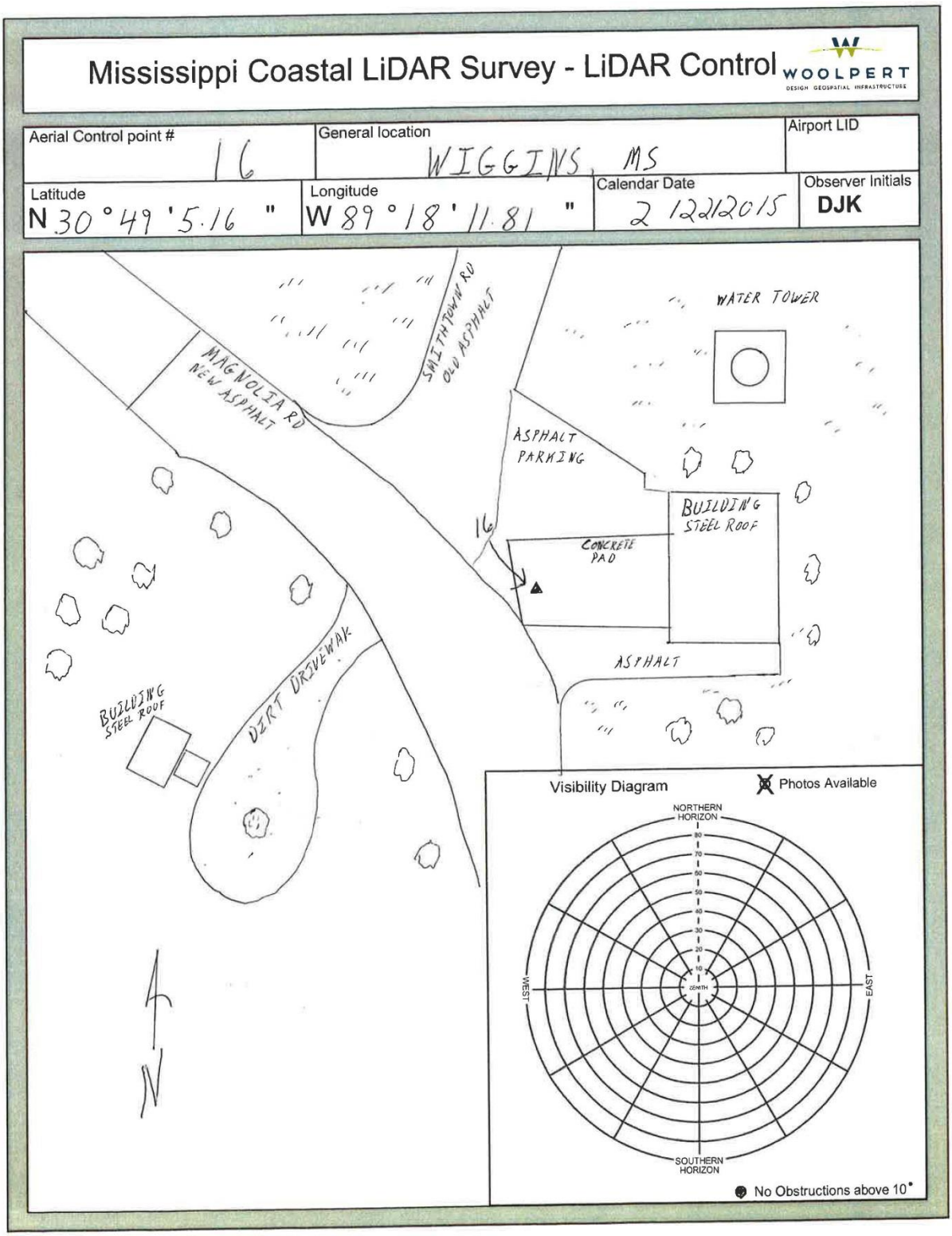
13, W, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
14
General location
Poplarville MS
Airport LID
Latitude
N 30 ° 50 ' 59 "
Longitude
W 89 ° 32 ' 37 "
Calendar Date
2/19/15
Observer Initials
DJK
N
14 end of white line
School Parking
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
No Obstructions above 10°

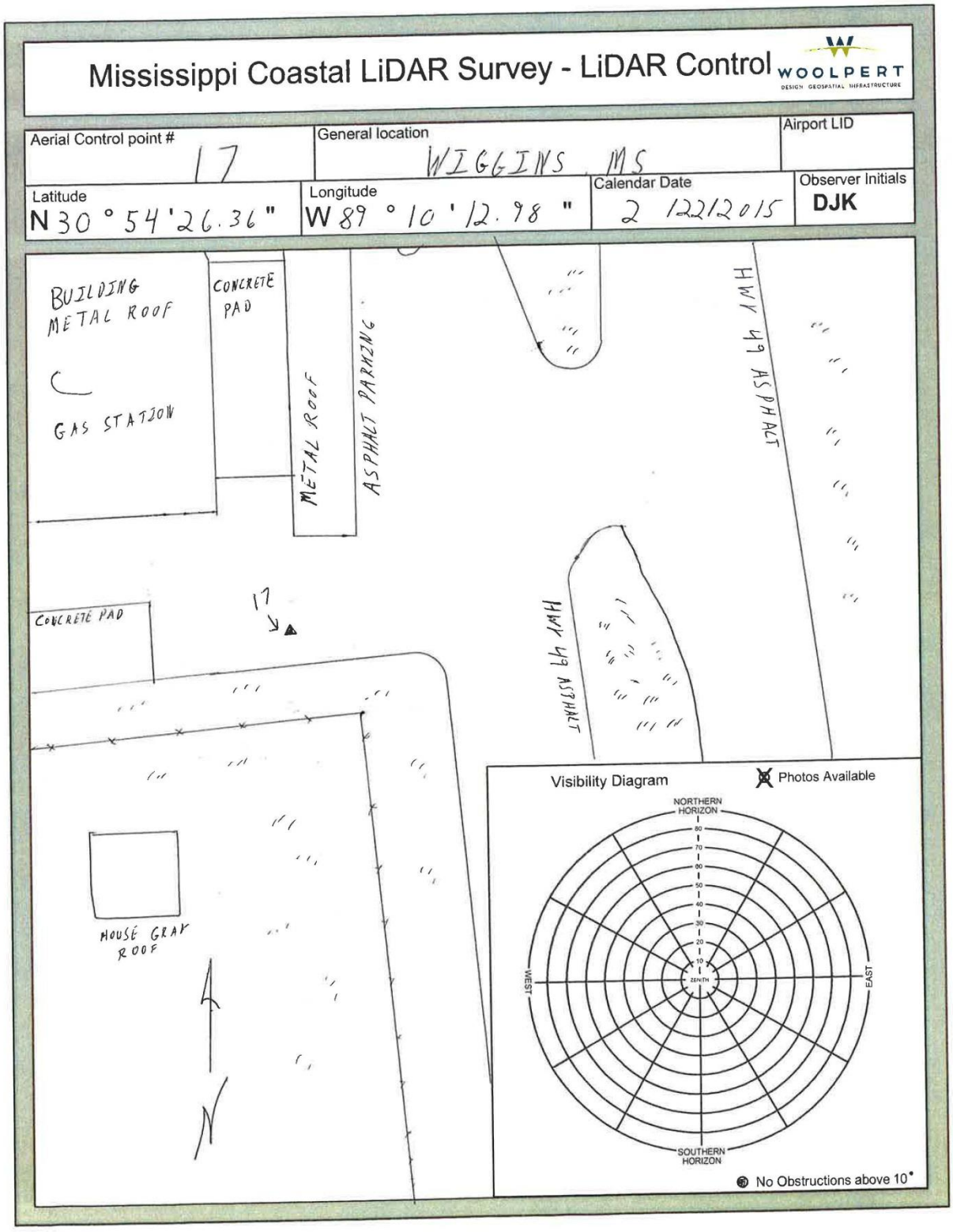
14, N, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 15
General location Lumberton MS
Airport LID
Latitude N 30 ° 58 ' 36 "
Longitude W 89 ° 25 ' 37 "
Calendar Date 2/19/15
Observer Initials DJK
Gumpond Beall Rd
3025 A
3025
15
N
3025A
3025
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

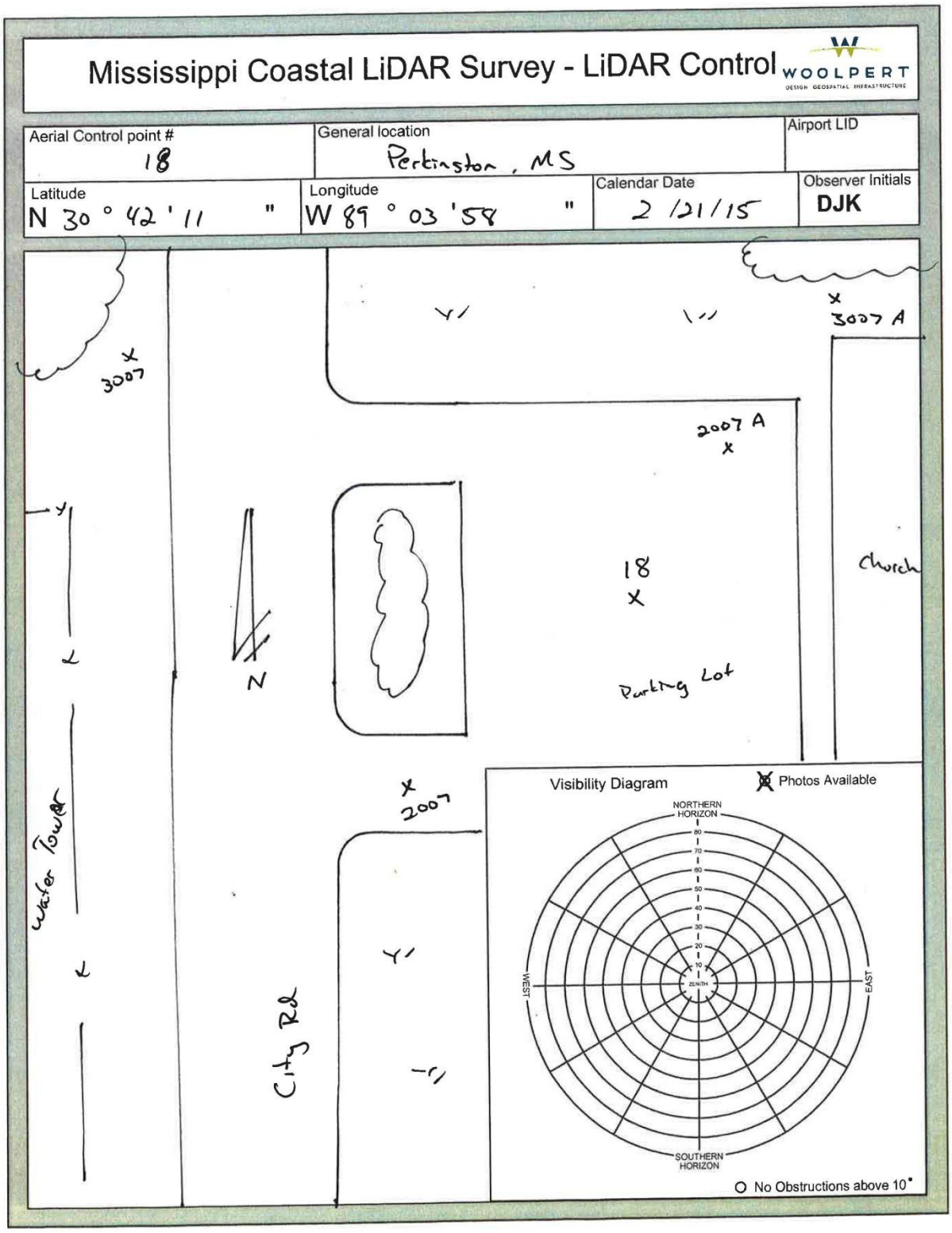
15, N, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 16
General location WIGGINS, MS
Airport LID
Latitude N 30 ° 49 ' 5.16 "
Longitude W 89 ° 18 ' 11.81 "
Calendar Date 2 12212015
Observer Initials DJK
MAGNOLIA RD NEW ASPHALT
SMITHTOWN RD OLD ASPHALT
WATER TOWER
ASPHALT PARKING
BUILDING STEEL ROOF
CONCRETE PAD
16
ASPHALT
DIRT DRIVEWAY
BUILDING STEEL ROOF
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

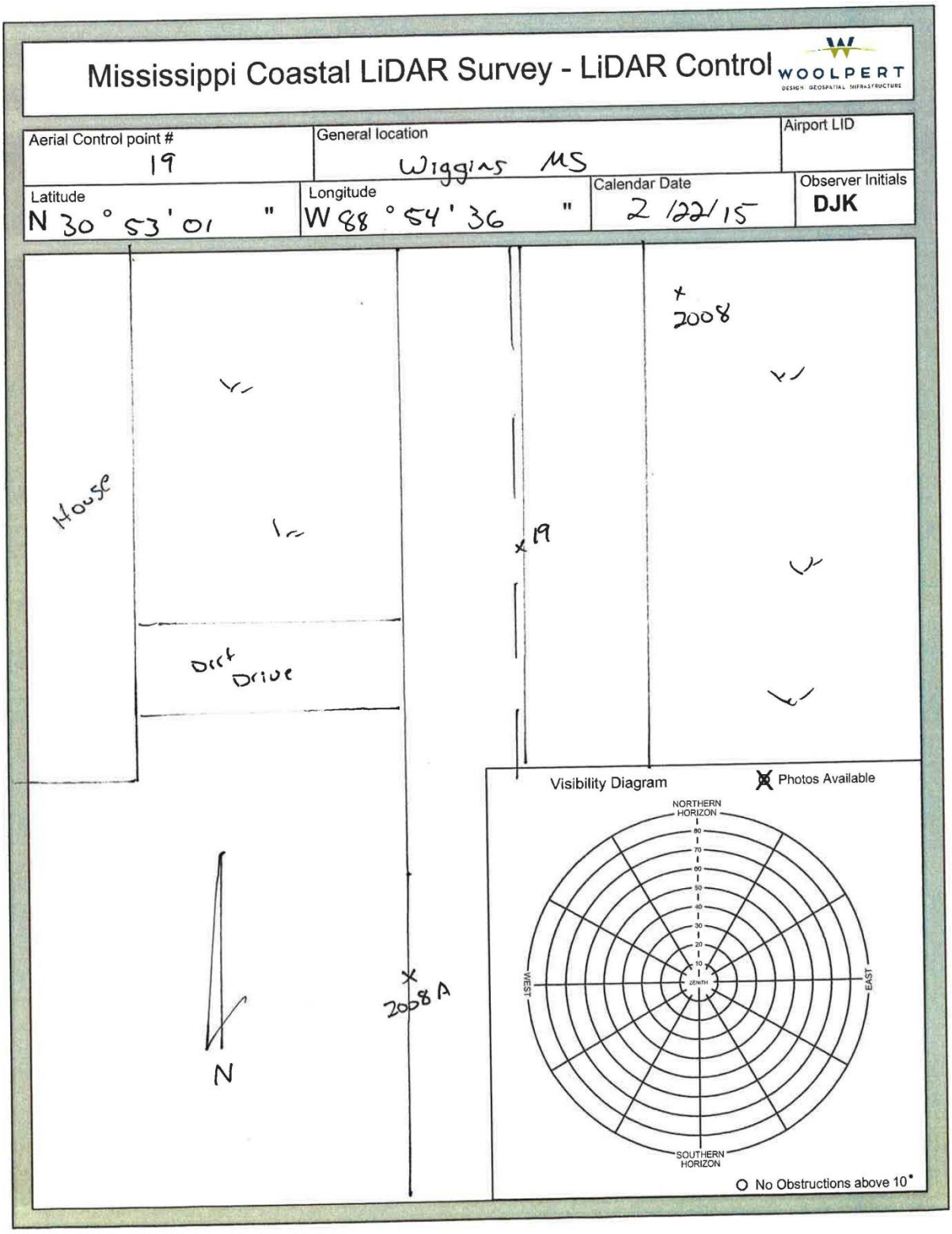
16, E, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 17
General location WIGGINS MS
Airport LID
Latitude N30 °54'26.36"
Longitude W89 °10'12.98"
Calendar Date 2 12212015
Observer Initials DJK
BUILDING METAL ROOF
GAS STATION
CONCRETE PAD
METAL ROOF
ASPHALT PARKING
HWY 49 ASPHALT
CONCRETE PAD
17
HWY 49 ASPHALT
HOUSE GRAY ROOF
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

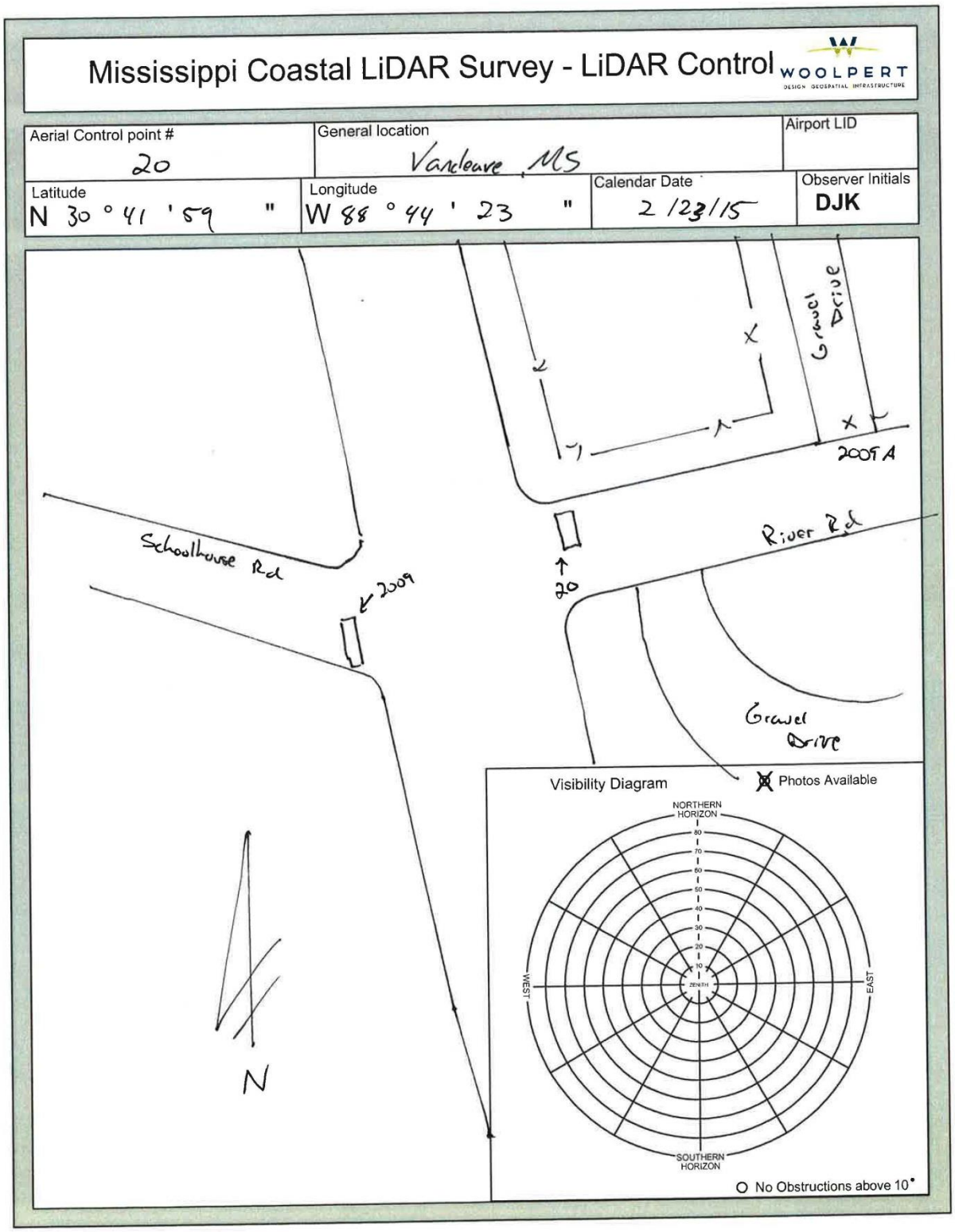
17, W, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
18
General location
Perkinston, MS
Airport LID
Latitude
N 30 ° 42 ' 11 "
Longitude
W 89 ° 03 ' 58 "
Calendar Date
2 /21/15
Observer Initials
DJK
3007 A
3007
2007 A
18
Church
Parking Lot
N
Water Tower
2007
City Rd
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
ZENITH
No Obstructions above 10°

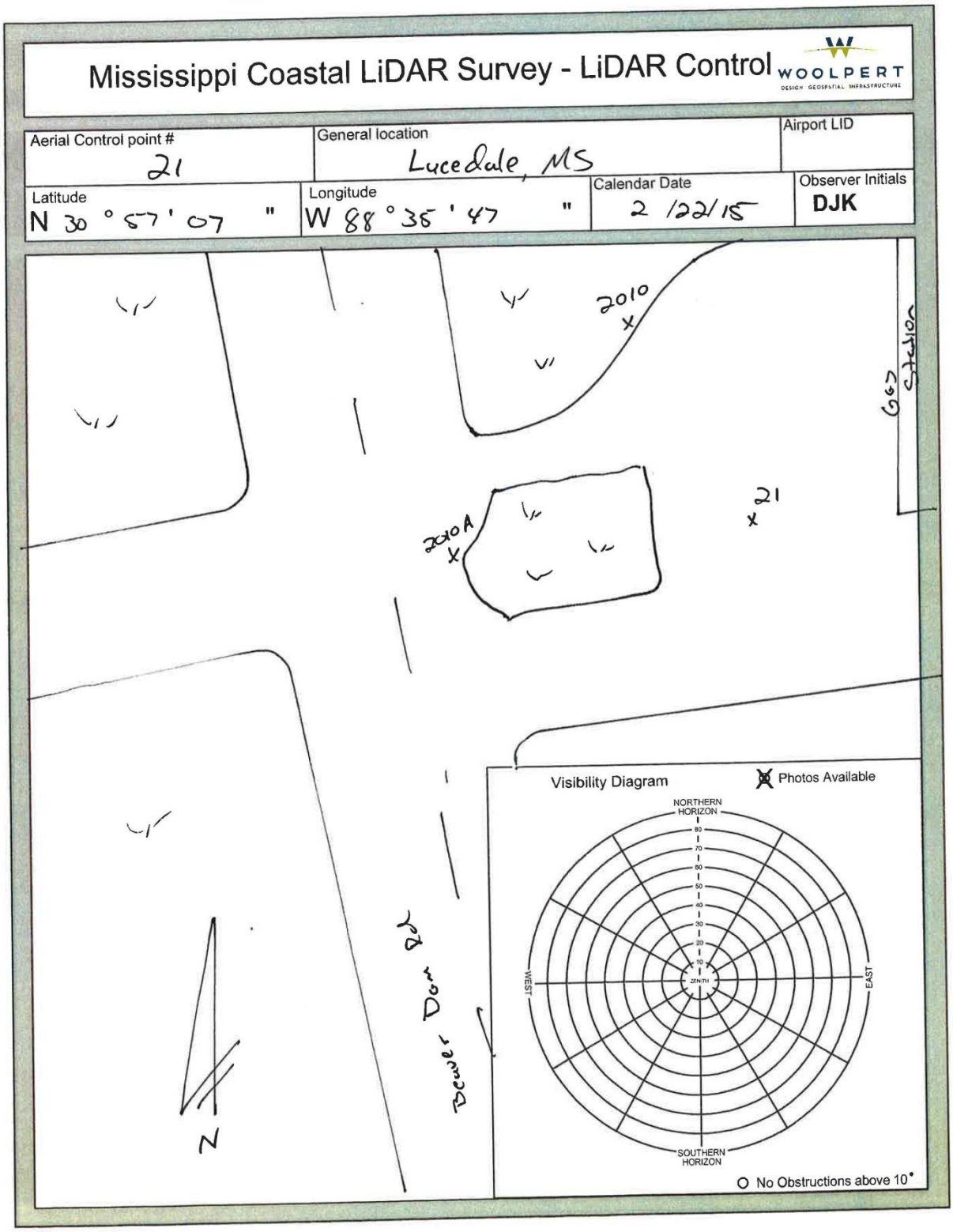
18, N, 21FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
House
Dirt Drive
19
2008
2008 A
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

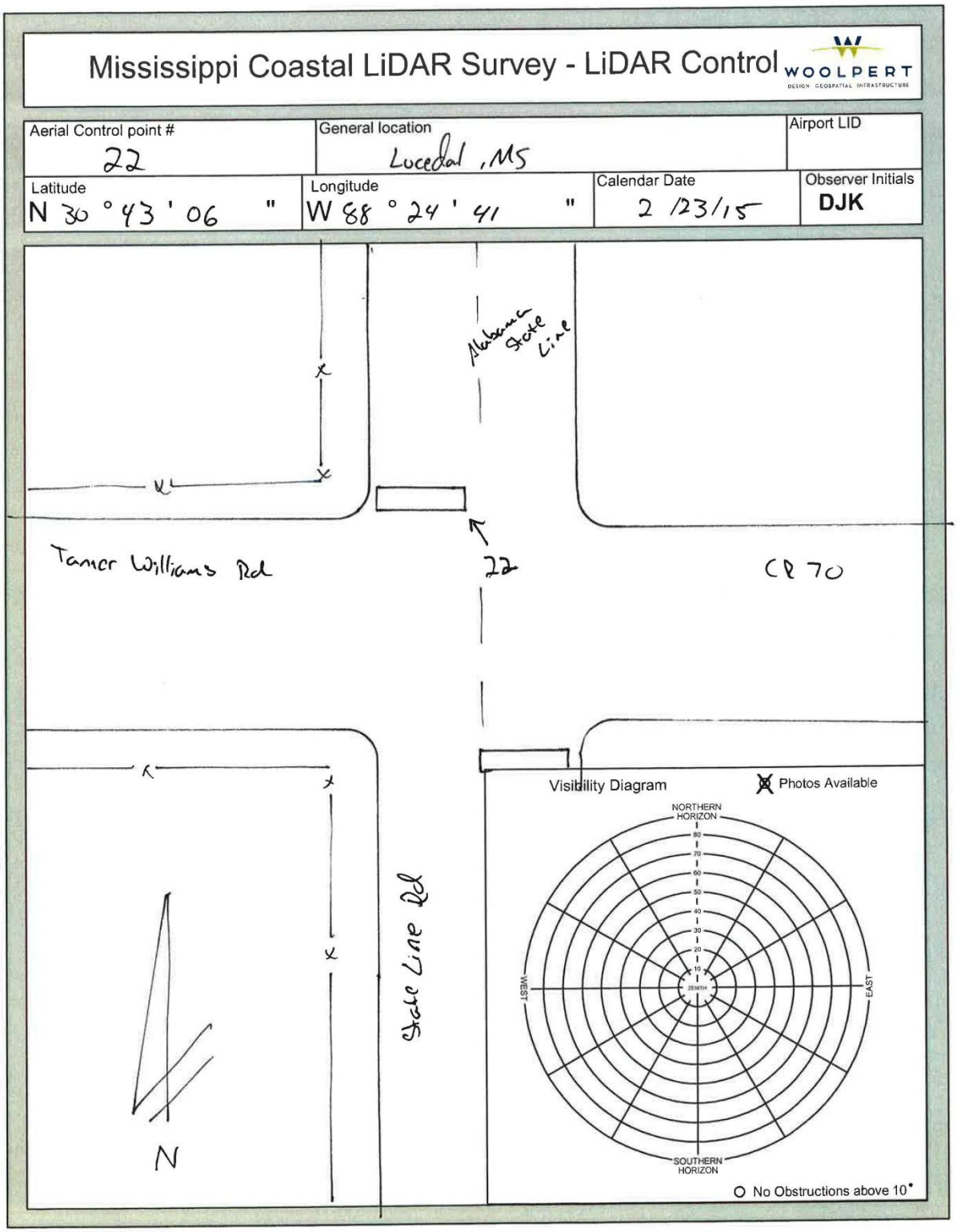
19, W, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
20
General location
Vancleave, MS
Airport LID
Latitude
N 30 ° 41 ' 59 "
Longitude
W 88 ° 44 ' 23 "
Calendar Date
2/23/15
Observer Initials
DJK
Gravel Drive
2009A
Schoolhouse Rd
2009
20
River Rd
Gravel Drive
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
No Obstructions above 10°

20, W, 23FEB2014


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
21
General location
Lucedale, MS
Airport LID
Latitude
N 30 ° 57 ' 07 "
Longitude
W 88 ° 35 ' 47 "
Calendar Date
2 /22/15
Observer Initials
DJK
2010
667 Station
2010A
21
Power Dam Rd
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

21, N, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
22
General location
Lucedal, MS
Airport LID
Latitude
N 30 ° 43 ' 06 "
Longitude
W 88 ° 24 ' 41 "
Calendar Date
2/23/15
Observer Initials
DJK
Alabama State Line
Tanner Williams Rd
22
CR 70
State Line Rd
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

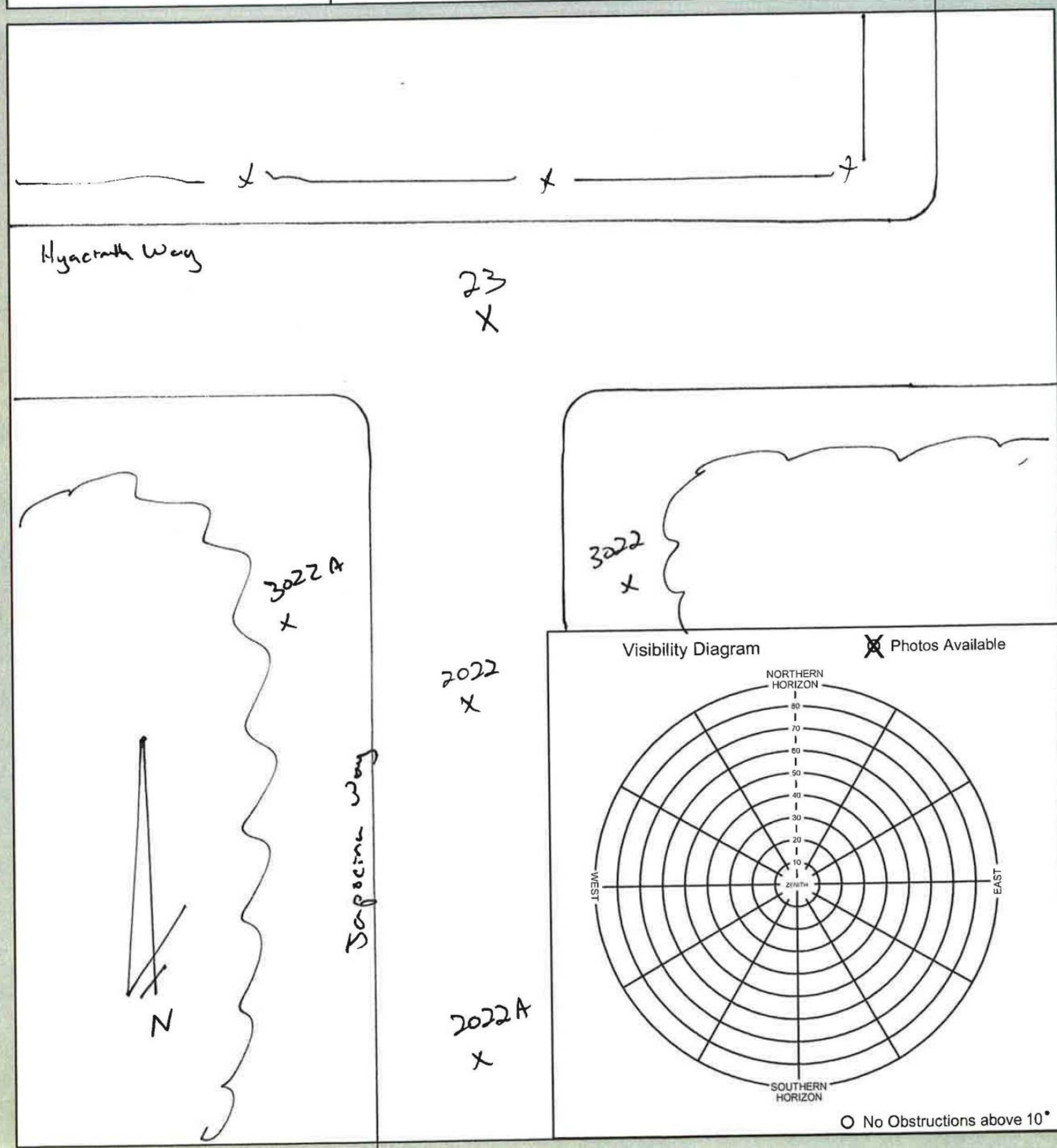
22, W, 23FEB2014

Mississippi Coastal LiDAR Survey - LiDAR Control

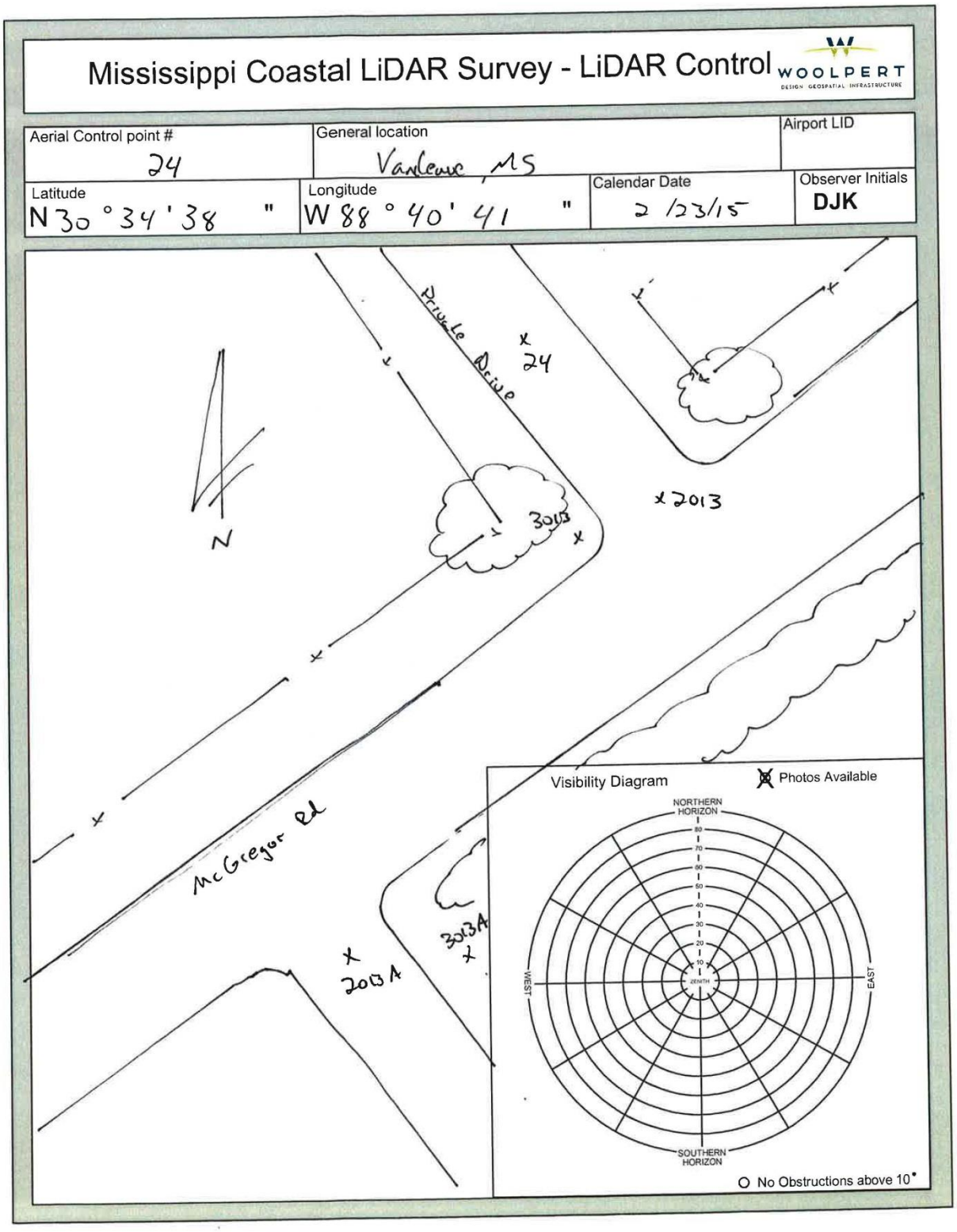
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
23	Moss Point, MS	

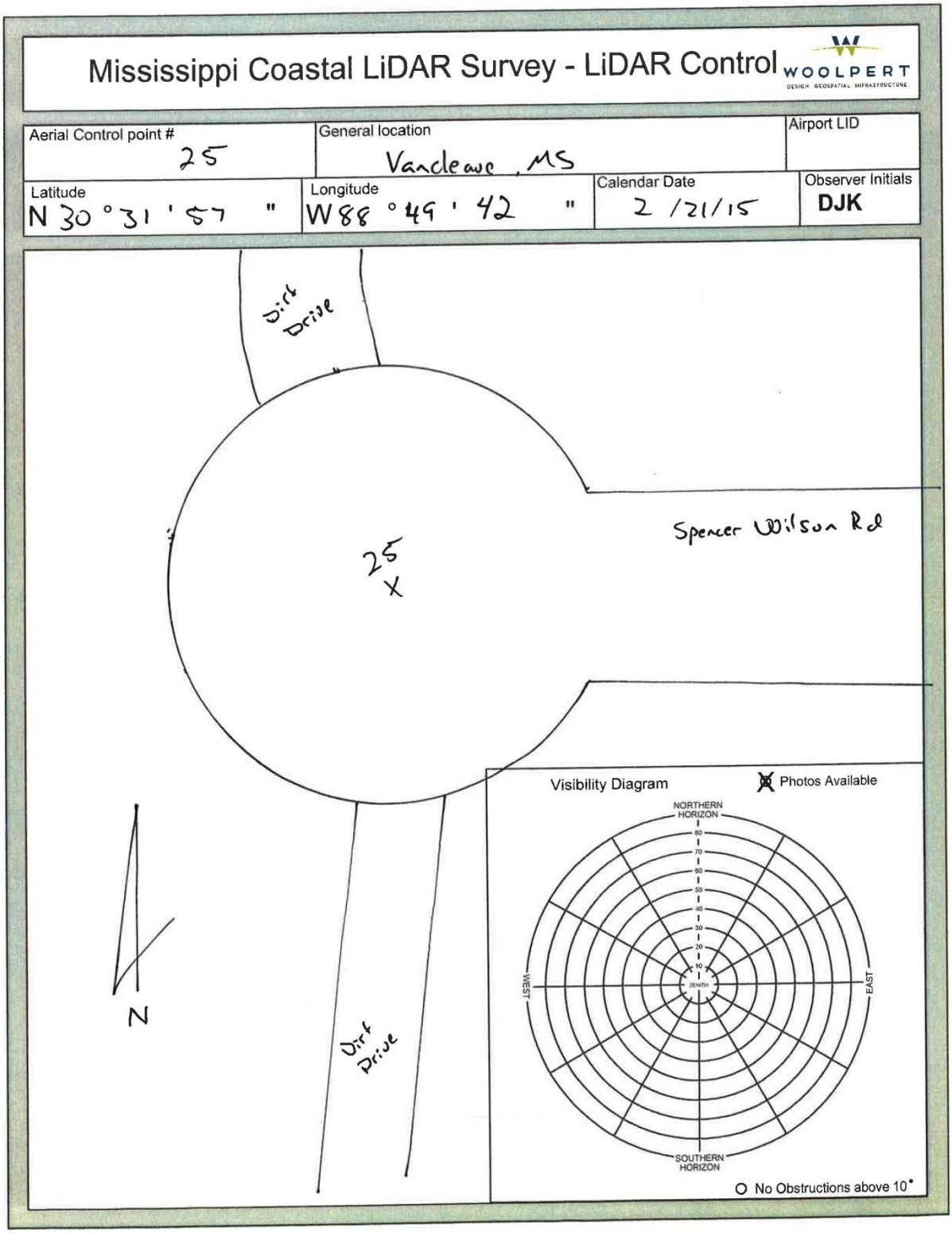
Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 27 ' 52 "	W 88 ° 28 ' 54 "	2 /23/15	DJK



23, E, 23FEB2014


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
24
General location
Vanleave, MS
Airport LID
Latitude
N 30 ° 34 ' 38 "
Longitude
W 88 ° 40 ' 41 "
Calendar Date
2/23/15
Observer Initials
DJK
Private Drive
24
2013
N
McGregor Rd
2013A
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
EAST
WEST
ZENITH
No Obstructions above 10°

24, N, 23FEB2014


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
25
General location
Vancleave, MS
Airport LID
Latitude
N 30 ° 31 ' 57 "
Longitude
W 88 ° 49 ' 42 "
Calendar Date
2 /21/15
Observer Initials
DJK
Dirt Drive
Spencer Wilson Rd
25
X
N
Dirt Drive
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

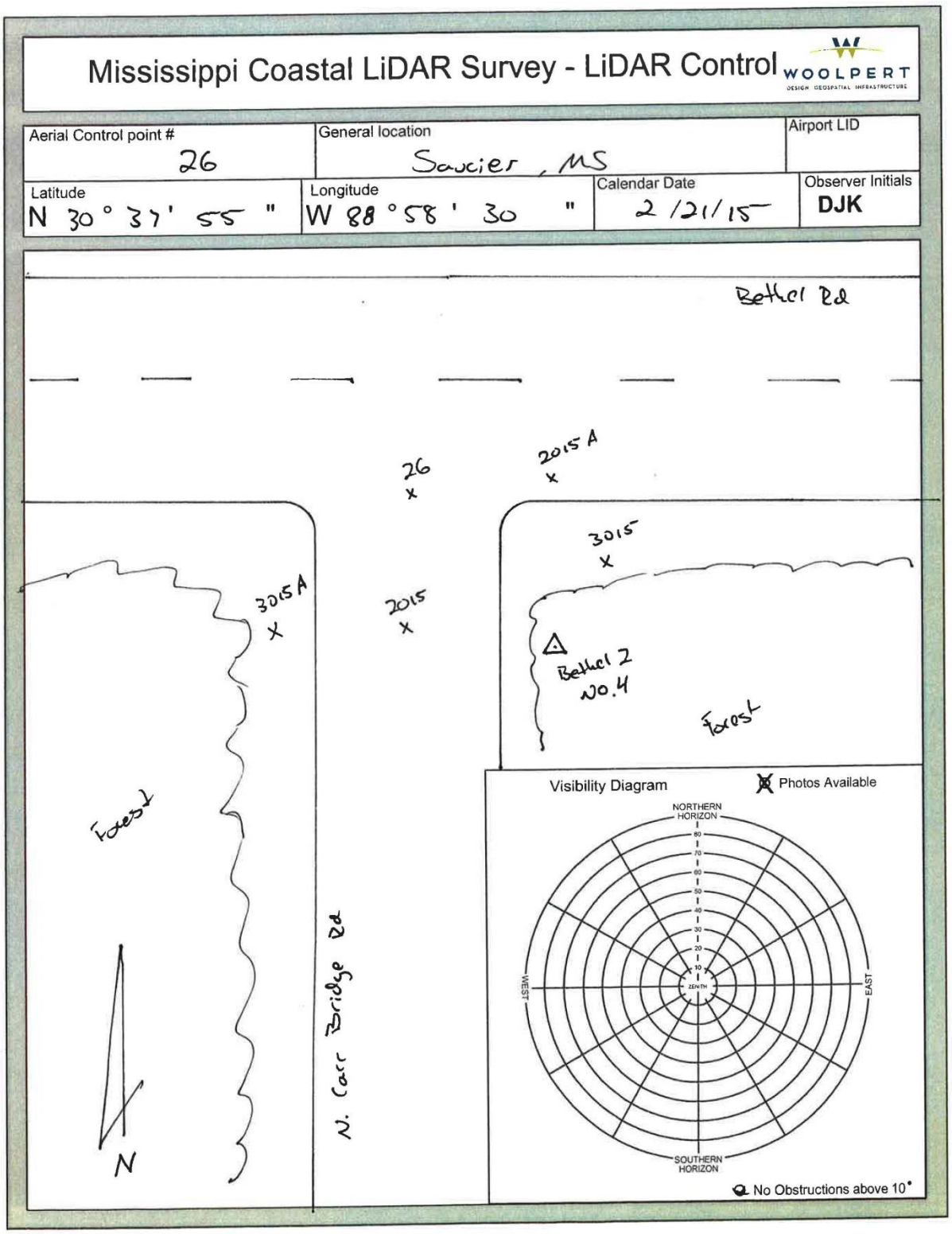
25, N, 21FEB2015

Mississippi Coastal LiDAR Survey - LiDAR Control

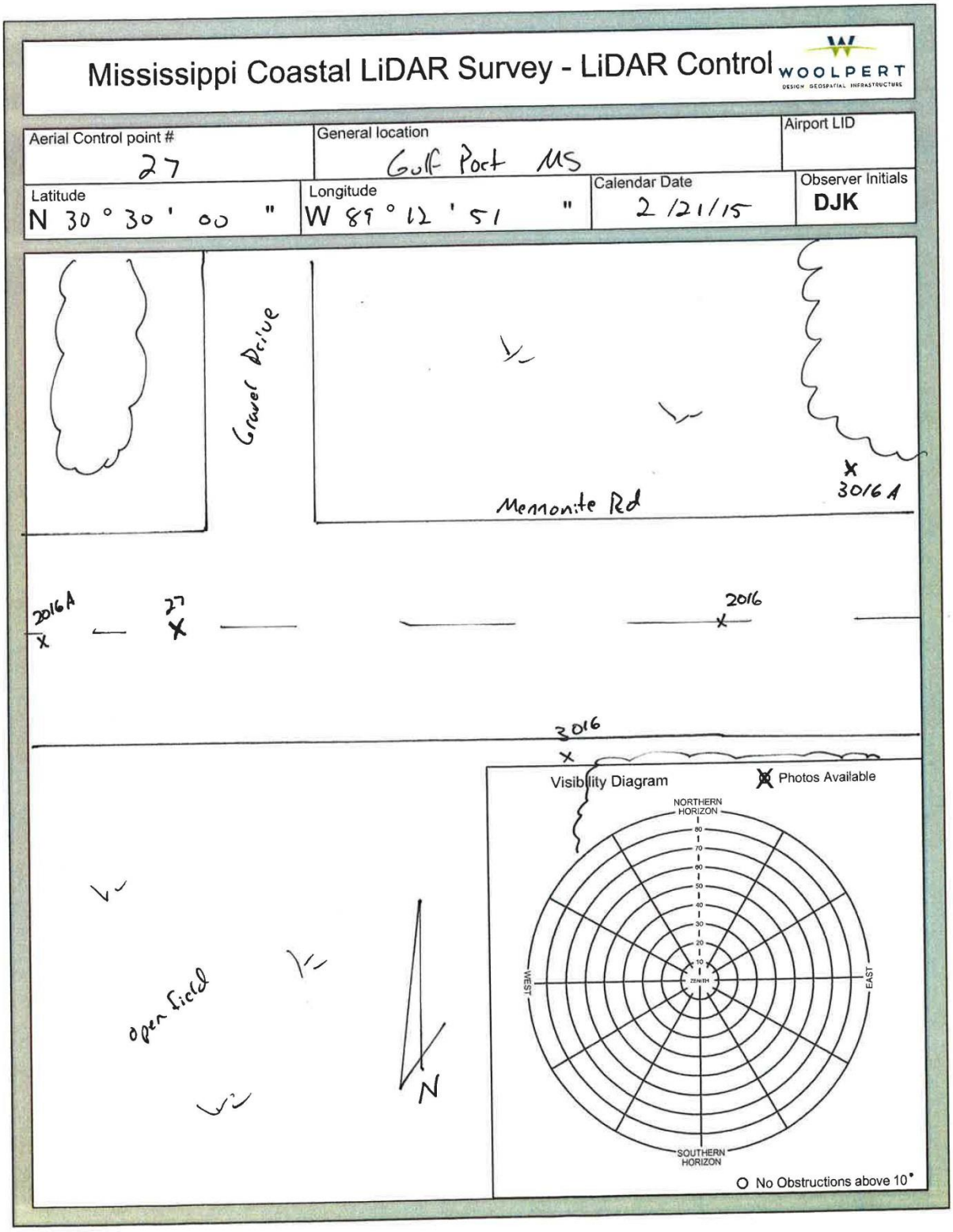
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
26	Saucier, MS	

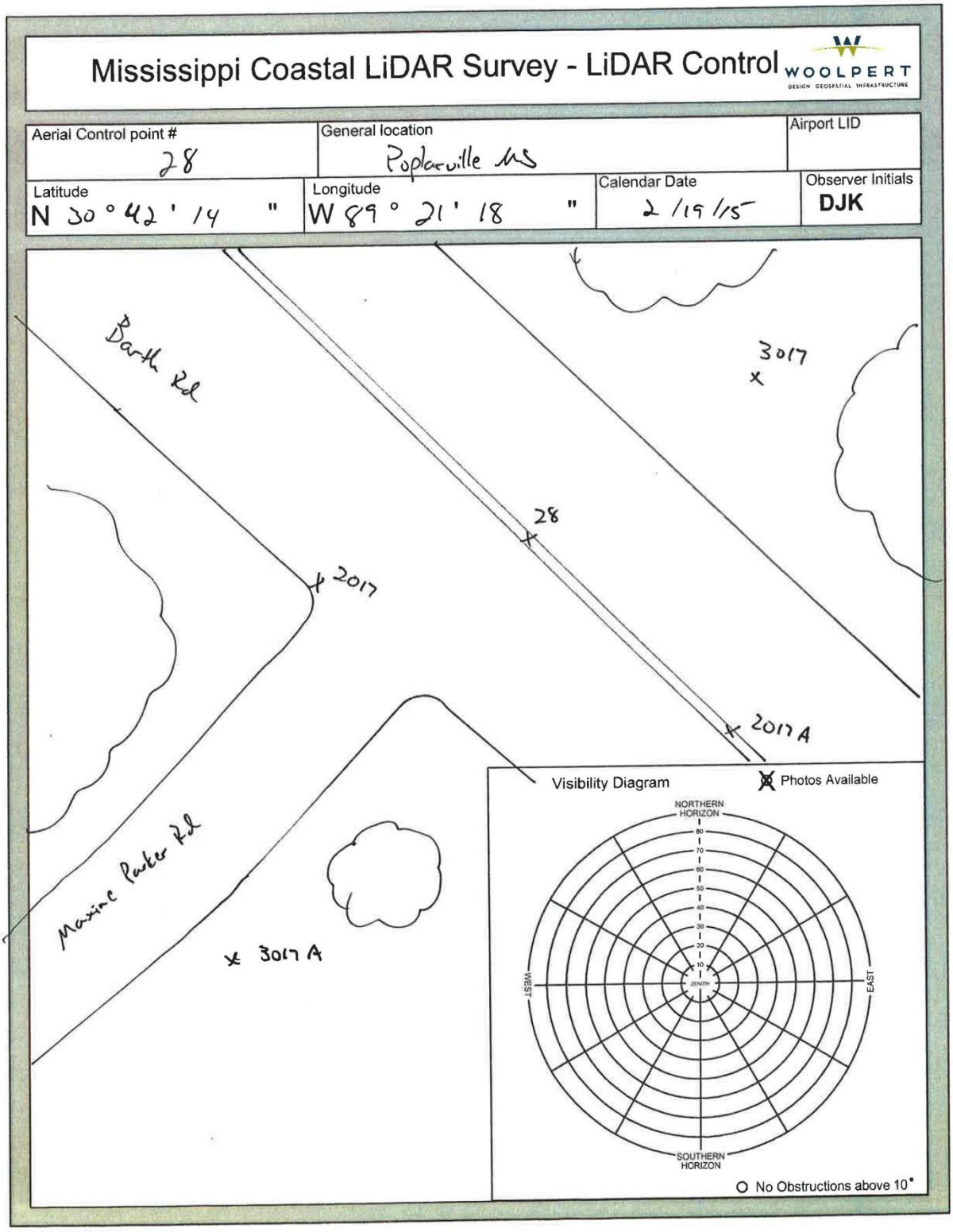
Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 37 ' 55 "	W 88 ° 58 ' 30 "	2/21/15	DJK



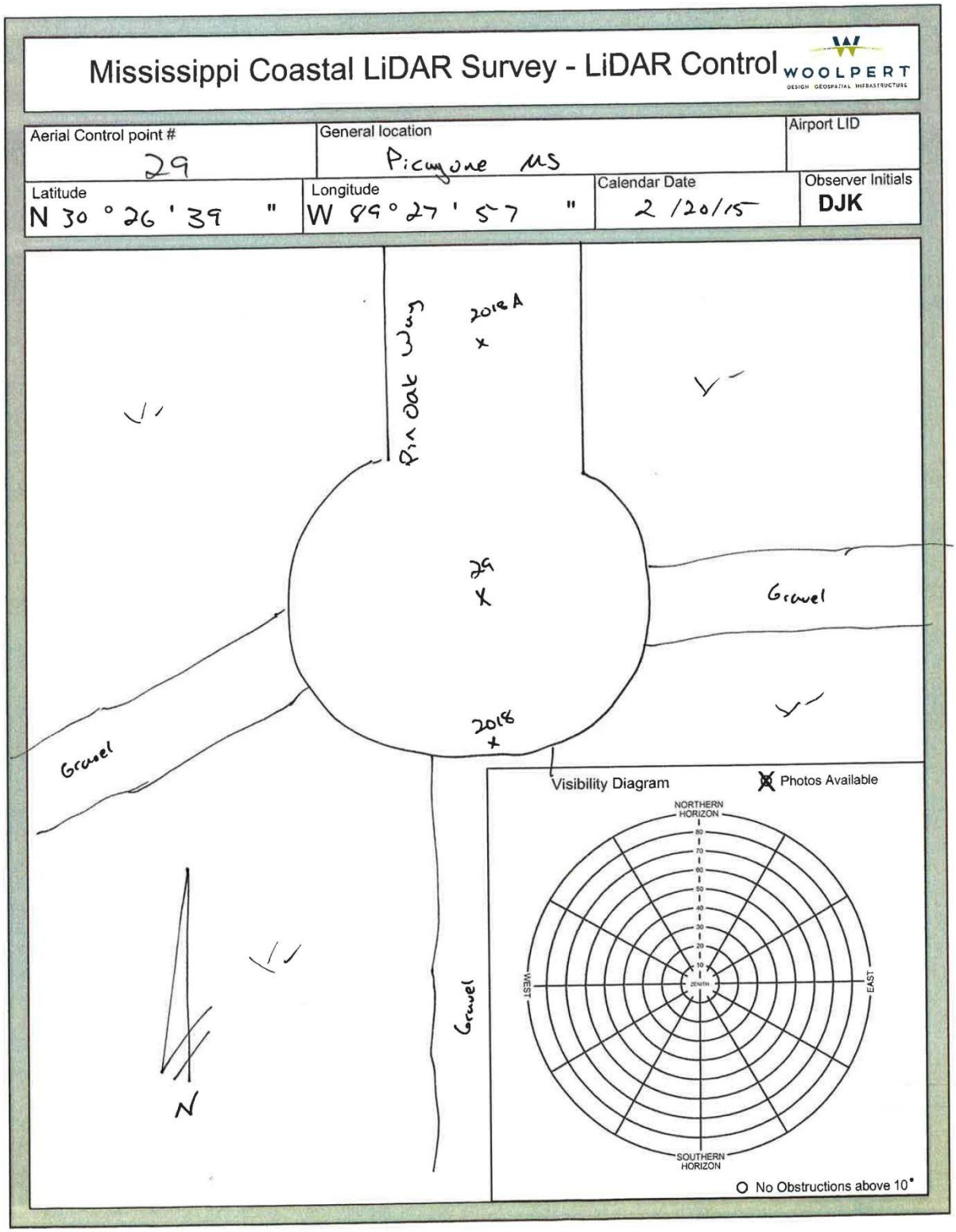
26, W, 21FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
27
General location
Gulf Port MS
Airport LID
Latitude
N 30 ° 30 ' 00 "
Longitude
W 89 ° 12 ' 51 "
Calendar Date
2/21/15
Observer Initials
DJK
Gravel Drive
Mennonite Rd
3016 A
2016A
27
2016
3016
open field
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

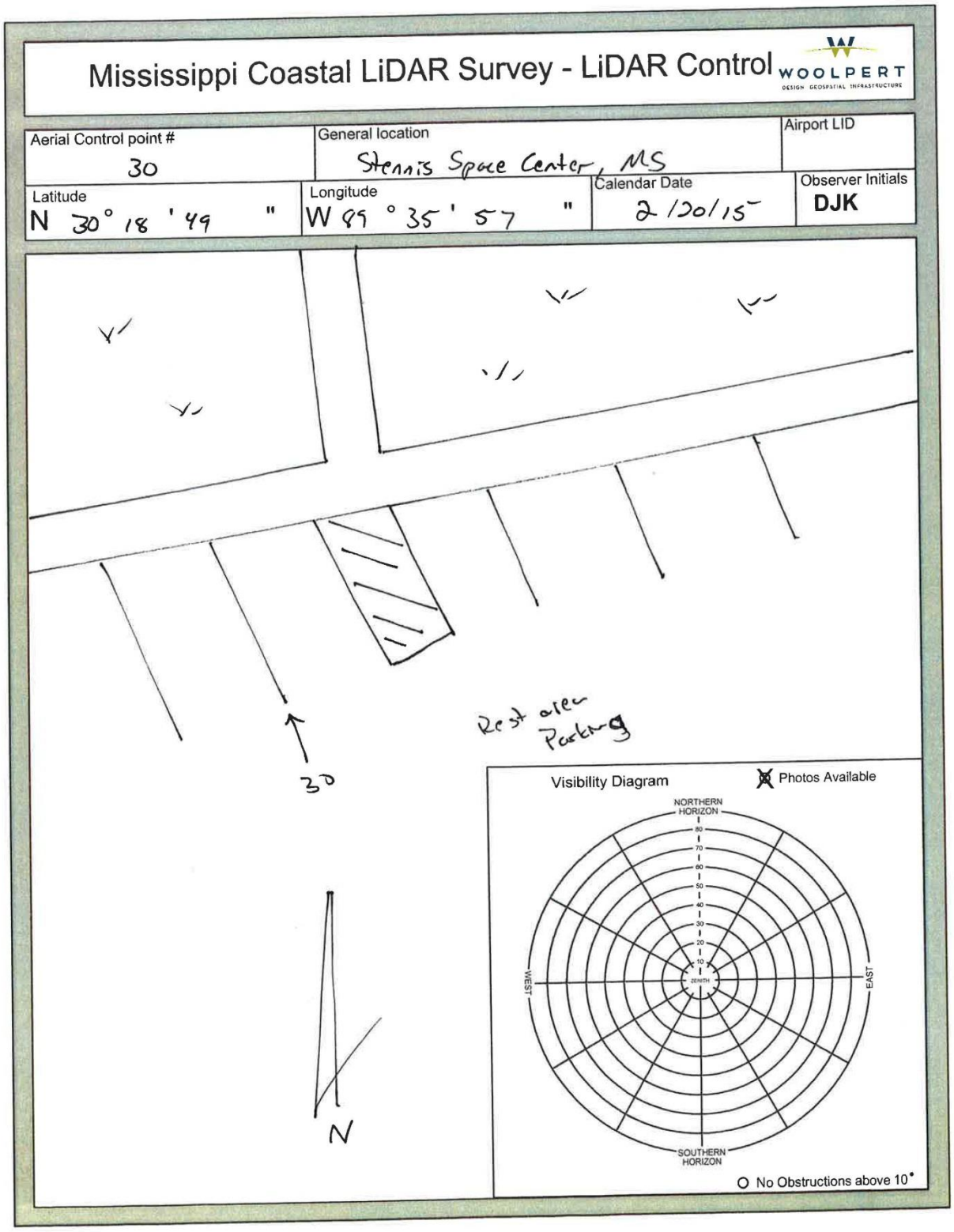
27, N, 21FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
28
General location
Poplarville MS
Airport LID
Latitude
N 30 ° 42 ' 14 "
Longitude
W 89 ° 21 ' 18 "
Calendar Date
2/19/15
Observer Initials
DJK
Barth Rd
3017
28
2017
2017 A
Maxine Parker Rd
3017 A
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

28, W, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
29
General location
Picayune MS
Airport LID
Latitude
N 30 ° 26 ' 39 "
Longitude
W 89 ° 27 ' 57 "
Calendar Date
2 /20/15
Observer Initials
DJK
Pin Oak Loop
2018 A
29
2018
Gravel
Gravel
Gravel
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

29, E, 20FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
Rest area Parking
30
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

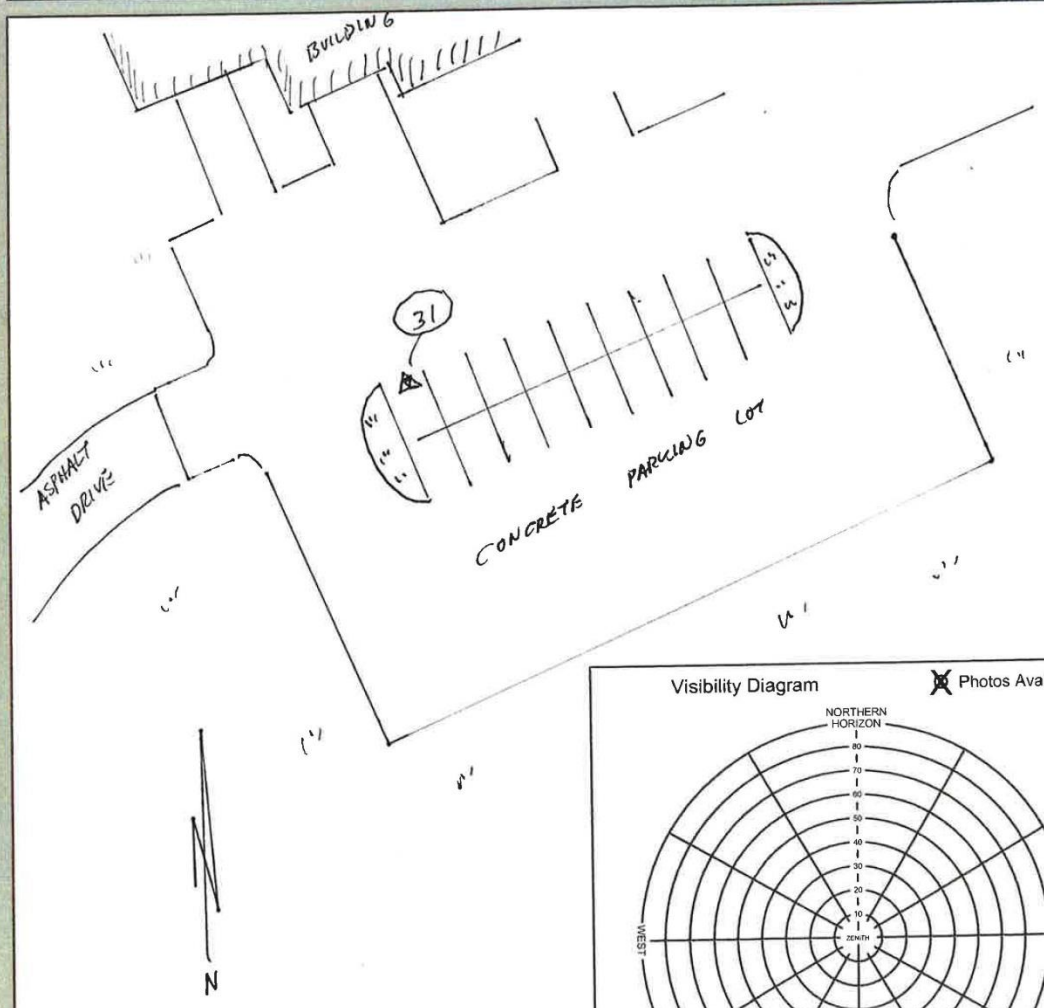
30, W, 20FEB2015

Mississippi Coastal LiDAR Survey - LiDAR Control

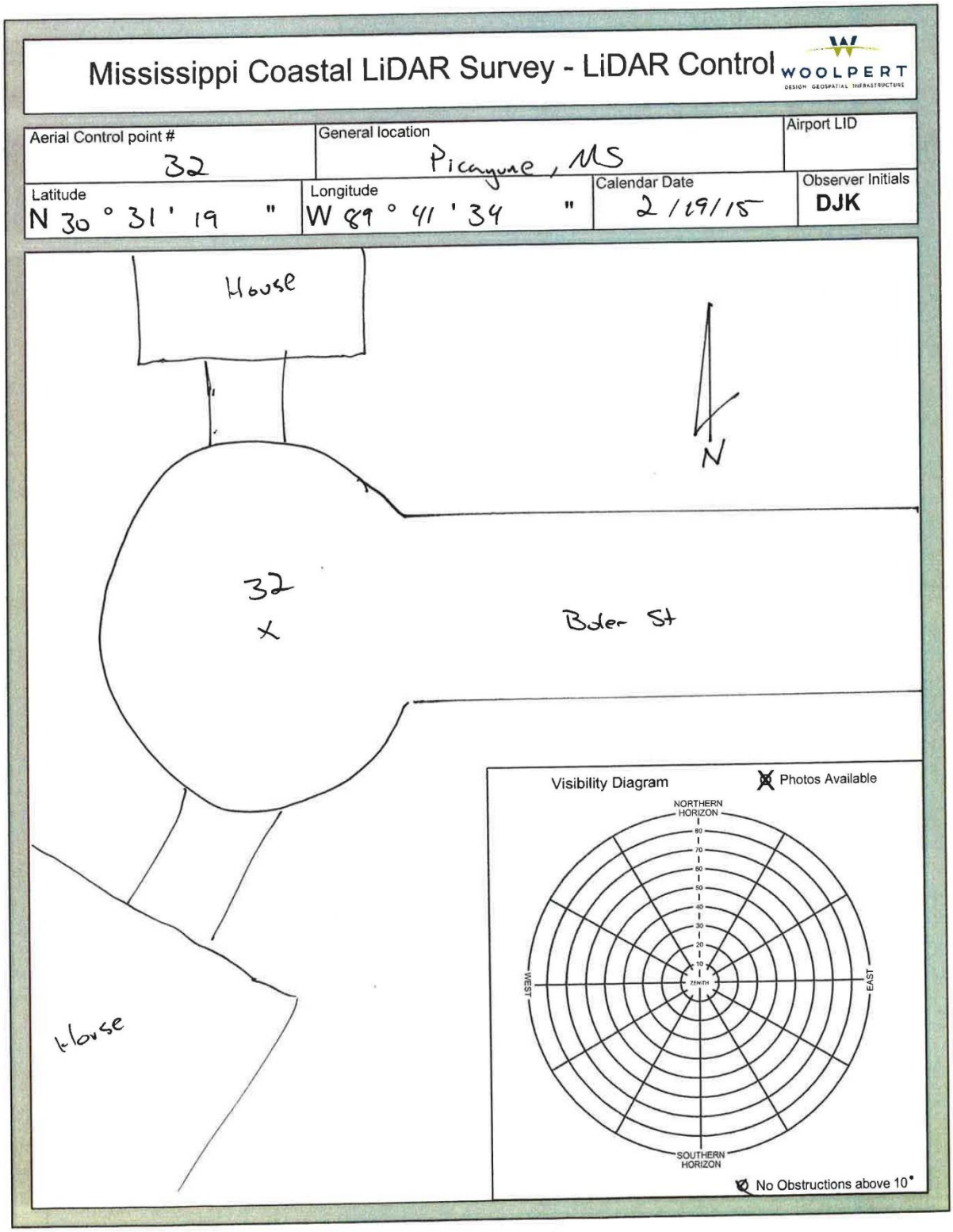
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
31	DERBY, MS	

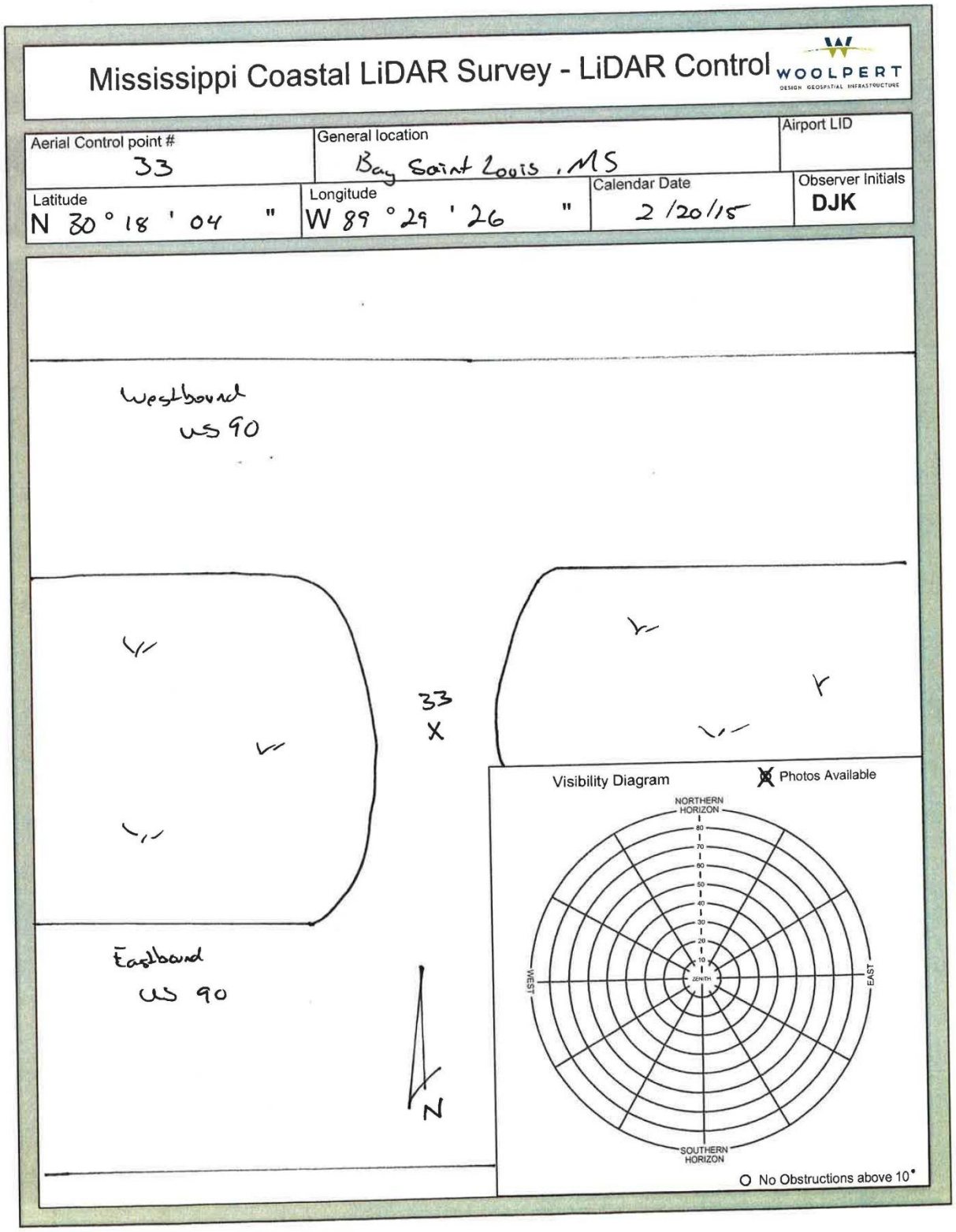
Latitude	Longitude	Calendar Date	Observer Initials
N30 ° 43 ' 25 "	W 89 ° 34 ' 59 "	02 /19 /15	DJK



31, N, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
32
General location
Picayune, MS
Airport LID
Latitude
N 30 ° 31 ' 19 "
Longitude
W 89 ° 41 ' 34 "
Calendar Date
2/19/15
Observer Initials
DJK
House
N
32
X
Bder St
House
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

32, E, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
33
General location
Bay Saint Louis, MS
Airport LID
Latitude
N 30 ° 18 ' 04 "
Longitude
W 89 ° 29 ' 26 "
Calendar Date
2/20/15
Observer Initials
DJK
Westbound
US 90
33
X
Eastbound
US 90
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
80
70
60
50
40
30
20
10
ZENITH
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

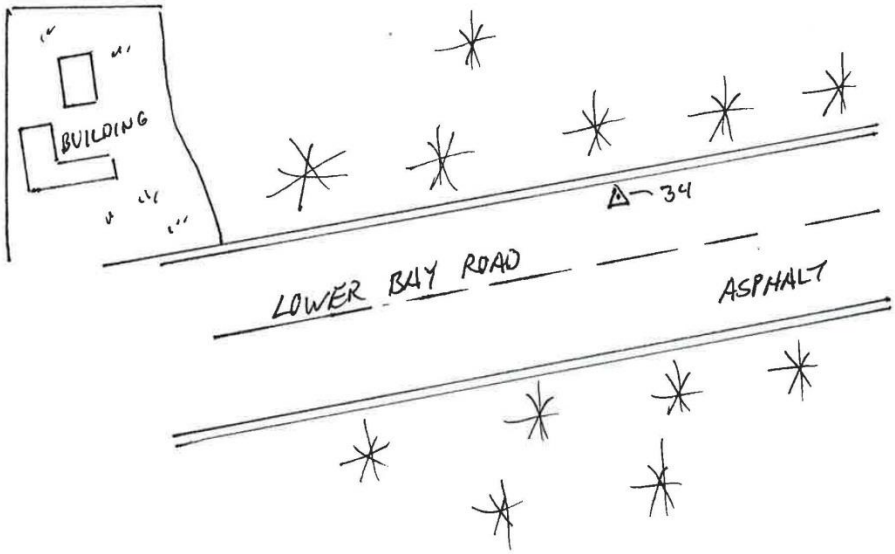
33, W, 20FEB2015

Mississippi Coastal LiDAR Survey - LiDAR Control

WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

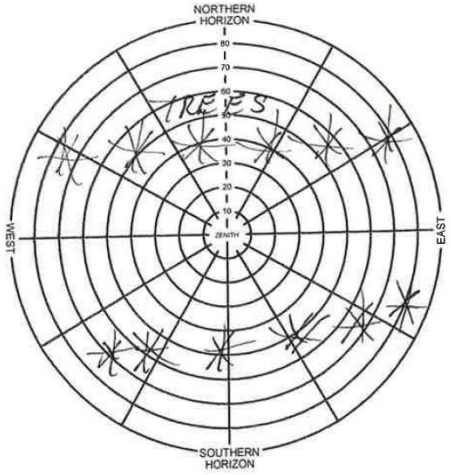
Aerial Control point #	General location	Airport LID
34	WAVELAND, MS	

Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 14 ' 55 "	W 89 ° 28 ' 28 "	02/20/15	DJK



Visibility Diagram

Photos Available



O No Obstructions above 10°

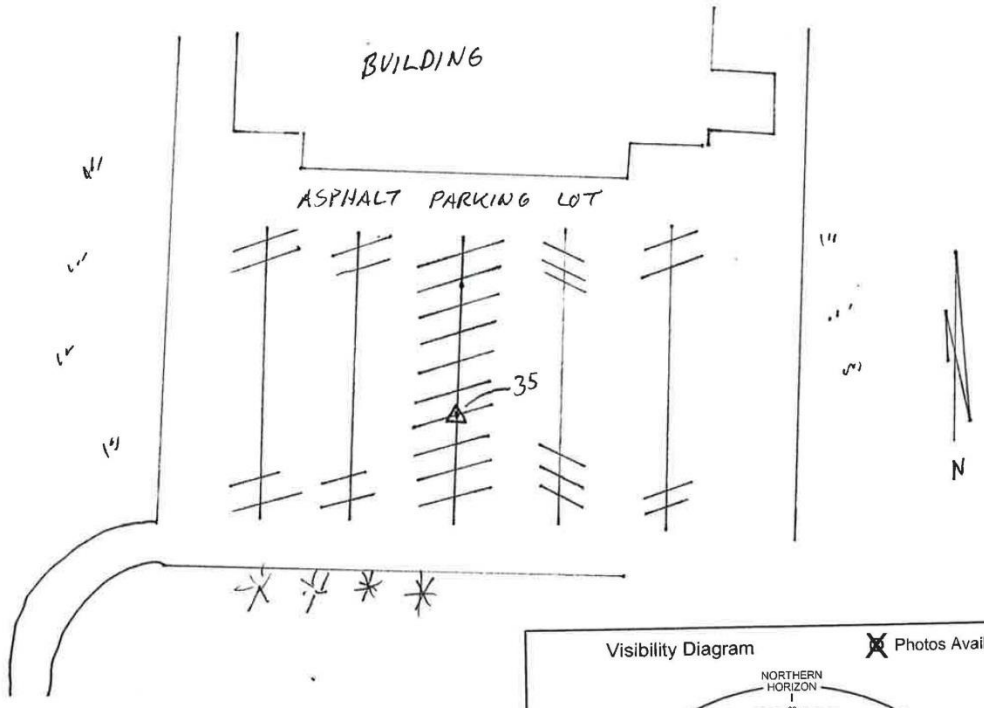
34, E, 20EFB2015

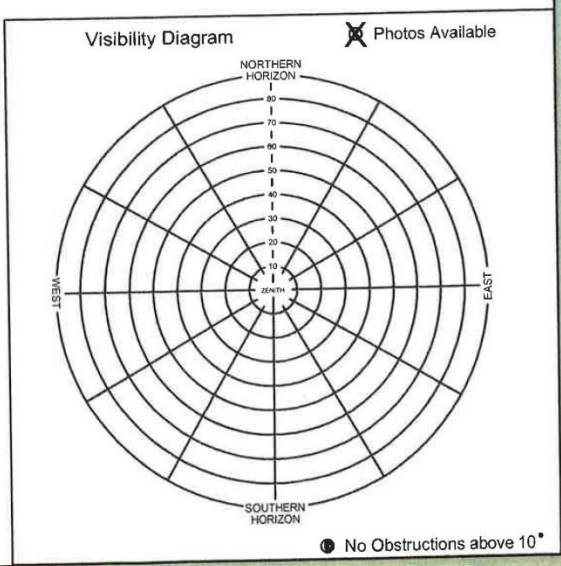
Mississippi Coastal LiDAR Survey - LiDAR Control

WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
35	WAVELAND, MS	

Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 18 ' 18 "	W 89 ° 23 ' 07 "	02/20/15	DJK





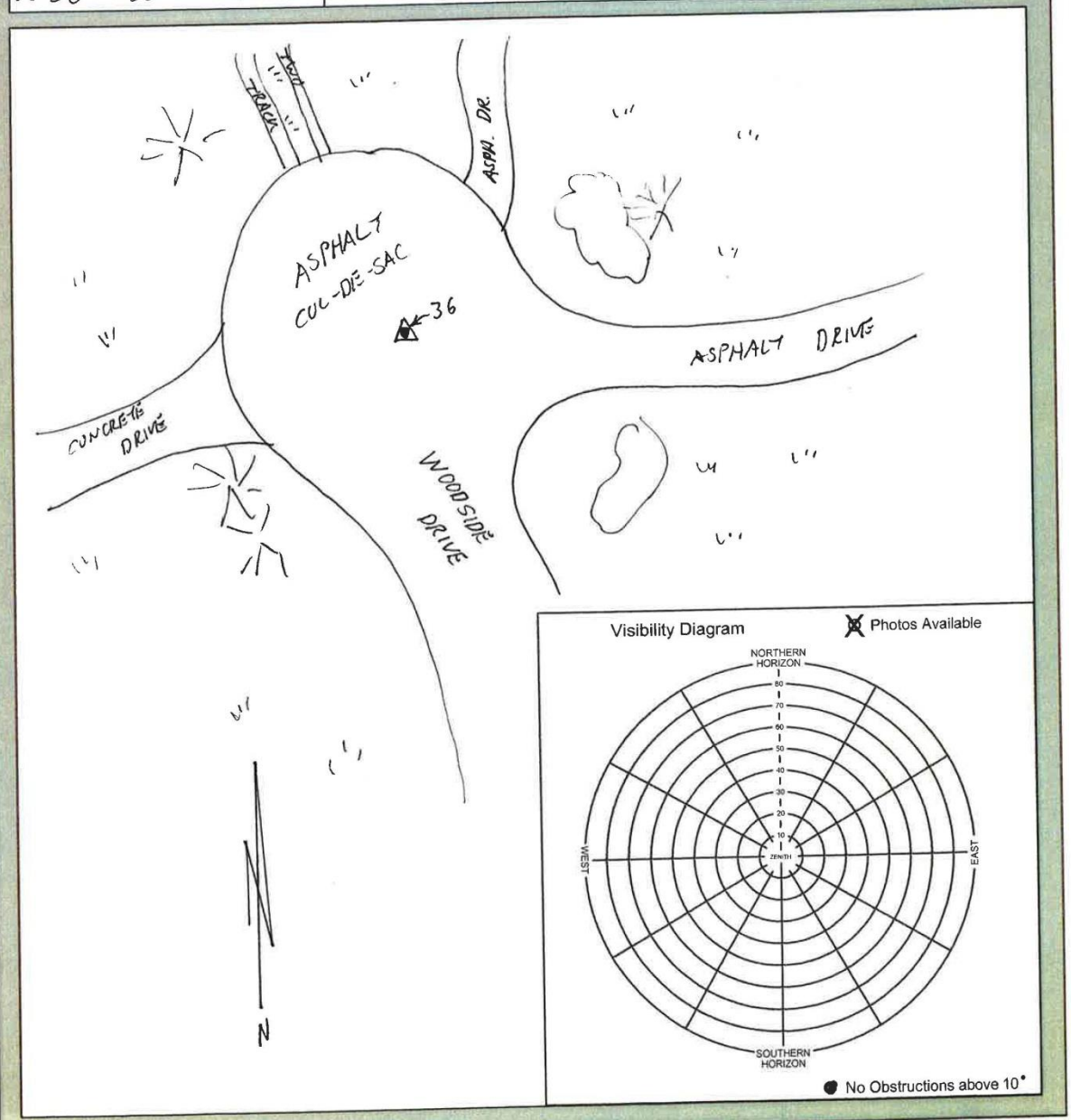
35, E, 20FEB2015

Mississippi Coastal LiDAR Survey - LiDAR Control

WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

Aerial Control point #	General location	Airport LID
36	OZONA, MS	

Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 36 ' 47 "	W 89 ° 44 ' 21 "	02/19/15	DJK



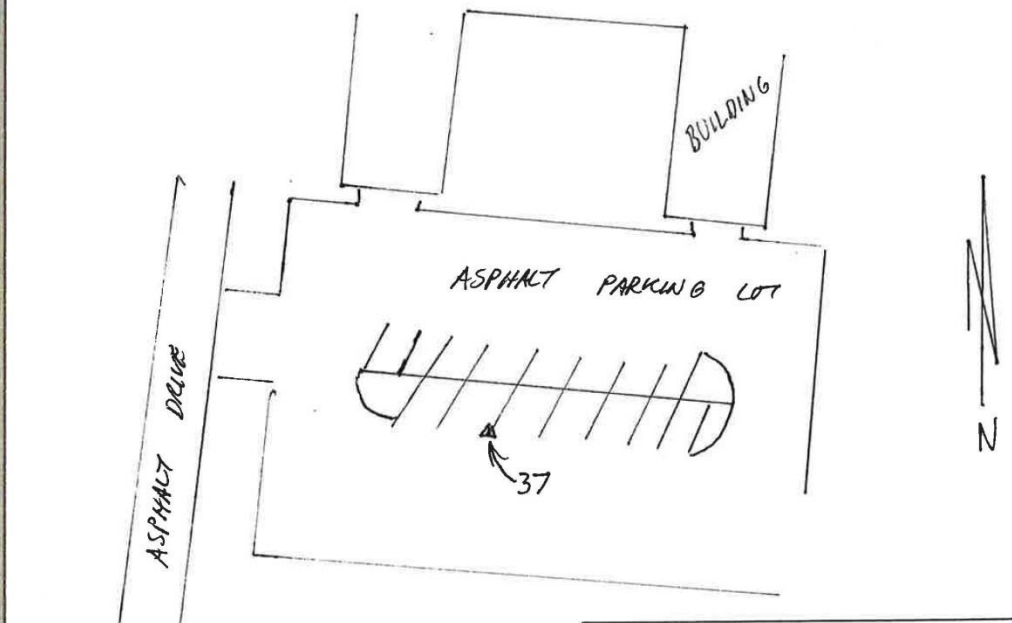
36, N, 19FEB2015

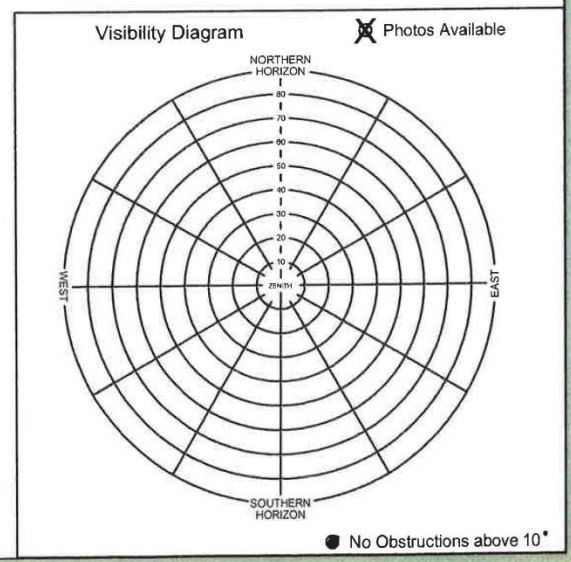
Mississippi Coastal LiDAR Survey - LiDAR Control

WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE

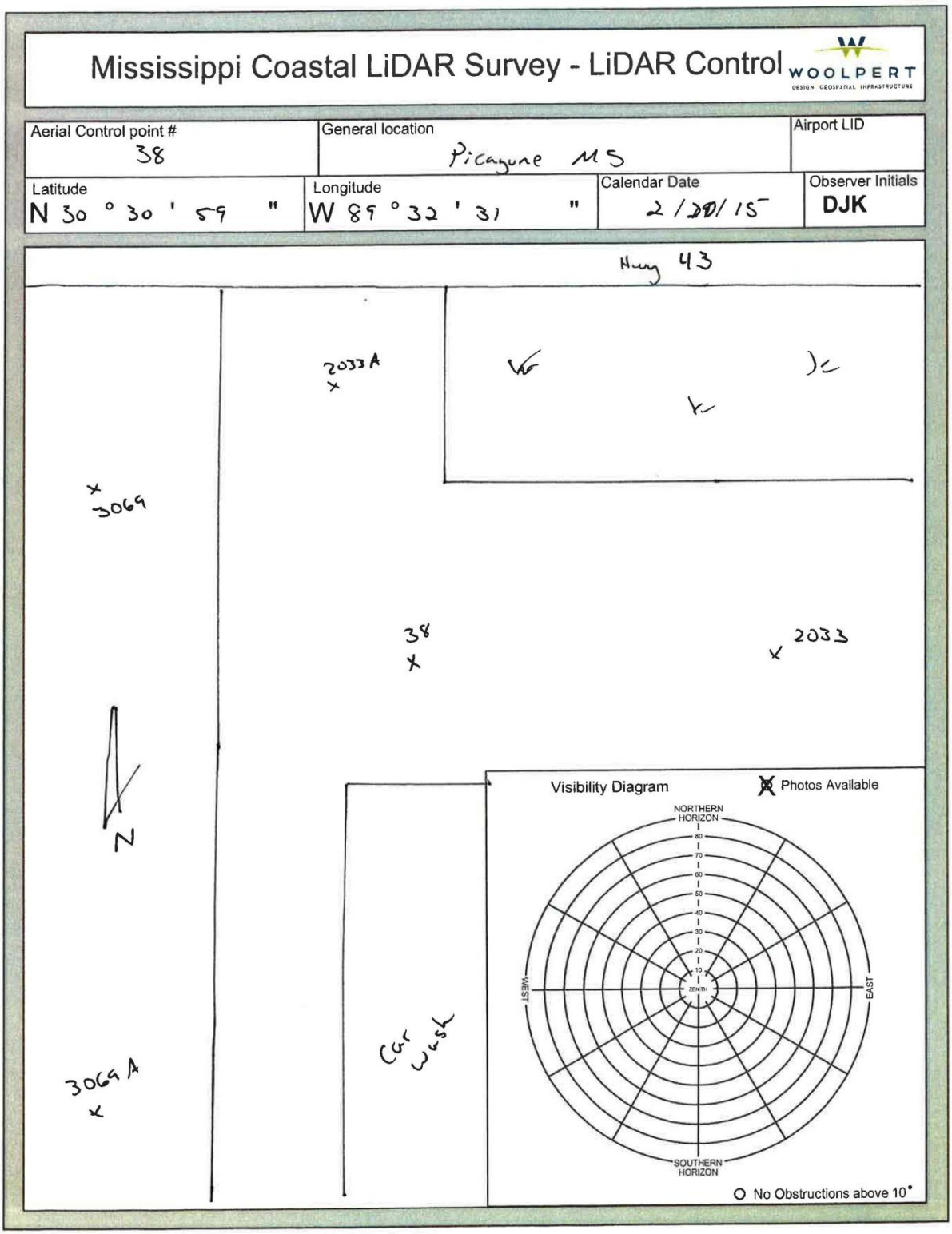
Aerial Control point #	General location	Airport LID
37	McNEIL, MS	

Latitude	Longitude	Calendar Date	Observer Initials
N 30 ° 40 ' 08 "	W 89 ° 38 ' 18 "	02/19/15	DJK

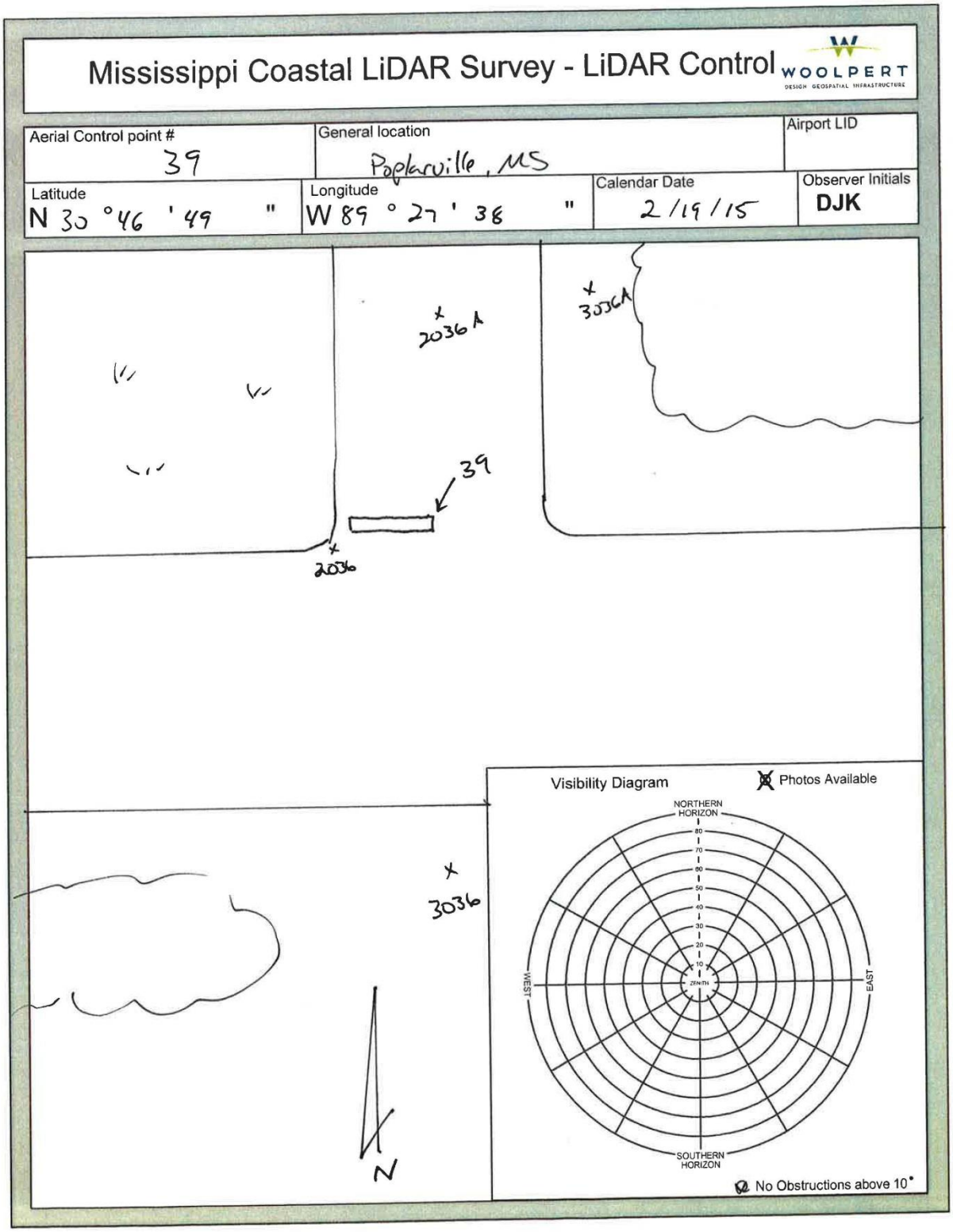




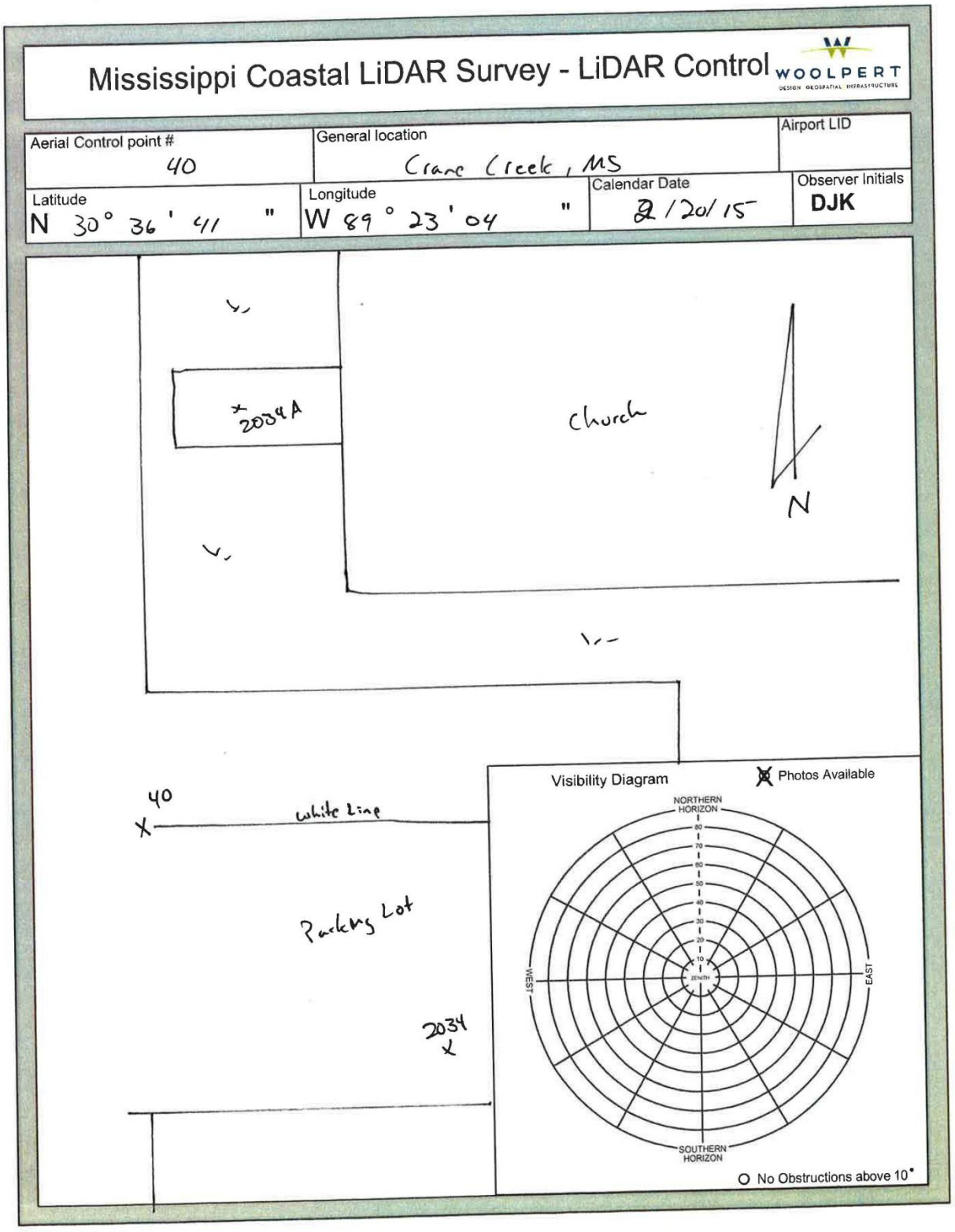
37, E, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
Hwy 43
2033 A
3069
38
2033
3069 A
Car wash
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
ZENITH
10
20
30
40
50
60
70
80
No Obstructions above 10°

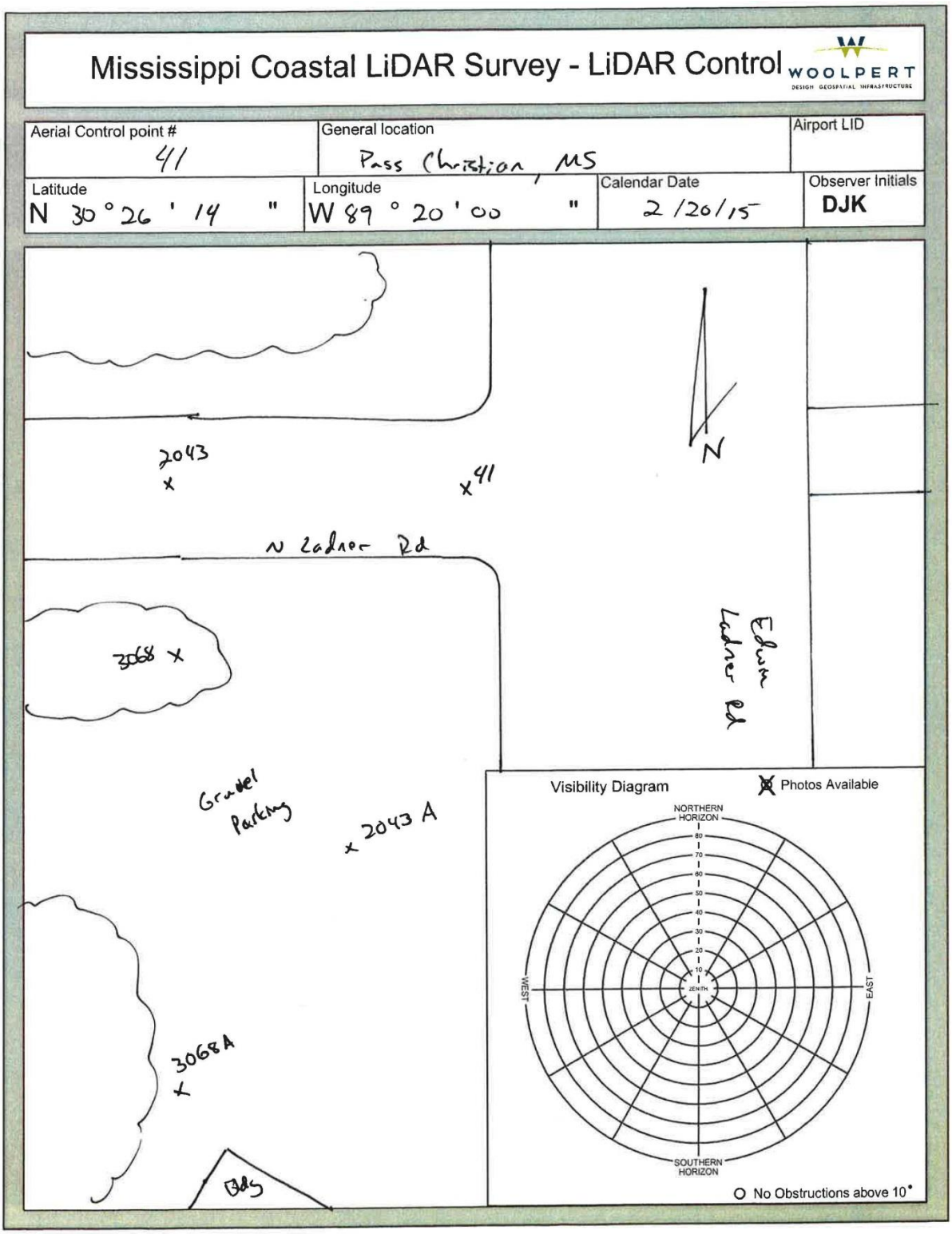
38, S, 20FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
39
General location
Poplarville, MS
Airport LID
Latitude
N 30 °46 '49 "
Longitude
W 89 ° 27 ' 38 "
Calendar Date
2/19/15
Observer Initials
DJK
2036A
3036A
39
2036
3036
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
EAST
WEST
ZENITH
No Obstructions above 10°

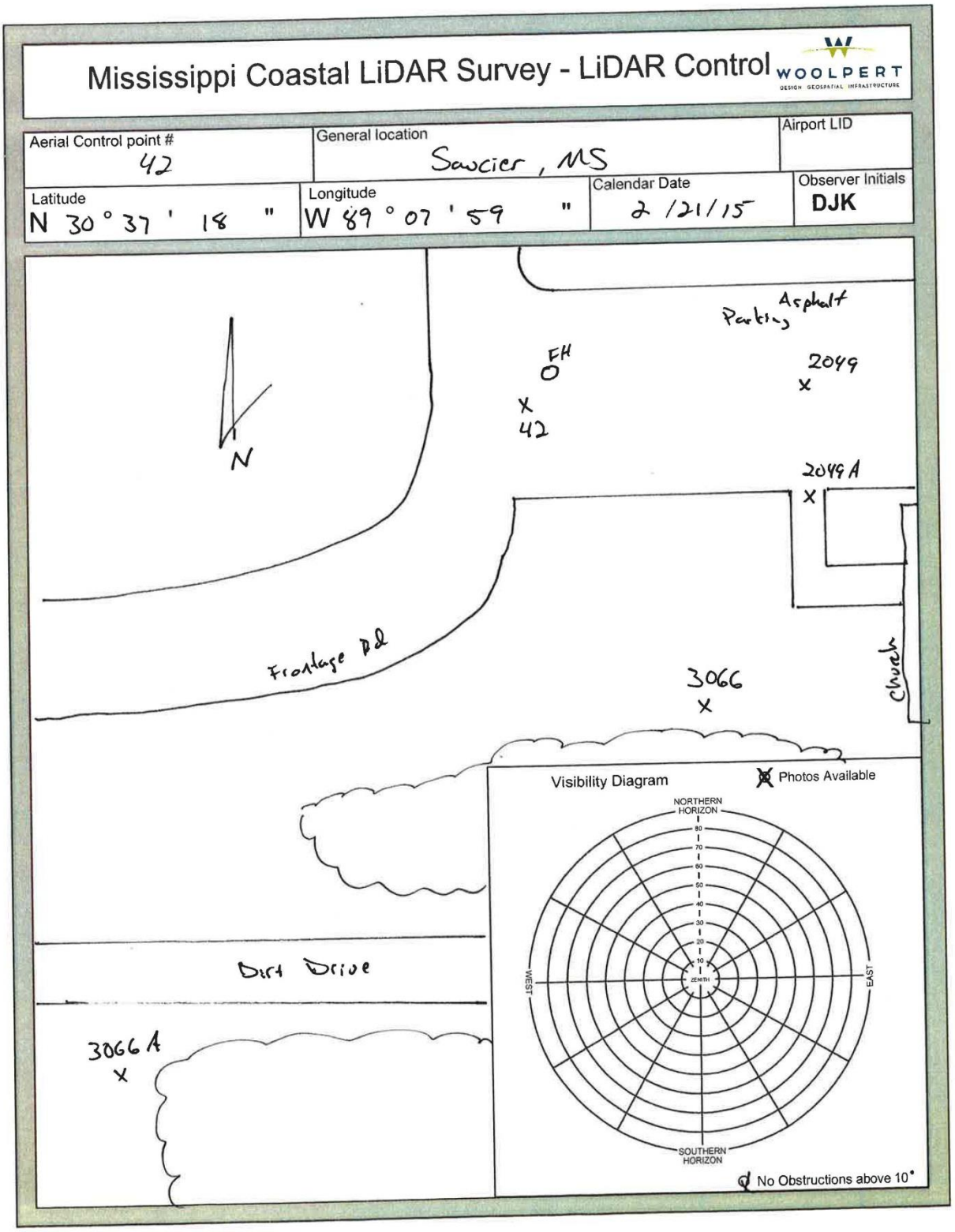
39, W, 19FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
2034A
Church
N
40
White Line
Parking Lot
2034
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
EAST
WEST
ZENITH
No Obstructions above 10°

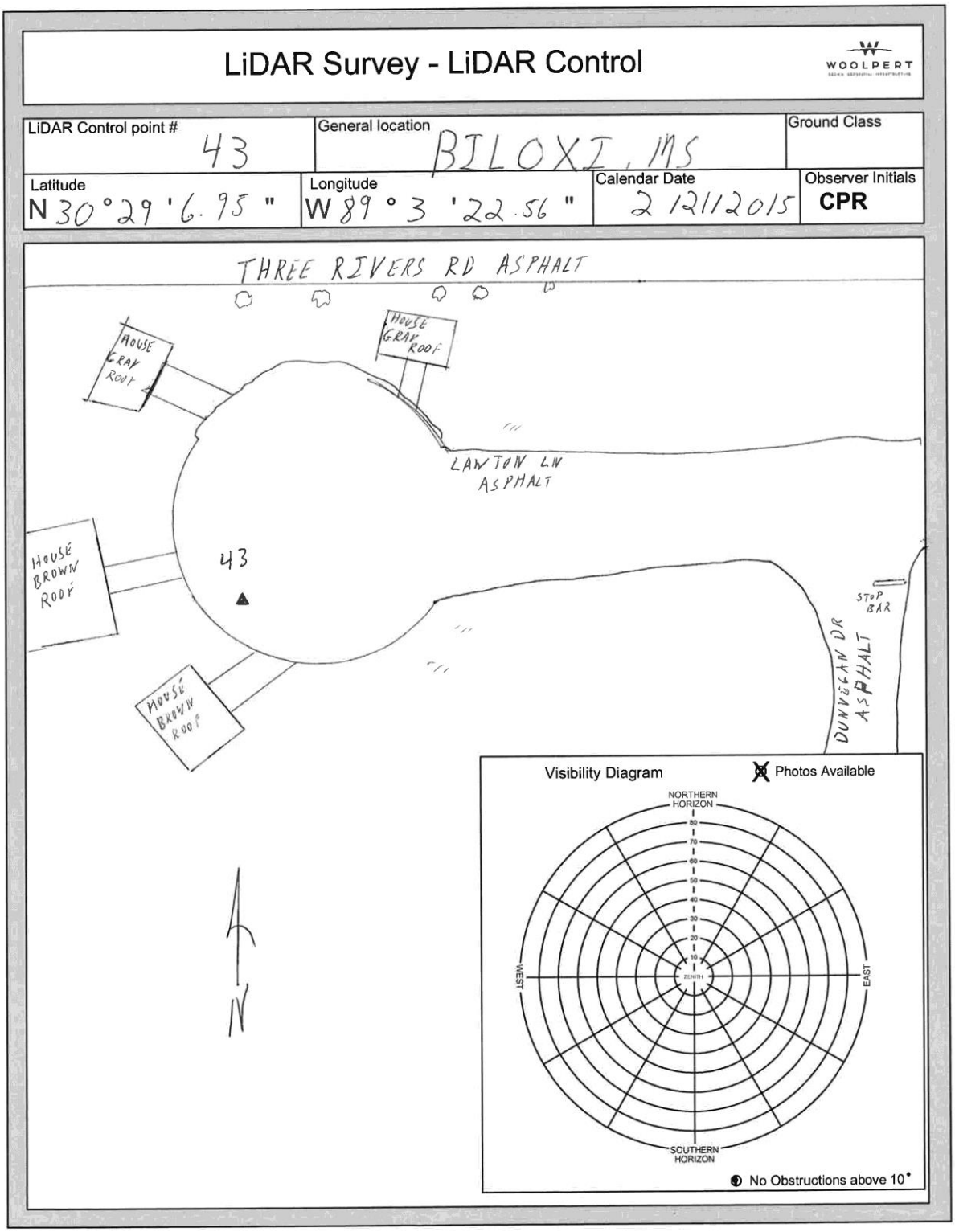
40, W, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 41
General location Pass Christian, MS
Airport LID
Latitude N 30 ° 26 ' 14 "
Longitude W 89 ° 20 ' 00 "
Calendar Date 2/20/15
Observer Initials DJK
2043
41
N
N Ladner Rd
Edwin Ladner Rd
3068
Gravel Parking
2043 A
3068A
Bldg
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

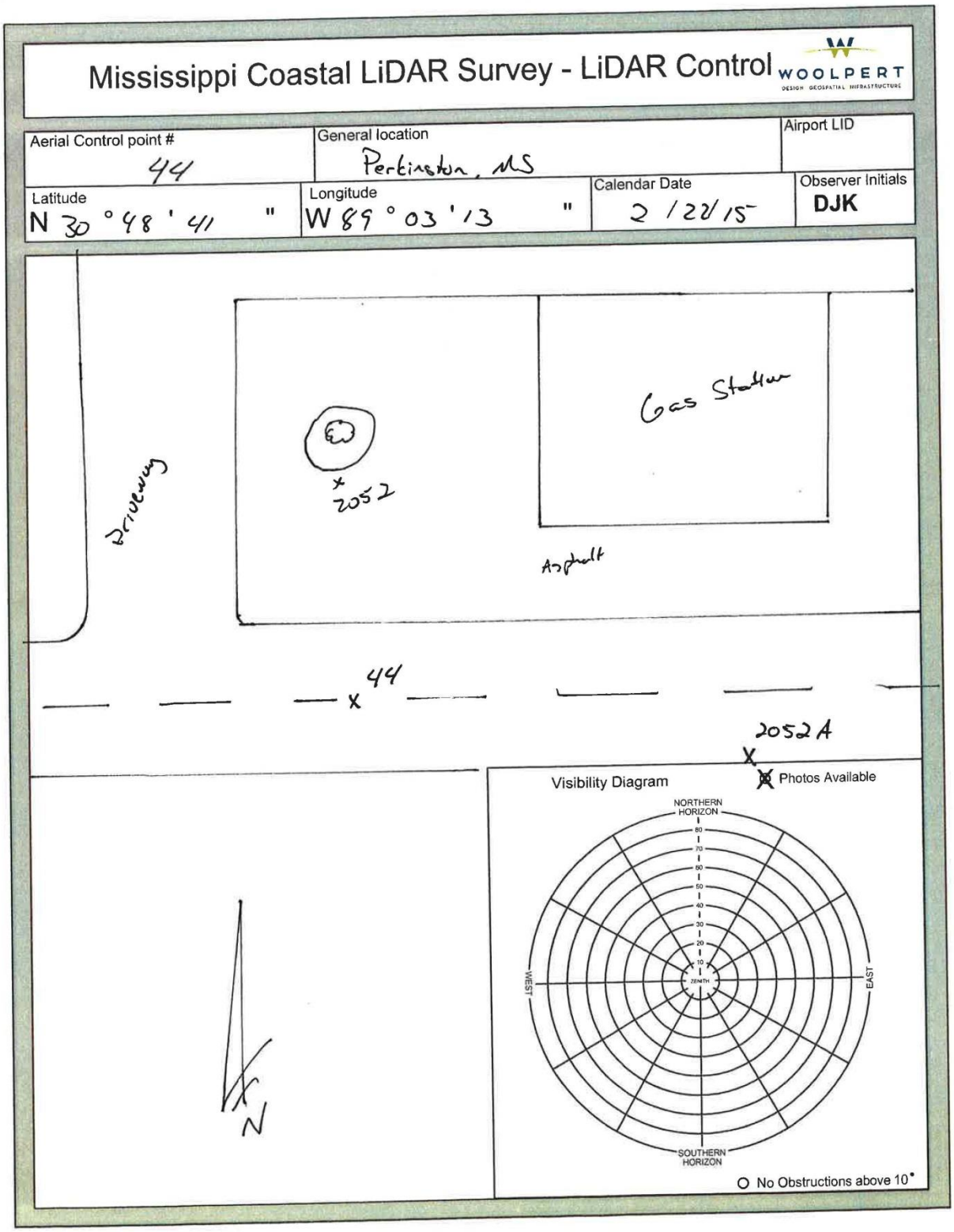
41, E, 20FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
42
General location
Saucier, MS
Airport LID
Latitude
N 30 ° 37 ' 18 "
Longitude
W 89 ° 07 ' 59 "
Calendar Date
2/21/15
Observer Initials
DJK
Asphalt Parking
FH
2049
42
N
2049 A
Frontage Rd
3066
Church
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
EAST
WEST
ZENITH
No Obstructions above 10°
Dirt Drive
3066 A

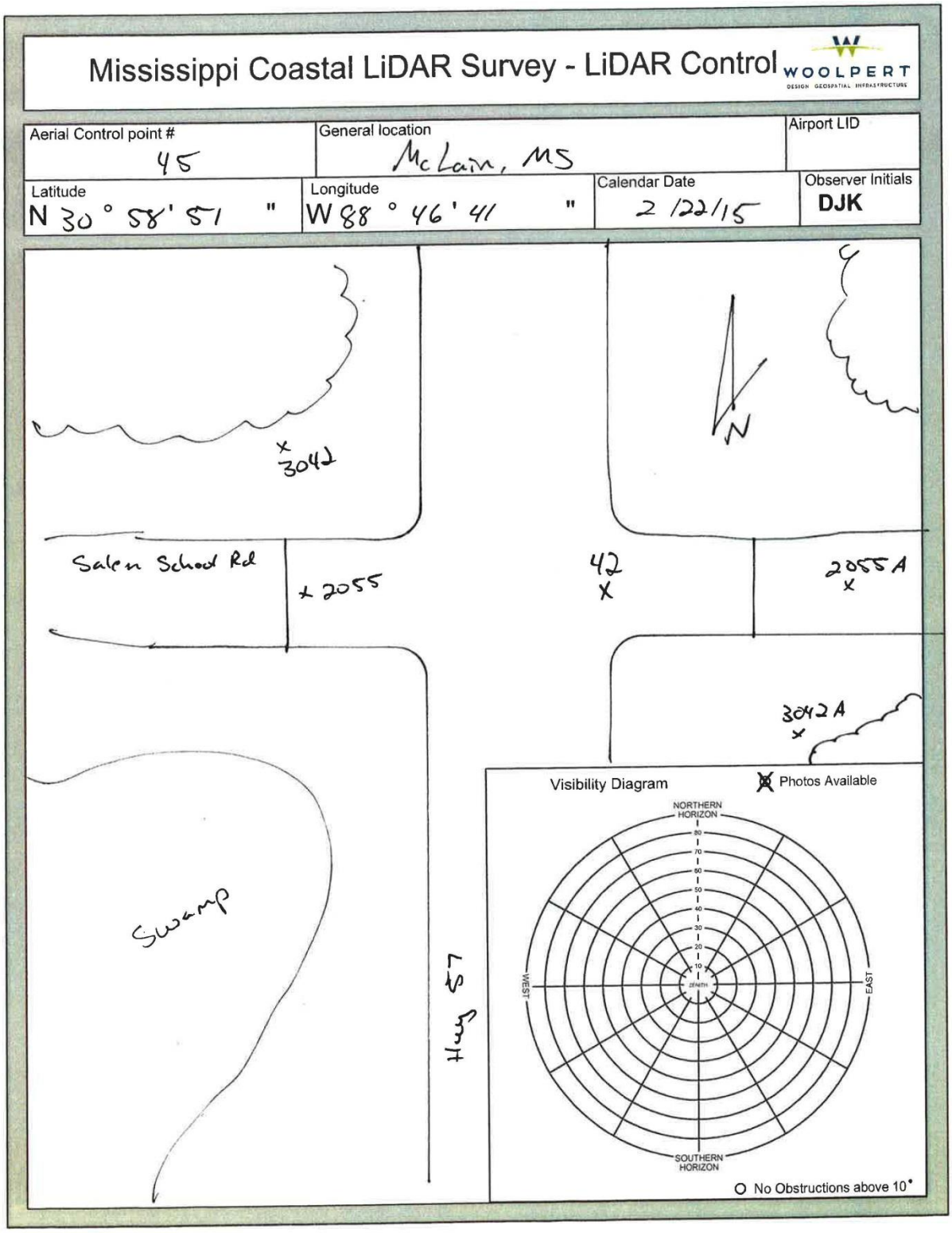
42, N, 21FEB2015


LiDAR Survey - LiDAR Control
WOOLPERT
LiDAR Control point # 43
General location BILOXI, MS
Ground Class
Latitude N 30° 29' 6.95"
Longitude W 89° 3' 22.56"
Calendar Date 2/12/2015
Observer Initials CPR
THREE RIVERS RD ASPHALT
HOUSE GRAY ROOF
HOUSE GRAY ROOF
LAWTON LN ASPHALT
HOUSE BROWN ROOF
43
HOUSE BROWN ROOF
STOP BAR
DUNVEGAN DR ASPHALT
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

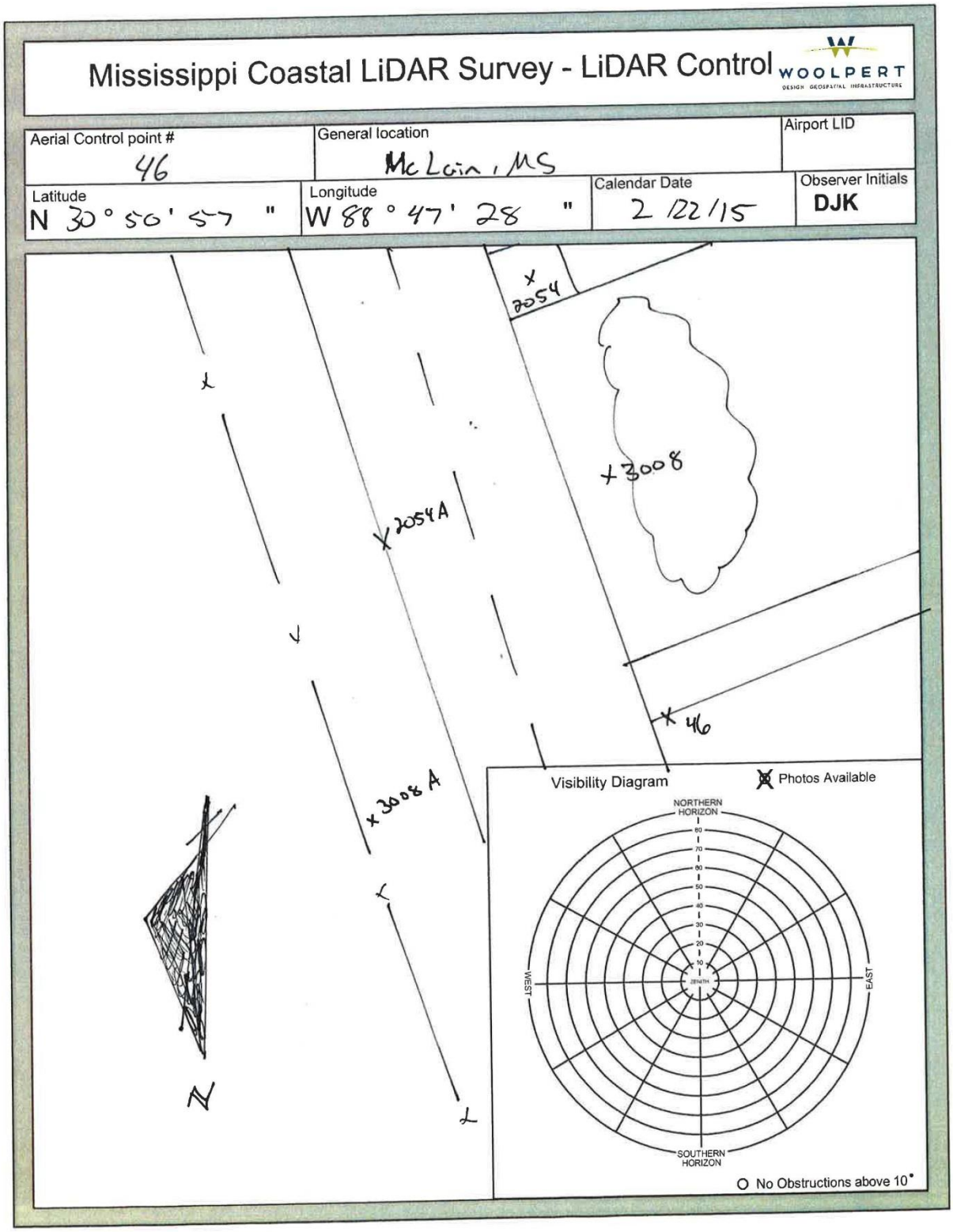
43, W, 21FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
44
General location
Perkinston, MS
Airport LID
Latitude
N 30 ° 48 ' 41 "
Longitude
W 89 ° 03 ' 13 "
Calendar Date
2 / 22 / 15
Observer Initials
DJK
Driveway
2052
Gas Station
Asphalt
44
2052A
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
N
No Obstructions above 10°

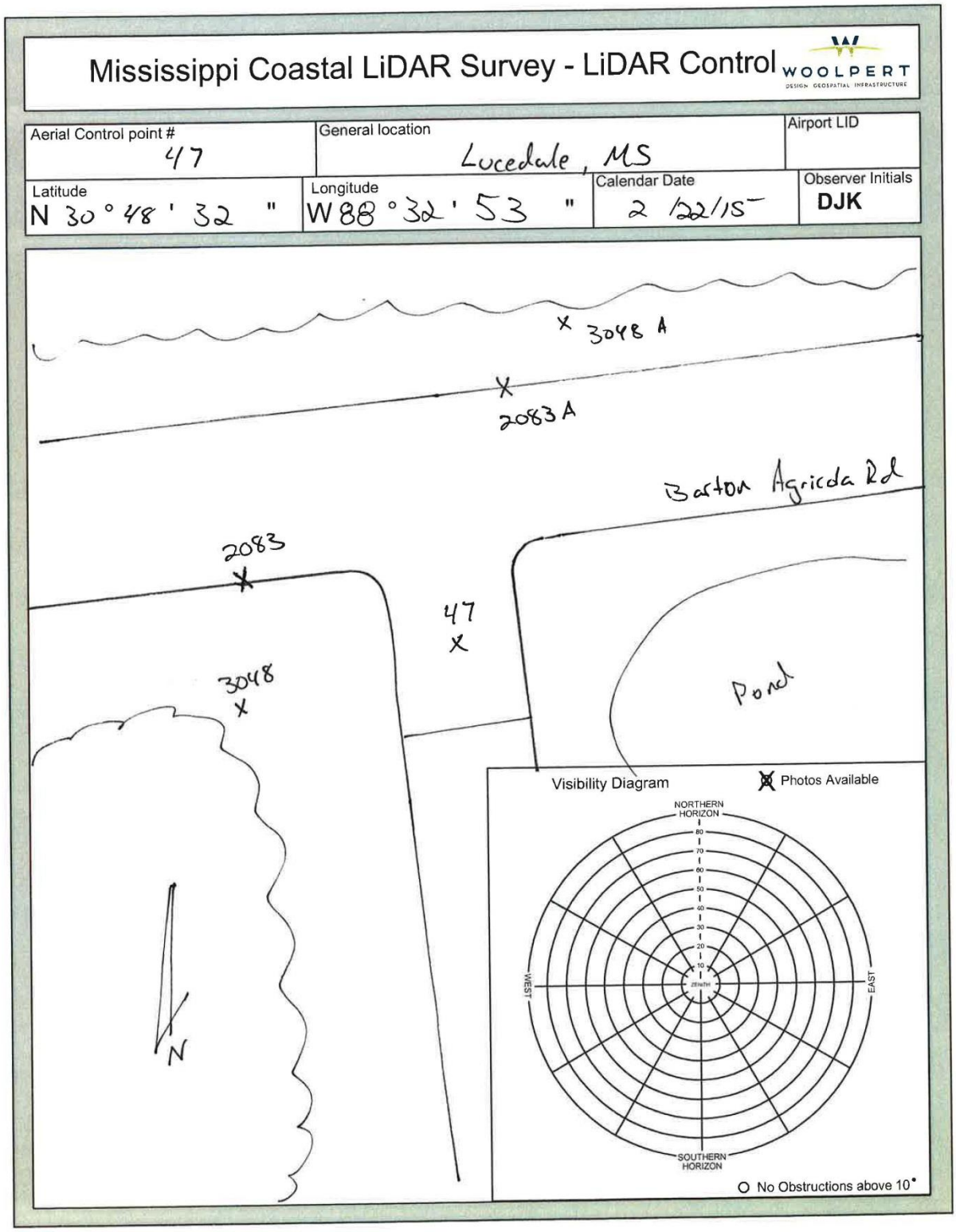
44, S, 22FEB2014


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
3042
Salem School Rd
2055
42
2055 A
3042 A
N
Swamp
Hwy 57
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
ZENITH
No Obstructions above 10°

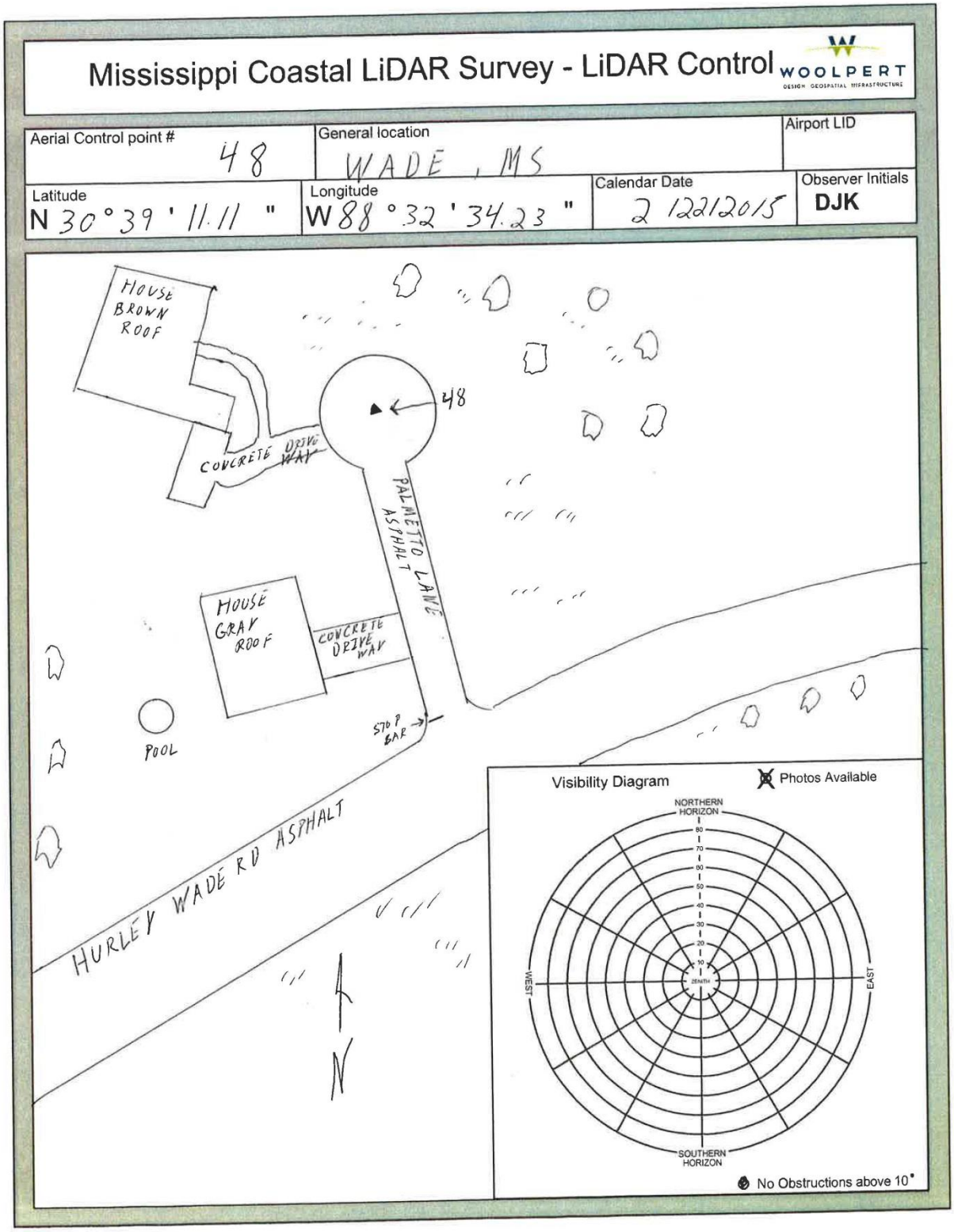
45, W, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
46
General location
McLain, MS
Airport LID
Latitude
N 30° 50' 57 "
Longitude
W 88° 47' 28 "
Calendar Date
2/22/15
Observer Initials
DJK
X 2054
X 3008
X 2054A
X 46
X 3008A
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

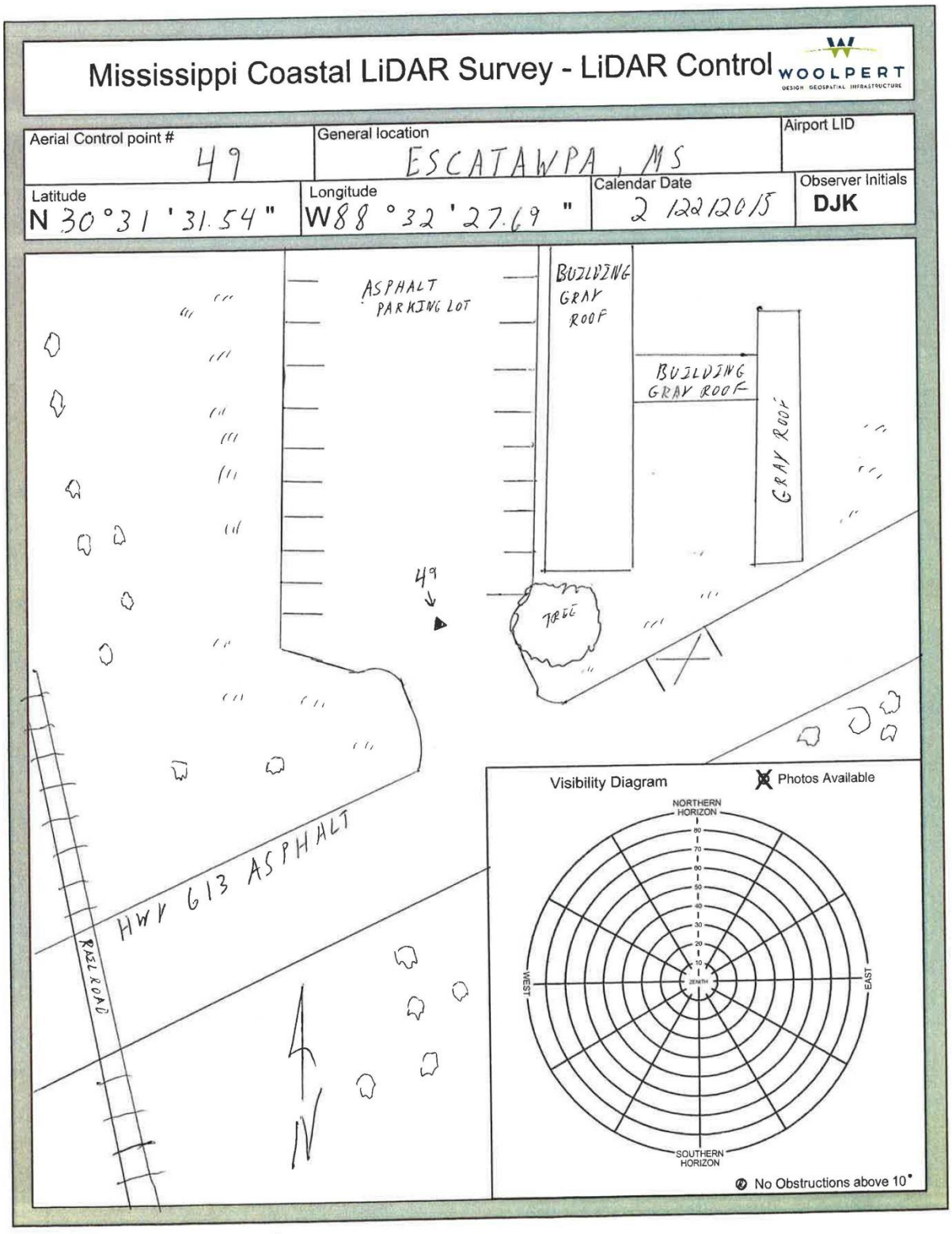
46, N, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
3048 A
2083 A
Barton Agricola Rd
2083
47
3048
Pond
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

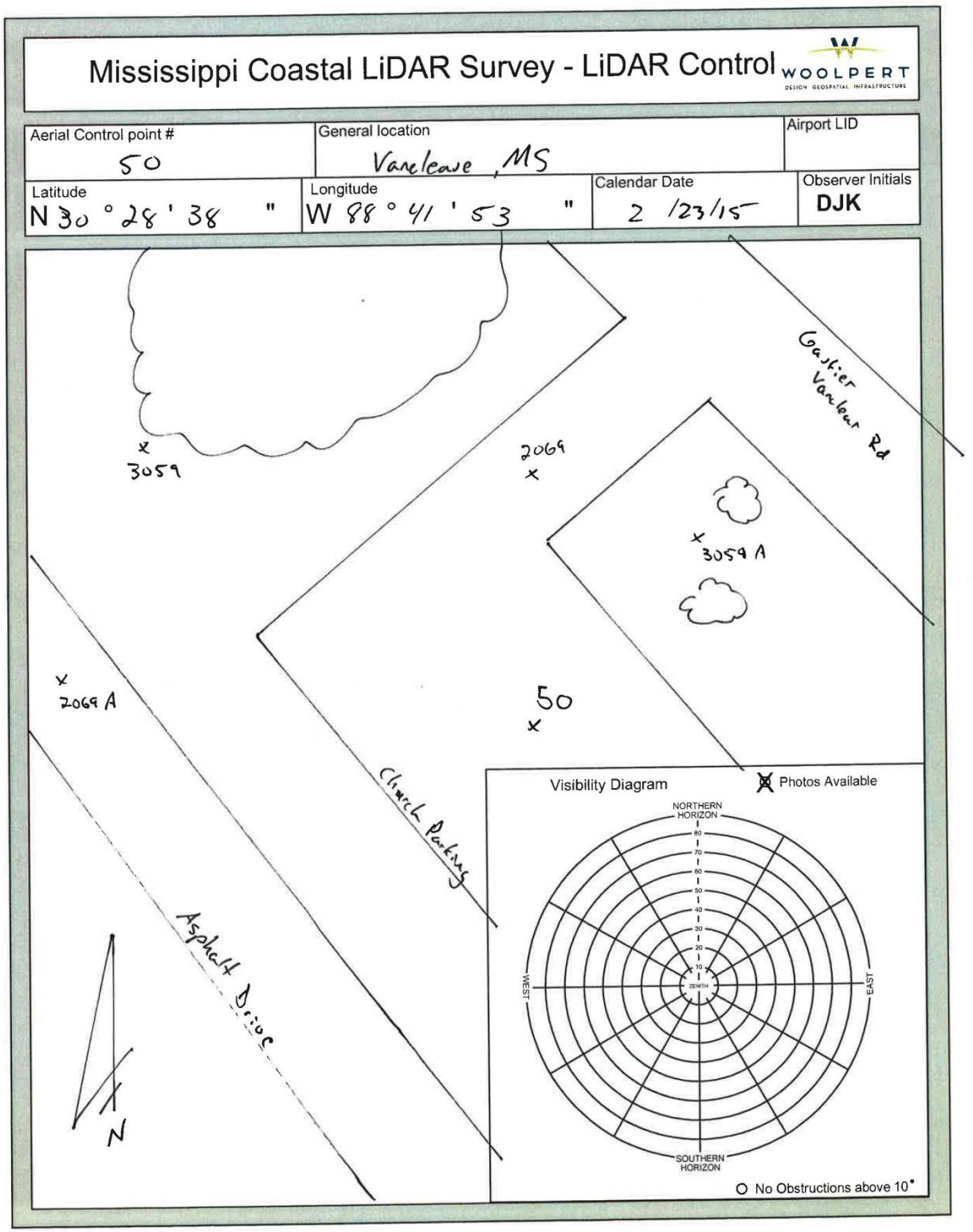
47, N, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 48
General location WADE , MS
Airport LID
Latitude N 30 ° 39 ' 11.11 "
Longitude W 88 ° 32 ' 34.23 "
Calendar Date 2 12212015
Observer Initials DJK
HOUSE BROWN ROOF
CONCRETE DRIVE WAY
48
PALMETTO LANE ASPHALT
HOUSE GRAY ROOF
CONCRETE DRIVE WAY
STOP BAR
POOL
HURLEY WADE RD ASPHALT
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

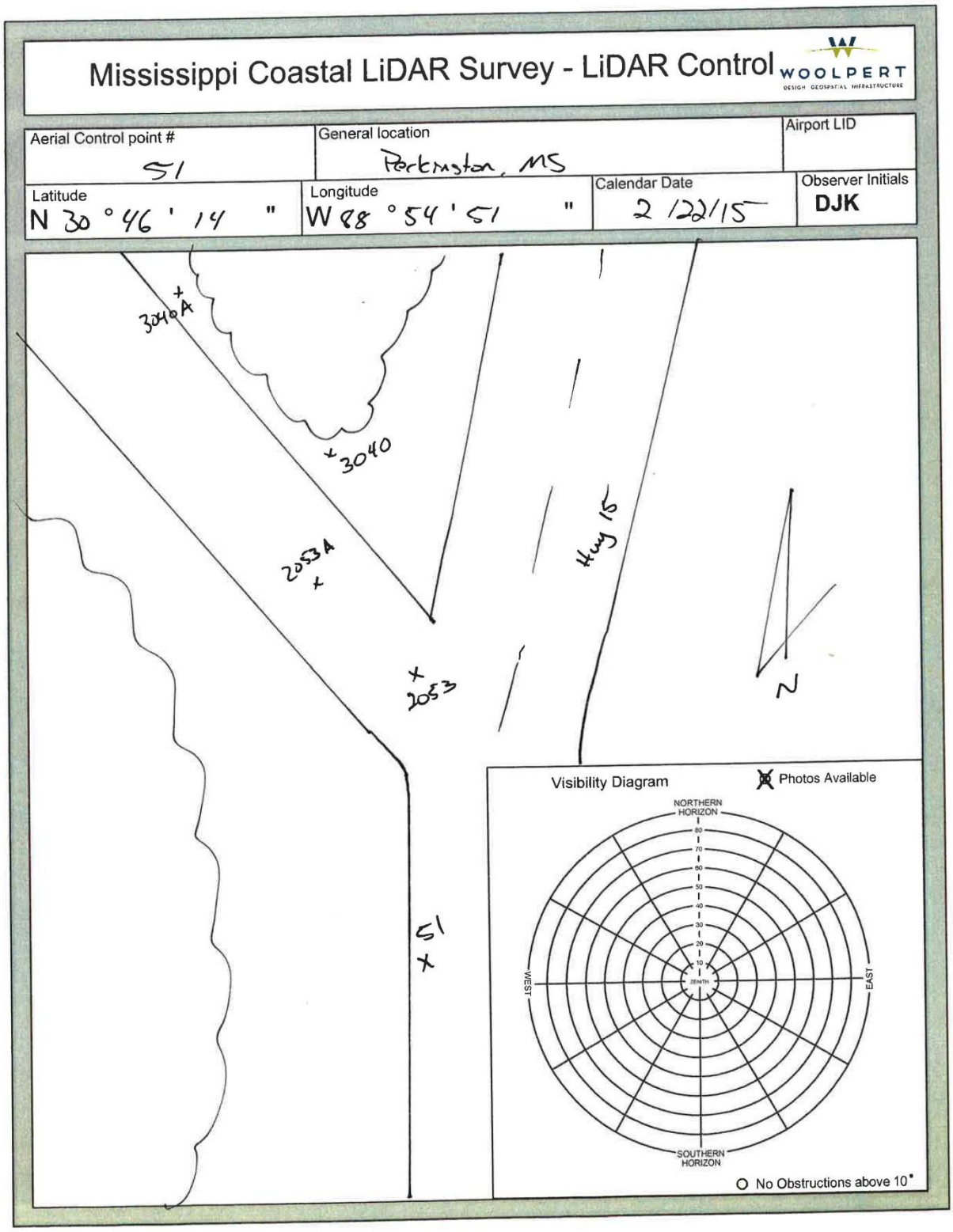
48, W, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point # 49
General location ESCATAWPA, MS
Airport LID
Latitude N 30°31'31.54"
Longitude W88°32'27.69"
Calendar Date 2 12212015
Observer Initials DJK
ASPHALT PARKING LOT
BUILDING GRAY ROOF
BUILDING GRAY ROOF
GRAY ROOF
49
TREE
HWY 613 ASPHALT
RAILROAD
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

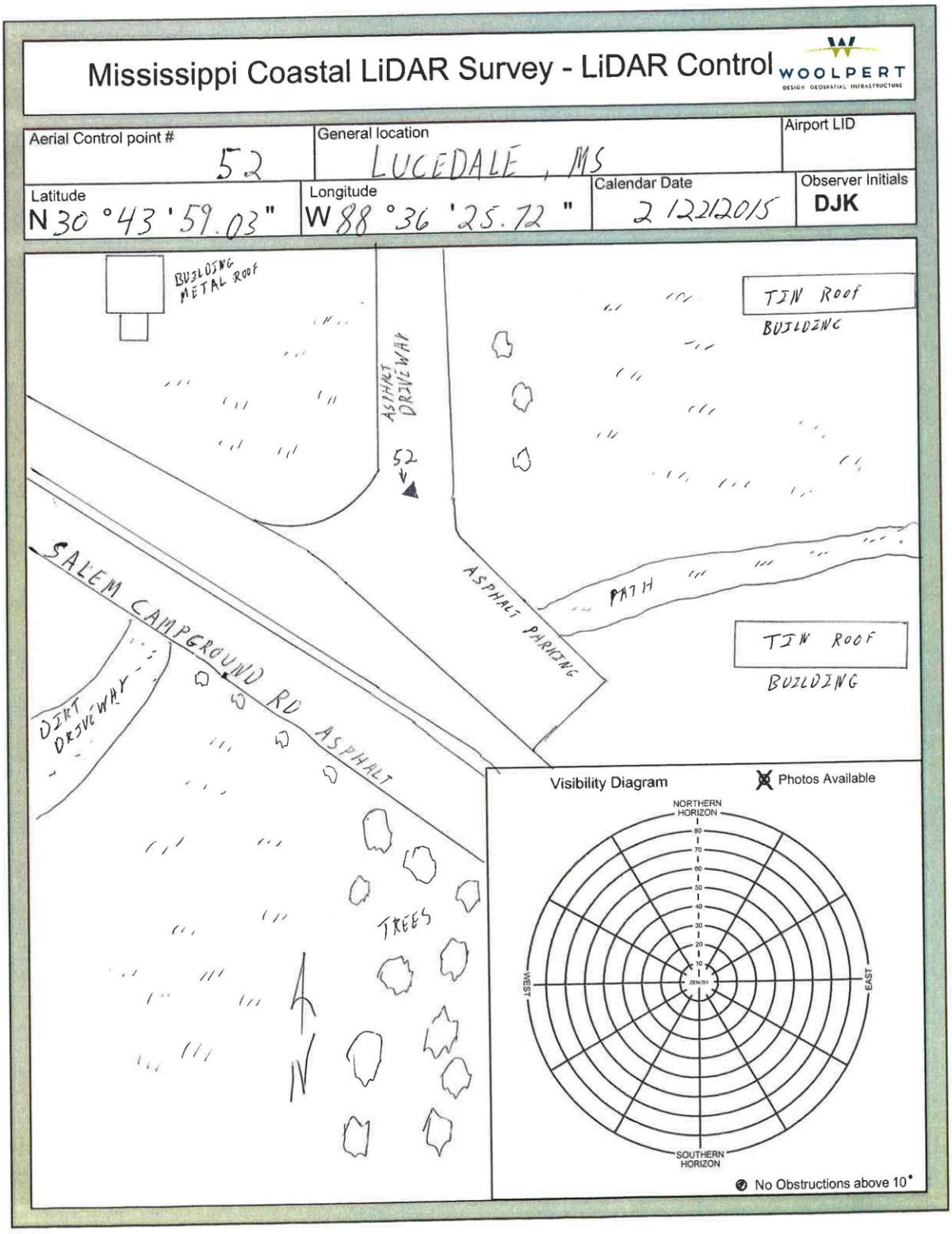
49, S, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
50
General location
Vancleave, MS
Airport LID
Latitude
N 30 ° 28 ' 38 "
Longitude
W 88 ° 41 ' 53 "
Calendar Date
2 /23/15
Observer Initials
DJK
3059
2069
Gautier Vancleave Rd
3059 A
2069 A
50
Church Parking
Asphalt Drive
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

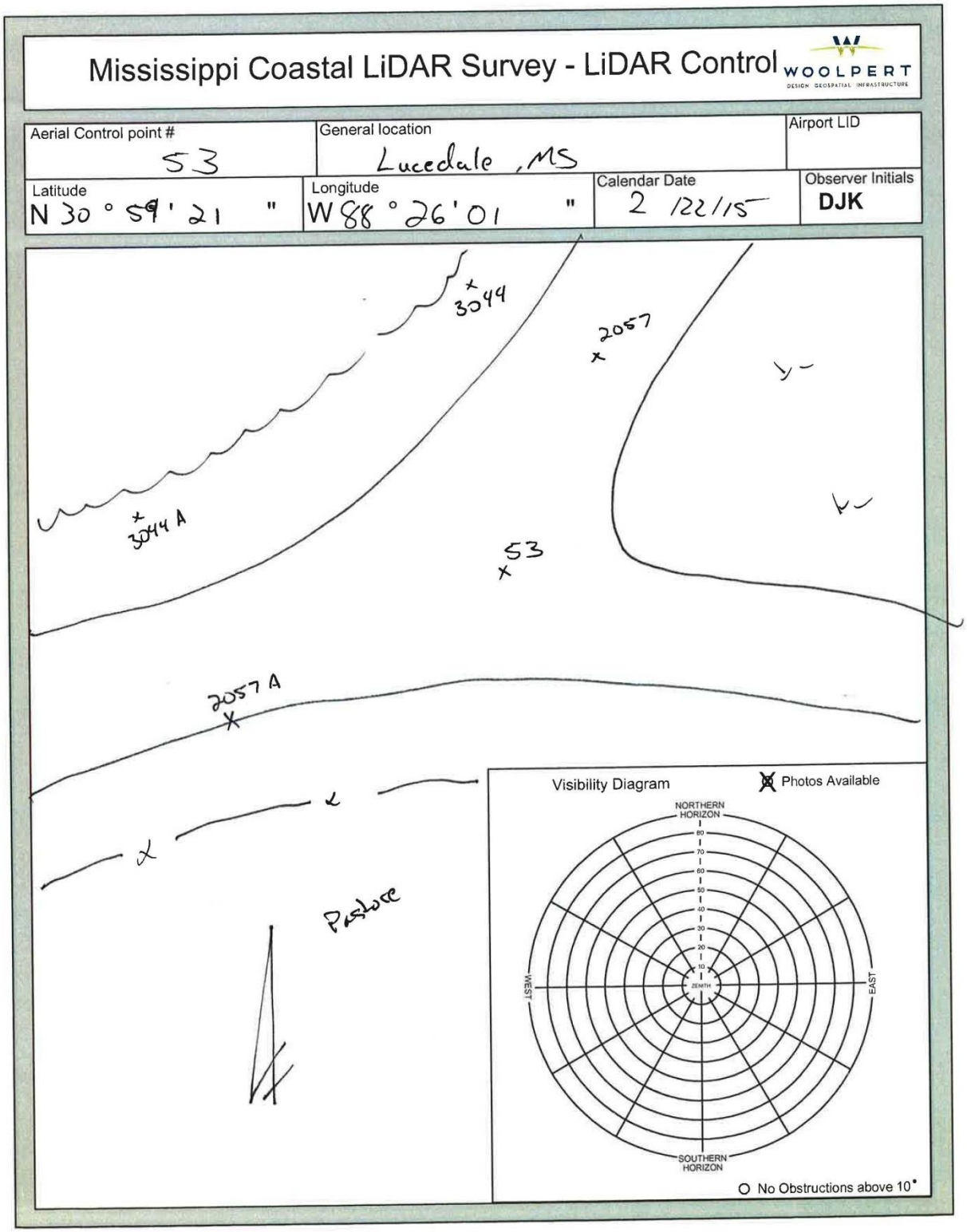
50, N, 23FEB2014


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
51
General location
Portmyston, MS
Airport LID
Latitude
N 30 ° 46 ' 14 "
Longitude
W 88 ° 54 ' 51 "
Calendar Date
2 /22/15
Observer Initials
DJK
3040A
3040
2053A
2053
Hwy 15
N
51
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
ZENITH
No Obstructions above 10°

51, N, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
Aerial Control point #
52
General location
LUCEDALE , MS
Airport LID
Latitude
N 30 °43 '59.03"
Longitude
W 88 °36 '25.72 "
Calendar Date
2 12212015
Observer Initials
DJK
BUILDING METAL ROOF
ASPHALT DRIVEWAY
52
TIN ROOF BUILDING
SALEM CAMPGROUND RD ASPHALT
ASPHALT PARKING
PATH
TIN ROOF BUILDING
DIRT DRIVEWAY
TREES
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
ZENITH
No Obstructions above 10°

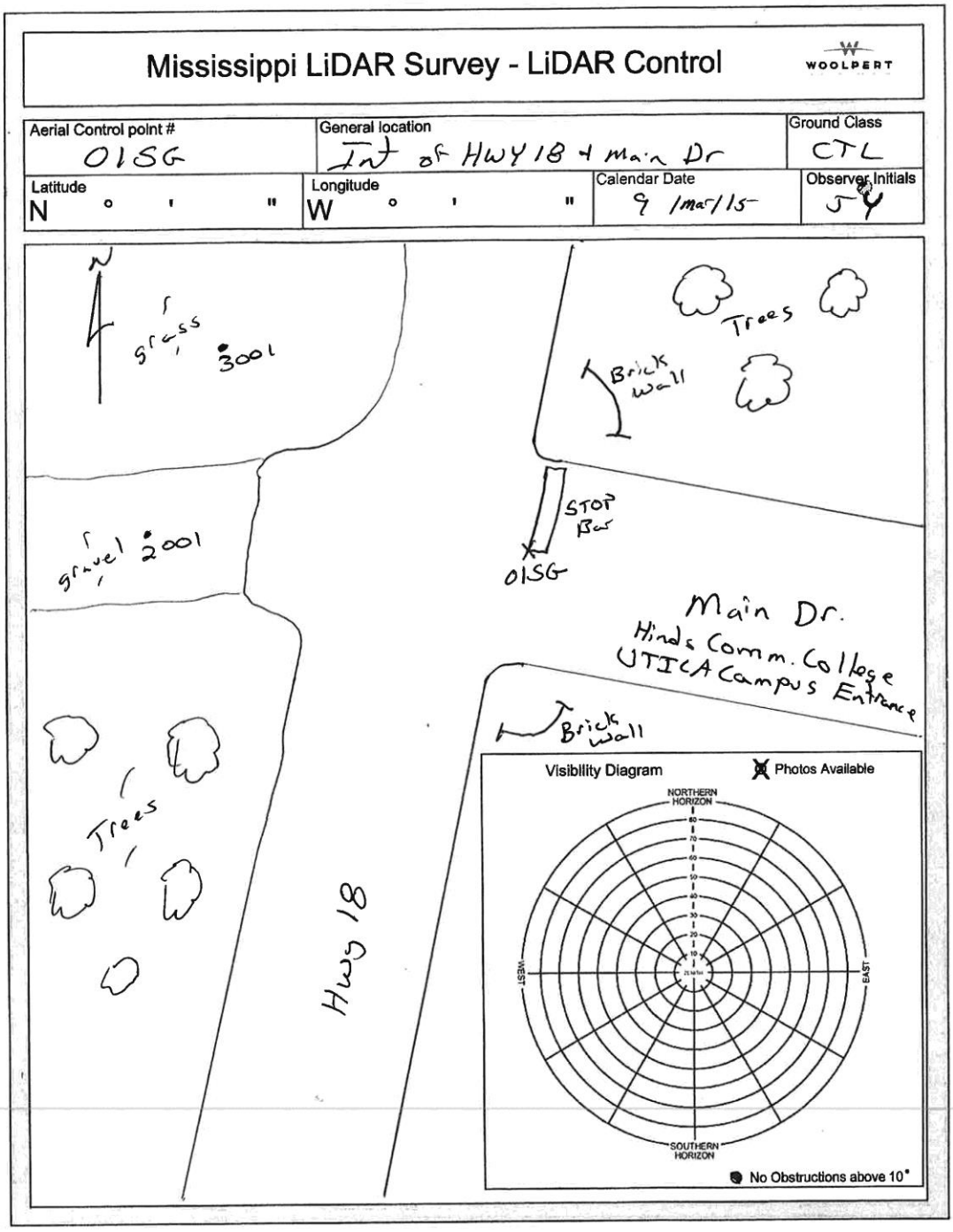
52, N, 22FEB2015


Mississippi Coastal LiDAR Survey - LiDAR Control
WOOLPERT
DESIGN GEOSPATIAL INFRASTRUCTURE
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
3044
2057
3044 A
53
2057 A
Pasture
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
ZENITH
No Obstructions above 10°

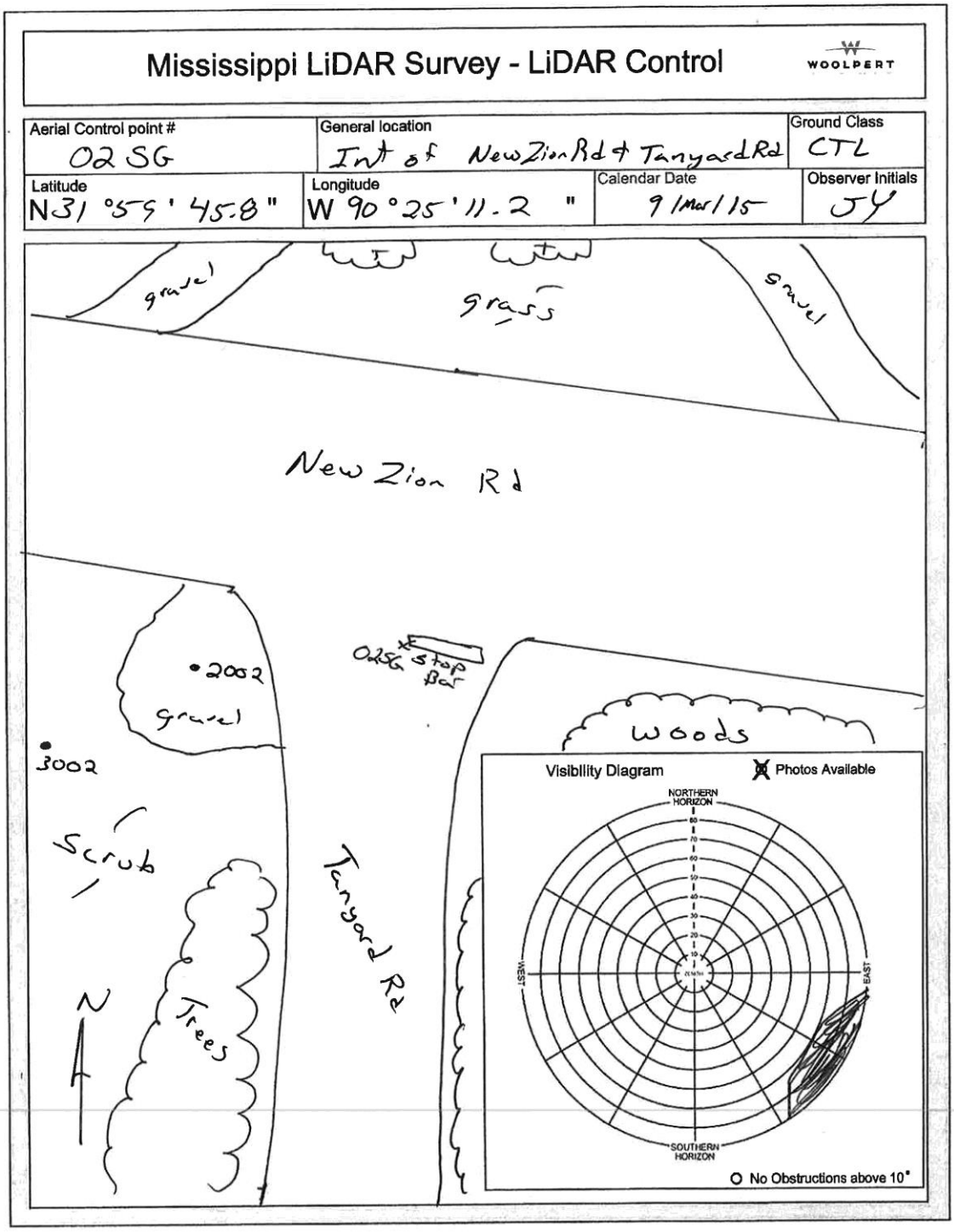
53, NE, 22FEB2015

3DEP EXTENSION AOI

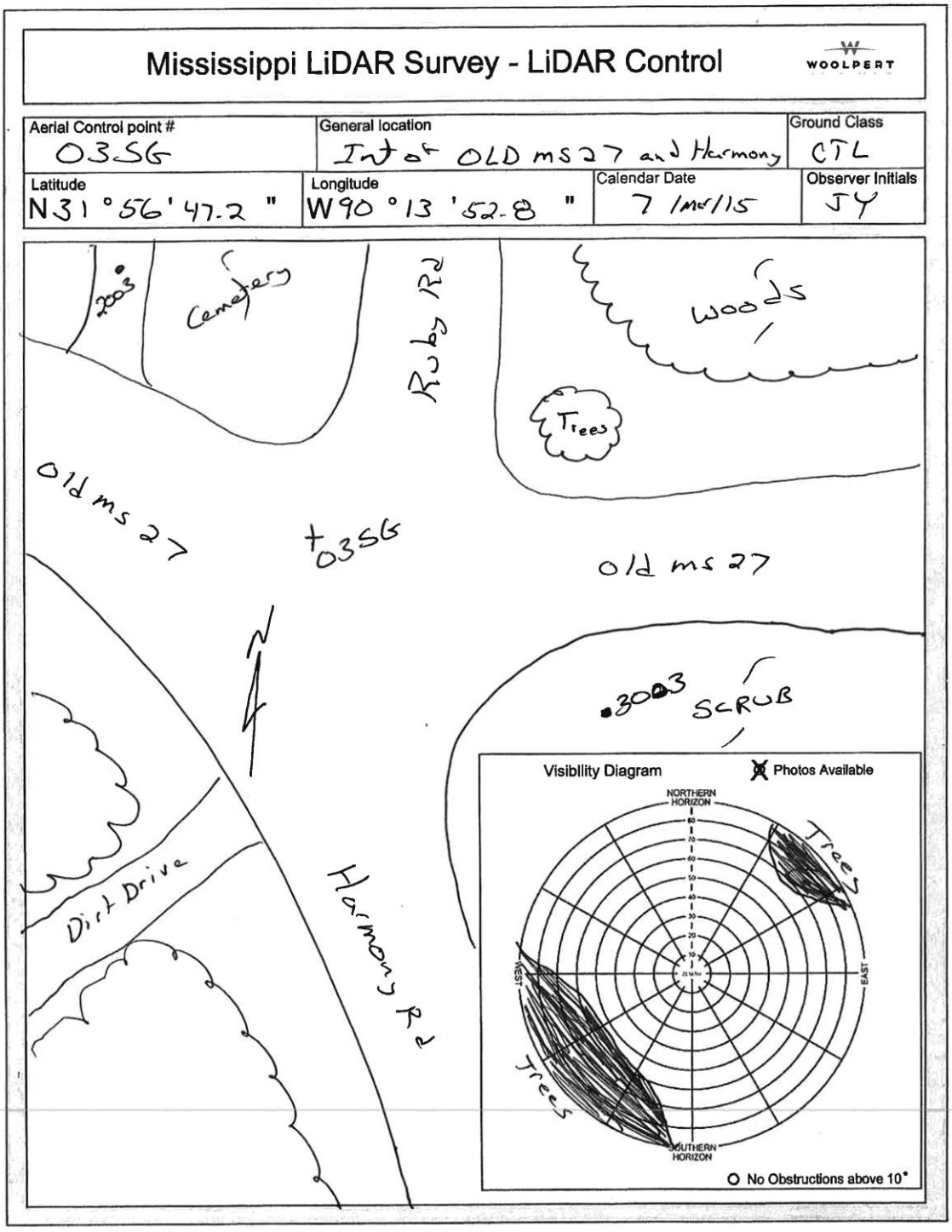
LiDAR Control Points:



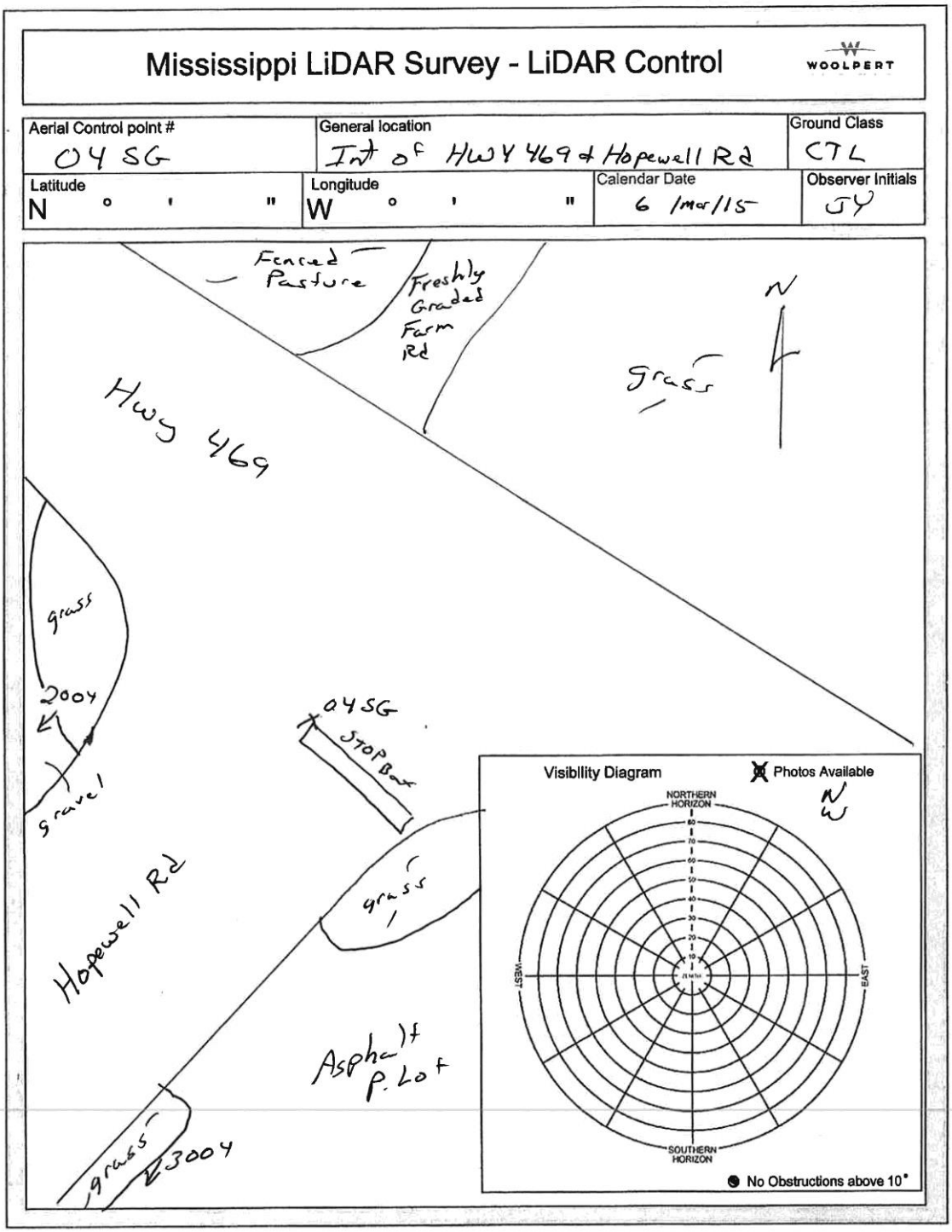
0001SG, N, 09MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
02SG
General location
Int of New Zion Rd & Tanyard Rd
Ground Class
CTL
Latitude
N31 °59 ' 45.8 "
Longitude
W 90 °25 ' 11.2 "
Calendar Date
9/Mar/15
Observer Initials
JY
gravel
grass
gravel
New Zion Rd
2002
gravel
3002
02SG stop Bar
woods
Scrub
Tanyard Rd
Trees
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

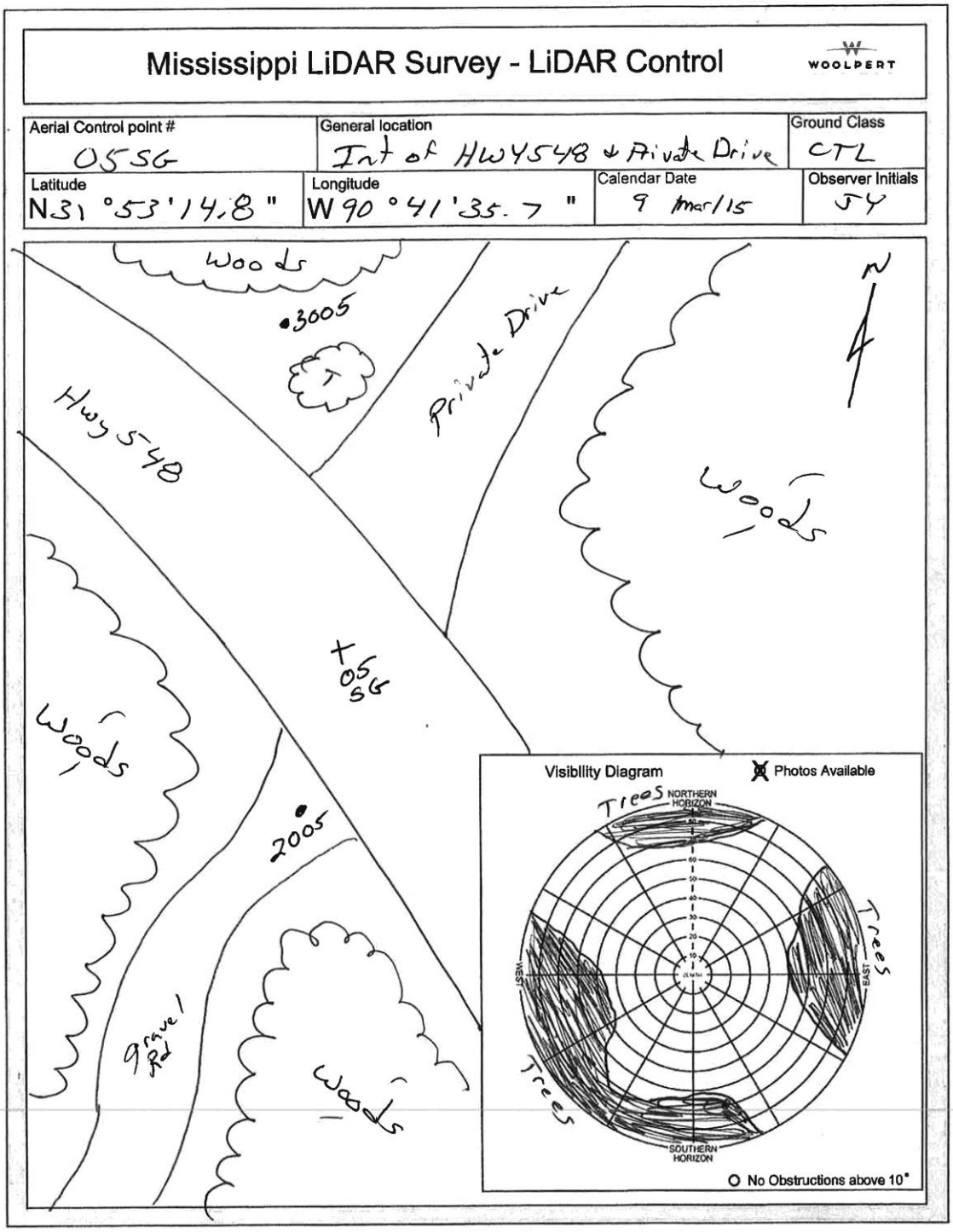
0002SG, N, 09MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
03SG
General location
Int of OLD MS 27 and Harmony
Ground Class
CTL
Latitude
N31 °56' 47.2 "
Longitude
W90 °13 '52.8 "
Calendar Date
7 /Mar/15
Observer Initials
JY
2003
Cemetery
Ruby Rd
Woods
Trees
Old MS 27
+03SG
Old MS 27
N
2003
SCRUB
Dirt Drive
Harmony Rd
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
Trees
Trees
No Obstructions above 10°

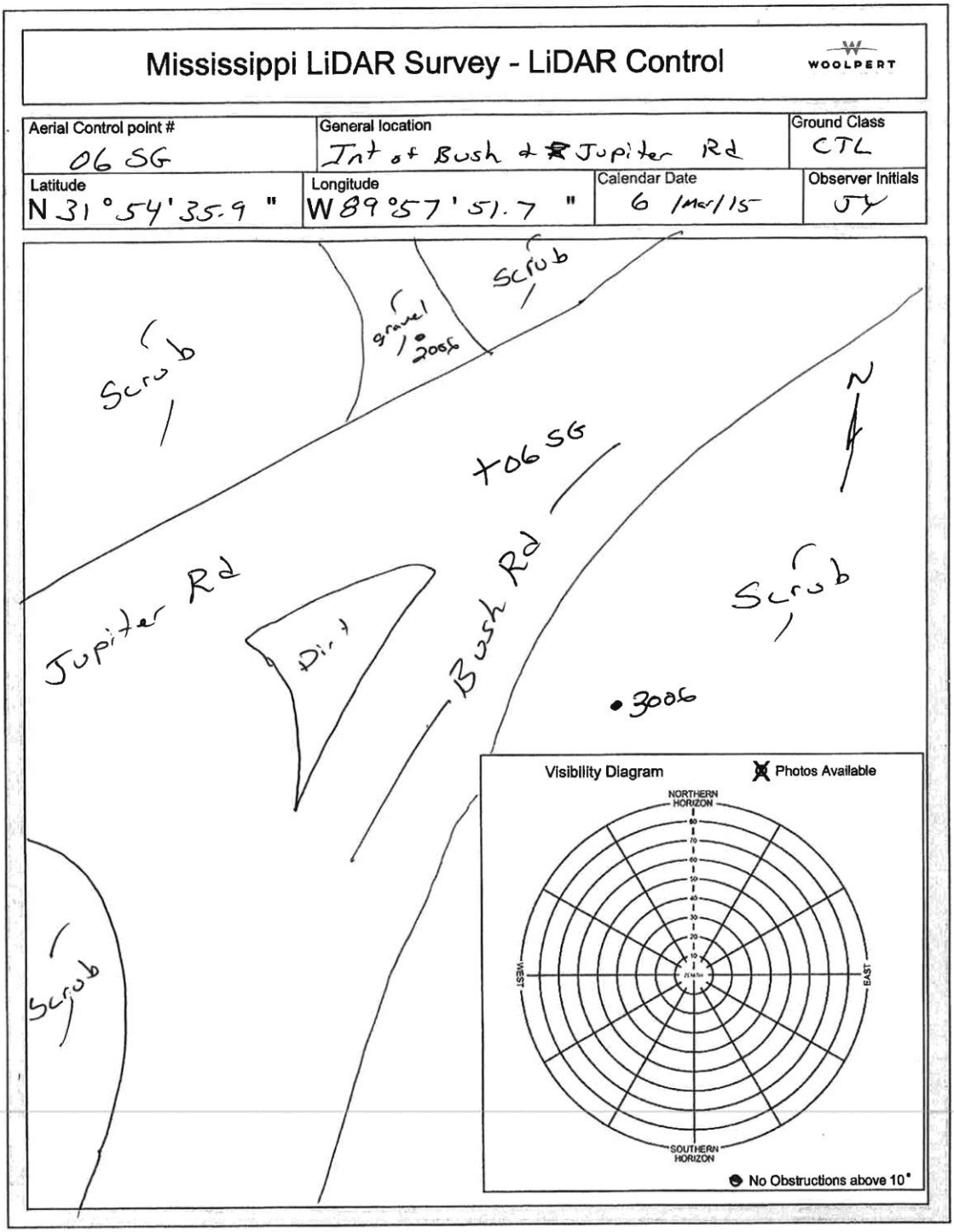
0003SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
04 SG
General location
Int of HWY 469 & Hopewell Rd
Ground Class
CTL
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
6 /mar/15
Observer Initials
GY
Fenced Pasture
Freshly Graded Farm Rd
Hwy 469
grass
N
grass
200'
gravel
04 SG
STOP Bar
Hopewell Rd
grass
Asphalt P. Lot
grass
300'
Visibility Diagram
Photos Available
NW
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

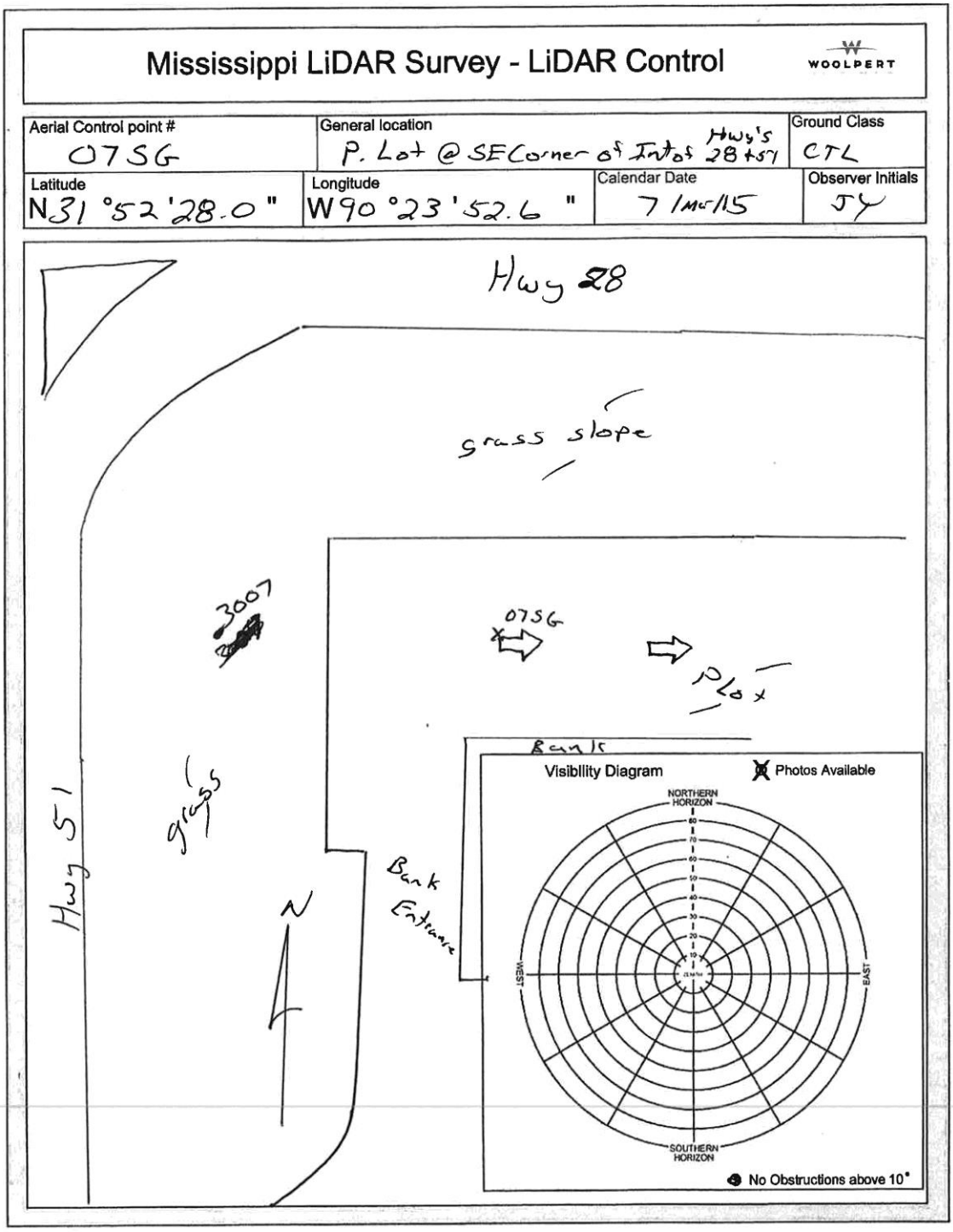
04SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
0556
General location
Int of HWY548 & Private Drive
Ground Class
CTL
Latitude
N31 °53'14.8"
Longitude
W90 °41'35.7"
Calendar Date
9 Mar/15
Observer Initials
JY
Woods
3005
Private Drive
Hwy 548
N
Woods
0556
Woods
2005
Gravel Rd
Woods
Visibility Diagram
Photos Available
Trees
NORTHERN HORIZON
Trees
WEST
EAST
Trees
SOUTHERN HORIZON
No Obstructions above 10°

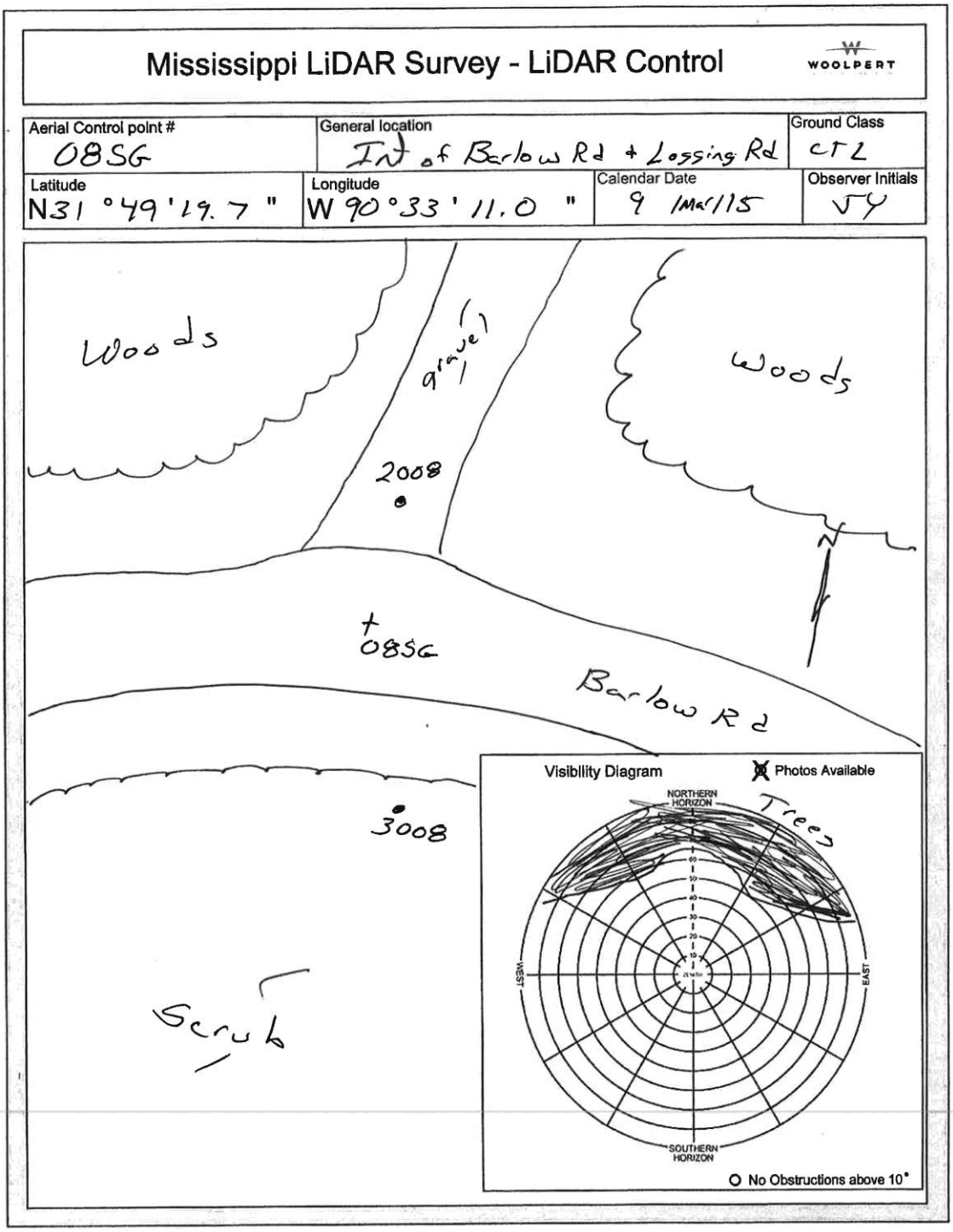
0005SG, W, 09MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
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
Scrub
gravel
Scrub
Scrub
Jupiter Rd
Dirt
Bush Rd
06 SG
N
Scrub
3006
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

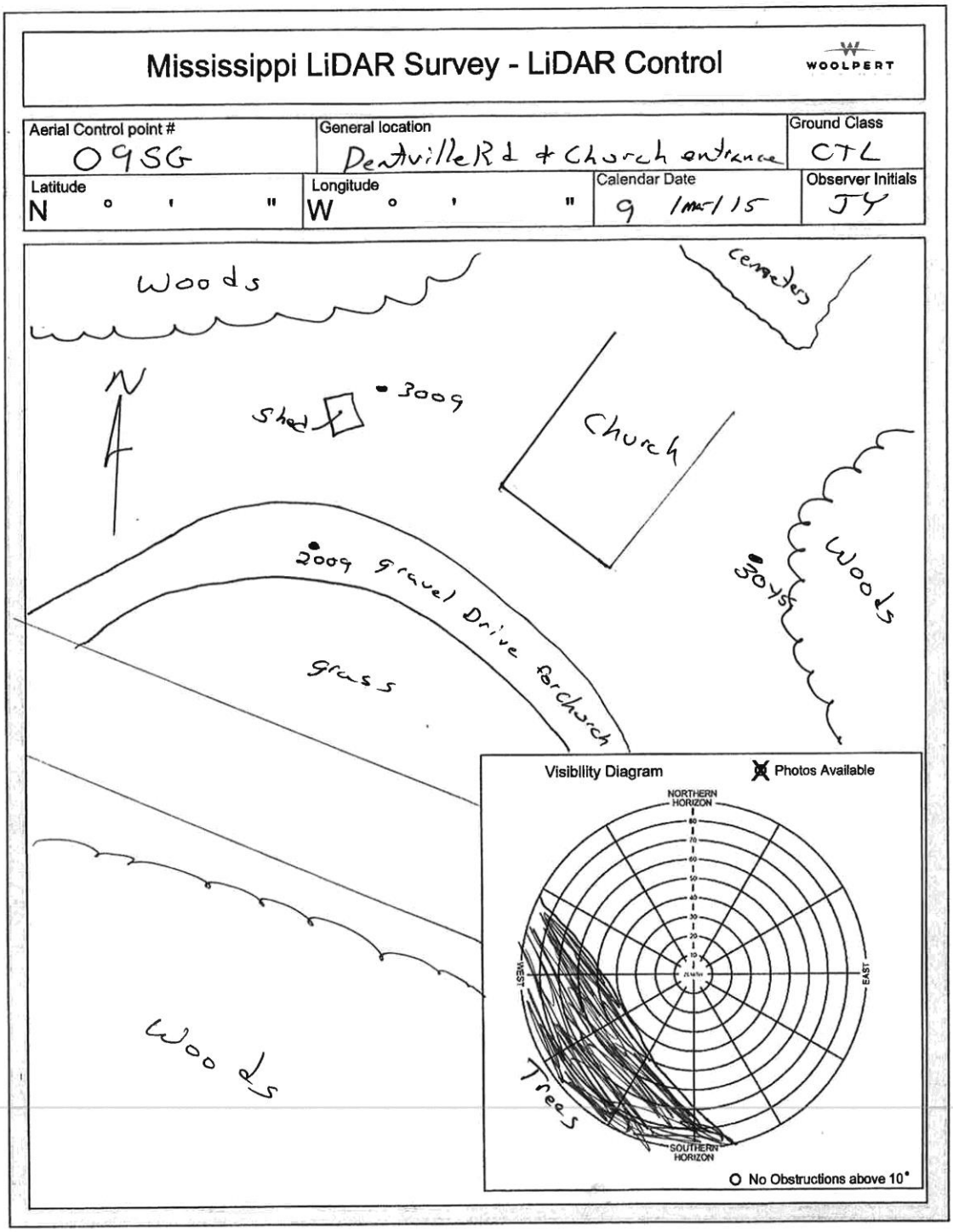
06SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
07SG
General location
P. Lot @ SE Corner of Int of Hwy's 28 + 51
Ground Class
CTL
Latitude
N31 °52 '28.0 "
Longitude
W90 °23 '52.6 "
Calendar Date
7 /MAY/15
Observer Initials
JY
Hwy 28
grass slope
3007
07SG
Plot
Bank
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°
Hwy 51
grass
Bank Entrance
N

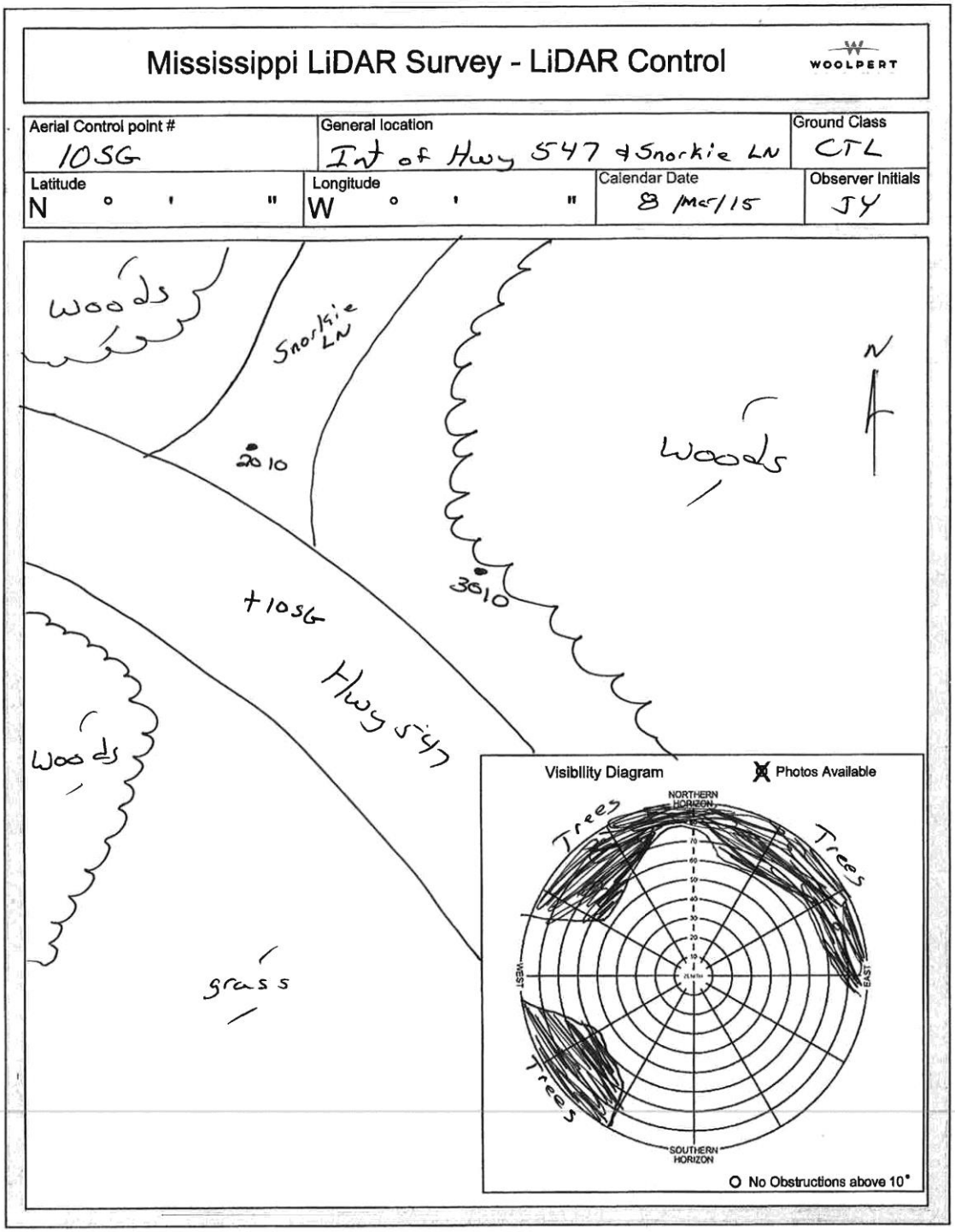
0007SG, W, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
08SG
General location
Int of Barlow Rd + Lossing Rd
Ground Class
CTL
Latitude
N31 °49 '19.7 "
Longitude
W 90 °33 ' 11.0 "
Calendar Date
9 Mar 15
Observer Initials
JY
Woods
gravel
2008
Woods
08SC
Barlow Rd
3008
Scrub
Visibility Diagram
Photos Available
NORTHERN HORIZON
Trees
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

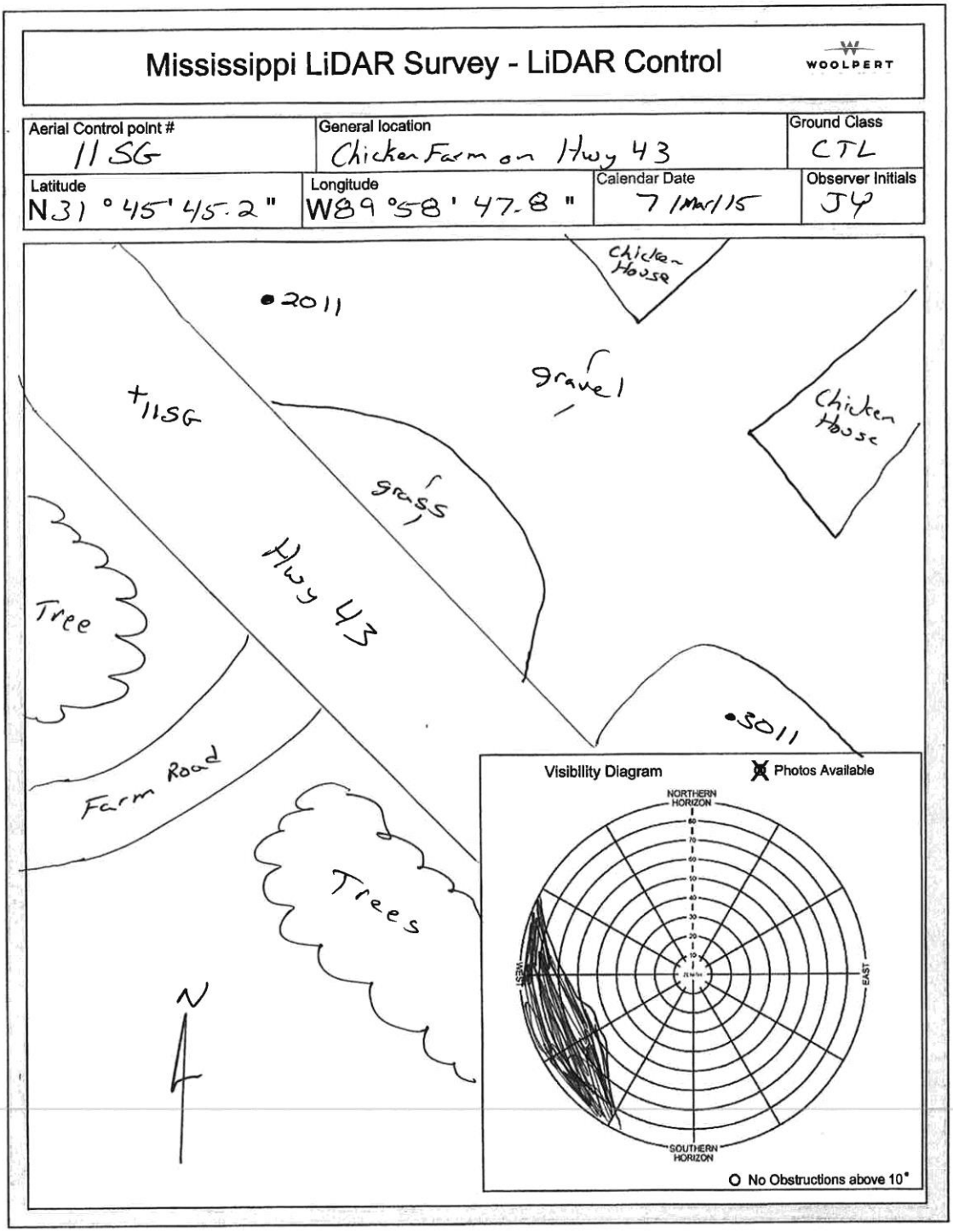
0008SG, W, 09MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
095G
General location
Denville Rd & Church entrance
Ground Class
CTL
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
9 Mar 15
Observer Initials
JY
Woods
cemetery
N
shed
3009
Church
3009 gravel Drive for church
Grass
3015
Woods
Woods
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
Trees
No Obstructions above 10°

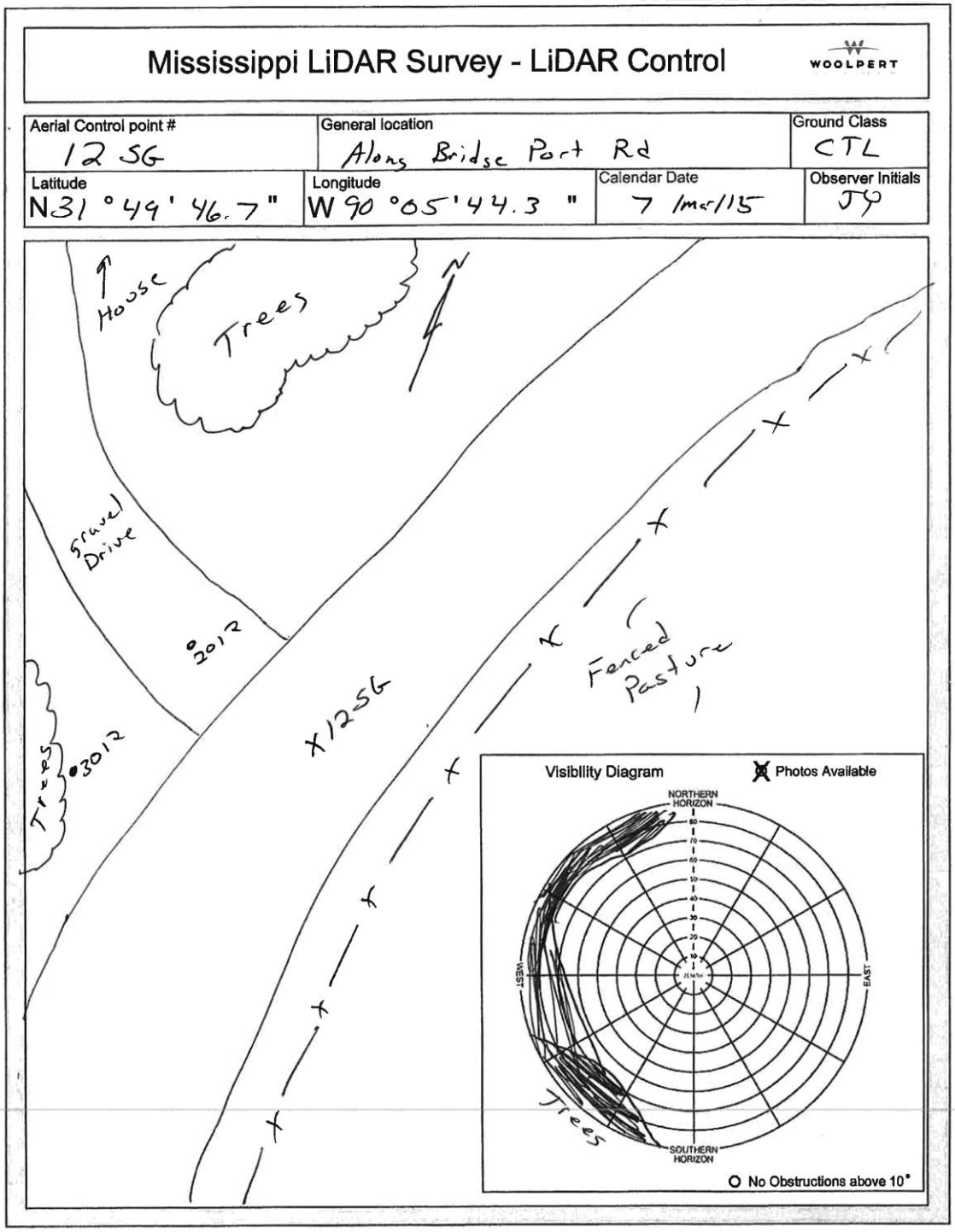
0009SG, N, 09MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
10SG
General location
Int of Hwy 547 & Snorkie LN
Ground Class
CTL
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
8 Mar 15
Observer Initials
JY
Woods
Snorkie LN
2010
3010
+10SG
Hwy 547
Woods
Woods
grass
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
Trees
Trees
Trees
O No Obstructions above 10°

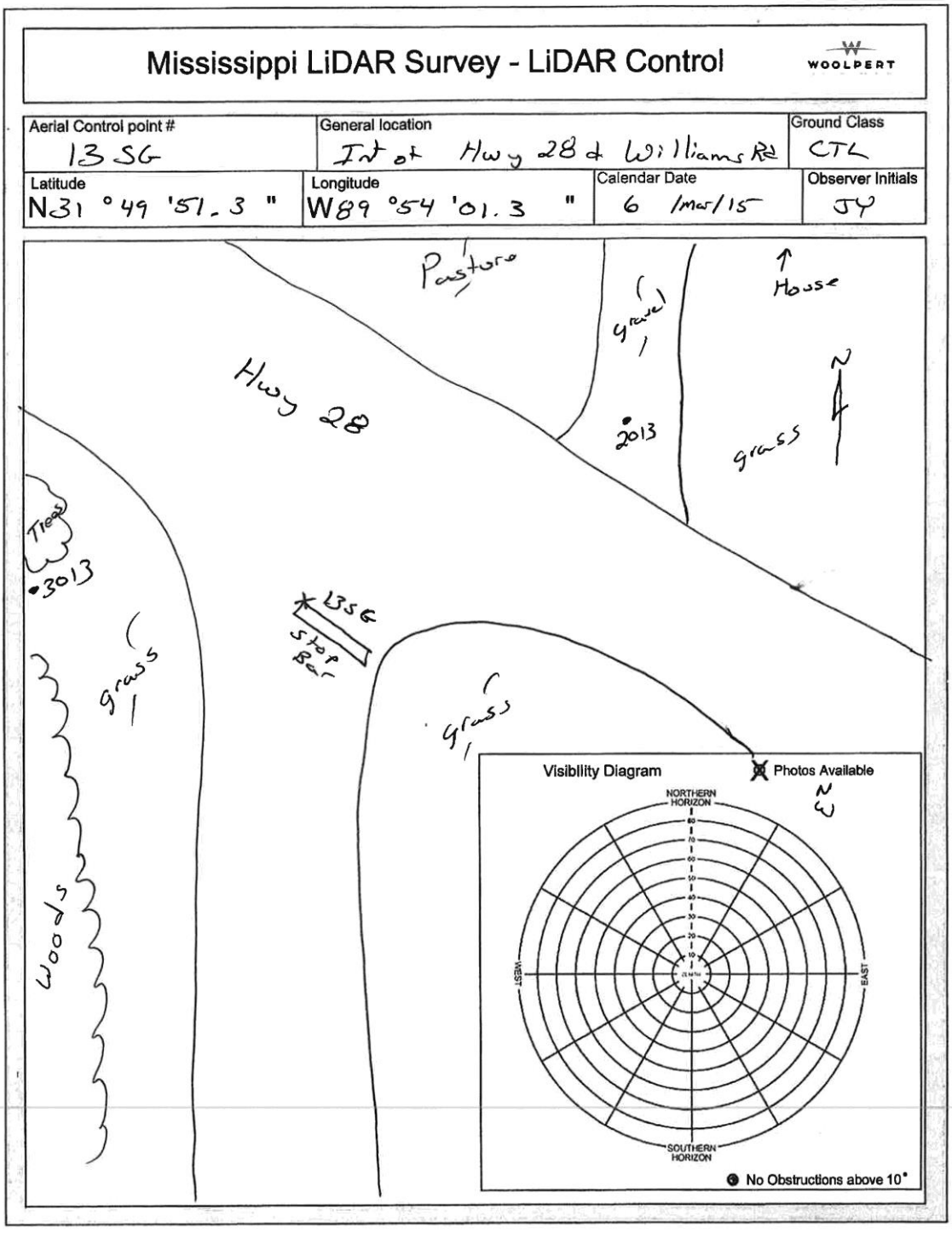
0010SG, W, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
11SG
General location
Chicken Farm on Hwy 43
Ground Class
CTL
Latitude
N31 °45' 45.2"
Longitude
W89 °58' 47.8"
Calendar Date
7 Mar 15
Observer Initials
JY
Chicken House
2011
Gravel
+11SG
Chicken House
Grass
Hwy 43
Tree
5011
Farm Road
Trees
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

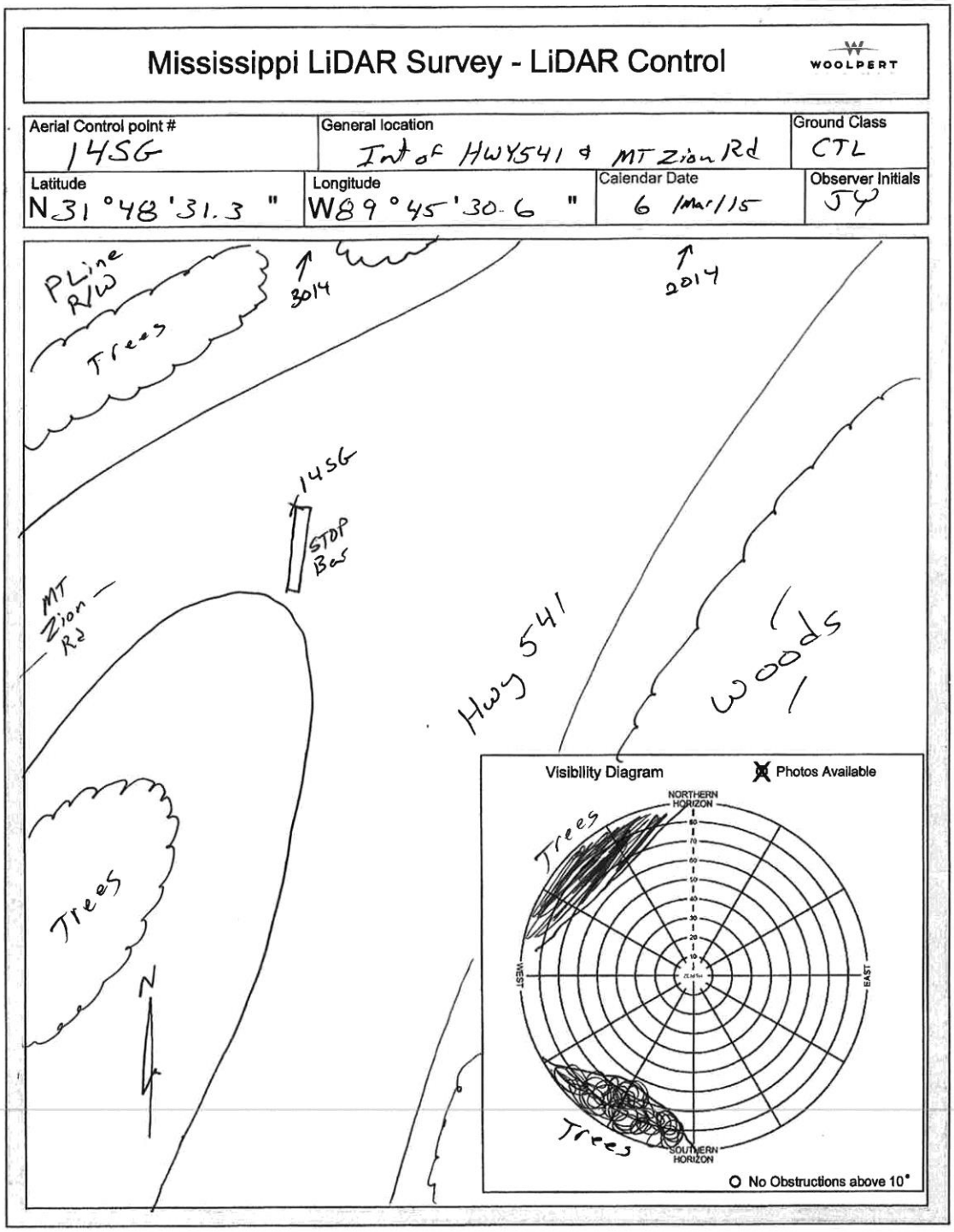
0011SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
12 SG
General location
Along Bridge Port Rd
Ground Class
CTL
Latitude
N31 °49' 46.7"
Longitude
W 90 °05' 44.3 "
Calendar Date
7 Mar 15
Observer Initials
JY
House
Trees
Gravel Drive
2012
3012
Trees
X12SG
Fenced Pasture
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
Trees
No Obstructions above 10°

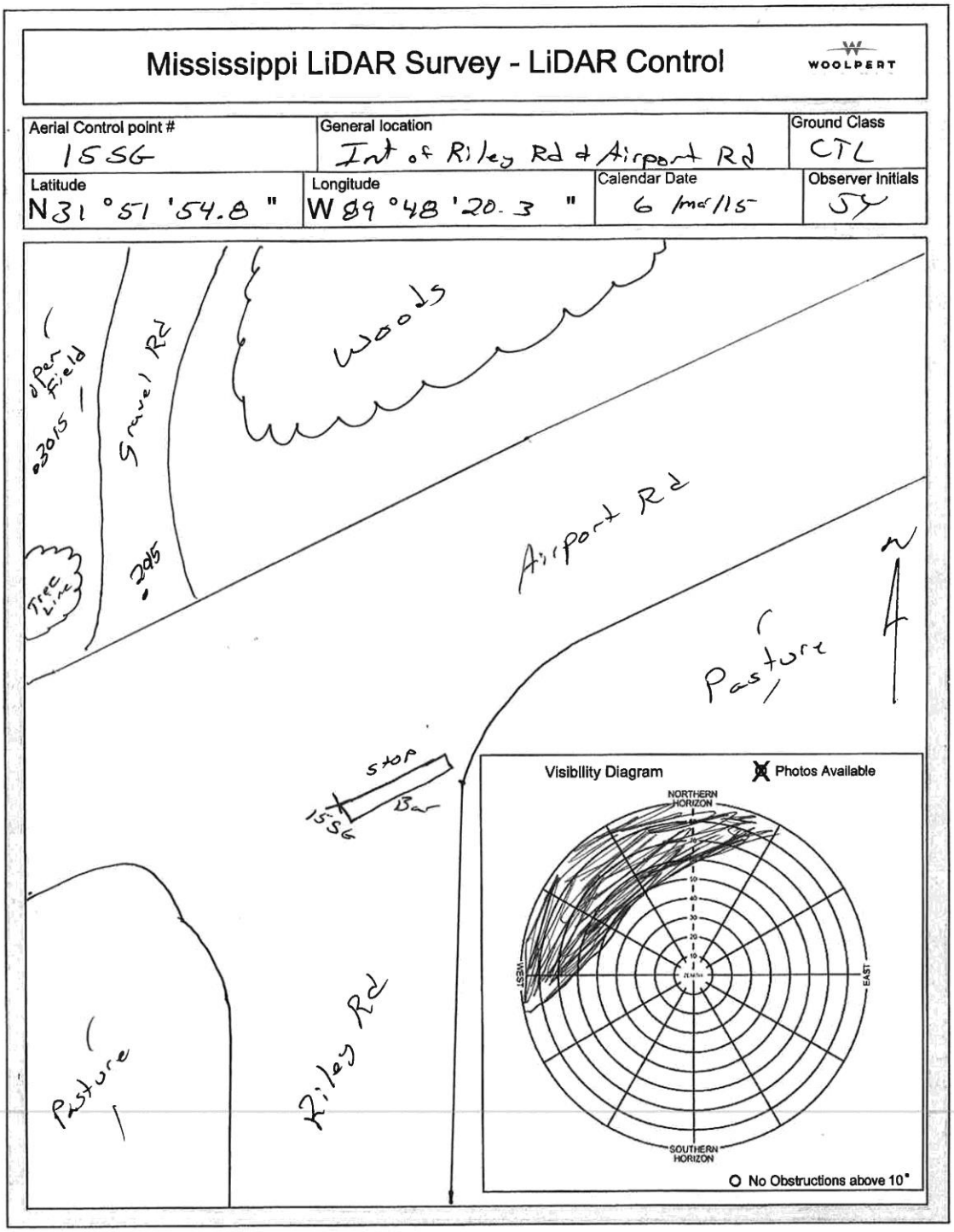
0012SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
13SG
General location
Int of Hwy 28 & Williams Rd
Ground Class
CTL
Latitude
N31 °49 '51.3 "
Longitude
W89 °54 '01.3 "
Calendar Date
6 /Mar/15
Observer Initials
JY
Pasture
House
gravel
Hwy 28
2013
grass
N
Trees
3013
L356
Stop Bar
grass
grass
Woods
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

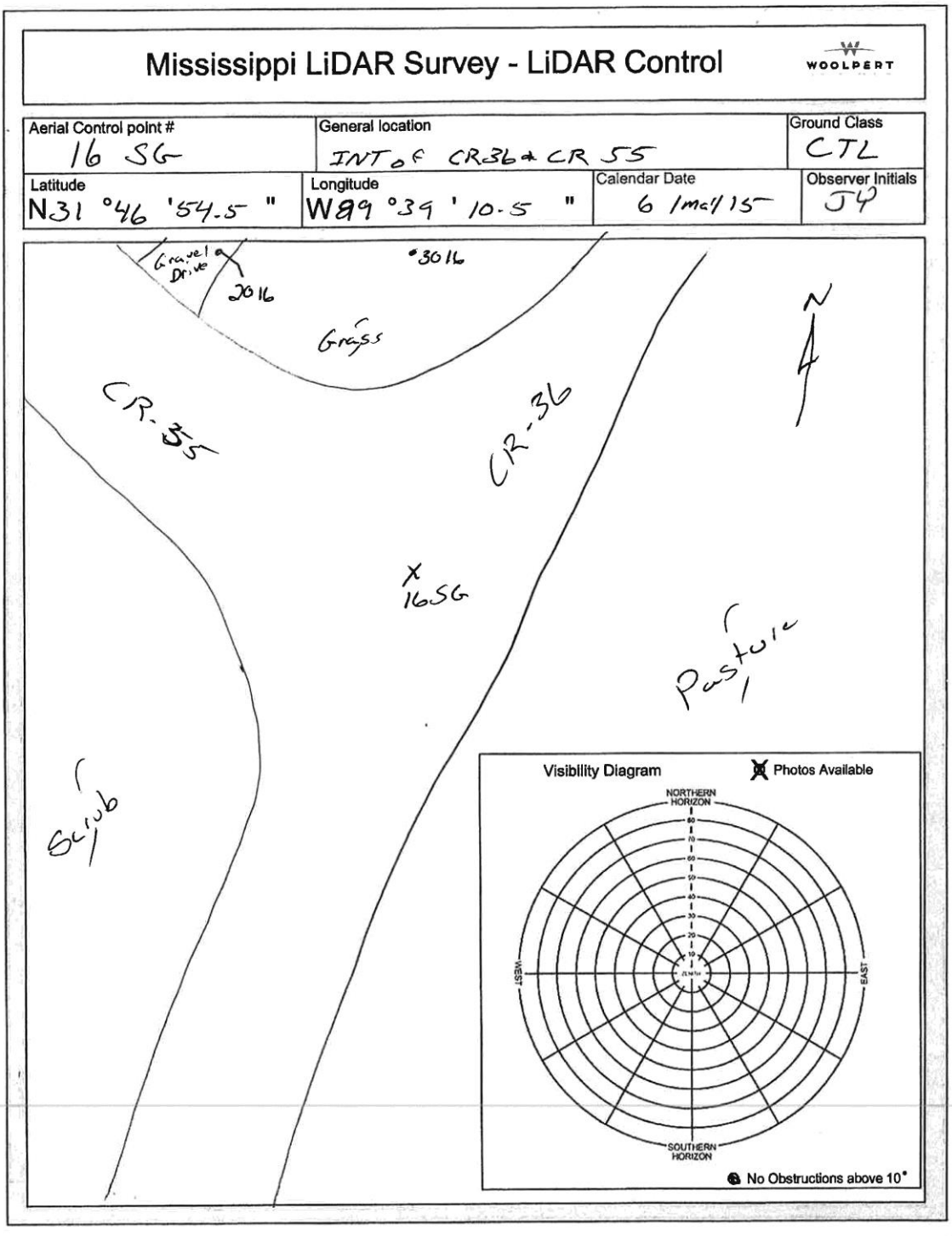
13SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
14SG
General location
Int of HWY541 & MT Zion Rd
Ground Class
CTL
Latitude
N31 °48 '31.3 "
Longitude
W89 °45 '30.6 "
Calendar Date
6 Mar 15
Observer Initials
JY
PLine R/W
Trees
3014
2014
14SG
STOP Bar
MT Zion Rd
Hwy 541
Woods
Trees
N
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
Trees
Trees
No Obstructions above 10°

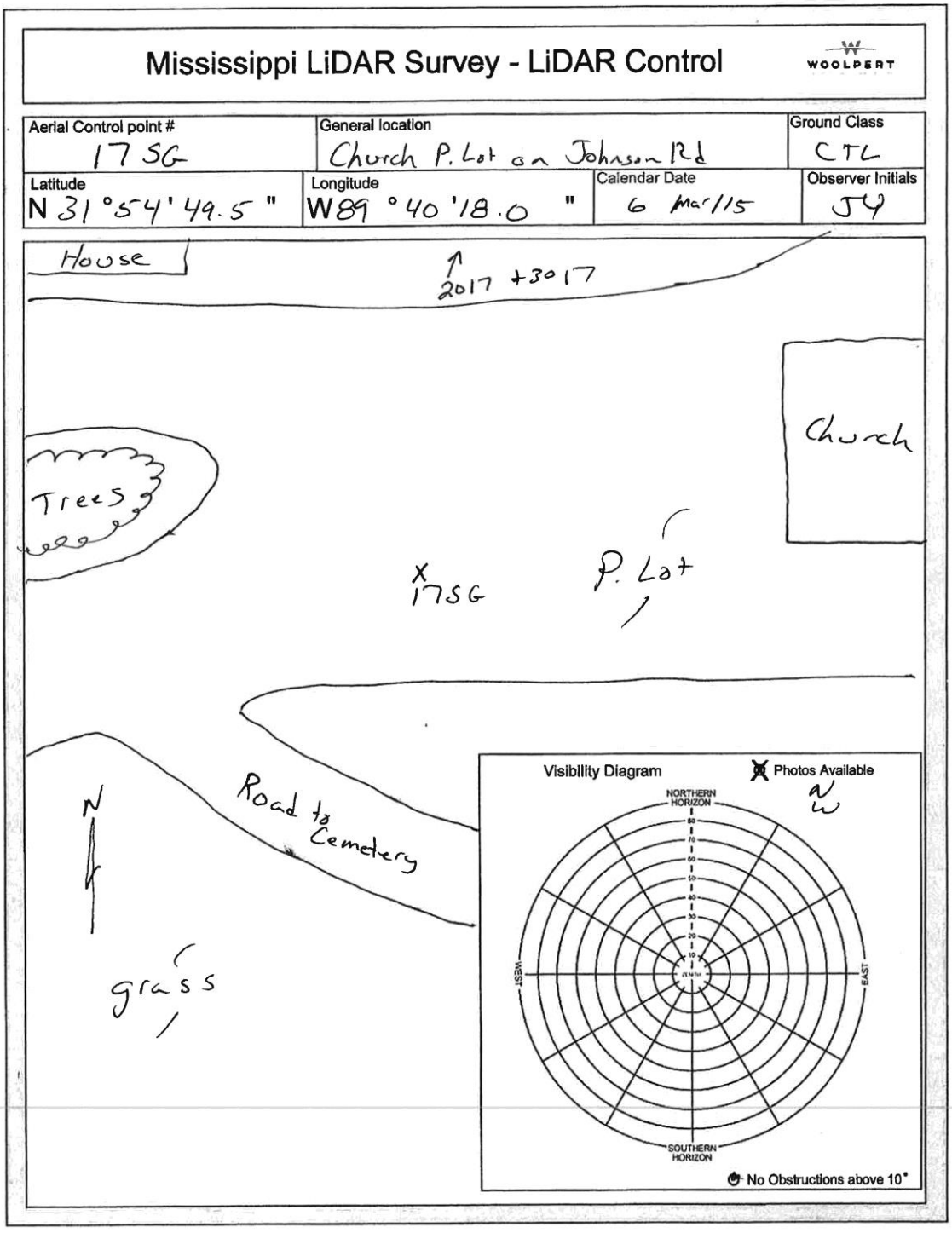
14SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
15SG
General location
Int of Riley Rd & Airport Rd
Ground Class
CTL
Latitude
N31 °51 '54.8 "
Longitude
W89 °48 '20.3 "
Calendar Date
6 Mar 15
Observer Initials
SY
Open Field
Gravel Rd
Woods
Airport Rd
Tree Line
Pasture
Pasture
Riley Rd
STOP
15SG
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
No Obstructions above 10°

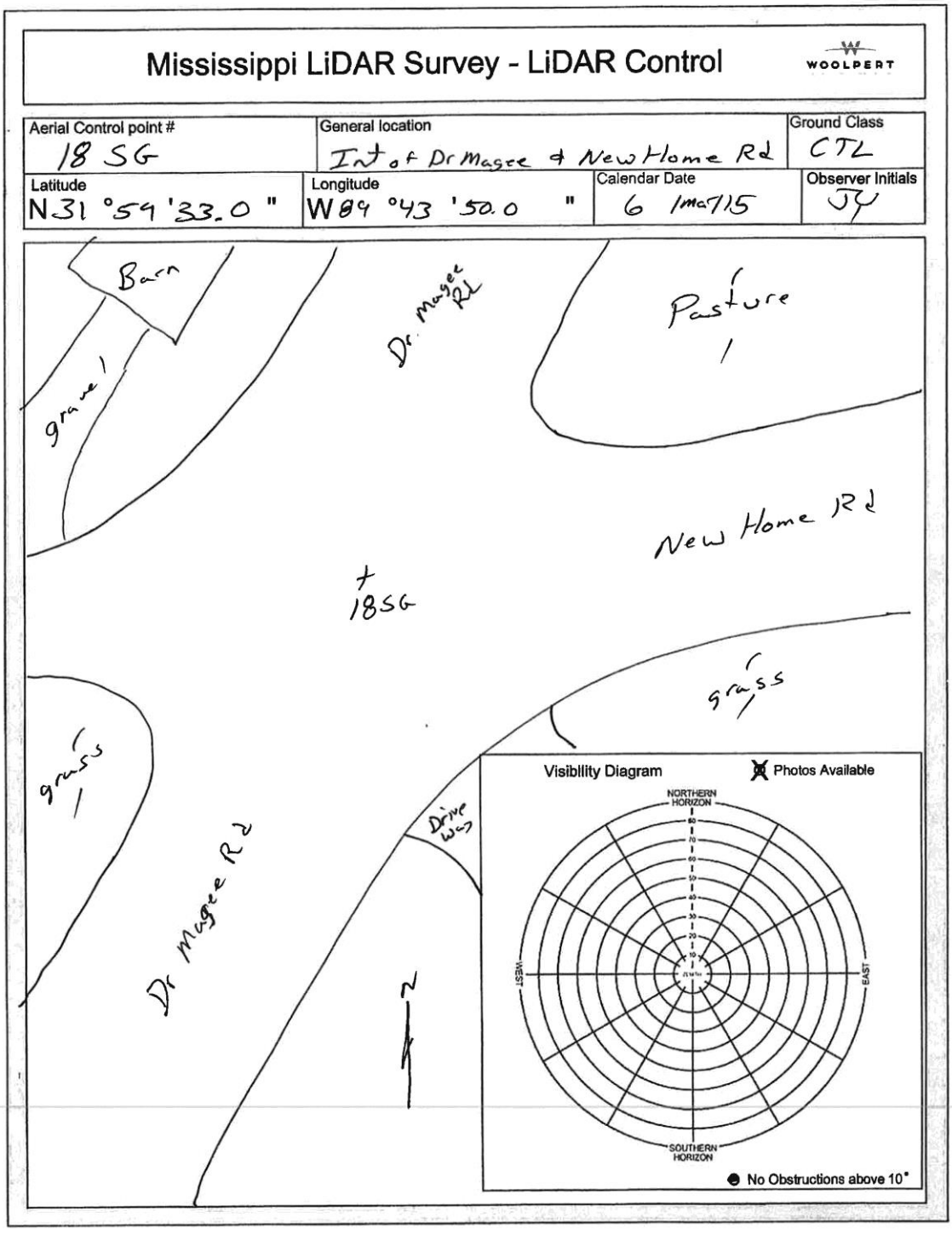
15SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
16 SG
General location
INT of CR36 & CR 55
Ground Class
CTL
Latitude
N31 °46 '54.5 "
Longitude
W89 °39 '10.5 "
Calendar Date
6 /mc/ 15
Observer Initials
JG
Gravel Drive
2016
3016
Grass
CR-55
CR-36
N
16SG
Pasture
Scrub
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

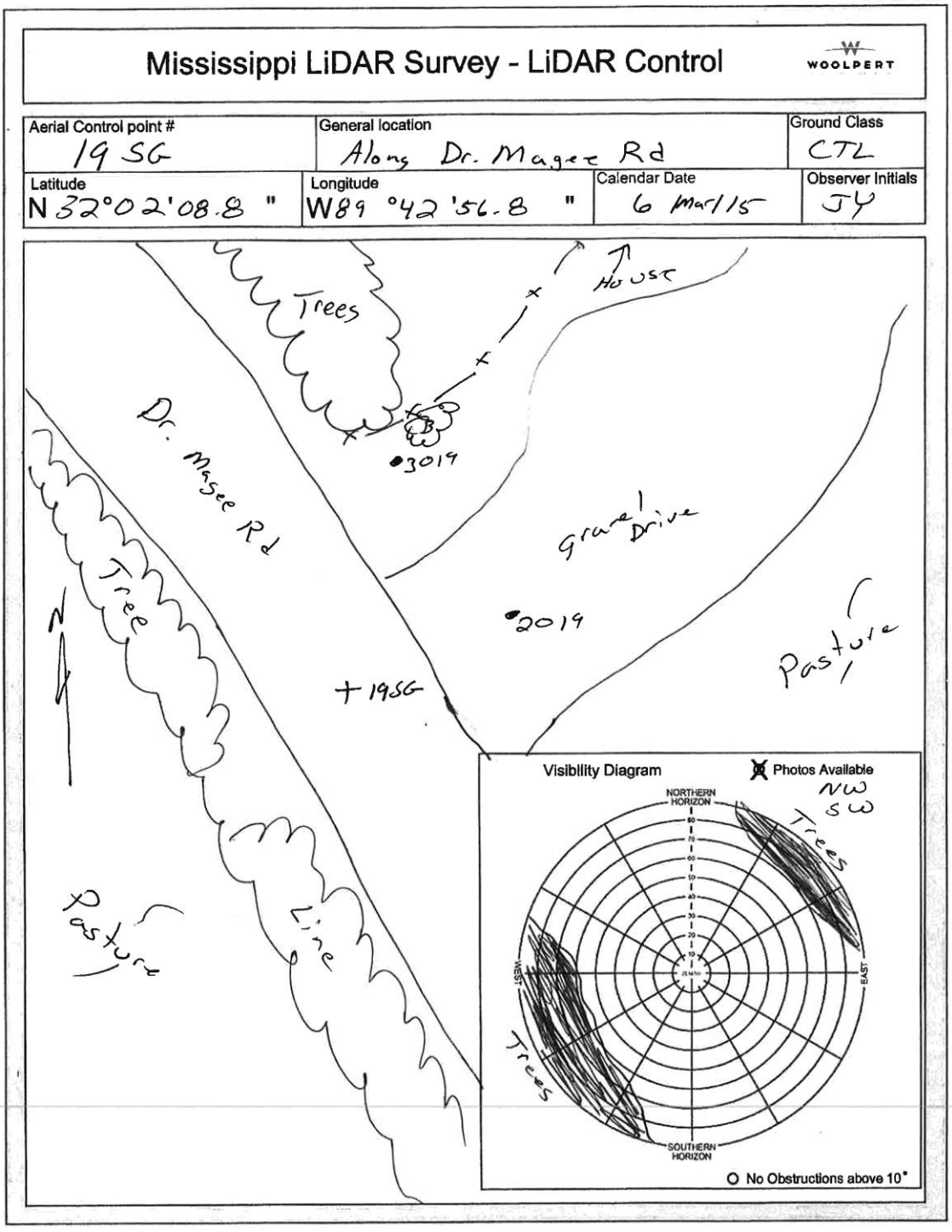
16SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
17 SG
General location
Church P. Lot on Johnson Rd
Ground Class
CTL
Latitude
N 31 °54 ' 49.5 "
Longitude
W89 °40 '18.0 "
Calendar Date
6 Mar 15
Observer Initials
JY
House
2017 +3017
Church
Trees
17SG
P. Lot
Road to Cemetery
N
grass
Visibility Diagram
Photos Available
NW
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

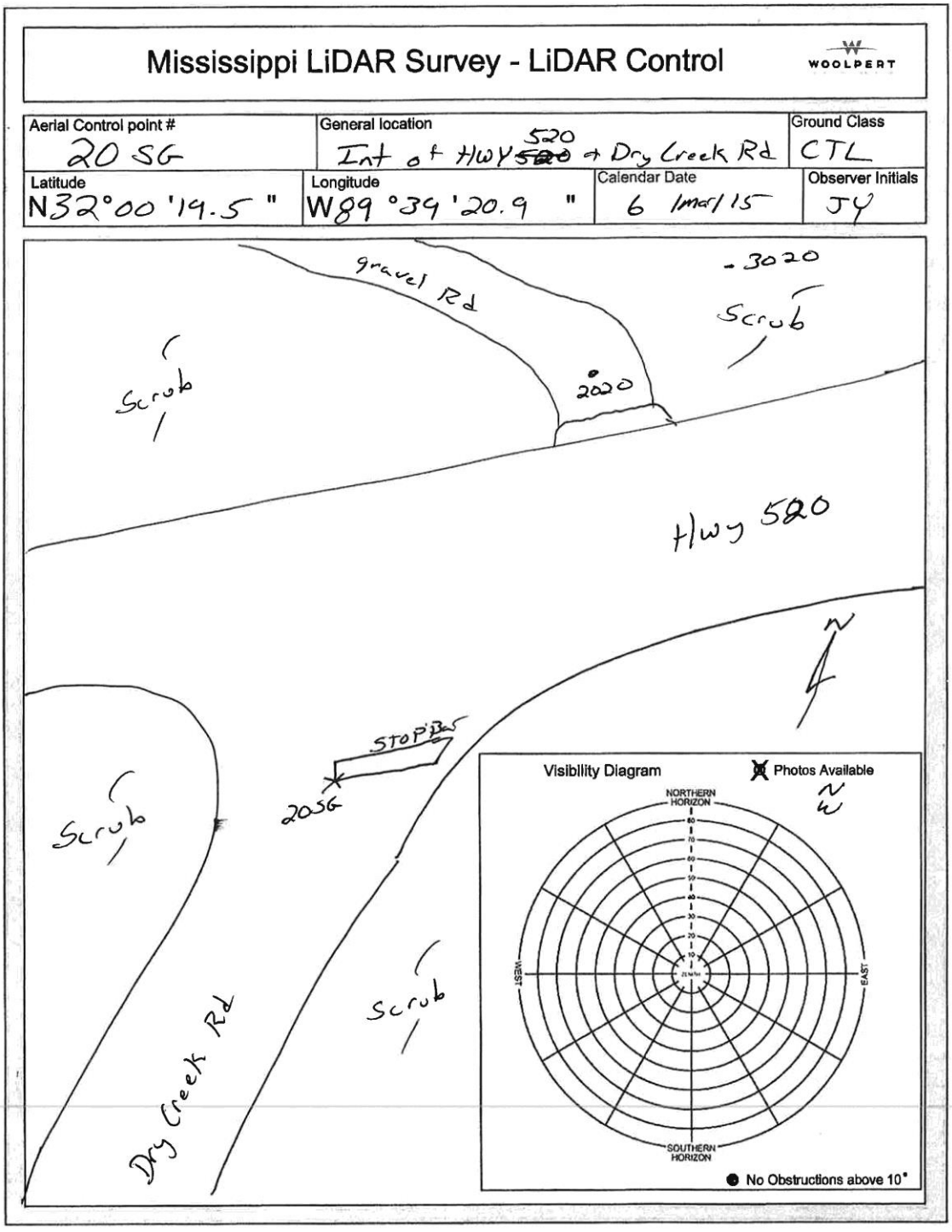
17SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
18 SG
General location
Int of Dr Magee & New Home Rd
Ground Class
CTL
Latitude
N31 °54 '33.0 "
Longitude
W89 °43 '50.0 "
Calendar Date
6 May 15
Observer Initials
JY
Barn
gravel
Dr. Magee Rd
Pasture
New Home Rd
18SG
grass
grass
Dr Magee Rd
Drive way
N
Visiblity Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

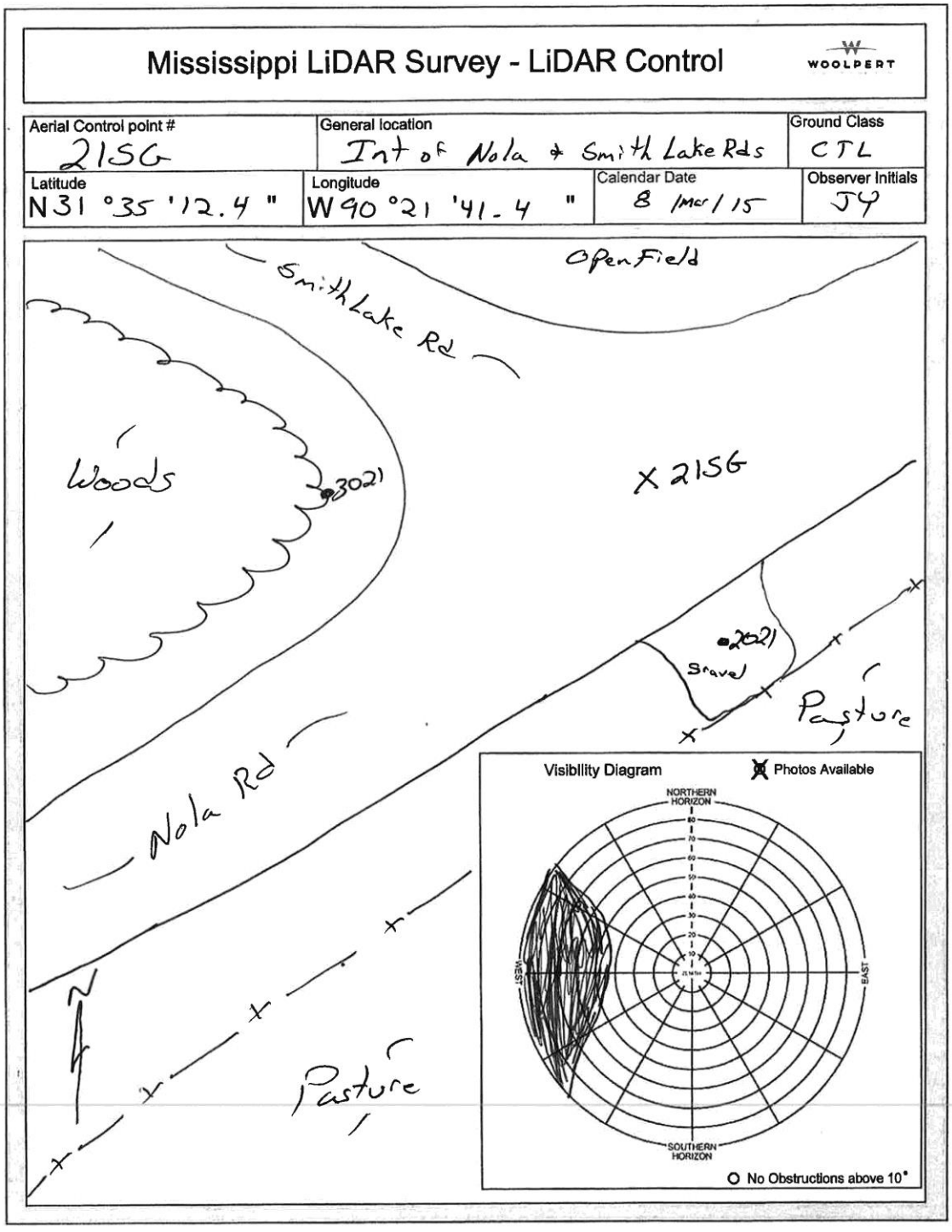
18SG, N, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
19 SG
General location
Along Dr. Magee Rd
Ground Class
CTL
Latitude
N 32°02'08.8 "
Longitude
W89 °42 '56.8 "
Calendar Date
6 Mar/15
Observer Initials
JY
Trees
House
Dr. Magee Rd
3019
Gravel Drive
2019
Pasture
Tree
19SG
Line
Pasture
Visibility Diagram
Photos Available
NW
SW
NORTHERN HORIZON
EAST
WEST
SOUTHERN HORIZON
Trees
Trees
No Obstructions above 10°

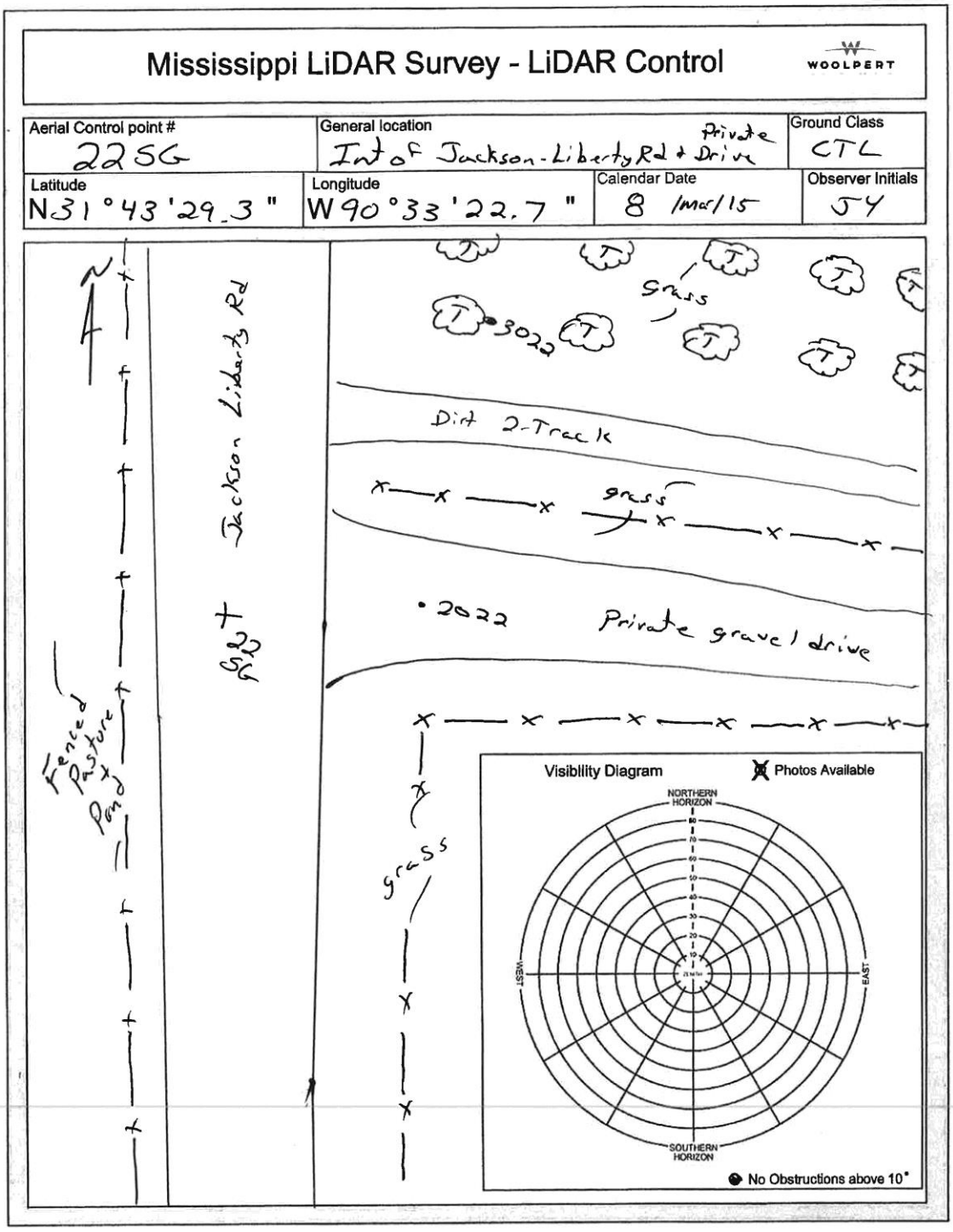
19SG, W, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
20 SG
General location
Int of Hwy 520 & Dry Creek Rd
Ground Class
CTL
Latitude
N32°00'19.5"
Longitude
W89°39'20.9"
Calendar Date
6 Mar 15
Observer Initials
JY
gravel Rd
-3020
Scrub
Scrub
2020
Hwy 520
STOP
2056
Scrub
Scrub
Dry Creek Rd
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

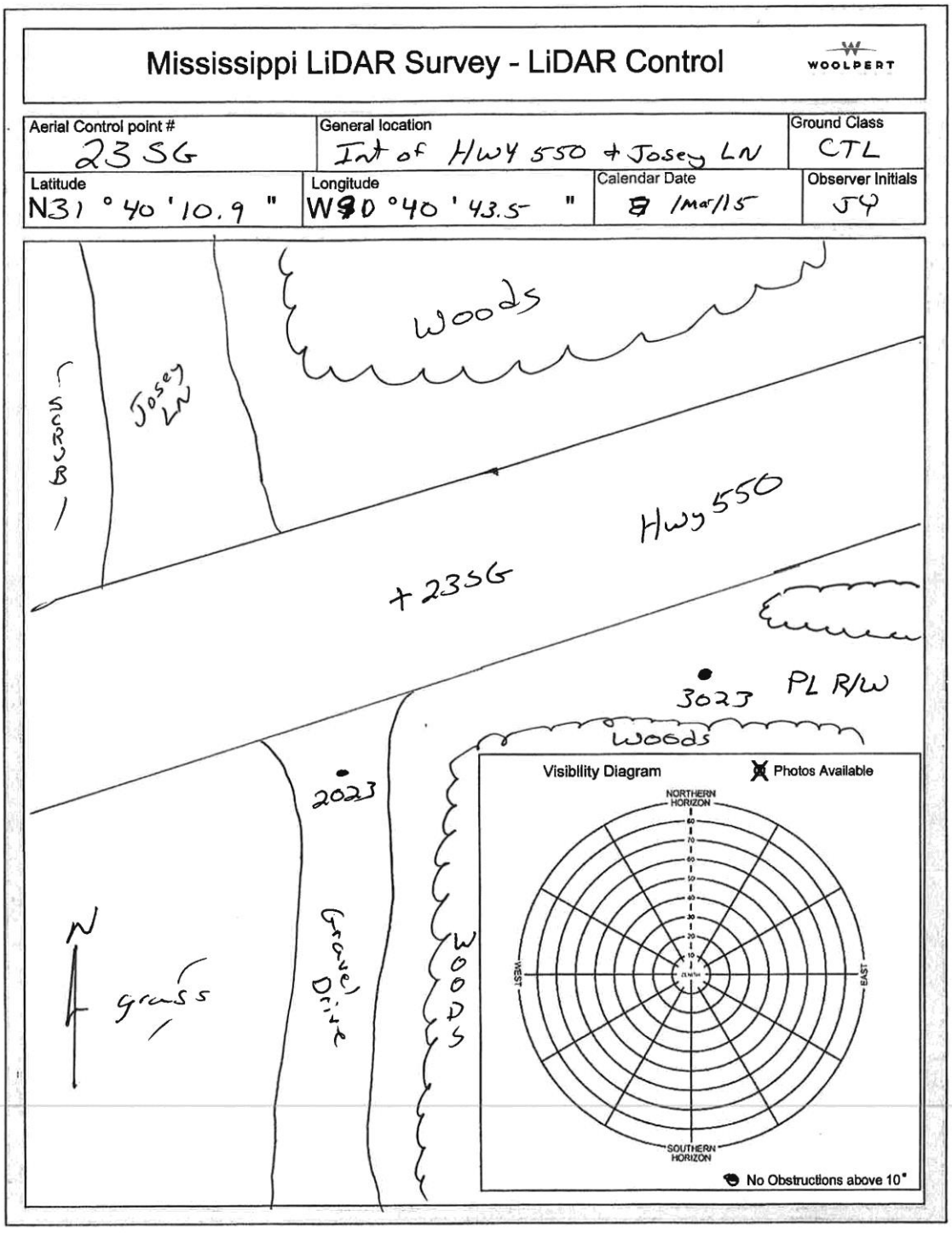
20SG, W, 06MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
2156
General location
Int of Nola & Smith Lake Rds
Ground Class
CTL
Latitude
N31 °35 '12.4 "
Longitude
W90 °21 '41.4 "
Calendar Date
8 Mar 15
Observer Initials
JY
Open Field
Smith Lake Rd
Woods
3021
X 2156
2021
Gravel
Pasture
Nola Rd
Pasture
Visiblity Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

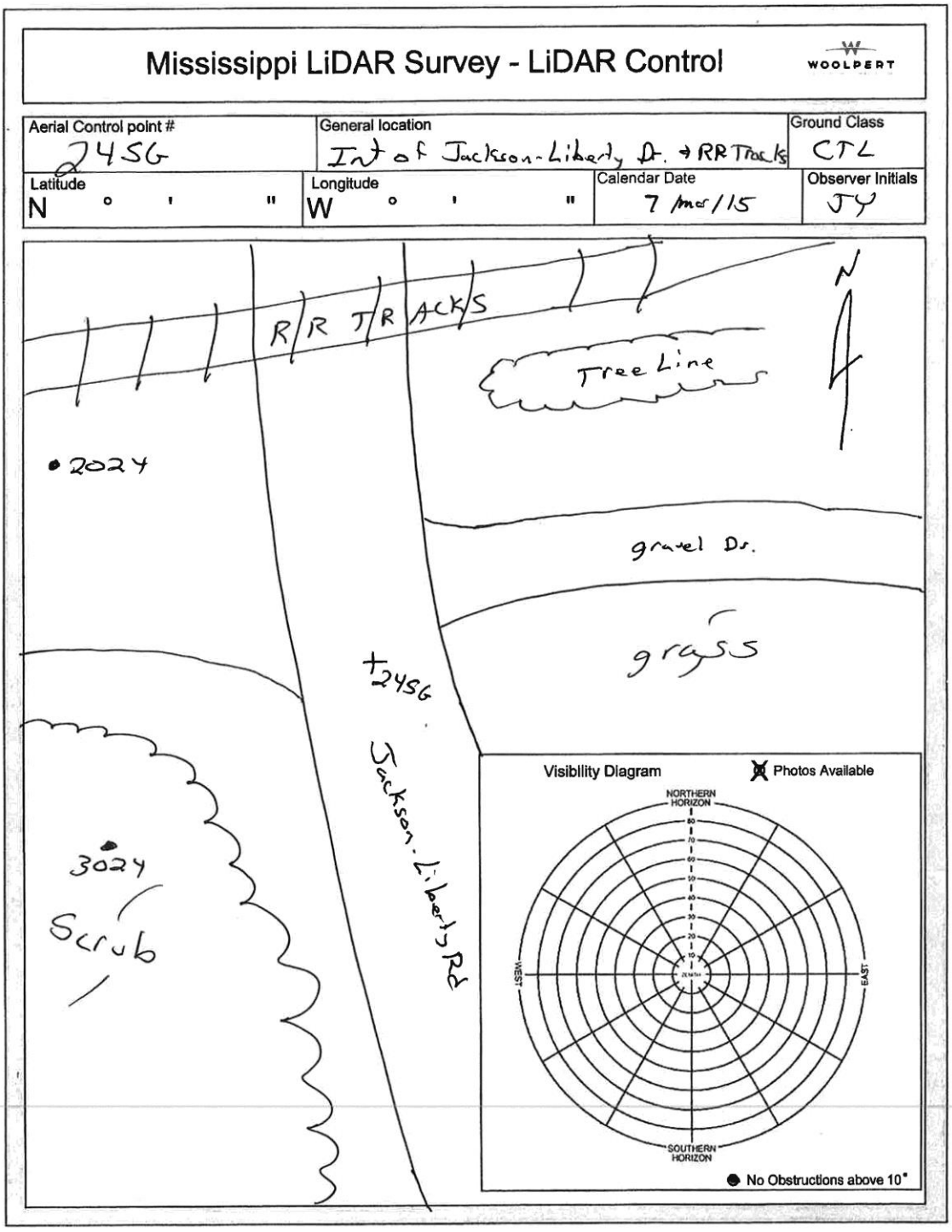
0021SG, N, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
225G
General location
Int of Jackson-Liberty Rd & Private Drive
Ground Class
CTL
Latitude
N31°43'29.3"
Longitude
W90°33'22.7"
Calendar Date
8 Mar 15
Observer Initials
JY
Jackson Liberty Rd
Fenced Pasture
Pond
grass
3022
Dirt 2-Track
grass
3022
Private gravel drive
grass
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
No Obstructions above 10°

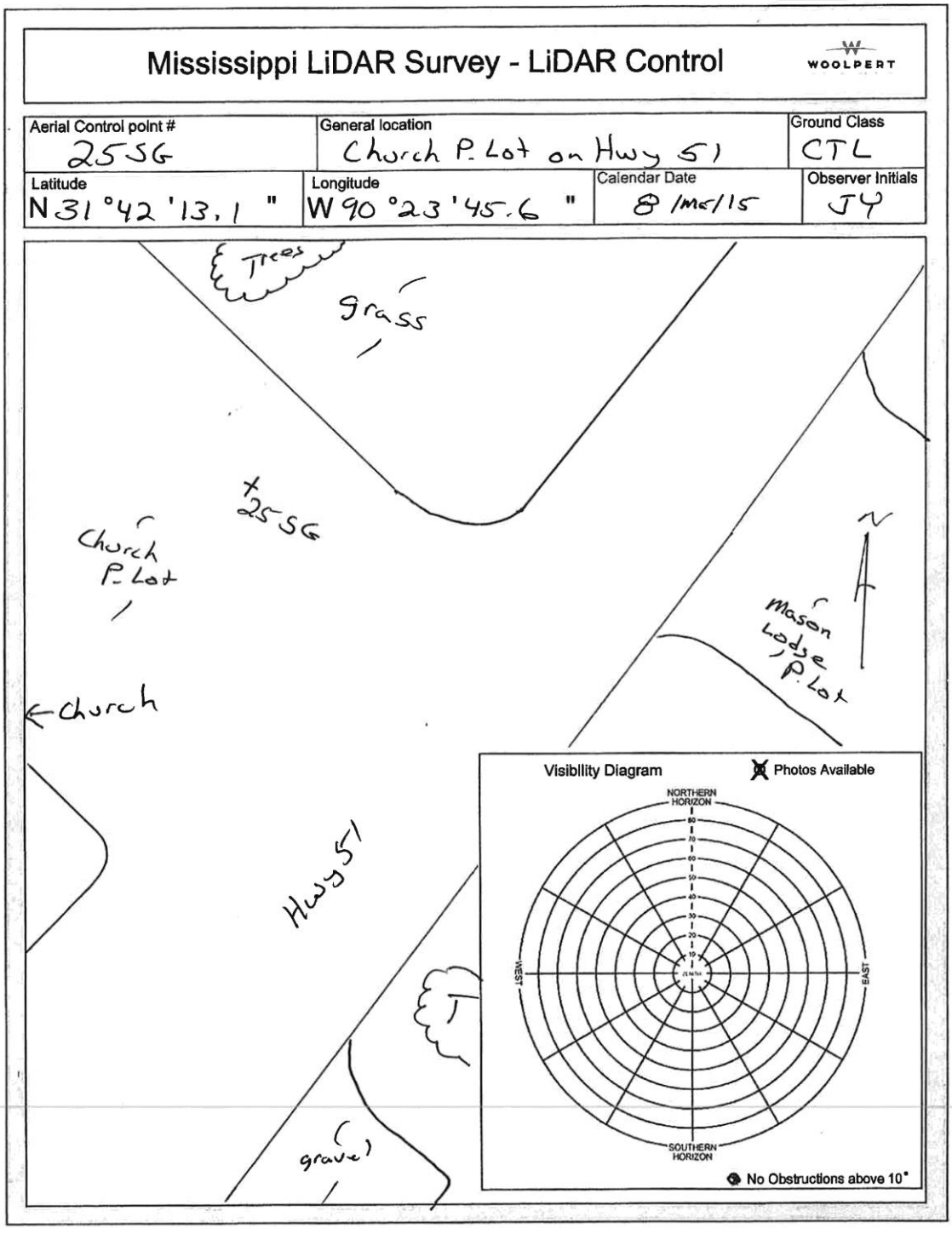
0022SG, W, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 23SG
General location Int of Hwy 550 & Josey LN
Ground Class CTL
Latitude N31 °40 '10.9 "
Longitude W90 °40 '43.5 "
Calendar Date 9 /Mar/15
Observer Initials JY
Woods
Josey LN
Hwy 550
+2356
3023
PL R/W
Woods
2023
Gravel Drive
Woods
N
grass
Visiblity Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

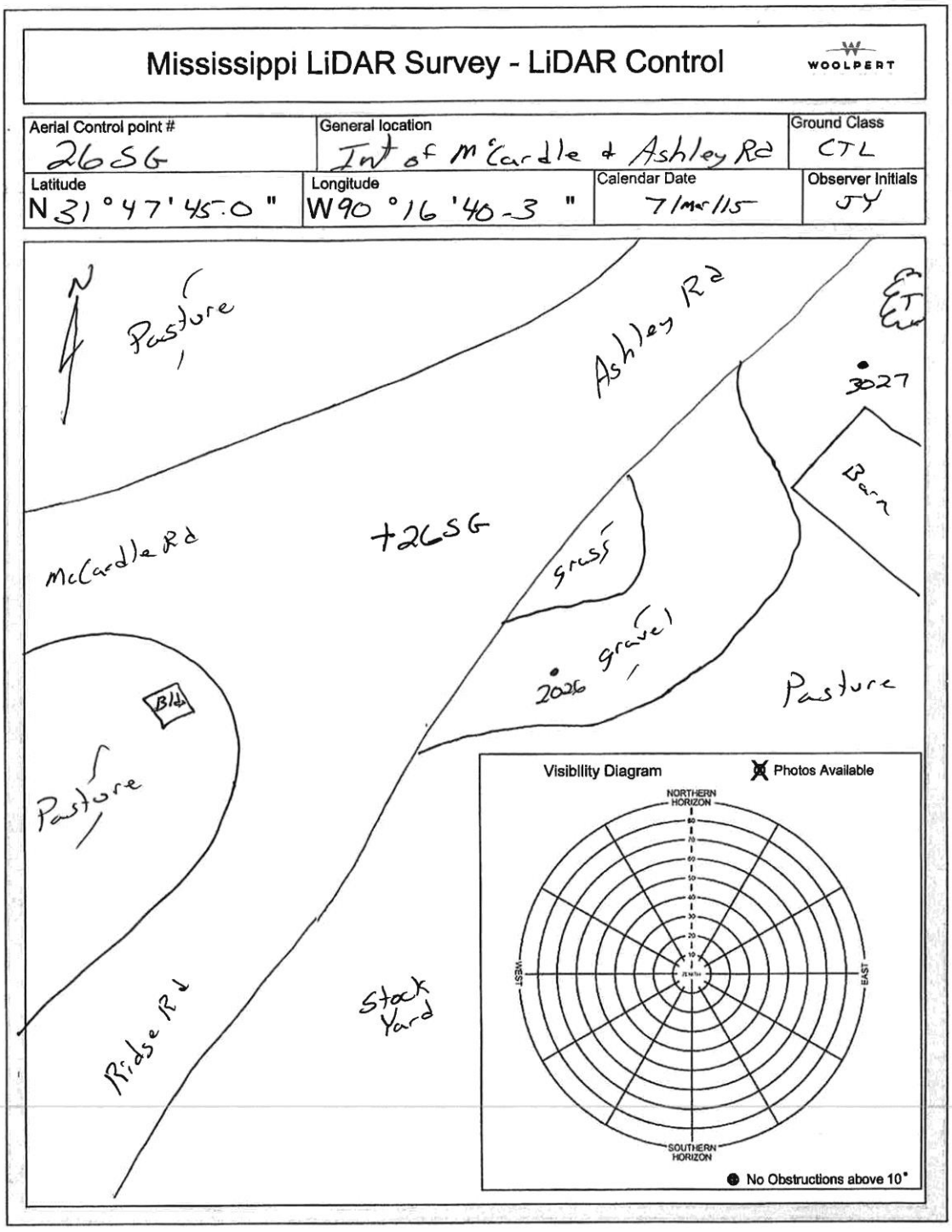
0023SG, N, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
2456
General location
Int of Jackson-Liberty Rd. → RR Tracks
Ground Class
CTL
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
7 Mar 15
Observer Initials
JY
R/R TRACKS
Tree Line
N
2024
gravel Dr.
grass
+2456
Jackson-Liberty Rd
3024
Scrub
Visiblity Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

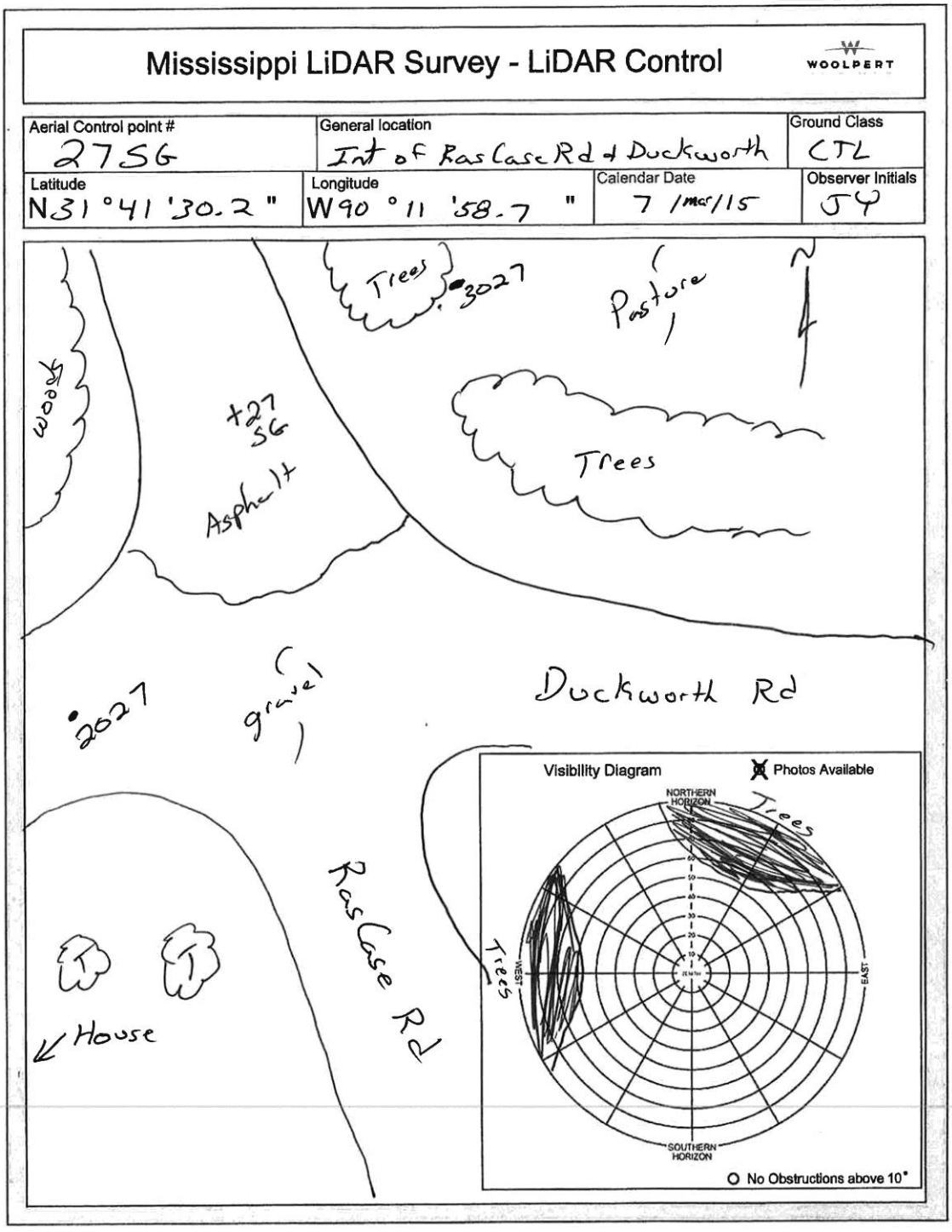
0024SG, N, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
2556
General location
Church P. Lot on Hwy 51
Ground Class
CTL
Latitude
N 31 °42 '13.1 "
Longitude
W 90 °23 '45.6 "
Calendar Date
8/Mar/15
Observer Initials
JY
Trees
Grass
2556
Church P. Lot
Church
Mason Lodge P. Lot
N
Hwy 51
gravel
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

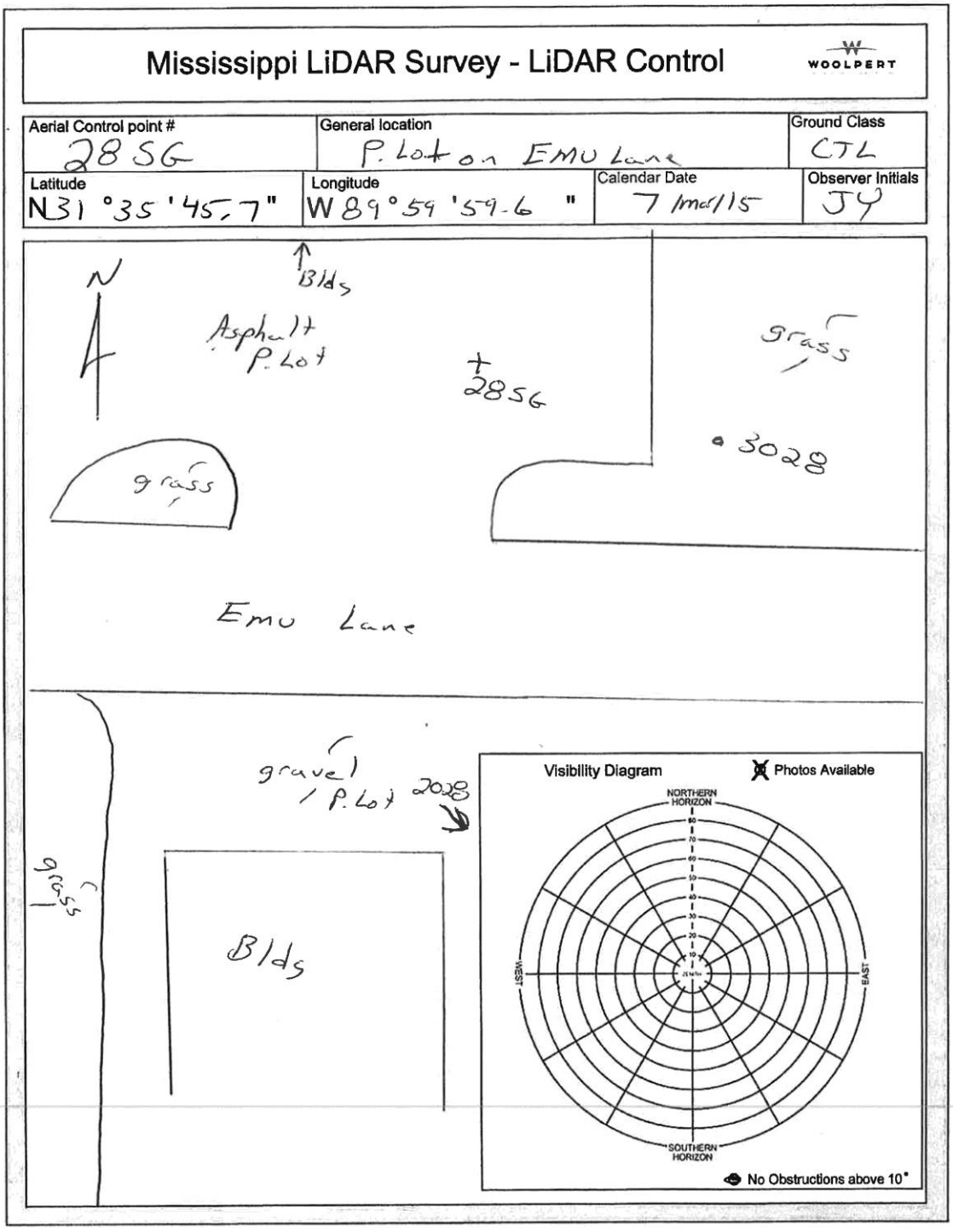
0025SG, N, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
26SG
General location
Int of McCardle & Ashley Rd
Ground Class
CTL
Latitude
N31°47'45.0"
Longitude
W90°16'40.3"
Calendar Date
7/Mar/15
Observer Initials
JY
N
Pasture
Ashley Rd
3027
Barn
McCardle Rd
+26SG
grass
2026
gravel
Pasture
Bldg
Pasture
Ridge Rd
Stock Yard
Visibility Diagram
Photos Available
NORTHERN HORIZON
WEST
EAST
SOUTHERN HORIZON
No Obstructions above 10°

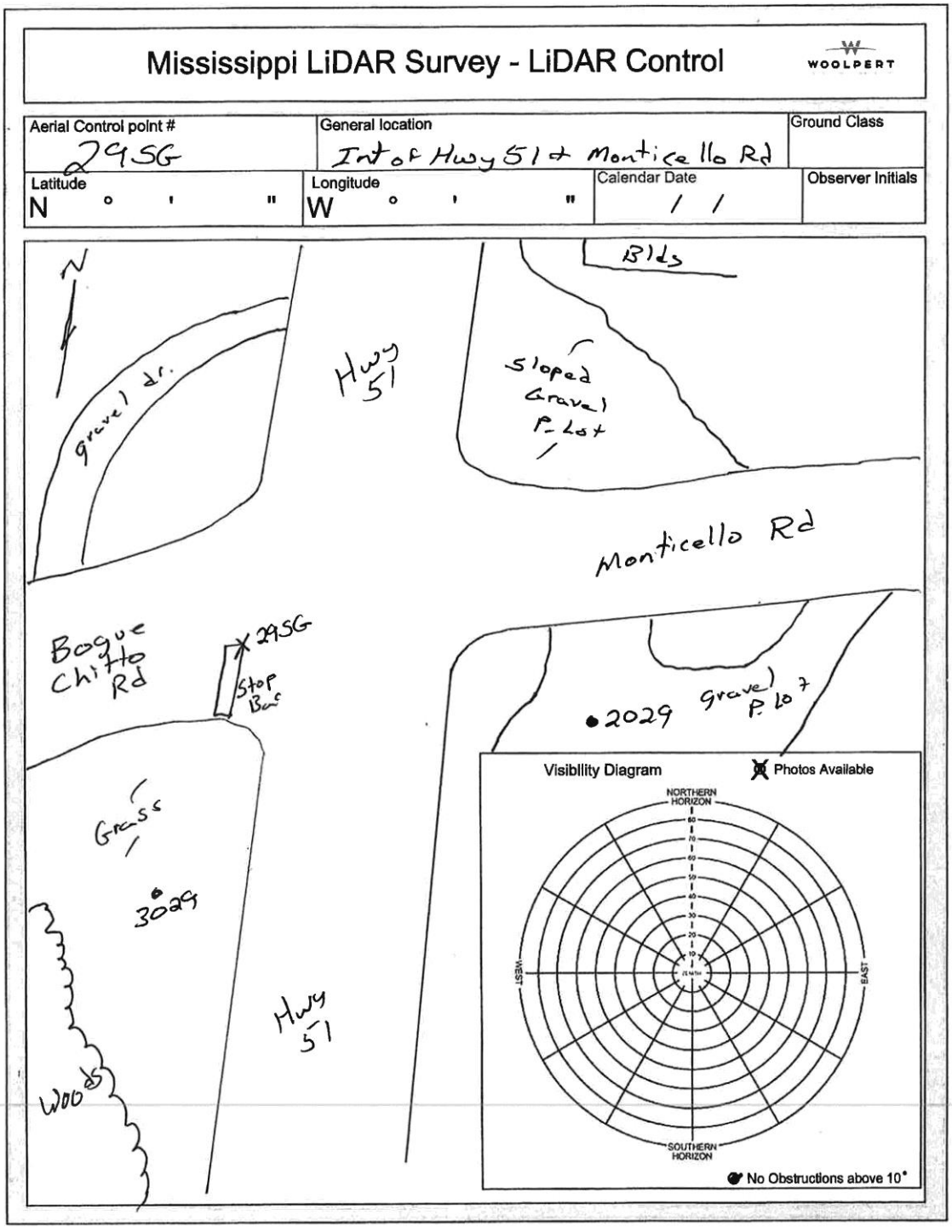
0026SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point # 2756
General location Int of Ras Case Rd & Duckworth
Ground Class CTL
Latitude N31 °41 '30.2 "
Longitude W90 °11 '58.7 "
Calendar Date 7 /mar/15
Observer Initials JY
Trees
3027
Pasture
N
Woods
+27 SG
Asphalt
Trees
3027
gravel
Duckworth Rd
House
Ras Case Rd
Visibility Diagram
Photos Available
NORTHERN HORIZON
Trees
WEST
EAST
Trees
SOUTHERN HORIZON
No Obstructions above 10°

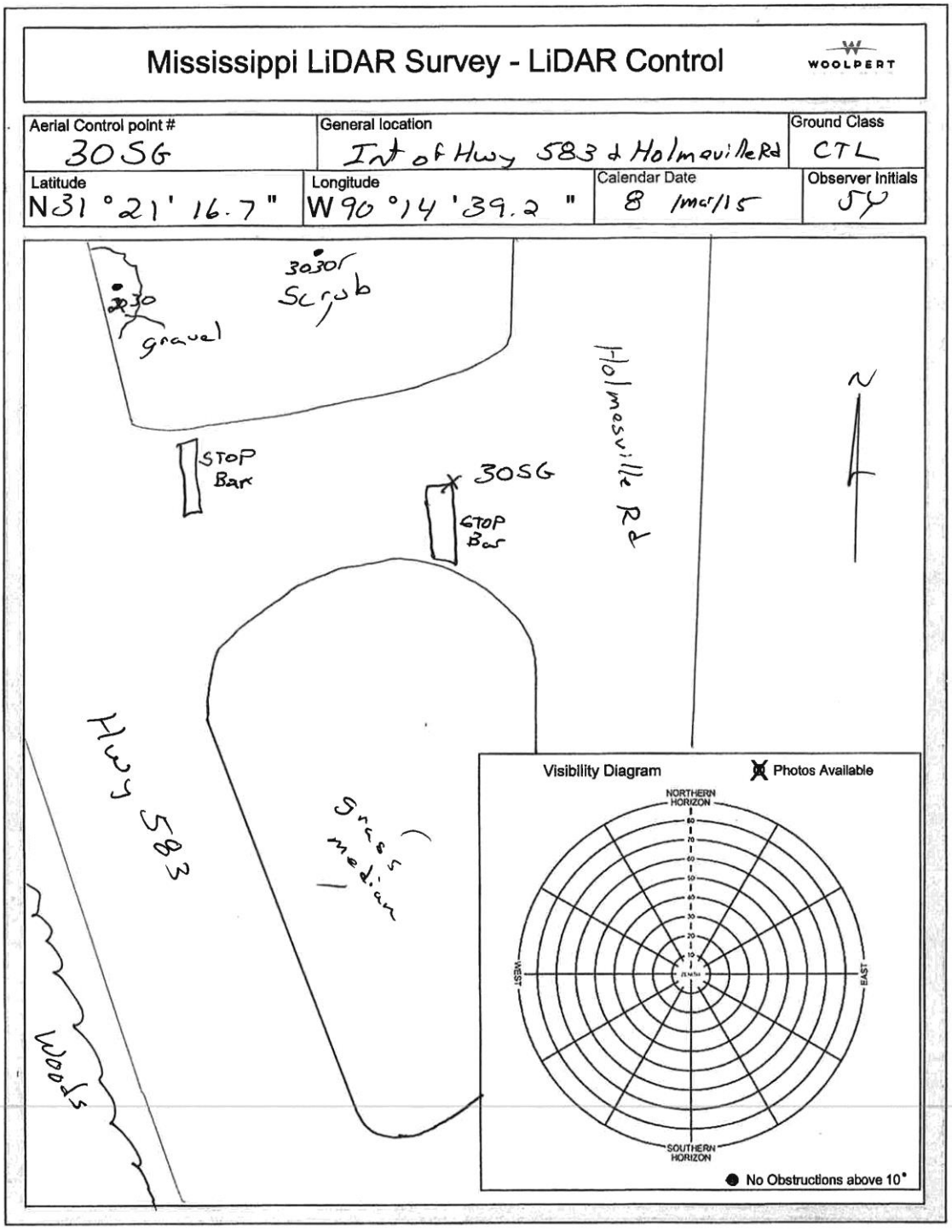
0027SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
28SG
General location
P. Lot on EMU Lane
Ground Class
CTL
Latitude
N31 °35 '45.7"
Longitude
W89 °59 '59.6 "
Calendar Date
7 Mar 15
Observer Initials
JY
N
Blds
Asphalt P. Lot
2856
grass
3028
grass
Emu Lane
gravel / P. Lot
2028
grass
Blds
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

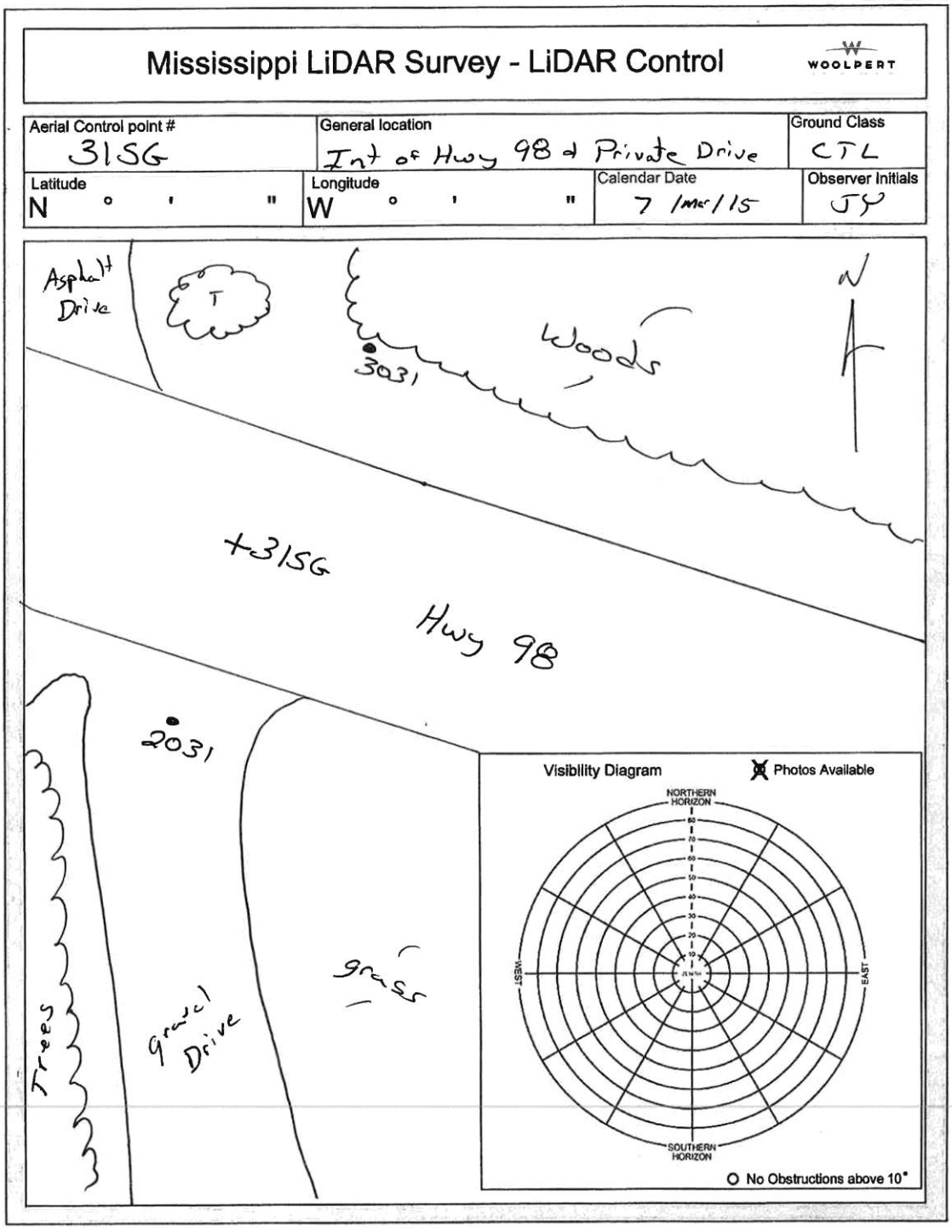
0028SG, N, 07MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
29SG
General location
Int of Hwy 51 & Monticello Rd
Ground Class
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
/ /
Observer Initials
N
gravel dr.
Hwy 51
Bldg
sloped Gravel P. Lot
Monticello Rd
Bogue Chitto Rd
29SG
Stop Bar
2029
gravel P. Lot
Grass
3029
Hwy 51
Wood
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

0029SG, N, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
3056
General location
Int of Hwy 583 & Holmaville Rd
Ground Class
CTL
Latitude
N31 °21' 16.7"
Longitude
W90 °14' 39.2"
Calendar Date
8 /mar/15
Observer Initials
SY
3030
Scrub
2030
gravel
STOP Bar
3056
STOP Bar
Holmesville Rd
N
Hwy 583
Grass median
Woods
Visibility Diagram
Photos Available
NORTHERN HORIZON
EAST
SOUTHERN HORIZON
WEST
No Obstructions above 10°

0030SG, W, 08MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
Aerial Control point #
3151G
General location
Int of Hwy 98 & Private Drive
Ground Class
CTL
Latitude
N ° ' "
Longitude
W ° ' "
Calendar Date
7 /Mar/15
Observer Initials
JY
Asphalt Drive
T
3031
Woods
N
+3151G
Hwy 98
2031
Trees
Gravel Drive
grass
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
No Obstructions above 10°

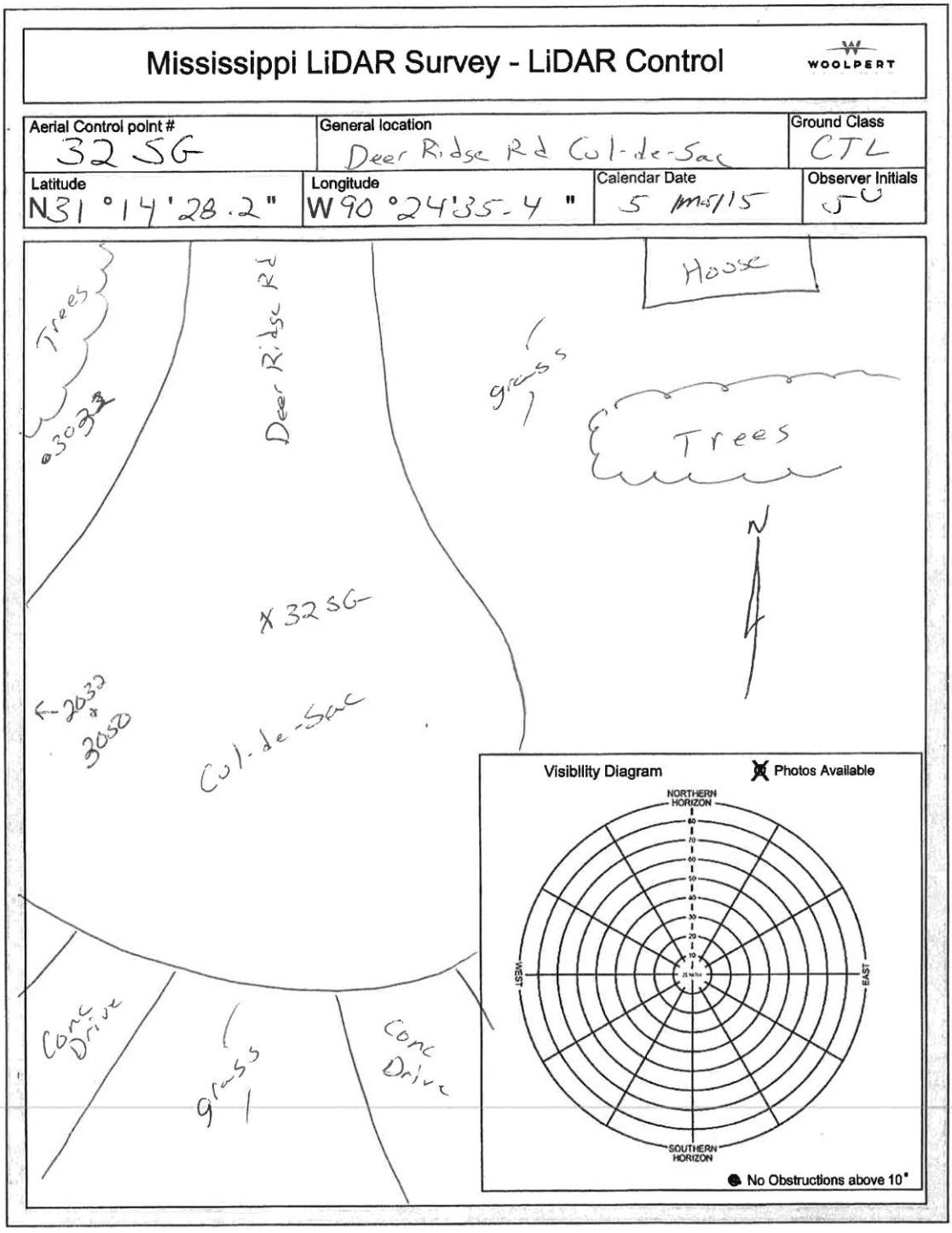
0031SG, N, 08MAR2015

Mississippi LiDAR Survey - LiDAR Control

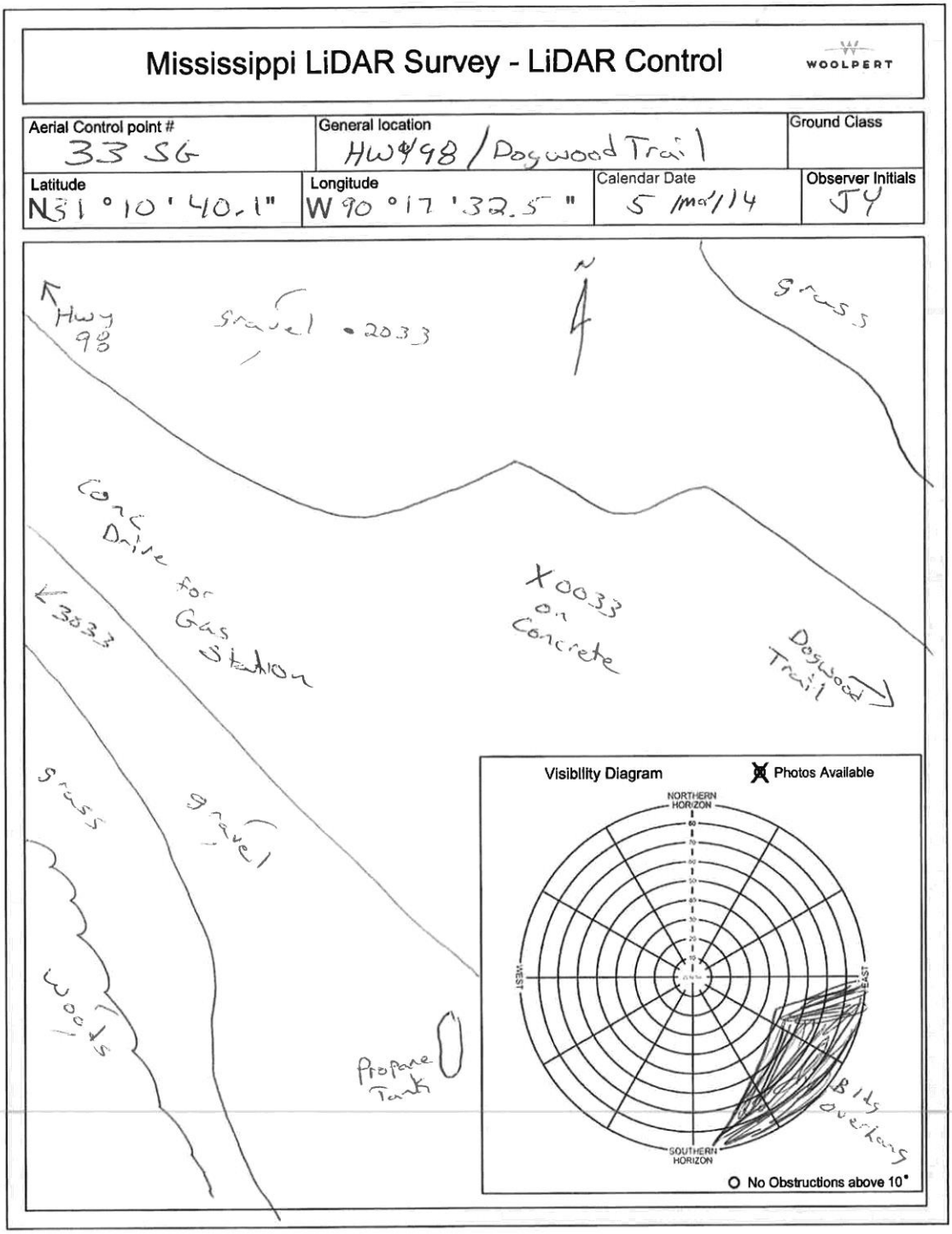
WOOLPERT

Aerial Control point #	General location	Ground Class
32 SG	Deer Ridge Rd Cul-de-Sac	CTL

Latitude	Longitude	Calendar Date	Observer Initials
N31 °14'28.2"	W90 °24'35.4 "	5 May 15	JC



32SG, N, 05MAR2015


Mississippi LiDAR Survey - LiDAR Control
WOOLPERT
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 May 14
Observer Initials
JY
Hwy 98
Gravel
2033
Grass
Conc Drive for Gas Station
3333
X0033 on Concrete
Dogwood Trail
Grass
Gravel
Woods
Propane Tank
Visibility Diagram
Photos Available
NORTHERN HORIZON
SOUTHERN HORIZON
WEST
EAST
Bldg overhang
No Obstructions above 10°

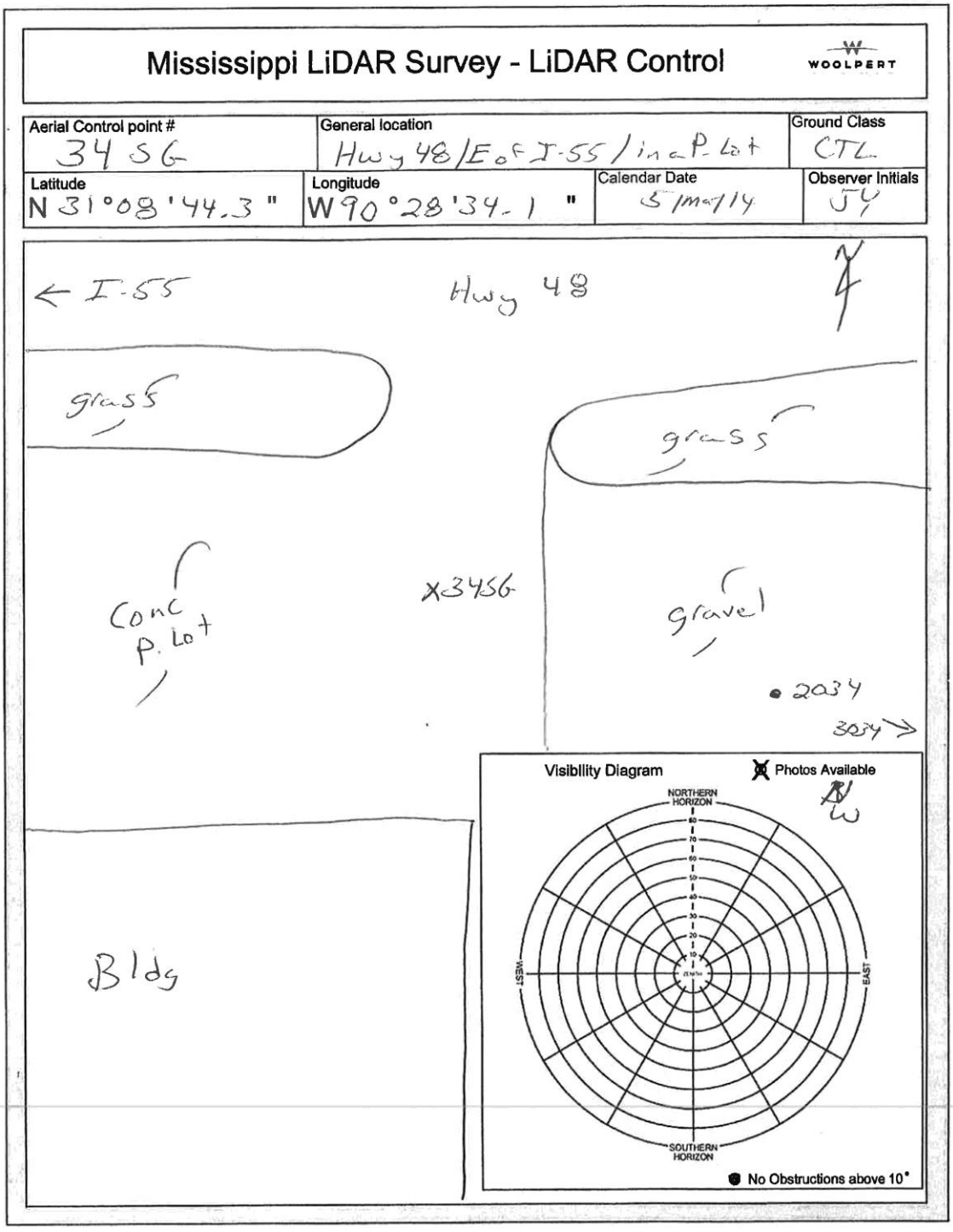
33SG, N, 05MAR2015

Mississippi LiDAR Survey - LiDAR Control

WOOLPERT

Aerial Control point #	General location	Ground Class
34 SG	Hwy 48/E of I-55/in a P. Lot	CTL

Latitude	Longitude	Calendar Date	Observer Initials
N 31°08'44.3"	W 90°28'34.1"	5/May/14	JY

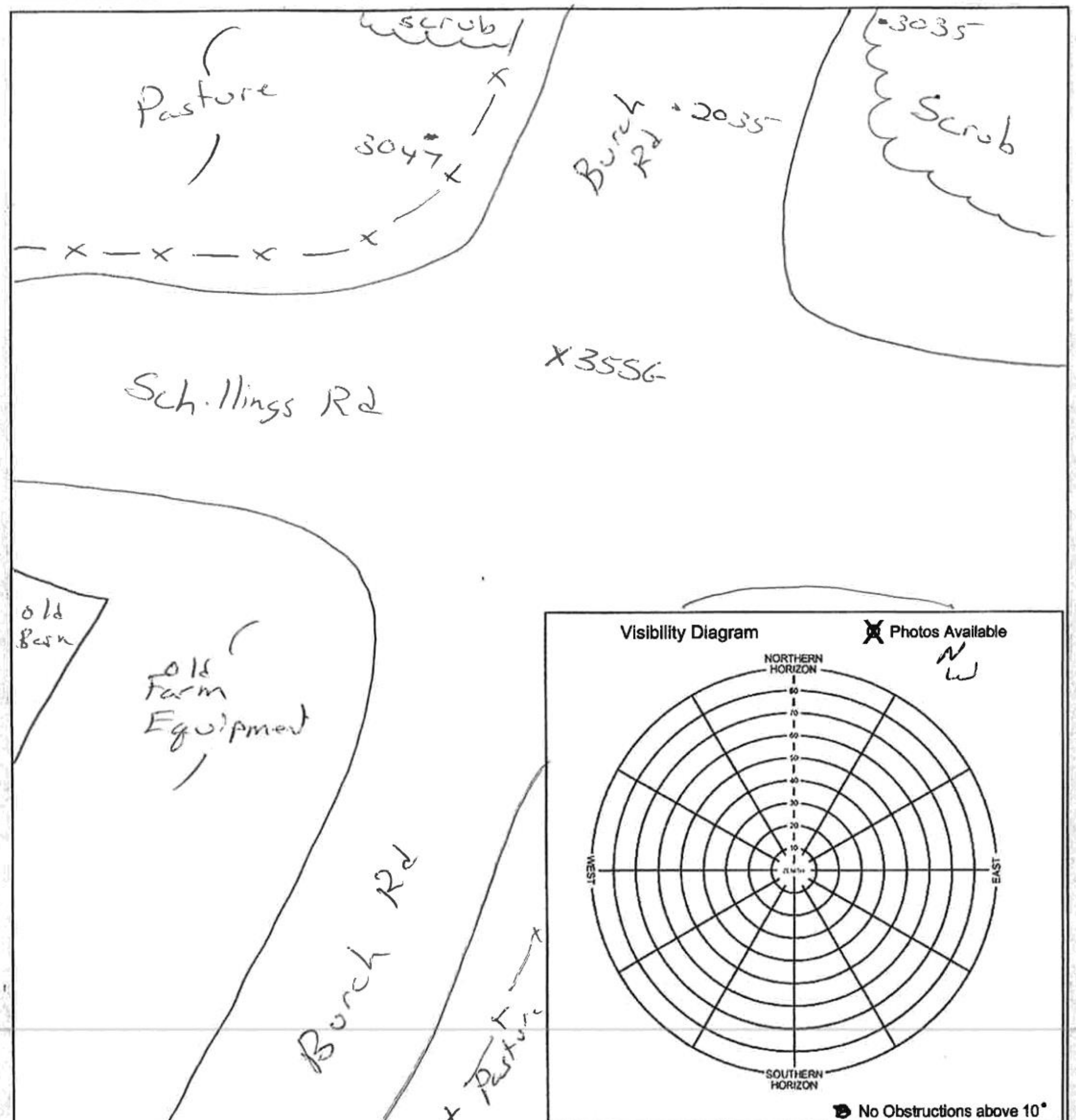


34SG, N, 05MAR2015

Mississippi LiDAR Survey - LiDAR Control

WOOLPERT

Aerial Control point #	General location		Ground Class
355G	Int. of Burch Rd and Schillings		CTL
Latitude	**Longitude**	**Calendar Date**	**Observer Initials**
N31°00'49.1"	W90°15'54.6"	5/[illegible]/15	JY



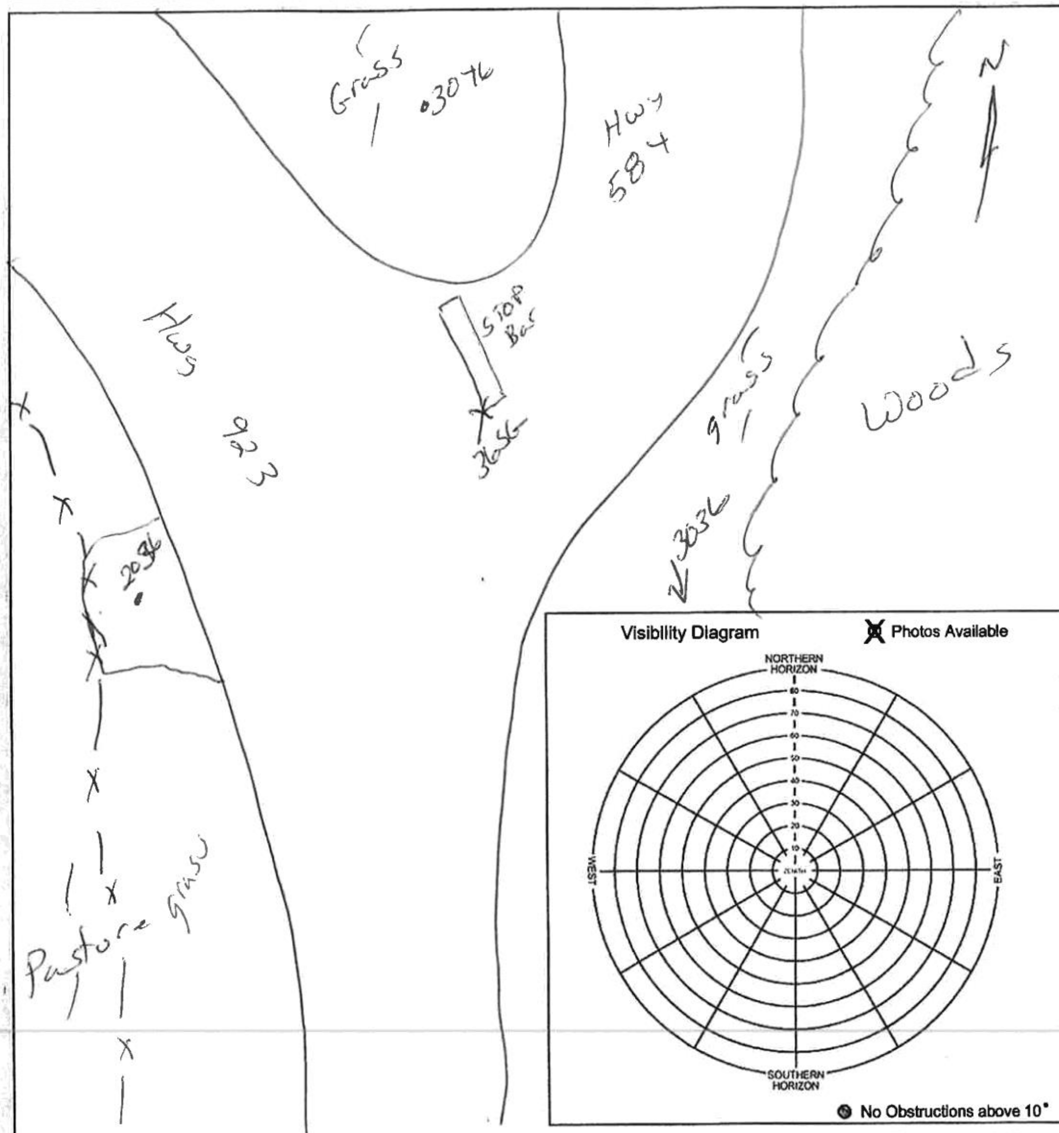
35SG, W, 05MAR2015

Mississippi LiDAR Survey - LiDAR Control

WOOLPERT

Aerial Control point #	General location		Ground Class
3656	Int of 923 + 584 W		C#2

Latitude	Longitude	Calendar Date	Observer Initials
N31 °00 '10.7 "	W 90 °32 '51.9 "	5 /mo/15	JY



35SG, W, 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

```
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  GEOID HEIGHT    -        -28.32  (meters)                      GEOID12A
 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
 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  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
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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 GULFP0RT 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 DEFLEC12A 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  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
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
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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
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
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
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
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  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
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
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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                        *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;                    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|                                                          dddmmss.s |
 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                         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                          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
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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
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'HEIGHT OF LIGHT ABOVE STATION MARK - 18 METERS.
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)
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BH2400'RECOVERED.  STATION, REFERENCE MARKS AND AZIMUTH MARK WERE RECOVERED
BH2400'IN GOOD CONDITION.  DESCRIPTION IS ADEQUATE.  DISTANCES TO RMS
BH2400'WERE VERIFIED.
BH2400
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.
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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  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 BH1529         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 BH1529            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 BH1529  ------------------------------------------------------------------
 BH1529  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
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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!             -  Elev Factor  x  Scale Factor =   Combined Factor
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
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
BH1529                          STATION RECOVERY (2007)
BH1529
BH1529'RECOVERY NOTE BY GEOCACHING 2007 (MM)
BH1529'RECOVERED IN GOOD CONDITION.
BH1529
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.
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BH1529'26 INTERCHANGE BY TRAVELING NORTH ALONG S. MAIN FOR .3 MILES TO THE
BH1529'RAILROAD AND MARK ON THE RIGHT.
BH1529
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  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
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
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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.
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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
 BH0309  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 BH0309         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 BH0309            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
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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  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
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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.
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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
 DL8881  ______________________________________________________________________
 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  ______________________________________________________________________
 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
 DL8881  Standards:
 DL8881         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DL8881            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
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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  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
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
BH0982                          STATION DESCRIPTION
BH0982
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
BH0982                          STATION RECOVERY (1976)
BH0982
BH0982'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1976
BH0982'RECOVERED IN GOOD CONDITION.
BH0982
BH0982                          STATION RECOVERY (1993)
BH0982
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
BH0982                          STATION RECOVERY (2005)
BH0982
BH0982'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2005 (KS)
BH0982'AT N 30 18 4.0 BY W 089 29 41.4
BH0982'
BH0982
BH0982                          STATION RECOVERY (2009)
BH0982
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 DEFLEC12A 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  =   0.99995563
DL9661!UTM  16      -   0.99999937  x   0.99988865  =   0.99988802
DL9661
DL9661                          SUPERSEDED SURVEY CONTROL
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
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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.
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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   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

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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.
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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
 DL9663  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 DL9663         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 DL9663            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
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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  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
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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.
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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  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 DN4016         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DN4016            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DN4016  ------------------------------------------------------------------
 DN4016  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
```

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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  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
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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.
```

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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
 DN3991  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 DN3991         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 DN3991            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DN3991  ------------------------------------------------------------------
 DN3991  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  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  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)
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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
DL8892                          STATION RECOVERY (2009)
DL8892
DL8892'RECOVERY NOTE BY MAPTECH INCORPORATED 2009 (BWH)
DL8892'RECOVERED AS DESCRIBED.
DL8892
DL8892                          STATION RECOVERY (2010)
DL8892
DL8892'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2010 (RWA)
DL8892'MARK RECOVERED AS DESCRIBED AND IN GOOD CONDITION.
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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
 BH0227  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 BH0227         FGDC (95% conf, cm)     Standard deviation (cm)     CorrNE
 BH0227            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
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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
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
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
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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
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 SLEEV
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
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
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  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
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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                          STATION RECOVERY (2009)
BH0428
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                          STATION RECOVERY (2009)
BH0428
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.
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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
 BH3281  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 BH3281         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 BH3281            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 BH3281  ------------------------------------------------------------------
 BH3281  NETWORK    1.62   2.10           0.62   0.70   1.07     -0.05719947
 BH3281  ------------------------------------------------------------------
 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
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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
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
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
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
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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;                    North         East     Units  Estimated Accuracy
 BH0297;SPC MS E     -    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
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

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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  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
BH0959  HISTORY     - Date     Condition        Report By
BH0959  HISTORY     - 1969     MONUMENTED       CGS
BH0959  HISTORY     - 1972     GOOD             MSHD
BH0959  HISTORY     - 1974     GOOD             NGS
BH0959  HISTORY     - 1976     GOOD             NGS
BH0959  HISTORY     - 19930315 GOOD             NGS
BH0959  HISTORY     - 20050705 GOOD             NGS
BH0959  HISTORY     - 20090114 GOOD             MAPTEC
BH0959  HISTORY     - 20090706 GOOD             EMCINC
BH0959
BH0959                          STATION DESCRIPTION
BH0959
BH0959'DESCRIBED BY MISSISSIPPI STATE HIGHWAY DEPARTMENT 1972
BH0959'3.3 MI W FROM BAY ST  LOUIS.
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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.O 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  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
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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.
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PROGRAM = datasheet95, VERSION = 8.6.1
1        National Geodetic Survey,   Retrieval Date = MARCH  8, 2015
 DN3856
***********************************************************************
 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
 DN3856                        *CURRENT SURVEY CONTROL
 DN3856
_____________________________________________________________________
 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
_____________________________________________________________________
 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
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 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!             -  Elev Factor  x  Scale Factor =   Combined Factor
 DN3856!SPC MS W     -   0.99998595  x   0.99995113  =   0.99993708
 DN3856!UTM  15      -   0.99998595  x   1.00033459  =   1.00032053
 DN3856
 DN3856                          SUPERSEDED SURVEY CONTROL
 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
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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.
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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  ______________________________________________________________________
 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  ______________________________________________________________________
 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:
 DN3858         FGDC (95% conf, cm)     Standard deviation (cm)      CorrNE
 DN3858            Horiz  Ellip           SD_N   SD_E   SD_h      (unitless)
 DN3858  ------------------------------------------------------------------
 DN3858  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
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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
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!             -  Elev Factor  x  Scale Factor =   Combined Factor
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
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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!             -  Elev Factor  x  Scale Factor =   Combined Factor
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  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
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
```

```
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  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
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 GEODETIC 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;                    North         East     Units Scale Factor Converg.
DL9094;SPC MS W     -   188,413.042   698,022.434   MT  0.99995005   -0 00 38.7
DL9094;SPC MS W     -   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!             -  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,
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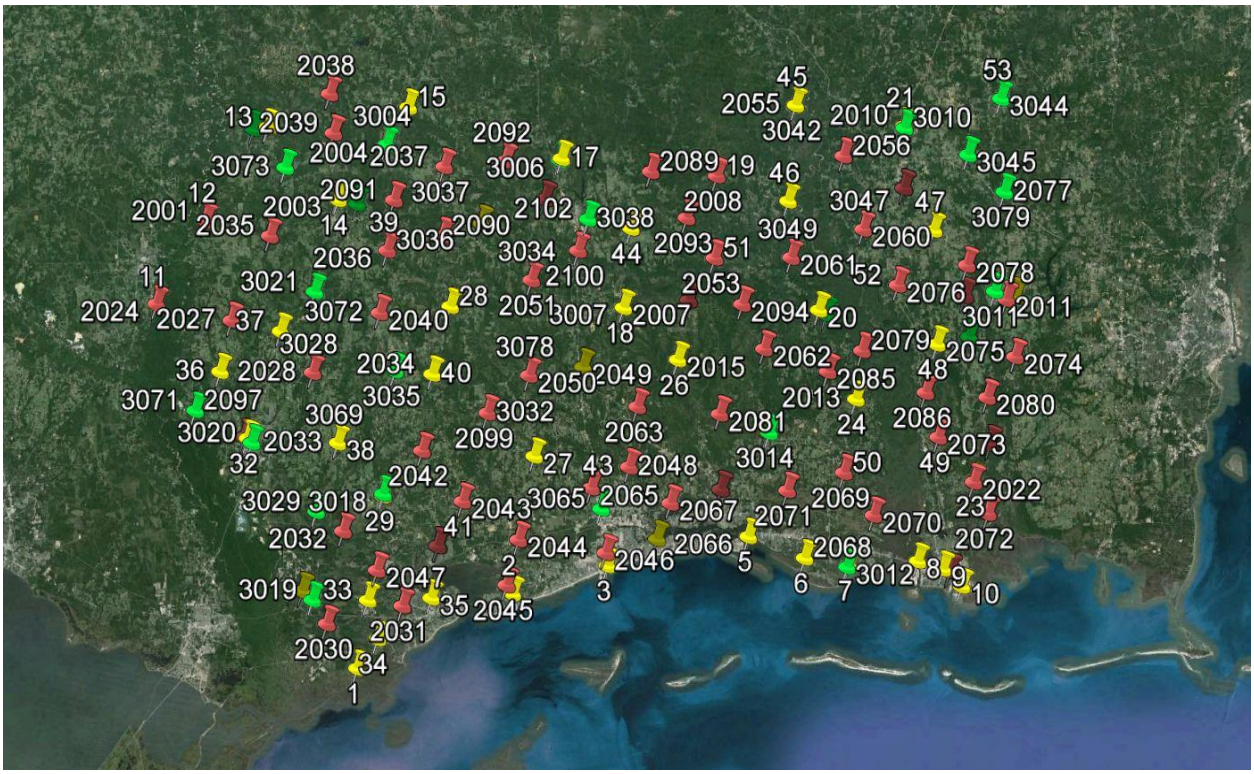
DL9094'33.7 FT (10.3 M) NORTHWEST OF ELECTRIC POWER POLE, 9.6 FT (2.9 M)
DL9094'NORTHWEST OF SOUTH CENTRAL BELL MARKER.

SECTION 5: GPS CONTROL DIAGRAM

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

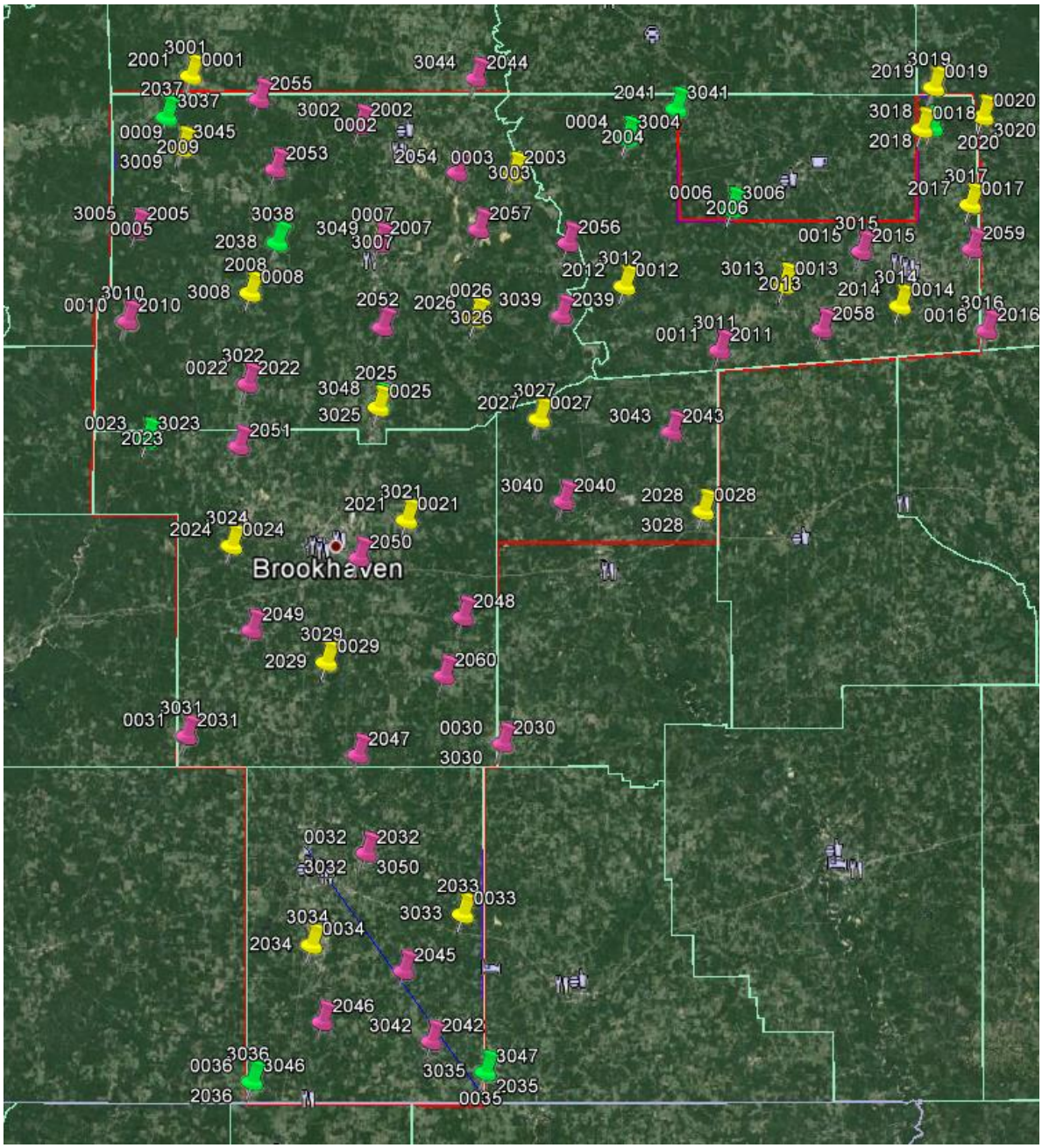
MS Coastal AOI



N

Not to Scale

3DEP Extension AOI



Not to Scale