ORTHOIMAGERY AND LIDAR CONTROL SURVEY REPORT



2013 INDIANA STATEWIDE IMAGERY PROGRAM WESTERN THIRD OF INDIANA INDIANA OFFICE OF TECHNOLOGY—INDIANAPOLIS, IN JULY 2013





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VOLUME 1

Summary, Geodetic Control and Control Diagram

ORTHOIMAGERY and LIDAR CONTROL SURVEY REPORT

2013 INDIANA STATEWIDE IMAGERY PROGRAM

Indiana Office of Technology

July 2013

Prepared by Woolpert, Inc. 4454 Idea Center Blvd. Dayton, OH 45420

Woolpert.com



VOLUME 1 - SECTION 1: SURVEY REPORT

INTRODUCTION

Report Date:	July 2013
Project Name: Client Information:	2013 Indiana Statewide Imagery Program Indiana Office of Technology
Order Number:	0012570167
Requisition/Reference Number:	000007841
Date of Contract:	May 5, 2012
Prepared By:	Woolpert, Inc.
Woolpert Project Number:	073112

This report contains a comprehensive outline of the Geodetic Control Survey that supported the 2013 Indiana Statewide Imagery Program. All surveys were performed in such a way as to achieve ground control accuracies that meet or exceed the National Mapping Accuracy.

PROJECT AREA

The 2013 project area covering approximately 10,331 square miles (based on orthoimagery), which comprises the western tier of the state, is divided into four (4) blocks. The following blocks show the number and the counties included in that block:

- Block 9 Jasper, Lake, Porter, Laporte and Newton Counties
- Block 10 White, Benton, Tippecanoe, Warren, Fountain, and Montgomery Counties
- Block 11 Vermillion, Parke, Putnam, Vigo, Clay, Owen, Sullivan, and Greene Counties
- Block 12 Knox, Daviess, Marin, Gibson, Pike, Posey, Vanderburgh, Warrick, Perry, Dubois and Spencer Counties

PURPOSE

The purpose of this survey was to establish three-dimensional coordinates for 269 new photoidentifiable (PID) orthometric control stations and 218 new LiDAR control stations, which were located on flat, hard, level surfaces not less than 5 meters away from a break line. The new control stations were picked on clear, well-defined locations that would be visible in the aerial photography

The PID orthometric control stations, in conjunction with aerial triangulation, will be used as the basis for subsequent photogrammetric mapping.

DATE OF SURVEY

Ground control field operations took place between March 13-22, March 27-28, and April 1-12, 2013.

MONUMENTATION

Prior to aerial imagery acquisition, Woolpert field crews performed a field reconnaissance to verify the existence and suitability of pre-selected existing National Geodetic Survey (NGS) control stations. These existing control stations were utilized to ensure that quality x, y, and z coordinate values were computed for each of the newly established photogrammetric control stations. Recovery information sheets for the existing NGS control stations can be found in Volume 1, Section 5 of this report. A control diagram showing the geodetic control stations used to support the digital ortho mapping project can be found in Volume 1, Section 2 of this report.

ACCURACY

The standard deviation of the ground control survey for Block 9 is 0.033 feet horizontally and 0.062 feet vertically; for Block 10 is 0.055 feet horizontally and 0.045 feet vertically; for Block 11 is 0.025 feet horizontally and 0.043 feet vertically; and for Block 12 is 0.021 feet horizontally and 0.025 feet vertically all at the 95% confidence level.

GPS EQUIPMENT

For base stations, Woolpert utilized five (5) Trimble Navigation dual-frequency GNSS GPS receivers with Air Link Communications Raven CDMA cellular modems with service plans provided by Verizon. For this project, Woolpert also utilized as rovers, five (5) Trimble Navigation dual-frequency GNSS GPS receivers with Air Link Communications Raven CDMA cellular modems and five (5) TSC2 data collectors.

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 photogrammetric control points and LiDAR Quality Control Check stations. 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 a minimum of two times to insure the necessary horizontal and vertical accuracies were being met for this project.

RAPID-STATIC GPS

In addition to the RTK GPS techniques, the project field crews utilized rapid-static (RS) GPS surveying techniques on control within areas lacking sufficient cellular coverage or observations with baselines to long for RTK measurements, as well as geodetic verification

observations. The RS survey was conducted at a 15-second sync rate with each observation lasting between 20-40 minutes.

GPS DATA ANALYSIS AND PROCESSING

The survey phase manager processed all session baselines each day using *Trimble Navigation's* Trimble Business Center (TBC) Version 2.60 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. Once the field work was complete, the processed baselines were then run through a rigorous loop closure analysis. As a result of this analysis, unacceptable GPS vectors were removed and field blunders, if any, were detected and eliminated. Once this process was completed, both unconstrained and constrained adjustments were conducted in order to effectively incorporate the static observation data.

The GPS base stations and constrained geodetic control consisted of the following:

Dimension	New and Existing Control Stations
3-D	D 124, G 335, LAKE VILLAGE, POLA S 107, WILL COUNTY GPS 2305, A 105 (2007), B 183 (2007), B 360 (2007), C 353 (2007), F 122 (2007), S 280 (2007, W 361 (2007), 1101, 1102, 1103, 1104, 1105, DAVIESS (2007), HARM (2007) JOSEPHINE 2 (2007) L 356 (2007), LAWRENCE (2007), T 329 (2007), Y 312 (2007), TT 13 TWC (2007) STINSON 2.

All 1100 series stations were used as temporary control base stations. These points were established by using an average location based on multiple days of results Real-time Kinematic (RTK) GPS techniques.

DATUM REFERENCE AND FINAL COORDINATES

New horizontal GPS control was based on the Indiana West State Plane Coordinates System, referenced to North American Datum 1983, national re-adjustment of 2007 (NAD83/2007), expressed in U.S. Survey Feet. All vertical control was based on the North American Vertical Datum of 1988 (NAVD88), also expressed in U.S. Survey Feet. These coordinates for the control survey can be found in Volume 1 Section 3 of this report.

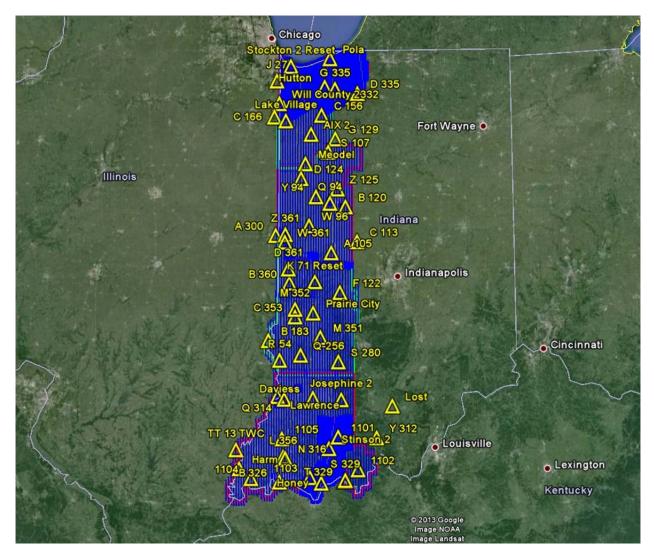
QUALITY ASSURANCE

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

distortions in orientation or scale. As an extra quality control measure, Woolpert crews reobserved several of the photogrammetric control stations throughout the eastern tier at different times, from different base stations, to ensure quality and error free data.

VOLUME 1 - SECTION 2: BASE STATION/GEODETIC CONTROL DIAGRAM

This section contains a graphical representation of the Base stations and Geodetic Control used for the 2013 Indiana Statewide Imagery project.



Not to Scale

VOLUME 1 - SECTION 3: BASE STATION/GEODETIC CONTROL COORDINATE LISTINGS

COORDINATE SYSTEM: GRID

HORIZONTAL DATUM: NAD83 (2007) VERTICAL DATUM: NAVD88 ZONE: Indiana West (1302) GEOID MODEL: GEOID 09 UNITS: U.S. Survey Feet

WOOLPERT ESTABLISHED BASE STATION COORDINATES

Station Name	Northing US Ft	Easting US Ft	Elevation US Ft	Description
1101	1130349.307	3020592.443	622.873	Rebar
1102	1024448.959	3084692.825	782.321	Rebar
1103	998619.991	2928489.559	380.022	Rebar
1104	994375.214	2736462.702	450.317	Rebar
1105	1123921.955	2838086.034	484.726	Rebar

NGS GEODETIC BASE STATIONS COORDINATES

Station Name	Northing US Ft	Easting US Ft	Elevation US Ft	Description
D 124	1962115.606	2901925.177	810.648	BM
G 335	2250097.239	3010689.875	730.940	CBN
LAKE VILLAGE	2148098.869	2852034.141	645.058	CBN
POLA	2348533.080	2993910.498	618.814	CBN
S 107	2046799.592	2989094.850	679.520	FBN
WILL COUNTY GPS 2305	2235553.304	2831200.509	730.314	HORZ.
A 105	1723877.576	2999530.985	802.587	CBN
B 183	1440281.795	2795524.641	459.304	BM
B 360	1625226.928	2863936.416	515.918	BM
C 353	1516601.793	2882163.730	557.647	BM
F 122	1594964.492	3027154.570	807.410	CBN
LAWRENCE	1260338.590	2824658.533	517.345	CBN
S 280	1372339.873	3021856.569	672.561	CBN
W 361	1758360.459	2849526.871	612.535	BM
DAVIESS	1255512.652	2939415.600	468.050	CBN
HARM	1026136.934	2698514.859	378.608	CBN
JOSEPHINE 2	1250661.196	3030997.041	713.680	CBN
L 356	1065310.686	2841871.323	457.082	CBN
T 329	987346.741	3042412.240	406.938	BM
Y 312	1128247.631	3145097.576	581.032	CBN
TT 13 TWC	1087479.554	2688486.557	400.262	BM
STINSON 2	1092758.675	2990632.499	527.469	CBN

NGS GEODETIC VALIDATION POINTS

Station	Northing	Easting	Elevation	Description
Name	US Ft	US Ft	US Ft	
G 335	2250097.245	3010689.963	730.937	CBN
S 107	2046799.633	2989094.818	679.579	FBN
WILL COUNTY GPS 2305	2235553.263	2831200.563	730.246	HORZ.
AIX 2	2104554.885	2933902.745	689.486	CBN
C 156	2165780.980	2967523.888	666.563	CBN
C 166	2160678.657	2814946.332	631.790	CBN
D 335	2235993.526	3083005.105	682.242	CBN
G 129	2089494.581	3012168.057	672.404	CBN
STOCKTON 2 RESET	2324384.334	2867696.234	591.172	CBN
HUTTON	2256772.770	2977512.646	758.105	BM
MEODEL	2009646.797	2915840.521	741.684	HORZ.
WILL COUNTY GPS 2332	2203947.274	2830895.347	730.940	HORZ.
A 300	1779647.248	2820012.456	645.313	BM
C 353	1516601.791	2882163.737	557.601	BM
D 361	1672078.575	2860755.659	654.601	CBN
JOSEPHINE 2	1250661.123	3030997.056	713.625	CBN
K 71 RESET	1629770.757	2946484.274	737.717	CBN
L 182	1414269.905	2787292.120	455.031	CBN
M 351	1450823.260	2963902.383	658.718	CBN
M 352	1541037.247	2882462.137	532.823	BM
PRAIRIE CITY	1528925.791	2940722.895	622.845	FBN
R 54	1377168.297	2831946.224	475.877	CBN
W 96	1810648.139	2927926.508	686.697	FBN
Z 361	1782569.601	2851233.760	583.534	BM
L 356	1065310.718	2841871.320	457.107	CBN
Т 329	987346.784	3042412.206	406.960	BM
Y 312	1128247.617	3145097.533	581.065	CBN
TT 13 TWC	1087479.568	2688486.551	400.145	BM
STINSON 2	1092758.675	2990632.513	527.415	CBN
S 329	990054.888	3043196.409	408.965	BM
Q 314	1251620.721	2846313.216	529.121	CBN
N 316	1060519.034	2848546.508	448.823	CBN
LOST	1230703.795	3195765.447	841.418	CBN
L 356	1065310.732	2841871.324	457.093	CBN
HONEY	980720.296	2965040.204	392.580	FBN
HARM	1026136.910	2698514.846	378.680	CBN
B 326	983592.196	2829260.951	377.686	FBN

COORDINATE SYSTEM: GEODETIC

HORIZONTAL DATUM: WGS84 VERTICAL DATUM: NAVD88 GEOID MODEL: GEOID 09 UNITS: U.S. Survey Feet

WOOLPERT ESTABLISED BASE STATION COORDINATES

Station Name	Latitude	Longitude	Ellip. Height US Ft	Description
1101	38°21'05.25442"	086°50'48.34280"	516.252	Rebar
1102	38°03'35.99644"	086°37'30.25572"	675.741	Rebar
1103	37°59'23.75799"	087°10'03.05192"	277.564	Rebar
1104	37°58'33.28654"	087°50'01.24352"	349.676	Rebar
1105	38°20'00.12347"	087°28'59.06943"	381.160	Rebar

NGS GEODETIC BASE STATION COORDINATES

Station Name	Latitude	Longitude	Ellip. Height US Ft	Description
D 124	40°38'06.38102"	087°15'59.25160"	701.068	BM
G 335	41°25'31.72405"	086°52'19.41723"	619.882	CBN
LAKE VILLAGE	41°08'42.54161"	087°26'56.46044"	535.443	CBN
POLA	41°41'44.61177"	086°55'57.42603"	507.982	CBN
S 107	40°52'03.42914"	086°57'06.92382"	569.203	FBN
WILL COUNTY GPS 2305	41°23'05.65553"	087°31'34.59895"	620.698	HORZ.
A 105	39°58'52.16859"	086°54'59.02542"	693.199	CBN
B 183	39°12'04.96437"	087°38'17.28136"	353.843	BM
В 360	39°42'36.09848"	087°23'56.46895"	408.250	BM
C 353	39°24'43.08989"	087°19'59.37243"	450.382	BM
F 122	39°37'37.47146"	086°49'09.04810"	699.105	CBN
LAWRENCE	38°42'27.97844"	087°31'55.93773"	413.087	CBN
S 280	39°00'57.25631"	086°50'24.41395"	564.722	CBN
W 361	40°04'31.26867"	087°27'07.88570"	504.851	BM
DAVIESS	38°41'43.34263"	087°07'48.19143"	361.843	CBN
HARM	38°03'43.95855"	087°57'58.89703"	278.051	CBN
JOSEPHINE 2	38°40'54.26372"	086°48'33.23088"	606.088	CBN
L 356	38°10'20.88590"	087°28'08.49810"	354.193	CBN
T 329	37°57'30.93816"	086°46'20.45176"	302.220	BM
Y 312	38°20'38.43340"	086°24'45.63155"	471.780	CBN
TT 13 TWC	38°13'49.34207"	088°00'11.88068"	299.165	BM
STINSON 2	38°14'54.24211"	086°57'05.11574"	422.019	CBN

NGS GEODETIC CHECK POINTS

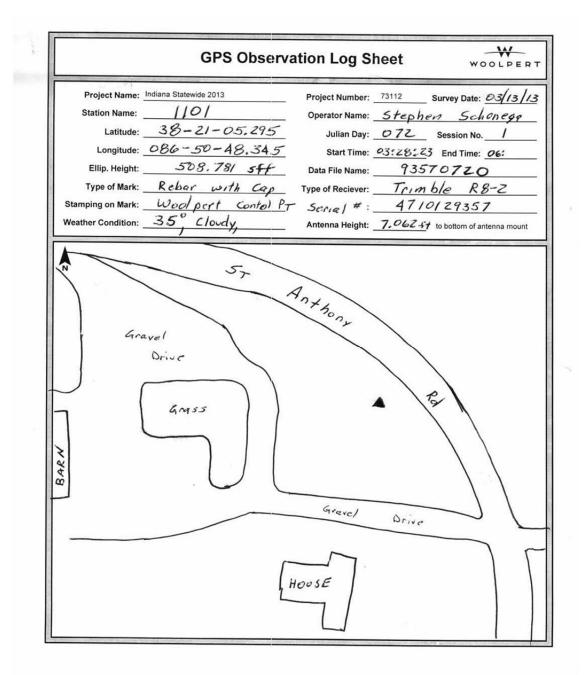
Station Name	Latitude	Longitude	Ellip. Height US Ft	Description
G 335	41°25'31.72411"	086°52'19.41607"	619.878	CBN
S 107	40°52'03.42955"	086°57'06.92424"	569.262	FBN
WILL COUNTY GPS 2305	41°23'05.65513"	087°31'34.59824"	620.630	HORZ.
AIX 2	41°01'34.30852"	087°09'05.90948"	579.474	CBN
C 156	41°11'39.29708"	087°01'46.74561"	555.776	CBN
C 166	41°10'45.01149"	087°35'02.16672"	522.647	CBN
D 335	41°23'09.54956"	086°36'31.16473"	571.217	CBN
G 129	40°59'04.84815"	086°52'05.22977"	561.933	CBN
STOCKTON 2 RESET	41°37'44.86680"	087°23'40.01597"	481.135	CBN
HUTTON	41°26'38.25038"	086°59'34.84588"	647.239	BM
MEODEL	40°45'56.30486"	087°12'59.69043"	632.091	HORZ.
WILL COUNTY GPS 2332	41°17'53.37028"	087°31'36.48238"	621.434	HORZ.
A 300	40°08'00.24629"	087°33'29.01644"	538.256	BM
C 353	39°24'43.08987"	087°19'59.37234"	450.336	BM
D 361	39°50'19.01577"	087°24'39.36270"	546.779	CBN
JOSEPHINE 2	38°40'54.26300"	086°48'33.23069"	606.034	CBN
K 71 RESET	39°43'22.54311"	087°06'20.19198"	628.868	CBN
L 182	39°07'47.36273"	087°39'59.73221"	349.991	CBN
M 351	39°13'53.88786"	087°02'38.26664"	551.445	CBN
M 352	39°28'44.60644"	087°19'56.43000"	425.269	BM
PRAIRIE CITY	39°26'45.83351"	087°07'33.31772"	514.979	FBN
R 54	39°01'43.10447"	087°30'30.86667"	370.619	CBN
W 96	40°13'09.98852"	087°10'20.01082"	577.582	FBN
Z 361	40°08'30.57970"	087°26'47.19983"	475.68	BM
L 356	38°10'20.88622"	087°28'08.49814"	354.217	CBN
T 329	37°57'30.93859"	086°46'20.45218"	302.242	BM
Y 312	38°20'38.43327"	086°24'45.63210"	471.835	CBN
TT 13 TWC	38°13'49.34221"	088°00'11.88076"	299.048	BM
STINSON 2	38°14'54.24211"	086°57'05.11556"	421.997	CBN
\$ 329	37°57'57.68486"	086°46'10.54663"	304.167	BM
Q 314	38°41'02.76511"	087°27'22.31157"	424.580	CBN
N 316	38°09'33.78387"	087°26'44.67395"	345.925	CBN
LOST	38°37'27.01088"	086°13'57.81991"	731.959	CBN
L 356	38°10'20.88636"	087°28'08.49809"	354.203	CBN
HONEY	37°56'26.88001"	087°02'26.57784"	290.089	FBN
HARM	38°03'43.95832"	087°57'58.89719"	278.123	CBN
B 326	37°56'52.49416"	087°30'41.69454"	276.028	FBN

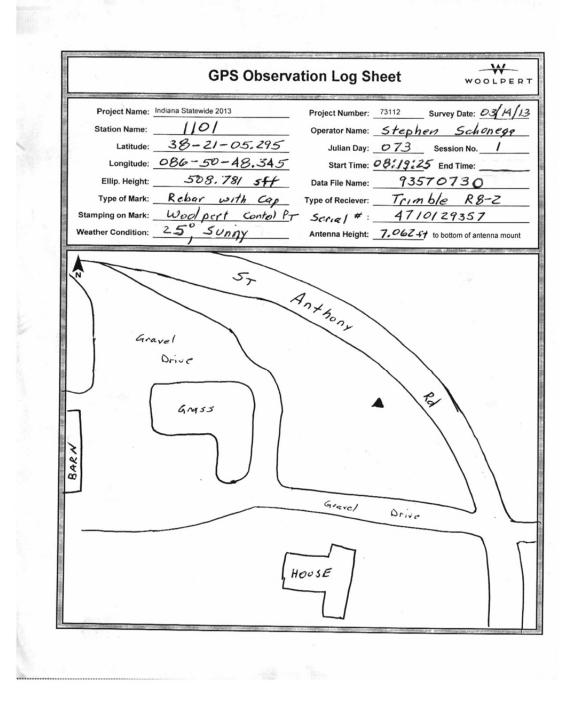
VOLUME 1 - SECTION 4: BASE STATION/GEODETIC CONTROL LOGS AND PHOTOS

This section contains the station recovery information sheets and photographs for the Woolpert base stations, the geodetic control used as base stations, and geodetic validation stations established and/or used for the project. The stations appear in order with the final coordinate listing of Volume 1 Section 2.

The data is assembled on the following pages.

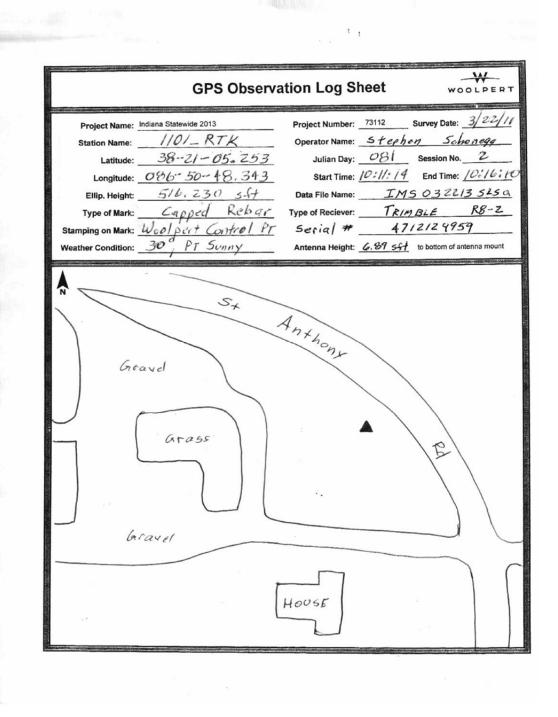
WOOLPERT ESTABLISHED BASE STATIONS





GPS Observat	tion Log Sheet
Project Name:Indiana Statewide 2013Station Name: 1101 Latitude: $38-21-05, 295$ Longitude: $086-50-48, 345$ Ellip. Height: $508, 781$ Type of Mark:Rebar with CapStamping on Mark: $Wool pert Contol P_T$ Weather Condition: 36° , $Cloudy,$	Type of Reciever: Trimble R8-2
Gravel Grass	Greekel Drive

		70440
Project Name: Indiana Statewide 20 Station Name:		: 73112 Survey Date: 03/16
Latitude: $38 - 21 - 38$		5tephen Schonege 075 Session No. STAT
Longitude: $086 - 50 - 50 - 50 - 50 - 50 - 50 - 50 - 5$: 11:23:5/ End Time: 3:29:
Ellip. Height:508, ;		935707 <u>50</u>
Type of Mark: Rebar u		Trimble R8
Stamping on Mark: Wool per	t Control PT Second #	4402130688
Weather Condition: 62° Clour	dy Windy Antenna Height	6.89 557 to bottom of antenna moun
Gravel Drive Grass	House	Drive



Project Name	Indaina State White 2013	Project Number:	73112	Survey Date: 3/-77/13
Station Name:	1101 (1101-1312)	Operator Name:		
	38' 21'05,25"	Julian Day:	086	Session No3
Longitude	86° 50 48.34	Start Time:	51,04	End Time: 5:07
	516.290 sft	Data File Name:	INDY STATEL	ITOÉ
Type of Mark	IP W/Cap	Type of Reciever:	Trimble RE	? model.3
	Woolpert Control Paint	Type of Antenna:		
Weather Condition	405 Sunny Calm	Antenna Height:	2.0 m	to bottom of antenna mou



	GPS Observa	tion Log She	et	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 1/0 Z 38-03-36.078 086-37-30.226 664.018 sft Capped Robar set flush Woolpert Control Pr 54° Sunny,	Julian Day: Start Time: Data File Name: Type of Reciever:	Stophen 071 Session 30:27 End Ti 9357074 TRIMBLE 4710129	No. $BASE$ me: $06:43:24$ V RB-2 357
	STATE BLDG	aravel Asphalt	A SA	37

	GPS Observa	tion Log Sl	heet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 1/D Z 38-03-36.078 086-37-30.226 664.018 sft Capped Robar set flush Woolpert Control Pr GO SUNDY	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Secoal #:	73112 Survey Da 5 to phen 0 75 Session 8:53:11 End Tin 935707.5 TRIABLE 4710129 7.042357 to bottom	<u>5chenegg</u> No. <u>BASE</u> ne: <u>4:18:05</u> 50 <u>RB-2</u> 357
IND HWY	OLD	aravel Asphalt	SR.	37

Project Name: Indiana Statewide 2013 Station Name: $1(0 \ 2 - RTK)$ Latitude: $38 - 03 - 35 \cdot 996$ Longitude: $086 - 37 - 30 \cdot 256$ Ellip. Height: $675 \cdot 717 \ 544$ Type of Mark: $Capped Rebar$ Stamping on Mark: $20^{\circ}pert \ Control \ Pr$ Weather Condition: $20^{\circ} \ 5 \ urn \ Y$ TND STATE Highway Corm m Bidg No. 1 Station Name: $1M5 \ 03 \ 22.13 \ 52.7$ The Strate Highway Corm m Bidg No. 1 Station Name: $27^{\circ} \ 5 \ urn \ Y$ Resolution: $20^{\circ} \ 5 \ urn \ Y$ Resolution: $20^{\circ} \ 5 \ urn \ Y$ Antenna Height: $6.97 \ 54^{\circ}$ to bottom of antenna mo No. 1 Stat Time: $1M5 \ 03 \ 22.13 \ 52.7$ Type of Mark: $20^{\circ} \ 5 \ urn \ Y$ Antenna Height: $6.97 \ 54^{\circ}$ to bottom of antenna mo No. 1 Stat Time: $310 \ 22.13 \ 52.7$ Stat Time: $310 \ 22.13 \ 52.7$ No. $5R \ 37$				
Latitude: <u>38-03-35.996</u> Longitude: <u>086-37-30.256</u> Ellip. Height: <u>675,717 sff</u> Type of Mark: <u>Capped Reber</u> Stamping on Mark: <u>Woolpect Control Pr</u> Weather Condition: <u>20° Sumny</u> Antenna Height: <u>689 sff</u> to bottom of antenna mo Antenna Height: <u>680 sf</u>				
Longitude: $086 - 37 - 30.256$ Ellip. Height: $675.717 + 544$ Type of Mark: Capped Rebar Stamping on Mark: $000/pert$ Control PT Weather Condition: 20° Summy Antenna Height: $6.89 + 544$ to bottom of antenna model Two STATE Highway Corm m Bide Reference of the set of the				
Ellip, Height: 675, 717 stt Type of Mark: Capped Rebar Stamping on Mark: Woolpert Control Pr Weather Condition: ZD, Surny Artenna Height: 6.89 stt to bottom of antenna mo Two STATE Highway Corm m Bidg				
Type of Mark: <u>Capped Reber</u> Type of Reciever: <u>TRIMBLE R8-</u> Stamping on Mark: <u>Woolpert Control Pr</u> Serial # <u>471212 9959</u> Weather Condition: <u>ZD^o Surnny</u> Antenna Height: <u>6.897 551</u> to bottom of antenna me TND STATE Highway Corm m Bidp Reber Reber Common Bidp				
Stamping on Mark: <u>Ucolpect Control Pr</u> Serial # <u>4712129959</u> Weather Condition: <u>20° Sunny</u> Antenna Height: <u>6.89 set</u> to bottom of antenna mo Two STATE Highway Corm m Bilde	Type of Mark:	Capped Reber	Type of Reciever: TRI	MBLE R8-
Weather Condition: <u>ZD' Sunny</u> Antenna Height: <u>6.87 sft</u> to bottom of antenna mo Two STATE Highway Comm m Bidg Rich Ric	Stamping on Mark:	Woolpert Control Pr	- Serial # 47	11212 4959
Kinghway Comm m Bidg Anna a Rankivy Anna a Rankivy Anna Anna Anna Anna Anna Anna Anna Ann	Weather Condition:	20° Sunny	Antenna Height: 6.89 55	
	OLS OLS		Parking	37
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Project Name:	Indaina Statewide 2013			Survey Date: 3/a7/13
Station Name:	1102 (1102-4312)		1	
Latitude:	38 03 35,99	Julian Day:	086	Session No. 5
Longitude:	86° 37' 30,25	10	6:39	
	675.740 sfe	Data File Name:		
	IP W/Cap			
	Woolpert Constel Cap			
Weather Condition:	Borthy Cloudy, 403, Colm	Antenna Height:	2.0 m	to bottom of antenna mour
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Project Name: Indiana Statchild 2013	Project Number:	73112	Survey Date: 3/28/13
Station Name: 1102 (1102-5329)	Operator Name:	Ron Siney	
Latitude: 38ຶ03' 35,97"	Julian Day:	087	
Longitude: 86 37' 30,25"	Start Time: _		End Time: 9:44
Ellip. Height: 675, 772 54	Data File Name: _		
Type of Mark: <u>IP</u> W/CaP			
Stamping on Mark: Costol Cap			
Weather Condition: 405 Sunny Calm	Antenna Height:	2.0 m	to bottom of antenna moun

Project Name:	Indiana State Unde 2013	Project Number:	73/12 Survey Date: 3/28/13
Station Name:	1102 (1102-STEN2	Operator Name:	Ron Sirey
Latitude:	38°03' 35,99"	Julian Day:	087 Session No. 3
Longitude:	86°37' 30.25''	Start Time:	12:09 End Time: 12:12
Ellip. Height:	675.804 sft	Data File Name:	INDSTATEWIDE - RS
Type of Mark:	IP W/CXP	Type of Reciever:	Trinble R8 model 3
Stamping on Mark:	Woolpest Control Cup	Type of Antenna:	Trimble Internal
Weather Condition:	SANNY 4175 Calm	Antenna Height:	2.0 m to bottom of antenna mount

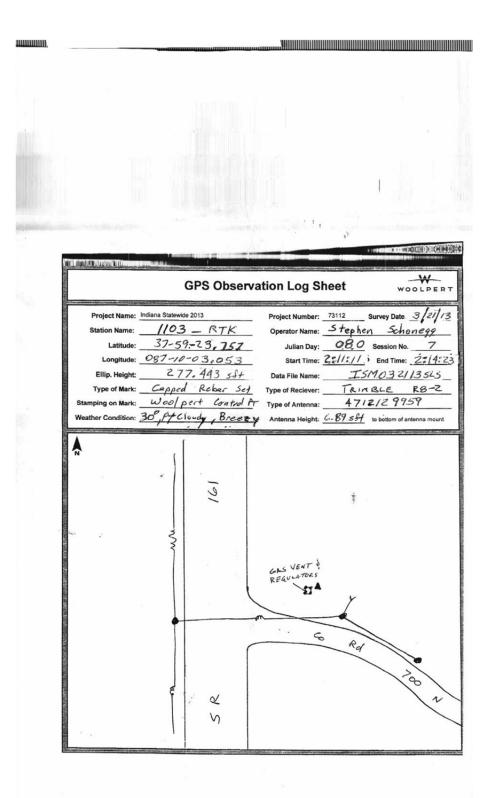


	GPS Observa	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number:
Station Name:	1103	Operator Name: <u>Stephen Schonegg</u>
	37-59-23.795	Julian Day: 075 Session No. STATIC
	087-10-03.091	Start Time: 2:24:05 End Time: 5:26:2
	267.64 sst	Data File Name: 99590751
Type of Mark:	Capped Rebar Set	Type of Reciever: TRIMBLE R8-2
	Woolpert Control PT	
Weather Condition:	60 -> 52°, doudy, Windy	Antenna Height: <u>6.895</u> to bottom of antenna mount
	S R IGI	II A CORDON

Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 1103 37-59. 23, 795 087-10-03. 091 267. 64 Capped Rober Set Woolpert Control A 32° Rainy Showy Wind;	
A.	191 [[]	si A Si A Go Rd
	r S	100 2

	GPS Observa	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date 3/15/
Station Name:	1103	Operator Name: Stephen Schenegg
	37-59-23,806	Julian Day: 077 Session No. STATIC
	087-10-03.077	Start Time: 8:55:54.) End Time: 4:5
	281.834	Data File Name: 93570770
	Capped Reber Set	Type of Reciever: TRIABLE R8-2
	Woolpert Control A	
weather Condition:	40° cloudy, Breezy	Antenna Height: <u>1.0625分</u> to bottom of antenna mou
6	S R [6]	GAS VENT S REQULATORS CORD CORD CORD

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	Indaina Statewide 2013	Project Number: 73/12 Survey Date: 3/38/1
Station Name:	1103 (1003-Stin2)	Operator Name: Ron Sirey
	37 59 23.75	Julian Day: 087 Session No. 6
Longitude:	87°10'03.05"	Start Time: 1:49 End Time: 1:47
Ellip. Height:	277.610 sfr	Data File Name:
Type of Mark:	IP w/ Cap	Type of Reciever: Trimble R8 model 3
Stamping on Mark:	Woolpest Control Cap	Type of Antenna: Trimble Internal
Weather Condition:	Swady, 40's , Wind 5-10	Antenna Height: to bottom of antenna mou

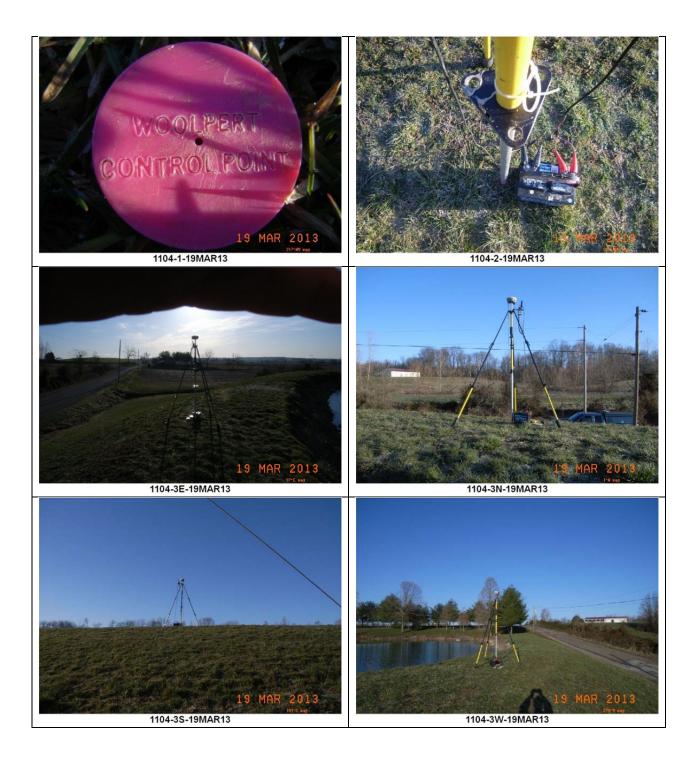


	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 1104 37-58-33.3 087-50-01.2 Capped Rebar Weelpest Control Pr 35° RAIN, WINOY	Operator Name: <u>Stephe</u> Julian Day: <u>076</u> Start Time: <u>1:32:39</u> Data File Name: <u>995</u> Type of Reciever: Trime	Session No. <u>374770</u> End Time: <u>5555946</u> 19076 <u>L</u> BLE R8-2 2129959
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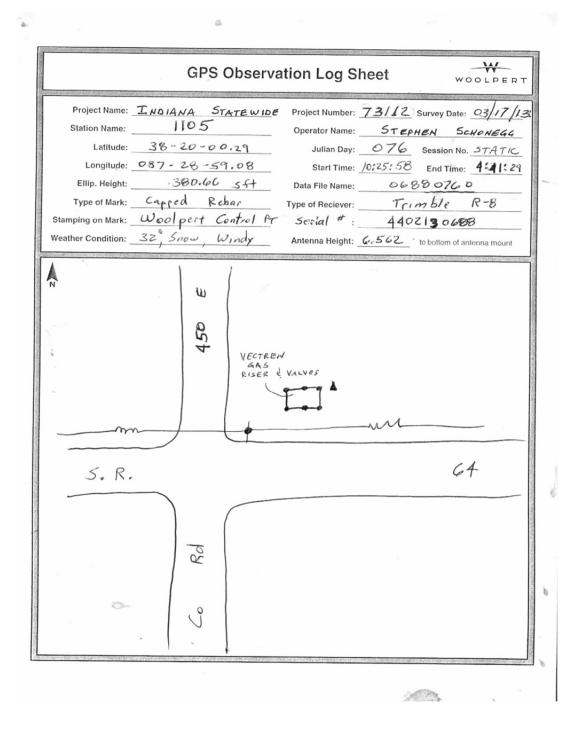
Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: 93/19 Operator Name: 5 tephen Schonegg
Station Name: 110 4	
Latitude: $37 - 58 - 33, 32$ Longitude: $087 - 50 - 01, 23$	
Ellip. Height: 347. 413 5 ft	
Type of Mark: Capped Rebar	
Stamping on Mark: Woolpest Control	Pr Serial # 4712124959
Weather Condition: 30° Sunny, Brea	Antenna Height: 6.5625.57 to bottom of antenna mo
A / .	POND
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co Rd	415 5
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	GF3 Observa	tion Log Sheet	WOOLPE
Station Name: Latitude: Longitude: Ellip. Height:		Operator Name: <u>Stephen</u> Julian Day: <u>OBO</u> Se Start Time <u>7/202:33</u> E Data File Name: <u>T_SM</u>	ssion No. 2 and Time <u>[/:07</u> 1032435
Type of Mark: Stamping on Mark: Weather Condition:	Capped Rebar Woolpert Control PT 25, Sunny, Breezy	Type of Reciever: T_{RIMBL} Serial # 4712 Antenna Height: <u>G.89551</u> to	E RB-3
Â.	/	POND	
		0.40 (
Co	Rd	415	5
e A	Mun C		e
	POND	ZV	

Project Name: Indaving Statewick 2013	Project Number: 73/12 Survey Date: 4/3/13
Station Name: 109_L356/CK	Operator Name: Ron Sircy
Latitude: <u>378833.28</u>	Julian Day: 013 Session No. 3
Longitude: 37° So bl, 24	Start Time: 1/39 End Time: 1/92
Ellip. Height: 349.610 sta	Data File Name: IND_SW_013_ RS
Type of Mark: IR W/CaP	Type of Reciever: Temble R8 model 3
Stamping on Mark: Woolpert Control Paint	Type of Antenna: Temble Internal
Weather Condition: 40's Swamy Wind 5-10	Antenna Height: 2.0 ~ to bottom of antenna mou
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8	







	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>I,NDIANA</u> <u>STATEWIDE</u> <u>1105 - RTK</u> <u>38-20-00.123</u> <u>087-28-59.070</u> <u>381.178 sft</u> <u>Capred</u> Rebar <u>Woolpert Control Pr</u> <u>27°, PT Cloudy, Biccezy</u>	Julian Day: OBQ Start Time: $12119:07$ Data File Name: ISA Type of Reciever: Tri Secial # 4	Schone44 Session No. 3 End Time: 12:25; 4 032//3515 5 m b/e R-8-2
		V VALVES T	64

Project Name:	Indivina State under 2013	Project Number:	73/12	Survey Date: 4/3/13
Station Name:		Operator Name:	Ron Siney	
Latitude:	38 20 00,12	Julian Day:	093	Session No!
Longitude:	87 28 59,06	Start Time:		End Time:
Ellip. Height:	381.195 58+	Data File Name:	8365093]	
Type of Mark:		Type of Reciever:	Trimble 28	model2
	bloolpert Control Paint	Type of Antenna:		
Weather Condition:	Ranly Cloudy, 40's, Wind S-10	Antenna Height:	7.562 54	to bottom of antenna mount

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Project Name: Indaina Statewide 2013	Project Number:	3/12 Survey Date: 4/3/13
Station Name: 105 (105_1356/CK)	Operator Name:	Ron Sincy
Latitude: 38° 20' 00,12''	Julian Day:	
Longitude: 27° 38' 59,06"	Start Time:	End Time: 4/29
Ellip. Height:	Data File Name:	
Type of Mark: T.P. WCap		Frindle R.B. model 3
Stamping on Mark: Wood pest Central Point		
Weather Condition: 40's Sharay Wind S-10	Antenna Height:	to bottom of antenna mou
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NGS GEODETIC BASE STATIONS

	GPS Of	oservation Log S	sheet woolp
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INJIGNG Statewid D 124 40-38-06.41 87-15-59.34 686.64 <u>CBN</u> D 124 1946 50° Clear 1	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	173112 Survey Date: 04-08 Welbasm 098 Session No. End Time: 8:0 36930982 R8 Mod 2 R8 Mod 2 R8 Mod 2 2.000m to bottom of antenna mode
Fiel	.)	N 300 E) (O)
Fiel			FIELD

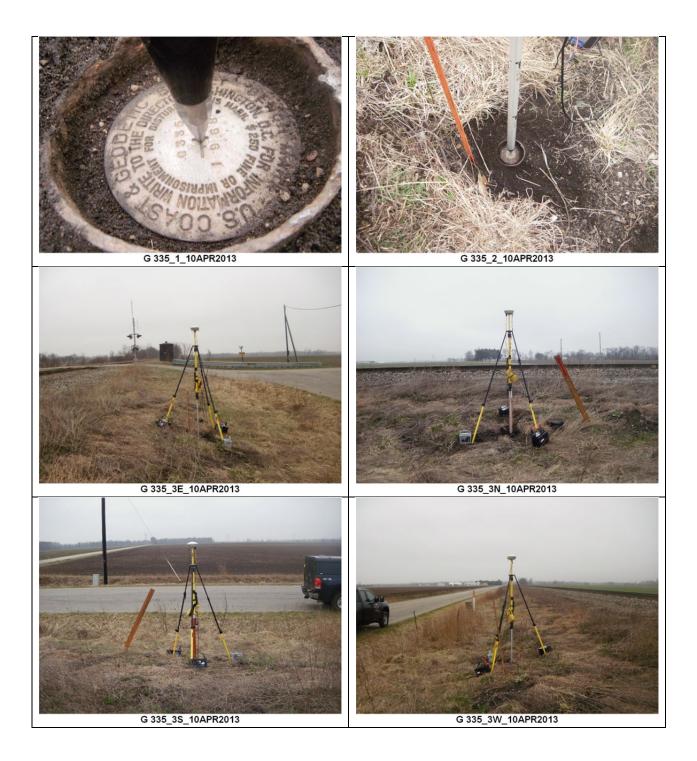


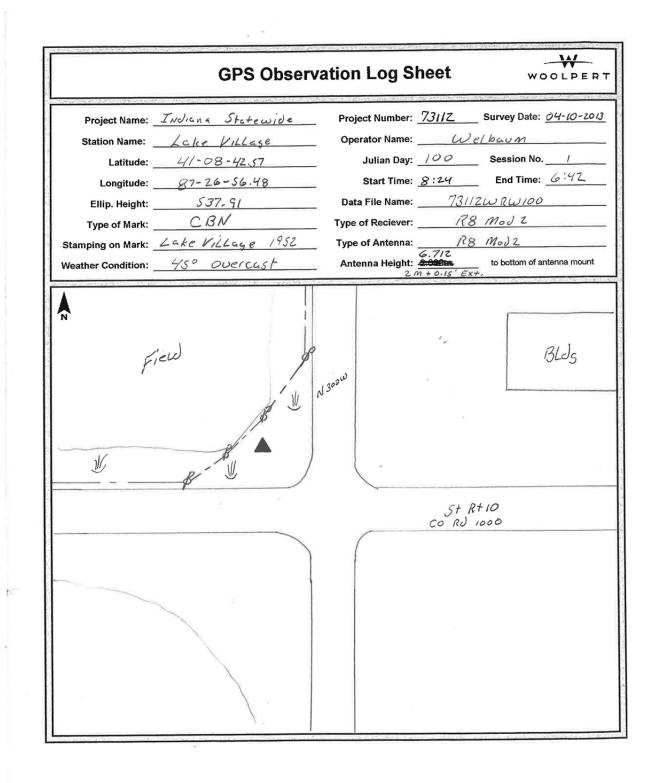
	GPS Observa	tion Log Sheet	WOOLPEI
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 2017 G 3355 N4(°25'31.75" W66°52' 19.37" G 6.2 off Mounted disk	Project Number: 73(12) Operator Name: Cody Julian Day: 100 Start Time: 737 Data File Name: 21/3/00 Type of Reciever: #21/3/70	Schneider Session No. <u>"/A</u> End Time: <u>(8:52</u> 0 8-2
Stamping on Mark:	6 335 1968 Cloudy ≈ 42°	Type of Antenna: $\frac{\# 2113}{7562 sct}$	28-2
	- GRASS - ASPHALT	RAHLROAD BALLAST 6 335	- ASPIHAUT-
	W PALLER FR	CH/GRASS-	

	GPS Observa	tion Log Sł	neet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 16 335 N 41° 25 ' 31,75" V 86° 52' 19.37" 616. Mounted disk 6 335 1968 Light Rain 243°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever:	Cody 101 16:05 # 0364 1 # 0364 1 # 076 4	R8-3
N	, Gee F	Previous -		
	// 201	L		

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	GPS Observ	ation Log S	heet	wo	DOLPER
Station Name: Latitude: Longitude: Ellip. Haight: Type of Mark: Stamping on Mark:	Indiana Stalaide 20 6 335 N 411° 25' 31.75" W 86' 521 14.37" 616.2566 Manded disk 6 335 1968 Cloudy 240°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever:	Cody 162 10:03 2113 #0364 #0364	Schneider Session No. End Time: 6020 1283 Rte3	<u>~/a</u> _14:03
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	- 500				
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	Pr	evious			

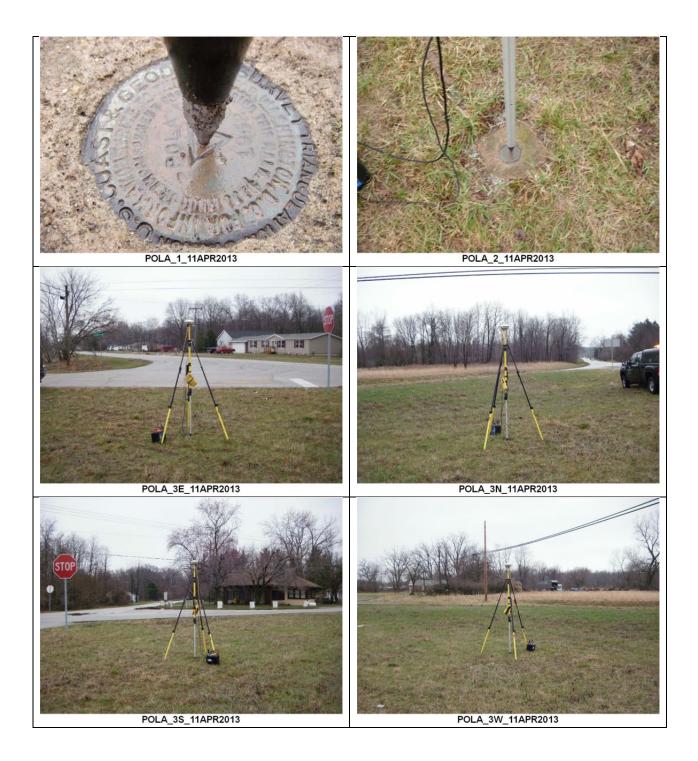




	GPS Observ	ation Log She	et woo	LPER
Project Name:	Indiana Stateunide	Project Number: <u>731</u>	12 Survey Date: 04	-11-201
Station Name:	Lake Village	Operator Name:	Welbaum	
Latitude:	411-08-42.53		/ Session No.	
	87-26-5647	Start Time: 8:	2 2 End Time: /2	2:19
	522.94	Data File Name:		
Type of Mark:	CBN		R8 Mod 2	
	Lake Village	17	R8 Mod 2	
Weather Condition:	45° overcast Rain	Antenna Height: $\frac{2.00}{2}$	to bottom of anter	ina mount
N	See previous obs	ervation for Sk	etch	
			<u>ç</u>	
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		ă.		
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	GPS Observa			WOOLPER
Project Name:	Endiana Statewide 2013			Survey Date: 4/1//201
Station Name:	POLA	Operator Name:	Cody	Schneider
Latitude:	N4(1°4(144.67"	Julian Day:	101	Session No. 1/A
Longitude:	W 86 55 5 1.46			End Time: _ 18 : 46
Ellip. Height:	513,0sft			9
	Concrete Monument	Type of Reciever:		
	POLA 1952 619,14	Type of Antenna:		
Weather Condition:	Light Rain 2 43°	Antenna Height:	7.562.54	to bottom of antenna mount
- FIELO-	State		445-	TREES
	- GRASS-	•	- ASPARACT	
E GRAVE		POLA		w punes the
US 12	- ASPITALT-		COUNTY LINE - INSPIT	ALT-
				GRASS



Project Name: _	Endiana Statemole 2013	Project Number:	73/12 Survey Date: 4/9/2
Station Name: _	\$ 107	Operator Name: _	Cody Schneider
Latitude:	140° 52 03.50"	Julian Day: _	099 Session No. 010
Longitude: _	N 86' 57' 66.93"	Start Time:	10:47 End Time: _/> , 30
Ellip. Height: _	565.3sft	Data File Name: _	21130990
	Concrete Monument	Type of Reciever:	# 2113 R8-2. #2113 K8-2
	5107 1946 D. 11 Cl. 1 560°		7.56254 to battom of antenna moun
weather Condition: _	Partly Cloudy= 60°	Antenna Height:	Trade and the bollow of antenna moun
	ATUD - ELGID - E FENCE	GRAVEL -	EPALCIE
×	6 0 ASS - 5 10	· /	EPRICE y
	- ASPHAUM		
		s12 16	
			- 6 RASS-
1	×	X PENCE	× × ×
	A.	CULTUR	TED . HELD

$\begin{array}{r c c c c c c c c c c c c c c c c c c c$	Project Number: 73172 Survey Date: 997 Operator Name: Cody Schneider Julian Day: 099 Session No. $^{N}/_{4}$ Start Time: 16:08 End Time: 19:11 Data File Name: 21136991 Type of Reciever: $\# 2113 RC-2$ Type of Antenna: $\# 2113 RC-2$ Antenna Height: 7.5625(Fto bottom of antenna mourner)
, See	Previous

,



	GPS Observ	ation Log Sh	neet "	W.
-	IN Jiang Statewide Will Co 2305		13112 Survey Date	
	41-23-05.65 87-31-34,59		<u>/00</u> Session N <u> ら;らう</u> End Time	
Type of Mark:	620,63 Deep Rod	Type of Reciever:	73112 WRW100 178 Mod 3 R8 Mod 3	
	None 45° Rain		2.000m to bottom of	
Field	Ditch Sta	te ne J.	Field	

	GPS Observ	vation Log Sh	leet	WOOLPER
	Indiana Statewide			Survey Date: 04-12-20
	Will CO. 2305			elbaum
	41-23-05 68			Session No.
	87-31-34.61			End Time:
	619,20			
	Deep Rod	3	100	
	None 40° allesaut			to bottom of antenna mount
weather Condition:	40° overcust	Antenna neight.		
N				
			10	
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			5 5	
		*		
			12	



GPS Observ	ation Log Sheet
Project Name:Indiana StatewideStation Name:A 105Latitude:39-58-52.24Longitude:86-54-58.99Ellip. Height:691.51Type of Mark:C B NStamping on Mark:A 105 1946Weather Condition:50°Clear	Type of Antenna: <u>RB Mod 2</u>
A _N	field 1.800 M Roj With 0.15'ext.
* * *	Co, RU, 400 S.

GPS Observ	ration Log Sheet
Project Name:IndianaStatewideStation Name:A 105 Latitude: $\frac{N}{39^{\circ}58}$ ' 52.26 "Longitude: $\frac{W}{86}$ ' 54 ' 59.00 "Ellip. Height: 684.354 Type of Mark:Concrete MonumentStamping on Mark:A 105 1946 Weather Condition: $(1car = 63^{\circ})$	Project Number: 73 (12 Operator Name: Survey Date: 97/20 Julian Day: 097 Session No. 4/A Start Time: 19:01 End Time: 19:30 Data File Name: 21130971 Type of Reciever: #2113 28-2 Type of Antenna: #2113 R8-2 Antenna Height: 2.00 m to bottom of antenna mourt
A _N	
, See Pre	1000



Project Name:	Indiana Statewide 2013	Project Number:	3(1) Survey I	Date: 4/3/20
	B 183	Operator Name	Cody Schoe	der
	N39" 12 ' 64.97"	Julian Day:	093 Sessio	n No/A
Longitude:	W & 7° 38' 17.31"	Start Time:	:53 End T	ime: <u>19:13</u>
	340.3 stt	Data File Name:	21130930	s '
Type of Mark:	Concrete Monument	Type of Reciever:	FZ113 R8-2	
	B 183 1956	Type of Antenna: _#	FZ113 R8-2	
Weather Condition:	Clear a 50°	Antenna Height:	1.562 set to bottor	n of antenna mount
	CULTIVATED - FIELD		2050TH ST	NASS WLTI
	PEDESTAL (O Rb 350		Pup Car	ſ
k	ASPHALT-	X		*
	CULTIU ATED - FIELIS	- GRA55*		



Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: 04 APR2
Station Name: <u>B 360</u>	Operator Name: Ben Christie
Latitude: 39° 42' 36.15" N	Julian Day: <u>094</u> Session No. $\frac{N/A}{A}$
Longitude: <u>87° 23′ 56.48″</u> W	Start Time: 1057 End Time: 1847
Ellip. Height: 412,66 SFt	Data File Name: 32.330940
Type of Mark: STEEL ROD	Type of Reciever: <u>R8-3</u>
Stamping on Mark: <u>3360</u> 1986	Type of Antenna: <u>R 8 - 3</u> Antenna Height: <u>2,0</u> to bottom of antenna mour
Weather Condition: <u>42°</u> CLEAR	Antenna Height: to bottom or antenna mou
AIRPORT 1993 /	X X X X X X X X X X X X X X X X X X X

Station Name: <u>B</u> 360 Latitude: <u>39° 4</u> Longitude: <u>87° 2</u> Ellip. Height: <u>408.2</u> Type of Mark: <u>5766</u> Stamping on Mark: <u>B</u> 36 Weather Condition: <u>40°</u>	12' 36.09"N 3' 56.46"W 25 SF+ 72 ROD 00 986	Start Data File N Type of Rec Type of Ant	n Day: : Time: Name: ciever: tenna:	095 1824 ISM- R 8-3 R 8-3	Session N End Tim 04051	lo. <u>N/A RT</u> e: <u>1115</u> 3- BRC
Longitude: <u>87°2</u> Ellip. Height: <u>408.2</u> Type of Mark: <u>STEE</u> Stamping on Mark: <u>B34</u>	3' 56.46"W 25 SFt 2 ROD 00 986	Start Data File N Type of Rec Type of Ant	: Time: Name: ciever: tenna:	1834 ISM- R8-3 R8-3	End Tim 04051	e: <u>1115</u> 3- BRC
Ellip. Height: <u>408.2</u> Type of Mark: <u>5766</u> Stamping on Mark: <u>B</u> 36	25 SF+ 12 ROD 00 1986	Data File N Type of Rec Type of Ant	Name: ciever: tenna:	<u>TSM-</u> <u>R 8-3</u> <u>R 8-3</u>	04051	3- BRC
Type of Mark: <u>STEE</u> Stamping on Mark: <u>B</u> 34	C ROD 00 1986	Type of Rec Type of Ant	ciever: tenna:	R 8-3 R 8-3		
Stamping on Mark: B 34	00 1986	Type of Ant	tenna:	R 8-3		of antenna mour
						of antenna mour
Weather Condition: <u>40°</u>	CLEAR	Antenna H	leight:	2.25 m	to bottom o	if antenna mour
R	leven d'Augustan Italia garantak					
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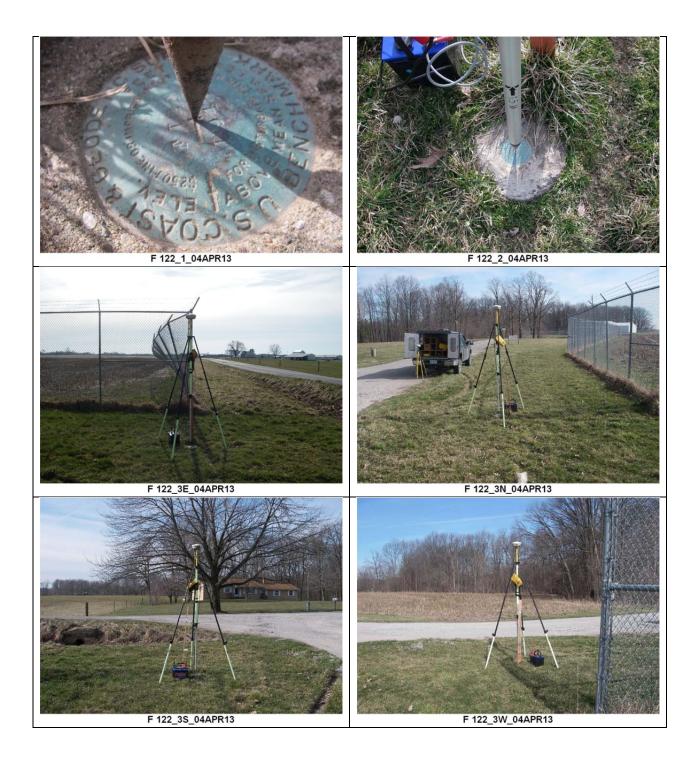


	GPS Ob	oservatio	n Log Sh	eet	w	DOLPE
Project Name: _	Indiana Slatewid	2 2017 Pro	ject Number:	73112	Survey Date:	4/3/20
Station Name:	C 353	Op	erator Name:	Cochy S	chae: der	
Latitude:	N39°24'43,09"	1	Julian Day:	093	Session No	~/A
Longitude:	N 87º19' 59.37:	b	Start Time: _	18:35	End Time:	18:147
Ellip. Height:	450.25Ft		ta File Name:	ISMO	40313C	Jζ
Type of Mark: _	Deep'Rod	Туре	e of Reciever: _	#0364	R8-3	
Stamping on Mark: _	6 353 1985	Тур	e of Antenna:	#0364	R8-3	
	Clear = 450		tenna Height: _2	2.00 m	to bottom of a	ntenna mour
	mees	1)		/	(
N	ALT ROAD		1			CULTAU
ASP14	E TO LOCAL BUSINE	55)		- PIC
	E TO LOCAL DEC		1	$\langle \rangle$)	
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TREE		EX /		$\langle \rangle$		
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		5	GRANEL			/
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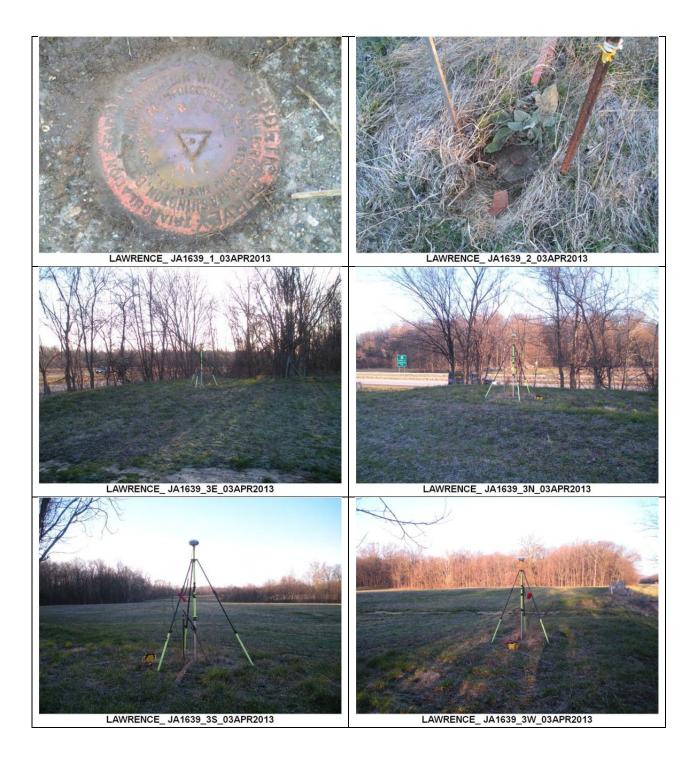
	GPS Observa	ation Log S	heet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <u>C 353</u> N39° 24' 43.09" W87° 19' 59.37" 450.4 18A <u>Peep Rod</u> <u>C 353 1985</u> <u>Clear = 50</u>	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody Sch 014 Sec 9:40 E 2(13094) #2113 RE- #2113 RE-	ssion No. <u>*/</u> /4 nd Time: <u>5:28</u> 0 -2 -2
	Clear = 50°		and the second se	ottom of antenna mount
			-	
	, See Pi	regious		



Project Name: Indunia Surguide	2013 Project Number:	그3/1고 Survey Date: _ 예세(3
Station Name: Flag	Operator Name:	
Latitude: <u>39~37、37.47</u>		이익석 Session No.
Longitude: <u>ຊຣິ4ຊ່ວງ,</u> 4 <u>3</u> "		End Time:
Ellip. Height: 246.099 m		
Type of Mark: <u>Conc.</u> Mon		Trimble R.R. model 2
Stamping on Mark: Fl2>		Termble Internal
Weather Condition: Swamy 30's Julia	Antenna Height:	7.562 sf+ to bottom of antenna mount
Fredal Part	Brek base Forfory	Arepury Arepury
	Aurport Rd.	



	ide 2013	Project Number: 73112	Survey Date: 03 APR 2
Station Name: LAWR		Operator Name: Ben Christie	
Latitude: <u>38° 42</u>		Julian Day: 093	
Longitude: <u>87° 31'</u>		Start Time: 0825	
Ellip. Height: 407.2	21	Data File Name: 323309	30
Type of Mark: DISK		Type of Reciever: <u>R8-3</u>	
Stamping on Mark: <u>LAWRENCE</u>		Type of Antenna: <u>RB-3</u>	
Weather Condition: 29°	LLEAN	Antenna Height: 2.25 m	to bottom of antenna mour
LARGE ROCKS	53 FIELD ENTRANCE	$\frac{ v _{B}}{ s } u_{S} s_{S}$	



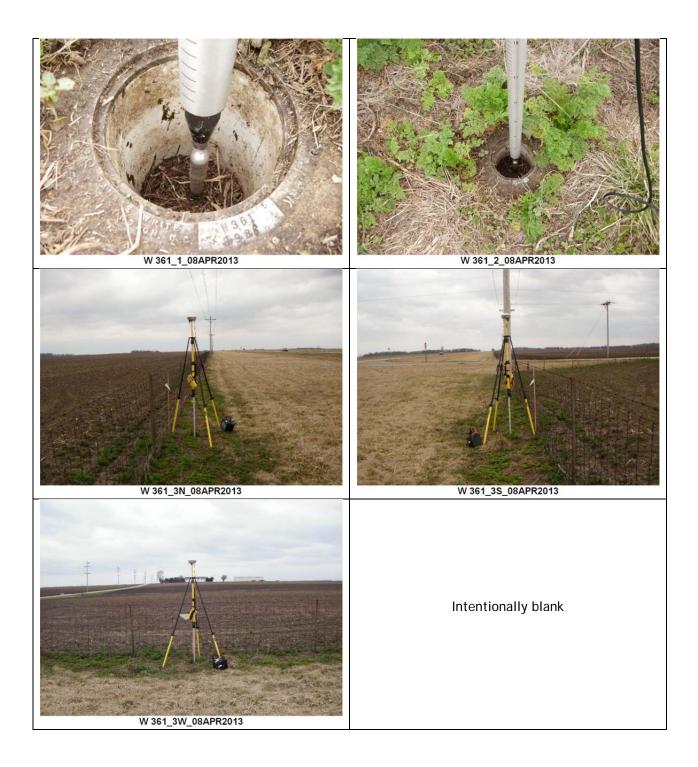
	GPS Obse	ervation Log S	heet WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	INdiana Statewide <u>S 280</u> <u>39-00-57.28</u> 86-50-24.40 <u>S66.79</u> <u>C BN</u> <u>S 280</u> 1949 45° CLear	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73/12 Survey Date: 04-03-20 welloaum 093 Session No. 1 End Time: 73/12 WRW693 R8 Mod 2 R8 Mod 2 6.056 5ft 2000m 1.846 ^M to bottom of antenna mount
	PLowed +	field	1.800 M With 0.15 Ext.
	Co. Rd. 50 5	5.	β.
	Сгор	Field	



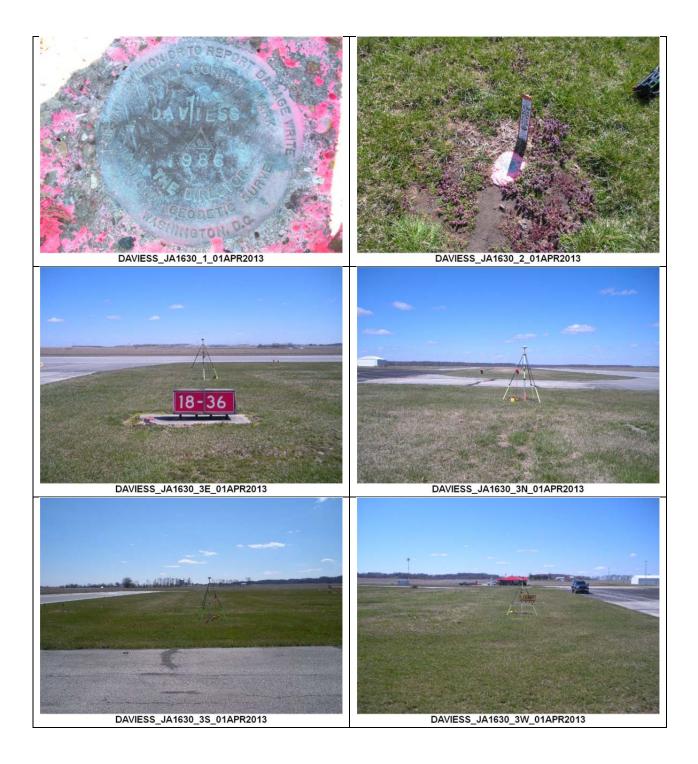
	GPS Observ	ation Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Da	ate: 05APR20
	W 361	Operator Name: Ben Christie	
Latitude:	40°04' 31.24"N	Julian Day: 095 Session	No. NA RTK
-	87° 27' 07.92" W		me:
	490.52 sft	Data File Name: <u>ISM_040513</u> .	_ CRC
	STEEL ROD	Type of Reciever: <u>R8-3</u>	····
	W 361 1986	Type of Antenna: <u>R8-3</u>	
Weather Condition:	52° CLEAR	Antenna Height: 2.25m to bottom	of antenna mount
	E 1300 N	SK 100	
	X		

Project Name:	Indiana S	fatemide 2013	Project Number:	73112	Survey Date: 4/8/20
	W 361		Operator Name:		Schneider
	N40°04'31		Julian Day:	098	Session No/A
	W 87027'07		Start Time:	12:37	End Time: 18:41
Ellip. Height:	512.6	sht	Data File Name:		
Type of Mark:	Concrete	Monument	Type of Reciever:		
Stamping on Mark:	W 361	1986	Type of Antenna:	#0364	R8-J
Neather Condition:	Cloudy &	windy 260°	Antenna Height:	7.56254	to battom of antenna mount
		Zer f.	revious		





	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 DAUIESS 38° 41' 43.34" M 87° 07' 48.19" W 361.84 5A DIS K DAVIESS 1986 44° PT. CLOY	Project Number: 73112 Survey Date: $Ol A Pla 2 or Operator Name: Ben Christie Julian Day: 091 Session No. NA BASE Start Time: 1400 End Time: 1730 Data File Name: 32 330912 PAT Type of Reciever: R 8-3 Type of Antenna: R 8-3 Antenna Height: 2.25 m to bottom of antenna mount $
	ASPN. Apron	HAVIESS 18-36 SIGN



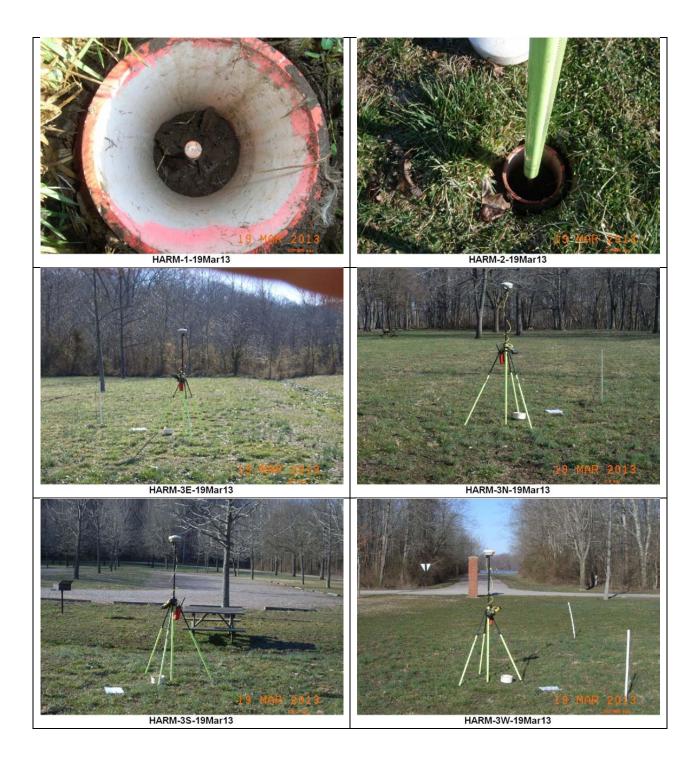
Latitude: Longitude: Ellip. Height:	HAR 38- 987- 27	ide 2013Project Number:73112Survey Date: $0.3/17/11$ $M _RTK$ Operator Name: $5tephen$ $5chonegg$ $0.3 - 43.958$ Julian Day: 0.76 Session No. 3 $57 - 58.896$ Start Time: $12:40:46$ End Time: $12:42:17$ 8.004 $sS+$ Data File Name: $IMS 0.317$ $13.52s$ ecp RodType of Reciever: $Trim BLE$ $RB-2$ $Serial$ $#$ 471212 9959 RAIN W_{INO} Antenna Height: 6.89 $sS+$
▲	road	
To Boat Ram		
	asphalt	Groavel Parking

Station Name: Latitude: Longitude: Ellip. Height:	diana Statewide 2013Project Number: 73112 Survey Date: $03/4$ HARM (AE8495)Operator Name: $5tephen$ $5choneg$ $38-03-43.979$ Julian Day: 078 Session No. 574 $087-57-58.922$ Start Time: $7:35:49$ End Time: $7:55:49$ $271.560sst$ Data File Name: 97590780 $Deep$ RodType of Reciever: T_{RIMBLE} $R8$ $5erial$ 4712129959 $30°$, SUA: nyAntenna Height: $6.89 sst$ to bottom of antenna m
To Boat Ray	togod togod Gravel Parking Parking

			on Log Sheet	e e
Project Name: In			roject Number: 73112 Survey Date: 03	
Station Name:	MA 20	RM_RTK 0	Operator Name: <u>Stephen</u> Schone	
		-03-43.998	Julian Day: <u>078</u> Session No.	
			Start Time: 10:03 40 End Time: 10:	05:
Ellip. Height:	 D	<u>5.656557</u> D	Data File Name: <u>IMS 031913 5</u>	
Type of Mark:	-		pe of Reciever: TRIMBLE RE	2
Weather Condition:	2 20	500000	Serial # 4712124959	
weather condition:	30,	<u>JUANY</u> A	ntenna Height: <u>6.89 55</u> to bottom of antenna	mour
A	1			
N				
	1090			
	2			
To Boat Ram			A	
		-		
]	
	×	Goravi		
	asphalt		Parking	
	201			
	0			
	1			

Station Name	Harm (Harm_165/66)	Project Number: 72 Ka Survey Date: 4/3//3 Operator Name: Ron Survey
	: 30°03' 43.95'	Julian Day: 093 Session No. 2
	8757 58.89	Start Time: 7/28 End Time: 7/31
	277.798 56-	Data File Name: IND_SW_093_RS
	: Deep Root	Type of Reciever: Trimble R8 model 3
Stamping on Mark	: p!A	Type of Antenna: Temble Internal
	405, Partly Cloudy, Wird 8-5	Antenna Height: to bottom of antenna mo

	Indaina Statewide		Project Number: Operator Name:		Survey Date: 4/3/13
Station Name:	Harm (Harm_L 38°03 43.95	22.00 01		O93	
	87 57 58,81			2:41	-
	277. 894 54		Data File Name:	-	
	Deep Roof		Type of Reciever:		
Stamping on Mark			Type of Antenna:		
	40'S Swany Wind 5	-10	Antenna Height:		
•					
•					





GPS Observation Log Sheet WOOLPERT Project Name: INDIANA STATEWIDE Project Number: 73/12 Survey Date: 03/22/13 Station Name: Josephine 2 (JA0699) operator Name: STEPHEN SCHONEGG
 Latitude:
 38-40-54.2637z
 Julian Day:
 081
 Session No.
 BASE

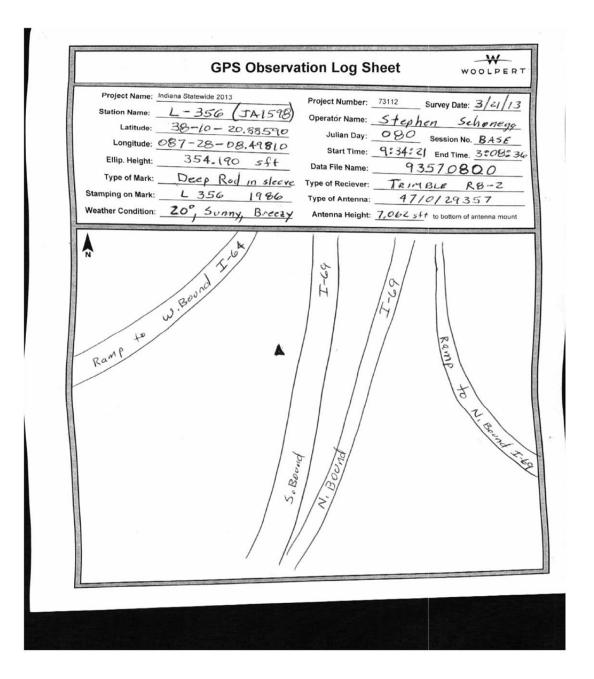
 Longitude:
 086-48-33.23088
 Start Time:
 1:06:00
 End Time:
 4:18:07
 Published Stamping on Mark:Josephine21966293570812Stamping on Mark:Josephine219665710129357 Weather Condition: 40° PT Cloudy, Breezy Antenna Height: 7.062 st to bottom of antenna mount AN US 50

	GPS Observ	ation Log Sl	heet	wa	DOLPER
	Indaina Statewide 2013 Josephine 2 (Josephine 2_ Y312)	Project Number: Operator Name:			3/27/13
	38°40' 54.26"		086		2
	86° 48' 33.23		4:00	End Time:	
Ellip. Height:	606.191 \$ 5+	Data File Name:			2
Type of Mark:	Conc. Monument	Type of Reciever:	Trimble R8	model 3	
Stamping on Mark:		Type of Antenna:			
Weather Condition:	SARAY 40's, Calm	Antenna Height:	2.0 M	to bottom of ar	itenna mount
	< us so			19	Pp -
	US, 50 >>				

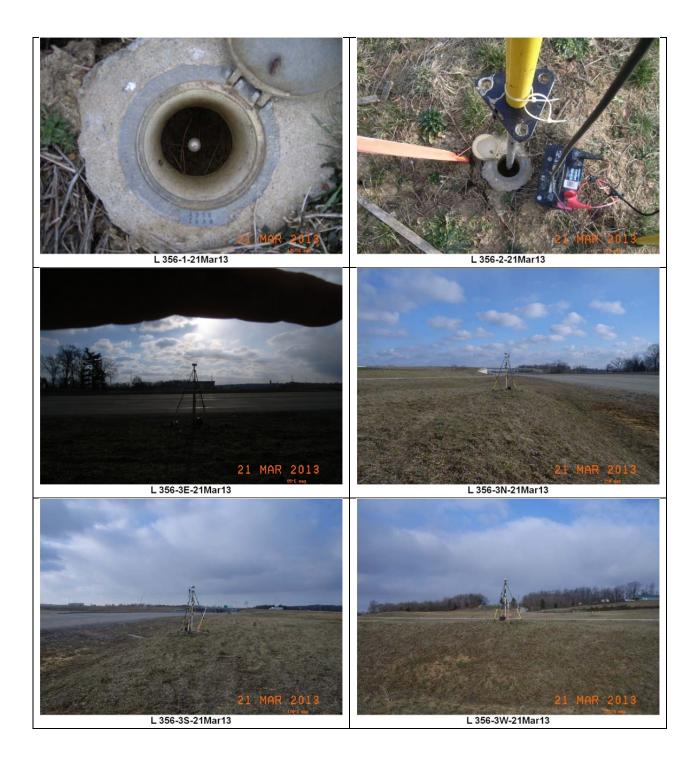
	GPS OI	bservation Log S	heet	woo	OLPERT
	INDY Statewide			Survey Date: <u>C</u> Welbaum	
	Josephine 2			Session No	
	38-40-54.26 86-48-33.23			End Time:	
	606.04			wRW 093	
	CBN			Mod 3	
	Josephine 2 196		28	Mod 3	
	35° CLEar		2.000m	to bottom of ante	enna mount
			V	facil	
	Conc Dit.	c.h			
	Rt	50			
~~~~~	2		and the second second second	ر میں	
	woods				







	Indaina Skatewide		Survey Date: 4/3/13
	L356 (L356-105/ck)		
Latitude:	38 10 20,88		Session No. 3
Longitude:	87 28 08.49		End Time:
	254,238 st-	Data File Name:	
Type of Mark:		Type of Reciever:	
Stamping on Mark:		Type of Antenna:	
Weather Condition:	Cloudy 40's, Wind 0-5	Antenna Height:	to bottom of antenna mour
			€
			н 8 1
			* *





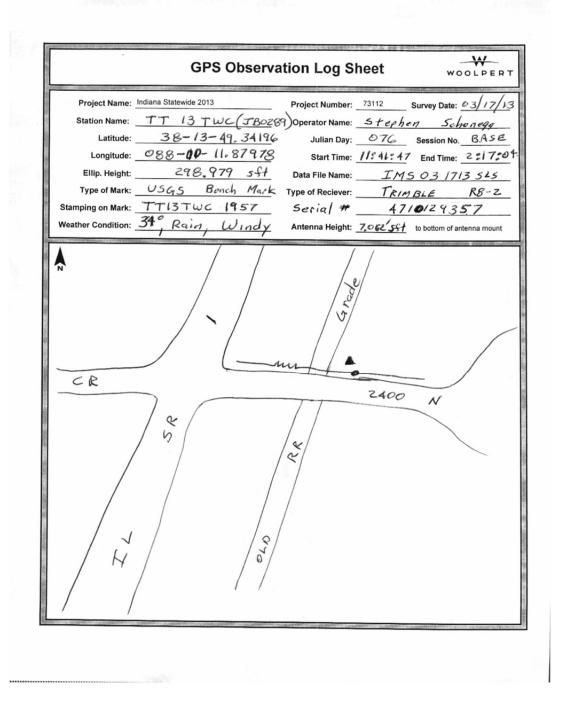
Project Name:	Indaina Statewide 2013	Project Number:	
	+329 (+329-5.329)	Operator Name:	
	37°57' 30.93		<u>087</u> Session No. 1
	86° 46' 20,45"		9:07 End Time: 9:10
	302.174 str		INDYSTATEWIDE RS
	Dist in Drill Hole		Trimble R.8 model 3 Toumble Taiward
Stamping on Mark:	30's SARAY Calm		Trimble Informal 2.0 m to bottom of antenna mount
Railroad Tracks RxR Bed -> wall	RXZ Bad	Top of Lever Top of Lever Top of Lever	



GPS Observation Log Sheet
Project Name:Indiana Statewide 2013Project Number: $73112$ Survey Date: $o3/16/13$ Station Name: $Y - 312$ $JA \phi 279$ Operator Name: $Stephen$ $Schon egg$ Latitude: $38 - 20 - 38.43334$ Julian Day: $075$ Session No. $STATICE$ Longitude: $086 - 24 - 45.6307/$ Start Time: $12:13:44$ End Time: $1:00:34$ Ellip. Height: $471.304$ $sft$ Data File Name: $99.59$ $0750$ Type of Mark: $U5C \notin 45$ BM $D_{15}k$ Type of Reciever: $TRIMBLE$ $R8-2$ Stamping on Mark: $Y$ $312$ $1965$ $Sesia1$ $471212$ $9959$ Weather Condition: $62^{\circ}$ , PT Cloudy, Light Walt Antenna Height: $6-562$ $5f$ to bottom of antenna mount
A Temple Rd
Train Passed from 12:52:15 to 12:53:45
Y 312
Gravel PIT

Project Name: Station Name: Y	Blainen Statewide 2013 312			73112 Ron Siney	Survey Date: 3/27/13
Latitude: 38	3 20'38,43"			086	
Longitude:	\$ 24 45.63"	St	art Time:	2:30	End Time:
Ellip. Height:		Data Fi	le Name:	83650860	2
Type of Mark:	rass Disk in Drill Hol	Type of	Reciever:	Trimble Ri	ś mogici 2
Stamping on Mark:	312 1965			Teimble	
Weather Condition:	's SUDAY SCALA	Antenn	a Height:	5.921 sft	to bottom of antenna mount
		Creek			
< Roilfr	and Bed	<u>A</u>	Hea	lwall	
Radr.		Tracks	Hea	d well	
	Radroad	2	K Hea	Aurell Raylroad	Bid





Project Name: Indana Statewide 2013	Project Number: 73//2 Survey Date: 4/3//3
Station Name: TT 13 TWC (TT13 TWC_L356	ICK Operator Name: Ron Sinery
Latitude: 38 13 49,34	Julian Day: ୦୩୦ Session No. 🤇
Longitude:	Start Time: <u>३</u> ,२० End Time: <u>३,२३</u>
Ellip. Height:	Data File Name: TND_SU_093_RS
Type of Mark: Conc. Mon	
Stamping on Mark: TT ISTWC	Type of Antenna: Trimble Internal
Weather Condition: Swany 405 Urad 5-10	Antenna Height: to bottom of antenna moun
	х

Station Name:       Tr 13 TUC (TT 13 TUC 105 (Ch))       Operator Name:       Residue         Latitude:       28° (3' 49,24")       Julian Day:       013       Session No.           Longitude:       28° (3' 49,24")       Julian Day:       013       Session No.           Ellip. Heigh:       299,071 (5h)       Data File Name:       End Time:       6:3.2         Type of Mark:       Conc. Man       Type of Reciever:       Tendble:       Reddel:       3         Stamping on Mark:       TT 13 TWC       Antenna Height:       2.9 A		Indania Statewide 2013	Project Number:			4/3/13
Longitude:       22° 00 11.02°       Start Time:       G/29       End Time:       6/32         Ellip. Height:       299.07/154       Data File Name:       IND_SW_093_RS         Type of Mark:       Conc. Mon       Type of Reciever:       Teinble:       Reciever:         Stamping on Mark:       IT13 TWC       Type of Antenna:       Teinble:       Internal	1			1		1
Ellip. Height:       Data File Name:       IND_SW_093_RS         Type of Mark:       Conc. Mon       Type of Reciever:       Temble       RE model       3         Stamping on Mark:       TT 13 TWC       Type of Antenna:       Temble       Tate indice						
Type of Mark:     Conc. Mon     Type of Reciever:     Temble     RE model       Stamping on Mark:     TT 13 TWC     Type of Antenna:     Temble     Tates to 1				3		
			Type of Reciever:	Temble RE	mootel 3	
Weather Condition:       Provide Cloudy, 40       Antenna Height:       D.D.A.       to bottom of antenna mount	Stamping on Mark:	FT 13 TWC	Type of Antenna:	Trimble	Tatolal	
	Weather Condition:	acely Cloudy, 40	Antenna Height:	20 M	to bottom of an	ntenna mount





	GPS Observa	tion Log Sheet	WOOLPER
Station Name: 5 Pog Latitude: - Longitude: 02 Ellip. Height: - Type of Mark: - Stamping on Mark: -	NDIANA STATE WIDE TINSON 2 (JA2135) 38-14-54. 24211 36-57-05. 11574 421. 968 384 VGS A DISK STINSON 2 D, PT Sunny,	Operator Name: $5\tau$ Julian Day: $08$ Start Time: $9:40$ Data File Name: Type of Reclever: 5ercal	12         urvey Date:         0.3/22/1.           EPHEN         SCHONEGG           1         Session No.         BASE           :15         End Time:         11:4           9.3.570811         Image: Compare the second seco
A R/	ĺw		
T/w	"A '		
$\langle$	GRAS <b>S</b>		
AIRPLANE			
A IRPLANE PARKING			

Project Name:	Indaina Statewish 2013	Project Number:	13113	Survey Date: 3/27/13
Station Name:	Stinson 2 (Stinson 2 - Y 312)	Operator Name:	Ros Sine	/
Latitude:	38° 14' 54.24"	Julian Day:	080	Session No4
Longitude:	86"57 1.50"	Start Time:	5:45	End Time: 5:48
Ellip. Height:	421.966 sft	Data File Name:	INDY STA	TEWIDE
Type of Mark:	Conc. Monument	Type of Reciever:	Tripple R	2 model 3
Stamping on Mark:		Type of Antenna:	Trimble J	Entrunal
Weather Condition:	40's , Shnoy , Wind 5-10			
Ņ		Antenna Height:	2.0 m	_ to bottom of antenna mour
		Antenna Height:	<u>2,0 m</u>	_ to bottom of antenna mour
		Antenna Height:	2.0 m	to bottom of antenna mour
		Antenna Height:	<u>2,0 m</u>	_ to bottom of antenna mour

	Indaine Statewide 2013		Survey Date: 3/28/13
	Strinston 2		1
Latitude:	38° 14' 54.24"	Julian Day:ରୁଚ୍	
	86° 57'05. 11"		End Time:
	160.7 M		
	<u>Солс. Мол</u> Stinson Q	#2	
	40's, Shany Calm		to bottom of antenna mount
		$\bigtriangleup$	Tore
	Taxi Grass		to Rang



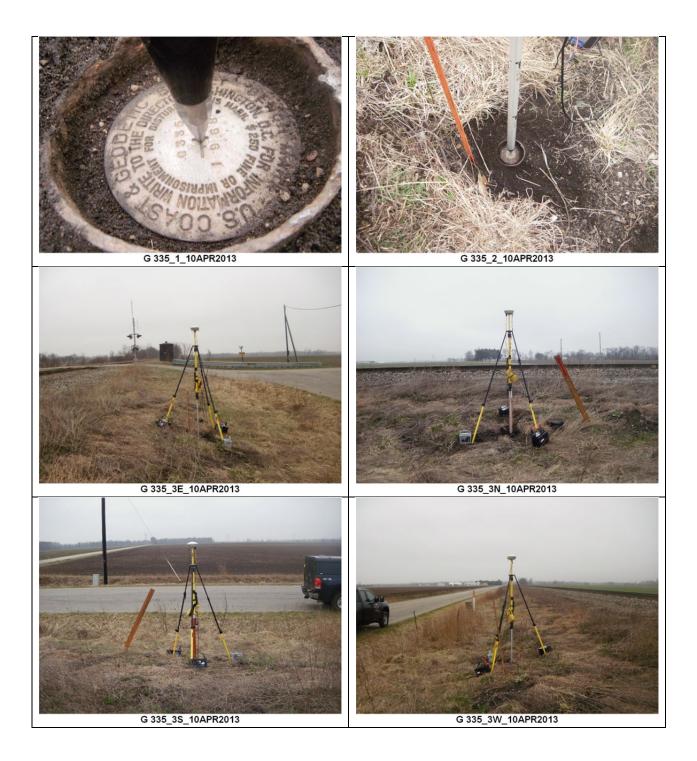


## NGS GEODETIC VALIDATION POINTS

	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2017 G 335 N41° 25' 31.75" W66° 52' 19.37" G   6.2 sft Mounted disk G 335 1968 Cloudy 242°	Operator Name:CompositionJulian Day: $100$ Start Time: $\overline{9}$ · 3 -Data File Name: $211$ Type of Reciever: $\#211$ Type of Antenna: $\#211$	3 128-2
		RAHLROAD BALLAST-	- ASPHAUT-
	N BAILER RE DIAL CALTILLATEN FIELY	D SH/GRASS-	CO RP 5900 W

	GPS Observa	tion Log Sh	eet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 16 335 N 41° 25 ' 31.75" V 86° 52' 19.37" 6 16- Mounted disk 6 335 1968 Light Rain 243°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody S 101 Ses 16:05 En 15:06 En 15:06 R8 # 0364 R8 # 0764 P	sion No. <u>"/#</u> d Tima: <u> 6:16</u> CJS -3
Weather Condition:	Light Rain 243°	Antenna Height:	7.00 m to ba	ttom of antenna mount
	, See F	Previous -		

.



Project Name: _	Endiana Statemole 2013	Project Number:	73/12 Survey Date: 4/9/2
Station Name: _	\$ 107	Operator Name: _	Cody Schneider
Latitude:	140° 52 03.50"	Julian Day: _	099 Session No. 010
Longitude: _	N 86' 57' 66.93"	Start Time:	10:47 End Time: _/> , 30
Ellip. Height: _	565.3sft	Data File Name: _	21130990
	Concrete Monument	Type of Reciever:	# 2113 R8-2. #2113 K8-2
	5107 1946 D. 11 Cl. 1 560°		7.56254 to battom of antenna moun
weather Condition: _	Partly Cloudy= 60°	Antenna Height:	Trade and the bollow of antenna moun
	ATUD - ELGID - E FENCE	GRAVEL -	EPALCIE
×	6 0 ASS - 5 10	· /	EPRICE y
	- ASPHAUM		
		s12 16	
			- 6 RASS-
1	×	X PENCE	× × ×
	A.	CULTUR	TED . HELD

$\begin{array}{r c c c c c c c c c c c c c c c c c c c$	Project Number: 73/12 Survey Date: 9/9/2 Operator Name: Cody Schneder Julian Day: 099 Session No. $^{\prime\prime}/7$ Start Time: 16:08 End Time: 19:11 Data File Name: 21136991 Type of Reciever: $\# 21/3 RC-2$ Type of Antenna: $\# 21/3 RC-2$ Antenna Height: 7.5625(F) to bottom of antenna mount
, Sec	Previous
	-17

,



	GPS Observ	ation Log Shee	et woolper
	IN Jiang Statewide Will Co 2305		12 Survey Date: 04-10-201 (1) elbaum
Longitude:	41-23-05.65 87-31-34.59		Session No.           '57         End Time:         6 : 60
Type of Mark:	620,63 Deep Rod	Type of Reciever:	73112 WRW/00 178 Mod 3
	None 45° Rain		R8     Mod 3       0m     to bottom of antenna mount
Field	pitch Sta	te ne J.	Field

	GPS Observ	ation Log Sheet
Project Name:	indiana Statewide	Project Number: 73/12 Survey Date: 04~11-20
Station Name:	WILL CO Z305	Operator Name: Welbaum
Latitude:	41-23-05.68	Julian Day: / 0 / Session No.
Longitude:	87-31-34.63	Start Time: 1:50 End Time: 7:58
Ellip. Height:	617.63	Data File Name:         369301011
Type of Mark:	Deep Rod	Type of Reciever: <u>R8 Mod z</u>
	None	Type of Antenna: <u>R8</u> Mod 2 6.7/2
Weather Condition:	45° Overcast Rain	6.712 Antenna Height: $2m + 0.15^{T}$ for bottom of antenna mount $2m + 0.15^{T}$ for $KT$
Se.	e previous obser	vation for Sketch
		1
		8

	GPS Observ	vation Log Sh	leet	WOOLPER
	Indiana Statewide			Survey Date: 04-12-20
	Will CO. 2305			elbaum
	41-23-05 68			Session No.
	87-31-34.61			End Time:
	619,20			
	Deep Rod	3	100	
	None 40° allesaut			to bottom of antenna mount
weather Condition:	40° overcust	Antenna neight.		
N				
			10	
			×.	
			5 5	
		*		
			12	



Station Name: Latitude: Longitude: Eilip. Height: Type of Mark: Stamping on Mark:	Indiana Statemide 2012 AIX Z N91601'34.31" W87669105.91" 579.5364 Concrete monumed AIX 2 1952 Cludy & Windy \$ 70°	Project Number:       73112       Survey Date:       19201         Operator Name:       Coda, Schnedar         Julian Day:       099       Session No.       %/A         Start Time:       17:13       End Time:       17:19         Data File Name:       ISM040913CTS         Type of Reciever:       #0369       R &-3         Type of Antenna:       #0369       R &-3         Antenna Height:       2.00%       to battom of entenna mount
CULTUATED FIED X	Contra Aspitaci V XXX	GRASS ASPHAUT JUNCTION THIFT & -FLEN- MARKET -GRASS



	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: <u>^</u> Longitude: <u>}</u> Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2017 C 156 241° 11' 39.36" 287° 61 46.75" 555.7 s(4- Concrete Monument C 156 1946 Raining ~ 45°	Project Number: 73112 Operator Name: Cod. Julian Day: 100 Start Time: 14134 Data File Name: 15M Type of Reciever: #0364 Type of Antenna: #0364 Antenna Height: 2,00 m	Y Schneider Session No. <u>MA</u> End Time: <u>14:45</u> 041013C3S RE-3 RE-3
Å.	- rrees -	- ERASS -	
<u> </u>	×	FENCE X	ک
	(0 R) E 1250	) 1/	
	A	Sphalt-	
<u></u> ≻ ×	FENCE X	BREAK IN FEN	FENCE
	RAIL	PORD -BALLAST	

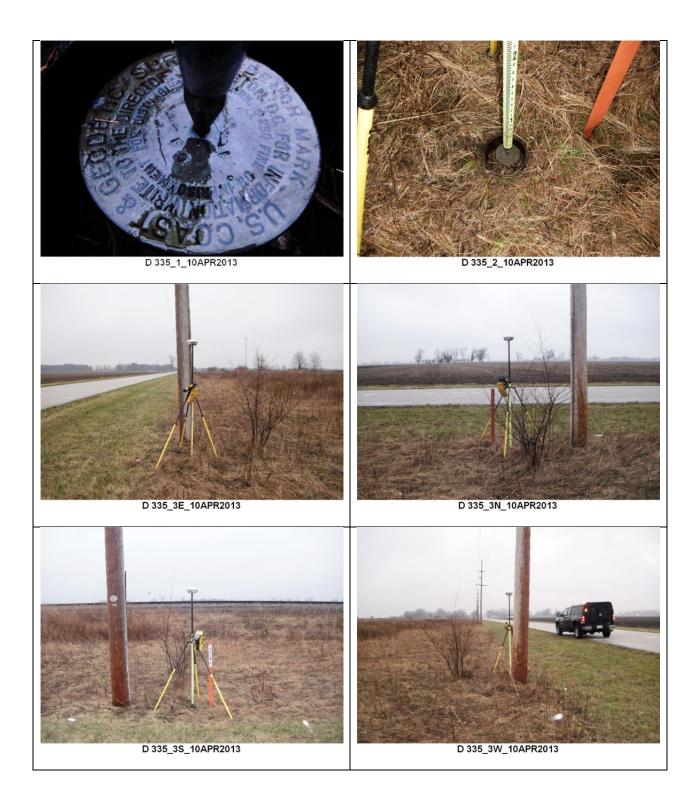
	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u><i>Tudiang Statewide</i></u> <u><i>C 156</i></u> <u>41-11-39.29</u> <u>87-01-46.74</u> <u>555.81</u> <u><i>C BN</i></u> <u><i>C-156</i></u> <u>45° overcast</u>		<u>Session No. Z</u> End Time: <u>9:17</u> WRW101 8 Mod 3 8 Mod 3
	>		3
X	F 1250 N	Øx	~
*	×	×@⊂	*
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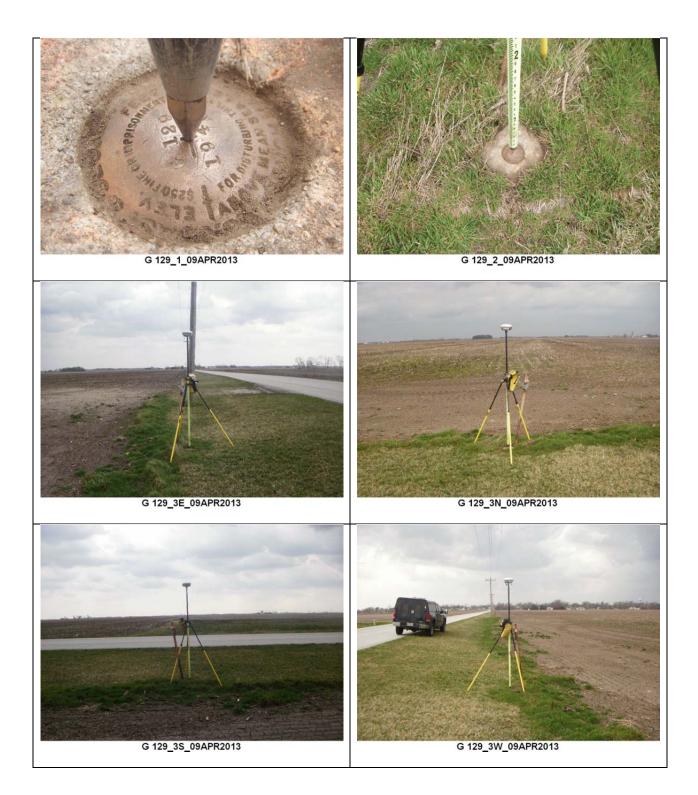
	GPS Obs	ervation Log S	heet wo	W OLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide C166 4/1-10-45.01 87-35-02.16 522.64 CBN C166 1954 45° Overcust	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73112         Survey Date: (           Welbaum           100         Session No.           9:02         End Time:           73112         RW 100           R8         Mod 3           R8         Mod 3           2.000m         to bottom of ar	<u>2</u> 9:05
	Co. RJ 13	Field Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grunner Grune	Field	

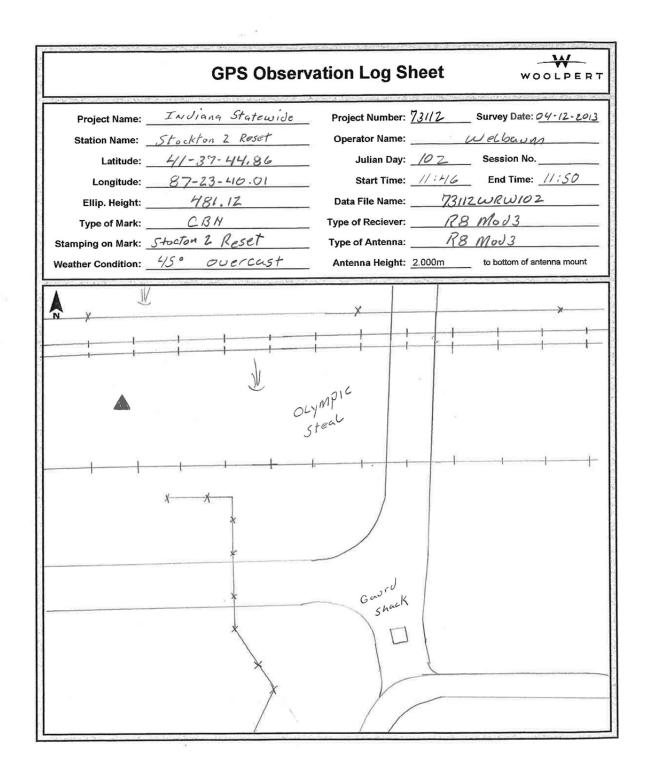


	GPS Observa	tion Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2012	Project Number: 73172 Surve	y Date: 4/10/20
Station Name:		Operator Name: Cody Scho	
Latitude:	Ny1°23'09.55"	Julian Day: Ses	sion No. MA
Longitude:	W86° 36' 31.16"	Start Time: 18.20 En	
	571,2 sft	Data File Name: 15M0410	013 CJ5
Type of Mark:	Mounted disk	Type of Reciever:	
Stamping on Mark:	b 335 1968	Type of Antenna: 40364 18	8-3
	Raining = 40°	Antenna Height:Con, to ba	ttom of antenna mount
		- GRASS - E OLD US HIGHWI - ASPWALT -	4 30
444	-BALLASI-	P335 Qpp	
E VELLOUSIC	NE GRASS/BRUSH -	HH+	



GPS Observa	tion Log Sheet	WOOLPER
Project Name: <u>JAliana Statewide 201</u> Station Name: <u>G 129</u> Latitude: <u>N 40° 59' 04.85''</u> Longitude: <u>W 86° 52' 05.23''</u> Ellip. Height: <u>561.9 564</u> Type of Mark: <u>Concrete Menument</u> Stemping on Mark: <u>6 129 1946</u> Weather Condition: <u>Cloudy</u> : <u>Endy</u> = 70°	Operator Name:       Cod         Julian Day:       099         Start Time:       14157         Data File Name:       1550         Type of Reciever:       40360         Type of Antenna:       40364	4 Schneider Session No. 1/A End Time: 15:22 040913035 (128-3 R8-3
x pwr. line x	CULTIVATED - AELD - SKASS -	G 12.9
	CG RD 506 S ES & ~ WEEDS	CULTUR PHONE







STOCKTON 2 RESET is an existing NGS Geodetic control mark located at Olympic Steel. The mark had to be accessed through the guard station by an escort. Only one picture was allowed to be taken of the mark.

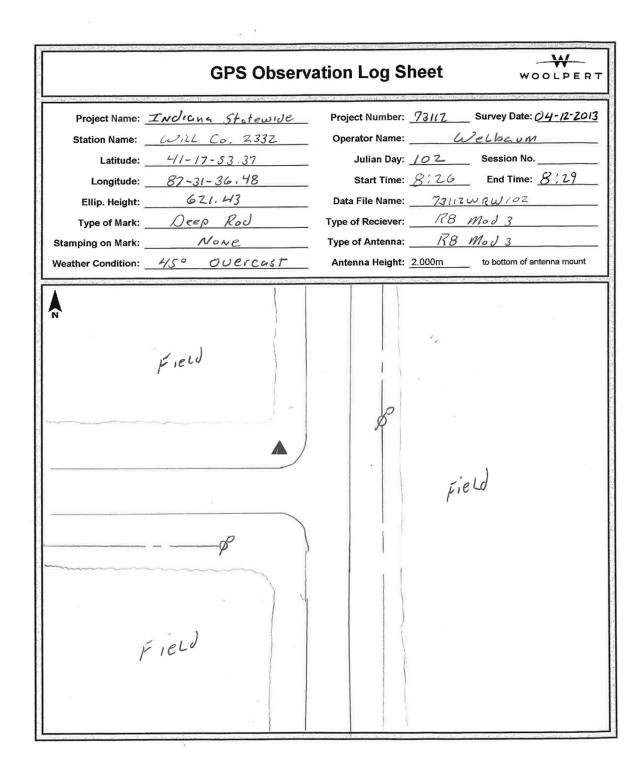
		tion Log Sheet	WOOLPE
Project Name:	Indiana Statonide 2017	Project Number: 7411	Z Survey Date: 4/1/20
	liution	Operator Name:Coo	ly Schneide
Latitude:	N 41° 26'38.25"	Julian Day:	Session No. 2/A
Longitude:	W 86°59 34.85"	Start Time: 16:3	0 End Time: 16140
Ellip. Height:	647.254	Data File Name:5	MO41113C55
Type of Mark: _	Concrete Monument	Type of Reciever: <u>#03</u>	54 RE-3
Stamping on Mark:	HUTTON 1952	Type of Antenna: #03	
Weather Condition:	Rain ~420	Antenna Height: 2.00	to battom of antenna mour
			GRASS -
			GRASS -
			US 36
			330
	-BRASS		
			ASPHALT
		ANPP	<u> </u>
<u> </u>	- Bausti-		
1			_
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AN			
TH	This		
< '	HH.		
~~	tott	BALLAST	
7	RATEROOD	TH.	
- TREES-	daur	KIKI	

		maria miliata
	3 Project Number: _	73/12_ Survey Date: 4/12/2
HUTTON		Cidy Schneide
N 41° 26 36.25"	Julian Day: _	102 Session No. 27
W 86' 59' 34.85'' 647.2 sft	Start Time: _	<u>16:27</u> End Time: <u>10:35</u> <i>ESMOY1213035</i>
Concele Monument		# 0364 R8-3
HUTION 1952		#0364 R8-3
Light Rain C 40"		2. COm to bottom of antenna moun
	Previous	



	GPS Observ	ation Log S	heet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide MEOJeL 40-45-56.30 87-12-59.68 632.18 Conc. Monument Meodel 1947 65° Overcast	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	 099 	Survey Date: <u>04.09-2013</u> <u>Bellbaum</u> Session No. <u>3</u> End Time: <u>//:44</u> <u>URW099</u> <u>Mod 3</u> to bottom of antenna mount
▲	Fic	eLd Rt Z4	*,	
P	Gra		6	* * * House







Project Name: Indiana Statewide 2013	Project Number: Survey Date: OSAPR20
Station Name: <u>A 300</u>	Operator Name: Ben Christie
Latitude: <u>40° 08' 00.24</u> " N	
Longitude: 87° 33' 29.01" W	
Ellip. Height: <u>538. 24 sf+</u>	
Type of Mark: STEEL ROD	Type of Reciever:
Stamping on Mark: <u>A 300</u> \9786	
Weather Condition: <u>55° CLEAR</u>	Antenna Height: 2.0m to bottom of antenna moun
× × × ×	GRASS
US 136	



	GPS Ob	servatio	n Log She	eet	wo	DOLPE
Project Name: _	Indiana Slatewid	2 2017 Pro	ject Number:	73112 :	Survey Date:	4/3/20
Station Name:	C 353	Ор	erator Name:	Cody S.	chae:der	. / /
Latitude:	N39°24'43,09"		Julian Day:	93	Session No.	MA
Longitude:	N 87º19' 59.37:	1)	Start Time: _/	8:35	End Time:	18:147
Ellip. Height:	450.25Ft		ta File Name:	ISMOL	103130	Τζ
Type of Mark: _	Deep'Rod	Туре	of Reciever:	#0364	R8-3	
Stamping on Mark: _	6 353 1985	Тур	e of Antenna:	#0364	R8-3	
	Clear = 450		enna Height: <u>2</u>	.00 m	to bottom of a	ntenna mour
	mees	1)			(	
N	ALT ROAD		4)			CULTAU
ASP14	ETO LOCAL BUSINE	55				- PIC
	E TO LOCAL COL		(		)	
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TREE		L K	/	)		
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20	- FIELD	11				~
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		5	GRANDE .			/
			Green /	1		
			GRA	55	\ \	
		X			/	
			CULT	WATER		
1.7	• I • •		the last said	1		

	GPS Observa	ation Log S	heet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <u>C 353</u> <u>N39° 24' 43.09"</u> W87° 19' 59.37" <u>450.4 184</u> <u>Peep Rod</u> <u>C 353 1985</u> <u>Clear = 50</u>	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody Sch 014 Sec 9:40 E 2(13094) #2113 RE- #2113 RE-	ssion No. <u>*/</u> /4 nd Time: <u>15: 28</u> 0 -2 -2
	Clear = 50°		and the second se	ottom of antenna mount
			-	
	, See Pi	regious		



	GPS Observ	vation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 D 361 39° 50' 19.01"N 87° 24' 39.36"W 546.86 5F+ STEEL ROD D 361 1986 50° CLEAR	Start Time: 1 30 Data File Name: ISM Type of Reciever: R8-3	_ Session No. <u>NA RT</u> _ End Time: <u>1136</u> _ CH0413_ BRC
N	FARM FIELD		
•	RMILLION RISE GA PARK SIGN		
	E 300 S FARM FIELD	× × ×	NB 5R 63

Project Name: Station Name:	Indiana Statewide 2013 D 361	Project Number: Operator Name:		Survey Date:	05APR 20
Latitude:	39° 50' 19.01"N	Julian Day:	095	Session No.	N/A
Longitude:	87° 24' 39.36" W	Start Time:	0911	End Time:	33
Ellip. Height:	546.75 SFt	Data File Name:	95480	950	, 1
	Stell FLOD		R 8-2		
	D 361 1986				
Weather Condition:	42° CLEAR	Antenna Height:	Ziom	to bottom of ar	ntenna moun
	PREV JKO	NOUS ETCH			



**GPS Observation Log Sheet** WOOLPERT Project Name: INDIANA STATEWIDE Project Number: 73/12 Survey Date: 03/22/13 Station Name: Josephine 2 (JA0699) operator Name: STEPHEN SCHONEGG 
 Latitude:
 38-40-54.2637z
 Julian Day:
 081
 Session No.
 BASE

 Longitude:
 086-48-33.23088
 Start Time:
 1:06:00
 End Time:
 4:18:07
 Published Stamping on Mark:Josephine21966293570812Stamping on Mark:Josephine219665710129357 Weather Condition: 40° PT Cloudy, Breezy Antenna Height: 7.062 st to bottom of antenna mount AN US 50

	GPS Observ	vation Log Sl	heet	wo	DOLPER
	Indaina Shaterinde 2013 Josephine 2 (Josephine 2_ Y312)	Project Number: Operator Name:			3/27/13
	38°40' 54.26"		086		2
	86° 48' 33.23		4:00		
Ellip. Height:	606.191 \$ 5+	Data File Name:			0
	Conc. Monument	Type of Reciever:		and the second se	
Stamping on Mark:		Type of Antenna:			
Weather Condition:	SARANY ,40'S, Calm	Antenna Height:	2.0 M	to bottom of ar	ntenna mount
	<u> </u>			19	~p
					-
	U.S. 50 >>				

	GPS Ob	oservation Log S	heet	wo	OLPERT
	INDY Statewide			Survey Date: <u>C</u> Welkaum	
	Josephine 2 38-40-54.26			Session No	
	86 - 48 - 33,23			End Time:	
	606.04			wRW 093	
	CBN			Mod 3	
Stamping on Mark:	Josephine 2 196	6 Type of Antenna:	128	Mod 3	
	35° CLEAR		2.000m	to bottom of ante	enna mount
		(°°°)		faci	I
B	Conc Qite	24			
	Rt J	50			
	2		al in the second s		
	woods				

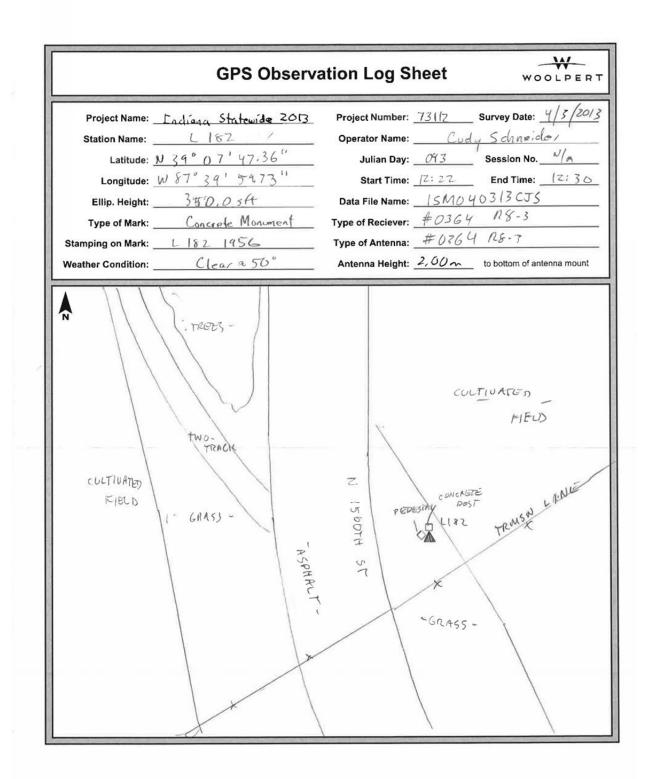




	GPS Observa	tion Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2013	Project Number: 73112 Su	Irvey Date: <u>OYAPR20</u>
Station Name:	K 71 RESET	Operator Name: Ben Christie	
Latitude:	39° 43' 22.54" N	Julian Day: <u>094</u>	Session No. <u>NA RT</u>
	87°06 20.19"W	Start Time: 1402	End Time: 1408
Ellip. Height:	628.93 sft	Data File Name: $\underline{TSM}_{0}$	40413-BRC
Type of Mark:	DISK	Type of Reciever: <u>R 8-3</u>	
	K71 RESET 1956	Type of Antenna: <u>R&amp;-3</u>	
Weather Condition:	54° PT. CLOUDY	Antenna Height: <u>2.0m</u> to	o bottom of antenna mount
CR	140 S	SR 59	

Project Name: Indaina Suatcuide 2013	Project Number: <u>73//a</u> Survey Date: <u>4//2//3</u>
Station Name: K71 Reset (K71 Reset_PTK	Operator Name: Ron Survy
Latitude: 39°43`22,54"	Julian Day: Session No
Longitude: <u>ຮ່ວຍເຊ</u>	
Ellip. Height: 528, 880 sf.	Data File Name: IND SW_044_RS
Type of Mark: Conc Man	
Stamping on Mark: K 7  Reset	
Weather Condition: 435, Sunny, Wird 5-10	Antenna Height: to bottom of antenna mou
v v	т
Field	Conc.
	A Point SR59
	1





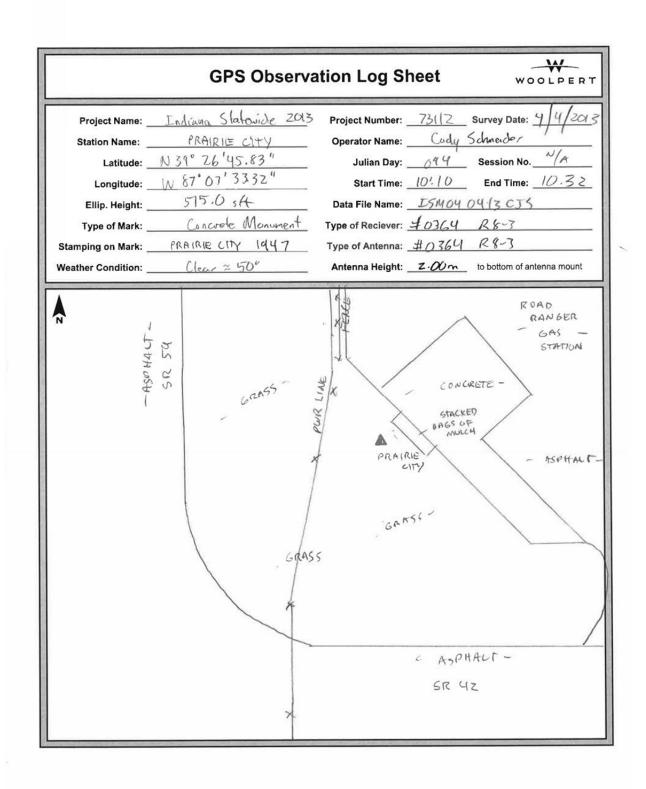


	GPS Obse	ervation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	89-13-53,88 87-02-38.26 551.44 CBN	Julian Day: <u>094</u> Start Time: <u>5:26</u> Data File Name: <u>73//20</u> Type of Reciever: <u>78//</u> Type of Antenna: <u>78//</u>	Session No. <u>5</u> End Time: <u>5:29</u> URW094 Mod 3 Mod 3
RU 1495 1495 149.	C.	RJ. 4205.	city
Guran Barrow Contraction of the second secon	ß	L'and	
	<u>у</u>	Garase	



	GPS Observat	tion Log Sheet	WOOLPER
Station Name: _ Latitude: _ Longitude: _ Ellip. Height: _ Type of Mark: _ Stamping on Mark: _	Indiana Statewide 2013 19 352 U39° 24' 44661" W87° 19' 56.43" 425.2 sft Deep Rad M 352 1985 Clear ≈45	Project Number: $75/12$ Operator Name: $C_{ody}$ Julian Day: $093$ Start Time: $18; 5\%$ Data File Name: $I5M04$ Type of Reciever: $\#0364$ Type of Antenna: $\#0364$ Antenna Height: $2,00\pi$	Schneider Session No. <u>"A</u> End Time: <u>19:072"</u> 0313CJS R&-3 R&-3
TREES-	and a state of the	Conass- conass- sign US 40	TREES
- GRA55-	n sn ye	ASIPHALT GOASS-	TREET





Project Name:	Indiana Statewhole 2013	Project Number:	73/12	Survey Date: 4/4/13
Station Name:	Prairie CHY	Operator Name:	Ron Sirey	
Latitude:	39 26 45.83	Julian Day:	094	Session No.
Longitude:	87 07 33.31		1:33	
Ellip. Height:	5 14.987 54.	Data File Name:	IND-SW.	.094_ 25
	Cons Mon		-	
-	PRAIRIE CITY		<i>e</i>	
Weather Condition:	Surry SO's Windzalm	Antenna Height:	2.0 m	to bottom of antenna mount



GPS Obse	rvation Log Sheet
Project Name:TodianaStatewide20Station Name:R54Latitude: $N$ 39°01'43,16''Longitude: $W$ $87°$ 30'30.87''Ellip. Height:370.6 sftType of Mark:ConcretePostStamping on Mark:R54'1934Weather Condition: $Clear \approx 50°$	Operator Name:Cody SchneiderJulian Day:093Session No.Start Time:13:39End Time:Data File Name:ISM0403/3CJSType of Reciever:#0364#0364R8-3
CULTIVATION - PIEUD	GRASS - TREE - GRAUEZ - #3879
- tRGBS - GRASS- BRUSH-	
- RAILIROAD - * PENGLE * - GRASS -	RAILROAD -

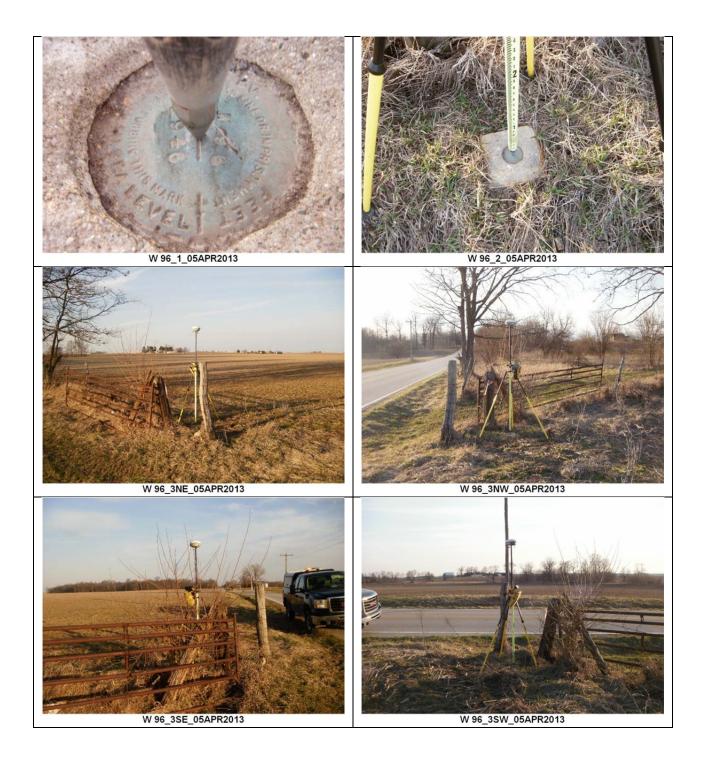
	GPS Observ	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude:	39° 01' 43.10"N 87° 30' 30,86"W	Start Time: 1755	Session No. <u> </u>
Type of Mark: Stamping on Mark:	370.58 SF+ DISK R 54 1934 43° CLEAR	Type of Reciever: <u> </u>	3
	SE PRE SK	EE VIOUS ETCH	



GPS Observ	vation Log Sheet
Project Name:Indiana Statewide 2013Station Name: $W 96$ Latitude: $N 40^{\circ}$ [3 $^{\circ}09.99''$ Longitude: $W 87^{\circ} 10' 20.61''$ Ellip. Height: $577.8sff$ Type of Mark:Concrete MonumantStamping on Mark: $W 96 1946$ Weather Condition: $Clea \approx 50^{\circ}$	Operator Name: <u>Cody</u> Schweider Julian Day: <u>095</u> Session No. <u>NA</u> Start Time: <u>19:23</u> End Time: <u>19:39</u> Data File Name: <u>LSM040513CJS</u>
A HREE BR	( EACHS
CULTIVATET)-	SR 53
	MART -

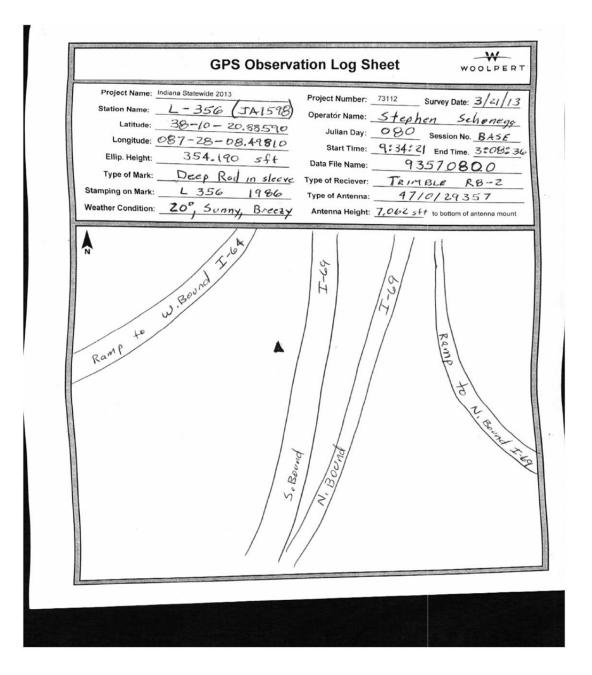
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 .W 96 N40° 13' 69,99" W87° 10' 20,01" 577,8564 Concrete Monument W 96 1946 Partly Cloudy 2 62°	Project Number: $731(2)$ Survey Date: $4/7/20$ Operator Name:Cody Schoold ~Julian Day:097Start Time: $18:00$ End Time: $18:00$ Data File Name: $18:00$ Type of Reciever: $\# 0364 \ R 8 - 3$ Type of Antenna: $\# 0364 \ R 8 - 3$ Antenna Height: $2.00 \ m$
N		
	- Sec	Previous -

		bservation		WOOLPER
Project Name:	Indiana Statevi	de 2013 Projec		Survey Date:9/8/201
Station Name:	W 46	Opera	tor Name:	4 Schneider NI.
Latitude:	NYD" 13'09.99"		ulian Day: 098	Session No. N/A
Longitude:	W 87° 10' 20.61"			End Tima: <u>16:18</u>
Ellip. Height:	577.5 sft	Data	File Name: <u>15M</u>	
	Concale N			4 R8-3
Stamping on Mark:	W 96 1941	5 Type o	f Antenna: <u># 030</u>	to bottom of antenna mount
Weather Condition:	Mostly Cloudy	Anten	na Height: <u>2.00 w</u>	to bottom of antenna mount
	- See	Previvos		



	GPS Obser	vation Log S	heet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stemping on Mark:	Endiana Statewid 2 361 N46° 08'35.58" N 87° 26' 48,00" 475.754 Disle in structure 2 361 1986 Partly Cloudy = 6!	Dperator Name: Julian Day: Start Time: Data File Name: Type of Rediever: Type of Antenna:	73172 Surve Cody So 698 Ses 1627 En 75416468-1 #6364 K8 #6364 R8 2.00m to ba	hneider sion No. <u>"/A</u> d Time: <u>1829</u> 3033 - 3
- GRAGS-		ON ^{OS'}		-60ASS -
ASPHALL -	CONCRETE	DUERPASS	US 130	n sv24ti
- 6n B. 5 5	SR 63 Saure - MSPHACT -	U.M. C.	SIR 63 NORTH	<b>A</b> (11:45.5-





Station Name:	Endamin Statewille 2013 L 356	Project Number: Operator Name:	10 100	Survey Date: <u>4/3/13</u>
Latitude:	38 0 , 20, 88	Julian Day:	093	Session No.
	87° 28' 08.41	Start Time:		End Time:
	139,319 M	Data File Name:		
	Deep Rool	Type of Reciever:		
Stamping on Mark:		Type of Antenna:		
Weather Condition:	405 , Sunny, Wind S-10	Antenna Height:	7,562 fz	to bottom of antenna mount
	Top B.	of		S.B. I - 69

	Indaina Skatewide		Survey Date: 4/3/13
	L356 (L356-105/ck)		
Latitude:	38 10 20,88		 Session No. 3
Longitude:	87 28 08.49		End Time:
	254,238 st-	Data File Name:	
Type of Mark:		Type of Reciever:	
Stamping on Mark:		Type of Antenna:	
Weather Condition:	Cloudy 40's, Wind 0-5	Antenna Height:	to bottom of antenna mour
			€
			* #
			* *





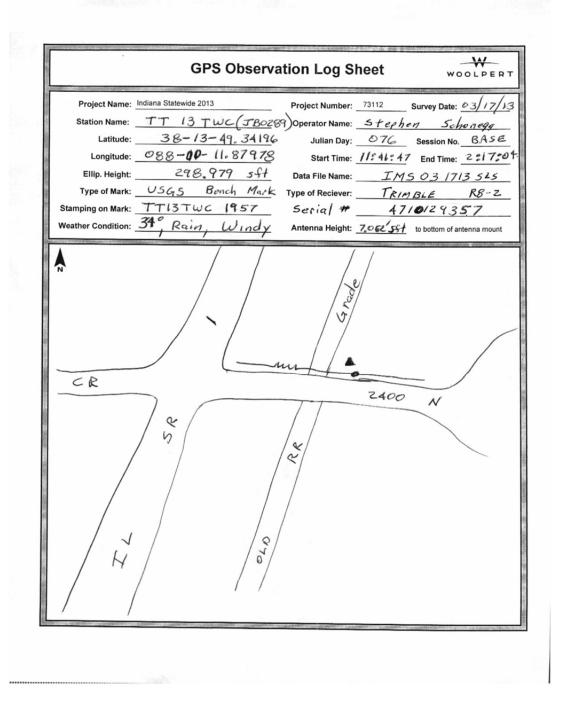
Project Name:	Indaina Statewide 2013	Project Number:	
5	T 329 (T329-5.329)	Operator Name:	
-	37 57 30.93		<u>087</u> Session No. 1
	86° 46' 20.45"		9:07 End Time: 9:10
2	302.174 str		INDYSTATEWIDE_RS
	Dist in Drill Hole		Trimble R.8 model 3
Stamping on Mark: Neather Condition:	30's SAMAY Calm		Trimble Informal 2.0 m to bottom of antenna mount
Railroad Tracks RxR Bed -> Ruall	RXR Book	Top of Lever Top of Lever Top of Lever	



GPS Observation Log Sheet
Project Name:Indiana Statewide 2013Project Number:73112Survey Date: $o3/16/13$ Station Name:Y $-312 (JA\phi 279)$ Operator Name:StephenSchon eggLatitude: $38-20-38.43334$ Julian Day:O75Session No.STATICELongitude: $086-24-45.6307/$ Start Time: $12:13:44$ End Time: $1:00:34$ Ellip. Height: $471-304$ sfitData File Name: $9959$ $0750$ Type of Mark: $471.304$ $sfitData File Name:99590750TRIMBLER8-2Stamping on Mark:Y 3/21965se_1a/447/2.122959Weather Condition:62°, PT Cloudy, Light Wal Antenna Height:6.562 .567 to bottom of antenna mount$
Temple Rd
Train Passed from 12:52:15 to 12:53:45 Y 312
Gravel PIT

	Indiana Statewide 2			Survey Date: 30113
Station Name:	38 20'38,43"		Name: Ron Siney	Session No.
Latitude:	86 24 45.63			End Time:
	143.781 M		Name: 8365086	
	Brass Disk in Drill			É model 2
Stamping on Mark:			tenna: Teimble	
	40's Sunny Calm			to bottom of antenna mount
	Railroad Bed		H H cadwall	
	Roul	road Tracks		
		Spar Tracks	Railroad	Bid





Project Name: 🔟	daing Statewide 2013	Project Number: 73	Survey Date: 4/3/13
Station Name:	T 13 TWC (TT 13 TWC-L356/CK	Operator Name:R	Sinely
	\$ 13 49,34	Julian Day: <u>୦</u> ୩.3	Session No. 🤇
Longitude:	8 00' 11,82''	Start Time: 3:3	
Ellip. Height:	92,975sfi	Data File Name: TNI	2_SW_093_RS
Type of Mark: <u>(</u>	nc. Mon	Type of Reciever: Trim	
Stamping on Mark:		Type of Antenna:	ble Internal
Weather Condition: <u>5</u> ,	any 405 Wind 5-10	Antenna Height: 20	to bottom of antenna moun
		×	

	Indania Statewide 2013 TT 13 TWE (TT15 TWE_105/CK)	Project Number: Operator Name:			4/3/13
	38"13' 49,34"		093		1
	88° 00' 11.88"		6:29		6:32
Ellip. Height:		Data File Name:			
	Gana. Mon	Type of Reciever:	Trimble PI	2 model 3	
Stamping on Mark:	TT 13 TWC	Type of Antenna:	Trimble	Internal	
Weather Condition:	Partly Cloudy, 40	Antenna Height:	20 M	to bottom of an	ntenna mount
	a K				





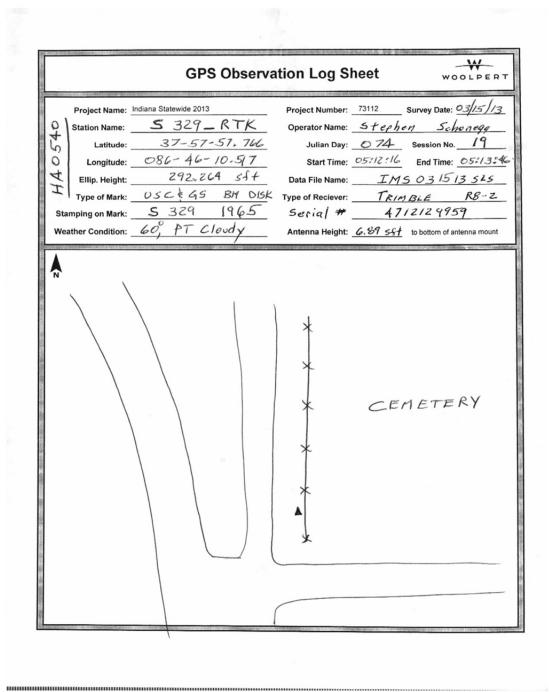
	GPS Observa	tion Log Sheet	WOOLPER
Station Name: 5 Pog Latitude: - Longitude: 02 Ellip. Height: - Type of Mark: - Stamping on Mark: -	NDIANA STATE WIDE TINSON 2 (JA2135) 38-14-54. 24211 36-57-05. 11574 421. 968 384 VGS A DISK STINSON 2 D, PT Sunny,	Operator Name: $5\tau$ Julian Day: $08$ Start Time: $9:40$ Data File Name: Type of Reclever: 5ercal	12         urvey Date:         0.3/22/1.           EPHEN         SCHONEGG           1         Session No.         BASE           :15         End Time:         11:4           9.3.570811         Image: Compare the second seco
A R/	ĺw		
T/w	"A '		
$\langle$	GRAS <b>S</b>		
AIRPLANE			
A IRPLANE PARKING			

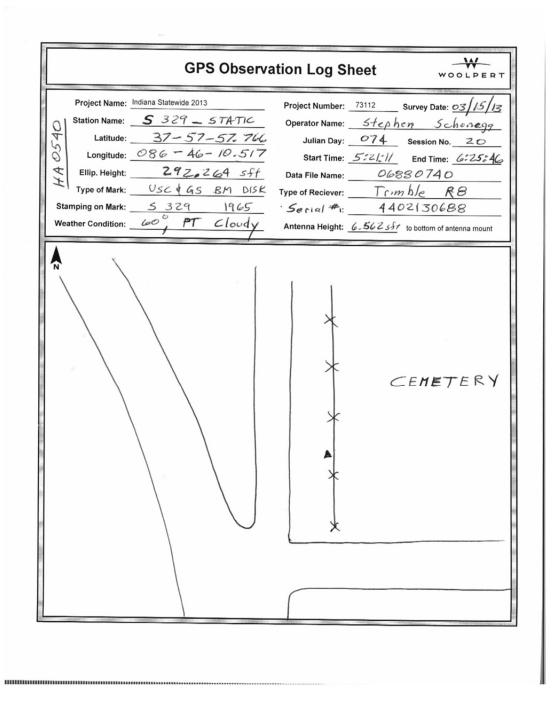
Project Name:	Indaina Statewish 2013	Project Number:	13113	Survey Date: 3/27/13
Station Name:	Stinson 2 (Stinson 2 - Y 312)	Operator Name:	Ros Sine	/
Latitude:	38° 14' 54.24"	Julian Day:	080	Session No4
Longitude:	86"57 1.50"	Start Time:	5:45	End Time: 5:48
Ellip. Height:	421.966 sft	Data File Name:	INDY STA	TEWIDE
Type of Mark:	Conc. Monument	Type of Reciever:	Tripple R	2 model 3
Stamping on Mark:		Type of Antenna:	Trimble J	Entrunal
Weather Condition:	40's , Shnoy , Wind 5-10			
Ņ		Antenna Height:	2.0 m	_ to bottom of antenna mour
		Antenna Height:	<u>2,0 m</u>	_ to bottom of antenna mour
		Antenna Height:	2.0 m	to bottom of antenna mour
		Antenna Height:	<u>2,0 m</u>	_ to bottom of antenna mour

	Indaine Statewide 2013			Survey Date: 3/28//3
	Strington 2		1	
Latitude:	38 14 54.24		087	
	86° 57'05, 11		00252070	
	160.7 M			
-	CONC. MON			
-	Stinson 2			to bottom of antenna mount
Weather Condition:	40's, Sunny, Calm	Antenna Height:	11 ( ) ( )	to pottom of antenna mount
	C Grass	$\bigtriangleup$		To by
	Taxi			
			/	
	CGRASS D			Xa Paris









GPS Observat	ion Log Sheet
· ·	Project Number: 73112 Survey Date: $3/22/13$ Operator Name: $5+ephen$ Schonegg Julian Day: $001$ Session No. $BASE$ Start Time: $7:43:19$ End Time: Data File Name: $93570810$ Type of Reciever: $Tcim b/e$ $R8-2$ Type of Antenna: $4710129357$ Antenna Height: $7.062.5ft$ to bottom of antenna mount
R R C	Cemetery X Winkelsend ST

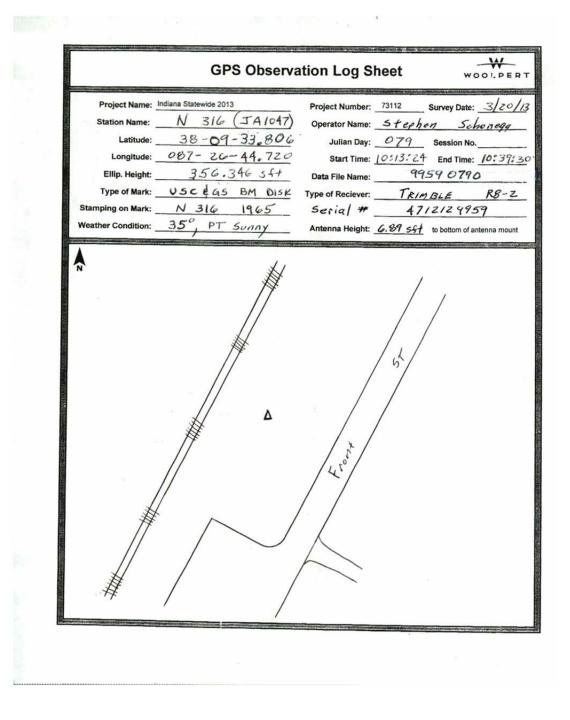
Project Name: Indiana Statewale 2015 Station Name: 5 3 29	
Latitude: 37 57 57.68	Julian Day: Session No
Longitude: 8 6 46 10,54	Start Time: End Time:
Ellip. Height: 124.631 m	
Type of Mark: Conc. Mon	
Stamping on Mark: <u>5327</u> Weather Condition: <u>403</u> Servey Color	
enertsry Service Drive Generalis Main St (SR 66)	Winkefreid St.

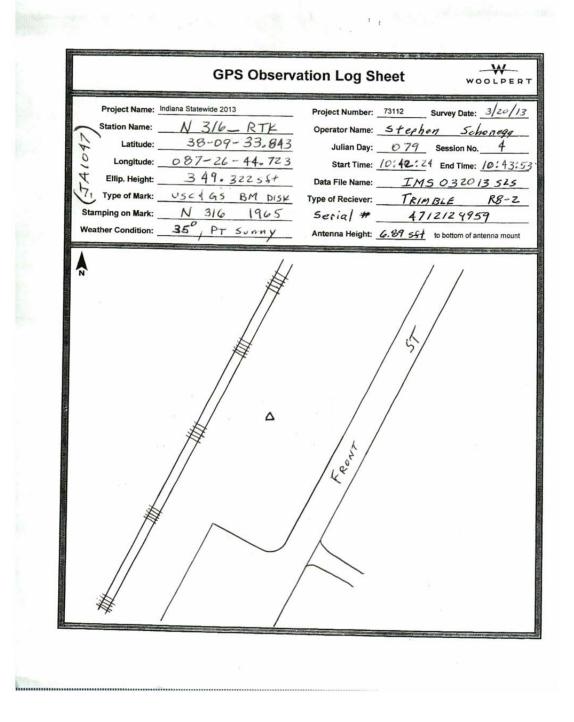
Project Name:	Indavia Statewi	de 2013	Project Number:	73//a	Survey Date:	3/28/13
Station Name:	5 329 (5 329	STIN2)	Operator Name:	Ron	Diney	
Latitude:	37 57 57,68		Julian Day: _	087	Session No.	4
Longitude:	86°46' 10.54"		Start Time:	12:33	End Time:	12:36
Ellip. Height: _	304.196 551		Data File Name:			
Type of Mark: _	Con, Mon.		Type of Reciever:			
Stamping on Mark: _	the second se		Type of Antenna:		Enternal	
Weather Condition:	Shany 40's Calm		Antenna Height: _	2.0 m	to bottom of an	tenna mount



GPS Observ	vation Log Sheet
Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: C3APR 201
Station Name: Q 314	Operator Name: Ben Christie
Latitude: $38^{\circ}41' 02.76''N$	Julian Day: $093$ Session No. $N/A$ RT
Longitude: <u>87° 27′ 22.31″ W</u>	Start Time: 0908 End Time: 0914
Ellip. Height: $424,5554$	Data File Name: $ISM = OHO313 = BRC$
Type of Mark:	Type of Reciever: <u>R8-3</u>
Stamping on Mark: <u>Q 314 1965</u>	Type of Antenna: <u>R8-3</u>
Weather Condition: 30° CLEAR	Antenna Height: 2.0 m to bottom of antenna mount
E OLD HWY 50	▲ GRASS
	FARM







	Indianina Statestide 2013	Project Number:		
	N 316 (N 316-1105/CK)			
	380933,78		093	
	87 20 44,67		8:46	78 82
	346.025 58+	Data File Name:		
	Conc. Mon.			
Stamping on Mark:		Type of Antenna:		
Weather Condition:	Cloudy , 40 , Calm	Antenna Height:	0.0 M	to bottom of antenna mount
		2		

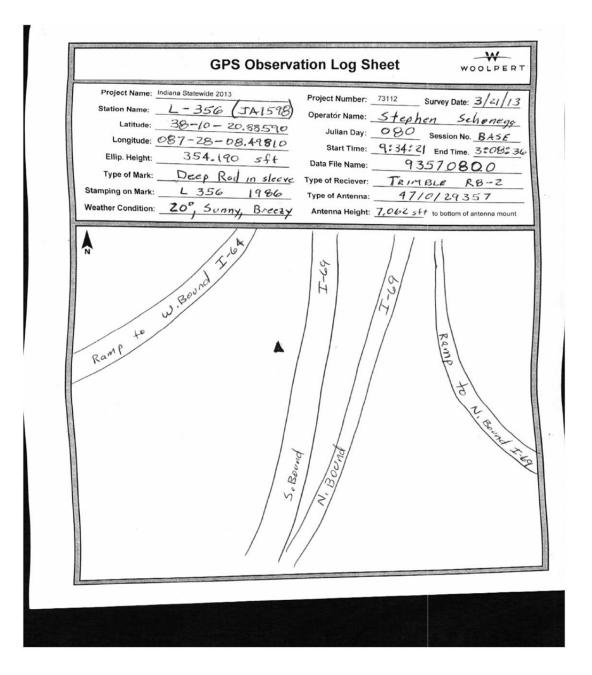
	Project Number: <u>731/2</u> Survey Date: <u>41/31/3</u>
Station Name: <u>N 316 (N 316_L 356/cK)</u>	
Latitude: 38° 49' 33,78'' Longitude: 87° 26' 44,67 ''	Julian Day: <u>の</u> 위3 Session No. 」 Start Time: <u>川パイイ</u> End Time: <u>川パイ</u>
Longitude:	Data File Name: $IMD_S W_O^3 R^{\delta}$
Type of Mark: Conc Mark.	Type of Reciever: Trimble 28 model 3
Stamping on Mark: N 3 16	Type of Antenna: Trimble Internal
Weather Condition: 405 Scony Calm	
Astron Pastano	From St





	Endains Statewide 2013	Project Number: 73/12	Survey Date: 3/27/13
	Lost (Lost - Y 3/2)	Operator Name:	n Sirey
	: 38° 37' 27.01"	Julian Day:୦ ହଉ	Session No
	: 86° 13' 57,81"	Start Time: 2:58	
	7 31.985 Str	Data File Name: IND	
	: Conc. Mon		
Stamping on Mark		a series and a series of the s	
Neather Condition	40% Sunny Calm	Antenna Height:,	to bottom of antenna mount
	Grass D D D Track	broke	× × × ×





	Indaina Skatewide		Survey Date: 4/3/13
	L356 (L356-105/ck)		
Latitude:	38 10 20,88		 Session No. 3
Longitude:	87 28 08.49		End Time:
	254,238 st-	Data File Name:	
Type of Mark:		Type of Reciever:	
Stamping on Mark:		Type of Antenna:	
Weather Condition:	Cloudy 40's, Wind 0-5	Antenna Height:	to bottom of antenna mour
			€
			* #
			* *

Station Name:	Endamin Statewille 2013 L 356	Project Number: Operator Name:	12 140	Survey Date: <u>4/3/13</u>
Latitude:	38 0 , 20, 88	Julian Day:	093	Session No.
	87° 28' 08.41	Start Time:		End Time:
	139,319 M	Data File Name:		
	Deep Rool	Type of Reciever:		
Stamping on Mark:		Type of Antenna:		
Weather Condition:	405 , Sunny, Wind S-10	Antenna Height:	7,562 fz	to bottom of antenna mount
	Top B.	of		S.B. I - 69





	GPS Observa	tion Log Sheet	WOOLPERT
	Indiana Statewide 2013		Survey Date: 03/18/13
Station Name:	HONEY (HA0568)	Operator Name: <u>Stephe</u>	n Schonegg
Latitude:	37-56-26-87993	Julian Day: 077	Session No. STATIC
	087-02-26-57643		
	289.986 sft		
Type of Mark:	USCEGS A DISK	Type of Reciever: TRIN	IBLE RB-Z
	HONEY 1946		
Weather Condition:	50° Cloudy, Breezy	Antenna Height: 6.89 55+	to bottom of antenna mount
	Co Rd 75	o ^r o	~3

	GPS Observ	ation Log Sheet
Station Name:       3       4       5       6       7       8       8       8       9       9       10       10       10       10       11       11       11       12       12       13       14       15       15       16       16       17       17       10       10       10       11       12       12       12       12       13       14       14       15       16       16       17       16       16       16       16       17       16       16       16       17       16       16       16       16       16       16       16       16       16       16       16       16       16       16 <td>37-56-26.928 087-02-26.603 294.353 sft USC &amp; GS D DISK HONEY 1946</td> <td>Project Number:73112Survey Date:$0.3/18/1.3$Operator Name:$5 + e_P h e_H$$5 e h o negg$Julian Day:$0.77$Session No.$16$Start Time:$3.45.53$End Time:$3.47.57$Data File Name:$IM 5 0 3 18 13 545$Type of Reciever:$T_R IM BLE$$RB-2$$5eria/#$$4712124959$Antenna Height:$6.89 551$to bottom of antenna mount</td>	37-56-26.928 087-02-26.603 294.353 sft USC & GS D DISK HONEY 1946	Project Number:73112Survey Date: $0.3/18/1.3$ Operator Name: $5 + e_P h e_H$ $5 e h o negg$ Julian Day: $0.77$ Session No. $16$ Start Time: $3.45.53$ End Time: $3.47.57$ Data File Name: $IM 5 0 3 18 13 545$ Type of Reciever: $T_R IM BLE$ $RB-2$ $5eria/#$ $4712124959$ Antenna Height: $6.89 551$ to bottom of antenna mount
	Co Rd 75 E	WOODS NO

.....

	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013Project Number:7312Survey Date: $03/21/13$ HONEY(HA0568)Operator Name: $5tephen$ $5chonegg$ $37-56-26.87997$ Julian Day:080Session No. $BA5E$ $087-02-26.57730$ Start Time: $4153:45$ End Time: $6:24:40$ $290.090$ $5ft$ Data File Name: $.93570801$ USCEGSDISKType of Reciever: $TRIMBLE$ $RB-Z$ HONEY1946Serial # $4710129357$ $30^{\circ}, PfCloudy, Breezy$ Antenna Height: $7.06255t$ to bottom of antenna mount
<b>▲</b>	LA L

Project Name:	Indaina Statewide 2013	Project Number:	73/12	Survey Date: 3/28/13
Station Name:	Honey (Honey-Stinz)	Operator Name:	Ron Siney	
Latitude:	37 56' 26,87"	Julian Day:	087	Session No
Longitude:	87 02' 26.57"	Start Time:	1:10	End Time: 1:13
Ellip. Height:	290.190 54	Data File Name:	TNDY ST AT	EWIDE_RS
Type of Mark:	Cane. Mon	Type of Reciever:	Trimble R	il model 3
Stamping on Mark:		Type of Antenna:		
Weather Condition:	Shony, 405 Calm	Antenna Height:	2.0 M	to bottom of antenna moun



Station Name: Latitude: Longitude: Ellip. Height:	diana Statewide 2013Project Number: $73112$ Survey Date: $03/19/19$ HARM (AF8495)Operator Name: $5 + ephen$ Schonegg38-03-43.979Julian Day: $078$ Session No. $5TAT$ 087-57-58.922Start Time: $9:35:449$ End Time: $9:57.078$ 271.56055+Data File Name: $97590780$ Deep RodType of Reciever: $TRIMBLE$ $R8-2$ 5erial # $4712129959$ 30°, SUA:nyAntenna Height: $6:87 564$ to bottom of antenna mount
To Boat Ran	togos travel parking

Station Name: $HARM_RTK$ Latitude: $38 - 03 - 43.998$ Longitude: $087 - 57 - 58.906$ Ellip. Height: $275.636sft$ Type of Mark: $Deep Rod$ Start Time: $10.031/90$ End Time: $10.031/913515$ Type of Mark: $Deep Rod$ Start Time: $TRIMBLE R8-2$ Stamping on Mark: $Sefial # 47.12.129959$ Meather Condition: $33^{\circ}$ Surny Antenna Height: $6.2915ft$ to bottom of arterna mount R R R R R R R R	Project Name: In			Project Number: 73112 Sur	
Longitude: $087-57-58.906$ Start Time: $10:03:49$ End Time: $10:05:4$ Ellip. Height: $275.636s5+$ Data File Name: $IMS 031913s2s$ Type of Mark: $Deep Rod$ Type of Reciever: $TRIMBLE RS-2$ Stamping on Mark: $337, 5000$ Antenna Height: $6:87s6+$ to bottom of antenna mour Neather Condition: $337, 5000$ Antenna Height: $6:87s6+$ to bottom of antenna mour TE Boot Ramp $R$ $G_{2}$ $R$ $G_{3}$	Station Name:	<u>17 R</u> 38	-03-43.99	0	
Ellip. Height: $275.636s$+$ Type of Mark: $Deep Rod$ Stamping on Mark: $Serial # 4712129959$ Weather Condition: $33^{\circ}$ Suriny Antenna Height: $6.89 \text{ set}$ to bottom of antenna mour N N To Boof Romp Gravel Gravel					
Type of Mark: Stamping on Mark: Weather Condition: 33, 50, 10 Y Antenna Height: 6.87 554 to bottom of antenna mount N To Boot Ramp Gravel Gravel	Ellip. Height:	27	5.63655+	Data File Name: TMS	031913 525
To Boat Romp Gravel	Type of Mark:	D	erp Rod	Type of Reciever:	
To Boat Romp Gravel	Stamping on Mark:			Serial # 4712	
To Boat Ramp	Weather Condition:	33,	SUMAY	Antenna Height: 6.89 554 to	bottom of antenna mou
	To Boat Rom,		6	neavel Parkin	9

Station Name	Harm (Harm_165/66)	Project Number: 72 Ka Survey Date: 4/3//3 Operator Name: Ron Survey
	: 30°03' 43.95'	Julian Day: 093 Session No. 2
	8757 58.89	Start Time: 7/28 End Time: 7/31
	277.798 56-	Data File Name: IND_SW_093_RS
	: Deep Root	Type of Reciever: Trimble R8 model 3
Stamping on Mark	: p!A	Type of Antenna: Temble Internal
	405, Partly Cloudy, Wird 8-5	Antenna Height: to bottom of antenna mo

Station Name:       Harn_L3S6[Ck       Operator Name:       Ro Surg/         Latitude:       38 0 2 43.35       Julian Day:       09.3       Session No. 4         Longitude:       27 5 7 5 8.64       Stat Time:       241       End Time:       244         Ellip. Heigh:       277.876 85       Type of Mark:       Data File Name:       Type of Science       Type of Antenna:       Type of antenna mount         Weather Condition:       Gos Senay Died 5 0       Antenna Height:       20 A       to bottom of antenna mount	-	Indaina Statewide	14		Survey Date: 4/3/13
Longitude:       27 57 58,21       Start Time:       2:41       End Time:       2:44         Ellip. Height:       277, 276 sft       Data File Name:       IND_SU-093_RS         Type of Mark:       Deep Reck       Type of Reciever:       Trinble R8 model 3         Stamping on Mark:       Dif       Type of Antenna:       Trinble I arenal					
Ellip. Height:     277. 896 sft     Data File Name:     IND_SW-093_RS       Type of Mark:     Deep Red     Type of Reciever:     Trinble R8 model 3       Stamping on Mark:     W/k     Type of Antenna:     Trinble Tatestal	Longitude:	87'57'58,89			
Type of Mark:     Deep Roof     Type of Reciever:     Trimble R8 model 3       Stamping on Mark:     11k     Type of Antenna:     Trimble Tatestal					
Stamping on Mark: <u>plk</u> Type of Antenna: <u>Trikb</u> Tayerial					
			10		
	2				





	Serial # $4712124959$ Antenna Height: $6.89551$ to bottom of antenna mou
Pollack Gravel Parking Lot	Ave

GPS OI	bservation Log She	eet wo	OLPERT
Project Name: Indexing Start white 2013 Station Name: B 376 (B376-£356/ck		Survey Date:	4/3/13
Latitude: 37°56 52,49"		গিব Session No	2
Longitude: ৪০ঁ ৫৬ঁ শা, পেঁ		End Time:	12:31
Ellip. Height:			
Type of Mark: Conc. Mon.			
Stamping on Mark: B 329	Type of Antenna:		
Weather Condition: 40's Swany Wind 5-10	Antenna Height: _2	b.o m to bottom of ant	enna mount
PP	A P4		Von Aut
bravel Parking		16.	





## VOLUME 1 - SECTION 5: EXISTING NGS DATA SHEETS

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

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 LB1326 DESIGNATION - D 124 LB1326 PID - LB1326 LB1326 STATE/COUNTY- IN/BENTON LB1326 COUNTRY - US LB1326 USGS QUAD - WADENA (1980) LB1326 LB1326 *CURRENT SURVEY CONTROL LB1326 LB1326* NAD 83(2011) POSITION- 40 38 06.38084(N) 087 15 59.25056(W) ADJUSTED LB1326* NAD 83(2011) ELLIP HT- 213.654 (meters) (06/27/12) ADJUSTED LB1326* NAD 83(2011) EPOCH - 2010.00 LB1326* NAVD 88 ORTHO HEIGHT - 247.086 (meters) 810.65 (feet) ADJUSTED LB1326 COMP LB1326 NAD 83(2011) X - 231,170.713 (meters) LB1326 NAD 83(2011) Y - -4,841,724.637 (meters) COMP LB1326 NAD 83(2011) Z - 4,131,895.823 (meters) COMP -2.03 (seconds) LB1326 LAPLACE CORR -DEFLEC12A LB1326 GEOID HEIGHT --33.43 (meters) GEOID12A LB1326 DYNAMIC HEIGHT -246.967 (meters) 810.26 (feet) COMP LB1326 MODELED GRAVITY - 980,135.8 (mgal) NAVD 88 LB1326 LB1326 VERT ORDER - SECOND CLASS 0 LB1326 LB1326 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB1326 Type LB1326 -----LB1326 NETWORK 0.88 1.92 LB1326 -----LB1326 MEDIAN LOCAL ACCURACY AND DIST (011 points) 1.00 2.14 38.51 LB1326 -----LB1326 NOTE: Click here for information on individual local accuracy LB1326 values and other accuracy information. LB1326 LB1326 LB1326. The horizontal coordinates were established by GPS observations LB1326.and adjusted by the National Geodetic Survey in June 2012. LB1326 LB1326.NAD 83(2011) refers to NAD 83 coordinates where the reference LB1326.frame has been affixed to the stable North American tectonic plate. See LB1326.NA2011 for more information. for more information. LB1326 LB1326. The horizontal coordinates are valid at the epoch date displayed above LB1326.which is a decimal equivalence of Year/Month/Day. LB1326 LB1326. The orthometric height was determined by differential leveling and LB1326.adjusted by the NATIONAL GEODETIC SURVEY LB1326.in June 1991. LB1326 LB1326. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB1326 LB1326.The Laplace correction was computed from DEFLEC12A derived deflections. LB1326

LB1326. The ellipsoidal height was determined by GPS observations LB1326.and is referenced to NAD 83. LB1326 LB1326. The dynamic height is computed by dividing the NAVD 88 LB1326.geopotential number by the normal gravity value computed on the LB1326.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB1326.degrees latitude (g = 980.6199 gals.). LB1326 LB1326. The modeled gravity was interpolated from observed gravity values. LB1326 LB1326. The following values were computed from the NAD 83(2011) position. LB1326 LB1326: North Units Scale Factor Converg. East LB1326;SPC IN W - 598,054.027 884,508.587 MT 0.99996962 -0 07 09.3 - 1,962,115.59 2,901,925.26 sFT 0.99996962 -0 07 09.3 LB1326;SPC IN W - 4,498,285.750 477,467.290 MT 0.99960625 -0 10 24.7 LB1326;UTM 16 LB1326 LB1326! - Elev Factor x Scale Factor = Combined Factor LB1326!SPC IN W - 0.99996649 x 0.99996962 = 0.99993611  $- 0.99996649 \times 0.99960625 = 0.99957275$ LB1326!UTM 16 LB1326 LB1326 SUPERSEDED SURVEY CONTROL I B1326 LB1326 NAD 83(2007)- 40 38 06.38102(N) 087 15 59.25160(W) AD( ) 0 LB1326 ELLIP H (02/10/07) 213.681 (m) GP( ) LB1326 NAD 83(1997)- 40 38 06.38088(N) 087 15 59.25142(W) AD( ) B LB1326 ELLIP H (03/12/99) 213.682 (m) GP( ) 2 1 LB1326 NAVD 88 (03/12/99) 247.09 (m) 810.7 (f) LEVELING 3 LB1326 NGVD 29 (??/??/92) 247.144 (m) 810.84 (f) ADJ UNCH 20 LB1326 LB1326.Superseded values are not recommended for survey control. LB1326 LB1326.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB1326.See file dsdata.txt to determine how the superseded data were derived. LB1326 LB1326_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDK7746798285(NAD 83) LB1326 LB1326 MARKER: DB = BENCH MARK DISK LB1326_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT LB1326 SP SET: SET IN TOP OF CONCRETE MONUMENT LB1326_STAMPING: D 124 1946 LB1326 MARK LOGO: CGS LB1326_MAGNETIC: O = OTHER; SEE DESCRIPTION LB1326_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO LB1326+STABILITY: SURFACE MOTION LB1326_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB1326+SATELLITE: SATELLITE OBSERVATIONS - April 21, 2008 LB1326 LB1326 HISTORY - Date Condition Report By LB1326 HISTORY - 1946 MONUMENTED CGS LB1326 HISTORY - 19980724 GOOD WOOLPT - 20080421 GOOD LB1326 HISTORY FARNGP LB1326 LB1326 STATION DESCRIPTION

## LB1326

LB1326'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 LB1326'5.2 MI NE FROM FOWLER.

LB1326'ABOUT 3.15 MILES SOUTHEAST AND EAST ALONG STATE HIGHWAY 18 FROM LB1326'THE COUNTY COURT HOUSE AT FOWLER, THENCE 2.0 MILES NORTH ALONG LB1326'A GRAVEL ROAD, IN THE NORTHEAST QUARTER OF AN INTERSECTION WITH LB1326'AN EAST-WEST ROAD, 124 FEET SOUTHWEST OF THE SOUTHWEST CORNER LB1326'OF THE FRANK WINNER FARM HOUSE, 32 FEET EAST OF THE CENTER LINE LB1326'OF THE NORTH-SOUTH ROAD, 31 FEET NORTH OF THE CENTER LINE OF THE LB1326'EAST WEST ROAD, 7.5 FEET WEST OF A CORNER FENCE POST, 2 FEET NORTH LB1326'REA POWER POLE NUMBER F 120 AND IN LINE WITH THE POLES, 2 FEET LB1326'SOUTH OF A WHITE WOODEN WITNESS POST AND ABOUT LEVEL WITH THE LB1326'CENTER OF THE INTERSECTION. A STANDARD DISK, STAMPED D 124 LB1326'1946 AND SET IN THE TOP OF A CONCRETE POST PROJECTING 6 INCHES LB1326'ABOVE GROUND.

LB1326 LB1326

STATION RECOVERY (1998)

LB1326

LB1326'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (JCB)

LB1326'DESCRIBED BY WOOLPERT LLP 1998 (JCB). STATION IS 5.2 MI (8.4 KM) LB1326'NORTHEAST OF FOWLER. TO REACH THE STATION FROM THE INTERSECTION OF LB1326'STATE ROUTE 18 AND STATE ROUTE 55, PROCEED APPROXIMATELY 3.2 MI (5.1 LB1326'KM) SOUTH AND EAST ALONG STATE ROUTE 18 TO THE INTERSECTION OF STATE LB1326'ROUTE 18 AND COUNTY ROAD 300 E. TURN RIGHT AND PROCEED 2.0 MI (3.2 LB1326'KM) NORTH ALONG COUNTY ROAD 300 E TO THE INTERSECTION OF COUNTY ROAD LB1326'300 E AND COUNTY ROAD 200 NORTH. THE STATION IS IN THE NORTHEAST LB1326'QUADRANT OF THE INTERSECTION. THE STATION IS A STANDARD DISK SET IN A LB1326'CONCRETE MONUMENT AND IS STAMPED--D 124 1946--. THE STATION IS 9.2 M LB1326'(30.2 FT) EAST OF THE CENTERLINE OF COUNTY ROAD 300 EAST, 8.7 M (28.5 LB1326'FT) NORTH OF THE CENTERLINE OF COUNTY ROAD 200 NORTH, 17.4 M (57.1 FT) LB1326'NORTH OF A UTILITY POLE LOCATED ON THE SOUTH SIDE OF COUNTY ROAD 200 LB1326'NORTH, AND 1.4 M (4.6 FT) SOUTHEAST OF A TELEPHONE PEDESTAL.

LB1326 LB1326

STATION RECOVERY (2008)

LB1326

LB1326'RECOVERY NOTE BY FARNSWORTH GROUP 2008 (KDV) LB1326'SATELLITE OBERVATION ON MAY 2 2008 1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME0558 ********* ME0558 CBN - This is a Cooperative Base Network Control Station. ME0558 DESIGNATION - G 335 ME0558 PID - ME0558 ME0558 STATE/COUNTY- IN/LA PORTE ME0558 COUNTRY - US ME0558 USGS QUAD - HANNA (1958) ME0558 ME0558 *CURRENT SURVEY CONTROL ME0558 ME0558* NAD 83(2011) POSITION- 41 25 31.72371(N) 086 52 19.41610(W) ADJUSTED ME0558* NAD 83(2011) ELLIP HT- 188.900 (meters) (06/27/12) ADJUSTED ME0558* NAD 83(2011) EPOCH - 2010.00 ME0558* NAVD 88 ORTHO HEIGHT - 222.791 (meters) 730.94 (feet) ADJUSTED ME0558 ME0558 NAD 83(2011) X - 261,348.049 (meters) COMP ME0558 NAD 83(2011) Y - -4,782,464.237 (meters) COMP ME0558 NAD 83(2011) Z - 4,198,094.919 (meters) COMP ME0558 LAPLACE CORR --0.77 (seconds) DEFLEC12A ME0558 GEOID HEIGHT --33.88 (meters) GEOID12A ME0558 DYNAMIC HEIGHT -222.701 (meters) 730.64 (feet) COMP ME0558 MODELED GRAVITY - 980,210.9 (mgal) NAVD 88 ME0558 ME0558 VERT ORDER - FIRST CLASS I ME0558 ME0558 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME0558 Type Horiz Ellip Dist(km) ME0558 -----ME0558 NETWORK 0.43 0.80 ME0558 -----ME0558 MEDIAN LOCAL ACCURACY AND DIST (023 points) 0.69 1.49 56.90 ME0558 -----ME0558 NOTE: Click here for information on individual local accuracy ME0558 values and other accuracy information. ME0558 ME0558 ME0558. The horizontal coordinates were established by GPS observations ME0558.and adjusted by the National Geodetic Survey in June 2012. ME0558 ME0558.NAD 83(2011) refers to NAD 83 coordinates where the reference ME0558.frame has been affixed to the stable North American tectonic plate. See ME0558.NA2011 for more information. for more information. ME0558 ME0558. The horizontal coordinates are valid at the epoch date displayed above ME0558.which is a decimal equivalence of Year/Month/Day. ME0558 ME0558. The orthometric height was determined by differential leveling and ME0558.adjusted by the NATIONAL GEODETIC SURVEY ME0558.in June 1991. ME0558 ME0558. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME0558 ME0558. The Laplace correction was computed from DEFLEC12A derived deflections.

ME0558 ME0558. The ellipsoidal height was determined by GPS observations ME0558 and is referenced to NAD 83. ME0558 ME0558. The dynamic height is computed by dividing the NAVD 88 ME0558.geopotential number by the normal gravity value computed on the ME0558.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME0558.degrees latitude (g = 980.6199 gals.). ME0558 ME0558. The modeled gravity was interpolated from observed gravity values. ME0558 ME0558. The following values were computed from the NAD 83(2011) position. ME0558 ME0558; North East Units Scale Factor Converg. ME0558;SPC IN W - 685,831.000 917,660.136 MT 0.99997050 +0.08 23.2 ME0558;SPC IN W - 2,250,097.21 3,010,689.96 sFT 0.99997050 +0 08 23.2 - 4,585,998.893 510,690.458 MT 0.99960141 +0 05 04.7 ME0558;UTM 16 ME0558 ME0558! - Elev Factor x Scale Factor = Combined Factor ME0558!SPC IN W - 0.99997037 x 0.99997050 = 0.99994087 - 0.99997037 x 0.99960141 = 0.99957179 ME0558!UTM 16 ME0558 MF0558 SUPERSEDED SURVEY CONTROL ME0558 ME0558 NAD 83(2007)- 41 25 31.72405(N) 086 52 19.41723(W) AD( ) 0 ME0558 ELLIP H (02/10/07) 188.931 (m) GP( ) ME0558 NAD 83(1997)- 41 25 31.72398(N) 086 52 19.41721(W) AD( ) B ME0558 ELLIP H (04/10/98) 188.951 (m) GP( ) 4 1 ME0558 NAVD 88 (04/10/98) 222.79 (m) 730.9 (f) LEVELING 3 731.26 (f) ADJUSTED 11 ME0558 NGVD 29 (01/19/93) 222.888 (m) ME0558 ME0558. Superseded values are not recommended for survey control. ME0558 ME0558.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME0558.See file dsdata.txt to determine how the superseded data were derived. ME0558 ME0558_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEL1069085998(NAD 83) ME0558 ME0558_MARKER: DB = BENCH MARK DISK ME0558 SETTING: 46 = COPPER-CLAD STEEL ROD W/O SLEEVE (10 FT.+) ME0558_SP_SET: COPPER-CLAD STEEL ROD ME0558 STAMPING: G 335 1968 ME0558_MARK LOGO: CGS ME0558_PROJECTION: RECESSED 6 CENTIMETERS ME0558 MAGNETIC: N = NO MAGNETIC MATERIAL ME0558_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL ME0558 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME0558+SATELLITE: SATELLITE OBSERVATIONS - November 03, 2009 ME0558 ROD/PIPE-DEPTH: 19.5 meters ME0558 ME0558 HISTORY - Date Condition Report By - 1968 MONUMENTED ME0558 HISTORY CGS - 1988 ME0558 HISTORY GOOD USPSOD ME0558 HISTORY - 19920907 GOOD NGS

ME0558 HISTORY - 19970513 GOOD NGS ME0558 HISTORY - 20060927 GOOD WOOLPT ME0558 HISTORY - 20071103 GOOD GEOCAC ME0558 HISTORY - 20091103 GOOD WOOLPT ME0558 ME0558 STATION DESCRIPTION ME0558 ME0558'DESCRIBED BY COAST AND GEODETIC SURVEY 1968 ME0558'1 MI E FROM WANATAH. ME0558'ABOUT 1.0 MILE EAST ALONG THE PENN CENTRAL RAILROAD FROM THE ME0558'U.S. HIGHWAY 421 OVERPASS OVER THE TRACKS AT WANATAH, IN SECTION ME0558'4, R 4 W, T 34 N, ABOUT 0.45 MILE WEST OF MILEPOST 413, NEAR THE ME0558'CROSSING OF COUNTY ROAD 900 WEST, 85 FEET WEST OF THE CENTER LINE ME0558'OF THE COUNTY ROAD, 25.5 FEET SOUTH OF THE SOUTH RAIL OF THE ME0558'EASTBOUND MAIN TRACK, 33 FEET NORTH OF THE CENTER LINE OF BAILEY ME0558'ROAD, 2 1/2 FEET WEST OF A UTILITY POLE, IN LINE WITH A ROW OF ME0558'POLES, 6.1 FEET EAST OF A METAL WITNESS POST, 4 FEET BELOW THE ME0558'LEVEL OF THE TRACK AND IS A DISK ON THE TOP OF A COPPER COATED ME0558'STEEL ROD FLUSH WITH THE GROUND AND PROTECTED BY A 5 INCH METAL ME0558'PIPE WHICH PROJECTS 1 INCH ABOVE THE LEVEL OF THE GROUND. THE ME0558'ROD WAS DRIVEN TO A DEPTH OF 64 FEET. ME0558 MF0558 **STATION RECOVERY (1988)** ME0558 ME0558'RECOVERY NOTE BY US POWER SQUADRON 1988 (TCR) ME0558'RECOVERED IN GOOD CONDITION. ME0558 ME0558 **STATION RECOVERY (1992)** ME0558 ME0558'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992 ME0558'1.6 KM (1.00 MI) EASTERLY ALONG THE CONRAIL RAILROAD FROM THE JUNCTION ME0558'OF U.S. HIGHWAY 421 IN WANATAH, 26.0 M (85.3 FT) WEST OF AND LEVEL ME0558'WITH THE CENTER OF COUNTY ROAD 900 WEST, 9.9 M (32.5 FT) NORTH OF THE ME0558'CENTER OF BAILEY ROAD, 8.4 M (27.6 FT) SOUTH OF THE NEAR RAIL, 1.3 M ME0558'(4.3 FT) BELOW THE LEVEL OF THE TRACK, 0.7 M (2.3 FT) WEST OF A ME0558'UTILITY POLE, AND 0.5 M (1.6 FT) EAST OF A WITNESS POST. NOTE--THE ME0558'DISK IS ENCASED IN A 5-INCH METAL PIPE AND IS RECESSED 0.05 M ME0558'(0.16 FT) BELOW THE GROUND SURFACE. ME0558 ME0558 **STATION RECOVERY (1997)** ME0558 ME0558'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) ME0558'THE STATION IS LOCATED ABOUT 1.6 KM (1.00 MI) EAST OF THE U.S. HIGHWAY ME0558'421 OVERPASS OVER THE RAILROAD TRACKS, NEAR THE EAST SIDE OF WANATAH, ME0558'ALONG THE SOUTH SIDE OF THE RAILROAD TRACKS, ALONG THE NORTH SIDE OF ME0558'E. FIRST ST, AND JUST WEST OF A RAILROAD CROSSING AT 900 W ROAD. ME0558'OWNERSHIP--CONRAIL RAILROAD. TO REACH THE STATION FROM THE JUNCTION ME0558'OF U.S. HIGHWAYS 30 AND 421 NEAR THE EAST-NORTHEAST EDGE OF WANATAH. ME0558'GO SOUTH FOR 0.96 KM (0.60 MI) ON HIGHWAY 421 CROSSING OVER THE TRACKS ME0558'TO (WANATAH RD) ON THE RIGHT. TURN RIGHT, WEST, THEN NORTH FOR 0.32 ME0558'KM (0.20 MI) ON WANATAH ROAD TO A Y-JUNCTION AT E. FIRST ST. BEAR ME0558'RIGHT, EAST FOR 1.6 KM (1.00 MI) ON EAST FIRST STREET TO THE STATION ME0558'ON THE LEFT. STATION IS 25.7 M (84.3 FT) WEST OF THE 900 W ROAD ME0558'CENTER, 19.5 M (64.0 FT) EAST-NORTHEAST OF A GREEN UNDERGROUND CABLE

ME0558'JUNCTION BOX NUMBER 30600 40-3 ABOUT 3-FOOT HIGH, 9.9 M (32.5 FT) ME0558'NORTH OF THE E. FIRST STREET CENTER, 8.1 M (26.6 FT) SOUTH OF THE ME0558'SOUTH RAIL, 0.2 M (0.7 FT) SOUTH OF A WITNESS POST, ABOUT 0.4 M (1.3 ME0558'FT) ABOVE THE E. FIRST STREET LEVEL AND RECESSED ABOUT 6 CM BELOW ME0558'GROUND. NOTE--THE DISK IS ENCASED IN A 5-INCH METAL PIPE. ME0558 ME0558 **STATION RECOVERY (2006)** ME0558 ME0558'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2006 (CTS) ME0558'THIS STATION WAS RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION. ME0558 ME0558 **STATION RECOVERY (2007)** ME0558 ME0558'RECOVERY NOTE BY GEOCACHING 2007 (BPS) ME0558'RECOVERED IN GOOD CONDITION. ME0558 ME0558 **STATION RECOVERY (2009)** ME0558 ME0558'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2009 (BJM) ME0558'THIS STATION WAS RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME1115 ******** ME1115 CBN - This is a Cooperative Base Network Control Station. **ME1115 DESIGNATION - LAKE VILLAGE** - ME1115 ME1115 PID ME1115 STATE/COUNTY- IN/NEWTON ME1115 COUNTRY - US ME1115 USGS QUAD - SCHNEIDER (1992) ME1115 ME1115 *CURRENT SURVEY CONTROL ME1115 ME1115* NAD 83(2011) POSITION- 41 08 42.54150(N) 087 26 56.45943(W) ADJUSTED ME1115* NAD 83(2011) ELLIP HT- 163.185 (meters) (06/27/12) ADJUSTED ME1115* NAD 83(2011) EPOCH - 2010.00 ME1115* NAVD 88 ORTHO HEIGHT - 196.614 (meters) 645.06 (feet) ADJUSTED ME1115 ME1115 NAD 83(2011) X - 214,090.652 (meters) COMP ME1115 NAD 83(2011) Y - -4,805,356.239 (meters) COMP ME1115 NAD 83(2011) Z - 4,174,682.873 (meters) COMP ME1115 LAPLACE CORR --2.78 (seconds) DEFLEC12A ME1115 GEOID HEIGHT --33.44 (meters) GEOID12A ME1115 DYNAMIC HEIGHT -196.531 (meters) 644.79 (feet) COMP ME1115 MODELED GRAVITY - 980,196.6 (mgal) NAVD 88 ME1115 ME1115 VERT ORDER - SECOND CLASS 0 ME1115 ME1115 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME1115 Type Horiz Ellip Dist(km) ME1115 -----ME1115 NETWORK 0.79 1.71 ME1115 -----ME1115 MEDIAN LOCAL ACCURACY AND DIST (018 points) 0.94 2.09 49.61 ME1115 -----ME1115 NOTE: Click here for information on individual local accuracy ME1115 values and other accuracy information. ME1115 ME1115 ME1115.The horizontal coordinates were established by GPS observations ME1115.and adjusted by the National Geodetic Survey in June 2012. ME1115 ME1115.NAD 83(2011) refers to NAD 83 coordinates where the reference ME1115.frame has been affixed to the stable North American tectonic plate. See ME1115.NA2011 for more information. for more information. ME1115 ME1115. The horizontal coordinates are valid at the epoch date displayed above ME1115.which is a decimal equivalence of Year/Month/Day. ME1115 ME1115. The orthometric height was determined by differential leveling and ME1115.adjusted by the NATIONAL GEODETIC SURVEY ME1115.in June 1991. ME1115 ME1115.Photographs are available for this station. ME1115 ME1115. The X, Y, and Z were computed from the position and the ellipsoidal ht.

ME1115 ME1115. The Laplace correction was computed from DEFLEC12A derived deflections. ME1115 ME1115. The ellipsoidal height was determined by GPS observations ME1115.and is referenced to NAD 83. ME1115 ME1115. The dynamic height is computed by dividing the NAVD 88 ME1115.geopotential number by the normal gravity value computed on the ME1115.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME1115.degrees latitude (g = 980.6199 gals.). ME1115 ME1115. The modeled gravity was interpolated from observed gravity values. ME1115 ME1115. The following values were computed from the NAD 83(2011) position. ME1115 Units Scale Factor Converg. ME1115; North East ME1115;SPC IL E - 497,538.084 374,237.243 MT 1.00004280 +0 34 54.8 ME1115;SPC IL E - 1,632,339.53 1,227,810.02 sFT 1.00004280 +0 34 54.8 ME1115;SPC IN W - 654,741.841 869,301.768 MT 0.99997826 -0 14 26.2 ME1115;SPC IN W - 2,148,098.86 2,852,034.22 sFT 0.99997826 -0 14 26.2 - 4,554,967.486 462,319.937 MT 0.99961747 -0 17 43.6 ME1115;UTM 16 ME1115 ME1115! - Elev Factor x Scale Factor = Combined Factor ME1115!SPC IL E - 0.99997440 x 1.00004280 = 1.00001720 ME1115!SPC IN W - 0.99997440 x 0.99997826 = 0.99995266 ME1115!UTM 16 - 0.99997440 x 0.99961747 = 0.99959188 ME1115 ME1115: Primary Azimuth Mark Grid Az ME1115:SPC IL E - LAKE VILLAGE AZ MK 001 34 32.4 ME1115:SPC IN W - LAKE VILLAGE AZ MK 002 23 53.4 ME1115:UTM 16 - LAKE VILLAGE AZ MK 002 27 10.8 ME1115 ME1115 |------ | ME1115 PID Reference Object Distance Geod. Az | dddmmss.s | ME1115 ME1115 | ME2559 SCHNEIDER STRATTON GRAIN ELEV APPROX. 5.8 KM 0005533.6 | ME1115 | ME1122 LAKE VILLAGE AZ MK 0020927.2 | ME1115 ME1116 LAKE VILLAGE RM 3 14.932 METERS 02040 ME1115 | ME1114 LAKE VILLAGE RM 1 30.004 METERS 03336 ME1115 ME1113 LAKE VILLAGE RM 2 27.463 METERS 13716 ME1115 ME1115 ME1115 SUPERSEDED SURVEY CONTROL ME1115 ME1115 NAD 83(2007)- 41 08 42.54161(N) 087 26 56.46044(W) AD( ) 0 ME1115 ELLIP H (02/10/07) 163.208 (m) GP( ) ME1115 NAD 83(1997)- 41 08 42.54155(N) 087 26 56.46036(W) AD( ) B ME1115 ELLIP H (04/10/98) 163.216 (m) GP( ) 4 1 ME1115 NAD 83(1986)- 41 08 42.54428(N) 087 26 56.46315(W) AD( ) 3 ME1115 NAD 27 - 41 08 42.41630(N) 087 26 56.33900(W) AD( ) 3 ME1115 NAVD 88 (04/10/98) 196.61 (m) 645.0 (f) LEVELING 3 ME1115 NGVD 29 (??/??/92) 196.701 (m) 645.34 (f) ADJ UNCH 20 ME1115 ME1115.Superseded values are not recommended for survey control.

ME1115 ME1115.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME1115.See file dsdata.txt to determine how the superseded data were derived. ME1115 ME1115 U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL6231954967(NAD 83) ME1115 ME1115 MARKER: DS = TRIANGULATION STATION DISK ME1115_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME1115_SP_SET: CONCRETE POST ME1115_STAMPING: LAKE VILLAGE 1952 ME1115 MARK LOGO: CGS ME1115 MAGNETIC: N = NO MAGNETIC MATERIAL ME1115_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME1115+STABILITY: SURFACE MOTION ME1115 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME1115+SATELLITE: SATELLITE OBSERVATIONS - June 23, 2009 ME1115 - Date ME1115 HISTORY Condition Report By ME1115 HISTORY - 1952 MONUMENTED CGS ME1115 HISTORY - 1954 GOOD CGS ME1115 HISTORY - 1967 GOOD CGS ME1115 HISTORY - 1967 GOOD CGS ME1115 HISTORY - 19880720 GOOD NGS ME1115 HISTORY - 19891021 GOOD USPSQD ME1115 HISTORY - 19900828 GOOD ME1115 HISTORY - 19970805 GOOD SEC ME1115 HISTORY DUCKS - 20020218 GOOD ME1115 HISTORY - 20090623 GOOD JCLS ME1115 ME1115 STATION DESCRIPTION ME1115 ME1115'DESCRIBED BY COAST AND GEODETIC SURVEY 1952 (LWS) ME1115'STATION IS LOCATED ABOUT 1/2 MILE NORTH OF LAKE VILLAGE, IN THE ME1115'NORTHWEST ANGLE OF THE ME1115'INTERSECTION OF U.S. HIGHWAY 41 AND STATE HIGHWAY 10, ON HIGHWAY ME1115'RIGHT-OF-WAY. IT IS 134 FEET ME1115'NORTHWEST OF THE INTERSECTION, 24 FEET SOUTHEAST OF A WHITE WITNESS ME1115'POST AND 23 FEET SOUTHEAST OF POWER ME1115'LINE POLE 366/220. THE MARK PROJECTS ABOUT 2 INCHES AND THE DISK. ME1115'IS STAMPED LAKE VILLAGE 1952. ME1115' ME1115'REFERENCE MARK NO. 1 IS 39 FEET WEST OF THE CENTER OF HIGHWAY 41, 18 ME1115'FEET SOUTHWEST OF POWER LINE ME1115'POLE 360/802 AND 1 FOOT SOUTHEAST OF A FENCE. THE MARK PROJECTS ME1115'ABOUT 8 INCHES AND THE DISK IS ME1115'STAMPED LAKE VILLAGE NO 1 1952. ME1115' ME1115'REFERENCE MARK NO. 2 IS NEAR THE CENTER OF THE GRASS ISLAND IN THE ME1115'NORTHWEST ANGLE OF THE HIGHWAY ME1115'INTERSECTION. IT IS 44 FEET NORTHWEST OF THE INTERSECTION. THE MARK ME1115'PROJECTS ABOUT 2 INCHES AND THE ME1115'DISK IS STAMPED LAKE VILLAGE NO 2 1952. ME1115' ME1115'AZIMUTH MARK IS 24 FEET WEST OF THE CENTER OF U.S. HIGHWAY 41, 20

ME1115'FEET SOUTH OF THE CENTER OF A ME1115'SAND LANE AND 3 FEET SOUTH OF A POWER LINE POLE AND WHITE WITNESS ME1115'POST. THE MARK PROJECTS ABOUT 6 ME1115'INCHES AND THE DISK IS STAMPED LAKE VILLAGE 1952. ME1115' ME1115'TO REACH THE AZIMUTH MARK FROM THE STATION, GO NORTH ON U.S. HIGHWAY ME1115'41 FOR 0.6 MILE TO THE MARK ON ME1115'THE LEFT, WEST SIDE OF ROAD AS DESCRIBED. ME1115' ME1115'HEIGHT OF LIGHT ABOVE STATION MARK - 30 METERS. ME1115 ME1115 STATION RECOVERY (1954) ME1115 ME1115'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1954 ME1115'3.1 MI S FROM SCHNEIDER. ME1115'ABOUT 3.1 MILES SOUTH ALONG U.S. HIGHWAY 41 FROM THE CROSSING ME1115'OF THE NEW YORK CENTRAL RAILROAD AT SCHNEIDER, AT THE INTERSECTION ME1115'OF STATE HIGHWAY 10, 92 FEET WEST OF CENTER LINE OF HIGHWAY ME1115'41, 99 FEET NORTH OF CENTER LINE OF HIGHWAY 10, 22 1/2 FEET ME1115'EAST-SOUTHEAST OF POWER POLE NO. 366-220, 98 1/2 FEET ME1115'SOUTH-SOUTHWEST OF RM NO. 1, 90.2 FEET NORTHWEST OF RM NO. 2, ME1115'24 FEET SOUTHEAST OF A WHITE WOODEN WITNESS POST AND A FENCE ME1115'LINE, ABOUT LEVEL WITH HIGHWAYS AND SET IN THE TOP OF A CONCRETE ME1115'POST ABOUT FLUSH WITH GROUND. NOTE-- THE MARK IS FLUSH, 0.25 MI ME1115'E ALONG STATE HWY 10 FROM ITS JUNCTION WITH U.S. HWY 41 AT THE ME1115'NW EDGE OF LAKE VILLAGE AND 1 FOOT SE OF A METAL WITNESS POST. ME1115 ME1115 **STATION RECOVERY (1967)** ME1115 ME1115'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1967 (LFS) ME1115'THE STATION MARK AND REFERENCE MARK 2 WERE FOUND IN GOOD CONDITION. ME1115'THE DISK AND TOP ME1115'PORTION OF REFERENCE MARK 1 HAS BEEN SHEARED OFF WITH ME1115'A SMALL PIECE OF THE STEM ME1115'REMAINING. THE AZIMUTH MARK WAS NOT FOUND AND ME1115'IS ASSUMED LOST SINCE AN ENTRANCE ROAD TO ME1115'NEW HIGHWAY 41 HAS BEEN MADE ME1115'IN THE AREA. REFERENCE MARK 1 WAS LEFT AS FOUND AND ME1115'REFERENCE MARK 3 ME1115'SET. THE DESCRIPTION IS GOOD WITH BELOW ADDED. ME1115' ME1115'U.S. HIGHWAY 41 HAS BEEN MOVED WEST 0.25 MILE AND THE STATION IS 0.25 ME1115'MILE EAST ALONG ME1115'STATE HIGHWAY 10 FROM ITS JUNCTION WITH HIGHWAY 41. ME1115' ME1115'THE STATION MARK IS FLUSH AND 1 FOOT SOUTHEAST OF A METAL WITNESS ME1115'POST. ME1115' ME1115'REFERENCE MARK 1 NOW PROJECTS 3 INCHES. ME1115' ME1115'REFERENCE MARK 2 IS FLUSH. ME1115 ME1115'REFERENCE MARK 3 IS A STANDARD DISK SET IN THE TOP OF A ROUND ME1115'CONCRETE MONUMENT

ME1115'PROJECTING 5 INCHES. IT IS 76 WEST OF THE CENTERLINE OF THE ME1115'HIGHWAY (OLD U.S. 41), 49 ME1115'FEET NORTH OF A METAL WITNESS POST, 46 FEET ME1115'NORTHEAST OF POWER POLE 366-220 AND 1 FOOT ME1115'NORTHEAST OF A GUY LINE DEAD ME1115'MAN. THE DISK IS STAMPED LAKE VILLAGE 1952 NO 3 1967. ME1115' ME1115'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN - 1/2 MILE NORTH OF ME1115'LAKE VILLAGE. ME1115' ME1115'HEIGHT OF LIGHT ABOVE STATION MARK - 5 FEET. MF1115 ME1115 **STATION RECOVERY (1967)** ME1115 ME1115'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1967 ME1115'RECOVERED IN GOOD CONDITION. ME1115 **STATION RECOVERY (1988)** ME1115 ME1115 ME1115'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 ME1115'THE STATION IS LOCATED ABOUT 16.1 KM (10.00 MI) WEST FROM INTERSTATE ME1115'HIGHWAY 65, 8.0 KM (4.95 MI) EAST OF THE ILLINOIS-INDIANA STATE LINE, ME1115'0.8 KM (0.50 MI) EAST OF LAKE VILLAGE AND ON HIGHWAY RIGHT-OF-WAY. ME1115'OWNERSHIP--INDIANA DEPARTMENT OF HIGHWAYS, 100 NORTH SENATE AVENUE, ME1115'ROOM 1101, STATE OFFICE BUILDING, INDIANAPOLIS, IN 46204, PHONE ME1115'317-232-5533. ME1115'TO REACH THE STATION FROM THE JUNCTION OF U.S HIGHWAY 41 AND STATE ME1115'HIGHWAY 10 AT THE NORTHWEST EDGE OF LAKE VILLAGE, GO EAST ON STATE ME1115'HIGHWAY 10 FOR 0.48 KM (0.30 MI) TO A CROSSROAD, OLD HIGHWAY 41, AND ME1115'THE STATION IN THE NORTHWEST OUADRANT OF THE INTERSECTION. ME1115'THE STATION IS A STANDARD CGS STATION MARK DISK STAMPED---LAKE ME1115'VILLAGE 1952---, SET IN THE TOP OF A ROUND CONCRETE POST THAT IS ME1115'FLUSH WITH THE GROUND. LOCATED 30.48 M (100.0 FT) NORTH FROM CENTER ME1115'OF STATE HIGHWAY 10, 28.96 M (95.0 FT) WEST FROM CENTER OF OLD ME1115'HIGHWAY 41, 18.9 M (62.0 FT) NORTH FROM A STOP SIGN, 14.33 M ME1115'(47.0 FT) EAST-NORTHEAST FROM A UTILITY POLE, 12.95 M (42.5 FT) ME1115'SOUTH-SOUTHWEST FROM A UTILITY POLE, 1.0 M (3.3 FT) NORTHEAST FROM A ME1115'WITNESS POST AND 0.3 M (1.0 FT) SOUTHWEST FROM A WITNESS POST. ME1115'GPS SURVEY, FAA AIRPORTS, INDIANA, ME1115'DESCRIBED BY D.L. ADAMS. ME1115 ME1115 **STATION RECOVERY (1989)** ME1115 ME1115'RECOVERY NOTE BY US POWER SQUADRON 1989 (WRM) ME1115'RECOVERED IN GOOD CONDITION. ME1115 ME1115 **STATION RECOVERY (1990)** ME1115 ME1115'RECOVERED 1990 ME1115'RECOVERED IN GOOD CONDITION. ME1115 ME1115 **STATION RECOVERY (1997)** ME1115 ME1115'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR)

ME1115'THE STATION IS LOCATED ABOUT 10 MILES (16.1 KM) WEST FROM INTERSTATE ME1115'HIGHWAY 65, 4.95 MILES (7.97 KM) EAST OF THE ILLINOIS-INDIANA STATE ME1115'LINE, 0.50 MILE (0.80 KM) EAST OF LAKE VILLAGE AND ON HIGHWAY ME1115'RIGHT-OF-WAY. OWNERSHIP--INDIANA DEPARTMENT OF TRANSPORTATION, 100 N. ME1115'SENATE AVENUE, ROOM 1101, STATE OFFICE BUILDING, INDIANAPOLIS IN ME1115'46204, HENRY ALDRIDGE, PHONE 317-232-6764. TO REACH THE STATION FROM ME1115'INTERSTATE HIGHWAY 65 AND STATE ROAD 10, GO EAST FOR 10.1 MILES (16.3 ME1115'KM) ON STATE HIGHWAY 10 TO A CROSSROAD (OLD HIGHWAY 41) AND THE ME1115'STATION, IN THE NORTHWEST QUADRANT OF THE INTERSECTION. THE STATION ME1115'IS SET IN THE TOP OF A ROUND CONCRETE MONUMENT FLUSH WITH GROUND. ME1115'LOCATED 30.48 METERS (100.00 FT) NORTH FROM THE CENTER OF STATE ME1115'HIGHWAY 10, 28.96 METERS (95.01 FT) WEST FROM THE CENTER OF OLD ME1115'HIGHWAY 41, 14.33 METERS (47.01 FT) EAST-NORTHEAST FROM A UTILITY POLE ME1115'AND 12.95 SOUTH-SOUTHWEST FROM A UTILITY POLE. ME1115 ME1115 **STATION RECOVERY (2002)** ME1115 ME1115'RECOVERY NOTE BY DUCKS UNLIMITED 2002 (GHB) ME1115'RECOVERED IN GOOD CONDITION. ME1115 ME1115 **STATION RECOVERY (2009)** ME1115 ME1115'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2009 (MRY)

ME1115'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME2148 ********* ME2148 CBN - This is a Cooperative Base Network Control Station. ME2148 DESIGNATION - POLA - ME2148 ME2148 PID ME2148 STATE/COUNTY- IN/PORTER ME2148 COUNTRY - US ME2148 USGS QUAD - MICHIGAN CITY WEST (1980) ME2148 ME2148 *CURRENT SURVEY CONTROL ME2148 ME2148* NAD 83(2011) POSITION- 41 41 44.61168(N) 086 55 57.42511(W) ADJUSTED ME2148* NAD 83(2011) ELLIP HT- 154.814 (meters) (06/27/12) ADJUSTED ME2148* NAD 83(2011) EPOCH - 2010.00 ME2148* NAVD 88 ORTHO HEIGHT - 188.615 (meters) 618.81 (feet) ADJUSTED ME2148 ME2148 NAD 83(2011) X - 255,226.236 (meters) COMP ME2148 NAD 83(2011) Y - -4,762,828.108 (meters) COMP ME2148 NAD 83(2011) Z - 4,220,531.658 (meters) COMP ME2148 LAPLACE CORR --2.23 (seconds) DEFLEC12A ME2148 GEOID HEIGHT --33.80 (meters) GEOID12A ME2148 DYNAMIC HEIGHT -188.546 (meters) 618.59 (feet) COMP ME2148 MODELED GRAVITY - 980,256.7 (mgal) NAVD 88 ME2148 ME2148 VERT ORDER - FIRST CLASS II ME2148 ME2148 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME2148 Type Horiz Ellip Dist(km) ME2148 -----ME2148 NETWORK 1.00 2.12 ME2148 -----ME2148 MEDIAN LOCAL ACCURACY AND DIST (008 points) 1.12 2.39 59.17 ME2148 -----ME2148 NOTE: Click here for information on individual local accuracy ME2148 values and other accuracy information. ME2148 ME2148 ME2148. The horizontal coordinates were established by GPS observations ME2148.and adjusted by the National Geodetic Survey in June 2012. ME2148 ME2148.NAD 83(2011) refers to NAD 83 coordinates where the reference ME2148.frame has been affixed to the stable North American tectonic plate. See ME2148.NA2011 for more information. for more information. ME2148 ME2148. The horizontal coordinates are valid at the epoch date displayed above ME2148.which is a decimal equivalence of Year/Month/Day. ME2148 ME2148. The orthometric height was determined by differential leveling and ME2148.adjusted by the NATIONAL GEODETIC SURVEY ME2148.in June 1991. ME2148 ME2148. Photographs are available for this station. ME2148 ME2148. The X, Y, and Z were computed from the position and the ellipsoidal ht.

ME2148 ME2148. The Laplace correction was computed from DEFLEC12A derived deflections. ME2148 ME2148. The ellipsoidal height was determined by GPS observations ME2148 and is referenced to NAD 83. ME2148 ME2148. The dynamic height is computed by dividing the NAVD 88 ME2148.geopotential number by the normal gravity value computed on the ME2148.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME2148.degrees latitude (g = 980.6199 gals.). ME2148 ME2148. The modeled gravity was interpolated from observed gravity values. ME2148 ME2148. The following values were computed from the NAD 83(2011) position. ME2148 ME2148; Units Scale Factor Converg. North East ME2148;SPC IN W - 715,834.312 912,545.766 MT 0.99996860 +0 06 00.9 ME2148;SPC IN W - 2,348,533.07 2,993,910.57 sFT 0.99996860 +0 06 00.9 ME2148;UTM 16 - 4,615,996.063 505,606.916 MT 0.99960039 +0 02 41.4 ME2148 - Elev Factor x Scale Factor = Combined Factor ME2148! ME2148!SPC IN W - 0.99997572 x 0.99996860 = 0.99994432 ME2148!UTM 16 -  $0.99997572 \times 0.99960039 = 0.99957612$ ME2148 Primary Azimuth Mark ME2148: Grid Az ME2148:SPC IN W - POLA AZ MK 062 09 07.6 ME2148:UTM 16 - POLA AZ MK 062 12 27.1 ME2148 ME2148 |------ | ME2148 PID Reference Object Distance Geod. Az dddmmss.s | ME2148 ME2148 | ME2457 MICHIGAN CITY N IND P S CO STK APPROX. 3.4 KM 0344535.8 | 28.151 METERS 05653 ME2148 | CM4389 POLA RM 1 ME2148 | CM4388 POLA AZ MK 0621508.5 32.004 METERS 14332 ME2148 | CM4390 POLA RM 2 ME2148 |------ | ME2148 ME2148 SUPERSEDED SURVEY CONTROL ME2148 ME2148 NAD 83(2007)- 41 41 44.61177(N) 086 55 57.42603(W) AD( ) () ME2148 ELLIP H (02/10/07) 154.834 (m) ) GP( 086 55 57.42613(W) AD( ME2148 NAD 83(1997)- 41 41 44.61171(N) ) B ME2148 ELLIP H (04/10/98) 154.861 (m) GP( ) 4 1 ME2148 NAD 83(1994)- 41 41 44.61560(N) 086 55 57.43232(W) AD( ) 2 ME2148 NAD 83(1986)- 41 41 44.61845(N) 086 55 57.43011(W) AD( ) 2 ME2148 NAD 27 - 41 41 44.47960(N) 086 55 57.32100(W) AD( ) 2 618.8 (f) LEVELING ME2148 NAVD 88 (04/10/98) 188.62 (m) 3 ME2148 NGVD 29 (01/19/93) 188.722 (m) 619.17 (f) ADJUSTED 12 ME2148 ME2148. Superseded values are not recommended for survey control. ME2148 ME2148.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME2148.See file dsdata.txt to determine how the superseded data were derived. ME2148

ME2148_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEM0560615996(NAD 83) ME2148 ME2148 MARKER: DS = TRIANGULATION STATION DISK ME2148_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME2148 SP SET: CONCRETE POST ME2148_STAMPING: POLA 1952 619.14 ME2148 MARK LOGO: CGS ME2148_PROJECTION: FLUSH ME2148_MAGNETIC: N = NO MAGNETIC MATERIAL ME2148_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME2148+STABILITY: SURFACE MOTION ME2148 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME2148+SATELLITE: SATELLITE OBSERVATIONS - April 25, 2002 ME2148 ME2148 HISTORY - Date Condition Report By ME2148 HISTORY - 1952 MONUMENTED CGS - 1961 ME2148 HISTORY GOOD THOMAS ME2148 HISTORY - 1985 GOOD NGS ME2148 HISTORY - 19880719 GOOD NGS ME2148 HISTORY - 19910515 GOOD NGS ME2148 HISTORY - 19970805 GOOD SEC ME2148 HISTORY - 19980810 GOOD JCLS ME2148 HISTORY - 20020425 GOOD INDIV ME2148 HISTORY - 20120907 GOOD GRWAS ME2148 ME2148 STATION DESCRIPTION ME2148 ME2148'DESCRIBED BY COAST AND GEODETIC SURVEY 1952 (LWS) ME2148'STATION IS LOCATED IN A TRIANGULAR PLOT OF LAND FORMED BY THE ME2148'INTERSECTION OF U.S. HIGHWAY 12 ME2148'AND A PAVED ROAD JUST WEST OF THE CITY LIMITS AT THE WEST SIDE OF ME2148'MICHIGAN CITY. IT IS 175 FEET ME2148'SOUTHWEST OF THE INTERSECTION, 49 FEET EAST OF THE CENTER OF THE ME2148'HIGHWAY AND 33 FEET WEST OF THE CENTER ME2148'OF THE PAVED ROAD. THE MARK IS FLUSH AND THE ME2148'DISK IS STAMPED POLA 1952. ME2148' ME2148'REFERENCE MARK NO. 1 IS 40 FEET EAST OF THE CENTER OF THE PAVED ROAD ME2148'AND 2 FEET WEST OF A POWER ME2148'POLE. THE MARK IS FLUSH AND THE DISK IS STAMPED POLA NO 1 1952. ME2148' ME2148'REFERENCE MARK NO. 2 IS 52 FEET SOUTHWEST OF THE CENTER OF A PAVED ME2148'ROAD AND 15 FEET SOUTH OF A ME2148'POWER POLE. THE MARK IS FLUSH AND THE DISK IS STAMPED POLA NO 2 ME2148'1952. ME2148' ME2148'AZIMUTH MARK IS 48 FEET SOUTH OF THE CENTER OF A PAVED ROAD, 46 FEET ME2148'WEST OF THE NORTHWEST CORNER ME2148'OF A FRAME HOUSE, 33 FEET WEST OF A POWER POLE AND 2 FEET NORTH OF A ME2148'WHITE WITNESS POST. THE MARK IS ME2148'FLUSH AND THE DISK IS STAMPED POLA 1952. ME2148 ME2148'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 421 AND 12 IN ME2148'MICHIGAN CITY, GO WEST ON

ME2148'HIGHWAY 12 FOR 2.5 MILES TO THE Y-INTERSECTION OF A PAVED ROAD ME2148'AND THE STATION AS DESCRIBED. ME2148' ME2148'TO REACH THE AZIMUTH MARK FROM THE STATION, GO EAST NORTHEAST ON A ME2148'PAVED ROAD FOR 0.2 MILE TO ME2148'THE MARK ON THE RIGHT AS DESCRIBED. ME2148' ME2148'HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS. ME2148 ME2148 **STATION RECOVERY (1961)** ME2148 ME2148'RECOVERY NOTE BY THOMAS ENG AND SURV 1961 ME2148'RECOVERED BY THE THOS ENGR AND SURVEY CO MF2148' ME2148'STATION MARK, REFERENCE MARK NO. 1, REFERENCE MARK NO. 2, AND AZIMUTH ME2148'MARK FOUND ME2148'UNDISTURBED. ME2148 ME2148 **STATION RECOVERY (1985)** ME2148 ME2148'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1985 ME2148'4.0 KM (2.5 MI) SW FROM MICHIGAN CITY. ME2148'4.0 KM (2.5 MI) SOUTHWESTERLY ALONG U.S. HIGHWAY 12 FROM THE ME2148'COURTHOUSE IN MICHIGAN CITY, 16.5 M (54.1 FT) NORTH OF THE CENTER OF ME2148'WOODLAWN AVENUE, 15.3 M (50.2 FT) SOUTHEAST OF THE CENTERLINE OF THE ME2148'HIGHWAY, AND 10.1 M (33.1 FT) WEST OF THE CENTER OF COUNTY LINE ROAD. ME2148'THE MARK IS 0.3 M BELOW THE HIGHWAY. ME2148 ME2148 **STATION RECOVERY (1988)** ME2148 ME2148'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 ME2148'THE STATION IS LOCATED IN MICHIGAN CITY, 0.32 KM (0.20 MI) EAST OF THE ME2148'LA PORTE COUNTY COURTHOUSE AND ON HIGHWAY RIGHT-OF-WAY. ME2148'OWNERSHIP--INDIANA DEPARTMENT OF HIGHWAYS, 100 SENATE AVENUE, ROOM ME2148'1101, STATE OFFICE BUILDING, INDIANAPOLIS, IN 46204, PHONE ME2148'317-232-5533. ME2148'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 35 AND 12 IN ME2148'MICHIGAN CITY, GO WESTERLY ON U.S. HIGHWAY 12 FOR 4.35 KM (2.70 MI) ME2148'TO A Y-INTERSECTION WITH COUNTY LINE ROAD AND THE STATION IN THE ME2148'GRASSY TRIANGLE FORMED BY THE JOINING OF U.S. HIGHWAY 12, COUNTY LINE ME2148'ROAD AND WOODLAWN AVENUE. ME2148'THE STATION IS A STANDARD CGS STATION MARK DISK STAMPED---POLA 1952 ME2148'619.14 SET IN THE TOP OF A SQUARE CONCRETE MONUMENT THAT IS FLUSH ME2148'WITH THE GROUND. LOCATED 15.7 M (51.5 FT) SOUTHEAST FROM THE CENTER ME2148'OF U.S. HIGHWAY 12, 15.4 M (50.5 FT) NORTHWEST FROM CENTER OF ME2148'WOODLAWN AVENUE AND 10.2 M (33.5 FT) WEST FROM THE CENTER OF COUNTY ME2148'LINE ROAD. ME2148'GPS SURVEY, FAA AIRPORTS, INDIANA. ME2148'DESCRIBED BY D.L. ADAMS. ME2148 ME2148 **STATION RECOVERY (1991)** ME2148 ME2148'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1991 ME2148'THE STATION IS LOCATED IN A TRIANGULAR PLOT OF LAND FORMED BY THE

ME2148'INTERSECTION OF U.S. HIGHWAY 12 AND COUNTY LINE ROAD JUST WEST OF THE ME2148'CITY LIMITS ON THE WEST SIDE OF MICHIGAN CITY. ME2148'TO REACH THE STATION FROM THE INTERSECTIONS OF HWY 35 AND 12 IN ME2148'MICHIGAN CITY, TAKE HWY 12 WEST AND SOUTH FOR 3.7 MILES TO THE ME2148'INTERSECTION OF HWY 12 AND COUNTY LINE ROAD, AND STATION IN TRIANGLE ME2148'AS DESCRIBED. ME2148'THE STATION IS A STANDARD BRONZE TRIANGULATION DISK STAMPED POLA 1952 ME2148'SET IN A ROUND CONCRETE MONUMENT.IT IS 16.9 M (55.45 FT) NORTH OF ME2148'CENTERLINE OF WOODLAWN AVENUE, 15.6 M (51.18 FT) NORTHWEST OF ME2148'CENTERLINE OF INTERSECTION OF WOODLAWN AVE AND COUNTY LINE ROAD, 15.2 ME2148'M (49.87 FT) SOUTHEAST OF CENTERLINE OF U.S. HWY 12 AT CURVE, AND 9.8 ME2148'M (32.15 FT) WEST OF CENTERLINE OF COUNTY LINE ROAD. ME2148'DESCRIBED BY GAB. ME2148 ME2148 **STATION RECOVERY (1997)** ME2148 ME2148'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) ME2148'STATION IS 2.5 MILES (4.0 KM) SOUTHWEST OF MICHIGAN CITY. TO REACH ME2148'STATION FROM THE INTERSECTION OF STATE HIGHWAY 520 AND U.S. HIGHWAY ME2148'12, GO EAST ON U.S. HIGHWAY 12 FOR 1.6 MILES (2.6 KM) TO COUNTY LINE ME2148'ROAD. STATION IS LOCATED IN A TRIANGULAR PLOT OF LAND FORMED BY ME2148'INTERSECTION OF U.S. HIGHWAY 12, COUNTY LINE ROAD AND WOODLAWN AVENUE, ME2148'IN THE RIGHT-OF-WAY OF U.S. HIGHWAY 12. OWNERSHIP--INDIANA DEPARTMENT ME2148'OF TRANSPORTATION, 100 N. SENATE AVENUE, ROOM 1101, STATE OFFICE ME2148'BUILDING, INDIANAPOLIS IN 46204, HENRY ALDRIDGE, PHONE 317-232-6764. ME2148'STATION IS SET IN A SQUARE CONCRETE MONUMENT, ABOUT LEVEL WITH COUNTY ME2148'LINE ROAD. IT IS 17.0 METERS (55.8 FT) NORTH OF THE CENTERLINE OF ME2148'WOODLAWN AVENUE, 15.8 METERS (51.8 FT) NORTHWEST OF THE CENTERLINE ME2148'INTERSECTION OF WOODLAWN AVENUE AND COUNTY LINE ROAD, 15.2 METERS ME2148'(49.9 FT) SOUTHEAST OF THE CENTERLINE OF U.S. HIGHWAY 12 AT CURVE, 9.8 ME2148'METERS (32.2 FT) WEST OF THE CENTERLINE OF COUNTY LINE ROAD AND FLUSH ME2148'WITH GROUND. MF2148 ME2148 **STATION RECOVERY (1998)** ME2148 ME2148'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 1998 ME2148'RECOVERED IN GOOD CONDITION. ME2148 ME2148 **STATION RECOVERY (2002)** ME2148 ME2148'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2002 (JLW) ME2148'RECOVERED IN GOOD CONDITION. ME2148 ME2148 **STATION RECOVERY (2012)** ME2148 ME2148'RECOVERY NOTE BY GRW AERIAL SURVEY 2012 (CS)

ME2148'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 LB1086 ******** LB1086 FBN - This is a Federal Base Network Control Station. LB1086 DESIGNATION - \$ 107 LB1086 PID - LB1086 LB1086 STATE/COUNTY- IN/WHITE LB1086 COUNTRY - US LB1086 USGS QUAD - MONON (1980) LB1086 LB1086 *CURRENT SURVEY CONTROL LB1086 LB1086* NAD 83(2011) POSITION- 40 52 03.42899(N) 086 57 06.92270(W) ADJUSTED LB1086* NAD 83(2011) ELLIP HT- 173.487 (meters) (06/27/12) ADJUSTED LB1086* NAD 83(2011) EPOCH - 2010.00 LB1086* NAVD 88 ORTHO HEIGHT - 207.118 (meters) 679.52 (feet) ADJUSTED LB1086 LB1086 NAD 83(2011) X - 256,848.727 (meters) COMP LB1086 NAD 83(2011) Y - -4,823,520.609 (meters) COMP LB1086 NAD 83(2011) Z - 4,151,430.417 (meters) COMP LB1086 LAPLACE CORR --1.48 (seconds) DEFLEC12A LB1086 GEOID HEIGHT --33.66 (meters) GEOID12A LB1086 DYNAMIC HEIGHT -207.025 (meters) 679.21 (feet) COMP LB1086 MODELED GRAVITY -980,172.3 (mgal) NAVD 88 LB1086 LB1086 VERT ORDER - SECOND CLASS 0 LB1086 LB1086 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB1086 Type LB1086 -----LB1086 NETWORK 0.40 0.82 LB1086 -----LB1086 MEDIAN LOCAL ACCURACY AND DIST (017 points) 0.70 1.55 42.48 LB1086 -----LB1086 NOTE: Click here for information on individual local accuracy LB1086 values and other accuracy information. LB1086 LB1086 LB1086. The horizontal coordinates were established by GPS observations LB1086.and adjusted by the National Geodetic Survey in June 2012. LB1086 LB1086.NAD 83(2011) refers to NAD 83 coordinates where the reference LB1086.frame has been affixed to the stable North American tectonic plate. See LB1086.NA2011 for more information. for more information. LB1086 LB1086. The horizontal coordinates are valid at the epoch date displayed above LB1086.which is a decimal equivalence of Year/Month/Day. LB1086 LB1086. The orthometric height was determined by differential leveling and LB1086.adjusted by the NATIONAL GEODETIC SURVEY LB1086.in June 1991. LB1086 LB1086. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB1086 LB1086.The Laplace correction was computed from DEFLEC12A derived deflections.

LB1086 LB1086. The ellipsoidal height was determined by GPS observations LB1086.and is referenced to NAD 83. LB1086 LB1086. The dynamic height is computed by dividing the NAVD 88 LB1086.geopotential number by the normal gravity value computed on the LB1086. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB1086.degrees latitude (g = 980.6199 gals.). LB1086 LB1086. The modeled gravity was interpolated from observed gravity values. LB1086 LB1086. The following values were computed from the NAD 83(2011) position. LB1086 LB1086; North East Units Scale Factor Converg. LB1086;SPC IN W - 623,865.759 911,077.959 MT 0.99996818 +0.05.09.5 LB1086;SPC IN W - 2,046,799.58 2,989,094.94 sFT 0.99996818 +0 05 09.5 - 4,524,062.815 504,051.431 MT 0.99960020 +0 01 53.2 LB1086;UTM 16 LB1086 LB1086! - Elev Factor x Scale Factor = Combined Factor LB1086!SPC IN W - 0.99997279 x 0.99996818 = 0.99994097 - 0.99997279 x 0.99960020 = 0.99957300 LB1086!UTM 16 LB1086 LB1086 SUPERSEDED SURVEY CONTROL LB1086 LB1086 NAD 83(2007)- 40 52 03.42914(N) 086 57 06.92382(W) AD( ) 0 LB1086 ELLIP H (02/10/07) 173.512 (m) GP( ) LB1086 NAD 83(1997)- 40 52 03.42915(N) 086 57 06.92375(W) AD( ) B LB1086 ELLIP H (04/10/98) 173.505 (m) GP( ) 4 1 LB1086 NAVD 88 (03/12/99) 207.12 (m) (f) LEVELING 679.5 3 LB1086 NAVD 88 (04/10/98) 207.2 (m) GEOID96 model used GPS OBS LB1086 NGVD 29 (??/??/92) 207.209 (m) 679.82 (f) ADJ UNCH 20 LB1086 LB1086.Superseded values are not recommended for survey control. LB1086 LB1086.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB1086.See file dsdata.txt to determine how the superseded data were derived. LB1086 LB1086_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEL0405124062(NAD 83) LB1086 LB1086 MARKER: DB = BENCH MARK DISK LB1086_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT LB1086_SP_SET: SET IN TOP OF CONCRETE MONUMENT LB1086_STAMPING: S 107 1946 LB1086_MARK LOGO: CGS LB1086_PROJECTION: PROJECTING 4 CENTIMETERS LB1086_MAGNETIC: O = OTHER; SEE DESCRIPTION LB1086 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO LB1086+STABILITY: SURFACE MOTION LB1086 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB1086+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 LB1086 LB1086 HISTORY - Date Condition Report By LB1086 HISTORY - 1946 MONUMENTED CGS LB1086 HISTORY - 19970519 GOOD NGS

LB1086 HISTORY - 19980724 GOOD WOOLPT LB1086 HISTORY - 20030624 GOOD INDOT LB1086 HISTORY - 20080220 GOOD ACCU LB1086 HISTORY - 20080421 GOOD FARNGP LB1086 HISTORY - 20090519 GOOD WOOLPT LB1086 HISTORY - 20110706 GOOD INDIV LB1086 LB1086 STATION DESCRIPTION LB1086 LB1086'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 LB1086'3.8 MI W FROM MONON. LB1086'ABOUT 3.8 MILES WEST ALONG STATE HIGHWAY 16 FROM THE SCHOOL LB1086'BUILDING AT MONON, 0.2 MILE WEST OF A PROMINENT NORTH-SOUTH LB1086'FENCE LINE, 39 FEET NORTH OF THE CENTER LINE OF THE HIGHWAY, 14 LB1086'FEET NORTH OF A LONE HICKORY TREE ON THE NORTH HIGHWAY LB1086'RIGHT-OF-WAY, 51 FEET SOUTHEAST OF THE WELL TUBEING OF A LB1086'WINDMILL, 6.8 FEET WEST OF THE WEST GATE POST AT A GATE IN THE LB1086'NORTH RIGHT-OF-WAY FENCE, 28.8 FEET EAST OF A HIGHWAY LB1086'RIGHT-OF-WAY MARKER, 1 FOOT SOUTH OF THE FENCE LINE, SET IN THE LB1086'TOP OF A CONCRETE POST PROJECTING 4 INCHES AND ABOUT 1 FOOT ABOVE LB1086'THE LEVEL OF THE HIGHWAY. LB1086 I B1086 **STATION RECOVERY (1997)** LB1086 LB1086'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) LB1086'THE STATION IS LOCATED ABOUT 6.15 KM (3.80 MI) WEST OF MONON, ALONG LB1086'THE NORTH SIDE OF STATE HIGHWAY 16, SOUTH-SOUTHEAST OF A WINDMILL, LB1086'JUST WEST OF A FIELD ENTRANCE AND GATE AND JUST SOUTH OF A LB1086'RIGHT-OF-WAY FENCE AND WITNESS POST. OWNERSHIP--STATE OF INDIANA. TO LB1086'REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 421 AND STATE LB1086'HIGHWAY 16 NEAR THE CENTER OF MONON, GO WEST FOR 1.75 KM (1.10 MI) ON LB1086'HIGHWAY 16 TO A RAILROAD CROSSING. CONTINUE WEST FOR 4.4 KM (2.75 MI) LB1086'ON HIGHWAY 16 TO A FIELD ENTRANCE ON THE RIGHT AT A WINDMILL AND THE LB1086'STATION, JUST WEST OF THE FIELD ENTRANCE. STATION IS 11.7 M (38.4 FT) LB1086'NORTH OF THE HIGHWAY 16 CENTERLINE, 7.7 M (25.3 FT) EAST OF A CONCRETE LB1086'STATE RIGHT-OF-WAY MARKER ABOUT 2-FOOT HIGH, 5.0 M (16.4 FT) WEST OF A LB1086'FIELD ENTRANCE CENTER WITH GATE, 2.3 M (7.5 FT) WEST OF THE WEST GATE LB1086'POST, 0.2 M (0.7 FT) EAST-SOUTHEAST OF A WITNESS POST, 0.1 M (0.3 FT) LB1086'SOUTH OF A RIGHT-OF-WAY FENCE, ABOUT 0.2 M (0.7 FT) ABOVE THE HIGHWAY LB1086'16 LEVEL AND PROJECTING ABOUT 4 CM ABOVE GROUND. LB1086 LB1086 **STATION RECOVERY (1998)** LB1086 LB1086'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (BBS) LB1086'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (BBS). LB1086 LB1086 **STATION RECOVERY (2003)** LB1086 LB1086'RECOVERY NOTE BY INDIANA DEPARTMENT OF TRANSPORTATION 2003 (JRK) LB1086'RECOVERED AS DESCRIBED. LB1086 LB1086 **STATION RECOVERY (2008)** LB1086 LB1086'RECOVERY NOTE BY ACCU AIR SURVEYS INCORPORATED 2008

LB1086'RECOVERED IN GOOD CONDITION. LB1086 LB1086 **STATION RECOVERY (2008)** LB1086 LB1086'RECOVERY NOTE BY FARNSWORTH GROUP 2008 (KDV) LB1086'SATELLITE OBERVATION ON APRIL 30 2008 LB1086 LB1086 **STATION RECOVERY (2009)** LB1086 LB1086'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2009 (BJM) LB1086'THIS STATION WAS RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION. LB1086 LB1086 **STATION RECOVERY (2011)** LB1086 LB1086'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011

LB1086'RECOVERED FOR 2011 INDIANA ORTHO AND LIDAR PROGRAM

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 AE2531 *********** AE2531 DESIGNATION - WILL COUNTY GPS 2305 AE2531 PID - AE2531 AE2531 STATE/COUNTY- IL/WILL AE2531 COUNTRY - US AE2531 USGS QUAD - DYER (1990) AE2531 AE2531 *CURRENT SURVEY CONTROL AE2531 AE2531* NAD 83(2011) POSITION- 41 23 05.65546(N) 087 31 34.59802(W) ADJUSTED AE2531* NAD 83(2011) ELLIP HT- 189.107 (meters) (06/27/12) ADJUSTED AE2531* NAD 83(2011) EPOCH - 2010.00 AE2531* NAVD 88 ORTHO HEIGHT - 222.6 (meters) 730. (feet) GPS OBS AE2531 AE2531 NAVD 88 orthometric height was determined with geoid model GEOID96 AE2531 GEOID HEIGHT - -33.27 (meters) GEOID96 AE2531 GEOID HEIGHT --33.44 (meters) GEOID12A AE2531 NAD 83(2011) X - 206,853.501 (meters) COMP AE2531 NAD 83(2011) Y - -4,788,114.378 (meters) COMP AE2531 NAD 83(2011) Z - 4,194,715.017 (meters) COMP AE2531 LAPLACE CORR --2.58 (seconds) DEFLEC12A AE2531 AE2531 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) AE2531 Type Horiz Ellip Dist(km) AE2531 -----AE2531 NETWORK 2.95 1.80 AE2531 -----AE2531 MEDIAN LOCAL ACCURACY AND DIST (003 points) 2.61 1.41 5.35 AE2531 -----AE2531 NOTE: Click here for information on individual local accuracy AE2531 values and other accuracy information. AE2531 AE2531 AE2531. The horizontal coordinates were established by GPS observations AE2531.and adjusted by the National Geodetic Survey in June 2012. AE2531 AE2531.NAD 83(2011) refers to NAD 83 coordinates where the reference AE2531.frame has been affixed to the stable North American tectonic plate. See AE2531.NA2011 for more information. for more information. AE2531 AE2531. The horizontal coordinates are valid at the epoch date displayed above AE2531.which is a decimal equivalence of Year/Month/Day. AE2531 AE2531. The orthometric height was determined by GPS observations and a AE2531.high-resolution geoid model. AE2531 AE2531. The X, Y, and Z were computed from the position and the ellipsoidal ht. AE2531 AE2531. The Laplace correction was computed from DEFLEC12A derived deflections. AE2531 AE2531. The ellipsoidal height was determined by GPS observations AE2531.and is referenced to NAD 83. AE2531

AE2531. The following values were computed from the NAD 83(2011) position. AE2531 AE2531: North Units Scale Factor Converg. East AE2531;SPC IL E - 524,101.607 367,503.864 MT 1.00003106 +0 32 00.9 - 1,719,490.02 1,205,718.93 sFT 1.00003106 +0 32 00.9 AE2531;SPC IL E - 4,581,620.126 455,997.684 MT 0.99962383 -0 20 52.6 AE2531;UTM 16 AE2531 AE2531! - Elev Factor x Scale Factor = Combined Factor AE2531!SPC IL E - 0.99997034 x 1.00003106 = 1.00000140  $- 0.99997034 \times 0.99962383 = 0.99959418$ AE2531!UTM 16 AE2531 AE2531 SUPERSEDED SURVEY CONTROL AE2531 AE2531 NAD 83(2007)- 41 23 05.65553(N) 087 31 34.59895(W) AD( ) 0 AE2531 ELLIP H (02/10/07) 189.127 (m) GP( ) AE2531 ELLIP H (02/03/05) 189.136 (m) GP( ) 4 2 AE2531 NAD 83(1997)- 41 23 05.65520(N) 087 31 34.59868(W) AD( ) 1 AE2531 ELLIP H (10/21/99) 189.131 (m) GP( ) 4 1 087 31 34.59875(W) AD( AE2531 NAD 83(1997)- 41 23 05.65521(N) ) 1 AE2531 NAD 83(1986)- 41 23 05.65800(N) 087 31 34.61354(W) AD( ) 1 AE2531 AE2531. Superseded values are not recommended for survey control. AE2531 AE2531.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. AE2531.See file dsdata.txt to determine how the superseded data were derived. AE2531 AE2531_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL5599781620(NAD 83) AE2531 AE2531_MARKER: DO = NOT SPECIFIED OR SEE DESCRIPTION AE2531 SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) AE2531_MARK LOGO: ASCPC AE2531 PROJECTION: RECESSED 8 CENTIMETERS AE2531_MAGNETIC: I = MARKER IS A STEEL ROD AE2531_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD AE2531+STABILITY: POSITION/ELEVATION WELL AE2531_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR AE2531+SATELLITE: SATELLITE OBSERVATIONS - 1997 AE2531 ROD/PIPE-DEPTH: 3 meters AE2531_SLEEVE-DEPTH : 1 meters AE2531 AE2531 HISTORY - Date Condition Report By AE2531 HISTORY - 1997 MONUMENTED ASCPC AE2531 AE2531 STATION DESCRIPTION AE2531 AE2531'DESCRIBED BY AMERICAN SURVEYING CONSULTANTS PC 1997 (PS) AE2531'FROM INTERSECTION OF BRUNSWICK RD AND STATE LINE RD, NORTH ON STATE AE2531'LINE 0.5 MI (0.8 KM) STATION ON LEFT (WEST). 5 MI (8.0 KM) EAST AND 3 AE2531'MI (4.8 KM) NORTH OF INTERSECTION IL RTE 1 AND INDIANA AVE IN BEECHER, AE2531'IL STATION IS FLUSH WITH SURFACE AND IS STAINLESS ROD WITH SLEEVE WITH AE2531'CAST CAP AND LID

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA0639 ********** KA0639 CBN - This is a Cooperative Base Network Control Station. KA0639 DESIGNATION - A 105 KA0639 PID - KA0639 KA0639 STATE/COUNTY- IN/MONTGOMERY KA0639 COUNTRY - US KA0639 USGS QUAD - NEW MARKET (1980) KA0639 KA0639 *CURRENT SURVEY CONTROL KA0639 KA0639* NAD 83(2011) POSITION- 39 58 52.16850(N) 086 54 59.02450(W) ADJUSTED KA0639* NAD 83(2011) ELLIP HT- 211.269 (meters) (06/27/12) ADJUSTED KA0639* NAD 83(2011) EPOCH - 2010.00 KA0639* NAVD 88 ORTHO HEIGHT - 244.629 (meters) 802.59 (feet) ADJUSTED KA0639 KA0639 NAD 83(2011) X - 263,274.800 (meters) COMP KA0639 NAD 83(2011) Y - -4,887,127.702 (meters) COMP KA0639 NAD 83(2011) Z - 4,076,518.442 (meters) COMP KA0639 LAPLACE CORR --0.27 (seconds) DEFLEC12A KA0639 GEOID HEIGHT --33.36 (meters) GEOID12A KA0639 DYNAMIC HEIGHT -244.496 (meters) 802.15 (feet) COMP KA0639 MODELED GRAVITY - 980,076.9 (mgal) NAVD 88 KA0639 KA0639 VERT ORDER - SECOND CLASS 0 KA0639 KA0639 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA0639 Type KA0639 -----KA0639 NETWORK 0.79 1.74 KA0639 -----KA0639 MEDIAN LOCAL ACCURACY AND DIST (014 points) 0.97 2.07 46.03 KA0639 -----KA0639 NOTE: Click here for information on individual local accuracy KA0639 values and other accuracy information. KA0639 KA0639 KA0639. This mark is at Crawfordville Airport (CFJ) KA0639 KA0639. The horizontal coordinates were established by GPS observations KA0639.and adjusted by the National Geodetic Survey in June 2012. KA0639 KA0639.NAD 83(2011) refers to NAD 83 coordinates where the reference KA0639.frame has been affixed to the stable North American tectonic plate. See KA0639.NA2011 for more information. for more information. KA0639 KA0639. The horizontal coordinates are valid at the epoch date displayed above KA0639.which is a decimal equivalence of Year/Month/Day. KA0639 KA0639. The orthometric height was determined by differential leveling and KA0639.adjusted by the NATIONAL GEODETIC SURVEY KA0639.in June 1991. KA0639 KA0639. The X, Y, and Z were computed from the position and the ellipsoidal ht.

KA0639 KA0639. The Laplace correction was computed from DEFLEC12A derived deflections. KA0639 KA0639. The ellipsoidal height was determined by GPS observations KA0639 and is referenced to NAD 83. KA0639 KA0639. The dynamic height is computed by dividing the NAVD 88 KA0639.geopotential number by the normal gravity value computed on the KA0639.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA0639.degrees latitude (g = 980.6199 gals.). KA0639 KA0639. The modeled gravity was interpolated from observed gravity values. KA0639 KA0639. The following values were computed from the NAD 83(2011) position. KA0639 KA0639; East Units Scale Factor Converg. North - 525,438.933 914,258.895 MT 0.99996917 +0 06 26.1 KA0639;SPC IN W KA0639;SPC IN W - 1,723,877.57 2,999,531.06 sFT 0.99996917 +0 06 26.1 - 4,425,669.281 507,138.400 MT 0.99960063 +0 03 13.4 KA0639;UTM 16 KA0639 - Elev Factor x Scale Factor = Combined Factor KA0639! KA0639!SPC IN W - 0.99996686 x 0.99996917 = 0.99993603 KA0639!UTM 16 - 0.99996686 x 0.99960063 = 0.99956750 KA0639 KA0639 KA0639 PID Reference Object Distance Geod. Az KA06391 dddmmss.s | KA0639 KA2029 CRAPORT 239.911 METERS 17109 KA0639|------| KA0639 KA0639 SUPERSEDED SURVEY CONTROL KA0639 KA0639 NAD 83(2007)- 39 58 52.16859(N) 086 54 59.02542(W) AD( ) 0 KA0639 ELLIP H (02/10/07) 211.290 (m) GP( ) KA0639 NAD 83(1997)- 39 58 52.16866(N) 086 54 59.02572(W) AD( ) B KA0639 ELLIP H (04/10/98) 211.289 (m) GP( ) 4 1 KA0639 NAD 83(1986)- 39 58 52.17284(N) 086 54 59.03260(W) AD( ) 3 KA0639 NAD 27 - 39 58 52.02341(N) 086 54 58.97765(W) AD( ) 3 KA0639 NAVD 88 (04/10/98) 244.63 (m) 802.6 (f) LEVELING 3 KA0639 NGVD 29 (??/??/92) 244.726 (m) 802.91 (f) ADJ UNCH 20 KA0639 KA0639. Superseded values are not recommended for survey control. KA0639 KA0639.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA0639.See file dsdata.txt to determine how the superseded data were derived. KA0639 KA0639 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEK0713825669(NAD 83) KA0639 KA0639 MARKER: DB = BENCH MARK DISK KA0639 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA0639_SP_SET: CONCRETE POST KA0639_STAMPING: A 105 1946 KA0639 MARK LOGO: CGS KA0639_MAGNETIC: O = OTHER; SEE DESCRIPTION

KA0639_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA0639+STABILITY: SURFACE MOTION KA0639_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA0639+SATELLITE: SATELLITE OBSERVATIONS - August 17, 2003 KA0639 KA0639 HISTORY - Date Condition Report By KA0639 HISTORY - 1946 MONUMENTED CGS - 19880515 GOOD KA0639 HISTORY NGS - 19970808 GOOD KA0639 HISTORY SEC KA0639 HISTORY - 19980723 GOOD WOOLPT - 20030817 GOOD INDIV KA0639 HISTORY KA0639 HISTORY - 20090713 GOOD INDOT KA0639 KA0639 STATION DESCRIPTION KA0639 KA0639'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 KA0639'4.7 MI SW FROM CRAWFORDSVILLE. KA0639'4.1 MILES SOUTH ALONG STATE HIGHWAY 43 FROM THE COURTHOUSE AT KA0639'CRAWFORDSVILLE, THENCE 0.6 MILE WEST ALONG A GRAVEL ROAD, AT THE KA0639'ENTRANCE TO CRAWFORDSVILLE MUNICIPAL AIRPORT, 73 FEET SOUTH OF KA0639'THE CENTERLINE OF THE GRAVEL ROAD, 40.5 FEET EAST OF THE KA0639'CENTERLINE OF THE DRIVEWAY TO THE OFFICE BUILDING, 1.5 FEET WEST KA0639'OF THE WEST LEG OF A CRAWFORDSVILLE MUNICIPAL AIRPORT SIGN, 2 KA0639'FEET NORTH OF A WHITE WOODEN WITNESS POST, AND LEVEL WITH THE KA0639'GRAVEL ROAD. A STANDARD DISK, STAMPED A 105 1946 AND SET IN THE KA0639'TOP OF A CONCRETE POST PROJECTING 5 INCHES ABOVE GROUND. KA0639 KA0639 **STATION RECOVERY (1988)** KA0639 KA0639'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 KA0639'THE STATION IS LOCATED ABOUT 11.2 KM (6.95 MI) WEST OF INTERSTATE KA0639'HIGHWAY 74, 6.8 KM (4.25 MI) SOUTH OF CRAWFORDSVILLE AND AT THE KA0639'CRAWFORDSVILLE MUNICIPAL AIRPORT. OWNERSHIP--INDIANA DEPARTMENT OF KA0639'HIGHWAYS, 100 NORTH SENATE AVENUE, ROOM 1101, STATE OFFICE BUILDING, KA0639'INDIANAPOLIS, INDIANA 46204, PHONE 317-232-5533. KA0639'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 136 AND 231 KA0639'IN CRAWFORDSVILLE, GO SOUTH ON U.S. HIGHWAY 231 FOR 7.4 KM (4.60 MI) KA0639'TO THE INTERSECTION WITH COUNTY ROAD 400S. TURN RIGHT AND GO WEST ON KA0639'COUNTY ROAD 400S FOR 1.3 KM (0.80 MI) TO AIRPORT ENTRANCE AND MARK ON KA0639'THE LEFT. KA0639'THE STATION IS A STANDARD CGS BENCH MARK DISK STAMPED---A 105 KA0639'1946---, SET IN THE TOP OF AN 8-INCH SQUARE CONCRETE MONUMENT THAT KA0639'PROJECTS 5 INCHES ABOVE THE GROUND SURFACE. LOCATED 22.2 M (72.8 FT) KA0639'SOUTH FROM CENTER OF COUNTY ROAD 400S, 12.6 M (41.3 FT) EAST FROM KA0639'CENTER OF AIRPORT ENTRANCE ROAD AND 10.8 M (35.4 FT) SOUTHWEST FROM KA0639'SOUTHEAST LEG OF WELCOME TO CRAWFORDSVILLE MUNICIPAL AIRPORT SIGN. KA0639'GPS SURVEY, FAA AIRPORTS, INDIANA. KA0639'DESCRIBED BY D.L. ADAMS. KA0639 KA0639 **STATION RECOVERY (1997)** KA0639 KA0639'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA0639'STATION IS LOCATED 4.7 MILES (7.6 KM) SOUTHWEST OF CRAWFORDSVILLE, AT KA0639'THE CRAWFORDSVILLE MUNICIPAL AIRPORT, 0.8 MILES (1.3 KM) WEST OF THE

KA0639'INTERSECTION OF STATE ROAD 231 AND COUNTY ROAD 400 SOUTH, 17.5 METERS KA0639'(57.4 FT) SOUTH OF CENTERLINE OF COUNTY ROAD 400 SOUTH, 12.25 METERS KA0639'(40.19 FT) EAST OF CENTERLINE OF THE AIRPORT MAIN ENTRANCE ROAD KA0639'(PAVED), 5 METERS (16.4 FT) SOUTH OF CENTER OF CRABAPPLE TREE TRUNK, KA0639'AND PROJECTS 15 CM ABOVE GRADE. KA0639 KA0639 **STATION RECOVERY (1998)** KA0639 KA0639'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (EJR) KA0639'RECOVERED AS DESCRIBED. WOOLPERT CONSULTANTS 1988 (EJR). KA0639 KA0639 **STATION RECOVERY (2003)** KA0639 KA0639'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 KA0639'RECOVERED AS DESCRIBED, KA0639 KA0639 **STATION RECOVERY (2009)** KA0639 KA0639'RECOVERY NOTE BY INDIANA DEPARTMENT OF TRANSPORTATION 2009 (FL) KA0639'RECOVERED AS DESCRIBED

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1299 ********* KA1299 DESIGNATION - B 183 KA1299 PID - KA1299 KA1299 STATE/COUNTY- IL/CLARK KA1299 COUNTRY - US KA1299 USGS QUAD - WEST UNION (1966) KA1299 KA1299 *CURRENT SURVEY CONTROL KA1299 KA1299* NAD 83(2011) POSITION- 39 12 04.96457(N) 087 38 17.28047(W) ADJUSTED KA1299* NAD 83(2011) ELLIP HT- 107.828 (meters) (06/27/12) ADJUSTED KA1299* NAD 83(2011) EPOCH - 2010.00 KA1299* NAVD 88 ORTHO HEIGHT - 139.996 (meters) 459.30 (feet) ADJUSTED KA1299 KA1299 NAD 83(2011) X - 203,964.439 (meters) COMP KA1299 NAD 83(2011) Y - -4,945,106.401 (meters) COMP KA1299 NAD 83(2011) Z - 4,009,734.739 (meters) COMP KA1299 LAPLACE CORR - -1.85 (seconds) DEFLEC12A KA1299 GEOID HEIGHT --32.16 (meters) GEOID12A KA1299 DYNAMIC HEIGHT -139.914 (meters) 459.03 (feet) COMP KA1299 MODELED GRAVITY - 980,043.4 (mgal) NAVD 88 KA1299 KA1299 VERT ORDER - FIRST CLASS II KA1299 KA1299 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1299 Type KA1299 -----KA1299 NETWORK 0.83 1.37 KA1299 -----KA1299 MEDIAN LOCAL ACCURACY AND DIST (003 points) 1.07 1.53 8.32 KA1299 -----KA1299 NOTE: Click here for information on individual local accuracy KA1299 values and other accuracy information. KA1299 KA1299 KA1299. The horizontal coordinates were established by GPS observations KA1299.and adjusted by the National Geodetic Survey in June 2012. KA1299 KA1299.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1299. frame has been affixed to the stable North American tectonic plate. See KA1299.NA2011 for more information. for more information. KA1299 KA1299. The horizontal coordinates are valid at the epoch date displayed above KA1299.which is a decimal equivalence of Year/Month/Day. KA1299 KA1299. The orthometric height was determined by differential leveling and KA1299.adjusted by the NATIONAL GEODETIC SURVEY KA1299.in June 1991. KA1299 KA1299. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1299 KA1299. The Laplace correction was computed from DEFLEC12A derived deflections. KA1299

KA1299. The ellipsoidal height was determined by GPS observations KA1299. and is referenced to NAD 83. KA1299 KA1299. The dynamic height is computed by dividing the NAVD 88 KA1299.geopotential number by the normal gravity value computed on the KA1299.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1299.degrees latitude (g = 980.6199 gals.). KA1299 KA1299. The modeled gravity was interpolated from observed gravity values. KA1299 KA1299. The following values were computed from the NAD 83(2011) position. KA1299 KA1299: Units Scale Factor Converg. North East KA1299; SPC IL E - 281,564.331 360,050.381 MT 1.00001938 +0 26 21.9 KA1299;SPC IL E - 923,765.64 1,181,265.29 sFT 1.00001938 +0 26 21.9 KA1299;UTM 16 - 4,339,318.162 444,899.649 MT 0.99963738 -0 24 12.0 KA1299 KA1299! - Elev Factor x Scale Factor = Combined Factor KA1299!SPC IL E - 0.99998308 x 1.00001938 = 1.00000246 KA1299!UTM 16  $- 0.99998308 \times 0.99963738 = 0.99962047$ KA1299 KA1299 SUPERSEDED SURVEY CONTROL KA1299 KA1299 NAD 83(2007)- 39 12 04.96437(N) 087 38 17.28136(W) AD( ) 0 KA1299 ELLIP H (02/10/07) 107.845 (m) GP( ) KA1299 ELLIP H (12/06/04) 107.848 (m) GP( ) 4 1 KA1299 NAD 83(1997)- 39 12 04.96421(N) 087 38 17.28148(W) AD( ) 1 KA1299 ELLIP H (12/18/02) 107.861 (m) GP( ) 4 2 KA1299 NAVD 88 (12/18/02) 140.00 (m) 459.3 (f) LEVELING 3 KA1299 NGVD 29 (??/??/92) 140.116 (m) 459.70 (f) ADJ UNCH 12 KA1299 KA1299.Superseded values are not recommended for survey control. KA1299 KA1299.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1299.See file dsdata.txt to determine how the superseded data were derived. KA1299 KA1299_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ4489939318(NAD 83) KA1299 KA1299_MARKER: DB = BENCH MARK DISK KA1299 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA1299_SP_SET: SET IN TOP OF CONCRETE MONUMENT KA1299 STAMPING: B 183 1956 KA1299_MARK LOGO: CGS KA1299_PROJECTION: FLUSH KA1299_MAGNETIC: N = NO MAGNETIC MATERIAL KA1299_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA1299+STABILITY: SURFACE MOTION KA1299 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1299+SATELLITE: SATELLITE OBSERVATIONS - March 30, 2012 KA1299 KA1299 HISTORY - Date Condition Report By KA1299 HISTORY - 1956 MONUMENTED CGS - 19860826 GOOD NGS KA1299 HISTORY KA1299 HISTORY - 20001229 GOOD ZAMBRA

KA1299 HISTORY - 20050210 GOOD ILDT KA1299 HISTORY - 20100804 GOOD ILDT KA1299 HISTORY - 20120330 GOOD TROTT KA1299 KA1299 STATION DESCRIPTION KA1299 KA1299'DESCRIBED BY COAST AND GEODETIC SURVEY 1956 KA1299'2.2 MI N FROM YORK. KA1299'2.15 MILES NORTH ALONG A GRAVEL ROAD FROM THE SCHOOL AT YORK, KA1299'AT AN EAST-WEST CROSSROAD, 55 FEET WEST OF CENTER LINE OF ROAD, KA1299'57 FEET WEST-NORTHWEST OF CENTER OF INTERSECTION, 14 FEET NORTH KA1299'OF CENTER LINE OF ROAD WEST, 38 FEET WEST OF WEST END OF AN 18-INCH KA1299'PIPE CULVERT UNDER NORTH-SOUTH ROAD, 5 1/2 FEET EAST OF A KA1299'TELEPHONE POLE, 2 FEET EAST OF A WHITE WOODEN WITNESS POST, ABOUT KA1299'1/2 FOOT ABOVE LEVEL OF ROAD AND SET IN THE TOP OF A CONCRETE KA1299'POST PROJECTING 2 INCHES. KA1299 KA1299 **STATION RECOVERY (1986)** KA1299 KA1299'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986 (RLR) KA1299'FROM THE POST OFFICE IN WEST UNION, GO EAST ON COUNTY ROAD 450 N FOR KA1299'1.3 MILES (2.1 KM) TO A SIDE ROAD RIGHT, COUNTY ROAD 2020 E, TURN KA1299'RIGHT AND GO SOUTH ON COUNTY ROAD 2020 E FOR 1.1 MILES (1.8 KM) TO A KA1299'CROSSROAD, COUNTY ROAD 350 N AND THE MARK ON RIGHT. 55.0 FEET (16.8 KA1299'M) WEST FROM THE CENTER OF COUNTY ROAD 2020 E, 14.0 FEET (4.3 M) NORTH KA1299'FROM THE CENTER OF COUNTY ROAD 350 N, 5.5 FEET (1.7 M) EAST FROM A KA1299'SAWED OFF UTILITY POLE AND A TELEPHONE JUNCTION BOX AND 5.0 FEET (1.5 KA1299'M) EAST FROM A WITNESS POST, 8 INCHES BELOW GROUND. KA1299 KA1299 **STATION RECOVERY (2000)** KA1299 KA1299'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INCORPORATED 2000 (NRB) KA1299'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INC 2000 (NRB) STATION KA1299'RECOVERED AS DESCRIBED IN GOOD CONDITION. KA1299' KA1299' KA1299 KA1299 **STATION RECOVERY (2005)** KA1299 KA1299'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2005 (DRS) KA1299'RECOVERED IN GOOD CONDITION. KA1299 KA1299 **STATION RECOVERY (2010)** KA1299 KA1299'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2010 (RA) KA1299'RECOVERED AS DESCRIBED KA1299 KA1299 **STATION RECOVERY (2012)** KA1299 KA1299'RECOVERY NOTE BY TROTTER AND ASSOCIATES 2012 (JMM) KA1299'RECOVERED AS DESCRIBED.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1741 DESIGNATION - B 360 KA1741 PID - KA1741 KA1741 STATE/COUNTY- IN/VERMILLION KA1741 COUNTRY - US KA1741 USGS QUAD - CLINTON (1986) KA1741 KA1741 *CURRENT SURVEY CONTROL KA1741 KA1741* NAD 83(2011) POSITION- 39 42 36.09838(N) 087 23 56.46804(W) ADJUSTED KA1741* NAD 83(2011) ELLIP HT- 124.408 (meters) (06/27/12) ADJUSTED KA1741* NAD 83(2011) EPOCH - 2010.00 KA1741* NAVD 88 ORTHO HEIGHT - 157.252 (meters) 515.92 (feet) ADJUSTED KA1741 KA1741 NAD 83(2011) X - 222,972.193 (meters) COMP KA1741 NAD 83(2011) Y - -4,908,374.269 (meters) COMP KA1741 NAD 83(2011) Z - 4,053,349.072 (meters) COMP KA1741 LAPLACE CORR - -5.05 (seconds) DEFLEC12A KA1741 GEOID HEIGHT --32.84 (meters) GEOID12A KA1741 DYNAMIC HEIGHT -157.165 (meters) 515.63 (feet) COMP KA1741 MODELED GRAVITY - 980,068.6 (mgal) NAVD 88 KA1741 KA1741 VERT ORDER - FIRST CLASS II KA1741 KA1741 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1741 Type KA1741 -----KA1741 NETWORK 1.07 2.39 KA1741 -----KA1741 MEDIAN LOCAL ACCURACY AND DIST (009 points) 1.15 2.61 48.12 KA1741 -----KA1741 NOTE: Click here for information on individual local accuracy KA1741 values and other accuracy information. KA1741 KA1741 KA1741. The horizontal coordinates were established by GPS observations KA1741.and adjusted by the National Geodetic Survey in June 2012. KA1741 KA1741.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1741.frame has been affixed to the stable North American tectonic plate. See KA1741.NA2011 for more information. for more information. KA1741 KA1741. The horizontal coordinates are valid at the epoch date displayed above KA1741.which is a decimal equivalence of Year/Month/Day. KA1741 KA1741. The orthometric height was determined by differential leveling and KA1741.adjusted by the NATIONAL GEODETIC SURVEY KA1741.in June 1991. KA1741 KA1741.Photographs are available for this station. KA1741 KA1741.The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1741

KA1741. The Laplace correction was computed from DEFLEC12A derived deflections. KA1741 KA1741. The ellipsoidal height was determined by GPS observations KA1741.and is referenced to NAD 83. KA1741 KA1741. The dynamic height is computed by dividing the NAVD 88 KA1741.geopotential number by the normal gravity value computed on the KA1741. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1741.degrees latitude (g = 980.6199 gals.). KA1741 KA1741. The modeled gravity was interpolated from observed gravity values. KA1741 KA1741. The following values were computed from the NAD 83(2011) position. KA1741 KA1741: North East Units Scale Factor Converg. - 495,370.155 872,929.587 MT 0.99997569 -0 12 06.1 KA1741;SPC IN W - 1,625,226.92 2,863,936.49 sFT 0.99997569 -0 12 06.1 KA1741;SPC IN W - 4,395,649.990 465,796.182 MT 0.99961440 -0 15 17.8 KA1741;UTM 16 KA1741 KA1741! - Elev Factor x Scale Factor = Combined Factor  $- 0.99998048 \times 0.99997569 = 0.99995617$ KA1741!SPC IN W - 0.99998048 x 0.99961440 = 0.99959489 KA1741!UTM 16 KA1741 KA1741 SUPERSEDED SURVEY CONTROL KA1741 KA1741 NAD 83(2007)- 39 42 36.09848(N) 087 23 56.46895(W) AD( ) 0 KA1741 ELLIP H (02/10/07) 124.428 (m) GP( 087 23 56.46901(W) AD( KA1741 NAD 83(1997)- 39 42 36.09848(N) ) B KA1741 ELLIP H (03/12/99) 124.433 (m) GP( ) 2 1 KA1741 NAVD 88 (03/12/99) 157.25 (m) 515.9 (f) LEVELING - 3 KA1741 KA1741.Superseded values are not recommended for survey control. KA1741 KA1741.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1741.See file dsdata.txt to determine how the superseded data were derived. KA1741 KA1741_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ6579695649(NAD 83) KA1741 KA1741 MARKER: I = METAL ROD KA1741 SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) KA1741_SP_SET: STAINLESS STEEL ROD KA1741 STAMPING: B 360 1986 KA1741_MARK LOGO: NGS KA1741_PROJECTION: FLUSH KA1741 MAGNETIC: O = OTHER; SEE DESCRIPTION KA1741_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL KA1741 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1741+SATELLITE: SATELLITE OBSERVATIONS - August 11, 2011 KA1741 ROD/PIPE-DEPTH: 9.7 meters KA1741 KA1741 HISTORY - Date Condition Report By KA1741 HISTORY MONUMENTED - 1986 NGS - 19980723 GOOD KA1741 HISTORY WOOLPT KA1741 HISTORY - 20050722 GOOD JCLS

KA1741 HISTORY - 20110811 GOOD JCLS KA1741 KA1741 STATION DESCRIPTION KA1741 KA1741'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 KA1741'6.7 KM (4.15 MI) NORTH FROM CLINTON. KA1741'6.7 KM (4.15 MI) NORTHERLY ALONG STATE HIGHWAY 63 FROM ITS JUNCTION KA1741'WITH STATE HIGHWAY 163 IN CLINTON, 37.0 M (121.4 FT) WEST OF THE KA1741'CENTERLINE OF THE SOUTH BOUND LANES OF THE HIGHWAY, 11.7 M (38.4 FT) KA1741'SOUTH OF THE CENTER OF THE CLINTON AIRPORT ENTRANCE ROAD, AND 4.0 M KA1741'(13.1 FT) SOUTH OF UTILITY POLE NUMBER 293-845. NOTE--ACCESS TO DATUM KA1741'POINT IS HAD THROUGH A 5-INCH LOGO CAP. KA1741'THE MARK IS 0.4 METERS E FROM A WITNESS POST AND FENCE KA1741'THE MARK IS 1.0 M BELOW THE HIGHWAY. KA1741 KA1741 **STATION RECOVERY (1998)** KA1741 KA1741'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (CWH) KA1741'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (CWH). KA1741 KA1741 **STATION RECOVERY (2005)** KA1741 KA1741'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2005 KA1741'RECOVERED IN GOOD CONDITION. KA1741 KA1741 **STATION RECOVERY (2011)** KA1741

KA1741'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 KA1741'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1696 *********** KA1696 DESIGNATION - C 353 KA1696 PID - KA1696 KA1696 STATE/COUNTY- IN/VIGO KA1696 COUNTRY - US KA1696 USGS QUAD - SEELYVILLE (1986) KA1696 KA1696 *CURRENT SURVEY CONTROL KA1696 KA1696* NAD 83(2011) POSITION- 39 24 43.08982(N) 087 19 59.37142(W) NO CHECK KA1696* NAD 83(2011) ELLIP HT- 137.241 (meters) (06/27/12) NO CHECK KA1696* NAD 83(2011) EPOCH - 2010.00 KA1696* NAVD 88 ORTHO HEIGHT - 169.971 (meters) 557.65 (feet) ADJUSTED KA1696 KA1696 NAD 83(2011) X - 229,595.238 (meters) COMP KA1696 NAD 83(2011) Y - -4,929,178.619 (meters) COMP KA1696 NAD 83(2011) Z - 4,027,844.386 (meters) COMP KA1696 LAPLACE CORR - -1.86 (seconds) DEFLEC12A KA1696 GEOID HEIGHT --32.72 (meters) GEOID12A KA1696 DYNAMIC HEIGHT -169.874 (meters) 557.33 (feet) COMP KA1696 MODELED GRAVITY - 980,051.3 (mgal) NAVD 88 KA1696 KA1696 VERT ORDER - FIRST CLASS II KA1696 KA1696 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1696 Type KA1696 -----KA1696 NETWORK 1.51 4.12 KA1696 -----KA1696 MEDIAN LOCAL ACCURACY AND DIST (002 points) 1.48 4.08 10.35 KA1696 -----KA1696 NOTE: Click here for information on individual local accuracy KA1696 values and other accuracy information. KA1696 KA1696 KA1696. The horizontal coordinates were established by GPS observations KA1696.and adjusted by the National Geodetic Survey in June 2012. KA1696 KA1696.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1696.frame has been affixed to the stable North American tectonic plate. See KA1696.NA2011 for more information. for more information. KA1696 KA1696. The horizontal coordinates are valid at the epoch date displayed above KA1696.which is a decimal equivalence of Year/Month/Day. KA1696 KA1696.No horizontal observational check was made to the station. KA1696. KA1696. The orthometric height was determined by differential leveling and KA1696. adjusted by the NATIONAL GEODETIC SURVEY KA1696.in June 1991. KA1696 KA1696.Photographs are available for this station. KA1696

KA1696. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1696 KA1696. The Laplace correction was computed from DEFLEC12A derived deflections. KA1696 KA1696. The ellipsoidal height was determined by GPS observations KA1696.and is referenced to NAD 83. KA1696 KA1696. The dynamic height is computed by dividing the NAVD 88 KA1696.geopotential number by the normal gravity value computed on the KA1696.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1696.degrees latitude (g = 980.6199 gals.). KA1696 KA1696. The modeled gravity was interpolated from observed gravity values. KA1696 KA1696. The following values were computed from the NAD 83(2011) position. KA1696 Units Scale Factor Converg. KA1696; North East - 462,261.149 878,485.286 MT 0.99997236 -0 09 31.0 KA1696;SPC IN W KA1696;SPC IN W - 1,516,601.79 2,882,163.81 sFT 0.99997236 -0 09 31.0 KA1696;UTM 16 - 4,362,547.831 471,319.209 MT 0.99961013 -0 12 41.5 KA1696 KA1696! - Elev Factor x Scale Factor = Combined Factor KA1696!SPC IN W  $-0.99997847 \times 0.99997236 = 0.99995083$ KA1696!UTM 16  $- 0.99997847 \times 0.99961013 = 0.99958861$ KA1696 KA1696 SUPERSEDED SURVEY CONTROL KA1696 KA1696 NAD 83(2007)- 39 24 43.08989(N) 087 19 59.37243(W) AD( ) 0 KA1696 ELLIP H (02/10/07) 137.263 (m) GP( KA1696 NAD 83(1997)- 39 24 43.08996(N) 087 19 59.37246(W) AD( ) 1 KA1696 ELLIP H (11/27/02) 137.277 (m) GP( ) 4 1 KA1696 NAD 83(1997)- 39 24 43.08992(N) 087 19 59.37249(W) AD( ) 1 KA1696 ELLIP H (03/18/02) 137.282 (m) GP( ) 4 1 KA1696 NAVD 88 (03/18/02) 169.97 (m) (f) LEVELING 557.6 3 KA1696 KA1696.Superseded values are not recommended for survey control. KA1696 KA1696.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1696.See file dsdata.txt to determine how the superseded data were derived. KA1696 KA1696_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ7131962547(NAD 83) KA1696 KA1696_MARKER: I = METAL ROD KA1696_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) KA1696_SP_SET: STAINLESS STEEL ROD KA1696_STAMPING: C 353 1985 KA1696 MARK LOGO: NGS KA1696_PROJECTION: RECESSED 5 CENTIMETERS KA1696_MAGNETIC: I = MARKER IS A STEEL ROD KA1696_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL KA1696_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1696+SATELLITE: SATELLITE OBSERVATIONS - April 18, 2007 KA1696_ROD/PIPE-DEPTH: 7.3 meters KA1696

KA1696 HISTORY - Date Report By Condition KA1696 HISTORY - 1985 MONUMENTED NGS KA1696 HISTORY - 20010501 GOOD WOOLPT KA1696 HISTORY - 20070418 GOOD HANPRO KA1696 KA1696 STATION DESCRIPTION KA1696 KA1696'DESCRIBED BY NATIONAL GEODETIC SURVEY 1985 KA1696'3.4 KM (2.1 MI) NORTH FROM RILEY. KA1696'3.4 KM (2.1 MI) NORTHERLY ALONG STATE HIGHWAY 46 FROM ITS JUNCTION KA1696'WITH STATE HIGHWAY 159 IN RILEY, 61.0 M (200.1 FT) SOUTH OF THE CENTER KA1696'OF A DRIVEWAY LEADING WEST TO A LARGE BUILDING, 40.2 M (131.9 FT) KA1696'NORTHWEST OF THE CENTER OF 55TH STREET, 28.9 M (94.8 FT) WEST OF THE KA1696'CENTERLINE OF THE HIGHWAY, 5.8 M (19.0 FT) NORTH OF A UTILITY POLE KA1696'WITH ONE GUY WIRE, AND 1.7 M (5.6 FT) SOUTH OF UTILITY POLE NUMBER 58. KA1696'NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. KA1696'THE MARK IS 0.3 METERS E FROM A WITNESS POST KA1696'THE MARK IS ABOVE LEVEL WITH THE HIGHWAY. KA1696 KA1696 STATION RECOVERY (2001) KA1696 KA1696'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2001 (ARL) KA1696'RECOVERED AS DESCRIBED. KA1696' KA1696' KA1696 **STATION RECOVERY (2007)** KA1696 KA1696 KA1696'RECOVERY NOTE BY HANSON PROFESSIONAL SERVICES INC 2007 (RLW)

KA1696'RECOVERED AS DESCRIBED

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA0601 ********** KA0601 CBN - This is a Cooperative Base Network Control Station. KA0601 DESIGNATION - F 122 KA0601 PID - KA0601 KA0601 STATE/COUNTY- IN/PUTNAM KA0601 COUNTRY - US KA0601 USGS QUAD - GREENCASTLE (1986) KA0601 KA0601 *CURRENT SURVEY CONTROL KA0601 KA0601* NAD 83(2011) POSITION- 39 37 37.47137(N) 086 49 09.04721(W) ADJUSTED KA0601* NAD 83(2011) ELLIP HT- 213.069 (meters) (06/27/12) ADJUSTED KA0601* NAD 83(2011) EPOCH - 2010.00 KA0601* NAVD 88 ORTHO HEIGHT - 246.099 (meters) 807.41 (feet) ADJUSTED KA0601 KA0601 NAD 83(2011) X - 272,963.189 (meters) COMP KA0601 NAD 83(2011) Y - -4,911,804.867 (meters) COMP KA0601 NAD 83(2011) Z - 4,046,316.074 (meters) COMP KA0601 LAPLACE CORR -0.78 (seconds) DEFLEC12A KA0601 GEOID HEIGHT --33.03 (meters) GEOID12A KA0601 DYNAMIC HEIGHT -245.959 (meters) 806.95 (feet) COMP KA0601 MODELED GRAVITY - 980,053.5 (mgal) NAVD 88 KA0601 KA0601 VERT ORDER - SECOND CLASS 0 KA0601 KA0601 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA0601 Type KA0601 -----KA0601 NETWORK 1.31 2.76 KA0601 -----KA0601 MEDIAN LOCAL ACCURACY AND DIST (011 points) 1.43 3.00 48.85 KA0601 -----KA0601 NOTE: Click here for information on individual local accuracy KA0601 values and other accuracy information. KA0601 KA0601 KA0601. The horizontal coordinates were established by GPS observations KA0601.and adjusted by the National Geodetic Survey in June 2012. KA0601 KA0601.NAD 83(2011) refers to NAD 83 coordinates where the reference KA0601.frame has been affixed to the stable North American tectonic plate. See KA0601.NA2011 for more information. for more information. KA0601 KA0601. The horizontal coordinates are valid at the epoch date displayed above KA0601.which is a decimal equivalence of Year/Month/Day. KA0601 KA0601. The orthometric height was determined by differential leveling and KA0601.adjusted by the NATIONAL GEODETIC SURVEY KA0601.in June 1991. KA0601 KA0601. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA0601 KA0601. The Laplace correction was computed from DEFLEC12A derived deflections.

KA0601 KA0601. The ellipsoidal height was determined by GPS observations KA0601 and is referenced to NAD 83. KA0601 KA0601. The dynamic height is computed by dividing the NAVD 88 KA0601.geopotential number by the normal gravity value computed on the KA0601. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA0601.degrees latitude (g = 980.6199 gals.). KA0601 KA0601. The modeled gravity was interpolated from observed gravity values. KA0601 KA0601. The following values were computed from the NAD 83(2011) position. KA0601 KA0601: North East Units Scale Factor Converg. KA0601;SPC IN W - 486,146.147 922,678.579 MT 0.99997300 +0 10 06.5 KA0601;SPC IN W - 1,594,964.48 3,027,154.64 sFT 0.99997300 +0 10 06.5 KA0601;UTM 16 - 4,386,383.186 515,518.400 MT 0.99960296 +0.06 55.2 KA0601 KA0601! - Elev Factor x Scale Factor = Combined Factor KA0601!SPC IN W - 0.99996657 x 0.99997300 = 0.99993957 KA0601!UTM 16 - 0.99996657 x 0.99960296 = 0.99956955 KA0601 KA0601: Primary Azimuth Mark Grid Az KA0601:SPC IN W - PUTPORT 075 57 26.5 076 00 37.8 KA0601:UTM 16 - PUTPORT KA0601 KA0601 |------| KA0601 | PID Reference Object Distance Geod. Az | dddmmss.s KA0601 KA0601 | KA2043 PUTPORT 437.651 METERS 0760733.0 | KA0601 KA0601 KA0601 SUPERSEDED SURVEY CONTROL KA0601 KA0601 NAD 83(2007)- 39 37 37.47146(N) 086 49 09.04810(W) AD( ) 0 KA0601 ELLIP H (02/10/07) 213.088 (m) GP( ) KA0601 NAD 83(1997)- 39 37 37.47148(N) 086 49 09.04829(W) AD( ) B KA0601 ELLIP H (04/10/98) 213.091 (m) GP( ) 4 1 KA0601 NAD 83(1986)- 39 37 37.46927(N) 086 49 09.04427(W) AD( ) 3 KA0601 NAD 27 - 39 37 37.31437(N) 086 49 09.02060(W) AD( ) 3 KA0601 NAVD 88 (04/10/98) 246.10 (m) 807.4 (f) LEVELING 3 KA0601 NGVD 29 (??/??/92) 246.209 (m) 807.77 (f) ADJ UNCH 20 KA0601 KA0601.Superseded values are not recommended for survey control. KA0601 KA0601.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA0601.See file dsdata.txt to determine how the superseded data were derived. KA0601 KA0601_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEJ1551886383(NAD 83) KA0601 KA0601_MARKER: DB = BENCH MARK DISK KA0601_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA0601_SP_SET: CONCRETE POST KA0601_STAMPING: F 122 1946

KA0601_MARK LOGO: CGS KA0601 MAGNETIC: N = NO MAGNETIC MATERIAL KA0601 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA0601+STABILITY: SURFACE MOTION KA0601 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA0601+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 KA0601 KA0601 HISTORY - Date Condition Report By KA0601 HISTORY - 1946 MONUMENTED CGS KA0601 HISTORY - 19880702 GOOD NGS KA0601 HISTORY - 19901008 GOOD NGS KA0601 HISTORY - 19970527 GOOD NGS KA0601 HISTORY - 20061005 GOOD AME KA0601 HISTORY - 20110706 GOOD INDIV KA0601 HISTORY - 20110706 GOOD INDIV KA0601 STATION DESCRIPTION KA0601 KA0601 KA0601'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 KA0601'3.2 MI SE FROM GREENCASTLE. KA0601'1.1 MILE SOUTH ALONG STATE HIGHWAY 43 FROM THE COUNTY COURT HOUSE KA0601'AT GREENCASTLE, THENCE 2.05 MILES EAST ALONG A PAVED ROAD TO KA0601'THE GREENCASTLE MUNICIPAL AIRPORT, AT THE ENTRANCE TO THE KA0601'AIRPORT, 60 YARDS SOUTHEAST OF THE SOUTHEAST CORNER OF A 12 FT KA0601'X 14 FT OFFICE BUILDING, 38 FEET NORTH OF THE CENTER LINE OF THE KA0601'PAVED ROAD ALONG THE SOUTH SIDE OF THE FIELD, 22.5 FEET EAST OF KA0601'THE CENTER LINE OF THE ENTRANCE ROAD, 3 FEET SOUTHWEST OF A SIGN KA0601'AERO SERVICES-GREENCASTLE MUNICIPAL AIRPORT- ETC., 2 FEET KA0601'NORTHWEST OF A WHITE WOODEN WITNESS POST AND ABOUT LEVEL WITH THE KA0601'PAVED ROAD. A STANDARD DISK. STAMPED F 122 1946 AND SET IN THE KA0601'TOP OF A CONCRETE POST PROJECTING 4 INCHES ABOVE GROUND. KA0601 KA0601 **STATION RECOVERY (1988)** KA0601 KA0601'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 KA0601'THE STATION IS LOCATED ABOUT 11.3 KM (7.00 MI) NORTH OF INTERSTATE KA0601'HIGHWAY 70, 4.8 KM (3.00 MI) SOUTHEAST OF GREENCASTLE AND NEAR KA0601'ENTRANCE TO GREENCASTLE MUNICIPAL AIRPORT. OWNERSHIP--INDIANA KA0601'DEPARTMENT OF HIGHWAYS, 100 NORTH SENATE AVENUE, ROOM 1101, STATE KA0601'OFFICE BUILDING, INDIANAPOLIS, IN 46204, PHONE 317-232-5533. KA0601'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 240 AND U.S. KA0601'HIGHWAY 231 AT GREENCASTLE, GO SOUTH ON U.S. HIGHWAY 231 FOR 1.4 KM KA0601'(0.85 MI) TO A ROAD LEFT. TURN LEFT AND GO EAST ON PAVED ROAD FOR 1.0 KA0601'KM (0.60 MI) TO A STOP SIGN AT T-ROAD. TURN RIGHT AND GO SOUTH ALONG KA0601'PAVED ROAD FOR 2.6 KM (1.60 MI) TO AIRPORT ENTRANCE AND STATION ON KA0601'THE LEFT. KA0601'THE STATION IS A STANDARD CGS BENCH MARK DISK STAMPED---F 122 KA0601'1946---, SET IN THE TOP OF A SQUARE CONCRETE POST THAT PROJECTS 4 KA0601'INCHES ABOVE THE GROUND. LOCATED 12.4 M (40.7 FT) NORTH FROM CENTER KA0601'OF PAVED ROAD, 5.8 M (19.0 FT) EAST FROM CENTER OF AIRPORT ENTRANCE KA0601'ROAD, 3.8 M (12.5 FT) NORTH OF A FENCE CORNER POST AND 0.4 M (1.3 KA0601'FT)WEST OF FIBERGLASS WITNESS POST IN FENCELINE. KA0601'GPS SURVEY, FAA AIRPORTS, INDIANA. KA0601'DESCRIBED BY D.L. ADAMS.

KA0601

## KA0601 STATION RECOVERY (1990)

KA0601

KA0601'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990 KA0601'THE STATION IS LOCATED ABOUT 11.3 KM (7.0 MI) NORTH OF INTERSTATE KA0601'HIGHWAY 70, 4.8 KM (3.0 MI) SOUTHEAST OF GREENCASTLE AND ON THE EAST KA0601'SIDE OF THE ENTRANCE ROAD OF THE GREENCASTLE MUNICIPAL AIRPORT. KA0601'OWNERSHIP--INDIANA DEPARTMENT OF HIGHWAYS, 100 NORTH SENATE AVENUE, KA0601'ROOM 1101, STATE OFFICE BUILDING, INDIANAPOLIS, IN 46204, PHONE KA0601'317-232-5533.

KA0601'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 240 AND U.S. KA0601'HIGHWAY 231 IN GREENCASTLE, GO SOUTH ON U.S. HIGHWAY 231 FOR 1.4 KM KA0601'(0.9 MI) TO THE JUNCTION MARTINSVILLE STREET ON THE LEFT, TURN LEFT, KA0601'EAST, ON MARTINSVILLE STREET FOR 1.0 KM (0.6 MI) TO THE JUNCTION OF A KA0601'T-ROAD (FIRST STREET), TURN RIGHT, SOUTH-SOUTHEAST, ON FIRST STREET KA0601'FOR 2.6 KM (1.6 MI) TO THE AIRPORT ENTRANCE ROAD AND THE STATION ON KA0601'THE LEFT.

KA0601'THE STATION IS LOCATED 12.4 M (40.7 FT) NORTH OF THE CENTER OF THE KA0601'ROAD, 5.8 M (19.0 FT) EAST OF THE CENTER OF THE AIRPORT ENTRANCE KA0601'ROAD, 3.8 M (12.5 FT) NORTH OF THE CORNER POST OF A FENCE AND 0.4 M KA0601'(1.3 FT) WEST OF A FIBERGLASS WITNESS POST SET IN A FENCE LINE. KA0601

KA0601

STATION RECOVERY (1997)

KA0601

KA0601'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) KA0601'THE STATION IS LOCATED ABOUT 11 KM (6.85 MI) NORTH OF INTERSTATE KA0601'HIGHWAY 70, 5 KM (3.10 MI) SOUTHEAST OF GREENCASTLE, IN THE EAST KA0601'QUADRANT OF THE JUNCTION OF COUNTY ROAD 200S AND THE AIRFIELD ENTRANCE KA0601'ROAD, IN GRASS JUST OUTSIDE OF THE AIRPORT PERIMETER FENCE, AND ACROSS KA0601'THE AIRPORT ENTRANCE ROAD FROM THE ENTRANCE TO THE JAYCEE PARK. KA0601'OWNERSHIP--INDIANA DEPARTMENT OF TRANSPORTATION. TO REACH FROM THE KA0601'JUNCTION OF U.S. HIGHWAY 231 AND STATE HIGHWAY 240 IN GREENCASTLE, GO KA0601'SOUTH ON HIGHWAY 231 FOR 0.12 KM (0.05 MI) TO A PAVED ROAD LEFT KA0601'(MARTINSVILLE STREET). TURN LEFT, EAST ON MARTINSVILLE STREET FOR KA0601'0.92 KM (0.55 MI) TO A PAVED T-JUNCTION (FIRST STREET). TURN RIGHT, KA0601'SOUTH-SOUTHEAST ON FIRST STREET FOR 0.16 KM (0.10 MI) TO A PAVED KA0601'T-JUNCTION. TURN LEFT, EAST, THEN SOUTHEASTERLY ON COUNTY ROAD 200S KA0601'FOR 2.14 KM (1.30 MI) TO THE AIRPORT ENTRANCE ROAD AND THE STATION ON KA0601'THE LEFT. THE STATION IS SET IN THE TOP OF A 30 CM ROUND CONCRETE KA0601'POST PROJECTING 3 CM ABOVE GROUND. IT IS 12.4 M (40.7 FT) NORTHEAST KA0601'OF THE CENTER OF COUNTY ROAD 200S, 5.8 M (19.0 FT) EAST-SOUTHEAST OF KA0601'THE CENTER OF THE AIRPORT ENTRANCE ROAD, 3.6 M (11.8 FT) EAST OF THE KA0601'EXTENDED CENTER OF THE PARK ENTRANCE ROAD, 3.6 M (11.8 FT) KA0601'NORTH-NORTHEAST OF A WOODEN FENCE CORNER POST, 0.35 M (1.15 FT) KA0601'WEST-NORTHWEST OF THE CHAIN LINK PERIMETER FENCE AND 0.25 M (0.82 FT) KA0601'WEST-NORTHWEST OF A FIBERGLASS WITNESS POST. KA0601 KA0601 **STATION RECOVERY (2006)** KA0601 KA0601'RECOVERY NOTE BY AERO-METRIC ENGINEERING INCORPORATED 2006 (MB) KA0601'RECOVERED IN GOOD CONDITION. KA0601 KA0601 **STATION RECOVERY (2011)** KA0601

KA0601'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI)KA0601'RECOVERED FOR INDIANA ORTHO AND LIDAR PROGRAMKA0601KA0601STATION RECOVERY (2011)KA0601KA0601'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI)KA0601'RECOVERED FOR INDIANA ORTHO AND LIDAR PROGRAM

National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 1 JA1639 ********** JA1639 CBN - This is a Cooperative Base Network Control Station. **JA1639 DESIGNATION - LAWRENCE** JA1639 PID - JA1639 JA1639 STATE/COUNTY- IL/LAWRENCE JA1639 COUNTRY - US JA1639 USGS QUAD - VINCENNES (1998) JA1639 JA1639 *CURRENT SURVEY CONTROL JA1639 JA1639* NAD 83(2011) POSITION- 38 42 27.97823(N) 087 31 55.93687(W) ADJUSTED JA1639* NAD 83(2011) ELLIP HT- 125.906 (meters) (06/27/12) ADJUSTED JA1639* NAD 83(2011) EPOCH - 2010.00 JA1639* NAVD 88 ORTHO HEIGHT - 157.687 (meters) 517.34 (feet) ADJUSTED JA1639 JA1639 NAD 83(2011) X - 214,590.662 (meters) COMP JA1639 NAD 83(2011) Y - -4,979,154.972 (meters) COMP JA1639 NAD 83(2011) Z - 3,967,132.375 (meters) COMP JA1639 LAPLACE CORR --2.56 (seconds) DEFLEC12A JA1639 GEOID HEIGHT --31.79 (meters) GEOID12A JA1639 DYNAMIC HEIGHT -157.590 (meters) 517.03 (feet) COMP JA1639 MODELED GRAVITY -980,012.8 (mgal) NAVD 88 JA1639 JA1639 VERT ORDER - FIRST CLASS II JA1639 JA1639 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JA1639 Type JA1639 -----JA1639 NETWORK 0.75 1.22 JA1639 -----JA1639 MEDIAN LOCAL ACCURACY AND DIST (043 points) 0.90 1.57 84.65 JA1639 -----JA1639 NOTE: Click here for information on individual local accuracy JA1639 values and other accuracy information. JA1639 JA1639 JA1639. The horizontal coordinates were established by GPS observations JA1639.and adjusted by the National Geodetic Survey in June 2012. JA1639 JA1639.NAD 83(2011) refers to NAD 83 coordinates where the reference JA1639.frame has been affixed to the stable North American tectonic plate. See JA1639.NA2011 for more information. for more information. JA1639 JA1639. The horizontal coordinates are valid at the epoch date displayed above JA1639.which is a decimal equivalence of Year/Month/Day. JA1639 JA1639. The orthometric height was determined by differential leveling and JA1639.adjusted by the NATIONAL GEODETIC SURVEY JA1639.in June 1991. JA1639 JA1639. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA1639 JA1639.The Laplace correction was computed from DEFLEC12A derived deflections.

JA1639 JA1639. The ellipsoidal height was determined by GPS observations JA1639.and is referenced to NAD 83. JA1639 JA1639. The dynamic height is computed by dividing the NAVD 88 JA1639.geopotential number by the normal gravity value computed on the JA1639. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA1639.degrees latitude (g = 980.6199 gals.). JA1639 JA1639. The modeled gravity was interpolated from observed gravity values. JA1639 JA1639. The following values were computed from the NAD 83(2011) position. JA1639 JA1639; North East Units Scale Factor Converg. JA1639;SPC IL E - 226,842.462 369,682.213 MT 1.00003477 +0 30 03.6 - 744,232.31 1,212,865.73 sFT 1.00003477 +0 30 03.6 JA1639;SPC IL E JA1639;SPC IN W - 384,151.964 860,957.663 MT 0.99998543 -0 16 50.5 JA1639;SPC IN W - 1,260,338.57 2,824,658.60 sFT 0.99998543 -0 16 50.5 - 4,284,482.909 453,726.353 MT 0.99962637 -0 19 58.1 JA1639;UTM 16 JA1639 - Elev Factor x Scale Factor = Combined Factor JA1639! JA1639!SPC IL E - 0.99998025 x 1.00003477 = 1.00001501 JA1639!SPC IN W  $- 0.99998025 \times 0.99998543 = 0.99996568$ JA1639!UTM 16  $- 0.99998025 \times 0.99962637 = 0.99960662$ JA1639 Primary Azimuth Mark JA1639: Grid Az JA1639:SPC IL E - LAWRENCE AZ MK 280 51 00.6 JA1639:SPC IN W - LAWRENCE AZ MK 281 37 54.7 JA1639:UTM 16 - LAWRENCE AZ MK 281 41 02.3 JA1639 JA1639|------| JA1639 | PID Reference Object Distance Geod. Az JA1639 dddmmss.s JA1639 | CG8765 LAWRENCE RM 1 26.341 METERS 09354 JA1639 JA2084 VINCENNES RAD KBU 406 APPROX. 3.1 KM 1262612.7 | JA1639 JA1952 VINCENNES UNIV TV WVUT APPROX. 7.9 KM 1422221.5 | JA1639 | JA1951 VINCENNES ST VINCENT SCH TANK APPROX. 7.7 KM 1534035.4 JA1639 | JA2081 VINCENNES PACKAGING CORP STACK APPROX. 2.5 KM 1693301.1 | JA1639 JA2085 VINCENNES ST FRANCIS CATH CH APPROX. 3.2 KM 1825323.2 JA1639 | JA2086 VINCENNES BLACKFORD GLASS STK APPROX. 3.9 KM 1860815.1 | JA1639 JA1638 LAWRENCE AZ MK 2812104.2 JA1639 CG8766 LAWRENCE RM 2 29.426 METERS 28539 JA1639 | JA2077 AIRPORT BCN LAWRENCEVILLE APT APPROX. 8.7 KM 3131926.9 | JA1639 JA1639 JA1639 SUPERSEDED SURVEY CONTROL JA1639 JA1639 NAD 83(2007)- 38 42 27.97844(N) 087 31 55.93773(W) AD( ) 0 JA1639 ELLIP H (02/10/07) 125.887 (m) GP( ) JA1639 ELLIP H (10/15/04) 125.907 (m) GP( ) 4 2 JA1639 NAD 83(1997)- 38 42 27.97846(N) 087 31 55.93785(W) AD( ) B JA1639 ELLIP H (04/10/98) 125.888 (m) GP( ) 4 1 JA1639 NAD 83(1986)- 38 42 27.98880(N) 087 31 55.93830(W) AD( ) 2 JA1639 NAD 27 - 38 42 27.81932(N) 087 31 55.85163(W) AD( ) 2

JA1639 NAVD 88 (04/10/98) 157.69 (m) 517.4 (f) LEVELING 3 JA1639 JA1639. Superseded values are not recommended for survey control. JA1639 JA1639.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA1639.See file dsdata.txt to determine how the superseded data were derived. JA1639 JA1639_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH5372684482(NAD 83) JA1639 JA1639_MARKER: DS = TRIANGULATION STATION DISK JA1639 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA1639_SP_SET: CONCRETE POST JA1639 STAMPING: LAWRENCE 1968 JA1639_MARK LOGO: CGS JA1639 PROJECTION: FLUSH JA1639_MAGNETIC: N = NO MAGNETIC MATERIAL JA1639_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA1639+STABILITY: SURFACE MOTION JA1639_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA1639+SATELLITE: SATELLITE OBSERVATIONS - August 04, 2010 JA1639 JA1639 HISTORY - Date Condition Report By JA1639 HISTORY - 1968 MONUMENTED CGS JA1639 HISTORY - 1986 GOOD NGS JA1639 HISTORY - 19970228 GOOD NGS JA1639 HISTORY - 19970628 GOOD NGS LNDMRK JA1639 HISTORY - 20090214 GOOD JA1639 HISTORY - 20100518 GOOD ILDT JA1639 HISTORY - 20100804 GOOD ILDT JA1639 JA1639 STATION DESCRIPTION JA1639 JA1639'DESCRIBED BY COAST AND GEODETIC SURVEY 1968 (LMC) JA1639'THE STATION IS LOCATED ABOUT 1.5 MILES NORTH OF VINCENNES, ON THE JA1639'SOUTH SIDE OF U S JA1639'HIGHWAY 50 AND ON THE HIGHWAY RIGHT OF WAY. JA1639' JA1639'TO REACH THE STATION FROM THE JUNCTION OF U S HIGHWAY 50 AND STATE JA1639'HIGHWAY 33 ABOUT JA1639'1.5 MILES NORTHWEST OF VINCENNES, GO EAST ON HIGHWAY JA1639'50 FOR 0.15 MILE TO THE AZIMUTH JA1639'MARK ON THE RIGHT. CONTINUE EAST ON JA1639'HIGHWAY 50 FOR 1.15 MILES TO THE TOP OF A HILL AND JA1639'THE STATION ON THE JA1639'RIGHT AS DESCRIBED. JA1639' JA1639'ALL MARKS ARE STANDARD DISKS SET IN ROUND CONCRETE MONUMENTS. JA1639' JA1639'STATION MARK, STAMPED LAWRENCE 1968 IS SET FLUSH WITH THE GROUND JA1639'SURFACE. IT IS 87 JA1639'FEET SOUTH OF THE CENTER OF THE EAST BOUND LANE OF JA1639'HIGHWAY 50, 81 FEET SOUTH OF THE JA1639'CENTER OF THE EAST BOUND LANE OF JA1639'HIGHWAY 50, 81 FEET NORTHWEST OF A PHILLIPS 66

JA1639'SIGN AND 36 FEET EAST JA1639'OF THE CENTER OF A FIELD ROAD. JA1639' JA1639'R M NO 1, STAMPED LAWRENCE NO 1 1968 IS SET FLUSH WITH THE GROUND JA1639'SURFACE. IT IS 76 JA1639'FEET SOUTH OF THE CENTER OF THE EAST BOUND LANE OF JA1639'HIGHWAY 50 AND 66 FEET NORTHEAST OF JA1639'THE PHILLIPS 66 SIGN. JA1639' JA1639'RM NO 2, STAMPED LAWRENCE NO 2 1968 IS SET FLUSH WITH THE GROUND JA1639'SURFACE. IT IS 75 JA1639'FEET SOUTH OF THE CENTER OF THE EAST BOUND LANE OF JA1639'HIGHWAY 50 AND 57 FEET WEST OF THE JA1639'CENTER OF THE FIELD ROAD. JA1639' JA1639'AZIMUTH MARK, STAMPED LAWRENCE 1968 IS SET FLUSH WITH THE GROUND JA1639'SURFACE. IT IS 39 JA1639'FEET NORTH OF THE CENTER OF PAVED ROAD, 24 FEET JA1639'SOUTH OF THE CENTER OF THE EAST BOUND JA1639'LANE OF HIGHWAY 50 AND 4.7 FEET JA1639'EAST OF A METAL WITNESS POST. JA1639' JA1639'HEIGHT OF LIGHT ABOVE STATION MARK 26 METERS. JA1639 JA1639 **STATION RECOVERY (1986)** JA1639 JA1639'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986 JA1639'8.2 KM (5.10 MI) NW FROM VINCENNES IN. JA1639'0.2 KM (0.1 MI) WEST ALONG THE CHESSIE SYSTEM RAILROAD FROM THE JA1639'STATION IN VINCENNES, INDIANA, THENCE 1.2 KM (0.75 MI) SOUTHWEST ALONG JA1639'6TH STREET, THENCE 4.8 KM (3.0 MI) NORTHWESTERLY ALONG U.S. HIGHWAY 50 JA1639'BUSINESS, THENCE 2.0 KM (1.25 MI) EAST ALONG U.S. HIGHWAY 50, ON TOP JA1639'OF A SMALL HIGHWAY CUT, 26.3 M (86.3 FT) SOUTH OF THE CENTERLINE OF JA1639'THE EAST BOUND LANES OF THE HIGHWAY, 11.2 M (36.7 FT) EAST OF THE JA1639'CENTER OF A FIELD ENTRANCE, AND 8.2 M (26.9 FT) WEST-NORTHWEST OF A JA1639'FENCE CORNER. JA1639'THE MARK IS 0.3 METERS N FROM A WITNESS POST JA1639'THE MARK IS 3.5 M ABOVE THE HIGHWAY. JA1639 JA1639 **STATION RECOVERY (1997)** JA1639 JA1639'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (RKB) JA1639'THE STATION IS LOCATED ABOUT 8 MI (12.9 KM) EAST OF LAWRENCEVILLE, 2 JA1639'MI (3.2 KM) NORTHWEST OF VINCENNES, INDIANA, AND 0.7 MI (1.1 KM) WEST JA1639'OF THE ILLINOIS-INDIANA STATE LINE. TO REACH FROM THE JUNCTION OF JA1639'U.S. ROUTE 50 AND STATE ROUTE 33 ABOUT 7 MI (11.3 KM) EAST OF JA1639'LAWRENCEVILLE AND 1.9 MI (3.1 KM) WEST OF THE STATE LINE, PROCEED EAST JA1639'ON ROUTE 50 FOR 1.2 MI (1.9 KM) TO THE STATION ON THE RIGHT, ON TOP OF JA1639'A CUT BANK, 26.3 M (86.3 FT) SOUTH OF AND ABOUT 3.5 M (11.5 FT) HIGHER JA1639'THAN THE CENTERLINE OF THE EASTBOUND LANES OF ROUTE 50, 11.2 M (36.7 JA1639'FT) EAST OF THE CENTER OF A FIELD ENTRANCE, 8.2 M (26.9 FT) JA1639'WEST-NORTHWEST OF A FENCE CORNER, AND 0.3 M (1.0 FT) SOUTH OF A JA1639'FIBERGLASS WITNESS POST. JA1639

JA1639 **STATION RECOVERY (1997)** JA1639 JA1639'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) JA1639'RECOVERED AS DESCRIBED. JA1639 JA1639 **STATION RECOVERY (2009)** JA1639 JA1639'RECOVERY NOTE BY LANDMARK SURVEYING INCORPORATED 2009 (DLH) JA1639'RECOVERED IN GOOD CONDITION. JA1639 JA1639 **STATION RECOVERY (2010)** JA1639 JA1639'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2010 (MW) JA1639'RECOVERED IN GOOD CONDITION. JA1639 **STATION RECOVERY (2010)** JA1639 JA1639 JA1639'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2010 (RA)

JA1639'RECOVERED AS DESCRIBED

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA0405 ********** KA0405 CBN - This is a Cooperative Base Network Control Station. KA0405 DESIGNATION - S 280 KA0405 PID - KA0405 KA0405 STATE/COUNTY- IN/GREENE KA0405 COUNTRY - US KA0405 USGS QUAD - SOLSBERRY (1983) KA0405 KA0405 *CURRENT SURVEY CONTROL KA0405 KA0405* NAD 83(2011) POSITION- 39 00 57.25623(N) 086 50 24.41309(W) ADJUSTED KA0405* NAD 83(2011) ELLIP HT- 172.103 (meters) (06/27/12) ADJUSTED KA0405* NAD 83(2011) EPOCH - 2010.00 KA0405* NAVD 88 ORTHO HEIGHT - 204.997 (meters) 672.56 (feet) ADJUSTED KA0405 KA0405 NAD 83(2011) X - 273,536.867 (meters) COMP KA0405 NAD 83(2011) Y - -4,954,804.962 (meters) COMP KA0405 NAD 83(2011) Z - 3,993,797.380 (meters) COMP KA0405 LAPLACE CORR --1.78 (seconds) DEFLEC12A KA0405 GEOID HEIGHT --32.89 (meters) GEOID12A KA0405 DYNAMIC HEIGHT -204.870 (meters) 672.14 (feet) COMP KA0405 MODELED GRAVITY - 980,002.1 (mgal) NAVD 88 KA0405 KA0405 VERT ORDER - FIRST CLASS II KA0405 KA0405 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) KA0405 Type Horiz Ellip Dist(km) KA0405 -----KA0405 NETWORK 0.69 1.55 KA0405 -----KA0405 MEDIAN LOCAL ACCURACY AND DIST (023 points) 0.97 2.18 64.94 KA0405 -----KA0405 NOTE: Click here for information on individual local accuracy KA0405 values and other accuracy information. KA0405 KA0405 KA0405. The horizontal coordinates were established by GPS observations KA0405.and adjusted by the National Geodetic Survey in June 2012. KA0405 KA0405.NAD 83(2011) refers to NAD 83 coordinates where the reference KA0405.frame has been affixed to the stable North American tectonic plate. See KA0405.NA2011 for more information. for more information. KA0405 KA0405. The horizontal coordinates are valid at the epoch date displayed above KA0405.which is a decimal equivalence of Year/Month/Day. KA0405 KA0405. The orthometric height was determined by differential leveling and KA0405.adjusted by the NATIONAL GEODETIC SURVEY KA0405.in June 1991. KA0405 KA0405. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA0405 KA0405.The Laplace correction was computed from DEFLEC12A derived deflections.

KA0405 KA0405. The ellipsoidal height was determined by GPS observations KA0405 and is referenced to NAD 83. KA0405 KA0405. The dynamic height is computed by dividing the NAVD 88 KA0405.geopotential number by the normal gravity value computed on the KA0405. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA0405.degrees latitude (g = 980.6199 gals.). KA0405 KA0405. The modeled gravity was interpolated from observed gravity values. KA0405 KA0405. The following values were computed from the NAD 83(2011) position. KA0405 KA0405; North East Units Scale Factor Converg. KA0405;SPC IN W - 418,290.027 921,063.745 MT 0.99997213 +0.09 11.2 KA0405;SPC IN W - 1,372,339.86 3,021,856.64 sFT 0.99997213 +0 09 11.2 - 4,318,553.684 513,841.648 MT 0.99960236 +0 06 02.4 KA0405;UTM 16 KA0405 KA0405! - Elev Factor x Scale Factor = Combined Factor KA0405!SPC IN W  $- 0.99997300 \times 0.99997213 = 0.99994513$  $- 0.99997300 \times 0.99960236 = 0.99957537$ KA0405!UTM 16 KA0405 KA0405 SUPERSEDED SURVEY CONTROL KA0405 KA0405 NAD 83(2007)- 39 00 57.25631(N) 086 50 24.41395(W) AD( ) 0 KA0405 ELLIP H (02/10/07) 172.126 (m) GP( ) KA0405 NAD 83(1997)- 39 00 57.25641(N) 086 50 24.41413(W) AD( ) B KA0405 ELLIP H (04/10/98) 172.133 (m) GP( ) 4 1 KA0405 NAVD 88 (04/10/98) 205.00 (m) 672.6 (f) LEVELING 3 KA0405 NGVD 29 (??/??/92) 205.125 (m) 672.98 (f) ADJ UNCH 12 KA0405 KA0405. Superseded values are not recommended for survey control. KA0405 KA0405.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA0405.See file dsdata.txt to determine how the superseded data were derived. KA0405 KA0405_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEJ1384118553(NAD 83) KA0405 KA0405_MARKER: DB = BENCH MARK DISK KA0405 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA0405_SP_SET: SET IN TOP OF CONCRETE MONUMENT KA0405 STAMPING: S 280 1949 KA0405_MARK LOGO: CGS KA0405_MAGNETIC: N = NO MAGNETIC MATERIAL KA0405 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA0405+STABILITY: SURFACE MOTION KA0405 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA0405+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 KA0405 KA0405 HISTORY - Date Condition Report By CGS KA0405 HISTORY - 1949 MONUMENTED KA0405 HISTORY - 19970818 SEE DESCRIPTION SEC - 20100511 GOOD KA0405 HISTORY AEROME KA0405 HISTORY - 20110706 GOOD INDIV

KA0405 HISTORY - 20110706 GOOD INDIV KA0405 KA0405 STATION DESCRIPTION KA0405 KA0405'DESCRIBED BY COAST AND GEODETIC SURVEY 1949 KA0405'0.4 MI E FROM PARK. KA0405'0.4 MILE EAST ALONG THE GRAVEL ROAD FROM THE PARK SCHOOL AT KA0405'PARK, ABOUT 0.8 MILE WEST FROM THE JUNCTION OF A ROAD NORTH, KA0405'AT A T FENCE CORNER AT AN ABANDONED CHURCH, 52 FEET WEST-NORTHWEST KA0405'OF THE NORTHWEST CORNER OF THE CHURCH, 39 FEET SOUTHEAST AND KA0405'ACROSS THE ROAD FROM POWER POLE WITH A TRANSFORMER, 18 FEET SOUTH KA0405'OF THE CENTER LINE OF THE ROAD, 2 FEET WEST OF THE T FENCE CORNER, KA0405'2 FEET SOUTH OF A WHITE WOODEN WITNESS POST, ABOUT 2 FEET ABOVE KA0405'THE LEVEL OF THE ROAD AND SET IN THE TOP OF A CONCRETE POST KA0405'PROJECTING 4 INCHES. KA0405 KA0405 **STATION RECOVERY (1997)** KA0405 KA0405'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA0405'FROM BLOOMFIELD, TRAVEL 7.64 KM (4.75 MI) EAST OF U.S. 54. TURN SOUTH KA0405'ON TO COUNTY ROAD 530 EAST AND TRAVEL 1.45 KM (0.90 MI) TO THE KA0405'JUNCTION WITH COUNTY ROAD 50 NORTH. TRAVEL EAST ON COUNTY ROAD 50 KA0405'NORTH FOR 0.25 KM (0.15 MI) TO THE JUNCTION WITH 500 EAST. TRAVEL KA0405'SOUTH ON 500 EAST FOR 2.25 KM (1.40 MI) TO THE INTERSECTION OF COUNTY KA0405'ROAD 50 SOUTH WITH 500 EAST. TURN EAST AND TRAVEL ON COUNTY ROAD 50 KA0405'SOUTH FOR 0.72 KM (0.45 MI). THE STATION IS LOCATED SOUTH OF COUNTY KA0405'ROAD 50 SOUTH, ON THE COUNTY RIGHT-OF-WAY ADJACENT TO THE PROPERTY OF KA0405'CHARLES HELMS. CONTACT DAVID O. ANDERSON, COUNTY ROAD SUPERVISOR, KA0405'COURTHOUSE, ROOM G05, BLOOMFIELD IN 47424, PHONE 812-384-2017, LOCATED KA0405'6.71 METERS (22.01 FT) WEST AND 0.91 METERS (2.99 FT) SOUTH OF A KA0405'TELEPHONE POLE, 5.33 METERS (17.49 FT) SOUTH OF THE COUNTY ROAD 50 KA0405'SOUTH CENTER, 101 METERS (331.4 FT) WEST OF THE CENTER OF THE WEST KA0405'DRIVEWAY ON THE PROPERTY OWNED BY CHARLES HELMS, 78.5 METERS (257.5 KA0405'FT) EAST OF THE CENTER OF THE EAST DRIVEWAY ON PROPERTY OWNED BY RALPH KA0405'RAPER, ABOUT 0.3 METERS (1.0 FT) ABOVE THE ROAD LEVEL, IN THE TOP OF A KA0405'ROUND CONCRETE MONUMENT PROJECTING 20 CM ABOVE GROUND. THE MONUMENT KA0405'APPEARS TO HAVE BEEN STRUCK, AS A PORTION OF THE TOP OF THE CONCRETE KA0405'MONUMENT ON THE WEST SIDE IS MISSING. IT ALSO APPEARS TO HAVE BEEN KA0405'DISTURBED, AS THE TOP OF THE MONUMENT SLOPES, 5/16 INCH PER FOOT TO KA0405'THE EAST. KA0405 KA0405 **STATION RECOVERY (2010)** KA0405 KA0405'RECOVERY NOTE BY AERO METRIC INC 2010 KA0405'RECOVERED IN GOOD CONDITION. KA0405 KA0405 **STATION RECOVERY (2011)** KA0405 KA0405'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI) KA0405'RECOVERED FOR INDIANA ORTHO AND LIDAR PROGRAM KA0405 KA0405 **STATION RECOVERY (2011)** KA0405 KA0405'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI)

## KA0405'RECOVERED FOR INDIANA ORTHO AND LIDAR PROGRAM

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 LB2105 ************** LB2105 DESIGNATION - W 361 LB2105 PID - LB2105 LB2105 STATE/COUNTY- IN/VERMILLION LB2105 COUNTRY - US LB2105 USGS QUAD - PERRYSVILLE (1991) LB2105 LB2105 *CURRENT SURVEY CONTROL LB2105 LB2105* NAD 83(2011) POSITION- 40 04 31.26858(N) 087 27 07.88478(W) ADJUSTED LB2105* NAD 83(2011) ELLIP HT- 153.852 (meters) (06/27/12) ADJUSTED LB2105* NAD 83(2011) EPOCH - 2010.00 LB2105* NAVD 88 ORTHO HEIGHT - 186.701 (meters) 612.53 (feet) ADJUSTED LB2105 LB2105 NAD 83(2011) X - 217,261.584 (meters) COMP LB2105 NAD 83(2011) Y - -4,882,611.698 (meters) COMP LB2105 NAD 83(2011) Z - 4,084,490.407 (meters) COMP LB2105 LAPLACE CORR - -4.31 (seconds) DEFLEC12A LB2105 GEOID HEIGHT --32.84 (meters) GEOID12A 612.22 (feet) COMP LB2105 DYNAMIC HEIGHT -186.606 (meters) LB2105 MODELED GRAVITY - 980,109.0 (mgal) NAVD 88 I B2105 LB2105 VERT ORDER - FIRST CLASS II LB2105 LB2105 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB2105 Type LB2105 -----LB2105 NETWORK 1.21 2.49 LB2105 ------LB2105 MEDIAN LOCAL ACCURACY AND DIST (009 points) 1.27 2.70 35.93 LB2105 -----LB2105 NOTE: Click here for information on individual local accuracy LB2105 values and other accuracy information. LB2105 LB2105 LB2105. The horizontal coordinates were established by GPS observations LB2105. and adjusted by the National Geodetic Survey in June 2012. LB2105 LB2105.NAD 83(2011) refers to NAD 83 coordinates where the reference LB2105.frame has been affixed to the stable North American tectonic plate. See LB2105.NA2011 for more information. for more information. I B2105 LB2105. The horizontal coordinates are valid at the epoch date displayed above LB2105.which is a decimal equivalence of Year/Month/Day. LB2105 LB2105. The orthometric height was determined by differential leveling and LB2105.adjusted by the NATIONAL GEODETIC SURVEY LB2105.in June 1991. LB2105 LB2105.Photographs are available for this station. LB2105 LB2105.The X, Y, and Z were computed from the position and the ellipsoidal ht. LB2105

LB2105. The Laplace correction was computed from DEFLEC12A derived deflections. LB2105 LB2105. The ellipsoidal height was determined by GPS observations LB2105.and is referenced to NAD 83. LB2105 LB2105. The dynamic height is computed by dividing the NAVD 88 LB2105.geopotential number by the normal gravity value computed on the LB2105.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB2105.degrees latitude (g = 980.6199 gals.). LB2105 LB2105. The modeled gravity was interpolated from observed gravity values. LB2105 LB2105. The following values were computed from the NAD 83(2011) position. LB2105 LB2105: North East Units Scale Factor Converg. - 535,949.337 868,537.549 MT 0.99997885 -0 14 14.9 LB2105;SPC IN W -1,758,360.45 2,849,526.94 sFT 0.99997885 -0 14 14.9 LB2105;SPC IN W - 4,436,218.604 461,443.571 MT 0.99961830 -0 17 28.0 LB2105;UTM 16 LB2105 - Elev Factor x Scale Factor = Combined Factor LB2105!  $- 0.99997586 \times 0.99997885 = 0.99995472$ LB2105!SPC IN W - 0.99997586 x 0.99961830 = 0.99959417 LB2105!UTM 16 I B2105 LB2105 SUPERSEDED SURVEY CONTROL LB2105 LB2105 NAD 83(2007)- 40 04 31.26867(N) 087 27 07.88570(W) AD( ) 0 LB2105 ELLIP H (02/10/07) 153.873 (m) GP( LB2105 NAD 83(1997)- 40 04 31.26866(N) 087 27 07.88577(W) AD( ) B LB2105 ELLIP H (03/12/99) 153.875 (m) GP( ) 2 1 LB2105 NAVD 88 (03/12/99) 186.70 (m) (f) LEVELING 612.5 3 LB2105 LB2105. Superseded values are not recommended for survey control. LB2105 LB2105.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB2105.See file dsdata.txt to determine how the superseded data were derived. LB2105 LB2105_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDK6144336218(NAD 83) LB2105 LB2105 MARKER: I = METAL ROD LB2105 SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) LB2105_SP_SET: STAINLESS STEEL ROD LB2105 STAMPING: W 361 1986 LB2105_MARK LOGO: NGS LB2105_PROJECTION: FLUSH LB2105 MAGNETIC: O = OTHER; SEE DESCRIPTION LB2105_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL LB2105 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB2105+SATELLITE: SATELLITE OBSERVATIONS - July 22, 2005 LB2105 ROD/PIPE-DEPTH: 8.5 meters LB2105 LB2105 HISTORY - Date Condition Report By MONUMENTED LB2105 HISTORY - 1986 NGS - 19980723 GOOD LB2105 HISTORY WOOLPT LB2105 HISTORY - 20050722 GOOD JCLS

LB2105 LB2105 STATION DESCRIPTION LB2105 LB2105'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 LB2105'13.8 KM (8.6 MI) NORTH FROM CAYUGA. LB2105'13.8 KM (8.55 MI) NORTHERLY ALONG STATE HIGHWAY 63 FROM ITS JUNCTION LB2105'WITH STATE HIGHWAY 234 IN CAYUGA, 43.8 M (143.7 FT) NORTH OF THE LB2105'CENTER OF COUNTY ROAD 1300 N, 30.5 M (100.1 FT) WEST OF THE CENTERLINE LB2105'OF THE SOUTH BOUND LANES OF THE HIGHWAY, 18.3 M (60.0 FT) LB2105'WEST-SOUTHWEST OF THE WEST END OF AN 18-INCH CONCRETE CULVERT, AND LB2105'15.4 M (50.5 FT) NORTH OF A FENCE CORNER. NOTE--ACCESS TO DATUM POINT LB2105'IS HAD THROUGH A 5-INCH LOGO CAP. LB2105'THE MARK IS 0.5 METERS E FROM A WITNESS POST AND FENCE LB2105'THE MARK IS 0.6 M BELOW THE HIGHWAY. LB2105 LB2105 **STATION RECOVERY (1998)** LB2105 LB2105'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (BBS) LB2105'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (BBS). NOTE--STATION MAY LB2105'ALSO BE REACHED BY TRAVELING SOUTH ON STATE ROUTE 63 FROM THE LB2105'INTERSECTION OF STATE ROUTE 63 AND STATE ROUTE 136 FOR 3.75 MI (6.03 LB2105'KM) TO THE STATION ON THE RIGHT. I B2105 LB2105 **STATION RECOVERY (2005)** LB2105 LB2105'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2005 LB2105'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 JA1630 *********** JA1630 FBN - This is a Federal Base Network Control Station. JA1630 PACS - This is a Primary Airport Control Station. **JA1630 DESIGNATION - DAVIESS** JA1630 PID - JA1630 JA1630 STATE/COUNTY- IN/DAVIESS JA1630 COUNTRY - US JA1630 USGS QUAD - WASHINGTON (1980) JA1630 JA1630 *CURRENT SURVEY CONTROL JA1630 JA1630* NAD 83(2011) POSITION- 38 41 43.34257(N) 087 07 48.19058(W) ADJUSTED JA1630* NAD 83(2011) ELLIP HT- 110.258 (meters) (06/27/12) ADJUSTED JA1630* NAD 83(2011) EPOCH - 2010.00 JA1630* NAVD 88 ORTHO HEIGHT - 142.662 (meters) 468.05 (feet) ADJUSTED JA1630 JA1630 NAD 83(2011) X - 249,575.620 (meters) COMP JA1630 NAD 83(2011) Y - -4,978,373.498 (meters) COMP JA1630 NAD 83(2011) Z - 3,966,048.419 (meters) COMP JA1630 LAPLACE CORR --2.92 (seconds) DEFLEC12A JA1630 GEOID HEIGHT --32.40 (meters) GEOID12A 467.76 (feet) COMP JA1630 DYNAMIC HEIGHT -142.572 (meters) JA1630 MODELED GRAVITY - 979,994.2 (mgal) NAVD 88 JA1630 JA1630 VERT ORDER - FIRST CLASS II JA1630 JA1630 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JA1630 Type JA1630 -----JA1630 NETWORK 0.54 1.18 JA1630 -----JA1630 MEDIAN LOCAL ACCURACY AND DIST (063 points) 0.72 1.47 116.12 JA1630 -----JA1630 NOTE: Click here for information on individual local accuracy JA1630 values and other accuracy information. JA1630 JA1630 JA1630. This mark is at Daviess County Airport (DCY) JA1630 JA1630. The horizontal coordinates were established by GPS observations JA1630.and adjusted by the National Geodetic Survey in June 2012. JA1630 JA1630.NAD 83(2011) refers to NAD 83 coordinates where the reference JA1630.frame has been affixed to the stable North American tectonic plate. See JA1630.NA2011 for more information. for more information. JA1630 JA1630. The horizontal coordinates are valid at the epoch date displayed above JA1630.which is a decimal equivalence of Year/Month/Day. JA1630 JA1630. The orthometric height was determined by differential leveling and JA1630.adjusted by the NATIONAL GEODETIC SURVEY JA1630.in June 1991. JA1630

JA1630.Photographs are available for this station. JA1630 JA1630. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA1630 JA1630. The Laplace correction was computed from DEFLEC12A derived deflections. JA1630 JA1630. The ellipsoidal height was determined by GPS observations JA1630.and is referenced to NAD 83. JA1630 JA1630. The dynamic height is computed by dividing the NAVD 88 JA1630.geopotential number by the normal gravity value computed on the JA1630. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA1630.degrees latitude (g = 980.6199 gals.). JA1630 JA1630. The modeled gravity was interpolated from observed gravity values. JA1630 JA1630. The following values were computed from the NAD 83(2011) position. JA1630 JA1630; North Units Scale Factor Converg. East JA1630; SPC IN W - 382, 681.020 895, 935.687 MT 0.99996687 -0 01 45.1 JA1630;SPC IN W - 1,255,512.65 2,939,415.67 sFT 0.99996687 -0 01 45.1 - 4,282,980.699 488,690.357 MT 0.99960158 -0 04 52.7 JA1630;UTM 16 JA1630 JA1630! - Elev Factor x Scale Factor = Combined Factor JA1630!SPC IN W - 0.99998270 x 0.99996687 = 0.99994957  $- 0.99998270 \times 0.99960158 = 0.99958429$ JA1630!UTM 16 JA1630 Primary Azimuth Mark JA1630: Grid Az JA1630:SPC IN W - DAVIESS AZ MK 359 32 05.9 JA1630:UTM 16 - DAVIESS AZ MK 359 35 13.5 JA1630 JA1630 JA1630 PID Reference Object Distance Geod. Az | JA1630 dddmmss.s JA1630 | JA0833 F 312 87.544 METERS 24423 JA1630 JA1631 DAVIESS AZ MK APPROX. 1.3 KM 3593020.8 | JA1630 JA1630 SUPERSEDED SURVEY CONTROL JA1630 JA1630 087 07 48.19143(W) AD( JA1630 NAD 83(2007)- 38 41 43.34263(N) ) 0 JA1630 ELLIP H (02/10/07) 110.285 (m) GP( ) JA1630 NAD 83(1997)- 38 41 43.34256(N) 087 07 48.19191(W) AD( ) B JA1630 ELLIP H (04/10/98) 110.308 (m) GP( ) 4 1 JA1630 NAD 83(1986)- 38 41 43.35087(N) 087 07 48.18810(W) AD( ) 3 JA1630 NAD 27 - 38 41 43.17880(N) 087 07 48.15008(W) AD( ) 3 JA1630 NAVD 88 (04/10/98) 142.66 (m) 468.0 (f) LEVELING 3 JA1630 NGVD 29 (02/23/89) 142.73 (m) 468.3 (f) LEVELING 3 JA1630 JA1630. Superseded values are not recommended for survey control. JA1630 JA1630.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA1630.See file dsdata.txt to determine how the superseded data were derived. JA1630

JA1630_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH8869082980(NAD 83) JA1630 JA1630 MARKER: DH = HORIZONTAL CONTROL DISK JA1630_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA1630 SP SET: CONCRETE POST JA1630_STAMPING: DAVIESS 1986 JA1630 MARK LOGO: NGS JA1630_PROJECTION: FLUSH JA1630_MAGNETIC: N = NO MAGNETIC MATERIAL JA1630_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA1630+STABILITY: SURFACE MOTION JA1630 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA1630+SATELLITE: SATELLITE OBSERVATIONS - February 26, 2008 JA1630 JA1630 HISTORY - Date Condition Report By JA1630 HISTORY MONUMENTED - 1986 NGS JA1630 HISTORY - 1986 NGS GOOD - 19880531 GOOD JA1630 HISTORY - 19970528 GOOD JA1630 HISTORY NGS JA1630 HISTORY - 19970628 GOOD NGS JA1630 HISTORY - 20030707 GOOD NGS JA1630 HISTORY - 20080226 GOOD JCLS JA1630 JA1630 STATION DESCRIPTION JA1630 JA1630'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 JA1630'9.1 KM (5.65 MI) NE FROM WASHINGTON. JA1630'THE MARK IS ABOVE LEVEL WITH THE TAXIWAY. JA1630'4.5 KM (2.8 MI) NORTHERLY ALONG STATE HIGHWAY 57 FROM ITS JUNCTION JA1630'WITH U.S. HIGHWAY 50 IN WASHINGTON, THENCE 1.7 KM (1.05 MI) EASTERLY JA1630'ALONG COUNTY ROAD 250 N, THENCE 0.9 KM (0.55 MI) NORTH ALONG COUNTY JA1630'ROAD 75 E, THENCE 1.7 KM (1.05 MI) EASTERLY ALONG COUNTY ROAD 275 E, JA1630'THENCE 0.2 KM (0.1 MI) NORTHEAST ALONG THE DAVIESS COUNTY AIRPORT JA1630'ENTRANCE ROAD, THENCE 0.1 KM (0.05 MI) EAST ALONG A TAXIWAY, 46.0 M JA1630'(150.9 FT) EAST-NORTHEAST OF THE NORTHEAST CORNER OF THE AIRPORT JA1630'OFFICE, 28.6 M (93.8 FT) WEST OF THE CENTERLINE OF A RUNWAY, AND JA1630'13.8 M (45.3 FT) SOUTH OF THE TAXIWAY CENTERLINE. JA1630'THE MARK IS 13.3 METERS E FROM A WITNESS POST AND FENCE JA1630 JA1630 **STATION RECOVERY (1986)** JA1630 JA1630'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986 JA1630'THE STATION IS LOCATED ABOUT 4.8 KM (3.00 MI) NORTHEAST OF WASHINGTON JA1630'AND AT THE WASHINGTON-DAVIESS COUNTY AIRPORT. OWNERSHIP--FOWLER JA1630'AVIATION, RT 3, WASHINGTON, IN 47501, PHONE 812-254-1205. AIRPORT JA1630'MANAGER IS JOE FOWLER. JA1630'TO REACH THE STATION FROM THE JUNCTION OF STATE HIGHWAY 57 AND COUNTY JA1630'ROAD 75E IN WASHINGTON, GO NORTHEAST ON COUNTY ROAD 75E FOR 1.8 KM JA1630'(1.10 MI) TO A ROAD RIGHT. TURN RIGHT AND GO 1.6 KM (1.00 MI) TO A JA1630'ROAD LEFT TO AIRPORT, TURN LEFT FOR 0.2 KM (0.10 MI) TO OFFICE AND JA1630'THE STATION. JA1630'THE STATION IS A STANDARD NGS STATION MARK DISK STAMPED---DAVIESS JA1630'1986---, SET IN THE TOP OF A 20 CM IN DIAMETER THAT IS FLUSH WITH THE JA1630'GROUND. LOCATED 18.9 M (62.0 FT) WEST FROM THE WEST EDGE OF RUNWAY,

JA1630'13.05 M (42.8 FT) EAST FROM THE NORTHEAST FENCE CORNER OF CHAINLINK JA1630'FENCE AROUND THE OFFICE WITH A WITNESS POST BY FENCE CORNER POST AND JA1630'7.5 M (24.6 FT) SOUTH FROM SOUTH EDGE OF TAXIWAY. JA1630'GPS SURVEY, FAA AIRPORTS, INDIANA. JA1630'DESCRIBED BY D.L. ADAMS. JA1630 JA1630 **STATION RECOVERY (1988)** JA1630 **JA1630'RECOVERED 1988** JA1630'RECOVERED IN GOOD CONDITION. JA1630 JA1630 **STATION RECOVERY (1997)** JA1630 JA1630'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) JA1630'THE STATION IS LOCATED ABOUT 7 KM (4.35 MI) NORTHEAST OF WASHINGTON, JA1630'AT THE WASHINGTON-DAVIESS COUNTY AIRPORT, IN GRASS JUST EAST OF THE JA1630'OLD AIRPORT OFFICE, IN THE SOUTHEAST QUADRANT OF THE JUNCTION OF THE JA1630'RUNWAY AND THE CONNECTOR TAXI FROM THE APRON. OWNERSHIP--FOWLER JA1630'AVIATION, ROUTE 3, WASHINGTON IN 47501. AIRPORT MANAGER IS WILLIAM JA1630'KESSLER, PHONE 812-254-9934. TO REACH FROM THE JUNCTION OF U.S. JA1630'HIGHWAYS 50 AND 150 AND STATE HIGHWAY 57 JUST SOUTH OF WASHINGTON, GO JA1630'NORTH ON HIGHWAY 57 FOR 2.53 KM (1.55 MI) TO THE JUNCTION OF HIGHWAY JA1630'57 ON THE LEFT AND CENTER STREET LEADING EAST. TURN LEFT, NORTH ON JA1630'HIGHWAY 57 FOR 1.93 KM (1.20 MI) TO A PAVED ROAD RIGHT (COUNTY ROAD JA1630'125N) AT AN AIRPORT SIGN. TURN RIGHT, EAST ON THE ROAD FOR 0.8 KM JA1630'(0.50 MI) TO A PAVED ROAD RIGHT (WAGNER AVENUE). TURN LEFT, JA1630'NORTHEASTERLY ON COUNTY ROAD 125N FOR 0.67 KM (0.40 MI) TO A REVERSE JA1630'Y-JUNCTION (COUNTY ROAD 75E). TURN LEFT, NORTHEASTERLY ON COUNTY ROAD JA1630'75E FOR 1.96 KM (1.20 MI) TO THE JUNCTION OF A PAVED ROAD RIGHT JA1630'(COUNTY ROAD 250N) AND A GRAVEL ROAD LEADING NORTH (ROAD 75E). TURN JA1630'RIGHT, EASTERLY ON COUNTY ROAD 250 N FOR 1.6 KM (1.00 MI) TO THE JA1630'AIRPORT ENTRANCE ON THE LEFT. TURN LEFT, NORTHEAST ON THE ROAD FOR JA1630'0.16 KM (0.10 MI) TO A GATE AT THE APRON. PASS THROUGH THE GATE, THEN JA1630'TURN EAST, ON THE APRON AND ALONG A TAXI FOR 0.08 KM (0.05 MI) TO THE JA1630'STATION ON THE RIGHT. THE STATION IS SET IN THE TOP OF A 25 CM ROUND JA1630'CONCRETE POST FLUSH WITH THE GROUND. IT IS 28.3 M (92.8 FT) WEST OF JA1630'THE RUNWAY CENTER, 19.2 M (63.0 FT) WEST OF THE WEST EDGE OF THE JA1630'RUNWAY, 13.7 M (44.9 FT) SOUTH OF THE TAXI CENTER, 13.3 M (43.6 FT) JA1630'EAST OF A FENCE CORNER AND FIBERGLASS WITNESS POST, 10.1 M (33.1 FT) JA1630'EAST-SOUTHEAST OF THE NORTHEAST CORNER OF THE CONCRETE PAD FOR A RAMP JA1630'AND RUNWAY SIGN, AND 7.7 M (25.3 FT) SOUTH OF THE SOUTH EDGE OF THE JA1630'TAXI. NOTE--THIS STATION IS DESIGNATED AS THE PRIMARY AIRPORT CONTROL JA1630'STATION. JA1630 JA1630 **STATION RECOVERY (1997)** JA1630 JA1630'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) JA1630'RECOVERED AS DESCRIBED. JA1630 JA1630 STATION RECOVERY (2003) JA1630 JA1630'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (JMW) JA1630'RECOVERED AS DESCRIBED. JA1630

JA1630 STATION RECOVERY (2008) JA1630 JA1630'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2008 JA1630'RECOVERED IN GOOD CONDITION. 1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 AE8495 ********** AE8495 CBN - This is a Cooperative Base Network Control Station. AE8495 DESIGNATION - HARM AE8495 PID - AE8495 AE8495 STATE/COUNTY- IN/POSEY AE8495 COUNTRY - US AE8495 USGS QUAD - SOLITUDE (1981) AE8495 AE8495 *CURRENT SURVEY CONTROL AE8495 AE8495* NAD 83(2011) POSITION- 38 03 43.95848(N) 087 57 58.89618(W) ADJUSTED AE8495* NAD 83(2011) ELLIP HT- 84.675 (meters) (06/27/12) ADJUSTED AE8495* NAD 83(2011) EPOCH - 2010.00 AE8495* NAVD 88 ORTHO HEIGHT - 115.4 (meters) 379. (feet) GPS OBS AE8495 AE8495 NAVD 88 orthometric height was determined with geoid model GEOID99 -30.62 (meters) AE8495 GEOID HEIGHT -GEOID99 AE8495 GEOID HEIGHT --30.69 (meters) GEOID12A AE8495 NAD 83(2011) X - 178,433.499 (meters) COMP AE8495 NAD 83(2011) Y - -5,025,074.802 (meters) COMP AE8495 NAD 83(2011) Z - 3,910,935.238 (meters) COMP AE8495 LAPLACE CORR --1.76 (seconds) DEFLEC12A AE8495 AE8495 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) AE8495 Type AE8495 -----AE8495 NETWORK 0.61 1.18 AE8495 -----AE8495 MEDIAN LOCAL ACCURACY AND DIST (016 points) 0.78 1.47 43.98 AE8495 -----AE8495 NOTE: Click here for information on individual local accuracy AE8495 values and other accuracy information. AE8495 AE8495 AE8495. The horizontal coordinates were established by GPS observations AE8495.and adjusted by the National Geodetic Survey in June 2012. AE8495 AE8495.NAD 83(2011) refers to NAD 83 coordinates where the reference AE8495.frame has been affixed to the stable North American tectonic plate. See AE8495.NA2011 for more information. for more information. AE8495 AE8495. The horizontal coordinates are valid at the epoch date displayed above AE8495.which is a decimal equivalence of Year/Month/Day. AE8495 AE8495. The orthometric height was determined by GPS observations and a AE8495.high-resolution geoid model. AE8495 AE8495. The X, Y, and Z were computed from the position and the ellipsoidal ht. AE8495 AE8495. The Laplace correction was computed from DEFLEC12A derived deflections. AE8495 AE8495. The ellipsoidal height was determined by GPS observations AE8495.and is referenced to NAD 83.

AE8495 AE8495. The following values were computed from the NAD 83(2011) position. AE8495 AE8495; North Units Scale Factor Converg. East AE8495; SPC IN W - 312,767.161 822,508.995 MT 1.00004059 -0.32 39.9 - 1,026,136.93 2,698,514.93 sFT 1.00004059 -0 32 39.9 AE8495; SPC IN W - 4,213,158.232 415,226.919 MT 0.99968851 -0 35 44.9 AE8495;UTM 16 AE8495 AE8495! - Elev Factor x Scale Factor = Combined Factor  $-0.99998671 \times 1.00004059 = 1.00002730$ AE8495!SPC IN W  $- 0.99998671 \times 0.99968851 = 0.99967523$ AE8495!UTM 16 AF8495 AE8495 SUPERSEDED SURVEY CONTROL AE8495 087 57 58.89703(W) AD( AE8495 NAD 83(2007)- 38 03 43.95855(N) ) 0 AE8495 ELLIP H (02/10/07) 84.716 (m) GP( AE8495 NAD 83(1997)- 38 03 43.95839(N) 087 57 58.89752(W) AD( ) B AE8495 ELLIP H (04/10/98) 84.741 (m) ) 4 1 GP( AE8495 NAVD 88 (04/10/98) 115.3 (m) GEOID96 model used GPS OBS AE8495 AE8495.Superseded values are not recommended for survey control. AE8495 AE8495.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. AE8495.See file dsdata.txt to determine how the superseded data were derived. AE8495 AE8495_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH1522613158(NAD 83) AE8495 AE8495_MARKER: I = METAL ROD AE8495_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) AE8495 MARK LOGO: NGS AE8495_PROJECTION: FLUSH AE8495 MAGNETIC: N = NO MAGNETIC MATERIAL AE8495_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL AE8495_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR AE8495+SATELLITE: SATELLITE OBSERVATIONS - July 27, 2006 AE8495_ROD/PIPE-DEPTH: 11.6 meters AE8495_SLEEVE-DEPTH : 1.00 meters AE8495 AE8495 HISTORY - Date Report By Condition AE8495 HISTORY - 1997 MONUMENTED INU AE8495 HISTORY - 20030327 GOOD ILDT AE8495 HISTORY - 20060727 GOOD ILDT AF8495 AE8495 STATION DESCRIPTION AE8495 AE8495'DESCRIBED BY INDIANA UNIVERSITY 1997 (MH) AE8495'8.0 KILOMETERS (4.95 MI) SOUTHWEST OF NEW HARMONY. THE STATION IS A AE8495'STAINLESS STEEL FLANGE ENCLOSED ROD WITHOUT SLEEVE WITH PUNCH MARK ON AE8495'TOP CENTER ABOUT 0.1 METERS (0.3 FT) BELOW THE GROUND SURFACE WITH A AE8495'DEPTH OF 11.6 METERS (38.1 FT) WITH 1.0 METERS (3.3 FT) LONG SLEEVE AE8495'ENCASED IN A 5-INCH PVC PIPE WITH PVC CAP (CAP COMES OFF) SURROUNDED AE8495'BY CONCRETE. AT JUNCTION OF STATE ROAD 66 AND STATE ROAD 69 IN NEW AE8495'HARMONY, GO SOUTH 4.74 KILOMETERS (2.95 MI) ON HIGHWAY STATE ROAD 69 AE8495'TO STATE ROAD 269. TURN RIGHT, WEST FOR 1.6 KILOMETERS (1.00 MI)

AE8495'ALONG ENTRANCE ROAD TO A SIDE ROAD RIGHT (FOLLOW WABASH RIVER SIGN). AE8495'TURN RIGHT, WEST FOR 2.09 KILOMETERS (1.30 MI) ALONG ROAD TO SIGN POST AE8495'(WABASH RIVER BOAT RAMP) AND AT A ROAD RIGHT. TURN RIGHT, NORTH FOR AE8495'0.2 KILOMETERS (0.10 MI) TO A BRICK SIGN POST MARKED WABASH RIVER BOAT AE8495'RAMP. STATION IS RIGHT (EAST OF THIS POST) 23.5 METERS (77.1 FT) OR AE8495'NORTHEAST CORNER OF BRICK SIGN POST, 29.7 METERS (97.4 FT) EAST OR AE8495'NORTHEAST FROM CENTER OF ROAD NORTH AND SOUTH, 27.7 METERS (90.9 FT) AE8495'SOUTHEAST OF A 5/8 INCH 4 FOOT (1.2 M) HIGH UNDERGROUND GAS PIPELINE AE8495'VENT PIPE. OWNERSHIP - STATE OF INDIANA. CONTACT - INDIANA DEPARTMENT AE8495'OF NATURAL RESOURCES FOR ACCESS AFTER HOURS. 30.59 KILOMETERS (19.00 AE8495'MI) NORTHWEST OF MOUNT VERNON, 60.38 KILOMETERS (37.50 MI) SOUTHWEST AE8495'OF PRINCETON, 45.08 KILOMETERS (28.00 MI) SOUTHEAST OF EVANSVILLE. AE8495 AE8495 **STATION RECOVERY (2003)** AE8495 AE8495'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2003 (BES) AE8495'RECOVERED AS DESCRIBED AE8495' AE8495' AE8495 AE8495 STATION RECOVERY (2006) AE8495 AE8495'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2006 (WAE) AE8495'NO WITNESS POST. DESCRIPTION TIES ADEQUATE.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 JA0699 ******** JA0699 CBN - This is a Cooperative Base Network Control Station. JA0699 DESIGNATION - JOSEPHINE 2 JA0699 PID - JA0699 JA0699 STATE/COUNTY- IN/MARTIN JA0699 COUNTRY - US JA0699 USGS QUAD - SHOALS (1993) JA0699 JA0699 *CURRENT SURVEY CONTROL JA0699 JA0699* NAD 83(2011) POSITION- 38 40 54.26366(N) 086 48 33.23003(W) ADJUSTED JA0699* NAD 83(2011) ELLIP HT- 184.708 (meters) (06/27/12) ADJUSTED JA0699* NAD 83(2011) EPOCH - 2010.00 JA0699* NAVD 88 ORTHO HEIGHT - 217.53 (meters) 713.7 (feet) RESET JA0699 JA0699 NAD 83(2011) X - 277,503.391 (meters) COMP JA0699 NAD 83(2011) Y - -4,977,900.568 (meters) COMP JA0699 NAD 83(2011) Z - 3,964,913.640 (meters) COMP JA0699 LAPLACE CORR --2.11 (seconds) DEFLEC12A JA0699 GEOID HEIGHT --32.82 (meters) GEOID12A JA0699 VERT ORDER - THIRD JA0699 JA0699 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) JA0699 Type Horiz Ellip Dist(km) JA0699 -----JA0699 NETWORK 0.72 1.69 JA0699 ------JA0699 MEDIAN LOCAL ACCURACY AND DIST (010 points) 0.85 1.92 84.69 JA0699 -----JA0699 NOTE: Click here for information on individual local accuracy JA0699 values and other accuracy information. JA0699 JA0699 JA0699. The horizontal coordinates were established by GPS observations JA0699.and adjusted by the National Geodetic Survey in June 2012. JA0699 JA0699.NAD 83(2011) refers to NAD 83 coordinates where the reference JA0699.frame has been affixed to the stable North American tectonic plate. See JA0699.NA2011 for more information. for more information. JA0699 JA0699. The horizontal coordinates are valid at the epoch date displayed above JA0699.which is a decimal equivalence of Year/Month/Day. JA0699 JA0699. The orthometric height was computed from unverified reset data. JA0699 JA0699. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA0699 JA0699. The Laplace correction was computed from DEFLEC12A derived deflections. JA0699 JA0699. The ellipsoidal height was determined by GPS observations JA0699. and is referenced to NAD 83. JA0699 JA0699. The following values were computed from the NAD 83(2011) position.

JA0699 JA0699; North East Units Scale Factor Converg. JA0699;SPC IN W - 381,202.293 923,849.766 MT 0.99997367 +0 10 16.7 JA0699;SPC IN W - 1,250,661.19 3,030,997.11 sFT 0.99997367 +0 10 16.7 - 4,281,477.148 516,592.814 MT 0.99960339 +0 07 09.2 JA0699;UTM 16 JA0699 - Elev Factor x Scale Factor = Combined Factor JA0699! JA0699!SPC IN W - 0.99997102 x 0.99997367 = 0.99994469 JA0699!UTM 16 - 0.99997102 x 0.99960339 = 0.99957442 JA0699 JA0699: Primary Azimuth Mark Grid Az JA0699:SPC IN W - JOSEPHINE 2 AZ MK 084 21 31.4 JA0699:UTM 16 - JOSEPHINE 2 AZ MK 084 24 38.9 JA0699 JA0699 |------| JA0699 | PID Reference Object Distance Geod. Az dddmmss.s JA0699 JA0699 | JA0702 JOSEPHINE 2 RM 3 23.472 METERS 07423 JA0699 | CG8249 JOSEPHINE 2 AZ MK 0843148.1 JA0699 JA0698 JOSEPHINE 24.026 METERS 10232 JA0699 | JA0703 JOSEPHINE 2 RM 4 23.575 METERS 25421 JA0699 JA0699 JA0699 SUPERSEDED SURVEY CONTROL JA0699 086 48 33.23088(W) AD( JA0699 NAD 83(2007)- 38 40 54.26372(N) ) 0 JA0699 ELLIP H (02/10/07) 184.736 (m) GP( ) JA0699 NAD 83(1997)- 38 40 54.26371(N) 086 48 33.23122(W) AD( ) B JA0699 ELLIP H (04/10/98) 184.758 (m) GP( ) 4 1 JA0699 NAD 83(1986)- 38 40 54.27100(N) 086 48 33.23325(W) AD( ) 3 JA0699 NAD 27 - 38 40 54.08600(N) 086 48 33.23100(W) AD( ) 3 JA0699 NAVD 88 (04/10/98) 217.5 (m) GEOID96 model used GPS OBS JA0699 NGVD 29 (??/??/) 217.65 (m) 714.1 (f) RESET 3 JA0699 JA0699.Superseded values are not recommended for survey control. JA0699 JA0699.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA0699.See file dsdata.txt to determine how the superseded data were derived. JA0699 JA0699 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEH1659281477(NAD 83) JA0699 JA0699 MARKER: DS = TRIANGULATION STATION DISK JA0699_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA0699_SP_SET: SET IN TOP OF CONCRETE MONUMENT JA0699 STAMPING: JOSEPHINE 2 1966 JA0699_MARK LOGO: CGS JA0699 MAGNETIC: N = NO MAGNETIC MATERIAL JA0699 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA0699+STABILITY: SURFACE MOTION JA0699 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA0699+SATELLITE: SATELLITE OBSERVATIONS - September 11, 2006 JA0699 JA0699 HISTORY - Date Condition **Report By** JA0699 HISTORY - 1966 MONUMENTED CGS

GOOD JA0699 HISTORY - 1966 CGS JA0699 HISTORY - 1967 GOOD CGS JA0699 HISTORY - 19970827 GOOD SEC - 20030321 GOOD JA0699 HISTORY LNDMRK JA0699 HISTORY - 20060911 GOOD COMPDA JA0699 HISTORY - 20110909 GOOD JCLS JA0699 JA0699 STATION DESCRIPTION JA0699 JA0699'DESCRIBED BY COAST AND GEODETIC SURVEY 1966 (WAZ) JA0699'THE STATION IS LOCATED ALONG THE NORTH RIGHT-OF-WAY OF US HIGHWAYS 50 JA0699'AND 150, ABOUT 1.5 JA0699'MILE NORTHWEST OF SHOALS. JA0699' JA0699'TO REACH THE STATION FROM THE NEW FEDERAL BUILDING IN THE SOUTHEAST JA0699'ANGLE OF THE JA0699'INTERSECTION OF MAIN STREET AND SECOND STREET IN SHOALS, JA0699'GO NORTH ON MAIN STREET FOR 0.1 JA0699'MILE TO THE JUNCTION WITH U S JA0699'HIGHWAYS 50 AND 150. HERE TURN LEFT AND GO JA0699'WESTERLY ON U S HIGHWAYS JA0699'50 AND 150 FOR 1.35 MILES TO STATE ROUTE 450 ON THE RIGHT, JA0699'CONTINUE JA0699'WESTERLY ON U S HIGHWAYS 50 AND 150 FOR 0.2 MILE TO THE STATION ON JA0699'THE RIGHT AS DESCRIBED. JA0699' JA0699'THE STATION IS 102 FEET SOUTH OF A 30-INCH, FORKED TRUNKED LOCUST JA0699'TREE, 93 FEET EAST JA0699'OF POWERLINE BRACE POLE NO L 10, 92 FEET SOUTHWEST JA0699'OF A 20-INCH LOCUST TREE, 83 FEET JA0699'SOUTHEAST OF A 12-INCH LOCUST TREE, JA0699'55 FEET NORTH OF THE APPROXIMATE CENTER OF THE NEW JA0699'HIGHWAY, 1.3 FEET JA0699'NORTH OF A METAL WITNESS POST AND SIGN, AND ABOUT 1000 YARDS WEST OF JA0699'A DRIVEWAY LEADING JA0699'INTO A GROUP OF BUILDINGS NORTH OF THE HIGHWAY. JA0699'IT IS A STANDARD DISK SET IN THE TOP JA0699'OF A 10-INCH, SQUARE, CONCRETE JA0699'MONUMENT THAT PROJECTS 5 INCHES AND THE DISK IS STAMPED JA0699'JOSEPHINE 2 1966. JA0699' JA0699'REFERENCE MARK NO 3 IS 73 FEET SOUTH OF A 12-INCH LOCUST TREE, 55 JA0699'FEET NORTH OF THE JA0699'APPROXIMATE CENTER OF THE NEW HIGHWAY, 16 FEET EAST JA0699'OF POWERLINE BRACE POLE NO L 10, 1.5 JA0699'FEET EAST OF A METAL WITNESS JA0699'POST AND SIGN, AND ABOUT 3.5 FEET BELOW THE ELEVATION JA0699'OF THE STATION. IT JA0699'IS A STANDARD DISK SET IN THE TOP OF A 10-INCH, SQUARE CONCRETE JA0699'MONUMENT THAT JA0699'PROJECTS 5 INCHES AND THE DISK IS STAMPED JOSEPHINE 2 NO 3 1966. JA0699' JA0699'REFERENCE MARK NO 4 IS 86 FEET SOUTH OF A 20-INCH LOCUST TREE, 55 JA0699'FEET NORTH OF THE

JA0699'APPROXIMATE CENTER OF THE NEW HIGHWAY, 1.9 FEET JA0699'WEST OF A METAL WITNESS POST AND JA0699'SIGN, AND ABOUT 2.5 FEET ABOVE THE JA0699'ELEVATION OF THE STATION. IT IS A STANDARD DISK JA0699'SET IN THE TOP OF A JA0699'10-INCH, SQUARE, CONCRETE MONUMENT THAT PROJECTS 5 INCHES AND THE JA0699'DISK IS STAMPED JA0699'JOSEPHINE 2 NO 4 1966. JA0699' JA0699'THE HORIZONTAL MEASURED DISTANCE BETWEEN REFERENCE MARK NO 3 AND JA0699'REFERENCE MARK NO JA0699'1 IS 154.35 FEET - (47.046 METERS). JA0699' JA0699'THE AZIMUTH MARK IS ALONG THE SOUTH RIGHT-OF-WAY OF THE NEW HIGHWAY, JA0699'110 FEET SOUTHWEST JA0699'OF THE APPROXIMATE CENTER OF THE HIGHWAY, 57 FEET JA0699'EAST OF A NORTHEAST FENCE CORNER, 56 JA0699'FEET SOUTHEAST OF THE SOUTH ONE JA0699'OF TWO POWERLINE POLES SUPPORTING TRANSMISSION CABLES, 31 FEET JA0699'NORTHEAST OF THE APPROXIMATE CENTER OF AN OILED ROAD, AND 1.5 FEET JA0699'SOUTHWEST OF A JA0699'METAL WITNESS POST AND SIGN. IT IS A STANDARD DISK JA0699'SET IN THE TOP OF A 10-INCH, JA0699'SQUARE, CONCRETE MONUMENT THAT PROJECTS JA0699'4 INCHES AND THE DISK IS STAMPED JOSEPHINE 2 1966. JA0699' JA0699'TO REACH THE AZIMUTH MARK FROM THE STATION, CONTINUE WESTERLY ON U S JA0699'HIGHWAYS 50 AND JA0699'150 FOR 0.1 MILE TO AN OILED ROAD ON THE LEFT AT A JA0699'CURVE, HERE KEEP LEFT ON THIS JA0699'OILED ROAD AND GO WESTERLY FOR 0.2 MILE JA0699'TO THE MARK ON THE RIGHT AS DESCRIBED. JA0699' JA0699'NOTE- THE UNDERGROUND MARK FOR THE ORIGINAL STATION JOSEPHINE 1946 JA0699'WAS NOT DISTURBED JA0699'AS THERE IS ONLY A SLIGHT CUT IN THIS AREA AND THIS JA0699'MARK SHOULD REMAIN INTACT AT THE JA0699'ORIGINAL POSITION. TRAVERSE JA0699'MEASUREMENT SHOWN IN THE BOX. JA0699 JA0699 **STATION RECOVERY (1966)** JA0699 JA0699'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1966 JA0699'1.6 MI NW FROM SHOALS. JA0699'THIS MARK IS AT THE JOSEPHINE 2 1966 TRIANGULATION STATION SITE, JA0699'ABOUT 1.55 MILES NORTHWESTERLY ALONG U.S. HIGHWAYS 50 AND 150 JA0699'FROM THE INTERSECTION OF MAIN STREET IN SHOALS. IT IS 102 FEET JA0699'SOUTH OF A 30-INCH, FORKED TRUNKED LOCUST TREE, 93 FEET EAST OF JA0699'POWERLINE BRACE POLE NO. L 10, 92 FEET SOUTHWEST OF A 20-INCH JA0699'LOCUST TREE, 83 FEET SOUTHEAST OF A 12-INCH LOCUST TREE, 55 FEET JA0699'NORTH OF THE APPROXIMATE CENTER OF NEW U.S. HIGHWAYS 50 AND 150, JA0699'1.3 FEET NORTH OF A METAL WITNESS POST AND SIGN, AND ABOUT 100 JA0699'YARDS WEST OF A DRIVEWAY LEADING INTO A GROUP OF BUILDINGS NORTH JA0699'OF THE HIGHWAY. IT IS A STANDARD TRIANGULATION STATION DISK

JA0699'SET IN THE TOP OF A 10-INCH, SQUARE, CONCRETE MONUMENT THAT JA0699'PROJECTS 5 INCHES AND THE DISK IS STAMPED JOSEPHINE 2 1966. JA0699 JA0699 **STATION RECOVERY (1967)** JA0699 JA0699'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1967 (EBB) JA0699'ALL MARKS WERE RECOVERED IN GOOD CONDITION AND FOUND AS DESCRIBED. JA0699 JA0699 **STATION RECOVERY (1997)** JA0699 JA0699'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) JA0699'STATION IS ABOUT 1.55 MILES (2.49 KM) NORTHWEST OF SHOALS MAIN STREET JA0699'INTERSECTION WITH U.S. HIGHWAY 150 AND 50, ON HIGHWAY 150/50 NORTH JA0699'BANK, ABOUT 0.2 MILES (0.3 KM) WEST OF THE INTERSECTION STATE ROAD JA0699'450. IT IS 0.45 METERS (1.48 FT) NORTH OF A WITNESS POST, 71.6 METERS JA0699'(234.9 FT) WEST OF THE CENTER OF A GRAVEL DRIVE LEADING NORTH TO A 2 JA0699'STORY WHITE CONCRETE BUILDING DENOTED AS R.E. FENCE CONTRACTOR, 23.6 JA0699'METERS (77.4 FT) WEST FROM JOSEPHINE 2 RM 4, 20.5 METERS (67.3 FT) JA0699'WEST-SOUTHWEST OF A POWER POLE MARKED HE SHOALS NUMBER 2 ABS, 16.95 JA0699'METERS (55.61 FT) NORTH OF U.S. HIGHWAY 150, 50 CENTERLINE, 34.4 JA0699'METERS (112.9 FT) EAST-SOUTHEAST OF A POWER POLE MARKED P.S.C. OF JA0699'649-125, 31.5 METERS (103.3 FT) SOUTH OF A 66-CM LOCUST TREE, 6.7 JA0699'METERS (22.0 FT) SOUTHEAST OF THE CENTER OF A ROUND CONCRETE LID TO A JA0699'SUBSURFACE VAULT, PROJECTING 14 CM ABOVE GROUND. THE NORTHWEST CORNER JA0699'OF CONCRETE POST IS CHIPPED. JA0699 **STATION RECOVERY (2003)** JA0699 JA0699 JA0699'RECOVERY NOTE BY LANDMARK SURVEYING INCORPORATED 2003 (DLH) JA0699'THIS MONUMENT IS IN GOOD CONDITION. JA0699 JA0699 **STATION RECOVERY (2006)** JA0699 JA0699'RECOVERY NOTE BY COMPASSDATA INC 2006 (RL) JA0699'RECOVERED IN GOOD CONDITION. JA0699 JA0699 **STATION RECOVERY (2011)** JA0699 JA0699'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 JA0699'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = APRIL 1, 2013 JA1598 ******** JA1598 CBN - This is a Cooperative Base Network Control Station. JA1598 DESIGNATION - L 356 - JA1598 JA1598 PID JA1598 STATE/COUNTY- IN/GIBSON JA1598 COUNTRY - US JA1598 USGS QUAD - ELBERFELD (1988) JA1598 JA1598 *CURRENT SURVEY CONTROL JA1598 JA1598* NAD 83(2011) POSITION- 38 10 20.88585(N) 087 28 08.49727(W) ADJUSTED JA1598* NAD 83(2011) ELLIP HT- 107.931 (meters) (06/27/12) ADJUSTED JA1598* NAD 83(2011) EPOCH - 2010.00 JA1598* NAVD 88 ORTHO HEIGHT - 139.319 (meters) 457.08 (feet) ADJUSTED JA1598 JA1598 NAD 83(2011) X - 221,711.577 (meters) COMP JA1598 NAD 83(2011) Y - -5,015,807.755 (meters) COMP JA1598 NAD 83(2011) Z - 3,920,578.317 (meters) COMP JA1598 LAPLACE CORR --1.84 (seconds) DEFLEC12A JA1598 GEOID HEIGHT --31.39 (meters) GEOID12A JA1598 DYNAMIC HEIGHT -139.225 (meters) 456.77 (feet) COMP JA1598 MODELED GRAVITY - 979,951.1 (mgal) NAVD 88 JA1598 JA1598 VERT ORDER - FIRST CLASS II JA1598 JA1598 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) JA1598 Type Horiz Ellip Dist(km) JA1598 -----JA1598 NETWORK 0.64 1.45 JA1598 -----JA1598 MEDIAN LOCAL ACCURACY AND DIST (015 points) 0.77 1.65 38.79 JA1598 -----JA1598 NOTE: Click here for information on individual local accuracy JA1598 values and other accuracy information. JA1598 JA1598 JA1598. The horizontal coordinates were established by GPS observations JA1598.and adjusted by the National Geodetic Survey in June 2012. JA1598 JA1598.NAD 83(2011) refers to NAD 83 coordinates where the reference JA1598.frame has been affixed to the stable North American tectonic plate. See JA1598.NA2011 for more information. JA1598 JA1598. The horizontal coordinates are valid at the epoch date displayed above JA1598.which is a decimal equivalence of Year/Month/Day. JA1598 JA1598. The orthometric height was determined by differential leveling and JA1598.adjusted by the NATIONAL GEODETIC SURVEY JA1598.in June 1991. JA1598 JA1598.Photographs are available for this station. JA1598 JA1598.The X, Y, and Z were computed from the position and the ellipsoidal ht.

JA1598 JA1598. The Laplace correction was computed from DEFLEC12A derived deflections. JA1598 JA1598. The ellipsoidal height was determined by GPS observations JA1598 and is referenced to NAD 83. JA1598 JA1598. The dynamic height is computed by dividing the NAVD 88 JA1598.geopotential number by the normal gravity value computed on the JA1598.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA1598.degrees latitude (g = 980.6199 gals.). JA1598 JA1598. The modeled gravity was interpolated from observed gravity values. JA1598 JA1598. The following values were computed from the NAD 83(2011) position. JA1598 JA1598; Units Scale Factor Converg. North East JA1598;SPC IN W - 324,707.345 866,204.132 MT 0.99998073 -0 14 18.1 - 1,065,310.68 2,841,871.39 sFT 0.99998073 -0 14 18.1 JA1598;SPC IN W - 4,225,054.942 458,917.200 MT 0.99962079 -0 17 23.6 JA1598;UTM 16 JA1598 JA1598! - Elev Factor x Scale Factor = Combined Factor JA1598!SPC IN W  $- 0.99998306 \times 0.99998073 = 0.99996380$ JA1598!UTM 16 - 0.99998306 x 0.99962079 = 0.99960386 JA1598 JA1598 SUPERSEDED SURVEY CONTROL JA1598 JA1598 NAD 83(2007)- 38 10 20.88590(N) 087 28 08.49810(W) AD( ) 0 JA1598 ELLIP H (02/10/07) 107.962 (m) GP( ) JA1598 NAD 83(1997)- 38 10 20.88578(N) 087 28 08.49850(W) AD( ) B JA1598 ELLIP H (04/10/98) 107.990 (m) GP( ) 4 1 JA1598 NAVD 88 (04/10/98) 139.32 (m) 457.1 (f) LEVELING 3 JA1598 JA1598.Superseded values are not recommended for survey control. JA1598 JA1598.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA1598.See file dsdata.txt to determine how the superseded data were derived. JA1598 JA1598 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH5891725054(NAD 83) JA1598 JA1598 MARKER: I = METAL ROD JA1598_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) JA1598 SP SET: STAINLESS STEEL ROD JA1598_STAMPING: L 356 1986 JA1598_MARK LOGO: NGS JA1598 PROJECTION: FLUSH JA1598_MAGNETIC: N = NO MAGNETIC MATERIAL JA1598 STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL JA1598_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA1598+SATELLITE: SATELLITE OBSERVATIONS - July 21, 2005 JA1598_ROD/PIPE-DEPTH: 3.1 meters JA1598 JA1598 HISTORY - Date Condition Report By JA1598 HISTORY - 1986 MONUMENTED NGS JA1598 HISTORY - 19970902 GOOD SEC

JA1598 HISTORY - 20031203 GOOD WOOLPT JA1598 HISTORY - 20050721 GOOD JCLS JA1598 HISTORY - 20090828 GOOD ACCU JA1598 JA1598 STATION DESCRIPTION JA1598 JA1598'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 JA1598'23.7 KM (14.7 MI) SOUTH FROM OAKLAND CITY. JA1598'23.7 KM (14.7 MI) SOUTHERLY ALONG STATE HIGHWAY 57 FROM ITS JUNCTION JA1598'WITH STATE HIGHWAY 357 IN OAKLAND CITY, 36.0 M (118.1 FT) WEST OF THE JA1598'SOUTH BOUND HIGHWAY CENTERLINE, 9.8 M (32.2 FT) SOUTH OF THE CENTER OF JA1598'COUNTY ROAD 1250 SOUTH, AND 2.6 M (8.5 FT) SOUTH OF THE NORTH END OF A JA1598'FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. JA1598'THE MARK IS 0.3 METERS SE FROM A WITNESS POST AND FENCE JA1598'THE MARK IS ABOVE LEVEL WITH THE ROAD. JA1598 JA1598 **STATION RECOVERY (1997)** JA1598 JA1598'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) JA1598'STATION IS LOCATED 14 MILES (22.5 KM) SOUTH OF OAKLAND CITY AND 1 MILE JA1598'(1.6 KM) NORTHWEST OF ELBERFIELD. TO REACH THE STATION FROM THE JA1598'INTERSECTION OF INTERSTATE HIGHWAYS 64, 167 AND STATE HIGHWAY 57, GO JA1598'NORTH 0.2 MILES (0.3 KM) ALONG STATE HIGHWAY 57 TO A CROSS ROAD. TURN JA1598'LEFT ON COUNTY ROAD 250 SOUTH, A GRAVEL ROAD, AND GO ABOUT 120 FEET JA1598'(36.6 M) TO STATION ON LEFT, IN THE RIGHT-OF-WAY OF STATE HIGHWAY 57. JA1598'OWNERSHIP--INDIANA DEPARTMENT OF TRANSPORTATION, 100 N. SENATE AVENUE, JA1598'ROOM 1101, STATE OFFICE BUILDING, INDIANAPOLIS IN 46204, HENRY JA1598'ALDRIDGE, PHONE 317-232-6764. ACCESS TO ROD IS THROUGH A 5-INCH LOGO JA1598'CAP THAT IS LEVEL WITH GROUND AND BELOW LEVEL OF GRAVEL ROAD, ROD IS JA1598'0.06 METERS (0.20 FT) BELOW LOGO CAP. IT IS 36.58 METERS (120.01 FT) JA1598'WEST OF THE WEST EDGE OF SOUTHBOUND LANE OF HIGHWAY 57, 9.75 METERS JA1598'(31.99 FT) SOUTH OF THE CENTERLINE OF COUNTY ROAD 250 SOUTH, 2.59 JA1598'METERS (8.50 FT) SOUTHEAST OF THE END OF RIGHT-OF-WAY FENCE AND 0.2 JA1598'METERS (0.7 FT) EAST OF THE RIGHT-OF-WAY FENCE. JA1598 JA1598 **STATION RECOVERY (2003)** JA1598 JA1598'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2003 (RMC) JA1598'RECOVERED IN GOOD CONDITION. JA1598 JA1598 **STATION RECOVERY (2005)** JA1598 JA1598'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2005 JA1598'RECOVERED IN GOOD CONDITION. JA1598 JA1598 **STATION RECOVERY (2009)** JA1598 JA1598'RECOVERY NOTE BY ACCU AIR SURVEYS INCORPORATED 2009 (WJC) JA1598'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 1 HA0536 ********** HA0536 DESIGNATION - T 329 HA0536 PID - HA0536 HA0536 STATE/COUNTY- IN/PERRY HA0536 COUNTRY - US HA0536 USGS QUAD - TELL CITY (1980) HA0536 *CURRENT SURVEY CONTROL HA0536 HA0536 HA0536* NAD 83(2011) POSITION- 37 57 30.93816(N) 086 46 20.45097(W) ADJUSTED HA0536* NAD 83(2011) ELLIP HT- 92.083 (meters) (06/27/12) ADJUSTED HA0536* NAD 83(2011) EPOCH - 2010.00 HA0536* NAVD 88 ORTHO HEIGHT - 124.035 (meters) 406.94 (feet) ADJUSTED HA0536 HA0536 NAD 83(2011) X - 283,506.072 (meters) COMP HA0536 NAD 83(2011) Y - -5,027,342.632 (meters) COMP HA0536 NAD 83(2011) Z - 3,901,877.958 (meters) COMP HA0536 LAPLACE CORR --4.65 (seconds) DEFLEC12A HA0536 GEOID HEIGHT --31.94 (meters) GEOID12A HA0536 DYNAMIC HEIGHT -123.947 (meters) 406.65 (feet) COMP HA0536 MODELED GRAVITY - 979,924.0 (mgal) NAVD 88 HA0536 HA0536 VERT ORDER - FIRST CLASS II HA0536 HA0536 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) HA0536 Type HA0536 -----HA0536 NETWORK 0.70 1.02 HA0536 ------HA0536 MEDIAN LOCAL ACCURACY AND DIST (001 points) 0.51 0.49 2.32 HA0536 -----HA0536 NOTE: Click here for information on individual local accuracy HA0536 values and other accuracy information. HA0536 HA0536 HA0536. The horizontal coordinates were established by GPS observations HA0536.and adjusted by the National Geodetic Survey in June 2012. HA0536 HA0536.NAD 83(2011) refers to NAD 83 coordinates where the reference HA0536.frame has been affixed to the stable North American tectonic plate. See HA0536.NA2011 for more information. for more information. HA0536 HA0536. The horizontal coordinates are valid at the epoch date displayed above HA0536.which is a decimal equivalence of Year/Month/Day. HA0536 HA0536. The orthometric height was determined by differential leveling and HA0536.adjusted by the NATIONAL GEODETIC SURVEY HA0536.in June 1991. HA0536 HA0536.The X, Y, and Z were computed from the position and the ellipsoidal ht. HA0536 HA0536. The Laplace correction was computed from DEFLEC12A derived deflections. HA0536

HA0536. The ellipsoidal height was determined by GPS observations HA0536.and is referenced to NAD 83. HA0536 HA0536. The dynamic height is computed by dividing the NAVD 88 HA0536.geopotential number by the normal gravity value computed on the HA0536.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 HA0536.degrees latitude (g = 980.6199 gals.). HA0536 HA0536. The modeled gravity was interpolated from observed gravity values. HA0536 HA0536. The following values were computed from the NAD 83(2011) position. HA0536 HA0536: Units Scale Factor Converg. North East - 300,943.889 927,329.125 MT 0.99997586 +0 11 28.6 HA0536;SPC IN W HA0536;SPC IN W - 987,346.74 3,042,412.30 sFT 0.99997586 +0 11 28.6 HA0536;UTM 16 - 4,201,245.385 519,998.528 MT 0.99960493 +0 08 24.1 HA0536 HA0536! - Elev Factor x Scale Factor = Combined Factor  $- 0.99998555 \times 0.99997586 = 0.99996141$ HA0536!SPC IN W HA0536!UTM 16  $- 0.99998555 \times 0.99960493 = 0.99959049$ HA0536 HA0536 SUPERSEDED SURVEY CONTROL HA0536 HA0536 NAD 83(2007)- 37 57 30.93816(N) 086 46 20.45176(W) AD( ) 0 HA0536 ELLIP H (02/10/07) 92.109 (m) GP( ) HA0536 NAD 83(1997)- 37 57 30.93785(N) 086 46 20.45237(W) AD( ) 1 HA0536 NAD 83(1993)- 37 57 30.93784(N) 086 46 20.45238(W) AD( ) 1 HA0536 ELLIP H (08/25/97) 92.112 (m) GP( ) 4 2 HA0536 NAVD 88 (08/25/97) 124.04 (m) 407.0 (f) LEVELING 3 HA0536 NGVD 29 (??/??/92) 124.142 (m) 407.29 (f) ADJ UNCH 12 HA0536 HA0536. Superseded values are not recommended for survey control. HA0536 HA0536.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. HA0536.See file dsdata.txt to determine how the superseded data were derived. HA0536 HA0536_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEH1999801245(NAD 83) HA0536 HA0536_MARKER: DB = BENCH MARK DISK HA0536 SETTING: 37 = SET IN A MASSIVE RETAINING WALL HA0536_SP_SET: LEVEE RETAINING WALL FOR RAILRD HA0536 STAMPING: T 329 1965 HA0536_MARK LOGO: CGS HA0536_MAGNETIC: N = NO MAGNETIC MATERIAL HA0536 STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL HA0536_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR HA0536+SATELLITE: SATELLITE OBSERVATIONS - August 04, 1996 HA0536 HA0536 HISTORY - Date Condition Report By HA0536 HISTORY - 1965 MONUMENTED CGS HA0536 HISTORY - 19960804 GOOD NGS HA0536 HISTORY - 20000308 GOOD DI HA0536 HA0536 STATION DESCRIPTION

## HA0536

HA0536'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 HA0536'0.8 MI N FROM TELL CITY. HA0536'ABOUT 0.7 MILE NORTH ALONG MAIN STREET FROM THE POST OFFICE AT TELL HA0536'CITY, THENCE 0.15 MILE WEST ALONG LAFAYETTE STREET, IN SECTION HA0536'30, T 6 S, R 3 W, 100 FEET NORTH OF THE CENTER LINE OF LAFAYETTE HA0536'STREET, 16 FEET EAST OF THE EAST RAIL OF THE SOUTHERN RAILROAD, 12 HA0536'FEET SOUTH OF THE CENTER LINE OF A LEVEE, SET IN THE TOP OF THE HA0536'SOUTHEAST CORNER OF A CONCRETE BACK WALL OF A GATE GUIDE OF A FLOOD HA0536'GATE IN THE LEVEE, 7 1/2 FEET EAST OF A PIPE RAILING WHICH IS ON HA0536'TOP OF A CONCRETE RETAINING WALL OF THE GATE GUIDE, ABOUT LEVEL HA0536'WITH THE TOP OF THE LEVEE. HA0536 HA0536 **STATION RECOVERY (1996)** HA0536 HA0536'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (WCW) HA0536'RECOVERY NOTE BY NGS-1996. RECOVERED IN GOOD CONDITION AS DESCRIBED. HA0536 HA0536 **STATION RECOVERY (2000)** HA0536 HA0536'RECOVERY NOTE BY US DEPARTMENT OF INTERIOR 2000 (DHH) HA0536'FOUND MARK IN GOOD CONDITION - NO CHANGE IN DESCRIPTION. GOOD GPS HA0536'LOCATION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 JA0279 *********** JA0279 CBN - This is a Cooperative Base Network Control Station. JA0279 DESIGNATION - Y 312 JA0279 PID - JA0279 JA0279 STATE/COUNTY- IN/CRAWFORD JA0279 COUNTRY - US JA0279 USGS QUAD - ENGLISH (1993) JA0279 JA0279 *CURRENT SURVEY CONTROL JA0279 JA0279* NAD 83(2011) POSITION- 38 20 38.43334(N) 086 24 45.63071(W) ADJUSTED JA0279* NAD 83(2011) ELLIP HT- 143.781 (meters) (06/27/12) ADJUSTED JA0279* NAD 83(2011) EPOCH - 2010.00 JA0279* NAVD 88 ORTHO HEIGHT - 177.099 (meters) 581.03 (feet) ADJUSTED JA0279 JA0279 NAD 83(2011) X - 313,408.208 (meters) COMP JA0279 NAD 83(2011) Y - -4,999,128.354 (meters) COMP JA0279 NAD 83(2011) Z - 3,935,552.552 (meters) COMP JA0279 LAPLACE CORR --1.90 (seconds) DEFLEC12A JA0279 GEOID HEIGHT --33.32 (meters) GEOID12A JA0279 DYNAMIC HEIGHT -176.974 (meters) 580.62 (feet) COMP JA0279 MODELED GRAVITY - 979,918.0 (mgal) NAVD 88 JA0279 JA0279 VERT ORDER - FIRST CLASS II JA0279 JA0279 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) JA0279 Type Horiz Ellip Dist(km) JA0279 -----JA0279 NETWORK 0.83 1.86 JA0279 ------JA0279 MEDIAN LOCAL ACCURACY AND DIST (017 points) 1.00 2.20 55.09 JA0279 -----JA0279 NOTE: Click here for information on individual local accuracy JA0279 values and other accuracy information. JA0279 JA0279 JA0279. The horizontal coordinates were established by GPS observations JA0279.and adjusted by the National Geodetic Survey in June 2012. JA0279 JA0279.NAD 83(2011) refers to NAD 83 coordinates where the reference JA0279. frame has been affixed to the stable North American tectonic plate. See JA0279.NA2011 for more information. for more information. JA0279 JA0279. The horizontal coordinates are valid at the epoch date displayed above JA0279.which is a decimal equivalence of Year/Month/Day. JA0279 JA0279. The orthometric height was determined by differential leveling and JA0279.adjusted by the NATIONAL GEODETIC SURVEY JA0279.in June 1991. JA0279 JA0279. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA0279 JA0279. The Laplace correction was computed from DEFLEC12A derived deflections.

JA0279 JA0279. The ellipsoidal height was determined by GPS observations JA0279.and is referenced to NAD 83. JA0279 JA0279. The dynamic height is computed by dividing the NAVD 88 JA0279.geopotential number by the normal gravity value computed on the JA0279. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA0279.degrees latitude (g = 980.6199 gals.). JA0279 JA0279. The modeled gravity was interpolated from observed gravity values. JA0279 JA0279. The following values were computed from the NAD 83(2011) position. JA0279 JA0279; North East Units Scale Factor Converg. JA0279; SPC IN W - 343,890.564 958,627.679 MT 1.00000898 +0 24 57.9 JA0279; SPC IN W - 1,128,247.63 3,145,097.64 sFT 1.00000898 +0 24 57.9 - 4,244,147.880 551,323.945 MT 0.99963244 +0 21 51.7 JA0279;UTM 16 JA0279 JA0279! - Elev Factor x Scale Factor = Combined Factor JA0279!SPC IN W  $- 0.99997744 \times 1.00000898 = 0.99998642$  $- 0.99997744 \times 0.99963244 = 0.99960989$ JA0279!UTM 16 JA0279 JA0279 SUPERSEDED SURVEY CONTROL JA0279 JA0279 NAD 83(2007)- 38 20 38.43340(N) 086 24 45.63155(W) AD( ) 0 JA0279 ELLIP H (02/10/07) 143.808 (m) GP( ) JA0279 NAD 83(1997)- 38 20 38.43358(N) 086 24 45.63174(W) AD( ) B JA0279 ELLIP H (04/10/98) 143.826 (m) ) 4 1 GP( JA0279 NAD 83(1993)- 38 20 38.44139(N) 086 24 45.63788(W) AD( ) 3 JA0279 NAD 83(1986)- 38 20 38.44348(N) 086 24 45.63978(W) AD( ) 3 - 38 20 38.23686(N) JA0279 NAD 27 086 24 45.69716(W) AD( ) 3 JA0279 NAVD 88 (04/10/98) 177.10 (m) 581.0 (f) LEVELING 3 JA0279 NGVD 29 (??/??/92) 177.209 (m) 581.39 (f) ADJ UNCH 12 JA0279 JA0279.Superseded values are not recommended for survey control. JA0279 JA0279.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA0279. See file dsdata.txt to determine how the superseded data were derived. JA0279 JA0279 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEH5132344147(NAD 83) JA0279 JA0279 MARKER: DB = BENCH MARK DISK JA0279_SETTING: 30 = SET IN A LIGHT STRUCTURE JA0279_SP_SET: CULVERT HEADWALL JA0279 STAMPING: Y 312 1965 JA0279_MARK LOGO: CGS JA0279 MAGNETIC: N = NO MAGNETIC MATERIAL JA0279_STABILITY: D = MARK OF QUESTIONABLE OR UNKNOWN STABILITY JA0279 SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR JA0279+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2012 JA0279 JA0279 HISTORY - Date Condition Report By JA0279 HISTORY - 1965 MONUMENTED CGS JA0279 HISTORY - 19880705 GOOD NGS

JA0279 HISTORY - 19970527 GOOD NGS JA0279 HISTORY - 20100323 GOOD JCLS JA0279 HISTORY - 20110706 GOOD INDIV JA0279 HISTORY - 20120706 GOOD JA0279 HISTORY - 20120707 GOOD JA0279 JA0279 STATION DESCRIPTION JA0279 JA0279'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 JA0279'3 MI E FROM ENGLISH. JA0279'3.0 MILES EAST ALONG THE SOUTHERN RAILROAD FROM THE STATION AT JA0279'ENGLISH, IN SECTION 16, T 2 S, R 1 E, AT THE SMALL SETTLEMENT JA0279'OF TEMPLE, 0.35 MILE WEST OF THE CROSSING OF THE RAILROAD AND JA0279'OLD STATE ROAD 64, 6 1/2 FEET NORTH OF THE NORTH RAIL, SET IN JA0279'THE TOP OF THE WEST END OF THE NORTH HEADWALL OF A CONCRETE JA0279'CULVERT, ABOUT 1 FOOT BELOW THE LEVEL OF THE ROAD. JA0279 JA0279 **STATION RECOVERY (1988)** JA0279 JA0279'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 JA0279'THE STATION IS LOCATED ABOUT 32.2 KM (20.00 MI) SOUTHEAST OF FRENCH JA0279'LICK, 20.9 KM (13.00 MI) NORTH OF INTERSTATE HIGHWAY 64, 4.8 KM JA0279'(3.00 MI) EAST OF ENGLISH AND ON RAILROAD RIGHT-OF-WAY JUST NORTH OF A JA0279'ROCK QUARRY. OWNERSHIP--SOUTHERN RAILROAD, 185 SPRING STREET SW, JA0279'ATLANTA, GA 30303, PHONE 404-529-2345. JA0279'TO REACH THE STATION FROM THE POST OFFICE IN ENGLISH, GO EAST AND JA0279'SOUTHEAST ON A PAVED BUT ROUGH ROAD FOR 2.2 KM (1.35 MI) TO A FORK. JA0279'TAKE RIGHT FORK AND CONTINUE FOR 5.1 KM (3.15 MI) TO MARK ON THE JA0279'RIGHT IN CULVERT. JA0279'THE STATION IS A STANDARD CGS BENCH MARK DISK STAMPED---Y 312 JA0279'1965---, SET IN A DRILL HOLE IN CONCRETE HEADWALL. LOCATED 2.0 M JA0279'(6.6 FT) NORTH FROM NORTH RAIL OF TRACKS AND IN THE WEST END OF THE JA0279'NORTH HEADWALL OF CULVERT. THE CULVERT IS ABOUT 0.3 M (1.0 FT) LOWER JA0279'THAN THE TRACKS. JA0279'GPS SURVEY, FAA AIRPORTS, INDIANA. JA0279'DESCRIBED BY D.A. BOWLING. JA0279 JA0279 **STATION RECOVERY (1997)** JA0279 JA0279'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) JA0279'THE STATION IS LOCATED ABOUT 32 KM (19.90 MI) SOUTHEAST OF FRENCH JA0279'LICK, 20 KM (12.40 MI) NORTH OF INTERSTATE HIGHWAY 64, 5 KM (3.10 MI) JA0279'EAST OF ENGLISH, 1 KM (0.60 MI) WEST OF A ROCK QUARRY, BETWEEN A ROAD JA0279'AND RAILROAD AND IN THE RAILROAD RIGHT-OF-WAY. OWNERSHIP--SOUTHERN JA0279'RAILROAD. CONTACT THE SOUTHERN RAILROAD CHIEF DISPATCHER AT JA0279'606-678-6112 BEFORE OCCUPYING STATION. TO REACH FROM OVERPASS AT THE JA0279'JUNCTION OF STATE HIGHWAYS 64 AND 37, ABOUT 1.5 KM (0.95 MI) WEST OF JA0279'ENGLISH, GO EAST ON HIGHWAY 64 PASSING THROUGH THE NORTH SIDE OF JA0279'ENGLISH FOR 4.38 KM (2.70 MI) TO A PAVED ROAD RIGHT NEAR THE BOTTOM OF JA0279'A GRADE IN THE HIGHWAY AND ABOUT 0.08 KM (0.05 MI) EAST OF A BRIDGE. JA0279'TURN RIGHT, SOUTHEAST ON THE ROAD FOR 2.01 KM (1.25 MI) TO A PAVED JA0279'Y-JUNCTION JUST BEFORE THE BOTTOM OF A HILL. TURN RIGHT, SOUTH ON THE JA0279'ROAD FOR 0.16 KM (0.10 MI) TO A T-JUNCTION AT THE BOTTOM OF THE HILL JA0279'AND THE STATION ON THE RIGHT. THE STATION IS SET IN THE TOP OF AND

JA0279'NEAR THE WEST END OF A 4.5 M (14.8 FT) LONG X 2.5 M (8.2 FT) HIGH X JA0279'0.3 M (1.0 FT) WIDE HEADWALL LEADING UNDER THE RAILROAD. IT IS 14.5 M JA0279'(47.6 FT) WEST OF THE EXTENDED CENTER OF THE ROAD LEADING NORTH, 11.7 JA0279'M (38.4 FT) SOUTH OF THE EAST-WEST ROAD, 7.3 M (24.0 FT) SOUTH OF THE JA0279'SOUTH END OF THE WEST ONE OF TWO STEEL CULVERTS UNDER THE ROAD, 1.9 M JA0279'(6.2 FT) NORTH OF THE NORTH RAIL AND 0.4 M (1.31 FT) EAST OF THE WEST JA0279'END OF THE HEADWALL. JA0279 JA0279 **STATION RECOVERY (2010)** JA0279 JA0279'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2010 JA0279'RECOVERED IN GOOD CONDITION. JA0279 JA0279 **STATION RECOVERY (2011)** JA0279 JA0279'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI) JA0279'RECOVERED FOR INDIANA ORTHO AND LIDAR PROGRAM JA0279 JA0279 **STATION RECOVERY (2012)** JA0279 JA0279'RECOVERY NOTE BY FUGRO AERIAL & MOBILE MAPPING INC 2012 (MRY) JA0279'RECOVERED IN GOOD CONDITION. JA0279 JA0279 **STATION RECOVERY (2012)** JA0279 JA0279'RECOVERY NOTE BY FUGRO AERIAL & MOBILE MAPPING INC 2012 JA0279'RECOVERED IN GOOD CONDITION.

2013 Statewide Imagery Program Indiana Department of Technology July 2013 1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 JB0289 ********** JB0289 DESIGNATION - TT 13 TWC JB0289 PID - JB0289 JB0289 STATE/COUNTY- IL/WHITE JB0289 COUNTRY - US JB0289 USGS QUAD - CROSSVILLE (1974) JB0289 JB0289 *CURRENT SURVEY CONTROL JB0289 JB0289* NAD 83(2011) POSITION- 38 13 49.34196(N) 088 00 11.87978(W) ADJUSTED JB0289* NAD 83(2011) ELLIP HT- 91.129 (meters) (06/27/12) ADJUSTED JB0289* NAD 83(2011) EPOCH - 2010.00 JB0289* NAVD 88 ORTHO HEIGHT - 122.000 (meters) 400.26 (feet) ADJUSTED JB0289 JB0289 NAD 83(2011) X - 174,792.148 (meters) COMP JB0289 NAD 83(2011) Y - -5,013,671.344 (meters) COMP JB0289 NAD 83(2011) Z - 3,925,618.934 (meters) COMP JB0289 LAPLACE CORR - -2.87 (seconds) DEFLEC12A JB0289 GEOID HEIGHT --30.86 (meters) GEOID12A JB0289 DYNAMIC HEIGHT -121.920 (meters) 400.00 (feet) COMP JB0289 MODELED GRAVITY - 979,973.1 (mgal) NAVD 88 JB0289 JB0289 VERT ORDER - SECOND CLASS 0 JB0289 JB0289 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JB0289 Type JB0289 -----JB0289 NETWORK 0.98 1.31 JB0289 -----JB0289 MEDIAN LOCAL ACCURACY AND DIST (004 points) 0.88 0.98 8.46 JB0289 -----JB0289 NOTE: Click here for information on individual local accuracy JB0289 values and other accuracy information. JB0289 JB0289 JB0289. The horizontal coordinates were established by GPS observations JB0289.and adjusted by the National Geodetic Survey in June 2012. JB0289 JB0289.NAD 83(2011) refers to NAD 83 coordinates where the reference JB0289.frame has been affixed to the stable North American tectonic plate. See JB0289.NA2011 for more information. for more information. JB0289 JB0289. The horizontal coordinates are valid at the epoch date displayed above JB0289.which is a decimal equivalence of Year/Month/Day. JB0289 JB0289. The orthometric height was determined by differential leveling and JB0289. adjusted by the NATIONAL GEODETIC SURVEY JB0289.in June 1991. JB0289 JB0289. The X, Y, and Z were computed from the position and the ellipsoidal ht. JB0289 JB0289. The Laplace correction was computed from DEFLEC12A derived deflections. JB0289

JB0289. The ellipsoidal height was determined by GPS observations JB0289.and is referenced to NAD 83. JB0289 JB0289. The dynamic height is computed by dividing the NAVD 88 JB0289.geopotential number by the normal gravity value computed on the JB0289.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JB0289.degrees latitude (g = 980.6199 gals.). JB0289 JB0289. The modeled gravity was interpolated from observed gravity values. JB0289 JB0289. The following values were computed from the NAD 83(2011) position. JB0289 JB0289: Units Scale Factor Converg. North East JB0289; SPC IL E - 173,596.782 328,896.045 MT 0.99998528 +0 12 15.2 - 569,542.11 1,079,053.11 sFT 0.99998528 +0 12 15.2 JB0289; SPC IL E JB0289;UTM 16 - 4,231,851.659 412,188.158 MT 0.99969496 -0 37 15.3 JB0289 JB0289! - Elev Factor x Scale Factor = Combined Factor JB0289!SPC IL E - 0.99998570 x 0.99998528 = 0.99997098 JB0289!UTM 16  $- 0.99998570 \times 0.99969496 = 0.99968067$ JB0289 JB0289 SUPERSEDED SURVEY CONTROL JB0289 JB0289 NAD 83(2007)- 38 13 49.34207(N) 088 00 11.88068(W) AD( ) 0 JB0289 ELLIP H (02/10/07) 91.174 (m) GP( ) JB0289 ELLIP H (02/03/05) 91.166 (m) GP( ) 4 2 JB0289 NAD 83(1997)- 38 13 49.34193(N) 088 00 11.88104(W) AD( ) 1 JB0289 ELLIP H (11/20/03) 91.179 (m) GP( ) 3 1 JB0289 NAVD 88 (11/20/03) 122.00 (m) 400.3 (f) LEVELING 3 JB0289 NGVD 29 (??/??/92) 122.128 (m) 400.68 (f) ADJ UNCH 20 JB0289 JB0289. Superseded values are not recommended for survey control. JB0289 JB0289.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JB0289.See file dsdata.txt to determine how the superseded data were derived. JB0289 JB0289_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH1218831851(NAD 83) JB0289 JB0289_MARKER: DB = BENCH MARK DISK JB0289 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JB0289_SP_SET: SET IN TOP OF CONCRETE MONUMENT JB0289 STAMPING: 400 TT 13 TWC 1957 JB0289_MARK LOGO: USGS JB0289_PROJECTION: FLUSH JB0289_MAGNETIC: N = NO MAGNETIC MATERIAL JB0289_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JB0289+STABILITY: SURFACE MOTION JB0289 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JB0289+SATELLITE: SATELLITE OBSERVATIONS - April 04, 2012 JB0289 JB0289 HISTORY - Date Condition Report By JB0289 HISTORY - 1957 MONUMENTED USGS - 1961 JB0289 HISTORY GOOD CGS JB0289 HISTORY - 20030327 GOOD ILDT

ILDT JB0289 HISTORY - 20060727 GOOD JB0289 HISTORY - 20120404 GOOD TROTT JB0289 JB0289 STATION DESCRIPTION JB0289 JB0289'DESCRIBED BY COAST AND GEODETIC SURVEY 1961 JB0289'2 MI S FROM GRAYVILLE. JB0289'ABOUT 2.0 MILES SOUTH ALONG STATE HIGHWAY 1 FROM THE JUNCTION JB0289'OF COURT STREET AND NORTH STREET ON STATE HIGHWAY 1 IN GRAYVILLE, JB0289'THENCE ABOUT 100 YARDS EAST ALONG A GRAVEL ROAD, AT THE CROSSING JB0289'OF THE NEW YORK CENTRAL RAILROAD, 17 FEET NORTH OF THE CENTER JB0289'OF THE ROAD, 26 FEET EAST OF THE EAST RAIL, 4 FEET NORTHWEST OF A JB0289'POWER POLE, 2.5 FEET SOUTHWEST OF A FENCE CORNER, ABOUT 1 FOOT JB0289'BELOW THE LEVEL OF THE ROAD, AND SET IN THE TOP OF A CONCRETE JB0289'POST PROJECTING 2 INCHES. JB0289 JB0289 **STATION RECOVERY (2003)** JB0289 JB0289'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2003 (BES) JB0289'RECOVERED AS DESCRIBED JB0289' JB0289 JB0289 **STATION RECOVERY (2006)** JB0289 JB0289'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2006 (WAE) JB0289'NEW WITNESS POST SET AT 2' EAST OF MONUMENT. FOUND FLUSH WITH GROUND. JB0289 JB0289 **STATION RECOVERY (2012)** JB0289 JB0289'RECOVERY NOTE BY TROTTER AND ASSOCIATES 2012 (JMM)

JB0289'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = MARCH 22, 2013 JA2135 ********** JA2135 CBN - This is a Cooperative Base Network Control Station. JA2135 DESIGNATION - STINSON 2 JA2135 PID - JA2135 JA2135 STATE/COUNTY- IN/DUBOIS JA2135 COUNTRY - US JA2135 USGS QUAD - DALE (1980) JA2135 JA2135 *CURRENT SURVEY CONTROL JA2135 JA2135* NAD 83(2011) POSITION- 38 14 54,24208(N) 086 57 05,11491(W) ADJUSTED JA2135* NAD 83(2011) ELLIP HT- 128.589 (meters) (06/27/12) ADJUSTED JA2135* NAD 83(2011) EPOCH - 2010.00 JA2135* NAVD 88 ORTHO HEIGHT - 160.7 (meters) 527. (feet) GPS OBS JA2135 JA2135 NAVD 88 orthometric height was determined with geoid model GEOID96 JA2135 GEOID HEIGHT --32.06 (meters) GEOID96 JA2135 GEOID HEIGHT --32.16 (meters) GEOID12A JA2135 NAD 83(2011) X - 266,737.975 (meters) COMP JA2135 NAD 83(2011) Y - -5,008,410.199 (meters) COMP JA2135 NAD 83(2011) Z - 3,927,213.878 (meters) COMP JA2135 LAPLACE CORR --3.98 (seconds) DEFLEC12A JA2135 JA2135 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JA2135 Type JA2135 ------JA2135 NETWORK 0.98 2.27 JA2135 -----JA2135 MEDIAN LOCAL ACCURACY AND DIST (013 points) 1.07 2.51 57.31JA2135 -----JA2135 NOTE: Click here for information on individual local accuracy JA2135 values and other accuracy information. JA2135 JA2135 JA2135. This mark is at Huntingburg Airport (HNB) JA2135 JA2135. The horizontal coordinates were established by GPS observations JA2135.and adjusted by the National Geodetic Survey in June 2012. JA2135 JA2135.NAD 83(2011) refers to NAD 83 coordinates where the reference JA2135.frame has been affixed to the stable North American tectonic plate. See JA2135.NA2011 for more information. JA2135 JA2135. The horizontal coordinates are valid at the epoch date displayed above JA2135.which is a decimal equivalence of Year/Month/Day. JA2135 JA2135. The orthometric height was determined by GPS observations and a JA2135.high-resolution geoid model. JA2135 JA2135. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA2135 JA2135.The Laplace correction was computed from DEFLEC12A derived deflections. JA2135

JA2135. The ellipsoidal height was determined by GPS observations JA2135.and is referenced to NAD 83. JA2135 JA2135. The following values were computed from the NAD 83(2011) position. JA2135 JA2135; North East Units Scale Factor Converg. JA2135;SPC IN W - 333,073.509 911,546.629 MT 0.99996831 +0 04 54.0 JA2135;SPC IN W - 1,092,758.67 2,990,632.57 sFT 0.99996831 +0 04 54.0 - 4,233,377.280 504,250.697 MT 0.99960022 +0 01 48.3 JA2135;UTM 16 JA2135 JA2135! - Elev Factor x Scale Factor = Combined Factor JA2135!SPC IN W  $- 0.99997982 \times 0.99996831 = 0.99994813$ JA2135!UTM 16  $- 0.99997982 \times 0.99960022 = 0.99958005$ JA2135 Primary Azimuth Mark JA2135: Grid Az JA2135:SPC IN W - STINSON 2 AZ MK 272 29 49.5 JA2135:UTM 16 - STINSON 2 AZ MK 272 32 55.2 JA2135 JA2135 JA2135 | PID Reference Object Distance Geod. Az dddmmss.s | APPROX. 1.0 KM 2723443.5 | JA2135 JA2135 | JA2136 STINSON 2 AZ MK JA2135 |------ | JA2135 JA2135 SUPERSEDED SURVEY CONTROL JA2135 JA2135 NAD 83(2007)- 38 14 54.24211(N) 086 57 05.11574(W) AD( ) 0 JA2135 ELLIP H (02/10/07) 128.616 (m) GP( ) JA2135 NAD 83(1997)- 38 14 54.24231(N) 086 57 05.11596(W) AD( ) B JA2135 ELLIP H (04/10/98) 128.633 (m) GP( ) 4 1 JA2135 NAD 83(1993)- 38 14 54.24862(N) 086 57 05.11621(W) AD( ) 3 JA2135 NAD 83(1986)- 38 14 54.25011(N) 086 57 05.11563(W) AD( ) 3 JA2135 NAD 27 - 38 14 54.05665(N) 086 57 05.13055(W) AD( ) 3 JA2135 NGVD 29 (02/23/89) 160.9 (m) RAPSU86 model used GPS OBS JA2135 JA2135.Superseded values are not recommended for survey control. JA2135 JA2135.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA2135.See file dsdata.txt to determine how the superseded data were derived. JA2135 JA2135_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEH0425033377(NAD 83) JA2135 JA2135_MARKER: DH = HORIZONTAL CONTROL DISK JA2135_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA2135 SP SET: CONCRETE POST JA2135_STAMPING: STINSON 2 1986 JA2135 MARK LOGO: NGS JA2135_MAGNETIC: N = NO MAGNETIC MATERIAL JA2135_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA2135+STABILITY: SURFACE MOTION JA2135_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA2135+SATELLITE: SATELLITE OBSERVATIONS - March 22, 2011 JA2135 JA2135 HISTORY - Date Condition Report By

JA2135 HISTORY - 1988 NGS MONUMENTED JA2135 HISTORY - 19970902 GOOD SEC JA2135 HISTORY - 20110322 GOOD GEOCAC - 20110322 GOOD JA2135 HISTORY GEOCAC JA2135 JA2135 STATION DESCRIPTION JA2135 JA2135'DESCRIBED BY NATIONAL GEODETIC SURVEY 1988 JA2135'THE STATION IS LOCATED ABOUT 9.7 KM (6.05 MI) NORTH OF INTERSTATE JA2135'HIGHWAY 64, 8.4 KM (5.20 MI) SOUTH OF HUNTINGBURG AND AT THE JA2135'HUNTINGBURG AIRPORT. OWNERSHIP--DUBOIS COUNTY, PO BOX 293, JA2135'HUNTINGBURG, IN 47542, PHONE 812-683-5454. AIRPORT MANAGER IS RAMIE JA2135'ECKERLY. JA2135'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 231 AND STATE JA2135'HIGHWAY 64 IN HUNTINGBURG, GO SOUTH ON U.S. HIGHWAY 231, MAIN STREET, JA2135'FOR 6.4 KM (4.00 MI) TO A PAVED ROAD LEFT. TURN LEFT AND GO EAST FOR JA2135'1.3 KM (0.80 MI) TO AIRPORT ON THE LEFT. FROM AIRPORT OFFICE GO JA2135'NORTH ACROSS APRON FOR 0.1 KM (0.05 MI) TO THE MARK ON THE LEFT. JA2135'THE STATION IS A STANDARD NGS STATION MARK DISK STAMPED---STINSON 2 JA2135'1986---, SET IN THE TOP OF A 20 CM IN DIAMETER CONCRETE POST THAT IS JA2135'FLUSH WITH THE GROUND. LOCATED 22.4 M (73.5 FT) SOUTH-SOUTHEAST FROM JA2135'A BLACK AND YELLOW INFORMATION SIGN, 11.2 M (36.7 FT) WEST FROM AN JA2135'ORANGE AND YELLOW TAXIWAY MARKER AND 11.0 M (36.1 FT) NORTH FROM JA2135'TAXIWAY CENTER. JA2135'GPS SURVEY, FAA AIRPORTS, INDIANA. JA2135'DESCRIBED BY D.A. BOWLING. JA2135 JA2135 **STATION RECOVERY (1997)** JA2135 JA2135'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) JA2135'RECOVERED AS DESCRIBED. JA2135 JA2135 STATION RECOVERY (2011) JA2135 JA2135'RECOVERY NOTE BY GEOCACHING 2011 (DSA) JA2135'MARK FOUND IN GOOD CONDITION JA2135 JA2135 STATION RECOVERY (2011) JA2135 JA2135'RECOVERY NOTE BY GEOCACHING 2011 (DSA) JA2135'MARK FOUND IN GOOD CONDITION

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME2545 ********** ME2545 CBN - This is a Cooperative Base Network Control Station. ME2545 DESIGNATION - AIX 2 ME2545 PID - ME2545 ME2545 STATE/COUNTY- IN/JASPER ME2545 COUNTRY - US ME2545 USGS QUAD - PARR (1980) ME2545 ME2545 *CURRENT SURVEY CONTROL ME2545 ME2545* NAD 83(2011) POSITION- 41 01 34.30831(N) 087 09 05.90777(W) ADJUSTED ME2545* NAD 83(2011) ELLIP HT- 176.619 (meters) (06/27/12) ADJUSTED ME2545* NAD 83(2011) EPOCH - 2010.00 ME2545* NAVD 88 ORTHO HEIGHT - 210.2 (meters) 690. (feet) GPS OBS ME2545 ME2545 NAVD 88 orthometric height was determined with geoid model GEOID03 -33.54 (meters) ME2545 GEOID HEIGHT -GEOID03 ME2545 GEOID HEIGHT --33.56 (meters) GEOID12A ME2545 NAD 83(2011) X - 239,460.259 (meters) COMP ME2545 NAD 83(2011) Y - -4,812,861.712 (meters) COMP ME2545 NAD 83(2011) Z - 4,164,734.343 (meters) COMP ME2545 LAPLACE CORR --1.24 (seconds) DEFLEC12A ME2545 ME2545 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) ME2545 Type ME2545 -----ME2545 NETWORK 0.83 1.45 ME2545 -----ME2545 MEDIAN LOCAL ACCURACY AND DIST (030 points) 0.95 1.76 96.94 ME2545 -----ME2545 NOTE: Click here for information on individual local accuracy ME2545 values and other accuracy information. ME2545 ME2545 ME2545. The horizontal coordinates were established by GPS observations ME2545.and adjusted by the National Geodetic Survey in June 2012. ME2545 ME2545.NAD 83(2011) refers to NAD 83 coordinates where the reference ME2545.frame has been affixed to the stable North American tectonic plate. See ME2545.NA2011 for more information. for more information. ME2545 ME2545. The horizontal coordinates are valid at the epoch date displayed above ME2545.which is a decimal equivalence of Year/Month/Day. ME2545 ME2545. The orthometric height was determined by GPS observations and a ME2545.high-resolution geoid model. ME2545 ME2545. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME2545 ME2545. The Laplace correction was computed from DEFLEC12A derived deflections. ME2545 ME2545. The ellipsoidal height was determined by GPS observations ME2545.and is referenced to NAD 83.

ME2545 ME2545. The following values were computed from the NAD 83(2011) position. ME2545 ME2545; Units Scale Factor Converg. North East ME2545;SPC IN W - 641,469.605 894,255.385 MT 0.99996707 -0 02 41.4 ME2545;SPC IN W - 2,104,554.86 2,933,902.88 sFT 0.99996707 -0 02 41.4 ME2545;UTM 16 - 4,541,676.230 487,251.804 MT 0.99960200 -0 05 58.3 ME2545 Elev Factor x Scale Factor = Combined Factor ME2545! ME2545!SPC IN W - 0.99997230 x 0.99996707 = 0.99993937 ME2545!UTM 16 - 0.99997230 x 0.99960200 = 0.99957431 ME2545 ME2545: Primary Azimuth Mark Grid Az ME2545:SPC IN W - RENSSELAER NW BASE 270 30 27.1 ME2545:UTM 16 - RENSSELAER NW BASE 270 33 44.0 ME2545 ME2545 | ------ | ME2545 PID Reference Object Distance Geod. Az | uaammss.s | 70.278 METERS 00241 37.993 METERS 04235 8 032 METERS 14 ME2545 ME2545 | ME2544 AIX ME2545 | CM2659 AIX 2 RM 2 8.032 METERS 18117 ME2545 | CM2661 AIX 2 RM 4 ME2545 | CM2001 AIA 2 KW 4 ME2545 | ME2541 RENSSELAER NW BASE APPROX. 5.8 KM 2702745.7 ME2545 | CM2658 AIX 2 AZ MK 2842041.1 70.221 METERS 33501 ME2545 | ME1422 M 108 ME2545 | CM2660 AIX 2 RM 3 23.339 METERS 34515 ME2545 |------ | ME2545 ME2545 SUPERSEDED SURVEY CONTROL ME2545 087 09 05.90874(W) AD( ME2545 NAD 83(2007)- 41 01 34.30841(N) ) () ME2545 ELLIP H (02/10/07) 176.636 (m) GP( ) ME2545 NAD 83(1997)- 41 01 34.30834(N) 087 09 05.90872(W) AD( ) A ME2545 ELLIP H (01/19/05) 176.638 (m) GP( ) 4 1 ME2545 NAD 83(1997)- 41 01 34.30821(N) 087 09 05.90800(W) AD( ) 2 ME2545 NAD 83(1986)- 41 01 34.31270(N) 087 09 05.91748(W) AD( ) 2 ME2545 NAD 27 - 41 01 34.18050(N) 087 09 05.82990(W) AD( ) 2 ME2545 ME2545. Superseded values are not recommended for survey control. ME2545 ME2545.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME2545. See file dsdata.txt to determine how the superseded data were derived. ME2545 ME2545_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL8725141676(NAD 83) ME2545 ME2545_MARKER: DS = TRIANGULATION STATION DISK ME2545 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME2545_STAMPING: AIX 2 1952 ME2545 MARK LOGO: CGS ME2545_PROJECTION: FLUSH ME2545_MAGNETIC: O = OTHER; SEE DESCRIPTION ME2545_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME2545+STABILITY: SURFACE MOTION ME2545_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

ME2545+SATELLITE: SATELLITE OBSERVATIONS - March 27, 2012 ME2545 ME2545 HISTORY - Date Condition Report By - 1952 MONUMENTED ME2545 HISTORY CGS ME2545 HISTORY - 1958 GOOD CGS ME2545 HISTORY - 1959 GOOD USGS ME2545 HISTORY - 1969 GOOD CGS - 20030612 GOOD ME2545 HISTORY IN-073 ME2545 HISTORY - 20050830 GOOD BUTLER ME2545 HISTORY - 20120327 GOOD IN-073 ME2545 ME2545 STATION DESCRIPTION ME2545 ME2545'DESCRIBED BY COAST AND GEODETIC SURVEY 1952 (LWS) ME2545'STATION IS LOCATED 6 MILES NORTH OF RENSSELAER, 0.05 MILE SOUTHEAST ME2545'OF THE INTERSECTION OF ME2545'STATE HIGHWAYS 53 AND 14 AND ON PROPERTY OWNED BY THE WEINBURG ME2545'BROTHERS. IT IS 284 FEET SOUTHEAST OF ME2545'THE INTERSECTION OF THE HIGHWAYS, 123 FEET SOUTHWEST OF THE ME2545'SOUTHWEST CORNER OF A CONCRETE BLOCK BUILDING, ME2545'50 FEET EAST OF THE CENTER OF STATE ME2545'HIGHWAY 53 AND 20 FEET EAST OF A WHITE WITNESS POST. THE MARK ME2545'PROJECTS 4 INCHES AND THE DISK IS ME2545'STAMPED AIX 2 1952. MF2545' ME2545'REFERENCE MARK NO. 2 IS 3 FEET NORTHWEST OF THE SOUTHWEST CORNER OF ME2545'THE CONCRETE BLOCK BUILDING. ME2545'THE MARK PROJECTS 2 INCHES AND THE DISK IS STAMPED AIX 2 NO 2 1952. ME2545' ME2545'REFERENCE MARK NO. 3 IS 31 FEET EAST OF THE CENTER OF STATE HIGHWAY ME2545'53 AND 1 FOOT EAST OF A ME2545'FENCELINE. THE MARK PROJECTS 10 INCHES AND THE DISK IS STAMPED AIX 2 ME2545'NO 3 1952. ME2545' ME2545'AIX 1947 AZIMUTH MARK IS 70 FEET EAST OF A POWERLINE POLE, 48 FEET ME2545'SOUTH OF THE CENTER OF STATE ME2545'HIGHWAY 14, 3 FEET EAST OF A WHITE WITNESS POST AND 1 FOOT SOUTH OF ME2545'A FENCELINE. THE MARK PROJECTS 2 ME2545'INCHES AND THE DISK IS STAMPED AIX 1947. ME2545' ME2545'BENCH MARK M 108 IS 74 FEET SOUTH OF THE CENTER OF STATE HIGHWAY 14, ME2545'45 FEET WEST OF THE ME2545'CENTER OF STATE HIGHWAY 53, 1.8 FEET SOUTHEAST OF A WHITE WITNESS ME2545'POST AND 1 FOOT WEST OF A ME2545'FENCELINE. THE MARK IS A 8 BY 8 INCH CONCRETE POST WHICH PROJECTS ME2545'4 INCHES WITH A BRONZE USC AND GS BENCH ME2545'MARK DISK SET IN THE TOP STAMPED M 108 1946. ME2545' ME2545'TO REACH THE AIX 1947 AZIMUTH MARK FROM THE INTERSECTION OF STATE ME2545'HIGHWAYS 53 AND 14, GO ME2545'WEST ON STATE HIGHWAY 14 FOR 0.2 MILE TO THE MARK ON THE LEFT. ME2545' ME2545'HEIGHT OF LIGHT ABOVE STATION MARK 34 METERS. ME2545

ME2545 **STATION RECOVERY (1958)** ME2545 ME2545'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1958 (WRH) ME2545'LETTER OF WALTER R. HOWARD, SOMERSET, KY., DATED JULY 29, 1958-ME2545' ME2545'REFERENCE MARK 3 WAS MOVED AND SET AS REFERENCE MARK 4. AN ANGLE WAS ME2545'TAKEN BETWEEN R.M. ME2545'2 AND THE MARK. ME2545 ME2545 **STATION RECOVERY (1959)** ME2545 ME2545'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1959 ME2545'STATION IS NOW COVERED WITH A BLACK TOP DRIVE WAY. ME2545' ME2545'REFERENCE MARKS 2 AND 4 WERE RECOVERED. ME2545' ME2545'REFERENCE MARK 3 WAS NOT LOCATED. ME2545' ME2545'BM M 108 WAS RECOVERED IN GOOD CONDITION. ME2545 ME2545 **STATION RECOVERY (1969)** ME2545 ME2545'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1969 (LFS) ME2545'THE STATION MARK AND REFERENCE MARK 2 WERE FOUND IN GOOD CONDITION. ME2545'REFERENCE MARK 3 ME2545'WAS NOT FOUND AND IS ASSUMED TO HAVE BEEN DESTROYED BY ME2545'ROAD CONSTRUCTION. THE AZIMUTH ME2545'MARK WAS FOUND UPROOTED AND ON ITS SIDE. ME2545'THE DISK WAS SALVAGED. REFERENCE MARK 4 WAS SET. ME2545'THERE IS NO OBJECTS ME2545'VISIBLE FROM THE GROUND TO SET A NEW AZIMUTH MARK FROM. ME2545' ME2545'THE STATION IS LOCATED ABOUT 250 FEET SOUTH OF THE JUNCTION OF ME2545'STATE HIGHWAY 53 ME2545'AND 14 WHICH IS ABOUT 6 MILES NORTH OF RENSSELAER, 169 ME2545'FEET NORTH OF THE SOUTH ENTRANCE TO ME2545'WEINBER BROS. DISCOUNT STORE, 123 ME2545'FEET NORTHWEST OF THE SOUTHWEST CORNER OF THE STORE, ME2545'85 FEET WEST OF THE ME2545'WEST WALL OF THE STORE, 50 FEET EAST OF THE CENTERLINE OF U.S. ME2545'HIGHWAY 231 AND ME2545'STATE HIGHWAY 53, 34 FEET SOUTH OF A CONCRETE RIGHT-OF-WAY POST, ME2545'1 FOOT NORTH OF A ME2545'TELEPHONE POLE, 1 FOOT SOUTH OF A METAL WITNESS POST ME2545'AND IN A NORTH-SOUTH FENCE LINE. ME2545'THE MONUMENT IS 4 INCHES UNDERGROUND ME2545'AND THE DISK IS STAMPED AIX 2 1952. ME2545' ME2545'REFERENCE MARK 2 IS 51 FEET NORTH OF THE WEST ENTRANCE TO THE STORE, ME2545'3 FEET NORTHWEST ME2545'OF THE 5TH BRACE PILLAR OF WALL FROM THE NORTH AND 1 ME2545'FOOT WEST OF THE WEST WALL OF THE ME2545'STORE. THE MONUMENT PROJECTS 6 INCHES ME2545'AND THE DISK IS STAMPED AIX 2 NO 2 1952.

ME2545' ME2545'RFERENCE MARK 4 IS 87 FEET WEST OF THE WEST WALL OF THE STORE, 1 ME2545'FOOT WEST OF THE ME2545'FENCE, 48 FEET EAST OF THE CENTERLINE OF THE ROAD AND ME2545'25 FEET SOUTH OF THE TELEPHONE ME2545'POLE. THE MONUMENT PROJECTS 4 INCHES AND ME2545'THE DISK IS STAMPED AIX 2 1952 NO 4 1969. MF2545' ME2545'NOTE, BM M 108 WAS FOUND WITH THE TOP SHEARED OFF AND THE DISK ME2545'GONE. ME2545' ME2545'AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN- 6 MILES NORTH OF ME2545'RENSSELAER ME2545' ME2545'HEIGHT OF LIGHT ABOVE STATION MARK 5 FEET. ME2545 ME2545 **STATION RECOVERY (2003)** ME2545 ME2545'RECOVERY NOTE BY JASPER COUNTY INDIANA 2003 (MK) ME2545'THE STATION IS LOCATED IN THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF ME2545'SECTION 30, T 30 N, R 6 W, UNION TOWNSHIP, 6 MI NORTH OF RENSSELAER, ME2545'3.5 MI EAST OF PARR AND 1 MI SOUTH OF THE VILLAGE OF ME2545'AIX.OWNERSHIP--WILLIAM AND BERTHA WEINBERG TRUST, 900 NE 195TH ST. ME2545'UNIT 616, NORTH MIAMI FL 33179. MF2545' ME2545'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROUTE 14 AND US ME2545'HIGHWAY 231 (SR 53), GO SOUTH FOR 284 FT TO THE STATION ON THE LEFT. ME2545' ME2545'THE STATION IS LOCATED 283.95 FT SOUTHEAST OF A SECTION CORNER ME2545'MONUMENT AT THE INTERSECTION OF ROUTE 14 AND HIGHWAY 231, 123,74 FT ME2545'NORTHWEST OF THE SOUTHWEST CORNER OF THE OLD WEINBERG STORE BUILDING, ME2545'103.7 FT SOUTH OF POWER POLE NIPSCO 768/640 AND 48.9 FT EAST OF THE ME2545'CENTERLINE OF HIGHWAY 231. ME2545 ME2545 **STATION RECOVERY (2005)** ME2545 ME2545'RECOVERY NOTE BY BUTLER FAIRMAN AND SEUFERT INC 2005 (JRC) ME2545'AIX2 AND REFERENCE MARK NO. 4 WERE FOUND, THE DISTANCE TO FROM ME2545'REFERENCE MARK NO. 4 TO AIX2 IS 26.52 FT. ME2545 ME2545 STATION RECOVERY (2012) ME2545 ME2545'RECOVERY NOTE BY JASPER COUNTY INDIANA 2012 (AGL) ME2545'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME1360 ********* ME1360 CBN - This is a Cooperative Base Network Control Station. ME1360 DESIGNATION - C 156 - ME1360 ME1360 PID ME1360 STATE/COUNTY- IN/JASPER ME1360 COUNTRY - US ME1360 USGS QUAD - WHEATFIELD (1992) ME1360 ME1360 *CURRENT SURVEY CONTROL ME1360 ME1360* NAD 83(2011) POSITION- 41 11 39.29711(N) 087 01 46.74478(W) ADJUSTED ME1360* NAD 83(2011) ELLIP HT- 169.374 (meters) (06/27/12) ADJUSTED ME1360* NAD 83(2011) EPOCH - 2010.00 ME1360* NAVD 88 ORTHO HEIGHT - 203.166 (meters) 666.55 (feet) ADJUSTED ME1360 ME1360 NAD 83(2011) X - 249,070.694 (meters) COMP ME1360 NAD 83(2011) Y - -4,800,080.410 (meters) COMP ME1360 NAD 83(2011) Z - 4,178,791.701 (meters) COMP ME1360 LAPLACE CORR --0.98 (seconds) DEFLEC12A ME1360 GEOID HEIGHT --33.80 (meters) GEOID12A ME1360 DYNAMIC HEIGHT -203.080 (meters) 666.27 (feet) COMP ME1360 MODELED GRAVITY - 980,193.7 (mgal) NAVD 88 ME1360 ME1360 VERT ORDER - SECOND CLASS 0 ME1360 ME1360 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME1360 Type Horiz Ellip Dist(km) ME1360 -----ME1360 NETWORK 0.83 1.76 ME1360 -----ME1360 MEDIAN LOCAL ACCURACY AND DIST (019 points) 0.99 2.12 70.09 ME1360 -----ME1360 NOTE: Click here for information on individual local accuracy ME1360 values and other accuracy information. ME1360 ME1360 ME1360. The horizontal coordinates were established by GPS observations ME1360.and adjusted by the National Geodetic Survey in June 2012. ME1360 ME1360.NAD 83(2011) refers to NAD 83 coordinates where the reference ME1360.frame has been affixed to the stable North American tectonic plate. See ME1360.NA2011 for more information. for more information. ME1360 ME1360. The horizontal coordinates are valid at the epoch date displayed above ME1360.which is a decimal equivalence of Year/Month/Day. ME1360 ME1360. The orthometric height was determined by differential leveling and ME1360.adjusted by the NATIONAL GEODETIC SURVEY ME1360.in June 1991. ME1360 ME1360. Photographs are available for this station. ME1360 ME1360. The X, Y, and Z were computed from the position and the ellipsoidal ht.

ME1360 ME1360. The Laplace correction was computed from DEFLEC12A derived deflections. ME1360 ME1360. The ellipsoidal height was determined by GPS observations ME1360 and is referenced to NAD 83. ME1360 ME1360. The dynamic height is computed by dividing the NAVD 88 ME1360.geopotential number by the normal gravity value computed on the ME1360.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME1360.degrees latitude (g = 980.6199 gals.). ME1360 ME1360. The modeled gravity was interpolated from observed gravity values. ME1360 ME1360. The following values were computed from the NAD 83(2011) position. ME1360 ME1360; Units Scale Factor Converg. North East ME1360;SPC IN W - 660,131.364 904,503.109 MT 0.99996692 +0 02 07.3 - 2,165,780.98 2,967,523.95 sFT 0.99996692 +0 02 07.3 ME1360;SPC IN W ME1360;UTM 16 - 4,560,321.354 497,513.614 MT 0.99960008 -0 01 10.3 ME1360 ME1360! - Elev Factor x Scale Factor = Combined Factor ME1360!SPC IN W  $- 0.99997343 \times 0.99996692 = 0.99994035$ ME1360!UTM 16 - 0.99997343 x 0.99960008 = 0.99957352 ME1360 ME1360 SUPERSEDED SURVEY CONTROL ME1360 ME1360 NAD 83(2007)- 41 11 39.29726(N) 087 01 46.74582(W) AD( ) 0 ME1360 ELLIP H (02/10/07) 169.400 (m) GP( ) ME1360 NAD 83(1997)- 41 11 39.29717(N) 087 01 46.74571(W) AD( ) B ME1360 ELLIP H (04/10/98) 169.417 (m) GP( ) 4 1 ME1360 NAVD 88 (04/10/98) 203.17 (m) 666.6 (f) LEVELING 3 ME1360 NGVD 29 (??/??/92) 203.258 (m) 666.86 (f) ADJ UNCH 20 ME1360 ME1360.Superseded values are not recommended for survey control. ME1360 ME1360.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME1360.See file dsdata.txt to determine how the superseded data were derived. ME1360 ME1360_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL9751360321(NAD 83) ME1360 ME1360_MARKER: DB = BENCH MARK DISK ME1360 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME1360_SP_SET: SET IN TOP OF CONCRETE MONUMENT ME1360_STAMPING: C 156 1946 ME1360 MARK LOGO: CGS ME1360_MAGNETIC: N = NO MAGNETIC MATERIAL ME1360 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME1360+STABILITY: SURFACE MOTION ME1360 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME1360+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 ME1360 ME1360 HISTORY - Date Condition Report By - 1946 ME1360 HISTORY MONUMENTED CGS ME1360 HISTORY - 1971 GOOD BRADY

ME1360 HISTORY - 19970805 GOOD SEC ME1360 HISTORY - 20090623 GOOD JCLS ME1360 HISTORY - 20110706 GOOD INDIV - 20120327 MARK NOT FOUND IN-073 ME1360 HISTORY ME1360 ME1360 STATION DESCRIPTION ME1360 ME1360'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 ME1360'1.3 MI E FROM WHEATFIELD. ME1360'ABOUT 1.3 MILE EAST ALONG THE NEW YORK CENTRAL RAILROAD FROM ME1360'THE STATION AT WHEATFIELD, 0.2 MILE WEST OF A GRAVEL ROAD CROSSING, ME1360'45 FEET NORTH OF THE NORTH RAIL OF THE TRACK, 22.5 FEET SOUTH OF ME1360'THE CENTER LINE OF A DIRT ROAD PARALLELING THE TRACK ON THE ME1360'NORTH, 4.5 FEET NORTH OF POLE NUMBER 56-32, 2 FEET BELOW TRACK ME1360'LEVEL AND SET IN THE TOP OF A CONCRETE POST PROJECTING ABOUT 5 ME1360'INCHES. NOTE -- POLE 56-32 NO LONGER EXISTS. ME1360 ME1360 **STATION RECOVERY (1971)** ME1360 ME1360'RECOVERY NOTE BY BRADY LAND SURVEYING INCORPORATED 1971 ME1360'RECOVERED IN GOOD CONDITION. ME1360 MF1360 **STATION RECOVERY (1997)** ME1360 ME1360'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) ME1360'THE STATION IS LOCATED ABOUT 1.3 MILES (2.1 KM) EAST OF WHEATFIELD. ME1360'FROM JUNCTION STATE ROAD 49 AND STATE ROAD 10, GO EAST 1 MILE (1.6 KM) ME1360'TO COUNTY ROAD 100 EAST. TURN LEFT, NORTH FOR 0.5 MILE (0.8 KM) TO ME1360'COUNTY ROAD 1250 NORTH. TURN LEFT, WEST (COUNTY ROAD PARALLELS ME1360'TRACKS) FOR 0.3 MILES (0.5 KM) TO THE STATION ON SOUTH SIDE OF COUNTY ME1360'ROAD, ON RAILROAD PROPERTY. LOCATED 0.80 METERS (2.62 FT) SOUTH OF ME1360'COUNTY ROAD RIGHT-OF-WAY FENCE, 13.70 METERS (44.95 FT) NORTH OF NORTH ME1360'RAIL OF RAILROAD TRACKS, 7.0 METERS (23.0 FT) SOUTH OF CENTERLINE OF ME1360'COUNTY ROAD, SET IN TOP 25 CM SQUARE CONCRETE POST PROJECTING 13 CM ME1360'ABOVE GROUND. ABOUT LEVEL WITH COUNTY ROAD, 33.5 EAST OF 0.30 P. OAK ME1360'(TWIN). OWNERSHIP--U.S. RAILROAD VEST CORP, JMS BUILDING, SUITE 805, ME1360'SOUTH BEND IN 46601. ME1360 ME1360 **STATION RECOVERY (2009)** ME1360 ME1360'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2009 (MRY) ME1360'RECOVERED IN GOOD CONDITION. ME1360 ME1360 **STATION RECOVERY (2011)** ME1360 ME1360'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI) ME1360'RECOVERED FOR 2011 INDIANA ORTHO AND LIDAR PROGRAM ME1360 ME1360 **STATION RECOVERY (2012)** ME1360 ME1360'RECOVERY NOTE BY JASPER COUNTY INDIANA 2012 (AGL) ME1360'MARK NOT FOUND.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME1498 ********* ME1498 CBN - This is a Cooperative Base Network Control Station. ME1498 DESIGNATION - C 166 - ME1498 ME1498 PID ME1498 STATE/COUNTY- IL/KANKAKEE ME1498 COUNTRY - US ME1498 USGS QUAD - ILLIANA HEIGHTS (1976) ME1498 ME1498 *CURRENT SURVEY CONTROL ME1498 ME1498* NAD 83(2011) POSITION- 41 10 45.01165(N) 087 35 02.16536(W) ADJUSTED ME1498* NAD 83(2011) ELLIP HT- 159.265 (meters) (06/27/12) ADJUSTED ME1498* NAD 83(2011) EPOCH - 2010.00 ME1498* NAVD 88 ORTHO HEIGHT - 192.557 (meters) 631.75 (feet) ADJUSTED ME1498 ME1498 NAD 83(2011) X - 202,669.610 (meters) COMP ME1498 NAD 83(2011) Y - -4,803,359.529 (meters) COMP ME1498 NAD 83(2011) Z - 4,177,524.709 (meters) COMP ME1498 LAPLACE CORR --2.68 (seconds) DEFLEC12A ME1498 GEOID HEIGHT --33.29 (meters) GEOID12A ME1498 DYNAMIC HEIGHT -192.477 (meters) 631.49 (feet) COMP ME1498 MODELED GRAVITY - 980,203.0 (mgal) NAVD 88 ME1498 ME1498 VERT ORDER - SECOND CLASS 0 ME1498 ME1498 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME1498 Type Horiz Ellip Dist(km) ME1498 -----ME1498 NETWORK 0.74 1.74 ME1498 -----ME1498 MEDIAN LOCAL ACCURACY AND DIST (033 points) 0.93 2.16 63.43 MF1498 -----ME1498 NOTE: Click here for information on individual local accuracy ME1498 values and other accuracy information. ME1498 ME1498 ME1498. The horizontal coordinates were established by GPS observations ME1498.and adjusted by the National Geodetic Survey in June 2012. ME1498 ME1498.NAD 83(2011) refers to NAD 83 coordinates where the reference ME1498.frame has been affixed to the stable North American tectonic plate. See ME1498.NA2011 for more information. for more information. ME1498 ME1498. The horizontal coordinates are valid at the epoch date displayed above ME1498.which is a decimal equivalence of Year/Month/Day. ME1498 ME1498. The orthometric height was determined by differential leveling and ME1498.adjusted by the NATIONAL GEODETIC SURVEY ME1498.in June 1991. ME1498 ME1498. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME1498 ME1498. The Laplace correction was computed from DEFLEC12A derived deflections.

ME1498 ME1498. The ellipsoidal height was determined by GPS observations ME1498 and is referenced to NAD 83. ME1498 ME1498. The dynamic height is computed by dividing the NAVD 88 ME1498.geopotential number by the normal gravity value computed on the ME1498.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME1498.degrees latitude (g = 980.6199 gals.). ME1498 ME1498. The modeled gravity was interpolated from observed gravity values. ME1498 ME1498. The following values were computed from the NAD 83(2011) position. ME1498 ME1498; North East Units Scale Factor Converg. ME1498;SPC IL E - 501,209.882 362,878.404 MT 1.00002364 +0 29 36.4 ME1498;SPC IL E - 1,644,386.09 1,190,543.56 sFT 1.00002364 +0 29 36.4 - 4,558,811.258 451,023.301 MT 0.99962952 -0 23 04.1 ME1498;UTM 16 ME1498 ME1498! - Elev Factor x Scale Factor = Combined Factor ME1498!SPC IL E - 0.99997502 x 1.00002364 = 0.99999866  $-0.99997502 \times 0.99962952 = 0.99960455$ ME1498!UTM 16 ME1498 MF1498 SUPERSEDED SURVEY CONTROL ME1498 ME1498 NAD 83(2007)- 41 10 45.01173(N) 087 35 02.16626(W) AD( ) 0 ME1498 ELLIP H (02/10/07) 159.287 (m) GP( ) ME1498 ELLIP H (10/15/04) 159.275 (m) GP( ) 4 2 ME1498 NAD 83(1997)- 41 10 45.01188(N) 087 35 02.16644(W) AD( ) B ME1498 ELLIP H (04/10/98) 159.307 (m) GP( ) 4 1 ME1498 NAVD 88 (04/10/98) 192.56 (m) 631.8 (f) LEVELING 3 ME1498 NGVD 29 (??/??/92) 192.647 (m) 632.04 (f) ADJ UNCH 20 ME1498 ME1498. Superseded values are not recommended for survey control. ME1498 ME1498.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME1498.See file dsdata.txt to determine how the superseded data were derived. ME1498 ME1498_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL5102358811(NAD 83) ME1498 ME1498 MARKER: DB = BENCH MARK DISK ME1498_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME1498 SP SET: SET IN TOP OF CONCRETE MONUMENT ME1498_STAMPING: C 166 1954 ME1498_MARK LOGO: CGS ME1498_MAGNETIC: N = NO MAGNETIC MATERIAL ME1498_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME1498+STABILITY: SURFACE MOTION ME1498 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME1498+SATELLITE: SATELLITE OBSERVATIONS - August 11, 2011 ME1498 ME1498 HISTORY - Date Condition Report By ME1498 HISTORY - 1954 MONUMENTED CGS - 19970304 GOOD ME1498 HISTORY NGS ME1498 HISTORY - 19970615 GOOD NGS

ME1498 HISTORY - 200205 GOOD ASCPC ME1498 HISTORY - 20080605 GOOD GEOCAC ME1498 HISTORY - 20110811 GOOD JCLS ME1498 ME1498 STATION DESCRIPTION ME1498 ME1498'DESCRIBED BY COAST AND GEODETIC SURVEY 1954 ME1498'4.3 MI E FROM MOMENCE. ME1498'ABOUT 4.3 MILES EAST ALONG THE NEW YORK CENTRAL RAILROAD FROM THE ME1498'STATION AT MOMENCE, ABOUT 0.45 MILE WEST OF CROSSING OF BLACK ME1498'TOP ROAD AT EDGETOWN, ABOUT 63 YARDS EAST OF SEMAPHORE NO. K 87.1, ME1498'AT CROSSING OF A PRIVATE ROAD LEADING SOUTHWEST TO A FARM, 68 ME1498'FEET SOUTHWEST OF CENTER OF CROSSING, 46 1/2 FEET SOUTH OF SOUTH ME1498'RAIL, 43 1/2 FEET WEST OF CENTER LINE OF PRIVATE ROAD, 1 FOOT ME1498'NORTH OF A FENCE LINE, 2 FEET EAST OF A WHITE WOODEN WITNESS ME1498'POST, ABOUT 1 FOOT BELOW LEVEL OF TRACK AND SET IN THE TOP OF ME1498'A CONCRETE POST PROJECTING 2 INCHES. ME1498 ME1498 **STATION RECOVERY (1997)** ME1498 ME1498'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (RKB) ME1498'THE STATION IS LOCATED ABOUT 4.3 MI (6.9 KM) EAST-NORTHEAST OF MOMENCE ME1498'AND 0.43 MI (0.69 KM) WEST OF EDGETOWN. TO REACH FROM THE JUNCTION OF ME1498'STATE ROUTES 1 AND 17 WITH STATE ROUTE 114 IN MOMENCE, GO NORTH ACROSS ME1498'THE KANKAKEE RIVER BRIDGE FOR 0.2 MI (0.3 KM) TO WASHINGTON STREET. ME1498'TURN RIGHT, EAST, ON WASHINGTON STREET, WHICH TURNS TO THE NORTHEAST ME1498'AND BECOMES RAILROAD AVENUE, FOR 0.9 MI (1.4 KM) TO A ROAD RIGHT, ME1498'3500N. TURN RIGHT, EAST, ON ROAD 3500N FOR 0.5 MI (0.8 KM) TO A ME1498'CROSSROAD. TURN LEFT, NORTH-NORTHEAST, ON VINCENNES ROAD (TOWNSHIP ME1498'ROAD 12150E) FOR 0.5 MI (0.8 KM) TO A ROAD RIGHT. TURN RIGHT, EAST, ME1498'ON ROAD 4000N FOR 2.9 MI (4.7 KM) TO A DRIVE RIGHT, SOUTH, TO A FARM ME1498'AND THE STATION ON THE RIGHT, IN THE SOUTHWEST ANGLE OF THE DRIVE AND ME1498'A RAILROAD CROSSING, 20.7 M (67.9 FT) SOUTHWEST OF THE CENTER OF THE ME1498'CROSSING, 14.2 M (46.6 FT) SOUTH OF THE SOUTH RAIL, 13.3 M (43.6 FT) ME1498'WEST OF THE CENTER OF THE DRIVE, 0.3 M (1.0 FT) NORTH OF A FENCE LINE, ME1498'AND 0.6 M (2.0 FT) EAST OF A FIBERGLASS WITNESS POST. ME1498 **STATION RECOVERY (1997)** ME1498 ME1498 ME1498'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (CSM) ME1498'RECOVERED AS DESCRIBED. ME1498 ME1498 **STATION RECOVERY (2002)** ME1498 ME1498'RECOVERY NOTE BY AMERICAN SURVEYING CONSULTANTS PC 2002 ME1498'RECOVERED AS DESCRIBED ME1498' ME1498' ME1498 ME1498 STATION RECOVERY (2008) ME1498 ME1498'RECOVERY NOTE BY GEOCACHING 2008 (BPS) ME1498'RECOVERED IN GOOD CONDITION. ME1498

ME1498 STATION RECOVERY (2011) ME1498 ME1498'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 ME1498'RECOVERED IN GOOD CONDITION. 1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME0522 ********* ME0522 CBN - This is a Cooperative Base Network Control Station. ME0522 DESIGNATION - D 335 ME0522 PID - ME0522 ME0522 STATE/COUNTY- IN/STARKE ME0522 COUNTRY - US ME0522 USGS QUAD - HAMLET (1977) ME0522 ME0522 *CURRENT SURVEY CONTROL ME0522 ME0522* NAD 83(2011) POSITION- 41 23 09.54893(N) 086 36 31.16277(W) ADJUSTED ME0522* NAD 83(2011) ELLIP HT- 174.030 (meters) (06/27/12) ADJUSTED ME0522* NAD 83(2011) EPOCH - 2010.00 ME0522* NAVD 88 ORTHO HEIGHT - 207.902 (meters) 682.09 (feet) ADJUSTED ME0522 ME0522 NAD 83(2011) X - 283,502.403 (meters) COMP ME0522 NAD 83(2011) Y - -4,784,097.036 (meters) COMP ME0522 NAD 83(2011) Z - 4,194,795.172 (meters) COMP ME0522 LAPLACE CORR -0.71 (seconds) DEFLEC12A ME0522 GEOID HEIGHT --33.86 (meters) GEOID12A ME0522 DYNAMIC HEIGHT -207.818 (meters) 681.82 (feet) COMP ME0522 MODELED GRAVITY - 980,214.7 (mgal) NAVD 88 ME0522 ME0522 VERT ORDER - FIRST CLASS I ME0522 ME0522 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME0522 Type Horiz Ellip Dist(km) ME0522 -----ME0522 NETWORK 0.49 0.90 ME0522 -----ME0522 MEDIAN LOCAL ACCURACY AND DIST (021 points) 0.75 1.55 57.70 ME0522 -----ME0522 NOTE: Click here for information on individual local accuracy ME0522 values and other accuracy information. ME0522 ME0522 ME0522. The horizontal coordinates were established by GPS observations ME0522.and adjusted by the National Geodetic Survey in June 2012. ME0522 ME0522.NAD 83(2011) refers to NAD 83 coordinates where the reference ME0522.frame has been affixed to the stable North American tectonic plate. See ME0522.NA2011 for more information. for more information. ME0522 ME0522. The horizontal coordinates are valid at the epoch date displayed above ME0522.which is a decimal equivalence of Year/Month/Day. ME0522 ME0522. The orthometric height was determined by differential leveling and ME0522.adjusted by the NATIONAL GEODETIC SURVEY ME0522.in April 1995. ME0522 ME0522. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME0522 ME0522. The Laplace correction was computed from DEFLEC12A derived deflections.

ME0522 ME0522. The ellipsoidal height was determined by GPS observations ME0522.and is referenced to NAD 83. ME0522 ME0522. The dynamic height is computed by dividing the NAVD 88 ME0522.geopotential number by the normal gravity value computed on the ME0522.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME0522.degrees latitude (g = 980.6199 gals.). ME0522 ME0522. The modeled gravity was interpolated from observed gravity values. ME0522 ME0522. The following values were computed from the NAD 83(2011) position. ME0522 ME0522; North East Units Scale Factor Converg. ME0522;SPC IN W - 681,532.171 939,701.881 MT 0.99998606 +0 18 49.8 ME0522;SPC IN W - 2,235,993.46 3,083,005.25 sFT 0.99998606 +0 18 49.8 - 4,581,680.466 532,719.882 MT 0.99961318 +0 15 31.4 ME0522;UTM 16 ME0522 ME0522! - Elev Factor x Scale Factor = Combined Factor ME0522!SPC IN W - 0.99997270 x 0.99998606 = 0.99995876 - 0.99997270 x 0.99961318 = 0.99958589 ME0522!UTM 16 ME0522 MF0522 SUPERSEDED SURVEY CONTROL ME0522 ME0522 NAD 83(2007)- 41 23 09.54913(N) 086 36 31.16414(W) AD( ) 0 ME0522 ELLIP H (02/10/07) 174.060 (m) GP( ) ME0522 NAD 83(1997)- 41 23 09.54903(N) 086 36 31.16402(W) AD( ) B ME0522 ELLIP H (04/10/98) 174.079 (m) GP( ) 4 1 ME0522 NAVD 88 (04/10/98) 207.90 (m) 682.1 (f) LEVELING 3 ME0522 NAVD 88 (06/15/91) 207.901 (m) 682.09 (f) SUPERSEDED 11 ME0522 NGVD 29 (01/19/93) 208.000 (m) (f) ADJUSTED 11 682.41 ME0522 ME0522. Superseded values are not recommended for survey control. ME0522 ME0522.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME0522.See file dsdata.txt to determine how the superseded data were derived. ME0522 ME0522_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEL3271981680(NAD 83) ME0522 ME0522 MARKER: DB = BENCH MARK DISK ME0522_SETTING: 46 = COPPER-CLAD STEEL ROD W/O SLEEVE (10 FT.+) ME0522 SP SET: COPPER-CLAD STEEL ROD ME0522_STAMPING: D 335 1968 ME0522_MARK LOGO: CGS ME0522 PROJECTION: FLUSH ME0522_MAGNETIC: N = NO MAGNETIC MATERIAL ME0522 STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL ME0522_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME0522+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 ME0522_ROD/PIPE-DEPTH: 14.6 meters ME0522 ME0522 HISTORY - Date Condition Report By - 1968 ME0522 HISTORY MONUMENTED CGS ME0522 HISTORY - 1988 GOOD USPSQD

ME0522 HISTORY NGS - 19920907 GOOD ME0522 HISTORY - 19970805 GOOD SEC ME0522 HISTORY - 19990623 GOOD USPSOD ME0522 HISTORY - 20060927 GOOD WOOLPT ME0522 HISTORY - 20091103 GOOD WOOLPT ME0522 HISTORY - 20110706 GOOD INDIV ME0522 ME0522 STATION DESCRIPTION ME0522 ME0522'DESCRIBED BY COAST AND GEODETIC SURVEY 1968 ME0522'1.4 MI W FROM HAMLET. ME0522'ABOUT 1.4 MILES WEST ALONG THE PENN CENTRAL RAILROAD FROM THE ME0522'CROSSING OF STARKE STREET AT HAMLET, ABOUT 0.5 MILE EAST OF ME0522'MILEPOST 400, ABOUT 0.4 MILE WEST OF THE CROSSING OF COUNTY ROAD ME0522'500 E., 50.1 FEET NORTH OF THE NORTH RAIL OF THE WESTBOUND TRACK, ME0522'27 1/2 FEET SOUTH OF THE CENTER LINE OF OLD U.S. HIGHWAY 30, ME0522'3 1/2 FEET WEST OF POWER LINE POLE 286 - 900, IN LINE WITH A ROW ME0522'OF POLES, 0.5 FOOT NORTHWEST OF A METAL WITNESS POST, 5 FEET ME0522'BELOW THE LEVEL OF THE TRACK AND IS A DISK ON THE TOP OF A COPPER ME0522'COATED STEEL ROD PROJECTING 2 INCHES ABOVE THE LEVEL OF THE ME0522'GROUND AND PROTECTED BY A 6 INCH METAL PIPE WHICH PROJECTS 4 ME0522'INCHES ABOVE THE LEVEL OF THE GROUND. THE ROD WAS DRIVEN TO A ME0522'DEPTH OF 48 FEET. IN SECTION 23, R 2 W, T 34 N. ME0522 ME0522 **STATION RECOVERY (1988)** ME0522 ME0522'RECOVERY NOTE BY US POWER SQUADRON 1988 (CM) ME0522'RECOVERED IN GOOD CONDITION. ME0522 ME0522 **STATION RECOVERY (1992)** ME0522 ME0522'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992 ME0522'0.1 KM (0.05 MI) NORTHERLY ALONG STARKE STREET FROM THE POST OFFICE IN ME0522'HAMLET, THENCE 2.3 KM (1.40 MI) WESTERLY ALONG THE CONRAIL RAILROAD, ME0522'19.4 M (63.6 FT) NORTH OF THE NEAR RAIL, 8.6 M (28.2 FT) SOUTH OF THE ME0522'CENTER OF OLD HIGHWAY 30, 1.1 M (3.6 FT) WEST OF UTILITY POLE NUMBER ME0522'785-911, 0.4 M (1.3 FT) EAST OF A WITNESS POST, AND 0.3 M (1.0 FT) ME0522'BELOW THE LEVEL OF THE HIGHWAY. NOTE--THE DISK IS ENCASED IN A 5-INCH ME0522'METAL PIPE AND IS FLUSH WITH THE GROUND SURFACE. ME0522 ME0522 STATION RECOVERY (1997) ME0522 ME0522'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) ME0522'ABOUT 1.4 MILES (2.3 KM) WEST OF HAMLET FROM THE INTERSECTION OF ME0522'STARKE STREET AND OLD U.S. ROUTE 30 (PLYMOUTH STREET), PARALLELING THE ME0522'NORFOLK SOUTHERN TRACKS, TO THE STATION ON THE SOUTH SIDE OF ROAD. ME0522'THE STATION IS A DISK SET ATOP A COPPER-CLAD STEEL ROD PROJECTING 2 ME0522'INCHES ABOVE THE GROUND INSIDE CASING AND ENCIRCLED BY A 6 INCH METAL ME0522'CASING FLUSH WITH SURROUNDING GROUND. LOCATED 19.35 METERS (63.48 FT) ME0522'NORTH OF NORTH RAIL OF TRACKS, 8.47 METERS (27.79 FT) SOUTH OF THE ME0522'CENTERLINE OF OLD U.S. ROUTE 30 (PLYMOUTH STREET) AND 1.11 METERS ME0522'(3.64 FT) WEST OF POWER POLE 785911. ME0522 ME0522 **STATION RECOVERY (1999)** 

ME0522 ME0522'RECOVERY NOTE BY US POWER SQUADRON 1999 ME0522'RECOVERED IN GOOD CONDITION. ME0522 ME0522 **STATION RECOVERY (2006)** ME0522 ME0522'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2006 (CTS) ME0522'THIS STATION WAS RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION. ME0522 ME0522 **STATION RECOVERY (2009)** ME0522 ME0522'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2009 (BJM) ME0522'THIS STATION WAS RECOVERED AS DESCRIBED AND FOUND IN GOOD CONDITION. ME0522 ME0522 **STATION RECOVERY (2011)** ME0522 ME0522'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 (USI) ME0522'RECOVERED FOR 2011 INDIANA ORTHO AND LIDAR PROGRAM

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 LB1139 ********** LB1139 CBN - This is a Cooperative Base Network Control Station. LB1139 DESIGNATION - G 129 LB1139 PID - LB1139 LB1139 STATE/COUNTY- IN/PULASKI LB1139 COUNTRY - US LB1139 USGS QUAD - MONON NE (1962) LB1139 LB1139 *CURRENT SURVEY CONTROL LB1139 LB1139* NAD 83(2011) POSITION- 40 59 04.84794(N) 086 52 05.22835(W) ADJUSTED LB1139* NAD 83(2011) ELLIP HT- 171.296 (meters) (06/27/12) ADJUSTED LB1139* NAD 83(2011) EPOCH - 2010.00 LB1139* NAVD 88 ORTHO HEIGHT - 204.987 (meters) 672.53 (feet) ADJUSTED LB1139 LB1139 NAD 83(2011) X - 263,438.227 (meters) COMP LB1139 NAD 83(2011) Y - -4,814,634.560 (meters) COMP LB1139 NAD 83(2011) Z - 4,161,251.375 (meters) COMP LB1139 LAPLACE CORR --0.35 (seconds) DEFLEC12A LB1139 GEOID HEIGHT --33.70 (meters) GEOID12A LB1139 DYNAMIC HEIGHT -204.896 (meters) 672.23 (feet) COMP LB1139 MODELED GRAVITY - 980,178.2 (mgal) NAVD 88 LB1139 LB1139 VERT ORDER - SECOND CLASS 0 LB1139 LB1139 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) LB1139 Type Horiz Ellip Dist(km) LB1139 -----LB1139 NETWORK 0.89 1.59 LB1139 -----LB1139 MEDIAN LOCAL ACCURACY AND DIST (020 points) 0.89 1.61 101.43 LB1139 -----LB1139 NOTE: Click here for information on individual local accuracy LB1139 values and other accuracy information. LB1139 LB1139 LB1139. The horizontal coordinates were established by GPS observations LB1139.and adjusted by the National Geodetic Survey in June 2012. LB1139 LB1139.NAD 83(2011) refers to NAD 83 coordinates where the reference LB1139.frame has been affixed to the stable North American tectonic plate. See LB1139.NA2011 for more information. for more information. LB1139 LB1139. The horizontal coordinates are valid at the epoch date displayed above LB1139.which is a decimal equivalence of Year/Month/Day. LB1139 LB1139. The orthometric height was determined by differential leveling and LB1139.adjusted by the NATIONAL GEODETIC SURVEY LB1139.in June 1991. LB1139 LB1139. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB1139 LB1139.The Laplace correction was computed from DEFLEC12A derived deflections.

LB1139 LB1139. The ellipsoidal height was determined by GPS observations LB1139.and is referenced to NAD 83. LB1139 LB1139. The dynamic height is computed by dividing the NAVD 88 LB1139.geopotential number by the normal gravity value computed on the LB1139.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB1139.degrees latitude (g = 980.6199 gals.). LB1139 LB1139. The modeled gravity was interpolated from observed gravity values. LB1139 LB1139. The following values were computed from the NAD 83(2011) position. LB1139 LB1139; North East Units Scale Factor Converg. LB1139;SPC IN W - 636,879.216 918,110.693 MT 0.99997070 +0 08 28.1 - 2,089,494.56 3,012,168.17 sFT 0.99997070 +0 08 28.1 LB1139;SPC IN W - 4,537,064.771 511,093.964 MT 0.99960151 +0 05 11.4 LB1139;UTM 16 LB1139 LB1139! - Elev Factor x Scale Factor = Combined Factor LB1139!SPC IN W - 0.99997313 x 0.99997070 = 0.99994383 - 0.99997313 x 0.99960151 = 0.99957465 LB1139!UTM 16 LB1139 I B1139 SUPERSEDED SURVEY CONTROL LB1139 LB1139 NAD 83(2007)- 40 59 04.84804(N) 086 52 05.22931(W) AD( ) 0 LB1139 ELLIP H (02/10/07) 171.312 (m) GP( ) LB1139 NAD 83(1997)- 40 59 04.84797(N) 086 52 05.22929(W) AD( ) A LB1139 ELLIP H (01/19/05) 171.312 (m) GP( ) 4 1 LB1139 NAVD 88 (01/19/05) 204.99 (m) 672.5 (f) LEVELING 3 LB1139 NGVD 29 (??/??/92) 205.085 (m) 672.85 (f) ADJ UNCH 20 LB1139 LB1139. Superseded values are not recommended for survey control. LB1139 LB1139.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB1139.See file dsdata.txt to determine how the superseded data were derived. LB1139 LB1139_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEL1109337064(NAD 83) LB1139 LB1139_MARKER: DB = BENCH MARK DISK LB1139 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT LB1139_SP_SET: SET IN TOP OF CONCRETE MONUMENT LB1139 STAMPING: G 129 1946 LB1139_MARK LOGO: CGS LB1139_PROJECTION: PROJECTING 15 CENTIMETERS LB1139_MAGNETIC: O = OTHER; SEE DESCRIPTION LB1139_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO LB1139+STABILITY: SURFACE MOTION LB1139 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB1139+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2011 LB1139 LB1139 HISTORY - Date Condition Report By - 1946 MONUMENTED LB1139 HISTORY CGS - 1989 LB1139 HISTORY GOOD USPSOD LB1139 HISTORY - 20030612 GOOD ABSHER

LB1139 HISTORY - 20100318 GOOD AEROME LB1139 HISTORY - 20110505 GOOD JCLS LB1139 HISTORY - 20110706 GOOD INDIV LB1139 LB1139 STATION DESCRIPTION LB1139 LB1139'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 LB1139'0.8 MI E FROM FRANCESVILLE. LB1139'ABOUT 0.75 MILE EAST ALONG A PAVED ROAD FROM THE POST OFFICE AT LB1139'FRANCESVILLE, ABOUT 0.3 MILE WEST OF A STEEL BRIDGE OVER BIG LB1139'MONON CREEK, 94 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A HOUSE, LB1139'58 FEET SOUTHWEST OF THE SOUTHWEST CORNER OF A GARAGE, 27 FEET LB1139'NORTH OF THE CENTER LINE OF THE ROAD, 43 FEET WEST OF THE CENTER LB1139'LINE OF A DRIVEWAY, 1 FOOT NORTH OF THE NORTH RIGHT-OF-WAY FENCE LB1139'LINE, ABOUT LEVEL WITH THE CENTER LINE OF THE ROAD AND SET IN LB1139'THE TOP OF A CONCRETE POST PROJECTING ABOUT 6 INCHES. LB1139 LB1139 **STATION RECOVERY (1989)** LB1139 LB1139'RECOVERY NOTE BY US POWER SQUADRON 1989 (TCR) LB1139'RECOVERED IN GOOD CONDITION. LB1139 I B1139 **STATION RECOVERY (2003)** LB1139 LB1139'RECOVERY NOTE BY ABSHER SURVEYING 2003 (DA) LB1139'RECOVERED AS DESCRIBED WITH THE FOLLOWING ADDITION. LB1139' LB1139'THE STATION IS 16 FT NORTH OF THE NORTH EDGE OF BITUMINOUS SURFACE OF LB1139'COUNTY ROAD 500 SOUTH. LB1139 LB1139 **STATION RECOVERY (2010)** LB1139 LB1139'RECOVERY NOTE BY AERO METRIC INC 2010 LB1139'RECOVERED IN GOOD CONDITION. LB1139 LB1139 **STATION RECOVERY (2011)** LB1139 LB1139'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 LB1139'RECOVERED IN GOOD CONDITION. LB1139 LB1139 **STATION RECOVERY (2011)** LB1139 LB1139'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2011 LB1139'RECOVERED FOR 2011 INDIANA ORTHO AND LIDAR PROGRAM

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME3364 ********* ME3364 CBN - This is a Cooperative Base Network Control Station. ME3364 DESIGNATION - STOCKTON 2 RESET ME3364 PID - ME3364 ME3364 STATE/COUNTY- IN/LAKE ME3364 COUNTRY - US ME3364 USGS QUAD - WHITING (1991) ME3364 ME3364 *CURRENT SURVEY CONTROL ME3364 ME3364* NAD 83(2011) POSITION- 41 37 44.86578(N) 087 23 40.01485(W) ADJUSTED ME3364* NAD 83(2011) ELLIP HT- 146.608 (meters) (06/27/12) ADJUSTED ME3364* NAD 83(2011) EPOCH - 2010.00 ME3364* NAVD 88 ORTHO HEIGHT - 180.170 (meters) 591.11 (feet) ADJUSTED ME3364 ME3364 NAD 83(2011) X - 217,051.007 (meters) COMP ME3364 NAD 83(2011) Y - -4,769,636.340 (meters) COMP ME3364 NAD 83(2011) Z - 4,215,000.257 (meters) COMP ME3364 LAPLACE CORR --0.83 (seconds) DEFLEC12A ME3364 GEOID HEIGHT --33.56 (meters) GEOID12A ME3364 DYNAMIC HEIGHT -180.105 (meters) 590.89 (feet) COMP ME3364 MODELED GRAVITY - 980,256.4 (mgal) NAVD 88 ME3364 ME3364 VERT ORDER - FIRST CLASS II ME3364 ME3364 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) ME3364 Type Horiz Ellip Dist(km) ME3364 -----ME3364 NETWORK 0.95 2.00 ME3364 -----ME3364 MEDIAN LOCAL ACCURACY AND DIST (002 points) 0.90 1.87 13.64 ME3364 -----ME3364 NOTE: Click here for information on individual local accuracy ME3364 values and other accuracy information. ME3364 ME3364 ME3364. The horizontal coordinates were established by GPS observations ME3364.and adjusted by the National Geodetic Survey in June 2012. ME3364 ME3364.NAD 83(2011) refers to NAD 83 coordinates where the reference ME3364.frame has been affixed to the stable North American tectonic plate. See ME3364.NA2011 for more information. for more information. ME3364 ME3364. The horizontal coordinates are valid at the epoch date displayed above ME3364.which is a decimal equivalence of Year/Month/Day. ME3364 ME3364. The orthometric height was determined by differential leveling and ME3364.adjusted by the NATIONAL GEODETIC SURVEY ME3364.in April 1995. ME3364 ME3364. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME3364 ME3364. The Laplace correction was computed from DEFLEC12A derived deflections.

ME3364 ME3364. The ellipsoidal height was determined by GPS observations ME3364.and is referenced to NAD 83. ME3364 ME3364. The dynamic height is computed by dividing the NAVD 88 ME3364.geopotential number by the normal gravity value computed on the ME3364.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME3364.degrees latitude (g = 980.6199 gals.). ME3364 ME3364. The modeled gravity was interpolated from observed gravity values. ME3364 ME3364. The following values were computed from the NAD 83(2011) position. ME3364 ME3364: North East Units Scale Factor Converg. ME3364;SPC IN W - 708,473.730 874,075.586 MT 0.99997493 -0 12 24.0 ME3364;SPC IN W - 2,324,384.23 2,867,696.32 sFT 0.99997493 -0 12 24.0 ME3364;UTM 16 - 4,608,675.352 467,143.679 MT 0.99961328 -0 15 43.3 ME3364 ME3364! - Elev Factor x Scale Factor = Combined Factor ME3364!SPC IN W - 0.99997701 x 0.99997493 = 0.99995194 ME3364!UTM 16 - 0.99997701 x 0.99961328 = 0.99959029 ME3364 ME3364: Primary Azimuth Mark Grid Az ME3364:SPC IN W - STOCKTON 2 AZ MK 3 285 04 45.8 ME3364:UTM 16 - STOCKTON 2 AZ MK 3 285 08 05.1 ME3364 ME3364 |------ | ME3364 PID Reference Object Distance Geod. Az | ME3364 dddmmss.s | ME3364 | ME2513 STOCKTON 63.204 METERS 01812 
 INIE 3304
 INIE 2513 STUCKTON
 63.204 METERS 01812

 ME3364
 ME1010 STOCKTON 2 RM 3
 5.267 METERS 10855

 ME3364
 ME3363 STOCKTON 2 AZ MK 3
 2845221.8

 ME3364
 ME1012 STOCKTON 2 RM 4
 5.196 METERS 28855
 2845221.8 ME3364 |------ | ME3364 SUPERSEDED SURVEY CONTROL ME3364 ME3364 087 23 40.01580(W) AD( ME3364 NAD 83(2007)- 41 37 44.86586(N) ) 0 ME3364 ELLIP H (02/10/07) 146.630 (m) GP( ) ME3364 NAD 83(1997)- 41 37 44.86575(N) 087 23 40.01547(W) AD( ) B ME3364 ELLIP H (04/10/98) 146.614 (m) GP( ) 4 1 ME3364 NAD 83(1994)- 41 37 44.87039(N) 087 23 40.02125(W) AD( ) 3 ) 3 ME3364 NAD 83(1986)- 41 37 44.87045(N) 087 23 40.02122(W) AD( ME3364 NAVD 88 (04/10/98) 180.17 (m) 591.1 (f) LEVELING 3 ME3364 NGVD 29 (01/19/93) 180.284 (m) 591.48 (f) ADJUSTED 12 ME3364 ME3364. Superseded values are not recommended for survey control. ME3364 ME3364.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME3364. See file dsdata.txt to determine how the superseded data were derived. ME3364 ME3364_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDM6714308675(NAD 83) ME3364 ME3364_MARKER: DH = HORIZONTAL CONTROL DISK

ME3364_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT ME3364 SP SET: CONCRETE POST ME3364 STAMPING: STOCKTON 2 1967 1980 ME3364_MARK LOGO: NGS ME3364 MAGNETIC: N = NO MAGNETIC MATERIAL ME3364_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME3364+STABILITY: SURFACE MOTION ME3364_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME3364+SATELLITE: SATELLITE OBSERVATIONS - April 27, 2005 ME3364 ME3364 HISTORY - Date Condition Report By ME3364 HISTORY - 1980 MONUMENTED NGS ME3364 HISTORY - 19900702 MARK NOT FOUND USGS ME3364 HISTORY - 19920806 GOOD NGS ME3364 HISTORY - 19970805 GOOD SEC ME3364 HISTORY - 20050427 GOOD INDIV ME3364 ME3364 STATION DESCRIPTION ME3364 ME3364'DESCRIBED BY NATIONAL GEODETIC SURVEY 1980 (CLN) ME3364'STATION MARK FOUND DESTROYED. THE UNDERGROUND MARK ALSO FOUND ME3364'DESTROYED. REFERENCE MARKS 3 AND 4 FOUND IN GOOD CONDITION. A NEW ME3364'STATION SURFACE AND SUB SURFACE STATION MARKS WERE ESTABLISHED BY THE ME3364'REFERENCE MARKS MEASUREMENTS. THE DIRECTION TO THE REFERENCE MARKS ME3364'CHECKED. THE DISTANCE TO RM 3 WAS LONGER BY 0.17 FT. RM 4 LONGER BY ME3364'0.19 FT. ME3364' ME3364'STATION IS LOCATED IN THE WEST PART OF GARY AN NEAR THE CLARK ROAD ME3364'ENTRANCE TO THE USS COMPANY TIN MILL PLANT. MF3364 ME3364'TO REACH FROM THE OVERPASS OF THE INDIANA TOLL ROAD AND U.S. HIGHWAY ME3364'12 AT THE W EDGE OF GARY, GO NW FOR 0.2 ON HIGHWAY 12 TO A ROAD ME3364'RIGHT. TURN RIGHT AND GO N ON CLARK ROAD FOR 1.3 MILES TO RAIL ROAD ME3364'TRACKS AND STATION ON LEFT. ME3364' ME3364'STATION MARKS ARE STANDARD DISKS, STAMPED---STOCKTON 2 1967 ME3364'1980---. IT IS 111 FT NW OF THE CROSSING OF CLARK ROAD AND THE RAIL ME3364'ROAD TRACKS, 77 FT E OF A RAIL ROAD TRACK SWITCH, 11.5 FT N OF N ME3364'RAIL OF TRACKS. THE MARK IS FLUSH. ME3364' ME3364'REFERENCE MARK 3 IS A STANDARD DISK, STAMPED---STOCKTON 2 NO 3 ME3364'1967---. IT IS 95 FT W OF CROSSING OF CLARK ROAD AND THE TRACKS, ME3364'94 FT E OF RAIL ROAD TRACK SWITCH AND 11 FT N OF THE N RAIL OF ME3364'TRACKS. THE MARK IS UNDERGROUND 2 INCHES. ME3364' ME3364'REFERENCE MARK 4 IS A STANDARD DISK, STAMPED---STOCKTON 2 NO 4 ME3364'1967---. IT IS 60 FT E OF THE RAIL ROAD TRACK SWITCH AND 11 FT N ME3364'OF N RAIL OF TRACKS. THE MARK IS UNDERGROUND 4 INCHES. ME3364' ME3364'THE AZIMUTH MARK IS A STANDARD DISK. STAMPED---STOCKTON 2 AZ 3 ME3364'1967---. SET IN A DRILL HOLE IN A SLAG SUBSTANCE. IT IS 35 FT S ME3364'OF THE CENTER LINE OF ROAD, 1 FT S OF POWER LINE POLE C 11 AND 1 FT ME3364'SW OF A METAL WITNESS POST. THE MARK IS UNDERGROUND 2 INCHES. ME3364'

ME3364'TO REACH THE AZIMUTH MARK FROM THE STATION, GO W ON ROAD FOR 0.25 ME3364'MILE TO THE MARK ON LEFT AS DESCRIBED. ME3364 ME3364 **STATION RECOVERY (1990)** ME3364 ME3364'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1990 (LRR) ME3364'STATION AND REFERENCE MARKS WERE SEARCHED FOR AND NOT FOUND. THERE ME3364'HAS BEEN EXTENSIVE GRADING IN THE AREA AND STATION AND REFERENCE MARKS ME3364'ARE PROBABLY DESTROYED. ME3364 ME3364 **STATION RECOVERY (1992)** ME3364 ME3364'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992 ME3364'0.2 KM (0.10 MI) NORTHERLY ALONG U.S. HIGHWAY 12 FROM THE JUNCTION OF ME3364'INTERSTATE HIGHWAY 90 IN GARY, THENCE 2.2 KM (1.35 MI) NORTHERLY ME3364'ALONG CLARK STREET, 66.0 M (216.5 FT) NORTHWEST OF THE NORTHWEST ME3364'CORNER OF A GUARD HOUSE, 47.5 M (155.8 FT) WEST OF THE ROAD CENTER, ME3364'23.6 M (77.4 FT) EAST OF A RAILROAD SWITCH STAND, 3.3 M (10.8 FT) ME3364'SOUTH OF A WITNESS POST, 3.2 M (10.5 FT) NORTH OF THE NEAR RAIL OF THE ME3364'CONRAIL RAILROAD, LEVEL WITH THE TRACK, AND THE MONUMENT IS RECESSED ME3364'0.05 M (0.16 FT) BELOW THE GROUND SURFACE. ME3364 ME3364 **STATION RECOVERY (1997)** ME3364 ME3364'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) ME3364'THE STATION IS LOCATED ABOUT 0.2 MILES (0.3 KM) NORTHWEST OF GARY, AT ME3364'THE END OF NORTH CLARK ROAD, JUST INSIDE THE WEST GATE OF U.S. STEEL. ME3364'OWNERSHIP--U.S. STEEL CORPORATION, CONTACT IS GLEN TOPPING, PHONE ME3364'219-888-4500. TO REACH THE STATION FROM THE END OF INTERSTATE 65. ME3364'TURN LEFT ON HIGHWAY 12. CONTINUE WEST ALONG HIGHWAY 12 FOR 5 MILES ME3364'(8.0 KM) UNTIL YOU CROSS THE GRAND CALUMET RIVER AT THE EAST END OF ME3364'GARY REGIONAL AIRPORT. JUST AS HIGHWAY 12 BENDS NORTHWEST, TURN RIGHT ME3364'ON NORTH CLARK ROAD. CONTINUE GOING NORTH ON NORTH CLARK ROAD FOR 1.3 ME3364'MILES (2.1 KM) TO THE WEST GATE OF U.S. STEEL. JUST TO THE NORTHWEST ME3364'OF THE GUARD STATION AND JUST SOUTH OF THE WITNESS POST. STATION IS 4 ME3364'METERS (13.1 FT) NORTH OF THE CENTERLINE OF THE RAILROAD TRACKS, 9.3 ME3364'METERS (30.5 FT) WEST-NORTHWEST OF YELLOW GAS VENT PIPE, 19.1 METERS ME3364'(62.7 FT) SOUTHWEST OF YELLOW GAS VENT PIPE, 23.8 METERS (78.1 FT) ME3364'NORTHEAST OF RAILROAD SWITCH AND 42 METERS (137.8 FT) NORTHWEST OF ME3364'MANHOLE. ME3364 ME3364 **STATION RECOVERY (2005)** ME3364 ME3364'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (SK) ME3364'CLARK ROAD GATE INTO STEELMILL IS NO LONGER IN USE. ACCESS BY ME3364'TEMPORARY PASS CAN BE OBTAINED AT THE STEEL MILL'S VISTORS CENTER, ME3364'LOCATED AT THE BROADWAY GATE. MAKE ARRANGEMENTS TO HAVE A SECURITY ME3364'PATROL SHOW YOU TO THE SITE.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 ME0580 ********** **ME0580 DESIGNATION - HUTTON** ME0580 PID - ME0580 ME0580 STATE/COUNTY- IN/PORTER ME0580 COUNTRY - US ME0580 USGS QUAD - WANATAH (1972) ME0580 *CURRENT SURVEY CONTROL ME0580 ME0580 ME0580* NAD 83(2011) POSITION- 41 26 38.25020(N) 086 59 34.84537(W) ADJUSTED ME0580* NAD 83(2011) ELLIP HT- 197.272 (meters) (06/27/12) ADJUSTED ME0580* NAD 83(2011) EPOCH - 2010.00 ME0580* NAVD 88 ORTHO HEIGHT - 231.066 (meters) 758.09 (feet) ADJUSTED ME0580 ME0580 NAD 83(2011) X - 251,180.673 (meters) COMP ME0580 NAD 83(2011) Y - -4,781,655.189 (meters) COMP ME0580 NAD 83(2011) Z - 4,199,639.200 (meters) COMP ME0580 LAPLACE CORR - -1.36 (seconds) DEFLEC12A ME0580 GEOID HEIGHT --33.82 (meters) GEOID12A ME0580 DYNAMIC HEIGHT -230.973 (meters) 757.78 (feet) COMP ME0580 MODELED GRAVITY - 980,214.9 (mgal) NAVD 88 MF0580 ME0580 VERT ORDER - FIRST CLASS I ME0580 ME0580 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) ME0580 Type ME0580 -----ME0580 NETWORK 0.85 2.21 ME0580 -----ME0580 MEDIAN LOCAL ACCURACY AND DIST (001 points) 0.17 0.10 5.17 ME0580 -----ME0580 NOTE: Click here for information on individual local accuracy ME0580 values and other accuracy information. ME0580 ME0580 ME0580. The horizontal coordinates were established by GPS observations ME0580.and adjusted by the National Geodetic Survey in June 2012. ME0580 ME0580.NAD 83(2011) refers to NAD 83 coordinates where the reference ME0580.frame has been affixed to the stable North American tectonic plate. See ME0580.NA2011 for more information. for more information. MF0580 ME0580. The horizontal coordinates are valid at the epoch date displayed above ME0580.which is a decimal equivalence of Year/Month/Day. ME0580 ME0580. The orthometric height was determined by differential leveling and ME0580.adjusted by the NATIONAL GEODETIC SURVEY ME0580.in June 1991. ME0580 ME0580. The X, Y, and Z were computed from the position and the ellipsoidal ht. ME0580 ME0580. The Laplace correction was computed from DEFLEC12A derived deflections. ME0580

ME0580. The ellipsoidal height was determined by GPS observations ME0580.and is referenced to NAD 83. ME0580 ME0580. The dynamic height is computed by dividing the NAVD 88 ME0580.geopotential number by the normal gravity value computed on the ME0580.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 ME0580.degrees latitude (g = 980.6199 gals.). ME0580 ME0580. The modeled gravity was interpolated from observed gravity values. ME0580 ME0580. The following values were computed from the NAD 83(2011) position. ME0580 ME0580: Units Scale Factor Converg. North East ME0580; SPC IN W - 687, 865.711 907, 547.682 MT 0.99996737 +0 03 35.2 ME0580;SPC IN W - 2,256,772.75 2,977,512.69 sFT 0.99996737 +0 03 35.2 ME0580; UTM 16 - 4,588,042.584 500,583.690 MT 0.99960000 +0 00 16.6 ME0580 - Elev Factor x Scale Factor = Combined Factor ME0580! ME0580!SPC IN W - 0.99996906 x 0.99996737 = 0.99993643 ME0580!UTM 16 - 0.99996906 x 0.99960000 = 0.99956907 ME0580 ME0580: Primary Azimuth Mark Grid Az ME0580:SPC IN W - VALPARAISO MUNICIPAL TANK 303 55 32.9 ME0580:UTM 16 - VALPARAISO MUNICIPAL TANK 303 58 51.5 ME0580 ME0580 | ------ | ME0580 | PID Reference Object Distance Geod. Az dddmmss.s | ME0580 ME0580 | ME0578 HUTTON AZ MK 0960652.1 ME0580 | ME0579 HUTTON RM 1 9.638 METERS 12902 ME0580 | ME0581 HUTTON RM 2 10.675 METERS 25230 ME0580 | ME2517 VALPARAISO MUNICIPAL TANK APPROX. 6.6 KM 3035908.1 | ME0580 | ------ | ME0580 ME0580 SUPERSEDED SURVEY CONTROL ME0580 086 59 34.84638(W) AD( ME0580 NAD 83(2007)- 41 26 38.25032(N) ) 0 ME0580 ELLIP H (02/10/07) 197.294 (m) GP( ) ME0580 NAD 83(1997)- 41 26 38.25053(N) 086 59 34.84633(W) AD( ) B ME0580 ELLIP H (03/12/99) 197.303 (m) GP( ) 2 2 ME0580 NAD 83(1986)- 41 26 38.25604(N) 086 59 34.84814(W) AD( ) 3 ME0580 NAD 27 - 41 26 38.11160(N) 086 59 34.75260(W) AD( ) 3 ME0580 NAVD 88 (03/12/99) 231.08 (m) 758.1 (f) LEVELING 3 ME0580 NGVD 29 (01/19/93) 231.160 (m) 758.40 (f) ADJUSTED 11 ME0580 ME0580.Superseded values are not recommended for survey control. ME0580 ME0580.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. ME0580.See file dsdata.txt to determine how the superseded data were derived. ME0580 ME0580_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TEL0058388042(NAD 83) ME0580 ME0580_MARKER: DS = TRIANGULATION STATION DISK ME0580_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

ME0580_SP_SET: CONCRETE POST ME0580 STAMPING: HUTTON 1952 ME0580 MARK LOGO: CGS ME0580_MAGNETIC: O = OTHER; SEE DESCRIPTION ME0580_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO ME0580+STABILITY: SURFACE MOTION ME0580 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR ME0580+SATELLITE: SATELLITE OBSERVATIONS - September 09, 2008 ME0580 ME0580 HISTORY - Date Condition Report By ME0580 HISTORY - 1952 MONUMENTED CGS ME0580 HISTORY - 1968 GOOD CGS ME0580 HISTORY - 1968 GOOD CGS - 1978 ME0580 HISTORY GOOD LOCSUR ME0580 HISTORY - 19920906 GOOD NGS - 19980725 GOOD ME0580 HISTORY WOOLPT ME0580 HISTORY - 20080909 GOOD LFA ME0580 ME0580 STATION DESCRIPTION ME0580 ME0580'DESCRIBED BY COAST AND GEODETIC SURVEY 1952 (LWS) ME0580'STATION IS LOCATED ALONG THE SOUTH SIDE OF U.S. HIGHWAY 30 ABOUT 3 ME0580'MILES EAST OF VALPARAISO. IT ME0580'IS 52 FEET NORTH OF THE NORTH RAIL OF THE PENNSYLVANIA RAILROAD ME0580'TRACKS, 38 FEET SOUTH OF THE CENTER ME0580'OF THE SOUTH LANE OF HIGHWAY 30, 6 FEET WEST OF A POWER ME0580'POLE AND 6 FEET WEST OF A WHITE WITNESS POST. ME0580'THE MARK PROJECTS ABOUT 2 INCHES AND THE ME0580'DISK IS STAMPED HUTTON 1952. ME0580' ME0580'REFERENCE MARK NO. 1 IS 52 FEET SOUTH OF THE CENTER OF THE SOUTH LANE ME0580'OF THE HIGHWAY, 39 FEET NORTH OF ME0580'THE NORTH RAIL OF THE RAILROAD AND 26 FEET SOUTHEAST OF A POWER ME0580'POLE. THE MARK PROJECTS ABOUT 2 ME0580'INCHES AND THE DISK IS STAMPED HUTTON NO 1 1952. ME0580' ME0580'REFERENCE MARK NO. 2 IS 58 FEET SOUTH OF THE CENTER OF THE SOUTH LANE ME0580'OF THE HIGHWAY AND 33 FEET NORTH ME0580'OF THE NORTH RAIL OF THE RAILROAD. THE MARK PROJECTS ABOUT 2 ME0580'INCHES AND THE DISK IS STAMPED ME0580'HUTTON NO 2 1952. ME0580' ME0580'AZIMUTH MARK IS 43 FEET NORTH OF THE CENTER OF THE NORTH LANE OF U.S. ME0580'HIGHWAY 30, 2 FEET WEST OF A ME0580'WHITE WITNESS POST AND 1 FOOT SOUTH OF A FENCE. THE MARK PROJECTS ME0580'ABOUT 2 INCHES AND THE DISK IS ME0580'STAMPED HUTTON 1952. ME0580' ME0580'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 30 AND STATE ME0580'HIGHWAY 49 IN THE SOUTHEAST ME0580'EDGE OF VALPARAISO, GO EAST ON HIGHWAY 30 FOR 2.6 MILES TO THE ME0580'STATION ON THE RIGHT AS DESCRIBED. ME0580'CONTINUE EAST ON THE HIGHWAY FOR 0.15 MILE TO THE AZIMUTH ME0580'MARK ON THE LEFT AS DESCRIBED.

ME0580' ME0580'HEIGHT OF LIGHT ABOVE STATION MARK 1 METER. ME0580 ME0580 **STATION RECOVERY (1968)** ME0580 ME0580'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1968 (RRG) ME0580'THE STATION, REFERENCE MARKS 1 AND 2 AND THE AZIMUTH MARK WERE ALL ME0580'RECOVERED AND IN ME0580'GOOD CONDITION. THE TO REACH ME0580'IS ADEQUATE. ME0580 ME0580 **STATION RECOVERY (1968)** ME0580 ME0580'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1968 ME0580'4.2 MI E FROM VALPARAISO. ME0580'ABOUT 4.2 MILES EAST ALONG THE PENN CENTRAL RAILROAD FROM THE ME0580'STATION AT VALPARAISO, IN SECTION 33, R 5 W, T 35 N, 0.25 MILE ME0580'WEST OF THE CROSSING OF ROAD 400 E, 0.15 MILE EAST OF MILEPOST ME0580'420, 52 FEET NORTH OF THE NORTH RAIL OF THE NORTH TRACK, 38 ME0580'FEET SOUTH OF THE CENTER LINE OF THE EASTBOUND LANE OF U.S. ME0580'HIGHWAY 30, 6 FEET WEST OF POWER LINE POLE 420/820, 2 FEET ME0580'EAST OF A METAL WITNESS POST, 2 FEET BELOW THE LEVEL OF THE ME0580'HIGHWAY AND SET IN THE TOP OF A CONCRETE POST FLUSH WITH THE ME0580'GROUND. ME0580 ME0580 **STATION RECOVERY (1978)** ME0580 ME0580'RECOVERY NOTE BY LOCAL SURVEYOR (INDIVIDUAL OR FIRM) 1978 ME0580'RECOVERED IN GOOD CONDITION. ME0580 ME0580 **STATION RECOVERY (1992)** ME0580 ME0580'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1992 ME0580'3.1 KM (1.90 MI) EASTERLY ALONG U.S. HIGHWAY 30 FROM THE JUNCTION OF ME0580'STATE HIGHWAY 49 IN VALPARAISO, 15.9 M (52.2 FT) NORTH-NORTHEAST OF ME0580'THE NEAR RAIL OF THE CONRAIL RAILROAD, 12.3 M (40.4 FT) ME0580'SOUTH-SOUTHWEST OF THE CENTERLINE OF THE EASTBOUND LANES OF THE ME0580'HIGHWAY, 10.8 M (35.4 FT) NORTHEAST OF REFERENCE MARK 2, 10.0 M ME0580'(32.8 FT) NORTHWEST OF REFERENCE MARK 1, 1.2 M (3.9 FT) WEST OF ME0580'UTILITY POLE NUMBER 420-820, 0.8 M (2.6 FT) BELOW THE LEVEL OF THE ME0580'HIGHWAY, 0.6 M (2.0 FT) EAST OF A WITNESS POST, AND THE MONUMENT IS ME0580'FLUSH WITH THE GROUND SURFACE. ME0580 ME0580 **STATION RECOVERY (1998)** ME0580 ME0580'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (ARL) ME0580'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (ARL). ME0580 ME0580 **STATION RECOVERY (2008)** MF0580 ME0580'RECOVERY NOTE BY LAWSON-FISHER ASSOCIATES PC 2008 (SST) ME0580'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 LB2146 *********** LB2146 DESIGNATION - MEODEL LB2146 PID - LB2146 LB2146 STATE/COUNTY- IN/JASPER LB2146 COUNTRY - US LB2146 USGS QUAD - REMINGTON (1980) LB2146 LB2146 *CURRENT SURVEY CONTROL LB2146 LB2146* NAD 83(2011) POSITION- 40 45 56.30406(N) 087 12 59.68886(W) ADJUSTED LB2146* NAD 83(2011) ELLIP HT- 192.626 (meters) (06/27/12) ADJUSTED LB2146* NAD 83(2011) EPOCH - 2010.00 LB2146* NAVD 88 ORTHO HEIGHT - 226.0 (meters) 741. (feet) GPS OBS LB2146 LB2146 NAVD 88 orthometric height was determined with geoid model GEOID96 LB2146 GEOID HEIGHT - -33.33 (meters) GEOID96 -33.44 (meters) LB2146 GEOID HEIGHT -GEOID12A LB2146 NAD 83(2011) X - 234,925.724 (meters) COMP LB2146 NAD 83(2011) Y - -4,832,063.872 (meters) COMP LB2146 NAD 83(2011) Z - 4,142,871.995 (meters) COMP LB2146 LAPLACE CORR --1.94 (seconds) DEFLEC12A LB2146 LB2146 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) LB2146 Type Horiz Ellip Dist(km) LB2146 -----LB2146 NETWORK 0.77 1.63 LB2146 -----LB2146 MEDIAN LOCAL ACCURACY AND DIST (011 points) 0.91 1.90 39.95 LB2146 -----LB2146 NOTE: Click here for information on individual local accuracy LB2146 values and other accuracy information. LB2146 LB2146 LB2146. The horizontal coordinates were established by GPS observations LB2146.and adjusted by the National Geodetic Survey in June 2012. LB2146 LB2146.NAD 83(2011) refers to NAD 83 coordinates where the reference LB2146.frame has been affixed to the stable North American tectonic plate. See LB2146.NA2011 for more information. for more information. LB2146 LB2146. The horizontal coordinates are valid at the epoch date displayed above LB2146.which is a decimal equivalence of Year/Month/Day. LB2146 LB2146. The orthometric height was determined by GPS observations and a LB2146.high-resolution geoid model. LB2146 LB2146. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB2146 LB2146. The Laplace correction was computed from DEFLEC12A derived deflections. LB2146 LB2146. The ellipsoidal height was determined by GPS observations LB2146.and is referenced to NAD 83. LB2146

LB2146. The following values were computed from the NAD 83(2011) position. LB2146 LB2146: North Units Scale Factor Converg. East LB2146;SPC IN W - 612,541.544 888,750.005 MT 0.99996822 -0 05 13.2 LB2146;SPC IN W - 2,009,646.72 2,915,840.64 sFT 0.99996822 -0 05 13.2 - 4,512,763.970 481,720.899 MT 0.99960411 -0 08 29.1 LB2146;UTM 16 LB2146 LB2146! - Elev Factor x Scale Factor = Combined Factor LB2146!SPC IN W - 0.99996978 x 0.99996822 = 0.99993801 LB2146!UTM 16 - 0.99996978 x 0.99960411 = 0.99957391 LB2146 LB2146: Primary Azimuth Mark Grid Az LB2146:SPC IN W - MEODEL AZ MK 270 29 22.4 LB2146:UTM 16 - MEODEL AZ MK 270 32 38.3 LB2146 LB2146 Distance Geod. Az | LB2146 PID Reference Object dddmmss.s LB2146 24.314 METERS 18843 LB2146 | CM3135 MEODEL RM 1 LB2146 | CM3134 MEODEL AZ MK 2702409.2 LB2146 | CM3136 MEODEL RM 2 33.796 METERS 27623 LB2146 LB2146 LB2146 SUPERSEDED SURVEY CONTROL LB2146 LB2146 NAD 83(2007)- 40 45 56.30423(N) 087 12 59.68991(W) AD( ) 0 LB2146 ELLIP H (02/10/07) 192.653 (m) GP( ) LB2146 NAD 83(1997)- 40 45 56.30410(N) 087 12 59.68974(W) AD( ) B LB2146 ELLIP H (03/12/99) 192.655 (m) GP( ) 2 1 LB2146 NAD 83(1986)- 40 45 56.30827(N) 087 12 59.70144(W) AD( ) 2 LB2146 NAD 27 - 40 45 56.16090(N) 087 12 59.62910(W) AD( ) 2 LB2146 LB2146.Superseded values are not recommended for survey control. LB2146 LB2146.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB2146.See file dsdata.txt to determine how the superseded data were derived. LB2146 LB2146_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL8172012763(NAD 83) LB2146 LB2146 MARKER: DS = TRIANGULATION STATION DISK LB2146_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT LB2146 STAMPING: MEODEL 1947 LB2146_MARK LOGO: CGS LB2146_MAGNETIC: O = OTHER; SEE DESCRIPTION LB2146_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO LB2146+STABILITY: SURFACE MOTION LB2146 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB2146+SATELLITE: SATELLITE OBSERVATIONS - March 27, 2012 LB2146 LB2146 HISTORY - Date Condition Report By LB2146 HISTORY - 1947 MONUMENTED CGS LB2146 HISTORY - 19980724 GOOD WOOLPT LB2146 HISTORY - 20030425 GOOD INDIV LB2146 HISTORY - 20070302 GOOD INDIV

LB2146 HISTORY - 20071110 GOOD GEOCAC LB2146 HISTORY - 20080421 GOOD FARNGP LB2146 HISTORY - 20080808 GOOD GEOCAC - 20101022 GOOD LB2146 HISTORY FARNGP LB2146 HISTORY - 20120327 GOOD IN-073 LB2146 LB2146 STATION DESCRIPTION LB2146 LB2146'DESCRIBED BY COAST AND GEODETIC SURVEY 1947 (RCB) LB2146'THE STATION IS LOCATED 4 MILES EAST OF GOODLAND AND 3-1/2 MILES WEST LB2146'OF REMINGTON, ON PROPERTY OWNED BY GEORGE WOODS. IT IS 43 FEET LB2146'SOUTH OF THE CENTER OF U. S. HIGHWAY 24, 25 FEET NORTHEAST OF THE LB2146'NORTHEAST CORNER OF A BARN, 20 FEET SOUTHWEST OF A FENCE CORNER AND LB2146'12 FEET SOUTH OF A WHITE WITNESS POST. THE MARK IS FLUSH AND LB2146'THE DISK IS STAMPED MEODEL 1947. LB2146' LB2146'REFERENCE MARK NO. 1 IS 79.77 FEET SOUTH OF THE STATION. IT IS 2 LB2146'FEET NORTHEAST OF THE NORTHWEST CORNER OF A GRANARY. THE MARK IS LB2146'FLUSH AND THE DISK IS STAMPED MEODEL NO 1 1947. LB2146' LB2146'REFERENCE MARK NO. 2 IS 110.88 FEET WEST OF THE STATION. IT IS 31 LB2146'FEET SOUTH OF THE CENTER OF HIGHWAY 24, 7 FEET WEST OF A TELEPHONE LB2146'POLE AND 1 FOOT SOUTH OF A BOARD FENCE. THE MARK PROJECTS 2 INCHES LB2146'AND THE DISK IS STAMPED MEODEL NO 2 1947. I B2146' LB2146'THE AZIMUTH MARK IS 0.2 MILE SOUTHWEST OF THE STATION. IT IS 33 FEET LB2146'SOUTH OF THE CENTER OF HIGHWAY 24, 3 FEET SOUTH OF A WHITE WITNESS LB2146'POST AND 1 FOOT SOUTHEAST OF A FENCE CORNER. THE MARK PROJECTS 2 LB2146'INCHES AND THE DISK IS STAMPED MEODEL 1947. LB2146' LB2146'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 24 AND STATE LB2146'HIGHWAY 53 IN REMINGTON, GO WEST ON HIGHWAY 24 FOR 3.3 MILES TO THE LB2146'STATION ON THE LEFT AS DESCRIBED. LB2146' LB2146'HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS. LB2146 LB2146 **STATION RECOVERY (1998)** LB2146 LB2146'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (JCB) LB2146'DESCRIBED BY JASPER COUNTY SURVEYORS OFFICE 1998 (KRK). THE STATION LB2146'IS 3.5 MI (5.6 KM) WEST OF THE INTERSECTION OF STATE ROUTE 231 AND LB2146'STATE ROUTE 24 IN REMINGTON, 5.2 MI (8.4 KM) EAST OF THE INTERSECTION LB2146'OF IROQUOIS STREET AND STATE ROUTE 24 IN GOODLAND, ON PROPERTY OF LB2146'JERRY AND LINDA MARTIN, 9067 WEST HIGHWAY 24, GOODLAND 47948. TO LB2146'REACH THE STATION FROM THE JUNCTION OF STATE ROUTE 231 AND STATE ROUTE LB2146'24 IN REMINGTON, PROCEED 3.5 MI (5.6 KM) WEST ON STATE ROUTE 24 TO THE LB2146'STATION ON THE LEFT, WEST OF A GRAVEL DRIVE. THE STATION IS A LB2146'STANDARD DISK SET IN A CONCRETE MONUMENT FLUSH WITH THE GROUND. THE LB2146'STATION IS 2.5 FT (0.8 M) NORTH OF A CARSONITE SURVEY MARKER, 43 FT LB2146'(13.1 M) SOUTHEAST OF A UTILITY POLE, 39 FT (11.9 M) WEST OF THE LB2146'CENTERLINE OF A GRAVEL DRIVE, 42.5 FT (13.0 M) SOUTH OF THE CENTERLINE LB2146'OF STATE ROUTE 24. REFERENCE MARK NO. 1 WAS NOT FOUND. REFERENCE LB2146'MARK NO. 2 WAS FOUND IN GOOD CONDITION. THE AZIMUTH MARK WAS FOUND LB2146'IN GOOD CONDITION.

LB2146 LB2146 **STATION RECOVERY (2003)** LB2146 LB2146'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 LB2146'RECOVERED AS DESCRIBED I B2146 LB2146 **STATION RECOVERY (2007)** LB2146 LB2146'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2007 (JAB) LB2146'RECOVERED BY M.D. WESSLER AND ASSOCIATES LB2146 LB2146 **STATION RECOVERY (2007)** LB2146 LB2146'RECOVERY NOTE BY GEOCACHING 2007 (BPS) LB2146'FOUND STATION AND RM 2 LB2146 LB2146 **STATION RECOVERY (2008)** LB2146 LB2146'RECOVERY NOTE BY FARNSWORTH GROUP 2008 (KDV) LB2146'SATELLITE OBERVATION ON MAY 2 2008 LB2146 LB2146 **STATION RECOVERY (2008)** I B2146 LB2146'RECOVERY NOTE BY GEOCACHING 2008 (BPS) LB2146'FOUND STATION AND RM 2 LB2146' LB2146 LB2146 **STATION RECOVERY (2010)** LB2146 LB2146'RECOVERY NOTE BY FARNSWORTH GROUP 2010 (KDV) LB2146'RECOVERED IN GOOD CONDITION. LB2146 LB2146 **STATION RECOVERY (2012)** LB2146 LB2146'RECOVERY NOTE BY JASPER COUNTY INDIANA 2012 (AGL) LB2146'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 AE2534 *********** AE2534 DESIGNATION - WILL COUNTY GPS 2332 AE2534 PID - AE2534 AE2534 STATE/COUNTY- IL/WILL AE2534 COUNTRY - US AE2534 USGS QUAD - BEECHER EAST (1990) AE2534 AE2534 *CURRENT SURVEY CONTROL AE2534 AE2534* NAD 83(2011) POSITION- 41 17 53.37024(N) 087 31 36.48103(W) ADJUSTED AE2534* NAD 83(2011) ELLIP HT- 189.324 (meters) (06/27/12) ADJUSTED AE2534* NAD 83(2011) EPOCH - 2010.00 AE2534* NAVD 88 ORTHO HEIGHT - 222.8 (meters) 731. (feet) GPS OBS AE2534 AE2534 NAVD 88 orthometric height was determined with geoid model GEOID96 AE2534 GEOID HEIGHT - -33.24 (meters) GEOID96 AE2534 GEOID HEIGHT --33.40 (meters) GEOID12A AE2534 NAD 83(2011) X - 207,084.414 (meters) COMP AE2534 NAD 83(2011) Y - -4,794,474.419 (meters) COMP AE2534 NAD 83(2011) Z - 4,187,481.846 (meters) COMP AE2534 LAPLACE CORR --2.89 (seconds) DEFLEC12A AE2534 AE2534 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) AE2534 Type Horiz Ellip Dist(km) AE2534 -----AE2534 NETWORK 4.15 2.16 AE2534 -----AE2534 MEDIAN LOCAL ACCURACY AND DIST (002 points) 2.90 1.41 3.79 AE2534 -----AE2534 NOTE: Click here for information on individual local accuracy AE2534 values and other accuracy information. AE2534 AE2534 AE2534. The horizontal coordinates were established by GPS observations AE2534.and adjusted by the National Geodetic Survey in June 2012. AE2534 AE2534.NAD 83(2011) refers to NAD 83 coordinates where the reference AE2534.frame has been affixed to the stable North American tectonic plate. See AE2534.NA2011 for more information. for more information. AE2534 AE2534. The horizontal coordinates are valid at the epoch date displayed above AE2534.which is a decimal equivalence of Year/Month/Day. AE2534 AE2534. The orthometric height was determined by GPS observations and a AE2534.high-resolution geoid model. AE2534 AE2534. The X, Y, and Z were computed from the position and the ellipsoidal ht. AE2534 AE2534. The Laplace correction was computed from DEFLEC12A derived deflections. AE2534 AE2534. The ellipsoidal height was determined by GPS observations AE2534.and is referenced to NAD 83. AE2534

AE2534. The following values were computed from the NAD 83(2011) position. AE2534 AE2534: North Units Scale Factor Converg. East AE2534;SPC IL E - 514,467.274 367,549.699 MT 1.00003113 +0 31 56.3 - 1,687,881.38 1,205,869.30 sFT 1.00003113 +0 31 56.3 AE2534; SPC IL E - 4,571,990.149 455,895.462 MT 0.99962394 -0 20 51.7 AE2534;UTM 16 AE2534 AE2534! - Elev Factor x Scale Factor = Combined Factor AE2534!SPC IL E - 0.99997030 x 1.00003113 = 1.00000143  $- 0.99997030 \times 0.99962394 = 0.99959426$ AE2534!UTM 16 AE2534 AE2534 SUPERSEDED SURVEY CONTROL AE2534 AE2534 NAD 83(2007)- 41 17 53.37031(N) 087 31 36.48195(W) AD( ) 0 AE2534 ELLIP H (02/10/07) 189.343 (m) GP( ) AE2534 ELLIP H (02/03/05) 189.355 (m) GP( ) 4 2 AE2534 NAD 83(1997)- 41 17 53.36995(N) 087 31 36.48170(W) AD( ) 1 AE2534 ELLIP H (10/21/99) 189.353 (m) GP( ) 4 1 AE2534 NAD 83(1997)- 41 17 53.36996(N) 087 31 36.48177(W) AD( ) 1 AE2534 NAD 83(1986)- 41 17 53.37272(N) 087 31 36.49646(W) AD( ) 1 AE2534 AE2534. Superseded values are not recommended for survey control. AE2534 AE2534.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. AE2534.See file dsdata.txt to determine how the superseded data were derived. AE2534 AE2534_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDL5589571990(NAD 83) AE2534 AE2534_MARKER: DO = NOT SPECIFIED OR SEE DESCRIPTION AE2534 SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) AE2534_MARK LOGO: ASCPC AE2534 PROJECTION: RECESSED 8 CENTIMETERS AE2534_MAGNETIC: I = MARKER IS A STEEL ROD AE2534_STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD AE2534+STABILITY: POSITION/ELEVATION WELL AE2534_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR AE2534+SATELLITE: SATELLITE OBSERVATIONS - 1997 AE2534 ROD/PIPE-DEPTH: 3 meters AE2534_SLEEVE-DEPTH : 1 meters AE2534 AE2534 HISTORY - Date Condition Report By AE2534 HISTORY - 1997 MONUMENTED ASCPC AE2534 HISTORY - 20101123 GOOD GEOCAC AE2534 AE2534 STATION DESCRIPTION AE2534 AE2534'DESCRIBED BY AMERICAN SURVEYING CONSULTANTS PC 1997 (PS) AE2534'FROM INTERSECTION IL ROUTE 1 (DIXIE HWY) AND COUNTY LINE ROAD, 5.1 AE2534'MILES (8.2 KM) EAST ON COUNTY LINE TO STATE LINE RD. STATION IN AE2534'NORTHWEST QUADRANT STATION IS FLUSH WITH SURFACE AND IS STAINLESS ROD AE2534'WITH SLEEVE WITH CAST CAP AND LID AE2534 AE2534 **STATION RECOVERY (2010)** AE2534

AE2534'RECOVERY NOTE BY GEOCACHING 2010 (CT) AE2534'REPORT SUBMITTED BY GEOCACHER. PICTURES OF THIS MARK ARE AVAILABLE AT AE2534'THE GEOCACHING WEBSITE (WWW.GEOCACHING.COM). SEARCH THE BENCHMARK AE2534'SECTION USING THIS MARK'S PID, AND VIEW LOG ENTRY BY 'COYOTE TRUST'. 1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 LB2113 *********** LB2113 DESIGNATION - A 300 LB2113 PID - LB2113 LB2113 STATE/COUNTY- IL/VERMILION LB2113 COUNTRY - US LB2113 USGS QUAD - DANVILLE NE (1978) LB2113 LB2113 *CURRENT SURVEY CONTROL LB2113 LB2113* NAD 83(2011) POSITION- 40 08 00.24664(N) 087 33 29.01627(W) ADJUSTED LB2113* NAD 83(2011) ELLIP HT- 164.034 (meters) (06/27/12) ADJUSTED LB2113* NAD 83(2011) EPOCH - 2010.00 LB2113* NAVD 88 ORTHO HEIGHT - 196.692 (meters) 645.31 (feet) ADJUSTED LB2113 LB2113 NAD 83(2011) X - 208,062.655 (meters) COMP LB2113 NAD 83(2011) Y - -4,878,864.111 (meters) COMP LB2113 NAD 83(2011) Z - 4,089,427.162 (meters) COMP LB2113 LAPLACE CORR - -4.18 (seconds) DEFLEC12A LB2113 GEOID HEIGHT --32.65 (meters) GEOID12A 644.99 (feet) COMP LB2113 DYNAMIC HEIGHT -196.593 (meters) LB2113 MODELED GRAVITY - 980,120.7 (mgal) NAVD 88 I B2113 LB2113 VERT ORDER - FIRST CLASS II LB2113 LB2113 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB2113 Type LB2113 -----LB2113 NETWORK 3.56 4.63 LB2113 ------LB2113 MEDIAN LOCAL ACCURACY AND DIST (003 points) 3.56 4.55 14.90 LB2113 -----LB2113 NOTE: Click here for information on individual local accuracy LB2113 values and other accuracy information. LB2113 LB2113 LB2113. The horizontal coordinates were established by GPS observations LB2113.and adjusted by the National Geodetic Survey in June 2012. LB2113 LB2113.NAD 83(2011) refers to NAD 83 coordinates where the reference LB2113.frame has been affixed to the stable North American tectonic plate. See LB2113.NA2011 for more information. for more information. I B2113 LB2113. The horizontal coordinates are valid at the epoch date displayed above LB2113.which is a decimal equivalence of Year/Month/Day. LB2113 LB2113. The orthometric height was determined by differential leveling and LB2113.adjusted by the NATIONAL GEODETIC SURVEY LB2113.in June 1991. I B2113 LB2113. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB2113 LB2113. The Laplace correction was computed from DEFLEC12A derived deflections. LB2113

LB2113. The ellipsoidal height was determined by GPS observations LB2113. and is referenced to NAD 83. LB2113 LB2113. The dynamic height is computed by dividing the NAVD 88 LB2113.geopotential number by the normal gravity value computed on the LB2113. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB2113.degrees latitude (g = 980.6199 gals.). LB2113 LB2113. The modeled gravity was interpolated from observed gravity values. LB2113 LB2113. The following values were computed from the NAD 83(2011) position. LB2113 LB2113: Units Scale Factor Converg. North East LB2113;SPC IL E - 385,100.484 366,073.256 MT 1.00002872 +0 29 59.0 LB2113;SPC IL E - 1,263,450.50 1,201,025.34 sFT 1.00002872 +0 29 59.0 - 4,442,712.932 452,456.859 MT 0.99962782 -0 21 35.0 LB2113;UTM 16 LB2113 LB2113! - Elev Factor x Scale Factor = Combined Factor LB2113!SPC IL E - 0.99997427 x 1.00002872 = 1.00000299  $- 0.99997427 \times 0.99962782 = 0.99960210$ LB2113!UTM 16 LB2113 LB2113 SUPERSEDED SURVEY CONTROL I B2113 LB2113 NAD 83(2007)- 40 08 00.24671(N) 087 33 29.01716(W) AD( ) 0 LB2113 ELLIP H (02/10/07) 164.056 (m) GP( ) LB2113 ELLIP H (12/06/04) 164.073 (m) GP( ) 4 1 LB2113 NAD 83(1997)- 40 08 00.24663(N) 087 33 29.01713(W) AD( ) 1 LB2113 ELLIP H (12/18/02) 164.063 (m) GP( ) 4 2 LB2113 NAVD 88 (12/18/02) 196.69 (m) (f) LEVELING 645.3 3 LB2113 LB2113. Superseded values are not recommended for survey control. LB2113 LB2113.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB2113.See file dsdata.txt to determine how the superseded data were derived. LB2113 LB2113_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDK5245642712(NAD 83) LB2113 LB2113 MARKER: I = METAL ROD LB2113_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) LB2113_SP_SET: STAINLESS STEEL ROD LB2113_STAMPING: A 300 1986 LB2113 MARK LOGO: NGS LB2113_PROJECTION: RECESSED 2 CENTIMETERS LB2113_MAGNETIC: N = NO MAGNETIC MATERIAL LB2113 STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL LB2113_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB2113+SATELLITE: SATELLITE OBSERVATIONS - October 18, 2010 LB2113_ROD/PIPE-DEPTH: 6.10 meters LB2113 LB2113 HISTORY - Date Report By Condition LB2113 HISTORY - 1986 MONUMENTED NGS - 20001229 GOOD LB2113 HISTORY ZAMBRA LB2113 HISTORY - 20080115 GOOD BCA LB2113 HISTORY - 20101018 GOOD FARNGP

LB2113 LB2113 STATION DESCRIPTION LB2113 LB2113'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 LB2113'6.9 KM (4.3 MI) EAST FROM DANVILLE. LB2113'6.9 KM (4.3 MI) EASTERLY ALONG U.S. HIGHWAY 136 FROM ITS JUNCTION WITH LB2113'U.S. HIGHWAY 150 IN DANVILLE, 47.4 M (155.5 FT) WEST OF THE SOUTHWEST LB2113'CORNER OF THE PLEASANT GROVE BIBLE CHAPEL, 19.8 M (65.0 FT) NORTH OF LB2113'THE CENTERLINE OF THE HIGHWAY, 6.7 M (22.0 FT) NORTH OF THE WEST END LB2113'OF AN 18-INCH METAL CULVERT, AND 0.4 M (1.3 FT) EAST OF A CONCRETE LB2113'HIGHWAY RIGHT-OF-WAY POST. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH LB2113'A 5-INCH LOGO CAP. LB2113'THE MARK IS ABOVE LEVEL WITH THE HIGHWAY. LB2113 LB2113 **STATION RECOVERY (2000)** LB2113 LB2113'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INCORPORATED 2000 (NRB) LB2113'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INC 2000 (NRB) STATION LB2113'RECOVERED IN GOOD CONDITION. THE STATION IS LOCATED ABOUT 4.3 MI LB2113'(6.9 KM ) EAST FROM DANVILLE, ABOUT 4.3 MI ( 6.8 KM ) EASTERLY ALONG LB2113'U.S. ROUTE 136 FROM ITS JUNCTION WITH U.S. ROUTE 150 ON THE WEST LB2113'SIDE OF DANVILLE DANVILLE. THE STATION IS ON THE SOUTHWEST CORNER LB2113'OF THE PLEASANT GROVE BIBLE CHAPEL. IT IS 155.5 FEET WEST OF THE LB2113'SOUTHWEST CORNER OF THE PLEASANT GROVE BIBLEECHAPEL, 65.0 FEET LB2113'NORTH OF THE CENTERLINE OF U.S. ROUTE 136, 22.0 FEET NORTH OF THE LB2113'WEST END OF AN 18-INCH METAL CULVERT, AND 1.3 FEET EAST OF A LB2113'CONCRETE RIGHT-OF-WAY MARKER. LB2113' LB2113' LB2113' I B2113' LB2113 I B2113 STATION RECOVERY (2008) LB2113 LB2113'RECOVERY NOTE BY BERNS CLANCY AND ASSOCIATES 2008 (DR) LB2113'0.3 MI. W'LY OF LYNCH ROAD, 35.9 FT. N OF N EDGE OF ASPHALT HIGHWAY LB2113'(IL RTE 136), 23.4 FT. W OF W EDGE OF ASPHALT PARKING LOT/ DRIVEWAY LB2113'FOR PLEASANT GROVE BIBLE CHAPEL. LB2113 LB2113 **STATION RECOVERY (2010)** I B2113 LB2113'RECOVERY NOTE BY FARNSWORTH GROUP 2010 (BRD) LB2113'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1750 ********** KA1750 CBN - This is a Cooperative Base Network Control Station. KA1750 DESIGNATION - D 361 - KA1750 KA1750 PID KA1750 STATE/COUNTY- IN/VERMILLION KA1750 COUNTRY - US KA1750 USGS QUAD - DANA (1983) KA1750 KA1750 *CURRENT SURVEY CONTROL KA1750 KA1750* NAD 83(2011) POSITION- 39 50 19.01558(N) 087 24 39.36172(W) ADJUSTED KA1750* NAD 83(2011) ELLIP HT- 166.651 (meters) (06/27/12) ADJUSTED KA1750* NAD 83(2011) EPOCH - 2010.00 KA1750* NAVD 88 ORTHO HEIGHT - 199.531 (meters) 654.63 (feet) ADJUSTED KA1750 KA1750 NAD 83(2011) X - 221,540.321 (meters) COMP KA1750 NAD 83(2011) Y - -4,899,328.040 (meters) COMP KA1750 NAD 83(2011) Z - 4,064,349.360 (meters) COMP KA1750 LAPLACE CORR - -4.98 (seconds) DEFLEC12A KA1750 GEOID HEIGHT --32.88 (meters) GEOID12A KA1750 DYNAMIC HEIGHT -199.423 (meters) 654.27 (feet) COMP KA1750 MODELED GRAVITY - 980,080.2 (mgal) NAVD 88 KA1750 KA1750 VERT ORDER - FIRST CLASS II KA1750 KA1750 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) KA1750 Type Horiz Ellip Dist(km) KA1750 -----KA1750 NETWORK 0.62 1.33 KA1750 -----KA1750 MEDIAN LOCAL ACCURACY AND DIST (026 points) 0.90 1.96 51.01 KA1750 -----KA1750 NOTE: Click here for information on individual local accuracy KA1750 values and other accuracy information. KA1750 KA1750 KA1750. The horizontal coordinates were established by GPS observations KA1750.and adjusted by the National Geodetic Survey in June 2012. KA1750 KA1750.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1750.frame has been affixed to the stable North American tectonic plate. See KA1750.NA2011 for more information. for more information. KA1750 KA1750. The horizontal coordinates are valid at the epoch date displayed above KA1750.which is a decimal equivalence of Year/Month/Day. KA1750 KA1750. The orthometric height was determined by differential leveling and KA1750.adjusted by the NATIONAL GEODETIC SURVEY KA1750.in June 1991. KA1750 KA1750. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1750 KA1750.The Laplace correction was computed from DEFLEC12A derived deflections.

KA1750 KA1750. The ellipsoidal height was determined by GPS observations KA1750 and is referenced to NAD 83. KA1750 KA1750. The dynamic height is computed by dividing the NAVD 88 KA1750.geopotential number by the normal gravity value computed on the KA1750. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1750.degrees latitude (g = 980.6199 gals.). KA1750 KA1750. The modeled gravity was interpolated from observed gravity values. KA1750 KA1750. The following values were computed from the NAD 83(2011) position. KA1750 KA1750; North East Units Scale Factor Converg. KA1750;SPC IN W - 509,650.563 871,960.092 MT 0.99997634 -0 12 35.5 - 1,672,078.56 2,860,755.74 sFT 0.99997634 -0 12 35.5 KA1750;SPC IN W - 4,409,926.135 464,840.321 MT 0.99961522 -0 15 47.7 KA1750;UTM 16 KA1750 KA1750! - Elev Factor x Scale Factor = Combined Factor KA1750!SPC IN W  $- 0.99997386 \times 0.99997634 = 0.99995020$  $- 0.99997386 \times 0.99961522 = 0.99958909$ KA1750!UTM 16 KA1750 KA1750 SUPERSEDED SURVEY CONTROL KA1750 KA1750 NAD 83(2007)- 39 50 19.01566(N) 087 24 39.36263(W) AD( ) 0 KA1750 ELLIP H (02/10/07) 166.671 (m) GP( ) KA1750 NAD 83(1997)- 39 50 19.01566(N) 087 24 39.36265(W) AD( ) B KA1750 ELLIP H (04/10/98) 166.672 (m) GP( ) 4 1 KA1750 NAVD 88 (04/10/98) 199.53 (m) 654.6 (f) LEVELING - 3 KA1750 KA1750.Superseded values are not recommended for survey control. KA1750 KA1750.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1750.See file dsdata.txt to determine how the superseded data were derived. KA1750 KA1750_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDK6484009926(NAD 83) KA1750 KA1750 MARKER: I = METAL ROD KA1750_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) KA1750 SP SET: STAINLESS STEEL ROD KA1750_STAMPING: D 361 1986 KA1750 MARK LOGO: NGS KA1750_PROJECTION: PROJECTING 2 CENTIMETERS KA1750_MAGNETIC: O = OTHER; SEE DESCRIPTION KA1750 STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL KA1750_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1750+SATELLITE: SATELLITE OBSERVATIONS - December 29, 2000 KA1750_ROD/PIPE-DEPTH: 7.3 meters KA1750 KA1750 HISTORY - Date Condition Report By KA1750 HISTORY - 1986 MONUMENTED NGS - 19970814 GOOD KA1750 HISTORY SEC WOOLPT KA1750 HISTORY - 19980723 GOOD KA1750 HISTORY - 20001229 GOOD ZAMBRA

KA1750 KA1750 STATION DESCRIPTION KA1750 KA1750'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986 KA1750'14.0 KM (8.7 MI) SOUTH FROM CAYUGA. KA1750'14.0 KM (8.7 MI) SOUTHERLY ALONG STATE HIGHWAY 63 FROM ITS JUNCTION KA1750'WITH STATE HIGHWAY 234 IN CAYUGA, 60.9 M (199.8 FT) NORTH OF THE KA1750'CENTER OF COUNTY ROAD 300 S, 36.9 M (121.1 FT) WEST OF THE CENTERLINE KA1750'OF THE SOUTH BOUND LANES OF THE HIGHWAY, 25.0 M (82.0 FT) KA1750'NORTH-NORTHWEST OF THE NORTHEAST CORNER OF THE STONEWORK NEWPORT ARMY KA1750'AMUNITION PLANT SIGN, AND 1.9 M (6.2 FT) NORTH OF THE SOUTH END OF A KA1750'WOVEN WIRE FENCE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH KA1750'LOGO CAP. KA1750'THE MARK IS 0.5 METERS E FROM A WITNESS POST AND FENCE KA1750'THE MARK IS ABOVE LEVEL WITH THE HIGHWAY. KA1750 KA1750 **STATION RECOVERY (1997)** KA1750 KA1750'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA1750'STATION IS 3 MILES (4.8 KM) SOUTH OF NEWPORT, ON STATE ROAD 63. TO KA1750'REACH STATION FROM INTERSECTION OF U.S. HIGHWAY 31 WITH STATE ROAD 63, KA1750'GO NORTH ON STATE ROAD 63 FOR 3.1 MILES (5.0 KM) TO SOUTH ENTRANCE OF KA1750'NEWPORT CHEMICAL DEPOT AND THE STATION ON THE LEFT (WEST) SIDE OF KA1750'STATE ROAD 63 AND THE NORTH SIDE OF ENTRANCE ROAD. THE MARK IS EAST KA1750'OF RIGHT-OF-WAY FENCE APPARENTLY ON STATE HIGHWAY RIGHT-OF-WAY, BUT IS KA1750'UNDER WATCH OF PLANT SECURITY. POINT OF CONTACT AT NEWPORT CHEMICAL KA1750'DEPOT IS KEVIN RUDDUCK, PHONE 765-245-2251. POINT OF CONTACT AT INDOT KA1750'IS HENRY ALDRIDGE, 100 N. SENATE AVENUE, INDIANAPOLIS IN 46204. THE KA1750'STATION IS A STAINLESS STEEL ROD 0.07 METERS (0.23 FT) BELOW 5-INCH KA1750'LOGO CAP. THE MARK IS 60.9 METERS (199.8 FT) NORTH OF THE CENTERLINE KA1750'OF ENTRANCE ROAD/COUNTY ROAD 300 SOUTH, 36.9 METERS (121.1 FT) WEST OF KA1750'THE CENTERLINE OF STATE ROAD 63 SOUTHBOUND LANES, 24.9 NORTHWEST OF KA1750'THE NORTHEAST CORNER OF THE STONEWORK NEWPORT CHEMICAL DEPOT SIGN KA1750'BASE, 25.5 METERS (83.7 FT) NORTH-NORTHWEST OF THE NORTHWEST CORNER OF KA1750'SAID SIGN, 1.93 METERS (6.33 FT) NORTH OF THE SOUTH END OF THE WOVEN KA1750'WIRE RIGHT-OF-WAY FENCE AND 0.5 METERS (1.6 FT) EAST OF FENCE AND KA1750'FIBERGLASS WITNESS POST. KA1750 KA1750 **STATION RECOVERY (1998)** KA1750 KA1750'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (KRB) KA1750'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (KRB). KA1750 KA1750 **STATION RECOVERY (2000)** KA1750 KA1750'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INCORPORATED 2000 (NRB) KA1750'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INC 2000 (NRB) STATION KA1750'RECOVERED IN GOOD CONDITION. TO REACH FROM THE INTERSECTION OF KA1750'STATE ROUTE 63 WITH THE JUNCTION OF STATE ROUTE 71 WEST OF KA1750'NEWPORT GO SOUTH ON STATE ROUTE 63 FOR 5.2 MILES AND THE STATION KA1750'ON THE RIGHT AS DESCRIBED KA1750' KA1750'

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA0837 ********* KA0837 CBN - This is a Cooperative Base Network Control Station. KA0837 DESIGNATION - K 71 RESET - KA0837 KA0837 PID KA0837 STATE/COUNTY- IN/PARKE KA0837 COUNTRY - US KA0837 USGS QUAD - MANSFIELD (1983) KA0837 KA0837 *CURRENT SURVEY CONTROL KA0837 KA0837* NAD 83(2011) POSITION- 39 43 22.54254(N) 087 06 20.19171(W) ADJUSTED KA0837* NAD 83(2011) ELLIP HT- 191.650 (meters) (06/27/12) ADJUSTED KA0837* NAD 83(2011) EPOCH - 2010.00 KA0837* NAVD 88 ORTHO HEIGHT - 224.84 (meters) 737.7 (feet) RESET KA0837 KA0837 NAD 83(2011) X - 248,061.200 (meters) COMP KA0837 NAD 83(2011) Y - -4,906,305.592 (meters) COMP KA0837 NAD 83(2011) Z - 4,054,493.895 (meters) COMP KA0837 LAPLACE CORR - -0.33 (seconds) DEFLEC12A KA0837 GEOID HEIGHT --33.20 (meters) GEOID12A KA0837 VERT ORDER - THIRD KA0837 KA0837 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA0837 Type KA0837 -----KA0837 NETWORK 0.69 1.51 KA0837 -----KA0837 MEDIAN LOCAL ACCURACY AND DIST (021 points) 0.93 2.00 61.25 KA0837 -----KA0837 NOTE: Click here for information on individual local accuracy KA0837 values and other accuracy information. KA0837 KA0837 KA0837. The horizontal coordinates were established by GPS observations KA0837.and adjusted by the National Geodetic Survey in June 2012. KA0837 KA0837.NAD 83(2011) refers to NAD 83 coordinates where the reference KA0837.frame has been affixed to the stable North American tectonic plate. See KA0837.NA2011 for more information. for more information. KA0837 KA0837. The horizontal coordinates are valid at the epoch date displayed above KA0837.which is a decimal equivalence of Year/Month/Day. KA0837 KA0837. The orthometric height was computed from unverified reset data. KA0837 KA0837.No vertical observational check was made to the station. KA0837 KA0837. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA0837 KA0837. The Laplace correction was computed from DEFLEC12A derived deflections. KA0837 KA0837. The ellipsoidal height was determined by GPS observations KA0837.and is referenced to NAD 83.

KA0837 KA0837. The following values were computed from the NAD 83(2011) position. KA0837 KA0837: Units Scale Factor Converg. North East KA0837; SPC IN W - 496,755.103 898,090.209 MT 0.99996671 -0 00 51.2 - 1,629,770.70 2,946,484.29 sFT 0.99996671 -0 00 51.2 KA0837;SPC IN W - 4,397,011.058 490,948.934 MT 0.99960101 -0 04 03.0 KA0837;UTM 16 KA0837 - Elev Factor x Scale Factor = Combined Factor KA0837!  $-0.99996993 \times 0.99996671 = 0.99993665$ KA0837!SPC IN W - 0.99996993 x 0.99960101 = 0.99957096 KA0837!UTM 16 KA0837 KA0837 SUPERSEDED SURVEY CONTROL KA0837 087 06 20.19261(W) AD( KA0837 NAD 83(2007)- 39 43 22.54262(N) ) 0 KA0837 ELLIP H (02/10/07) 191.670 (m) GP( KA0837 NAD 83(1997)- 39 43 22.54266(N) 087 06 20.19275(W) AD( ) B ) 4 1 KA0837 ELLIP H (04/10/98) 191.672 (m) GP( KA0837 NAVD 88 (04/10/98) 224.9 (m) GEOID96 model used GPS OBS KA0837 NGVD 29 (??/??/??) 224.94 (m) (f) RESET 738.0 3 KA0837 KA0837. Superseded values are not recommended for survey control. KA0837 KA0837.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA0837.See file dsdata.txt to determine how the superseded data were derived. KA0837 KA0837_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ9094897011(NAD 83) KA0837 KA0837 MARKER: DB = BENCH MARK DISK KA0837 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA0837_STAMPING: K 71 RESET 1956 KA0837 MARK LOGO: CGS KA0837_MAGNETIC: N = NO MAGNETIC MATERIAL KA0837_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA0837+STABILITY: SURFACE MOTION KA0837_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA0837+SATELLITE: SATELLITE OBSERVATIONS - August 14, 1997 KA0837 KA0837 HISTORY - Date Report By Condition KA0837 HISTORY - 1956 MONUMENTED CGS KA0837 HISTORY - 19970814 GOOD SEC KA0837 KA0837 STATION DESCRIPTION KA0837 KA0837'DESCRIBED BY COAST AND GEODETIC SURVEY 1956 KA0837'2.5 MI S FROM BELLMORE. KA0837'2.5 MILES SOUTH ALONG STATE HIGHWAY 59 FROM THE JUNCTION OF U.S. KA0837'HIGHWAY 36 AT BELLMORE, 3.4 MILES NORTH OF THE CROSSROADS AT KA0837'MANSFIELD, AT THE JUNCTION WITH A BLACKTOP ROAD LEADING WEST, IN KA0837'THE NORTHWEST QUARTER OF THE JUNCTION, 50 FEET WEST OF THE KA0837'CENTERLINE OF THE HIGHWAY, 93 FEET NORTH OF THE CENTERLINE OF THE KA0837'ROAD LEADING WEST, 2 FEET SOUTH OF A CONCRETE INDIANA KA0837'RIGHT-OF-WAY MARKER, 5 FEET SOUTH OF A TELEPHONE POLE, 2 FEET KA0837'EAST OF A WIRE FENCE LINE AND ABOUT 5 FEET HIGHER THAN THE

KA0837'HIGHWAY. KA0837 KA0837 STATION RECOVERY (1997) KA0837 KA0837'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA0837'THIS STATION IS LOCATED ABOUT 20 MILES (32.2 KM) NORTHEAST OF TERRE KA0837'HAUTE. TO REACH THE STATION FROM THE SOUTH, GO NORTH ON STATE ROUTE KA0837'59 FOR 14.3 MILES (23.0 KM) FROM U.S. HIGHWAY 40. FROM THE NORTH, GO KA0837'2.5 MILES (4.0 KM) SOUTH ON STATE ROUTE 59 FROM U.S. HIGHWAY 36 TO THE

KA0837'INTERSECTION OF STATE ROUTE 59 AND COUNTY ROAD 160 SOUTH (WEST BOUND KA0837'FROM STATE ROUTE 59). CONTACT IS INDOT, HENRY ALDRIDGE, 100 NORTH KA0837'SENATE AVENUE, INDIANAPOLIS IN 46204-2249, PHONE 317-232-6764. KA0837'LOCATED AT AZIMUTH 188 DEGREES AND 34.52 METERS (113.25 FT) TO A STOP KA0837'SIGN (EASTBOUND 160 SOUTH), AZIMUTH 72 DEGREES AND 31.27 METERS KA0837'(102.59 FT) TO POWER POLE NUMBER A/A129, AZIMUTH 180 DEGREES AND 28.50 KA0837'METERS (93.50 FT) TO THE CENTERLINE OF 160 SOUTH, AZIMUTH 90 DEGREES KA0837'AND 15.12 METERS (49.61 FT) TO THE CENTERLINE OF STATE ROUTE 59, KA0837'AZIMUTH 30 DEGREES AND 0.50 METER (1.64 FT) TO A RIGHT-OF-WAY MARKER, KA0837'NORTHWEST QUADRANT OF INTERSECTION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA1307 ********** KA1307 CBN - This is a Cooperative Base Network Control Station. KA1307 DESIGNATION - L 182 - KA1307 KA1307 PID KA1307 STATE/COUNTY- IL/CRAWFORD KA1307 COUNTRY - US KA1307 USGS QUAD - WEST UNION (1966) KA1307 KA1307 *CURRENT SURVEY CONTROL KA1307 KA1307* NAD 83(2011) POSITION- 39 07 47.36258(N) 087 39 59.73127(W) ADJUSTED KA1307* NAD 83(2011) ELLIP HT- 106.667 (meters) (06/27/12) ADJUSTED KA1307* NAD 83(2011) EPOCH - 2010.00 KA1307* NAVD 88 ORTHO HEIGHT - 138.700 (meters) 455.05 (feet) ADJUSTED KA1307 KA1307 NAD 83(2011) X - 201,712.440 (meters) COMP KA1307 NAD 83(2011) Y - -4,950,219.307 (meters) COMP KA1307 NAD 83(2011) Z - 4,003,574.682 (meters) COMP KA1307 LAPLACE CORR --2.18 (seconds) DEFLEC12A KA1307 GEOID HEIGHT --32.03 (meters) GEOID12A KA1307 DYNAMIC HEIGHT -138.619 (meters) 454.79 (feet) COMP KA1307 MODELED GRAVITY - 980,040.5 (mgal) NAVD 88 KA1307 KA1307 VERT ORDER - FIRST CLASS II KA1307 KA1307 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) KA1307 Type Horiz Ellip Dist(km) KA1307 -----KA1307 NETWORK 0.62 1.08 KA1307 -----KA1307 MEDIAN LOCAL ACCURACY AND DIST (035 points) 0.69 1.22 56.00 KA1307 -----KA1307 NOTE: Click here for information on individual local accuracy KA1307 values and other accuracy information. KA1307 KA1307 KA1307. The horizontal coordinates were established by GPS observations KA1307.and adjusted by the National Geodetic Survey in June 2012. KA1307 KA1307.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1307.frame has been affixed to the stable North American tectonic plate. See KA1307.NA2011 for more information. for more information. KA1307 KA1307. The horizontal coordinates are valid at the epoch date displayed above KA1307.which is a decimal equivalence of Year/Month/Day. KA1307 KA1307. The orthometric height was determined by differential leveling and KA1307.adjusted by the NATIONAL GEODETIC SURVEY KA1307.in June 1991. KA1307 KA1307. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1307 KA1307. The Laplace correction was computed from DEFLEC12A derived deflections.

KA1307 KA1307. The ellipsoidal height was determined by GPS observations KA1307 and is referenced to NAD 83. KA1307 KA1307. The dynamic height is computed by dividing the NAVD 88 KA1307.geopotential number by the normal gravity value computed on the KA1307. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1307.degrees latitude (g = 980.6199 gals.). KA1307 KA1307. The modeled gravity was interpolated from observed gravity values. KA1307 KA1307. The following values were computed from the NAD 83(2011) position. KA1307 KA1307: North East Units Scale Factor Converg. KA1307; SPC IL E - 273,601.891 357,650.534 MT 1.00001591 +0 25 14.8 KA1307; SPC IL E - 897,642.20 1,173,391.79 sFT 1.00001591 +0 25 14.8 - 4,331,394.852 442,383.989 MT 0.99964087 -0 25 14.5 KA1307;UTM 16 KA1307 KA1307! - Elev Factor x Scale Factor = Combined Factor KA1307!SPC IL E - 0.99998326 x 1.00001591 = 0.99999917  $-0.99998326 \times 0.99964087 = 0.99962414$ KA1307!UTM 16 KA1307 KA1307 SUPERSEDED SURVEY CONTROL KA1307 KA1307 NAD 83(2007)- 39 07 47.36247(N) 087 39 59.73231(W) AD( ) 0 KA1307 ELLIP H (02/10/07) 106.676 (m) GP( KA1307 ELLIP H (10/15/04) 106.680 (m) GP( ) 4 2 KA1307 NAD 83(1997)- 39 07 47.36221(N) 087 39 59.73247(W) AD( ) B KA1307 ELLIP H (07/17/98) 106.697 (m) GP( ) 4 1 KA1307 NAVD 88 (07/17/98) 138.70 (m) 455.1 (f) LEVELING 3 KA1307 NGVD 29 (??/??/92) 138.826 (m) 455.47 (f) ADJ UNCH 12 KA1307 KA1307.Superseded values are not recommended for survey control. KA1307 KA1307.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1307.See file dsdata.txt to determine how the superseded data were derived. KA1307 KA1307 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ4238331394(NAD 83) KA1307 KA1307 MARKER: DB = BENCH MARK DISK KA1307_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA1307_SP_SET: SET IN TOP OF CONCRETE MONUMENT KA1307_STAMPING: L 182 1956 KA1307_MARK LOGO: CGS KA1307 PROJECTION: FLUSH KA1307_MAGNETIC: N = NO MAGNETIC MATERIAL KA1307 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA1307+STABILITY: SURFACE MOTION KA1307 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1307+SATELLITE: SATELLITE OBSERVATIONS - March 30, 2012 KA1307 KA1307 HISTORY Report By - Date Condition - 1956 MONUMENTED KA1307 HISTORY CGS KA1307 HISTORY - 1981 GOOD AEROS

KA1307 HISTORY - 19860826 GOOD NGS KA1307 HISTORY - 19970228 GOOD NGS KA1307 HISTORY - 20001229 GOOD ZAMBRA KA1307 HISTORY - 20100517 GOOD ILDT KA1307 HISTORY - 20100804 GOOD ILDT KA1307 HISTORY - 20100925 GOOD PB KA1307 HISTORY - 20120330 GOOD TROTT KA1307 KA1307 STATION DESCRIPTION KA1307 KA1307'DESCRIBED BY COAST AND GEODETIC SURVEY 1956 KA1307'1.8 MI N FROM HUTSONVILLE. KA1307'1.5 MILES NORTH ALONG A BLACK TOP ROAD FROM THE SCHOOL AT KA1307'HUTSONVILLE, THENCE ABOUT 0.15 MILE WEST ALONG A BLACK TOP ROAD, KA1307'THENCE ABOUT 0.05 MILE NORTH ALONG A GRAVEL ROAD, ABOUT 0.15 KA1307'MILE WEST AND 0.05 MILE NORTH FROM THE ENTRANCE TO CENTRAL KA1307'ILLINOIS PUBLIC SERVICE CO. POWER PLANT, 28 FEET EAST OF CENTER KA1307'LINE OF GRAVEL ROAD, 389 FEET NORTH OF CENTER LINE OF EAST-WEST KA1307'BLAKC TOP ROAD, 117 FEET WEST-NORTHWEST OF THE WEST LEG OF STEEL KA1307'POWER TRANSMISSION TOWER NO. 5, 23 FEET NORTHEAST OF NORTHEAST KA1307'RAIL OF A SIDE TRACK LEADING TO POWER PLANT, 1 FOOT SOUTHWEST KA1307'OF A FENCE LINE, 2 FEET SOUTHEAST OF A WHITE WOODEN WITNESS KA1307'POST, ABOUT 1 FOOT BELOW LEVEL OF ROAD AND SET IN THE TOP OF A KA1307'CONCRETE POST PROJECTING 4 INCHES. KA1307 KA1307 **STATION RECOVERY (1981)** KA1307 KA1307'RECOVERY NOTE BY AERO SERVICE CORPORATION 1981 KA1307'RECOVERED IN GOOD CONDITION. KA1307 KA1307 **STATION RECOVERY (1986)** KA1307 KA1307'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986 (RLR) KA1307'TO REACH FROM THE WEST END OF THE BRIDGE OVER THE WABASH RIVER IN KA1307'HUTSONVILLE GO WEST ON EAST CLOVER STREET FOR 0.1 MILE (0.2 KM) TO A KA1307'CROSSROAD, NORTH PLEASANT STREET, TURN RIGHT AND GO NORTH FOR 1.4 KA1307'MILES (2.3 KM) TO THE ENTRANCE OF CENTRAL ILLINOIS PUBLIC SERVICE KA1307'COMPANY HUTSONVILLE POWER PLANT AND THE ROAD CURVES WEST, BEAR LEFT KA1307'AND GO WEST FOR 0.1 MILE (0.2 KM) TO A SIDEROAD RIGHT, TURN RIGHT AND KA1307'GO NORTH FOR 0.07 MILE (0.11 KM) TO A OLD RAILROAD BED CROSSING AND KA1307'THE MARK ON RIGHT. LOCATED 389.0 FEET (118.6 M) NORTH OF THE CENTER KA1307'OF THE EAST-WEST ROAD, 117.0 FEET (35.7 M) WEST OF THE WEST LEG OF A KA1307'STEEL POWER TRANSMISSION LINE TOWER NO 5, 28.0 FEET (8.5 M) EAST OF KA1307'CENTER OF THE NORTH-SOUTH ROAD AND 1.0 FOOT (0.3 M) SOUTH OF A SQUARE KA1307'CONCRETE FENCE POST AND WITNESS POST. KA1307 KA1307 **STATION RECOVERY (1997)** KA1307 KA1307'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1997 (RKB) KA1307'THE STATION IS LOCATED 1.8 MI (2.9 KM) NORTH OF HUTSONVILLE. TO REACH KA1307'FROM THE WEST END OF THE BRIDGE OVER THE WABASH RIVER IN HUTSONVILLE, KA1307'GO WEST ON EAST CLOVER STREET FOR 0.1 MI (0.2 KM) TO NORTH PLEASANT KA1307'STREET, TURN RIGHT, NORTH, FOR 1.4 MI (2.3 KM) TO THE ENTRANCE OF KA1307'CENTRAL ILLINOIS PUBLIC SERVICE COMPANY HUTSONVILLE POWER PLANT WHERE

KA1307'THE ROAD CURVES WEST, BEAR LEFT, WEST, FOR 0.1 MI (0.2 KM) TO A SIDE KA1307'ROAD RIGHT, TURN RIGHT, NORTH, FOR 0.07 MI (0.11 KM) TO AN OLD KA1307'RAILROAD BED CROSSING AND THE STATION ON THE RIGHT, 118.6 M (389.1 FT) KA1307'NORTH OF THE CENTER OF THE EAST-WEST ROAD, 8.5 M (27.9 FT) EAST OF THE KA1307'CENTER OF THE NORTH-SOUTH ROAD, 35.7 M (117.1 FT) WEST OF THE WEST LEG KA1307'OF A STEEL TRANSMISSION LINE TOWER NO 5, 0.3 M (1.0 FT) SOUTHEAST OF A KA1307'TELEPHONE SPLICE BOX, AND 0.3 M (1.0 FT) SOUTH OF A SQUARE CONCRETE KA1307'FENCE POST AND WITNESS POST. KA1307 KA1307 **STATION RECOVERY (2000)** KA1307 KA1307'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INCORPORATED 2000 (NRB) KA1307'RECOVERY NOTE BY ZAMBRANA ENGINEERING, INC 2000 (NRB) STATION KA1307'RECOVERED AS DESCRIBED IN GOOD CONDITION. KA1307' KA1307 **STATION RECOVERY (2010)** KA1307 KA1307 KA1307'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2010 (MW) KA1307'RECOVERED IN GOOD CONDITION. KA1307 KA1307 **STATION RECOVERY (2010)** KA1307 KA1307'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2010 (RA) KA1307'RECOVERED AS DESCRIBED KA1307 KA1307 **STATION RECOVERY (2010)** KA1307 KA1307'RECOVERY NOTE BY PBS&J 2010 (MAZ) **KA1307'PICTURES ARE AVAILABLE** KA1307 KA1307 **STATION RECOVERY (2012)** KA1307 KA1307'RECOVERY NOTE BY TROTTER AND ASSOCIATES 2012 (JMM) KA1307'RECOVERED AS DESCRIBED.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1711 ********** KA1711 CBN - This is a Cooperative Base Network Control Station. KA1711 DESIGNATION - M 351 - KA1711 KA1711 PID KA1711 STATE/COUNTY- IN/OWEN KA1711 COUNTRY - US KA1711 USGS QUAD - COAL CITY (1986) KA1711 KA1711 *CURRENT SURVEY CONTROL KA1711 KA1711* NAD 83(2011) POSITION- 39 13 53.88803(N) 087 02 38.26569(W) ADJUSTED KA1711* NAD 83(2011) ELLIP HT- 168.059 (meters) (06/27/12) ADJUSTED KA1711* NAD 83(2011) EPOCH - 2010.00 KA1711* NAVD 88 ORTHO HEIGHT - 200.772 (meters) 658.70 (feet) ADJUSTED KA1711 KA1711 NAD 83(2011) X - 255,127.356 (meters) COMP KA1711 NAD 83(2011) Y - -4,940,650.983 (meters) COMP KA1711 NAD 83(2011) Z - 4,012,375.355 (meters) COMP KA1711 LAPLACE CORR - -1.81 (seconds) DEFLEC12A KA1711 GEOID HEIGHT --32.72 (meters) GEOID12A KA1711 DYNAMIC HEIGHT -200.655 (meters) 658.32 (feet) COMP KA1711 MODELED GRAVITY - 980,038.0 (mgal) NAVD 88 KA1711 KA1711 VERT ORDER - FIRST CLASS II KA1711 KA1711 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1711 Type KA1711 -----KA1711 NETWORK 0.86 1.92 KA1711 -----KA1711 MEDIAN LOCAL ACCURACY AND DIST (018 points) 1.05 2.30 55.47 KA1711 -----KA1711 NOTE: Click here for information on individual local accuracy KA1711 values and other accuracy information. KA1711 KA1711 KA1711. The horizontal coordinates were established by GPS observations KA1711.and adjusted by the National Geodetic Survey in June 2012. KA1711 KA1711.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1711.frame has been affixed to the stable North American tectonic plate. See KA1711.NA2011 for more information. for more information. KA1711 KA1711. The horizontal coordinates are valid at the epoch date displayed above KA1711.which is a decimal equivalence of Year/Month/Day. KA1711 KA1711. The orthometric height was determined by differential leveling and KA1711.adjusted by the NATIONAL GEODETIC SURVEY KA1711.in June 1991. KA1711 KA1711. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1711 KA1711. The Laplace correction was computed from DEFLEC12A derived deflections.

KA1711 KA1711. The ellipsoidal height was determined by GPS observations KA1711 and is referenced to NAD 83. KA1711 KA1711. The dynamic height is computed by dividing the NAVD 88 KA1711.geopotential number by the normal gravity value computed on the KA1711. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1711.degrees latitude (g = 980.6199 gals.). KA1711 KA1711. The modeled gravity was interpolated from observed gravity values. KA1711 KA1711. The following values were computed from the NAD 83(2011) position. KA1711 KA1711: North East Units Scale Factor Converg. KA1711;SPC IN W - 442,211.819 903,399.276 MT 0.99996681 +0 01 29.6 - 1,450,823.28 2,963,902.46 sFT 0.99996681 +0 01 29.6 KA1711;SPC IN W - 4,342,482.863 496,205.637 MT 0.99960018 -0 01 40.1 KA1711;UTM 16 KA1711 KA1711! - Elev Factor x Scale Factor = Combined Factor KA1711!SPC IN W  $- 0.99997363 \times 0.99996681 = 0.99994044$ - 0.99997363 x 0.99960018 = 0.99957382 KA1711!UTM 16 KA1711 KA1711 SUPERSEDED SURVEY CONTROL KA1711 KA1711 NAD 83(2007)- 39 13 53.88812(N) 087 02 38.26657(W) AD( ) 0 KA1711 ELLIP H (02/10/07) 168.080 (m) GP( ) KA1711 NAD 83(1997)- 39 13 53.88820(N) 087 02 38.26671(W) AD( ) B KA1711 ELLIP H (04/10/98) 168.090 (m) GP( ) 4 1 KA1711 NAVD 88 (04/10/98) 200.77 (m) 658.7 (f) LEVELING - 3 KA1711 KA1711.Superseded values are not recommended for survey control. KA1711 KA1711.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1711.See file dsdata.txt to determine how the superseded data were derived. KA1711 KA1711_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ9620542482(NAD 83) KA1711 KA1711 MARKER: I = METAL ROD KA1711_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) KA1711_SP_SET: STAINLESS STEEL ROD IN SLEEVE KA1711_STAMPING: M 351 1986 KA1711 MARK LOGO: NGS KA1711_PROJECTION: FLUSH KA1711_MAGNETIC: N = NO MAGNETIC MATERIAL KA1711 STABILITY: A = MOST RELIABLE AND EXPECTED TO HOLD KA1711+STABILITY: POSITION/ELEVATION WELL KA1711 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1711+SATELLITE: SATELLITE OBSERVATIONS - May 27, 2008 KA1711 ROD/PIPE-DEPTH: 3.4 meters KA1711_SLEEVE-DEPTH : 3.0 meters KA1711 KA1711 HISTORY - Date Condition Report By KA1711 HISTORY - 1986 MONUMENTED NGS KA1711 HISTORY - 19970815 GOOD SEC

KA1711 HISTORY - 20080527 GOOD INDNR

KA1711

STATION DESCRIPTION

KA1711 KA1711

KA1711'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986

KA1711'11.8 KM (7.35 MI) SE FROM CLAY CITY.

KA1711'11.4 KM (7.1 FT) SOUTHEASTERLY ALONG STATE HIGHWAY 157 FROM ITS KA1711'JUNCTION WITH STATE HIGHWAY 59 IN CLAY CITY, THENCE 0.4 KM (0.25 MI) KA1711'NORTH ALONG A PAVED STREET, 9.0 M (29.5 FT) EAST OF THE STREET CENTER, KA1711'6.5 M (21.3 FT) SOUTHEAST OF A UTILITY POLE WITH A TRANSFORMER, 6.5 M KA1711'(21.3 FT) NORTHWEST OF THE CENTER OF THE WEST ENTRANCE INTO THE COAL KA1711'CITY COMMUNITY CHURCH, 4.0 M (13.1 FT) WEST OF THE NORTHWEST CORNER OF KA1711'THE CHURCH, AND 3.1 M (10.2 FT) SOUTH OF THE CENTER OF A DRIVEWAY KA1711'LEADING EAST. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH KA1711'LOGO CAP.

KA1711'THE MARK IS ABOVE LEVEL WITH THE STREET.

KA1711

KA1711 STATION RECOVERY (1997)

KA1711

KA1711'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA1711'THE STATION IS LOCATED 11.8 KM (7.35 MI) SOUTHEAST OF CLAY CITY, IN KA1711'COAL CITY. FROM THE INTERSECTION OF STATE HIGHWAY 157 AND STATE KA1711'HIGHWAY 59 IN CLAY CITY, GO 7.1 MILES (11.4 KM) SOUTHEASTERLY ALONG KA1711'STATE HIGHWAY 157, THEN TURN LEFT (NORTH) ON A PAVED STREET (COUNTY KA1711'ROAD 1495) AND GO 0.25 MILES (0.40 KM) TO THE STATION ON RIGHT. KA1711'OWNERSHIP--COAL CITY FITNESS CENTER, BILL MEGENHARDT, PHONE KA1711'65-859-4569. THE STATION IS A STAINLESS STEEL ROD IN SLEEVE UNDER A KA1711'5 INCH LOGO CAP SET ABOUT THE SAME LEVEL AS THE STREET. STATION IS KA1711'10.06 METERS (33.01 FT) NORTHWEST OF SOUTHWEST CORNER OF COAL CITY KA1711'FITNESS CENTER, 8.84 METERS (29.00 FT) EAST OF THE CENTERLINE OF KA1711'COUNTY ROAD 1495, 6.5 METERS (21.3 FT) SOUTHEAST OF A UTILITY POLE KA1711'WITH TRANSFORMER, 4.36 METERS (14.30 FT) WEST OF THE NORTHWEST CORNER KA1711'GRAVEL DRIVE LEADING EAST.

KA1711

KA1711 STATION RECOVERY (2008)

KA1711

KA1711'RECOVERY NOTE BY IN DEPT OF NAT RES 2008 (RDN)

KA1711'14.5 FEET WEST OF THE NORTHWEST CORNER OF COAL FITNESS CENTER,

KA1711'28.8 FEET EAST OF THE CENTERLINE OF POPLAR STREET,

KA1711'22.0 FEET SOUTHEAST OF POWER POLE NUMBER 246/709 WITH GUY WIRE,

KA1711'140 FEET NORTH OF THE CENTERLINE OF FOURTH STREET,

KA1711'160 FEET SOUTH OF THE CENTERLINE OF THIRD STREET,

KA1711'14.7 FEET NW OF THE NW CORNER OF THE BOTTOM CONCRETE STEO OF COAL CITY KA1711'FITNESS CENTER.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 KA1688 *********** KA1688 DESIGNATION - M 352 KA1688 PID - KA1688 KA1688 STATE/COUNTY- IN/VIGO KA1688 COUNTRY - US KA1688 USGS QUAD - SEELYVILLE (1986) KA1688 KA1688 *CURRENT SURVEY CONTROL KA1688 KA1688* NAD 83(2011) POSITION- 39 28 44.60589(N) 087 19 56.42891(W) NO CHECK KA1688* NAD 83(2011) ELLIP HT- 129.626 (meters) (06/27/12) NO CHECK KA1688* NAD 83(2011) EPOCH - 2010.00 KA1688* NAVD 88 ORTHO HEIGHT - 162.410 (meters) 532.84 (feet) ADJUSTED KA1688 KA1688 NAD 83(2011) X - 229,445.026 (meters) COMP KA1688 NAD 83(2011) Y - -4,924,442.230 (meters) COMP KA1688 NAD 83(2011) Z - 4,033,591.505 (meters) COMP KA1688 LAPLACE CORR - -2.11 (seconds) DEFLEC12A KA1688 GEOID HEIGHT --32.80 (meters) GEOID12A KA1688 DYNAMIC HEIGHT -162.318 (meters) 532.54 (feet) COMP KA1688 MODELED GRAVITY - 980,054.2 (mgal) NAVD 88 KA1688 KA1688 VERT ORDER - FIRST CLASS II KA1688 KA1688 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1688 Type KA1688 -----KA1688 NETWORK 1.17 3.41 KA1688 -----KA1688 MEDIAN LOCAL ACCURACY AND DIST (001 points) 0.96 3.04 4.06 KA1688 -----KA1688 NOTE: Click here for information on individual local accuracy KA1688 values and other accuracy information. KA1688 KA1688 KA1688. The horizontal coordinates were established by GPS observations KA1688.and adjusted by the National Geodetic Survey in June 2012. KA1688 KA1688.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1688.frame has been affixed to the stable North American tectonic plate. See KA1688.NA2011 for more information. for more information. KA1688 KA1688. The horizontal coordinates are valid at the epoch date displayed above KA1688.which is a decimal equivalence of Year/Month/Day. KA1688 KA1688.No horizontal observational check was made to the station. KA1688. KA1688. The orthometric height was determined by differential leveling and KA1688.adjusted by the NATIONAL GEODETIC SURVEY KA1688.in June 1991. KA1688 KA1688.The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1688

KA1688. The Laplace correction was computed from DEFLEC12A derived deflections. KA1688 KA1688. The ellipsoidal height was determined by GPS observations KA1688.and is referenced to NAD 83. KA1688 KA1688. The dynamic height is computed by dividing the NAVD 88 KA1688.geopotential number by the normal gravity value computed on the KA1688.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1688.degrees latitude (g = 980.6199 gals.). KA1688 KA1688. The modeled gravity was interpolated from observed gravity values. KA1688 KA1688. The following values were computed from the NAD 83(2011) position. KA1688 KA1688: North East Units Scale Factor Converg. - 469,709.075 878,576.243 MT 0.99997232 -0 09 29.9 KA1688;SPC IN W - 1,541,037.19 2,882,462.22 sFT 0.99997232 -0 09 29.9 KA1688;SPC IN W - 4,369,992.972 471,417.013 MT 0.99961006 -0 12 40.7 KA1688;UTM 16 KA1688 KA1688! - Elev Factor x Scale Factor = Combined Factor  $- 0.99997966 \times 0.99997232 = 0.99995198$ KA1688!SPC IN W  $- 0.99997966 \times 0.99961006 = 0.99958973$ KA1688!UTM 16 KA1688 KA1688 SUPERSEDED SURVEY CONTROL KA1688 KA1688 NAD 83(2007)- 39 28 44.60597(N) 087 19 56.43001(W) AD( ) 0 KA1688 ELLIP H (02/10/07) 129.650 (m) GP( 087 19 56.42992(W) AD( KA1688 NAD 83(1997)- 39 28 44.60601(N) ) 1 KA1688 ELLIP H (11/27/02) 129.663 (m) GP( ) 4 1 KA1688 NAD 83(1997)- 39 28 44.60595(N) 087 19 56.42998(W) AD( ) 1 KA1688 ELLIP H (03/18/02) 129.669 (m) GP( ) 4 1 KA1688 NAVD 88 (03/18/02) 162.41 (m) 532.8 (f) LEVELING 3 KA1688 KA1688.Superseded values are not recommended for survey control. KA1688 KA1688.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1688.See file dsdata.txt to determine how the superseded data were derived. KA1688 KA1688_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ7141769992(NAD 83) KA1688 KA1688_MARKER: I = METAL ROD KA1688 SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+) KA1688_SP_SET: STAINLESS STEEL ROD KA1688_STAMPING: M 352 1985 KA1688 MARK LOGO: NGS KA1688_PROJECTION: RECESSED 5 CENTIMETERS KA1688 MAGNETIC: I = MARKER IS A STEEL ROD KA1688_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL KA1688 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1688+SATELLITE: SATELLITE OBSERVATIONS - May 01, 2001 KA1688_ROD/PIPE-DEPTH: 13.7 meters KA1688 KA1688 HISTORY - Date Condition Report By - 1985 KA1688 HISTORY MONUMENTED NGS

KA1688 HISTORY - 20010501 GOOD WOOLPT KA1688 HISTORY - 20100930 GOOD PB KA1688 KA1688 STATION DESCRIPTION KA1688 KA1688'DESCRIBED BY NATIONAL GEODETIC SURVEY 1985 KA1688'7.4 KM (4.6 MI) NE FROM TERRE HAUTE. KA1688'7.4 KM (4.6 MI) NORTHEASTERLY ALONG U.S. HIGHWAY 40 FROM THE KA1688'COURTHOUSE IN TERRE HAUTE, 37.8 M (124.0 FT) EAST OF THE EXTENDED KA1688'CENTER OF THE WEST BOUND LANES OF STATE HIGHWAY 46, 11.5 M (37.7 FT) KA1688'NORTH OF THE CENTERLINE OF THE WEST BOUND LANES OF THE HIGHWAY, AND KA1688'1.4 M (4.6 FT) EAST OF A UTILITY POLE. NOTE--ACCESS TO DATUM POINT IS KA1688'HAD THROUGH A 5-INCH LOGO CAP. KA1688'THE MARK IS 0.3 M ABOVE THE HIGHWAY. KA1688 KA1688 **STATION RECOVERY (2001)** KA1688 KA1688'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2001 (ARL) KA1688'RECOVERED AS DESCRIBED. KA1688' KA1688' KA1688 KA1688 **STATION RECOVERY (2010)** KA1688 KA1688'RECOVERY NOTE BY PBS&J 2010 (MAZ)

KA1688'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA1790 ********* KA1790 FBN - This is a Federal Base Network Control Station. **KA1790 DESIGNATION - PRAIRIE CITY** KA1790 PID - KA1790 KA1790 STATE/COUNTY- IN/CLAY KA1790 COUNTRY - US KA1790 USGS QUAD - STAUNTON (1986) KA1790 KA1790 *CURRENT SURVEY CONTROL KA1790 KA1790* NAD 83(2011) POSITION- 39 26 45.83332(N) 087 07 33.31767(W) ADJUSTED KA1790* NAD 83(2011) ELLIP HT- 156.956 (meters) (06/27/12) ADJUSTED KA1790* NAD 83(2011) EPOCH - 2010.00 KA1790* NAVD 88 ORTHO HEIGHT - 189.9 (meters) 623. (feet) GPS OBS KA1790 KA1790 NAVD 88 orthometric height was determined with geoid model GEOID03 KA1790 GEOID HEIGHT --32.87 (meters) GEOID03 KA1790 GEOID HEIGHT --32.90 (meters) GEOID12A KA1790 NAD 83(2011) X - 247,302.604 (meters) COMP KA1790 NAD 83(2011) Y - -4,925,929.927 (meters) COMP KA1790 NAD 83(2011) Z - 4,030,780.862 (meters) COMP KA1790 LAPLACE CORR --0.89 (seconds) DEFLEC12A KA1790 KA1790 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) KA1790 Type KA1790 -----KA1790 NETWORK 1.10 2.12 KA1790 -----KA1790 MEDIAN LOCAL ACCURACY AND DIST (028 points) 1.19 2.34 139.86 KA1790 -----KA1790 NOTE: Click here for information on individual local accuracy KA1790 values and other accuracy information. KA1790 KA1790 KA1790. The horizontal coordinates were established by GPS observations KA1790.and adjusted by the National Geodetic Survey in June 2012. KA1790 KA1790.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1790. frame has been affixed to the stable North American tectonic plate. See KA1790.NA2011 for more information. for more information. KA1790 KA1790. The horizontal coordinates are valid at the epoch date displayed above KA1790.which is a decimal equivalence of Year/Month/Day. KA1790 KA1790. The orthometric height was determined by GPS observations and a KA1790.high-resolution geoid model. KA1790 KA1790. The X, Y, and Z were computed from the position and the ellipsoidal ht. KA1790 KA1790. The Laplace correction was computed from DEFLEC12A derived deflections. KA1790 KA1790. The ellipsoidal height was determined by GPS observations

KA1790 KA1790. The following values were computed from the NAD 83(2011) position. KA1790 KA1790: North Units Scale Factor Converg. East KA1790; SPC IN W - 466,017.507 896,334.132 MT 0.99996683 -0 01 37.4 KA1790;SPC IN W - 1,528,925.77 2,940,722.90 sFT 0.99996683 -0 01 37.4 - 4,366,286.339 489,165.023 MT 0.99960145 -0 04 48.0 KA1790;UTM 16 KA1790 KA1790! - Elev Factor x Scale Factor = Combined Factor KA1790!SPC IN W - 0.99997538 x 0.99996683 = 0.99994221  $- 0.99997538 \times 0.99960145 = 0.99957684$ KA1790!UTM 16 KA1790 KA1790: Primary Azimuth Mark Grid Az KA1790:SPC IN W - PRAIRIE CITY AZ MK 271 43 50.0 KA1790:UTM 16 - PRAIRIE CITY AZ MK 271 47 00.6 KA1790 KA1790|------| KA1790 | PID Reference Object Distance Geod. Az | dddmmss.s KA1790 KA1790 CM4397 PRAIRIE CITY RM 1 48.975 METERS 18723 KA1790 | AH9790 PRAIRIE CITY AZ MK 2714212.6 KA1790 | CM4398 PRAIRIE CITY RM 2 25.438 METERS 31714 KA1790|------| KA1790 KA1790 SUPERSEDED SURVEY CONTROL KA1790 087 07 33.31849(W) AD( KA1790 NAD 83(2007)- 39 26 45.83342(N) ) 0 KA1790 ELLIP H (02/10/07) 156.972 (m) GP( ) KA1790 NAD 83(1997)- 39 26 45.83338(N) 087 07 33.31848(W) AD( ) A KA1790 ELLIP H (01/19/05) 156.980 (m) GP( ) 4 1 KA1790 NAD 83(1997)- 39 26 45.83096(N) 087 07 33.31770(W) AD( ) 3 KA1790 NAD 83(1986)- 39 26 45.83583(N) 087 07 33.31078(W) AD( ) 3 KA1790 NAD 27 - 39 26 45.69520(N) 087 07 33.24930(W) AD( ) 3 KA1790 KA1790.Superseded values are not recommended for survey control. KA1790 KA1790.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1790.See file dsdata.txt to determine how the superseded data were derived. KA1790 KA1790 U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ8916566286(NAD 83) KA1790 KA1790 MARKER: DS = TRIANGULATION STATION DISK KA1790_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA1790_STAMPING: PRAIRIE CITY 1947 KA1790 MARK LOGO: CGS KA1790_MAGNETIC: O = OTHER; SEE DESCRIPTION KA1790 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA1790+STABILITY: SURFACE MOTION KA1790 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1790+SATELLITE: SATELLITE OBSERVATIONS - June 25, 2003 KA1790 KA1790 HISTORY - Date Condition Report By - 1947 KA1790 HISTORY MONUMENTED CGS KA1790 HISTORY - 1982 GOOD LOCENG

KA1790 HISTORY - 19840321 GOOD NGS KA1790 HISTORY - 20030625 GOOD INDOT KA1790 KA1790 STATION DESCRIPTION KA1790 KA1790'DESCRIBED BY COAST AND GEODETIC SURVEY 1947 (FXP) KA1790'THE STATION IS LOCATED ABOUT 5.5 MILES SOUTH OF BRAZIL AND 0.75 MILE KA1790'WEST OF THE SMALL COMMUNITY OF PRAIRIE CITY ON THE RIGHT-OF-WAYS KA1790'OF STATE HIGHWAYS 59 AND 42. IT IS 134.80 FEET NORTHEAST OF THE KA1790'INTERSECTION OF THE CENTERLINE OF THE HIGHWAYS, 106 FEET EAST OF KA1790'THE CENTERLINE OF HIGHWAY 59, 82 FEET NORTH OF THE CENTERLINE OF KA1790'HIGHWAY 42, AND 17 FEET SOUTH OF A FENCE. THE MARK IS FLUSH KA1790'WITH THE GROUND, AND THE DISK IS STAMPED PRAIRIE CITY 1947. KA1790' KA1790'REFERENCE MARK NO. 1 IS 160.68 FEET SOUTH OF THE STATION 94 FEET KA1790'EAST OF THE CENTERLINE OF HIGHWAY 59, 78 FEET SOUTH OF THE KA1790'CENTERLINE OF HIGHWAY 42, AND 15 FEET NORTH OF A CULTIVATED FIELD. KA1790'THE MARK IS FLUSH WITH THE GROUND, AND THE DISK IS STAMPED KA1790'PRAIRIE CITY NO 1 1947. KA1790' KA1790'REFERENCE MARK NO. 2 IS 83.46 FEET NORTHWEST OF THE STATION, 59 FEET KA1790'EAST OF THE CENTERLINE OF HIGHWAY 59, 44 FEET SOUTH-SOUTHEAST KA1790'OF A FENCE CORNER, AND 17 FEET SOUTH OF THE FENCE. THE MARK IS FLUSH KA1790'WITH THE GROUND AND THE DISK IS STAMPED PRAIRIE CITY NO 2 1947. KA1790' KA1790'THE AZIMUTH MARK IS 0.5 MILE WEST OF THE STATION, 16 FEET NORTH OF KA1790'THE CENTERLINE OF HIGHWAY 42, 6 FEET SOUTH OF A GUY-POST FOR A KA1790'POWER LINE, 4 FEET EAST OF A 4-INCH CONCRETE POST, AND 2.5 FEET EAST KA1790'OF A WITNESS POST. THE MARK PROJECTS 6 INCHES, AND THE DISK KA1790'IS STAMPED PRAIRIE CITY 1947. KA1790' KA1790'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAY 40 AND STATE KA1790'HIGHWAY 59 IN BRAZIL, GO SOUTH ON HIGHWAY 59 FOR 5.5 MILES TO THE KA1790'INTERSECTION OF STATE HIGHWAYS 59 AND 42 AND THE STATION ON THE LEFT. KA1790' KA1790'TO REACH THE AZIMUTH MARK FROM THE STATION, GO WEST ON HIGHWAY 42 FOR KA1790'0.5 MILE TO THE AZIMUTH MARK ON THE RIGHT. KA1790' KA1790'HEIGHT OF LIGHT ABOVE STATION MARK 30 METERS. KA1790 KA1790 STATION RECOVERY (1982) KA1790 KA1790'RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1982 (CRF) KA1790'PRAIRIE CITY 1947 RECOVERED IN GOOD CONDITION- 111.7 FEET WEST TO KA1790'CENTERLINE HWY. 59 82.0 FEET SOUTH TO CENTERLINE HWY. 42 FLUSH KA1790'WITH GROUND. KA1790' KA1790'R.M. NO.1 INSIDE 15 INCHES 0 CONC. BELL PIPE - 20 INCHES BELOW KA1790'GROUND. 78.5 FEET N TO CENTERLINE HWY. 42 - 92.0 FEET W TO KA1790'CENTERLINE HWY. 59 - 80.4 FEET S 50 W TO PWP. KA1790' KA1790'R.M. NO.2 2 INCHES BELOW GROUND - 55.3 FEET W TO CENTERLINE HWY. KA1790'59-35.2 FEET N TO PWP 851 7044 48.0 INCHES N 20 W TO SE COR. CONC. KA1790'BASE OF ALUMINUM LIGHT POST.

KA1790'

KA1790'PRAIRIE CITY AZIMUTH PROJECTS 6 INCHES - 7 FEET N10W TO BRACE WIRE KA1790'POLE - 4.5 FEET W TO REMAINS OF CONC. POST - 38.0 FEET S TO PWP KA1790'IG/24 - 16.0 FEET S TO CENTERLINE HWY. 42. KA1790' KA1790'STATION ON INDIANA STATE HIGHWAY RIGHT-OF-WAY. KA1790' KA1790'DISTANCE BETWEEN PRAIRIE CITY STATION AND AZIMUTH - 2742.32 FT. KA1790' KA1790'DISTANCE AND DIRECTION FROM NEAREST TOWN--PRAIRIE CITY 0.75 KA1790'MILE EAST. KA1790 KA1790 **STATION RECOVERY (1984)** KA1790 KA1790'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1984 (CLN) KA1790'THE STATION MARK, REFERENCE MARKS 1 AND 2 WERE RECOVERED IN GOOD KA1790'CONDITION. THE DISTANCES AND DIRECTION TO BOTH REFERENCE MARKS KA1790'CHECKED THE OLD DATA. THE AZIMUTH MARK WAS RECOVERED 2 INCHES BELOW KA1790'GROUND. THE AREA AROUND THIS MONUMENT WAS DUG DOWN THIS 2 INCHES AND KA1790'GRAVEL WAS SPREAD AROUND THE MONUMENT MAKING 1 FLUSH WITH THE GROUND. KA1790'THE DISTANCE WAS MEASURED TO THE AZIMUTH MARK AT THIS TIME. THE TO KA1790'REACH FOR THIS STATION IS ADEQUATE. THE STATION IS A STANDARD NGS KA1790'DISK STAMPED, --- PRAIRIE CITY 1947---, SET INTO THE TOP OF A SQUARE KA1790'CONCRETE MONUMENT, 12 INCHES (30 CM) IN DIAMETER, FLUSH, WITH GROUND. KA1790'THE STATION IS LOCATED, 34.046 METERS (111.699 FT) EAST FROM THE KA1790'CENTERLINE OF STATE HIGHWAY 59, 24.994 METERS (82.001 FT) NORTH FROM KA1790'THE CENTERLINE OF STATE HIGHWAY 42, 18.898 METERS (62.001 FT) KA1790'NORTHEAST FROM A UTILITY POLE, 27.432 METERS (90.000 FT) NORTHWEST KA1790'FROM A UTILITY POLE, 25.908 METERS (85.000 FT) WEST FROM A GUARD RAIL KA1790'AND 0.305 METERS (1.001 FT) SOUTH FROM A WITNESS POST. REFERENCE MARK KA1790'NO 1 IS A STANDARD NGS DISK STAMPED, ---PRAIRIE CITY NO 1 1947---, SET KA1790'INTO THE TOP OF A SQUARE CONCRETE MONUMENT, 12 INCHES (30 CM) IN KA1790'DIAMETER, RECESSED, 20 INCHES, 55 CM BELOW THE GROUND. THE STATION IS KA1790'LOCATED 28.042 METERS (92.001 FT) EAST FROM THE CENTERLINE OF HIGHWAY KA1790'59, 23.317 METERS (76.499 FT) SOUTH FROM THE CENTERLINE OF HIGHWAY 42, KA1790'7.925 METERS (26.001 FT) NORTHWEST FROM A UTILITY POLE WITH STREET KA1790'LAMP ATOP, AND 12.497 METERS (41.001 FT) SOUTH-SOUTHEAST FROM A LAMP KA1790'POST WITH STREET LAMP ATOP, AND 0.6 METERS (2.0 FT) LOWER THAN THE KA1790'STATION. NOTE, THIS MONUMENT IS INCASED IN THE CENTER OF A 15 INCH KA1790'CONCRETE PIPE AND IS 20 INCHES BELOW GROUND. REFERENCE MARK 2 IS A KA1790'STANDARD NGS DISK STAMPED, --- PRAIRIE CITY NO 2 1947---, SET INTO THE KA1790'TOP OF A SQUARE CONCRETE MONUMENT, 12 INCHES (30 CM) IN DIAMETER, KA1790'RECESSED, 2 INCHES, (6 CM) BELOW THE GROUND. THE STATION IS LOCATED KA1790'16.916 METERS (55.499 FT) EAST FROM THE CENTERLINE OF HIGHWAY 59, KA1790'10.729 METERS (35.200 FT) SOUTH FROM A UTILITY POLE 11.765 METERS KA1790'(38.599 FT) SOUTHWEST FROM THE WEST ONE OF TWO SUPPORT POLES FOR A LK KA1790'FAMILY RESTAURANT SIGN, AND 0.6 METERS (2.0 FT) HIGHER THAN THE KA1790'STATION. AZIMUTH MARK NO 1 IS A STANDARD NGS DISK STAMPED, --- PRAIRIE KA1790'CITY 1947---, SET INTO THE TOP OF A SQUARE CONCRETE MONUMENT, 12 KA1790'INCHES (30 CM) IN DIAMETER, PROJECTING, 2 INCHES (6 CM) ABOVE THE KA1790'GROUND. THE STATION IS LOCATED 11.582 METERS (37.999 FT) NORTH FROM A KA1790'UTILITY POLE NUMBER 1 G 24, 4.572 METERS (15.000 FT) NORTH FROM THE KA1790'CENTERLINE OF HIGHWAY 42, 2.134 METERS (7.001 FT) SOUTH-SOUTHEAST FROM KA1790'A GUY WIRE POLE FOR UTILITY POLE NUMBER 1 G 24 AND 1.219 METERS (3.999

KA1790'FT) SOUTH SOUTHEAST FROM A WITNESS POST. TO REACH THE AZIMUTH MARK KA1790'FROM THE STATION GO WEST ON STATE HIGHWAY 42 FOR 0.5 MILES (0.8 KM) TO KA1790'A SIDE ROAD LEFT LEADING TO A FARM HOUSE AND THE MARK ON RIGHT AS KA1790'DESCRIBED.

KA1790

STATION RECOVERY (2003)

KA1790 KA1790

KA1790'RECOVERY NOTE BY INDIANA DEPARTMENT OF TRANSPORTATION 2003 (CHA) KA1790'THE STATION IS LOCATED IN JACKSON TOWNSHIP, 173.32 FT NORTHEAST FROM KA1790'THE SOUTHWEST CORNER OF SECTION 30, T 12 N, R 6 W OF THE 2ND KA1790'PRINCIPAL MERIDIAN, 5.4 MI SOUTH OF BRAZIL, 10.0 MI EAST-NORTHEAST OF KA1790'RILEY AND 7.25 MI NORTHWEST OF BOWLING GREEN. OWNERSHIP--INDOT, KA1790'CONTACT HENRY ALDRIDGE, INDIANA DEPARTMENT OF TRANSPORTATION, 100 KA1790'NORTH SENATE AVENUE, ROOM N642 IGCN, INDIANAPOLIS, IN 46204, PHONE KA1790'317-232-6764.

KA1790'

KA1790'TO REACH THE STATION FROM THE INTERSECTION OF INTERSTATE HIGHWAY 70 KA1790'(MM23) AND STATE ROAD 59, GO SOUTH ON ROAD 59 FOR 0.2 MI TO THE KA1790'INTERSECTION OF STATE ROAD 42 AND THE STATION IN THE NORTHEAST KA1790'QUADRANT.

KA1790'

KA1790'THE STATION IS FLUSH WITH GROUND. LOCATED 20.04 FT SOUTHWEST FROM THE KA1790'EDGE OF CONCRETE DRIVE, 78.8 FT WEST-NORTHWEST FROM THE FACE OF A 20 KA1790'INCH DIAMETER STEEL SIGN POST (PILOT GAS PRICE SIGN), 39.1 FT KA1790'SOUTH-SOUTHEAST FROM THE FACE OF CONCRETE BASE OF LIGHT POLE, 112.18 KA1790'FT EAST OF THE CENTERLINE OF ROAD 59 AND 82.22 FT NORTH OF THE KA1790'CENTERLINE OF ROAD 42. 1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 KA1335 ********** KA1335 CBN - This is a Cooperative Base Network Control Station. KA1335 DESIGNATION - R 54 KA1335 PID - KA1335 KA1335 STATE/COUNTY- IN/SULLIVAN KA1335 COUNTRY - US KA1335 USGS QUAD - MEROM (1986) KA1335 KA1335 *CURRENT SURVEY CONTROL KA1335 KA1335* NAD 83(2011) POSITION- 39 01 43.10440(N) 087 30 30.86616(W) ADJUSTED KA1335* NAD 83(2011) ELLIP HT- 112.923 (meters) (06/27/12) ADJUSTED KA1335* NAD 83(2011) EPOCH - 2010.00 KA1335* NAVD 88 ORTHO HEIGHT - 145.024 (meters) 475.80 (feet) ADJUSTED KA1335 KA1335 NAD 83(2011) X - 215,672.080 (meters) COMP KA1335 NAD 83(2011) Y - -4,956,723.680 (meters) COMP KA1335 NAD 83(2011) Z - 3,994,858.569 (meters) COMP KA1335 LAPLACE CORR --2.24 (seconds) DEFLEC12A KA1335 GEOID HEIGHT --32.10 (meters) GEOID12A KA1335 DYNAMIC HEIGHT -144.938 (meters) 475.52 (feet) COMP KA1335 MODELED GRAVITY - 980,032.4 (mgal) NAVD 88 KA1335 KA1335 VERT ORDER - SECOND CLASS 0 KA1335 KA1335 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) KA1335 Type Horiz Ellip Dist(km) KA1335 -----KA1335 NETWORK 0.81 1.82 KA1335 -----KA1335 MEDIAN LOCAL ACCURACY AND DIST (016 points) 0.99 2.21 71.65 KA1335 -----KA1335 NOTE: Click here for information on individual local accuracy KA1335 values and other accuracy information. KA1335 KA1335 KA1335. The horizontal coordinates were established by GPS observations KA1335.and adjusted by the National Geodetic Survey in June 2012. KA1335 KA1335.NAD 83(2011) refers to NAD 83 coordinates where the reference KA1335.frame has been affixed to the stable North American tectonic plate. See KA1335.NA2011 for more information. for more information. KA1335 KA1335. The horizontal coordinates are valid at the epoch date displayed above KA1335.which is a decimal equivalence of Year/Month/Day. KA1335 KA1335. The orthometric height was determined by differential leveling and KA1335.adjusted by the NATIONAL GEODETIC SURVEY KA1335.in June 1991. KA1335 KA1335.Photographs are available for this station. KA1335 KA1335.The X, Y, and Z were computed from the position and the ellipsoidal ht.

KA1335 KA1335. The Laplace correction was computed from DEFLEC12A derived deflections. KA1335 KA1335. The ellipsoidal height was determined by GPS observations KA1335.and is referenced to NAD 83. KA1335 KA1335. The dynamic height is computed by dividing the NAVD 88 KA1335.geopotential number by the normal gravity value computed on the KA1335.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 KA1335.degrees latitude (g = 980.6199 gals.). KA1335 KA1335. The modeled gravity was interpolated from observed gravity values. KA1335 KA1335. The following values were computed from the NAD 83(2011) position. KA1335 KA1335; Units Scale Factor Converg. North East KA1335;SPC IN W - 419,761.734 863,178.948 MT 0.99998335 -0 16 04.0 - 1,377,168.29 2,831,946.27 sFT 0.99998335 -0 16 04.0 KA1335;SPC IN W - 4,320,077.843 455,979.330 MT 0.99962386 -0 19 12.9 KA1335;UTM 16 KA1335 KA1335! - Elev Factor x Scale Factor = Combined Factor KA1335!SPC IN W  $- 0.99998228 \times 0.99998335 = 0.99996563$ - 0.99998228 x 0.99962386 = 0.99960615 KA1335!UTM 16 KA1335 KA1335 SUPERSEDED SURVEY CONTROL KA1335 KA1335 NAD 83(2007)- 39 01 43.10448(N) 087 30 30.86702(W) AD( ) 0 KA1335 ELLIP H (02/10/07) 112.942 (m) GP( KA1335 NAD 83(1997)- 39 01 43.10451(N) 087 30 30.86716(W) AD( ) B KA1335 ELLIP H (04/10/98) 112.948 (m) GP( ) 4 1 KA1335 NAD 83(1986)- 39 01 43.11192(N) 087 30 30.86050(W) AD( ) 3 KA1335 NAVD 88 (04/10/98) 145.02 (m) 475.8 (f) LEVELING 3 KA1335 NGVD 29 (??/??/92) 145.173 (m) 476.29 (f) ADJ UNCH 20 KA1335 KA1335.Superseded values are not recommended for survey control. KA1335 KA1335.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. KA1335. See file dsdata.txt to determine how the superseded data were derived. KA1335 KA1335_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDJ5597920077(NAD 83) KA1335 KA1335 MARKER: DB = BENCH MARK DISK KA1335_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT KA1335_SP_SET: CONCRETE POST KA1335_STAMPING: R 54 1934 KA1335_MARK LOGO: CGS KA1335 MAGNETIC: N = NO MAGNETIC MATERIAL KA1335_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO KA1335+STABILITY: SURFACE MOTION KA1335_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR KA1335+SATELLITE: SATELLITE OBSERVATIONS - July 22, 2005 KA1335 KA1335 HISTORY - Date Condition Report By KA1335 HISTORY - 1934 MONUMENTED CGS

KA1335 HISTORY NGS - 19880510 GOOD KA1335 HISTORY - 19901019 GOOD NGS KA1335 HISTORY - 19970716 GOOD SEC KA1335 HISTORY - 20050722 GOOD JCLS KA1335 KA1335 STATION DESCRIPTION KA1335 KA1335'DESCRIBED BY COAST AND GEODETIC SURVEY 1934 KA1335'1.6 MI E FROM MEROM. KA1335'1.6 MILES EAST ALONG THE ILLINOIS CENTRAL RAILROAD FROM THE KA1335'STATION AT MEROM, SULLIVAN COUNTY, 3-1/2 RAILS WEST OF MILEPOST KA1335'I 117, 45 YARDS SOUTHWEST OF THE WILLIAM ALUMBOUGH HOUSE, 16 KA1335'YARDS SOUTHWEST OF A 30-INCH LOCUST TREE, AT A GRAVEL-ROAD KA1335'CROSSING, 10 YARDS NORTH OF THE NORTH RAIL, 7 YARDS WEST OF THE KA1335'CENTERLINE OF THE ROAD, 1 YARD SOUTH OF THE FENCE, AND ABOUT KA1335'ONE-HALF FOOT ABOVE THE GROUND. A STANDARD DISK, STAMPED R 54 KA1335'1934 AND SET IN THE TOP OF A CONCRETE POST. KA1335 KA1335 **STATION RECOVERY (1988)** KA1335 KA1335'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1988 KA1335'THE STATION IS LOCATED ABOUT 11.3 KM (7.00 MI) SOUTHWEST OF SULLIVAN, KA1335'4.0 KM (2.50 MI) WEST OF NEW LEBANON, 2.6 KM (1.60 MI) EAST OF MEROM KA1335'AND ON HIGHWAY RIGHT-OF-WAY. OWNERSHIP--INDIANA DEPARTMENT OF KA1335'HIGHWAYS, 100 NORTH SENATE AVENUE, ROOM 1101, STATE OFFICE BUILDING, KA1335'INDIANAPOLIS, IN 46204, PHONE 317-232-5533. KA1335'TO REACH THE STATION FROM THE JUNCTION OF COUNTY ROAD 25W AND COUNTY KA1335'ROAD 300S IN NEW LEBANON, GO WEST ON COUNTY ROAD 300S FOR 3.3 KM KA1335'(2.05 MI) TO A SIDE ROAD LEFT. TURN LEFT AND GO SOUTH ON A GRAVELED KA1335'ROAD FOR 1.45 KM (0.90 MI) TO A RAILROAD CROSSING AND THE STATION ON KA1335'THE RIGHT. KA1335'THE STATION IS A STANDARD CGS BENCH MARK DISK STAMPED---R 54 1934---, KA1335'SET IN THE TOP OF A SQUARE CONCRETE MONUMENT. LOCATED 9.14 M KA1335'(30.0 FT) NORTH FROM NORTH RAIL OF TRACKS, 6.71 M (22.0 FT) WEST FROM KA1335'CENTER OF GRAVELED ROAD, 2.29 M (7.5 FT) WEST FROM A UTILITY POLE KA1335'WITH TRANSFORMER, 0.91 M (3.0 FT) SOUTH FROM OLD FENCELINE AND 0.15 M KA1335'(0.5 FT) EAST FROM A WITNESS POST. KA1335'GPS SURVEY, FAA AIRPORTS, INDIANA. KA1335'DESCRIBED BY D.A. BOWLING. KA1335 KA1335 STATION RECOVERY (1990) KA1335 KA1335'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1990 KA1335'STATION WAS RECOVERED IN GOOD CONDITION. NO OTHER MARKS SEARCHED FOR. KA1335'AN UPDATED DESCRIPTION FOLLOWS. KA1335'STATION IS LOCATED ABOUT 11.3 KM (7.0 MI) SOUTHWEST OF SULLIVAN, 4 KM KA1335'(2.5 MI) WEST OF NEW LEBANON, 2.6 KM (1.6 MI) EAST OF MEROM AND ON A KA1335'GRAVEL ROAD R-O-W. OWNERSHIP-UNKNOWN KA1335'TO REACH THE STATION FROM THE JUNCTION OF COUNTY ROAD 325W AND 300S, KA1335'LOCATED AT THE SOUTH SIDE OF THE NEW LEBANON GENERAL STORE, WHICH IS KA1335'NEAR THE CENTER OF SMALL TOWN OF NEW LEBANON, GO WEST ALONG COUNTY KA1335'ROAD 300S FOR 2 MI (3.2 KM) TO A GRAVEL ROAD ON THE LEFT, THEN GO KA1335'LEFT, SOUTH, ALONG GRAVEL ROAD FOR 0.9 MI (1.4 KM) TO A RAILROAD KA1335'CROSSING AND THE STATION AS DESCRIBED ON THE RIGHT.

KA1335'STATION IS SET IN THE TOP OF A CONCRETE POST PROJECTING ABOUT 3-CM KA1335'ABOVE THE GROUND SURFACE. IT IS 9.1 M (29.9 FT) NORTH OF THE NORTH KA1335'RAIL OF THE RAILROAD TRACKS, 6.7 M (22.0 FT) WEST OF THE APPROXIMATE KA1335'CENTER OF THE GRAVEL ROAD, 2.3 M (7.5 FT) WEST OF A POWERLINE POLE KA1335'WITH TRANSFORMER ATTACHED, 0.91 M (2.99 FT) SOUTH OF A FENCELINE, AND KA1335'0.15 M (0.49 FT) EAST OF A FIBERGLASS WITNESS POST.

KA1335'DESCRIBED BY G.F.S. NOTE-CAN PARK IN DIM FIELD ENTRANCE ROAD. KA1335

KA1335

STATION RECOVERY (1997)

KA1335

KA1335'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) KA1335'STATION IS LOCATED ABOUT 11.3 KM (7.00 MI) SOUTHWEST OF SULLIVAN, 4.0 KA1335'KM (2.50 MI) EAST OF MEROM, ALONG THE WEST SIDE OF COUNTY ROAD 550 KA1335'WEST AND A RAILROAD CROSSING. OWNERSHIP--COUNTY ROAD SUPERVISOR KA1335'ROBERT STULTZ 1469 EAST COUNTY ROAD 75 NORTH, SULLIVAN IN 47882, KA1335'PHONE 812-268-5457. TO REACH THE STATION FROM THE JUNCTION OF COUNTY KA1335'ROADS 350 WEST (MAIN STREET) AND 300 SOUTH (MEROM STREET) NEAR CENTER KA1335'OF NEW LEBANON, GO WEST FOR 3.2 KM (2.00 MI) ALONG 300 SOUTH TO A KA1335'GRAVEL ROAD (550 WEST) ON THE LEFT. TURN LEFT, SOUTH FOR 1.4 KM (0.85 KA1335'MI) ALONG 550 WEST TO THE STATION ON THE RIGHT, JUST BEFORE THE KA1335'RAILROAD TRACKS. STATION IS 10.5 METERS (34.4 FT) NORTH OF THE NORTH KA1335'RAIL, 8.1 METERS (26.6 FT) NORTH-NORTHWEST OF A RAILROAD CROSSING KA1335'SIGN, 7.9 METERS (25.9 FT) WEST OF 550 WEST CENTERLINE, 2.2 METERS KA1335'(7.2 FT) WEST OF UTILITY POLE NUMBER 307, 0.9 METERS (3.0 FT) SOUTH OF KA1335'A FENCE, 0.2 METERS (0.7 FT) EAST OF A WITNESS POST, ABOUT 0.4 METERS KA1335'(1.3 FT) BELOW ROAD GRADE AND PROJECTING 4 CM ABOVE GROUND. KA1335

KA1335

STATION RECOVERY (2005)

KA1335

KA1335'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2005 KA1335'RECOVERED IN GOOD CONDITION.

National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 1 LB1704 ******** LB1704 FBN - This is a Federal Base Network Control Station. LB1704 DESIGNATION - W 96 LB1704 PID - LB1704 LB1704 STATE/COUNTY- IN/FOUNTAIN LB1704 COUNTRY - US LB1704 USGS QUAD - MELLOTT (1980) LB1704 LB1704 *CURRENT SURVEY CONTROL LB1704 LB1704* NAD 83(2011) POSITION- 40 13 09.98834(N) 087 10 20.00968(W) ADJUSTED LB1704* NAD 83(2011) ELLIP HT- 176.068 (meters) (06/27/12) ADJUSTED LB1704* NAD 83(2011) EPOCH - 2010.00 LB1704* NAVD 88 ORTHO HEIGHT - 209.329 (meters) 686.77 (feet) ADJUSTED LB1704 LB1704 NAD 83(2011) X - 240,608.796 (meters) COMP LB1704 NAD 83(2011) Y - -4,871,205.442 (meters) COMP LB1704 NAD 83(2011) Z - 4,096,734.690 (meters) COMP LB1704 LAPLACE CORR --1.40 (seconds) DEFLEC12A LB1704 GEOID HEIGHT --33.28 (meters) GEOID12A LB1704 DYNAMIC HEIGHT -209.222 (meters) 686.42 (feet) COMP LB1704 MODELED GRAVITY - 980,111.0 (mgal) NAVD 88 LB1704 LB1704 VERT ORDER - SECOND CLASS 0 LB1704 LB1704 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB1704 Type LB1704 -----LB1704 NETWORK 0.60 1.14 LB1704 -----LB1704 MEDIAN LOCAL ACCURACY AND DIST (049 points) 0.84 1.71 85.96 I B1704 -----LB1704 NOTE: Click here for information on individual local accuracy LB1704 values and other accuracy information. LB1704 LB1704 LB1704. The horizontal coordinates were established by GPS observations LB1704.and adjusted by the National Geodetic Survey in June 2012. LB1704 LB1704.NAD 83(2011) refers to NAD 83 coordinates where the reference LB1704.frame has been affixed to the stable North American tectonic plate. See LB1704.NA2011 for more information. for more information. LB1704 LB1704. The horizontal coordinates are valid at the epoch date displayed above LB1704.which is a decimal equivalence of Year/Month/Day. LB1704 LB1704. The orthometric height was determined by differential leveling and LB1704.adjusted by the NATIONAL GEODETIC SURVEY LB1704.in June 1991. LB1704 LB1704. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB1704 LB1704.The Laplace correction was computed from DEFLEC12A derived deflections.

LB1704 LB1704. The ellipsoidal height was determined by GPS observations LB1704, and is referenced to NAD 83. LB1704 LB1704. The dynamic height is computed by dividing the NAVD 88 LB1704.geopotential number by the normal gravity value computed on the LB1704. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB1704.degrees latitude (g = 980.6199 gals.). LB1704 LB1704. The modeled gravity was interpolated from observed gravity values. LB1704 LB1704. The following values were computed from the NAD 83(2011) position. LB1704 LB1704; North East Units Scale Factor Converg. LB1704;SPC IN W - 551,886.651 892,433.812 MT 0.99996737 -0 03 26.6 - 1,810,648.12 2,927,926.60 sFT 0.99996737 -0 03 26.6 LB1704;SPC IN W - 4,452,127.730 485,346.097 MT 0.99960264 -0.06 40.4 LB1704;UTM 16 LB1704 LB1704! - Elev Factor x Scale Factor = Combined Factor LB1704!SPC IN W - 0.99997238 x 0.99996737 = 0.99993975  $- 0.99997238 \times 0.99960264 = 0.99957503$ LB1704!UTM 16 LB1704 I B1704 SUPERSEDED SURVEY CONTROL LB1704 LB1704 NAD 83(2007)- 40 13 09.98844(N) 087 10 20.01062(W) AD( ) 0 LB1704 ELLIP H (02/10/07) 176.088 (m) GP( ) LB1704 NAD 83(1997)- 40 13 09.98828(N) 087 10 20.01050(W) AD( ) B LB1704 ELLIP H (04/10/98) 176.103 (m) GP( ) 4 1 LB1704 NAVD 88 (04/10/98) 209.33 (m) 686.8 (f) LEVELING 3 LB1704 NGVD 29 (??/??/92) 209.407 (m) 687.03 (f) ADJ UNCH 20 LB1704 LB1704. Superseded values are not recommended for survey control. LB1704 LB1704.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB1704.See file dsdata.txt to determine how the superseded data were derived. LB1704 LB1704_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDK8534652127(NAD 83) LB1704 LB1704_MARKER: DB = BENCH MARK DISK LB1704 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT LB1704_SP_SET: SET IN TOP OF CONCRETE MONUMENT LB1704 STAMPING: W 96 1946 LB1704_MARK LOGO: CGS LB1704_MAGNETIC: O = OTHER; SEE DESCRIPTION LB1704_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO LB1704+STABILITY: SURFACE MOTION LB1704 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB1704+SATELLITE: SATELLITE OBSERVATIONS - June 24, 2003 LB1704 LB1704 HISTORY - Date Condition Report By LB1704 HISTORY - 1946 MONUMENTED CGS LB1704 HISTORY - 19970814 GOOD SEC LB1704 HISTORY - 19980723 GOOD WOOLPT LB1704 HISTORY - 20030425 GOOD INDIV

LB1704 HISTORY - 20030624 GOOD INDOT LB1704 LB1704 STATION DESCRIPTION LB1704 LB1704'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 LB1704'1.6 MI NW FROM NEWTON. LB1704'ABOUT 1.65 MILES NORTHWEST ALONG STATE HIGHWAY 55 FROM THE POST LB1704'OFFICE AT NEWTOWN, ABOUT 0.3 MILE WEST OF THE PLEASANT VIEW FARM, LB1704'ABOUT 0.2 MILE SOUTHEAST AND ACROSS A PASTURE FROM THREE RED LB1704'ROOF BARNS, 45 FEET NORTHEAST AND ACROSS THE HIGHWAY FROM POWER LB1704'POLE NO. 142-346, 26 FEET NORTHEAST OF THE CENTER LINE OF THE LB1704'HIGHWAY, 4 FEET NORTHEAST OF A FENCE CORNER, 2 FEET NORTHEAST OF A LB1704'WHITE WOODEN WITNESS POST, AND ABOUT LEVEL WITH THE HIGHWAY. A LB1704'STANDARD DISK, STAMPED W 96 1946 AND SET IN THE TOP OF A CONCRETE LB1704'POST PROJECTING 6 INCHES ABOVE GROUND. LB1704 LB1704 **STATION RECOVERY (1997)** LB1704 LB1704'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) LB1704'STATION IS 1.6 MILES (2.6 KM) NORTHWEST OF NEWTOWN, ALONG THE LB1704'NORTHEASTERLY RIGHT-OF-WAY OF STATE HIGHWAY 55. FROM THE INTERSECTION LB1704'OF STATE HIGHWAY 55 WITH STATE HIGHWAY 341, ABOUT 1.6 MILES (2.6 KM) LB1704'NORTHWEST ALONG STATE HIGHWAY 55, ON THE LAND OF RICHARD TAYLOR, 1884 LB1704'EAST STATE HIGHWAY 55, NEWTOWN IN 47987, PHONE 765-295-2661. STATION LB1704'IS SET IN A SQUARE CONCRETE MONUMENT PROJECTING 5 CM ABOVE GROUND. LB1704'LOCATED 22.6 METERS (74.1 FT) NORTH AND ACROSS THE HIGHWAY FROM THE LB1704'NORTH FACE OF A FENCE CORNER POST, 13.5 METERS (44.3 FT) NORTHEAST AND LB1704'ACROSS THE HIGHWAY FROM THE NORTH FACE OF POWER POLE NUMBER 142-346, LB1704'7.6 METERS (24.9 FT) NORTHEAST OF THE CENTERLINE OF THE HIGHWAY AND LB1704'1.2 METERS (3.9 FT) NORTHEAST OF A FENCE CORNER POST. I B1704 LB1704 **STATION RECOVERY (1998)** I B1704 LB1704'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (GTF) LB1704'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (GTF). LB1704 LB1704 **STATION RECOVERY (2003)** LB1704 LB1704'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2003 LB1704'RECOVERED AS DESCRIBED LB1704 LB1704 **STATION RECOVERY (2003)** I B1704 LB1704'RECOVERY NOTE BY INDIANA DEPARTMENT OF TRANSPORTATION 2003 (DLF) LB1704'THE STATION IS LOCATED ABOUT 19.7 MI SOUTHWEST OF LAFAYETTE, 6.1 MI LB1704'SOUTHEAST OF ATTICA, 1.6 MI NORTHWEST OF NEWTOWN, IN RICHLAND LB1704'TOWNSHIP, ABOUT 875 FT SOUTH OF THE NORTH 1/4 CORNER OF THE SOUTHEAST LB1704'QUARTER OF SECTION 35, T 21 N, R 7 W, OWNERSHIP--RICHARD TAYLOR. LB1704'1884 EAST STATE HIGHWAY 55, NEWTOWN IN 47987. I B1704' LB1704'TO REACH THE STATION FROM THE INTERSECTION OF STATE ROADS 55 AND 341 LB1704'IN NEWTOWN, GO NORTHWEST FOR 1.6 MI ON STATE ROAD 55 TO A NORTH-SOUTH LB1704'FENCE LINE AND THE STATION ON THE RIGHT. LB1704'

LB1704'THE STATION IS SET IN THE TOP OF A 9-INCH SQUARE CONCRETE MONUMENT LB1704'PROJECTING 5 CM ABOVE GROUND. LOCATED 74.1 FT (22.6 M) NORTH AND LB1704'ACROSS HIGHWAY FROM THE NORTH FACE OF A WOOD FENCE CORNER POST, 44.3 LB1704'FT (13.5 M) NORTHEAST AND ACROSS HIGHWAY FROM THE NORTH FACE OF POWER LB1704'POLE NUMBER 142 346, 24.9 FT (7.6 M) NORTHEAST OF THE CENTERLINE OF LB1704'THE HIGHWAY AND 3.9 FT (1.2 M) NORTHEAST OF THE CENTER OF A WOOD LB1704'FENCE CORNER POST. 1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 LB2108 *********** LB2108 DESIGNATION - Z 361 LB2108 PID - LB2108 LB2108 STATE/COUNTY- IN/WARREN LB2108 COUNTRY - US LB2108 USGS QUAD - COVINGTON (1991) LB2108 *CURRENT SURVEY CONTROL LB2108 LB2108 LB2108* NAD 83(2011) POSITION- 40 08 30.57965(N) 087 26 47.19942(W) ADJUSTED LB2108* NAD 83(2011) ELLIP HT- 144.955 (meters) (06/27/12) ADJUSTED LB2108* NAD 83(2011) EPOCH - 2010.00 LB2108* NAVD 88 ORTHO HEIGHT - 177.851 (meters) 583.50 (feet) ADJUSTED LB2108 LB2108 NAD 83(2011) X - 217,539.068 (meters) COMP LB2108 NAD 83(2011) Y - -4,877,832.447 (meters) COMP LB2108 NAD 83(2011) Z - 4,090,130.132 (meters) COMP LB2108 LAPLACE CORR - -4.45 (seconds) DEFLEC12A LB2108 GEOID HEIGHT --32.90 (meters) GEOID12A LB2108 DYNAMIC HEIGHT - 177.760 (meters) 583.20 (feet) COMP LB2108 MODELED GRAVITY - 980,112.6 (mgal) NAVD 88 I B2108 LB2108 VERT ORDER - FIRST CLASS II LB2108 LB2108 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) LB2108 Type LB2108 -----LB2108 NETWORK 0.77 1.67 LB2108 ------LB2108 MEDIAN LOCAL ACCURACY AND DIST (018 points) 0.92 2.07 53.67 LB2108 -----LB2108 NOTE: Click here for information on individual local accuracy LB2108 values and other accuracy information. LB2108 LB2108 LB2108. The horizontal coordinates were established by GPS observations LB2108 and adjusted by the National Geodetic Survey in June 2012. LB2108 LB2108.NAD 83(2011) refers to NAD 83 coordinates where the reference LB2108.frame has been affixed to the stable North American tectonic plate. See LB2108.NA2011 for more information. for more information. I B2108 LB2108. The horizontal coordinates are valid at the epoch date displayed above LB2108.which is a decimal equivalence of Year/Month/Day. LB2108 LB2108. The orthometric height was determined by differential leveling and LB2108. adjusted by the NATIONAL GEODETIC SURVEY LB2108.in June 1991. LB2108 LB2108. The X, Y, and Z were computed from the position and the ellipsoidal ht. LB2108 LB2108. The Laplace correction was computed from DEFLEC12A derived deflections. LB2108

LB2108. The ellipsoidal height was determined by GPS observations LB2108. and is referenced to NAD 83. LB2108 LB2108. The dynamic height is computed by dividing the NAVD 88 LB2108 geopotential number by the normal gravity value computed on the LB2108.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 LB2108.degrees latitude (g = 980.6199 gals.). LB2108 LB2108. The modeled gravity was interpolated from observed gravity values. LB2108 LB2108. The following values were computed from the NAD 83(2011) position. LB2108 LB2108: North Units Scale Factor Converg. East LB2108;SPC IN W - 543,328.300 869,057.798 MT 0.99997845 -0 14 02.7 LB2108;SPC IN W - 1,782,569.60 2,851,233.79 sFT 0.99997845 -0 14 02.7 - 4,443,594.415 461,970.544 MT 0.99961780 -0 17 16.1 LB2108;UTM 16 LB2108 - Elev Factor x Scale Factor = Combined Factor LB2108! - 0.99997726 x 0.99997845 = 0.99995571 LB2108!SPC IN W LB2108!UTM 16 - 0.99997726 x 0.99961780 = 0.99959507 LB2108 LB2108 SUPERSEDED SURVEY CONTROL I B2108 LB2108 NAD 83(2007)- 40 08 30.57977(N) 087 26 47.20039(W) AD( ) 0 LB2108 ELLIP H (02/10/07) 144.978 (m) GP( ) LB2108 NAD 83(1997)- 40 08 30.57972(N) 087 26 47.20035(W) AD( ) B LB2108 ELLIP H (03/12/99) 144.982 (m) GP( ) 2 1 LB2108 NAVD 88 (03/12/99) 177.85 (m) 583.5 (f) LEVELING 3 LB2108 LB2108. Superseded values are not recommended for survey control. LB2108 LB2108.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. LB2108.See file dsdata.txt to determine how the superseded data were derived. LB2108 LB2108_U.S. NATIONAL GRID SPATIAL ADDRESS: 16TDK6197043594(NAD 83) LB2108 LB2108_MARKER: DB = BENCH MARK DISK LB2108_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE LB2108_SP_SET: BRIDGE ABUTMENT LB2108 STAMPING: Z 361 1986 LB2108_MARK LOGO: NGS LB2108 MAGNETIC: O = OTHER; SEE DESCRIPTION LB2108_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL LB2108_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR LB2108+SATELLITE: SATELLITE OBSERVATIONS - June 08, 2005 LB2108 LB2108 HISTORY - Date Condition Report By MONUMENTED LB2108 HISTORY - 1986 NGS LB2108 HISTORY - 19980723 GOOD WOOLPT LB2108 HISTORY - 20050608 GOOD CMT LB2108 LB2108 STATION DESCRIPTION LB2108 LB2108'DESCRIBED BY NATIONAL GEODETIC SURVEY 1986

LB2108'16.7 KM (10.4 MI) EAST FROM DANVILLE IL. LB2108'16.7 KM (10.35 MI) EASTERLY ALONG U.S. HIGHWAY 136 FROM ITS JUNCTION LB2108'WITH U.S. HIGHWAY 150 IN DANVILLE IL, TOP OF AND 0.4 M (1.3 FT) NORTH LB2108'OF THE SOUTH END OF THE EAST CONCRETE ABUTMENT OF THE U.S. HIGHWAY 136 LB2108'OVERPASS OF THE HIGHWAY, AND 7.2 M (23.6 FT) SOUTH OF THE CENTERLINE LB2108'OF THE HIGHWAY. LB2108'THE MARK IS 0.3 M ABOVE THE HIGHWAY. LB2108 LB2108 **STATION RECOVERY (1998)** LB2108 LB2108'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (JCB) LB2108'RECOVERED AS DESCRIBED. WOOLPERT CONSULTANTS 1998 (JCB). LB2108 LB2108 **STATION RECOVERY (2005)** LB2108 LB2108'RECOVERY NOTE BY CRAWFORD MURPHY AND TILLY INC 2005 (KWS)

LB2108'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 HA0540 ********** HA0540 DESIGNATION - \$ 329 HA0540 PID - HA0540 HA0540 STATE/COUNTY- IN/PERRY HA0540 COUNTRY - US HA0540 USGS QUAD - TELL CITY (1980) HA0540 *CURRENT SURVEY CONTROL HA0540 HA0540 HA0540* NAD 83(2011) POSITION- 37 57 57.68510(N) 086 46 10.54646(W) ADJUSTED HA0540* NAD 83(2011) ELLIP HT- 92.667 (meters) (06/27/12) ADJUSTED HA0540* NAD 83(2011) EPOCH - 2010.00 HA0540* NAVD 88 ORTHO HEIGHT - 124.631 (meters) 408.89 (feet) ADJUSTED HA0540 HA0540 NAD 83(2011) X - 283,718.916 (meters) COMP HA0540 NAD 83(2011) Y - -5,026,822.984 (meters) COMP HA0540 NAD 83(2011) Z - 3,902,528.506 (meters) COMP HA0540 LAPLACE CORR --4.51 (seconds) DEFLEC12A HA0540 GEOID HEIGHT --31.97 (meters) GEOID12A HA0540 DYNAMIC HEIGHT -124.543 (meters) 408.60 (feet) COMP HA0540 MODELED GRAVITY - 979,924.1 (mgal) NAVD 88 HA0540 HA0540 VERT ORDER - FIRST CLASS II HA0540 HA0540 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) HA0540 Type HA0540 -----HA0540 NETWORK 0.73 1.06 HA0540 -----HA0540 MEDIAN LOCAL ACCURACY AND DIST (001 points) 0.54 0.55 3.05 HA0540 -----HA0540 NOTE: Click here for information on individual local accuracy HA0540 values and other accuracy information. HA0540 HA0540 HA0540. The horizontal coordinates were established by GPS observations HA0540.and adjusted by the National Geodetic Survey in June 2012. HA0540 HA0540.NAD 83(2011) refers to NAD 83 coordinates where the reference HA0540.frame has been affixed to the stable North American tectonic plate. See HA0540.NA2011 for more information. for more information. HA0540 HA0540. The horizontal coordinates are valid at the epoch date displayed above HA0540.which is a decimal equivalence of Year/Month/Day. HA0540 HA0540. The orthometric height was determined by differential leveling and HA0540.adjusted by the NATIONAL GEODETIC SURVEY HA0540.in June 1991. HA0540 HA0540. Photographs are available for this station. HA0540 HA0540. The X, Y, and Z were computed from the position and the ellipsoidal ht. HA0540

HA0540. The Laplace correction was computed from DEFLEC12A derived deflections. HA0540 HA0540. The ellipsoidal height was determined by GPS observations HA0540.and is referenced to NAD 83. HA0540 HA0540. The dynamic height is computed by dividing the NAVD 88 HA0540.geopotential number by the normal gravity value computed on the HA0540. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 HA0540.degrees latitude (g = 980.6199 gals.). HA0540 HA0540. The modeled gravity was interpolated from observed gravity values. HA0540 HA0540. The following values were computed from the NAD 83(2011) position. HA0540 HA0540: North East Units Scale Factor Converg. HA0540; SPC IN W - 301,769.341 927,568.125 MT 0.99997602 +0 11 34.8 - 990,054.91 3,043,196.42 sFT 0.99997602 +0 11 34.8 HA0540;SPC IN W - 4,202,070.316 520,238.177 MT 0.99960504 +0 08 30.3 HA0540;UTM 16 HA0540 HA0540! - Elev Factor x Scale Factor = Combined Factor  $- 0.99998546 \times 0.99997602 = 0.99996148$ HA0540!SPC IN W  $- 0.99998546 \times 0.99960504 = 0.99959051$ HA0540!UTM 16 HA0540 HA0540 SUPERSEDED SURVEY CONTROL HA0540 HA0540 NAD 83(2007)- 37 57 57.68510(N) 086 46 10.54725(W) AD( ) 0 HA0540 ELLIP H (02/10/07) 92.693 (m) GP( ) 086 46 10.54786(W) AD( HA0540 NAD 83(1997)- 37 57 57.68478(N) ) 1 HA0540 NAD 83(1993)- 37 57 57.68477(N) 086 46 10.54787(W) AD( ) 1 HA0540 ELLIP H (08/25/97) 92.695 (m) GP( ) 4 2 HA0540 NAVD 88 (08/25/97) 124.63 (m) 408.9 (f) LEVELING 3 HA0540 NGVD 29 (??/??/92) 124.738 (m) 409.24 (f) ADJ UNCH 12 HA0540 HA0540.Superseded values are not recommended for survey control. HA0540 HA0540.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. HA0540.See file dsdata.txt to determine how the superseded data were derived. HA0540 HA0540_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SEH2023802070(NAD 83) HA0540 HA0540_MARKER: DB = BENCH MARK DISK HA0540 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT HA0540_SP_SET: SET IN TOP OF CONCRETE MONUMENT HA0540_STAMPING: S 329 1965 HA0540 MARK LOGO: CGS HA0540_MAGNETIC: N = NO MAGNETIC MATERIAL HA0540 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO HA0540+STABILITY: SURFACE MOTION HA0540 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR HA0540+SATELLITE: SATELLITE OBSERVATIONS - April 18, 2011 HA0540 HA0540 HISTORY Report By - Date Condition - 1965 HA0540 HISTORY MONUMENTED CGS HA0540 HISTORY - 19960804 GOOD NGS

HA0540 HISTORY - 20080226 GOOD JCLS HA0540 HISTORY - 20110418 GOOD **JCLS** HA0540 HA0540 STATION DESCRIPTION HA0540 HA0540'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 HA0540'1.2 MI N FROM TELL CITY. HA0540'ABOUT 1.0 MILE NORTH ALONG MAIN STREET FROM THE POST OFFICE AT HA0540'TELL CITY, THENCE 0.2 MILE NORTH ALONG STATE HIGHWAY 66, IN SECTION HA0540'29, T 6 S, R 3 W, 69 FEET EAST OF THE CENTER LINE OF THE HIGHWAY, HA0540'35 FEET NORTH OF THE CENTER LINE OF WINKELRIED STREET, 19 1/2 FEET HA0540'NORTH-NORTHEAST OF A FIRE HYDRANT, 17 1/2 FEET NORTH OF A PIPE FENCE HA0540'CORNER, 2 FEET WEST OF A STEEL MESH FENCE, ABOUT LEVEL WITH THE HA0540'HIGHWAY, SET IN THE TOP OF A CONCRETE POST FLUSH WITH THE GROUND. HA0540 HA0540 **STATION RECOVERY (1996)** HA0540 HA0540'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1996 (WCW) HA0540'RECOVERED IN GOOD CONDITION AS DESCRIBED WITH THE FOLLOWING CHANGES. HA0540'THE STATION IS LOCATED 16.0 M (52.5 FT) NORTH OF WINKELRIED STREET HA0540'CENTER, 8.0 M (26.2 FT) EAST OF ASPHALT CEMETARY ACCESS DRIVE, 0.6 M HA0540'(2.0 FT) WEST OF A FOUR FT CHAIN LINK CEMETARY PERIMETER FENCE. HA0540 HA0540 **STATION RECOVERY (2008)** HA0540 HA0540'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2008 HA0540'RECOVERED IN GOOD CONDITION. HA0540 HA0540 **STATION RECOVERY (2011)** HA0540 HA0540'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011

HA0540'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 28, 2013 JA0881 ********** JA0881 CBN - This is a Cooperative Base Network Control Station. JA0881 DESIGNATION - Q 314 JA0881 PID - JA0881 JA0881 STATE/COUNTY- IN/KNOX JA0881 COUNTRY - US JA0881 USGS QUAD - FRITCHTON (1988) JA0881 JA0881 *CURRENT SURVEY CONTROL JA0881 JA0881* NAD 83(2011) POSITION- 38 41 02.76465(N) 087 27 22.31114(W) ADJUSTED JA0881* NAD 83(2011) ELLIP HT- 129.404 (meters) (06/27/12) ADJUSTED JA0881* NAD 83(2011) EPOCH - 2010.00 JA0881* NAVD 88 ORTHO HEIGHT - 161.275 (meters) 529.12 (feet) ADJUSTED JA0881 JA0881 NAD 83(2011) X - 221,268.728 (meters) COMP JA0881 NAD 83(2011) Y - -4,980,509.834 (meters) COMP JA0881 NAD 83(2011) Z - 3,965,083.707 (meters) COMP JA0881 LAPLACE CORR --2.77 (seconds) DEFLEC12A JA0881 GEOID HEIGHT --31.88 (meters) GEOID12A JA0881 DYNAMIC HEIGHT -161.175 (meters) 528.79 (feet) COMP JA0881 MODELED GRAVITY - 980,004.9 (mgal) NAVD 88 JA0881 JA0881 VERT ORDER - FIRST CLASS II JA0881 JA0881 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JA0881 Type JA0881 -----0.93 2.20 JA0881 NETWORK JA0881 -----JA0881 MEDIAN LOCAL ACCURACY AND DIST (015 points) 1.09 2.49 91.78 JA0881 -----JA0881 NOTE: Click here for information on individual local accuracy JA0881 values and other accuracy information. JA0881 JA0881 JA0881. The horizontal coordinates were established by GPS observations JA0881.and adjusted by the National Geodetic Survey in June 2012. JA0881 JA0881.NAD 83(2011) refers to NAD 83 coordinates where the reference JA0881.frame has been affixed to the stable North American tectonic plate. See JA0881.NA2011 for more information. for more information. JA0881 JA0881. The horizontal coordinates are valid at the epoch date displayed above JA0881.which is a decimal equivalence of Year/Month/Day. JA0881 JA0881. The orthometric height was determined by differential leveling and JA0881.adjusted by the NATIONAL GEODETIC SURVEY JA0881.in June 1991. JA0881 JA0881.Photographs are available for this station. JA0881 JA0881.The X, Y, and Z were computed from the position and the ellipsoidal ht.

JA0881 JA0881. The Laplace correction was computed from DEFLEC12A derived deflections. JA0881 JA0881. The ellipsoidal height was determined by GPS observations JA0881 and is referenced to NAD 83. JA0881 JA0881. The dynamic height is computed by dividing the NAVD 88 JA0881 geopotential number by the normal gravity value computed on the JA0881.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA0881.degrees latitude (g = 980.6199 gals.). JA0881 JA0881. The modeled gravity was interpolated from observed gravity values. JA0881 JA0881. The following values were computed from the NAD 83(2011) position. JA0881 JA0881; Units Scale Factor Converg. North East JA0881; SPC IN W - 381,494.745 867,558.014 MT 0.99997962 -0 13 59.0 - 1,251,620.68 2,846,313.25 sFT 0.99997962 -0 13 59.0 JA0881;SPC IN W JA0881;UTM 16 - 4,281,820.646 460,321.911 MT 0.99961939 -0 17 06.5 JA0881 JA0881! - Elev Factor x Scale Factor = Combined Factor JA0881!SPC IN W - 0.99997970 x 0.99997962 = 0.99995932 JA0881!UTM 16 - 0.99997970 x 0.99961939 = 0.99959909 JA0881 JA0881 SUPERSEDED SURVEY CONTROL JA0881 JA0881 NAD 83(2007)- 38 41 02.76474(N) 087 27 22.31199(W) AD( ) 0 JA0881 ELLIP H (02/10/07) 129.425 (m) GP( ) JA0881 NAD 83(1997)- 38 41 02.76479(N) 087 27 22.31212(W) AD( ) B JA0881 ELLIP H (04/10/98) 129.430 (m) GP( ) 4 1 JA0881 NAVD 88 (04/10/98) 161.28 (m) 529.1 (f) LEVELING 3 JA0881 NGVD 29 (??/??/92) 161.398 (m) 529.52 (f) ADJ UNCH 12 JA0881 JA0881.Superseded values are not recommended for survey control. JA0881 JA0881.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA0881.See file dsdata.txt to determine how the superseded data were derived. JA0881 JA0881_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH6032181820(NAD 83) JA0881 JA0881_MARKER: DB = BENCH MARK DISK JA0881 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA0881_SP_SET: CONCRETE POST JA0881_STAMPING: Q 314 1965 JA0881 MARK LOGO: CGS JA0881_MAGNETIC: N = NO MAGNETIC MATERIAL JA0881 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA0881+STABILITY: SURFACE MOTION JA0881 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA0881+SATELLITE: SATELLITE OBSERVATIONS - September 09, 2011 JA0881 JA0881 HISTORY - Date Condition Report By - 1965 JA0881 HISTORY MONUMENTED CGS JA0881 HISTORY - 1986 GOOD NGS

JA0881 HISTORY - 19970904 GOOD SEC JA0881 HISTORY - 20050328 GOOD INDIV JA0881 HISTORY - 20090413 GOOD GEOCAC JA0881 HISTORY - 20110811 GOOD JCLS JA0881 HISTORY - 20110909 GOOD JCLS JA0881 JA0881 STATION DESCRIPTION JA0881 JA0881'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 JA0881'3.6 MI E FROM VINCENNES. JA0881'ABOUT 3.6 MILES EAST ALONG THE BALTIMORE AND OHIO RAILROAD FROM JA0881'THE STATION AT VINCENNES. IN FRACTIONAL SECTION 22, T 3 N, R 9 W. JA0881'30 FEET WEST OF THE SECOND POLE WEST OF MILEPOST 184-40, 32 FEET JA0881'SOUTH OF THE SOUTH RAIL, 324 FEET EAST OF THE CENTER LINE OF A JA0881'PRIVATE DRIVEWAY LEADING TO THE HENRY DECKER FARMHOUSE WHICH IS JA0881'LOCATED ON THE SOUTH SIDE OF U.S. HIGHWAY 50, 36 FEET NORTH OF JA0881'THE CENTERLINE OF THE HIGHWAY, 17 FEET EAST OF UNDERGROUND CABLE JA0881'MARKER POST NUMBER 6-S, IN LINE WITH A ROW OF TELEPHONE POLES, JA0881'1.7 FEET NORTH OF A METAL WITNESS PSOT, ABOUT LEVEL WITH THE JA0881'HIGHWAY ABOUT 2 FEET BELOW THE LEVEL OF THE TRACK, AND SET IN THE JA0881'TOP OF A CONCRETE POST PROJECTING 4 INCHES. JA0881 JA0881 **STATION RECOVERY (1986)** JA0881 JA0881'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1986 JA0881'RECOVERED IN GOOD CONDITION WITH THE FOLLOWING EXCEPTIONS. THE JA0881'BALTIMORE AND OHIO RAILROAD IS NOW THE CHESSIE SYSTEM RAILROAD. JA0881'DELETE--30 FT WEST OF THE SECOND POLE WEST OF MILEPOST 184-40. JA0881'ADD--29.8 M (97.8 FT) WEST OF MILEPOST 185. JA0881 JA0881 **STATION RECOVERY (1997)** JA0881 JA0881'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) JA0881'5.80 KM (3.60 MI) EAST OF VINCENNES. AT JUNCTION OF U.S. HIGHWAY 50 JA0881'AND U.S. HIGHWAY 150 EAST AND U.S. HIGHWAY 41 IN VINCENNES, HEADING JA0881'EAST TOWARD WASHINGTON, GO 3.22 KILOMETERS (2.00 MI) TO NORTHEAST 300 JA0881'STREET. TURN LEFT, NORTH AND GO 1.21 KILOMETERS (0.75 MI) TO FIRST JA0881'STOP SIGN SOUTH OF RAILROAD TRACKS. THIS IS OLD U.S. HIGHWAY 50. TURN JA0881'RIGHT, EAST ON OLD U.S. HIGHWAY 50 AND GO 0.48 KILOMETER (0.30 MI) JA0881'EAST TO THE STATION, 10.80 METERS (35.43 FT) NORTH OF CENTER OF OLD JA0881'HIGHWAY 50, 9.88 METERS (32.41 FT) SOUTH OF INSIDE SOUTH RAIL, 29.80 JA0881'METERS (97.77 FT) NORTHWEST OF TELEPHONE POLE 26 (AT TOP OF POLE JA0881'NORTHWEST SIDE), 9.30 METERS (30.51 FT) WEST OF CENTER OF TELEPHONE JA0881'POLE, 30.00 METERS (98.42 FT) SOUTHWEST OF MILE MARKER 185 AND 27.30 JA0881'METERS (89.57 FT) SOUTH OF THE CENTER OF OLD WHEATLAND ROAD. JA0881'OWNERSHIP--CHESSIE SYSTEM RAILROAD. STATION IS SET IN THE TOP OF A 30 JA0881'CM ROUND CONCRETE POST PROJECTING 10 CM ABOVE GROUND. LOCATED 0.52 JA0881'METER (1.71 FT) NORTH OF A METAL WITNESS POST, LEVEL WITH OLD HIGHWAY JA0881'50, 0.61 METER (2.00 FT) BELOW LEVEL OF RAILROAD TRACKS. THE STATION JA0881'IS LOCATED ABOUT 22.54 KILOMETERS (14.00 MI) WEST OF WASHINGTON, 57.74 JA0881'KILOMETERS (35.85 MI) SOUTHEAST OF SULLIVAN, OR 43.47 KILOMETERS JA0881'(27.00 MI) NORTHEAST OF PRINCETON. JA0881 JA0881 **STATION RECOVERY (2005)** 

JA0881 JA0881'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2005 (MGB) JA0881'RECOVERED IN GOOD CONDITION. JA0881 JA0881 **STATION RECOVERY (2009)** JA0881 JA0881'RECOVERY NOTE BY GEOCACHING 2009 (CJJ) JA0881'RECOVERED. IN GOOD CONDITION. IF YOU NEED ME TO INSPECT ANY MORE JA0881'BENCHMARKS, JUST CONTACT ME. THANKS, COLTON JUNOD JA0881 JA0881 **STATION RECOVERY (2011)** JA0881 JA0881'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 JA0881'RECOVERED IN GOOD CONDITION. JA0881 JA0881 **STATION RECOVERY (2011)** JA0881 JA0881'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2011 JA0881'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 JA1047 *********** JA1047 CBN - This is a Cooperative Base Network Control Station. JA1047 DESIGNATION - N 316 JA1047 PID - JA1047 JA1047 STATE/COUNTY- IN/WARRICK JA1047 COUNTRY - US JA1047 USGS QUAD - ELBERFELD (1988) JA1047 JA1047 *CURRENT SURVEY CONTROL JA1047 JA1047* NAD 83(2011) POSITION- 38 09 33.78415(N) 087 26 44.67273(W) ADJUSTED JA1047* NAD 83(2011) ELLIP HT- 105.420 (meters) (06/27/12) ADJUSTED JA1047* NAD 83(2011) EPOCH - 2010.00 JA1047* NAVD 88 ORTHO HEIGHT - 136.814 (meters) 448.86 (feet) ADJUSTED JA1047 JA1047 NAD 83(2011) X - 223,789.854 (meters) COMP JA1047 NAD 83(2011) Y - -5,016,611.824 (meters) COMP JA1047 NAD 83(2011) Z - 3,919,434.914 (meters) COMP JA1047 LAPLACE CORR --1.48 (seconds) DEFLEC12A JA1047 GEOID HEIGHT --31.40 (meters) GEOID12A JA1047 DYNAMIC HEIGHT -136.721 (meters) 448.56 (feet) COMP JA1047 MODELED GRAVITY - 979,951.1 (mgal) NAVD 88 JA1047 JA1047 VERT ORDER - FIRST CLASS II JA1047 JA1047 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) JA1047 Type JA1047 -----JA1047 NETWORK 0.87 2.04 JA1047 ------JA1047 MEDIAN LOCAL ACCURACY AND DIST (001 points) 0.60 1.45 2.50JA1047 -----JA1047 NOTE: Click here for information on individual local accuracy JA1047 values and other accuracy information. JA1047 JA1047 JA1047. The horizontal coordinates were established by GPS observations JA1047.and adjusted by the National Geodetic Survey in June 2012. JA1047 JA1047.NAD 83(2011) refers to NAD 83 coordinates where the reference JA1047.frame has been affixed to the stable North American tectonic plate. See JA1047.NA2011 for more information. for more information. JA1047 JA1047. The horizontal coordinates are valid at the epoch date displayed above JA1047.which is a decimal equivalence of Year/Month/Day. JA1047 JA1047. The orthometric height was determined by differential leveling and JA1047.adjusted by the NATIONAL GEODETIC SURVEY JA1047.in June 1991. JA1047 JA1047. The X, Y, and Z were computed from the position and the ellipsoidal ht. JA1047 JA1047.The Laplace correction was computed from DEFLEC12A derived deflections.

JA1047 JA1047. The ellipsoidal height was determined by GPS observations JA1047.and is referenced to NAD 83. JA1047 JA1047. The dynamic height is computed by dividing the NAVD 88 JA1047.geopotential number by the normal gravity value computed on the JA1047. Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 JA1047.degrees latitude (g = 980.6199 gals.). JA1047 JA1047. The modeled gravity was interpolated from observed gravity values. JA1047 JA1047. The following values were computed from the NAD 83(2011) position. JA1047 JA1047: North East Units Scale Factor Converg. JA1047; SPC IN W - 323,246.857 868,238.742 MT 0.99997909 -0 13 26.1 JA1047;SPC IN W - 1,060,519.06 2,848,546.61 sFT 0.99997909 -0 13 26.1 - 4,223,593.152 460,949.764 MT 0.99961878 -0 16 31.5 JA1047;UTM 16 JA1047 JA1047! - Elev Factor x Scale Factor = Combined Factor JA1047!SPC IN W - 0.99998346 x 0.99997909 = 0.99996255 - 0.99998346 x 0.99961878 = 0.99960224 JA1047!UTM 16 JA1047 JA1047 SUPERSEDED SURVEY CONTROL JA1047 JA1047 NAD 83(2007)- 38 09 33.78419(N) 087 26 44.67356(W) AD( ) 0 JA1047 ELLIP H (02/10/07) 105.451 (m) GP( ) JA1047 NAD 83(1997)- 38 09 33.78408(N) 087 26 44.67396(W) AD( ) B JA1047 ELLIP H (04/10/98) 105.480 (m) GP( ) 4 1 JA1047 NAVD 88 (04/10/98) 136.81 (m) 448.9 (f) LEVELING 3 JA1047 NGVD 29 (??/??/92) 136.931 (m) 449.25 (f) ADJ UNCH 12 JA1047 JA1047.Superseded values are not recommended for survey control. JA1047 JA1047.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. JA1047.See file dsdata.txt to determine how the superseded data were derived. JA1047 JA1047_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH6094923593(NAD 83) JA1047 JA1047_MARKER: DB = BENCH MARK DISK JA1047 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT JA1047_SP_SET: SET IN TOP OF CONCRETE MONUMENT JA1047_STAMPING: N 316 1965 JA1047_MARK LOGO: CGS JA1047_MAGNETIC: N = NO MAGNETIC MATERIAL JA1047_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO JA1047+STABILITY: SURFACE MOTION JA1047 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR JA1047+SATELLITE: SATELLITE OBSERVATIONS - September 02, 1997 JA1047 JA1047 HISTORY - Date Condition Report By JA1047 HISTORY - 1965 MONUMENTED CGS JA1047 HISTORY - 19910131 GOOD USPSQD - 19970902 GOOD JA1047 HISTORY SEC JA1047 HISTORY - 20090828 GOOD ACCU

JA1047 JA1047 STATION DESCRIPTION JA1047 JA1047'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 JA1047'0.1 MI SE FROM ELBERFELD. JA1047'ABOUT 0.1 MILE SOUTHEAST ALONG MAIN STREET FROM THE POST OFFICE JA1047'AT ELBERFELD, IN SECTION 20, T 4 S, R 9 W, 6 POLES NORTHEAST OF JA1047'MILEPOST 120, 232 FEET NORTHEAST OF THE CENTER LINE OF MAIN JA1047'STREET, 82 FEET NORTHWEST ACROSS A PAVED STREET FROM THE AFTERALL JA1047'HOUSE, 44 FEET NORTHEAST OF A TELEPHONE POLE, 41 FEET NORTHWEST JA1047'OF THE CENTER LINE OF A PAVED ROAD, 28 FEET SOUTHEAST OF THE JA1047'SOUTHEAST RAIL OF THE MAIN TRACK, 75 FEET SOUTHWEST OF A POWER JA1047'POLE, 1.5 FEET WEST OF A METAL WITNESS POST, ABOUT LEVEL WITH THE JA1047'TRACK, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 5 INCHES. JA1047 JA1047 **STATION RECOVERY (1991)** JA1047 JA1047'RECOVERY NOTE BY US POWER SQUADRON 1991 (TCR) JA1047'RECOVERED IN GOOD CONDITION. JA1047 JA1047 **STATION RECOVERY (1997)** JA1047 JA1047'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) JA1047'THE STATION IS LOCATED 1.3 MILES (2.1 KM) EAST OF INTERSTATE HIGHWAY JA1047'164, 0.6 MILES (1.0 KM) SOUTH OF INTERSTATE HIGHWAY 64, IN THE TOWN OF JA1047'ELBERFELD. TO REACH THE STATION FROM THE INTERCHANGE OF INTERSTATE JA1047'HIGHWAYS 64, 164, AND STATE HIGHWAY 57, GO NORTH ON STATE HIGHWAY 57 JA1047'FOR 0.15 MILES (0.24 KM) TO A CROSSROAD. TURN RIGHT AT NOBLE CHAPEL JA1047'ROAD AND GO EAST FOR 1.1 MILES (1.8 KM) TO A CROSSROAD, TURN RIGHT ON JA1047'NORTH SECOND STREET AND GO SOUTH FOR 0.9 MILES (1.4 KM) TO A JA1047'CROSSROAD, TURN LEFT ON MAIN STREET AND GO 0.1 MILES (0.2 KM) TO THE JA1047'FIRST CROSSROAD OVER RAILROAD TRACKS, TURN LEFT AT EAST FRONT STREET JA1047'AND GO NORTH 0.04 MILES (0.06 KM) TO STATION ON LEFT. JA1047'OWNERSHIP--INDIANA SOUTHERN RAILROAD, GENERAL MANAGER, DICK NEWMAN, JA1047'PHONE 812-354-8080. THE STATION IS SET IN A ROUND CONCRETE MONUMENT JA1047'FLUSH WITH GROUND, ABOUT LEVEL WITH RAILROAD TRACKS. IT IS 71.6 JA1047'METERS (234.9 FT) NORTHEAST OF THE CENTERLINE OF MAIN STREET, 22.71 JA1047'METERS (74.51 FT) SOUTHWEST OF POWER POLE 661-352, 14.48 METERS (47.51 JA1047'FT) WEST OF CENTERLINE OF EAST FRONT STREET, 8.47 METERS (27.79 FT) JA1047'SOUTHEAST OF SOUTHEAST RAIL AND 0.47 METERS (1.54 FT) WEST OF METAL JA1047'WITNESS POST. JA1047 JA1047 **STATION RECOVERY (2009)** JA1047 JA1047'RECOVERY NOTE BY ACCU AIR SURVEYS INCORPORATED 2009 (WJC) JA1047'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 HA0568 ********* HA0568 FBN - This is a Federal Base Network Control Station. HA0568 DESIGNATION - HONEY HA0568 PID - HA0568 HA0568 STATE/COUNTY- IN/SPENCER HA0568 COUNTRY - US HA0568 USGS QUAD - ROCKPORT (1982) HA0568 HA0568 *CURRENT SURVEY CONTROL HA0568 HA0568* NAD 83(2011) POSITION- 37 56 26.87993(N) 087 02 26.57648(W) ADJUSTED HA0568* NAD 83(2011) ELLIP HT- 88.388 (meters) (06/27/12) ADJUSTED HA0568* NAD 83(2011) EPOCH - 2010.00 HA0568* NAVD 88 ORTHO HEIGHT - 119.659 (meters) 392.58 (feet) ADJUSTED HA0568 HA0568 NAD 83(2011) X - 260,017.990 (meters) COMP HA0568 NAD 83(2011) Y - -5,029,825.479 (meters) COMP HA0568 NAD 83(2011) Z - 3,900,318.237 (meters) COMP HA0568 LAPLACE CORR --2.52 (seconds) DEFLEC12A HA0568 GEOID HEIGHT --31.26 (meters) GEOID12A HA0568 DYNAMIC HEIGHT -119.579 (meters) 392.32 (feet) COMP HA0568 MODELED GRAVITY - 979,958.7 (mgal) NAVD 88 HA0568 HA0568 VERT ORDER - FIRST CLASS II HA0568 HA0568 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) HA0568 Type Horiz Ellip Dist(km) HA0568 -----HA0568 NETWORK 0.56 1.02 HA0568 -----HA0568 MEDIAN LOCAL ACCURACY AND DIST (034 points) 0.71 1.33 116.76 HA0568 -----HA0568 NOTE: Click here for information on individual local accuracy HA0568 values and other accuracy information. HA0568 HA0568 HA0568. The horizontal coordinates were established by GPS observations HA0568.and adjusted by the National Geodetic Survey in June 2012. HA0568 HA0568.NAD 83(2011) refers to NAD 83 coordinates where the reference HA0568.frame has been affixed to the stable North American tectonic plate. See HA0568.NA2011 for more information. for more information. HA0568 HA0568. The horizontal coordinates are valid at the epoch date displayed above HA0568.which is a decimal equivalence of Year/Month/Day. HA0568 HA0568. The orthometric height was determined by differential leveling and HA0568.adjusted by the NATIONAL GEODETIC SURVEY HA0568.in June 1991. HA0568 HA0568. The X, Y, and Z were computed from the position and the ellipsoidal ht. HA0568 HA0568. The Laplace correction was computed from DEFLEC12A derived deflections.

HA0568 HA0568. The ellipsoidal height was determined by GPS observations HA0568.and is referenced to NAD 83. HA0568 HA0568. The dynamic height is computed by dividing the NAVD 88 HA0568.geopotential number by the normal gravity value computed on the HA0568.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 HA0568.degrees latitude (g = 980.6199 gals.). HA0568 HA0568. The modeled gravity was interpolated from observed gravity values. HA0568 HA0568. The following values were computed from the NAD 83(2011) position. HA0568 HA0568; North East Units Scale Factor Converg. HA0568;SPC IN W - 298,924.142 903,746.095 MT 0.99996684 +0 01 34.3 HA0568;SPC IN W - 980,720.29 2,965,040.31 sFT 0.99996684 +0 01 34.3 HA0568;UTM 16 - 4,199,247.469 496,422.399 MT 0.99960016 -0 01 30.1 HA0568 HA0568! - Elev Factor x Scale Factor = Combined Factor HA0568!SPC IN W - 0.99998613 x 0.99996684 = 0.99995297 HA0568!UTM 16 - 0.99998613 x 0.99960016 = 0.99958630 HA0568 HA0568: Primary Azimuth Mark Grid Az HA0568:SPC IN W - GRAND 103 20 48.9 103 23 53.3 HA0568:UTM 16 - GRAND HA0568 HA0568 |------ | HA0568 | PID Reference Object Distance Geod. Az | dddmmss.s HA0568 APPROX. 5.1 KM 1032223.2 | HA0568 HA0558 GRAND HA0568 | CG8036 HONEY AZ MK | 1801141.7 34.220 METERS 21143 32.263 METERS 32432 1801141.7 | HA0568 HA0569 HONEY RM 1 HA0568 HA0567 HONEY RM 2 HA0568 HA0568 SUPERSEDED SURVEY CONTROL HA0568 HA0568 HA0568 NAD 83(2007)- 37 56 26.87997(N) 087 02 26.57730(W) AD( ) 0 HA0568 ELLIP H (02/10/07) 88.414 (m) GP( ) HA0568 NAD 83(1997)- 37 56 26.88001(N) 087 02 26.57702(W) AD( ) B HA0568 ELLIP H (04/10/98) 88.437 (m) GP( ) 4 1 HA0568 NAD 83(1993)- 37 56 26.88242(N) 087 02 26.57640(W) AD( ) 3 HA0568 NAD 83(1986)- 37 56 26.88920(N) 087 02 26.57987(W) AD( ) 3 HA0568 NAD 27 - 37 56 26.70800(N) 087 02 26.59800(W) AD( ) 3 HA0568 NAVD 88 (04/10/98) 119.66 (m) 392.6 (f) LEVELING 3 HA0568 NGVD 29 (??/??/92) 119.759 (m) 392.91 (f) ADJ UNCH 12 HA0568 HA0568.Superseded values are not recommended for survey control. HA0568 HA0568.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. HA0568.See file dsdata.txt to determine how the superseded data were derived. HA0568 HA0568_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDG9642299247(NAD 83) HA0568

HA0568_MARKER: DS = TRIANGULATION STATION DISK HA0568 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT HA0568 SP SET: SET IN TOP OF CONCRETE MONUMENT HA0568_STAMPING: HONEY 1946 HA0568 MARK LOGO: CGS HA0568_MAGNETIC: O = OTHER; SEE DESCRIPTION HA0568 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO HA0568+STABILITY: SURFACE MOTION HA0568_SATELLITE: THE SITE LOCATION WAS REPORTED AS NOT SUITABLE FOR HA0568+SATELLITE: SATELLITE OBSERVATIONS - July 06, 2012 HA0568 HA0568 HISTORY - Date Condition Report By HA0568 HISTORY - 1946 MONUMENTED CGS HA0568 HISTORY - 1965 GOOD CGS HA0568 HISTORY - 1965 GOOD AIRSUR HA0568 HISTORY - 1965 GOOD CGS - 19970902 GOOD SEC HA0568 HISTORY - 19980727 GOOD WOOLPT HA0568 HISTORY HA0568 HISTORY - 20030708 GOOD INDOT HA0568 HISTORY - 20100323 GOOD JCLS HA0568 HISTORY - 20100722 GOOD GEOCAC HA0568 HISTORY - 20120706 GOOD HA0568 HISTORY - 20120707 GOOD HA0568 HA0568 STATION DESCRIPTION HA0568 HA0568'DESCRIBED BY COAST AND GEODETIC SURVEY 1946 (WJC) HA0568'THIS STATION IS 5.0 MILES SOUTH OF THE POST OFFICE IN CHRISNEY AT A HA0568'CURVE IN STATE HIGHWAY 45. THE STATION MARK IS 303.5 FEET NORTH HA0568'OF THE INTERSECTION OF THE HIGHWAY AND A GRAVEL SIDE ROAD. 37 FEET HA0568'WEST OF THE CENTERLINE OF THE HIGHWAY, AND 13 FEET NORTHEAST HA0568'OF A STANDARD WHITE WITNESS POST. THE MARK PROJECTS 6 INCHES AND THE HA0568'DISK IS STAMPED---HONEY 1946---. HA0568 HA0568'REFERENCE MARK NO. 1 IS 112.27 FEET SOUTHWEST OF THE STATION, 24 FEET HA0568'SOUTHWEST OF THE CENTERLINE OF A GRAVEL ROAD, AND 9 FEET HA0568'SOUTHWEST OF A HIGHWAY STOP SIGN. THE MARK PROJECTS 6 INCHES AND THE HA0568'DISK IS STAMPED---HONEY NO. 1 1946---. HA0568' HA0568'REFERENCE MARK NO. 2 IS 105.85 FEET WEST OF THE STATION. 20 FEET HA0568'SOUTHWEST OF THE CENTERLINE OF GRAVEL ROAD, IN THE EDGE OF A HA0568'FIELD. THE MARK PROJECTS 4 INCHES AND THE DISK IS STAMPED HA0568'---HONEY NO. 2 1946---. HA0568' HA0568'THE AZIMUTH MARK IS APPROXIMATELY 0.7 MILE SOUTH OF THE STATION ALONG HA0568'STATE HIGHWAY 45, 27 FEET EAST OF THE CENTERLINE OF THE HIGHWAY, 23 HA0568'FEET NORTH OF THE CENTERLINE OF A GRAVEL ROAD, AND 3 FEET EAST OF A HA0568'STANDARD WHITE WITNESS POST. THE MARK PROJECTS 6 HA0568'INCHES AND THE DISK IS STAMPED---HONEY 1946---. HA0568' HA0568'HEIGHT OF LIGHT ABOVE STATION MARK - 30 METERS. HA0568 HA0568 **STATION RECOVERY (1965)** HA0568

HA0568'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1965 (DDJ) HA0568'THE STATION MARK, STAMPED---HONEY 1946---IS ABOUT 4.9 MILES SOUTH HA0568'ALONG THE SOUTHERN RAILROAD FROM THE POST OFFICE AT CHRISNEY, THENCE HA0568'O.3 MILE SOUTH ALONG A GRAVELED ROAD TO A Y-INTERSECTION WITH U.S. HA0568'HIGHWAY 231, OR ABOUT 4.15 MILES NORTH ALONG THE SOUTHERN RAILROAD HA0568'FROM THE POST OFFICE AT ROCKPORT, IN SECTION 2, T 7 S, R 6 W, 112.2 HA0568'FEET NORTHEAST AND ACROSS THE ROAD FROM HONEY R.M. 1, 105.8 FEET HA0568'SOUTHEAST AND ACROSS THE ROAD FROM HONEY R.M. 2, 39 FEET EAST OF THE HA0568'CENTER LINE OF THE ROAD, 38 FEET WEST OF THE CENTER LINE OF A CURVE HA0568'IN THE HIGHWAY, 1.0 FOOT SOUTH OF A METAL WITNESS POST, ABOUT 1 FOOT HA0568'ABOVE THE LEVEL OF THE HIGHWAY, SET IN THE TOP OF A CONCRETE POST HA0568'PROJECTING 4 INCHES.

HA0568'

HA0568'R.M. 1, STAMPED---HONEY NO 1 1946---IS 112.2 FEET SOUTHWEST AND ACROSS HA0568'THE ROAD FROM HONEY 1946, 91 1/2 FEET WEST-NORTHWEST AND ACROSS THE HA0568'HIGHWAY FROM A POWER POLE, 23 FEET WEST OF THE CENTER LINE OF THE HA0568'ROAD, 10 1/2 FEET SOUTH OF A TELEPHONE POLE, ABOUT LEVEL WITH THE HA0568'ROAD, SET IN THE TOP OF A CONCRETE POST PROJECTING 5 INCHES. HA0568'

HA0568'R.M. 2, STAMPED---HONEY NO 2 1946---IS 105.8 FEET NORTHWEST AND HA0568'ACROSS THE GRAVELED ROAD FROM HONEY 1946, 24 FEET WEST OF THE CENTER HA0568'LINE OF THE ROAD, 46 FEET NORTH OF TELEPHONE POLE 405, ABOUT 1 FOOT HA0568'BELOW THE LEVEL OF THE ROAD, SET IN THE TOP OF A CONCRETE POST HA0568'PROJECTING 4 INCHES.

HA0568 HA0568

STATION RECOVERY (1965)

HA0568

HA0568'RECOVERY NOTE BY AIR SURVEY CORPORATION 1965

HA0568'THE STATION WAS RECOVERED IN GOOD CONDITION, AZIMUTH MARK HAS POLE HA0568'ON LINE.

HA0568

**STATION RECOVERY (1965)** 

HA0568 HA0568

HA0568'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1965 HA0568'5.2 MI S FROM CHRISNEY.

HA0568'ABOUT 4.9 MILES SOUTH ALONG THE SOUTHERN RAILROAD FROM THE POST HA0568'ABOUT 4.9 MILES SOUTH ALONG THE SOUTH ALONG A GRAVELED ROAD, OR HA0568'ABOUT 4.15 MILES NORTH ALONG THE SOUTHERN RAILROAD FROM THE POST HA0568'OFFICE AT ROCKPORT, IN SECTION 2, T 7 S, R 6 W, AT A Y-JUNCTION OF HA0568'THE GRAVELED ROAD AND U.S. HIGHWAY 231, 38 FEET WEST OF THE CENTER HA0568'LINE OF THE HIGHWAY, AT A CURVE IN THE HIGHWAY, 39 FEET EAST HA0568'OF THE CENTER LINE OF THE GRAVELED ROAD, 112.2 FEET NORTHEAST HA0568'AND ACROSS THE GRAVELED ROAD FROM HONEY R.M. 1, 105.8 FEET SOUTHEAST HA0568'AND ACROSS THE GRAVELED ROAD FROM HONEY R.M. 2, 1.0 FOOT SOUTH OF HA0568'AND SET IN THE TOP OF A CONCRETE POST PROJECTING 4 INCHES. HA0568 HA0568 HA0568 HA0568 HA0568

HA0568

HA0568'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) HA0568'THE STATION IS LOCATED ABOUT 25 MILES (40.2 KM) EAST OF EVANSVILLE. TO HA0568'REACH THE STATION FROM THE JUNCTION OF STATE ROUTE 231 AND STATE ROUTE HA0568'66, GO NORTH FOR 2.4 MILES (3.9 KM) ON STATE ROUTE 231 TO COUNTRY ROAD HA0568'75 EAST. THE STATION IS 11.4 METERS (37.4 FT) EAST OF CENTER OF

HA0568'COUNTRY ROAD 75 EAST AND 15.8 METERS (51.8 FT) NORTHWEST OF CENTER OF HA0568'STATE ROUTE 231. CONTACT - HENRY ALDRIDGE AT INDOT, 100 NORTH SENATE HA0568'AVENUE, INDIANAPOLIS IN 46204-2249, PHONE 317-232-6764. LOCATED AT HA0568'AZIMUTH 308 DEGREES AND 20.84 METERS (68.37 FT) TO A POWER POLE, HA0568'AZIMUTH 43 DEGREES AND 13.20 METERS (43.31 FT) TO A POWER POLE, HA0568'AZIMUTH 208 DEGREES AND 11.95 METERS (39.21 FT) TO POWER POLE NUMBER HA0568'E70-745. HA0568 HA0568 **STATION RECOVERY (1998)** HA0568 HA0568'RECOVERY NOTE BY WOOLPERT CONSULTANTS 1998 (EJR) HA0568'RECOVERED AS DESCRIBED. WOOLPERT LLP 1998 (EJR). HA0568 HA0568 **STATION RECOVERY (2003)** HA0568 HA0568'RECOVERY NOTE BY INDIANA DEPARTMENT OF TRANSPORTATION 2003 (DLF) HA0568 THE STATION IS LOCATED IN THE OHIO TOWNSHIP, APPROXIMATELY 1600 FT HA0568'SOUTH OF THE NORTH 1/4 CORNER OF THE NORTHEAST QUARTER OF SECTION 2, HA0568'T 7 S, R 6 W, 5.2 MI SOUTH OF CHRISNEY, 4.1 MI NORTH OF ROCKPORT, HA0568'27.8 MI EAST OF EVANSVILLE, 15.2 MI WEST OF TELL CITY. HA0568'OWNERSHIP--INDOT, 100 N. SENATE AVE., ROOM N642, INDIANAPOLIS, IN HA0568'46204-2249, CONTACT HENRY ALDRIDGE AT PHONE 317-232-6764. HA0568 HA0568'TO REACH THE STATION FROM THE INTERSECTION OF THE NEW NORTHBOUND RAMP HA0568'FOR US HIGHWAY 231 AND STATE ROAD 66. GO NORTH ON HIGHWAY 231 FOR 2.3 HA0568'MI TO THE Y JUNCTION OF HIGHWAY 231 AND GRAVELED COUNTY ROAD 75 EAST HA0568'AT THE CURVE IN THE HIGHWAY AND THE STATION IN THE TRIANGULAR AREA HA0568'BETWEEN THE TWO ROADS. HA0568' HA0568'THE STATION PROJECTS 6 CM ABOVE GROUND. LOCATED 11.4 M (37.4 FT) EAST HA0568'OF THE CENTER OF ROAD 75 EAST, 15.8 M (51.8 FT) NORTHWEST OF THE HA0568'CENTER OF HIGHWAY 231, 20.84 M (68.37 FT) SOUTHEAST FROM A TELEPHONE HA0568'POLE, 13.0 M (43.0 FT) SOUTHWEST FROM POWER POLE NUMBER D1228 AND HA0568'11.95 M (39.21 FT) NORTH-NORTHEAST FROM POWER POLE NUMBER E70 4 5. HA0568 HA0568 **STATION RECOVERY (2010)** HA0568 HA0568'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2010 HA0568'RECOVERED IN GOOD CONDITION. HA0568 HA0568 **STATION RECOVERY (2010)** HA0568 HA0568'RECOVERY NOTE BY GEOCACHING 2010 (DSA) HA0568'STATION MARK RECOVERED IN GOOD CONDITION. HA0568 HA0568 **STATION RECOVERY (2012)** HA0568 HA0568'RECOVERY NOTE BY FUGRO AERIAL & MOBILE MAPPING INC 2012 (MRY) HA0568'RECOVERED IN GOOD CONDITION. HA0568 HA0568 **STATION RECOVERY (2012)** HA0568 HA0568'RECOVERY NOTE BY FUGRO AERIAL & MOBILE MAPPING INC 2012

HA0568'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 AE8495 ********** AE8495 CBN - This is a Cooperative Base Network Control Station. AE8495 DESIGNATION - HARM - AE8495 AE8495 PID AE8495 STATE/COUNTY- IN/POSEY AE8495 COUNTRY - US AE8495 USGS QUAD - SOLITUDE (1981) AE8495 AE8495 *CURRENT SURVEY CONTROL AE8495 AE8495* NAD 83(2011) POSITION- 38 03 43.95848(N) 087 57 58.89618(W) ADJUSTED AE8495* NAD 83(2011) ELLIP HT- 84.675 (meters) (06/27/12) ADJUSTED AE8495* NAD 83(2011) EPOCH - 2010.00 AE8495* NAVD 88 ORTHO HEIGHT - 115.4 (meters) 379. (feet) GPS OBS AE8495 AE8495 NAVD 88 orthometric height was determined with geoid model GEOID99 -30.62 (meters) AE8495 GEOID HEIGHT -GEOID99 AE8495 GEOID HEIGHT --30.69 (meters) GEOID12A AE8495 NAD 83(2011) X - 178,433.499 (meters) COMP AE8495 NAD 83(2011) Y - -5,025,074.802 (meters) COMP AE8495 NAD 83(2011) Z - 3,910,935.238 (meters) COMP AE8495 LAPLACE CORR --1.76 (seconds) DEFLEC12A AE8495 AE8495 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) Horiz Ellip Dist(km) AE8495 Type AE8495 -----AE8495 NETWORK 0.61 1.18 AE8495 -----AE8495 MEDIAN LOCAL ACCURACY AND DIST (016 points) 0.78 1.47 43.98 AE8495 -----AE8495 NOTE: Click here for information on individual local accuracy AE8495 values and other accuracy information. AE8495 AE8495 AE8495. The horizontal coordinates were established by GPS observations AE8495.and adjusted by the National Geodetic Survey in June 2012. AE8495 AE8495.NAD 83(2011) refers to NAD 83 coordinates where the reference AE8495.frame has been affixed to the stable North American tectonic plate. See AE8495.NA2011 for more information. for more information. AE8495 AE8495. The horizontal coordinates are valid at the epoch date displayed above AE8495.which is a decimal equivalence of Year/Month/Day. AE8495 AE8495. The orthometric height was determined by GPS observations and a AE8495.high-resolution geoid model. AE8495 AE8495. The X, Y, and Z were computed from the position and the ellipsoidal ht. AE8495 AE8495. The Laplace correction was computed from DEFLEC12A derived deflections. AE8495 AE8495. The ellipsoidal height was determined by GPS observations AE8495.and is referenced to NAD 83.

AE8495 AE8495. The following values were computed from the NAD 83(2011) position. AE8495 AE8495; North Units Scale Factor Converg. East AE8495; SPC IN W - 312,767.161 822,508.995 MT 1.00004059 -0.32 39.9 - 1,026,136.93 2,698,514.93 sFT 1.00004059 -0 32 39.9 AE8495;SPC IN W - 4,213,158.232 415,226.919 MT 0.99968851 -0 35 44.9 AE8495;UTM 16 AE8495 AE8495! - Elev Factor x Scale Factor = Combined Factor  $-0.99998671 \times 1.00004059 = 1.00002730$ AE8495!SPC IN W  $- 0.99998671 \times 0.99968851 = 0.99967523$ AE8495!UTM 16 AF8495 AE8495 SUPERSEDED SURVEY CONTROL AE8495 087 57 58.89703(W) AD( AE8495 NAD 83(2007)- 38 03 43.95855(N) ) 0 AE8495 ELLIP H (02/10/07) 84.716 (m) GP( AE8495 NAD 83(1997)- 38 03 43.95839(N) 087 57 58.89752(W) AD( ) B ) 4 1 AE8495 ELLIP H (04/10/98) 84.741 (m) GP( AE8495 NAVD 88 (04/10/98) 115.3 (m) GEOID96 model used GPS OBS AE8495 AE8495.Superseded values are not recommended for survey control. AE8495 AE8495.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. AE8495.See file dsdata.txt to determine how the superseded data were derived. AE8495 AE8495_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH1522613158(NAD 83) AE8495 AE8495_MARKER: I = METAL ROD AE8495_SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+) AE8495 MARK LOGO: NGS AE8495_PROJECTION: FLUSH AE8495 MAGNETIC: N = NO MAGNETIC MATERIAL AE8495_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL AE8495_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR AE8495+SATELLITE: SATELLITE OBSERVATIONS - July 27, 2006 AE8495_ROD/PIPE-DEPTH: 11.6 meters AE8495_SLEEVE-DEPTH : 1.00 meters AE8495 AE8495 HISTORY - Date Report By Condition AE8495 HISTORY - 1997 MONUMENTED INU AE8495 HISTORY - 20030327 GOOD ILDT AE8495 HISTORY - 20060727 GOOD ILDT AF8495 AE8495 STATION DESCRIPTION AE8495 AE8495'DESCRIBED BY INDIANA UNIVERSITY 1997 (MH) AE8495'8.0 KILOMETERS (4.95 MI) SOUTHWEST OF NEW HARMONY. THE STATION IS A AE8495'STAINLESS STEEL FLANGE ENCLOSED ROD WITHOUT SLEEVE WITH PUNCH MARK ON AE8495'TOP CENTER ABOUT 0.1 METERS (0.3 FT) BELOW THE GROUND SURFACE WITH A AE8495'DEPTH OF 11.6 METERS (38.1 FT) WITH 1.0 METERS (3.3 FT) LONG SLEEVE AE8495'ENCASED IN A 5-INCH PVC PIPE WITH PVC CAP (CAP COMES OFF) SURROUNDED AE8495'BY CONCRETE. AT JUNCTION OF STATE ROAD 66 AND STATE ROAD 69 IN NEW AE8495'HARMONY, GO SOUTH 4.74 KILOMETERS (2.95 MI) ON HIGHWAY STATE ROAD 69 AE8495'TO STATE ROAD 269. TURN RIGHT, WEST FOR 1.6 KILOMETERS (1.00 MI)

AE8495'ALONG ENTRANCE ROAD TO A SIDE ROAD RIGHT (FOLLOW WABASH RIVER SIGN). AE8495'TURN RIGHT, WEST FOR 2.09 KILOMETERS (1.30 MI) ALONG ROAD TO SIGN POST AE8495'(WABASH RIVER BOAT RAMP) AND AT A ROAD RIGHT. TURN RIGHT, NORTH FOR AE8495'0.2 KILOMETERS (0.10 MI) TO A BRICK SIGN POST MARKED WABASH RIVER BOAT AE8495'RAMP. STATION IS RIGHT (EAST OF THIS POST) 23.5 METERS (77.1 FT) OR AE8495'NORTHEAST CORNER OF BRICK SIGN POST, 29.7 METERS (97.4 FT) EAST OR AE8495'NORTHEAST FROM CENTER OF ROAD NORTH AND SOUTH, 27.7 METERS (90.9 FT) AE8495'SOUTHEAST OF A 5/8 INCH 4 FOOT (1.2 M) HIGH UNDERGROUND GAS PIPELINE AE8495'VENT PIPE. OWNERSHIP - STATE OF INDIANA. CONTACT - INDIANA DEPARTMENT AE8495'OF NATURAL RESOURCES FOR ACCESS AFTER HOURS. 30.59 KILOMETERS (19.00 AE8495'MI) NORTHWEST OF MOUNT VERNON, 60.38 KILOMETERS (37.50 MI) SOUTHWEST AE8495'OF PRINCETON, 45.08 KILOMETERS (28.00 MI) SOUTHEAST OF EVANSVILLE. AE8495 AE8495 **STATION RECOVERY (2003)** AE8495 AE8495'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2003 (BES) AE8495'RECOVERED AS DESCRIBED AE8495' AE8495' AE8495 AE8495 **STATION RECOVERY (2006)** AE8495 AE8495'RECOVERY NOTE BY ILLINOIS DEPARTMENT OF TRANSPORTATION 2006 (WAE) AE8495'NO WITNESS POST. DESCRIPTION TIES ADEQUATE

1 National Geodetic Survey, Retrieval Date = FEBRUARY 26, 2013 HA1116 ********* HA1116 CBN - This is a Cooperative Base Network Control Station. HA1116 DESIGNATION - B 326 HA1116 PID - HA1116 HA1116 STATE/COUNTY- IN/VANDERBURGH HA1116 COUNTRY - US HA1116 USGS QUAD - EVANSVILLE SOUTH (1981) HA1116 HA1116 *CURRENT SURVEY CONTROL HA1116 HA1116* NAD 83(2011) POSITION- 37 56 52.49430(N) 087 30 41.69388(W) ADJUSTED HA1116* NAD 83(2011) ELLIP HT- 84.080 (meters) (06/27/12) ADJUSTED HA1116* NAD 83(2011) EPOCH - 2010.00 HA1116* NAVD 88 ORTHO HEIGHT - 115.109 (meters) 377.65 (feet) ADJUSTED HA1116 HA1116 NAD 83(2011) X - 218,652.528 (meters) COMP HA1116 NAD 83(2011) Y - -5,031,303.920 (meters) COMP HA1116 NAD 83(2011) Z - 3,900,938.395 (meters) COMP HA1116 LAPLACE CORR --1.18 (seconds) DEFLEC12A HA1116 GEOID HEIGHT --31.01 (meters) GEOID12A HA1116 DYNAMIC HEIGHT -115.030 (meters) 377.39 (feet) COMP HA1116 MODELED GRAVITY - 979,942.5 (mgal) NAVD 88 HA1116 HA1116 VERT ORDER - FIRST CLASS II HA1116 HA1116 FGDC Geospatial Positioning Accuracy Standards (95% confidence, cm) HA1116 Type Horiz Ellip Dist(km) HA1116 -----HA1116 NETWORK 0.81 1.84 HA1116 -----HA1116 MEDIAN LOCAL ACCURACY AND DIST (002 points) 0.60 1.41 11.61 HA1116 -----HA1116 NOTE: Click here for information on individual local accuracy HA1116 values and other accuracy information. HA1116 HA1116 HA1116.The horizontal coordinates were established by GPS observations HA1116.and adjusted by the National Geodetic Survey in June 2012. HA1116 HA1116.NAD 83(2011) refers to NAD 83 coordinates where the reference HA1116.frame has been affixed to the stable North American tectonic plate. See HA1116.NA2011 for more information. for more information. HA1116 HA1116. The horizontal coordinates are valid at the epoch date displayed above HA1116.which is a decimal equivalence of Year/Month/Day. HA1116 HA1116.The orthometric height was determined by differential leveling and HA1116.adjusted by the NATIONAL GEODETIC SURVEY HA1116.in June 1991. HA1116 HA1116.Photographs are available for this station. HA1116 HA1116.The X, Y, and Z were computed from the position and the ellipsoidal ht.

HA1116 HA1116. The Laplace correction was computed from DEFLEC12A derived deflections. HA1116 HA1116. The ellipsoidal height was determined by GPS observations HA1116.and is referenced to NAD 83. HA1116 HA1116. The dynamic height is computed by dividing the NAVD 88 HA1116.geopotential number by the normal gravity value computed on the HA1116.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45 HA1116.degrees latitude (g = 980.6199 gals.). HA1116 HA1116. The modeled gravity was interpolated from observed gravity values. HA1116 HA1116. The following values were computed from the NAD 83(2011) position. HA1116 HA1116; Units Scale Factor Converg. North East HA1116;SPC IN W - 299,799.505 862,360.479 MT 0.99998411 -0 15 48.1 - 983,592.21 2,829,261.00 sFT 0.99998411 -0 15 48.1 HA1116;SPC IN W HA1116;UTM 16 - 4,200,159.514 455,052.604 MT 0.99962488 -0 18 52.6 HA1116 - Elev Factor x Scale Factor = Combined Factor HA1116! HA1116!SPC IN W  $- 0.99998681 \times 0.99998411 = 0.99997092$ HA1116!UTM 16 - 0.99998681 x 0.99962488 = 0.99961169 HA1116 HA1116 SUPERSEDED SURVEY CONTROL HA1116 HA1116 NAD 83(2007)- 37 56 52.49435(N) 087 30 41.69469(W) AD( ) 0 HA1116 ELLIP H (02/10/07) 84.109 (m) GP( ) HA1116 NAD 83(1997)- 37 56 52.49422(N) 087 30 41.69508(W) AD( ) B HA1116 ELLIP H (04/10/98) 84.122 (m) GP( ) 4 1 HA1116 NAVD 88 (04/10/98) 115.11 (m) 377.7 (f) LEVELING 3 HA1116 NGVD 29 (??/??/92) 115.200 (m) 377.95 (f) ADJ UNCH 12 HA1116 HA1116.Superseded values are not recommended for survey control. HA1116 HA1116.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums. HA1116.See file dsdata.txt to determine how the superseded data were derived. HA1116 HA1116_U.S. NATIONAL GRID SPATIAL ADDRESS: 16SDH5505200159(NAD 83) HA1116 HA1116_MARKER: DB = BENCH MARK DISK HA1116 SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT HA1116_SP_SET: SET IN TOP OF CONCRETE MONUMENT HA1116_STAMPING: B 326 1965 HA1116 MARK LOGO: CGS HA1116_MAGNETIC: N = NO MAGNETIC MATERIAL HA1116 STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO HA1116+STABILITY: SURFACE MOTION HA1116 SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR HA1116+SATELLITE: SATELLITE OBSERVATIONS - June 14, 2010 HA1116 HA1116 HISTORY - Date Condition Report By - 1965 HA1116 HISTORY MONUMENTED CGS HA1116 HISTORY - 1988 GOOD USPSQD

HA1116 HISTORY - 19970902 GOOD SEC HA1116 HISTORY - 19981107 GOOD USPSQD HA1116 HISTORY - 20050721 GOOD JCLS JCLS HA1116 HISTORY - 20100323 GOOD HA1116 HISTORY - 20100614 GOOD GEOCAC HA1116 HA1116 STATION DESCRIPTION HA1116 HA1116'DESCRIBED BY COAST AND GEODETIC SURVEY 1965 HA1116'4.6 MI E FROM EVANSVILLE. HA1116'ABOUT 0.15 MILE SOUTHWEST ALONG SYCAMORE STREET FROM THE POST HA1116'OFFICE AT EVANSVILLE. THENCE 2.9 MILES SOUTHEAST ALONG RIVERSIDE HA1116'DRIVE, THENCE 1.5 MILES EAST ALONG POLLACK AVENUE, IN SECTION HA1116'3, T 7 S, R 10 W, 59 FEET SOUTHWEST OF THE CENTER OF THE HA1116'INTERSECTION OF VANN AVENUE, 30 FEET SOUTH OF THE CENTER LINE OF HA1116'THE AVENUE, 75 FEET WEST OF THE CENTER LINE OF VANN AVENUE, 41 HA1116'FEET WEST OF A FIRE HYDRANT, 28 FEET EAST OF A POWER POLE HA1116'BRACED BY A GUY WIRE, 6 1/2 FEET WEST OF THE BASE FOR A GUY WIRE, HA1116'1.5 FEET SOUTH OF A METAL WITNESS POST, ABOUT LEVEL WITH THE HA1116'AVENUES, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 3 HA1116'INCHES. NOTE -- THIS MARK CAN ALSO BE REACHED BY GOING 2.7 HA1116'MILES WEST ALONG STATE HIGHWAY 662 FROM THE LOCK AND DAM NUMBER HA1116'47 AT NEWBURGH, THENCE 0.5 MILE SOUTH ALONG STACER ROAD, THENCE HA1116'3.6 MILES WEST ALONG POLLACK AVENUE. HA1116 HA1116 **STATION RECOVERY (1988)** HA1116 HA1116'RECOVERY NOTE BY US POWER SQUADRON 1988 (TCR) HA1116'RECOVERED IN GOOD CONDITION. HA1116 HA1116 **STATION RECOVERY (1997)** HA1116 HA1116'RECOVERY NOTE BY SCHNEIDER ENGINEERING CORPORATION 1997 (RGR) HA1116'THE STATION IS LOCATED ABOUT 4.6 MILES (7.4 KM) EAST OF EVANSVILLE HA1116'CENTER. AT I-64 AND STATE ROAD 66 (LLOYD EXPRESSWAY) INTERSECTION GO HA1116'3.0 MILES (4.8 KM) WEST ON STATE ROAD 66 TO VANN AVENUE. TURN SOUTH HA1116'ONTO VANN. GO 2.0 MILES (3.2 KM) TO POLLACK AVENUE INTERSECTION. HA1116'STATION IS 23.82 METERS (78.15 FT) WEST-SOUTHWEST FROM CENTER OF HA1116'INTERSECTION, 8.5 METERS (27.9 FT) SOUTH OF THE CENTERLINE OF POLLACK HA1116'AVENUE, 22.3 METERS (73.2 FT) WEST OF THE CENTERLINE OF VANN AVENUE, HA1116'10.7 METERS (35.1 FT) WEST OF FIRE HYDRANT, 1.8 METERS (5.9 FT) WEST HA1116'OF NORTH GUY WIRE BASE, 10.6 METERS (34.8 FT) WEST-NORTHWEST OF EAST HA1116'POWER POLE, 8.6 METERS (28.2 FT) EAST-SOUTHEAST OF WEST POWER POLE, HA1116'3.7 METERS (12.1 FT) NORTH-NORTHWEST OF SOUTH GUY WIRE BASE AND IS HA1116'RECESSED 10 CM BELOW GROUND. HA1116 HA1116 **STATION RECOVERY (1998)** HA1116 HA1116'RECOVERY NOTE BY US POWER SQUADRON 1998 HA1116'RECOVERED IN GOOD CONDITION. HA1116 HA1116 **STATION RECOVERY (2005)** HA1116 HA1116'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2005

HA1116'RECOVERED IN GOOD CONDITION.

HA1116

HA1116 STATION RECOVERY (2010)

HA1116

HA1116'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2010

HA1116'RECOVERED IN GOOD CONDITION.

HA1116

HA1116 STATION RECOVERY (2010)

HA1116

HA1116'RECOVERY NOTE BY GEOCACHING 2010 (ACM)

HA1116'RECOVERED IN GOOD CONDITION.

## VOLUME 2

Block 9 Ground and LiDAR Control

## ORTHOIMAGERY AND LIDAR CONTROL SURVEY REPORT

### 2013 INDIANA STATEWIDE IMAGERY PROGRAM

Indiana Office of Technology

July 2013

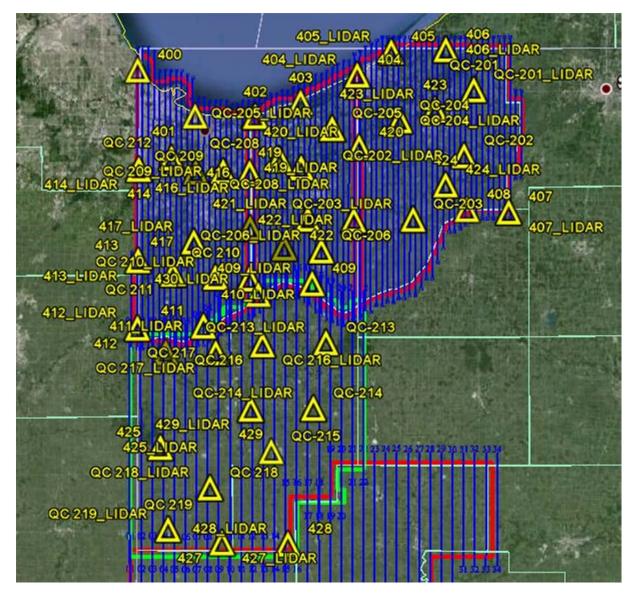
Prepared by Woolpert, Inc. 4454 Idea Center Blvd. Dayton, OH 45420

Woolpert.com



# VOLUME 2 – SECTION 1: BLOCK 9 GPS CONTROL DIAGRAM

This section contains a graphical representation of the ground control used for Block 9 of the 2013 Indiana Statewide Imagery project.



Not to Scale

# VOLUME 2 - SECTION 2: BLOCK 9 GROUND/LIDAR CONTROL COORDINATE LISTINGS

## COORDINATE SYSTEM: GRID

HORIZONTAL DATUM: NAD83 (2007) VERTICAL DATUM: NAVD88 ZONE: Indiana West (1302) GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
400	2356328.386	2830763.413	587.644	COR TENN COURT+LIDAR
401	2322064.853	2873732.211	591.419	401 COR PAINT+LIDAR
402	2321858.738	2918639.674	607.349	HATCHED AREA CORNER
403	2332307.925	2952365.723	605.186	COURT LINES/LIDAR
404	2352512.107	2994578.040	606.105	STOP BAR
405	2369861.607	3019920.177	600.147	STOP BAR
406	2371486.665	3060573.175	696.452	BRICK CORNER
407	2251038.712	3107441.584	699.867	CONCRETE CORNER
408	2252824.673	3076282.138	686.124	BRICK CORNER/LIDAR
409	2197814.917	2961107.975	671.607	CONCRETE CORNER
410	2189412.183	2920972.968	654.592	COR. CONC.
411	2165868.230	2880141.475	638.638	COR CONC SIDEWALK
412	2164248.172	2830766.962	634.219	COR PAINT STRIPE
413	2214778.434	2831289.467	719.143	COR CONC DR
414	2282549.339	2831704.269	623.409	COR CONC WALK
415	2280472.896	2874231.522	625.318	COR DRIVE@WALK
416	2280090.234	2914437.947	639.122	CONCRETE CORNER
417	2228727.619	2872842.152	759.865	CORNER SIDEWALK
418	2238920.594	2914765.272	733.006	CONCRETE CORNER
419	2283703.749	2952893.106	828.662	CONCRETE CORNER
420	2298889.963	2996074.091	802.815	CONCRETE CORNER
421	2245609.271	2957897.699	705.566	CONCRETE CORNER
422	2245102.865	2992075.460	724.127	CONCRETE CORNER
423	2327060.739	3052410.551	827.419	CONCRETE CORNER
424	2271155.028	3060463.757	716.755	CONCRETE CORNER
425	2075906.120	2847964.716	682.556	COR ASPHALT PATH
427	2005141.199	2893812.249	743.177	COR CONC DRIVE
428	2004333.169	2943106.647	740.740	COR CONC CATCH BASIN
429	2104015.555	2915344.891	692.390	CENTER OF LID
430	2201207.112	2914421.296	686.429	COR CONC.DR.

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
QC-201	2341731.648	3081605.614	814.664	SIDEWALK CORNER
QC-202	2292766.846	3074145.933	745.699	CONCRETE CORNER
QC-203	2245566.728	3036293.018	713.269	LIGHT CONCRETE CORNER
QC-204	2318694.607	3026280.002	854.136	CONCRETE CORNER
QC-205	2312878.174	2975919.657	702.719	CONCRETE CORNER
QC-206	2222082.964	2967906.342	696.319	CONCRETE CORNER
QC-207	2224220.720	2940293.091	715.369	SIDEWALK CORNER
QC-208	2290264.031	2936358.871	665.492	SIDEWALK CORNER
QC-209	2280996.131	2894687.892	626.505	COR OF WALK
QC-210	2202473.156	2889004.055	691.914	COR CONC WALK
QC-211	2204653.423	2857243.172	713.209	CONC DR.@WALK
QC-212	2290951.161	2856195.451	617.734	COR SIDEWALK
QC-213	2153654.375	2971413.804	698.418	CONCRETE CORNER
QC-214	2105051.239	2962040.322	683.083	CONCRETE CORNER
QC-215	2073024.762	2930635.321	661.645	COURT LINES/LIDAR
QC-216	2152041.360	2924114.372	712.976	COR ASPHALT DR.
QC-217	2146123.738	2889290.428	686.772	COR ASPHALT DR.
QC-218	2045898.926	2884903.497	647.709	COR CONC. DRIVE
QC-219	2015075.941	2853625.405	668.894	COR CONC DRIVE
QC-220	2146302.105	2851907.547	647.853	COR PAINT LIDAR TENNIS COURT

#### LIDAR CONTROL COORDINATES

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
400	2356328.386	2830763.413	587.644	COR TENN COURT+LIDAR
401	2322064.853	2873732.211	591.419	401 COR PAINT+LIDAR
402_LIDAR	2321412.906	2917799.033	610.344	CONCRETE
403	2332307.925	2952365.723	605.186	COURT LINES/LIDAR
404_LIDAR	2352592.267	2994590.086	605.935	SAND/GRASS
405_LIDAR	2369849.965	3019799.338	598.866	BRICK
406_LIDAR	2371477.663	3060548.225	696.541	BRICK
407_LIDAR	2251013.523	3107557.012	697.839	CONCRETE
408	2252824.673	3076282.138	686.124	BRICK CORNER/LIDAR
409_LIDAR	2197824.377	2961096.425	671.747	CONCRETE
410_LIDAR	2189473.430	2921029.040	651.413	GRAVEL
411_LIDAR	2165848.446	2880124.640	638.563	SHORT GRASS
412_LIDAR	2164282.969	2830824.858	631.203	SAND
413_LIDAR	2214728.080	2831264.489	716.334	GRAVEL
414_LIDAR	2282537.399	2831714.327	623.108	SHORT GRASS
415_LIDAR	2280464.017	2874223.447	625.171	SHORT GRASS
416_LIDAR	2280114.627	2914435.424	639.727	CONCRETE

Station	Northing	Easting	Elevation	Description
Name	US Ft.	US Ft.	US Ft.	
417_LIDAR	2228745.194	2872822.244	760.415	SHORT GRASS
418_LIDAR	2238927.706	2914917.409	743.505	GRAVEL
419_LIDAR	2283747.875	2952902.703	828.544	CONCRETE
420_LIDAR	2298906.531	2996018.533	803.428	LIGHT ASPHALT
421_LIDAR	2245623.750	2957883.295	705.884	CONCRETE
422_LIDAR	2245117.583	2992085.435	724.263	CONCRETE
423_LIDAR	2327069.475	3052483.334	829.225	CONCRETE
424_LIDAR	2271071.662	3060412.297	717.563	CONCRETE
425_LIDAR	2075927.819	2847996.896	681.737	GRAVEL
427_LIDAR	2005107.885	2893838.631	742.396	SHORT GRASS
428_LIDAR	2004322.095	2943066.272	741.103	GRAVEL
429_LIDAR	2104432.344	2915382.651	690.774	GRAVEL
430_LIDAR	2201191.161	2914401.172	686.723	SHORT GRASS
QC-201_LiDAR	2341671.456	3081342.011	811.573	GRAVEL/DIRT
QC-202_LiDAR	2292780.673	3074131.995	745.721	CONCRETE
QC-203_LiDAR	2245551.428	3036215.684	714.082	GRASS
QC-204_LiDAR	2318707.757	3026290.177	854.203	CONCRETE
QC-205_LiDAR	2312838.105	2975932.657	704.876	CONCRETE
QC-206_LiDAR	2222081.044	2967860.460	696.656	CONCRETE
QC-207_LiDAR	2224154.139	2940265.852	715.446	GRAVEL
QC-208_LiDAR	2289731.094	2936851.213	664.942	CONCRETE
QC 209_LiDAR	2281000.485	2894683.816	626.189	CONCRETE
QC 210_LiDAR	2202455.776	2888995.299	692.183	SHORT GRASS
QC 211_LiDAR	2204667.687	2857215.762	713.677	SHORT GRASS
QC 212_LiDAR	2290892.676	2856184.606	617.208	SHORT GRASS
QC-213_LiDAR	2153668.914	2971385.579	698.442	CONCRETE
QC-214_LiDAR	2105043.140	2962048.355	682.881	CONCRETE
QC-215	2073024.762	2930635.321	661.645	COURT LINES/LIDAR
QC 216_LiDAR	2152077.776	2924122.177	712.141	SHORT GRASS
QC 217_LIDAR	2146172.203	2889283.041	687.440	SHORT GRASS
QC 218_LIDAR	2045894.471	2884930.611	647.156	SHORT GRASS
QC 219_LiDAR	2015060.423	2853607.704	668.982	CONCRETE
QC-220	2146302.105	2851907.547	647.853	TENNIS COURT LINES/LIDAR

## COORDINATE SYSTEM: GEODETIC

#### HORIZONTAL DATUM: WGS 84 VERTICAL DATUM: NAVD88 GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Latitude	Longitude	E. Height US Ft.	Description
400	41°42'58.85600"	087°31'48.52846"	477.800	COR TENN COURT+LIDAR
401	41°37'22.15839"	087°22'20.43092"	481.351	401 COR PAINT+LIDAR
402	41°37'21.18612"	087°12'29.13056"	497.112	HATCHED AREA CORNER
403	41°39'04.66629"	087°05'05.06203"	494.785	COURT LINES/LIDAR
404	41°42'23.91178"	086°55'48.53329"	495.257	STOP BAR
405	41°45'14.73774"	086°50'13.76725"	488.975	STOP BAR
406	41°45'29.29545"	086°41'17.30949"	585.143	BRICK CORNER
407	41°25'36.74620"	086°31'09.30758"	588.881	CONCRETE CORNER
408	41°25'56.19480"	086°37'58.21327"	575.081	BRICK CORNER/LIDAR
409	41°16'55.84046"	087°03'10.52432"	560.702	CONCRETE CORNER
410	41°15'32.62294"	087°11'56.07987"	543.965	COR. CONC.
411	41°11'39.11635"	087°20'49.77700"	528.523	COR CONC SIDEWALK
412	41°11'21.12715"	087°31'35.51201"	524.835	COR PAINT STRIPE
413	41°19'40.40332"	087°31'32.04202"	609.597	COR CONC DR
414	41°30'49.99649"	087°31'31.13860"	513.602	COR CONC WALK
415	41°30'31.25225"	087°22'12.03855"	515.143	COR DRIVE@WALK
416	41°30'28.45152"	087°13'23.56373"	528.732	CONCRETE CORNER
417	41°21'59.95915"	087°22'28.01306"	649.719	CORNER SIDEWALK
418	41°23'41.69452"	087°13'18.39591"	622.491	CONCRETE CORNER
419	41°31'04.45952"	087°04'58.11876"	718.105	CONCRETE CORNER
420	41°33'34.10747"	086°55'30.10688"	692.056	CONCRETE CORNER
421	41°24'48.07470"	087°03'52.43817"	594.789	CONCRETE CORNER
422	41°24'42.75524"	086°56'23.87821"	613.118	CONCRETE CORNER
423	41°38'10.74353"	086°43'07.49156"	716.275	CONCRETE CORNER
424	41°28'58.05862"	086°41'24.78607"	605.678	CONCRETE CORNER
425	40°56'49.05740"	087°27'45.54865"	573.555	COR ASPHALT PATH
427	40°45'11.35452"	087°17'45.83525"	633.796	COR CONC DRIVE
428	40°45'04.05695"	087°07'05.30166"	630.868	COR CONC CATCH BASIN
429	41°01'28.76532"	087°13'08.03160"	582.517	CENTER OF LID
430	41°17'29.06719"	087°13'22.11349"	575.846	COR CONC.DR.
QC-201	41°40'34.28659"	086°36'41.95265"	703.432	SIDEWALK CORNER
QC-202	41°32'30.92520"	086°38'23.56897"	634.618	CONCRETE CORNER
QC-203	41°24'46.20864"	086°46'43.53512"	602.125	LIGHT CONCRETE CORNER

Station Name	Latitude	Longitude	E. Height US Ft.	Description
QC-204	41°36'49.03644"	086°48'51.96456"	743.152	CONCRETE CORNER
QC-205	41°35'52.59036"	086°59'55.04110"	592.081	CONCRETE CORNER
QC-206	41°20'55.58558"	087°01'41.27476"	585.393	CONCRETE CORNER
QC-207	41°21'16.72281"	087°07'43.34579"	604.622	SIDEWALK CORNER
QC-208	41°32'09.21933"	087°08'35.53364"	555.034	SIDEWALK CORNER
QC-209	41°30'37.00471"	087°17'43.18113"	516.224	COR OF WALK
QC-210	41°17'41.03901"	087°18'55.12650"	581.599	COR CONC WALK
QC-211	41°18'01.53325"	087°25'51.32953"	603.297	CONC DR.@WALK
QC-212	41°32'14.11737"	087°26'09.66083"	507.694	COR SIDEWALK
QC-213	41°09'39.45159"	087°00'55.98595"	587.725	CONCRETE CORNER
QC-214	41°01'39.26811"	087°02'58.78203"	572.892	CONCRETE CORNER
QC-215	40°56'22.73268"	087°09'48.16421"	551.856	COURT LINES/LIDAR
QC-216	41°09'23.41671"	087°11'14.36217"	602.555	COR ASPHALT DR.
QC-217	41°08'24.28603"	087°18'49.41881"	576.694	COR ASPHALT DR.
QC-218	40°51'53.86001"	087°19'43.07617"	538.498	COR CONC. DRIVE
QC-219	40°46'48.23073"	087°26'28.54065"	559.980	COR CONC DRIVE
QC-220	41°08'24.78342"	087°26'58.01639"	538.255	COR PAINT LIDAR TENNIS COURT

#### LIDAR CONTROL COORDINATES

Station Name	Latitude	Longitude	E. Height US Ft.	Description
400	41°42'58.85600"	087°31'48.52846"	477.800	COR TENN COURT+LIDAR
401	41°37'22.15839"	087°22'20.43092"	481.351	401 COR PAINT+LIDAR
402_LIDAR	41°37'16.76920"	087°12'40.19056"	500.111	CONCRETE
403	41°39'04.66629"	087°05'05.06203"	494.785	COURT LINES/LIDAR
404_LIDAR	41°42'24.70352"	086°55'48.37259"	495.088	SAND/GRASS
405_LIDAR	41°45'14.62613"	086°50'15.36201"	487.695	BRICK
406_LIDAR	41°45'29.20765"	086°41'17.63924"	585.232	BRICK
407_LIDAR	41°25'36.48991"	086°31'07.79455"	586.854	CONCRETE
408	41°25'56.19480"	086°37'58.21327"	575.081	BRICK CORNER/LIDAR
409_LIDAR	41°16'55.93396"	087°03'10.67556"	560.842	CONCRETE
410_LIDAR	41°15'33.22883"	087°11'55.34674"	540.785	GRAVEL
411_LIDAR	41°11'38.92037"	087°20'49.99642"	528.448	SHORT GRASS
412_LIDAR	41°11'21.47386"	087°31'34.75709"	521.818	SAND
413_LIDAR	41°19'39.90456"	087°31'32.36605"	606.789	GRAVEL
414_LIDAR	41°30'49.87903"	087°31'31.00559"	513.300	SHORT GRASS
415_LIDAR	41°30'31.16426"	087°22'12.14429"	514.995	SHORT GRASS
416_LIDAR	41°30'28.69249"	087°13'23.59741"	529.337	CONCRETE
417_LIDAR	41°22'00.13213"	087°22'28.27492"	650.269	SHORT GRASS
418_LIDAR	41°23'41.76719"	087°13'16.39989"	632.989	GRAVEL
419_LIDAR	41°31'04.89549"	087°04'57.99260"	717.987	CONCRETE
420_LIDAR	41°33'34.27217"	086°55'30.83731"	692.669	LIGHT ASPHALT

Station Name	Latitude	Longitude	E. Height US Ft.	Description
421_LIDAR	41°24'48.21779"	087°03'52.62717"	595.108	CONCRETE
422_LIDAR	41°24'42.90050"	086°56'23.74698"	613.255	CONCRETE
423_LIDAR	41°38'10.82680"	086°43'06.53256"	718.081	CONCRETE
424_LIDAR	41°28'57.23728"	086°41'25.46715"	606.486	CONCRETE
425_LIDAR	40°56'49.27319"	087°27'45.13051"	572.736	GRAVEL
427_LIDAR	40°45'11.02596"	087°17'45.49140"	633.015	SHORT GRASS
428_LIDAR	40°45'03.94737"	087°07'05.82621"	631.232	GRAVEL
429_LIDAR	41°01'32.88414"	087°13'07.54738"	580.895	GRAVEL
430_LIDAR	41°17'28.90927"	087°13'22.37678"	576.139	SHORT GRASS
QC-201_LiDAR	41°40'33.70617"	086°36'45.43061"	700.341	GRAVEL/DIRT
QC-202_LiDAR	41°32'31.06251"	086°38'23.75133"	634.639	CONCRETE
QC-203_LiDAR	41°24'46.06016"	086°46'44.55078"	602.939	GRASS
QC-204_LiDAR	41°36'49.16605"	086°48'51.83006"	743.219	CONCRETE
QC-205_LiDAR	41°35'52.19435"	086°59'54.87051"	594.238	CONCRETE
QC-206_LiDAR	41°20'55.56690"	087°01'41.87637"	585.731	CONCRETE
QC-207_LiDAR	41°21'16.06483"	087°07'43.70251"	604.699	GRAVEL
QC-208_LiDAR	41°32'03.95722"	087°08'29.05494"	554.479	CONCRETE
QC 209_LiDAR	41°30'37.04763"	087°17'43.23485"	515.909	CONCRETE
QC 210_LiDAR	41°17'40.86706"	087°18'55.24061"	581.869	SHORT GRASS
QC 211_LiDAR	41°18'01.67310"	087°25'51.68940"	603.765	SHORT GRASS
QC 212_LiDAR	41°32'13.53911"	087°26'09.80030"	507.167	SHORT GRASS
QC-213_LiDAR	41°09'39.59546"	087°00'56.35482"	587.749	CONCRETE
QC-214_LiDAR	41°01'39.18805"	087°02'58.67726"	572.690	CONCRETE
QC-215	40°56'22.73268"	087°09'48.16421"	551.856	COURT LINES/LIDAR
QC 216_LiDAR	41°09'23.77662"	087°11'14.26071"	601.720	SHORT GRASS
QC 217_LiDAR	41°08'24.76470"	087°18'49.51704"	577.361	SHORT GRASS
QC 218_LiDAR	40°51'53.81675"	087°19'42.72310"	537.945	SHORT GRASS
QC 219_LiDAR	40°46'48.07668"	087°26'28.76994"	560.068	CONCRETE
QC-220	41°08'24.78342"	087°26'58.01639"	538.255	TENNIS COURT LINES/LIDAR

# VOLUME 2 - SECTION 3: BLOCK 9 GROUND/LIDAR CONTROL LOGS AND PHOTOS

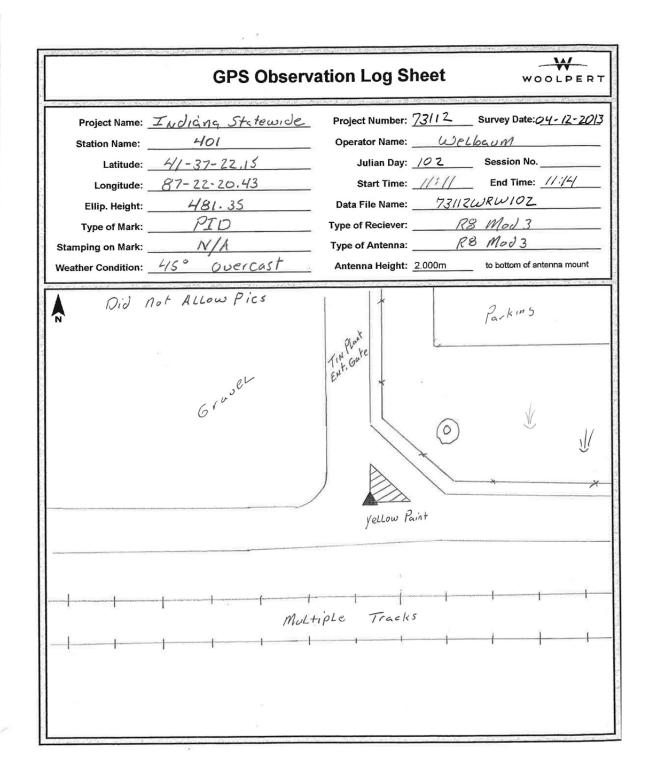
This section contains the station recovery information sheets and photographs for the ground control and LiDAR control stations.

The data is assembled on the following pages.

#### GROUND CONTROL

	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 400 41-42-58.85 87-31-48.52 477.80 PID N/A 45° Rain	Project Number:       73112       Survey Date:       64-11-201.         Operator Name:       Welbawm         Julian Day:       101       Session No.         Start Time:       4:30       End Time:       4:34         Data File Name:       73112       WRW101         Type of Reciever:       R8       Mod 3         Type of Antenna:       178       Mod 3         Antenna Height:       2.000m       to bottom of antenna mount
	X Red Green Freshly Painted	Calumet Park





PID 401

The PID was located at the entrance drive to a tin plant. The Woolpert surveyor was not allowed to take any pictures.

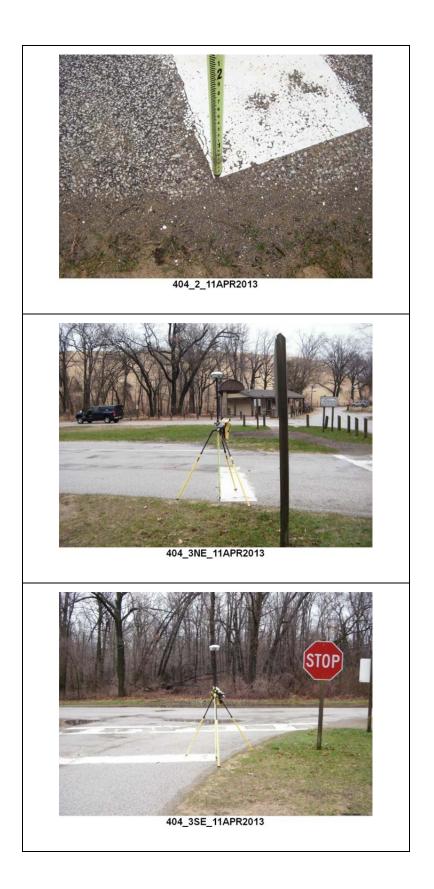
GPS Observa	tion Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 402 Latitude: <u>N 41' 37' 21,19'</u> Longitude: <u>W 87' 12' 29,13'</u> Ellip. Height: <u>497,1564</u> Type of Mark: <u>Hatched area corner</u> Stamping on Mark: <u>N /A</u> Weather Condition: <u>Raining &amp; 42'</u>	Project Number:       73/12       Survey Date:       9/10/2013         Operator Name:       Cody Schneider         Julian Day:       101       Session No.       N/A         Start Time:       17:05       End Tima:       17:21         Data File Name:       \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$
LARGE ASPILACT LOT	CONCRETES PRICE PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES PRODUCES



GPS Observa	tion Log Sheet
Project Name: <u>Tudiana</u> Statewide 2013 Station Name: <u>403</u> Latitude: <u>N91° 39' 09 67'</u> Longitude: <u>W 87° 65' 05.06'</u> Ellip. Height: <u>489.8 sft</u> Type of Mark: <u>Court line Infersectroin</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Range 92'</u>	Project Number:       73/12       Survey Date:       14/11/2013         Operator Name:       Cody Schneider         Julian Day:       [0]       Session No.       N/A         Start Time:       17/51       End Time:       17/58         Data File Name:       ISMO4/11/3CJS         Type of Reciever:       #0364       R8-3         Type of Antenna:       40364       R8-3         Antenna Height:       2.00 n       to battom of antenna mount
A	E RD - ASPHALT
TREES - ASPHALT - COURT	ASPHALT PARKING TENNIS COURTS 403
	TENNIS COURTS * PENCE V SI TREES-



GPS Observ	ation Log Sheet
Project Name:IndianaStatewide 2013Station Name: $404$ Latitude: $N 41^{\circ} 42^{\circ} 23.91^{\circ}$ Longitude: $W 86^{\circ} 55^{\circ} 48.53^{\circ}$ Ellip. Height: $495.3 \times 64$ Type of Mark: $560$ bar cornerStamping on Mark: $MA$ Weather Condition: $Cloudy \approx 43^{\circ}$	Project Number:       73/12       Survey Date:       4/1/20/3         Operator Name:       Cody Schneder         Julian Day:       101       Session No.       4/A         Start Time:       9:02       End Time:       4/66         Data File Name:       55M6411/3 CJ 5       5         Type of Reciever:       #0364 R8-3         Type of Antenna:       #0364 R8-3         Antenna Height:       2.00 M       to bottom of antenna mount
PUS/RU PARICINC DIPARIT	or GRISSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RECESSWALLZ RE



GPS Observa	tion Log Sheet	WOOLPERT
Project Name: I aliana Statewide 2017 Station Name: 405 Latitude: <u>N47° 45'14,74''</u> Longitude: <u>W86° 50'13,77''</u> Ellip. Height: <u>489.0 sft</u> Type of Mark: <u>Stap bar comer</u> Stamping on Mark: <u>NfA</u> Weather Condition: <u>Light Rain &amp; 43°</u>	Project Number: 73/12 Operator Name: Cody Julian Day: 10 ( Start Time: 91:49 Data File Name: ISMOU Type of Reciever: #0364 Type of Antenna: #0364 Antenna Height: 2.00 m	Schneider Session No. <u>M/A</u> End Time: <u>9%57</u> <u>1/1/3CJS</u> <u>1/28-3</u> <u>1/28-3</u> <u>1/28-3</u> <u>1/28-3</u> <u>1/28-3</u>
# 3044 A TRANSFER PLEAN	US SWALL 405 CARE DAALC	CENTURY 21
- MEES- House	CONCRETE TO	(AUL') (POUSE MEES HOLST



	GPS Obs	ervation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 406 N 41° 45129.30" W 86° 41'17.31" 565.15(t Brick comer N/A Light cain 5440	Operator Name:         Cody Schneider           Julian Day:         (61         Session No.         MA           Start Time:         11:10         End Time:         11:15           Data File Name:         ISMOY 11/13 CTS         Type of Reciever:         #0364 R 8 - 3           Type of Antenna:         #0364 R 8 - 3         Type of Antenna:         #0364 R 8 - 3
- GRASS	CONSCIENCE	ASPHALT CULDE-SAC CULDE-SAC CRASS-
- LONCRETE	N HALSTERD DR	- GRASS - H10153

.



	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewiele 2013 407 N41°25'36.75" W86'31'69.31" 588.9 sty Concrete corner M/A Maining = 42°	Project Number: 73112 Surve Operator Name: Cody Schine Julian Day: 100 Ses Start Time: 17:57 En Data File Name: 15M041013 Type of Reciever: #0369 R Type of Antenna: #0369 roba	rida sion No. <u>MA</u> d Time: <u>18:01</u> s:CJS t:-3 RE-3
Co RO N 725 E ASFARAUT	H & SS55 H & SS55 DARK ASOHALT - GRASS-	- GRASS- (TREE - GRASS- (TREE - GRASS- (TREE - GRASS- (TREE - GRASS- (TREE - GRASS- (TREE - GRASS- (TREE	Chulleen Banas





407_3N_10APR2013

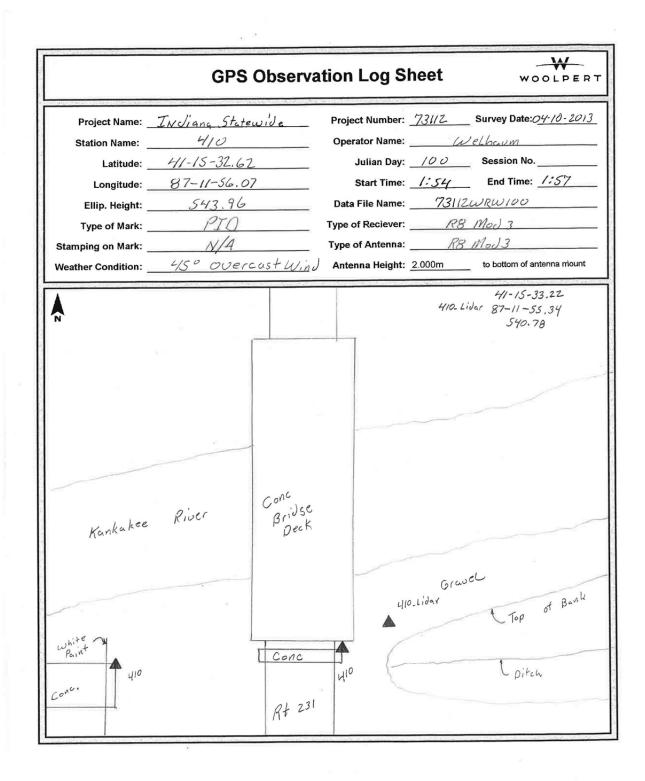


GPS Obse	ervation Log Sheet
Project Name: <u>TAdiana Statewide</u> Station Name: <u>408</u> Latitude: <u>N 46° 25° 56.19″</u> Longitude: <u>W 86° 37″ 58.21</u> Ellip. Height: <u>575.1544</u> Type of Mark: <u>Brick conce</u> Stamping on Mark: <u>4/A</u> Weather Condition: <u>(Joudy &amp; 48°</u>	Data File Name:
A N	- ASPHALT - CO RD E 900 N
Tree Laws sca on the	GRASS. GRASS. TRUE TRUE TRUE TRUE
- GRAVEL-	Buick- #3355
FILCE GRASS-	LANDS (APING -



Station Name: Latitude Longitude Eilip. Height Type of Mark Stamping on Mark	: <u>Fridiana Stalewide 2013</u> <u>409</u> : <u>N41° 16' 55.84"</u> : <u>W&amp;7° 03' 16.52"</u> : <u>560.75ft</u> : <u>Concrete Currer</u> HA : <u>Cloudy = 45°</u>	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	7511:2       Survey Date: 4/10/201         Cody Schneider         160       Session No. MA         13:54       End Time: 14:01         .55MC4(0.3755         #6364 R8-3         #6364 R8-3         #6364 R5-3         200m       to battom of antenna mount
CAASS 6AAL-	BUSHES -	# 59 AVEL-	GAUNSS FREES
			CO RO E 1050 5 - ASPITACT -

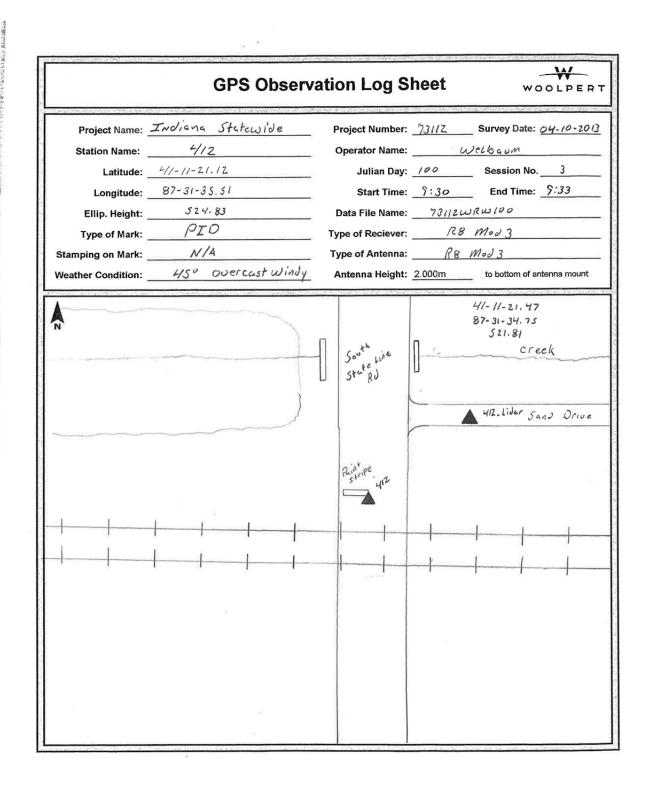






	GPS Observ	ation Log She	et woolpert
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 4/11 4/1-11-39.11 87-20-49.77 528.52 PID N/A 45° Overcust Rain	Operator Name: Julian Day:/ Start Time:/ Data File Name: Type of Reciever: Type of Antenna:	3//2         Survey Date: 04-11-2013           (1)elbaum           01         Session No. 3           010         End Time: 101/3           73//2         701/2           R8         Mod 3           R8         Mod 3           00m         to bottom of antenna mount
<b>A</b>		RJ. Z3	4/-1/-38.92 4/1-21-20-49.99 528,44
	Asphalt Parkins	SideWalk V	HII-Lidar
13LJS		¢	



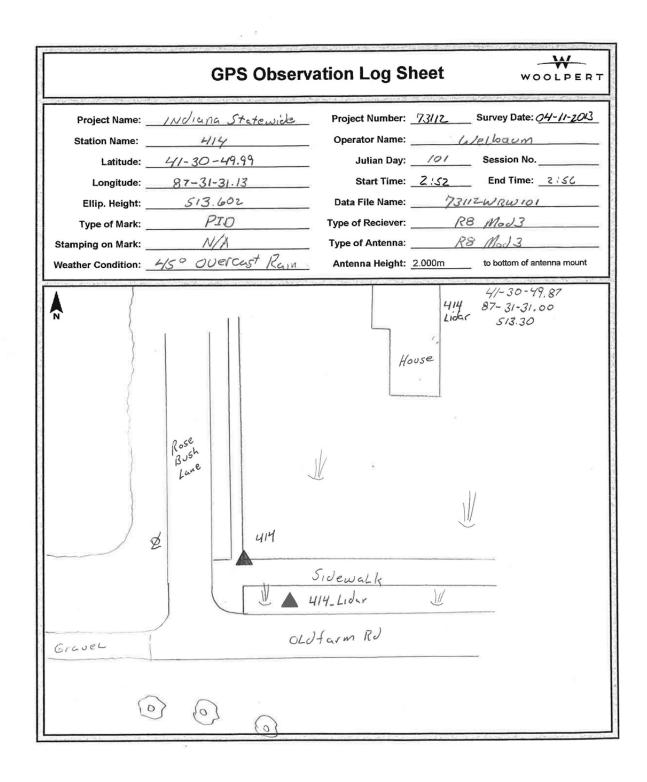




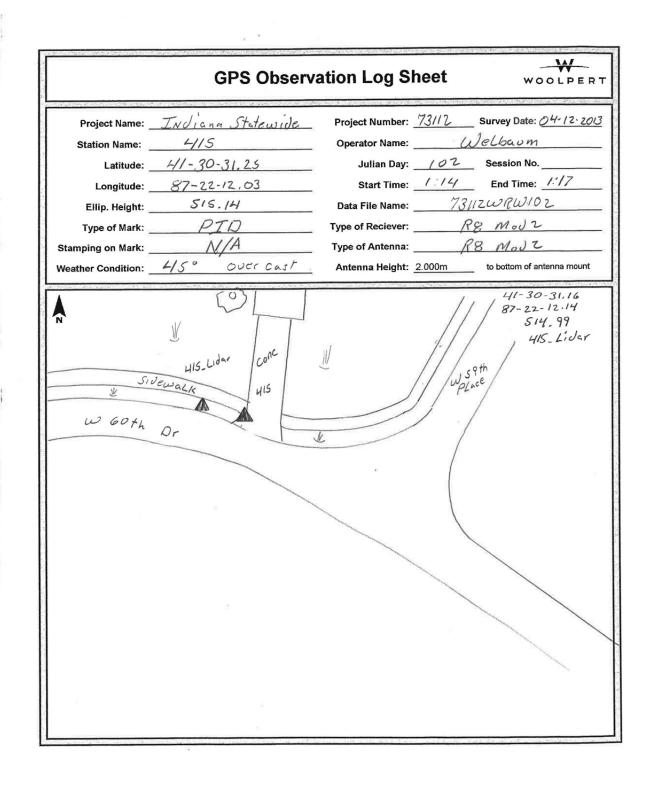
	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	INDIANA Statewide 413 41-19-40,40 87-31-32,04 609.59 PID N/4	Project Number:       73/12       Survey Date:       94-11-2013         Operator Name:       Wetbaum         Julian Day:       101       Session No.         Start Time:       11:42       End Time:       11:46         Data File Name:       73/12WRW101         Type of Reciever:       R8       Mod 3         Type of Antenna:       R8       Mod 3
	45° Overcast	Antenna Height: 2.000m to bottom of antenna mount 4/13_Lijar 4/1-19-39.96 87-31-32.36 606.78
	₩.	Gravel Barn
	V	<u> </u>

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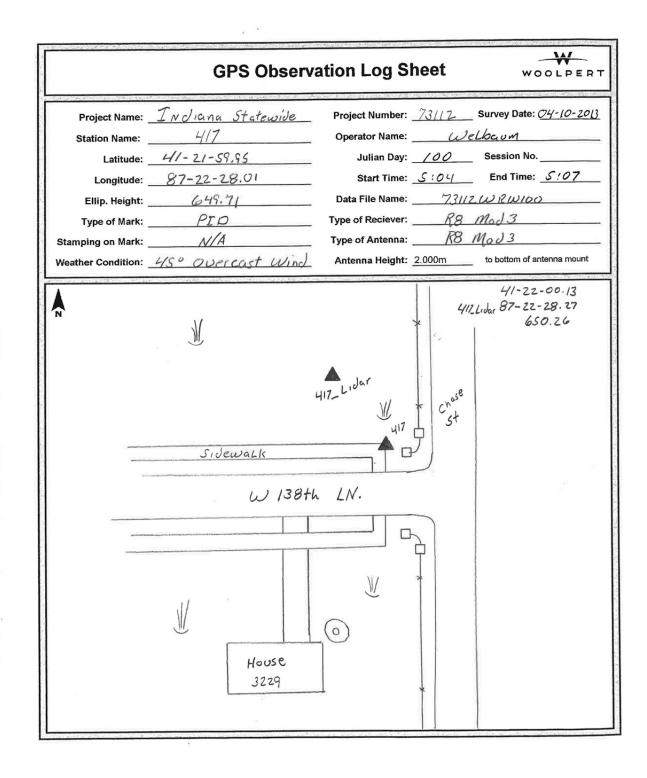






GPS Obs	ervation Log Sheet
Project Name:Indiana Statewide ZaStation Name: $4/6$ Latitude: $N/1^{\prime} 36^{\prime} 28.45^{\prime\prime}$ Longitude: $W 87^{\prime} 15^{1} 23.56^{\prime\prime}$ Ellip. Height: $528.7564$ Type of Mark: $Concrete correctStamping on Mark:N/AWeather Condition:Cloudy \approx 40^{\prime}$	Operator Name:       Cody Schneider         Julian Day:       102       Session No.       N/n         Start Time:       11/071       End Time:       11/08         Data File Name:       ISMOY 1213 CJS
theres Gr - Gr STDNIES-	42950 MULTCH DERICK ASOHALT - GRASS- - GRASS- - GRASS- - CREES- - GRASS- - CREES-







Project Name: _ Indiana Statewide 2013	Project Number: 73 112 Survey Date: 4/10/20
Station Name: 4/16	Operator Name: Cody Sancider
Latitude: N 41°23 41.69"	Julian Day: <u>100</u> Session No. $\frac{\nu}{A}$
Longitude: W \$7"13" 18, 70"	Start Time: 11:5% End Time: 12:10
Ellip. Height: 622.45H	Data File Name: ISM 64 16 13 633
Type of Mark: Concrete Corner	Type of Reciever: 4-0364 125-3
Stamping on Mark:	Type of Antenna: #-6364 128-3
Weather Condition: $Cloudy \approx 46^{\circ}$	Antenna Height: 2.001. to bottom of enterina mount
	_ TRees -
GRASS - GRASS - GRASS - GRASS - GRASS - FERICE	- GRASS - TREE GRAVEZ -
418 - GRASS-	- GRASS -



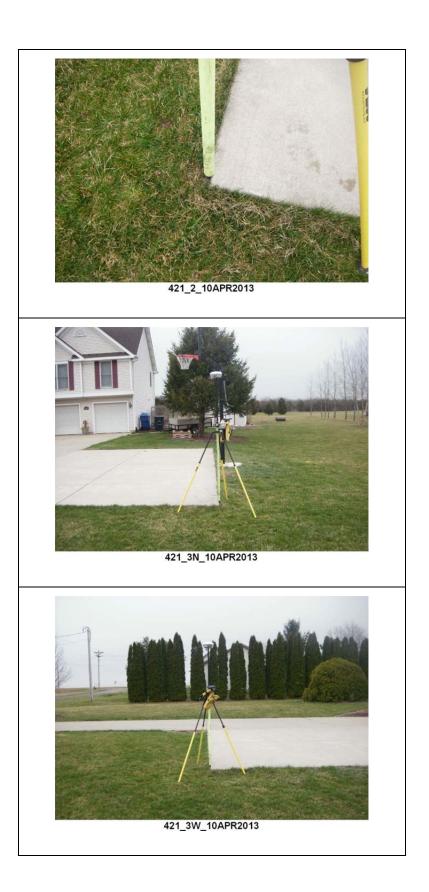
77	GPS Observation Log Sheet
Station Name: Latitude: _// Longitude: _// Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013Project Number: $23/12$ Survey Date: $4/12/20D$ 419Operator Name: $Cady Schneider41° 31' 09.446"Julian Day:102Session No.M/A187' 09' 58.12Start Time:12:41End Time:12:51718.0544Data File Name:ISMO4/12/3 CT5Concrete cornerType of Reciever:HO369/R8.3N/AType of Antenna:HO369/R8.3Raining 246Antenna Height:2.60nto battom of antenna mount$
<b>A</b>	ASS- TRUE DARIS ASPHALT REDEAPING CANSSCAPING LANDSCAPING ASPHALCT-
- 61RA 9	5- # 97 H 97



GPS Observa	ation Log Sheet
Project Name:IndianaStatewideZOBStation Name: $420$ Latitude:N $41^{\circ}$ 33 ' 34.12"Longitude:W $86^{\circ}$ 55 ' 30.11"Eilip. Height: $692.0$ sftType of Mark:Concrete cornerStamping on Mark:N/AWeather Condition: $Cloudy \approx 40^{\circ}$	Project Number: 73/12 Survey Date: 4/2/2013 Operator Name: Cody Schneider Julian Day: 162 Session No. 14 Start Time: 13/25 End Time: 13:29 Data File Name: 75/104/213CJS Type of Reciever: 16364 R&3 Type of Antenna: #0364 R&3 Antenna Height: 2.40 to battom of antenna mount
Trate WEINDMILL	There LANDSCAPING
LIGHT ASPHAUT	- CONCRETE-
-6R555 -	Q LKNDGENPING



GPS Observation Log Sheet	
Project Name:       Indiana       Staticuide       2013         Station Name:       421         Latitude:       N41°24'4%07''         Longitude:       N67°63'52,44''         Ellip. Height:       594.8 std-         Type of Mark:       Concrete corner         Stamping on Mark:       N/A         Weather Condition:       Cloudy = 44''	Project Number: 731/2 Survey Date: 410/20 Operator Name: Cody Schneides Julian Day: 10.6 Session No. MA Start Time: 10:53 End Time: 10:58 Data File Name: 2310941013CJ5 Type of Reciever: #0364_R8-3 Type of Antenna: #0364_R8-3 Antenna Height: 2.06 m to bottom of entenna mount
TREES- TREE -GRASS- TREE -GRASS- TREE	GRASS $GRASS$ $GRAS$
	Asometic -
	- GRASS-



	GPS Observ	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>Lodiona Statewide 201</u> <u>422</u> <u>N 41° 24 '42.75"</u> <u>W 86' 56' 23.88°</u> <u>613.2 stt</u> <u>Concrete corne</u> <u>N/A</u> <u>Cloudy</u> ≈ 42°	Operator Name:       Carciele corner         Julian Day:       100       Session No.       N/A-         Start Time:       10:10       End Time:       10:17         Data File Name:       #3M041013055
PLANTED F(ELD	GRASS -	FROES - CONCILETE -
	6 m (0 10 5 650 G	422 H 155 Here There - GRASS-



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Todiana Statewide 2013Project Number: $73112$ Survey Date: $411/2013$ 423Operator Name:Cody SchnéiderN91° 3£' 10.79"Julian Day:101Session No.W 66' 43' 67.99"Start Time:12:99End Time:716.334Data File Name:ISMOY (113055)Concrete conceType of Reciever: $40364$ R8-3N/AType of Antenna: $40764$ R8-3Raining 292'Antenna Height: $2000$ to bottom of antenna mount
▲ ~	- CONCRETE "
G ND N LOO W	- GRASS- - GRAS



GPS Observat	tion Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 424 Latitude: N41° 28' 58.06" Longitude: W86° 41° 24.79" Ellip. Height: 605.75ff Type of Mark: 7/A Stamping on Mark: 7/A Weather Condition: Light rain & 43°	Project Number: $73112$ Survey Date: $4/11/2013$ Operator Name: $Cody$ SchweideeJulian Day: $101$ Session No. $N/A$ Start Time: $14:57$ End Time: $14:59$ Data File Name: $ISMOY(113 CFS)$ Type of Reciever: $#03641863$ Type of Antenna: $#0364188-3$ Antenna Height: $2.00a$ to battom of entenna mount
N - GRASS- - ASMALT. 424 - ASMALT. CONCRETE WEW JERUSALEM JERUSALEM	Constituted Constitution and Constitutio
DR (1/1/1/1/1/10) - N50 HIGUT -	- 69455 -





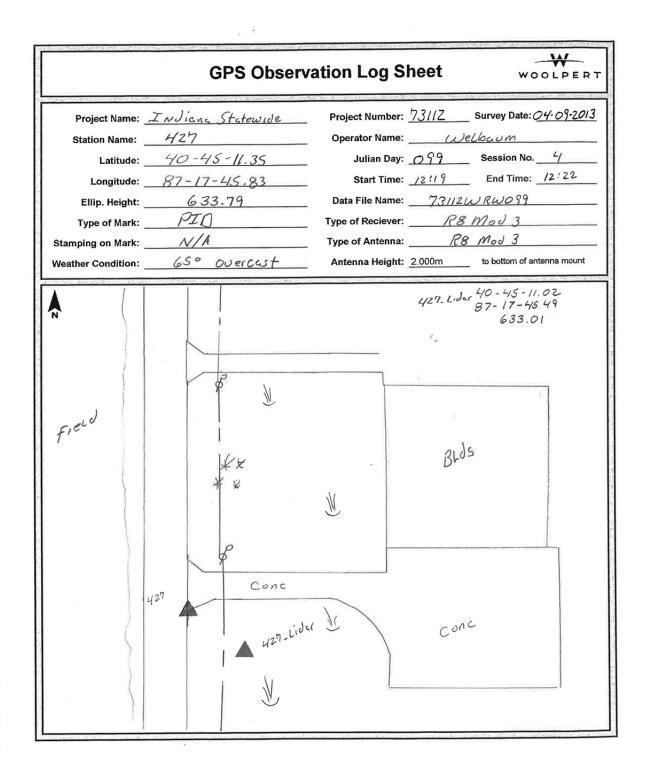
424_3NW_11APR2013



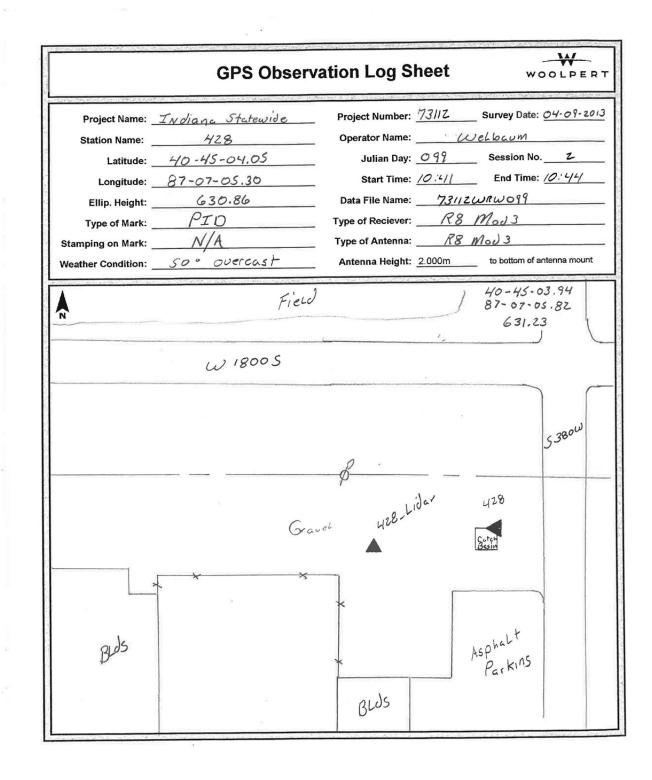
	GPS Observation	n Log S	heet	wc	OLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	4/25         Ope           4/0 - 5 6 - 4/9.05         6           87 - 27 - 4/5.54         6           573.62         Data           PID         Type           N/A         Type	erator Name: Julian Day: Start Time: a File Name: of Reciever: of Antenna:	000 10:59 73112 R8 R8	Survey Date: 26600 Session No. End Time: WRW 100 Mod 3 Mod 3 to bottom of ar	//:02
Dean St	Sunshine Di	· ·	<u>د</u> ر بر	40 - 125_Lider87- 3	56-49.27 27-45.13 572.73
 V	× +25-Lider +25	×	Graved		×
Ň	Asphalt Gravel Asphalt Path	*		¥	

58 ^{- 5}





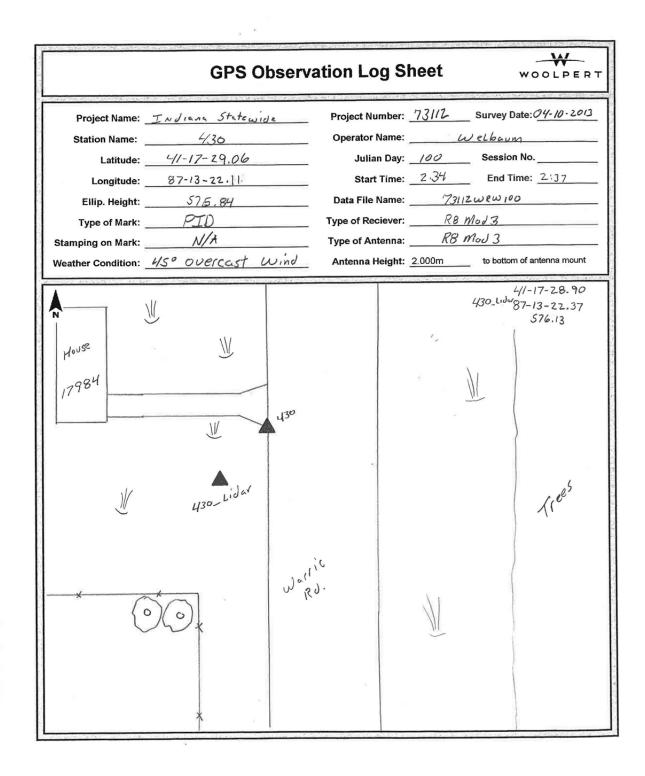






GPS Observa	ation Log Sheet
Project Name: $I_A d_{1eAa}$ Statewide 20Station Name: $429$ Latitude: $N 41^{\circ} 01^{\circ} 28.77^{\circ}$ Longitude: $M 87^{\circ} 13^{\circ} 68.03^{\circ}$ Ellip. Height: $582.8566$ Type of Mark: $Center of 1id$ Stamping on Mark: $N/A$ Weather Condition: $Cloudy \notin windy \approx 76^{\circ}$	13 Project Number: <u>7317</u> Survey Date: <u>997013</u> Operator Name: <u>Cody</u> Schnelder Julian Day: <u>099</u> Session No. <u>74</u> Start Time: <u>1811</u> End Time: <u>1816</u> Data File Name: <u>ISMC40978CFS</u> Type of Reciever: <u>#0369_R8-3</u> Type of Antenna: <u>#0369_R8-3</u> Type of Antenna: <u>#0369_R8-3</u> Antenna Height: <u>7.00</u> to bottom of antenna mount
CERES	GRAUEL-
OKFICE BLDG	CORD N QUEL- - ASPHANT ASPHANT - - CERVEL- - CERVEL- - 25 
	-GRAUEL -







GPS Observa	tion Log Sheet
Project Name:Indiana Statewide 2013Station Name:QC-201Latitude:N 91° 90° 39.29°Longitude:N 86° 36° 91.95°Ellip. Height:703, 954Type of Mark:Sidewalls cornesStamping on Mark:NARaining & 92°	Project Number: $73/12$ Survey Date: $4/1/2cn$ Operator Name:Cody SchneiderJulian Day: $101$ Session No.Start Time: $11:54$ End Tima:Data File Name:ISMO41113CJJType of Reciever: $#0364$ $RS-3$ Type of Antenna: $#0364$ $RS-3$ Antenna Height: $2.002$ to battom of antenna mount
R	ASPHALT PARILING LOTS TO ROLLING PRARIE ELEMENTARY CONCRET
TRUE TREES-	Q C-201 - GRASS GRAS
GRASS- Stine the	ENTRANCE ROAD



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	J-ndiana Statemidio QC-20-2. N 41° 32' 30.93" W 86° 38' 23.57" 634.7 564 Concrete Corner M/A Cloudy = 43°	Dperator Name: Julian Day:( Start Time: Data File Name: Type of Reciever: _# Type of Antenna:	Cody Sdineder )1 Session No. <u>N/2</u> 06 End Time: <u>14:12</u> 5M641/13 CJS 5364 R6.3
	ARAGE	-GRASS G A INCOMENTE CONCRETE DRIVEWAY	SMIALL INCE
	÷ 61	2855 **	QC-202 - Line Hase



	GPS Observa	tion Log Sł	ieet woolperi
Station Name: _ Latitude: _ Longitude: _ Ellip. Height: _ Type of Mark: _ Stamping on Mark:	Indiana Statewide 2013 QC-203 V 91'29'46,21" W 86° 96' 93,53" 602,25ft Light Concrete corne N/A Cloudy ≈ 97°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73112       Survey Date: 4/10/20         Cidy Schneder         160       Session No.         16:21       End Time: 16:35         15:00 0 41013 CDTS         #0364       R8-3         #0364       R8-3         220 m       to battom of antenna mount
N		TREE	ASPHALT-
PLLIMONS ST ASPHACE	- GRA55-		ous concrett. sites5-
		tory come	CONCURETE



	GPS Observa		
Project Name:	Indiana Statewide 201	3 Project Number:	23112 Survey Date: 4/1(/20)
Station Name:	QC-2.04	Operator Name:	Cody Schneider
Latitude:	NY1º 36' 49.04"	Julian Day: _	101 Session No. ~/A-
Longitude:	WEG 48 51.96"	Start Time: _	13:27 End Time: 13:32
Ellip. Height: _	7431 sff		ISMOY (113 CK
Type of Mark: _	Concrete corner		#0364 R8-3
Stamping on Mark: _	n h		40764 RF3
Weather Condition:	Cloudy = 430	Antenna Height: _	2.0 0m to bottom of antenna mount
N GOLDRING ND	CONCRETE		# 5837
QC-204	TREES-	$\mathcal{O}$	- GRASS-



GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: QC-205 Latitude: N Y1° 35' 52, 59" Longitude: W 86° 59' 55, 04" Ellip. Height: 592, 1 sCt Type of Mark: Concrete corner Stamping on Mark: N/A Weather Condition: Raining 240'	Project Number: 73/12 Survey Date: 4/11/20 Operator Name: Cody Schneider Julian Day: 101 Session No. N/A Start Time: 18:17 End Time: 18:21 Data File Name: FSM 04 11/3 CJ S Type of Reciever: #036 4 628 - 7 Type of Antenna: #036 4 628 - 3 Antenna Height: Z, 00 m to bottom of entenna mount
N	E BURDICIC RD
FREE GRASS-	-CONCRETE- - TREES-
# 356 TREE	GPAS 5



GPS Observa	tion Log Sheet
Project Name: $f$ ad anaStatewide 2017Station Name: $QC-206$ Latitude: $NY1^{\circ}$ 20'55.59"Longitude: $NY7^{\circ}$ 01' 41.27"Ellip. Haight: $565.4 \text{ sff}$ Type of Mark: $Cinciele coiner$ Stamping on Mark: $N/A$ Weather Condition: $Cloudy \approx 45^{\circ}$	Project Number:       73172       Survey Date:       9102013         Operator Name:       Cody       Schweider         Julian Day:       100       Session No.       MA         Start Time:       1319       End Time:       13:25         Data File Name:       25M04 (013003)         Type of Reciever:       # 0364 R 8-3         Type of Antenna:       :# 0764 R 8-3         Antenna Height:       Z.000       to baltom of antenna mount
# 590 AND 5 CAPING	Their GRASS
- GRASS- P	





QC-206_3E_10APR2013

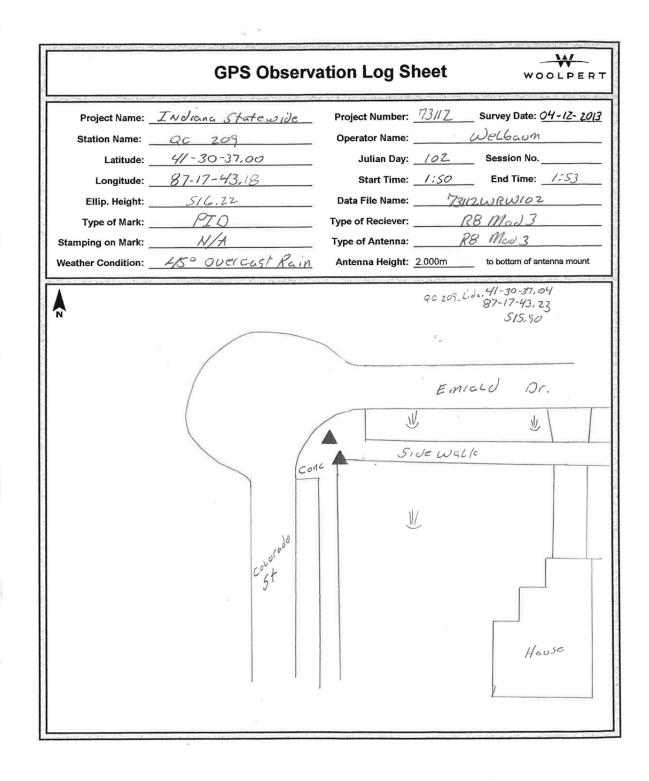


	servation Log Sheet	PER
Project Name:       Indian. Statewide       20         Station Name:       QC - 20 7         Latitude:       N910° 21' 16.72"         Longitude:       W 8 70° 67' 43.35"         Eilip. Height:       604.7564         Type of Mark:       Sidewalls corner         Stamping on Mark:       MA         Weather Condition:       Cloudy & vindy x	Operator Name:       CodySchucider         Julian Day:       106       Session No.         Start Time:       12:39       End Time:       12         Data File Name:       ISM 041013005         Type of Reciever:       #6364       RE-3         Type of Antenna:       #6364       RE-3	a ; ( 3
N	- GRASS (BOONS GROUD EZEMENTARY & MI SCHEL	
2	45PHACT - CG RT W 550 5	



Ellip. Height: $555.0 \pm 64$ Type of Mark: $5162.64.64$ [1/2 COMC Type of Reciever: $40364$ REC 3 Stamping on Mark: $\frac{9/4}{14}$ Weather Condition: $Clowedy \times 40^{\circ}$ Antenna Height: $2.00\infty$ to bottom of antenna mount N N roboticarte = 2 contrarte = 2			rvation Log Sheet
Latitude: $N 91^{\circ} 32^{\circ} 09.22^{\circ}$ Longitude: $W 87^{\circ} 08^{\circ} 35.53^{\circ}$ Ellip. Height: $555.0 s.H$ Type of Mark: $Sidewall (concertistic concertistic co$			
Longitude: $W \ 87^{\circ} \ 08^{\circ} \ 35^{\circ} \ 53^{\circ}}$ Ellip. Height: $555, 0 \ 54$ Type of Mark: $514 \ come \ 12^{\circ} \ 05^{\circ} \ 0.54$ Type of Mark: $514 \ come \ 12^{\circ} \ 0.54$ Stamping on Mark: $\frac{8^{\circ}/4}{12}$ Weather Condition: $\frac{12 \ 05^{\circ} \ 0.54}{12 \ 0.56}$ Weather Condition: $\frac{12 \ 05^{\circ} \ 0.54}{12 \ 0.56}$ Antenna Height: $2.00 \ 10 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.510 \ 0.$			Operator Name: Cody Schneider
Ellip. Height: $555.0 \pm 64$ Type of Mark: $516 \pm 0.0 \pm 64$ Stanping on Mark: $4/4$ Weather Condition: $1/4$ N 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4			
Type of Mark: $Sidewall concert Stamping on Mark: \frac{V/4}{M4} Type of Reciever: \frac{\#0.364}{4.0364} R.6.3Type of Antenna: \frac{\#0.364}{4.0364} R.6.3Antenna Height: 2.00m to battom of antenna mount\frac{\#0.364}{4.0364} R.6.3Antenna Height: 2.00m to battom of antenna mount\frac{\#0.364}{4.03} R.6.3\frac{\#0.364}{4.00} $	Longitude:	W 87° 08' 35.53"	
Stamping on Mark: $\frac{\sqrt{4}}{Cl_{out}}$ Type of Antenna: $\frac{\#0364}{RE-3}$ Weather Condition: $Cl_{out}$ $\sqrt{40^{\circ}}$ Antenna Height: $2.00m$ to bottom of antenna mount R $H 701SIFNUTS$ $H 701SIFUTATOR H 701H 701H 701H 701H 7$	10 0700 D	1 11	11
Weather Condition: $\underline{Cl_{oud} \times 40^{\circ}}$ Antenna Height: $\underline{2.00_{M}}$ to bottom of antenna mount 4701 4701 5170055. 4701 5170055. $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$ $60055^{\circ}$			
AND # 701 SIZNUES. GRASS- CONTRACT SIZNUES. ASPITALT DRIVE CONTRACT DRIVE CONTRACT SIZNUES. ASPITALT DRIVE CONTRACT SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUES. ASPITALT DRIVE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE SIZNUE	Stamping on Mark:	»/4	Type of Antenna:0364
$\frac{4701}{5170055}$	Weather Condition:	Cloudy × 400	Antenna Height: 2,00m to battom of antenna mount
	_	2 002	- GNASS- ASPITALT ORIVE
			GNASS-
			ASeltALT
			W 760 N
ASPHACT			
ASEHALT		. /	( MEE ) LANDSCADING







	GPS Observ	vation Log SI	neet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INdiana Statewide QC 210 411-17-41.03 87-18-55.12 SBI.59 PID N/H 415* Overcast Wind	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	00 3:14 73111 R	_ Session No _ End Time: 
	E 177th.Ct. Sidewalk V O Youse	QC 210-Lidar	st st	Freddy Fr

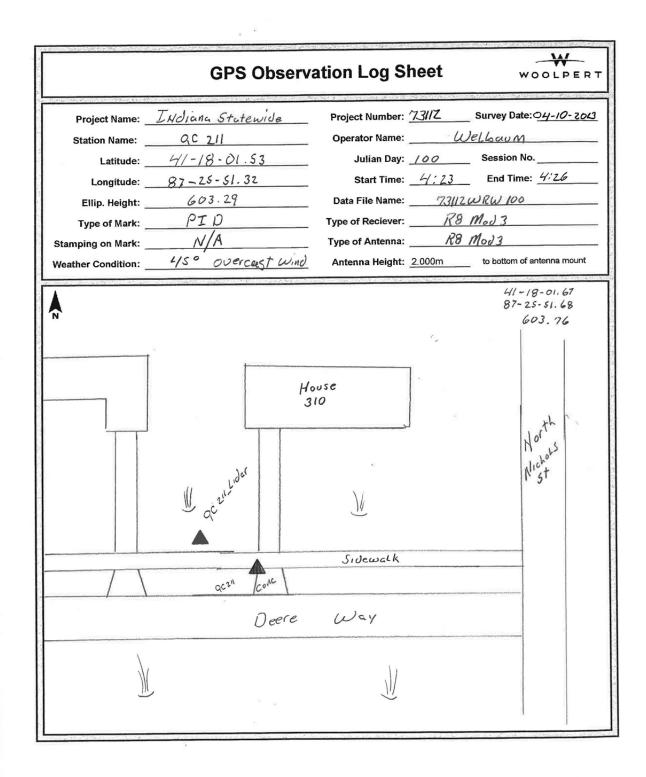


QC-210_2_10APR2013



QC-210_3N_10APR2013







	GPS	S Observ	vation Log S	heet	wo	OLPER
Station Name: _ Latitude: _ Longitude: _ Ellip. Height: _		2 11 .66	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	101 17:02 731/2 R8 R8	<u>Session No.</u> End Time: <u>WRW101</u> MoJ3 MoJ3	7:05
N	45th	St N. Earme St		SidewaLk		
BLJ 5		st		Asphall	i Parkins	



GPS Observ	ation Log Sheet	WOOLPERT
Project Name:Indianal State and 2013Station Name: $QC - 213$ Latitude: $N Y (^{\circ} 09' 39.45'')$ Longitude: $W 87^{\circ} 60' 55.99''$ Ellip. Height: $587.756'$ Type of Mark: $Concrete corner$ Stamping on Mark: $N / A$ Weather Condition: $Cloudy 2 46^{\circ}$	Dperator Name: <u>Co</u> Julian Day: <u>166</u> Start Time: <u>15:00</u> Data File Name: <u>I5</u> Type of Reciever: <u># 636</u> Type of Antenna: <u># 636</u>	Session No.         Mn           2         End Time:         (5:19)           MO4[013C75]         5         (5:3)
-GRINGS-	ASPHALC . CUL-DE-SAC	There's
H 10234 - GRASS -	ANE CT	Ther # 10233
CONCRETE STONES	1	ARIC ASPHACT -

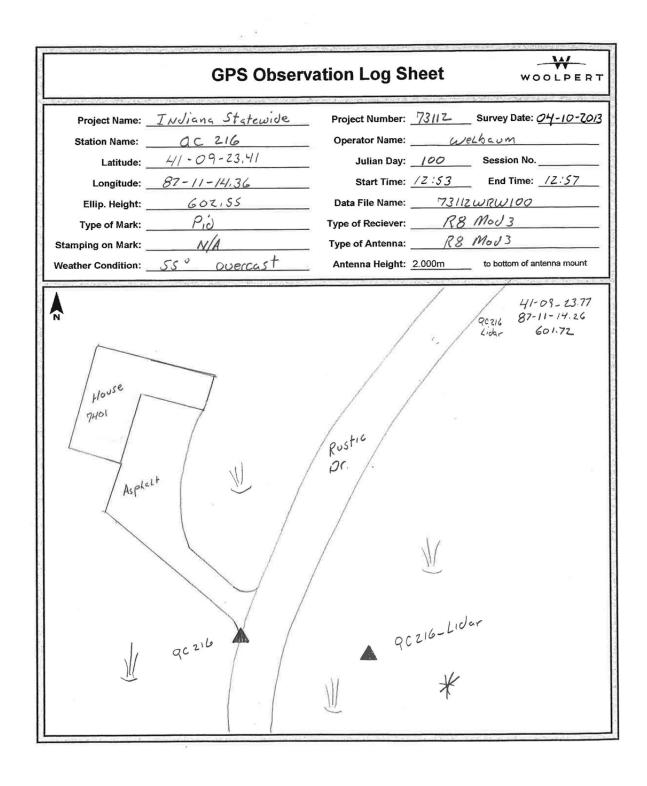


Station Name: Latitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-214 N 41° 61' 39.27" W 87° 62' 58.78" 572.9 5A Concrete corner N/A Cloudy & windy ~ 65°	Project Number: 73/12 Survey Date: 9/9/2014 Operator Name: Cody Schneider Julian Day: 099 Session No. 1/A Start Time: 16:95 End Time: 16:53 Data File Name: #594.640913CJS Type of Reciever: #0364_R8-3 Type of Antenna: #0364_R8-3 Antenna Height: 2.00 to battom of antenna mount
CULTURTED	GRASS- GRAVEL-	# 202 BC-244 CONCRETE - ASPITALT -
	J GILL ]	SR 14 GRASS - J HILL J
		CULTIVATED

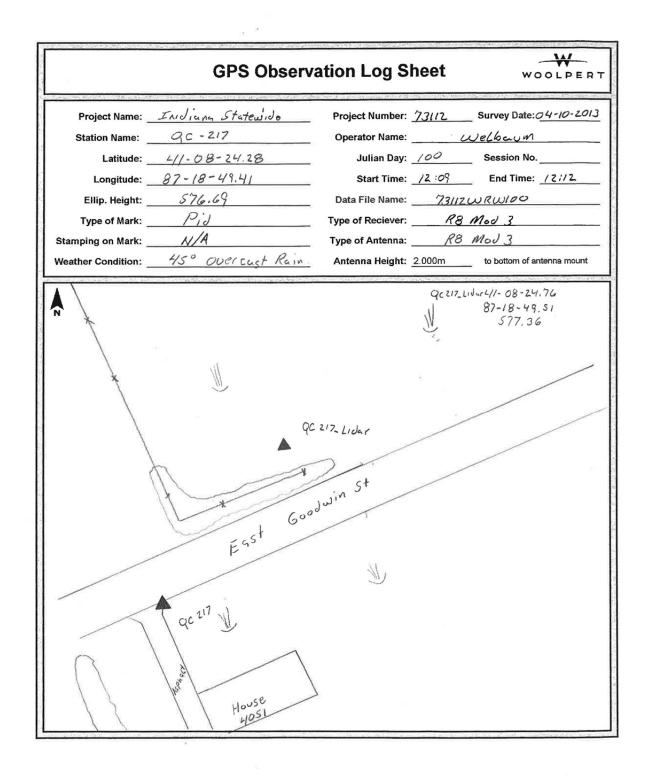


	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: _/ Longitude: _/ Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-215 140° 56' 22.73" 187° 69' 49.16" 551.9 sft Court line intersection N/A Cloudy & windy ~ 76°	Operator Name: Julian Day:099	Session No. <u>~//~</u> End Time: <u>/&amp;:45</u> 40413635 R&-3 R&-3 R&-3
GRASS- GRASS-	BROGICSIDE BROGICSIDE PARIE	TRE X FENCE X FENCE COURT X FERNCE BASEBALL FIELD - GRAS	- Gautss -

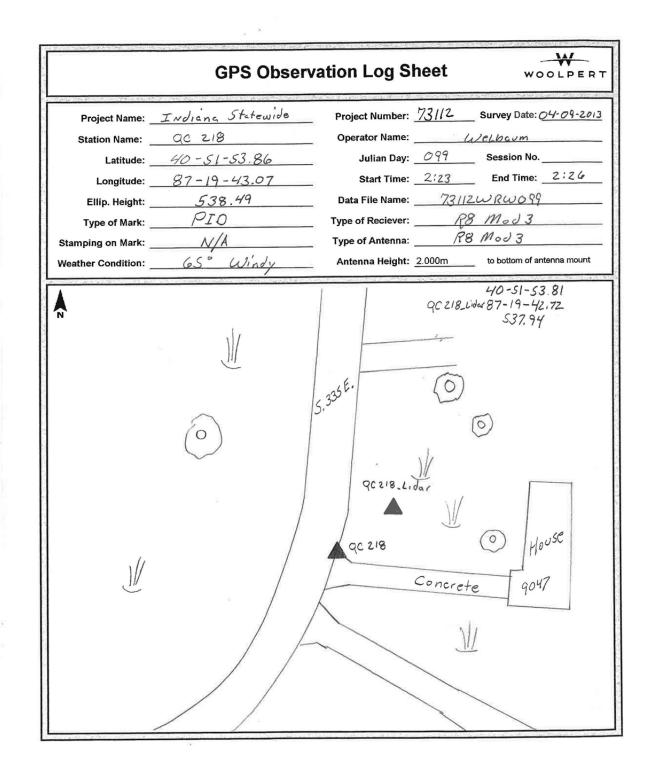










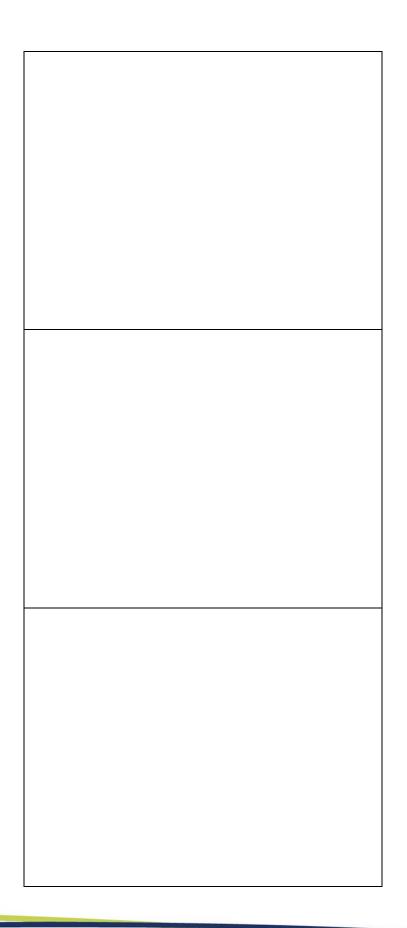




	GPS Obser	vation Log S	heet	wc	OLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide QC 219 40-46-48.23 87-26-28.54 559.98 PID N/A 65° Overcast	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	099 /z:58 73112 	Session No. End Time: WRW099 Mod 3 Mod 3	/:61
Ŕ	Field		90 Z 15	40 - 46 7- Lidar 87 - 26- 560	28.76
		W 150	05	Princton	Pky.
House Co	rerete 219_Lider () () () () () () () () () () () () ()	*			
	2 				



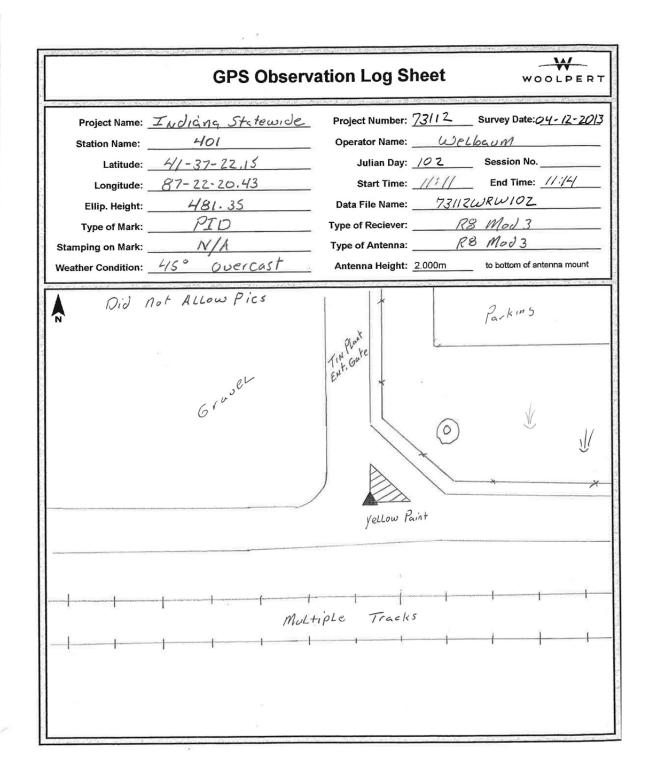
Project Name:	Indiana Statewide				
	QC 220				
	41-08-24.78		100		
	87-26-58.01		10:13		
	538.25				
	PID				
	N/A	Type of Antenna:			
Weather Condition:	450 Windy overcust	Antenna Height:	2.000m	to bottom of an	tenna mount
	Wall	kins Path			
	M.	B.Ball court	SHelter		
V		QC 220 ALSO QC 220 LIDON C 220 LIDON C Soft	Red surface	X	¢



## LIDAR CONTROL

	GPS Observa	tion Log Sheet
Station Name: Latitude:	Indiana Statewide 400 41-42-58.85 87-31-48.52	Project Number: $73112$ Survey Date: $64-11-20$ Operator Name: $welbawm$ Julian Day: $101$ Session No. Start Time: $4:30$ End Time: $4:34$
Type of Mark:	477.80 PID N/A 45° Rain	Data File Name:       73/12_WRW101         Type of Reciever:       RB/Mod 3         Type of Antenna:       178/Mod 3         Antenna Height:       2.000m       to bottom of antenna mount
	X Red Green Freshly Painted	Calomet Park





PID 401

The PID was located at the entrance drive to a tin plant. The Woolpert surveyor was not allowed to take any pictures.

	GPS Observa	tion Log She	woolpert
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	<u>Ladiana Stalowide 2013</u> <u>402-LIDIAR</u> <u>N 41° 37' 16.77"</u> <u>W 87° 12' 40, 19"</u> <u>500.1 sft</u> <u>No selfring (Concrek)</u> <u>V/A</u> <u>Biamang 242'</u>	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	3112 Survey Date: 4/1/2012 (ody Schneider 01 Session No. 10/4 2:25 End Time: 17/31 5MO4 (113 CJS \$0364 R8-3 \$0364 R8-3 \$0364 R8-3 \$0364 R8-3 \$0364 R8-3 \$0364 R8-3 \$0364 R8-3
SHEITER SHEITER	6anver	HOZ-CIP HOZ-CIP	SHELTER- GRAVEL SHELTER- SAND/GRASS



GPS Observa	tion Log Sheet
Project Name: <u>Indiana</u> Statewide 2013 Station Name: <u>403</u> Latitude: <u>N91° 39' 09.67°</u> Longitude: <u>W 87° 65' 05.06°</u> Ellip. Height: <u>USY. 8 sft</u> Type of Mark: <u>Court line infersection</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Ranger 92°</u>	Project Number:       73/(2       Survey Date:       14/11/2013         Operator Name:       Cody Schneider         Julian Day:       [0]       Session No.       1/A         Start Time:       17/57       End Time:       17/58         Data File Name:       ISMO4/11/3CJS         Type of Reciever:       #0364       R8-3         Type of Antenna:       40364       R8-3         Antenna Height:       2.00 n       to battom of antenna mount
A	E RD - ASPHALT
TREES ASPHALT	ASPHALT PARKING TENNIS COURTS 403 - PARK -
	TENNIS COURTS * PENCE V SI TREES-



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Haight: Type of Mark:	todiana Statewide 2018 404_LIDAR N 41° 42' 24.70" W 86° 55' 48.37" 495.1 stf No setting (Sand/Gross) N/A Clordy 243"	Project Number:       73112       Survey Date: 4/11/20         Operator Name:       0.64.9 Schwerder         Julian Day:       101       Session No.         Start Time:       9:08       End Time:         Data File Name:       ISMO4 11 13 CFS         Type of Reciever:       # 0364 R&3         Type of Antenna:       # 0364 R&3         Antenna Height:       2.00 m       to bottom of entenna mount
TREES-	"ISPIRE	CROSSING DIA C TREASE ST RICE ST ASPANO



	GPS Observ	ation Log Sheet	W OOLPEI
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 405-LIDAR 11045' 14.63" W 86° 56' 15.76" 487.75ft No setting (Brold) 1/K Light Rain = 44"	Project Number: 73/12 Survey Data Operator Name: Cody Schneid Julian Day: 101 Session N Start Time: 4:55 End Time Data File Name: £5M641113CTS Type of Reciever: #0364178-3 Type of Antenna: #0364178-3 Antenna Height: 7.00m to bottom of	ar •. <u>~/n</u> a: <u>(0:19</u>
# 3044 # 3044 Baren Baren	Houre	SWALL	the start



	GPS Observa	tion Log Sheet	WOOLPER
Project Name: Ladia Station Name: <u>400</u> Latitude: <u>N 41° Li</u> Longitude: <u>W 86° 4</u> Ellip. Height: <u>1</u> Type of Mark: <u>N</u> Stamping on Mark: <u>Light</u>	5-LIDAV( 51 29.21" 1'17.64" 555.25ft 0 setting (Brick) V/A	Operator Name: Julian Day: <u> 01</u> Start Time: <u> 1/1</u> Data File Name: <u>T</u> Type of Reciever: <u>#03</u> Type of Antenna: <u>#03</u>	6 End Time: <u>11:72</u> 5W1041113CJ3 64 RE-3
Cence	K Lerc	ASPILAUT CUL-DE-SAC	- GRASS-
- GRASS -	N HALSTERID DR	- GR#55 -	406-21024 406-21024 406-21024
- CONCRETE-			-9 10153 # (0153



	GPS Observatio			WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	N41° 25' 36.494 W 86' 31' 07.79" 586.9 st.t No setting (Concrede) Ty N/A Ty	Dperator Name: Julian Day: Start Time:7 Data File Name: ope of Reciever: ype of Antenna:	5(12 Survey Di Cody Schne 00 Session ;42 End Til 25M091013 F0369 RE- 0369 RE- 2,00m to battom	No. <u>*/n</u> ma: <u>17:56</u> CT3 3
ASPIALT - ASS F	TREEST TREEST		HIZEE BARN - TREE -GRAS	HOUSS CONCRETE 407-LIDAR BAGN

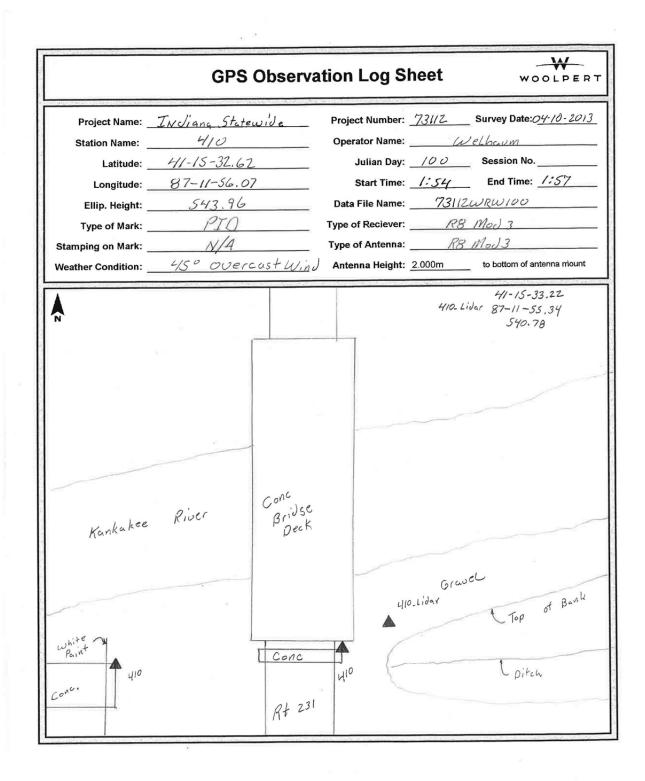


	GPS Observ	ation Log Shee	et woo	LPERT
Station Name: Latitude: _// Longitude: _// Ellip. Haight:	14° 25' 56,19" 36° 37' 58,21 575,1<44 Brick carnes V/A	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: # Type of Antenna:	112 Survey Date: Cody Schneider Session No. 104 End Time: 1 5M CH / 613 CF 5 1364 R 8-3 0364 R 8-3 0364 R 8-3	v/n 17:10
×		- ASPHALT CO RD E 900 N		
	PREE LANDSCADING	GALASS.		-mee
GRAVER	- 310	#3355		Z
TROLE GRASS-			ANDS (APING -	



GPS Observa	tion Log Sheet
Project Name:IndianaStatewide2013Station Name: $409 - LIDAP2$ Latitude: $N41^{\circ}16'55.93''$ Longitude: $N87^{\circ}03'tD.68''$ Ellip. Height: $550.8'sft$ Type of Mark: $N_0 soffing$ (Cena ele)Stamping on Mark: $N/a$ Weather Condition: $Cloudy \approx 45^{\circ}$	Project Number:       73112       Survey Date:       910/2013         Operator Name:       Cody Schneider         Julian Day:       100       Session No.       91A         Start Time:       14:05       End Time:       14:09         Data File Name:       451404(013035)         Type of Reciever:       40364       788-3         Type of Antenna:       40364       788-3         Antenna Height:       2.00       to battom of antenna mount
N TREES- - GRASS- - GRASS- - GR	H 59 -GRASS- TRUE TRUE TRUE TRUE -GRASS- -GRASS- -GRASS- -GRASS- -GRASS- -GRASS- -GRASS- -GRASS-

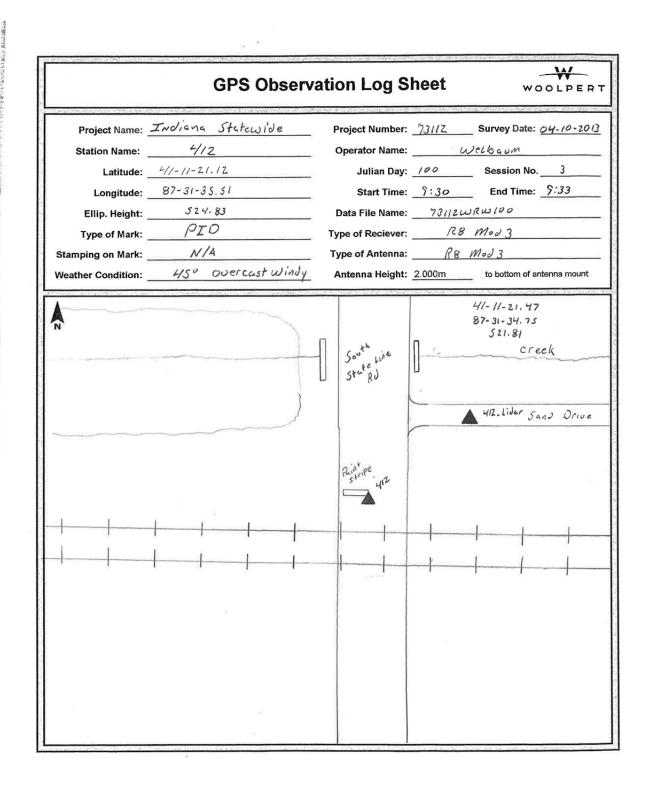






	GPS Observ	ation Log Shee	t WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 411 41-11-39.11 87-20-49.77 528.52 PID N/A 45° Overcust Rain	Operator Name: Julian Day: _/o Start Time: _/o Data File Name: Type of Reciever: Type of Antenna:	Image: Survey Date:         04-11-2013           (L)elbaum         3           (D)elbaum         3           (D)elbaum         3           (III)         End Time:         10:13           (T3112WRW101         73112WRW101         10:13           R8         Mod         3           R8         Mod         3           m         to bottom of antenna mount
<b>A</b>	2	RJ. 233	8
	Asphalt Parkins	Sidewalk	HII- Lidar
BLUS		ß	



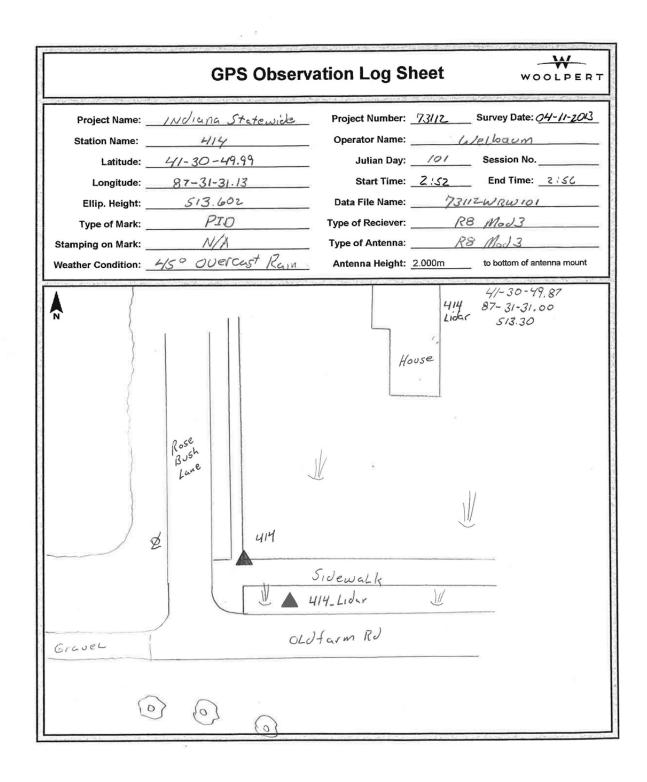




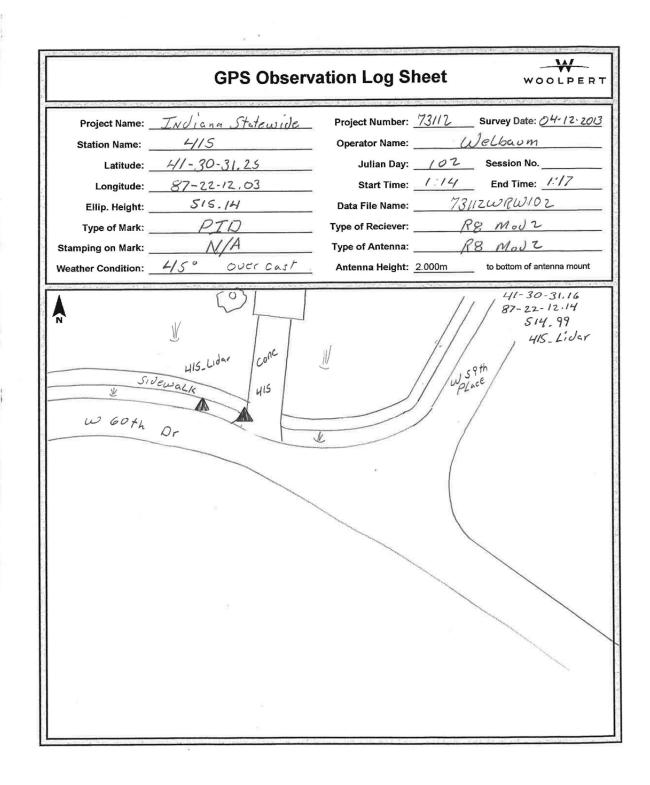
	GPS Observ	vation Log Sheet
	Indiana Statewide 413	
	41-19-40,40	
	87-31-32,04	
Ellip. Height:	609.59	Data File Name: <u>73//ZWRW10/</u>
	DIC	
Stamping on Mark:	N/4	Type of Antenna: <u></u>
Weather Condition:	45° overcast	Antenna Height: 2.000m to bottom of antenna mount
State Line RJ		4/3_Lidar 41-19-39.96 87-31-32.36 606.78 16015 Conc
	W.	Gravel Barn

1





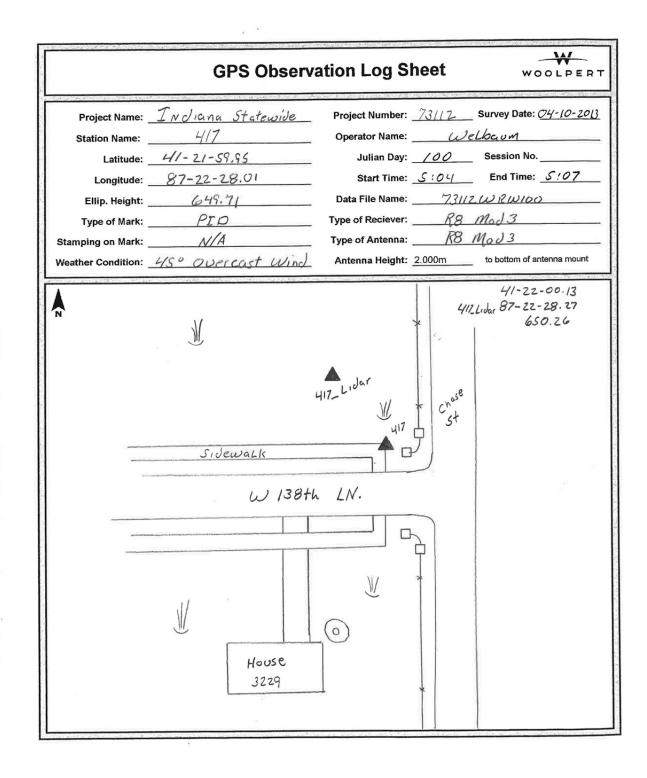






	GPS Observa	tion Log Sheet	WOOLPER
Project Name:	Indiana Stalewide 2013	Project Number:73 []	2 Survey Date: 12/20
Station Name	416 LIDAR	Operator Name:	dy Schneider
Latitudes	NUL 30' 28.69"	Julian Day: 10-2	Session No. 4/4
Longitude:	W 87º 13' 23,66"	Start Time: 1/	17 End Time: 11:25
Ellip. Height:	579.3 sft		11041213 (35
Type of Mark:	No setting (Concrete)	Type of Reciever:	364 128-3
Stamping on Mark:	NA	Type of Antenna: #03	264 R.8-3
Weather Condition:	Cloudy = 40'	Antenna Height: 2, 00	to battom of antenna mount
TREES-	STONES,		- MIEES-







Project Name: Indiana Statemiole 20	12 Project Number: 72/12 Survey Date: 4/10/20
Station Name: <u>418_LIDAR</u>	Operator Name: Cody Schneider
Latitude: <u>MY1 23'41,77"</u>	Julian Day: 100 Session No. 11/4
Longitude: <u>W &amp; 7' 13' 16, 40''</u>	Start Time:          End Time:             Data File Name:
Ellip. Height: 633,0 eff	
Type of Mark: $N_0$ Setting (Grave)         Stamping on Mark: $W/A$	
Neather Condition: $Cloudy \approx 46^{\circ}$	Antenna Height: 2.00 m to battom of antenna mount
	. THEUS
4 / /	* HEU-
RAMD	
	- GRASS-
-GRASS-	Ince
X \	
FENCE	
NCE	
7 K	GRAVEL -
	- GILMUEL
HUL	
7	418-LICAR
, could	
3	
×	
- GRASS -	- GR #55-



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Eilip. Height: Type of Mark: Stamping on Mark:	Fridiana Statewick 2013 419_UDAR N 410 31' 04. 90" W 87° 04' 58.00" 718.05ft No setting (Concrete) NA Raining ~38°	Project Number: 73/12 Survey Date: 9/12/201 Operator Name: Cody Schneider Julian Day: 162 Session No. 9/4 Start Time: 12:52 End Time: 12:59 Data File Name: 15M041213 CJS Type of Reciever: 40369 RE-3 Type of Antenna: 40369 RE-3 Antenna Height: 2.60m to bottom of antenna mount
<b>N</b> ~ (0 <i>R</i>	65- DAA As	K - KANDSCAPING SCAPING
- 61	455 - #92	GRASS. TREESS, GRASS. TREESS, GRASS. UNCERT UNCERT



	GPS Observa	tion Log Sl	heet ,	VOOLPER
Station Name: _ Latitude: _ Longitude: _ Ellio, Height:	t. diana Stataide 2013 420-LIDAR NY11° 33' 34.27" W 86°53' 30.84" 692.75ft No setting (Light Aspha	Operator Name: Julian Day: Start Time: Data File Name:	73/12         Survey Date           Cody         Schneide           102         Session N           13:32         End Tim           ISMO41213C         #0364 P83	er No. <u>N/A</u> e: <u>13:142</u> TS
Stamping on Mark:	No setting (Light Aspha P/A Raining ≈ 40°	Type of Antenna: Antenna Height:	#0364 R8-3 2,00 m to bottom o	f antenna mount
	W WIND MILL LN UZO_LIDAR -LIGAT ASPHALT	(iRtt)	IN NOSCA PING	ne - J
	GRAS4 -		CAND SCAP IM	°



GPS Observa	ation Log Sheet
Project Name: $I r diana Statewide 2013$ Station Name: $421 c UDAR$ Latitude: $N 41^{\circ} 24^{\circ} 48.22^{\circ}$ Longitude: $W 87^{\circ} 03^{\circ} 52.63^{\circ}$ Ellip. Height: $595.1 sff$ Type of Mark: $N_3 setting (Concrete)$ Stamping on Mark: $N/A$ Weather Condition: $Cloudy \approx 44^{\circ}$	Project Number: $73/12$ Survey Date: $41/4202$ Operator Name: $Ccd_4$ Same date Julian Day: $100$ Session No. $4/4$ Start Time: $10!59$ End Time: $11!05$ Data File Name: $4504091613 c 73$ Type of Reciever: $46369 R 8 - 3$ Type of Antenna: $40369 R 8 - 3$ Antenna Height: $2400 m$ to bottom of antenna mount
TREE - CONSCIENCE	421-LIDAR - GRASJ FREZE
	GARSS



GPS Observ	vation Log Sheet
Indiana Statewide 2019 422-LIDAR N 41024' 42.90" W 86" 56' 23.75" 613.3 stt No setting (Concret "/A Cloudy = 420	Operator Name:       Cody       Schoolder         Julian Day:       100       Session No.       4/A         Start Time:       10:17       End Time:       10:26         Data File Name:       ISM 041013 CTS
LARVER CO RD 5 55	CONCRETE A 422-LIDAR # 155 CONCRETE A 5000000000000000000000000000000000000
	Indiana Statewide 2019 422-UDAir N 41024 42.90" W 86" 56 23.75" 613.3 stt No setting (Concol "/A Clardy = 42"



	GPS Observation Log Sheet
Station Na Latit Longit Ellip. He Type of N	IndianaStatewide2013Project Number: $731(2)$ Survey Date: $4/11/201$ me: $423 - LIDAR$ Operator Name: $Cody Schneider$ ude: $423 - LIDAR$ Operator Name: $IOI$ session No. $MA$ Session No. $MA$ ude: $V S 6^{\circ} 43^{\circ} 06.53^{\circ}$ Start Time: $I2.141$ ight: $718.N s 64$ Data File Name: $ISMO 4/113 c DS$ Mark: $N_{\circ}$ Seffing (Concrete)Type of Reciever: $# 0364 R 8^{\circ}3$ Mark: $N/A$ Type of Antenna: $# 0364 R 8^{\circ}3$ tion: $Raining 242^{\circ}$ Antenna Height: $2.00n$ to bottom of antenna mount
	CONCRETE -
CORD NICOW	- GRASS- GRASS- CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE. CARAGE



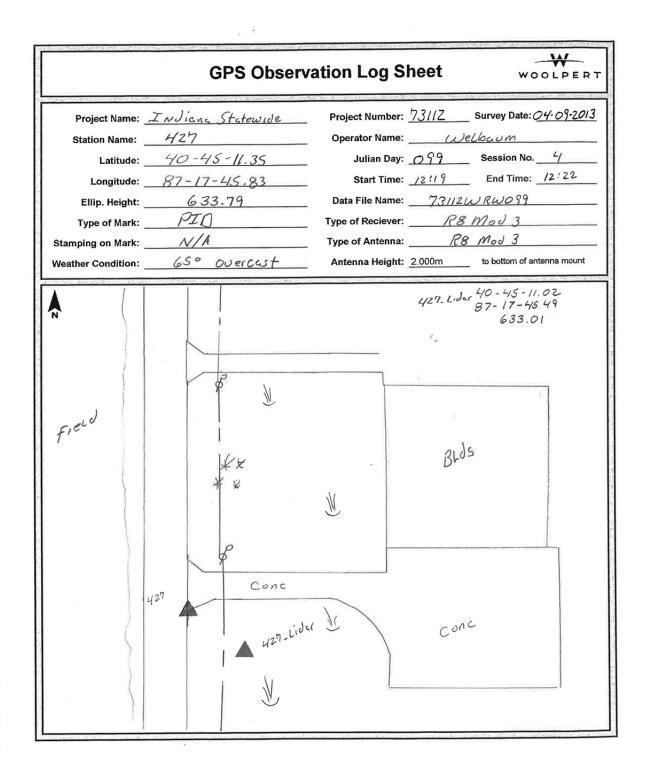
GPS Observation Log Sheet		
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Stalewide 424_LIDAN N 41° 28' 57.24" W 86° 41' 25.47" 606.5 sft No setting (Concrete) "/A Light rain = 43°	Project Number:       7 3112       Survey Date:       911/2         Operator Name:       Cody Schweider         Julian Day:       101       Session No.       9/4         Start Time:       15:00       End Time:       16:2         Data File Name:       15:00       End Time:       16:2         Type of Reciever:       #0364 RE-3         Type of Antenna:       #0364 RE-3         Antenna Height:       2.00 m       to battom of antenna mode
N -GRAM 424-LIDA	- ASP HADE CONCRETE JERUJALEM C.O. G.I.C.	CHAITTIES BY COLORS



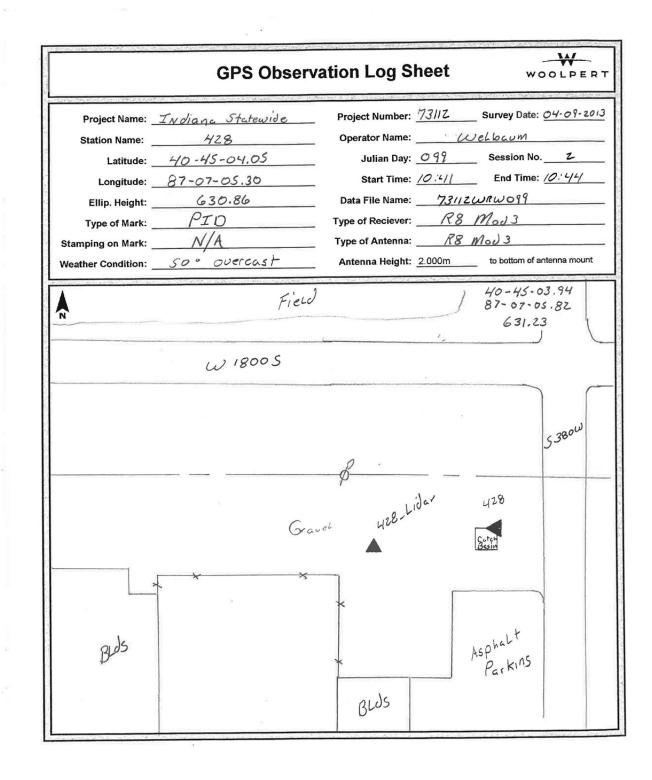
GPS Observation Log Sheet				
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INdiana Statewide 425 40-56-49.05 87-27-45.54 573.62 PID N/A 45° Overcust	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73/12         Survey Date           Welbaum           100         Session N           10:59         End Time           73/12         Www.coo           R8         Mod 3           R8         Mod 3           R8         Mod 3           2.000m         to bottom of	o :: _//:02
Dean St	Sunchi	ine Dr.	40 425_Lider87	- 56-49.27 - 27-45.13 572.73
 	× × +25-Lio +25-Lio	×	Gravel	×
Ň	Asphalt Gravel Asphalt Path	¢,	, V	/

51 ^{- 5}





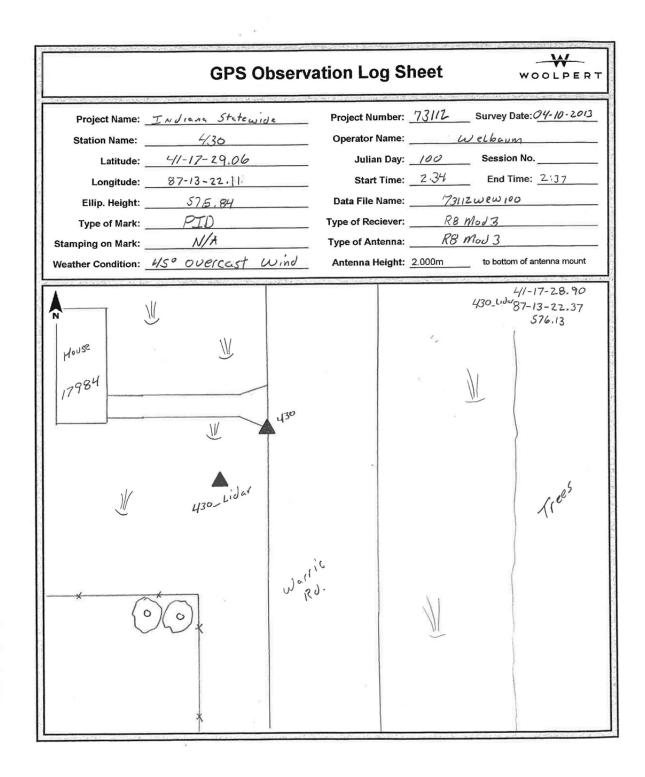


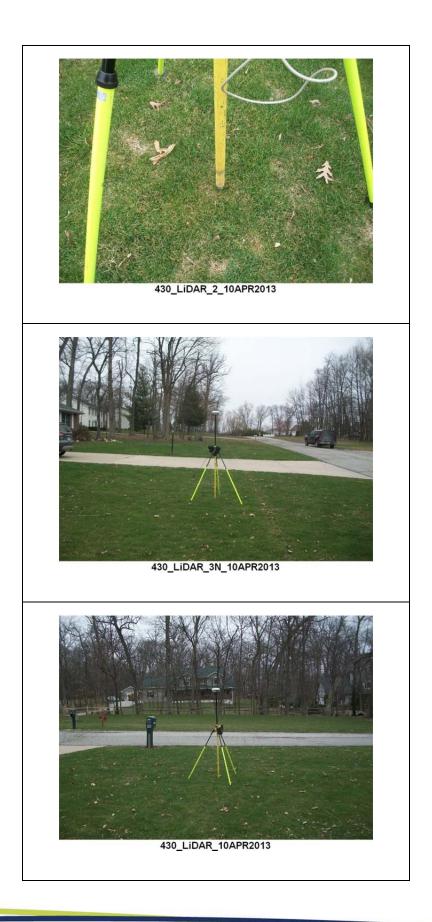




Endiana Statewide 20 429_LIDARA 41° 01 '32.88" 187° 13' 07.55" 580.9 sft No colling (Grovel) N/A Cloudy & woody 276" 7202	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cady D99 17:47 ISMOU #0364 #0364	Schneider Session No. <u>"[1-</u> End Time: <u>17:53</u> 10913 CTS RE-3
C			
DARK ASHALT			GAASS.
GRA43 -		NOOD N GN ON CO NO N GOOM	- MERS - CULTIVATED - FIELD-
	NOTON STUMP TOUSE	NTON STUMP touse GANEL	NOTON STUMP GRAVER O 75 2 900 E







	GPS Observation	Log Sheet WOOLPEI
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark: Weather Condition:	QC-201_LNJHIL Ope <u>N 41°46'33171''</u> <u>W 86'36'45,43''</u> <u>.700,3 sfd</u> Data <u>No soffing (Gravel/Dot</u> ) Type <u>N/A</u> Type	ect Number: $73172$ Survey Date: $91720$ rator Name: $Cody SchweiderJulian Day: 101 Session No. 71Start Time: 12.10 End Time: 12.22a File Name: ISM 041133CT5of Reciever: #0369 RE-3of Antenna: #0369 RE-3enna Height: 2.00r to bottom of entenne moun$
N E LUBLOW ST ASH	DIRT/GRAVEL-	ASPHALT PARIONS
×	- GRASS-	- TREES.
	FENCUT	GANSS-



		GPS Observat		Autor Car	An one of the second	OOLPER
		ing Statenide 2013	Project Number:	73/12	Survey Date	: <u>4/11/20</u>
		202-LIDAR	Operator Name:	Cody	y Ochnei	der
Lat	itude: <u>NU(°3</u>	2'31.06"		101		
Longi	itude: & & & & & 2	125,15		14:13		
		634.6 sft	Data File Name:			
		setting (Concrete)	Type of Reciever: Type of Antenna:			
Stamping on	Mark:	4 4 = 43°	Antenna Height:			
weather cond		4 12	Artenna nergili.	m	10 201011 0	
	GARA 62		CONCRETE DAIVE			
		- GRASS		QC-202-4		ab s 300 é
						0



	GPS Observa	tion Log Sheet	WOOLPERT
Project Name:	Indiana Statewide 20	3Project Number: <u>73/1</u> 2	Survey Date: 4/10/201
	QC-203_LIDAR	Operator Name: Cod	ly Schneider
Latitude:	N41°24'46.66"	Julian Day: 100	Session No/A
Longitude:	W86°46'44.55"	Start Time: 610	End Time: 16:20
Ellip. Height:	602.9 sft	Data File Name:	MO41013055
Type of Mark:	No setting (Grass)	Type of Reciever: <u>#636</u>	4 128.3
Stamping on Mark:	N/A	Type of Antenna: #036 0	1 128-3
Weather Condition:	Cloudy = 46"	Antenna Height: 2.00.	to battom of antenna mount
		HOPPER SI	GRAS
- ASPHALT	- CRASS -	0	LO ENC.RETE-
	QC-203 LIDAR	CONCRETE,	LIGHT (NEW)
		# 102 - FOR SALE -	( DN COMERCE TR



	GPS Observation Log SI	voolper
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	$\frac{N41^{\circ} 36^{\circ} 49,17^{\circ}}{W 86^{\circ} 46^{\circ} 51,83^{\circ}}$ $\frac{743.7 s64}{V 86^{\circ} 16^{\circ} 51,83^{\circ}}$ $\frac{743.7 s64}{V 13.7 s64}$ $\frac{N. setting (Concrete)}{V 100}$ $\frac{N}{A}$ $\frac{10004 843^{\circ}}{V 13^{\circ}}$ $\frac{N}{V 100}$ $\frac{10004 843^{\circ}}{V 13^{\circ}}$ $\frac{N}{V 100}$	73112 Survey Date: 9/11/201 (cd.y. Schneider 101 Session No. 1/A 13:17 End Time: 13:25 15:5M641/13C35 4:0364 8:8-3 4:0364 8:8-3 2:00 c to bottom of antenna mount
	TREES -	- GR#155 -
NS OHALT - NO ANG AD	- CONCRETE - QC-204_LIDAR	#5839
	TREES -	- GRP 55 -
	$\backslash$	mees -



	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-205-LIDAR 1/41° 351 52.19" W 86° 59' 54.87" 594.25ft Concrete N/A Raining 240° - A SPITAUT -	Project Number: $73112$ Survey Date: $4/11/2013$ Operator Name: $Cody$ SchneiderJulian Day: $161$ Session No. $10/4$ Start Time: $18.22$ End Time: $18.26$ Data File Name: $15 MOY    13C55$ Type of Reciever: $\#0364$ $R8-7$ Type of Antenna: $\#0364$ $R8-3$ Antenna Height: $2.00m$ to battom of antenna mount
LUAR	(1455 -	AC-205_LIDAN
- treezes -	# 356	- GRASS-



	GPS Observ	ation Log Sh	eet "	OOLPERT
Station Name: Latitude: Longitude: Eilip. Height: Type of Mark:	Indiana Statewide 2013 QC-206_LIDH12 N 41° 20' 55.57" W 87°01' 41.88" 585.75ft No setting (Concrete MA Cloudy ≈ 45°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Z3112         Survey Date           Crdy         Schweide           100         Session No           3:24         End Time           ISM 041613CJ         End Time           # 0364 Rt-3         # 0364 Rt-3           # 0364 Rt-3         # 0364 Rt-3	2/A ::3 : 2.5/ ::
# 590		Thete - GRASS - GRA	Service Co	FUBLO

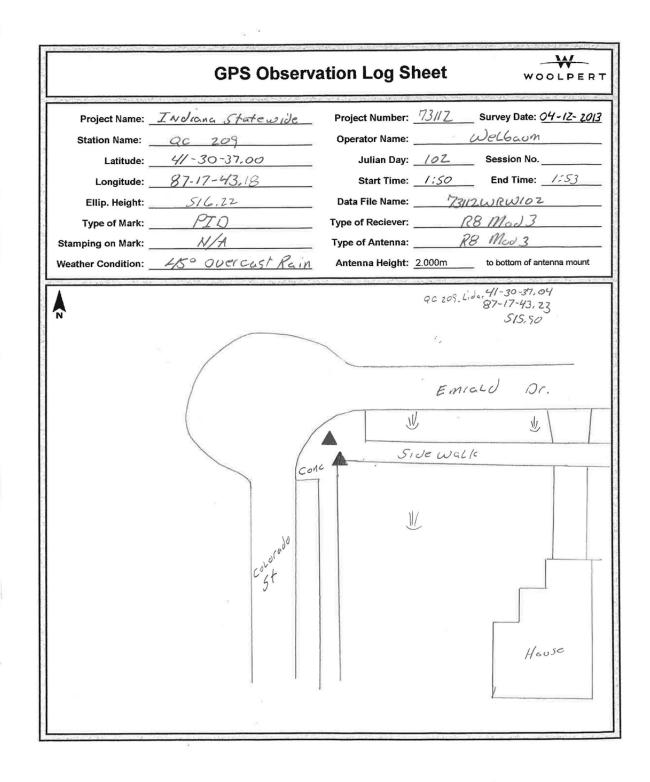


Project Name: $\underline{Ladiana}$ State ide 2013Station Name: $QC \cdot 207 - LIDAD$ Latitude: $\underline{N41^{\circ} 21'16.06''}$ Longitude: $\underline{N57^{\circ} 07'43.70''}$ Ellip. Height: $604.75ff$ Type of Mark: $No$ setting (Gravel)Stamping on Mark: $N[A]$ Weather Condition: $Cludy's undy' = 45''$	Project Number: $73/12$ Survey Date: $4f/2/2a$ Operator Name: $Cdy S dnacides$ Julian Day: $100$ Session No. $M/A$ Start Time: $12:46$ End Time: $12.751$ Data File Name: $134041013CTS$ Type of Reciever: $#03647853$ Type of Antenna: $463647653$ Antenna Height: $2.00 \text{ m}$ to battom of antenna mount
- 6NA55-	BOONE GROVE ELEMENTARY & MIDDLE SCHOOL
	CONCRETE
	ASPHALT -
RED 1+0 ME	GRAVEL



	GPS (	Observation Lo	g Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Fordiana Sta QC-208-L N 41° 32' 03.9 W 87° 08' 29. 554.4 SF No setting (C N/A Raining 24	ADA()     Operator N       6 ¹¹ Julian       65 ⁻¹¹ Start T       1     Data File N       2ancrele)     Type of Reci       Type of Ante	ame: <u>Cody</u> Day: <u>102</u> Fime: <u>12:()</u> ame: <u>ISMC</u> ever: <u>#036</u> anna: <u>#036</u>	_ Session No. <u>~/</u> A _ End Time: <u>(≥;22</u> <u>541/213 C75</u> 1 <i>R&amp;</i> -3
AIG - LONST MO	PERRBORINE CONCRETE		#689 A	STRUCTION / MOVED DIRT IREES_

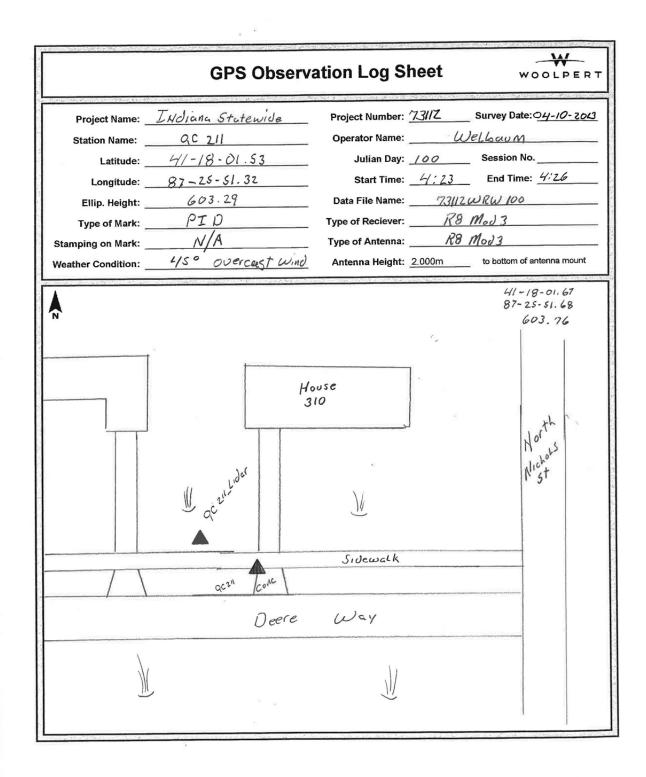






	GPS Obser	vation Log S	heet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INdiana Statewide QC 210 411-17-41.03 87-18-55.12 581.59 PID N/t 415* Overcast Wing	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:		Session No End Time:
	E 177th.Ct. Sidewalk V Couse	QC 210-Lidar	Jussister	Field







Project Name:	7 1' 0			A DE LES AND A DE	A CHINE AND THE SECTION	
Latitude:	QC 21 41-32-14, 87-26-09 507.69 DID N/A	2 11 .66	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	101 7:02 731/20 R8 R8	Session No. End Time: URW101 Mod 3 Mod 3	7:05
BLU S	45 th	St N. Ewime St		Sidewal K	12-13.53 26-09.80 507.16	



	GPS Observation L	og Sheet
Station Name: <u>(</u> Latitude: <u>N (</u> Longitude: <u>M</u>	$\frac{1009'39.60''}{57'00'56.36''}   Operat 87'00'56.36''   Ju 87'00'56.36''   St 587.95(f-   Data Fi No setting (Concrete)   Type of I \frac{1009'39.60''}{7/4}   Type of I 7/4   Type of I$	Number: 73/12 Survey Date: $4/10/20$ tor Name: Cody Schoeldes ulian Day: 166 Session No. $1/n$ tart Time: 15:16 End Time: 15:23 ile Name: ESM641013C3-5 Reclever: FI6364 RE-3 Antenna: $46364$ RE-3 ina Height: 2.66m to bottom of antenna mount
- MURES - 6A AS 5	-ASPHALL CUL-D	e-SAC Reps
410234 - 5M	C ASS-	FREE # 102.33 BITONIES- PARU -ASPHAUT-

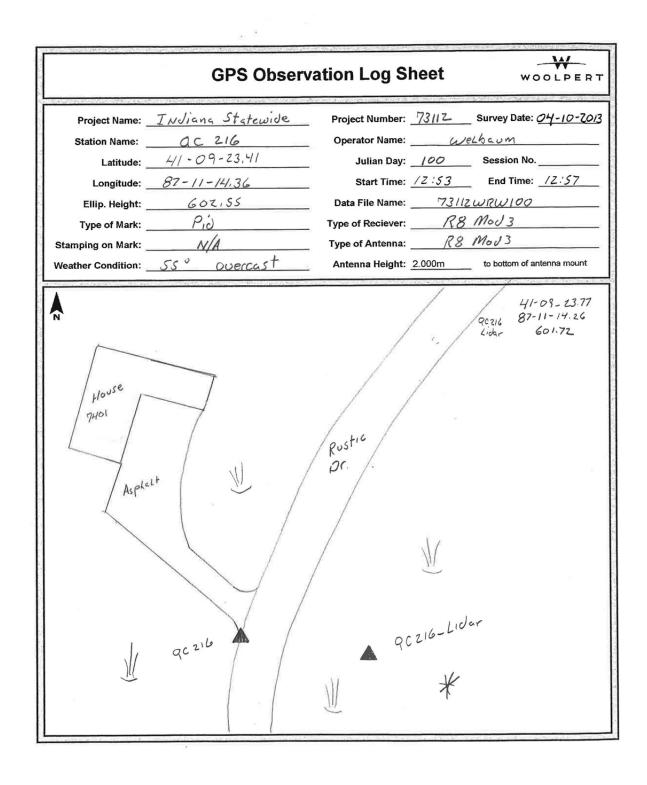


	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Findiana Statewide zorsProject Number: $73/12$ Survey Date: $7/9/201$ QC-214-LIDATOperator Name:Cody SchneiderN41° 61 ' 39.19Julian Day:099Session No.N87° 62' 58.68 "Start Time:16:36End Time:577.756*Data File Name:ISM 040913 CJSNo setting (concrete)Type of Reciever: $40364$ R8-3 $1/A$ Type of Antenna: $40364$ R8-3Cloudy & windy $\approx 65^{\circ}$ Antenna Height: $7.00 m$
N FLUPTED -	GRASS- GRASS- GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL
	J HULL & GRASS- J CHUL J
	CULTIUMTED FIELD

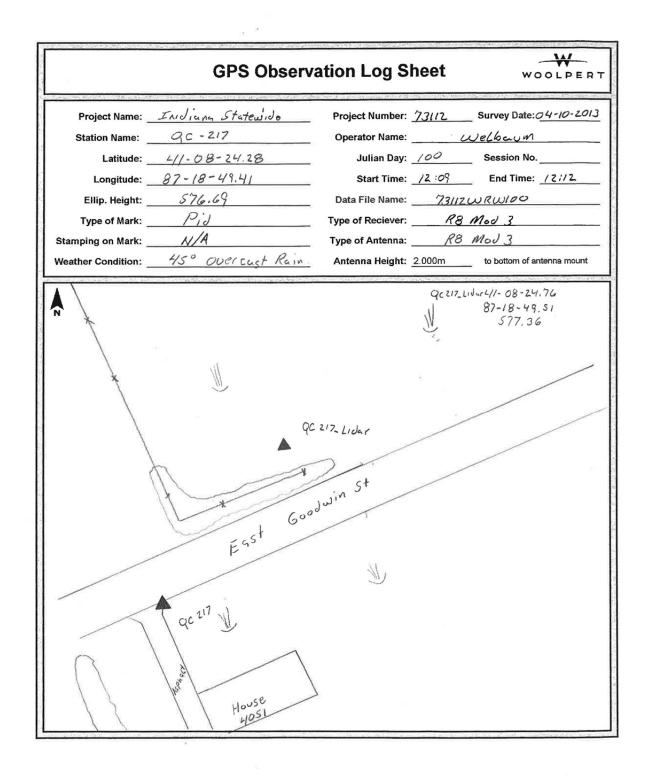


	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: _/ Longitude: _/ Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-215 140° 56' 22.73" 187° 69' 49.16" 551.9 sft Court line intersection N/A Cloudy & windy ~ 76°	Operator Name: Julian Day:099	Session No. <u>~//~</u> End Time: <u>/&amp;:45</u> 40413635 R&-3 R&-3 R&-3
GRASS- GRASS-	BROGICSIDE BROGICSIDE PARIE	TRE X FENCE X FENCE COURT X FERNCE BASEBALL FIELD - GRAS	- Gautss -

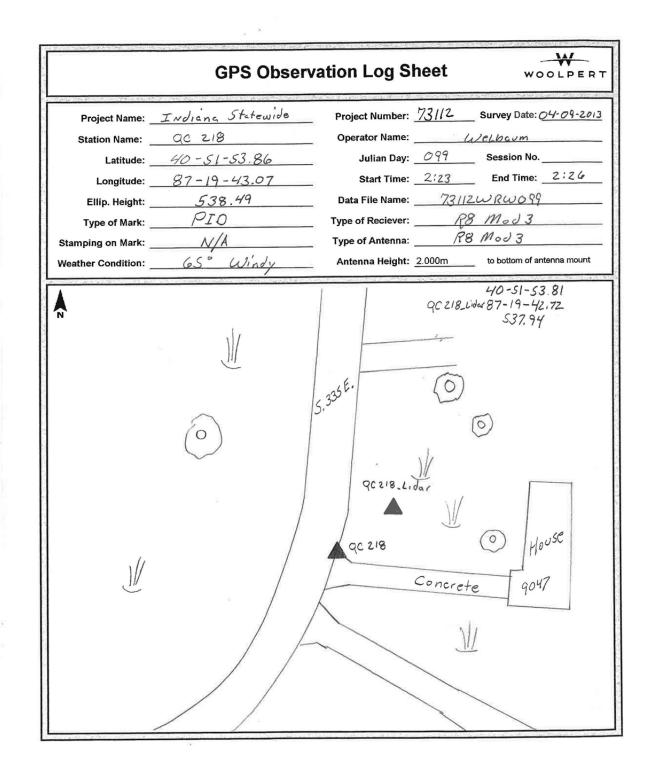














	GPS Obser	vation Log S	heet	wa	W DOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide QC 219 40-46-48.23 87-26-28.54 559.98 PID N/A 65° Overcast	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	099 /z:58 73112 	2 <u>eLlocum</u> Session No. End Time: CURW099 Mod 3 Mod 3	_/:01
	Field		QC 219.	40 - 46 - LiJ _{ar} 87 - 26- 560	
		W 150	05	Princton	Pky.
House to	x ac 2A QC 2A QC 2A QC 2A QC 2A Rose St	*			
	, 1				



	GP	S Observation Log	Sheet	WOOLPER
Station Na Lati Longi Ellip. He Type of I Stamping on I	ame: $\sum_{N \in Jicnc} S + c$ ame:       QC 220         tude: $4/1 - 08 - 24.5$ tude: $87 - 26 - 58.5$ sight: $538.25$ Mark: $PID$ Mark: $N/A$ ition: $45^{\circ}$ Windy	Operator National Content of Cont	me: <u>10 ; 13</u> me: <u>10 ; 13</u> me: <u>731/20</u> ver: <u>R8</u> ma: <u>R8</u>	Survey Date: <u>04-10-201</u> <u>Delbqum</u> Session No. <u>4</u> End Time: <u>10.16</u> Wall 100 <u>Mol 3</u> to bottom of antenna mount
2		Asphalt Parkins Upackins Path	*	
	M	B.Ball Court	SHelter	
	M	QC 220 ALSO QC 220 Lidor QC 220 Lidor	Resurface	*



## **VOLUME 3**

Block 10 Ground and LiDAR Control

## ORTHOIMAGERY AND LIDAR CONTROL SURVEY REPORT

2013 INDIANA STATEWIDE IMAGERY PROGRAM

Indiana Office of Technology

July 2013

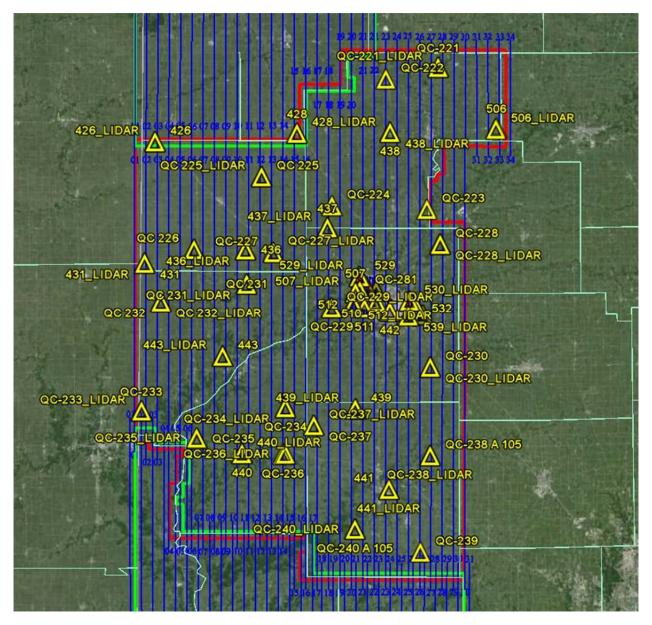
Prepared by Woolpert, Inc. 4454 Idea Center Blvd. Dayton, OH 45420

Woolpert.com



# VOLUME 3 – SECTION 1: BLOCK 10 GPS CONTROL DIAGRAM

This section contains a graphical representation of the ground control used for Block 9 of the 2013 Indiana Statewide Imagery project.



Not to Scale

## VOLUME 3 - SECTION 2: BLOCK 10 GROUND/LIDAR CONTROL COORDINATE LISTINGS

## COORDINATE SYSTEM: GRID

HORIZONTAL DATUM: NAD83 (2007) VERTICAL DATUM: NAVD88 ZONE: Indiana West (1302) GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
426	1998176.019	2839699.793	731.378	COR CONC SIDEWALK
428	2004333.169	2943106.647	740.740	COR CONC CATCH BASIN
431	1910058.113	2832187.498	732.874	COR PAINT STRIPE
432	1787629.31	2829624.05	649.604	CORNER CONCRETE_LIDAR
434	1693385.64	2949300.91	721.181	COR CONC. DRIVE
436	1919784.961	2905714.017	753.660	COR CONC SIDEWALK
437	1935861.816	2965295.529	751.703	CONCRETE CORNER
438	2005252.520	3010821.100	692.472	RAILROAD "X"
439	1804047.708	2985991.643	779.235	CONCRETE CORNER
440	1771606.930	2903152.563	610.389	CONCRETE CORNER
441	1745680.692	3010175.231	774.534	COR SIDEWALK@ DRIVE
442	1875156.870	3010744.823	652.660	ARROW TIP
443	1842298.940	2888987.122	716.453	CONCRETE CORNER
506	2008254.767	3088412.677	710.191	CONCRETE CORNER
507	1888792.755	2985760.963	673.957	DARK ASPHALT CORNER
508	1893142.248	2993493.627	693.857	SIDEWALK CORNER
509	1889848.787	3000795.671	667.947	SIDEWALK CORNER
510	1881694.246	3001045.142	536.670	ARROW TIP/LIDAR
511	1877547.906	2992279.980	552.028	CONCRETE CORNER/LIDAR
512	1880090.084	2984254.657	551.920	DARK ASPHALT CORNER
529	1900391.706	2988670.194	682.540	CONCRETE CORNER
530	1882372.989	3025462.046	662.070	HATCHED AREA CORNER
532	1877213.556	3030190.854	658.317	SIDEWALK CORNER
533	1872512.628	3034767.328	657.279	ASPHALT CORNER
539	1872206.781	3024358.255	654.430	CENTER OF MANHOLE
QC-221	2052224.991	3045946.612	666.249	CORNER OF HATCHED AREA
QC-222	2043689.087	3007876.930	670.378	COURT LINES/LIDAR
QC-223	1949133.220	3037722.819	645.927	CONCRETE CORNER/LIDAR
QC-224	1951717.096	2968628.024	728.586	CONCRETE CORNER/LIDAR

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
QC-225	1972798.984	2917364.166	747.084	COR CONC WALK
QC-226	1920071.555	2868180.814	754.001	COR CONC SIDEWALK
QC-227	1917793.683	2926049.254	696.232	CONCRETE CORNER
QC-228	1923810.588	3047484.603	635.105	CONCRETE CORNER
QC-229	1877588.667	2968442.627	577.774	CONCRETE CORNER
QC-230	1834390.294	3040203.103	774.171	CONCRETE CORNER
QC-231	1894962.621	2906533.145	695.227	COR PAINT STRIPE
QC-232	1881927.602	2844051.257	719.720	COR CONC SIDEWALK
QC-233	1802536.618	2829693.471	722.902	CONCRETE CORNER
QC-234	1804972.515	2934826.667	707.484	SIDEWALK CORNER
QC-235	1782386.432	2870410.310	621.001	CONCRETE CORNER
QC-236	1770886.485	2932959.972	724.686	CONCRETE CORNER
QC-237	1792055.524	2955444.123	775.938	CONCRETE CORNER
QC-238	1770096.986	3040177.985	787.377	COR PAINT STRIPE
QC-239	1700014.918	3033104.493	824.346	COURT LINE INTERSECTION/LIDAR
QC-240	1716649.787	2985336.409	781.385	COR CONC DRIVE
QC-241	1749722.99	2854407.35	540.799	SIDEWALK CORNER
QC-281	1890157.620	2988908.105	675.342	SIDEWALK CORNER
QC-282	1883512.124	2996809.539	613.182	SIDEWALK CORNER/LIDAR

### LIDAR CONTROL COORDINATES

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
426_LIDAR	1998178.713	2839664.907	730.616	SHORT GRASS
428_LIDAR	2004322.095	2943066.272	741.103	GRAVEL
431_LIDAR	1910096.128	2832211.201	731.900	GRAVEL
432	1787629.31	2829624.05	649.604	CORNER CONCRETE_LIDAR
434_LIDAR	1693402.53	2949313.99	720.846	LIGHT ASPHALT GRAVEL
436_LIDAR	1919793.732	2905726.498	753.524	SHORT GRASS
437_LIDAR	1935878.196	2965278.223	751.594	CONCRETE
438_LIDAR	2004919.522	3010948.191	692.128	GRAVEL
439_LIDAR	1804047.502	2985606.859	776.870	GRASS
440_LIDAR	1771586.021	2903140.190	610.721	CONCRETE
441_LIDAR	1745664.703	3010162.660	775.393	SHORT GRASS
442_LIDAR	1875154.281	3010676.533	652.239	CONCRETE
443_LIDAR	1842304.397	2889065.510	713.830	GRAVEL
506_LIDAR	2007286.581	3088050.338	698.280	SAND/GRAVEL
507_LIDAR	1888890.131	2985670.894	673.526	LIGHT ASPHALT
508_LIDAR	1892868.862	2993469.028	685.160	CONCRETE
509_LIDAR	1889715.244	3000776.916	661.978	CONCRETE
510	1881694.246	3001045.142	536.670	ARROW TIP/LIDAR
511	1877547.906	2992279.980	552.028	CONCRETE CORNER/LIDAR

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
512_LIDAR	1880313.343	2983892.801	555.214	GRAVEL
529_LIDAR	1900444.844	2988614.038	682.611	GRASS
530_LIDAR	1882746.105	3025010.392	664.808	CONCRETE
532_LIDAR	1877422.724	3030260.602	659.724	GRAVEL
533_LIDAR	1872504.811	3034782.763	657.357	GRAVEL
539_LIDAR	1871581.515	3024286.437	651.796	GRASS
QC-221_LIDAR	2052273.956	3046150.772	667.462	GRAVEL
QC-222	2043689.087	3007876.930	670.378	COURT LINES/LIDAR
QC-223	1949133.220	3037722.819	645.927	CONCRETE CORNER/LIDAR
QC-224	1951717.096	2968628.024	728.586	CONCRETE CORNER/LIDAR
QC-225_LIDAR	1972775.355	2917366.128	746.472	SHORT GRASS
QC-226_LIDAR	1919978.984	2868183.858	752.221	SHORT GRASS
QC-227_LIDAR	1918143.725	2925584.093	694.473	LIGHT ASPHALT
QC-228_LIDAR	1923915.858	3047353.400	634.700	CONCRETE
QC-229_LIDAR	1877545.996	2968452.210	578.239	CONCRETE
QC-230_LIDAR	1834401.553	3040192.193	774.508	CONCRETE
QC-231_LIDAR	1894991.385	2906488.465	693.127	SHORT GRASS
QC-232_LIDAR	1881931.538	2844002.198	719.813	CONCRETE
QC-233_LIDAR	1802512.167	2829998.777	721.464	GRAVEL
QC-234_LIDAR	1805034.603	2934807.978	707.174	GRASS
QC-235_LIDAR	1782978.425	2870056.064	628.203	GRAVEL
QC-236_LIDAR	1771383.355	2934634.390	719.185	GRAVEL
QC-237_LIDAR	1792030.946	2955428.573	776.205	CONCRETE
QC-238_LIDAR	1770128.933	3040099.640	786.335	SHORT GRASS
QC-239	1700014.918	3033104.493	824.346	COURT LINE INTERSECTION/LIDAR
QC-240_LIDAR	1716712.755	2985433.735	779.945	SHORT GRASS
QC-241_LIDAR	1749789.18	2854428.96	541.505	GRASS/GRAVEL
QC-281_LIDAR	1890643.936	2989153.035	670.802	LIGHT ASPHALT

## COORDINATE SYSTEM: GEODETIC

### HORIZONTAL DATUM: WGS 84 VERTICAL DATUM: NAVD88 GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Latitude	Longitude	E. Height US Ft.	Description
426	40°44'00.63963"	087°29'28.53729"	622.685	COR CONC SIDEWALK
428	40°45'04.05695"	087°07'05.30166"	630.868	COR CONC CATCH BASIN
431	40°29'29.56054"	087°31'00.48342"	624.318	COR PAINT STRIPE
432	40°09'19.61496"	087°31'25.77873"	542.251	CORNER CONCRETE_LIDAR
434 A	39°53'51.25407"	087°05'44.25506"	612.067	COR CONC. DRIVE
436	40°31'08.15988"	087°15'09.05196"	644.042	COR CONC SIDEWALK
437	40°33'47.44132"	087°02'17.44553"	641.450	CONCRETE CORNER
438	40°45'12.47511"	086°52'25.42246"	581.919	RAILROAD "X"
439	40°12'04.66368"	086°57'51.58129"	669.584	CONCRETE CORNER
440	40°06'43.80236"	087°15'38.37713"	501.649	CONCRETE CORNER
441	40°02'27.42049"	086°52'41.63962"	664.901	COR SIDEWALK@ DRIVE
442	40°23'46.92107"	086°52'30.40948"	542.116	ARROW TIP
443	40°18'22.07839"	087°18'43.04561"	607.562	CONCRETE CORNER
506	40°45'39.08614"	086°35'37.00263"	598.943	CONCRETE CORNER
507	40°26'02.12629"	086°57'53.09167"	563.689	DARK ASPHALT CORNER
508	40°26'44.99289"	086°56'12.99746"	583.453	SIDEWALK CORNER
509	40°26'12.31702"	086°54'38.63205"	557.442	SIDEWALK CORNER
510	40°24'51.72985"	086°54'35.61271"	426.216	ARROW TIP/LIDAR
511	40°24'10.91052"	086°56'29.01947"	441.748	CONCRETE CORNER/LIDAR
512	40°24'36.14663"	086°58'12.71576"	441.737	DARK ASPHALT CORNER
529	40°27'56.70538"	086°57'15.24939"	572.156	CONCRETE CORNER
530	40°24'57.84387"	086°49'19.91363"	551.240	HATCHED AREA CORNER
532	40°24'06.71653"	086°48'18.98588"	547.470	SIDEWALK CORNER
533	40°23'20.11615"	086°47'20.03265"	546.425	ASPHALT CORNER
539	40°23'17.41458"	086°49'34.56650"	543.716	CENTER OF MANHOLE
QC-221	40°52'55.53514"	086°44'46.65977"	555.661	CORNER OF HATCHED AREA
QC-222	40°51'32.34336"	086°53'02.54358"	559.916	COURT LINES/LIDAR
QC-223	40°35'57.15763"	086°46'38.40314"	534.781	CONCRETE CORNER/LIDAR
QC-224	40°36'24.09875"	087°01'34.13246"	618.356	CONCRETE CORNER/LIDAR
QC-225	40°39'52.21849"	087°12'39.19315"	637.390	COR CONC WALK
QC-226	40°31'09.99649"	087°23'15.06359"	644.886	COR CONC SIDEWALK
QC-227	40°30'48.78469"	087°10'45.71073"	586.373	CONCRETE CORNER
QC-228	40°31'46.57679"	086°44'33.12213"	523.802	CONCRETE CORNER

Station Name	Latitude	Longitude	E. Height US Ft.	Description
QC-229	40°24'11.57752"	087°01'37.15017"	467.806	CONCRETE CORNER
QC-230	40°17'03.20848"	086°46'11.52799"	663.796	CONCRETE CORNER
QC-231	40°27'02.88589"	087°14'57.84057"	585.705	COR PAINT STRIPE
QC-232	40°24'52.13183"	087°28'25.32061"	611.142	COR CONC SIDEWALK
QC-233	40°11'46.93357"	087°31'25.83689"	615.418	CONCRETE CORNER
QC-234	40°12'13.95910"	087°08'51.00492"	598.330	SIDEWALK CORNER
QC-235	40°08'29.47070"	087°22'40.26371"	512.739	CONCRETE CORNER
QC-236	40°06'37.09346"	087°09'14.71396"	615.610	CONCRETE CORNER
QC-237	40°10'06.37142"	087°04'25.29485"	666.614	CONCRETE CORNER
QC-238	40°06'27.85080"	086°46'14.77307"	677.381	COR PAINT STRIPE
QC-239	39°54'55.49858"	086°47'48.70961"	715.259	COURT LINE INTERSECTION/LIDAR
QC-240	39°57'40.96130"	086°58'01.49743"	672.080	COR CONC DRIVE
QC-241	40°03'06.10508"	087°26'04.66471"	433.022	SIDEWALK CORNER
QC-281	40°26'15.57001"	086°57'12.36597"	565.023	SIDEWALK CORNER
QC-282	40°25'09.77251"	086°55'30.33072"	502.784	SIDEWALK CORNER/LIDAR

#### LIDAR CONTROL COORDINATES

Station Name	Latitude	Longitude	E. Height US Ft.	Description
426_LIDAR	40°44'00.66464"	087°29'28.99062"	621.924	SHORT GRASS
428_LIDAR	40°45'03.94737"	087°07'05.82621"	631.232	GRAVEL
431_LIDAR	40°29'29.93734"	087°31'00.17905"	623.344	GRAVEL
432	40°09'19.61496"	087°31'25.77873"	542.251	CORNER CONCRETE_LIDAR
434_LIDAR	39°53'51.42105"	087°05'44.08728"	611.732	LIGHT ASPHALT GRAVEL
436_LIDAR	40°31'08.24679"	087°15'08.89056"	643.906	SHORT GRASS
437_LIDAR	40°33'47.60327"	087°02'17.66965"	641.342	CONCRETE
438_LIDAR	40°45'09.18165"	086°52'23.78140"	581.573	GRAVEL
439_LIDAR	40°12'04.66671"	086°57'56.54039"	667.223	GRASS
440_LIDAR	40°06'43.59548"	087°15'38.53584"	501.982	CONCRETE
441_LIDAR	40°02'27.26276"	086°52'41.80173"	665.759	SHORT GRASS
442_LIDAR	40°23'46.89708"	086°52'31.29221"	541.696	CONCRETE
443_LIDAR	40°18'22.13431"	087°18'42.03398"	604.938	GRAVEL
506_LIDAR	40°45'29.53944"	086°35'41.78126"	587.024	SAND/GRAVEL
507_LIDAR	40°26'03.08974"	086°57'54.25479"	563.259	LIGHT ASPHALT
508_LIDAR	40°26'42.29172"	086°56'13.32149"	574.758	CONCRETE
509_LIDAR	40°26'10.99772"	086°54'38.87798"	551.475	CONCRETE
510	40°24'51.72985"	086°54'35.61271"	426.216	ARROW TIP/LIDAR
511	40°24'10.91052"	086°56'29.01947"	441.748	CONCRETE CORNER/LIDAR
512_LIDAR	40°24'38.35742"	086°58'17.39008"	445.035	GRAVEL
529_LIDAR	40°27'57.23130"	086°57'15.97495"	572.227	GRASS
530_LIDAR	40°25'01.54409"	086°49'25.73880"	553.981	CONCRETE
532_LIDAR	40°24'08.78133"	086°48'18.07580"	548.874	GRAVEL

Station Name	Latitude	Longitude	E. Height US Ft.	Description
533_LIDAR	40°23'20.03839"	086°47'19.83352"	546.502	GRAVEL
539_LIDAR	40°23'11.23782"	086°49'35.51810"	541.090	GRASS
QC-221_LIDAR	40°52'56.01119"	086°44'43.99936"	556.874	GRAVEL
QC-222	40°51'32.34336"	086°53'02.54358"	559.916	COURT LINES/LIDAR
QC-223	40°35'57.15763"	086°46'38.40314"	534.781	CONCRETE CORNER/LIDAR
QC-224	40°36'24.09875"	087°01'34.13246"	618.356	CONCRETE CORNER/LIDAR
QC-225_LIDAR	40°39'51.98503"	087°12'39.16724"	636.779	SHORT GRASS
QC-226_LIDAR	40°31'09.08184"	087°23'15.02004"	643.106	SHORT GRASS
QC-227_LIDAR	40°30'52.23868"	087°10'51.73846"	584.617	LIGHT ASPHALT
QC-228_LIDAR	40°31'47.62204"	086°44'34.81601"	523.398	CONCRETE
QC-229_LIDAR	40°24'11.15579"	087°01'37.02664"	468.272	CONCRETE
QC-230_LIDAR	40°17'03.32013"	086°46'11.66826"	664.134	CONCRETE
QC-231_LIDAR	40°27'03.16930"	087°14'58.41923"	583.605	SHORT GRASS
QC-232_LIDAR	40°24'52.16859"	087°28'25.95508"	611.236	CONCRETE
QC-233_LIDAR	40°11'46.70690"	087°31'21.90095"	613.973	GRAVEL
QC-234_LIDAR	40°12'14.57254"	087°08'51.24638"	598.020	GRASS
QC-235_LIDAR	40°08'35.30933"	087°22'44.85053"	519.944	GRAVEL
QC-236_LIDAR	40°06'42.01637"	087°08'53.16749"	610.092	GRAVEL
QC-237_LIDAR	40°10'06.12855"	087°04'25.49519"	666.882	CONCRETE
QC-238_LIDAR	40°06'28.16923"	086°46'15.77993"	676.339	SHORT GRASS
QC-239	39°54'55.49858"	086°47'48.70961"	715.259	COURT LINE
QC-240_LIDAR	39°57'41.58234"	086°58'00.24644"	670.639	SHORT GRASS
QC-241_LIDAR	40°03'06.76010"	087°26'04.39025"	433.726	GRASS/GRAVEL
QC-281_LIDAR	40°26'20.37216"	086°57'09.18898"	560.476	LIGHT ASPHALT

# VOLUME 3 - SECTION 3: BLOCK 10 GROUND/LIDAR CONTROL LOGS AND PHOTOS

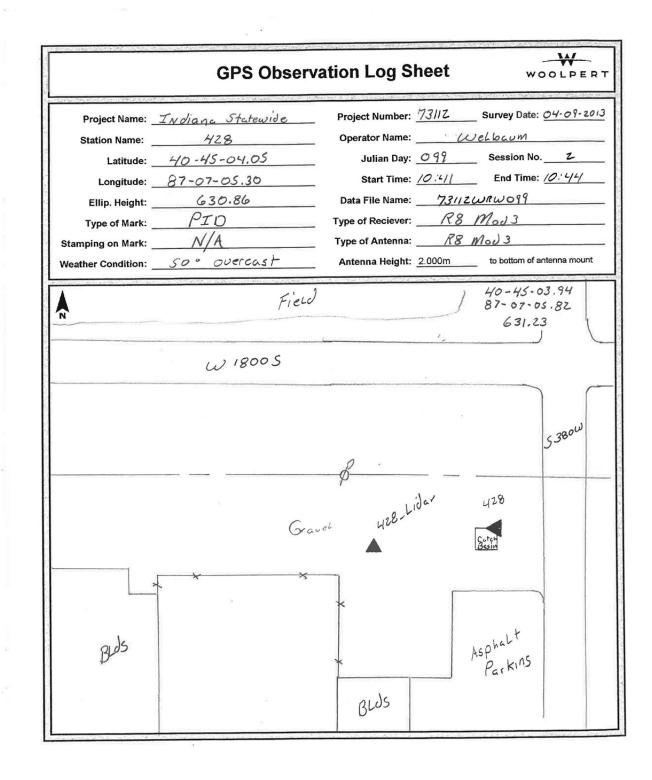
This section contains the station recovery information sheets and photographs for the ground control and LiDAR control stations.

The data is assembled on the following pages.

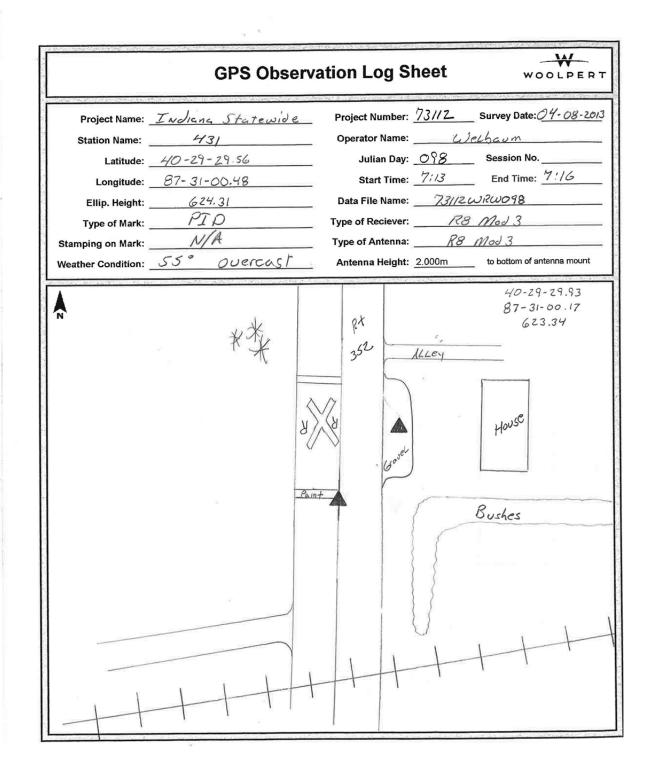
## GROUND CONTROL

	GPS Obser	vation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 426 40-44-00.63 87-29-28.53 622.68 PIO	Operator Name:       Uelb         Julian Day:       099       Set         Start Time:       /:35       E         Data File Name:       73112 w R	<u>ないが</u> ssion No nd Time: ω つ??
Stamping on Mark: Weather Condition:	N/A 65° Windy	Type of Antenna: <u>R8</u> M	
Rt 71	U U U U U U U U U U U U U U U U U U U	House House 8757 Sidewalk 426 Gravel	40-44-00.66 87-29-28.99 621.92









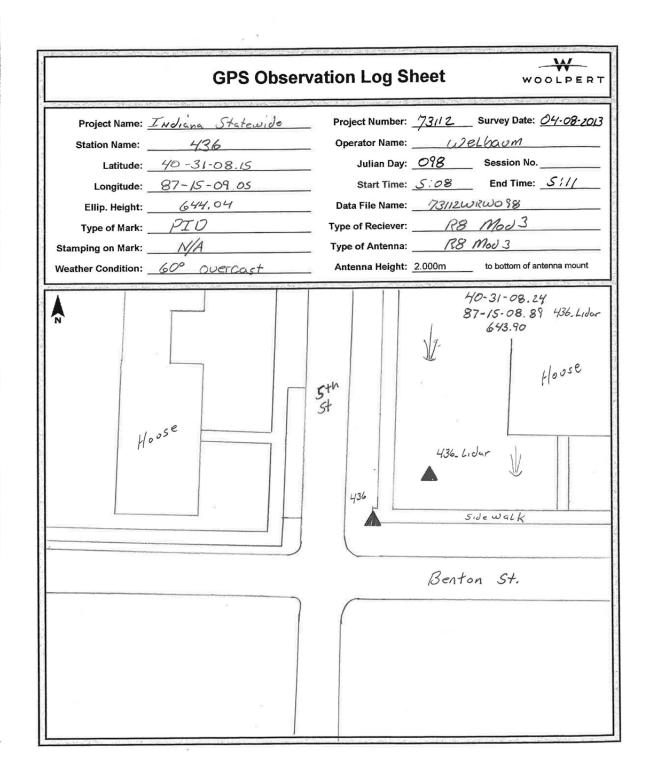


Project Name: Indiana Statewide 2013 Station Name: 432	Project Number: 73112 Survey Date: 05 Apr 2 Operator Name: Ben Christie
Latitude: 40° 09' 19,61"N	Julian Day: <u>095</u> Session No. $\frac{N_A}{R}$ R
Longitude: <u> </u>	Start Time: <u>        / </u> End Time: <u>      / </u>
Ellip. Height: $542.25$ sft	Data File Name: <u>ISM_040513_BRC</u>
Type of Mark: CORNER CONCRETE	Type of Reciever: <u>R8-3</u>
Stamping on Mark: $\underline{N/A}$ Weather Condition: $\underline{55^{\circ} CLEAR}$	Type of Antenna: $R & 8 - 3$ Antenna Height: $2 \cdot 0  m$ to bottom of antenna mour
W 1100 5	CONC.



	GPS Obser	vation Log Sl	heet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INdiana Statewide 434 39-53-51.25 87-05-44.25 612.06 PID N/A 55° CLEGT	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	095 4:08 731120 R8 M	Survey Date: <u>04.05.201</u> Session No End Time: <u>4.11</u> DRW095 10 d 3 cd 3 to bottom of antenna mount
	Short Grass	474 lidar	-53-51.42 -05-44.08 611,73	Tall Grass
	Gravel and Asphalt, conc House 995	434	- Lidar	







	GPS Observ	ation Log She	et w	OOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 201 437 N40° 33' 47.44" W 87° 02' 17.45" 641.3 sft Concrete corner N/A Clear ≈53°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reclever: # Type of Antenna:	<u>TSM040513 CJ</u> 0364 R <del>E</del> -3	. <u>MA</u> <u>14715</u> 3
<b>A</b> ₂	# 9621	LONCRETE -	437	1 X FENDER
- GRA	-small TREES	- 6 MB-	GNASS	W/BRUSIX X
	CO RD 1300 5		SPHALT -	



Project Name:Indiana, Statewide 2010Station Name: $438$ Latitude: $900$ 45' 12, 48''Longitude: $1000$ 45' 12, 48''Longitude: $1000$ 45' 25, 42''Ellip. Height: $581.9 eft$ Type of Mark: $Paileaad 4 \times 10^{10}$ Stamping on Mark: $1000$ 49 260°Weather Condition: $Cloudy = 60^{10}$	Project Number:       73117       Survey Date:       4/9/2013         Operator Name:       Cody Schneider         Julian Day:       099       Session No.       M/m.         Start Time:       11:40       End Time:       11:50         Data File Name:       1500/04013035         Type of Reciever:       40364 R8-7         Type of Antenna:       40364 R8-3         Antenna Height:       2.00,m       to bottom of antenna mount
BRAUEL TUP RATIO	ASS - CONCRETE GARANSI WICCONSTIC
	438 WHITTE PAINT CONT CRETE WARK CONT CRETE WARK CONTRESS

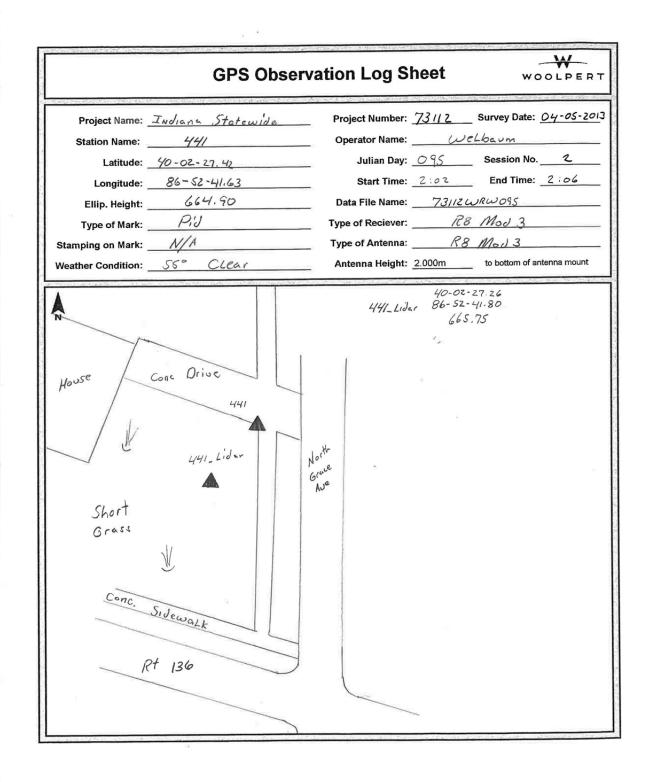


Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Shatewide 2013 439 N 40° 12' 04.66 W 86° 57' 51.58 669.65Ft Concrete corner N/A Clear = 55°	Project Number: 73112 Survey Date: 4/5/201 Operator Name: Cody Schneider Julian Day: 095 Session No. P/A Start Time: 18:13 End Time: 18:29 Data File Name: ISM 040513 CJS Type of Antenna: #0364 RE-3 Type of Antenna: #0364 RE-3 Antenna Height: 2:00 to bottom of antenna mount
C R * 63 -	CORD WILLOON STONE STONE GRASS- GRAVEL- HED	SPITALT - PSTONE - GRASI- H39 H3231 CONCRETE - GARAGE - TREE OACLEVARD CONCRETE - TREE OACLEVARD -GRASI CARAGE - TREE



	GPS Obser	rvation Log Sheet	WOOLPERT
Station Name: _ Latitude: _ Longitude: _ Ellip. Height: _ Type of Mark: _ Stamping on Mark:	440 N40°06'43.80" W87°15'38.38" 501.6 sft Concrete corner	Data File Name: Type of Reciever: ↓ 0369 R Type of Antenna: ↓ 0369 R	<u>dimeid</u> iession No. <u>W/A</u> End Time: <u>14:37</u> 813CT3 8-3 8-3
N FDE	STORAGE	COCH GRAVER/DIRT -	- A
	AIN CO. MUSEVINI	CONCRETE PAD	
-	GRASS-	GRASS -	







GPS Observation Log Sheet		
Project Name:	Endiana Statewide 2013	Project Number: 731(2. Survey Date: 4/7/20
Station Name:	442	Operator Name: Cody Schneder
Latitude:	N40°Z3'46.92"	Julian Day: <u>097</u> Session No. $\frac{N/A}{A}$
Longitude:	W 86° 52' 30.41"	Start Time: 8:57 End Time: 9:02
	542.1sft	Data File Name:
Type of Mark:	A row tip	Type of Reciever: #0364 R8-3
Stamping on Mark:	N/A	Type of Antenna: _ # 036 4
Weather Condition:	Partly Cloudy = 55	Antenna Height: 2.00 m to bottom of antenna moun
N		LAFAYETTE TECOMSETT
		- PRULICING
- CRASS -		A raete
/	-curricaetie -	TREE CANSE VELLAN EN
	"kn41-	CL NIRETÉ
/	7 1 3 FLACPULES	GRASS-



GPS Observa	tion Log Sheet
Project Name: Indiana Statewide 2013 Station Name: <u>443</u> Latitude: <u>N 40° 18' 27.08"</u> Longitude: <u>N 87° 18' 43.05"</u> Ellip. Height: <u>667.6.64</u> Type of Mark: <u>Concedea Corner</u> Stamping on Mark: <u>N A</u> Weather Condition: <u>Partly Cloudy 265°</u>	Project Number: $73(12)$ Survey Date: $9/8/2013$ Operator Name: $Cody Solvae.der$ Julian Day: $098$ Session No.Start Time: $167.91$ End Time:Ib: $167.91$ End Time:Data File Name: $ISMOYO8 (3 CJS)$ Type of Reciever: $40364$ $R8-3$ Type of Antenna: $40364$ $R8-3$ Antenna Height: $2.00$ to bottom of antenna mount
GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GRASS- GR	meter State
# 710	TREE TO NORETE



	GPS Observ	ation Log She	woolper
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2017 506 N 40° 45' 39.09" W 86° 35' 37.00" 599.05ft Concrete corner- N/A Cloudy * 62°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	3/12       Survey Date: 9/9/203         Cody       Schnades         299       Session No. 1/4         3:21       End Time: 13:31         JSM646915CF5       H0364         #0364       R.8-3         ±0364       R.8-3         ±0364       R.8-3         ±0364       R.8-3
- GR	FIRE OED ANTWENT GRAVEL GRAVEL - AS OHAUT -	S. MAIN ST	TREE TREE TREE TREE TREE TREE TREE TREE



	GPS Observ	ation Log Shee	WOOLPERT
Station Name: _ Latitude: _ Longitude: _ Ellip. Helght: _ Type of Mark: _ Stamping on Mark:	507 N40°26'62.13" W 86°57'53.69" 563.7564 Dark Asplatt locar	Operator Name:( Julian Day:0 Start Time:3 Data File Name:5 Type of Reciever: $# c$ Type of Antenna: $# 0$	
LANDSCAPED TSLAND	- 6RASJ 507	- 61	RASS-
- CANSS & LANDSCHPING	LIGHT ASPHALT	DARIC ASPHALT GRASS-	CULANDS CALAN



	GPS Observ	ation Log Sh	eet	WOOLPER
Project Name:	Indiana Statewide 2013	Project Number:	73112 Survey Da	te: 4/6/201
Station Name:		Operator Name:	Cody Schneid	her
	N 40° 26' 44,99'	Julian Day:	096 Session	No(A
Longitude:	W86° 56' 13.00"	Start Time: 1	3 ;43 End Tin	ne: <u>13 : 49</u>
Ellip. Height:	583.5sft	Data File Name:	ISM 040613 C	TS .
Type of Mark:	Sidevalle curner			
	r) (A		#0364 R8-3	
Weather Condition:	Clear & windy 2 58	Antenna Height:	2.00m to bottom	of antenna mount
N	LINBERG RD ASPHALT			
- 61.A55-	50% CONCRETE WALK	HALD CONCI HALD CONCI HALD CONCI HALD CONCI HALD CONCI HALD CONCI HALD CONCI HALD CONCI HALD CONCI	(0.40.4676 - 6.0145	- GA455-

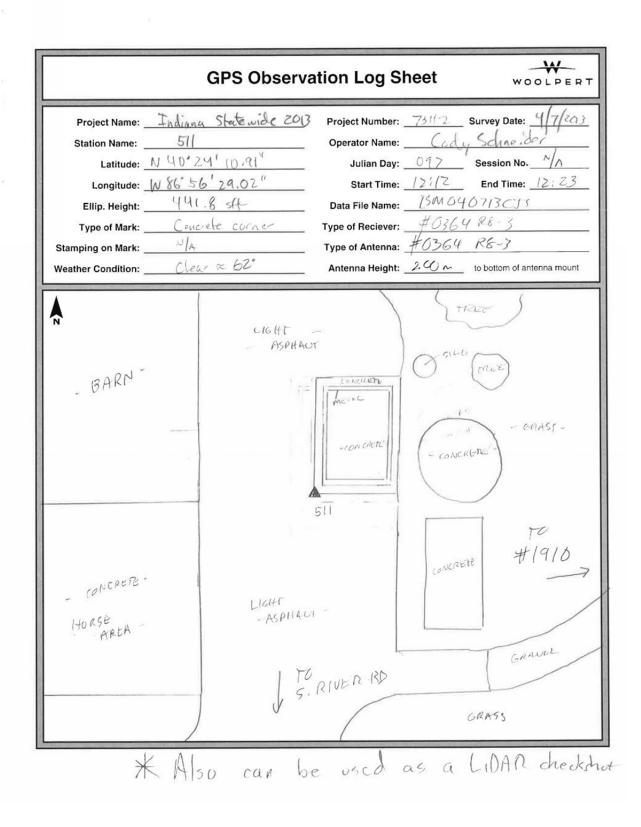


GPS Observa	ation Log Sheet
Project Name:IndianaStatewide 2013Station Name: $509$ Latitude: $N$ 40° 26' [2,32"Longitude: $W$ 86° 54' 38.63"Ellip. Height: $557.4sc4$ Type of Mark:Sidewalle CornerStamping on Mark: $r'/A$ Weather Condition: $Clear e' windy \approx 58°$	Project Number: 73 112 Survey Date: $\frac{9}{6} \frac{16}{2013}$ Operator Name: Cody Schneider Julian Day: 096 Session No. $\frac{9}{4}$ Start Time: 19:32 End Time: 19:90 Data File Name: $\frac{15M0406}{3CTS}$ Type of Reciever: $\frac{40364}{7564}$ RS-3 Type of Antenna: $\frac{40364}{7564}$ RS-3 Antenna Height: 2.00~1 to bottom of antenna mount
- ASPHAT - - GRAS- - GRAS-	Lought GRASS.



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
RIP- REP	CONTRACTOR MANY TO RECEVITER CONTRACTOR CONTRACTOR
CONCRETE	6.0
	* Also can be used as a Lidthic checkshot







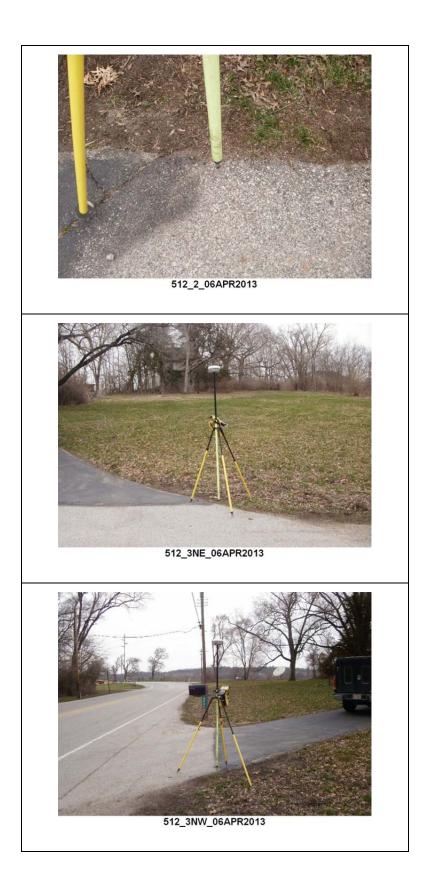
511_2_07APR2013



511_3E_07APR2013



GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 51 2 Latitude: N40°24'36.[5" Longitude: W86°58' [2,72" Ellip. Height: 441.754 Type of Mark: N4A Stamping on Mark: N/A Weather Condition: Cloudy & windy & 55°	Project Number: 13112Survey Date: $4/6/200$ Operator Name:Cody SchneiderJulian Day:096Session No.Start Time:17:00End Time:Data File Name: $17:00$ End Time:Jype of Reciever: $40364$ $R4-3$ Type of Antenna: $40364$ $R8-7$ Antenna Height: $200$ to bottom of antenna mount
TREES-	ME #3444 DARK ASPHAUT DRIVE GRASS- 512



GPS Obse	ervation Log Sheet
Project Name: Indiana Statawide 20 Station Name: 529 Latitude: N40°27'56.71" Longitude: W86'57'15.25" Ellip. Height: 572.244 Type of Mark: Concrete carper Stamping on Mark: MA Weather Condition: (Lear & windy = 58	Operator Name:         Cady Schnader           Julian Day:         096         Session No.         N/A           Start Time:         15:09         End Time:         15:17           Data File Name:         ISM 64 06 /3 CTS           Type of Reciever:         #0364         R 8-3           Type of Antenna:         #0364         R 6-3
A ASPHALT -	CONSTRUCTION AREA - GARAVEL
TROOTS CONCRETTER CANDSCHONE	S- CONCRET UNNHAVED ROAD UNNHAVED ROAD



GPS Observation Log Sheet			
Project Name: <u>Indiana Statewide 2013</u> Station Name: <u>530</u> Latitude: <u>N40'24'57,84"</u> Longitude: <u>W86°49'19.91"</u> Ellip. Height: <u>551,2sff</u> Type of Mark: <u>N4A</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Clear ~58°</u>	Project Number: $73(12)$ Survey Date: $4/7/201$ Operator Name: $Cody Schule der$ Julian Day: $097$ Start Time: $1/1:10$ End Time: $1/201$ Data File Name: $ISM040713cJ5$ Type of Reciever: $\#0364R8-3$ Type of Antenna: $\#0364R8-3$ Antenna Height: $2.00m$		
MULTCH MULTCH BEST WESTERN - ASOHALT - NATCHED AREN	- ASPHALT.		
6n4 55 -	- GAASS - CULT WATED - FIELD		



	GPS Observa	ation Log Sł	neet WOOLPER
Project Name: <u>todian</u> Station Name: <u>53</u> Latitude: <u>N 40* 2</u> Longitude: <u>V 86° 0</u> Ellip. Height:	2 4'06.72" f8'[8,91"	Operator Name: _ Julian Day: _ Start Time: _	<u>73112</u> Survey Date: <u>417/201</u> <u>Cody Schneider</u> <u>097</u> Session No. <u>MA</u> <u>10:41</u> End Time: <u>10:45</u> <u>ISM0467135J</u> 5
Type of Mark: $5$	ewalk corner	Type of Reciever: Type of Antenna:	#0364 R&-3 #0364 R&-3 200 m to bottom of antenna mount
FO ARNETT HOSPITAL	532 Conceene malls	ALLK 'S PARK STRATUT	JEL . GR#55 -



GPS Observation Log Sheet					
Project Name: Indiana Statewide 2013 Station Name: 533 Latitude: N 40° 23 '20.12" Longitude: W 86° 477' 20.03" Ellip. Height: 547.4 sff Type of Mark: Asphalf corner Stamping on Mark: 01A Weather Condition: Party Cloudy 255°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody 017 9:54 151104 #0364 #0364			
FENKE ATI T TOWER GRAVEL BRUSH SRUSH TREES- BRUSH		COUTIU F - GR	IELD		



	GPS Observ	ration Log Sheet	ER
Project Name:	Indiana Statewide 2013	Project Number: 72112 Survey Date: 4	7/=
Station Name:		Operator Name: Lody Schnadar	
Latitude:	N 40° 23' [7.41"	Julian Day: 097 Session No. N/A	
Longitude:	W 86° 49' 34.57"	Start Time: <u>9:37</u> End Time: <u>9:4</u>	6
	543.7564	Data File Name: <u>FSM640713CJS</u>	
Type of Mark:	Center of manhole	Type of Reciever: #0364 RD-3	-
Stamping on Mark:	NA CI de Fail	Type of Antenna: #0364 R8-3	_
Weather Condition:	Partly Cloudy + 550	Antenna Height: 2.00 m to bottom of antenna mo	ount
N		- ASPITALT- HAGERTY LN	
		- G @ 455 -	
CT- EAST BLUD	STOR SIGN	ANAWHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHALL MANHA	< CA 555
PARK -		DA RIC ASPHALT	

Photos are unavailable for Ground Control shot #539

	GPS Observ	vation Log Sheet	R
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Endrana Statearde 2013 QC-221 N'40'52'55.54" V 86' 44'46.66" 555.3 sef Locher of hatched an N/x Mostly Cloudy 264°	Operator Name:       Cody Schneider         Julian Day:       09.9       Session No.       M/A         Start Time:       14.12.0       End Time:       14.13.7         Data File Name:       15.10400113 CTS       14.0364       R.8-3         Type of Antenna:       14.0364       R.8-7	3
- GRASS -	2 Novce 2 X X	DARK FIRE DARK FIRE NSPETALT DEPARTMENT NATCHERT NATCHERT NATCHERT CONCRET DEPARTMENT DEPARTMENT DEPARTMENT DEPARTMENT SPRATU	- Gross
		-ASPHALT-	
- GRAVEL		source st	

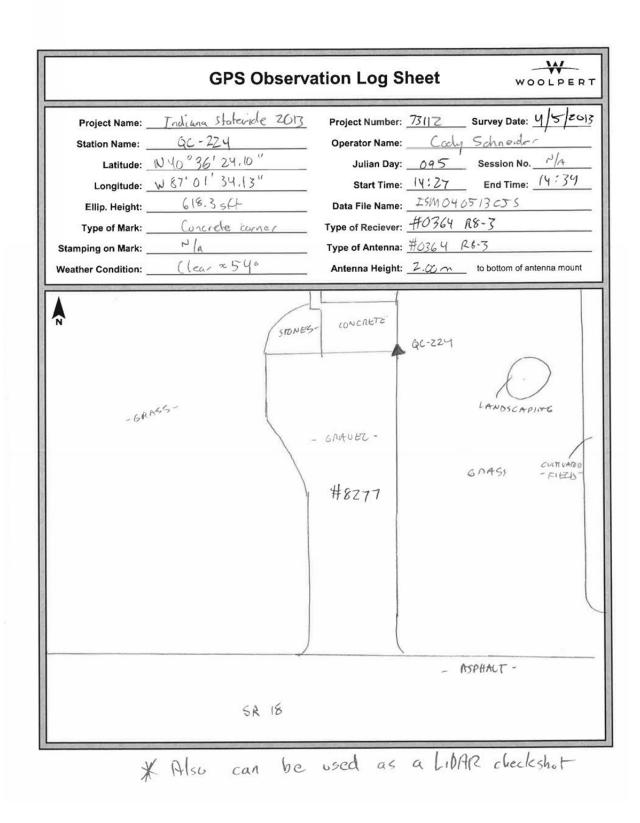


	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Haight: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-222 N40° 51' 32.34" W 66° 53' 62.5°4" 560,0 56+ Court line Intersection M/A Partly Cloudy = 62°	Operator Name: <u>Cad</u> Julian Day: <u>099</u> Start Time: <u>[[/]9</u> Data File Name: <u>35700</u> Type of Reciever: <u>46036</u> Type of Antenna: <u>4036</u>	Session No. <u>1/4</u> End Tima: <u>1/123</u> 9/09/18/075
GRAVEL	ASDNA OT BASICETUMA COURT	GRASS W/ SALAC TREES	s s s
	GR	AV22	LIDAR checksho

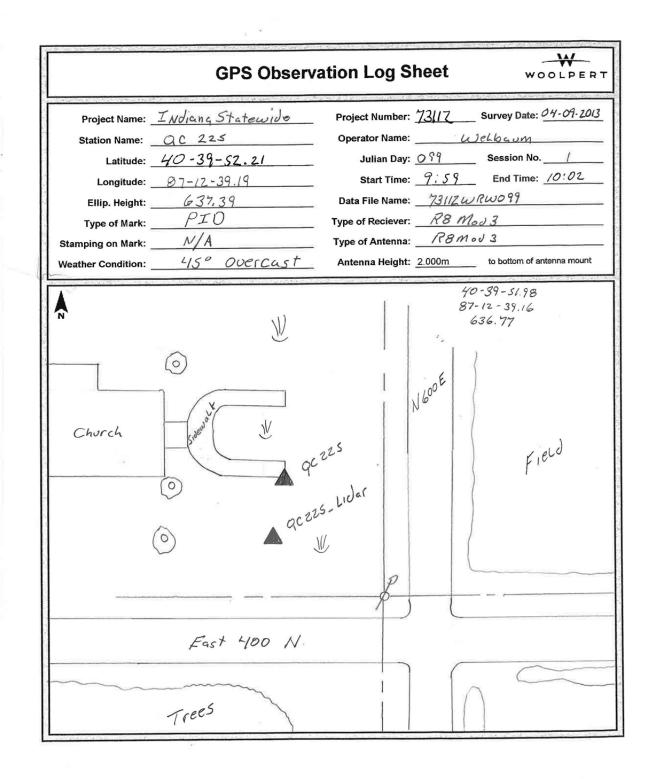


GPS Obs	ervation Log Sheet
Project Name: Indiana Statewide 20	
Station Name: <u>QC-223</u> Latitude: <u>N 40°35'57, 16"</u>	Operator Name:         Cody Schneider           Julian Day:         095         Session No.         N/A
Longitude: W 86° 46' 38.40"	Start Time: 15:01 End Time: 15:10
Ellip. Height: 534, 6sH	Data File Name:
Type of Mark: <u>Concrete corner</u>	
Stamping on Mark:V (A Weather Condition:Clear ≈ 55°	Type of Antenna:       #0364       RE~3         Antenna Height:       2,00 m       to bottom of antenna mount
NSPITALT BLACK LOCUST CT	#10441 GRASS. NCRETE - QC-227
	- GRASS -

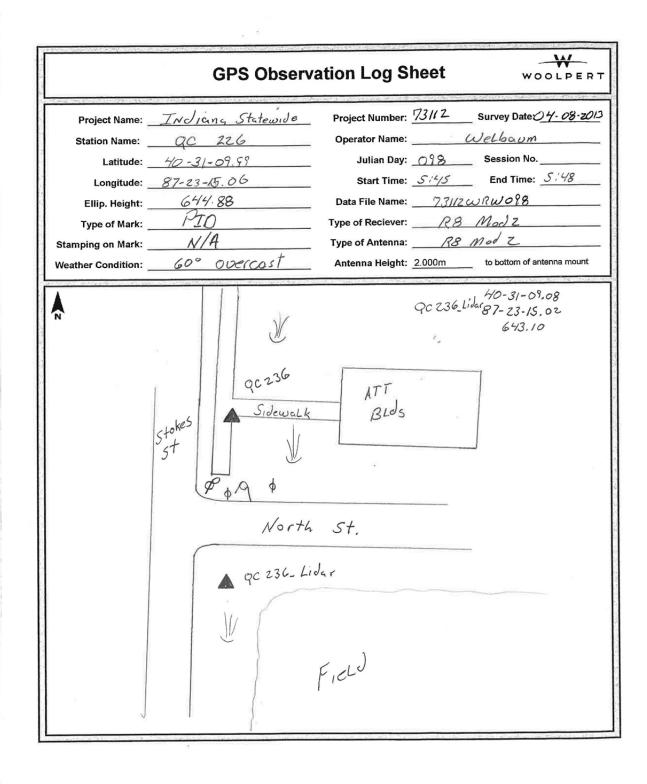
















QC-226_3E_08APR2013



	GPS Observation Log Sheet	PER
Project Name:	Indiana Statewide 2013 Project Number: 73112 Survey Date: 4/5	120
Station Name:	QC-227 Operator Name: Cody Schneider	<u> </u>
Latitude: H	40'30'46.78'' Julian Day: 045 Session No.	A
Longitude: _v	87°10'45.71" Start Time: 13:05 End Time: (3:	16
Ellip. Height: _	586,43ff Data File Name: ISM040513 CJS	
Type of Mark:	Concrete corner Type of Reciever: #0364 R8-3	
Stamping on Mark:	N/A Type of Antenna: #6364 R&-3	
	elear a 55° Antenna Height: 2.40 m to bottom of antenna n	nount
	CONCRETE CLAD ASPHALT CONCRETE CLAD ASPHALT DE ANDREW DR CONCRETE CURB	
CULTWATED	-GRASS -	

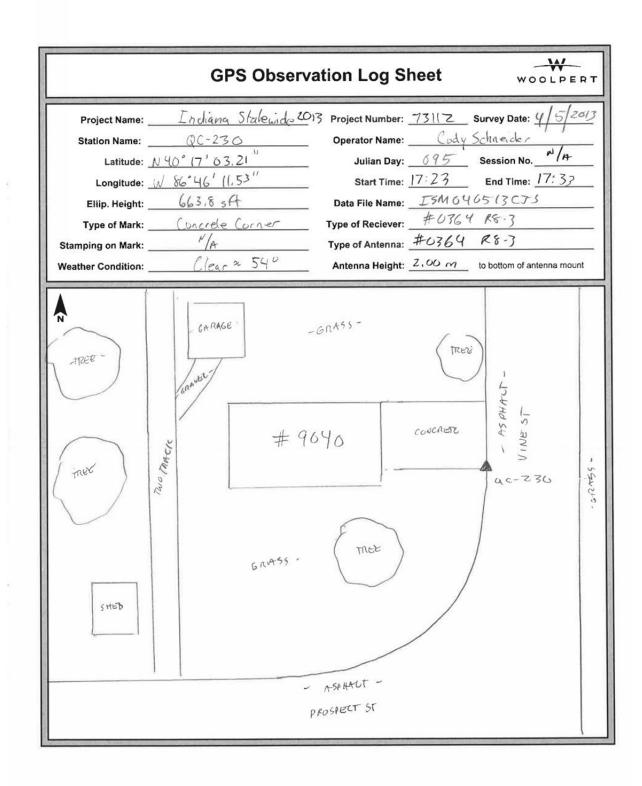


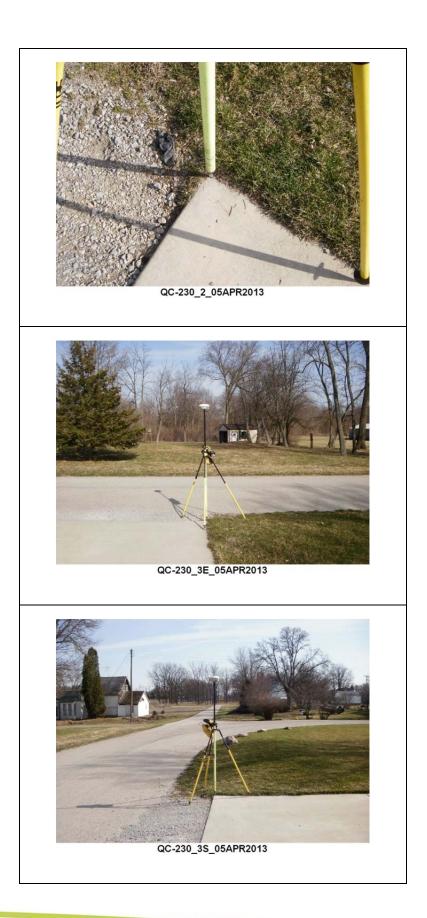
GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: QC-228 Latitude: N40° 31' 46,56" Longitude: W86' 44' 33,12" Ellip. Height: 523,8 sft Type of Mark: Concrete Corner Stamping on Mark: N/A Weather Condition: Clear 254'	Project Number:       731(2       Survey Date:       95/2013         Operator Name:       Cody Schneider         Julian Day:       095       Session No.       N/A         Start Time:       16:14       End Time:       16:26         Data File Name:       15M040513 cJ S         Type of Reciever:       #0364 RS-J         Type of Antenna:       #6364 RS-J         Antenna Height:       2.00 m       to bottom of antenna mount
	GRASS .
GRASS - QC-228 ORNERGTE AN ORNERGTE AN	GRANEL - RETRIEVER LN
	67.755-



GPS Obser	rvation Log Sheet
Project Name: Latitude: Latitude: Latitude: Longitude: W 87° 01' 37.15" Ellip. Height: Type of Mark: Stamping on Mark: Wather Condition: Cloudy & windy ≈ 5	
- ASPRALT - GRASS-	- GRASS - - ASPHALT -
>	CONCRETE
<	#984

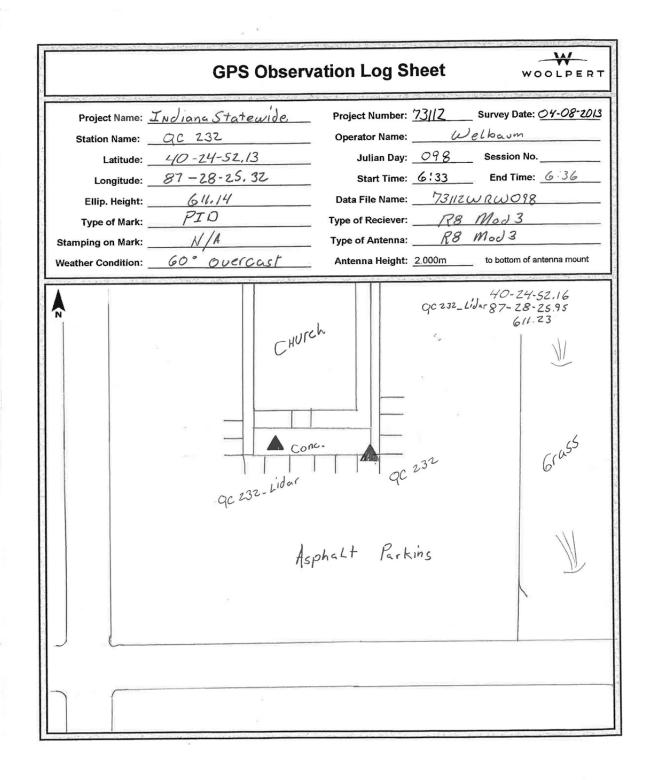






GPS O	oservation Log Sheet	WOOLPERT
Project Name: $InJiana Statew$ Station Name: $QC 231$ Latitude: $40-27-02.88$ Longitude: $87-14-57.84$ Ellip. Height: $585.70$ Type of Mark: $PTO$ Stamping on Mark: $N/A$ Weather Condition: $60^{\circ}$ Windy C	Operator Name:	Session No End Time: <u>4:38</u>  いんのうろ  Mod 3
QC 231-Ludar GYM QC 231-Ludar GYM QC 231 QC 231 QC 231 QC 231 QC 231 QC 231 Prive UI	Asphalt	40-27-03.16 1. Lidx87-14-58.41 583.60







	GPS Observa	tion Log S	heet WOOLPERT
Station Name: Latitude: Longitude: Ellip. Halght: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 ac-233 N 40' 11' 46.93" W 87° 31' 25.84" 615.4 stt Concrete Corner N/A Partly Cloudy = 65°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73(12       Survey Date: 4/8/2013         Cody Schneider         098       Session No.         17:37       End Time: 17:45         ISM/040813055         #0364       R8-3         #0364       R8-3         2.022       to bottom of antenna mount
R GRIASS	TILLED - FIELD-	~	CULTIURIED ETELD
~			- ASPHALT-
		¢	WASHINGTON ST
TREE TREE	CONCRETE -	IE (	REE COASS.



	GPS Observa	-	
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 (pc-234 N 40° 12' 13.96" W 87°08' 51.66" 598.3 sff Sidewalk Corner N/A Clear ≈ 53°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73 112       Survey Date: 4 5 201         Cody Schneider         095       Session No.         19:02       End Time: 19:10         ±5M040513CJ5         40364 RE-3         #0764 RE-3         ±0764 RE-3         ±0764 RE-3         ±0764 RE-3         ±0000 Color of antenna mount
	NTOWN PLAYGROWD - GRASS - QC-234 CONCRETE WALK CONCRETE WALK CONCRETE WALK		SHAMMERST STREEST
GNAVEL ~	ASAHAUT - GRASS-		- GRASS-



QC-234_3N_05APR2013

2013 Indiana Statewide Imagery Program Indiana Department of Technology July 2013

	GPS Observ	ation Log Sl	neet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Endiuso. Stateoride 20 QC-235 N 40° 08' 24.47" W 87° 22' 40.26" 512.75ff Concrete Comer N/A Cloudy ×60°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody Se 098 13:49 ISSMO #0364 #0364	hneich / Session No. 18/14 End Time: 13,56 4081355 R&3
THE P	Contraction of the Party of the	ac-235 LANUSCAUNC -GRASS-	2672	aces -



	GPS Observa	tion Log Shee	t WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Stalewide 2013 QC-236 N40° 06'37.69" W87°09'14.71" 615.6sft Concrete come- N/A Mostly (loudy=62"	Operator Name: Julian Day: Start Tima: Data File Name: Type of Reciever: Type of Antenna:	Cody         Selection           Session No.         N/A           103         End Time:           151/2           3M040813235           264
CHERRY ST	CASS .	4601 WCC236	GIASS.
ASPHALT	2	- ASPITANT-	- GRANRER CWICRENE TREE
GRAVEL	HOBSON ST - GRAVEL -	#405	CONCRETE WALLS



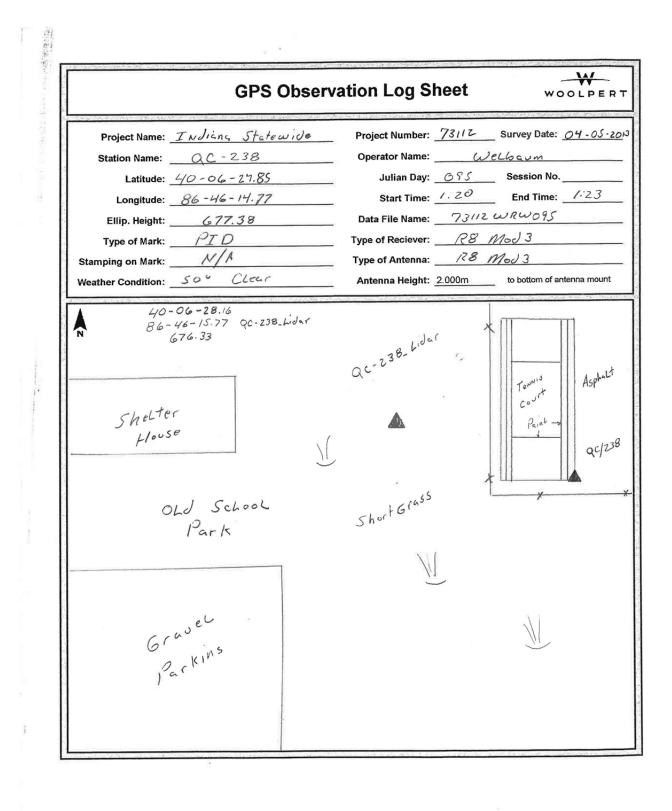
	GPS Observ	ation Log	Sheet wa	DOLPERT
Station Name: Latitude: <u>//</u> Longitude: <u>//</u> Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Jatewide 201 QC-237 40°10'06.37" 87°04'25.29" 666.6sft Concrele corner N/A Parthy Clady ~60°	Operator Name Julian Day Start Time Data File Name Type of Recieve Type of Antenne	r: $73112$ Survey Date:         e: $Cody Schneider         y:       097       Session No.         e:       17.46       End Time:         e:       15M040713CT         e:       15M040713CT         e:       40364R6-3         a:       40364R5-3         a:       40364R5-3         at       2.00n       to bottom of a   $	~/~ 18.37
RASEBAUL BASEBAUL FIRID	SAND VOLLETB	ALL		
- GRASS -	CONCRETE COVIGT	C-237	- 6 MASS -	ISPHALL- SK
	-728625-		TREE	25





QC-237_3N_07APR2013



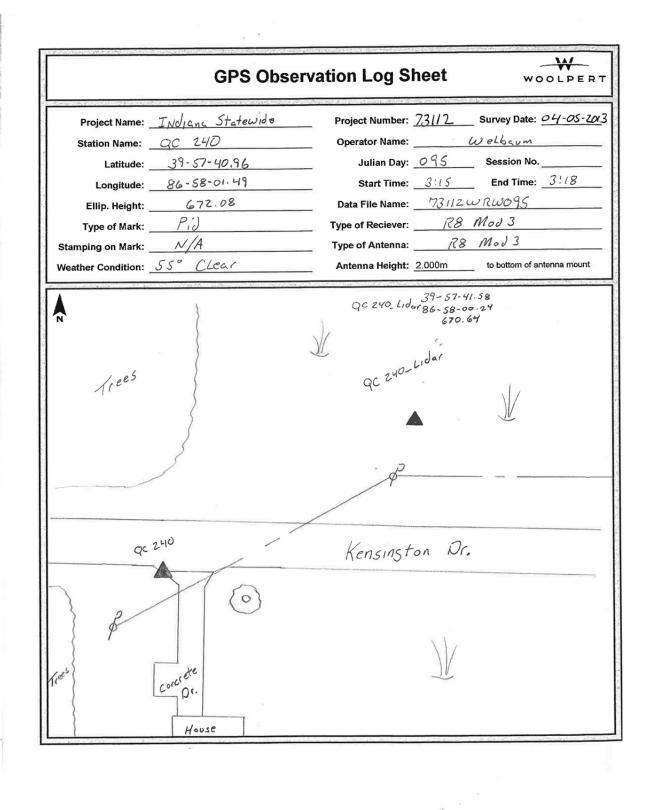




Project Name:IndianaStatewide 2013Station Name:QC-239Latitude: $N 39^{\circ} 59^{\circ} 55.50^{\circ}$ Longitude: $W 86^{\circ} 97^{\circ} 98.71^{\circ}$ Ellip. Height:715.3 scfType of Mark:Court Line IntersectionStamping on Mark: $N/A$ Weather Condition:Clear $\approx 65^{\circ}$	Project Number: 75112 Survey Date: $97720$ Operator Name: Cody Schneder Julian Day: 097 Session No. $4/n$ Start Time: $14129$ End Time: $19790$ Data File Name: ISM040713055 Type of Reciever: $40364$ R8-5 Type of Antenna: $46364$ R8-3 Antenna Height: $2.00$ to bottom of antenna mount
- ASHART- E TAYLOA ST GRAVEL BASEBAU- FIELD - GRASS- - GRASS- BASICOTBALL COURT	X HICKOASS CONCRETE GRAVEL GRAVEL GRAVEL SHELTE

33







GPS Observat	tion Log Sheet
Project Name: <u>Indiana Statewide 2013</u> Station Name: <u>QC-241</u> Latitude: <u>N40° 63'06.11"</u> Longitude: <u>W 87° 26'64.66"</u> Ellip. Height: <u>433.0 sff</u> Type of Mark: <u>Sidewalls corner</u> Stamping on Mark: <u>V(a</u> Weather Condition: <u>Cloudy</u> ~60°	Project Number: $731(2)$ Survey Date: $462203$ Operator Name: $C6d_{V}$ Sdune: $dar$ Julian Day: $098$ Session No. $N/4$ Start Time: $13:06$ End Time: $13:13$ Data File Name: $ISM040813CTS$ Type of Reciever: $\#0364R5-3$ Type of Antenna: $\#0364R5-3$ Antenna Height: $2.00m$ to battom of antenna mount
+ 125 - 6RASS	GRASS GRASS GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL
- GRASS- (CANCARD SIR 32 - ASPILL - GRASS-	6 AAS



	GPS Observa	tion Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 2013 QC-281 N 40°26'15.57" W 86'57'12.37" 565.0 sft Sidewalk corner	Project Number: <u>73(( z</u> Surv Operator Name: <u>Cody So</u> Julian Day: <u>095</u> See Start Time: <u>((*0 Z</u> E Data File Name: <u>ISM040513</u> Type of Reciever: <u>#0364</u> <i>R</i> E	hneider ssion No. <u>"A</u> nd Time: <u>1/: 12</u> RCTS
Stamping on Mark:	N/A Clear $\approx 55^{\circ}$	Type of Antenna: <u>#0364</u> RE Antenna Height: <u>200 m</u> to b	3
(ner)	CONCRETE WALK (NOR ATE DR ADDUEGATE DR NORETE WALK M (20-281)	TREE TREES.	
	- GRASS-	42495	(TREES)



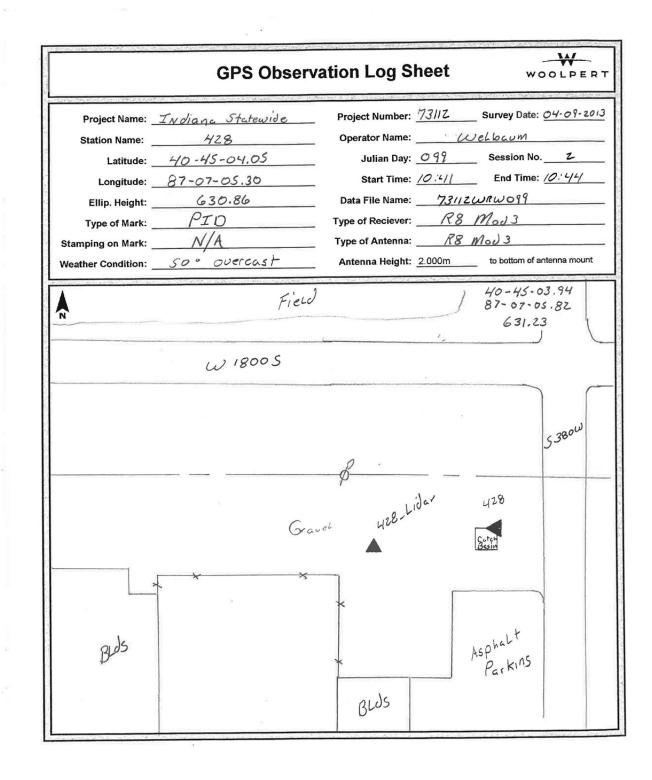
	GPS Observation Log Sheet	WOOLPER
Station Name: _ Latitude: { Longitude: { Ellip. Height: _ Type of Mark: _ Stamping on Mark: _	$ \begin{array}{c c} \hline & & \\ \hline \hline & & \\ \hline & & \\ \hline & & \\ \hline \hline \hline & & \\ \hline \hline \hline & & \\ \hline \hline \hline \\ \hline \hline \hline \hline$	Aneider ession No. <u>4/A</u> End Time: <u>10 = 50</u> 5 13 CJS &-3 &-3
	ASPHALT PARKING LOT	GRASS-
- 6RASS	- GRASS- QC-287 CONCRETE WALL	
<	GLASS -	ASPITALT- ARNOD DR



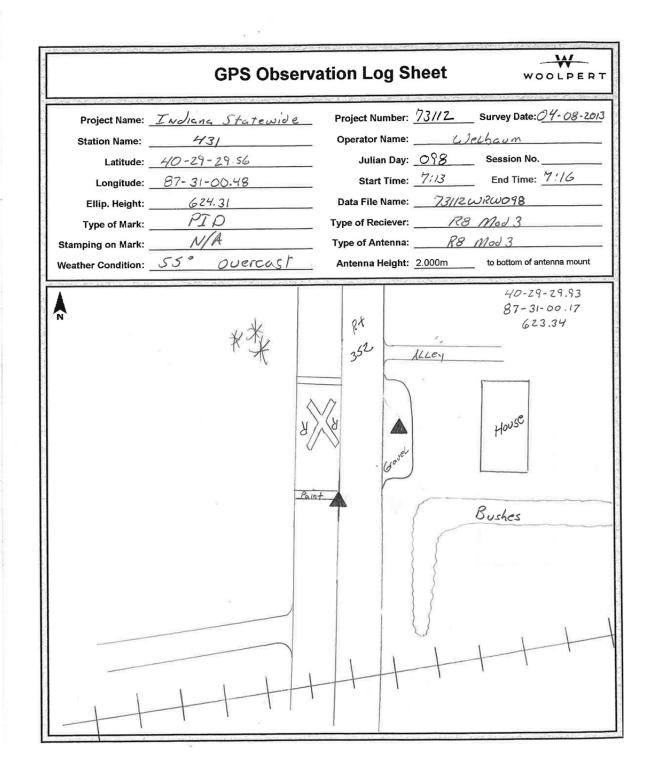
## LIDAR CONTROL

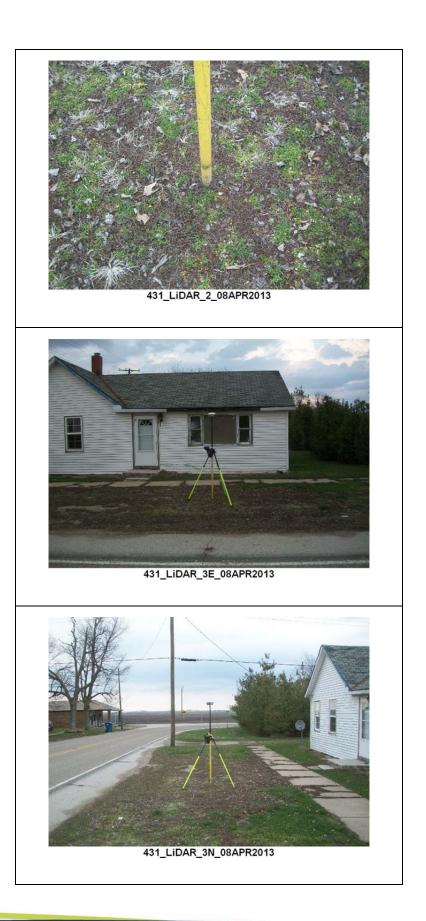
	GPS Obser	vation Log Sheet
Station Name:	Indiana Statewide 426 40-44-00.63	Operator Name: Welbaum
Longitude:	87-29-28.53 622.68	1178
Type of Mark:	PIO	Type of Reciever: <u>R8 Mod 3</u>
Stamping on Mark: Weather Condition:	N/A GS° Windy	Type of Antenna:       R8       Mod 3         Antenna Height:       2.000m       to bottom of antenna mount
Rt 71	U U U U U U U U U U U U U U U U U U U	426-Lider 40-44-00.66 426-Lider 87-29-28.99 621.92 House 8757 Sidewalk 60
	M	











Project Name: Indiana Statewide 2013 Station Name: <u>432</u> Latitude: <u>40° 09' 19,61"N</u>	
Longitude: <u>$97^{\circ}31'$ 25.77"4/</u> Ellip. Height: <u>542.25 sff</u> Type of Mark: <u>CORNER CONCRETE</u> Stamping on Mark: <u>N</u> /A	Data File Name: ISM_040513_BRC
Weather Condition: <u>55° CLEAR</u>	Antenna Height: <u>2.0</u> to bottom of antenna moun HOUSE H IO CLAWSON CONC.
W 1100 5	



	GPS Observation Log Sheet	W LPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INdiansStatewideProject Number: $731/2$ Survey Date: $04$ 4/34Operator Name: $Ulelbaum$ 39-53-51.25Julian Day: $095$ Session No.87-05-44.25Start Time: $4'08$ End Time: $4'08$ 612.06Data File Name: $731/2WRW095$ PIDType of Reciever: $R8 Mod 3$ N/AType of Antenna: $R8 Mod 3$ 55°CLEGTAntenna Height:2.000m	://
(0)	434_Lidar 39-53-51.42 87-05-44.08 611,73 Short Grass J	2
	Gravel and Asphalt Rd 134-Lidar Conc 434 House 995	



GPS Obser	rvation Log Sheet
Project Name: <u>Indiana Statewide</u> Station Name: <u>436</u> Latitude: <u>40-31-08.15</u> Longitude: <u>87-15-09.05</u> Ellip. Height: <u>644,04</u> Type of Mark: <u>PID</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>60° overcast</u>	Operator Name:       (1) eLbo.om         Julian Day:       098       Session No.         Start Time:       5:08       End Time:       5:11         Data File Name:       73/12WRW0 %8         Type of Reciever:       R8       Mod 3         Type of Antenna:       R8       Mod 3
Hoose	5+h 5+ 40-31-08.24 87-15-08.88 436.21,00 643.90 436.21,00 436.21,00 436.21,00 436.21,00 436.21,00 510 = Walk Benton St.



	GPS Observ	ation Log S	heet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewidz 2013 437_LIDAR N40°33'47.60" W 87°02'17.67" 641.3 sft No setting (Concrete) N/A Clear #53°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	<u>Codys</u> 095 s 13:38 ISMICHOSI3 ±0364 R8 #0364 R	ession No. <u>4</u> End Time: <u>13:55</u> CJS 5-3
-GRASS	# 9021 SMALL FREEDS	CONCRETE	- GRASS	X X FERRE 10 BLUSH X X
	- ASPHALT-		CO R. 6 13	00 5



	GPS Observa	tion Log Sheet woolper
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 438-LIDAR N 40° 45' 09.18" N 86° 52' 23.78" 551.656t No setting (Gravel) N/A Claudy = 62°	Project Number:       13/12       Survey Date:       4/1/22         Operator Name:       Cody Schweider         Julian Day:       099       Session No.       4/4         Start Time:       11:55       End Time:       12:05         Data File Name:       ISMO 40915CJS         Type of Reciever:       #03004       Rg-3         Type of Antenna:       #0364       Rg-3         Antenna Height:       2.004       to battom of antenna mount
BALLAST	CRAVEZ	GRASS
RAILVEDAD	GRIE GRIE GRIE	ASPHAUT - E. WAYNE ST GRAVEL - GRAVEL -

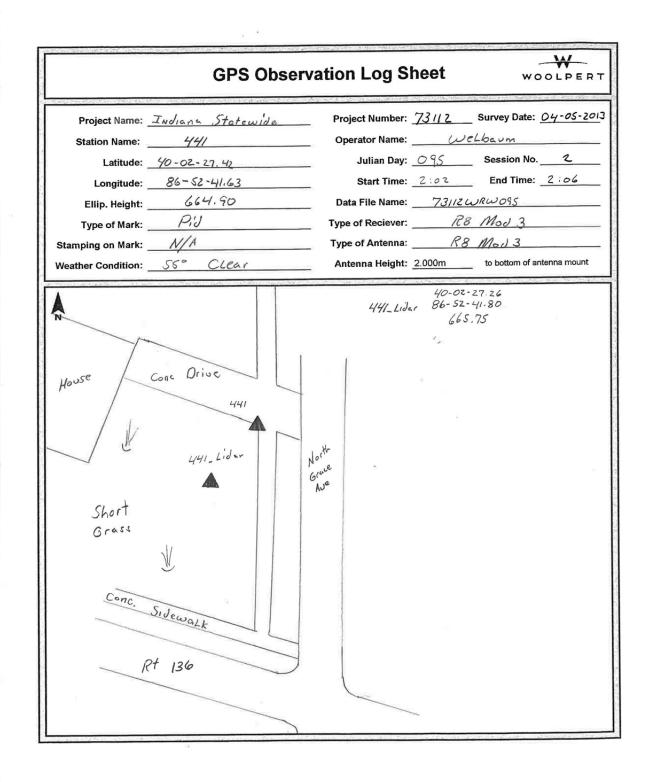


Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>. Indiana Statewide 2013</u> <u>439_LIDAR</u> <u>N 40°12'64.67''</u> W 86'57'56.54" <u>667.2 sft</u> No setting (Shot grav	Type of Antenna:     #6364     RE-3       Antenna Height:     2.60 m     to bottom of antenna mount
- GRANDL	- GRASS-	COROWIGON ASPHAUT - - GRASS- - GR
into A	¥ 331 7	GRAVEZ X GRAZING AREA



GPS Observa	ation Log Sheet
Project Name: Indiana Statevide 2013 Station Name: <u>440_LIZAR</u> Latitude: <u>N40° OG 43.60"</u> Longitude: <u>N87' (5' 38.54"</u> Ellip. Height: <u>562.65E</u> Type of Mark: <u>No setting (concrete)</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Mostly Cloudy 262</u> *	Tuna of Antonna: #0364 185-3
N PUEL TANK STORAGE	- GRAVEL / BIRT GRASS-
FOUNTAIN CC. WAR MUSEUM	440-LIPAR CONCRETE PAD-
- GRASS-	GRASS ~







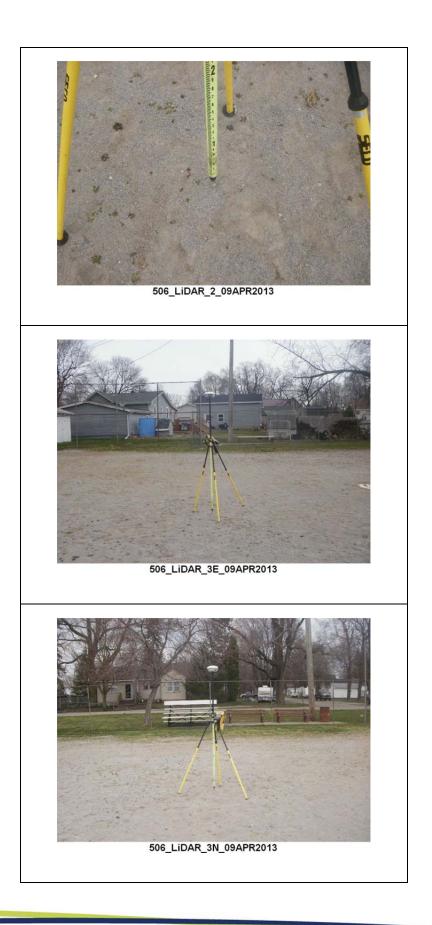
	GPS Observa	ation Log Sheet	WOOLPER
Project Name:	Indiana Stalewide 2013	Project Number: 73/12	Survey Date:/ 7/20
Station Name:	442-LIDAR	Operator Name: <u>Cody</u>	Schneidler
	N 40° 23' 46,90"		Session NoN/A
Longitude:	W 86° 52' 31.29"	Start Time: 8:47	End Time: <u>9:56</u>
Ellip. Height:	541,7 sft	Data File Name:	040713675
Type of Mark:	No setting (concrete)	Type of Reciever: #036	4 R8-3
Stamping on Mark:	NA	Type of Antenna: #036	
Weather Condition:	Partly cloudy = 55"	Antenna Height: 2,00	m to bottom of antenna mount
2		LAFA YETTE JUNICI	K H ( 64 - / 1
		CONCRET	E PARICING LOT
_ GRASS -		1	/
5 (Sin(3)		GRASS	
		China	
		HTREE	ION CRET
		0	100
		~ /	/
	CONCRETE . 447	LIOAA QGRAS,C	A
/	442	The	Harow 27
			ARROW
/ /			
/ /			CONCRETE-
	$\backslash$		/
/	- GRASS-		
		7	
	- FLAGPOL	25-	



	GPS Observa	tion Log S	heet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	1 Indiána Statewide 2013 443_LIDAR N 40° 18' 22.13'' W 87° 18' 42.63'' 605.6 sft No setting (Gravel)	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever:	Cody 098 \$ 16:55 15M040 #0364 R	813cJS 77:05
Stamping on Mark: Weather Condition:	Partly Cloudy # 65°	Type of Antenna: Antenna Height:		battom of antenna mount
Conserver Conserver	6R,1455 -	HR EE	73_112.51	5 MILLIM SQUAT RT)
	GRAG	-		
			Ċ	TREE CONCRETE



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 506-LIDAN N 40° 45' 29,59" W 86° 35' 41,78" 587,1 std No cetting (sam N/A Cloudy = 62°	Operator Name:         Cody Schneder           Julian Day:         099         Session No.         %           Start Time:         12:44         End Time:         13%
A		HSP (FACT - W TITH ST
NSMALLE COURT		C PARMER CALLERS GRANNEL CALLERS KENCE X X BASEBALL FILL IS 50G-LIDARE
	GRASS-	



	GPS Obser	vation Log She	eet	WOOLPERT
	Indiana Statewide 20 507_LIDAR	Project Number: _7 Operator Name:		
Latitude:	N 40° 26'03,09"	Julian Day:	015 Sessi	
Ellip. Height:	W 86° 57' 54.25" 563.35ft	Start Time: Data File Name:	ESM040513	
Type of Mark:	No setting (Light A	Type of Reciever: _#		
Stamping on Mark:	clear ≈ 55°	Antenna Height: 2		om of antenna mount
<b>▲</b> ~ ⁶	2455	PARVIEW DA	- MSPHALT	5RASS -
TREE		прад	GRAS	Ro CICS
ASPITAUT		FRASS & LAND FRAPING		



48.415 - 51.17 - 5	GPS Observa	tion Log Sł	neet		WOOL	PER
Project Name: Todad Station Name: 506 Latitude: N 40°2 Longitude: W 86° t Ellip. Height: 5 Type of Mark: No 9 Stamping on Mark: No 9 Weather Condition: C(ear	26' 42.29" 56' 13.32" 74.8 sft Setting (Concrele)	Project Number: Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna: Antenna Height:	Cody 096 13:51 ISMC #070 #070	<u>Schn</u> <u>Ses</u> <u>En</u> <u>940613</u> <u>54 R(</u> 128-	eid <i>or</i> sion No~/ d Time: <u>13</u> ; 5~3 3	/+ 58
RUISI CONCRETE I TREE I TREE I TREE I I I I I I I I I I I I I	505 LIDA SIDE ROAD-STULL ILOSTRAL		- CONCRETE -	· GRASS.	KESTRAL BLUD	CONCRETE



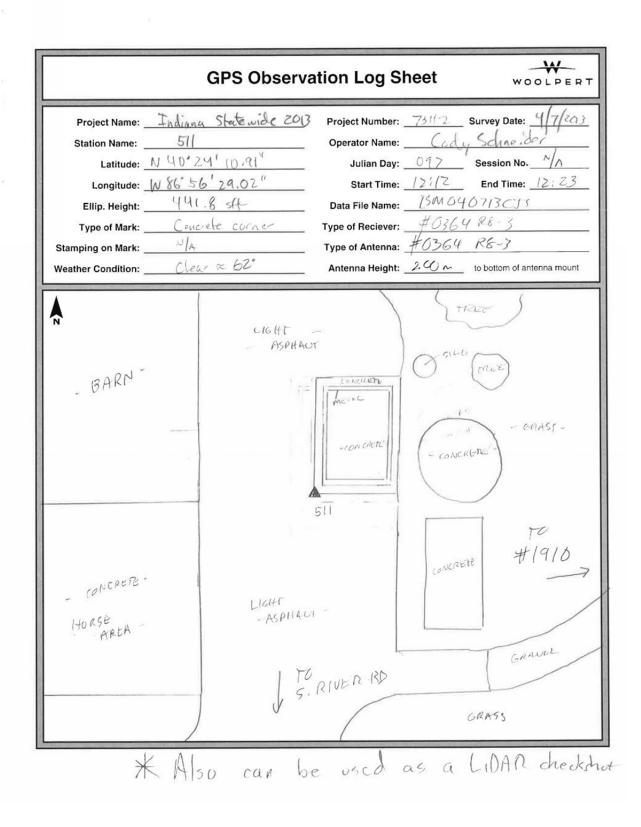
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 509_LIDAR N 40°26'11,00" W86°54'38,88" 551.5564 No setting (Concrete) N/A Clear & windy 258°	Project Number: $73/12$ Survey Date: $4/6/20$ Operator Name: Cody Schneider Julian Day: $996$ Session No. $N/4$ Start Time: $14/42$ End Time: $14/44$ Data File Name: $15M0406(3 c s s)$ Type of Reciever: $40364$ R & 3 Type of Antenna: $40364$ R & 3 Antenna Height: $200$ to bottom of antenna mour
WEST LAFAYETTE JUNIOR SEANOR JUNIOR SEANOR	GRASS- GRASS- GRASS- STEPS STEPS GRASS CONCACTE CONCACTE CONCACTE	CONCRETE SIGN SIGN CONCRETE BG9_LIDAN ASPHAUT ASPHAUT CONCRETE

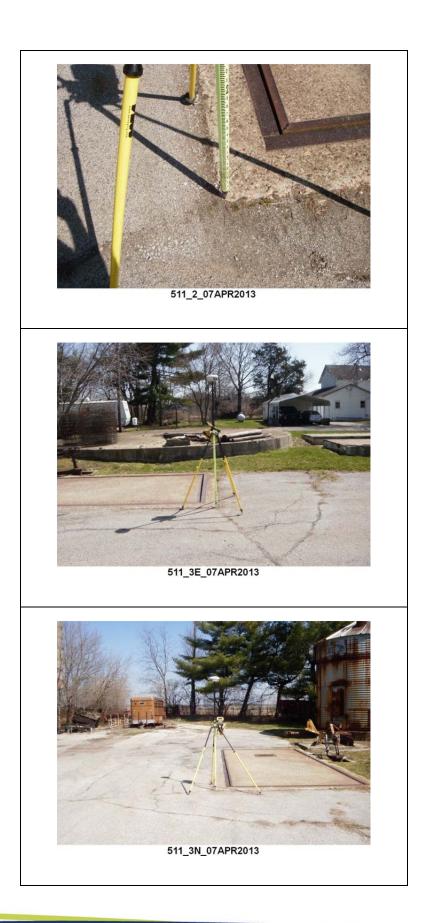
μ.



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
RIP- REP	CONTRACTOR MANY TO RECEVITER CONTRACTOR CONTRACTOR
CONCRETE	6.0
	* Also can be used as a Lidthic checkshot







GPS Observa	tion Log Sheet
Project Name: <u>Indiana Statewide 2013</u> Station Name: <u>512_LIDAR</u> Latitude: <u>N 40'24'38.36"</u> Longitude: <u>W 86'58'17.39"</u> Ellip. Height: <u>445.0sff</u> Type of Mark: <u>No setting (Gravel)</u> Stamping on Mark: <u>Pla</u> Weather Condition: <u>Cloudy &amp; widy ≈ 550</u>	Project Number: $73112$ Survey Date: $4/6/2012$ Operator Name: $Cal_{4}$ SchneiderJulian Day: $096$ Session No. $N/A$ Start Time: $17:18$ End Time: $12:28$ Data File Name: $I5M040613CTS$ Type of Reciever: $\#0364R8-3$ Type of Antenna: $\#0364R8-3$ Antenna Height: $2.00m$ to bottom of antenna mount
TREES - GRASS-	S RIVER RD -ASPHALT.
- GRAVEL - 512. LIDAR BARN- - GRAVEL - - GRAVEL - - GRAVEL - - GRAVEL - - GRAVEL - - - - - - - - - - - - -	CHY - GRASS- VRAUEL



GPS Observa	ation Log Sheet
Project Name:Indrang Statewide 2013Station Name: $529 \downarrow LiDA72$ Latitude: $N40^{\circ} 27^{1}57, 23^{11}$ Longitude: $N86' 57' 15, 97''$ Ellip. Height: $572, 2sff$ Type of Mark:No seffing (Grass)Stamping on Mark: $N/A$ Weather Condition: $Clear \notin Windy \approx 58^{\circ}$	Type of Antenna: #0364 R&-3
- 458HHUT	GRASS- CONSTRUCTION GRASS- AREA - GRAVEL-
BETHER AR CONCRETE, AR	CONCRETE CONCRETE UNNAMED ROAD GRASS



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	GPS Ob Indiana Stotewide 530-LIDAA N 40° 25' D1.59' W 86° 49' 25.74 533.9 stt No setting (Conc. "/A Clear = 58°	201 <u>3</u> r u	Operator Name: Julian Day: <u>69</u> -7 Start Time:2 Data File Name:5 Type of Reciever: <u>#3</u> Type of Antenna:6	Survey Date:         4/7/2013           -14         Schneider           Session No.         1/14           2         End Time:         11/34           MO40713CFG         364         864
CONCRETE	NK WITORS	MULTCH É BRUSH	DARK - ASPHALT	BEST WESTERN RESORT E CONFERENCE CENTER
LIGHT NSPH	WHETE AKROW CAR WASH			



	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Stalewide 2017 532-LIDAR NGO° 241' 08.78" W86° 48' 18.08' 548.9 set No setting (Graved) N/A Clear 258°	Project Number: 777112 Su Operator Name: Cody So Julian Day: 097 S Start Time: 10:51 Data File Name: ISM 040 Type of Reclever: #0364 R Type of Antenna: #0364 R Antenna Height: Z.Com to	haech Session No. <u>N/A</u> End Time: <u>10:58</u> 713CJS 28-3 28-3
to AR	DARIL MCCARTY LN - GRASS - DARIL MSPHALT - GRASS - NETT HOSPITAL	BRUSH GRAVIA 532-1 - DATCHY BRUS	GRAUDY TWO-TRALL



GPS Observa	ation Log Sheet
Project Name: <u>Indiana Stalewide 2013</u> Station Name: <u>573_LIDAR</u> Latitude: <u>N40°23'20.04''</u> Longitude: <u>N86°47'14.83''</u> Ellip. Height: <u>546.5564</u> Type of Mark: <u>No setting (Gravel)</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Partly Cloudy ~55°</u>	Project Number: $73/12$ Survey Date: $4/7/307$ Operator Name: $Cody Gdhaeder$ Julian Day: $097$ Start Time: $10:02$ End Time: $10:02$ Data File Name: $25M040713c33$ Type of Reciever: $40364$ $R&364$ Type of Antenna: $40364$ $R&364$ $R&3$ Antenna Height: $2.00\infty$ to bottom of antenna mount
ATÉT TOWER ORAUL ASPHAN BRUSH- GRASS-	CRASS- CRASS- CRASS- GRACEY TWO-TRACK 533-LIDAR TPG25 S CRUSH



GPS Observ	ation Log Sheet
Project Name:Tridicinal Statende 2013Station Name: $539_LiDAR$ Latitude: $N 40^{\circ}23^{\circ}11.24^{\circ}$ Longitude: $W 86^{\circ}44'35.52^{\circ}$ Ellip. Height: $541.1sf4$ Type of Mark: $Na setting (Grass)$ Stamping on Mark: $NA$ Weather Condition: $Partytlordy \approx 55^{\circ}$	Project Number: 73112 Survey Date: $9/7/2013$ Operator Name: Cody Schereider Julian Day: 097 Session No. $\frac{N/A}{}$ Start Time: 9:24 End Time: 9:33 Data File Name: ISMC40713CTS Type of Reciever: $\frac{#0364 \ Re-3}{}$ Type of Antenna: $\frac{#0364 \ Re-3}{}$ Antenna Height: 2.00 to bottom of antenna mount
HIGH GRASS GRASS	DARK ASPITALT LOT GRASS
	PRK EAST BLUD GRASS

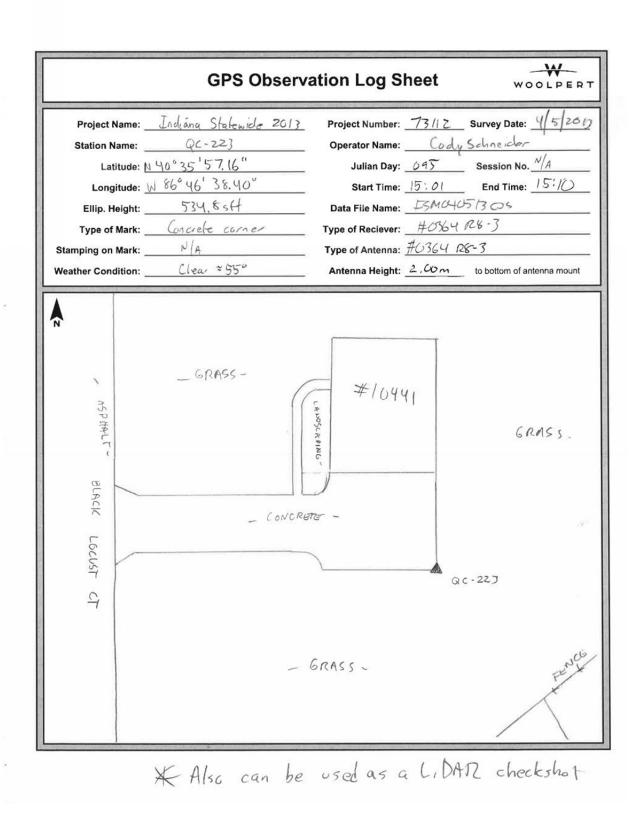
Photos are unavailable for LiDAR shot #539_LiDAR

	GPS Observ	vation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Stokande 2013 QC-221 NGO'521 55.54 * V 86' (14' 46.66" 555.3 sff Locuer of halched an N/N Mostly Cloudy 264"	Operator Name:       Cody Schneider         Julian Day:       09.9       Session No.       N/A         Start Time:       14.12.0       End Time:       14.33         Data File Name:       15.54.040913:075       CTS         **       Type of Reciever:       14.0364       R.S-3         Type of Antenna:       44.0364       R.S-7
- GRASS	X Kover X X X	DARK FIRE DARK FIRE ASPETALT DEPARTONEOUT HATCHEST CONCRETE DEPARTONEOUT DEPARTONEOUT DEPARTONEOUT DEPARTONEOUT DEPARTONEOUT CONCRETE DEPARTONEOUT CONCRETE DEPARTONEOUT
X FON	<u></u>	-ASPHALT-
- GRAVET		source st

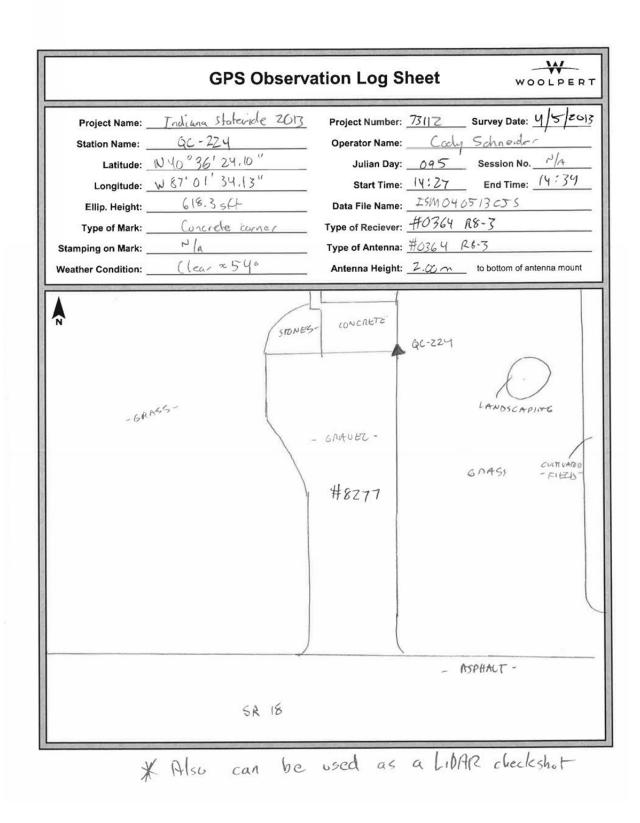


	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Haight: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-222 N40° 51' 32.34" W 66° 53' 62.5°9" 560,0 56+ Count line Interscetion M/A Partly Cloudy = 62°	Operator Name: <u>Cad</u> Julian Day: <u>09.4</u> Start Time: <u>117.4</u> Data File Name: <u>15.40.0</u> Type of Reciever: <u>4.056</u> Type of Antenna: <u>4.056</u>	Session No. <u>11/23</u> End Tima: <u>11/23</u> 14/09/18/075 9/ RE-3
GRAVEL	ASDHIL OT BASICLIBAC COURT	11 17	2
	GR	わりとし. ~	LIDAR checksho

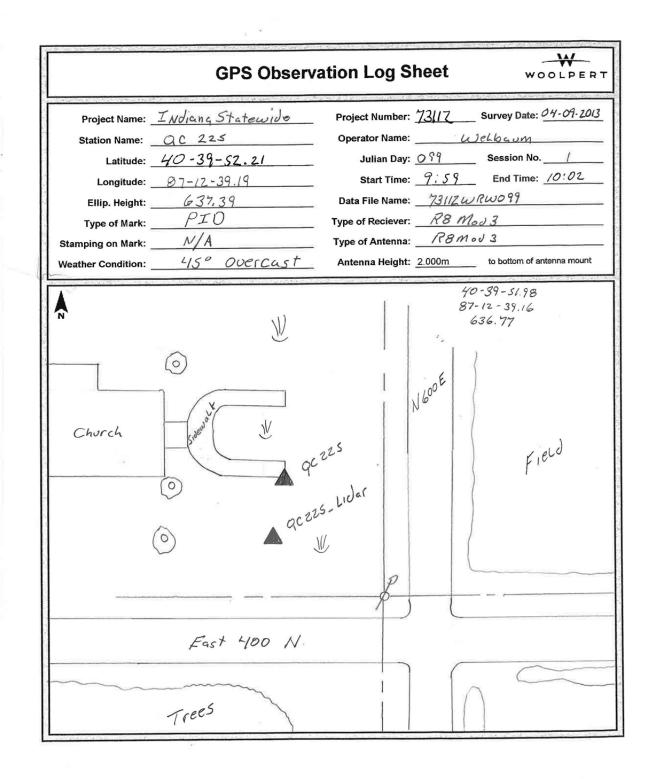




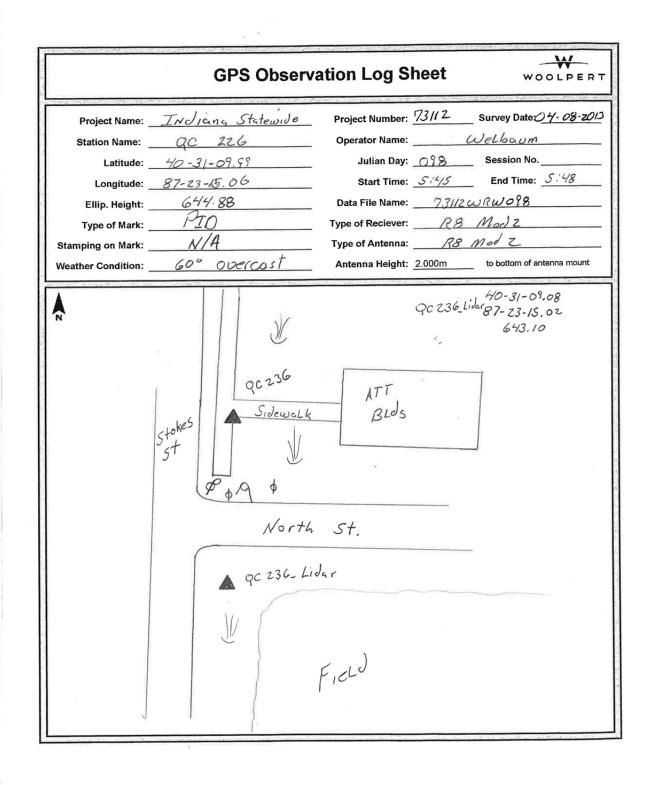














	GPS Observation Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2013 Project Number: 73112	Survey Date: 4/5/20
Station Name:	QC-227 Operator Name:	Cody Schneider
Latitude: H	リイの「この ⁶ 4%、78 ¹ Julian Day: <u>0</u> 9	5 Session No. N/A
Longitude: _	J 87°10'45.71" Start Time: <u>13:0</u>	5 End Time: 13:16
Ellip. Height: _	586.43ff Data File Name:	040513055
Type of Mark:	Cincrete corner Type of Reciever: #03	64 R8-3
Stamping on Mark:	N/A Type of Antenna: #63	364 R8-3
		to bottom of antenna mount
	CONCRETE CLAS ASPHALT CONCRETE CLAS CONCRETE CLAS CONCRETE CURS	" WILL RIDGS
CULTWARD	-6RA95 -	

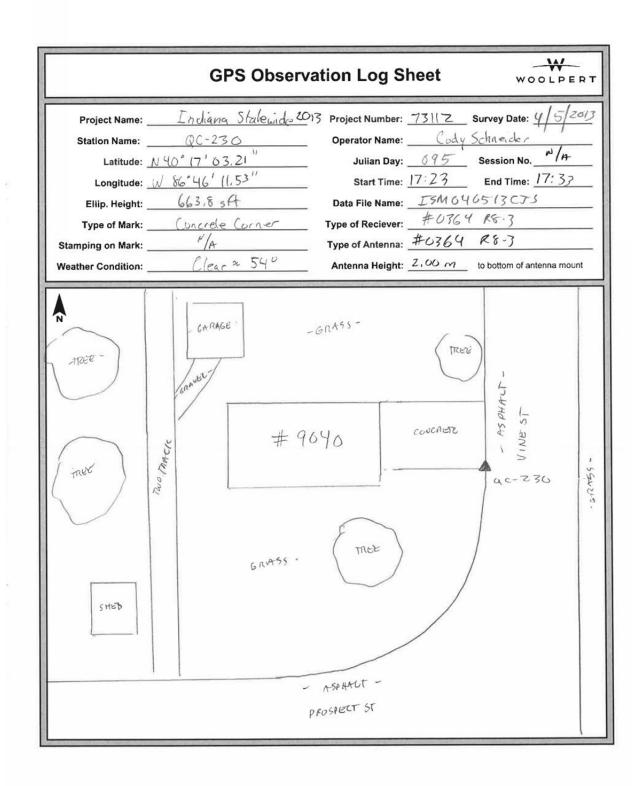


GPS Observa	ation Log Sheet
Project Name: Indiana Statevide 2013 Station Name: QC-228 Latitude: N40° 31' 46,56" Longitude: W86' 44' 33,12" Ellip. Height: 523,8 sft Type of Mark: Concrete Corner Stamping on Mark: N/A Weather Condition: Clear 254'	Project Number: $73/(2)$ Survey Date: $9/(5/2013)$ Operator Name:CodySchneiderJulian Day: $095$ Session No. $N/A$ Start Time: $16:14$ End Time: $16:26$ Data File Name: $15M040513cT5$ Type of Reciever: $\#0364R5-3$ Type of Antenna: $\#6.364R5-3$ Antenna Height: $2.00M$ to bottom of antenna mount
	GRASS -
GRASS - QC-228	GRAVEL -
# 78411	RETRIEVER LN



GPS Obse	ervation Log Sheet
Project Name: <u>Endiana Stalewde 20</u> Station Name: <u>QC-229</u> Latitude: <u>N40° 241 11.58''</u> Longitude: <u>W 87° 01' 37.15''</u> Ellip. Height: <u>467.8 sff</u> Type of Mark: <u>Concrebe corner</u> Stamping on Mark: <u>N/A</u> Weather Condition: <u>Cloudy &amp; windy %</u>	Operator Name:       Cody Schneider         Julian Day:       096       Session No.       N/A         Start Time:       16:26       End Time:       (6:38)         Data File Name:       ISM040613 cts         Type of Reciever:       #0369       R.8-7         Type of Antenna:       #0369       R.8-7
- HSPHALT - GRASS-	- GRASS -
- 6NASS-	CONCRETE
	#984

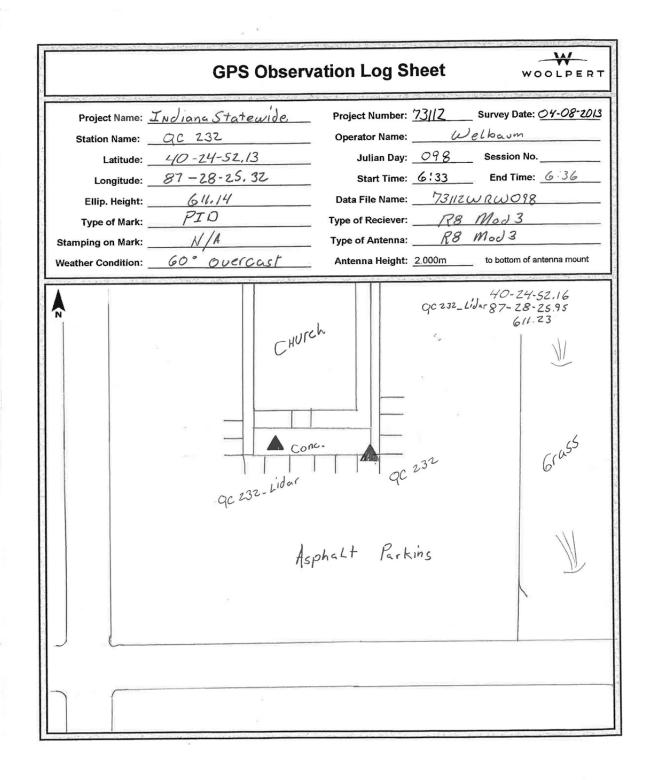






GPS Obser	vation Log She	et woolpert
Project Name: INJiana Statewide Station Name: QC 231 Latitude: 40-27-02.88 Longitude: 87-14-57.84 Ellip. Height: 585.70 Type of Mark: PTO Stamping on Mark: N/A Weather Condition: 60° Windy Clear	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	I/2Survey Date:         24-08-20/3           Welbaum         38         Session No.           35         End Time:         4:38           73/12WRW098         73/12WRW098           R8 Mod 3         R8 Mod 3           R8 Mod 3         10m
A GYM ac 231-Under GYM ac 231 ac 231 yellows r stripe yellows r stripe Prive Urew	Asphalt	40-27-03.16 90231.6487-14-58.41 583.60







	GPS Observa	tion Log S	heet WOOLPERT
Station Name: Latitude: Longitude: Ellip. Halght: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 ac-233 N 40' 11' 46.93" W 87° 31' 25.84" 615.4 stt Concrete Corner N/A Partly Cloudy = 65°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73(12 Survey Date: <u>48/2013</u> Cody Schneider 098 Session No. <u>N/A</u> 17:37 End Time: <u>17:45</u> ISM/040813C55 40364 R8-3 <u>40364 R8-3</u> 2.08m to bottom of antenna mount
R GRIASS	TILLED - FIELD-	~	CULTIURIED ETELD
~			- ASP HALT -
		¢	WASHINGTON ST
TREE TREE	CONCRETE -	IE (	REE COASS.



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:		Project Number: Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever:	heet → → → → → → → → → → → → → → → → → → →
NET	Clear ≈ 53° NTOWN PLAYOROUND - GRASS - QC-234 CONCRETE WALK CONCRETE WALK	Antenna Height:	SH RE REC ST
GNAVEL ~	ASPHACT . GRASS-		- GRASS-



	GPS Observ	ation Log Sl	neet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Endiuso. Stateoride 20 QC-235 N 40° 08' 24.47" W 87° 22' 40.26" 512.75ff Concrete Comer N/A Cloudy ×60°	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody Se 098 13:49 ISSMO #0364 #0364	hneich / Session No. 18/14 End Time: 13,56 4081355 R&3
THE P	Contraction of the Party of the	ac-235 LANUSCAUNC -GRASS-	2672	aces -

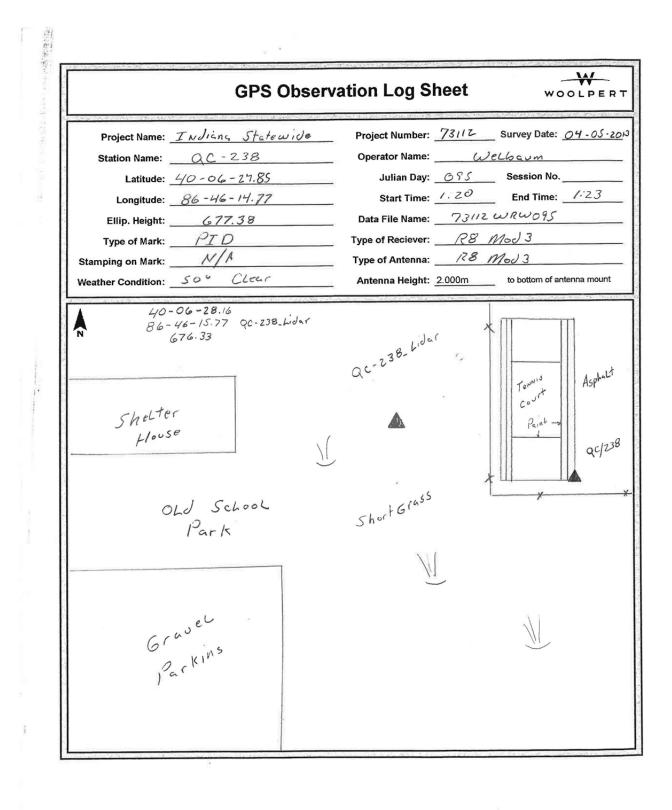


	GPS Observa	tion Log Shee	t WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Stalewide 2013 QC-236 N40° 06'37.69" W87°09'14.71" 615.6sft Concrete come- N/A Mostly (loudy=62"	Operator Name: Julian Day: Start Tima: Data File Name: Type of Reciever: Type of Antenna:	<u>Cody Solumeiller</u> <u>Session No. N/14</u> <u>Session No. N/14</u> <u>SMO4081305</u> <u>264</u> RE-2
CHERRY ST	CASS .	4601 WCC236	GIASS.
ASPHALT	2	- ASPHANT-	- GRANRER CWICRDRE TREE
GRAVEL	HOBSON ST - GRAVEL -	#405	CONCRETE WALLS



	GPS Observ	ation Log	Sheet wa	DOLPERT
Station Name: Latitude: _/ Longitude: _/ Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Jatewide 201 QC-237 40°10'06.37" 87°04'25.29" 666.6sft Concrele corner N/A Parthy Clady ~60°	Operator Name Julian Day Start Time Data File Name Type of Recieve Type of Antenne	r: $73112$ Survey Date:         e: $Cody Schneider         y:       097       Session No.         e:       17.46       End Time:         e:       15M040713CT         e:       15M040713CT         e:       40364R6-3         a:       40364R5-3         a:       40364R5-3         at       2.00n       to bottom of a   $	~/~ 18.37
RASEBAUL BASEBAUL FIRED	SAND VOLLETB	ALL		
- GRASS -	CONCRETE COVIGT	C-237	- 6 MASS -	ISPHALL- SK
	-728625-		TREE	25



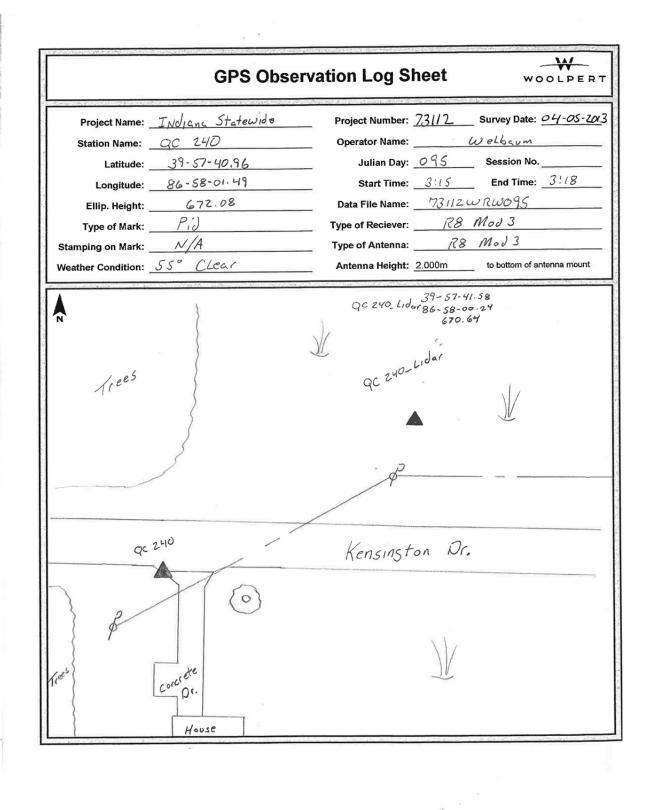




GPS Observa	tion Log Sheet
Project Name:IndianaStatewide 2013Station Name: $Q_{C}-239$ Latitude: $M 39^{\circ} 59' 55.50''$ Longitude: $W 86^{\circ} 97' 98.71''$ Ellip. Height: $715.3 \text{ scf}$ Type of Mark: $Court 1 \text{ intersection}$ Stamping on Mark: $N/A$ Weather Condition: $Clear \approx 65^{\circ}$	Project Number: $7512$ Survey Date: $9720$ Operator Name: $Cody Schne.der$ Julian Day: $097$ Session No. $\sqrt[n]{A}$ Start Time: $M129$ End Time: $19790$ Data File Name: $ISM040713C55$ Type of Reciever: $\#0364$ R8-3 Type of Antenna: $\#6364$ R8-3 Antenna Height: $2.00m$ to bottom of antenna mount
- ASIHACT-	
GRAVEL BASEBALL- FIELD	X- GRAVEL-
ERASS - TENNIS COURT	HICKORY ST SHELTEN

3







GPS Observat	tion Log Sheet
Project Name: <u>Indiana Statewide 2013</u> Station Name: <u>QC-241</u> Latitude: <u>N40° 63'06.11"</u> Longitude: <u>W 87° 26'64.66"</u> Ellip. Height: <u>433.0 sff</u> Type of Mark: <u>Sidewalls corner</u> Stamping on Mark: <u>V(a</u> Weather Condition: <u>Cloudy</u> ~60°	Project Number: $731(2)$ Survey Date: $462203$ Operator Name: $C6d_{V}$ Sdune: $dar$ Julian Day: $098$ Session No. $N/4$ Start Time: $13:06$ End Time: $13:13$ Data File Name: $ISM040813CTS$ Type of Reciever: $\#0364R5-3$ Type of Antenna: $\#0364R5-3$ Antenna Height: $2.00m$ to battom of antenna mount
+ 125 - 6RASS	GRASS GRASS GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL GRAVEL
- GRASS- (CANCARD SIR 32 - ASPILL - GRASS-	6 AAS



	GPS Observa	tion Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 2013 QC-281 N 40°26'15.57" W 86'57'12.37" 565.0 sft Sidewalk corner	Project Number: <u>73(( z</u> Surv Operator Name: <u>Cody So</u> Julian Day: <u>095</u> See Start Time: <u>((*0 Z</u> E Data File Name: <u>ISM040513</u> Type of Reciever: <u>#0364</u> <i>R</i> E	hneider ssion No. <u>"A</u> nd Time: <u>1/: 12</u> RCTS
Stamping on Mark:	N/A Clear $\approx 55^{\circ}$	Type of Antenna: <u>#0364</u> RE Antenna Height: <u>200 m</u> to b	3
(ner)	CONCRETE WALK (NOR ADDIEGATE DR ADDIEGATE DR NORETE WALK M (20-281)	TREE TREES.	
	- GRASS-	42495	(TREES)



# **VOLUME 4**

Block 11 Ground and LiDAR Control

## **ORTHOIMAGERY AND LIDAR CONTROL SURVEY REPORT**

## 2013 INDIANA STATEWIDE IMAGERY PROGRAM

Indiana Office of Technology

July 2013

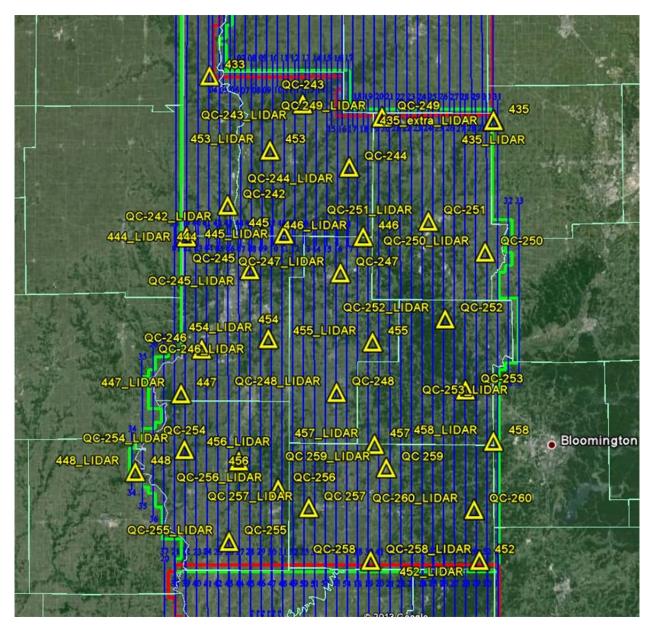
Prepared by Woolpert, Inc. 4454 Idea Center Blvd. Dayton, OH 45420

Woolpert.com



# VOLUME 4 – SECTION 1: BLOCK 11 GPS CONTROL DIAGRAM

This section contains a graphical representation of the ground control used for Block 11 of the 2013 Indiana Statewide Imagery project.



Not to Scale

# VOLUME 4 - SECTION 2: BLOCK 11 GROUND/LIDAR CONTROL COORDINATE LISTINGS

## COORDINATE SYSTEM: GRID

HORIZONTAL DATUM: NAD83 (2007) VERTICAL DATUM: NAVD88 ZONE: Indiana West (1302) GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
433	1710849.553	2847273.139	508.867	CORNER ASPHALT_LIDAR
435	1676090.159	3066111.565	912.154	CONCRETE CORNER
444	1587168.308	2829672.930	611.133	CORNER SIDEWALK_LIDAR
445	1589161.293	2904796.094	536.621	CORNER CONCRETE
446	1587172.410	2965677.913	769.292	CORNER CONC WALK
447	1466662.884	2825223.353	525.054	CONCRETE CORNER
448	1406789.258	2789724.110	445.678	SIDEWALK CORNER
454	1508969.896	2892579.421	560.449	CONCRETE CORNER
455	1506312.543	2972837.368	646.174	CONCRETE CORNER
456	1415083.910	2869424.209	523.852	CONCRETE CORNER
457	1427668.694	2974288.519	533.592	COR. C.B.
458	1430014.611	3065825.109	683.141	COR. WALK
QC-242	1611374.484	2861264.506	503.550	CORNER SIDEWALK
QC-243	1689156.524	2919206.583	581.814	CORNER PAINT STRIPE_LIDAR
QC-244	1640412.169	2955034.188	723.854	CORNER ASPHALT_LIDAR
QC-245	1561860.599	2878530.009	496.504	CORNER CONCRETE_LIDAR
QC-246	1500954.532	2841231.002	477.944	CONCRETE CORNER/LIDAR
QC-247	1559324.454	2948204.664	686.038	CORNER PAINT_LIDAR
QC-248	1467610.508	2945084.934	603.848	CONCRETE CORNER
QC-249	1678872.382	2980327.472	822.987	COR. SIDEWALK
QC-250	1575087.548	3059577.418	796.962	CORNER CONC
QC-251	1598880.295	3015923.265	868.802	CORNER CONC WALK
QC-252	1523978.949	3028794.633	718.660	ANGLE IN CONC
QC-253	1469451.847	3044389.828	549.230	COR. WALK
QC-254	1423841.846	2827751.554	472.605	CONCRETE CORNER
QC-255	1353109.943	2861966.465	521.053	CORNER SIDEWALK
QC-256	1393739.692	2899820.024	570.826	SIDEWALK CORNER
QC 257	1379239.091	2923559.968	529.362	COR. CONC.
QC-258	1338484.447	2971250.666	558.362	COR. WALK

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
QC 259	1409800.550	2983318.111	524.144	COR. WALK
QC-260	1377691.844	3050941.108	818.961	COR. WALK

### LIDAR CONTROL COORDINATES

Station	Northing	Easting	Elevation	Description
Name	US Ft.	US Ft.	US Ft.	Description
433	1710849.55	2847273.14	508.867	CORNER ASPHALT_LIDAR
435_extra_LIDAR	1676077.04	3066124.63	912.223	SHORT GRASS
435_LIDAR	1676003.11	3066424.07	911.197	GRAVEL
444	1587168.31	2829672.93	611.133	CORNER SIDEWALK_LIDAR
445_LIDAR	1589155.5	2904820.66	538.054	SHORT GRASS
446_LIDAR	1587154.81	2965665.05	768.151	GRAVEL
447_LIDAR	1466620.38	2825180.84	523.923	GRASS
448_LIDAR	1406700.41	2789712.81	445.41	GRASS
454_LIDAR	1508988.72	2892600.51	560.537	CONCRETE
455_LIDAR	1506326.44	2972856.91	646.111	CONCRETE
456_LIDAR	1415149.21	2869712.68	533.962	GRAVEL
457_LIDAR	1427631.87	2974276.3	535.138	GRAVEL
458_LIDAR	1430045.82	3065833.99	683.515	SHORT GRASS
QC-243	1689156.52	2919206.58	581.814	CORNER PAINT STRIPE_LIDAR
QC-244	1640412.17	2955034.19	723.854	CORNER ASPHALT_LIDAR
QC-245	1561860.6	2878530.01	496.504	CORNER CONCRETE_LIDAR
QC-246	1500954.53	2841231	477.944	CONCRETE CORNER/LIDAR
QC-247	1559324.45	2948204.66	686.038	CORNER PAINT_LIDAR
QC-248_LIDAR	1467597.14	2945090.96	604.008	GRAVEL
QC-249_LIDAR	1678892.77	2980329.12	823.349	SHORT GRASS
QC-250_LIDAR	1575097.7	3059590.89	797.236	CONC
QC-251_LIDAR	1598869.48	3015905.54	868.762	GRASS
QC-252_LIDAR	1523990.53	3028795.27	718.076	CONC
QC-253_LIDAR	1469462.24	3044381.09	548.749	SHORT GRASS
QC-254_LIDAR	1423831.99	2827765.16	472.541	CONCRETE
QC-255_LIDAR	1353089.3	2861963.57	521.374	SHORT GRASS
QC-256_LIDAR	1393706.36	2899989.05	571.243	LIGHT ASPHALT
QC-257_LIDAR	1379173.34	2923593.76	530.533	CONCRETE
QC-258_LIDAR	1338577.76	2971217.69	560.72	258_LIDAR
QC-259_LIDAR	1409820.07	2983321.65	524.122	SHORT GRASS
QC-260_LIDAR	1377711.45	3050953.99	819.468	SHORT GRASS

# COORDINATE SYSTEM: GEODETIC

#### HORIZONTAL DATUM: WGS 84 VERTICAL DATUM: NAVD88 GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

### **GROUND CONTROL COORDINATES**

Station Name	Latitude	Longitude	E. Height US Ft.	Description
433	39°56'41.65168"	087°27'34.29762"	401.319	CORNER ASPHALT_LIDAR
435	39°50'57.79770"	086°40'46.48421"	803.501	CONCRETE CORNER
444	39°36'18.54438"	087°31'12.52868"	504.629	CORNER SIDEWALK_LIDAR
445	39°36'40.74888"	087°15'12.75184"	428.336	CORNER CONCRETE
446	39°36'21.50831"	087°02'14.82064"	660.830	CORNER CONC WALK
447	39°16'27.33308"	087°32'01.68841"	418.997	CONCRETE CORNER
448	39°06'33.57973"	087°39'28.27007"	340.699	SIDEWALK CORNER
454	39°23'27.92305"	087°17'46.43286"	453.174	CONCRETE CORNER
455	39°23'02.28158"	087°00'44.15968"	538.408	CONCRETE CORNER
456	39°07'59.32926"	087°22'37.49293"	417.902	CONCRETE CORNER
457	39°10'04.96210"	087°00'26.51802"	426.279	COR. C.B.
458	39°10'25.78117"	086°41'04.13115"	574.902	COR. WALK
QC-242	39°40'19.09988"	087°24'30.01637"	396.021	CORNER SIDEWALK
QC-243	39°53'09.23892"	087°12'10.32050"	472.894	CORNER PAINT STRIPE_LIDAR
QC-244	39°45'07.72012"	087°04'30.75345"	614.929	CORNER ASPHALT_LIDAR
QC-245	39°32'10.30174"	087°20'47.35468"	388.821	CORNER CONCRETE_LIDAR
QC-246	39°22'06.99587"	087°28'40.03485"	371.367	CONCRETE CORNER/LIDAR
QC-247	39°31'46.30414"	087°05'58.01181"	577.804	CORNER PAINT_LIDAR
QC-248	39°16'39.82468"	087°06'37.47757"	496.628	CONCRETE CORNER
QC-249	39°51'27.67389"	086°59'06.36007"	713.914	COR. SIDEWALK
QC-250	39°34'19.87734"	086°42'15.73556"	688.954	CORNER CONC
QC-251	39°38'16.47398"	086°51'32.46735"	760.419	CORNER CONC WALK
QC-252	39°25'55.84725"	086°48'50.80025"	610.744	ANGLE IN CONC
QC-253	39°16'56.41545"	086°45'34.53014"	441.110	COR. WALK
QC-254	39°09'24.22524"	087°31'26.89088"	367.024	CONCRETE CORNER
QC-255	38°57'46.52068"	087°24'09.37733"	415.541	CORNER SIDEWALK
QC-256	39°04'29.15469"	087°16'11.18420"	464.631	SIDEWALK CORNER
QC 257	39°02'06.20024"	087°11'09.94016"	422.854	COR. CONC.
QC-258	38°55'23.46232"	087°01'05.90027"	451.208	COR. WALK
QC 259	39°07'08.26091"	086°58'32.13566"	416.736	COR. WALK
QC-260	39°01'49.22612"	086°44'15.65814"	710.896	COR. WALK

# LIDAR CONTROL COORDINATES

Station Name	Latitude	Longitude	E. Height US Ft.	Description
433	39°56'41.65168"	087°27'34.29762"	401.319	CORNER ASPHALT_LIDAR
435_extra_LIDAR	39°50'57.66746"	086°40'46.31746"	803.571	SHORT GRASS
435_LIDAR	39°50'56.92340"	086°40'42.48249"	802.545	GRAVEL
444	39°36'18.54438"	087°31'12.52868"	504.629	CORNER SIDEWALK_LIDAR
445_LIDAR	39°36'40.69210"	087°15'12.43783"	429.769	SHORT GRASS
446_LIDAR	39°36'21.33443"	087°02'14.98512"	659.689	GRAVEL
447_LIDAR	39°16'26.91089"	087°32'02.22627"	417.867	GRASS
448_LIDAR	39°06'32.70087"	087°39'28.40625"	340.432	GRASS
454_LIDAR	39°23'28.10958"	087°17'46.16486"	453.262	CONCRETE
455_LIDAR	39°23'02.41880"	087°00'43.91069"	538.345	CONCRETE
456_LIDAR	39°07'59.98391"	087°22'33.83469"	428.008	GRAVEL
457_LIDAR	39°10'04.59820"	087°00'26.67351"	427.824	GRAVEL
458_LIDAR	39°10'26.08921"	086°41'04.01667"	575.275	SHORT GRASS
QC-243	39°40'19.35080"	087°24'30.18222"	396.238	CORNER PAINT
QC-244	39°53'09.23892"	087°12'10.32050"	472.894	CORNER ASPHALT_LIDAR
QC-245	39°45'07.72012"	087°04'30.75345"	614.929	CORNER CONCRETE_LIDAR
QC-246	39°32'10.30174"	087°20'47.35468"	388.821	CONCRETE CORNER/LIDAR
QC-247	39°22'06.99587"	087°28'40.03485"	371.367	CORNER PAINT_LIDAR
QC-248_LIDAR	39°31'46.30414"	087°05'58.01181"	577.804	GRAVEL
QC-249_LIDAR	39°04'28.82861"	087°16'09.03999"	465.046	SHORT GRASS
QC-250_LIDAR	39°16'39.69255"	087°06'37.40084"	496.788	CONC
QC-251_LIDAR	39°34'19.97713"	086°42'15.56296"	689.229	GRASS
QC-252_LIDAR	39°38'16.36749"	086°51'32.69427"	760.38	CONC
QC-253_LIDAR	39°25'55.96174"	086°48'50.79171"	610.159	SHORT GRASS
QC-254_LIDAR	39°16'56.51850"	086°45'34.64076"	440.63	CONCRETE
QC-255_LIDAR	39°09'24.12848"	087°31'26.71760"	366.96	SHORT GRASS
QC-256_LIDAR	38°57'46.31656"	087°24'09.41308"	415.862	LIGHT ASPHALT
QC-257_LIDAR	39°51'27.87531"	086°59'06.33869"	714.276	CONCRETE
QC-258_LIDAR	39°02'05.55070"	087°11'09.51102"	424.024	258_LIDAR
QC-259_LIDAR	38°55'24.38493"	087°01'06.31668"	453.565	SHORT GRASS
QC-260_LIDAR	39°07'08.45385"	086°58'32.09051"	416.714	SHORT GRASS

# VOLUME 4 - SECTION 3: BLOCK 11 GROUND/LIDAR CONTROL LOGS AND PHOTOS

This section contains the station recovery information sheets and photographs for the ground control and LiDAR control station.

The data is assembled on the following pages.

## GROUND CONTROL

Project Name	Indiana Statewide	2013	Project Number	73112	Summer Data: A.L.A.S.
Station Name:		2010			Survey Date: <u>04 APR 20</u>
		41.65" N	_ Operator Name:	094	Session No. N/A RT
		3,4.29"W	-	1207	
		SF+	-		040413_BRC
		ASPHALT	-		
Stamping on Mark:	1		Type of Antenna:		
Weather Condition:	52° CL	EAR			to bottom of antenna mount
	PARK ENTRANCE	F /	433 FLAT SURFACE PID & Lidar	SKATE	, ' /
		GRASS		PARK	



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	N39° 50' 57.80"       Julian Day: $097$ Session No. $N/4$ $U86°40'46.48"$ Start Time: $15:00$ End Time: $15:10$ $S03.5$ 564       Data File Name: $ISM040713CJS$ Convole       corner       Type of Reciever:       #0364 R8-3
<b>A</b> ∼	DARK ASOTHAT ORIVEGRASS- NO HATCHED DARIANG AREA DARK KSOHALT - 435 LOT GRASS- GRASS- EMMANLEL BAPTIST CHUR
_6	GRASS -



	GPS Observ	vation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 435 39-50-57.79 86-40-46.48 803.43 PID N/A 45° Windy	Operator Name:       Welbaum         Julian Day:       098       Session No.         Start Time:       12:13       End Time:       12:16         Data File Name:       73112WRW098         Type of Reciever:       R8       MoJ 3         Type of Antenna:       R8       MoJ 3
	Asphalt Parkins Jule walk 435-Lidar	39-50-57.66 86-40-46.31 803.57



Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 04A/R Z
Station Name:		Operator Name: Ben Christie
Latitude:	39° 36' 18.54"N	Julian Day: <u>094</u> Session No. $\frac{N/A}{R}$
Longitude:	87° 31' 12.52"W	Start Time: 1812 End Time: 81-
Ellip. Height:	504. 54 sft	Data File Name: <u>ISM_040413_</u> CRC
	CORNER SIDEWALK	Type of Reciever: <u>R8-3</u>
	N/A	Type of Antenna: & B - 3
Weather Condition:	50° CLEAR	Antenna Height: 2.0 m to bottom of antenna mou
	HOUSE # 11520 CONC.	444 FLAT SURFACE PID & Lidar

11520



	GPS Observ	ation Log Sheet		WOOLPER
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey D	ate: OSAPRZ 01
Station Name:	445	Operator Name: Ben Ch	ristie	
Latitude:	39° 36' 40.74"N	Julian Day: 🔜 🔿 🖷	5 Session	No. NA R.
Longitude:	87° 15' 12.75"W	Start Time:()	2.5 End T	ime: 1027
Ellip. Height:	428.34 SF+	Data File Name:5	M-0405	13_ BRC
Type of Mark:	CORNER CONCRE			
Stamping on Mark:		Type of Antenna:	8-3	
Weather Condition:	48° CLEAR	Antenna Height: <u>2</u> .	Um to botton	n of antenna mount
CR	78 Pozc. House 1099		CR 75 W	



Project Name: Indaine Statewide 2013	Project Number:	73112	Survey Date: 4/4/13
Station Name: 446 / 446 - Lidar	Operator Name:	Ron Siney	
Latitude: 39 36 21,50	Julian Day:	094	
Longitude:	- Start Time:	12124	End Time: 12:25
Ellip. Height: 660,013 str	Data File Name:		
Type of Mark: PIB Corner Conc Walk/ Lictor= Grave			
Stamping on Mark:	Type of Antenna:		
Weather Condition: 405 Strong Wid 0-3	Antenna Height:	-2.0 M	to bottom of antenna mount
WOODEN RAMP WOODEN RAMP UHB UHB	Coverad Drive Granvel Parking	Play strand	Grass



	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 .447 N39° 16' 27,33" W 87° 32'01.69" 418.9 sft Concrete Corner N/A Clear 250°	Project Number: $73(12)$ Survey Date: $4/5/201$ Operator Name: $Cad_4$ SdineiderJulian Day: $043$ Session No. $\sqrt{64}$ Start Time: $(6.445)$ End Time: $16.52$ Data File Name: $15M040313$ CJSType of Reciever: $#0364$ R&3Type of Antenna: $#0364$ R&3Antenna Height: $2.00 m$ to bottom of antenna mount
GRASS		Asontali Asontali Theres Gridss.
rater C	- crtats J-	447 #7451 concerne hsatinu -GRASS. -GRASS. -GRASS.
c	W MIDDLE	TOWN DR _ ASPITALT -



	GPS Observ	vation Log Sheet	WOOLPER
Station Name: Latitude: <u>{\/</u> Longitude: \ <u>/</u> 8	Indiana Statevido 2 448 39 ° 06' 33.58" 7° 39' 28.27" 340.75ft	Julian Day: <u>093</u> Start Time: <u>12:45</u>	y Schneider Session No. N/A End Time: 12:50
Stamping on Mark:	Sibewalk Corner NA Clear = 50°	Type of Antenna: #030	54 R8-3
	CLOVER ST CONCRETE	498	
Gn	ASS CREETE WALK	< Xennes	CONVENIENCE STORE
	(	Wacowero HUTSONVILLE"	5 plansant st



	GPS Observa	ation Log Sheet
Station Name:	Enliana Statewide 454	Project Number: 73112 Survey Date: 4/4/201 Operator Name: Cody Schneider
Longitude:	N 39° 23' 27.92" W 87' 17' 46.43"	Julian Day: <u>099</u> Session No. <u>N/4</u> Start Time: <u>15:06</u> End Time: <u>15:16</u>
	453, ZSFF Concrete corner	Data File Name: <u>ISM646413C55</u> Type of Reciever: <u>#6364 R &amp;-3</u>
Stamping on Mark:	N/x Partly Cloudy 2 55°	Type of Antenna:       #0364       N6-3         Antenna Height:       2.00 n       to bottom of antenna mount
TENYNIS COJRTS	SHELTER CONCRETE CONCRETE	- GRASS - CONCRETE - 454
MSPHAN TREES -	Jr wAuk	GWINGSET WOUD CHIPS-



Statio L Elli Typ Stamping	iect Name:       Indiana       Statewide       20         on Name:       455         Latitude:       N39° 23'02.26"         Longitude:       W 87° 60' 44.16"         ip. Height:       538.3 sft         e of Mark:       Concrete Corner         g on Mark: $W[A]$ Condition:       Partly Cloudy = 50°	Operator Name:       Cody Schneider         Julian Day:       094       Session No.         Start Time: <u>1</u> :58       End Time:         Data File Name: <u>150090913C55</u> Type of Reciever: <u>#6364</u> R8-7         Type of Antenna: <u>#0364</u> R8-3	2/ A 2: 28
Å	F RANKLIN	ST GRAVEL-	
zł	TRUE CONCRETE PAD	- GRASS -	GRT GRF ARIGNG AREA
r EFF ER So N	PLAYGROON AREA HILL	- IREBS -	

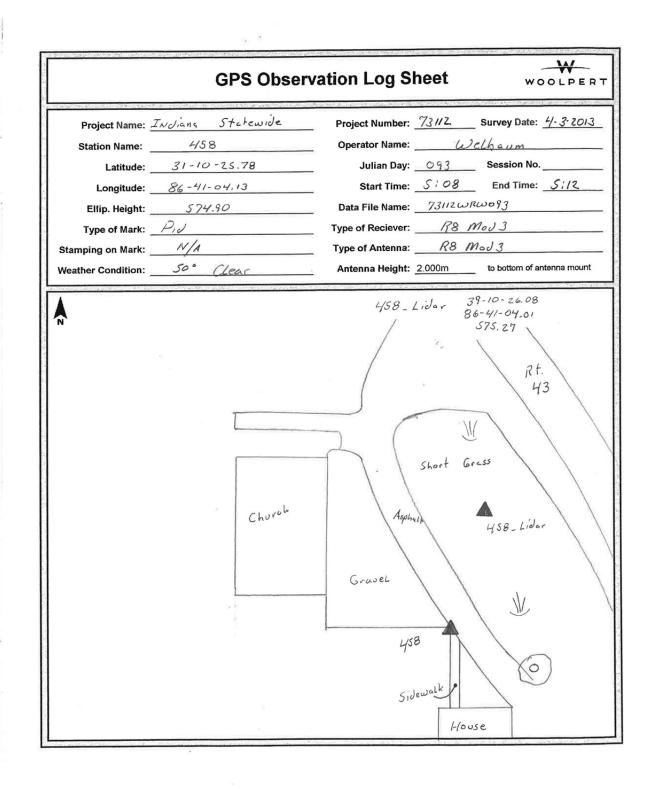


GPS Observa	tion Log Sheet
Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: 4/3/201
Station Name: 456	Operator Name: Cody Schneider
Latitude: N 39°07'59, 33"	Julian Day: Session No/4
Longitude: W 87° 22' 37.49"	Start Time: 15:15 End Time: 15:24
Ellip. Height: 4(7,954	Data File Name: ISM046313CJS
Type of Mark: Concrete Corner	Type of Reciever: <u>#0364</u> RS-3
Stamping on Mark:/	Type of Antenna:
Weather Condition: <u>Clear 250°</u>	Antenna Height: 200 m to bottom of antenna mount
	HARD 456
WINDY RIDGE DR ASPITALT DR	HON 45% HON 45% CONCRETE DRIVEWAN #3327
- TREES .	-GRASS -



	Indiana Statewide 457		
	39-10-04,96		Session No3
	87-00-76.51		End Time: 4:49
	426,27		
	PID		
Stamping on Mark:	N/A	_ Type of Antenna:	Mod 3
Weather Condition:	55° CLear	Antenna Height: 2.000m	to bottom of antenna mount
N		39-10- 4/57_Lidar 87-00- 4/27.	
	~		
	Driveway	457	
JL.	Driveway Johnstown Gas pumpins Station	457 457 457-Lidar Gravel	t U







Project Name	Indiana Statewide 2013	Project Number: 73112 Survey Date: 05 APR 2
	QC-242	Operator Name: Ben Christie
	39°40' 19,09"N	Julian Day: $O95$ Session No. $N/AR$
	87° 24' 30.01"W	Start Time: 0951 End Time: 0952
	: 396,02 SF+	Data File Name: ISM_040513_ BRC
Type of Mark	CURNER CONCRETE	Type of Reciever:/₹.⊗−3
	: N/A	Type of Antenna: R_3-3
Weather Condition	: 47° CLEAR	Antenna Height: 2, 0 1 to bottom of antenna mour
	GAR, CONC.	HSHINGTON ST.



	GPS Observ	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	39° 53' 09.23" N 87° 12' 10.32" W 472.98 sft CORNER PAINT STRIP	Start Time: <u>1259</u> Data File Name: <u>エSM</u> G Type of Reciever: <u>R ター</u> Type of Antenna: <u>R ター</u>	_ Session No. <u>N/A R T K</u> _ End Time: <u>\302</u> _ <i>0</i> 40 4 13 - じRC. 3
	BASKET BALL		



	GPS Observ	vation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-244 39°45'07.71"N 87°04'30.75"W 614.925F+ CORNER ASPHALT N/A 55° CLEAR	Project Number:       73112       Survey Date:       04 A PR 2013         Operator Name:       Ben Christie         Julian Day:       094       Session No.       MARTK         Start Time:       1340       End Time:       1342         Data File Name:       ISM_040413_ERC         Type of Reciever:       R 8-3         Type of Antenna:       R 8-3         Antenna Height:       2.0 m       to bottom of antenna mount
A Pornal Print		ASPH. PARKING QC-244 FLAT SURFACE PID & Lidar



Project Name:	Indiana Statewide 2013	Project Number:	73112	Survey Date: 04APR 20
	QC-245	Operator Name:		
	39" 32' 10.30" N			Session No. MAR
Longitude:	87° 20' 47.35"W	Start Time:	1735	End Time: 1737
Ellip. Height:	388.81 5F+	Data File Name:	ISM-	040413_ BRC
Type of Mark:	CORNER CONCRETE	Type of Reciever:	R8-3	
Stamping on Mark:		Type of Antenna:		
Weather Condition:	54° CLEAR	Antenna Height:	2.0m	to bottom of antenna moun
	HOUSE CONC. # 5732 GRANT AVE			



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
-GRASS -	# 3887 - GRASS- - GRASS- - GRASS- - GRASS -

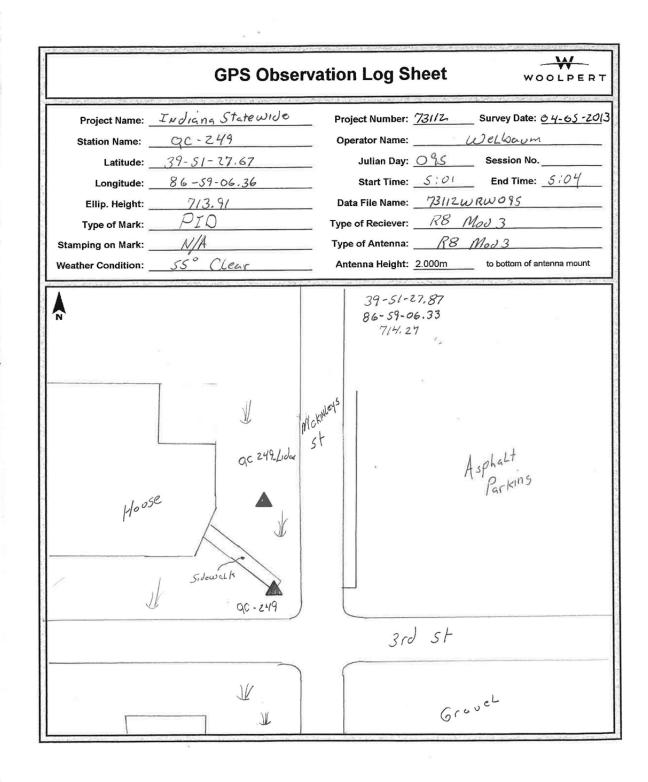


Project Name: Indaine Shire with 2013	
Station Name:	Operator Name: <u>Rea Sing</u> Julian Day: 이거 Session No. 그
Longitude: 87 05 580	Start Time: 18/59 End Time: 1:00
Ellip. Height: 577,798 st.	Data File Name: IND_SW_094_&S
Type of Mark: PID= Corner Paint / Lefar= Asphalt	
Stamping on Mark:;/ 序	Type of Antenna: Teimble Internal
Weather Condition: 105 Sundy Wind 5-10	Antenna Height: to bottom of antenna mou
Lonce	Asphalt Parking Asphalt Parking Bank Bank



GP	S Observation Log S	Sheet WOOLPERT
Project Name:Indiana StatStation Name: $QC - ZU8$ Latitude: $N39^{\circ}$ 16' 39.Longitude: $W87^{\circ}$ 06' 37.Ellip. Height: $U96.7$ .Type of Mark: $Concoeller$ Stamping on Mark: $W/A$ Weather Condition: $Pa - Hy$ Close	Operator Name       . § Z ''       y § ''       Start Time       Start File Name       - Curne       Type of Reciever       Type of Antenna	$\frac{73112}{Cody} Survey Date: 4/4/2013}$ $\frac{Cody}{Schneider}$ $\frac{094}{Session No. N/n}$ $\frac{13104}{End Time: 131(2)}$
CONCRETE 6 RASS	- TJANAT SCHART	TO LLAY COR COR CITY ELEMENIAR OF COR - GRASS -
CONCRETE	PATCHY- GRAVEZ	GRAVEL - - ASPHANT-
- CONCEPTO - 1		GRATH ST GRATH - CONCRETE -







Station Name: QC-250 / Lidar Latitude: <u>39</u> <u>34</u> <u>19,87</u> Longitude: <u>8C</u> <u>43</u> <u>16,37</u> Ellip. Height: <u>(c8,926,56</u> Type of Mark: <u>MIA</u> Weather Condition: <u>505</u> <u>Sungl Calm</u> (a resS (a resS Conc. <i>Fire Dept.</i> <i>Fire Dept.</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i> <i>Green</i>	Project Name: Indaina Statewide 2013	Project Number: <u>3842</u> Survey Date: <u>4(4)13</u>	
Longitude: $\frac{9C^{\circ} 43^{\circ} 15.3^{\circ}}{15.3^{\circ}}$ Start Time: $3:30$ End Time: $3:31$ Ellip. Height: $(se. 936 = 64$ Type of Mark: $PID=Connu Conc / Ledux = Conc}$ Stamping on Mark: $p/4$ Weather Condition: $50s$ Sumy Code A A A A A A A A A A A A A A A A A A A			
Ellip. Height:     L&E. 926 SF       Type of Mark:     PLD=Corner Conc. [Lobar = Conc.]       Stamping on Mark:     I/I       Weather Condition:     SOS Sunsy Colm.       Antenna Height:     D.Om.       to bottom of antenna mount   Fire DepF.       In ress         Conc.         Stapping on Mark:   Intermediation:       Stormy Colm.         Antenna Height:         Stormy Colm.         In ress         Conc.         Stormy Colm.         In ress	Longitude: 86 43 15.37		
Type of Mark: PID=Corner Conc / Loder = Conc       Stamping on Mark: MA       Weather Condition:     SOS Sunny Colom       Source Color       Type of Antenna:       Trinable Reverse:       Trinable Reverse: <td col<="" th=""><th>Ellip. Height: 688,926 56+</th><th></th></td>	<th>Ellip. Height: 688,926 56+</th> <th></th>	Ellip. Height: 688,926 56+	
Weather Condition:     Sors     Summy Calm     Antenna Height:     DOM     to bottom of antenna mount       Image: Sors     Fire Dept.       Image: Sors     Game.     Same.       Image: Sors     Conc.     Same.		Type of Reciever: Trimble R& model 3	
Weather Condition:     50%     Swart Calm     Antenna Height:     D.O.m     to bottom of antenna mount       Image: Source of the second secon	Stamping on Mark: $\nu/\epsilon$	Type of Antenna: Trimber Internal	
Conc. So		Antenna Height:	
мв. DDD	Urass (2 Land 1		
		<u>М</u> В. DDD	



GPS Observ	vation Log Sl	heet WOOLPER
Project Name: <u>Indana</u> Statewole 2013 Station Name: <u>QC-251 [Lidar</u>	Project Number: Operator Name:	73 hg         Survey Date: 4(4/13           Reg         Sign(4)
Latitude: 39° 38' 16,47 "	-	Session No
Longitude: 86 51 32.46		4:33 End Time: 4:34
Ellip. Height: 760,409 554	Data File Name:	IND_SW_094_RS
Type of Mark: PID= Corner Core / Lidar = Gross	Type of Reciever:	Trimble R& model 3
Stamping on Mark:/+	Type of Antenna:	Trimble, Janteins 1
Weather Condition: 50%, Surny, Calm	Antenna Height:	2.0 M to bottom of antenna mount
$\sim$ $\times$	Conc. Walk	
Play browned	*	Asphalt, Parking



Project Name: Indaine Statewild 2013	Project Number: <u>311</u> 2 Survey Date: <u>414</u> /13
Station Name: <u>QC- コミス / Lid ar</u> Latitude: <u>39° コミ、ミミ、eg [™]</u>	Operator Name: Roo Swy
Latitude: 39°25',55,29	Julian Day: Session No
Longitude: ୧୪ ୨୪,୨୦	Start Time: 3:40 End Time: 391
Ellip. Height: <u>CID. TAT SC+</u>	Data File Name: IND_SW_094_RS
Type of Mark: PLD= Abde 12 Coac/Lidar = Coac	Type of Reciever: Trimble R8 model 3
Stamping on Mark: <u>MIA</u>	Type of Antenna: Trimble Internal
Weather Condition: 50% Survey Calm	Antenna Height: to bottom of antenna mount
Curry Dark A Curry	Conc Druis
mill cook	



	GPS Observ	ation Log S	heet	wo	OLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INJiana Statewide 253 39-16-56.41 86-45-34.53 4441.11 PiJ N/A 50° CLear	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	093 5:57 7311 78 R8		6:00
₹	Shed W Sidewalk East Chay St.	Grever Hely	4.	Asphalt Parkins	



	GPS Obse	rvation Log Sheet	PER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Stolewide 2 QC-254 N 39° 09' 24.23" W 87° 31' 26,89" 367.0 xft Concrete corner N/A Clear 250°	20(3)       Project Number:       73112       Survey Date:       4/-         Operator Name:	1 * 16
TREES-	-6R 0C-254	CONCRETE DAN CASS- CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CONCRETE CO	



GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 APR 2013
Station Name: <u>QC-255</u>	Operator Name: Ben Christie
Latitude: <u>38° 57' 46,52" N</u>	Julian Day: <u>093</u> Session No. <u>N/A R T K</u>
Longitude: <u>87°24′09,37</u> ″W	Start Time: 1702 End Time: 1704
Ellip. Height:415.50 sf+	Data File Name: $\underline{ISM}_{O40313} \underline{BRC}_{O40313}$
Type of Mark: CORNER SIDEWALK	Type of Reciever: <u>R8-3</u>
Stamping on Mark: <u>N/A</u>	Type of Antenna: <u>R8-3</u>
Weather Condition: 47° CLEAR	Antenna Height: 2.0m to bottom of antenna mount
	OST FFILE

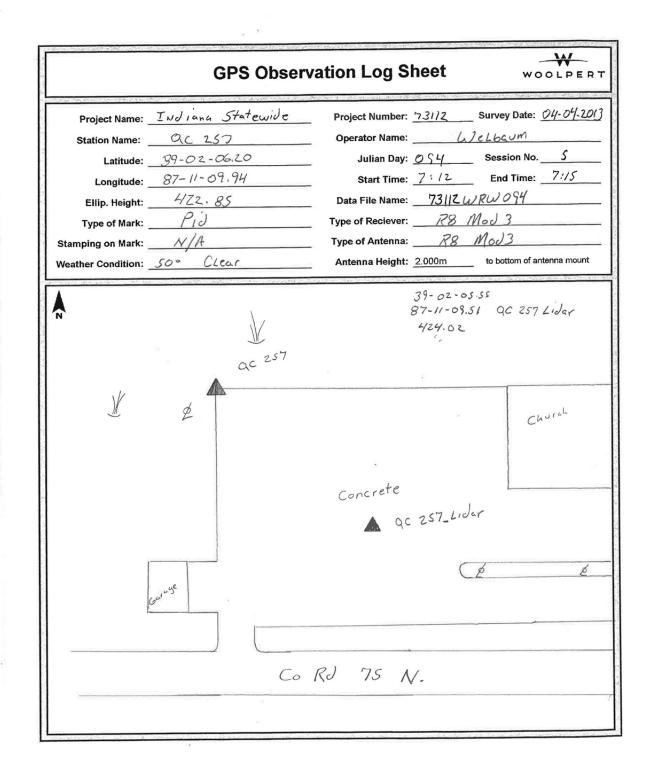


Froject Na	ame: Indiana S	Elewide 2013 Project Number: 7311	2 Survey Date: <u>4/3/</u> 2
	me: Q(-256	Operator Name:(	ody Schneider
	ude: <u>139'04'29</u> .	15 ¹¹ Julian Day:04	Session No. N/A
Longit	ude:	511 Start Time: 14:2	6 End Time: 14:57
Ellip. He	ight: 464,554	Data File Name: ISM	040313651
	Mark:Sidewalls (		
Stamping on N	Mark: ^{4/} /4	Type of Antenna: #0	364 RE-3
Weather Condi	tion: <u>Clear ~ 50°</u>	Antenna Height:	to bottom of antenna mount
	E CO	O RO 50 S ASPHAN	7-
CANES- CONCOLOR		CRASS- RELAG POLE	LIGHT ASPITAUT PARIEING- LOT
	GLEMENTARY Scitoul	- GRASS - * * FENÉG	ş <b>- × − ×</b> 55 ~

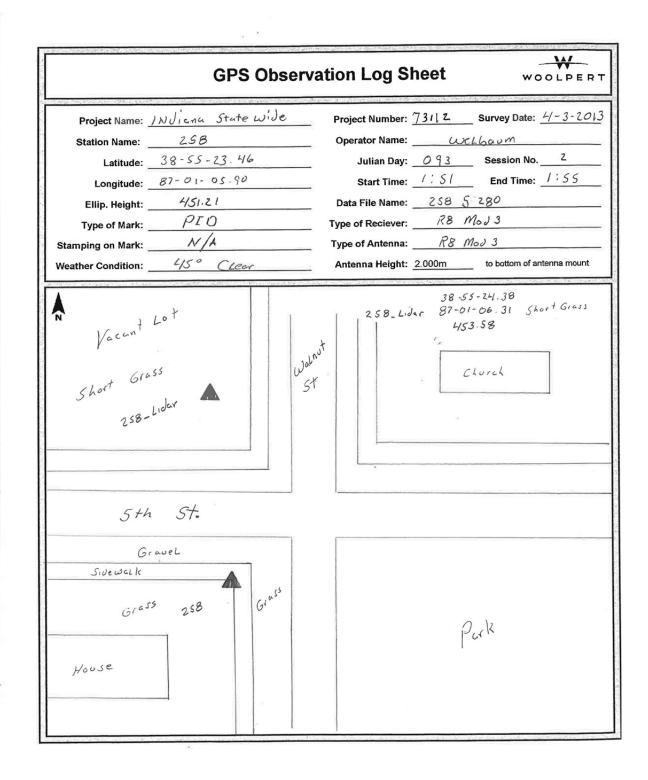




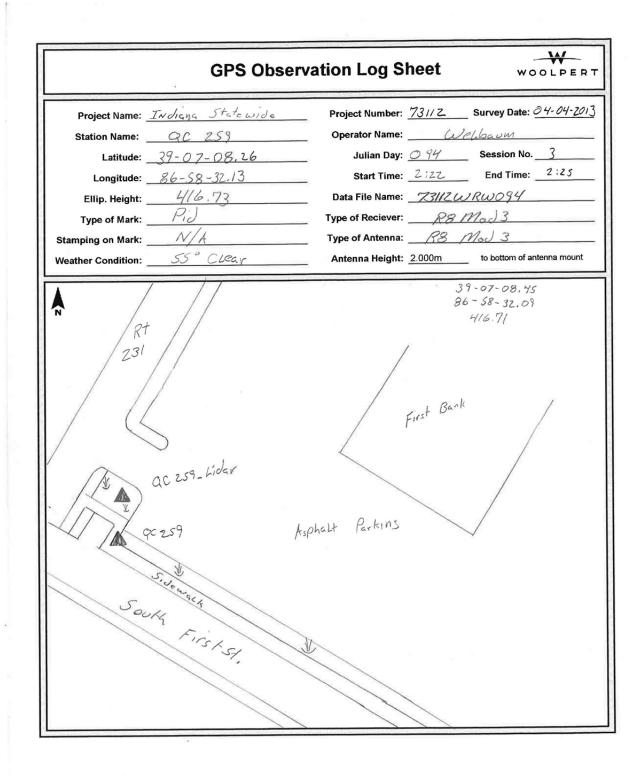














	GPS Observ	vation Log She	eet woolpert
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana State Wide 260 39-01-419.22 86-44-15.65 710.89 PTD N/A 55° CLear	Operator Name: Julian Day:( Start Time: Data File Name: Type of Reciever: Type of Antenna:	73112       Survey Date: 4/-3-2013         Welbaum         093       Session No.         94.16       End Time: 4.19         73112       Rw093         R8       MoJ 3         R8       MoJ 3         000m       to bottom of antenna mount
<b>A</b> N	260	Short Grass 260 - Lidar . W Sidewalk	39-01-49.41 60-Lidar 86-44-15.49 711.40 Eastern Green HISL School
		M	

14



## LIDAR CONTROL

Project Name:	Indiana Statewide	2013	Project Number:	73112	Survey Date: 04 APR 20
Station Name:	433		Operator Name: B	en Christie	
Latitude:	39° 56'	41.65"N	Julian Day:	094	Session No. N/A RT
Longitude:	87° 27'	3,4,29"W	Start Time:	1207	End Time: 1209
Ellip. Height:	401.3	SF+	Data File Name:	ISM-	040413_ BRC
	1	ASPHALT	Type of Reciever:	R8-3	
Stamping on Mark:	N/A		Type of Antenna:	R 8-3	
Weather Condition:	52° CL	EAR	Antenna Height:	2.0m	to bottom of antenna mount
	K ENTRANCE	F	433 ELAT SURFACE PID & Lidar		
	PARK	GRASS		SKATÉ PARK	χ, /



	GPS Observa	tion Log Sheet	WOOLPERT
Station Name: Latitude: _ ^시 Longitude: _ ^{\/} Ellip. Height:	<u>435-LIDAR</u> <u>435-LIDAR</u> <u>39°50'56.92" 86°40'42.48" 802.5564 No setting (Gravel) N/A Clear ~ 65°</u>	Operator Name: <u>Coa</u> Julian Day: <u>097</u> Start Time: <u>15:17</u> Data File Name: <u>I57</u> Type of Reciever: <u>#036</u> Type of Antenna: <u>#036</u>	Session No. <u>"/4</u> End Time: <u>15:41</u> MO407/3CJS GY RE-3
TO EMMANUEL BAPTIST CHURC	s г.svi - ыАкг	- GRAVEZ	TREE
- GRF		AUEL-	-6 RASS.



GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 435 39-50-57.79 86-40-46.48 803.43 PID N/A 4/5° Windy	Operator Name:	
	Asphalt Parkins Jule walk	39-50-57.66 86-40-46.31 803.57	



Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 04AIR 2
Station Name:		Operator Name: Ben Christie
Latitude:	39° 36' 18.54"N	Julian Day: <u>094</u> Session No. $\frac{N/A}{A}$
	87° 31' 12.52"W	Start Time: 1812 End Time: 81-
Ellip. Height:	504. 54 sft	Data File Name: <u>ISM_040413_</u> CRC
	CORNER SIDEWALK	Type of Reciever: <u>R8-3</u>
	N/A	Type of Antenna: & B - 3
Weather Condition:	50° CLEAR	Antenna Height: 2.0 m to bottom of antenna mou
	Ноизе #11520 Сонс.	444 FLAT SURFACE PID & Lidar

11520



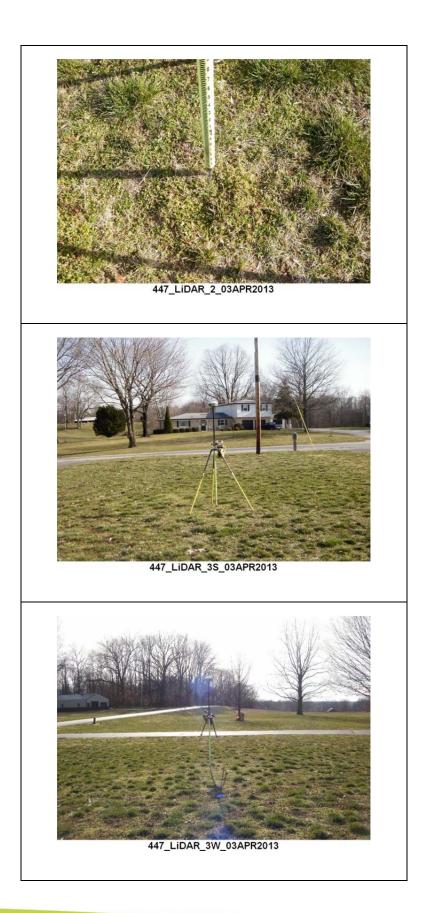
	GPS Observ	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <u>445_LIDAR</u> <u>39° 36' 40.69" N</u> <u>87° 15' 12.43" W</u> <u>429.76 5F+</u> SHORT GRASS N/A <u>48° CLEAR</u>	Project Number:       73112         Operator Name:       Ben Christie         Julian Day:       095         Start Time:       1030         Data File Name:       ISM_         Type of Reciever:       R %         Type of Antenna:       R %         Antenna Height:       2,000	Session No. <u>N/AR</u> End Time: <u>1032</u> 40513BRC  3
	CR 78 CR 78 COZ CZ CZ CZ CZ CZ CZ CZ CZ CZ CZ CZ CZ CZ	SHORT GRASS	CR 8 3 51 20



Project Name: Indaine Statewide 2013	Project Number:	73112	Survey Date: _4/4/i3
Station Name: 446 / 446 - Lidar	_ Operator Name:	Ron Siney	
Latitude: 39 36 21,50	– Julian Day:	094	
Longitude: ୧୨୦୦୦ ୳ ୧୦୦	_ Start Time:	12124	End Time: 12:25
Ellip. Height: 660,013 ste	_ Data File Name:		
Type of Mark: PI B Corner Conc Walk/ Lidor=Grave			
Stamping on Mark:	Type of Antenna:		
Weather Condition: 405 Sucry Wind O-S	Antenna Height:	2.0 m	to bottom of antenna mount
Wooden Rding Wooden Rding Utos Utos	Coverad Drive Gravel Par King	Play growny Sct J	Grass



	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 447-LIDAR N 39°16'26.91" W 87°32'02.23" 411.8544 No setting (GRASS) W/A Clar 250"	Project Number: 73(12 Operator Name: Cody Julian Day: 093 Start Time: 16:55 Data File Name: ISM 04 Type of Reciever: #0364 Type of Antenna: #0364 Antenna Height: 2,00~	Schneider Session No. <u>N/A</u> End Time: <u>16:59</u> 03 13075 R&-3 R&-7
- GRASS. ASD CONCRETE GRASS GRASS GRASS GRASS GRASS GRASS	HAUT TREE 447-L	IDAR GRASS-	-GRASS - 47451 -TREES -GRASS-



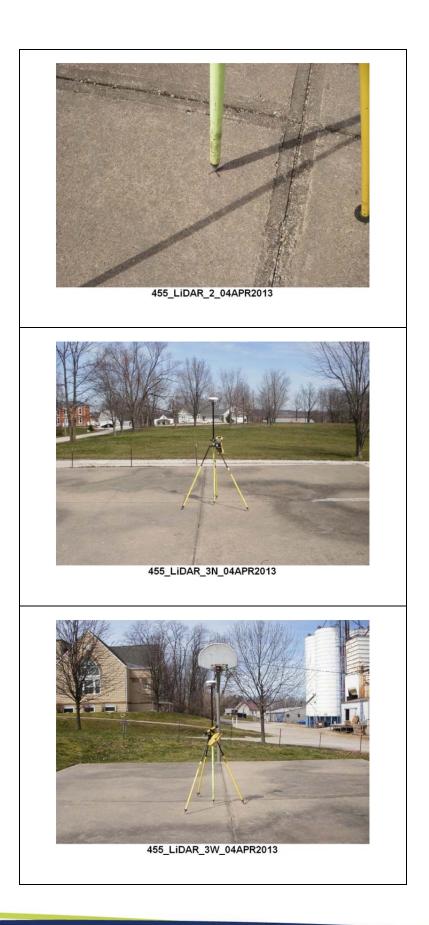
Project Name:	Indiana Statomide Ze	217 Project Number:	3117 Survey	Date: y /2/20
	448-LIDAR			
	N39° 06'32,70"	Julian Day:	93 Sessio	n No. MA
	W87°39'28.41"	Start Time: 12		ime: 12:57
	340.4sft	Data File Name:		
Type of Mark:	Nothing Sot (Grass)	Type of Reciever:	£0364 R8-	3
Stamping on Mark:	NA	Type of Antenna:	£6364 RE-	3
Weather Condition:	Clear × 50°	Antenna Height:	. 00 m to bottom	n of antenna mount
	- GRASS -	GANSS HOTSONVILLE"	2 PLEN CONCUENTS	STORE



	GPS Observation Log Sheet
Project Name:	Indiana Statewick 2013 Project Number: 73112 Survey Date: 4/4/2013
Station Name:	454_LIDAR Operator Name: Cody Schneider
Latitude:	N 39' 23' 26.11" Julian Day: 094 Session No. 1/2
Longitude:	W 87° 17' 46, 16" Start Time: 15:11 End Time: 15:19
	453,2 sft Data File Name: ISM 040413 CJS
Type of Mark:	No setting (Concrete)         Type of Reciever: #0364 Pcb-7           N/A         Type of Antenna: #0364 Pcb-3
Stamping on Mark:	N/A Type of Antenna: #0364 R8-3
Weather Condition:	$p_{a}$ Hy Cludy $\approx 55^{\circ}$ Antenna Height: 2.00 m to bottom of antenna mount
TENNIS COURTE	- GRASS - GRAS
-TREB'S-	PRINT WHAT SWINGSET - CHIDS - CHIDS



	GPS Observa	tion Log Sh	neet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>Indiana Statewido 2013</u> <u>455 - LIDAR</u> <u>N39° 23' 62.42"</u> <u>W 87° 60' 43.91"</u> <u>538.3 sft</u> <u>No setting (Concrete)</u> <u>Partly Cloudy ≈ 50°</u>	Operator Name: _ Julian Day: _ Start Time: _ Data File Name: _ Type of Reciever: _ Type of Antenna: _	Cody So 094 12:30 ISM04 #0364 #036	Session No. $\frac{\sqrt{4}}{12;45}$ End Time: $\frac{12;45}{042013}$ R&-3
JEFFERSON ST GRAUEL - GRAUEL -	PLAY GROUN P AREAT	- (	- 6RAUE	SHORT GRA - PARKING AREA

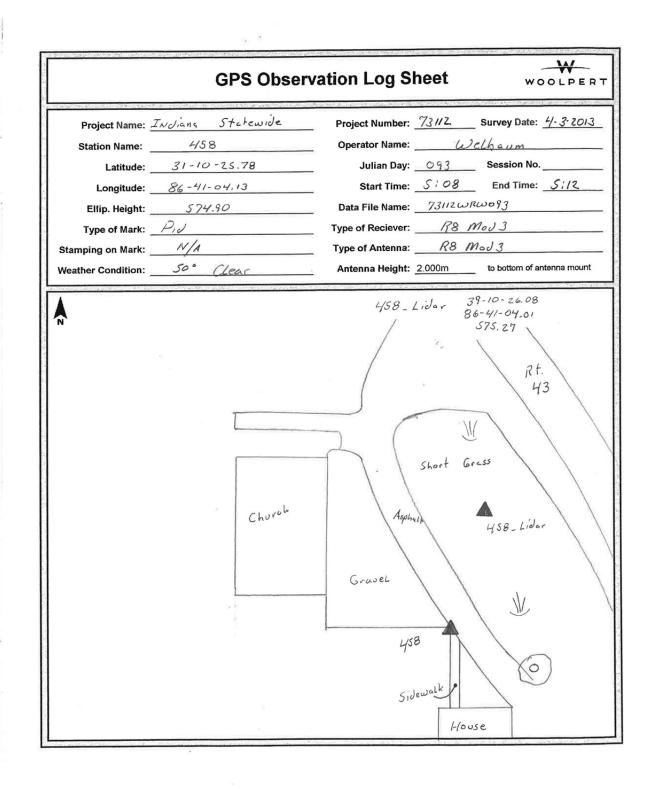


	GPS Observation Log Sheet
Station Nan Latitu Longitu Ellip. Heig Type of Ma Stamping on Ma	me:IndianaStatewide2017Project Number: $7312$ Survey Date: $4/3/2013$ me: $456-L10AR$ Operator Name: $Cody$ Schneiderude: $N396$ $07'59.98''$ Julian Day: $093$ Session No. $A/A$ ude: $W87^{\circ}$ $22'33.83''$ Start Time: $15:28$ End Time: $15.35$ ght: $426.0$ $64$ Data File Name: $ISMO40313CJS$ ark:No settingGRAVELType of Reciever: $#03C4$ $R8-3$ ark: $M/A$ Type of Antenna: $#03C4$ $R8-3$ ion: $Clear \approx 50^{\circ}$ Antenna Height: $2.00M$ to bottom of antenna mount
	GRAVEZ # 333 Z Prove GRAVEZ GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRASS GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAV GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ GRAVEZ
	CULTIUATED FIELD



	Indiana Statewide 457		
	39-10-04,96		Session No3
	87-00-76.51		End Time: 4:49
	426,27		
	PID		
Stamping on Mark:	N/A	_ Type of Antenna:	Mod 3
Weather Condition:	55° CLear	Antenna Height: 2.000m	to bottom of antenna mount
N		39-10- 4/57_Lidar 87-00- 4/27.	
	~		
	Driveway	457	
JL.	Driveway Johnstown Gas pumpins Station	457 457 457-Lidar Gravel	t U







i i ojeot i iu	me: Indiana Statewide 2	2013	Project Number:	73112	Survey Date:	USAPR2
Station Na	me: <u>QC-242</u> .	LIDAR	Operator Name:	Ben Christie		
Latit	ude: <u>39° 40'</u>	19.35"N	Julian Day:	095	Session No.	N/A R
Longit	ude: <u>87°24'</u>	30.18"W	Start Time:	0954	End Time:	0956
Ellip. Hei	ght: <u>396.22</u>	- 5f+	Data File Name:	ISM_	040513_	BRC
	ark: <u>SHURT</u>	CRASS		-		
	ark: <u>N/A</u>		Type of Antenna:	R 8-3		
Weather Condit	ion: <u>47</u> °	CLEAR	Antenna Height:	2.00	to bottom of an	ntenna moun
	W MILLE	ER ST.				
W MILLER ST. SHORT GRASS GAR, CONC HOUSE						



GPS Ob	oservation Log Sheet
Project Name:Indiana Statewide 2013Station Name:QC - 243Latitude:39° 53' 09.23Longitude:97° 12' 10.32'Ellip. Height:472.98 sf +Type of Mark:CORNER PAINTStamping on Mark:N/AWeather Condition:54° PT. CLD	W Start Time: 1259 End Time: 1302 Data File Name: エミルーロイロチョー ひれん STRIPE Type of Reciever: R&-3 Type of Antenna: R &-3
BASKET BALL	RC-243 FLAT SURFACE PID & LIDAR



	GPS Observ	vation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-244 39°45'07.71"N 87°04'30.75"W 614.925F+ CORNER ASPHALT N/A 55° CLEAR	Start Time: 1340 End Time: 1342 Data File Name: ISM_040413_ERC
A Point		ASPH. PARKINIG QC-244 FLAT SURFACE PID & Lidar



Project Name:	Indiana Statewide 2013	Project Number:	73112	Survey Date: 04APR 20
	QC-245	Operator Name:		
	39" 32' 10.30" N			Session No. MAR
Longitude:	87° 20' 47.35"W	Start Time:	1735	End Time: 1737
Ellip. Height:	388.21 5F+	Data File Name:	ISM_	040413_ BRC
Type of Mark:	CORNER CONCRETE	Type of Reciever:	R8-3	
Stamping on Mark:		Type of Antenna:		
Weather Condition:	54° CLEAR	Antenna Height:	2.0m	to bottom of antenna moun
	HOUSE CONC. # 5732 GRANT AVE			



		ation Log Sho		WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>Indiana Statewide 20</u> <u>QC-246</u> <u>N 39° 22' 67,00</u> <u>W 87° 28' 40,03</u> <u>371,4564</u> <u>Concrete corner</u> <u>N /A</u> <u>Partly Cloudy 253°</u>	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	Cody Sch 094 Sessi 19122 End ISM04041 40364 R8-3 0364 R8-3	Time: $\frac{N A}{3CTS}$
-GRASS -	# 3887 (ALIK (ALIK (	ASPITA	Graniel ranch	- GRA# 5

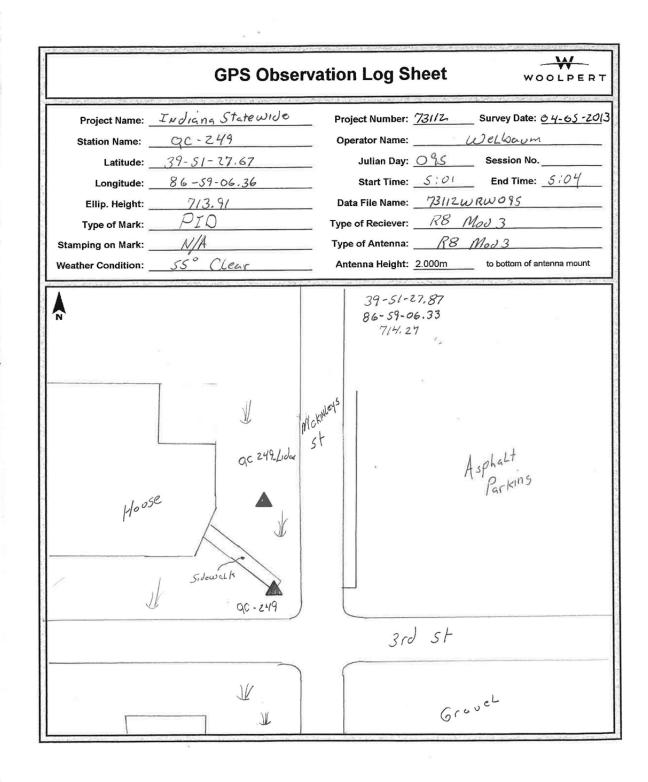


Project Name: Indaine Shinewike 2013	
Station Name: OC-247 / Lidar	Operator Name: Rea Sindy
Latitude: <u>39 31 46.30</u> Longitude: 87 05 ຮອດໂ	Julian Day: 094 Session No. 2 Start Time: 12:59 End Time: 1:00
Ellip. Height:	Data File Name:094KS
Type of Mark: _PID= Corner Paint / Letar = Asplatt	
Stamping on Mark:	Type of Antenna: Trimble Internal
Weather Condition: 108 Swany Wind 5-10	Antenna Height: 2,3 m to bottom of antenna mount
Lonce	Asphalt Parking Oc-2474 Lidar Bank



GPS Observa	ation Log Sheet
Project Name: Endiana Statewide 2013 Station Name: QC-24&_LIDAR Latitude: N 39° 16' 39.69" Longitude: W 87° 06' 37.40" Ellip. Height: 496.9 54 Type of Mark: No setting (Gravel) Stamping on Mark: NJA Weather Condition: Partly cloudy 252°	Operator Name:       Cody Schneid=7         Julian Day:       094         Start Time:       13 13         End Time:       13 228         Data File Name:       13 200 0913075         Type of Reciever:       #0364
- GOUASS-	- GRAVEL - GRASS -
GARSS -	PATCHY GRIAUET GRIAUET SEVENTH ST -
G PUASS CONCRETE -	_NSPHALT - 







Project Name: Indaina Statewide 2013	
Station Name: <u>QC-QSO / Lidar</u> Latitude: <u>גר אין אין אין גר</u>	Operator Name: <u>Ros Sinay</u> Julian Day: <u>סקי</u> Session No. <u>4</u>
Latitude: <u>86 42 16.37</u>	Start Time:         3:30         End Time:         3:31
Ellip. Height: ( &&, 926 54	Data File Name: IND, S 10, 094 - RS
Type of Mark: PID=Corner Conc / Liblar = Conc	
Stamping on Mark:	
Weather Condition: 50% Sunny Calm	Antenna Height:
Corress	Conc. Sings A Linder MB. DDD Grav. Grav.
E CR600S	



GPS Observ	vation Log Sl	heet WOOLPER
Project Name: <u>Indana</u> Statewole 2013 Station Name: <u>QC-251 [Lidar</u>	Project Number: Operator Name:	73 hg         Survey Date: 4(4/13           Reg         Sign(4)
Latitude: 39° 38' 16,47 "	-	Session No
Longitude: 86 51 32.46		4:33 End Time: 4:34
Ellip. Height: 760,409 554	Data File Name:	IND_SW_094_RS
Type of Mark: PID= Corner Core / Lidar = Gross	Type of Reciever:	Trimble R& model 3
Stamping on Mark:/+	Type of Antenna:	Trimble, Janteins 1
Weather Condition: 50% Surny Calm	Antenna Height:	2.0 M to bottom of antenna mount
$\sim$ $\times$	Conc. Walk	
Play browned	*	Asphalt, Parking



GPS Observ	vation Log Sheet
Project Name: Indaile Statewilde 2013	
Station Name: QC-252 / Lidar	Operator Name: Ron Simy
Latitude: 39° 25',55, 29"	Julian Day: Session No
Longitude: ୧୯୦ 42' SD, 20	Start Time: 3'.40 End Time: 391
Ellip. Height:	Data File Name: IND_SW_094_RS
Type of Mark: PLD= Assic Is Coac/Lidar = Coac	Type of Reciever: Trimble R8 model 3
Stamping on Mark: MA	Type of Antenna: Trimble Internal
Weather Condition: 50% Shany Calm	Antenna Height: to bottom of antenna mount
Curry Dart Alidar	Conc Druis
mill creek	



	GPS Obs	servation Log S	heet	wo	OLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INJiang Statewide 253 39-16-56.41 86-45-34,53 441.11 PiJ N/A S0 ° CLear	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	093 5:57 7311 78 R8		6:00
	June June June June June June June June		2000) 2000 2010 2010	Asphalt 12, kins	
	ă. A				



	GPS Observation Log Sheet
Project Name:	Endiana Statewide 2013 Project Number: 73/12 Survey Date: 4/3/2013
Station Name:	QC-254_LIDAR Operator Name: Cody Schneider
Latitude:	1 39° 69 24,13" Julian Day: 093 Session No. "/~
Longitude:	w 87° 31' 26.72" Start Time: 16:14 End Time: 16:20
Ellip. Height:	367,0 sft Data File Name: ISM040313C33
	(oncete ( Type of Reciever: #0364 RE-3
Stamping on Mark:	"M/A Type of Antenna: <u></u> <u> </u> <del> </del>
Weather Condition:	Clear = 50° Antenna Height: 200 m to bottom of antenna mount
}	-GRASS- GARAGE
TREES-	RASI- BOILER RASI- RASI- RASI- BOILER CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. CONCREP. C

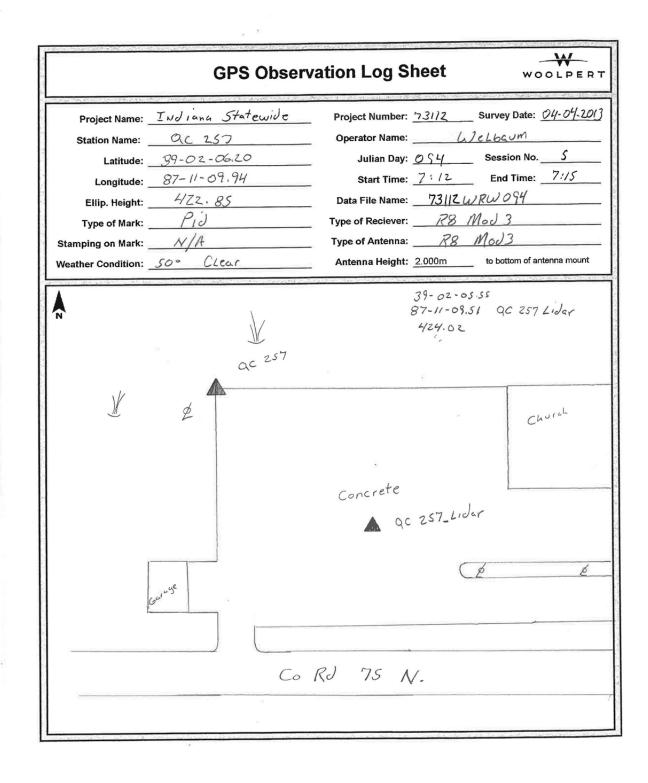


	GPS Observa	ation Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: 03 APR 201
Station Name:	QC-255_LIDAR	Operator Name: Ben Christie	
Latitude:	38° 57' 46.31"N	Julian Day:93	Session No. MA RTH
Longitude:	87° 24' 09.41"W	Start Time: 1709	End Time: 1711
Ellip. Height:	415.87 sft	Data File Name: <u>ISM</u>	_040313_BRC
Type of Mark:	CORNER SIDEWALK	Type of Reciever:	
Stamping on Mark:		Type of Antenna: <u>R8-3</u>	
Weather Condition:	47° CLEAR	Antenna Height: 2.0m	to bottom of antenna mount
SCHOOL		COTE COTE COTE COTE COTE COTE COTE COTE	OLO GLOSPICA SHORT GRASS

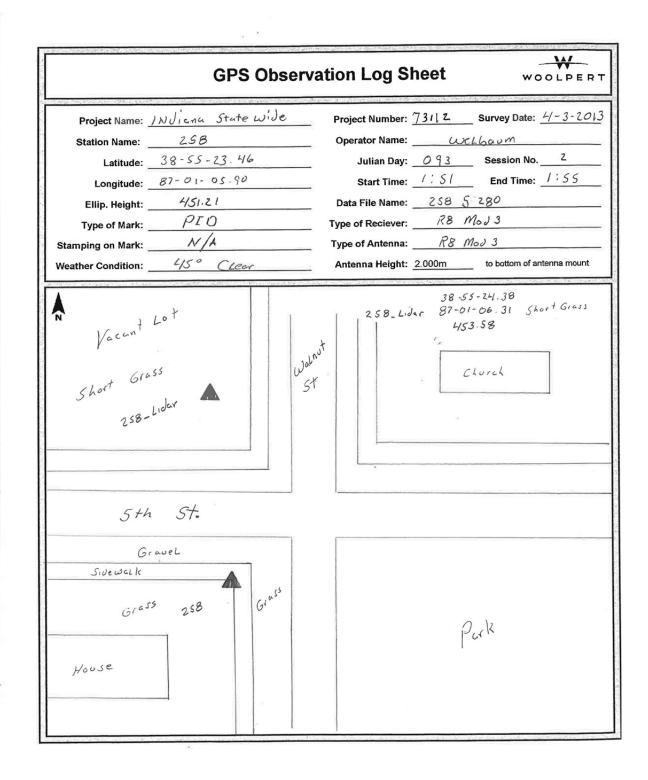


Station Na Lati Longi Ellip. He Type of I Stamping on I	ame: $L_1 diana Sl$ ame: $Q(-256)$ tude: $N39604'26$ tude: $W87^{\circ}(6'04)'26$ tude: $W87^{\circ}(6'04)'26$ tude: $W87^{\circ}(6'04)'26$ tude: $W87^{\circ}(6'04)'26$ tude: $W87^{\circ}(6'04)'26$ tude: $W87^{\circ}(6'04)'26$ vight: $U65$ Mark: $N0$ set         Mark: $N/A$ ition: $Cleur *$	LIDAR 83" 1.04" 1sft ting (Light Asptialit)	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: # Type of Antenna:	Cody 093 \$ 1:38 ISMO40 B364 R #0364 R	Schrieder Session NoN/A End Time: <u>14:45</u> 0313CJS 6-3
6RA55-		CONCRETE -		CO RD 50	5 LIGHT ASPHANT BARIKING LOT
	- CON	<u>cruru</u>	RASS -		& C-256
	CHODL	X	FENE	GRASI	

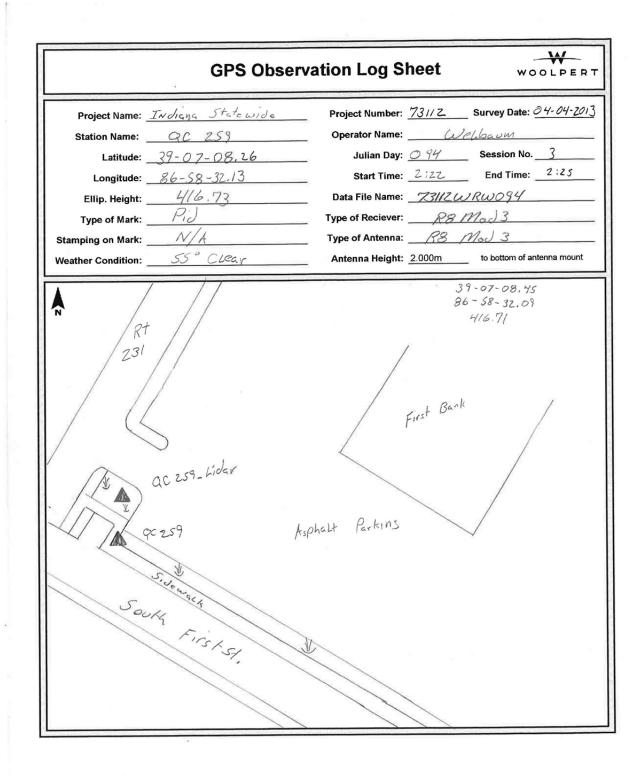














	GPS Observ	vation Log She	eet woolpert
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	INDiana State Wide 260 39-01-49.22 86-44-15.65 710.89 PTD N/A 55° CLear	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna:	73112       Survey Date: 4/-3-2013         Welbaum         0.93       Session No.         1:16       End Time: 4/.19         73112       RW093         R8       MoJ 3         000m       to bottom of antenna mount
	200	Short Grass 260-Lidar 	39-01-49.41 60-Lider 86-44-15.49 711.40 Eastern Green HISL School



# **VOLUME 5**

Block 12 Ground and LiDAR Control

# ORTHOIMAGERY AND LIDAR CONTROL SURVEY REPORT

2013 INDIANA STATEWIDE IMAGERY PROGRAM

Indiana Office of Technology

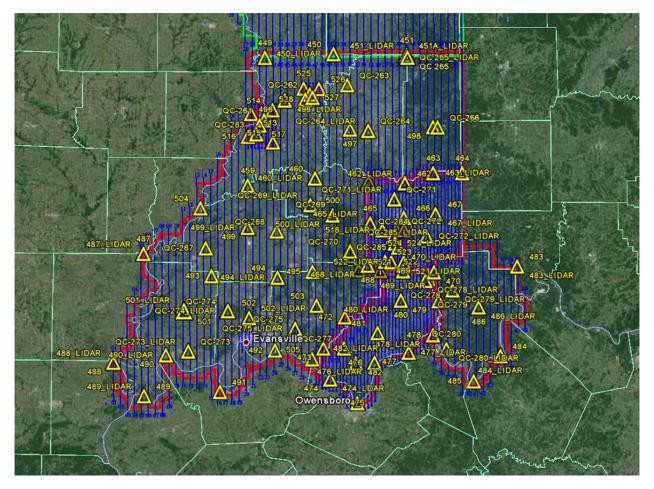
July 2013

Prepared by Woolpert, Inc. 4454 Idea Center Blvd. Dayton, OH 45420 Woolpert.com



# VOLUME 5 - SECTION 1: BLOCK 12 GPS CONTROL DIAGRAM

This section contains a graphical representation of the ground control used for Block 12 of the 2013 Indiana Statewide Imagery project.



Not to Scale

# VOLUME 5 - SECTION 2: BLOCK 12 GROUND/LIDAR CONTROL COORDINATE LISTINGS

## COORDINATE SYSTEM: GRID

#### HORIZONTAL DATUM: NAD83 (2007) VERTICAL DATUM: NAVD88 ZONE: State Plane - Indiana West (1302) GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
449	1328820.828	2835338.070	436.842	CORNER CONCRETE_LIDAR
450	1332978.040	2916641.489	498.600	CORNER CONCRETE_LIDAR 450
451-S	1331186.562	3003684.507	612.123	CORNER CONCRETE AROUND MH
459	1177585.206	2814604.723	461.393	LIDAR and STOP BAR
460	1185948.730	2894558.799	497.163	CORNER ASPHALT DRIVE
461	1181427.880	2957774.972	475.169	CORNER OF CONCRETE STEPS
462	1179970.770	3001124.345	503.665	CORNER OF CONCRETE WALK
463	1191894.328	3034540.240	497.025	CORNER OF METAL ROOF
464	1191771.795	3069008.805	674.011	CORNER OF ASPHALT
465	1132552.895	2959786.217	462.772	CORNER OF CONCRETE
466	1139121.692	2999787.795	461.981	LIDAR ALSOPAINT STRIPE
467	1143436.955	3037222.623	590.293	CORNER OF CONCRETE
468	1082841.974	2956713.488	480.555	CORNER OF CONCRETE
469	1076116.400	2998740.867	540.864	CORNER OF CONCRETE
470	1074840.263	3035182.902	436.007	CORNER OF CONCRETE
470	1074840.316	3035182.790	435.949	CORNER OF CONCRETE
471	1076399.704	2971624.260	487.701	CORNER OF CONCRETE
472	1021930.240	2929622.583	430.534	LIDAR and CORNER STOP BAR
473	985141.822	2903975.747	433.398	LIDAR also STOP BAR
474	948478.515	2912007.788	377.310	CORNER OF CONCRETE
475	920475.203	2944056.774	392.036	LIDAR and CORNER CONCRETE
476	968090.256	2964566.994	394.282	CORNER CONCRETE WALK
477	979944.756	3005146.442	392.665	CORNER CONCRETE WALK
478	1000506.900	3033997.999	414.311	CORNER OF CONCRETE WALKS
479	1040757.841	3040714.736	403.686	CORNER OF ASPHALT ROAD
480	1041580.618	2995733.231	486.944	CENTER OF MANHOLE
481	1003214.451	2968254.711	502.449	LIDAR and TIP PAINTED ARROW
482	967468.223	2942541.999	453.238	CORNER CONCRETE DRIVE
483	1081479.307	3133944.206	431.879	ASPHALT CHANGE
484	975691.538	3113950.748	413.652	CORNER OF ASPHALT

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
485	945918.854	3082094.134	395.765	LIDAR and STOP BAR
486	1033346.981	3088130.710	740.522	ASPHALT CHANGE
487	1097370.396	2690564.165	443.446	CORNER OF CONCRETE WALK
488	968580.784	2654258.951	362.201	WATER VALVE IN CONCRETE
489	928927.429	2690678.856	360.938	CORNER OF CONCRETE WALK
490	977309.582	2716912.236	382.401	CORNER CONCRETE WALK
491	933887.994	2781042.628	387.538	LIDAR and PAINT STRIPE
492	982871.902	2846523.772	384.261	LIDAR and PAINT STRIPE
493	1070856.726	2771428.324	476.340	LIDAR and CORNER PAINT STRIPE
494	1068839.559	2849821.003	427.105	CORNER CONCRETE DRIVE
495	1075653.877	2891287.988	500.701	LIDAR and CORNER PAINT STRIPE
496	1278204.251	2858737.743	512.210	CORNER SIDEWALK
497	1243654.002	2936101.104	573.860	CORNER CONCRETE
498	1246250.662	3034568.428	507.841	CORNER PAINT STRIPE
499	1127828.063	2814573.092	495.641	CORNER CONCRETE WALK
500	1142198.625	2915342.714	476.057	CORNER CONCRETE WALK
501	1029382.652	2738557.297	476.120	CORNER CONCRETE DRIVE
502	1021246.711	2815903.402	415.234	CORNER CONCRETE WALK
503	1035694.400	2895989.712	465.817	LIDAR and CORNER CONCRETE
504	1151077.120	2758440.944	435.010	LIDAR and TIP PAINTED ARROW
505	972343.672	2890697.039	449.251	LIDAR and CORNER OF CONCRETE
513	1262346.304	2818747.349	411.820	CORNER CONCRETE_LIDAR
514	1266716.123	2844218.253	458.856	CORNER CONCRETE_LIDAR
515	1228752.778	2844738.748	500.269	CORNER CONCRETE_LIDAR
516	1235395.413	2814965.225	415.704	CORNER SIDEWALK_LIDAR
517	1248765.961	2828883.836	415.851	CORNER SIDEWALK_LIDAR
518	1124504.999	2974256.243	502.561	CORNER OF CONCRETE
519	1124951.739	2990851.268	479.974	CORNER OF CONCRETE
520	1124672.676	2999858.460	557.689	CORNER OF CONCRETE
521	1086661.084	2999439.329	566.059	CORNER OF CONCRETE
522	1086910.947	2984668.774	527.433	CORNER OF CONCRETE
523	1087396.097	2977358.998	535.404	CORNER OF CONCRETE
524	1108916.517	2988986.080	493.536	CORNER OF WALK
525	1292228.808	2881195.443	545.383	CORNER CONCRETE_LIDAR
526	1291686.569	2899294.128	460.040	CORNER SIDEWALK_LIDAR
527	1281323.724	2891692.533	453.290	CORNER CONCRETE_LIDAR
528	1279163.847	2883125.474	541.112	CORNER SIDEWALK_LIDAR
QC-261	1254887.049	2834196.987	430.886	CORNER CONCRETE_LIDAR
QC-262	1285123.289	2888449.385	541.262	CORNER SIDEWALK_LIDAR
QC-263	1296151.348	2932886.146	467.243	SW CORNER SIDEWALK
QC-264	1242079.357	2957684.546	534.274	CORNER CONCRETE

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
QC-265	1328510.486	3004515.038	598.249	CORNER CONCRETE
QC-266	1245849.490	3040061.848	499.149	CORNER PAINT STRIPE
QC-267	1103697.219	2764597.552	468.218	LIDAR and CORNER OF ASPHALT
QC-268	1123525.588	2849026.021	464.471	LIDAR and CORNR PAINT STRIPE
QC-269	1154572.543	2888969.211	474.644	CORNER OF INLET
QC-270	1099643.247	2936004.632	622.533	LIDAR ALSO_PAINT STRIPE
QC-271	1161077.318	2988457.337	475.426	CORNER OF CONCRETE
QC-272	1117218.843	3026450.252	558.223	CORNER OF CONCRETE
QC-273	981812.365	2743517.532	377.486	SE CORNER OF INLET
QC-274	1029410.581	2790851.603	519.651	CORNER CONCRETE DRIVE
QC-275	1008382.499	2870614.785	454.698	CORNER OF CONCRETE WALK
QC-276	1077342.345	2945899.124	508.301	CORNER OF CONCRETE
QC-277	985110.729	2928347.655	389.485	LIDAR also CORNER OF PAINT STRIPE
QC-278	1064776.322	3025134.098	567.946	CORNER OF CONCRETE
QC-279	1053461.999	3057185.804	413.258	CORNER OF ASPHALT
QC-280	984057.685	3049827.594	524.657	CORNER OF CONCRETE DRIVE
QC-283	1238287.492	2824887.050	423.097	CORNER CONCRETE_LIDAR
QC-284	1116977.541	2986915.792	473.436	BACK CURB AT DRIVEWAY
QC-285	1104103.533	2993115.736	514.497	CORNER OF CONCRETE

## LIDAR CONTROL COORDINATES

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
449	1328820.828	2835338.070	436.842	CORNER CONCRETE_LIDAR
450_LIDAR	1332995.063	2916617.869	498.143	GRAVEL
451A_LIDAR	1331144.609	3003656.358	608.919	GRAVEL
459	1177585.206	2814604.723	461.393	LIDAR and STOP BAR
460_LIDAR	1185968.202	2894533.973	496.087	CENTER ASPHALT DRIVE
461_LIDAR	1181368.382	2957921.069	473.664	CENTER OF GRAVEL
462_LIDAR	1179962.089	3001103.278	503.919	GRASS
463_LIDAR	1191925.265	3034548.934	494.421	GRASS
464	1191771.795	3069008.805	674.011	CORNER OF ASPHALT
465_LIDAR	1132534.536	2959780.413	462.241	CENTER OF CONCRETE
466	1139121.692	2999787.795	461.981	LIDAR ALSOPAINT STRIPE
467_LIDAR	1143461.855	3037216.826	592.115	CENTER OF CONCRETE
468_LIDAR	1082860.488	2956721.894	480.816	CENTER OF CONCRETE
469_LIDAR	1076097.148	2998727.079	540.914	CENTER OF CONCRETE
470_LIDAR	1074857.943	3035193.351	436.134	CENTER OF CONCRETE
471_LIDAR	1076401.326	2971608.127	487.872	RR SPIKE IN GRASS
472	1021930.240	2929622.583	430.534	LIDAR and CORNER STOP BAR
473	985141.822	2903975.747	433.398	LIDAR also STOP BAR
474_LDAR	948474.021	2911991.678	377.118	CENTER OF CONCRETE

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
475	920475.203	2944056.774	392.036	LIDAR and CORNER CONCRETE
476_LIDAR	968076.401	2964533.906	393.613	CENTER ASPHALT PARKING
477_LIDAR	979952.647	3005113.650	393.198	CENTER ASPHALT STREET
478_LIDAR	1000434.242	3034008.713	415.833	ASPHALT PARKING LOT
479_LIDAR	1040766.708	3040703.948	403.892	CENTER OF ASPHALT ROAD
480_LIDAR	1041466.534	2995966.625	472.025	GRAVEL
481	1003214.451	2968254.711	502.449	LIDAR and TIP PAINTED ARROW
482_LIDAR	967475.121	2942527.633	453.993	CENTER CONCRETE DRIVE
483_LIDAR	1081470.646	3133948.298	431.891	CENTER OF ASPHALT
484_LIDAR	975678.374	3113976.494	413.366	GRAVEL DRIVE
485	945918.854	3082094.134	395.765	LIDAR and STOP BAR
486_LIDAR	1033315.702	3088103.026	742.630	GRASS
487_LIDAR	1097354.727	2690500.572	444.043	CENTER OF CONCRETE DRIVE
488_LIDAR	968554.631	2654271.479	363.035	CENTER OF ASPHALT STREET
489_LIDAR	928920.916	2690610.369	361.292	CENTER ASPHALT PARKING LOT
490_LIDAR	977365.317	2716798.342	382.929	CENTER GRAVEL LOT
491	933887.994	2781042.628	387.538	LIDAR and PAINT STRIPE
492	982871.902	2846523.772	384.261	LIDAR and PAINT STRIPE
493	1070856.726	2771428.324	476.340	LIDAR and CORNER PAINT STRIPE
494_LIDAR	1068830.994	2849798.713	427.545	CENTER CONCRETE DRIVE
495	1075653.877	2891287.988	500.701	LIDAR and CORNER PAINT STRIPE
496_LIDAR	1278224.123	2858739.117	513.262	SHORT GRASS
497	1243654.002	2936101.104	573.860	CORNER CONCRETE
498	1246250.662	3034568.428	507.841	CORNER PAINT STRIPE
499_LIDAR	1127723.126	2814534.654	495.996	ASPHALT STREET
500_LIDAR	1142242.272	2915262.849	474.630	ASPHALT STREET
501_LIDAR	1029368.448	2738576.875	475.706	CENTER CONCRETE DRIVE
502_LIDAR	1021262.599	2815912.434	415.861	CENTER CONCRETE DRIVE
503	1035694.400	2895989.712	465.817	LIDAR and CORNER CONCRETE
504	1151077.120	2758440.944	435.010	LIDAR and TIP PAINTED ARROW
505	972343.672	2890697.039	449.251	LIDAR and CORNER OF CONCRETE
513	1262346.304	2818747.349	411.820	CORNER CONCRETE_LIDAR
514	1266716.123	2844218.253	458.856	CORNER CONCRETE_LIDAR
515	1228752.778	2844738.748	500.269	CORNER CONCRETE_LIDAR
516	1235395.413	2814965.225	415.704	CORNER SIDEWALK_LIDAR
517	1248765.961	2828883.836	415.851	CORNER SIDEWALK_LIDAR
518_LIDAR	1124517.305	2974246.021	502.759	CENTER OF CONCRETE
519_LIDAR	1124942.423	2990820.915	479.679	CENTER OF CONCRETE
520_LIDAR	1124685.863	2999848.502	557.959	CENTER OF CONCRETE
521_LIDAR	1086638.107	2999451.736	566.273	CENTER OF CONCRETE
522_LIDAR	1086903.483	2984652.626	527.715	CENTER OF CONCRETE
523_LIDAR	1087384.825	2977380.367	535.949	CENTER OF CONCRETE

Station Name	Northing US Ft.	Easting US Ft.	Elevation US Ft.	Description
524_LIDAR	1108925.884	2988968.620	493.666	STREET PAVEMENT
525	1292228.808	2881195.443	545.383	CORNER CONCRETE_LIDAR
526	1291686.569	2899294.128	460.040	CORNER SIDEWALK_LIDAR
527	1281323.724	2891692.533	453.290	CORNER CONCRETE_LIDAR
528	1279163.847	2883125.474	541.112	CORNER SIDEWALK_LIDAR
QC-261	1254887.049	2834196.987	430.886	CORNER CONCRETE_LIDAR
QC-262	1285123.289	2888449.385	541.262	CORNER SIDEWALK_LIDAR
QC-263	1296151.348	2932886.146	467.243	SW CORNER SIDEWALK
QC-264_LIDAR	1242066.622	2957702.402	534.659	ON CONCRETE
QC 265_LIDAR	1328473.789	3004536.098	599.707	CONCRETE
QC-266	1245849.490	3040061.848	499.149	CORNER PAINT STRIPE
QC-267	1103697.219	2764597.552	468.218	LIDAR and CORNER OF ASPHALT
QC-268	1123525.588	2849026.021	464.471	LIDAR and CORNR PAINT STRIPE
QC-269_LIDAR	1154518.035	2888879.973	477.361	GRAVEL
QC-270	1099643.247	2936004.632	622.533	LIDAR ALSO_PAINT STRIPE
QC-271_LIDAR	1161069.425	2988477.997	475.346	CENTER OF ASPHALT
QC-272_LIDAR	1117226.858	3026495.514	564.210	PAINT STRIPE
QC-273_LIDAR	981755.936	2743533.358	378.494	GRASS
QC-274_LIDAR	1029401.851	2790820.829	517.465	CENTER CONCRETE DRIVE
QC-275_LIDAR	1008367.512	2870603.672	454.470	CL-CL OF STREETS
QC-276_LIDAR	1077350.545	2945883.273	507.908	CENTER OF CONCRETE
QC-277	985110.729	2928347.655	389.485	LIDAR also CORNER OF PAINT
QC-278_LIDAR	1064767.150	3025098.718	567.569	CENTER OF CONCRETE
QC-279_LIDAR	1053450.878	3057194.282	413.275	CENTER OF ASPHALT ROAD
QC-280_LIDAR	984043.659	3049842.738	525.507	CENTER OF CONCRETE DRIVE
QC-283	1238287.492	2824887.050	423.097	CORNER CONCRETE_LIDAR
QC-284_LIDAR	1116964.187	2986931.435	474.252	CENTER OF CONCRETE
QC-285_LIDAR	1104104.702	2993092.246	515.011	CENTER OF CONCRETE

## COORDINATE SYSTEM: GEODETIC

#### HORIZONTAL DATUM: WGS 84 VERTICAL DATUM: NAVD88 GEOID MODEL: GEOID 09 UNITS: U.S. Survey Ft.

#### **GROUND CONTROL COORDINATES**

Station Name	Latitude	Longitude	E. Height US Ft.	Description
449	38°53'45.38374"	087°29'45.11127"	331.893	CORNER CONCRETE_LIDAR
450	38°54'28.85110"	087°12'36.80477"	392.295	CORNER CONCRETE_LIDAR 450
451-S 280	38°54'10.89756"	086°54'15.67840"	504.593	CORNER CONCRETE AROUND MH
459	38°28'49.47908"	087°33'57.28253"	357.882	LIDAR and STOP BAR
460	38°30'15.09754"	087°17'12.04109"	392.238	CORNER ASPHALT DRIVE
461	38°29'31.03867"	087°03'56.79688"	369.228	CORNER OF CONCRETE STEPS
462	38°29'16.20062"	086°54'51.59177"	396.957	CORNER OF CONCRETE WALK
463	38°31'13.25030"	086°47'50.85526"	389.633	CORNER OF METAL ROOF
464	38°31'10.75721"	086°40'37.16193"	565.965	CORNER OF ASPHALT
465	38°21'27.88778"	087°03'31.66346"	357.407	CORNER OF CONCRETE
466	38°22'32.41919"	086°55'09.31613"	355.684	LIDAR ALSOPAINT STRIPE
467	38°23'14.15714"	086°47'19.05430"	483.190	CORNER OF CONCRETE
468	38°13'16.47282"	087°04'10.33330"	376.086	CORNER OF CONCRETE
469	38°12'09.59595"	086°55'23.83246"	435.582	CORNER OF CONCRETE
470	38°11'56.11164"	086°47'47.34504"	329.810	CORNER OF CONCRETE
470	38°11'56.11217"	086°47'47.34643"	329.751	CORNER OF CONCRETE
471	38°12'12.72318"	087°01'03.54288"	383.046	CORNER OF CONCRETE
472	38°03'14.21351"	087°09'49.15007"	327.712	LIDAR and CORNER STOP BAR
473	37°57'10.18193"	087°15'08.96211"	331.241	LIDAR also STOP BAR
474	37°51'07.85336"	087°13'27.98728"	275.827	CORNER OF CONCRETE
475	37°46'31.29245"	087°06'48.27777"	290.739	LIDAR and CORNER CONCRETE
476	37°54'22.01907"	087°02'32.55432"	292.000	CORNER CONCRETE WALK
477	37°56'18.73573"	086°54'05.94043"	289.290	CORNER CONCRETE WALK
478	37°59'41.30401"	086°48'05.01557"	309.597	CORNER OF CONCRETE WALKS
479	38°06'19.00905"	086°46'39.45471"	297.987	CORNER OF ASPHALT ROAD
480	38°06'28.23273"	086°56'02.20851"	382.536	CENTER OF MANHOLE
481	38°00'09.24330"	087°01'46.28798"	399.529	LIDAR and TIP PAINTED ARROW
482	37°54'15.87602"	087°07'07.36664"	351.214	CORNER CONCRETE DRIVE
483	38°12'56.90619"	086°27'09.62475"	323.227	ASPHALT CHANGE
484	37°55'32.41537"	086°31'28.10482"	307.504	CORNER OF ASPHALT
485	37°50'39.78539"	086°38'07.46837"	291.189	LIDAR and STOP BAR
486	38°05'03.78907"	086°36'46.70831"	633.676	ASPHALT CHANGE
487	38°15'27.31036"	087°59'47.06889"	342.247	CORNER OF CONCRETE WALK

Station Name	Latitude	Longitude	E. Height US Ft.	Description
488	37°54'10.52738"	088°07'04.18918"	262.941	WATER VALVE IN CONCRETE
489	37°47'42.30081"	087°59'25.03917"	261.837	CORNER OF CONCRETE WALK
490	37°55'42.96256"	087°54'03.51966"	282.258	CORNER CONCRETE WALK
491	37°48'38.51271"	087°40'39.69646"	287.341	LIDAR and PAINT STRIPE
492	37°56'46.10296"	087°27'06.14635"	282.481	LIDAR and PAINT STRIPE
493	38°11'11.89204"	087°42'51.06608"	374.172	LIDAR and CORNER PAINT STRIPE
494	38°10'56.08608"	087°26'29.11938"	324.082	CORNER CONCRETE DRIVE
495	38°12'04.71494"	087°17'49.97355"	397.219	LIDAR and CORNER PAINT STRIPE
496	38°45'26.00535"	087°24'46.83072"	407.287	CORNER SIDEWALK
497	38°39'46.10210"	087°08'29.90319"	467.802	CORNER CONCRETE
498	38°40'10.55851"	086°47'48.36667"	400.216	CORNER PAINT STRIPE
499	38°20'37.62700"	087°33'54.41123"	392.380	CORNER CONCRETE WALK
500	38°23'02.98783"	087°12'49.80235"	371.273	CORNER CONCRETE WALK
501	38°04'19.50789"	087°49'38.58320"	374.967	CORNER CONCRETE DRIVE
502	38°03'04.09671"	087°33'30.85188"	313.142	CORNER CONCRETE WALK
503	38°05'29.78824"	087°16'50.00807"	362.895	LIDAR and CORNER CONCRETE
504	38°24'23.95548"	087°45'41.09292"	332.469	LIDAR and TIP PAINTED ARROW
505	37°55'03.38723"	087°17'54.38126"	347.398	LIDAR and CORNER OF CONCRETE
513	38°42'47.53089"	087°33'10.63781"	307.638	CORNER CONCRETE_LIDAR
514	38°43'31.89295"	087°27'49.52174"	354.251	CORNER CONCRETE_LIDAR
515	38°37'16.65745"	087°27'40.97879"	395.901	CORNER CONCRETE_LIDAR
516	38°38'20.93846"	087°33'56.56430"	311.767	CORNER SIDEWALK_LIDAR
517	38°40'33.78870"	087°31'01.94376"	311.605	CORNER SIDEWALK_LIDAR
518	38°20'08.25340"	087°00'30.08090"	397.008	CORNER OF CONCRETE
519	38°20'12.48510"	086°57'01.79353"	374.044	CORNER OF CONCRETE
520	38°20'09.58325"	086°55'08.75149"	451.573	CORNER OF CONCRETE
521	38°13'53.82510"	086°55'14.85041"	460.552	CORNER OF CONCRETE
522	38°13'56.51096"	086°58'19.96316"	422.266	CORNER OF CONCRETE
523	38°14'01.38379"	086°59'51.57059"	430.396	CORNER OF CONCRETE
524	38°17'33.99457"	086°57'25.47828"	387.887	CORNER OF WALK
525	38°47'45.33745"	087°20'03.80873"	439.980	CORNER CONCRETE_LIDAR
526	38°47'40.40663"	087°16'15.19074"	354.288	CORNER SIDEWALK_LIDAR
527	38°45'57.80817"	087°17'50.89802"	347.747	CORNER CONCRETE_LIDAR
528	38°45'36.24639"	087°19'38.99019"	435.744	CORNER SIDEWALK_LIDAR
QC-261	38°41'34.53673"	087°29'55.29671"	326.513	CORNER CONCRETE_LIDAR
QC-262	38°46'35.28867"	087°18'31.96325"	435.762	CORNER SIDEWALK_LIDAR
QC-263	38°48'25.00669"	087°09'10.94002"	360.860	SW CORNER SIDEWALK
QC-264	38°39'30.58453"	087°03'57.79078"	427.871	CORNER CONCRETE
QC-265	38°53'44.42967"	086°54'05.23970"	490.723	CORNER CONCRETE
QC-266	38°40'06.41761"	086°46'39.11892"	391.455	CORNER PAINT STRIPE
QC-267	38°16'36.05300"	087°44'19.52869"	365.835	LIDAR and CORNER OF ASPHALT

Station Name	Latitude	Longitude	E. Height US Ft.	Description
QC-268	38°19'56.65092"	087°26'41.75228"	360.757	LIDAR and CORNR PAINT STRIPE
QC-269	38°25'04.80924"	087°18'21.40338"	370.078	CORNER OF INLET
QC-270	38°16'02.51517"	087°08'29.96979"	518.168	LIDAR ALSO_PAINT STRIPE
QC-271	38°26'09.63361"	086°57'31.22696"	369.108	CORNER OF CONCRETE
QC-272	38°18'55.29969"	086°49'35.26605"	451.627	CORNER OF CONCRETE
QC-273	37°56'29.65132"	087°48'31.91929"	276.905	SE CORNER OF INLET
QC-274	38°04'23.41852"	087°38'44.65350"	417.779	CORNER CONCRETE DRIVE
QC-275	38°00'59.13497"	087°22'06.36922"	352.314	CORNER OF CONCRETE WALK
QC-276	38°12'22.09929"	087°06'25.83098"	404.146	CORNER OF CONCRETE
QC-277	37°57'10.20272"	087°10'04.67117"	287.250	LIDAR also CORNER OF PAINT
QC-278	38°10'16.91174"	086°49'53.56991"	462.220	CORNER OF CONCRETE
QC-279	38°08'24.01174"	086°43'12.76336"	306.832	CORNER OF ASPHALT
QC-280	37°56'58.16777"	086°44'48.01136"	419.799	CORNER OF CONCRETE DRIVE
QC-283	38°38'50.02275"	087°31'51.69656"	318.981	CORNER CONCRETE_LIDAR
QC-284	38°18'53.70925"	086°57'51.31632"	367.709	BACK CURB AT DRIVEWAY
QC-285	38°16'46.35663"	086°56'33.77051"	408.825	CORNER OF CONCRETE

### LIDAR CONTROL COORDINATES

Station Name	Latitude	Longitude	E. Height US Ft.	Description
449	38°53'45.38374"	087°29'45.11127"	331.893	CORNER CONCRETE_LIDAR
450_LIDAR	38°54'29.01904"	087°12'37.10387"	391.839	GRAVEL
451A_LIDAR	38°54'10.48343"	086°54'16.03552"	501.39	GRAVEL
459	38°28'49.47908"	087°33'57.28253"	357.882	LIDAR and STOP BAR
460_LIDAR	38°30'15.28948"	087°17'12.35394"	391.162	CENTER ASPHALT DRIVE
461_LIDAR	38°29'30.45024"	087°03'54.95944"	367.72	CENTER OF GRAVEL
462_LIDAR	38°29'16.11518"	086°54'51.85692"	397.212	GRASS
463_LIDAR	38°31'13.55584"	086°47'50.74465"	387.029	GRASS
464	38°31'10.75721"	086°40'37.16193"	565.965	CORNER OF ASPHALT
465_LIDAR	38°21'27.70630"	087°03'31.73639"	356.876	CENTER OF CONCRETE
466	38°22'32.41919"	086°55'09.31613"	355.684	LIDAR ALSOPAINT STRIPE
467_LIDAR	38°23'14.40347"	086°47'19.12611"	485.012	CENTER OF CONCRETE
468_LIDAR	38°13'16.65583"	087°04'10.22793"	376.347	CENTER OF CONCRETE
469_LIDAR	38°12'09.40585"	086°55'24.00561"	435.632	CENTER OF CONCRETE
470_LIDAR	38°11'56.28610"	086°47'47.21345"	329.936	CENTER OF CONCRETE
471_LIDAR	38°12'12.73932"	087°01'03.74498"	383.216	RR SPIKE IN GRASS
472	38°03'14.21351"	087°09'49.15007"	327.712	LIDAR and CORNER STOP BAR
473	37°57'10.18193"	087°15'08.96211"	331.241	LIDAR also STOP BAR
474_LDAR	37°51'07.80868"	087°13'28.18805"	275.635	CENTER OF CONCRETE
475	37°46'31.29245"	087°06'48.27777"	290.739	LIDAR and CORNER CONCRETE
476_LIDAR	37°54'21.88223"	087°02'32.96725"	291.332	CENTER ASPHALT PARKING

Station Name	Latitude	Longitude	E. Height US Ft.	Description
477_LIDAR	37°56'18.81437"	086°54'06.34956"	289.824	CENTER ASPHALT STREET
478_LIDAR	37°59'40.58540"	086°48'04.88448"	311.119	ASPHALT PARKING LOT
479_LIDAR	38°06'19.09706"	086°46'39.58931"	298.193	CENTER OF ASPHALT ROAD
480_LIDAR	38°06'27.10119"	086°55'59.29069"	367.614	GRAVEL
481	38°00'09.24330"	087°01'46.28798"	399.529	LIDAR and TIP PAINTED ARROW
482_LIDAR	37°54'15.94416"	087°07'07.54593"	351.97	CENTER CONCRETE DRIVE
483_LIDAR	38°12'56.82030"	086°27'09.57422"	323.239	CENTER OF ASPHALT
484_LIDAR	37°55'32.28372"	086°31'27.78449"	307.218	GRAVEL DRIVE
485	37°50'39.78539"	086°38'07.46837"	291.189	LIDAR and STOP BAR
486_LIDAR	38°05'03.48124"	086°36'47.05654"	635.785	GRASS
487_LIDAR	38°15'27.14928"	087°59'47.86412"	342.846	CENTER OF CONCRETE DRIVE
488_LIDAR	37°54'10.27025"	088°07'04.02928"	263.776	CENTER OF ASPHALT STREET
489_LIDAR	37°47'42.22986"	087°59'25.89153"	262.191	CENTER ASPHALT PARKING LOT
490_LIDAR	37°55'43.50363"	087°54'04.94715"	282.788	CENTER GRAVEL LOT
491	37°48'38.51271"	087°40'39.69646"	287.341	LIDAR and PAINT STRIPE
492	37°56'46.10296"	087°27'06.14635"	282.481	LIDAR and PAINT STRIPE
493	38°11'11.89204"	087°42'51.06608"	374.172	LIDAR and CORNER PAINT
494_LIDAR	38°10'56.00055"	087°26'29.39812"	324.523	CENTER CONCRETE DRIVE
495	38°12'04.71494"	087°17'49.97355"	397.219	LIDAR and CORNER PAINT
496_LIDAR	38°45'26.20183"	087°24'46.81428"	408.338	SHORT GRASS
497	38°39'46.10210"	087°08'29.90319"	467.802	CORNER CONCRETE
498	38°40'10.55851"	086°47'48.36667"	400.216	CORNER PAINT STRIPE
499_LIDAR	38°20'36.58770"	087°33'54.88682"	392.736	ASPHALT STREET
500_LIDAR	38°23'03.41819"	087°12'50.80615"	369.846	ASPHALT STREET
501_LIDAR	38°04'19.36902"	087°49'38.33697"	374.553	CENTER CONCRETE DRIVE
502_LIDAR	38°03'04.25423"	087°33'30.73998"	313.769	CENTER CONCRETE DRIVE
503	38°05'29.78824"	087°16'50.00807"	362.895	LIDAR and CORNER CONCRETE
504	38°24'23.95548"	087°45'41.09292"	332.469	LIDAR and TIP PAINTED ARROW
505	37°55'03.38723"	087°17'54.38126"	347.398	LIDAR and CORNER OF
513	38°42'47.53089"	087°33'10.63781"	307.638	CORNER CONCRETE_LIDAR
514	38°43'31.89295"	087°27'49.52174"	354.251	CORNER CONCRETE_LIDAR
515	38°37'16.65745"	087°27'40.97879"	395.901	CORNER CONCRETE_LIDAR
516	38°38'20.93846"	087°33'56.56430"	311.767	CORNER SIDEWALK_LIDAR
517	38°40'33.78870"	087°31'01.94376"	311.605	CORNER SIDEWALK_LIDAR
518_LIDAR	38°20'08.37512"	087°00'30.20908"	397.206	CENTER OF CONCRETE
519_LIDAR	38°20'12.39344"	086°57'02.17465"	373.75	CENTER OF CONCRETE
520_LIDAR	38°20'09.71379"	086°55'08.87617"	451.843	CENTER OF CONCRETE
521_LIDAR	38°13'53.59775"	086°55'14.69542"	460.766	CENTER OF CONCRETE
522_LIDAR	38°13'56.43737"	086°58'20.16566"	422.549	CENTER OF CONCRETE
523_LIDAR	38°14'01.27217"	086°59'51.30289"	430.941	CENTER OF CONCRETE
524_LIDAR	38°17'34.08740"	086°57'25.69713"	388.017	STREET PAVEMENT
525	38°47'45.33745"	087°20'03.80873"	439.98	CORNER CONCRETE_LIDAR

Station Name	Latitude	Longitude	E. Height US Ft.	Description
526	38°47'40.40663"	087°16'15.19074"	354.288	CORNER SIDEWALK_LIDAR
527	38°45'57.80817"	087°17'50.89802"	347.747	CORNER CONCRETE_LIDAR
528	38°45'36.24639"	087°19'38.99019"	435.744	CORNER SIDEWALK_LIDAR
QC-261	38°41'34.53673"	087°29'55.29671"	326.513	CORNER CONCRETE_LIDAR
QC-262	38°46'35.28867"	087°18'31.96325"	435.762	CORNER SIDEWALK_LIDAR
QC-263	38°48'25.00669"	087°09'10.94002"	360.86	SW CORNER SIDEWALK
QC-264_LIDAR	38°39'30.45860"	087°03'57.56570"	428.255	ON CONCRETE
QC 265_LIDAR	38°53'44.06652"	086°54'04.97425"	492.181	CONCRETE
QC-266	38°40'06.41761"	086°46'39.11892"	391.455	CORNER PAINT STRIPE
QC-267	38°16'36.05300"	087°44'19.52869"	365.835	LIDAR and CORNER OF ASPHALT
QC-268	38°19'56.65092"	087°26'41.75228"	360.757	LIDAR and CORNR PAINT STRIPE
QC-269_LIDAR	38°25'04.26828"	087°18'22.52299"	372.796	GRAVEL
QC-270	38°16'02.51517"	087°08'29.96979"	518.168	LIDAR ALSO_PAINT STRIPE
QC-271_LIDAR	38°26'09.55530"	086°57'30.96744"	369.028	CENTER OF ASPHALT
QC-272_LIDAR	38°18'55.37769"	086°49'34.69786"	457.614	PAINT STRIPE
QC-273_LIDAR	37°56'29.09471"	087°48'31.71626"	277.914	GRASS
QC-274_LIDAR	38°04'23.33039"	087°38'45.03767"	415.593	CENTER CONCRETE DRIVE
QC-275_LIDAR	38°00'58.98647"	087°22'06.50751"	352.086	CL-CL OF STREETS
QC-276_LIDAR	38°12'22.18031"	087°06'26.02960"	403.754	CENTER OF CONCRETE
QC-277	37°57'10.20272"	087°10'04.67117"	287.25	LIDAR also CORNER OF PAINT
QC-278_LIDAR	38°10'16.82203"	086°49'54.01325"	461.844	CENTER OF CONCRETE
QC-279_LIDAR	38°08'23.90147"	086°43'12.65778"	306.849	CENTER OF ASPHALT ROAD
QC-280_LIDAR	37°56'58.02856"	086°44'47.82293"	420.649	CENTER OF CONCRETE DRIVE
QC-283	38°38'50.02275"	087°31'51.69656"	318.981	CORNER CONCRETE_LIDAR
QC-284_LIDAR	38°18'53.57704"	086°57'51.12026"	368.525	CENTER OF CONCRETE
QC-285_LIDAR	38°16'46.36854"	086°56'34.06508"	409.34	CENTER OF CONCRETE

# VOLUME 5 - SECTION 3: BLOCK 12 GROUND/LIDAR CONTROL LOGS AND PHOTOS

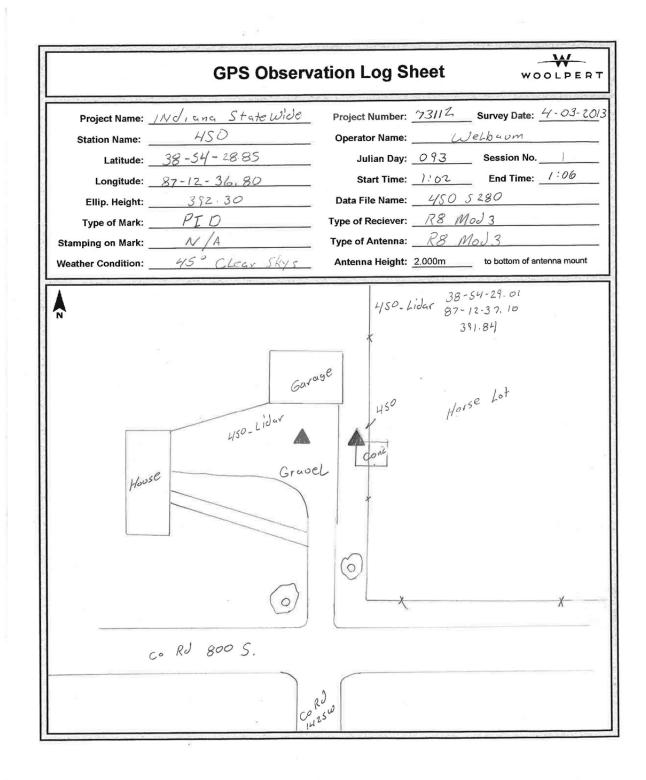
This section contains the station recovery information sheets and photographs for the ground control and LiDAR control station.

The data is assembled on the following pages.

## **GROUND CONTROL**

Project Name	Indiana Statewide 2013	Project Number: 73112	Survey Date: <u>03APR</u>
Station Name:	11/10	Operator Name: Ben Christie	
	38° 53' 45,38"N	Julian Day: 093	Session No. MA RT
	87° 29' 45,11"W	Start Time: 838	End Time: 1840
	331,87 SF+	Data File Name:	- 040313 - BR
Type of Mark:	CORNER CONCRETE	Type of Reciever: RB-3	
Stamping on Mark:	r/A	Type of Antenna: <u>R8-3</u>	
	43° CLEAR	Antenna Height: 2. 0 m	to bottom of antenna mou
449 FLAT SU PID 2 L		GRAVEL	





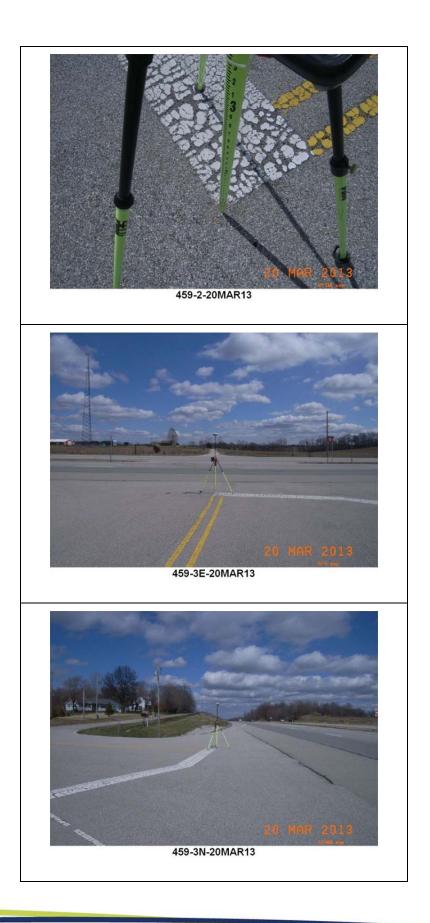
	GPS Upserva	tion Log Sheet	WOOLPEI
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: O3APR2
Station Name:		Operator Name: Ben Christie	
Latitude:	38° 54' 28.85"N	Julian Day: <u>093</u>	
	87° 12' 36.80"W		End Time: 1613
Ellip. Height:	392.14 SF+	Data File Name:	
Type of Mark:	CORNER CONCRETE	Type of Reciever: <u>R8-</u>	
Stamping on Mark:	N/A	Type of Antenna: <u>R8-3</u>	
Weather Condition:	48° CLEAR	Antenna Height: <u>2.0</u>	_ to bottom of antenna mour
	SEE PREV SKE	UUS TCH	



	GPS Obse	rvation Log Shee	woolper
Station Name:	INdiana Statewide 451	Operator Name:	12 Survey Date: 4/-03-201 Welbaum
Longitude:	38 - 54 - 10.89 86 - 54 - 15,67	Start Time:	93         Session No.         3           39         End Time:         2 : 4/3
Type of Mark:	SON.SS PIO	Type of Reciever:	
	N/A 50° CLear		178 MoJ 3
A 1201	nt Moved 800'SE	451_Lidar 8	8 - 54-10.40 6 - 54-16.27 500.92
		4/51A_Lidar 38 80	3-54-10.48 6-54-16.03 501.39 RU LOOE
		5	Grass
	~	Concrete Parkins	451 5 280
ßL	JS is	451-Lidar 451	



	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 459 (LIDAR also) 38-28-49.538 087-33-57.332 361.320 sft 601.101 STOP BAR 30°, PT Sunny, Windy	Operator Name:       5 f ep.         Julian Day:       079         Start Time:       2:03:         Data File Name:       1         Type of Reciever:       Tr.	_ Session No. <u>7</u> 2 <u>36</u> End Time: <u>2:05:55</u> <u>15 0 3 2013 525</u> <u>15 0 3 2013 525</u> <u>15 0 3 2013 525</u> <u>15 0 3 2013 525</u> <u>15 0 3 2013 525</u> <u>17 1212 9757</u>
		459	Co Rd 85



GPS Obs	servation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 460 Latitude: 38 - 30 - 15, 1 Longitude: 087 - 17 - 12, 0 Ellip. Height: 395, 677 ssr Type of Mark: 60, nor, Asphalt 1 Stamping on Mark: Weather Condition: 32, PT Suppry, W	PO         Start Time:         1:09:23         End Time:         1:13           Data File Name:         IMS 03201352           DR         Type of Reciever:         TRIMBLE         R8-           Service1 #         4712124953
Aspha D. Kennedy	House House House House House House House House House House House House House House House House House
945) -	



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude:	Indiana Statewide 2013 461 38-29-31.079 087-03-56.800	Project Number: $73112$ Survey Date: $0.3/15/13$ Operator Name: $5 + e_p h e_n$ $5 cho negg$ Julian Day: $0.74$ Session No.4Start Time: $9.5810$ End Time: $9.59.41$
48	361.795 sft Corner of Conc Steps 38°, Sunny	Data File Name: $IMS 03/513525$ Type of Reciever: $T_{RIMBLE} RB-Z$ Serial # $4712129959$ Antenna Height: <u>6.89 sst</u> to bottom of antenna mount
A 2	(mrave) DR	House Conc Walk 461



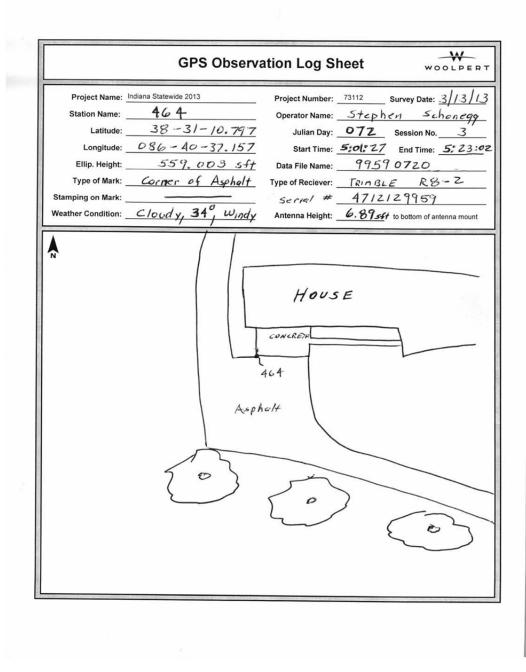
	Contraction of the second second second	vation Log Sheet
252	Indiana Statewide 2013 462	Project Number: <u>73112</u> Survey Date: <u>03/13/13</u> Operator Name: <u>Stephen</u> Schonegg
	38-29-16.241	Julian Day: 072 Session No. 8
	086-54-51.594	
Ellip. Height:	389.502 5 ft	Data File Name: $IMS O3/3/3SLS$
Type of Mark:	Corner Concrete Wa	1K Type of Reciever: Trimble 89-2
Stamping on Mark:		Serial # 4712129959
Weather Condition:	32°, clady, windy	Antenna Height: 6-89 ++ to bottom of antenna mount
	US ZX	46 Z

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	The Property of the Contract of the State of
GPS Observa	tion Log Sheet
Project Name:Indiana Statewide 2013Station Name: $463$ Latitude: $38 - 3/ - 13.291$ Longitude: $086 - 47 - 50.858$ Ellip. Height: $382.220.547$ Type of Mark: $Corner Meta/Covcr$ Stamping on Mark: $33^{\circ} Floring, Windy$	Project Number: 73112 Survey Date: $0.3/13/13$ Operator Name: 5tephen Schonegg Julian Day: 072 Session No. 5 Start Time: 06:18:47 End Time: 06:19:47 Data File Name: IMS 03/3]3 5LS Type of Reciever: TRIMBLE R8-2 Serie/ # 3 Antenna Height: 6.89 Sft to bottom of antenna mount
Point is ON TOP of retal roof of structore Corner is 1.0' above ground 463	and





	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 464 38-31-10-757 086-40-37.161 565-940sff Corner of Asphalt Cloudy, 40°, Windy	Operator Name: 5+c Julian Day: 08 Start Time: 3:1/c Data File Name: 7: Type of Reciever: 7: Securet # 47	
	Asph	HOUSE	



GPS Observa	tion Log Sheet
Project Name:Indiana Statewide 2013Station Name: $4.65$ Latitude: $38-21-27.928$ Longitude: $087-03-31.666$ Ellip. Height: $349.945$ sftType of Mark: $Corner of Concrete$ Stamping on Mark: $42^{\circ}$ , $50nny$	Project Number:73112Survey Date: $0.3/15/13$ Operator Name: $5 + e_{P}hen$ $5 cho neqq$ Julian Day: $0.74$ Session No.6Start Time: $10!34:19$ End Time: $10!36:09$ Data File Name: $IMS 0.3.15.13.52S$ Type of Reciever: $TRIMBLE$ $RB-Z$ $5erial$ $4.71212.9959$ Antenna Height: $6.89.551$ to bottom of antenna mount
Gravel Conc Dr X X X	PX Gravel Dr 465



	GPS Observa	ation Log Sheet	WOOLPER
	Indiana Statewide 2013	Project Number: 73112	Survey Date: 03/15/1
Station Name:	466 LIDAR ALSO	Operator Name: <u>5fep</u>	hen schonegy
Latitude:	38-22-32.460	Julian Day: 074	Session No. /
	086-55-09.319		End Time: 9:00:0
	348.199 sft	Data File Name: IS.	
	PAINT STRIPE	Type of Reciever: TR	
Stamping on Mark:	Sunny, 30°	Serial# 47	
Weather Condition:	Sunny, 30°	Antenna Height: <u>6,89</u> s+	$\underline{\uparrow}$ to bottom of antenna mount



GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 467 Latitude: 38-23-14.198 Longitude: 086-47-19.057 Ellip. Height: 475.75 Type of Mark: Corner of Concrete Stamping on Mark: 34°, Cloudy, Windy	Start Time:       04:10:57       End Time:       04:11:57         Data File Name:
He He	nu s <u>e</u>

1000



GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 468 38-13-16,513 087-04-10,336 368,573 sft Corner of Concrete 35°, PT Cloudy, Light W,	Operator Name: _ Julian Day: _ Start Time: _ Data File Name: _ Type of Reciever: _	73112         Survey Date: 03/14/13           Stephen         Schonegp           073         Session No.         17           End Time:
	Grave Drive	CONC PAD 468	

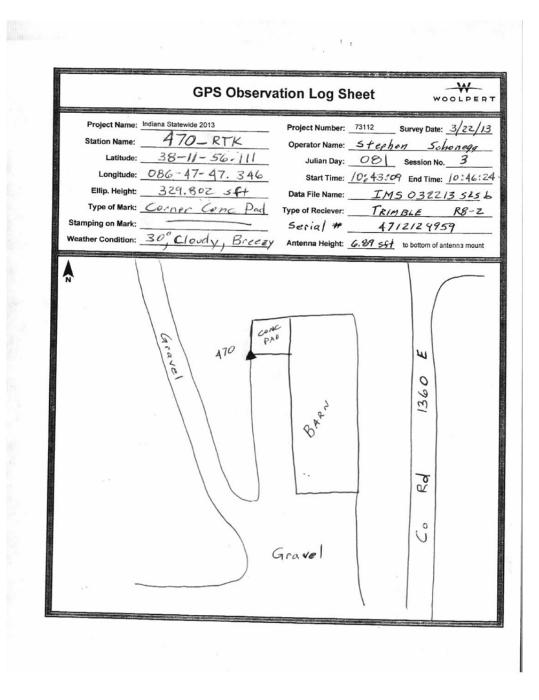


GPS Observation Log Sheet		
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 469 3812-09,636 086-55-23,835 428,106 Conner of Concrete 32, Sunny	Project Number:73112Survey Date: $03/14/13$ Operator Name: $5tephen$ $5chonegg$ Julian Day: $073$ Session No. $7$ Start Time: $1/1/3:40$ End Time: $11:14:40$ Data File Name: $ISM$ $03/4/35LS$ Type of Reciever: $TeIMBLE$ $RB-2$ Serig/#: $47/2/2959$ Antenna Height: $4.87.547$ to bottom of antenna mount
Conc	CONC 469	Co Po



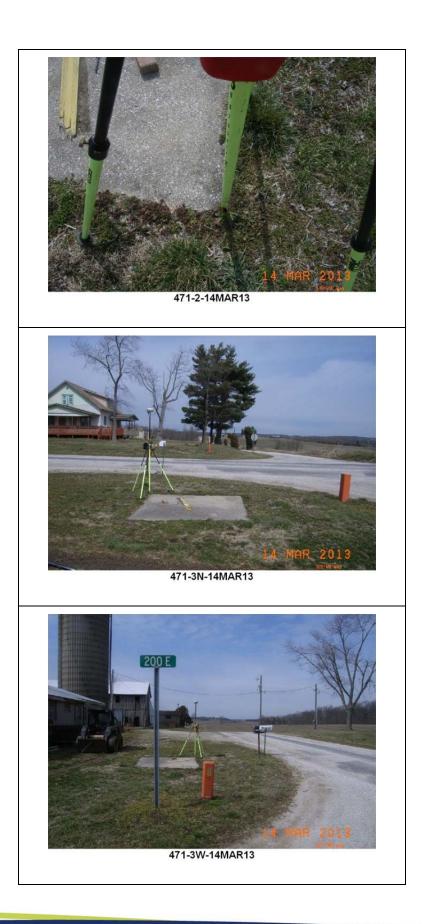
GPS Observa	ation Log Sheet	WOOLPERT
Indiana Statewide 2013Station Name: $4.70$ Latitude: $38 - 11 - 56 \cdot 153$ Longitude: $086 - 47 - 47 \cdot 348$ Ellip. Height: $322 \cdot 267 \cdot 54^4$ Type of Mark: $Corritor of ConcretStamping on Mark:30^{\circ} \cdot 5 \cdot c_{1171} \cdot y$	Operator Name: $3 + 4$ Julian Day: $0 + 7$ Start Time: $10.21$ ; Data File Name: $1 + 3$ Type of Reciever: $1 + 4$ Sector 4	Survey Date: 03/14/13 Leph2n Schonegg 73 Session No. <u>3</u> 40 End Time: 10:23:12 5M 031413525 6 m b/c R8-2 712/29959 54f to bottom of antenna mount
ATO Contract Dr. Lee	ic ic X X X X X X X X X X X X X X X X X	Co Rol 1360 E

Longitude: $036 - 47 - 47 - 316$ Ellip, Height: $318 \cdot 069 \cdot 5f$ Type of Mark: $56 \cdot ncc + 6 \cdot Conc.cdet$ Type of Reciever: $Tc \cdot m ble R + 2$ Stamping on Mark: $60^{\circ} - 5 \cdot c_{MAY}$ Antenna Height: $2.87 \cdot 5f$ to bottom of antenna moun N N N N N N N N N N N N N	Project Name: Indiana Statewide 2013 Station Name: 470 Latitude: 38-11-56-194	Operator Name:	Survey Date: 03/16 Survey Date: 03/16 Survey Date: 03/16 Survey Date: 03/16 Survey Date: 03/16
Type of Mark: Stamping on Mark: Weather Condition: $60^{\circ}$ , $5v_{IJPT}$ Antenna Height: $47/2/29959$ Antenna Height: $60^{\circ}$ , $5v_{IJPT}$ Antenna Height: $60^{\circ}$ , $5v_{IJPT}$ to bottom of antenna mount N N N N N N N N N N N N N		Start Time: 9:40:	09 End Time: 9:4(:
Weather Condition: $40^{\circ}$ , $5v_{HMY}$ Antenna Height: $4.87.547$ to bottom of antenna mount N N N N N N N N N N			
ATO ATO VALUE DI LA OSSI DI LA OS	Stamping on Mark:		
	ATO ATO	48.2	1360
Grave			9





	GPS Observation Log Sheet		
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:			
Co Co	Rol 1200 N ATI	6 Rd 600 E 6 Rd 1200 5	
BARN	PAO	Co Rol 200	



GPS Observa	ation Log Sh	eet	WOOLPER
Project Name: Indiana Statewide 2013 Station Name: $472(LI0AR q l_{\infty})$ Latitude: $38-03-14,213$ Longitude: $087-09-49,150$ Ellip. Height: $327.703 sft$ Type of Mark: <u>Corner Stop Bar</u> Stamping on Mark: Weather Condition: $34^{\circ}$ , AT Cloudy, Bracey	Julian Day: _ Start Time: _ Data File Name: _ Type of Reciever: _ Setia ( # _	<u>Stephen</u> 080 s 1:46:47 IMS Trimb 47/2	rvey Date: <u>3/2 //</u> <u>5 c ho n eqq</u> ession No. 6 End Time: <u>1:50</u> : 0 3 2   13 5 2 5 16 R8 - 2 12 4959 bottom of antenna mount
	0 Rd 425 E		



	GPS Observa	tion Log Sheet	WOOLP
Latitude: Longitude:6 Ellip. Height:		Project Number: 7312 ) Operator Name: 5 f e Julian Day: 07 Start Time: 9:52 Data File Name: 2 Type of Reciever: 7	27 Session No. 2 27 Session No. 2 21/3 End Time: 9:5 7 M BLE RB
Stamping on Mark:		Seria   # Antenna Height: <u>6.89</u>	4712129959
Co Rd		ATB Rd Rd	550



		ation Log Sheet	WOOLPE
Project Name: Indiana			Survey Date: 03/18/
Station Name:	414	Operator Name: <u>Steph</u>	
		Julian Day: 077 Start Time: 12:20:3	
	7-13-28.012 280.077 sft		
	orner of Concrete		
Stamping on Mark:		Serial #47	
Weather Condition: 4	5° Cloudy, WINDY	Antenna Height: 6.89 55	
A			
N			
~			
C ₀			
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	/ CONC	474	10,5
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AST AST			
	H		
' /	House	/	
		/	



	GPS Observa	tion Log Shee	woo	LPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	37-46-31,34 087-06-48.303 295.021 5 ft CORNER CONCRETE PATCH	Operator Name: <u>5</u> Julian Day: <u>0</u> Start Time: <u>1</u> Data File Name: <u></u> Type of Reciever: <u></u> Secial #	471212 4959	9 9 525 RB-Z
		Canton and a second	E	
	Leaerica			



	GPS Observa	ation Log Shee	et woo	DLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 476 37-54-22.067 087-02-32.579 296.294 sft Corner Cone Walk 50°, Cloudy, BREERY	Operator Name: <u>5</u> Julian Day: <u>6</u> Start Time: <u>02</u> Data File Name: <u>15</u> Type of Reciever: <u>5</u>	112       Survey Date: 9         + ephen       Sche         77       Session No         39;03       End Time: 9         IMS       0.3 (B);         TRIMBLE       47/2/2995         89       554         to bottom of ant	12 12 52:42:15 3 525 RB-2 9
	ATC ATC			



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 477 37-56-18.784 08 <b>6</b> -54-05.966 293 532 stf Coiner Conc. Walk 50° Cloudy, Winoy	Project Number:73112Survey Date: $0.3/18/13$ Operator Name: $5 + e_{p} h e_{r1}$ $5 cho neqq$ Julian Day: $0.77$ Session No. $10$ Start Time: $2:06:27$ End Time: $2:09:2$ Data File Name: $IM 5 0 3 18 13 525$ Type of Reciever: $T_{RIMBLE}$ $RB-2$ $5erial$ $471212979$ Antenna Height: $6:8954$ to bottom of antenna mount
<b>A</b> R	15	477 CONC WALK
MARKET		57



	Indiana Statewide 2013	Project Number: 73112 Survey Date: 23/15/1
	478	Operator Name: <u>Stephen</u> Schonegg
	37-59- 41.386	Julian Day: 074 Session No. 21
Longitude:	086-13-04.986	Start Time: 5:36:02 End Time: 5:37.
Ellip. Height:	297.862	Data File Name: <u>IMS 03/513 545</u>
		Type of Reciever: <u>TRIMBLE R8-2</u>
Stamping on Mark:	coo D= Cladu	Serial # 4712129959 Antenna Height: 6.89 551 to bottom of antenna mour
Weather Condition:	60, Pr 21000x	Antenna Height: 6.89 557 to bottom of antenna mour
		476



Station Name: Latitude:	Indiana Statewide 2013 <b>4</b> 79 38-06-19.091	Project Number: 73112 Survey Date: 03/16/13 Operator Name: <u>Stephen</u> Schonegg Julian Day: 075 Session No. <u>3</u>
Longitude:	086-46-39.425 286.249 sft	Start Time: <u>/0:04:/3</u> End Time: <u>/0:05:43</u>
	Corner of Asphalt Rd	Data File Name:       IMS 031613 525         Type of Reciever:       IRIMBLE
Stamping on Mark		Servial # 4712129959
Weather Condition:	60 SUMMY, WINDY	Antenna Height: 6.89 55+ to bottom of antenna mount
		Hussiman 479



	GPS Observa	tion Log Sheet	ERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	382.568 sft Center of Manhole	Start Time: $5:24:32$ End Time: $5:29$ Data File Name: <u>IMS 032 1352</u> Type of Reciever: <u>TRIMBLE</u> <u>RB-</u> Secial # 471212 9959	:05 5 Z
Weather Condition:	House	Antenna Height: <u>6.89 sSt</u> to bottom of antenna mo	ount
Prancer	48		
2			

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	GPS Observation Log Sheet	LPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 <b>ABI</b> (and LIDAR) Operator Name: <u>Stephen</u> Scho <u>38-00-09.243</u> <u>087-01-46.287</u> <u>399.491</u> <u>sft</u> <u>73112</u> <u>Survey Date: 9</u> <u>087-01-46.287</u> Start Time: <u>6:03:03</u> End Time: <u>0</u> <u>399.491</u> <u>sft</u> <u>Data File Name</u> : <u>IMS 032113</u> <u>TIP</u> <u>PAINTED</u> <u>Airco</u> Type of Reciever: <u>TRIMBLE</u> <u>505</u> <u>Cloudy</u> , <u>Breezy</u> <u>Antenna Height</u> : <u>6:89 sft</u> to bottom of ante	10 10 525 R8-2
	$+ \varepsilon_{I} = \frac{\frac{1}{4} \frac{1}{4} $	



GPS Obser	vation Log S	Sheet WOOLPER
Project Name:Indiana Statewide 2013Station Name: $482$ Latitude: $37-54-15.924$ Longitude: $087-07-07.392$ Ellip. Height: $355.417 \pm f4$ Type of Mark:Corner Concrete DeStamping on Mark: $50^{\circ}$ Cloudy, Breeze	Operator Name: 	r: 73112       Survey Date: $0.3/18/1.5$ e: $5 + ephen$ Schonegg         y: 077       Session No. 14         e: $031/9.52$ 4 End Time: $03723.52$ e: $IM5 0.318 13.525$ r: $TRIPBLE$ $RB-2$ 4       471212 4959         at: $6.87.551$ to bottom of antenna mount
Asphalt DR		

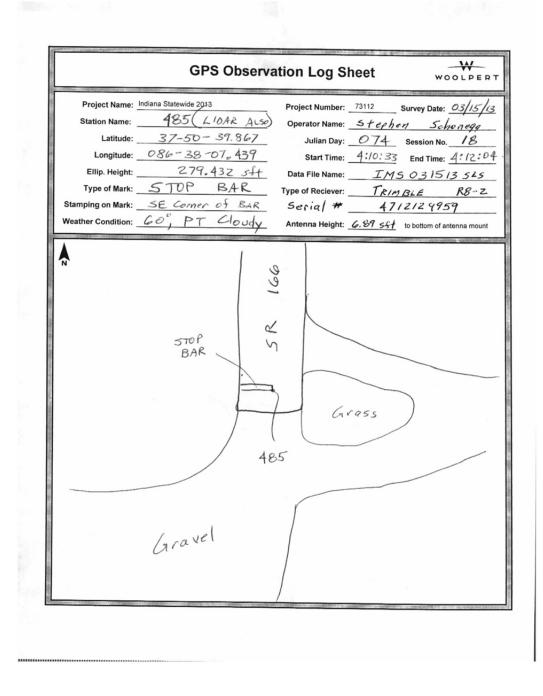


		ation Log Sheet
	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03/15/1
		Operator Name: <u>Stephen</u> Schonegg
	38-12-56.988	Julian Day: 074 Session No. 14
	086-27-09.594	Start Time: 2: 37:04 End Time: 2: 39:4
	311.547 sft	Data File Name:
Type of Mark:	Asphalt Change	Type of Reciever: TRIMBLE R8-Z
Stamping on Mark:	MAG NAIL	Serial #4712124959
Weather Condition:	60, PT Cloudy	Antenna Height: 6.89 557 to bottom of antenna mount
	SR	483 483 105/11



	GPS Observation Log Sheet		
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 484 37-55-32,497 086-31-28.075 295,729 sft corner of Aspholt 60°, PT Cloudy	Project Number:73112Survey Date: $03/12$ Operator Name: $5 + e_p h e_n$ $5 - h e_n e_n$ Julian Day: $0.74$ Session No. $14$ Start Time: $3.51:04$ End Time: $3.32$ Data File Name: $IMS 0.31513.52$ Type of Reciever: $T_{RIMBLE}$ $R8-5$ $5erial$ $#$ $471212.9959$ Antenna Height: $G.89.524$ to bottom of antenna meta	
Rome	484 Gravel Drive	Rd	







	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip, Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <b>486</b> 38-05-03-871 086-36-46.678 621-962 sft MAG NAIL M.A.G. 55°, PT Cloudy	Project Number: $73112$ Survey Date: $0.3/15/13$ Operator Name: $5 + e_P hen$ $5 e_{hen} neqq$ Julian Day: $074$ Session No. <b>12</b> Start Time: $1.56.46$ End Time: $1.58.16$ Data File Name: $IMS 0.3 1513 525$ Type of Reciever: $T_{RIMBLE}$ $RB-2$ $5erial$ $471212 9959$ Antenna Height: $6.89 581$ to bottom of antenna mount
	N M As N	2ph 186 X Asph De



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	342.058 551	Start Time: $\frac{11\pm59,28}{28}$ End Time: $\frac{12:00558}{25}$ Data File Name: $\underline{IM5031713525}$ Type of Reciever: $\underline{TRIMBLE}$ $RB-2$
Conc Dr	NORTH CONC BANK BANK	487 WALK WALK WALK WALK WALK WALK WALK WALK

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		and the second secon		malal
	Indiana Statewide 2013		73112 Survey Date:	
	488 37-54-10,568		<u>Stephen</u> Sc. 078 Session No	
	088-07-04,197		10:59:53 End Time:	
	260.685 sft			
	WATER VALVE IN G			
Stamping on Mark:	WATER	Serial #	47121299	59
Weather Condition:	WATER 34°, Sunny, Breez	Antenna Height:	6.89 55t to bottom of a	antenna mount
	WATER VALUE IN CONCRETE FH		House DR	



GPS Observation Log Sheet				
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 489 37-47-42.342 087-59-25.046 259.554 5ft Corner Concrete Walk 35°, Sunny, Windy	Project Number:73112Survey Date: $o_3/1$ Operator Name: $Stephen$ Scheneg,Julian Day: $O78$ Session No.4Start Time: $11.48:39$ End Time: $11.53$ Data File Name: $IMS O_3 19 13 52$ Type of Reciever: $T_{RIMBLE}$ $RB$ Serial $4712129959$ Antenna Height: $G.89 5f_1$ to bottom of antenna model		
Asp	helt Parking L			



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 490 37-55-43.003 087-54-03.527 280.002 sft Corner Conc Walk 35°, Sunny, Windy	Project Number: 73112 Operator Name: $5 + e_p h_a$ Julian Day: 078 Start Time: 12:2.3:0 Data File Name: $IM$ Type of Reciever: $T_{R/P}$ Serial # 47 Antenna Height: <u>6.89 sst</u>	Session No. <u>6</u> End Time: <u>1272</u> 5 0 3 19 13 54 1 BLE <u>R8</u> 1 2 12 9959
Second	Pearl	490 ST	ST HOUSE





490-3N-19MAR13

MAR 2013

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	GPS Observation Log Sheet			
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03		
Station Name:	491 (Lider also)	Operator Name: <u>Stephen</u> <u>Schon</u>		
	37-48-38.554	Julian Day: <u>07多</u> Session No Start Time: <u>0ここの5:1</u> /1 End Time: <u>0こ</u>		
	087-40-39.703	Start Time:         OZ:         OS:         Tend Time:         OZ:           Data File Name:         IMS 031913         IMS		
	285.057 sft	Type of Reciever: <u>TRIMBLE</u> R	8-2	
	Corner Paint Stripe	Serial # 4712124959		
Stamping on Mark:	38°, Sunny, Windy	Antenna Height: 6.89 55t to bottom of antenn	a mou	

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GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 2013 492 (and LIDAR) 37-56-46.151 087-27-06.171 286.764 sft Paint Stripe 48°, Mist, Cloudy	Operator Name: <u>Stephe</u> Julian Day: <u>077</u> Start Time: <u>11:20:06</u> Data File Name: <u>TMS</u>	Session No. <u>5</u> End Time: <u>///:23:3</u> 5 0 <u>3 /813 525</u> <u>BLE RB-Z</u> 2/2 4959
5.	$\overline{)}$		
	- 492	1	



GPS Obse	rvation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 493 (LIDAR a Latitude: 38-11-11.751 Longitude: 087-42-51.115 Ellip. Height: 377.603 sft Type of Mark: Scoped "+" Weather Condition: 45°, Sunny, Wim	Julian Day: $079$ Session No. 15 Start Time: $3:36:06$ End Time: $3:3$ Data File Name: IMS 032013 52 Type of Reclever: Trimble R8- Seria # 471212 4959
<b>Å</b>	68
	1
SR	
49	3 Concrete
	3 Concrete Apron
EL I	



Project Name: $494$ Station Name: $494$ Latitude: $38-10-56 \cdot 145$ Longitude: $087-26-29$ . (68 Ellip. Height: $327.471 \cdot 54t$ Type of Mark: $Corner Concrete Dr$ Stamping on Mark: $35^{\circ} - 5 mny$ Weather Condition: $35^{\circ} - 5 mny$ Project Number: $73112$ Survey Date: $95/2$ Start Time: $91.50129$ End Time: $91.5$	GPS Obser	vation Log Sheet
And And And Conc Dr	Station Name:       494         Latitude:       38-10-56.145         Longitude:       087-26-29.168         Ellip. Height:       327.471 sft         Type of Mark:       Corner Concrete Date:	Operator Name:       Stephen       Schone         Julian Day:       079       Session No.       2         Start Time:       9:50:29       End Time:       9:50         Data File Name:       IMS 0320135         Type of Reciever:       TRIMBLE       R8         Setic/       4712129959
Conc Dr 494	Weather Condition: <u>35 Sunny</u>	_ Antenna Height: <u>6.89 551</u> to bottom of antenna n



	GPS Observa	tion Log She	et wool
Station Name: Latitude: Longitude: Ellip. Height Type of Mark	Indiana Statewide 2013 495 (LIDAR also) 38-12-04.714 087-17-49.974 397.256 sft Conner Paint Stripp 32°, PT Sunny	Operator Name: $\leq$ Julian Day: $\bigcirc$ Start Time: $\bigcirc$ Data File Name: $_$ Type of Reciever: $_$ Seria/#	II2         Survey Date: 03           112         Survey Date: 03           112         Sension No.           080         Session No.           080         Sension No.           110         End Time:           111         IMS 0.32/13.           111         TRIMBLE           4712/29959           129         SCA.
Weather Condition	32°, PT Sunny	Antenna Height: <u>6</u> .	39 551 to bottom of antenna
		495	



	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height:		Project Number:73112Operator Name:Ben ChristieJulian Day:093Start Time:1304Data File Name:ISM_Type of Reciever:R8-3Type of Antenna:R8-3Antenna Height:2.0m	End Time: 1308 _040313_ BRC
SR 67		Housé Housé House, swk	



	GPS Obse	ervation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 497 38° 39° 46.10″K 87° 08' 29.90″W 467.83 5f+ CORNER CONCRETO N/A 47° PT CLOY	Start Time:       1359       End Time:       1402         Data File Name:       ISM_040113_BRC         Image:       TSM_040113_BRC         Image:       TSM_040113_BRC         Image:       R83
	RAVES X PINIES X ***	GRASS 11







	GPS Observ	ation Log Sheet	WOOLPER
Longitude: Ellip. Height: Type of Mark: Stamping on Mark:		Data File Name: TA	_ Session No. <u>/</u> 5 End Time: <u>/*24;</u> <u>15032213525</u> <u>MBLE RB-2</u> 712124959
<₽			
	Conce Conce	welk welk	



GPS Observ	ation Log Sheet
Project Name: Indiana Statewide 2013	Project Number: 73112 Survey Date: 3
Station Name: <u>499</u> Latitude: <u>38-20-37, 636</u>	Operator Name: <u>Stephen</u> Schon Julian Day: <u>079</u> Session No.
Latitude: $087 - 33 - 54.460$	Start Time: 4:32:45 End Time: 4:
Ellip. Height: 395. 791 sft	Data File Name: IMS 032013
Type of Mark: Corner Conc Walk	Type of Reciever: TRIMBLE R
Stamping on Mark:	Serial # 4712124959
Weather Condition: 30° PT Cloudy, Winn	Antenna Height: 6.89 554 to bottom of antenn
OHIO	CONC WALK Agg ST
G 1850N	



GPS Observation Log Sheet		
Project Name: Indiana Statewide 2013 Station Name: 500 Latitude: 38-23-03,044 Longitude: 087-12-49,852 Ellip. Height: 374.701 sft Type of Mark: Corner Concrete Walk Stamping on Mark: Weather Condition: 37, Pr Sunny, Windy	Operator Name: <u>Stephen</u> Julian Day: <u>079</u> Start Time: <u>11:52:01</u> Data File Name: <u>IMS</u> Type of Reciever: TRIM	Session No. End Time: <u>  </u> 0320  3. BLE R 2/2 4959
Ň	and and the second s	
NORTH		
		5 -
NORTH Conc Walk	Conc	
Conc Walk		ST Deik
Conc Walk	\$ 500	
Conc Walk		



GPS Observation Log Sheet				
		description of the providence of the decision of the		
_	diana Statewide 2013		112 Survey Date: 03/19	
Station Name:	38-04-19.54		tephen Schonegg 78 Session No. 16	
	087-49-38.59		25:56 End Time: 4;29	
Ellip. Height:	372.717 sft	Data File Name:	IMS 03 19 13 52	
	Corner Concrete	O _ℓ Type of Reciever:	TRIMBLE R8-	
Stamping on Mark:	1000	Serial #	4712124959	
Weather Condition:	45°, Sunny, Breezy	Antenna Height:	39 5-5+ to bottom of antenna mot	
Ve	leah			



GPS Observa	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 502 Latitude: 38 - 03 - 04 138 Longitude: 087 - 33 - 30,859 Ellip. Height: 310.897 s.f.t Type of Mark: Concrete Walk Stamping on Mark: Weather Condition: 38° Sunny, Windy	Project Number: 73112 Survey Date: $0.3/1$ Operator Name: $5 + e_{phen}$ Scheney Julian Day: $0.78$ Session No. 11 Start Time: $0255417$ End Time: $0255417$ Data File Name: $IMS 0.3191354$ Type of Reciever: $T_{RIMBLE}$ R8 Seria/# 4712129959 Antenna Height: $6.89541$ to bottom of antenna m
502 Fepperidge	



	GPS Observ	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 503 (LIDAR also) 38-05-29,788 087-16-50.008 362.940 sft Corner Conc Pad 32°, PT Cloudy, Breazy	Project Number:       73112         Operator Name:       Stephe         Julian Day:       080         Start Time:       1:20:15         Data File Name:       IM         Type of Reciever:       Tring         Setial       #       47         Antenna Height:       G.89 sst	Session No.         5           End Time:         1;22::44           5:032113525         325           BLE         R8-2           12129959
Bidg		BL04 X Concrete	× * * *
Bidg	Asphal+	~5 <i>03</i>	
	Co Rd	400	



₩ **GPS Observation Log Sheet** WOOLPERT Project Name: Indiana Statewide 2013 Project Number: 73112 3/20/13 Survey Date: 504(LIDAR also) Station Name: Operator Name: Stephen Schonegy 38-24-24.014 079 Session No. Latitude: Julian Day: 13 087-45-41.142 Start Time: 2137: 43 End Time: 2:41:55 Longitude: Ellip. Height: 335.892 sft IMS 032013 525 Data File Name: Tip of Painted Arrow Type of Reciever: TRIMBLE R8-2 Type of Mark: 4712124959 Stamping on Mark: Serial # PT Cloudy, Windy Antenna Height: 6.89 55+ to bottom of antenna mount Weather Condition: 30 Â A 504 Walk one



	GPS Observa	tion Log Shee	t woo	LPER
Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Ana Statewide 2013 505 (and LIDAR) 37-55-03.435 097-17-54.406 351.701 sft Corner Concrete 45°, Cloudy, Windy	Julian Day: 07 Start Time: <u>///:5</u> Data File Name: Type of Reciever: Secia/ #	Tephen         Scholl           77         Session No.           77         Session No.           77         End Time:           1         1           1         5           1         1           1         1           1         1           1         1           1         1           1         1           1         1           1         1           2         1           2         1           2         1           2         1           2         1           2         1           2         1           3         1           3         1           3         1           3         1           3         3	negg 6 1:52:2 525 RB-2
OL D	- 505	66		Yanke town
	NEWER CO	ETE		Rd



	GPS Observa	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 513 38° 42' 47.53"N 87° 33' 10.63"W 307.62 5F+ CORNER CONCRETE NA 44° CLEAR	Project Number:       7312         Operator Name:       Ben Christie         Julian Day:       093         Start Time:       1203         Data File Name:       ISM-1         Type of Reciever:       R8-3         Type of Antenna:       R8-3	Session No. <u>N/A RT</u> End Time: <u>1205</u> 040313_ BRC
S. S.	AND SAND OR.	SIS FLAT PID	b SURFACE Lidar



GPS Observation Log Sheet		
Project Name: Station Name:	Indiana Statewide 2013	Project Number:       73112       Survey Date:       03A FR 2013         Operator Name:       Ben Christie
Latitude:	38° 43' 31.89" N	Julian Day: 093 Session No. N/A RTK
Longitude:	87° 27' 49.52" W	Start Time: 1238 End Time: 1239
Ellip. Height:	354, 24 SF+	Data File Name: エミル_ 040313- BRC
Type of Mark:	CORNER CONCRETE	Type of Reciever: <u>R8-3</u>
Stamping on Mark:	N/A	Type of Antenna:R 8 - 3
Weather Condition:	46° CLEAR	Antenna Height: <u>2</u> , 0 m to bottom of antenna mount
	FARM	CONC HOUSE CONC 3370 CONC GARAGE



Project Name:	Indiana Statewide 2013		73112 Survey Date: <u>O3APR2</u>
Station Name:		Operator Name:	
	38° 37' 16.65''N		<u>093</u> Session No. <u>MA RT</u>
	87° 27' 40.97"W		1024 End Time: 1028
	395. 91 54+		ISM. 040313. BRC
	CORNER CONCRETE		<u>Ru-</u>
Stamping on Mark:	<u>N/A</u>		
Weather Condition:	34° CLEAR	Antenna Height:	2.0 m to bottom of antenna mour
ſ		ASPH.	



	GPS Observ	ation Log Sheet	WOOLPER.
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: 03 APR 2013
Station Name:	516	Operator Name: Ben Christie	
Latitude:	38° 38' 20.93" N	Julian Day: 093	Session No. $\frac{N/A}{A} RTK$
Longitude:	87° 33' 56. 56"W	Start Time: 1124	End Time: _ ]   2 &
Ellip. Height:	311.78 SF+	Data File Name: <u>TSM_C</u>	10313_ BRC
Type of Mark:	CORNER SIDEWALK	Type of Reciever: <u>R8-3</u>	
Stamping on Mark:		Type of Antenna: <u>R8-3</u>	
Weather Condition:	46° CLEAR	Antenna Height: Z, OM	to bottom of antenna mount
_, /	HOUSE # (NO #) CONC GRASS	516 AT SURFACE D & Lidar G G F F	House #2732
		Transmith Transmith Statement of Damage Statements	

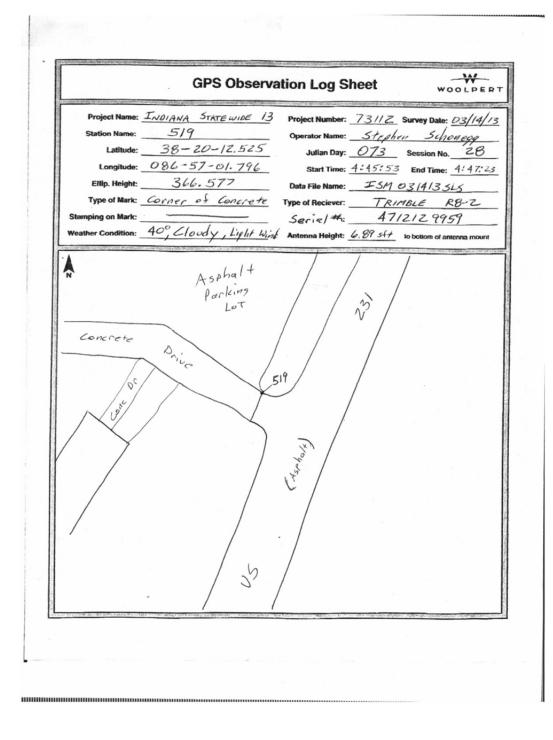


	GPS Observa	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 A PR 2 4
Station Name:	517	Operator Name: Ben Christie
Latitude:	38° 40' 33.78" N	Julian Day: <u>093</u> Session No. $\frac{N/A}{RT}$
	87°31'01.94"W	Start Time: $0957$ End Time: $0958$
Ellip. Height:	311. Ley SP+	Data File Name: $ISA_1 - OHO313 - BRC$
	CURNER SIDEWALK	
	N/A	Type of Antenna: <u>R 8-3</u>
Weather Condition:	32° CLEAR	Antenna Height: 2.0M to bottom of antenna mount
	one: Sure House	517 X FLAT SURFACE PID & Lidar

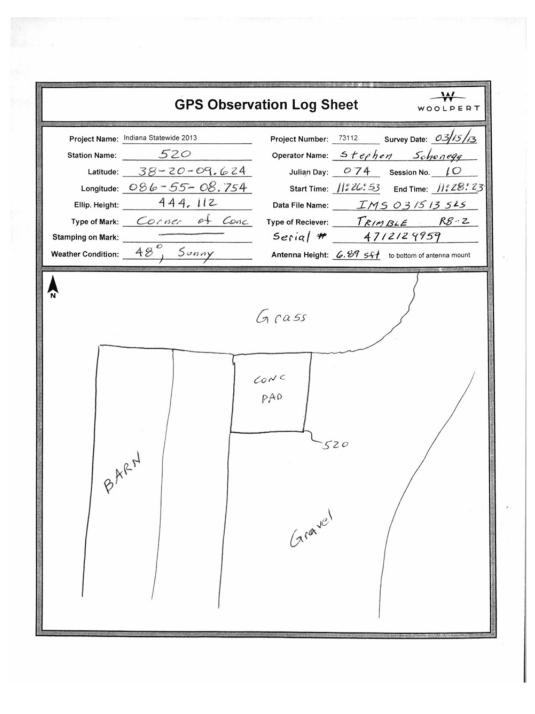


Droiget Mamer	Project Name: Indiana Statewide 2013 Project Number: 73112 Survey Date: 03/15/13					
	518	Operator Name: Stephen Schonegg				
Latitude:	38-20-08.294	Julian Day: 074 Session No. 8				
	087-00-30.084	Start Time: 11:00:35 End Time: 11:02:04				
	389.551 sft	Data File Name: IMS 031513 525				
	Corner of Conc	Type of Reciever: TRIMBLE R8-2				
Stamping on Mark		Serial # 4712124959				
Weather Condition:	45°, Sunny	Antenna Height: 6.89 554 to bottom of antenna mount				
		Gravel drive				











Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 52/ 38-13-53,865 086-35-14.853 453.880 Corner of Concret 32°, Cloudy, Light Win	Start Time: 11:44:16 End Time: 11:42:
(2		Gravel Dr Pad Barn



GPS Observ	ation Log Sheet
Project Name:       Indiana Statewide 2013         Station Name:       522         Latitude:       38-13-56.551         Longitude:       086-50-19.966         Ellip. Height:       414.747         Type of Mark:       Corner. of Concrete         Stamping on Mark:       33°/2 Cloudy, Light W,	Start Time:         12:35:22         End Time:         12:37:04           Data File Name:         TSM 03/4/35L5
N	
Holland	Ra
	522 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2



GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 523 38- 14 - 01.424 086-59-51.573 422.828 Corner of Concrete 35° Cloudy, Light Wind	Project Number:73112Survey Date: $03/14/13$ Operator Name: $StephrinSchenegeJulian Day:D73Session No.13Start Time:12:52:53End Time:12:54:23Data File Name:TSM03/413345Type of Reciever:TRIMBLERB-2Serial\# =47/2129959Antenna Height:6.89 sfrto bottom of antenna mount$	
Aseh	Dr.	523 Conc Pad House	

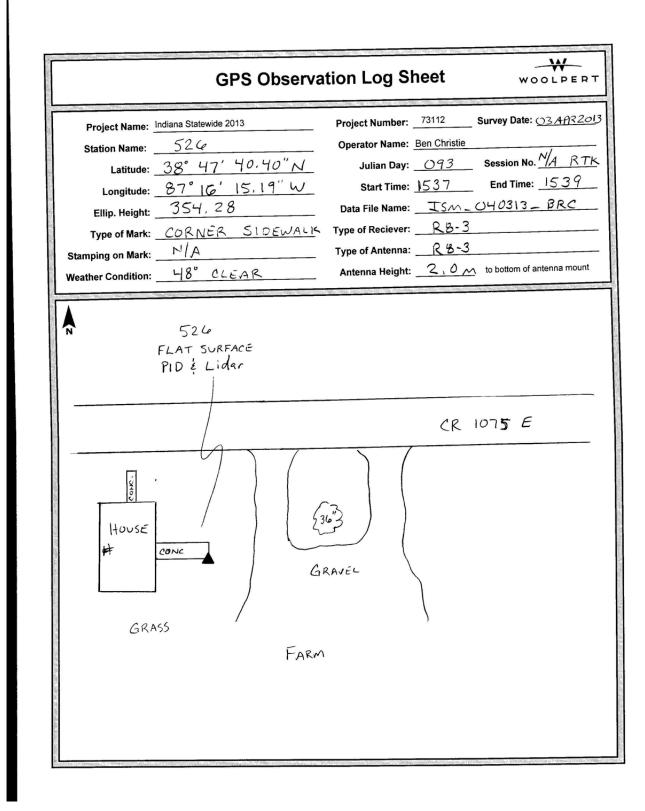


	GP	S Observa	ation Log She	eet ,	WOOLPE
Station Name: Latitude: Longitude: ENIp. Height: Type of Mark:	INDIANA STR 524 38-17- 086-57- 380. Corner o 40°, Cloudy,	34.035 25:481 465 344 of Walk	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever:	7 <u>3//2</u> Survey Da Stephen S 0 <u>73</u> Session 1 <u>248:26</u> End Tin ISM 03/4 <u>TRIM BLE</u> <u>47/2/29</u> 0.89357 to bottom of	chonego No. 24 No. 24 N
		57			
E ZM			524		Walk
	Walk	GEIGER	Walk		
	Lone	S.	Conc		



un an a the local set of the baseline	GPS Observa	tion Log Sheet	WOOLPERT
Station Name:		Project Number: 73112 Operator Name: Ben Christie	Survey Date: <u>(23 APR20</u> ) Session No. <u>NA</u> RTK
Longitude:	<u>38° 47' 45,33" N</u> <u>87° 20' 03.80" W</u>	Julian Day: $073$ Start Time: $1508$ Data File Name: $ISM$ .	End Time: 510
	H39.93 SF+ CORNER CONCRETE N/A	Type of Reciever: $R8-3$ Type of Antenna: $R8-3$	
	47° CLEAR	Antenna Height: <u>2.0 M</u>	to bottom of antenna mount
		Conc Conc Banic FLAT SUR PID 2 L	FACE idar







	GPS Observ	ation Log Sheet
	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 APR 201
Station Name:	527	Operator Name: <u>Ben Christie</u> Julian Day: <i>0</i> 93 Session No. <u>ハ/A RT</u>
	38° 45' 57.80" N	Julian Day: <u>093</u> Session No. <u>$N/A RTP$ Start Time: <u>1414</u> End Time: <u>1416</u></u>
	87° 17' 50.89"W	Data File Name: $ISM = 040313 = BRC$
	347.79 sft	Type of Reciever: $\underline{R8-3}$
	CORNER CONCRETE	Type of Antenna: R &-3
Stamping on Mark:		Antenna Height: 2.0m to bottom of antenna mount
Weather Condition:	47° CLEAR	
-X W COAL	SHORT GRASS I CONC. X ST 527 FLAT SURFAC PID 2 Lidar	CRAVEL CRAVEL



	GPS Observ	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 APR 2013
Station Name:	528	Operator Name: Ben Christie
	38°45' 36.24"N	Julian Day: $093$ Session No. $\frac{N_A}{A}$ RTK
Longitude:	87° 19' 38.99"W	Start Time: 1348 End Time: 1350
	435.67 SF+	Data File Name: $\underline{ISM - O40313 - BRC}$
	CORNER SIDEWALK	
	<u>N/A</u>	Type of Antenna: <u>R8-3</u>
Weather Condition:	47° CLEAR	Antenna Height: 2.0m to bottom of antenna mount
	GRASS	FLAT SURFACE PID & Lidar



	GPS Observ	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	38° 41' 34.53" N 87° 29' 55.29" W 326.53 5Ft CORNER CONCRETE	Project Number:       73112         Operator Name:       Ben Christie         Julian Day:       093         Start Time:       0939         Data File Name:       ISM-         Type of Reciever:       R&-3         Type of Antenna:       R&-3         Antenna Height:       2.0M	Session No. <u>^N/A RTK</u> End Time: <u>0941</u> 040313_ BRC
DENI	DC TOPIC TOPIC TEN DP P	QC-261 FLAT SURFACE PID & Lidar REGIONIS ATM GRASS	pR (al



GPS Observation Log Sheet						
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-262 <b>3</b> 8° 46' 35.28"N 87° 18' 31.96" W 435.81 CORNER SIDEWALK N/A 47° CLEAR	Project Number:       73112       Survey Date:       03APR 201.         Operator Name:       Ben Christie         Julian Day:       093       Session No.       N/A RTH         Start Time:       1451       End Time:       1453         Data File Name:       ISM_040313_13_13RC         Type of Reciever:       R 8-3         Type of Antenna:       R 8-3         Antenna Height:       2,0M       to bottom of antenna mount				
Fur	FI OH	LS ROLDHIGHN Vashingron QC-262 LAT SURFACE DID & Lidar				



GPS Observation Log Sheet					
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: OLAPR 201		
Station Name:	QC-263	Operator Name: Ben Christie			
Latitude:	38°48' 25.00"N	Julian Day: 09	Session NoRT		
Longitude:	87°09' 10.94"W	Start Time: 1625	End Time: 16て8		
Ellip. Height:	360.88 sft	Data File Name: ISM - 0	40113-BRC		
Type of Mark:	SW COR SIDEWALK	Type of Reciever: <u>R8-3</u>			
Stamping on Mark:	N/A	Type of Antenna: <u> </u>			
Weather Condition:	46° PT. CLDY	Antenna Height: 2.0m	to bottom of antenna mount		
Дони	ST.				
	ASPHALT PARKING	TARAS SALON			



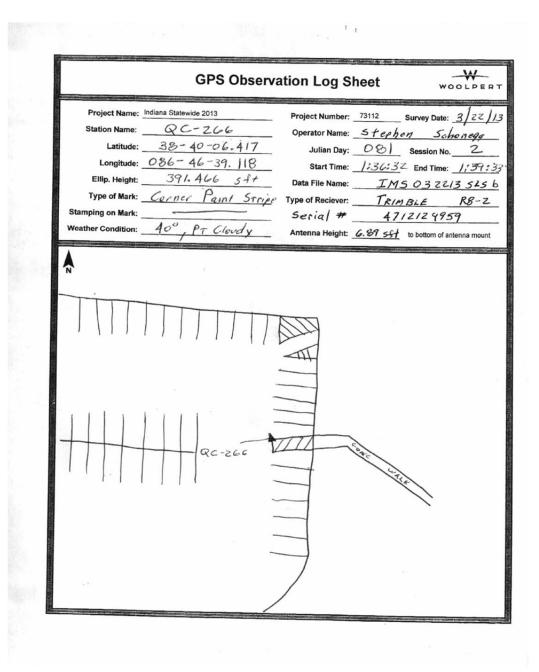
GPS Observation Log Sheet						
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC 264 38° 39' 30,58" N B7° 03' 57.79" W 427.85 5F+ CORNER CONCRETE N/A 46° PT. CLPY	O	oject Number: 73112 perator Name: Ben Christie Julian Day: 09   Start Time: 1530 ata File Name: <u>ISM-04</u> be of Reciever: <u>R8-3</u> be of Antenna: <u>R8-3</u> ntenna Height: <u>2.00</u>	_ End Time: <u>] 5 33</u> (0113_BRC		
↓ 275	CONIC.	N. ÉAGLE DR.	Cc	House Huse (NO H)		



	GPS Obse	ervation Log Sheet	WOOLPER
	Indiana Statewide GC 265	Project Number: <u>73112</u> Si Operator Name: <i>Wel</i>	
	38-53-44.42	Julian Day:94	
Longitude:	86-54-05.23	Start Time: 10:19	End Time: 10:22
Ellip. Height:	490.72	Data File Name: 73112. WR	W094
Type of Mark:	PIJ	Type of Reciever: 178 M	
Stamping on Mark:		Type of Antenna: R8 m	
Weather Condition:	40° overcast	Antenna Height: 2.000m	to bottom of antenna mount
	5,c	1/2 W 9 L K 0 qc 245 cone Cone	Crane Village Church
	Asp	shalt Parkins	M







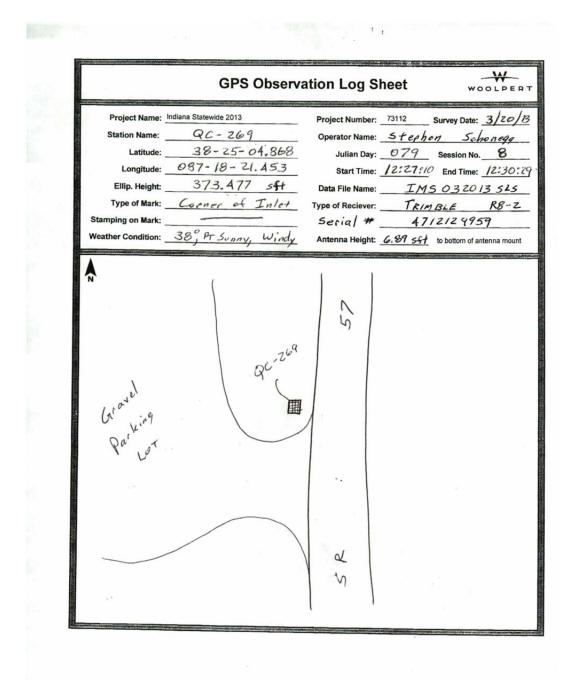


Project Name: Indiana Statewide 2013 Station Name: $QC-2 GT(LiOAR olso)$ Operator Name: $Stephen$ Schon. Latitude: $38-16-36.112$ Julian Day: $079$ Session No. Longitude: $087-44-19.578$ Start Time: $3:16:21$ End Time: $3:$ EIIIp. Height: $369.267$ sft Data File Name: $IMS 0.32013$ Type of Mark: $Corner of Aspholt$ Type of Reciever: $TRIMBLE$ R Stamping on Mark: $Serial # 4712129959$ Weather Condition: $3v^{\circ} PTSMNY, WINDY$ Antenna Height: $6.897$ sft to bottom of antenna BIdg	Station Name: $QC-267(Li0AR else)$ Operator Name: $Stephen Schon.$ Latitude: $38-16-36.112$ Julian Day: $079$ Session No. Longitude: $087-44-19.578$ Start Time: $3:16:21$ End Time: $3:$ Ellip. Height: $369.267 + 51t$ Data File Name: $IMS 0.32013$ . Type of Mark: $Corner + 5Aspholt$ Type of Reciever: $TRIMBLE = R$ Stamping on Mark: $Serial # 471212979$ Weather Condition: $3p^{\circ} PTSJARY, WINDY$ Antenna Height: $6.89 + 55t$ to bottom of antenna N		GPS O	bservation Log S	Sheet	VOOL
	Asphal+	Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	QC-267(1) 38-16-36 087-44-19. 369.267 Corner of A	0AR also       Operator Name         0112       Julian Day         578       Start Time         54       Data File Name         5phalt       Type of Reciever         5erial       #	x: <u>Stephen</u> <u>S</u> x: <u>079</u> Session x: <u>3:16:21</u> End Tin x: <u>IMS 032</u> x: <u>TRIMBLE</u> 4712129	No No D 13 R 959



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-268 (LIDAR a 38-19-56.710 087-26-41.801 364.160 sft Corner Paint Stripe Scribed "+" 30° Sunny	Julian Day: <u>07</u> Start Time: <u>9:19</u> Data File Name: <u>2</u> Type of Reciever: <u>7</u>	ephen Schonegg 9 Session No. 1 1:59 End Time: 9:23:1 IMS 032013525 FRIMBLE R8-2
	es l	фс-268	







141 **GPS Observation Log Sheet** WOOLPER INDIANA STATEWIDE 13 Project N 03/14/13 7311Z QC-ZTO (AND LIDAR) Operator Name: Stephen Schonegg 38-10-02,556 Julian Day: 073 2 10: 087-08-29.973 e: 02:37:20 End Time: 02:38:5 Start Long 510.685 5.5+ ISM0314135LS Eilip. Data Fi TRIMBLE R8-2 PAINT STRIPE 47/2/2 9959 Serial # Antenna Height: 6, 99 544 to be 40 PTEloudy, Light Wind 64 N 5.R. Old Grass QC-270 (LIDAR ALSO)

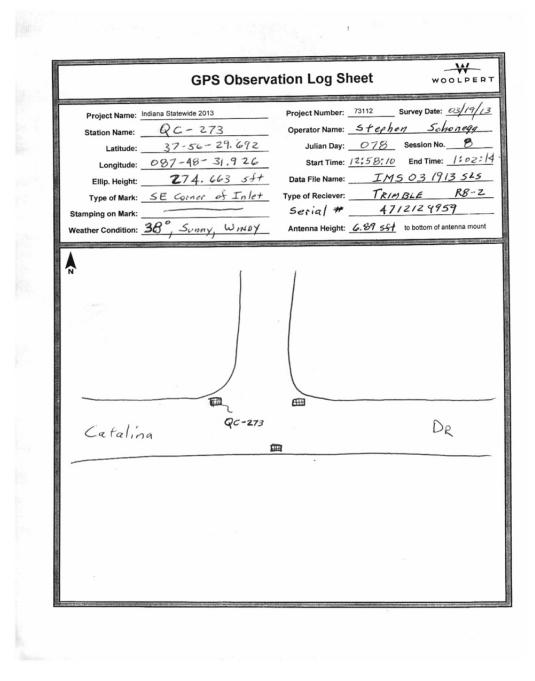


	GPS Observation	Log Sheet	WOOLPER
Longitude: 086	C - 271 Open 3-26-09.674 5-57-31.230 361.686 sft Data Type of Concrete Type o Sec	ct Number: $73112$ Surveyator Name: $5 + ephen$ Julian Day: $074$ Start Time: $9:27:48$ EndFile Name: $IMS 0_{-}$ f Reciever: $TRIMBLE$ Sig/ # $471212$ ana Height: $6:89$ sstto bot	<u>Schenegg</u> ion No. 2 I Time: <u>9</u> /2912 3/5/13/54 8 <i>R8-2</i> 2/9959
Conc		C-271 St Gra	vel



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC - 272 38 - 15 - 55.34 086 - 49 - 35.269 4 4 4. 149 sft Corner of Concrete 28° 50nny	$\begin{array}{c} 0 \qquad \text{Julian Day:}  \underline{0.73} \\ \text{Start Time:}  \underline{8.367} \\ \text{Data File Name:}  \underline{1.75} \\ \text{Type of Reciever:}  \underline{767} \\ \text{Start Data File Name:}  \underline{477} \\ \end{array}$	
	+5 Q410	<ul> <li></li></ul>	School Y*rd





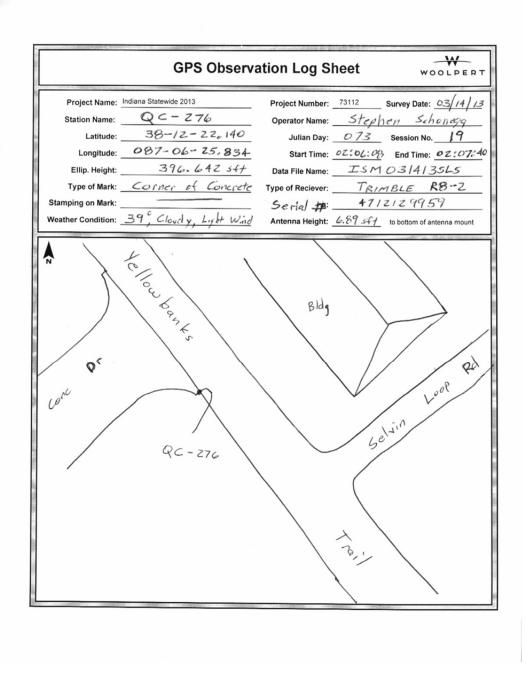


Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC - 274 38-04-23: 459 087 - 38 - 44. 660 415.526 sft Corner Concrete DR 42°, Surnay, Windy	C 1 ++ 17	n         Schoney           Session No.         []           Index Index         []           End Time:         312           50319135         []           BLE         R8           []         []           []         []
Hei		rel) qc-2	74 LA



	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC - 275 38-00-59.183 087-22-06.394 356.593 sft Corner of Concrete 48°, Mist, Cloudy	Project Number: 73112 Survey Date: $0.3/18/1.3$ Operator Name: $5 + e_{Phen}$ Schenegg Julian Day: $0.77$ Session No. 3 Start Time: $10:27:4^{o}$ End Time: $10:30:52$ Data File Name: $IM5 \ 0.3/8 \ 1.3 \ 5.5$ Type of Reciever: $T_{RIMBLE}$ $RB-2$ Setial # $4712129959$ Antenna Height: $6.89 \ 5.54$ to bottom of antenna mount
WoodL	AND ON AND	275 Conceste DALL SPRINAS





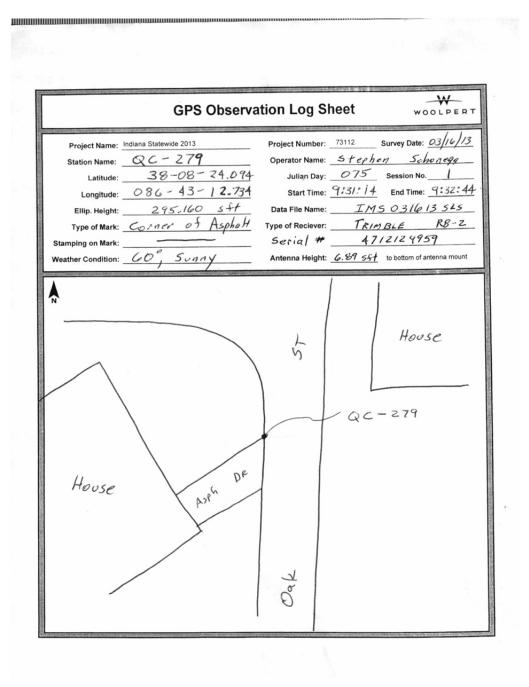


Alabert Landager and Party and Andrew	GPS Observation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013Project Number:73112Surve $Q < -277 (and LIDAR)$ Operator Name: $5 t ephen$ $37 - 57 - 10, 251$ Julian Day: $077$ Sess $D87 - 10 - 04, 696$ Start Time: $9128:15$ Enu $291, 520$ Data File Name: $IM50$ Corner of Paint StripeType of Reciever: $TRIMBLE$ $471212$ Serial # $471212$ $40^{\circ}$ , CloudyAntenna Height: $6.87$ 551	<u>Schonegg</u> ion No. 1 I Time: <u>913210</u> 3 17 13 545 E <u>RB-</u> Z 2 9959
<b>₹</b>	Co Rd QC-277	450 N
	CHURCH	
SR		



GPS Obser	vation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: $QC - 278$ Latitude: $38 - 10 - 16, 952$ Longitude: $086 - 49 - 53 \cdot 573$ Ellip. Height: $454.741$ Type of Mark: $Corner of Concrects$ Stamping on Mark: $30^{2}, 500$ May	$\begin{array}{c} \text{Start Time: } \underline{/0.47.5^{\circ}}  \text{End Time: } \underline{/0.47.5^{\circ}} \\ \text{Data File Name: } \underline{\textbf{F-SM}}  \underline{0.514/3}  \underline{5LS} \\ \underline{f_C}  \text{Type of Recieve: } \underline{\textbf{Tr} \cdot Im}  \underline{b}_{12}  \underline{RB-2} \\ \underline{f_C}  \underline{f_C}  \underline{f_C}  \underline{RB-2} \\ \underline{f_C}  \underline{f_C}  \underline{RB-2} \\ \underline{f_C}  \underline{f_C}  \underline{RB-2} \\ \underline{f_C}  $
To US Prive Conce De lue to US Prive	QC-278 62







GPS	Observa	ation Log Sheet
Project Name:Indiana Statewide 2013Station Name: $Q < -280$ Latitude: $37 - 56 - 280$ Longitude: $086 - 44 - 280$ Ellip. Height: $408.04$	- 58.249 47.982	
Type of Mark:       Corner Conci         Stamping on Mark:		Type of Reciever:     TRIMBLE     R8-2       Serial     #     471212 4959       Antenna Height:     6.89 551     to bottom of antenna mount
Ň	QC-28 CONC DR	HOUSE
Franklin		ST

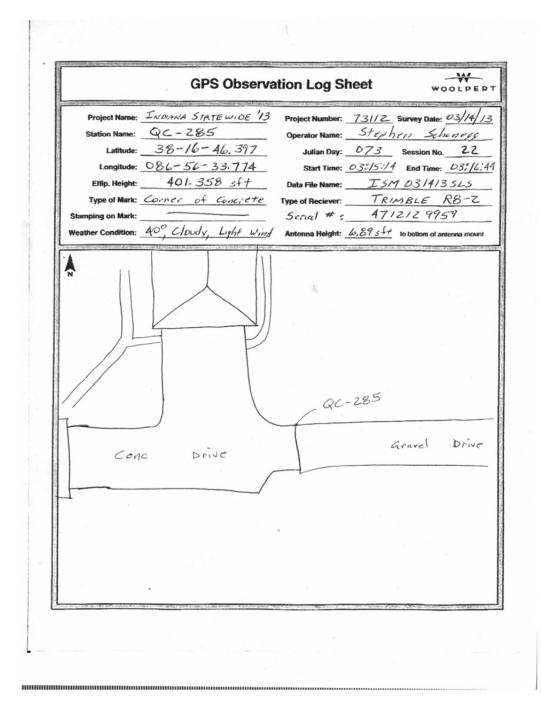


GPS Observ	ation Log Sheet	WOOLPER
Project Name:       Indiana Statewide 2013         Station Name:       QC - 283         Latitude:       38° 38′ 50.02″N         Longitude:       87° 31′ 51.69″W         Ellip. Height:       318.93 SF+         Type of Mark:       CORNER CONCRETE         Stamping on Mark:       N/A         Weather Condition:       40° CLEAR	Project Number: $73112$ Surv.Operator Name:Ben ChristieJulian Day: $093$ Start Time: $1104$ ErData File Name: $\pm 5M - 044$ Type of Reciever: $\mathcal{R}B-3$ Type of Antenna: $\mathcal{R}B-3$ Antenna Height: $2.0M$ to be	ssion No. <u>MA RTH</u> nd Time: <u>  04</u> 0313_ BRC
DOLL'S MOTEL DOLL'S MOTEL DOLL'S MOTEL QC-283 FLAT SURFACE PID & Lidar		



	GPS Observa	ation Log Sheet
Project Name:	INDIANA STATEWIDE 13	Project Number: 73/12 Survey Date: 03/14/1
	QC-284	Operator Name: <u>Stephen</u> Schonegy
	38-18-53.750	Julian Day: 073 Session No. 26
	086-57-51.319	Start Time: 04:18:39 End Time: 04:20:
	360.249 sft	Data File Name: ISM 0314 18 51.5
	Back Curb at Drive	Type of Reciever: TRIMBLE R8-
Stamping on Mark:	100 (1 1 1 11111	Serial # : 471212.9959 Antenna Height: 6.89 5ft to bottom of antenna mount
Weather Condition:	40, Cloudy, Light Wind	Antenna Height: (2, 01 3) to bottom of antenna mount
		QC-284 Conc Drive



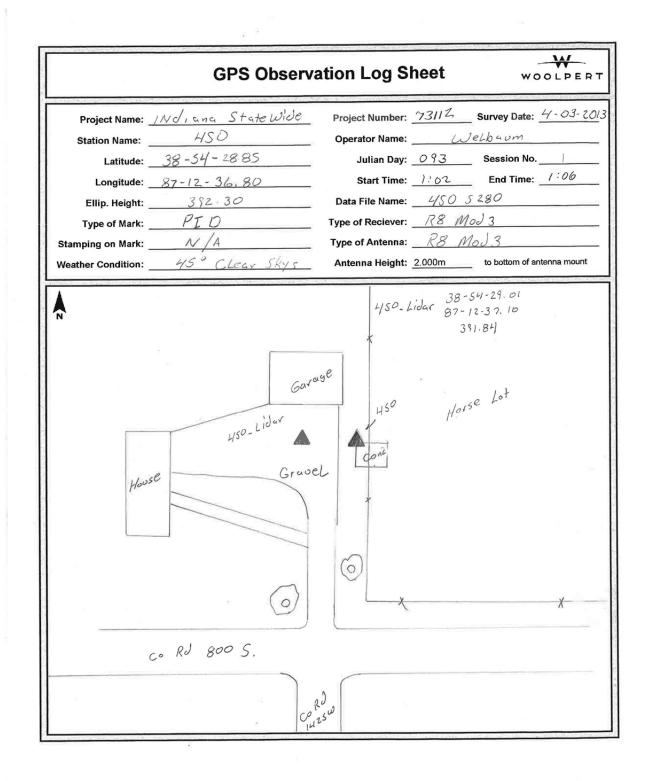




## LIDAR CONTROL

three designed and the second second second second			
	Indiana Statewide 2013	Project Number: 73112	_ Survey Date: <u>O3APR 2</u>
Station Name:		Operator Name: Ben Christie	
	38° 53' 45,38"N		Session No. NA RT
-	87° 29' 45,11"W		_ End Time: <u>1840</u>
	331,87 SF+	Data File Name: <u>TSM</u>	
	CORNER CONCRETE		
		Type of Antenna: <u>R8-</u>	
Weather Condition:	43° CLEAR	Antenna Height: 2、ひゃ	to bottom of antenna moun
449 FLAT SU PID 2 1		CORAVEL	



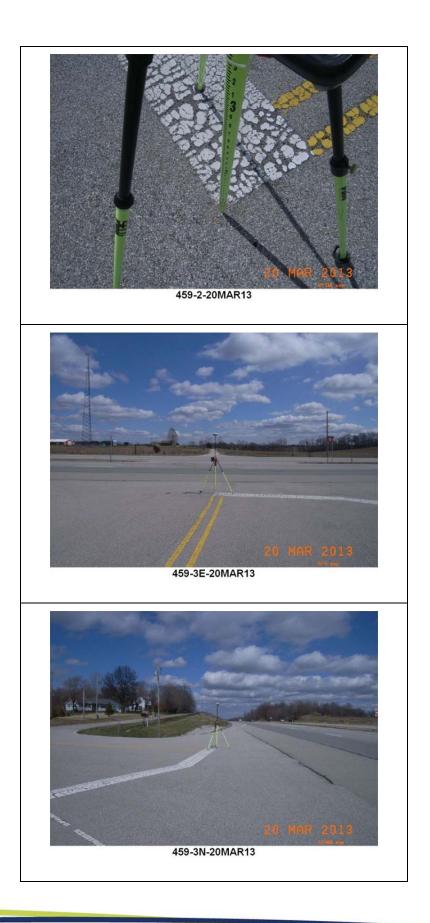




Project Name:	INdiana St	stewide					
Station Name:	451		_ Operator Name:				
-	38-54-10.8	The second s				n No. <u>3</u>	
	86-54-15.0	57	<del>.</del>			ime: 2:43	
Ellip. Height:	504.55		_ Data File Name:			3	
Type of Mark:	PIU		_ Type of Reciever:				
Stamping on Mark: _ Weather Condition: _	N/A	Par	Type of Antenna: Antenna Height:			n of antenno m	
weather Condition: _				2.00011			
Poil	+ Moved &	800'SE	451_Lidar	50	0.92		
			451A_ Lidar	38-54 86-54	1-10.48		
				50	1.39	CO RU	
	)			2		C0 200E.	
	ſ				Grass	L	
					61		
			*			r.	
			concrete		451 5 280		
			Concrete Parkins				
BL	05		٨	Gravel			
				4SI A			
			451-Lidar	-1017			



	GPS Observa	tion Log Sheet	WOOLPE
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <u>459</u> (LIDAR also) <u>38-28-49.538</u> <u>087-33-57.332</u> <u>361.320 sft</u> <u>60.ner</u> <u>570</u> BAR <u>30°</u> , PT Sunny, Windy	Project Number: 73112 S Operator Name: $5 t ephen$ Julian Day: 079 Start Time: $2:03:36$ Data File Name: $IMS$ Type of Reciever: $T_{RIM}$ 5etial # 477 Antenna Height: $6.89 sst$	Session No.         /2           End Time:         2:05:           0.3 2D /3 525         54           BLE         RB-2           2/2 4959         54
		AS9 SD	Co Rol 84



	GPS Observa	ation Log Sheet	DOLP
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 460 - LIDAR 38-30-15.348 087-17-12.407 394.610 sit Center Asphalt DR 320, PT Sunny, WINDY	Project Number:7312 7312Survey Date:Operator Name: $5 + e_P hen$ $5_O$ Julian Day: $079$ Session No Start Time: $1.201/9$ End Time:Data File Name: $IM50.320$ Type of Reciever: $T_{RIMBLE}$ $5erial$ $471212.99$ Antenna Height: $6.87.54$ to bottom of a	13 51 13 51 13 57
	GARAGE 460_LIDAR Kennedy	House	



GPS Observation Log Sheet				
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 461_LIDAR 38-29-30.491 087-03-54.962 360.248 sft RR Spike in Gravel 38, Sumny	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Seria ( #*	73112         Survey Date:         03/1           Stephen         Schoneg           074         Session No.         5           10:05:31         End Time:         10:0           IMS 03/51354         TRIMBLE         RB:           47/2129959         6.89 564         to bottom of anterna m	29 5 7:0 25 Z
N		n a bhailtean ann ann ann ann ann ann ann ann ann	nnege Saleken Batel Hansa Anne et Meter State	
5				
				7
	Grass		Gravel	/
BARN		fel - LIDAR	Gravel	



	GPS Observ	ation Log Sheet
	Indiana Statewide 2013	Project Number: Survey Date: $O_3/I_3/I_2$
	462 _ LIDAR 38-29-16,156	Operator Name: <u>Stephen Schonege</u>
	086- 54-51.860	Julian Day: 072 Session No. 7
	389.768 sft	Start Time: <u>06:53:2</u> 3 End Time: <u>06:54:4</u> Data File Name: <u>エMS</u> 03/3/3 SLS
Type of Mark:	SPIKE NAIL	Type of Reciever: <u>Trimble</u> R3-Z
Stamping on Mark:	SPIKE NAIL	Serial# 4712129959
Weather Condition:	32° Cloudy, Windy	Antenna Height: 6.39 54 to bottom of antenna mount
	4 (52 50)	CZ_LIDAR

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	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 463_LIDAR 38-31-13.596 086-47-50.747 379.525 sft Spike Nail 33° Flurnics, Windy	Project Number:73112Survey Date: $03/13/13$ Operator Name: $Stephen Schonegg$ Julian Day: $072$ Session No.Start Time: $06.229:03$ End Time:Ota File Name: $IMS 03/3/35LS$ Type of Reciever: $ImS 108/88-2$ $Sceric / #:$ $47/2/2959$ Antenna Height: $6.89 ff$
	463 Hourt	AGS_LIDAR Rd Wrond



	GPS Observa	ation Log SI	neet WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 464 - LID AR 38-31-10.670 086-40-37.128 557.28 sft Center of Asphalt 33° Fluivies, Windy	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Serual ⊯ :	73112         Survey Date:         0.3/13/13           Stephen         Schonegg           072         Session No.         4           05:31:12         End Time:         05:53:04           99590721         Trim ble         R8-2           47/2/2959         4.895ft         to bottom of antenna mount
		Concrete	De me



	GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height	Indiana Statewide 2013 465_LIDAR 38-ZI-27.747 087-03-31.739 349.411 sft Center of Conc 42° Sunny	Project Number:73112Survey Date: $0.3/15/13$ Operator Name: $5 + e_{p}h_{ent}$ $5 chonegg$ Julian Day: $0.74$ Session No. $7$ Start Time: $10:39:12$ End Time: $10:40c44$ Data File Name: $IM5 03.15.13.525$ Type of Reciever: $T_{RIMBLE}$ $RB-2$ $5efig/$ $4.71212.9959$ Antenna Height: $6.89.551$ to bottom of antenna mount		
Conc X	DR X X X	prov Gravel 465-LIDAR Haydso		

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	GPS Observation Log Sheet
	Indiana Statewide 2013 Project Number: 73112 Survey Date: 03/15/
	466 (LIDAR ALSO) Operator Name: 5tephen Schonegy
	38-22-32.460 Julian Day: 074 Session No. 1
	086-55-09.319 Start Time: 8:58:37 End Time: 9:002
Ellip. Height:	348, 199 sft Data File Name: ISM 031513515
Type of Mark:	PAINT STRIPE Type of Reciever: TRIMBLE RB-: Serial# 4712129959
Stamping on Mark:	
Weather Condition:	Antenna Height: Kontenna mount



	GPS Observa	ation Log Sh	eet woolpert
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 467 _ LIDAR 38-23-14.444 086-47-19.129 477.520 55+ Center of Concrete 31° Cloudy, Windy	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Serie/ # z	Survey Date:       03/13/13         5 tep hen       5 chonegg         Session No.       2         24:17:09       End Time:       04:18:09         TSM 031313545       7         Trimble       R8-2         4712/29959       to bottom of antenna mount
	He He	2005C	



GPS	GPS Observation Log Sheet			
Project Name: Indiana Statewide 2013 Station Name: $467 \pm L10$ , Latitude: $38 - 23 - 23 - 23 - 23$ Longitude: $086 - 47 - 23$ Ellip. Height: $477.52$ Type of Mark: $Center of$ Stamping on Mark: $-31^{\circ}_{1} Cloudy$ ,	4ROperator Name: $14.444$ Julian Day: $19.129$ Start Time: $20 547$ Data File Name:ConcictreType of Reciever: $5er(e) # :$	73112         Survey Date: 03/13/13           5 tep ben         5 choneegg           Session No.         2           04:17:09         End Time:         04:18:09           TSM 031313545         7         7           Trim b/e         R8-2         4712129959           to bottom of antenna mount		
N Curretete	House 447-LioAR			

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GPS Observation Log Sheet		
	Indiana Statewide 2013	Project Number: Survey Date: Survey Date:
	468_ LIDAR 38-13-14696	Operator Name: <u>Stephen</u> Schonegy
		Julian Day: 073 Session No. 18
	087-04-10,231 368.850	Start Time: 01, 43; 28 End Time: 01, 44:58
	Center of Concrete	Data File Name: <u>ISM 0314135L5</u>
Stamping on Mark:		Type of Reciever: <u>$T_{RIMBLE}$ R8-2</u> 5 $e_{1}(a) = 4712129959$
		Antenna Height: <u>6,895</u> to bottom of antenna mount
	Gravel Dr	168_LIDAR

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	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013Project Number:7312Survey Date: $073$ $469 - L1DAR$ Operator Name: $5tephen$ $5chonegg$ $38-12 - 09.446$ Julian Day: $073$ Session No. $8$ $086 \cdot 52 - 24.008$ Start Time: $11:18:36$ End Time: $11:20:11$ $428.118$ $5f+$ Data File Name: $ISM 03141354.5$ Center of ConcreteType of Reciever: $Trimble R8 - 2$ $32^{\circ}_{i}$ $Cloudy, Light Wingle$ Antenna Height: $6, 89 sf+$
Conc	Dr ALG_LIDAR Gravel Conc Pad NO M



GPS Observa	tion Log Sheet	WOOLPERT
Indiana Statewide 2013Station Name: $470 - 104R$ Latitude: $38 - 11 - 56.327$ Longitude: $036 - 47 - 47.216$ Ellip. Height: $322.447$ Type of Mark: $Center - 4$ Stamping on Mark: $38^{27}$ Weather Condition: $38^{27}$ $38^{27}$ $50nny$	Operator Name: $5777$ Julian Day: $073$ Start Time: $10:22$ Data File Name: $IS7$ Type of Reciever: $TR7$	Session No. <u>4</u> <u>5</u> ² End Time: <u>10: 30:22</u> <u>19 03 141 3 5L5</u> <u>19 05 E R8 - 2</u> <u>121 2 9 9 5 9</u>
ATO- GARAYEL Dr.L Corre	z	Co Rd 1360 E



GPS Observation Log Sheet				
Project Name:Indiana Statewide 2013Station Name: $47/_LiDAR$ Latitude: $3B-1Z-1Z.779$ Longitude: $087 -01 - 03.748$ Ellip. Height: $375.764 - 5f$ Type of Mark: $RS_{51ke}$ in GrassStamping on Mark: $35, PT - Cloufy, Light Wind$	Project Number: $73112$ Survey Date: $03/14/13$ Operator Name: $5tephen$ SchoneggJulian Day: $073$ Session No. $16$ Start Time: $1:20:20$ End Time: $1:21:50$ Data File Name: $I5M$ $03/4135L5$ Type of Reciever: $TRIMBLE$ $RB-2$ Serrig/#: $4712129959$ Antenna Height: $6.89$ $544$			
	CO Rd 600 W			
Co Rd 1200 N 471_LIDAR	60 Rd 1200 S			
	Co Rd 200			



	GPS Observa	ation Log S	heet WOOLPE
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	<u>38-03-14.213</u> 087-09-49.150 327.703 sft Corner STOP BAR	Julian Day: Start Time: Data File Name: Type of Reciever: Seria / #	73112         Survey Date:         3/2//.           Stephen         Schonegg           080         Session No.         6           1:46:47         End Time:         1:50           IMS         0.321/3         525           TRIMBLE         R8-2           47/2/2         959           6.89         Set
₹		C Rd 425 E	



	GPS Observation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Co	Rd 473 Baller Baller



	GPS Observa	ation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 474_LIDAR 37-51-07.857 087-13-28.213 279.876 sft Center of Gone Dr 45° Cloudy, Winnor	Project Number:73112Survey Date: $03/18/12$ Operator Name: $5 + ephen$ $5 ehonegg$ Julian Day: $077$ Session No. $8$ Start Time: $12:25:53$ End Time: $12:27:51$ Data File Name: $IMS 0.34813525$ Type of Reciever: $T_{RIMBLE}$ $R8-2$ Serial # $4712129959$ Antenna Height: $6.89 sSt$ to bottom of antenna mount
	CONC Drive	2905



GPS	Observation Lo	g Sheet	WOOLPERT
Project Name:Indiana Statewide 2013Station Name: $475$ (and $37-46-31$ )Latitude: $37-46-31$ Longitude: $087-06-48$ Ellip. Height: $295.02$ Type of Mark: $CORNER$ ConderStamping on Mark: $48^{\circ}$ Cloudy	$\begin{array}{c c} LIOAR \\ \hline \\ 34 \\ \hline \\ 36 \\ \hline \\ \\ \\ 36 \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	Name: <u>Stephen</u> Day: <u>077</u> Sessie Time: <u>1207:21</u> End Name: <u>IMS 03</u> Never: <u>Trimble</u>	on No. 9 Time: 1:10;34 2.18 13 525 R8-2
S J J	Cance Prive	E.	
Frederica			





475-3N-18MAR13

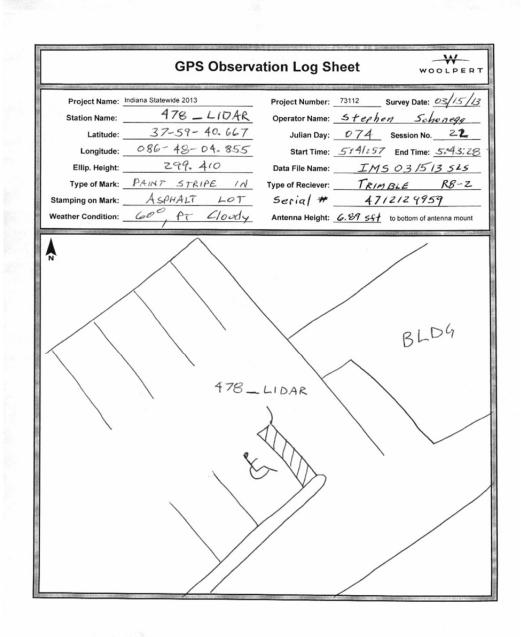


	GPS Observa	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 476-LIDAR 37-54-21,931 087-02-32,992 295,577 sft Center Asphalt Lot 50°, Cloudy, Bracer	Project Number: $73112$ Operator Name: $5 + e_{P}h$ Julian Day: $077$ Start Time: $2:48:0$ Data File Name: $IM$ Type of Reclever: $T_{R/P}h$ $5e_{Via}/#$ $47$ Antenna Height: $6.89$ sch	$\begin{array}{rcl} & S_{chonegg} \\ & Session No. & 13 \\ \hline & Session No. & 2:50:5; \\ S & 0.31813525 \\ \hline & 0.3181355 \\ \hline & 0.3181355 \\ \hline & 0.3181355 \\ \hline & 0.3181355 \\ \hline & 0.31813555 \\ \hline & 0.31815555 \\ \hline & 0.318155555 \\ \hline & 0.3181555555 \\ \hline & 0.318155555555555555555555555555555555555$
▲	ATC - LIDAR		HOTEL



GPS Obs	ervation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: <u>477 _ LIDAR</u> Latitude: <u>37 - 56 - 18.865</u> Longitude: <u>086 - 54 - 06.37</u> Ellip. Height: <u>294.066</u> Type of Mark: <u>Center Asphalt s</u> Stamping on Mark: <u>50°, Cloudy</u> , Winner	Start Time: $\frac{D2!/3!!}{IM5 03!B!35!5}$ End Time: $\frac{IM5 03!B!35!5}{IM5 03!B!35!5}$ Each Type of Reciever: $\frac{T_{RIMBLE}}{Secial} = \frac{R8-2}{47!2!28959}$
N	ATT_LIDAR CONC WALK
MARKET	57
	al 2

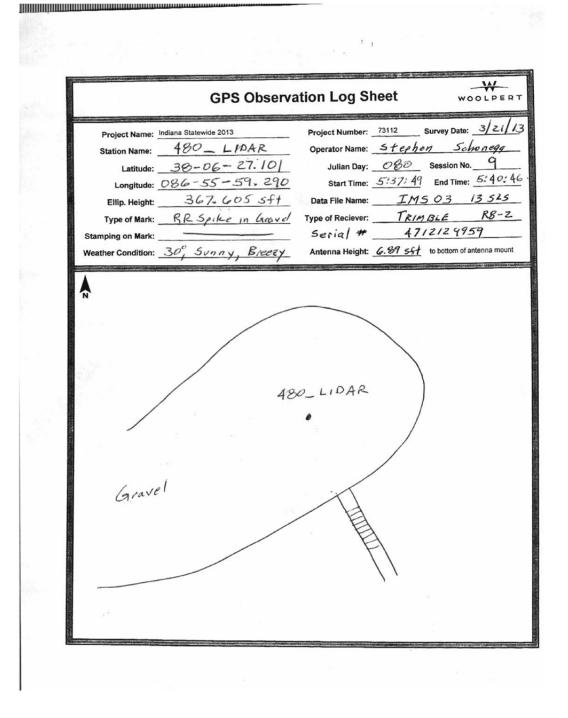






Project Name: Indiana Statewide 2013 Station Name: $479 - L1DAR$ Latitude: $389 - 06 - 19.179$ Longitude: $086 - 46 - 39.540$ Ellip. Height: $256.493 - 54+$ Type of Mark: Center of Asphale Rd Stamping on Mark: $$	GPS Observa	ation Log Sheet
479 11048	Station Name:       479 _ LIDAR         Latitude:       38-06-19.179         Longitude:       086-46-39.560         Ellip. Height:       286.493 sft         Type of Mark:       Center of Asphalt Rd         Stamping on Mark:	Operator Name: $Stephen$ SchoneggJulian Day: $\bigcirc 7.5$ Session No.4Start Time: $10:11:05$ End Time: $10:12:35$ Data File Name: $IMS 0.316 13.525$ Type of Reciever: $TRIMBLE$ $RB-Z$ Serial# $471212.9959$
	A79_LIDAR	





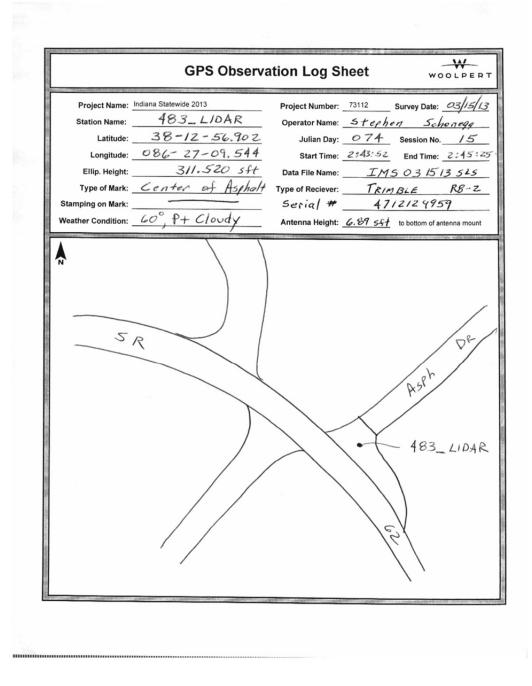


	GPS Observa	tion Log Sheet	WOOLPERT
	Indiana Statewide 2013		Survey Date: 03/21/13
	481 (and LIDAR)		ephen Schonegg
	38-00-09.243		Session No. 10
	087-01-46.287		03:03 End Time: 6:05:14
	399,491 sft		IMS 0321 13 525
Type of Mark:	TIP PAINTED ARROW	Type of Reciever:	TRIMBLE R8-Z
Stamping on Mark:	50°, Cloudy, Breezy	Seria #	4712129959
Weather Condition:	50, Cloudy, Breezy	Antenna Height: 6.8	to bottom of antenna mount
2			
	$ \sum \left( \sum \right) $	/////	
	401 - 18	(も)も/も	E/
			1



	GPS Observa	tion Log Sheet
Project Name:	Indiana Statewide 2013	Project Number:
Station Name:	482_LIDAR	Operator Name: <u>Stephen Schonegg</u>
Latitude:	37-54-15,992	Julian Day: <u>077</u> Session No. <u>15</u>
Longitude:	087-07-07.571	Start Time: <u>3:25:46</u> End Time: <u>3:27:3</u>
	356. 233 sft	Data File Name: <u>IMS 031813545</u>
	Center Conc PR	Type of Reciever: <u>TRIMBLE</u> <u>RB-2</u> Serial # <u>4712129959</u>
Stamping on Mark:	50°, Cloudy, Breezy	Antenna Height: 6.89 554 to bottom of antenna mount
Weather Condition:	Se, choca , oracey	
House	Conc DR 482-LIDAS WALK	Rd 350
Conc	Aspha4 Dr	18

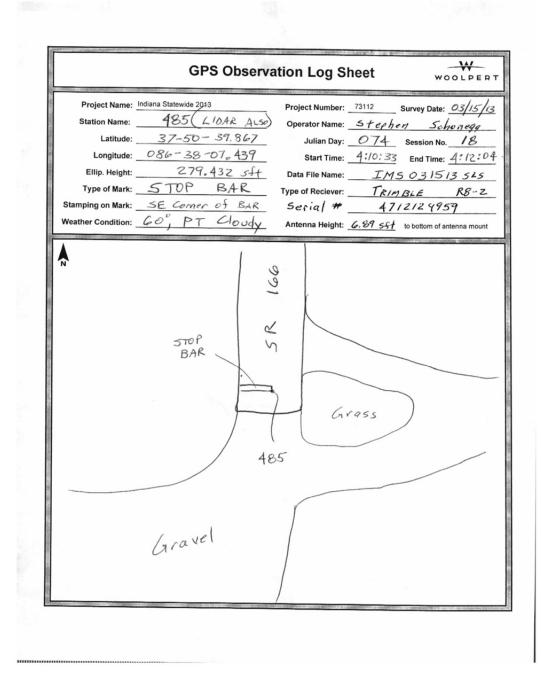






	GPS Observation	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	ndiana Statewide 2013 <u>484</u> _ LIDAR 37-55-32.365 086-31-27.754 295.451 sft Gravel Drive Mag Naic Co ^o , PT Cloudy	Serial # 47121	<u>Schonega</u> sion No. <u>17</u> d Time: <u>3:37;57</u> <u>3 13 525</u> <u>6 RB-Z</u> 2 4959
<b>∧</b>			
Rome			Rd
		484_LIDA	R







Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 486_ LIDAR 38-05-03.563 086-36-47.027 624.076 sft R R Spike in Grass 5.5°, PT Cloudy	Start Time: $2! 0 2:5$ Data File Name: $IA$ Type of Reciever: $IR$ Secial # 4	<i>hen Schonegg</i> Session No. 13 4 End Time: 2:04: 1503/51352 <i>MBLE R8</i> - 712/29959
▲7	486.	-LIDAR	



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Jiana Statewide 2013 487_LIDAR 38-15-27,149 287-59-47.863 342,649 sft Center of Conc Dr 37° Rain, Wind	Start Time: 12:0 Data File Name: Type of Reciever:	ephen <u>Scho</u> , 76 Session No <u>4: A</u> 9 End Time: <u>13</u> <u>IMS 03</u> 1713 <u>TRIMBLE</u> <u>A7121229953</u>	2 2 2:06:19 525 RB-2
Nor 487_LID			SR 1 (court st)	57

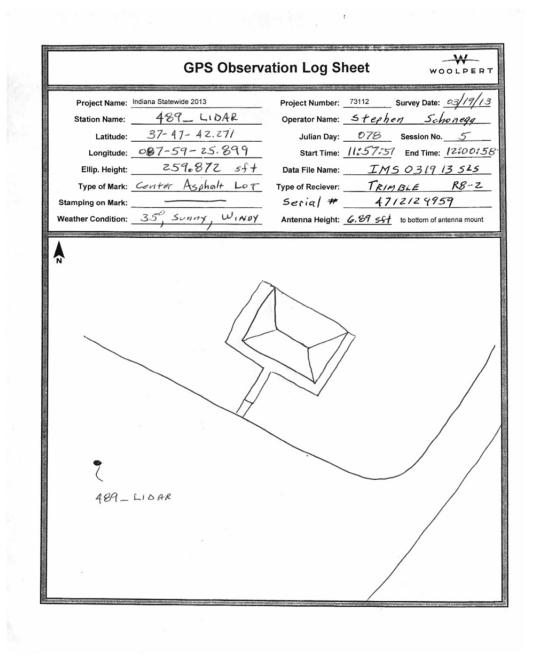
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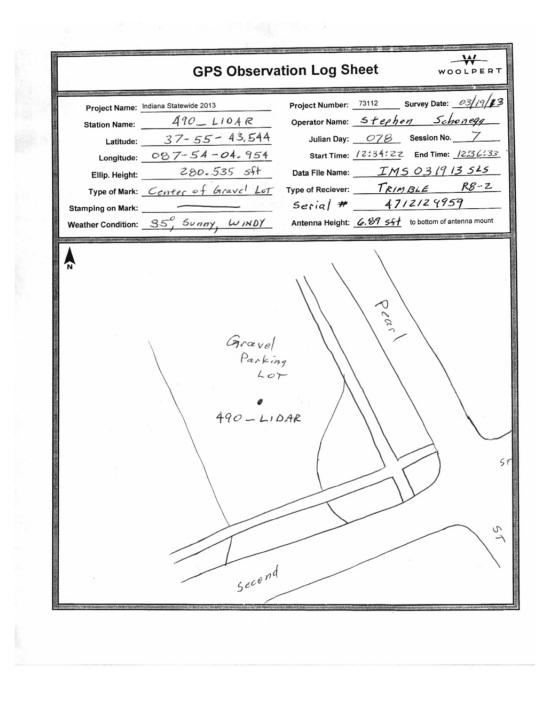
GPS Observation Log Sheet		
	Indiana Statewide 2013	Project Number: Survey Date:/19/1
	488_ LIDAR	Operator Name: <u>Stephen</u> Schonegg
	37-54-10.311	
	088-07-04.037 261.505 sft	Start Time: <u>11: 14:38</u> End Time: <u>11: 16:</u>
		Data File Name: <u>IMS 03 1913 525</u>
Stamping on Mark:	Center Asphan Sileer	Type of Reciever: <u>TRIMBLE RB-2</u> Serial # <u>4712124959</u>
Weather Condition:	34°, Summy, Breezy	Antenna Height: 6.89 557 to bottom of antenna moun
		an a
N	$\langle \rangle$	
	10/	
	1001	
	Bain	HOUSE
	· · · · · · · · · · · · · · · · · · ·	
		Gravel DR
4	-88-LIDAR	
	Rd	

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	GPS Observa	tion Log Sheet	WOOLPER
Project Name:	Indiana Statewide 2013	-	urvey Date: <u>03/19/</u>
	491 (Lider also)	Operator Name: <u>Stephen</u>	
	37-48-38.554	Julian Day: 078	
	087-40-39.703	Start Time: 02:05:14	
	285.057 sft	Data File Name: <u>IMS</u>	03 9 13 3=3 RB=7
	Corner Paint Stripe	Type of Reciever: <u>TRIML</u> Serial # 471	7124959
Stamping on Mark:			
Weather Condition:	38°, Sunny, Windy	Antenna Height: 6.89 55†	o boutom or anterma mou

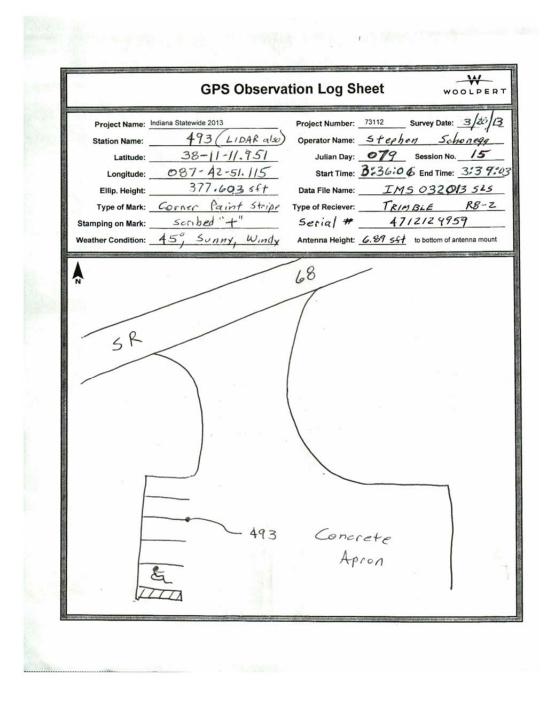
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GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height:	Indiana Statewide 2013 492 (and LIDAR) 37-56-46.151 087-27-06.171 286.764 sft Paint Stripe 48°, Mist, Cloudy	Project Number:73112Operator Name: $5 + e_{P} he$ Julian Day: $077$ Start Time: $11:20:06$ Data File Name: $IMS$ Type of Reciever: $TRIM$ Serial # $470$ Antenna Height: $6.89$	n <u>Schenegg</u> Session No. <u>5</u> End Time: <u>//:23:3</u> 503/813525 BLE <u>R8-2</u> 12129959
Weather Condition:	48, MIST, Cloudy	Antenna Height: <u>6.89 55†</u>	to bottom of antenna mount
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		$\bigwedge$	



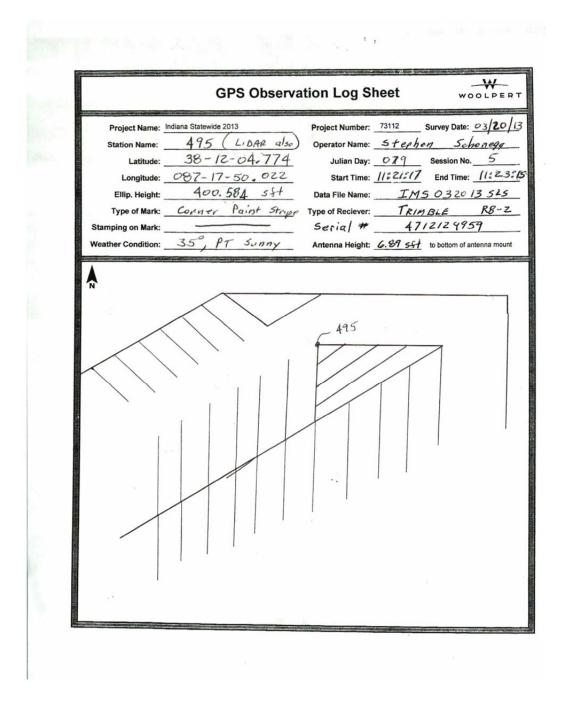
	GPS Observa	tion Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 493 (LIDAR also) 38-11-11.933 087-42-51.074 371-919 sft Corner Paint Stripp Serribed "+" 45°, Sunny, Windy	Operator Name: $5 + e_{phen}$ Julian Day: $073$ S Start Time: $3 = 56:39$ Data File Name: $IMS$ Type of Reciever: $T_{RIMB}$ Secial # 4712	ession No. <b>15</b> End Time: <b>3</b> %59% 03/9/13/525 24 <i>RB~Z</i> 2/2/959
	493	Concrete Apron	

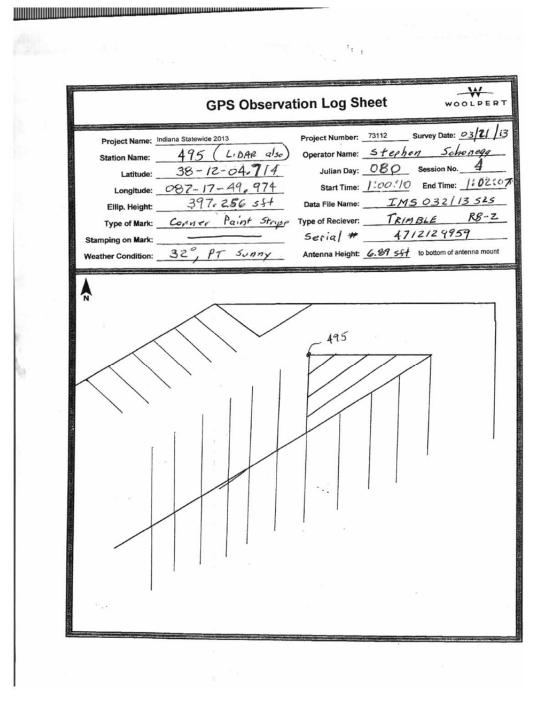




GPS Observ	vation Log Sheet woo
Project Name: Indiana Statewide 2013 Station Name: <u>494 - LIDAR</u> Latitude: <u>38-10-56.059</u> Longitude: <u>087-26-29.447</u> Ellip. Height: <u>327-931 54+</u> Type of Mark: <u>Contecte DR</u> Stamping on Mark: Weather Condition: <u>35°, 500000000000000000000000000000000000</u>	Start Time: $\frac{9:57:21}{IMS 032013}$ End Time: $\frac{100}{IMS 032013}$ Type of Reciever: $\frac{T_{RIM BLE}}{525161}$ $\frac{4712129959}{12012959}$
Cone Dr • 494_LIDAR	Eagle Crest LN









GPS Observ	vation Log Sheet
Project Name:Indiana Statewide 2013Station Name:496 LIDARLatitude:38° 45' 26,20" NLongitude:87° 24' 46,81 "WEllip. Height:408,30 5F+Type of Mark:SI+oRT C=RASS	Data File Name: <u>ISM_040313-BRC</u>
Stamping on Mark: $\frac{N/A}{47^{\circ} CLEAR}$	Type of Antenna:       R8-3         Antenna Height:       2.0m       to bottom of antenna mount
	CONC. SUL 67



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496_LIDAR_3W_03APR2013

	GPS Observ	vation Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 497 38° 39° 46.10"N 87° 08' 29.90"W 467.83 Sf+ CORNER CONCRETE N/A 47° PT CLDY	Start Time: $1359$ End Time: $1402$ Data File Name: $ISM_040113_BRC$ Type of Reciever: $R83$ Type of Antenna: $R83$
	PINES X RIDGE RO.	GRASS VI HOUSE HOUSE # 504 VI FLAT SURFACE PID & Lidar VI VI VI VI VI VI HOUSE # 504 VI VI VI VI VI VI VI VI VI VI



GPS Observ	ation Log Sheet
Project Name: Indiana Statewide 2013 Station Name: 498 Latitude: 38-40-10.558 Longitude: 086-47-48.366 Ellip. Height: 400.209 sft Type of Mark: Corner Paint Stripe Stamping on Mark: Weather Condition: 40°, PT Cloudy	Project Number:73112Survey Date: $3/22/B$ Operator Name: $5 + ephen$ $5 ehonegg$ Julian Day: $081$ Session No.1Start Time: $1:20:15$ End Time: $1:24:0$ Data File Name: $IMS 0.322$ $13.545b$ Type of Reciever: $T_{RIMBLE}$ $RB-2$ Serial# $471212$ $4959$ Antenna Height: $6.89.55t$ to bottom of antenna mount
Gene Conc	e fe



498-2-22MAR13



498-3E-22MAR13



GPS Observa	ation Log Sheet
Project Name:Indiana Statewide 2013Station Name: $499 - LIDAR$ Latitude: $38-20-36.646$ Longitude: $087-33-54.936$ Ellip. Height: $396.169$ sftType of Mark: $Asp hgH streer$ Stamping on Mark: $30^{\circ}$ PT cloudy, Wird	Serial # 4712124959
	4
0410	5 T
499_ LIDAR	BSON
	182



499_LiDAR-2-20MAR13



À W1 a 499_LiDAR-3N-20MAR13

	GPS Observa	ation Log Sheet	WOOLPE
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 <u>500_LIDAR</u> <u>38-23-03.477</u> <u>087-12-50.855</u> <u>373.229</u> <u>57</u> <u>Asphelit</u> <u>Street</u> <u>M.49</u> <u>NA4</u> <u>Street</u> <u>38</u> °, PT Cloudy, Windy	Project Number:73112Operator Name: $Steph$ Julian Day: $O79$ Start Time: $I2:033$ Data File Name: $IM$ Type of Reciever: $TRA$ Setial#47Antenna Height: $G.89$	Session No. 7 T End Time: 12:00 15 0 3 20 13 52 15 0 3 20 13 52 17 0 3 20 10 10 10 10 10 10 10 10 10 10 10 10 10
NORTH	500_	LIDAP	



500_LiDAR-2-20MAR13



500_LiDAR-3W-20MAR13

GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 501_LIDAR 38-04-19,410 087-49-38.344 372.277 5ft Confer Concrete Dr 45°, Sunny, Breezy	Operator Name: $5 + e_f$ Julian Day: $078$ Start Time: $4:38$ Data File Name:       I         Type of Reciever: $T_f$ Serial       #	Survey Date: <u>03/19/1</u> <u>5 chonegg</u> Session No. <u>17</u> <u>8.28</u> End Time: <u>4.241</u> <u>MS 0.319 13 525</u> <u>8 M BLE</u> <u>R8-2</u> <u>471212 9959</u> <u>54</u> to bottom of antenna moun
Valeah		501_LIL	DR

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501_LIDAR-2-19MAR13



501_LiDAR-3E-19MAR13



GPS Observation Log Sheet			
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 502 _ LIDAR 38-03-04.295 087-33-30.747 311.567 sft Center Concrete Dr 40°, Sunny, Windy		Section regg           Session No.         12           End Time:         3:04:11           15 0 3 19 13 525         13 525           MBLE         R8-2           71212 4959
Peppe	House 502-L		



502_LIDAR-2-19MAR13



502_LiDAR-3N-19MAR13

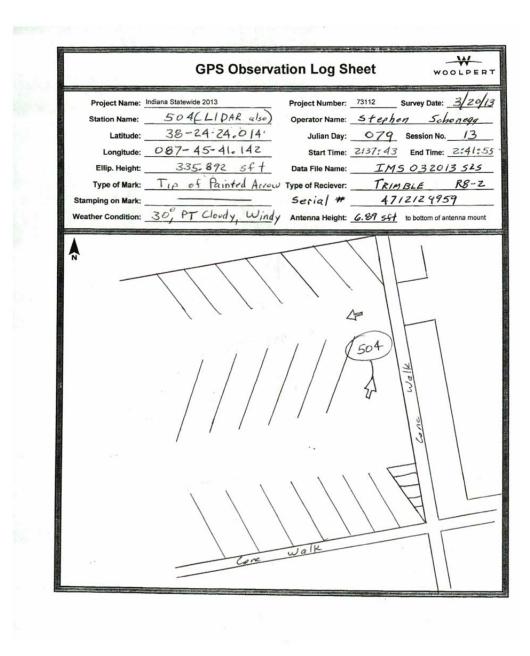
	GPS Observa	ation Log Sheet	WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 503 (LIDAR also) 38-05-29.788 087-16-50.008 362.940 sft Corner Conc Pad 32°, PT Cloudy, Brazy		hen <u>Schoneg</u> Session No. <u>5</u> End Time: <u>1722:4</u> <u>15032/13525</u> <u>19866</u> <u>R8-2</u> 7/2/24959
Bidg		BLOG X Concrete	× × * - ×
	Asphaly Co Rd	400	$\sum$



503-2-21MAR13



503-3N-21MAR13







<image>

GPS Observation Log Sheet				
Latitude: Longitude:O Ellip. Height: Type of Mark:	a Statewide 2013 505 (and LIDAR) 37-55-03.435 87-17-54.406 351.701 sft orner Concrete 5°, Cloudy, Windy	Start Time: <u>//:5/:</u> Data File Name: <u></u> Type of Reciever: <u></u>	<u>Phen</u> Scho, 7_ Session No 27 End Time: <u>1</u> 7. 7. 7. 7. 7. 7. 7. 7. 7. 7.	1.499 6 1.52:27 525 525
OLD	5 R	66		Yanke town
	CONCR	ETE NCRETE		Rd



505-2-18MAR13



505-3E-18MAR13



GPS Observation Log Sheet				
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 513 38° 42' 47.53"N 87° 33' 10.63"W 307.62 5F+ CORNER CONCRETE NA 44° CLEAR	Project Number:       7312         Operator Name:       Ben Christie         Julian Day:       093         Start Time:       1203         Data File Name:       ISM-1         Type of Reciever:       R8-3         Type of Antenna:       R8-3	Session No. <u>N/A RT</u> End Time: <u>1205</u> 040313_ BRC	
S. S.	AND SAND OR.	SIS FLAT PID	b SURFACE Lidar	





513_3E_03APR2013



	GPS Observ	ation Log Sheet
Project Name: Station Name:	Indiana Statewide 2013	Project Number:       73112       Survey Date:       03A FR 2013         Operator Name:       Ben Christie
Latitude:	38° 43' 31.89" N	Julian Day: 093 Session No. N/A RTK
Longitude:	87° 27' 49.52" W	Start Time: 1238 End Time: 1239
Ellip. Height:	354, 24 SF+	Data File Name: エミル_ 040313- BRC
Type of Mark:	CORNER CONCRETE	Type of Reciever: <u>R8-3</u>
Stamping on Mark:	N/A	Type of Antenna:R 8 - 3
Weather Condition:	46° CLEAR	Antenna Height: <u>2</u> , 0 m to bottom of antenna mount
	FARM	CONC HOUSE CONC 3370 CONC GARAGE





514_3N_03APR2013



Project Name:	Indiana Statewide 2013	Project Number:	73112 Survey Date: 03/APR2
Station Name:		Operator Name: E	Ben Christie
	38° 37' 16.65''N	Julian Day:	093 Session No. MA RT
	87° 27' 40.97"W	Start Time:	1024 End Time: 1028
	395. 91 5++	Data File Name: _	ISM. 040313. BRC
	CORNER CONCRETE	Type of Reciever:	R&-3
Stamping on Mark:		Type of Antenna:	R 8-3
Weather Condition:	34° CLEAR	Antenna Height:	2.0 m to bottom of antenna mour
	House	ASPH.	







	GPS Observ	ation Log Sheet	WOOLPER.
Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: 03 APR 2013
Station Name:	516	Operator Name: Ben Christie	
Latitude:	38° 38' 20.93" N	Julian Day: 093	Session No. $\frac{N/A}{A} RTK$
Longitude:	87° 33' 56. 56"W	Start Time: 1124	End Time: _ ]   2 &
Ellip. Height:	311.78 SF+	Data File Name: <u>TSM_C</u>	10313_ BRC
Type of Mark:	CORNER SIDEWALK	Type of Reciever: <u>R8-3</u>	
Stamping on Mark:		Type of Antenna: <u>R8-3</u>	
Weather Condition:	46° CLEAR	Antenna Height: Z, OM	to bottom of antenna mount
_, /	HOUSE # (NO #) CONC GRASS	516 AT SURFACE D & Lidar G G F F	House #2732
		Tourses - Tourse - Science - Marine - Science	







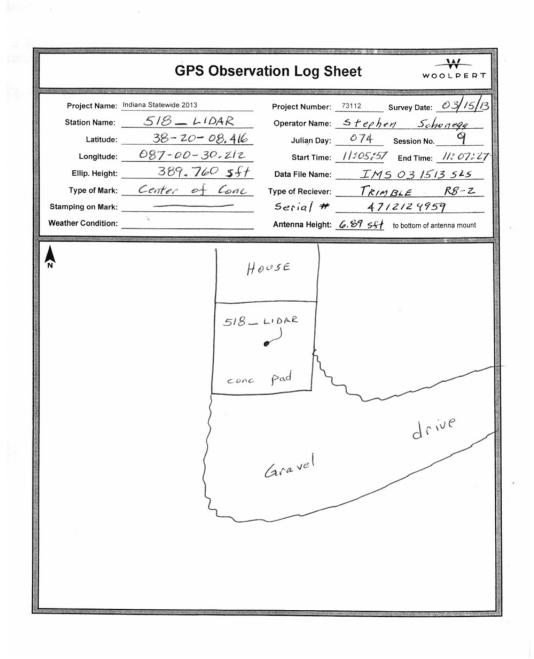
	GPS Observa	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 A PR 2 4
Station Name:	517	Operator Name: Ben Christie
Latitude:	38° 40' 33.78" N	Julian Day: <u>093</u> Session No. $\frac{N/A}{RT}$
	87°31'01.94"W	Start Time: $0957$ End Time: $0958$
Ellip. Height:	311. Ley SP+	Data File Name: $ISA_1 - OHO313 - BRC$
	CURNER SIDEWALK	
	N/A	Type of Antenna: <u>R 8-3</u>
Weather Condition:	32° CLEAR	Antenna Height: 2.0M to bottom of antenna mount
	one sure House	517 X FLAT SURFACE PID & Lidar





517_3S_03APR2013

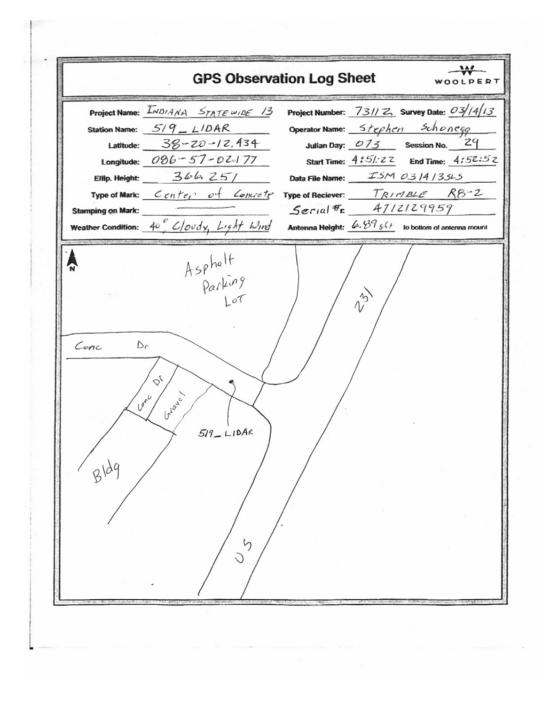










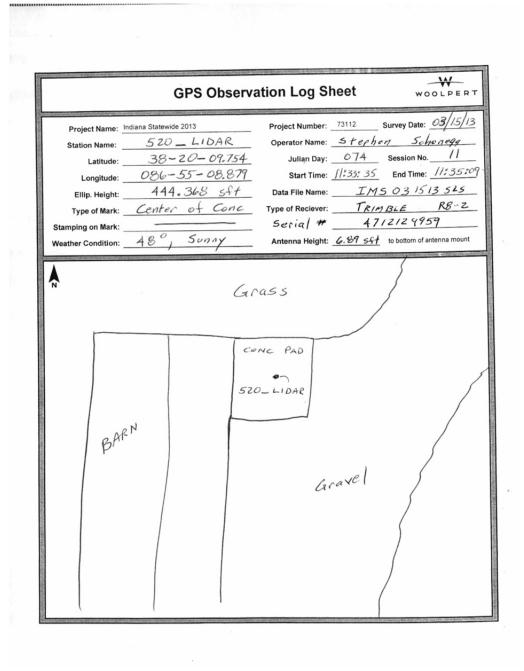






519_LiDAR-3S-14MAR13









520_LiDAR-3W-15MAR13

Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 521_ LIDAR 38-13-53,638 086-55-14.698 453,310 Center of Concre 32°, Cloudy, Light	B         Start Time:         11:46:10         End Time:         11:47:1           Data File Name:         II.SM 031413545         545
	Gravel Drive	CONC Ped 521_LIDAR Barn





 14
 MAR
 2013

 521_LiDAR-3N-14MART3

	tion Log Sheet
Project Name:         Indiana Statewide 2013           Station Name:         522_LIDAR           Latitude:         38-/3-56,478           Longitude:         086-58-20,168           Ellip, Height:         415,087	Project Number: 73112 Survey Date: $03/14/13$ Operator Name: $5tepheth$ Schonegeg Julian Day: 073 Session No. 12 Start Time: 12:40:01 End Time: 11:41:43 Data File Name: $TSM 0314/35L-5$
Type of Mark:       Center of Concione         Stamping on Mark:	Type of Reciever:
A N	
Holland	Rd
	SZZ_LIDAR G J J





522_LiDAR-3N-14MAR13

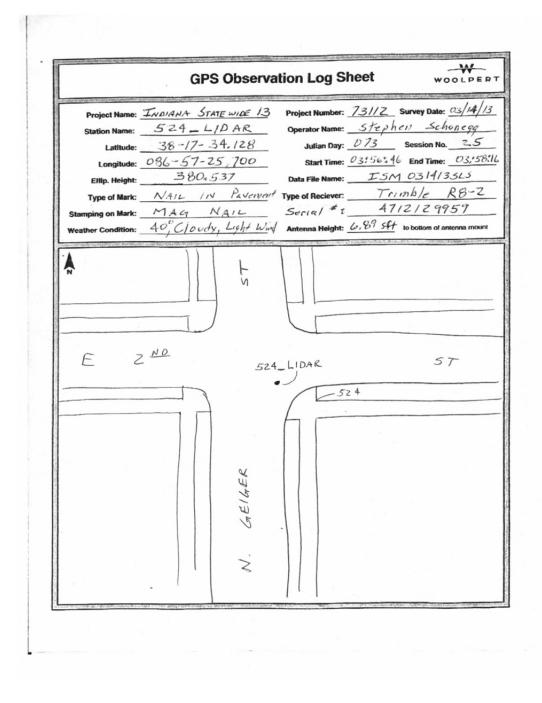


Asph Dr 523-LIDAR		Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 523_LIDAR 38-14-01.313 086-59-51.306 423.393 s4t Center of Concrete 35°, Cloudy, Light Wind	Type of Reciever: TRIMBLE R8-Z
	( JANK	Asph	Dr	523_LIDAR













524_LiDAR-3N-14MAR13



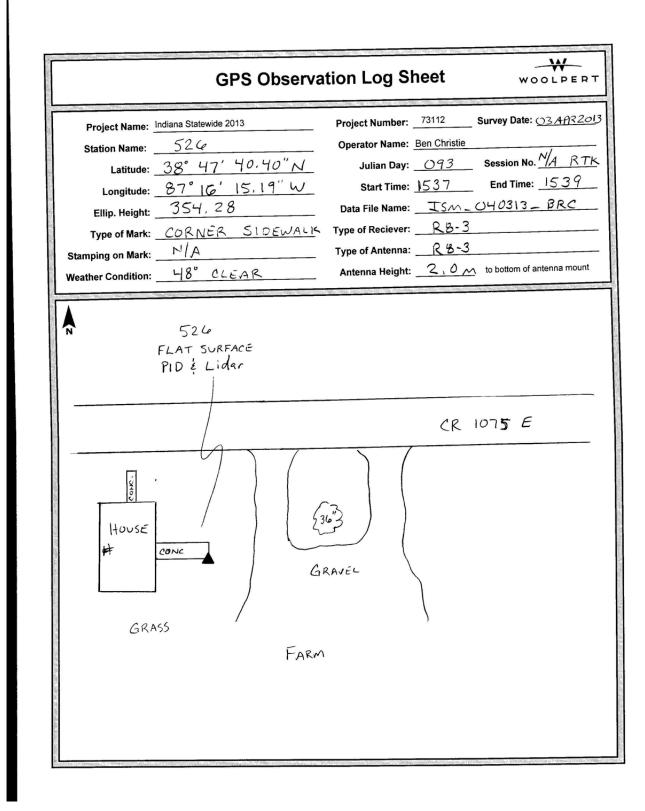
un an a the local set of the baseline	GPS Observa	tion Log Sheet	WOOLPERT
Station Name:		Project Number: 73112 Operator Name: Ben Christie	Survey Date: <u>(23 APR20</u> ) Session No. <u>NA</u> RTK
Longitude:	<u>38° 47' 45,33" N</u> <u>87° 20' 03.80" W</u>	Julian Day: $073$ Start Time: $1508$ Data File Name: $ISM$ .	End Time: 510
	H39.93 SF+ CORNER CONCRETE N/A	Type of Reciever: $R8-3$ Type of Antenna: $R8-3$	
	47° CLEAR	Antenna Height: <u>2.0 M</u>	to bottom of antenna mount
		Conc Conc Banic FLAT SUR PID 2 L	FACE idar





525_3E_03APR2013











	GPS Observa	ation Log Sheet
	Indiana Statewide 2013	Project Number: Survey Date: O3 APR 201. Operator Name: Ben Christie
	38° 45' 57.80" N	Julian Day: $093$ Session No. $\frac{N/A}{A}$ R T K
	87° 17' 50.89"W	Start Time: 1414 End Time: 1416
Ellip. Height:	347,79 sft	Data File Name: <u>ISM_040313_BRC</u>
	CORNER CONCRETE	Type of Reciever: <u>R8-3</u>
Stamping on Mark:		Type of Antenna: <u>R8-3</u>
Weather Condition:	47° CLEAR	Antenna Height: 2.0m to bottom of antenna mount
-X W COAL	SHORT GRASS	







	GPS Observ	ation Log Sheet
Project Name:	Indiana Statewide 2013	Project Number: 73112 Survey Date: 03 APR 2013
Station Name:		Operator Name: Ben Christie
	38°45' 36.24"N	Julian Day: $093$ Session No. $\frac{N_A}{A}$ RTK
	87° 19' 38.99"W	Start Time: <u>1348</u> End Time: <u>1350</u>
	435.67 sf+	
	CORNER SIDEWALK	
	N/A	Type of Antenna: <u>R8-3</u>
Weather Condition:	47° CLEAR	Antenna Height: 2.0m to bottom of antenna mount
	GRASS	FLAT SURFACE PID & Lidar





528_3S_03APR2013



	GPS Observ	ation Log Sheet	WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	38° 41' 34.53" N 87° 29' 55.29" W 326.53 5Ft CORNER CONCRETE	Project Number:       73112         Operator Name:       Ben Christie         Julian Day:       093         Start Time:       0939         Data File Name:       ISM-         Type of Reciever:       R&-3         Type of Antenna:       R&-3         Antenna Height:       2.0M	Session No. <u>^N/A</u> RTK End Time: <u>0941</u> 040313_ BRC
DENI	DC TOPIC TOPIC TEN DP P	QC-261 FLAT SURFACE PID & Lidar REGIONIS ATM GRASS	pR (al



QC-261_2_03APR2013



 CC-261_3W_03APR2013

	GPS Observa	ation Log Sh	neet	wo	OLPER
Longitude: <u>87</u> Ellip. Height: <u> </u>	2-262 3° 46' 35.28"N 18' 31.96" W 135. 81 RNER SIDEWALK A	Project Number: Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Type of Antenna: Antenna Height:	Ben Christie 093 1451 ISM- R 8-3 R 8-3	End Time: 	N/A RT 1453 BRC
MCCLUR FUNERA Home	TH ST Sult	LS ROLDINHSUM QC-262 LAT SURFACE		AS HIN & TON	



QC-262_2_03APR2013



QC-262_3N_03APR2013



Project Name:	Indiana Statewide 2013	Project Number: 73112	Survey Date: OLAPR
	QC-263	Operator Name: Ben Christie	
	38°48' 25.00"N	Julian Day: 역	Session No.
	87°09' 10.94"W		End Time: 1678
Ellip. Height:	360.88 sft	Data File Name: ISM_ (	040113 - BRC
Type of Mark:	SW COR SIDEWALK	Type of Reciever: <u>R8-3</u>	
Stamping on Mark:	N/A	Type of Antenna: <u>R 8-3</u>	
Weather Condition:	46° PT. CLDY	Antenna Height: 2.0m	to bottom of antenna mou
JOHN	ST.		
ЛИНО	ST.		
ЛОНИ		TARAS SALON	)



QC-263_2_01APR2013



QC-263_3E_01APR2013



GPS Observ	ation Log Sheet
Project Name:Indiana Statewide 2013Station Name: $QC - 2GH _ LIDAR$ Latitude: $38^{\circ} 39' 30.45''N$ Longitude: $87^{\circ} 03' 57.56''W$ Ellip. Height: $H28.25 SP+$ Type of Mark: $ON CONCRET$ Stamping on Mark: $N/A$ Weather Condition: $H6^{\circ} P7. CLDY$	Data File Name: <u>15M_040119215AC</u> Type of Reciever: <u>R8-3</u> Type of Antenna: <u>R8-3</u>
HSE HZTS	CONC HOUSE (NO H)



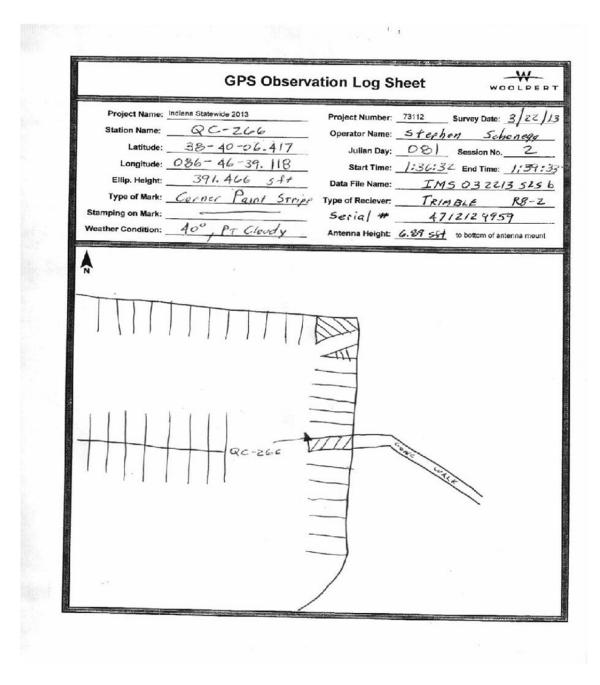


	GPS Obser	rvation Log SI	neet	WOOLPER
Project Name:	Indiana Statewide			vey Date: 04.04-20
Station Name:	QC 265	Operator Name:	Welb	aum
	38-53-44.42			ession No. /
Longitude:	86-54-05.23			and Time: 10:22
	490.72		73112 WRW	
Type of Mark:	PIJ			
	N/A		R8 Moi	3
	40° overcast	Antenna Height:	2.000m to	bottom of antenna mount
	S,Je	o) qc	245	11
		J. q	265-61	
	W.			Crawe Village Church









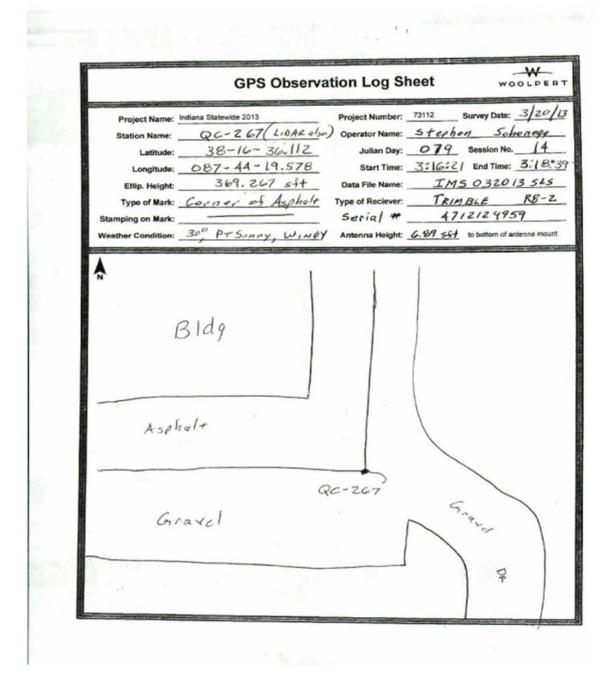


QC-266-2-22MAR13



QC-266-3E-22MAR13







QC-267-2-20MAR13



QC-267-3E-20MAR13



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-Z68 (LIDAR of 38-19-56.710 087-26-41.801 364.160 sst Corner Paint Stripe Scribed "+" 30°, Sunny	Julian Day: Start Time: Data File Name: Type of Reciever: Secial #	73112 Stephen 079 9:19:59 IMS TRIM 471	Session No. 1 End Time: 9:23:1 032013515 GLE R8-2
	E.	φε-268		

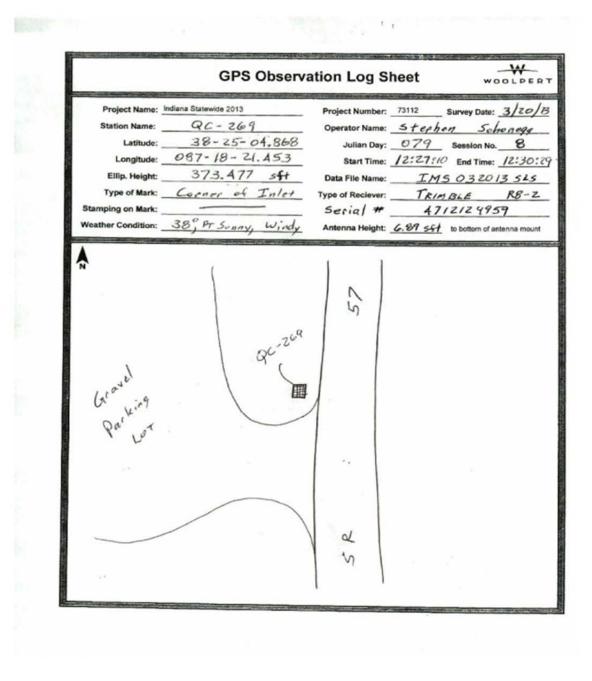


QC-268-2-20MAR13



QC-268-3N-20MAR13







QC-269_LiDAR-2-20MAR13



QC-269_LiDAR-3E-20MAR13



	GPS Ob	servation Log	Sheet	WOOLP
Station Name: Latitude: Longitude: EIIIp. Height: Type of Mark: Stamping on Mark:	Тмріана STATEW, QC - 270 (Ано 38-10-02,5 087-08-29,9 510,685 sf Раінт STRIPE 40°, PTEloudy, Ligh	LIDAE     Operator Nam       56     Julian Di       73     Start Tim       +     Data File Nam       Type of Recieve       Secold ##	$\begin{array}{c} \text{me:} & \underline{5 + ephen} \\ \underline{5 + ephen} \\ \text{me:} & \underline{073} \\ \underline{02:37:20} \\ \text{me:} & \underline{15M0} \\ \text{me:} & \underline{15M0} \\ \text{me:} & \underline{7R/M1} \\ \underline{7:} & \underline{47/27} \end{array}$	$\frac{5 - 5 - 5 - 5 - 5}{2 - 5 - 5 - 5}$
X	TO, THENOUS, ENA	5.R. 6	WE CHARACTER THAT AND	
N	012	5.K.		
/				
		Chrass		
-	1-1-1-1-27			ΠV
	QC-2			P
	(LIDA ALSO	9		
	$\mathbf{V}$			/ ,
		1		



QC-270-2-14MAR13



QC-270-3E-14MAR13



	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 QC-27/_LIDAR 38-26-09.596 086-57-30.970 361.580 sft Center of Asphalt  30°, Sunny	Project Number: 73112 Survey Date: $03/15/13$ Operator Name: $5tephen$ Schenegg Julian Day: 074 Session No. 3 Start Time: 9:33:07 End Time: 9:34:37 Data File Name: IMS 03 15 13 525 Type of Reciever: TRIMBLE R8-2 Serial # 471212 9959 Antenna Height: 6.89 554 to bottom of antenna mount
	onc DR	QC-271_LIDAR Gravel



QC-271_LIDAR-2-15MAR13



G-271_LiDAR-3W-15MAR13

Station Name: Latitude: Longitude: Ellip. Height:	38-18-55 086-49-34 450,147 s	- 418 -, 700 - 5+	Start Time: 05:43:40 End Time: 05:45:3
	LS	12	PAINT FRIPE
	QC-27	12	QC-272_LI



QC-272_LiDAR-2-14MAR13





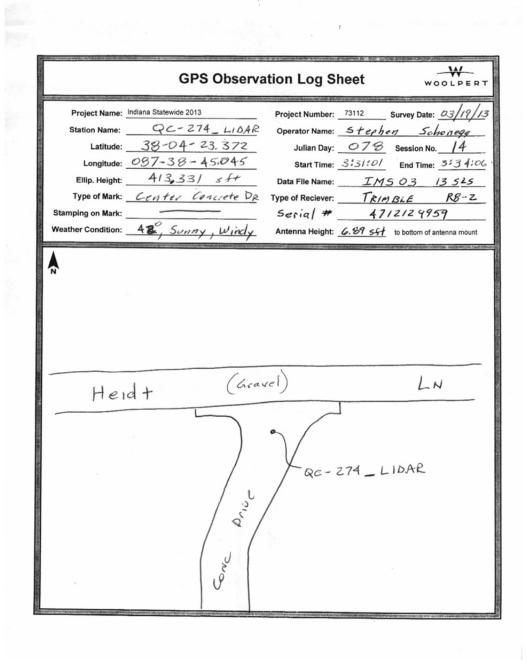
GPS Obse	rvation Log Sheet
Project Name:Indiana Statewide 2013Station Name: $QC - 273 _ LIDAR$ Latitude: $37 - 56 - 29$ , $/36$ Longitude: $087 - 48 - 31$ , $723$ Ellip. Height: $275.645 - 544$ Type of Mark:RR Spike In GrassStamping on Mark: $380^{\circ}_{j} S_{unny}, W_{INP}$	Julian Day:         078         Session No.         9           Start Time:         1306:54         End Time:         150:33           Data File Name:         IMS 0.3 19 13 525         Imstead 19 13 525           Type of Reciever:         Trim BLE         R8-33           Service         #         4.71212 4953
Catalina	DR
QC-273	3_LIDAR



QC-273_LiDAR-2-19MAR13



GC-2T3_LiDAR-3N-19MAR13





QC-274_LIDAR-2-19MAR13



GC-274_LiDAR-3N-19MAR13

1	GPS Observa	tion Log Sheet
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC - 275_LIDAR 38-00-59.034 087-22-06.533 356.380 sft Mag NAIL W/ WASHER Morley & Assaciates 48°, Mist, Cloudy	Project Number: 73112 Survey Date: 03/12 Operator Name: $5 + e_p hen$ Scheneg, Julian Day: 077 Session No. 4 Start Time: $10:34:32$ End Time: $10:34$ Data File Name: $IMS 0 3 / 8 / 3 5 2$ Type of Reciever: $T_{RIMBLE}$ R8- Serial # 47/2/29959 Antenna Height: 6.89 sct to bottom of artenna me
Wood	)	-275-LIDAR Springs

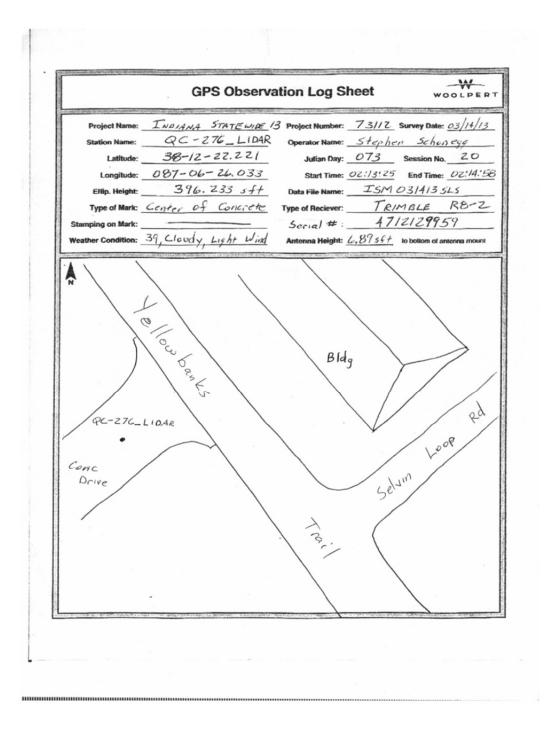


QC-275_LiDAR-2-18MAR13



QC-275_LiDAR-3E-18MAR13







QC-276_LiDAR-2-14MAR13



QC-276_LiDAR-3N-14MAR13



		vation Log SI		WOOLPER
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC-277 (and LID 37-57-10,251 087-10-04.696 291.520 Corner of Paint Strip 40°, Cloudy	AR) Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Secial #	077 Sessi 9:28:15 End IM5 03 TRIMBLE 471212	<u>Schonegg</u> on No. 1 Time: <u>913270</u> 1713 525 <u>R8-</u> 2 9959
S R 161	Co Rd		(	450 N



QC-277-2-18MAR13



QC-277-3S-18MAR13

Project Name: Indiana Statewide 2013	L.I.
Station Name: $QC - 278 L$	Project Number: 73112 Survey Date: 93/14/13
Latitude: 38-10-16.8	57 CP PTEN 521011299
Longitude: 036-49-54, 9	Session No. 4
Ellip. Height: 454, 362	End time: / / / / End time: / / / / /
Type of Mark: Center of c	
Stamping on Mark:	Seciel# 4717179959
Weather Condition: $30^{\circ}, 5_{v,n,ny}, L$	ight Wind Antenna Height: 6.87 54+ to bottom of antenna mount
N S. P. UN Drive CONC Drive	LIDAR
House	~ \\\



QC-278_LIDAR-2-14MAR13





	GPS Observa	tion Log S	heet WOOLPERT
Station Name: Latitude: Longitude: Ellip. Height: Type of Mark: Stamping on Mark:	Indiana Statewide 2013 QC - 279 _ LIDAR 38-08- 23.983 086 - 43 - 12.628 295.074 sft Center of Asph Rogd 60°, Sunny	Operator Name: Julian Day: Start Time: Data File Name: Type of Reciever: Secia / #*	73112         Survey Date:         03/16/13           5 + ephen         5 chonegg           075         Session No.         2           9:36:20         End Time:         9:37:50           IMS 03/6/13 525         IMS 03/6/13 525           TRIMBLE         RB-2           47/2/2 4959         6.89 551           to bottom of antenna mount
House	Roth DR	Dak	House QC-279_LIDAR



QC-279_LiDAR-2-16MAR13



QC-279_LiDAR-3N-16MAR13



Station Name: Latitude: Longitude: Ellip. Height: Type of Mark:	Indiana Statewide 2013 QC-280_LIDAR 37-58-58.110 086-44-47.793 408.919 Center of Gone Dr 	Julian Day: Start Time: Data File Name: Type of Reciever:	73112         Survey I           Stephen         074         Sessio           06:07:32         End T           IMS 03         TRIMBLE           471212         471212           6.89         564         to bottor	n No. 24 ime: 06:05 1513 525 RB-3 7959
ري م	QC-280 LIDAR		Hou	5 E
FRANK	LIN			57



QC-280_LiDAR-2-15MAR13



QC-280_LiDAR-3E-15MAR13



GPS Observation Log Sheet	
Project Name:Indiana Statewide 2013Station Name:QC - 283Latitude:38° 38′ 50.02″ NLongitude:87° 31′ 51.69″ WEllip. Height:318.93 SFFType of Mark:CORNER CONCRETEStamping on Mark:N/AWeather Condition:40° CLEAR	Project Number:73112Survey Date: $\bigcirc 3 \land A \land R \land Z \land C$ Operator Name:Ben ChristieJulian Day: $\bigcirc 9 \land 3$ Session No. $N \land A \land R \land T \land R \land R$
DOLL'S MOTEL DOLL'S MOTEL DOLL'S MOTEL QC-283 FLAT SURFACE PID & Lidar	

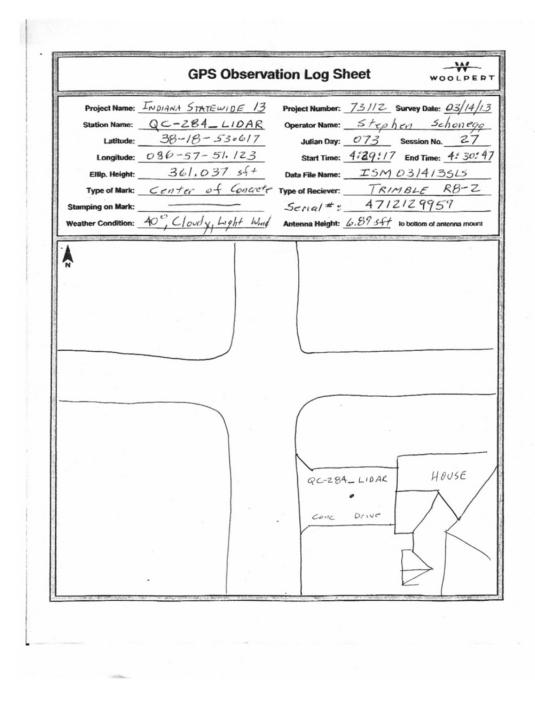


QC-283_2_03APR2013



QC-283_3N_03APR2013

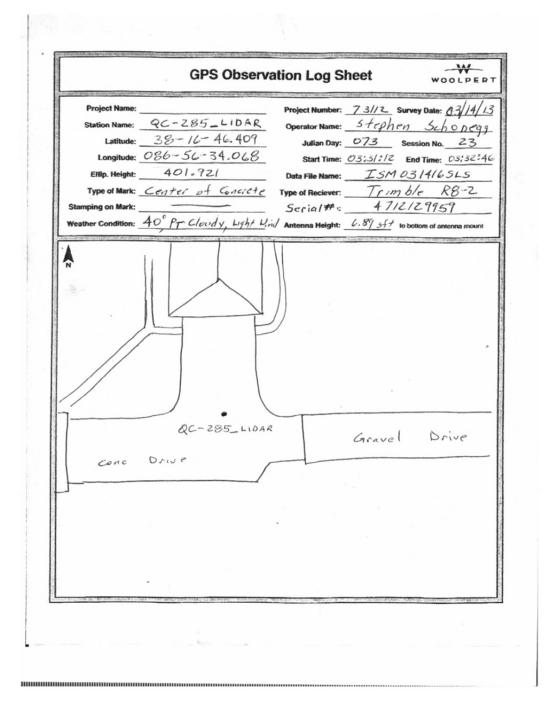














QC-285_LiDAR-2-14MAR13





QC-285_LiDAR-3N-14MAR13