



Legal Department

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
AEP.com

June 23, 2016

Chairman Asim Z. Haque
Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio 43215

Hector Garcia
Senior Counsel –
Regulatory Services
(614) 716-3410 (P)
(614) 716-2014 (F)
hgarcia1@aep.com

**Re: Case No. 16-1120-EL-BLN Request for Expedited Treatment:
In the Matter of the Construction Notice for the
Raider 138kV Extension**

Dear Chairman Haque,

Attached please find a copy of the Construction Notice for the Raider 138kV Extension by AEP Ohio Transmission Company, Inc. This filing and notice is in accordance with O.A.C. 4906-6-05.

A copy of this filing will also be submitted to the executive director or the executive director's designee. A copy is also being provided to the OPSB Staff via electronic message. The Company will also submit a check in the amount of \$2,000 to the Treasurer, State of Ohio, for Fund 5610 for the expedited fees.

If you have any questions, please do not hesitate to contact me.

Respectfully Submitted,

/s/ Hector Garcia

Hector Garcia
Counsel for AEP Ohio Transmission Company, Inc.

cc: Werner Margard, Counsel OPSB Staff
Jon Pawley, OPSB Staff

Construction Notice for Raider 138 KV Line Extension



PUCO Case No. 16-1120-EL-BNR

Submitted to:
The Ohio Power Siting Board
Pursuant to OAC 4906-6-05

Submitted by:
AEP Ohio Transmission Company, Inc.

June 23, 2016

CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

June 23, 2016

Construction Notice

AEP Ohio Transmission Company, Inc.'s Raider 138 kV Line Extension

4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco or AEP") proposes to extend the existing Rexford 138 kV transmission line on the south side of Giacobbi Road to a proposed Marathon customer station on the north side of Giacobbi Road ("Project"). The following information is provided in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(B) General Information

B(1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Construction Notice.

AEP Ohio Transco proposes to construct the Raider 138 kV Line Extension, PUCO Case No. 16-1120-EL-BNR, on Giacobbi Road, which is east of OH-151 (Jewett-Hopedale Road) in Section 21, Township 10 North, Green Township, Harrison County, Ohio. The Project involves construction of a 976 foot (0.185 mile) transmission line extension from the existing Rexford 138 kV transmission line on the south side of Giacobbi Road to a proposed Marathon customer station on the north side of Giacobbi Road. Three new pole structures will be constructed. The new right-of-way ("ROW") is located on property owned by Markwest Ohio Fractionation Company, LLC and crosses the Wheeling and Lake Erie Railway. Figure 1.1 (Appendix A) illustrates the location of the Project. Figures 1.2, 1.3, and 1.4 in Appendix A and the preliminary plan and profile exhibit in Appendix B illustrate the new ROW corridor, the three new pole structure locations, and the proposed customer station.

Pursuant to Ohio Administrative Code Section 4906-1-01 Appendix A, "Application Requirement Matrix for Electric Power Transmission Lines," the proposed Project meets the the requirements for a Construction Notice because it is:

(1) New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:

(a) Line(s) not greater than 0.2 miles in length.

CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

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B(2) Statement of Need

If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

AEP proposes to construct the Raider 138 kV Line Extension Project to provide electrical service to a new Marathon customer station. The customer station does not currently have electric service, but will require it for operation. The proposed double-circuit line will be designed and constructed for 138 kV operation, but will be energized at 69 kV. The Raider Line Extension will tie into the existing Rexford 138 kV transmission line and will be upgraded from 69 kV to 138 kV in order to serve the increased number of shale gas customers in this area.

B(3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the project area.

Figure 1.5 in Appendix A and the preliminary plan and profile sheet in Appendix B show the location of the proposed Project in relation to existing AEP facilities, including the Rexford 138 kV transmission line.

B(4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

AEP worked closely with Markwest to identify the optimal transmission line route across Markwest's property that complied with their overall site development plans.

B(5) Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

AEP did not develop a public information program. The project lies fully within Markwest's property and only has a single railroad crossing that feeds Markwest's site operations.

A copy of the Construction Notice has been sent to the following public officials concurrently with submittal to OPSB. Copies of the cover letters to these officials will be filed under separate

CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

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cover. AEP will advise additional local and federal officials of the status of the proposed electrical transmission line Project as necessary.

Harrison County Board of
Commissioners
Mr. William H. Host
Mr. Dale R. Norris
Mr. Don R. Bethel
101 Market Street
Cadiz, Ohio 43907

Harrison County Engineer
Mr. Robert K. Sterling
32500 Cadiz-Dennison Road
Scio, Ohio 43988

Green Township Trustee
Mr. John J. Seleski
80495 Croskey Road
Cadiz, Ohio 43907

Puskarich Public Library
Ms. Sandi Thompson, Director
200 East Market Street
Cadiz, Ohio 43907

Green Township Trustee
Mr. Vee Jay Beadling, Sr.
607 East Street
Hopedale, Ohio 43976

Green Township Trustee
Mr. James E. Ward
308 Hilltop Street
Hopedale, Ohio 43976

Green Township Fiscal Officer
Ms. Jacqueline A. Tipton
528 Virginia Street
Hopedale, Ohio 43976

Harrison County Soil & Water
Conservation District
Ms. Keila Telfer, District
Administrator
538 North Main Street
Cadiz, Ohio 43907

B(6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction is planned to begin on or about August 1, 2016, with a planned in-service date of the Project in October 2016.

B(7) Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figure 1.1 in Appendix A identifies the location of the proposed Project on the USGS quadrangle map for Cadiz, Ohio. Figure 1.2 (Appendix A) shows an aerial map of the Project. To visit the Project, from Columbus drive on I-70 East toward Wheeling, then take Exit 180B for I-77 North toward Cleveland. Take Exit 47 to merge onto US-22 East/Cadiz Road toward Cadiz. Take OH-151 West toward Jewett/Scio, then turn right onto Giacobbi Road. The Project is located within 0.1 mile.

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B(8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

AEP has obtained the necessary easements from Markwest and the Wheeling and Lake Erie Railway for this Project.

B(9) Technical Features

The applicant shall describe the following information regarding the technical features of the Project:

B(9)(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The proposed Project involves the installation of 0.185 miles of 138 kV double-circuit, electrical transmission line. The new transmission line will be energized at 69 kV with provisions for future conversion to 138 kV. See below and the exhibits in Appendix B for additional operating characteristics.

Voltage:	138 kV
Structure Type:	Double circuit galvanized steel pole structures on concrete piers (three new pole structures to be constructed)
Shield Wire:	Two 7-No. 8 Alumoweld overhead groundwires will be used as shield wires above the phase conductors
Conductors:	1033 KCM 54/7 ACSR Curlew
Other:	138kV, 2000A, 3-Way, PH/PH, GOAB Switch No interrupting mechanism or motor operators required 69/138kV customer metering at customer station (metering will be on the first structure outside of the customer station)

B(9)(b) Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line. The discussion shall include:

B(9)(b)(i) Calculated Electric and Magnetic Field Strength Levels

Three loading conditions were examined: (1) normal maximum loading, (2) emergency line loading, and (3) winter normal conductor rating. Normal maximum loading represents the peak

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flow expected with all system facilities in service. Daily/hourly flows fluctuate below this limit. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future. Loading levels and the calculated electric and magnetic fields are summarized below. The line loading level used to calculate Electric and Magnetic Fields (EMF) is for the normal maximum and is presented below. The corresponding designs, including normal maximum loading phase configurations are shown in Appendix B.

GROUND CLEARANCE, RIGHT-OF-WAY, AND PROJECTED LOADING LEVELS					
Line	Phase Conductor (kCM ACSR)	Ground Clearance	Right-of-Way		Line Loading
		(Feet)	Width (Feet)	Edge (Feet)**	Normal (A)
Raider 138 kV Line Extension	1033 KCM 54/7 ACSR Curlew	30/20.5	100	50	91

*Minimum ground clearance: normal maximum

**Distance from centerline to ROW edge.

The calculated electric and magnetic fields are summarized below.

EMF CALCULATIONS			
Condition	Line Load (MVA)	Electric Field (kV/m)	Magnetic Field (mG)
(1) Normal Maximum Loading	91	0.14 / 2.30 / 0.14	4.60 / 12.20 / 5.30
(2) Emergency Line Loading	169	0.14 / 2.30 / 0.14	10.25 / 25.60 / 10.90
(3) Winter Normal Conductor Rating	1400	0.12 / 3.70 / 0.12	117.80 / 375.80 / 117.80

*EMF levels (left ROW edge / maximum / ROW edge) calculated one meter above ground assuming balanced currents and nominal voltages. Electric fields reflect normal and emergency operations; lower electric fields are expected during emergency conditions when one mutually-coupled line is out of service.

B(9)(b)(ii) Design Alternatives

A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Design alternatives were not considered due to EMF strength levels. Transmission lines, when energized, generate EMF. Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. However, some people are concerned that EMF has impacts on human health. Due to their concerns, EMF associated with the new circuits was calculated in the Table above. The EMF was computed assuming the highest possible EMF values that could exist along the proposed transmission line. Normal daily

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EMF levels will operate below these maximum load conditions. Based on studies from the National Institute of Health, the magnetic field (measured in milliGauss) associated with emergency loading at the highest EMF value for the proposed transmission line, is lower than those associated with normal household appliances like microwaves, electric shavers and hair dryers. For additional information regarding EMF, the National Institute of Health has posted information on their website, http://www.niehs.nih.gov/health/_assets/docs_p_z/results_of_emf_research_emf_questions_answers_booklet.pdf. Information on electric and magnetic fields is also available on AEP Ohio's website, <https://www.aepohio.com/info/projects/emf/>, which describes the basics of electromagnetic field theory, scientific research activities, and EMF exposures encountered in everyday life.

B(9)(c) Project Cost

The estimated capital cost of the project.

The 2016 capital cost estimates for the proposed Project have been tabulated by the Federal Energy Regulatory Commission (FERC) Electric Plant Transmission Accounts:

ESTIMATES OF APPLICABLE INTANGIBLE AND CAPITAL COSTS		
FERC Account Number	Description	Cost
350	Land and Land Rights	\$50,000
352	Structures & Improvement	Not Applicable
353	Substation Equipment	Not Applicable
354	Towers & Fixtures	Not Applicable
355	Poles & Fixtures	\$201,000
356	Overhead Conductors & Devices	\$20,000
357	Underground Conductors & Devices	Not Applicable
358	Underground-to-overhead Conversion Equipment	Not Applicable
359	Right-of-way Clearing, Roads, Trails or Other Access	\$70,000
	TOTAL	\$341,000

B(10) Social and Economic Impacts

The applicant shall describe the social and ecological impacts of the project.

B(10)(a) Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The proposed Project is located within Green Township, Harrison County, Ohio. This area is not zoned.

There are two different land uses within the electrical transmission line ROW. 976feet (2.22 acres) consists of previously-disturbed new field habitat and 77 feet (0.18 acres) consists of previously-

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disturbed industrial land use. Photographs of land uses in the Raider 138 kV Project area are provided in Appendix E.

There are currently four occupied residences within 1,000 feet of the centerline of the proposed electrical transmission line. There are no cemeteries, parks, wildlife management areas, or nature preserve lands within 1,000 feet of the proposed electrical line. Additionally, no churches or schools have been identified within the vicinity of the proposed electrical transmission line (see Figure 1.3, Appendix A).

B(10)(b) Agricultural Land Information

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

The proposed electrical transmission line ROW is not located within agricultural district lands or other agricultural row crop land (see Figure 1.3, Appendix A).

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

In November 2015, AEP Ohio Transco's consultant completed a Phase I archaeological survey for the adjacent Rexford 138 kV Line Extension Project. A portion of the study area for that project overlaps the proposed Project study area. A desktop review of the Ohio Historic Preservation Office (OHPO) database indicated that no previously documented archaeological sites, National Register of Historic Places (NRHP) or properties listed in or potentially eligible for listing in, the NRHP are located within a one mile radius of the center of the proposed Project area. AEP Ohio Transco's consultant followed standard OHPO-approved methods to conduct fieldwork for the proposed Project area. Phase I fieldwork involved a pedestrian site reconnaissance within the Rexford 138 kV Line Extension Project. Due to the steeply sloping terrain and/or evidence of disturbance within the Project area related to ongoing construction, no prehistoric or historic cultural materials were found, and no surface evidence of archaeological sites was identified. No further archaeological investigation was recommended by AEP Ohio Transco's consultant (see Appendix C). Due to the overlapping study areas, similar highly-disturbed land uses, and the findings of AEP Ohio Transco's consultant's November 2015 study, the proposed Project is not expected to impact any cultural resources sites. Therefore, no additional investigations were performed.

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B(10)(d) Local, State, and Federal Agency Correspondence

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

There is no other agency coordination with this project based upon the small size and lack of complexity associated with this project. There will be less than 1 acre of impacts. Therefore, there will not be a need for a Stormwater Pollution Prevention Plan

B(10)(e) Threatened, Endangered, and Rare Species

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The United States Fish and Wildlife Service (USFWS) *Federally Listed Species by Ohio Counties October 2015* (available at www.fws.gov/midwest/ohio/pdf/OhioTEListByCountyOct2015.pdf) was reviewed to determine the threatened and endangered species currently known to occur in Harrison County. This USFWS publication listed the Indiana bat (*Myotis sodalis*; federally listed endangered) and northern long-eared bat (*Myotis septentrionalis*; federally listed threatened) as the currently listed threatened or endangered species as occurring in Harrison County. The bald eagle (*Haliaeetus leucocephalus*; de-listed but still protected under the Bald and Golden Eagle Protection Act) was also on this list of species for Harrison County. Several state-listed threatened species, endangered species, and species of concern are listed by the Ohio Department of Natural Resources (ODNR) available at <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/statelisted%20species/harrison.pdf> as occurring, or potentially occurring in Harrison County. As part of AEP's adjacent Rexford 138 kV Extension Project, a coordination letter was submitted to the USFWS Ohio Ecological Services Field Office on November 16, 2015, seeking an environmental review of that proposed Project for potential impacts to threatened or endangered species. Response from this agency indicated that the Project was within range of the Indiana and northern long-eared bats and any tree clearing should be within October 1 and March 31. With seasonal tree clearing, the USFWS did not anticipate adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species (Appendix E).

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Coordination letters were also submitted to the ODNR Division of Wildlife (DOW) Ohio Natural Heritage Program (ONHP) and the ODNR Office of Real Estate on November 16, 2015. Correspondence received from ODNR's DOW/OHNP (Appendix E) indicated that a one-mile radius around the Rexford project (including the proposed Raider 138 kV Extension Project area) did not contain any known occurrences of state-listed species, federally-listed species, or rare species. The response from ODNR's Office of Real Estate (Appendix E) recommended tree clearing between October 1 and March 31.

On May 18, 2016, AEP Ohio Transco's consultant performed an ecological field survey of the proposed Project area. No Indiana or northern long eared bats were encountered during the field survey and based on the results of the field survey, no trees are expected to be cleared. Therefore, the project is not expected to impact Indiana bat or northern long-eared bat.

The proposed Project is also located within the range of upland sandpiper (*Bartramia longicauda*), a state-listed endangered bird that nests in native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). None of these habitats were encountered in the proposed Project area. The ODNR Office of Real Estate also indicated that the Rexford project (and therefore the Raider project) are within range of the black bear (*Ursus americanus*; state-listed endangered), but due to the mobility of this species, no impacts are expected.

B(10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Correspondence from ODNR's DOW/OHNP for the adjacent Rexford 138 kV Line Extension Project (Appendix E) indicated that they are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, or other protected natural areas within a one mile radius of that project area, which includes the proposed Project area.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was consulted to identify any floodplains/flood hazard areas that have been mapped for the proposed Project area. The Project area is not within mapped FEMA floodplains (Figure 1.2, Appendix A). No floodplain permits will be required for this Project.

A review of the National Wetlands Inventory (NWI) database indicated that no wetlands were identified within the proposed Project area. Locations of NWI-mapped wetlands in the vicinity of the Project are shown on Figure 1.2 in Appendix A. A wetland and stream reconnaissance survey was completed by Stantec on May 18, 2016 within the right-of-way corridor for the Raider

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138 kV Line Extension Project. No wetlands were found during this field visit. One stream and one open water body were found within the Project right-of-way. The open water body feature was determined to be a stormwater retention basin. A summary of the surface stream is presented in Table 1 below and in Appendix E. Locations of these features can be found on Figure 1.2 (Appendix A). Neither the stream nor the open water body is located in the immediate vicinity of any of the proposed transmission line structures, and no impacts are anticipated (AEP Ohio Transco will either avoid crossing the features or cross using temporary timber mat structures).

Table 1. Summary of Stream Resources found within the Raider 138 kV Line Extension.

Stream Name	Photo Numbers ¹	Receiving Waters	Cowardin Stream Classification	Stream Flow Regime ²	Stream Evaluation Method	Stream Evaluation Score ¹	OHHM Width (feet) ³	Delineated Length (feet)	Impacted Length (feet)
Stream 1	6-7	Cross Creek	R4SB5	Intermittent	HHEI	40	2	86	0
¹ Appendix F – Ecological Information									
² Stream classification is based on Federal Register/Vol. 67, No. 10 (2002)									
³ OHHM = Ordinary High Water Mark									

B(10)(g) Unusual Conditions

Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

As described above, the Project is not expected to impact Stream 1 or the open water feature, and to the best of AEP Ohio Transco's knowledge, there are no known unusual conditions that are would result in significant environmental, social, health, or safety impacts.

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Appendix A Project Maps
June 23, 2016

Appendix A Project Maps

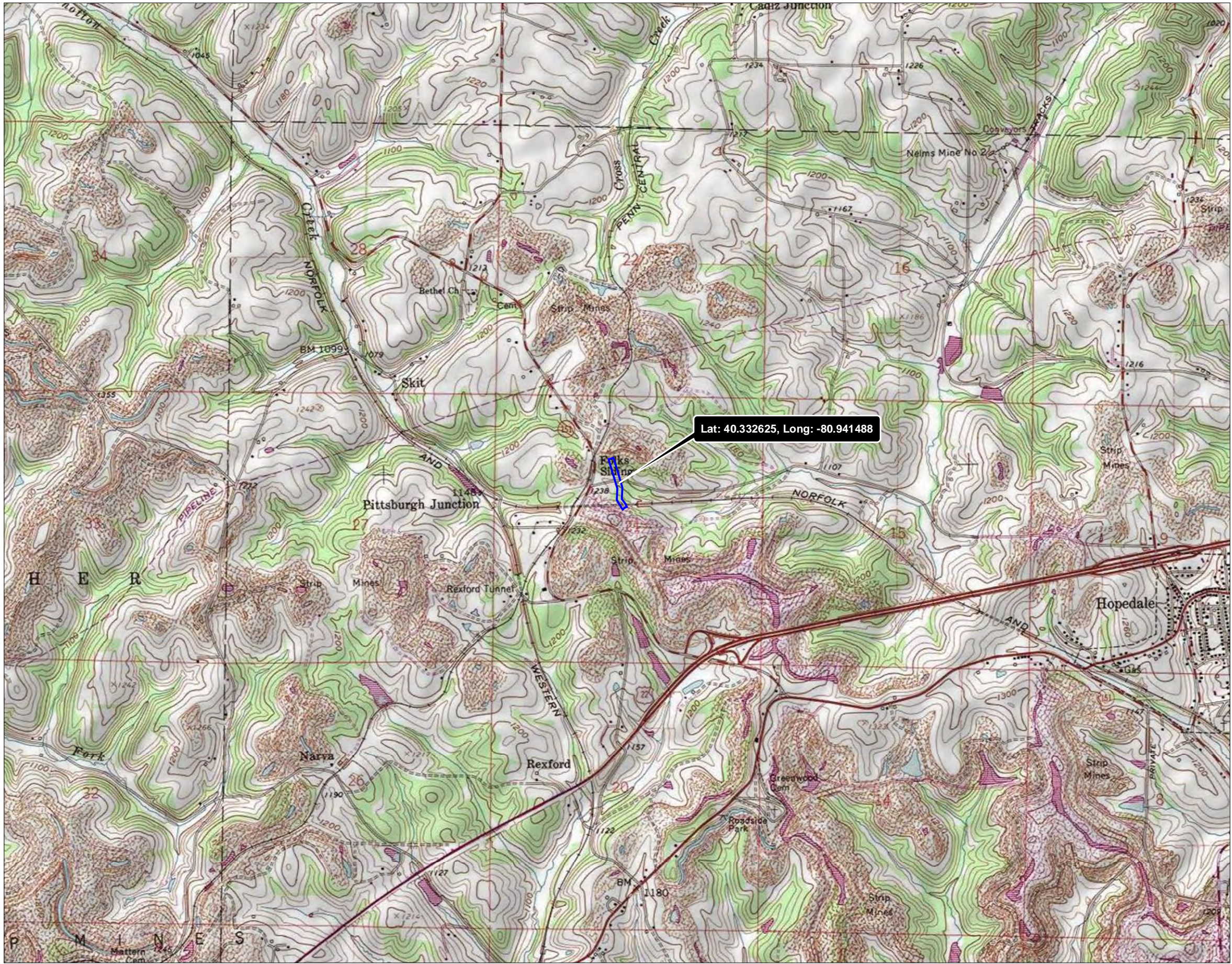


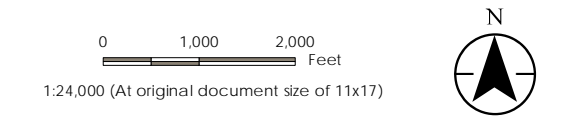
Figure No. 1.1

Title Project Location Map

Client/Project American Electric Power
Raider 138kV Line Extension Project

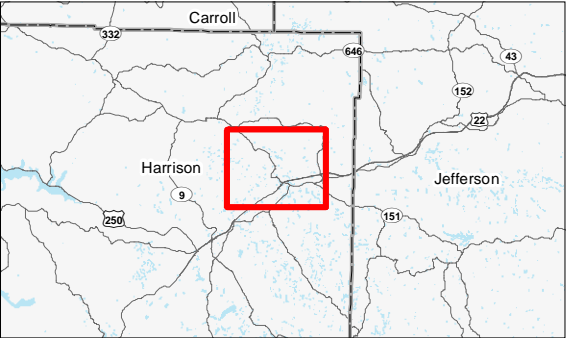
Project Location Harrison Co., OH

193704486
Prepared by MCP on 2016-05-12
Technical Review by BJ on 2016-06-09
Independent Review by JB on 2016-06-09



Legend

Study Area



- Notes
1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources Include: Stantec, AEP, NADS
 3. Background: USGS 7.5' Topographic Quadrangles





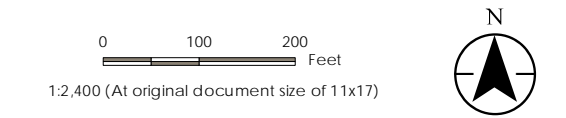
Figure No.
1.2

Title
Project Layout Map

Client/Project
American Electric Power
Raider 138kV Line Extension Project

Project Location
Harrison Co., OH

193704486
Prepared by MCP on 2016-05-12
Technical Review by BJ on 2016-06-09
Independent Review by JB on 2016-06-09



- Legend
- Study Area
 - Existing Pole Location
 - Proposed Pole Location
 - Proposed 138kV Transmission Line
 - Proposed Marathon Customer Station Facility
 - Culvert
 - Field Identified Waterway
 - Field Identified Open Water
 - National Wetlands Inventory
 - FEMA Flood Zones*
 - 100-year Flood Zone
 - 100-year Floodway
 - National Hydrography Dataset
 - Perennial Stream
 - Intermittent Stream
 - Waterbody

*No features within data frame



- Notes
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 - Data Sources Include: Stantec, AEP, NADS, FEMA, USFWS
 - Orthophotography: 2015 NAIP



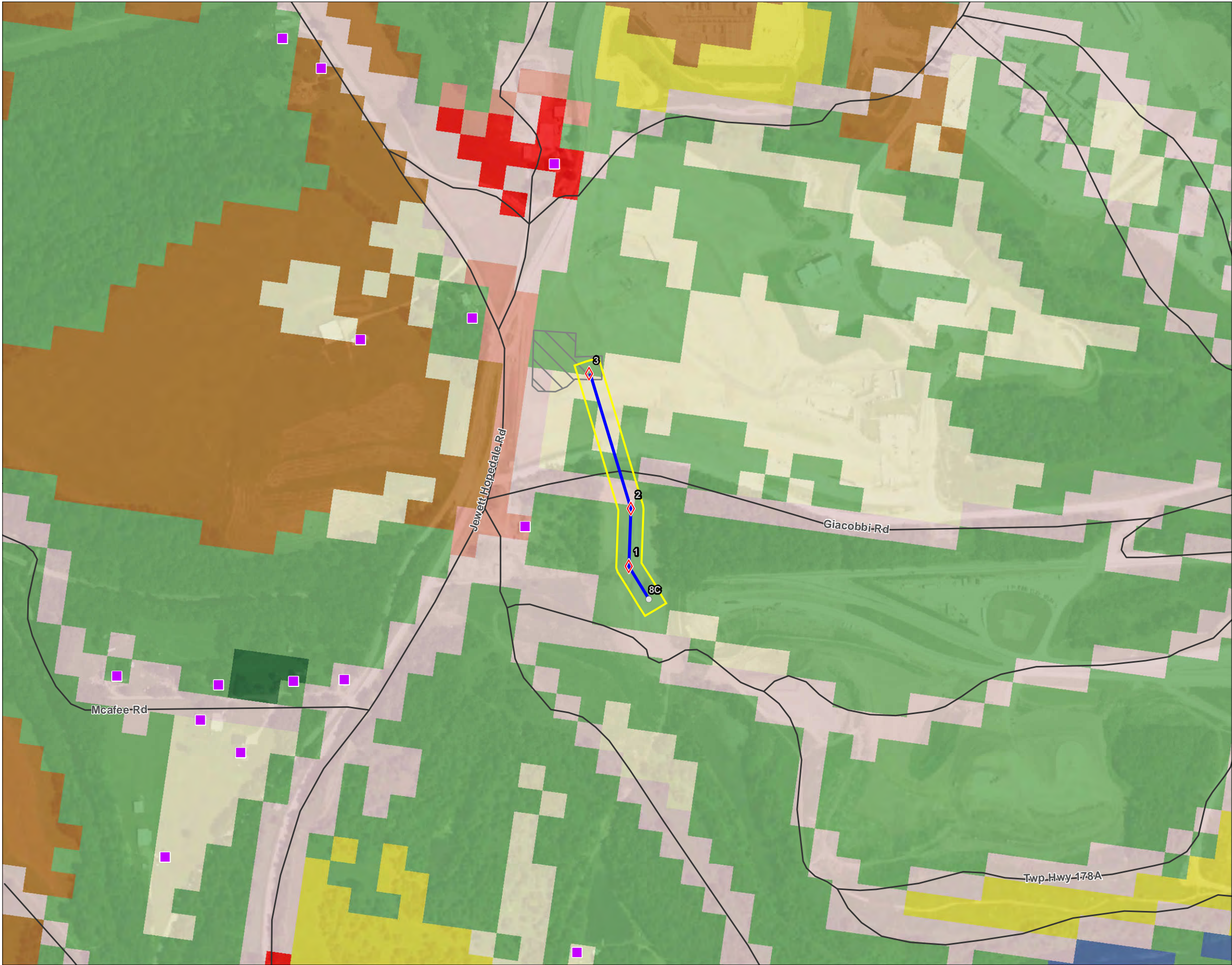


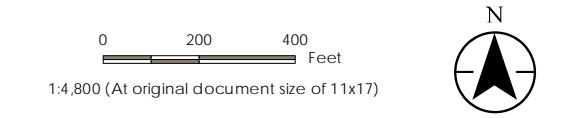
Figure No.
1.3

Title
Land Use Map

Client/Project
**American Electric Power
Raider 138kV Line Extension Project**

Project Location
Harrison Co., OH

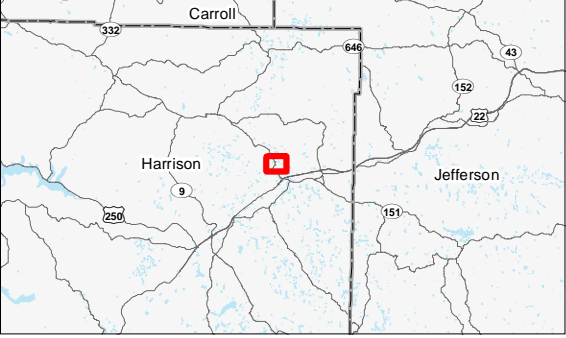
193704486
Prepared by MCP on 2016-05-12
Technical Review by BJ on 2016-06-09
Independent Review by JB on 2016-06-09



- Legend**
- Study Area
 - Existing Pole Location
 - Proposed Pole Location
 - Proposed 138kV Transmission Line
 - Proposed Marathon Customer Station Facility
 - Residence

Land Use	
Open Water	Evergreen Forest
Developed, Open Space	Mixed Forest
Developed, Low Intensity	Shrub/Scrub
Developed, Medium Intensity	Herbaceous
Developed, High Intensity	Hay/Pasture
Barren Land	Cultivated Crops
Deciduous Forest	Woody Wetlands
	Emergent Herbaceous Wetlands

*No features within map extent
**No parks, wildlife management areas, nature preserves or government owned land was identified within the Project Area or its vicinity.
(Sources: ODNr, USFS, USFWS, The Nature Conservancy, PADUS)



- Notes**
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 - Data Sources Include: Stantec, AEP, NADS, USDA
 - Orthophotography: 2015 NAIP



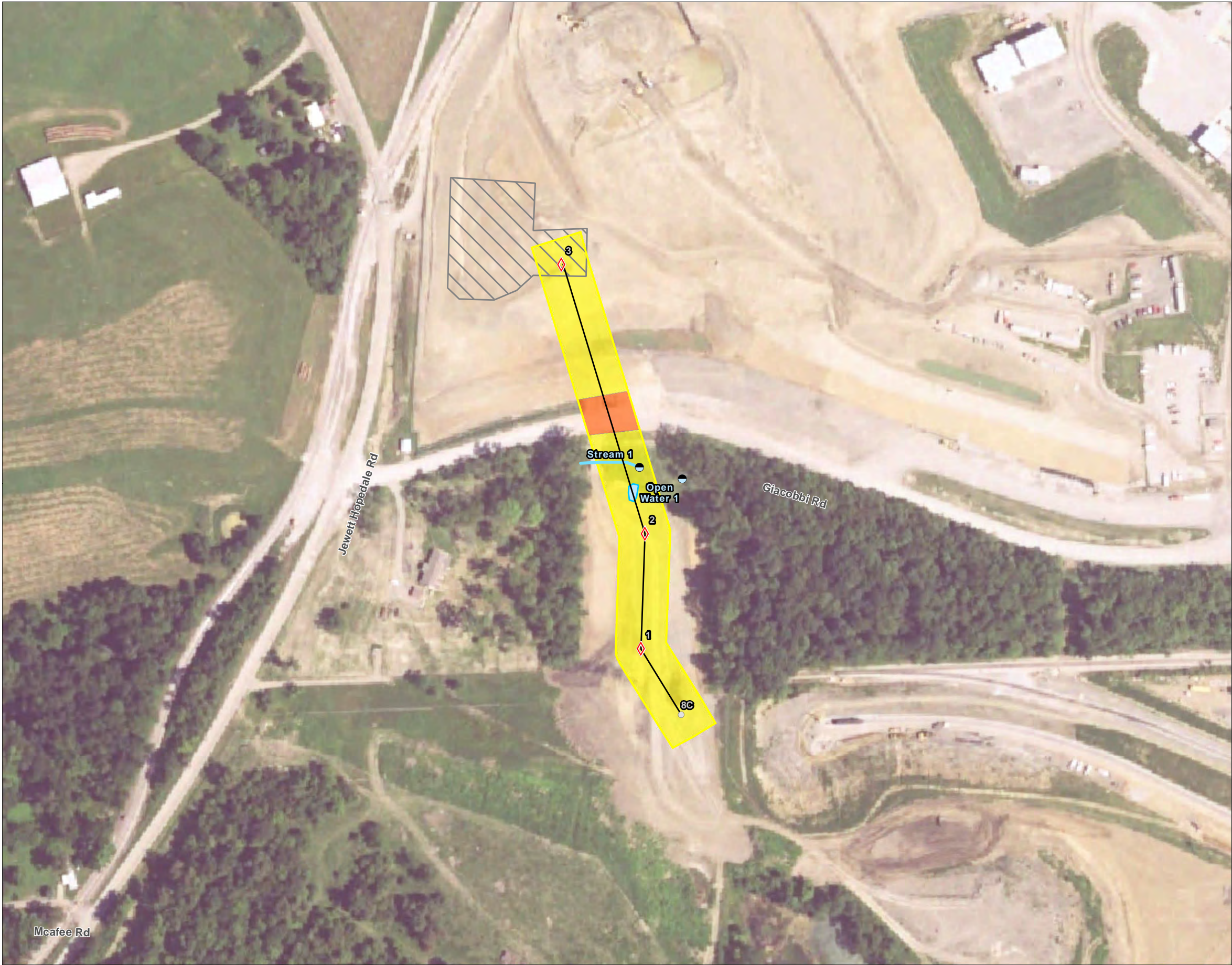


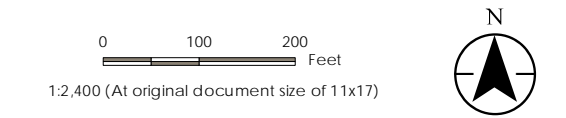
Figure No.
1.4

Title
Habitat Type Map

Client/Project
American Electric Power
Raider 138kV Line Extension Project

Project Location
Harrison Co., OH

193704486
Prepared by MCP on 2016-05-12
Technical Review by BJ on 2016-06-09
Independent Review by JB on 2016-06-09



Legend

Study Area

Existing Pole Location

Proposed Pole Location

Proposed 138kV Transmission Line

Proposed Marathon Customer Station Facility

Culvert

Field Identified Waterway

Field Identified Open Water

Habitat Type

Industrial

New Field



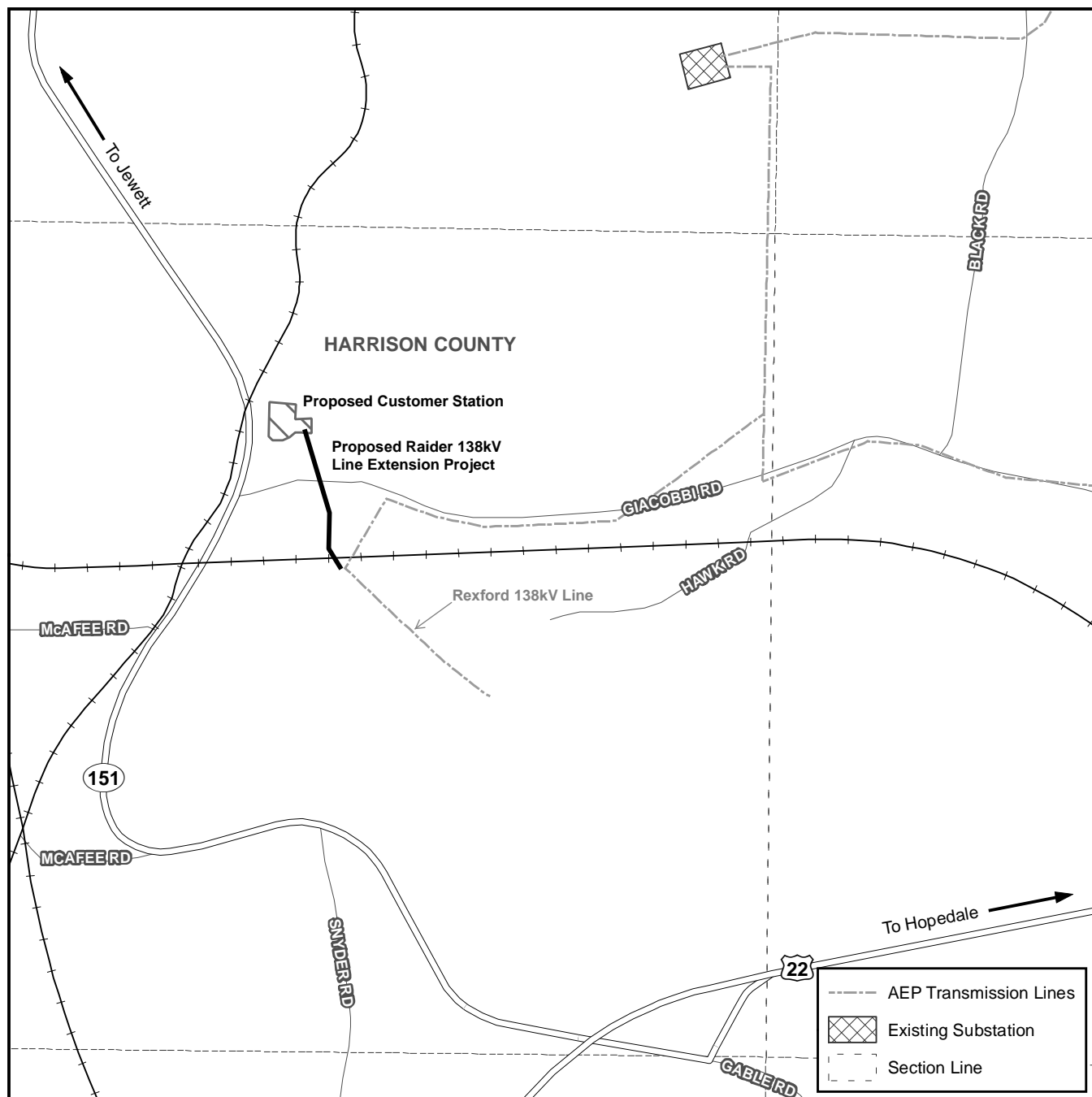
- Notes
1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet

2. Data Sources Include: Stantec, AEP, NADS

3. Orthophotography: 2015 NAIP



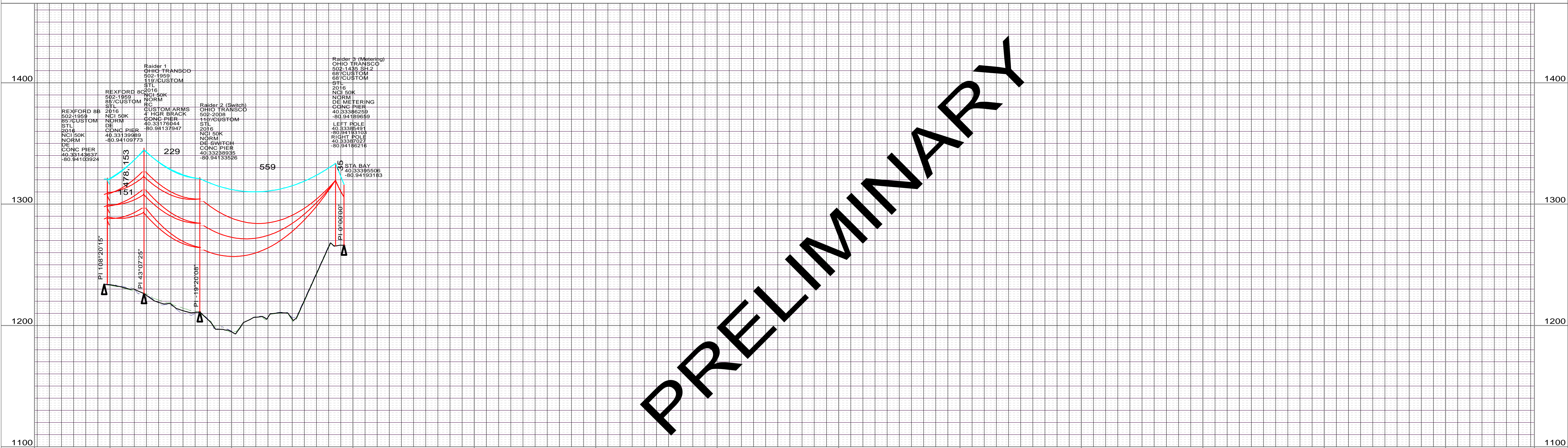
Figure 1.5 - Existing AEP Facilities



CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

Appendix B Design Drawings
June 23, 2016

Appendix B Design Drawings



NOTES:
SEE GENERAL INFORMATION SHEET 2 FOR GUY AND ANCHOR DIAGRAM.
SEE GENERAL INFORMATION SHEET 2A FOR PHASING DIAGRAM.
SEE GENERAL INFORMATION SHEETS 2B & 2C FOR CONDUCTOR WEIGHT,
DAMPER, SPACER & BIRD DIVERter DETAILS.

REV	REVISION DESCRIPTION	DATE	BY
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Appendix C Cultural Resources Survey Report
June 23, 2016

Appendix C Cultural Resources Survey Report



**Phase I Cultural Resource Management Investigations for the 7.7 ha (19
ac) Rexford 138kV Line Extension to Sunco-HOPDL in Green
Township, Harrison County, Ohio**

Ryan Weller

November 26, 2015

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**Phase I Cultural Resource Management Investigations for the
7.7 ha (19 ac) Rexford 138kV Line Extension to Sunco-HOPDL
in Green Township, Harrison County, Ohio**

By

Ryan J. Weller

Submitted By:

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Ohio Power Siting Board



Ryan Weller, P.I.

November 25, 2015

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W-1830

Abstract

In November of 2015, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 7.7 ha (19 ac) Rexford 138kV Line Extension to Sunco-HOPDL in Green Township, Harrison County, Ohio. The lead agency for this project is the Ohio Power Siting Board. A cultural resources management survey was deemed necessary to identify any sites or properties and to determine if they are significant similar to what would be eligible for the National Register of Historic Places (NRHP). The project involves the construction of the extension of the Rexford 138kV electric line to Sunco-HOPDL. The work involved a literature review and a field reconnaissance survey. These investigations did not result in the identification of any cultural materials. Buildings/structures that are present within or near the project area are less than 50 years old.

The project area is located in an upland, rural area with the surrounding terrain being a mixture of a strip mining and gas industry-related activity. The surrounding area is primarily contained in fallow, previously mined landscape. The terrain within the project area is consistent with upland, unglaciated settings. The project area is located in the east central part of Section 21 of Green Township. Giacobbi Road and (former) Hawk Road traverse the project as does a Norfolk railroad line. This is an area that is rugged and was previously the subject of surface coal mining activity. The north side of Patterson Road with the majority being to the east of Yeager Road. Some areas have been disturbed by grading and mining-related activity; especially the southern and central parts.

These investigations did not identify any cultural materials; there are no buildings or structures that are older than 50 years within the project area or its vicinity. The project involves the extension of an existing electric line. This area is completely disturbed or steeply sloped. The project is not considered to affect any historic properties or landmarks. No further work is considered to be necessary for this project.

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Introduction

In November of 2015, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 7.7 ha (19 ac) Rexford 138kV Line Extension to Sunco-HOPDL in Green Township, Harrison County, Ohio (Figures 1-3). A cultural resources management (CRM) survey was appropriate to identify any sites or properties that might be regarded as historically significant and to evaluate the effects of this project on such properties. Significance is relative to evaluation that is consistent with the National Register of Historic Places (NRHP) pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 [36 CFR 800]). AEP Ohio Transco requested the survey pursuant to Ohio Power Siting Board (OPSB) regulations; OPSB is the lead agency. This report summarizes the results of the fieldwork and literature review. The report format and design is similar to that established in *Archaeology Guidelines* (Ohio Historic Preservation Office [OHPO] 1994).

The literature review was conducted on November 10, 2015. The survey for this project was conducted on November 24th by Josh Engle, Matt Sanders, and Ryan Weller. Chad Porter completed the figures for the report. Ryan Weller was responsible for the text and he served as the Principal Investigator and Project Manager.

Project Description

The Project will involve the establishment and construction/extension of the existing Rexford 138kV electric line to a customer of AEP. The survey corridor is typically 30.5 m (100 ft) wide. The work is being proposed in an area that is highly developed and built relative to the natural gas industry.

Environmental Setting

Climate

The project area is located in northeastern Harrison County. The climate is considered to be Continental consisting of hot and humid summers with cold winters. About 96 cm (38 in) of precipitation fall annually in this area. Mid-winter tends to be the driest time of the year [United States Department of Agriculture, Soil Conservation Service (USDA, SCS) 1998:11-12].

Physiography, Relief and Drainage

Harrison County is located within the unglaciated Allegheny Plateau Region, and more specifically the area east of the Flushing Ridge is considered as the Little Switzerland Plateau (Brockman 1998). The terrain is rugged with steep sided hill slopes and narrow, entrenched drainages. Frequently, the ridge tops are narrow but can be wider in the eastern part of the county. The Flushing Escarpment or Flushing Divide is a watershed ridge that separates the Ohio River watershed from the Tuscarawas-Muskingum River watershed. The broader valleys are situated in the western part of the

county and associated with Conotton, Little Stillwater, and Stillwater Creeks. The project area is drained by an unnamed tributary of the Cross Creek, which flows eastward to the Ohio River.

Geology

The project area is located in the unglaciated Allegheny Plateau Region of the state. This is within the Pennsylvanian System of underlying bedrock, which includes sedimentary rocks of the Allegheny, Conemaugh, and Monongahela Formations (Brockman 1998; USDA, SCS 1998:3). The geology of the project consists of shales, siltstones, coals, and sandstones (Brockman 1998).

Soils

The project area is located within the Morristown-Guernsey soil association. This association is present in upland, unglaciated situations and has entrenched stream valleys with narrow to comparably broad ridge tops (USDA, SCS 1998 [2015]). There are five specific soils within the project area (Table 1). Coal mining activity has taken place in this area and the soils are expected to be a byproduct of these strip mining activities. The project area does not appear to contain many situations where the soils are intact or not steeply sloped.

Table 1. Soil in the Project.			
Soil Symbol	Soil Name	Slope	Location
MrF	Morristown Channery silt loam	25-70	Mining spoil; disturbance
GnD	Gilpin silt loam	15 to 25	Ridge tops and side slopes
MoD	Morristown Channery silty clay loam	8 to 25	Mining spoil; disturbance
BkE	Berks Channery silty clay loam	25-40	Mining spoil; disturbance
Me	Melvin silt loam (ponded)	0	Depressions; low areas

Flora

There is or at least was great floral diversity in Ohio. This diversity is relative to the soils and the terrain that generally includes the till plain, lake plain, terminal glacial margins, and unglaciated plateau (Forsyth 1970). Three major glacial advances, including the Kansan, Illinoian, and Wisconsinan, have affected the landscape of Ohio. The effects of the Wisconsin glaciation are most pronounced and have affected more than half of the state (Pavey et al. 1999).

The least diverse part of Ohio extends in a belt from the northeast below the lake-affected areas through most of western Ohio (Gordon 1966). These areas are part of the late Wisconsin ground moraine and lateral end moraines. It is positioned between the lake plains region and the terminal glacial moraines. This area included broad forested areas of beech maple forests interspersed with mixed oak forests in elevated terrain or

where relief is greater (Forsyth 1970; Gordon 1966). Prairie environments such as those in Wyandot and Marion County areas would contain islands of forests, but were mostly expansive open terrain dominated by grasses.

The northwestern Ohio terrain is nearly flat because of ancient glacial lakes and glaciation, which affected the flora. However, the vegetation was more diverse than the till plain to the south and east because of the variety of factors that contributed to its terrain. Forests within the Black Swamp were generally comprised of elm/ash stands; however, dissected areas along drainages and drier, elevated areas from beach deposits would contain mixed forests of oak and hickory (Gordon 1966, 1969). There was little upland floral diversity in the lake plains (Black Swamp region) except for the occasional patches of oak and hickory. Floral variety was most evident in narrow sleeves along larger stream valleys where there is relief.

The most biological diversity in Ohio is contained within the Allegheny Plateau, which encompasses the southeastern two-thirds of the state (Sheaffer and Rose 1998). Because this area is higher and has drier conditions, it is dominated by mixed oak forests. Some locations within the central part of this area contain beech and mixed mesophytic forests. There are large patches of oak and sugar maple forests to the south of the terminal moraine from Richland to Mahoning County (Gordon 1966).

Southwestern Ohio from about Cincinnati to Bellefontaine east to the Scioto River historically contained a very diverse floral landscape. This is an area where moraines from three glacial episodes are prevalent (Pavey et al. 1999). Forests in this area include elm-ash swamp, beech, oak-sugar maple, mixed mesophytic, prairie grasslands, mixed oak, and bottomland hardwoods (Core 1966; Gordon 1966, 1969). These forest types are intermingled with prairies being limited to the northern limits of this area mostly in Clark and Madison Counties.

Generally, beech forests are the most common variety through Ohio and could be found in all regions. Oak and hickory forests dominated the southeastern Ohio terrain and were found with patchy frequency across most of northern Ohio. Areas that were formerly open prairies and grasslands are in glacial areas, but are still patchy. These are in the west central part of the state. Oak and sugar maple forests occur predominantly along the glacial terminal moraine. Elm-ash swamp forests are prevalent in glaciated areas including the northern and western parts of Ohio (Gordon 1966; Pavey et al. 1999).

The project area and most of Harrison County is generally within what is considered to be a general mixed oak forest (Gordon 1966).

Fauna

The upland forest zone offered a diversity of mammals to the prehistoric diet. This food source consisted of white-tailed deer, black bear, Eastern cottontail rabbit, opossum, a variety of squirrels, as well as other less economically important mammals. Several avian species were a part of the upland prehistoric diet as well (i.e. wild turkey,

quail, ruffed grouse, passenger pigeon, etc.). The lowland zone offered significant species as well. Raccoon, beaver, and muskrat were a few of the mammals, while wood duck and wild goose were the economically important birds. Fishes and shellfish were also an integral part of the prehistoric diet. Ohio muskellunge, yellow perch, white crappie, long nose gar, channel catfish, pike, and sturgeon were several of the fish, whereas, the Ohio naiad mollusc, butterfly's shell, long solid, common bullhead, knob rockshell, and cod shell were the major varieties of shellfish. Reptiles and amphibians, such as several varieties of snakes, frogs, and turtles, were also part of the prehistoric diet (Trautman 1981; Lafferty 1979; Mahr 1949).

Cultural Setting

The first inhabitants of Ohio were probably unable to enter this land until the ice sheets of the Wisconsin glacier melted around 14,000 B.C. Paleoindian sites are considered rare due to the age of the sites and the effects of land altering activities such as erosion. Such sites were mostly used temporarily and thus lack the accumulation of human occupational deposits that would have been created by frequent visitation. Paleoindian artifact assemblages are characteristic of transient hunter-gatherer foraging activity and subsistence patterns. In Ohio, major Paleoindian sites have been documented along large river systems and near flint outcrops in the Unglaciaded Plateau (Cunningham 1973). Otherwise, Paleoindian sites in the glaciaded portions of Ohio are encountered infrequently and are usually represented by isolated finds or open air scatters.

The Paleoindian period is characterized by tool kits and gear utilized in hunting Late Pleistocene megafauna and other herding animals including but not limited to short-faced bear, barren ground caribou, flat-headed peccary, bison, mastodon, giant beaver (Bamforth 1988; Brose 1994; McDonald 1994). Groups have been depicted as being mobile and nomadic (Tankersley 1989); artifacts include projectile points, multi-purpose unifacial tools, burins, graters, and spokeshaves (Tankersley 1994). The most diagnostic artifacts associated with this period are fluted points that exhibit a groove or channel positioned at the base to facilitate hafting. The projectiles dating from the late Paleoindian period generally lack this trait; however, the lance form of the blade is retained and is often distinctive from the following Early Archaic period (Justice 1987).

The Archaic period has been broken down into three sub-categories, including the Early, Middle, and Late Archaic. During the Early Archaic period (ca. 10,000-8000 B.P.), the environment was becoming increasingly arid as indicated by the canopy (Shane 1987). This period of dryness allowed for the exploitation of areas that were previously inaccessible or undesirable. The Early Archaic period does not diverge greatly from the Paleoindian regarding the type of settlement. Societies still appear to be largely mobile with reliance on herding animals (Fitting 1963). For these reasons, Early Archaic artifacts can be encountered in nearly all settings throughout Ohio. Tool diversity increased at this time including hafted knives that are often re-sharpened by the process of beveling the utilized blade edge and intense basal grinding (Justice 1987). There is a basic transition from lance-shaped points to those with blades that are triangular. Notching becomes a common hafting trait. Another characteristic trait occurring almost

exclusively in the Early and Middle Archaic periods is basal bifurcation and large blade serrations. Tool forms begin to vary more and may be a reflection of differential resource exploitation. Finished tools from this period can include bifacial knives, points, drills/perforators, utilized flakes, and scrapers.

The Middle Archaic period (8000-6000 B.P.) is poorly known or understood in archaeological contexts within Ohio. Some (e.g., Justice 1987) regard small bifurcate points as being indicative of this period. Ground stone artifacts become more prevalent at this time. Other hafted bifaces exhibit large side notches with squared bases, but this same trait can extend back to the Paleoindian period. The climate at this time is much like that of the modern era. Middle Archaic period subsistence tended to be associated with small patch foraging that involved a consistent need for mobility with a shift towards stream valleys (Stafford 1994). Sites encountered from this time period throughout most of Ohio tend to be lithic scatters or isolated finds. The initial appearance of regional traits may be apparent at this time.

The Late Archaic period in Ohio (ca 6000-3000 B.P.) diverges from the previous periods in many ways. Preferred locations within a regional setting appear to have been repeatedly occupied. The more intensive and repeated occupations often resulted in the creation of greater social and material culture complexity. The environment at this time is warmer and drier. Most elevated landforms in northeastern Ohio have yielded Archaic artifacts (Prufer and Long 1986: 7), and the same can be stated for the remainder of Ohio.

Various artifacts are diagnostic of the Late Archaic period. Often, burial goods provide evidence that there was some long-distance movement of materials, while lithic materials used in utilitarian assemblages are often from a local chert outcrop. There is increased variation in projectile point styles that may reflect regionalism. Slate was often used in the production of ornamental artifacts. Ground and polished stone artifacts reached a high level of development. This is evident in such artifacts as grooved axes, celts, bannerstones, and other slate artifacts.

It is during the Terminal Archaic period (ca 3500-2500 B.P.) that extensive and deep burials are encountered. Cultural regionalism within Ohio is evident in the presence of Crab Orchard (southwest), Glacial Kame (northern), and Meadowood (central to Northeastern). Along the Ohio River, intensive occupations have been placed within the Riverton phase. Pottery makes its first appearance during the Terminal Late Archaic.

The Early Woodland period (ca 3000-2100 B.P.) in Ohio is often associated with the Adena culture and the early mound builders (Dragoo 1976). Early and comparably simple geometric earthworks first appear with mounds more spread across the landscape. Pottery at this time is thick and tempered with grit, grog, or limestone; however, it becomes noticeably thinner towards the end of the period. There is increased emphasis on gathered plant resources, including maygrass, chenopodium, sunflower, and squash. Habitation sites have been documented that include structural evidence. Houses that were constructed during this period were circular, having a diameter of up to 18.3 m (Webb and Baby 1963) and often with paired posts (Cramer 1989). Artifacts dating from

this period include leaf-shaped blades with parallel to lobate hafting elements, drilled slate pieces, ground stone, thick pottery, and increased use of copper. Early Woodland artifacts can be recovered from every region of Ohio.

The Middle Woodland period (ca 2200-1600 B.P.) is often considered to be equivalent with the Hopewell culture. The largest earthworks in Ohio date from this period. There is dramatic increase in the appearance of exotic materials that appear most often in association with earthworks and burials. Artifacts representative of this period include thinner, grit-tempered pottery, dart-sized projectile points (Lowe Flared, Steuben, Snyders, and Chesser) [Justice 1987], exotic materials (mica, obsidian, and marine shell, etc.). The points are often thin, bifacially beveled, and have flat cross sections. There seems to have been a marked increase in the population as well as increased levels of social organization. Middle Woodland sites seem to reflect a seasonal exploitation of the environment. There is a notable increase in the amount of Eastern Agricultural Complex plant cultigens, including chenopodium, knotweed, sumpweed, and little barley. This seasonal exploitation may have followed a scheduled resource extraction year in which the populations moved camp several times per year, stopping at known resource extraction loci. Middle Woodland land use appears to center on the regions surrounding earthworks (Dancey 1992; Pacheco 1996); however, there is evidence of repeated occupation away from earthworks (Weller 2005a). Household structures at this time vary with many of them being squares with rounded corners (Weller 2005a). Exotic goods are often attributed to funerary activities associated with mounds and earthworks. Utilitarian items are more frequently encountered outside of funerary/ritual contexts. The artifact most diagnostic of this period is the bladelet, a prismatic and thin razor-like tool, and bladelet cores. Middle Woodland remains are more commonly recovered from central Ohio south and lacking from most areas in the northern and southeastern part of the state.

The Late Woodland period (ca A.D. 400-900) is distinct from the previous period in several ways. There appears to be a population increase and a more noticeable aggregation of groups into formative villages. The villages are often positioned along large streams, on terraces, and were likely seasonally occupied (Cowan 1987). This increased sedentism was due in part to a greater reliance on horticultural garden plots, much more so than in the preceding Middle Woodland period. The early Late Woodland groups were growing a wide variety of crop plants that are collectively referred to as the Eastern Agricultural Complex. These crops included maygrass, sunflower, and domesticated forms of goosefoot and sumpweed. This starch and protein diet was supplemented with wild plants and animals. Circa A.D. 800 to 1000, populations adopted maize agriculture, and around this same time, shell-tempered ceramics appear. Other technological innovations and changes during this period included the bow and arrow and changes in ceramic vessel forms.

The Late Prehistoric period (ca A.D. 1000-1550) is distinctive from former periods. The Cole complex (ca A.D. 1000-1300) has been identified in central and south central Ohio. Sites that have been used to define the Cole complex include the W.S. Cole (33DL11), Ufferman (33DL12), and Decco (33DL28) sites along the Olentangy; the Zencor Village site, located along the Scioto River in southern Franklin County; and the

Voss Mound site (33FR52), located along the Big Darby Creek in southwestern Franklin County. It has been suggested that this cultural manifestation developed out of the local Middle Woodland cultures and may have lasted to be contemporaneous with the Late Prehistoric period (Barkes 1982; Baby and Potter 1965; Potter 1966). Cole is a poorly defined cultural complex as its attributes are a piecemeal collection gathered from various sites. Some have suggested that it may be associated with the Fort Ancient period (Pratt and Bush 1981). Artifacts recovered from sites considered as Cole include plain and cordmarked pottery, triangular points, Raccoon Notched points, chipped slate discs, rectangular gorgets, and chipped stone celts. The vessels often have a globular form with highly variable attributes and rim treatment. There have been few structures encountered from this period, but those that have are typically rounded or circular (Pratt and Bush 1981; Weller 2005b).

Monongahela phase sites date to the Late Prehistoric to Contact period in eastern Ohio. Monongahela sites are typically located on high bottomlands near major streams, on saddles between hills, and on hilltops, sometimes a considerable distance from water sources. Most of these sites possessed an oval palisade, which surrounded circular house patterns. Burials of adults are usually flexed and burial goods are typically ornamental. A large variety of stone and bone tools are found associated with Monongahela sites. Monongahela pottery typically is plain or cordmarked with a rounded base and a gradually in-sloping shoulder area. Few Euro-American trade items have been found at Monongahela sites (Drooker 1997).

Protohistoric to Settlement

By the mid-1600s, French explorers traveled through the Ohio country as trappers, traders, and missionaries. They kept journals about their encounters and details of their travels. These journals are often the only resource historians have regarding the early occupants of seventeenth century Ohio. The earliest village encountered by the explorers in 1652 was a Tionontati village located along the banks of Lake Erie and the Maumee River. Around 1670, it is known that three Shawnee villages were located along the confluence of the Ohio River and the Little Miami River. Because of the Iroquois Wars, which continued from 1641-1701, explorers did not spend much time in the Ohio region, and little else is known about the natives of Ohio during the 1600s. Although the Native American tribes of Ohio may have been affected by the outcome of the Iroquois Wars, no battles occurred in Ohio (Tanner 1987).

French explorers traveled extensively through the Ohio region from 1720-1761. During these expeditions, the locations of many Native American villages were documented. In 1751, a Delaware village known as Maguck existed near present-day Chillicothe. In 1758, a Shawnee town known as 'Lower Shawnee 2' existed at the same location. The French also documented the locations of trading posts and forts, which were typically established along the banks of Lake Erie or the Ohio River (Tanner 1987).

While the French were establishing a claim to the Ohio country, many Native Americans were also entering new claims to the region. The Shawnee were being forced

out of Pennsylvania because of English settlement along the eastern coast. The Shawnee created a new headquarters at Shawnee Town, which was located at the mouth of the Scioto River. This headquarters served as a way to pull together many of the tribes which had been dispersed because of the Iroquois Wars (Tanner 1987).

Warfare was bound to break out as the British also began to stake claims in the Ohio region by the mid-1700s. The French and Indian War (1754-1760) affected many Ohio Native Americans; however, no battles were recorded in Ohio (Tanner 1987). Although the French and Indian War ended in 1760, the Native Americans continued to fight against the British explorers. In 1764, Colonel Henry Bouquet led a British troop from Fort Pitt, Pennsylvania to near Zanesville, Ohio.

In 1763, the Seven Years' War fought between France and Britain, also known as the French and Indian War ended with The Treaty of Paris. In this Peace of Paris, the French ceded their claims in the entire Ohio region to the British. When the American Revolution ended with the Second Treaty of Paris in 1783, the Americans gained the entire Ohio region from the British; however, they designated Ohio as Indian Territory. Native Americans were not to move south of the Ohio River but Americans were encouraged to head west into the newly acquired land to occupy and govern it (Tanner 1987).

By 1783, Native Americans had established fairly distinct boundaries throughout Ohio. The Shawnee tribes generally occupied southwest Ohio, while the Delaware tribes stayed in the eastern half of the state. Wyandot tribes were located in north-central Ohio, and Ottawa tribes were restricted to northeast Ohio. There was also a small band of Mingo tribes in eastern Ohio along the Ohio River, and there was a band of Mississauga tribes in northeastern Ohio along Lake Erie. The Shawnee people had several villages within Ross County along the Scioto River (Tanner 1987). Although warfare between tribes continued, it was not as intense as it had been in previous years. Conflicts were contained because boundaries and provisions had been created by earlier treaties.

In 1795, the Treaty of Greenville was signed as a result of the American forces defeat of the Native American forces at the Battle of Fallen Timbers. This allocated the northern portion of Ohio to the Native Americans, while the southern portion was opened for Euro-American settlement. Although most of the battles which led up to this treaty did not occur in Ohio, the outcome resulted in dramatic fluctuations in the Ohio region. The Greenville Treaty line was established, confining all Ohio Native Americans to northern Ohio, west of the Tuscarawas River (Tanner 1987).

Ohio Native Americans were again involved with the Americans and the British in the War of 1812. Unlike the previous wars, many battles were fought in the Ohio country during the War of 1812. By 1815, peace treaties began to be established between the Americans, British, and Native Americans. The Native Americans lost more and more of their territory in Ohio. By 1830, the Shawnee, Ottawa, Wyandot, and Seneca were the only tribes remaining in Ohio. These tribes were contained on reservations in

northwest Ohio. By the middle 1800s, the last of the Ohio Native Americans signed treaties and were removed from the Ohio region.

Harrison County History

Most of the early settlers came from Pennsylvania, particularly Washington County. Other settlers came from Virginia and Maryland. The majority of these settlers were Scots-Irish, Pennsylvania Dutch, and Quakers. The first settler was Alexander Henderson, who arrived in the county in 1799 and settled near Cadiz. These early settlers were primarily farmers as agriculture was the most important economy for the county during the first half of the nineteenth century. Major products of the county included the staple grains and livestock, potatoes, and dairy, particularly cheese (Eckley and Perry 1921; Hanna 1900). The area was a major wool-producing region of Ohio in the late nineteenth century. An oil boom hit the county in the early 1900s, followed by a period of coal mining. Coal remains an important component of the county's economy today. Harrison County ranks second, behind Belmont County, in coal producing counties in Ohio (Crowell 2001).

Harrison County takes its name from General William Henry Harrison. With the organization and formation of Harrison County in January of 1813 came the typical improvements associated with local governance. Transportation began to grow and towns sprung up allowing for easier trading of goods and expansion of local culture and sentiment (Eckley and Perry 1921; Howe 1888).

Indian trails served as major transportation routes during the early 1800s. The first railroads built in the county brought new intensity and further purpose to agricultural production and allowed for extensive coal mining and shipping. With this new means of transportation, coal became the county's cash crop. Two men, Biggs and Beatty laid out Cadiz, the county seat, in October 1804. By 1847, the town was a typical Ohio town of 1,000 inhabitants with several churches, general stores, and plenty of jobs from the several nearby foundries (Eckley and Perry 1921; Hanna 1900; Howe 1888).

Like many Ohio communities, Harrison County possesses a rich abolitionist heritage. The Reverend John Walker, a Presbyterian minister and staunch abolitionist, founded Alma College in New Athens in 1818. He changed the school's name to Franklin College in 1826. The college was a hotbed of abolitionist teaching before the Civil War. Many graduates carried the message forward in their careers as ministers, teachers, and attorneys. Among the institution's graduates were eight senators, nine congressmen, several governors, and twenty state legislators (Eckley and Perry 1921; Hanna 1900).

Harrison County's tourism industry plays an increasingly important role in the economy. It is the birthplace of General George A. Custer and Hollywood actor Clark Gable; each draws tourists to the county. Harrison has numerous historical sites, more than 4,200 acres of public lakes, 20,000 acres of public land, and over 100 miles of public

hiking and bicycling routes. Harrison County is home also to more than 15 small manufacturing companies, some of which have been there for more than 100 years.

Green Township History

The county commissioners of Jefferson County organized Green Township in 1807 while Harrison was still part of that county. The Green Township known today took on its lasting boundaries in 1833 when the present sub-divisions of Harrison County were formed by her county commissions. Green Township is situated along the eastern line of Harrison County. The land of the township is hilly and rough, cut by many small streams. This was fitting for sheep and dairy farming an advantage well played by its early settlers. Soon however, the citizens of Green found a more profitable resource within their hills and coalmines sprang up all over the township (Eckley and Perry 1921).

As of 1921 Green Township was better supplied with railroads than any other part of Harrison County. These railroads were the Wabash, the Lake Erie & Western, the Wheeling & Lake Erie and the Pennsylvania system (Eckley and Perry 1921). This fact drove the coal economy and helped to develop Green Township's small towns into vibrant communities during the coal era.

There are five villages or hamlets located in the township. Cyrus McNeely platted the village of Hopedale on October 15, 1849 and filed for record on July 30, 1851. Hopedale has several churches and a college for which it is well recognized. It is the only incorporated community in the township. The mills of Hopedale are very old dating back to the pioneer days. The Hamlet of Folk, Skit Station, Ginther, and Unionvale Village are all small towns along the Wheeling and Lake Erie Railroad line. Folk is at the junction of that railroad and the Pennsylvania. Skit Station in Section 28, Ginther in Section 10, and Unionvale in Section 17 were never much more than places for miners and coal shippers to live and they have all but emptied since the end of the coal era (Eckley and Perry 1921).

Research Design

The purpose of a Phase I survey is to locate and identify cultural resources that will be affected by the planned electric line extension. This includes archaeological deposits as well as architectural properties that are older than 50 years. Once these resources are identified and sampled, they are evaluated for their eligibility or potential eligibility to the NRHP. These investigations are directed to answer or address the following questions:

- 1) Did the literature review reveal anything that suggests the project had been previously surveyed, and what is the relationship of previously recorded properties to the project?
- 2) Are cultural resources likely to be identified in the project?

Archaeological Field Methods

The survey conducted within the project area included visual inspection to identify and evaluate the subject area for cultural resources. The project area was inspected from an aerial perspective prior to entering the field and it was apparent that was likely contained in severely disturbed terrain.

Visual inspection. Locations where cultural resources were not expected, such as disturbed areas, streams, and steep slope were walked over and visually inspected. This method was used to verify the absence or likelihood of any cultural resources as well as rockshelters being located in these areas. This method was also utilized to document the general terrain and the surrounding area.

The application of the resulting field survey methods was documented in field notes, field maps, and project plan maps.

Curation

There were no cultural resources identified during these investigations. Notes and maps affiliated with this project will be maintained at Weller & Associates, Inc. files.

Literature Review

The literature review study area is defined as a 1.6 km (1 mile) radius from the center of the project (Figure 2 and 3). In conducting the literature review, the following resources were consulted at OHPO and the State Library of Ohio:

- 1) *An Archaeological Atlas of Ohio* (Mills 1914);
- 2) OHPO United States Geological Survey (USGS) 7.5' series topographic maps;
- 3) Ohio Archaeological Inventory (OAI) files;
- 4) Ohio Historic Inventory (OHI) files;
- 5) National Register of Historic Places (NRHP) files;
- 6) Determinations of Eligibility (DOE) files;
- 7) OHPO CRM/contract archaeology files; and
- 8) Harrison County atlases, histories, historic USGS 15' series topographic map(s), and current USGS 7.5' series topographic map(s).

The *Archeological Atlas of Ohio* (Mills 1914) did not indicate any resources that were located within the project area or Green Township.

A review of the OHPO topographic maps indicated no sites located in the project area, but there is one site identified in the study area. Site 33HN0201 is a historic period campsite that is located to the south of the project area and within mined land. This site has been destroyed by the mining activity.

The Ohio Historic Inventory (OHI) files indicated no previously recorded OHIs located within or adjacent the project area and none within the study area.

There were no NRHP or DOE properties located within the project area or study area.

There have not been any professional surveys conducted in the study or project area of this project.

Cartographic/atlas resources were reviewed for the project. The *Atlas of Harrison County, Ohio* (Caldwell 1875) indicates the landowners were Robert Herron, W. Welsh, and J. Adams; there does not appear to be any residences associated with these nineteenth century landowners that are relative to this project (Figure 4). The USGS *1904 Scio, Ohio 15 Minute Series (Topographic)* map does not indicate that there are structures within the project (Figure 5). The USGS *1960 Cadiz, Ohio Quadrangle 7.5 Minute Series (Topographic)* map indicates that there are no buildings in the vicinity of the project area, the terrain is sloping, and mining activity is present (Figure 2).

Evaluation of Research Questions 1 and 2

There were two questions presented in the research design that will be addressed at this point. These are:

- 1) Did the literature review reveal anything that suggests the project had been previously surveyed, and what is the relationship of previously recorded properties to the project?
- 2) Are cultural resources likely to be identified in the project?

The literature review did not indicate that there were any buildings, previously recorded sites, or structures within the project area. Mills (1914) indicated that there are no sites near the project area. The identification of cultural materials does not seem likely in this project area due to the amount of severe disturbance and sloping terrain.

Fieldwork Results

The field investigations for this project were conducted on November 24, 2015 (Figures 6-12). The climactic conditions at the time of survey involved partly cloudy, dry, and seasonally average temperatures. At the time of survey, the project area included deciduous forestation, railroad easement, scrubland, and built/disturbed areas. The project area is located in upland and rugged conditions that were previously the subject of surface mining activity. The entirety of this project area was contained in steeply sloping terrain or severe disturbance. The field investigations did not result in the identification of any cultural materials. There are no buildings older than 50 years within or near the project area.

Prior to conducting the fieldwork, various cartographic, historic, and aerial maps were inspected. The soils survey for this project indicated that much of the area had been surface mined for coal. The areas that had not been mined, were contained in steeply sloping conditions (i.e., >15 percent). Construction activity affiliated with the abutting natural gas industry was prevalent and accounted for some of the agents of disturbance as well. Inspection further noted that there were unnatural settings within the woods that were probably created from grading and bulldozing activity from the previous and nearby mining. The field investigations did not identify any situations or conditions that are suitable for testing. There were no cultural materials identified during these investigations.

Fieldwork Summary

The field investigations for this project were limited to visual inspection. The project area was found to be either steeply sloped or contained in severely disturbed conditions. The disturbance is relative to previous coal mining activity as well as the constructions associated with the natural gas industry. The opportunity to conduct archaeological investigations was precluded by these conditions. There were no cultural materials identified during these investigations and there are no buildings older than 50 years within view of this project.

APE Definition and NRHP Determination

The APE is a term that must be applied on an individual project basis. The nature of the project or undertaking is considered in determining the APE. This may include areas that are off the property or outside of the actual project's boundaries to account for possible visual impacts. When construction is limited to underground activity, the APE may be contained within the footprint of the project. The APE includes the footprint of the project and a limited area surrounding it. The APE accounts for both architecture and archaeology. The archaeological aspect of the APE can be regarded as the footprint of the proposed construction; however, Weller reviewed an area for which the project corridor will be constructed.

The project plans involve the construction/installation of an extension for an existing electric line. This is a small stint that will be established in an area that is bracketed by large-scale industrial types of development. The surrounding landscape is rural, but has been greatly affected by surface coal mining activity and natural gas-related constructions. The electric line is fully contained in steeply sloping and/or severely disturbed conditions. The archaeological investigations for the project did not identify any cultural materials. The planned construction is not considered to effect any historic properties in regards to the APE.

Recommendations

In November of 2015, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 7.7 ha (19 ac) Rexford 138kV Line

Extension to Sunco-HOPDL in Green Township, Harrison County, Ohio. These investigations involved visual inspection and identified severe disturbance and steep slope. There were no cultural deposits identified during these investigations and there are no buildings older than 50 years contained within or immediately adjacent to the project area. The project is not considered to impact or affect any historic sites or landmarks. If this project is subject to Section 106 of the National Historic Preservation Act, a finding of no historic properties affected as outlined by 36 CFR § 800.4 and 36 CFR § 800.5 is considered appropriate. No further work is deemed necessary for this project.

References Cited

- Baby, R. S., and M. A. Potter
1965 "The Cole Complex: A Preliminary Analysis of the Late Woodland Ceramics in Ohio and Their Relationship to the Ohio Hopewell Phase." In: *Papers in Archaeology of the Ohio Historical Society*, February 1965, No. 2. Ohio Historical Society, Columbus.
- Bamforth, D.
1988 *Ecology and Human Organization on the Great Plains*. Plenum, New York.
- Barkes, B. M.
1982 *Analysis of Late Woodland Ceramics from the Decco (33DL28), Ufferman (33DL12), and W. S. Cole (33DL11) Sites: The Cole Complex Reconsidered*. Copy available at the Ohio Historic Preservation Office, Columbus.
- Beers, J. H.
1891 *Commemorative biographical record of the counties of Harrison and Carroll, Ohio, containing biographical sketches of prominent and representative citizens, and many of the early settled families*. J.H. Beers and Company.
- Brockman, C. S.
1998 *Physiographic Regions of Ohio*. Ohio Department of Natural Resources, Division of Geological Survey, Columbus.
- Brose, D. S.
1994a "Archaeological Investigations at the Paleo Crossing Site, a Paleoindian Occupation in Medina County, Ohio." In: *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 61-76. The Ohio Archaeological Council, Columbus.
- 1994b "The South Park Village Site and the Late Prehistoric Whittlesey Tradition of Northeast Ohio." In: *Monographs in World Archaeology* No. 20. Prehistory Press, Madison, Wisconsin.
- Cowan, W. C.
1987 *First Farmers of the Middle Ohio Valley: From Ancient Societies, A.D. 1000-1670*. The Cincinnati Museum of Natural History, Cincinnati.
- Cramer, A.
1989 *The Dominion Land Company Site: An Early Adena Mortuary Manifestation in Franklin County, Ohio*. M.A. Thesis, Kent State University, Kent, Ohio.

Cunningham, R. M.

1973 "Paleo Hunters along the Ohio River." In: *Archaeology of Eastern North America* 1(1): 116-118. Eastern States Archeological Federation, Bethlehem, Connecticut.

Dancey, W. S.

1992 "Village Origins in Central Ohio: The Results and Implications of Recent Middle and Late Woodland Research." In: *Cultural Variability in Context: Woodland Settlements of the Mid-Ohio Valley*, edited by M. F. Seeman, pp. 24-29. Special Papers 7, *Midcontinental Journal of Archaeology*, Kent State University Press, Kent, Ohio.

Dragoo, D.

1976 "Some Aspects of Eastern North American Prehistory: A Review 1975." In: *American Antiquity* 41(1):3-27. The Society for American Archaeology, Washington, DC.

Eckley, H.J., and W.T. Perry

1921 *History of Carroll and Harrison Counties, Ohio. Volume I.* The Lewis Publishing Company Chicago and New York.

Fitting, J. E.

1965 "Late Woodland Culture in Southeastern Michigan." In: *Anthropological Papers, the Museum of Anthropology*, No. 24, University of Michigan, Ann Arbor.

1963 "The Hi-Lo Site: A Paleo-Indian Site in Western Michigan." In: *Wisconsin Archaeologist* 44:87-96. Wisconsin Historical Society, Madison, Wisconsin.

Forsyth, J. L.

1970 "A Geologist Looks at the Natural Vegetation Map of Ohio." In: *The Ohio Journal of Science* 70(s):180-191. The Ohio Academy of Science, Columbus.

Gordon, R. B.

1969 "The Natural Vegetation of Ohio in Pioneer Days." In: *Bulletin of the Ohio Biological Survey, New Series* 3(2). Ohio State University, Columbus.

1966 *Natural Vegetation of Ohio at the Time of the Earliest Land Surveys.* Ohio Biological Survey and the Natural Resources Institute of the Ohio State University, Columbus.

Gramly, R. M., and G. L. Summers

1986 "Nobles Pond: A Fluted Point Site in Northeastern Ohio." In: *Mid-Continental Journal of Archaeology* 11(1): 98-123.

Justice, N.

1987 *Stone Age Spears and Arrow Points of the Midcontinental and Eastern United States.* Indiana University Press, Bloomington and Indianapolis.

Lafferty, M. B.

1979 *Ohio's Natural Heritage*. Ohio Academy of Science, Columbus.

Mahr, A. C.

1949 "A Chapter of Early Ohio Natural History." In: *Ohio Journal of Science* 49(1). The Ohio Academy of Science, Columbus.

McDonald, H.

1994 "The Late Pleistocene Vertebrate Fauna in Ohio: Coinhabitants with Ohio's Paleoindians." In: *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 23-41. The Ohio Archaeological Council, Columbus.

Mills, W.

1914 *An Archeological Atlas of Ohio*. Ohio State Archaeological and Historical Society, Columbus.

Ohio Historic Preservation Office

1994 *Archaeology Guidelines*. The Ohio Historical Society and Ohio Historic Preservation Office, Columbus, Ohio.

Pacheco, P.

1996 "Ohio Hopewell Regional Settlement Patterns." In: *A View From The Core: A Synthesis of Ohio Hopewell Archaeology*, edited by P. Pacheco, pp. 16-35. The Ohio Archaeological Council, Columbus.

Pavey, R.R., R.P. Goldthwait, C.S. Brockman, D.N. Huyll, E. MacSwinford, and R.G. Van Horn

1999 *Quaternary Geology of Ohio*. Ohio Division of Geological Survey Map No. 2. The Ohio Department of Natural Resources, Division of Geological Survey, Columbus.

Potter, M. A.

1966 "Cole Ceramics: A Study of Late Woodland Pottery." Unpublished M.A. thesis on file at the Ohio Historical Society, Department of Archaeology, Columbus.

Pratt, G. M., and D. R. Bush

1981 *Archaeological Resource Management in Ohio: A State Plan for Archaeology (Draft)*. Copy available for review at the Ohio Historic Preservation Office, Columbus.

Prufer, O. H., D. A. Long, and D. J. Metzger

1989 "Krill Cave: A Stratified Rockshelter in Summit County, Ohio." In: *Kent State Research Papers in Archaeology No. 8*. Kent State University Press, Kent, Ohio.

- Prufer, O. H., and D. A. Long
 1986 "The Archaic of Northeastern Ohio." In: *Kent Research Papers in Archaeology*, No. 6, Kent State University Press, Kent, Ohio.
- Richner, J. and W. Volf
 2000 "Front Yard Archeology: Hopewellian Occupation at the Szalay Site." In: *The Newsletter of Hopewell Archaeology in the Ohio River Valley Volume 4, Number 1, June 2000*. U.S. Department of the Interior National Park Service, Midwest Archaeological Center, Lincoln, Nebraska.
- Ritchie, W. A.
 1965 *The Archaeology of New York State*. Natural History Press, Garden City, New York.
- Seeman, M. F., G. Summers, E. Dowd, and L. Morris
 1994 "Fluted Point Characteristics at Three Large Sites: The Implication for Modeling Early Paleoindian Settlement Patterns in Ohio." In: *The First Discovery of America: Archaeological Evidence of the Early Inhabitants of the Ohio Area*, edited by W. S. Dancey, pp. 77-93. The Ohio Archaeological Council, Columbus, Ohio.
- Shane, L.
 1987 "Late-glacial Vegetational and Climatic History of the Allegheny Plateau and the Till Plains of Ohio and Indiana, U.S.A." In: *Boreas* 16:1-20. The Boreas Collegium, Blackwell Publishing Ltd., Edinburgh.
- Shane, O. C., III
 1975 "The Mixer Site: A Multicomponent Locality in Erie County, Ohio." In: *Studies in Ohio Archaeology* (rev. ed.), edited by O.H. Prufer and D. M. McKenzie, Kent State University Press, Kent, Ohio.
- Sheaffer, C., and M. A. Rose
 1998 *The Native Plants of Ohio, Bulletin 865*. The Ohio State University Extension (College of Food, Agricultural & Environmental Sciences) Department of Horticulture. Electronic document, http://ohioline.osu.edu/b865/b865_01.html, accessed November 28, 2005.
- Stafford, R.
 1994 "Structural Changes in Archaic Landscape Use in the Dissected Uplands of Southwestern Indiana." In: *American Antiquity*, 59:219-237. The Society for American Archaeology, Washington, DC.
- Stothers, D. M., J. R. Graves, and B. G. Redmond
 1984 "The Sandusky and Western Basin Traditions: A Comparative Analysis of Settlement-Subsistence Systems." In: *Toledo Area Aboriginal Research Society Bulletin* 7 (1&2): 1-73. Toledo Area Aboriginal Research Society, Toledo, Ohio.

Tankersley, K.

1994 "Was Clovis a Colonizing Population in Eastern North America?" In: *The First Discovery of America: Archaeological Evidence of the Early Ohio Area*, edited by W. S. Dancey, pp. 95-116. The Ohio Archaeological Council, Columbus.

1989 *Late Pleistocene Lithic Exploitation and Human Settlement Patterns in the Midwestern United States*. Unpublished Ph.D. dissertation, Department of Anthropology, Indiana University, Bloomington.

Tanner, H.

1987 *Atlas of Great Lakes Indian History*. University of Oklahoma Press, Norman.

Trautman, M. B.

1981 *The Fishes of Ohio*. The Ohio State University Press, Columbus.

United States Department of Agriculture, Soil Conservation Service (USDA, SCS)

1998[2015] *Soil Survey of Harrison County Ohio*. United States Department of Agriculture, Soil Conservation Service in cooperation with the Ohio Department of Natural Resources, Division of Lands and Soil, and Ohio Agricultural Research and Development Center.

Webb, W. S., and R. S. Baby

1963 *The Adena People No. 2*. The Ohio Historical Society, The Ohio State University Press, Columbus.

Weller, R. J.

2005 *Data Recovery at the Haven Site (33DL1448) Located in Liberty Township, Delaware County, Ohio*. Weller & Associates. Submitted to the Delaware County Sanitary Engineer's Office. Copy available for review at the Ohio Historic Preservation Office.

Zakucia, J.

1964 "The Middle Woodland period in the Beaver Valley." In: *Eastern States Archaeological Federation*, Bulletin No. 23. Eastern States Archeological Federation, Bethlehem, Connecticut.

Figures



Figure 1. Political map of Ohio showing the approximate location of the project.

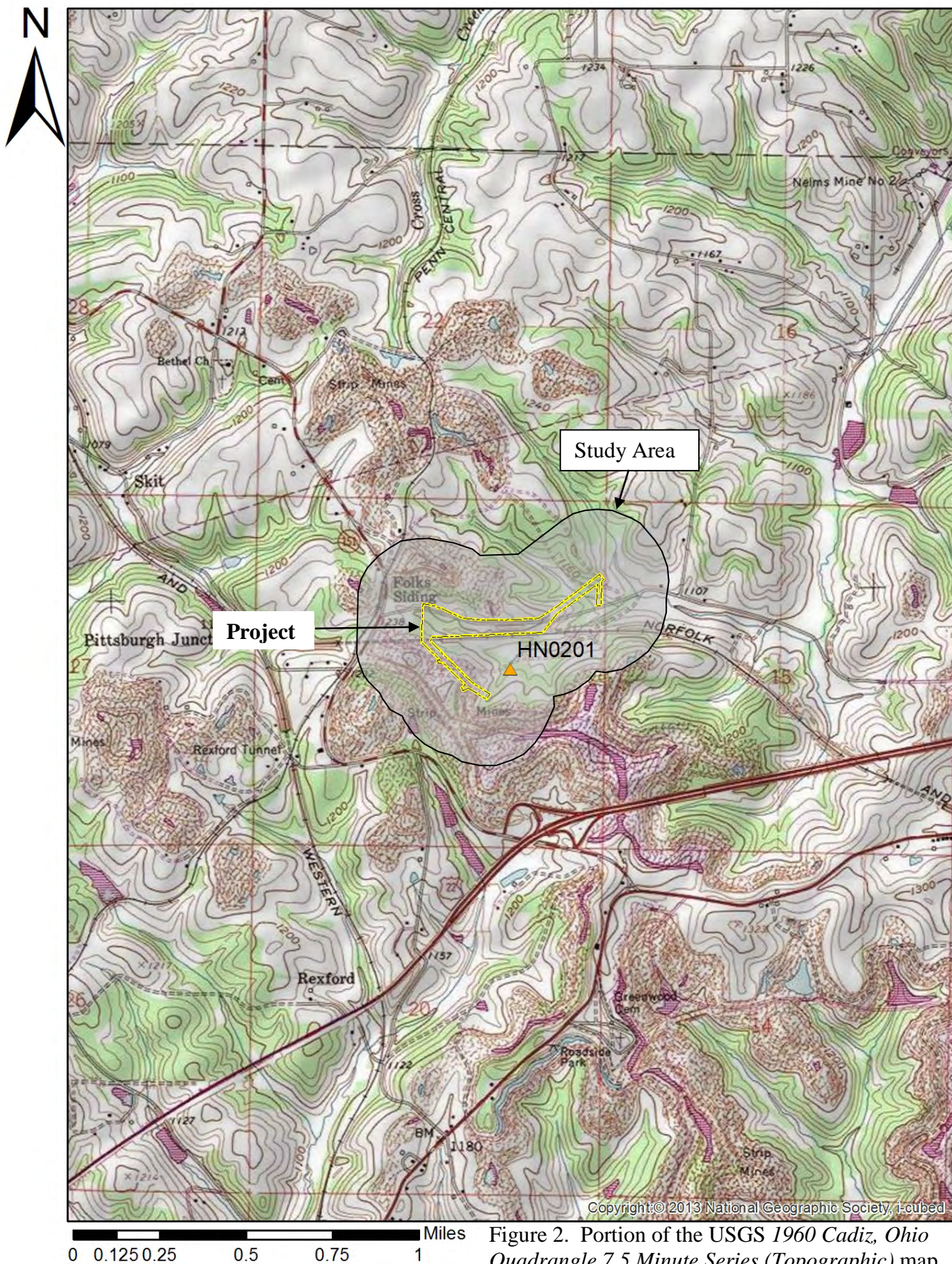




Figure 3. Aerial view indicating the location of the project and previously recorded resources in the vicinity.

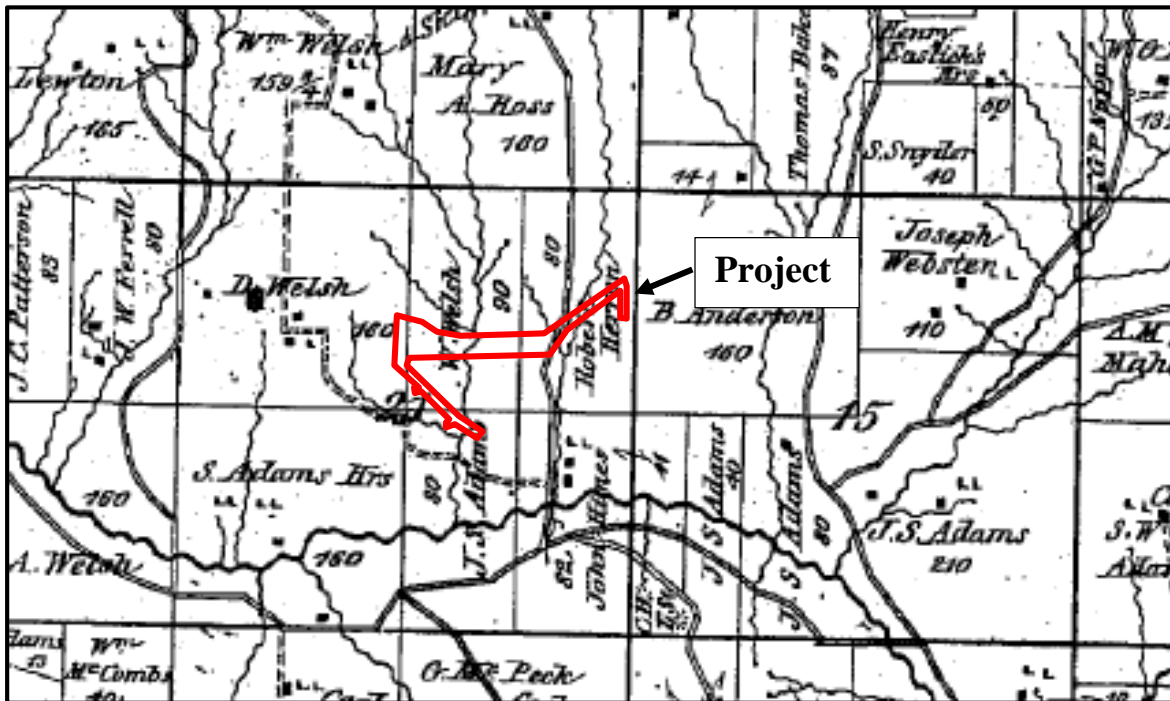


Figure 4. Portion of the *Atlas of Harrison County, Ohio* (Caldwell 1875) indicating the approximate location of the project.

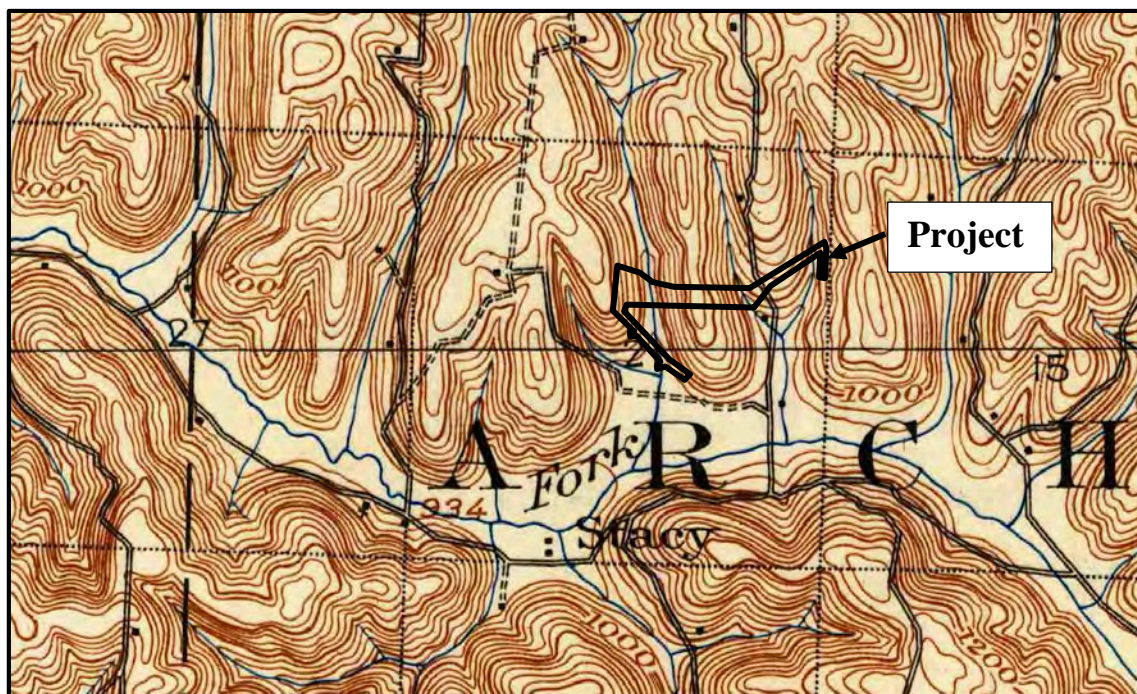


Figure 5 Portion of the USGS 1904 Scio, OH Quadrangle 15 Minute Series (Topographic) map indicating the location of the project.

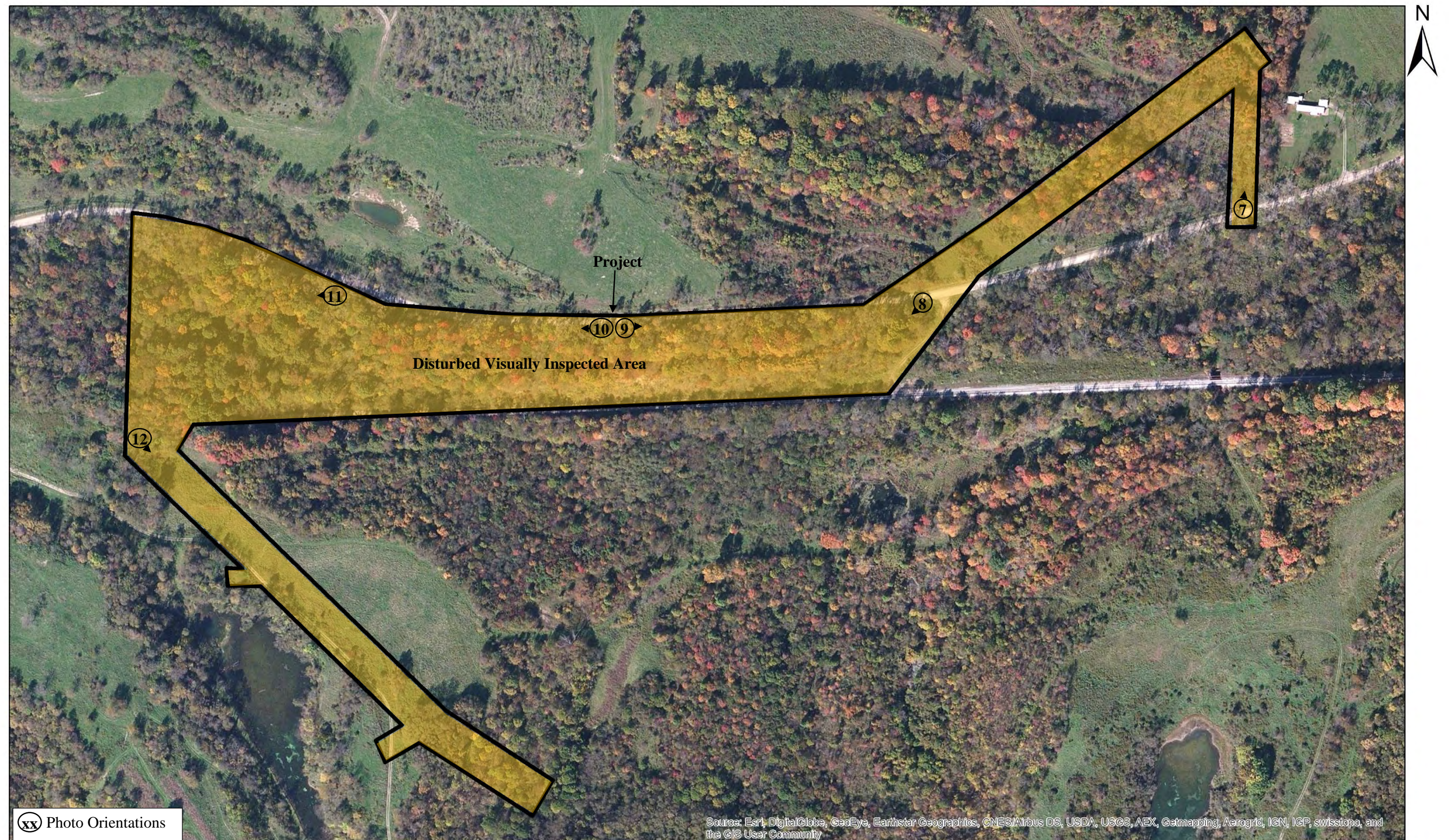


Figure 6. Aerial map of the project indicating the results of testing and photo orientations.

0 200 400 800 Feet



Figure 7. View of the disturbed conditions within the southeastern portion of the project.



Figure 8. View of some of the disturbance within the eastern portion of the project.



Figure 9. View of the disturbed conditions within the central portion of the project.



Figure 10. Another view of the disturbed conditions within the central portion of the project.



Figure 11. View of the disturbed conditions within the western portion of the project.



Figure 12. View of the disturbed conditions within the southwestern portion of the project.

CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

Appendix D Copies of Construction Notice to Public Officials
June 23, 2016

Appendix D Copies of Construction Notice to Public Officials

FILED UNDER SEPARATE COVER

CONSTRUCTION NOTICE FOR RAIDER 138 KV LINE EXTENSION

Appendix E Ecological Information
June 23, 2016

Appendix E Ecological Information



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

40

SITE NAME/LOCATION ALD-raider 138 KV Line Extension, St. Charlesville, OH
Harrison Co. SITE NUMBER Stream 1 RIVER BASIN Tuscarawas River DRAINAGE AREA (mi²) 0.04
LENGTH OF STREAM REACH (ft) 200 LAT. 40.332761°N LONG. 80.941694°W RIVER CODE _____ RIVER MILE _____
DATE 5/16/2010 SCORER KBNN COMMENTS culverted under drive

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY
MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 pt]	<u>10</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u>5</u>
<input type="checkbox"/> BEDROCK [16 pt]		<input type="checkbox"/> FINE DETRITUS [3 pts]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]		<input type="checkbox"/> CLAY or HARDPAN [0 pt]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>10</u>	<input type="checkbox"/> MUCK [0 pts]	
<input type="checkbox"/> SAND (<2 mm) [8 pts]		<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<u>25</u>

Total of Percentages of
Blldr Slabs, Boulder, Cobble, Bedrock 0

(A)

6

(B)

4HHEI
Metric
PointsSubstrate
Max = 40

10

A + B

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30:

15

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

8

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

Bankfull
Width
Max=30

15

COMMENTS OHWM - 2 ft

AVERAGE BANKFULL WIDTH (meters):

1.5

This Information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None

COMMENTS

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Mining or Construction

- FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

Stream 1

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Cross Creek Distance from Evaluated Stream ~ 2 m.
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Cadiz NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
 County: Harrison Township/City: St. Clairsville

MISCELLANEOUS:

Base Flow Conditions? (Y/N): Y Date of last precipitation: 5/18/2016 Quantity: 0.04"
 Photograph Information: 10 Upstream, 7 Downstream
 Elevated Turbidity? (Y/N): N Canopy (% open): 100
 Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
 Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
 Is the sampling reach representative of the stream (Y/N): Y If not, please explain: _____

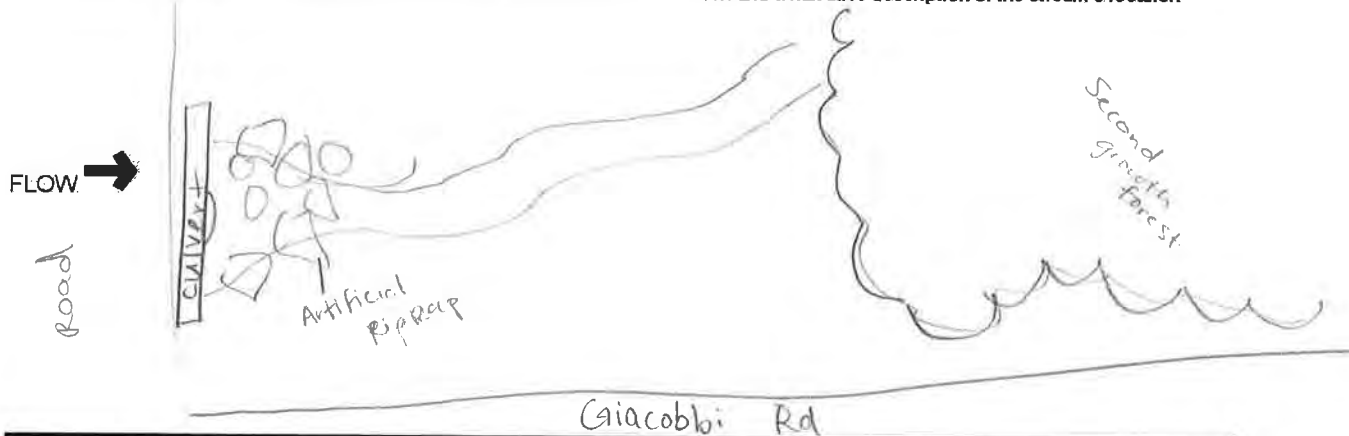
Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N): N Voucher? (Y/N): _____ Salamanders Observed? (Y/N): N Voucher? (Y/N): _____
 Frogs or Tadpoles Observed? (Y/N): N Voucher? (Y/N): _____ Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): _____
 Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 1. View of fence boundary facing west.



Photograph 2. View of fence boundary and upland drainage feature. Photograph taken facing east.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 3. View of proposed locations for Poles 3 and 4 and new field habitat. Photograph taken facing north.



Photograph 4. View of upland drainage feature. Photograph taken facing west.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 5. View of upland drainage feature and industrial habitat. Photograph taken facing east.



Photograph 6. View of Steam 1. Photograph taken facing upstream/west.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 7. View of Steam 1. Photograph taken facing downstream/east.



Photograph 8. View of Open Water 1. Photograph taken facing north.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 9. View of proposed location for Pole 2. Photograph taken facing south.



Photograph 10. View of proposed location for Pole 2. Photograph taken facing north.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 11. View of proposed location for Pole 1. Photograph taken facing north.



Photograph 12. View of proposed location for Pole 1. Photograph taken facing south.

American Electric Power
Raider 138 kV Line Extension Project
Harrison County, Ohio



Photograph 13. View of site. Photograph taken facing north.



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife

Ray Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

November 17, 2015

Jesse Binau
Stantec Consulting, Inc.
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Binau,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Rexford 138 kV Line Extension project area, including a one mile radius, in Green Township, Harrison County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke".

Debbie Woischke
Ohio Natural Heritage Database Program



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

December 2, 2015

Jesse Binau
Stantec
11687 Lebanon Road
Cincinnati OH 45241-2012

Re: 15-710; Request for Environmental Review, AEP Rexford 138 kV Line Extension Project, Harrison County, Ohio

Project: The proposed project involves the construction of an approximate one mile extension to an existing 138 kV transmission line.

Location: The proposed project is located in Archer Township, Harrison County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no data at or within a one mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

ODNR appreciates the opportunity to provide these comments .Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

From: susan_zimmermann@fws.gov [mailto:susan_zimmermann@fws.gov] **On Behalf Of** Ohio, FW3
Sent: Thursday, December 03, 2015 12:04 PM
To: Binau, Jesse
Subject: AEP Rexford 138kV Line Extension Project, Harrison Co. OH



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2016-TA-0258

Dear Mr. Binau,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project

be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson", is positioned above the printed name.

Dan Everson

Field Office Supervisor

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/23/2016 1:41:22 PM

in

Case No(s). 16-1120-EL-BNR

Summary: Notice (Construction Notice) electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company