

AN N V 5 COMPANY



Work Package: 183663 Work Unit: 209900

Prepared for: **USGS** science for a changing world

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2020

Submitted: January 11, 2021

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Appendix A: Survey Report



1. Summary / Scope

1.1. Summary

This report contains a summary of the Ashland Iron Florence 2019 D19, Work Unit 209900 LiDAR acquisition task order, issued by USGS under their Contract G16PC00016 on September 23, 2019. The task order yielded a project area covering approximately 111 square miles over Wisconsin. The intent of this document is only to provide specific validation information for the data acquisition/collection, processing, and production of deliverables completed as specified in the task order.

1.2. Scope

Aerial topographic LiDAR was acquired using state of the art technology along with the necessary surveyed ground control points (GCPs) and airborne GPS and inertial navigation systems. The aerial data collection was designed with the following specifications listed in Table 1 below.

Average Point Density	Flight Altitude (AGL)	Field of View	Minimum Side Overlap	RMSEz

58.52°

20%

Table 1. Originally Planned LiDAR Specifications

1.3. Coverage

2 pts / m²

The QL2 boundary covers approximately 111 square miles over Ashland County, Wisconsin . A buffer of 100 meters was created to meet task order specifications. Project extents are shown in Figure 1.

1.4. Duration

QL 2 LiDAR data was acquired on May 5, 2020 in one total lift. See "Section: 2.4. Time Period" for more details.

1.5. Issues

There were no major issues to report for this project.

2300 m

≤ **10 cm**



WI_AshlandIronFlorence_2019_D19 Work Unit 209900 Projected Coordinate System: WISCRS Ashland County Horizontal Datum: NAD83 (2011) Vertical Datum: NAVD88 (GEOID 12B) Units: Feet			
Lidar Point Cloud	Classified Point Cloud in LAS 1.4 format		
Rasters	 2-Foot GeoTiffs Hydroflattened Bare Earth Model (DEM) Highest Hit Digital Surface Model (DSM) Highest Hit Digital Surface Model (DSM) Mosaic Intensity Images 		
Vectors	 Shapefiles (*.shp) Project Boundary LiDAR Tile Index Coverage polygon ESRI Geodatabase (*.gdb) Continuous Hydro-flattened Breaklines 		
Reports	Reports in PDF format • Focus on Delivery • Lidar Processing Report		
Metadata	 XML Files (*.xml) Breaklines Classified Point Cloud DEM Intensity Imagery DSM 		



WI_AshlandIronFlorence_2019_D19 Work Unit 209900 Boundary







2. Planning / Equipment

2.1. Flight Planning

Flight planning was based on the unique project requirements and characteristics of the project site. The basis of planning included: required accuracies, type of development, amount / type of vegetation within project area, required data posting, and potential altitude restrictions for flights in project vicinity.

Detailed project flight planning calculations were performed for the project using RiPARAMETER planning software. Planned flight lines are shown in Figure 2.

2.2. LiDAR Sensor

Quantum Spatial utilized a Riegl VQ1560i LiDAR sensor (Figure 3), serial number 4040, for lidar data acquisition.

The Riegl 1560i system has a laser pulse repetition rate of up to 2 MHz resulting in more than 1.3 million measurements per second. The system utilizes a Multi-Pulse in the Air option (MPIA). The sensor is also equipped with the ability to measure up to an unlimited number of targets per pulse from the laser.

A brief summary of the aerial acquisition parameters for the project are shown in the LiDAR System Specifications in Table 2.



WI_AshlandIronFlorence_2019_D19 Work Unit 209900 Planned Flight Lines







Table	2. l	_iDAR	System	Specifications
-------	------	-------	--------	----------------

		Riegl VQ1560i
Terrain and	Flying Height	2300 m
Aircraft Scanner	Recommended Ground Speed	140 kts
Cooppor	Field of View	58.52°
Scanner	Scan Rate Setting Used	320 Hz
Laser	Laser Pulse Rate Used	700 kHz
	Multi Pulse in Air Mode	1
Coverage	Full Swath Width	2577 m
Coverage	Line Spacing	2062 m
Point Spacing	Average Point Spacing	0.63 m
and Density	Average Point Density	2.52 pts / m ²

Figure 3. Riegl VQ1560i LiDAR Sensor



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2.3. Aircraft

All flights for the project were accomplished through the use of customized planes. Plane type and tail numbers are listed below.

LiDAR Collection Planes

• Piper Navajo (twin-piston), Tail Number: N22GE

These aircraft provided an ideal, stable aerial base for LiDAR acquisition. These aerial platforms have relatively fast cruise speeds, which are beneficial for project mobilization / demobilization while maintaining relatively slow stall speeds, proving ideal for collection of high-density, consistent data posting using a state-of-the-art Riegl VQ1560i LiDAR system. Some of Quantum Spatial's operating aircraft can be seen in Figure 4 below.



Figure 4. Some of Quantum Spatial's Planes

Ashland Iron Florence LiDAR Project - Work Unit 209900

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2.4. Time Period

Project specific flights were conducted on May 5, 2020. One aircraft lift was completed. Accomplished lifts are listed below.

• 05052020A (SN4040,N22GE)



3. Processing Summary

3.1. Flight Logs

Flight logs were completed by LIDAR sensor technicians for each mission during acquisition. These logs depict a variety of information, including:

- Job / Project #
- Flight Date / Lift Number
- FOV (Field of View)
- Scan Rate (HZ)
- Pulse Rate Frequency (Hz)
- Ground Speed
- Altitude
- Base Station
- PDOP avoidance times
- Flight Line #
- Flight Line Start and Stop Times
- Flight Line Altitude (AMSL)
- Heading
- Speed
- Returns
- Crab

Notes: (Visibility, winds, ride, weather, temperature, dew point, pressure, etc).



3.2. LiDAR Processing

Applanix + POSPac software was used for post-processing of airborne GPS and inertial data (IMU), which is critical to the positioning and orientation of the LiDAR sensor during all flights. Applanix POSPac combines aircraft raw trajectory data with stationary GPS base station data yielding a "Smoothed Best Estimate Trajectory" (SBET) necessary for additional post processing software to develop the resulting geo-referenced point cloud from the LiDAR missions.

During the sensor trajectory processing (combining GPS & IMU datasets) certain statistical graphs and tables are generated within the Applanix POSPac processing environment which are commonly used as indicators of processing stability and accuracy. This data for analysis include: max horizontal / vertical GPS variance, separation plot, altitude plot, PDOP plot, base station baseline length, processing mode, number of satellite vehicles, and mission trajectory.

Point clouds were created using the RiPROCESS software. The generated point cloud is the mathematical three dimensional composite of all returns from all laser pulses as determined from the aerial mission. The point cloud is imported into GeoCue distributive processing software. Imported data is tiled and then calibrated using TerraMatch and proprietary software. Using TerraScan, the vertical accuracy of the surveyed ground control is tested and any bias is removed from the data. TerraScan and TerraModeler software packages are then used for automated data classification and manual cleanup. The data are manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler.

DEMs and Intensity Images are then generated using proprietary software. In the bare earth surface model, above-ground features are excluded from the data set. Global Mapper is used as a final check of the bare earth dataset.

Software	Version
Applanix + POSPac	8.4
RIPROCESS	1.8.6
GeoCue	2017.1.14.1
Global Mapper	19.1;20.1
TerraModeler	20.004
TerraScan	20.011
TerraMatch	20.004

Finally, proprietary software is used to perform statistical analysis of the LAS files.



3.3. LAS Classification Scheme

The classification classes are determined by the USGS Version 1.3 specifications and are an industry standard for the classification of LIDAR point clouds. All data starts the process as Class 1 (Unclassified), and then through automated classification routines, the classifications are determined using TerraScan macro processing.

The classes used in the dataset are as follows and have the following descriptions:

	Classification Name	Description
1	Processed, but Unclassified	Laser returns that are not included in the ground class, or any other project classification
2	Bare earth	Laser returns that are determined to be ground using automated and manual cleaning algorithms
3	Low Vegetation	Points that fall on vegetation (0.5ft-6ft)
4	Medium Vegetation	Points that fall on vegetation (6ft-30ft)
5	High Vegetation	Points that fall on vegetation (>30ft)
6	Buildings	Points falling on buildings, structures inside of water bodies, docks, and piers.
7	Low Noise	Laser returns that are often associated with scaterring from reflective surfaces, or artificial points below the ground surface
9	Water	Laser returns that are found inside of hydro features
17	Bridge Deck	Laser returns falling on bridge decks
18	High Noise	Laser returns that are often associated with birds or artificial points above the ground surface
20	Ignored Ground	Ground points that fall within the given threshold of a collected hydro feature.

Table 3. LAS Classifications

3.4. Classified LAS Processing

The bare earth surface is then manually reviewed to ensure correct classification on the Class 2 (Ground) points. After the bare- earth surface is finalized; it is then used to generate all hydrobreaklines through heads-up digitization.

All ground (ASPRS Class 2) LiDAR data inside of the Lake Pond and Double Line Drain hydro



flattening breaklines were then classified to water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 3 feet was also used around each hydro flattened feature to classify these ground (ASPRS Class 2) points to Ignored ground (ASPRS Class 20). All Lake Pond Island and Double Line Drain Island features were checked to ensure that the ground (ASPRS Class 2) points were reclassified to the correct classification after the automated classification was completed.

All overlap data was processed through automated functionality provided by TerraScan to classify the overlapping flight line data to approved classes by USGS. The overlap data was identified using the Overlap Flag, per LAS 1.4 specifications.

All data was manually reviewed and any remaining artifacts removed using functionality provided by TerraScan and TerraModeler. Global Mapper is used as a final check of the bare earth dataset. GeoCue was then used to create the deliverable industry-standard LAS files for all point cloud data. Quantum Spatial's proprietary software was used to perform final statistical analysis of the classes in the LAS files, on a per tile level to verify final classification metrics and full LAS header information.

3.5. Hydro-Flattened Breakline Processing

Class 2 LiDAR was used to create a bare earth surface model. The surface model was then used to heads-up digitize 2D breaklines of Inland Streams and Rivers with a 100 foot nominal width and Inland Ponds and Lakes of 2 acres or greater surface area.

Elevation values were assigned to all Inland Ponds and Lakes, Inland Pond and Lake Islands, Inland Streams and Rivers and Inland Stream and River Islands using TerraModeler functionality.

Elevation values were assigned to all Inland streams and rivers using Quantum Spatial's proprietary software.

All ground (ASPRS Class 2) LiDAR data inside of the collected inland breaklines were then classified to water (ASPRS Class 9) using TerraScan macro functionality. A buffer of 3 feet was also used around each hydro flattened feature. These points were moved from ground (ASPRS Class 2) to Ignored Ground (ASPRS Class 20).

The breakline files were then translated to Esri file geodatabase format using Esri conversion tools.

Breaklines are reviewed against lidar intensity imagery to verify completeness of capture. All breaklines are then compared to TINs (triangular irregular networks) created from ground only points prior to water classification. The horizontal placement of breaklines is compared to terrain features and the breakline elevations are compared to lidar elevations to ensure all breaklines match the lidar within acceptable tolerances. Some deviation is expected between breakline and lidar elevations due to monotonicity, connectivity, and flattening rules that are enforced on the breaklines. Once completeness, horizontal placement, and vertical variance is reviewed, all breaklines are reviewed for topological consistency and data integrity using a combination of Esri Data Reviewer tools and proprietary tools.



3.6. Hydro-Flattened Raster DEM Processing

Class 2 LiDAR in conjunction with the hydro breaklines were used to create a 2-foot Raster DEM. Using automated scripting routines within proprietary software, a GeoTIFF file was created for each tile. Each surface is reviewed using Global Mapper to check for any surface anomalies or incorrect elevations found within the surface.

3.7. Intensity Image Processing

GeoCue software was used to create the deliverable intensity images. All overlap classes were ignored during this process. This helps to ensure a more aesthetically pleasing image. The GeoCue software was then used to verify full project coverage as well. GeoTIFF files with a cell size of 2-foot were then provided as the deliverable for this dataset requirement.

3.8. Raster DSM Processing

First return LiDAR points were used to create a 2 foot first-return raster DSM. Using automated scripting routines within ArcMap, GeoTIFF files were created for each tile. Each surface is reviewed using Global Mapper to check for any surface anomalies or incorrect elevations found within the surface.



WI_AshlandIronFlorence_2019_D19 Work Unit 209900 Tile Layout



Figure 5. Lidar Tile Layout





4. Project Coverage Verification

Coverage verification was performed by comparing coverage of processed .LAS files captured during project collection to generate project shape files depicting boundaries of specified project areas. Please refer to Figure 6.



WI_AshlandIronFlorence_2019_D19 Work Unit 209900 Lidar Coverage



Figure 6. Lidar Coverage



5. Ground Control and Check Point Collection

Quantum Spatial completed a field survey of 20 ground control (calibration) points along with 46 blind QA points in Non-Vegetated and Vegetated land cover classifications as an independent test of the accuracy of this project.

A combination of precise GPS surveying methods, including static and RTK observations were used to establish the 3D position of ground calibration points and QA points for the point classes above. GPS was not an appropriate methodology for surveying in the forested areas during the leaf-on conditions for the actual field survey (which was accomplished after the LiDAR acquisition). Therefore the 3D positions for the forested points were acquired using a GPS-derived offset point located out in the open near the forested area, and using precise offset surveying techniques to derive the 3D position of the forested point from the open control point. The explicit goal for these surveys was to develop 3D positions that were three times greater than the accuracy requirement for the elevation surface. In this case of the blind QA points the goal was a positional accuracy of 5 cm in terms of the RMSE.

For more information, see the Survey Report in Appendix A.

The required accuracy testing was performed on the LiDAR dataset (both the LiDAR point cloud and derived DEM's) according to the USGS LiDAR Base Specification Version 1.3.

5.1. Calibration Control Point Testing

Figure 7 shows the location of each bare earth calibration point for the project area. TerraScan was used to perform a quality assurance check using the LiDAR bare earth calibration points. The results of the surface calibration are not an independent assessment of the accuracy of these project deliverables, but the statistical results do provide additional feedback as to the overall quality of the elevation surface.

5.2. Point Cloud Testing

The project specifications require that only Non-Vegetated Vertical Accuracy (NVA) be computed for raw lidar point cloud swath files. The required accuracy (ACCz) is: 19.6 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSE of 10 cm in the "bare earth" and "urban" land cover classes. The NVA was tested with 26 checkpoints located in bare earth and urban (non-vegetated) areas. These check points were not used in the calibration or post processing of the lidar point cloud data. The checkpoints were distributed throughout the project area and were surveyed using GPS techniques. See survey report for additional survey methodologies.

Elevations from the unclassified lidar surface were measured for the x,y location of each check point. Elevations interpolated from the lidar surface were then compared to the elevation values of the surveyed control points. AccuracyZ has been tested to meet 19.6 cm or better Non-Vegetated Vertical Accuracy at 95% confidence level using RMSE(z) x 1.9600 as defined by the



National Standards for Spatial Data Accuracy (NSSDA); assessed and reported using National Digital Elevation Program (NDEP)/ASRPS Guidelines.

5.3. Digital Elevation Model (DEM) Testing

The project specifications require the accuracy (ACCz) of the derived DEM be calculated and reported in two ways:

1. The required NVA is: 19.6 cm at a 95% confidence level, derived according to NSSDA, i.e., based on RMSE of 10 cm in the "bare earth" and "urban" land cover classes. This is a required accuracy. The NVA was tested with 26 checkpoints located in bare earth and urban (non-vegetated) areas. See Figure 8.

2. Vegetated Vertical Accuracy (VVA): VVA shall be reported for "brushlands/low trees" and "tall weeds/crops" land cover classes. The target VVA is: 29.4 cm at the 95th percentile, derived according to ASPRS Guidelines, Vertical Accuracy Reporting for Lidar Data, i.e., based on the 95th percentile error in all vegetated land cover classes combined. This is a target accuracy. The VVA was tested with 20 checkpoints located in tall weeds/ crops and brushlands/low trees (vegetated) areas. The checkpoints were distributed throughout the project area and were surveyed using GPS techniques. See Figure 9.

AccuracyZ has been tested to meet 19.6 cm or better Non-Vegetated Vertical Accuracy at 95% confidence level using RMSE(z) x 1.9600 as defined by the National Standards for Spatial Data Accuracy (NSSDA); assessed and reported using National Digital Elevation Program (NDEP)/ASRPS Guidelines.

A brief summary of results are listed below.

	Target	Measured	Point Count
Raw NVA	0.196 m	0.0525 m	26
NVA	0.196 m	0.0538 m	26
VVA	0.294 m	0.1198 m	20



WI_AshlandIronFlorence_2019_D19 Calibration Points



Figure 7. Calibration Control Point Locations



WI_AshlandIronFlorence_2019_D19 NVA Points



Figure 8. QC Checkpoint Locations - NVA



WI_AshlandIronFlorence_2019_D19 VVA Points



Figure 9. QC Checkpoint Locations - VVA



Project Report Appendices

The following section contains the appendices as listed in

the WI_AshlandIronFlorence_2019_D19

LiDAR Project Report.



Appendix A

Survey Report

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January 11, 2021

Survey Report QSI Ashland County Control Ayres Project No. 72-0227.15

Client:	Quantum Spatial
Type of Survey:	LIDAR Control Survey (USGS Specs)
Project Manager:	Zach Nienow
Survey Project Manager:	Jerry Ripley
RLS of Record:	
Crew Chief:	Ken Clark
Additional Field Crew:	
Project Start Date:	10/14/19
Report Date:	11/06/19

Control Summary

Horizontal Datum:	North American Datum of 1983, 2011 Adjustment – NAD83 (2011)
Vertical Datum:	North American Vertical Datum of 1988, 2012 Adjustment – NAVD88
	(2012), GEOID 12B
Rectangular Coordinate System:	Wisconsin Coordinate Reference System, Ashland Zone – WisCRS-
	Ashland
Used NGS Control?	Yes No
List any NGS control points used:	AF9933, AF9952, AF9964, AF9969, AG9554, DN3612, DO6199, RM0893
Summary of control checks and	(See Field Notes for control checks on NGS monuments – No
calibration (if applicable):	calibration was needed)
Survey Methods Used:	WISCORS Network through VRS connection was the origination of the control used with checks and calibration as discussed. GPS methods were used where VRS connection and obstructions permitted. Other areas used control set by VRS RTK methods and robotic total station methods were used. OPUS observations of a 45 minute minimum were taken on control points where necessary.
Equipment Used:	GPS Trimble R8-3 GNSS S/N 5239497193 (Ayres -72.22)
	Total station Trimble S6 S/N RSC22010 (Ayres- 75.41)
	Data Collector Trimble TSC3 S/N RSOPC12821 (Ayres- 75.51)
	Data Collector Trimble TSC3 S/N 517C22013 (Ayres- 75.37)

Utilities

Otinites							
Diggers Hotline Ticket #:	N/A						
Locator Contact Info:	N/A						
General Notes:							

Recorded appropriate: NVA (Bare Earth & Urban) and VVA (Forested,Tall Weed/Crop). Took 5 pictures of each point – one from each cardinal direction, and one of the rod tip. Point BE 30 was moved west due to data connectivity. Other points were moved slightly to accommodate slope or water requirements.

Survey Methods (continued)

All work was performed in and referenced to NAD83 (2011), NAVD 88(2012), Geoid 12B, WISCRS, Ashland County Zone in US Survey feet.

Established horizontal and vertical coordinate values on the points by a minimum of two – 180 epoch observations with separate initializations using RTK GPS and the WISCORS network. The resultant coordinates and elevations provided in the deliverables are an average of the two observations.

Check shots were taken on numerous NGS control points (see field notes) to verify that the values obtained are consistent with the datum/adjustment as described herein and meet the ±3 centimeter vertical accuracy requirement at the 95% confidence level.

Points not able to be directly occupied by GPS means were measured using Total Station methods from control point pairs set utilizing GPS methods outlined above.

Traffic Observations

N/A

Summary of RLS Decisions (Right of Way, Property Lines)

N/A

Survey Data Not Collected

None

Surveyor's Certificate

Surveyor's Certificate

I, Gerald C. Ripley, being a Licensed Professional Land Surveyor in the State of Wisconsin, hereby certify to the best of my professional knowledge and belief that the survey methodologies and results shown on the attached report for the WI Ashland, Iron, Florence 2019 USGS Lidar project survey deliverables submitted to QSI on November 14, 2019, were performed and obtained utilizing commonly acceptable survey standards, practices and procedures. The survey portion of this project for Ashland County was accomplished on October 17, 18, 21, 22, 24 and 25, 2019.

I have reviewed the accuracy statements as part of my oversight and found them to meet the National Standards for Spatial Accuracy (NSSDA) required by this project.

Gerald C. Ripley Professional Land Surveyor 2371 December 21, 2020

Expires: January 31, 2022

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FIELD DATA SHEET

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PHOTO: South

JOB REFERENCE

Project No.

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OPERA	TOR		K. Cla	rk		NAD	83(CONUS)	PROJECT WISCRS-A	COORDINATE/E	ELEVAT TY, US	TION SY FT; NA	(STEM VD88, (GEOID1	2b, USFT	
						NORTHIN	G	2360)81.222					ELEV.	
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				Projec	t No.	72	2-0227.15							
STATE		WI]	COUNTY	Ashland Country						USA		
OPERA	OPERATOR K. Clark				NAD	PROJECT COORDINATE/ELEVAT NAD83(CONUS),WISCRS-ASHLAND COUNTY, US					GEOID1	2b, USFT		
						NORTHING	3	2346	66.380				ELEV.	
RECE	EIVER M	NODEL				EASTING		5278	800.218				1189.898	
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STATE		W	I]	COUNTY	Ash	land			Country				USA	
OPERA	TOR		K. Cla	rk		NA	D83(C	P CONUS),W	ROJECT	COORDINATE/E SHLAND COUN	E/ELEVATION SYSTEM INTY, USFT; NAVD88, GEOID12b, US			2b, USFT	
						NORTHI	NG		2282	92.725	EL				ELEV.
RECE		MODEL				EASTIN	G		5576	76.466					1238.222
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				Projec	t No.	72-0227.15					_				
STATE		W	′ I]	COUNTY	Ashl		USA							
OPERA	PERATOR K. Clark					NAD	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USF								
						NORTHIN	G	1881	115.822				ELEV.		
RECE	EIVER	MODEL				EASTING	3	5980)54.674				1590 351		
RE	CEIVE	R S/N									-	1	1000.001		
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l	~							PUB.	CONTROL		BASE	STATIO	N		
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FIELD DATA SHEET

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				Projec	t No.	72-0227.15					_				
STATE		WI			COUNTY	Ashl	land			ι	USA				
OPERA	PERATOR K. Clark					NAD	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS).WISCRS-ASHLAND COUNTY. USFT: NAVD88. GEOID12b. U								
						NORTHIN	IG	1889	56.654				ELEV.		
RECE	EIVER I	MODEL				EASTING	G	5661	55.968				1499.468		
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JOB REFERENCE

Project No.

GPS CONTROL FIELD DATA SHEET

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STATE		W	l		COUNTY	Ashla	and	Country			USA				
OPERA	TOR		K. Cla	rk		NAD	83(CONUS)	PROJECT COORDINATE/ELEVATION SYSTEM S(CONUS), WISCRS-ASHLAND COUNTY, USFT: NAVD88, GEOID12b, USFT							
						NORTHIN	G	2044	128.408	3			ELEV.		
RECE						EASTING	•	5210)34.329				1498.141		
RE	CEIVEI	K 5/N		OBS. A	OBS. B				OBS. A	OB	S. B				
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[ANTEN	NA HEIGHT (V	ERTICAL)											
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GPS CONTROL

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	JOB REFERENCE Project No.	35275_WI_AshlandIronFlorence_2 72-0227.15	2019_D19	Point ID	CAL_22
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				JOB REFE	ERENCE	35275_W	I_AshlandI	ronFlorenc	e_2019_D19	Poir	Point ID CAL 23				
				Projec	t No.	72-0227.15									
STATE		WI			COUNTY	Ashland Country							USA		
OPERATOR K. Clark					NAD	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USF							2b, USFT		
						NORTHIN	G	1952	266.369					ELEV.	
						EASTING 494023.956								1472.684	
RECEIVER S/N				OPS B						OPS P					
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FIELD DATA SHEET

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				JOB REF	ERENCE	35275_W	/I_Ashla	andIronFlorence	e_2019_D19	Point ID CAL		AL 24		
				Projec	t No.	72-0227.15								
STATE		WI			COUNTY	Ashland Country						USA		
OPERA	TOR		K. Cla	rk		NAD	PROJECT COORDINATE/ELEVATION SYSTE NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD8					I GEOID1:	2b, USFT	
						NORTHIN	IG	1672	05.763				ELEV.	
RECE		MODEL	Trimbl	e R8-3		EASTING	G	4953	03.426				1/39 003	
RECEIVER S/N 5239497193											1430.993			
				OBS. A	OBS. B		STAR	С	DBS. A	OB	S. B			
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FIELD DATA SHEET

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	Project No.	72-0227.15		
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				Projec	t No.		72-0227.1	5					
STATE		W	VI		COUNTY	Ash	land		Country			USA	
OPERA	TOR		K. Cla	rk		NAD	083(CONU	PROJECT	COORDINATE/I SHLAND COUN	ELEVATION TY, USFT;	N SYSTEN NAVD88,	I GEOID1	2b, USFT
						NORTHIN	IG	1636	61.411				ELEV.
RECEIVER MODEL						EASTIN	EASTING 522911.936						1493.814
RECEIVER S/N OBS. A					OPS P		OBS. A				с D	I	
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FIELD DATA SHEET

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				Projec	t No.		72-02	27.15						
STATE		WI]	COUNTY	Ash	land		Country			USA		
OPERA	TOR		K. Cla	rk		PROJEC NAD83(CONUS),WISCRS			ROJECT COORDINATE/ELEVATION SYS ISCRS-ASHLAND COUNTY, USFT; NAVI			STEM		
							1G	164	539.616				ELEV.	
RECE		MODEL				EASTIN	G	566	583.810				1525.811	
RECEIVER S/N									-	1				
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OPERA	TOR		K. Cla	rk		PROJECT C NAD83(CONUS),WISCRS-AS			JECT COORDINATE/ELEVATION SYSTEM RS-ASHLAND COUNTY, USFT; NAVD88, G				2b, USFT	
						NORTHIN	IG	160	510.604		,		ELEV.	
RECE		NODEL				EASTIN	G				1535.199			
RECEIVER S/N														
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			Projec	t No.	7	2-0227.15						-			
	W	/I		COUNTY	Ashla	and		Country		USA					
TOR		K. Cla	rk		NAD	83(CONUS),	PROJECT WISCRS-A	COORDINATE/I SHLAND COUN	ELEVATION TY, USFT; I	SYSTEN NAVD88,	I GEOID1	2b, USFT			
					NORTHING 150085.667			85.667				ELEV.			
EIVER	MODEL				EASTING	i	6373	64.644				1653.784			
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	ANTE	NNA HEIGHT (V	ERTICAL)												
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	JOB REFERENCE	35275_WI_AshlandIronFlor	ence_2019_D19	Point ID	CAL 28
	Project No.	72-0227.15			
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				Projec	t No.		72-02	227.15			Point ID		C A	AL_34		
STATE		W	l		COUNTY	Ash	land			Country			USA			
OPERA	TOR		K. Cla	rk		NA	PROJECT COORDINATE/EL NAD83(CONUS),WISCRS-ASHLAND COUNTY				ELEVATION TY. USFT:	LEVATION SYSTEM 'Y, USFT; NAVD88, GEOID12b, USFT				
						NORTHING 111038.773			38.773				ELEV.			
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RECEIVER S/N																
05		•	DATE	OBS. A	OBS. B		ST	TART	C	OBS. A	OBS	. B				
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	JOB REFERENCE	35275_WI_AshlandIronFlorence	e_2019_D19	Point ID	CAL_34
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				Projec	t No.		72-0227.1	5					07		
STATE		WI			COUNTY	Ash	land		Country		USA				
OPERA	TOR		K. Cla	rk		NAE	083(CONUS	PROJECT COORDINATE/ELEV IS),WISCRS-ASHLAND COUNTY,			LEVATION SYSTEM Y, USFT; NAVD88, GEOIE			2b, USFT	
	·					NORTHIN	IG	112895.603						ELEV.	
RECE	EIVER	MODEL	Trimbl	le R8-3		EASTING			598283.459					1550 112	
RECEIVER S/N 5239497193														1550.115	
	OBS. A						START	(OBS. A		OBS. B				
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FIELD DATA SHEET

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	JOB REFERENCE	35275_V	VI_AshlandIronFlorer	1ce_2019_D19	Point ID	CAL 35
	Project No.		72-0227.15			-
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CAL 35						

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				Projec	t No.		72-022	27.15		Poir	וווס		CA	\L_30	
STATE		W	/I		COUNTY	Ash	land		Country				USA		
OPERA	TOR		K. Cla	rk		NAC	D83(CC	PROJECT DNUS),WISCRS-A	COORDINATE/	ELEVA TY, U	TION SY SFT; NA	YSTEM VD88,	i GEOID1	2b, USFT	
						NORTHIN	1G	116	116919.111					ELEV.	
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FIELD DATA SHEET

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	Project No.	72-0227.15			
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				Projec	t No.		72-02	227.15			POI			04	AL_37
STATE		WI]	COUNTY	Ash	land			Country				USA	
OPERA	TOR		K. Cla	rk		NAI	D83(C	PI ONUS),W	ROJECT ISCRS-AS	COORDINATE/E SHLAND COUN	ELEVA TY, U	ATION SY SFT; NA	YSTEM VD88,	l GEOID1:	2b, USFT
						NORTHIN	IG		1172	51.289					ELEV.
RECE	EIVER	MODEL				EASTIN	G		5074	49.563					1462.599
RE	CEIVE	R S/N		OBS A	OBS, B				0	BS. A		OBS. B			
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	JOB REFERENCE	35275_WI_AshlandIronFlorence_2019_D19	Point ID	CAL_37
	Project No.	72-0227.15		
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				JOB REF	ERENCE	35275_	_WI_A	shlandlr	onFlorence	e_2019_D19	Point ID		CA	AL_57	
				Projec	t No.		72-0	227.15							
STATE WI COUNTY				COUNTY	/ As	shland	ł		Country			USA			
OPERA	TOR		K. Cla	rk		N	AD83(0	CONUS),	PROJECT WISCRS-A	COORDINATE/	ELEVATION TY, USFT; I	SYSTEN NAVD88,	I GEOID1	2b, USFT	
						NORTH	IING		1430	41.224				ELEV.	
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ASSOCIATES JOB REFERENCE Project No.						35275_WI_A	Point ID	Point ID BE_02					
STATE		WI			COUNTY	Ashland		Country			USA		
OPERA	TOR		K. Cla	rk		NAD83(0	PROJECT	COORDINATE/	ELEVATION	SYSTEN	I GEOID1	2b. USFT	
						NORTHING	2794	11.139				ELEV.	
RECI	EIVER	MODEL				EASTING	4956	30.521				845.065	
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				Projec	t No.	7	2-0227.15							-	
STATE WI COUNTY				Ashla	and		Country				USA				
OPERA	TOR		K. Cla	rk		NAD	83(CONUS)	PROJECT WISCRS-A	COORDINATE/I SHLAND COUN	ELEVAT TY, US	FION SY FT; NA	(STEM VD88,	GEOID1	2b, USFT	
						NORTHIN	G	2361	01.882					ELEV.	
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				Projec	t No.		72-0227.15								
STATE		WI			COUNTY	Ash	land		Country	USA					
OPERA	TOR		K. Cla	rk		NAD	D83(CONUS)	PROJECT	COORDINATE/	ELEVATI TY, USF	2b, USFT				
						NORTHIN	IG	2347	40.564		ELEV.				
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OPERA	TOR		K. Cla	ırk		NAI	D83(CONUS)	PROJECT ,WISCRS-A	COORDINATE/E SHLAND COUN	ELEVAT TY, US	2b, USFT						
						NORTHIN	NG	1881	00.422		ELEV.						
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	~			JOB REFE	ERENCE	35275_W	I_Ashlandlı	onFlorenc	e_2019_D19	Point	t ID		в	E 18	
				Projec	t No.	7	2-0227.15								
STATE		WI			COUNTY	Ashla	and		Country	USA					
OPERA	TOR		K. Cla	rk		NAD	83(CONUS)	PROJECT	COORDINATE/	:/ELEVATION SYSTEM NTY, USFT; NAVD88, GEOID12b, USF				2b, USFT	
						NORTHIN	G	1890	23.029					ELEV.	
RECI	EIVER	MODEL				EASTING	;	5661	43.900		1498.616				
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	RTK		DAY OF YEAR	290	-					- X LOCA					
MTRS	/FT			(SEANT)			METE	ERS/FEET				ABC	OVE GR	OUND	
				FIXED HG	т.		METE	RS/FEET				BEL	.OW GR	OUND	
		ANTENN	IA HEIGHT (V	ERTICAL)											
MTRS	/FT		5.00 F	Т				AERIA	L TARGET		F	рнот	0 I.D.		
	X	MEASURE	D	FIXED HG	т			PUB. B		-	XN		CONTRO		
								PUB.	CONTROL		E	BASE	STATIO	N	
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		BE	18						BE 18						



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				JOB REF	ERENCE	35275_WI_	Ashlandlr	onFlorence	e_2019_D19	Poir	nt ID		В	E 19	
				Projec	t No.	72	2-0227.15								
STATE		W	Ι]	Ashla	nd		Country	USA						
OPERA	TOR		K. Cla	rk		NAD8	3(CONUS),	PROJECT WISCRS-A	COORDINATE/	ELEVA TY, U	TION S SFT; NA	YSTEM VD88,	l GEOID1:	2b, USFT	
						NORTHING		2044	09.134					ELEV.	
RECI	EIVER	MODEL]	EASTING		5210	39.467					1498.229	
RE	CEIVE	R S/N		000 4	000			~			OBC D				
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		ANTE	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:		LUSH				
MTRS	/FT						METE	RS/FEET		ABOVE GROUND				OUND	
				FIXED HG	т.		METE	RS/FEET				BEI	LOW GR	OUND	
		ANTEN	INA HEIGHT (V	'ERTICAL)						п г					
MTRS	/FT		5.00 F	Т				AERIA				РНОТ	O I.D.		
	X	MEASUR	RED	FIXED HG	T			PUB. BI			X	NEW	CONTRO		
								PUB.	CONTROL			BASE	STATIO	N	
Туре:	BAR	E EARTH	1												
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		E	BE 19						BE 19						



BE 19

GPS CONTROL

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FIELD DATA SHEET

JOB REFERENCE	35275_W	/I_AshlandIronFlo	rence	e_2019_D19	Point ID	BE 1	9
Project No.		72-0227.15					
		PHOTO: West					

PHOTO: South



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				JOB REF	ERENCE	35275_	WI_As	shlandIr	onFlorence	e_2019_D19	Poin	nt ID		В	E 20
				Projec	t No.		72-02	227.15							_
STATE		WI			COUNTY	As	hland			Country					
OPERA	TOR		K. Cla	rk		N	AD83(C	ONUS),	PROJECT WISCRS-AS	COORDINATE/	ELEVA TY, US	TION SY SFT; NA	2b, USFT		
						NORTH	IING		1952	74.548					ELEV.
REC	EIVER	MODEL				EASTI	NG		4940	44.380					1472.664
RE	CEIVE	R S/N		000 4				ſ							
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рнотс):Nortl	h					РНС	DTO: Ea	ist						
		BI	Ε 20							BE 20					



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	JOB REFERENCE	35275_W	I_AshlandIronFlore	nce_2019_D19	- Point ID	BE 20
	Project No.	-	72-0227.15			-
PHOTO: South			PHOTO: West			
BE 20				BE20		
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BE 20						

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				JOB REFE	ERENCE	352	275_WI	L_Ashland	IlronFlorenc	e_2019_D19	Poir	nt ID		В	E_21	
				Projec	t No.	72-0227.15										
STATE		WI			COUNTY		Ashla	and		Country	USA					
OPERA	TOR		K. Cla	rk			NAD	83(CONUS	PROJECT 6),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVA TY, U	TION SY SFT; NA	YSTEM VD88, (GEOID1	2b, USFT	
						NO	RTHING	G	1638	317.893					ELEV.	
RECI	EIVER	MODEL				EA	ASTING	i	5228	357.732			1496.121			
RE	CEIVE	R S/N				•										
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	RTK		DAY OF	298	_						- X				LOCAL	
			YEAR													
		ANTE	NNA HEIGHT	(SLANT)					TOP OF M	ONUMENT IS:				FI	LUSH	
MTRS	/FT							ME	TERS/FEET				AB	OVE GR	OUND	
				FIXED HG	т.			ME	TERS/FEET				BEI	LOW GR	OUND	
		ANTEN	NA HEIGHT (V	ERTICAL)				r								
MTRS	/FT		5.00 F	r					AERIA	AL TARGET			PHOT	0 I.D.		
	X	MEASURE	ED	FIXED HG	T				PUB. B			X	NEW	CONTRO)L	
									PUB.	CONTROL			BASE	STATIO	N	
Type:	BAR	E EARTH														
рното	:Nortl	h					1	PHOTO:	East							
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FIELD DATA SHEET

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	JOB REFERENCE	35275_V	VI_AshlandIronFlorence	e_2019_D19	Point ID	BE 21
	Project No.		72-0227.15			-
PHOTO: South			PHOTO: West			
BE 21				BE 21		
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				JOB REF	ERENCE	35	5275_W	I_Ashla	andIronFlorenc	e_2019_D19	Point	п		B	E 22
				Projec	t No.		7	72-0227	'.15						
STATE		WI			COUNTY		Ashland Country					l	USA		
OPERA	OPERATOR K. Clark					NAD	83(CON	PROJECT	COORDINATE/I SHLAND COUN	ELEVATIO	ON SYS	STEM /D88, (GEOID1:	2b, USFT	
					N	ORTHIN	G	 1648	336.524		,			ELEV.	
RECE	RECEIVER MODEL Trimble R8-3		e R8-3		E	EASTING 566824.775						1519.215			
RE	CEIVER	R S/N	52394	97193	0.50			·				BO B			
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			YEAR	290	-		L					-		^	LUCAL
		ANTE	NNA HEIGHT ((SLANT)					TOP OF M	ONUMENT IS:				FI	LUSH
MTRS	/FT							N	IETERS/FEET				ABC	OVE GR	OUND
				FIXED HG	т.			N	IETERS/FEET				BEL	.OW GR	OUND
		ANTEN	NA HEIGHT (V	ERTICAL)											
MTRS	/FT		2.00 M	1					AERIA	AL TARGET		I	рнот	0 I.D.	
		MEASURE	ED X	FIXED HG	т				PUB. B	ENCH MARK		X I	NEW C	CONTRO	DL
									PUB.	CONTROL			BASE	STATIO	N
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рното	:North	ı						рното	D: East						
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				JOB REFE	RENCE	35275_V	35275_WI_AshlandIronFlorence_2019_D19 Point ID						E_23
				Projec	t No.		72-022	7.15					
STATE	TATE WI COUNTY						nland		Country		L	JSA	
OPERA	TOR		K. Cla	rk		NA	D83(COI	PROJECT NUS),WISCRS-A	COORDINATE/	ELEVATION S TY, USFT; NA	YSTEM VD88, G	EOID12	2b, USFT
						NORTHI	NG	1604	89.805				ELEV.
RECE	EIVER	MODEL				EASTIN	IG	5956	58.449			I	1534.054
RE	CEIVEI	R S/N			OBS F	2					2		
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l				FIXED IIG				WEIERS/FEET			BELL		COND
MTRS	/FT	ANTENN	<u>1A HEIGHT (V</u> 5 00 F	(ERTICAL)				AFRIA			рното	חוו	
	x	MEASURE	ED	FIXED HG	т		_	PUB. BI		x	NEW C)L
l								PUB.	CONTROL		BASE S	στατιο	N
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рното	:North	1					РНОТ	O: East					
		BE	23						BE2	3			



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	JOB REFERENCE Project No.	35275_WI_AshlandIronFlore 72-0227.15	nce_2019_D19	Point ID	BE_23
PHOTO: South		PHOTO: West			
BE23			BE23		
PHOTO: Tip		ΡΗΟΤΟ			
BE23					

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20	00			JOB REFE	RENCE	35275_WI_As	hlandlronFlorenc	e_2019_D19	Point ID	в	F 24		
			l	Projec	t No.	72-02	227.15				L_27		
STATE		WI			COUNTY	Ashland	Ashland Country			USA			
OPERAT	FOR		K. Clar	ŕk		NAD83(C	PROJECT	COORDINATE/	ELEVATION S	YSTEM	2h USET		
						NORTHING	1500)79.403			ELEV.		
RECE	RECEIVER MODEL			EASTING	6373	380.744			1654.498				
REC	CEIVER S/	N			000 0								
SES	SSIONS		DATE	0BS. A 10/24/2019	<u>-</u>	ST T		JBS. A	OBS. B	•	U.T.C.		
	RTK		DAY OF	297	-				-	x	LOCAL		
	_												
MTRS/	FT	ANTENN	NA HEIGHT (SLANT)	_			UNUMENT IS:	-				
				FIXED HG	т.		METERS/FEET			BELOW GR	ROUND		
MTRS/	FT /		5.00 F1				AERIA	AL TARGET		PHOTO I.D.			
	x ME	EASURED		FIXED HG	т		PUB. B	X		DL			
							PUB. CONTROL			BASE STATION			
Type: I	BARE E	ARTH											
PHOTO:	North					РНС	DTO: East						



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FIELD DATA SHEET

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	JOB REFERENCE Project No.	35275_WI_AshlandIronFlorence_2019_D19 72-0227.15	Point ID	BE_24
PHOTO: South		BE 2 4		
PHOTO: Tip		PHOTO:	Torre & and the second	
BE 24				

			-6				G	PS CONTRO	DL			[PAGE:
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AS	SS	DCIA	TES										
				JOB REF	ERENCE	35275_\	VI_Ashla	ndIronFlorenc	e_2019_D19	Point ID		В	E 27
				Projec	t No.		72-0227	15					
STATE		WI]	COUNTY	Asł	nland		Country		U	SA	
OPERA	TOR		K. Cla	rk		NA	D83(CON	PROJECT JS),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVATION S TY, USFT; NA	YSTEM VD88, GE	OID12	2b, USFT
						NORTHI	NG	1430)57.329				ELEV.
RECI	EIVER	MODEL				EASTIN	IG	5850)53.239]	1550.26
RE	CEIVER	R S/N		OPS A	OPe						•		
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		ΔΝΤΕΝ		(SLANT)								FI	USH
MTRS	S/FT	,		(02))			м	ETERS/FEET			ABOV	E GR	
				FIXED HG	т.		м	ETERS/FEET			BELO	W GR	OUND
		ANTENN											
MTRS	FT		5.00 F	<u>т</u>				AERIA	AL TARGET		рното	I.D.	
	x	MEASURE	D	FIXED HG	T			PUB. B	ENCH MARK	X	NEW CO	NTRO)L
				•				PUB.	CONTROL		BASE ST	ΓΑΤΙΟ	N
Туре:	BARE	EARTH											
рното	:North						РНОТО	: East					
		BE	27						BE 27				



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FIELD DATA SHEET

BE_27	

	Project No.	72-0227.15		
PHOTO: South		PHOTO: West		
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				JOB REF	ERENCE	35275_WI_A	shlandlro	onFlorence	e_2019_D19	Point II	D	в	E 28
				Projec	t No.	72-0	0227.15						-
STATE		W	I		COUNTY	Ashlan	d		Country			USA	
OPERA	TOR		K. Cla	rk		NAD83(F CONUS),V	PROJECT	COORDINATE/	ELEVATIO TY, USFT	ON SYSTE	M , GEOID1	2b, USFT
						NORTHING		1172	87.307				ELEV.
REC	EIVER	MODEL				EASTING		5073	91.116				1462.041
RE	CEIVE	ER S/N		0.50 4	000 0	_	_	-				-	
SE	SSION	NS	DATE	0BS. A	OBS. B		START	C	DBS. A	OF	35. B -		ШТС
	DTI		DAY OF	10/20/2013									
	RIK		YEAR	301	-	EN					-	X	LOCAL
		ANTE	NNA HEIGHT	(SLANT)			T	OP OF M	ONUMENT IS:			F	LUSH
MTRS	/FT						METER	RS/FEET			A	BOVE GR	OUND
				FIXED HG	т.		METER	RS/FEET			BI	ELOW GR	OUND
		ANTEN	INA HEIGHT (V	(ERTICAL)									
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	x	MEASUR	ED	FIXED HG	T			PUB. BI	ENCH MARK		X NEW	CONTRO	DL
								PUB.	CONTROL		BAS	E STATIO	N
Туре:	BAR	E EARTH	ł										
рнотс):Nort	h				PH	OTO: Eas	st					
		BE	28						BE 28				



GPS CONTROL

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FIELD DATA SHEET

BE_28

	Project No.	72-0227.15	
PHOTO: South		PHOTO: West	
BE 28			BE 28
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				JOB REFE		35275_WI_As	shlandIronFlorenc	e_2019_D19	Point ID		В	E_29	
				Projec	i no.	12-02	227.15						
STATE		WI			COUNTY	Ashland		Country	USA				
OPERA	TOR		K. Cla	rk		NAD83(C	PROJECT CONUS),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVATION S TY, USFT; N/	SYSTEM AVD88, G	SEOID1	2b, USFT	
						NORTHING	1169	970.839				ELEV.	
RECI	EIVER	MODEL				EASTING	5692	206.644				1605.805	
RE	CEIVE	R S/N			OPS P				OPS	D			
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	RTK		DAY OF	297		ENC			-		x	LOCAL	
мтре	/ET	ANTE	NNA HEIGHT	(SLANT)									
WITING	/1 1			FIXED HG	т.		METERS/FEET	-	BELOW GROU				
MTRS	/FT	ANTEN	<u>NA HEIGHT (V</u> 5.00 F	T			AERIA	AL TARGET		РНОТС) I.D.		
	x	MEASURE	ED	FIXED HG	T		PUB. B	ENCH MARK	x	NEW C	ONTRO	DL	
							PUB. CONTROL			BASE STATION			
Туре:	BAR	E EARTH											
рното	:Nortl	h				РНС	DTO: East						
		Ē	BE 29					BE 29					



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	JOB REFERENCE	35275_WI_AshlandIronFlorence	ce_2019_D19	Point ID	BF 29
	Project No.	72-0227.15			
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BE 29			BE 29		
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BEZ9					

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				JOB REF	ERENCE	35275_V	VI_Asł	hlandIronFloi	rence	_2019_D19	Poir	nt ID		B	E 55		
				Projec	t No.		72-02	27.15			1 011						
STATE		V	VI		COUNTY	Ash	nland			Country				USA			
OPERA	TOR		K. Cla	ırk		NA	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USFT								2b, USFT		
						NORTHI	NG	1	14466	69.513					ELEV.		
RECE	EIVER	MODEL				EASTIN	IG	5	50250)1.516					1435.566		
RECEIVER S/N							0			OPS P							
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			YEAR														
		ANT	ENNA HEIGHT	(SLANT)			_	TOP C	OF MO	NUMENT IS:				FI	LUSH		
MTRS	/FT							METERS/FE	ET				AB	OVE GR	OUND		
				FIXED HG	т.			METERS/FE	ET				BEI	LOW GR	OUND		
[ANTE	NNA HEIGHT (V	/ERTICAL)			Г		_		1 г						
MTRS	/FT		5.00 F	т		AERIAL TARGET						РНОТ	0 I.D.				
l	x	MEASU	RED	FIXED HG	Τ	PUB. BENCH MARK											
								F	JUB . C	UNIRUL			BASE	STATIO	N		
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рното	:Nortl	h					PHO	TO: East									
			BE 55							BE 55							



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	JOB REFERENCE	35275_WI_AshlandIronFlorence	e_2019_D19	Point ID	BE 55
	Project No.	72-0227.15			
PHOTO: South		PHOTO: West			
BE 55			BE 55		
PHOTO: Tip		PHOTO:			

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				JOB REFE	ERENCE	35275_\	NI_As	shlandlr	onFlorence	e_2019_D19	Poin	t ID		BI	E 56	
				Projec	t No.		72-02	227.15								
STATE		WI			COUNTY	Asl	nland			Country				USA		
OPERA	TOR		K. Cla	rk		NA	\D83(C	ONUS),	PROJECT WISCRS-A	COORDINATE/E SHLAND COUN	ELEVA TY, US	TION SY SFT; NAV	(STEM VD88,	GEOID12	2b, USFT	
						NORTH	NG		1010	48.299					ELEV.	
RECE	EIVER	MODEL	Trimbl	e R8-3		EASTIN	IG		5304	22.713]	1514.57	
RE	CEIVEI	R S/N	52394	97193												
SESSIONS DATE		OBS. A	OBS. B		ST	ART		0BS. A		OBS. B			ШТС			
UL			DAY OF	10/24/2019			Т	IME		12.51					0.1.0.	
RTK YEAR		297	-		END	DTIME		13:22		-		X	LOCAL			
[ANTE	NNA HEIGHT	(SLANT)					TOP OF M	ONUMENT IS:				FL	JUSH	
MTRS	/FT							METE	RS/FEET				AB	OVE GR	OUND	
				FIXED HG	т.			METE	ERS/FEET				BEI	LOW GR	OUND	
[ANTEN	NA HEIGHT (V	ERTICAL)												
MTRS	/FT		2.00 N	1					AERIA	L TARGET			рнот	O I.D.		
		MEASURI	ED x	FIXED HG	T	PUB. BENCH MARK			ENCH MARK		Х	X NEW CONTROL				
									PUB.	CONTROL	IL	BASE STATION				
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рното	:North	า					PHC	DTO: E	ast							
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	JOB REFERENCE	35275_WI_AshlandIronFlorence	ce_2019_D19	Point ID	BE 56
	Project No.	72-0227.15			
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AS	S	OCIA	TES												
				JOB REF	ERENCE	35275_WI	_Ashlandlı	onFlorence	e_2019_D19	Point	ID		BI	E 59	
				Projec	t No.	7	2-0227.15								
STATE		WI]	COUNTY	Ashla	and		Country			U	SA		
OPERA	TOR		K. Cla	rk		NAD	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b,							2b, USFT	
						NORTHING	G	2128	95.449					ELEV.	
RECI	EIVER	MODEL				EASTING	i	5764	90.215					1565.736	
RECEIVER S/N			OBS B						JBS B						
SESSIONS DATE		10/18/2019	-		START		/03. A		-			U.T.C.			
RTK DAY OF YEAR		291	-						-		x	LOCAL			
		ANTEI	NNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FL	.USH	
MIRS	/ - 1				-		MET	RS/FEEI							
				FIXED HG	1.			KO/FEEI				BELU		UND	
МТРО	/ C T	ANTEN	NA HEIGHT (V	(ERTICAL)					TADOLT						
IVITES	V V	MEASUDE	5.00 F		T								ו.ש.		
	^	MEROOR						PUB.	CONTROL		E	BASE S	ASE STATION		
_															
Туре:	BAR	E EARTH													
рното	:Nort	h			X X X	1	PHOTO: E	ast							
		BE	59						BE 59						



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FIELD DATA SHEET

	JOB REFERENCE	35275_WI_AshlandIronFlorence	_2019_D19	Point ID	BE_59
	Project No.	72-0227.15			
PHOTO: South		PHOTO: West			
BE 59			BE 59		
PHOTO: Tip		РНОТО:		1 Providence	
BE 59					

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<u>.</u>						IELD DATA SH					1		
S	OCI	ATES											
			JOB REFE	ERENCE	35275_WI_A	shlandIronFlorenc	e_2019_D19	Point ID		В	E_63		
			Projec	t No.	72-0	227.15							
	W	/I		COUNTY	Ashlanc	l	Country			USA			
TOR		K. Cla	rk		NAD83(0	PROJECT CONUS),WISCRS-A	COORDINATE/	ELEVATION TY, USFT; N	SYSTEM IAVD88, (GEOID1	2b, USFT		
					NORTHING	1265	56.652				ELEV.		
EIVER	MODEL				EASTING	6355	533.378				1578.47		
RECEIVER S/N			ORS A	OBS B				OBS	B				
SESSIONS DATE			10/24/2019	-	S	TART	703. A	-	0		U.T.C.		
RTK YEAR		297	_	EN	D TIME		-		x	LOCAL			
	ΔΝΤ									E			
/FT						METERS/FEET			ABO	OVE GR			
			FIXED HG	т.		METERS/FEET			BEL	.OW GR	OUND		
	ANTEN												
S/FT		5.00 F	T			AERIA	L TARGET		РНОТ	0 I.D.			
X	MEASUF	RED	FIXED HG	т	PUB. BENCH MARK				NEW CONTROL				
						PUB.	CONTROL		BASE	SE STATION			
BAR	E EARTI	н											
):Nort	h				PH	OTO: East							
	TOR EIVER CEIVE SSION RTK //FT //FT X BAR	SOCCI SOCCI INOR CEIVER MODEL CEIVER S/N CEIVER S/N CEI	WI ITOR K. Cla EIVER MODEL CEIVER S/N SSIONS DATE RTK DATE ANTENNA HEIGHT //FT ANTENNA HEIGHT (N //FT ANTENNA HEIGHT (N //FT SOO F X MEASURED	IJOB REFI Project IJOB REFI Project IVI ITOR K. Clark EVER MODEL CEIVER S/N BATE 10/24/2019 DAY OF 297 INOTH INTENNA HEIGHT (SLANT) IFT ANTENNA HEIGHT (SLANT) IFT ANTENNA HEIGHT (VERTICAL) IFT 5.00 FT X MEASURED I FIXED HG BARE EARTH	JOB REFERENCE JOB REFERENCE Project No. VI COUNTY ITOR K. Clark ITOR Itol/24/2019 ITOR Itol/24/2	ANTENNA HEIGHT (SLANT) //rT	SSIONS DATE 10/24/2019 OBS.A 0BS.B START TIME OBS.A 0BS.B START TIME OBS.A 0BS.B START TIME OBS.A 0BS.B START TIME ODAY OF 297 - OBS.A 0BS.B START TIME ODAY OF 297 - OBS.A 0BS.B START TIME ODAY OF 297 - OBS.A 0BS.B START TIME DAY OF 297 - OBS.A 0BS.B START DATE 10/24/2019 - TIME ODAY OF 297 - OBS.A 0BS.B START TIME DAY OF 297 - OBS.A 0BS.B START OBS.A 0BS.B START ODAY OF 297 - OBS.A 0BS.B START ODAY OF 297 - ODAY START ODAY OF 297 - ODAY START ODAY OF 297 - ODAY START ODAY START	ANTENNA HEIGHT (SLANT) TOP OF MONUMENT IS: MI OBS.A OBS.A MI OBS.A OBS.A SSIONS DATE 10/24/2019 MI PROJECT COORDINATE/ NADD3/CONUS/,WISCRS-ASHLAND COUN OBS.A SSIONS DATE 10/24/2019 MITC TOP OF MONUMENT IS: METERS/FEET MATENNA HEIGHT (SLANT) TOP OF MONUMENT IS: METERS/FEET METERS/FEET METERS/FEET METERS/FEET MEASURED FIXED HGT PUB. BENCH MARK PUB. CONTROL DARE EARTH PHOTO: East	Antenna Height (slant) Pixed Hor. Image: Source in the state in the	GPS CONTROL FIELD DATA SHEET IDE REFERENCE 35275_VI_AshlandlronFlorence_2019_D19 Point ID WI COUNTY Ashland Country PROJECT COORDINATE/ELEVATION SYSTEM INDR K. Clark PROJECT COORDINATE/ELEVATION SYSTEM NAD53/CONUS),WISCRS-ASHLAND COUNTY, USFT, NAUDEAL INDR K. Clark NAD53/CONUS),WISCRS-ASHLAND COUNTY, USFT, NAUDEAL NAD53/CONUS),WISCRS-ASHLAND COUNTY, USFT, NAUDEAL EVER MODEL EASTING 635533.378 EASTING 635533.378 CEIVER SIN OBS. A OBS. A OBS. A OBS. A SSIONS DATE 10/24/2019 - INTER - SSIONS DATE 10/24/2019 - INTER - - KRK DAY OF 297 - INTER - - - KATE 10/24/2019 - INTER INTER -	OPS CONTROL FIELD DATA SHEET JOB REFERENCE 35275 WI AshiandironFlorence 2019 D19 Project No. Point ID B WI COUNTY AshiandironFlorence 2019 D19 Project No. Point ID B WI COUNTY Ashiand Country USA VI Country Ashiand Country USA ODS A ODS A <th colspan<="" th=""></th>		



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	JOB REFERENCE	35275_WI_Ashla	ndIronFlorence	_2019_D19	Point ID	BF 63
	Project No.	72-0227	.15			0
PHOTO: South		РНОТС	: West			
BE 63			7	BE 63		
РНОТО: Тір		РНОТС	:			
BE 63						

ASSOCIATES						GPS CONTROLPAGE:FIELD DATA SHEET1										
AS	5	JCIA	ATES			05075.14										
				JOB REFE Projec	ERENCE	35275_W	72-0227 15	ronFlorenc	e_2019_D19	Point	t ID		U	A_01		
								7]	_						
STATE		WI			COUNTY	Ash	land		Country				USA			
OPERA	TOR		K. Cla	rk		NAC	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USFT							2b, USFT		
						NORTHIN	IG	3238	342.567					ELEV.		
RECE	EIVER	MODEL	Trimbl	e R8-3		EASTING	G	5014	76.438					644 153		
RE	CEIVE	R S/N	52394	97193										044.100		
		OBS. A	OBS. B	3	START	C	OBS. A		OBS. B							
SESSIONS DATE		10/23/2019	-		TIME				-			U.T.C.				
RTK DAY OF YEAR		296	-		END TIME				-		X	LOCAL				
[ANTE	NNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:			FLUSH				
MTRS	/FT						MET	ERS/FEET				AB	OVE GR	OUND		
				FIXED HG	т.		MET	ERS/FEET				BEL	OW GR	OUND		
[ANTEN	NA HEIGHT (V	ERTICAL)												
MTRS	/FT		2.00 N	I				AERIA	AL TARGET			рнот	0 I.D.			
		MEASURE	ED X	FIXED HG	т		PUB. BENCH MARK				X NEW CONTROL			DL		
								PUB.	CONTROL			BASE	STATIO	N		
Туре:	Urba	n Area														
рното	:North	า					PHOTO: E	ast								
									CAC	01			AL			



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		7 P] 3	-6			GPS CONTROL PAGE:								PAGE:
1L					l		FIELD	DATA SH	EET					1
AS	S	OCIA	TES											
				JOB REFE	RENCE	35275_WI_A	shlandlr	onFlorence	e_2019_D19	Poi	nt ID			Δ 02
				Projec	t No.	72-0	0227.15			1 01			0	n_v2
STATE		WI			COUNTY	Ashlan	d		Country				USA	
OPERA	TOR		K. Cla	rk		PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USFT							2b, USFT	
						NORTHING		3916	21.349					ELEV.
RECE	EIVER	MODEL	Trimb	le R8-3		EASTING	EASTING 525795.659							613.303
RE	RECEIVER S/N 523949			197193			-							
			0BS. A	OBS. B	S	TART	<u> </u>	JBS. A		OBS. B	5		ШТС	
DAY OF		10/29/2019	-	_	TIME				-			0.1.0.		
RTK YEAR		302	-	EN	ID TIME				-		X	LOCAL		
		ANTEN	NNA HEIGHT	(SLANT)					ONUMENT IS:				F	LUSH
MTRS	/FT						METE	RS/FEET				AB	OVE GR	OUND
				FIXED HG	т.		METE	RS/FEET				BEI	LOW GR	OUND
		ANTENN												
MTRS	/FT		2.00 N	Ń				AERIA	L TARGET] [рнот	O I.D.	
		MEASURE	DX	FIXED HG	т		PUB. BENCH MARK X NEW C			CONTROL				
								PUB.	CONTROL			BASE	STATIO	N
Tvpe:	Urba	n Area												
рното	:Nort	h				РН	OTO: Ea	ist						
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JOB REFERENCE

Project No.

GPS CONTROL

PAGE: 2

FIELD DATA SHEET

35275_WI_AshlandIronFlorence_2019_D19 72-0227.15	Point ID	UA_02
		•
PHOTO: West		



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				JOB REFE	ERENCE	35275_WI_As	shlandIronFlorenc	e_2019_D19				Δ 03	
				Projec	t No.	72-0	227.15		Form			4_03	
STATE		WI			COUNTY	Ashland		Country			USA		
OPERA	TOR		K. Cla	rk		NAD83(C	PROJECT CONUS),WISCRS-A	COORDINATE/	ELEVATION S TY, USFT; N	GEOID1	2b, USFT		
						NORTHING	2615	535.487				ELEV.	
RECI	EIVER	MODEL	Trimbl	le R8-3		EASTING	5175	535.316				771 321	
RE	RECEIVER S/N 5239497193											111.521	
				OBS. A	OBS. B			DBS. A	OBS.	В			
SE	SSION	IS	DATE	10/23/2019	-	T	IME		-			U.T.C.	
	RTK		YEAR	296	-	ENI	DTIME		-		X	LOCAL	
		ANTE	NNA HEIGHT	(SLANT)			TOP OF M	ONUMENT IS:			FI	LUSH	
MTRS	/FT						METERS/FEET		ABOVE GROUND				
				FIXED HG	т.		METERS/FEET			BEI	LOW GR	OUND	
		ANTEN	NA HEIGHT (V	(ERTICAL)									
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		MEASUR	ED X	FIXED HG	т		PUB. B	ENCH MARK	X NEW CONTROL				
							PUB.	CONTROL		BASE	STATIO	N	
Туре:	Urba	n Area											
рното	:Nort	h				РНС	DTO: East						
								UA O.	3				
			Unics			VAUS							



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		(P)	=(=				GPS	CONTRO)L					PAGE:	
	\mathbf{N}						FIELD	DATA SH	EEI				l	1	
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				JOB REF	ERENCE	35275_W	/I_Ashland	ronFlorenc	e_2019_D19	Poin	t ID		U	A 06	
				Projec	t No.		72-0227.15								
STATE		W	/]	COUNTY	Ash	land		Country				USA		
OPERA	TOR		K. Cla	rk		NAI	D83(CONUS	PROJECT),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVA TY, US	TION S' SFT; NA	YSTEM VD88,	GEOID1:	2b, USFT	
						NORTHIN	1G	2285	538.525					ELEV.	
RECE	EIVER	MODEL				EASTIN	G	5577	/93.241					1242.04	
RECEIVER S/N OBS. A						2									
SE	SSION	IS	DATE	10/18/2019	-	,	START		JD3. A		-	,		U.T.C.	
SESSIONS DATE 10/18/2019 RTK DAY OF 291											-		x	LOCAL	
r															
		ANTE	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				Fl	LUSH	
MTRS	/FT				-		MET			-		AB	OVE GR		
				FIXED HG	1.		MEI	ERS/FEEI				BEI		UUND	
	/FT	ANTEN	NNA HEIGHT (V	'ERTICAL)				4501	TADOFT	1 [DUOT			
MIRS	/F1	MEASUE	5.00 F		۲.							NEW CONTROL			
l	^	WEASUR		FILED HG				PUB.	CONTROL		~	BASE	STATIO	/N	
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Туре:	Urba	n Area													
рното	:North	h Ma					РНОТО: Е	ast				<u> </u>			
					AL										
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			UA 06						UA C	26					



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	JOB REFERENCE	35275_WI_Ashlandl	ronFlorence_2019_D19	Point ID	UA 06
	Project No.	72-0227.15			
PHOTO: South		PHOTO: V	Vest		
UAC			UA C	26	
CA CG					

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AS	5		ALES	JOB REFE	ERENCE	35275 WI A	shlandIronFlorenc	e 2019 D19					
				Projec	t No.	72-0	227.15		Point ID		U	A_07	
STATE		WI			COUNTY	Ashland	I	Country			USA		
OPERA	TOR		K. Cla	ark		NAD83(0	PROJECT CONUS),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVATION TY, USFT; N	SYSTEM IAVD88,	I GEOID1	2b, USFT	
						NORTHING	1672	219.887			ELEV.		
RECI	EIVER	MODEL	Trimb	le R8-3		EASTING	4952	200.403				1438 832	
RE	CEIVE	R S/N	5239	497193			·						
OBS. A						S	TART	OBS. A	OBS.	В			
SE	SSION	IS		10/25/2019	-	-	ГІМЕ		-			U.T.C.	
	RTK		YEAR	298	-	EN	DTIME		-		X	LOCAL	
		ANTE		(SLANT)			TOP OF M	ONUMENT IS:			F	LUSH	
MTRS	/FT						METERS/FEET			AB	OVE GR	OUND	
				FIXED HG	т.			BE		OUND			
		ANTEN											
MTRS	/FT		2.00 1	<u>и</u>			AERIA	AL TARGET		РНОТ	O I.D.		
		MEASUR	ED X	FIXED HG	т		PUB. B	ENCH MARK	x	DL			
							PUB.	CONTROL		BASE	STATIC	N	
Туре:	Urba	n Area											
рното	:Nort	h				PH	OTO: East	_					
			UA 07						A 07				



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	JOB REFERENCE Project No.	35275_V	VI_AshlandIronFlorence 72-0227.15	e_2019_D19	Point ID	UA_07
PHOTO: South			PHOTO: West	-		
UA 07				UA	07	
PHOTO: Tip			РНОТО:			

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		(P)	-6					GPS	CONTRO	DL					PAGE:	
	N						F	FIELD	DATA SH	EET					1	
AS	S	OCI	ATES													
				JOB REF	ERENCE	35275	_WI_A	shlandlr	onFlorence	e_2019_D19	Poin			ш	Δ 08	
				Projec	t No.		72-0	227.15			FUII			0/	4_00	
STATE		W	I		COUNTY	A	shlanc	ł		Country				USA		
OPERA	TOR		K. Cla	rk		_						LEVATION SYSTEM				
						NORTI	IAD83(0 HING	CONUS),	wiscrs-A	SHLAND COUN 75.371	TY, US	SFT; NA	VD88,	GEOID1	2b, USFT ELEV.	
RECE	EIVER	MODEL	Trimbl	e R8-3		EAST	EASTING 5782			54.414					1525 717	
RE	CEIVE	R S/N	52394				-							1525.717		
				OBS. A	OBS. E	5	.	TADT	C)BS. A		OBS. B	3			
SE	SSION	IS	DATE	10/17/2019	-		3					-			U.T.C.	
RTK DAY OF 290					-		EN	D TIME				-		x	LOCAL	
ANTENNA HEIGHT (SLANT)									TOP OF M	ONUMENT IS:				FI	LUSH	
MTRS	/FT			. ,				METE	RS/FEET				AB	OVE GR	OUND	
				FIXED HG	т.			METE	RS/FEET				BEI	LOW GR	OUND	
		ΔΝΤΕΝ														
MTRS	/FT	,	2.00 N	1					AERIA		1 [РНОТ	O I.D.		
		MEASUR	ED X	FIXED HG	T				PUB. BI	ENCH MARK	1	х	NEW	CONTRO	DL	
									PUB.	CONTROL	1		BASE	STATIO	N	
Туре:	Urba	n Area														
рното	:North	า					PH	OTO: Ea	ast							
			UAO	8						UA	08					



PAGE: 2

	JOB REFERENCE	35275_V	e_2019_D19	Point ID	UA_08	
	Project No.		72-0227.15			_
PHOTO: South			PHOTO: West			
UA 08				UAO	8	
РНОТО: Тір			PHOTO:			
UA 08						

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				Projec	t No.	72-0	227.15		Point ID		U	A_10			
STATE		WI			COUNTY	Ashland		Country		USA					
OPERA	TOR		K. Cla	ark		NAD83(C		COORDINATE/I			I GEOID1	2h LISET			
						NORTHING	1130)19.878		1141200,		ELEV.			
RECI	EIVER	MODEL	Trimb	le R8-3		EASTING	5982	244.875				1549 517			
RE	RECEIVER S/N 5239497193											1040.011			
OBS. A								OBS. A	OBS	6. B					
SE	SSION	IS	DATE	10/17/2019	-	ĭ	IME		-			U.T.C.			
	RTK		DAY OF YEAR	290	-	ENI	DTIME		-		X	LOCAL			
	ANTENNA HEIGHT (SLANT)						TOP OF M	ONUMENT IS:			F	LUSH			
MTRS	/FT						METERS/FEET			AB	OVE GR	OUND			
				FIXED HG	т.			BE	LOW GR	OUND					
		ANTEN	NA HEIGHT (VERTICAL)											
MTRS	/FT		2.00	М			AERIA	AL TARGET		РНОТ	O I.D.				
		MEASUR	ED X	FIXED HG	т		PUB. B	ENCH MARK	x	NEW	CONTRO	DL			
							PUB.	CONTROL		BASE	STATIO	N			
Туре:	Urba	n Area													
рното	:Nort	h				PHO	OTO: East								
			UA 10					UA	10						



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							FIELD	DATA SH	EET					1	
AS	S	OCI/	ATES												
				JOB REF	ERENCE	35275_WI	_AshlandIr	onFlorence	e_2019_D19	Poin	t ID		T۱	N 02	
				Projec	t No.	72	2-0227.15							-	
STATE		WI]	COUNTY	Ashla	and		Country				USA		
OPERA	TOR		K. Cla	ırk		NAD	33(CONUS)	PROJECT WISCRS-A	COORDINATE/	ELEVA TY, US	TION SY SFT; NA	YSTEM VD88,	GEOID1	2b, USFT	
						NORTHING	3	2608	374.603					ELEV.	
RECE	EIVER	MODEL	Trimb	le R8-3		EASTING		5172	65.011					775 032	
RE	CEIVE	R S/N	52394	497193										115.052	
OBS. A 005. A 002/2010							START	C	DBS. A		OBS. B	3			
SESSIONS DATE 10/23/2019						_	TIME				-			U.T.C.	
RTK DAY OF 296				-		END TIME				-		X	LOCAL		
[ANTE		(SLANT)					ONUMENT IS				FI	USH	
MTRS	/FT	,		(02/001)	_		МЕТЕ	RS/FEET				AB	OVE GR	OUND	
				FIXED HG	т.		METE	RS/FEET				BEI	LOW GR	OUND	
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		MEASUR	ED X	FIXED HG	т			PUB. BI	ENCH MARK	1	x	NEW	CONTROL		
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	JOB REFERENCE	35275_V	/I_AshlandIronFlore	nce_2019_D19	Point ID	TW 02
	Project No.		72-0227.15			
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РНОТО: Тір			РНОТО:			Pro reconcisional
TWOZ						

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AS	S	OCI	ATES												
	~			JOB REFI	ERENCE	35275_	WI_As	hlandIronFlorenc	ce_2019_D19	Poir	nt ID		F	0.01	
				Projec	t No.		72-02	27.15		1 011					
STATE		W	1		COUNTY	As	hland		Country				USA		
OPERA	TOR		K. Cla	ark		N	AD83(C	PROJECT ONUS),WISCRS-A	COORDINATE	ELEVA TY, U	TION SY SFT; NA	YSTEM VD88,	l GEOID1:	2b, USFT	
						NORTH	ING	2794	457.776					ELEV.	
RECE	EIVER	MODEL]	EASTI	NG	4954	452.127					843.611	
RE	CEIVE	R S/N		050 4	000				000 4		000 0				
SE	SSION	IS	DATE	10/23/2019		>	ST	ART	UB5. A		<u>- UB3. B</u> -	•		U.T.C.	
RTK ZEAR 296							END				-		x	LOCAL	
													_		
MTRS	/FT	ANTE	ENNA HEIGHT	(SLANT)			-					ΔR			
				FIXED HG	т.		METERS/FEET					BEI			
							L								
MTRS	/FT		5.00 F	T			[AERI	AL TARGET			рнот	O I.D.		
	X	MEASUR	RED	FIXED HG	т		-	PUB. B	ENCH MARK		X	NEW	CONTROL		
								PUB.	CONTROL			BASE	STATIO	N	
Туре:	Fore	st					7								
рното	:Nortl	h					РНО	TO: East						_	
			Fool						Force						



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FIELD DATA SHEET

	JOB REFERENCE	35275_WI_AshlandIronFlorence_20	019_D19	Point ID	FO_01
	Project No.	72-0227.13	L		
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				JOB REF	ERENCE	35275_WI_A	shlandIronFlorenc	e_2019_D19	Point ID		F	D_06	
				Projec	t No.	72-0	227.15						
STATE		W	1]	COUNTY	Ashland	l		USA				
OPERA	TOR		K. Cla	rk		NAD83(0	PROJECT CONUS),WISCRS-A	ELEVATION TY, USFT;	I SYSTEN NAVD88,	I GEOID1	2b, USFT		
						NORTHING	2359	926.940				ELEV.	
RECE	EIVER	MODEL				EASTING		1158.359					
RECEIVER S/N				000 0	_				_	1			
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		ANTE	ENNA HEIGHT	(SLANT)			TOP OF M	ONUMENT IS:			F	LUSH	
MTRS	/FT					METERS/FEET				AB	OVE GR	OUND	
				FIXED HG	т.	METERS/FEET				BE	LOW GR	OUND	
[ANTEN	INA HEIGHT (V	ERTICAL)									
MTRS	/FT		5.00 F	т			AERIA	AL TARGET		PHOT	ΓΟ I.D.		
	Х	MEASUR	RED	FIXED HG	T		PUB. B	ENCH MARK				DL	
							PUB.	CONTROL	BASE STATION				
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FIELD DATA SHEET

	JOB REFERENCE	35275_WI	_AshlandIronFlorence	_2019_D19	Point ID	FO 06
	Project No.	7	2-0227.15			-
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				JOB REF	ERENCE	35275_WI_A	AshlandIr	onFlorence	e_2019_D19	Point ID FO			D_07		
				Projec	t No.	72-	0227.15								
STATE		W	/		COUNTY	Ashlan	d		Country				USA		
OPERA	TOR		K. Cla	rk		PROJECT COORDINATE/ELEVATION SYST NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT: NAVD8						(STEM VD88, (GEOID1	2b, USFT	
						NORTHING		2344	48.379					ELEV.	
RECE	EIVER	MODEL				EASTING 527748.803								1198.733	
RE	RECEIVER S/N OBS. A				_		~								
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			YEAR	-											
		ANTI	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FI	LUSH	
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				FIXED HG	т.		METERS/FEET			_		BEI	-OW GR	OUND	
[ANTEN	NNA HEIGHT (V	'ERTICAL)						ı –					
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								PUB.	CONTROL	IL		BASE	STATIO	N	
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FIELD DATA SHEET

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	JOB REFERENCE	35275_WI_AshlandIronF	lorence_2019_D19	Point ID	FO 07
	Project No.	72-0227.15			
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				JOB REF	ERENCE	35275_W	I_AshlandIr	onFlorenc	e_2019_D19	Point ID FO_0			D_08		
				Projec	t No.	7	2-0227.15					L			
STATE		W	1		COUNTY	Ashla	Ashland Country						USA		
OPERA	TOR		K. Cla	ark		PROJECT COORDINATE/ELEVAT NAD83(CONUS),WISCRS-ASHLAND COUNTY, US						YSTEM VD88,	GEOID1	2b, USFT	
						NORTHING	G	2282	264.176					ELEV.	
RECI	EIVER	MODEL				EASTING	i	5578	61.898					1235.349	
RE	CEIVE	R S/N		000 4	0.000 0						000 0				
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	RTK		DAY OF	291	-	- 1	TIME END TIME				-		x	LOCAL	
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		ANTE	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FI	LUSH	
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		ANTEN	NNA HEIGHT ('	VERTICAL)						1 r					
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								PUB.	CONTROL			BASE	STATIO	N	
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FIELD DATA SHEET

	JOB REFERENCE	35275_W	/I_AshlandIronFlorence	_2019_D19	Point ID	FO_08
l	Project No.	-	72-0227.15			
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				JOB REF	ERENCE	35275_WI_	Ashlandlr	onFlorence	e_2019_D19	Poi	nt ID		F	 D 16	
				Projec	t No.	72	-0227.15								
STATE		WI]	COUNTY	Ashlar	Ashland Country						USA		
OPERA	TOR		K. Cla	rk		PROJECT COORDINATE/ELEVATION SYS NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAV						YSTEM VD88,	GEOID1	2b, USFT	
						NORTHING		2128	93.967					ELEV.	
RECE	EIVER I	MODEL				EASTING		5764	58.528					1568.455	
RE	CEIVEI	R S/N					I				OBS B	2			
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	RTK		DAY OF YEAR	291	-	E					-		x	LOCAL	
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l				TIXED IIO											
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L								PUB.	CONTROL			BASE	STATIO	N	
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рното	:North	1				P	HOTO: Ea	ast							
			Fo 16						Fo 14						



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	JOB REFERENCE	35275_WI_AshlandIronFlorence_2019_	D19	Point ID	FO_16
	Project No.	72-0227.15			-
PHOTO: South		PHOTO: West			
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				Projec	t No.	7	_ 2-0227.15			Poir	it ID		FC	J_17	
STATE		WI			COUNTY	Ashla	and		Country				USA		
OPERA	TOR		K. Cla	rk		PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT: NAVD88, GEOID12b, I							2b, USFT		
						NORTHING	G	2043	80.714	_	ELEV.				
RECE	EIVER I	MODEL				EASTING		1499.							
RE	RECEIVER S/N OBS. A					_					OBS E				
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				FIXED HG	т.	METERS/FEET			-		BEL	LOW GR	OUND		
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	x	MEASURE	ED	FIXED HG	T	PUB. BENCH MARK					X NEW CONTROL				
								PUB.	CONTROL	BASE STATION					
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рното	:North	ו 	. 22.110			I	PHOTO: E	ast							
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FIELD DATA SHEET

	JOB REFERENCE	35275 WI	AshlandIronFlorence	2019 D19	Delint ID	50.47
	Project No.	72	2-0227.15		Point ID	FU_1/
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PHOTO: Tip		P	PHOTO:			

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				JOB REF	ERENCE	35275_WI_	Ashlandlı	onFlorence	e_2019_D19	Point ID FO 1			O 18		
				Projec	t No.	72	2-0227.15								
STATE		W	I		COUNTY	Ashlar	nd		Country			USA			
OPERA	TOR		K. Cla	ırk		PROJECT COORDINATE/ELEVATION SYSTE NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD8						EM 8, GEOID1	2b, USFT		
						NORTHING		1952	07.688				ELEV.		
REC	EIVER	MODEL				<b>EASTING</b> 493993.508					1,				
RECEIVER S/N OBS. A				OPS P					0						
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		ANTE	ENNA HEIGHT	(SLANT)					ONUMENT IS:				LUSH		
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				FIXED HG	Т.	METERS/FEET					E	SELOW GR	OUND		
		ANTEN	INA HEIGHT (V	/ERTICAL)											
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	X	MEASUR	ED	FIXED HG	<b>FT</b>	PUB. BENCH MARK					BASE STATION				
								PUB.	CONTROL		BA	SE STATIC	'N		
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FIELD DATA SHEET

	JOB REFERENCE	35275_WI_AshlandIronF	lorence_2019_D19	Point ID	FO_18
	Project No.	72-0227.15			
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				JOB REF	ERENCE	35275_WI_	_AshlandIr	onFlorence	e_2019_D19	- Point ID			O_19		
				Projec	t No.	72-0227.15									
STATE		WI		]	COUNTY	Ashland Country					USA				
OPERA	TOR		K. Cla	rk		PROJECT COORDINATE/ELEVATION SYS NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAV					ION SYST FT; NAVD	⁻ EM 88, GEOID1	2b, USFT		
						NORTHING	ì	1890	27.161				ELEV.		
RECE	EIVER	MODEL				EASTING		5661	98.992				1497.37		
RE	CEIVE	R S/N		050.4	000 0	_	ſ	~				_			
SF	SESSIONS DATE 10/		10/17/2019	<u>085. B</u>		START	Ľ	JB5. A	(	- -		штс			
	RTK DAY OF		290	-	E	TIME END TIME				-	x	LOCAL			
ANTENNA HEIGHT (SLANT)								TOP OF M	ONUMENT IS:	_		F	LUSH		
MTRS	MTRS/FT				METE	RS/FEET				ABOVE GF	OUND				
FIXED HGT.							METE	RS/FEET				BELOW GF	ROUND		
		ANTEN	NA HEIGHT (V	'ERTICAL)						. –					
MTRS	/FT		5.00 F	T			AERIAL TARGET			PHOTO I.D.			-		
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								PUB.	CONTROL		Dł	ASE STATIC	)N		
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FIELD DATA SHEET

	JOB REFERENCE Project No.	35275_WI_AshlandIronFlorence_2 72-0227.15	2019_D19	Point ID	FO_19		
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				Projec	t No.	- 7				Poir	nt ID		F	J_20	
STATE		W	I		COUNTY	Ashland Country					USA				
OPERA	TOR		K. Cla	ırk		NAD	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT: NAVD88, GEOID12b, US						2b, USFT		
						NORTHIN	G	1881	58.984					ELEV.	
REC	EIVER	MODEL				EASTING	3	5980	34.472					1592.517	
RE	CEIVE	R S/N		(											
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		ANTE	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FI	LUSH	
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	FIXED HGT.				т.		METE	ERS/FEET				BE	LOW GR	OUND	
		ANTEN	INA HEIGHT (\	/ERTICAL)											
MTRS	S/FT		5.00 F	Т				AERIAL TARGET			PHOTO I.D.				
	X	MEASUR	ED	FIXED HG	т			PUB. BENCH MARK			X NEW CONTROL			)L	
							PUB. CONTROL			BASE STATION					
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FIELD DATA SHEET

	JOB REFERENCE	35275 WI	AshlandIronFlorence	e 2019 D19		
	Project No.		2-0227 15		Point ID	FO_20
			2-0227.15			
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				Projec	t No.	72-0227.15									
STATE		W	I		COUNTY	Ashland Country					USA				
OPERA	TOR		K. Cla	rk		NAD83(	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88. GEOID12					2b, USFT			
						NORTHING		1645	39.784					ELEV.	
RECE	EIVER	MODEL				EASTING		5664	32.285					1533.527	
RE	CEIVE	r s/n		0.50 4	000 0	_	_	0			000 0				
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		ANTE	ENNA HEIGHT	(SLANT)			т	OP OF MO	ONUMENT IS:				FI	JUSH	
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FIXED HGT. METERS/FEET								BEI	_OW GR	OUND					
		ANTEN	INA HEIGHT (V	ERTICAL)				_		1 6			_		
MTRS	/FT		5.00 F	T			AERIAL TARGET				PHOTO I.D.				
	X	MEASUR	ED	FIXED HG	<b>FT</b>		PUB. BENCH MARK								
						PUB. CONTROL				JL	DASE STATION				
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	JOB REFERENCE	35275_W	/I_AshlandIronFlorence	_2019_D19	Point ID	EO 24
	Project No.		72-0227.15			10_24
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				JOB REF	ERENCE	35275_WI_	Ashlandlr	onFlorenc	e_2019_D19	Point ID FO 25				D 25	
				Projec	t No.	72-0227.15									
STATE		W	1		COUNTY	Ashland Country					USA				
OPERA	TOR		K. Cla	ark		NAD8	PROJECT COORDINATE/ELEVATION SYSTEM						2b, USFT		
						NORTHING		1604	50.138					ELEV.	
RECE	EIVER	MODEL				EASTING		5956	644.147				]	1534.93	
RE	CEIVE	R S/N		0.50 4	000 0							_			
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			10/11/2019	_	_	TIME							0.1.0.		
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		ANTE	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FI	LUSH	
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	FIXED HGT.		т.		МЕТЕ	ERS/FEET				BELO	W GR	OUND			
		ANTEN		/ERTICAL)											
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	Project No.	72-0227.15			-
PHOTO: South		PHOTO: West			
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				JOB REF	ERENCE	35275_WI_A	shlandlro	nFlorence	e_2019_D19	Point ID			F	J_26	
				Projec	t No.	72-0227.15									
STATE		W	l	]	COUNTY	Ashland Country					USA				
OPERA	TOR		K. Cla	rk		NAD83(	PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID121					2b, USFT			
	·					NORTHING		1500	77.619					ELEV.	
RECI		MODEL				EASTING		6372	77.496					1650.753	
RE	CEIVER	R S/N		0.50 4	0.50 5		_				000 0				
SE			0BS. A	OBS. B	S	TART	0	JBS. A		<u>088. B</u>			ште		
02	DAY OF		DAY OF	207											
	RIK		YEAR	297	-						-		*	LUCAL	
		ANTE	NNA HEIGHT	(SLANT)			Т	OP OF MO	ONUMENT IS:				FI	LUSH	
MTRS	MTRS/FT				METER	RS/FEET				AB	OVE GR	OUND			
	FIXED HGT.			т.		METER	RS/FEET				BEI	_OW GR	OUND		
		ANTEN	NA HEIGHT (V	ERTICAL)						_					
MTRS	/FT		5.00 F	т			AERIAL TARGET					рнот	0 I.D.		
	x	MEASUR	ED	FIXED HG	т		PUB. BENCH MARK			X NEW CONTR			CONTRO	DL	
								PUB.	CONTROL	BASE STATION					
Type:	Fores	st													
рното	:North	ı				PH	OTO: Eas	st							
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FIELD DATA SHEET

	JOB REFERENCE	35275_V	VI_AshlandIronFlorence	_2019_D19	Point ID	EO 26
	Project No.		72-0227.15		FOILTD	10_20
PHOTO: South			PHOTO: West			
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Fo 26						

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				Projec	t No.	7	_ 2-0227.15			Poli	nt ID		F	J_30
STATE		WI]	COUNTY	Ashla	and		Country				USA	
OPERA	TOR		K. Cla	rk		NAD	B3(CONUS),	PROJECT WISCRS-A	COORDINATE/	ELEVA TY, U	ATION S' SFT; NA	YSTEM VD88,	GEOID12	2b, USFT
						NORTHING	3	1109	35.062					ELEV.
RECI	EIVER	MODEL				EASTING		6304	08.114					1551.561
RE	CEIVE	R S/N		000 4	OBS B						OBC F	•		
SE	SSION	IS	DATE	10/24/2019	- 065. 6		START TIME		/65. A		- 063. 6	•		U.T.C.
	RTK		DAY OF YEAR	297	-		END TIME				-		x	LOCAL
		ANTE	NNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				Fl	LUSH
MTRS	S/FT						МЕТЕ	RS/FEET				AB	OVE GR	OUND
				FIXED HG	т.		METE	RS/FEET				BEI	LOW GR	OUND
		ANTENN	NA HEIGHT (V											
MTRS	/FT		5.00 F	т				AERIA	L TARGET			РНОТ	O I.D.	
	X	MEASURE	D	FIXED HG	T			PUB. BI	ENCH MARK		X	NEW	CONTRO	DL
								PUB.	CONTROL			BASE	STATIO	N
Туре:	Fore	st												
рното):Nort	h				F	PHOTO: E	ast						
			Fo 30						Fo 30					



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FIELD DATA SHEET

	JOB REFERENCE Project No.	35275_WI_AshlandIronFlorence_ 72-0227.15	_2019_D19	Point ID	FO_30
Fo 30		PHOTO: West	Fo 30		
PHOTO: Tip		РНОТО:			
Fo 30					

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AC	5	JUIF	AILS	JOB REFI	ERENCE	35275 WI A	AshlandIr	onFlorence	e 2019 D19					
				Projec	t No.	72-	0227.15			Poir	nt ID		FC	J_31
STATE		WI]	COUNTY	Ashlan	ıd		Country				USA	
OPERA	TOR		K. Cla	rk		NAD83	(CONUS),	PROJECT WISCRS-A	COORDINATE/	ELEVA TY, U	TION S SFT; NA	YSTEM VD88,	GEOID12	2b, USFT
						NORTHING		1168	09.404					ELEV.
RECI	EIVER	MODEL				EASTING		5692	87.897					1606 467
RE	CEIVE	R S/N												1000.101
SE	SSION	IS	DATE	OBS. A	OBS. B		START	C	OBS. A		OBS. E	5		штс
	RTK		DAY OF	297							-		x	LOCAL
			YEAR	_										
		ANTE	NNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FL	USH
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				FIXED HG	1.		MEIE	RS/FEEI				BEI		UUND
мтре	/67	ANTEN	NA HEIGHT (V	'ERTICAL)						1 1		риот		
WIIKS	x	MEASURE	5.00 T	FIXED HG	т			PUB. BI			x	NEW)L
	~							PUB.	CONTROL		~	BASE	STATIO	 N
Type:	Fores	st												
рното	:North	ו גער א				PF	IOTO: Ea	ist		MISSI				E Contraction of the second se
			Fo.31						Fo.3					



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FIELD DATA SHEET

	JOB REFERENCE Project No.	35275_WI_A 72-(shlandIronFlorence	_2019_D19	Point ID	FO_31
PHOTO: South		PH	OTO: West			
FO.31				Fo.3I		
PHOTO: Tip		PH	ото:			
F0.31						

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AS	SS)OCI	ATES			I								
				JOB REF	ERENCE	35275_WI_A	shlandIron	Florence	e_2019_D19	Poir	nt ID		F	D_32
				Projec	t No.	72-0)227.15							
STATE		W	I]	COUNTY	Ashlano	k		Country				USA	
OPERA	TOR		K. Cla	rk		NAD83(PI CONUS),WI	ROJECT ISCRS-AS	COORDINATE/E SHLAND COUN	ELEVA TY, US	TION S SFT; NA	YSTEM VD88, (GEOID1	2b, USFT
	·					NORTHING		1172	37.476					ELEV.
RECI		MODEL				EASTING		5073	84.406					1458.355
RE	CEIVER	R S/N		0.50 4	0.50 5		_				0.00			
SE	SSION	c	DATE	0BS. A	OBS. B	S	TART	0	JBS. A		OBS. B			ште
02	DTK	0	DAY OF	10/20/2013										
	RIK		YEAR	301	-	EN	DTIME				-		X	LUCAL
		ANTE	ENNA HEIGHT	(SLANT)			тс	OP OF MO	ONUMENT IS:				FI	LUSH
MTRS	/FT						METER	S/FEET				AB	OVE GR	OUND
				FIXED HG	т.		METERS	S/FEET				BEL		OUND
		ANTEN	INA HEIGHT (V	'ERTICAL)										
MTRS	/FT		5.00 F	т				AERIA	L TARGET			рнот	0 I.D.	
	x	MEASUR	ED	FIXED HG	т			PUB. BE	ENCH MARK		Х	NEW	CONTRO	DL
								PUB.	CONTROL			BASE	STATIO	N
Type:	Fores	st												
рното	:North	ı				PH	OTO: East	t						
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FIELD DATA SHEET

	JOB REFERENCE	35275_WI	_AshlandIronFlorence	e_2019_D19	Point ID	FO 32
	Project No.	72	2-0227.15			
PHOTO: South		P	PHOTO: West			
Fo.32				Fo 32		
PHOTO: Tip		P	РНОТО:			
Fo 32						

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AS	S)OCI	ATES										
				JOB REF	ERENCE	35275_WI_A	shlandIronF	lorence	e_2019_D19	Point	п		FO 51
				Projec	t No.	72-0	0227.15			1 0111			
STATE		W	I]	COUNTY	Ashlan	d		Country			USA	
OPERA	TOR		K. Cla	ark		NAD83(OJECT	COORDINATE/E	ELEVATI	ION SYST	FEM 88. GEOID	12b. USFT
						NORTHING		1446	17.937				ELEV.
RECE	EIVER I	MODEL				EASTING		5024	45.648				
RE	CEIVEI	R S/N		050 4	000 0			~				_	
SF	SSION	s	DATE	10/25/2019	<u>085. B</u>	S	START	0	/B5. A		- -		итс
		-	DAY OF	200									
	RIK		YEAR	290	-						-	~	LUCAL
[ANTE	ENNA HEIGHT	(SLANT)			TOF	P OF MC	ONUMENT IS:				FLUSH
MTRS	/FT						METERS/	FEET				ABOVE G	ROUND
				FIXED HG	т.		METERS/	FEET				BELOW G	ROUND
		ANTEN	INA HEIGHT (\	/ERTICAL)									
MTRS	/FT		5.00 F	т				AERIA	L TARGET		PH	IOTO I.D.	
	X	MEASUR	ED	FIXED HG	т		F	PUB. BE	ENCH MARK		X NE		ROL
								PUB.	CONTROL		BA	ASE STAT	ON
Туре:	Fores	st											
рното	:North	ı				РН	OTO: East						
			Fo 51						Fo	51			



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FIELD DATA SHEET

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	JOB REFERENCE	35275_WI_Ash	andIronFlorence	_2019_D19	Point ID	FO_51
	Project No.	72-022	7.15			
PHOTO: South		PHOT	O: West			
Fo 51				F0 51		
PHOTO: Tip		РНОТ	O :			

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AS	S	OCI	ATES	JOB REFI Projec	ERENCE	35275_\	WI_Ashlar 72-0227.	idIronFlorenc	e_2019_D19	Poin	nt ID		F	D_52
STATE		W	/I		COUNTY	Asł	nland		Country				USA	
OPERA	TOR		K. Cla	ark		NA	D83(CONU	PROJECT IS),WISCRS-A	COORDINATE/I SHLAND COUN	ELEVA TY, US	TION SY	YSTEM VD88,	GEOID1	2b, USFT
			_			NORTHI	NG	1638	356.711					ELEV.
RECE	EIVER	MODEL				EASTIN	IG	5228	313.576					1496.16
RE	CEIVE	R S/N		OBS. A	OBS. B	5		(DBS. A		OBS. B			
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	RTK		DAY OF YEAR	298	-			IE			-		x	LOCAL
		ANT	ENNA HEIGHT	(SLANT)				TOP OF M	ONUMENT IS:				FI	LUSH
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				FIXED HG	т.		М	ETERS/FEET				BEI	LOW GR	OUND
[ANTE	NNA HEIGHT (VERTICAL)										
MTRS	/FT		5.00 F	Ŧ				AERIA	AL TARGET			рнот	0 I.D.	
	X	MEASUR	RED	FIXED HG	т			PUB. B	ENCH MARK		X	NEW	CONTRO	DL
								PUB.	CONTROL			BASE	STATIO	N
Туре:	Fore	st												
рното	:Nort	h					РНОТО	East						
			Fo 52						Fo 5z					



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FIELD DATA SHEET

	JOB REFERENCE	35275_WI_AshlandIronFlorence	e_2019_D19	Point ID	FO_52
	Project No.	72-0227.15			
PHOTO: South		PHOTO: West			
FO 5Z			Fo 5		
PHOTO: Tip		PHOTO:			
Fo 52					

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AS	S	OCI/	ATES								
				JOB REFE	RENCE	35275_WI_As	hlandIronFlorence	e_2019_D19	Point ID	F	O_53
				Projec	t No.	72-02	227.15				
STATE		W	I		COUNTY	Ashland		Country		USA	
OPERA	TOR		K. Cla	rk		NAD83(C	PROJECT ONUS),WISCRS-A	COORDINATE/	ELEVATION SY TY, USFT; NA	YSTEM VD88, GEOID1	2b, USFT
						NORTHING	1431	00.604			ELEV.
RECI	EIVER	MODEL				EASTING	5849	067.358			1548.427
RE	CEIVE	R S/N		000 4		_					
SE	SSION	IS	DATE	10/17/2019	<u> </u>	ST	ART	JDJ. A		,	U.T.C.
	RTK		DAY OF	290	-	END			_	x	LOCAL
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		ANTE	ENNA HEIGHT	(SLANT)			TOP OF M	ONUMENT IS:		F	LUSH
MTRS	/FT						METERS/FEET			ABOVE GR	OUND
				FIXED HG	т.		METERS/FEET			BELOW GF	ROUND
		ANTEN	INA HEIGHT (V	(ERTICAL)							
MTRS	/FT		5.00 F	Г			AERIA	AL TARGET		PHOTO I.D.	
	X	MEASUR	ED	FIXED HG	T		PUB. B	ENCH MARK	X	NEW CONTR	DL
							PUB.	CONTROL		BASE STATIC)N
Type:	Fore	st									
рното	:Nortl	h				PHC	OTO: East				
			Fo 53								



FIELD DATA SHEET

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	JOB REFERENCE	35275_WI_AshlandIron	Florence_2019_D19	Point ID	FO 53
	Project No.	72-0227.15			-
PHOTO: South		PHOTO: Wes	t		
Fo 5.5			Fo 5.3		
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JOB REFERENCE		ERENCE	35275_WI_As	hlandIronFlorenc	e_2019_D19	Point ID FO 54		O_54		
			Projec	t No.	72-02	227.15				
STATE		WI		COUNTY	Ashland		Country	USA		
OPERA	ERATOR K. Clark			PROJECT COORDINATE/ELEVATION SYSTEM NAD83(CONUS),WISCRS-ASHLAND COUNTY, USFT; NAVD88, GEOID12b, USFT					2b, USFT	
					NORTHING	1264	36.200			ELEV.
RECE		DEL]	EASTING	6355	95.970			1574.746
RE	CEIVER S/	'N	0.50	0.000 0	_					
SE	SSIONS	DATE	10/24/2019	<u> </u>	ST	ART	JB5. A	OBS. E	5	итс
	RTK	DAY OF	297	-				-	x	LOCAL
		TEAK								
		ANTENNA HEIGH	T (SLANT)			TOP OF M	ONUMENT IS:		F	LUSH
MTRS	/FT					METERS/FEET			ABOVE GR	OUND
l			FIXED HG	iT.		METERS/FEET			BELOW GF	OUND
		ANTENNA HEIGHT	(VERTICAL)							
MTRS	/FT	5.00	FT	_		AERIA	AL TARGET		PHOTO I.D.	-
	X ME	EASURED	FIXED HG	ST		PUB. B		X		
						PUB.	CONTROL		BASE STATIC)N
Туре:	Forest									
рното	:North				РНС	OTO: East				
		Fo 54					Fo	54		



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	JOB REFERENCE	35275_WI_AshlandIronFlorenc	e_2019_D19	Point ID	FO_54
	Project No.	72-0227.15			
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Fo 54			F	0 54	
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