



Legal Department

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Columbus, OH 43215-2373
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December 21, 2016

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

Erin C. Miller
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**Re: PUCO Case No. 16-2314-EL-BLN
In the Matter of the Letter of Notification for the
Lemaster 138 kV Station Project**

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification for the Lemaster 138 kV Station Project submitted by AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco”). 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 will be provided to the Board Staff via electronic message.

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

Respectfully Submitted,

/s/ Erin C. Miller
Erin C. Miller
Contract Counsel
AEP Ohio Transmission Company, Inc.

cc: Jon Pawley, OPSB Staff

Letter of Notification for Lemaster 138 kV Station Project



PUCO Case No. 16-2314-EL-BLN

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Administrative Code
Section 4906-6-05

Submitted by:
AEP Ohio Transmission Company, Inc.

December 21, 2016

LETTER OF NOTIFICATION FOR LEMASTER 138 KV STATION PROJECT

Letter of Notification Lemaster 138 kV Station Project

4906-6-05

AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco”) provides this Letter of Notification (“LON”) to the Ohio Power Siting Board (“OPSB”) in accordance with the requirements of the Ohio Administrative Code Chapter 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 Letter of Notification.

AEP Ohio Transco has identified the need to construct the Lemaster Station Project (the “Project”) in York Township, Athens County, Ohio. The Project consists of constructing a new 138 kV electric transmission substation on a site adjacent to AEP’s existing Poston Station, which will ultimately be replaced by Lemaster Station. The Project will be set up as a 138 kV breaker-and-a-half configuration, with an initial placement of four breaker strings, containing six 138 kV circuit terminations. It will also contain two 138 kV capacitor banks, for system voltage support.

The Project will be constructed on a property currently owned by the Athens County Port Authority, which is located along Poston Road (County Road 110) near the intersection with State Route 691. The location of the property (the “Project Area”) is shown on Figure 1.1 in Appendix A. This undeveloped, non-forested property is approximately 22.3 acres in size. AEP Ohio Transco intends to purchase 5.0 acres of the property for the Project and obtain an access road easement (location not yet determined). AEP Ohio Transco has secured an option to purchase the property. Figures 1.2 and 1.3 in Appendix A show the existing Poston Station and the general location of the proposed Lemaster Station within the Project Area. At a later date, AEP Ohio Transco will submit separate applications to the OPSB for the relocation of electric transmission lines from the existing Poston Station to the new Lemaster Station.

The Project meets the requirements for a LON because it is within the types of projects defined by Item (1)(a) of 4906-1-01 *Appendix A Application Requirement Matrix For Electric Power Transmission Lines*. This item states:

(3) Constructing a new electric power transmission substation.

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B(2) Statement of Need

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

This section is not applicable. The proposed Project is an electric transmission substation.

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.

Figures 1.2, 1.3, and 1.4 in Appendix A show the location of the Project in relation to other existing AEP Ohio Transco transmission lines and the existing Poston Station.

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.

The proposed Project is located on a publicly owned property immediately adjacent to the existing Poston Station facility. This property is currently undeveloped and non-forested, and does not contain any streams or wetlands. There are no residences within 1,000 feet of the proposed Project location. This minimizes impacts to the community and the environment, while taking into account the engineering and construction needs of the Project. Therefore, no significant alternatives were studied as part of the Project.

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.

The Project will be located fully on property currently owned by the Athens County Port Authority. Within seven days of filing this LON, AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project Area. The notice will comply with all requirements under O.A.C. Section 4906-6-08(A)(1-6). Further, AEP Ohio Transco maintains a website (<http://aeptransmission.com/ohio/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. The LON will also be sent to applicable public officials concurrently with submittal to OPSB, and a paper copy of the LON will be provided to the Athens County Public Library.

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B(6) Construction Schedule

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

Construction is planned to start in May 2017. The in-service date (completion date) of the Project is expected to be on or about June 2018.

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 included in Appendix A identifies the location of the Project Area on a USGS quadrangle map. Figure 1.2 in Appendix A is an aerial map of the Project Area. To visit the Project from Columbus, take US 33 southeast to the State Route 682 interchange approximately four miles northeast of Athens, Ohio. Take State Route 682 south for 0.25 miles and then turn right (west) on Poston Road (County Road 110). Follow Poston Road west for approximately 2.75 miles. The Project Area is located on the north side of the road.

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.

Construction of the new Lemaster Station will occur on property owned by the Athens County Port Authority in York Township, Athens County (Parcel ID: P010010000104). AEP Ohio Transco will purchase 5.0 acres of the 22.3-acre parcel for construction of the station. In addition, AEP Ohio Transco will obtain an easement for the station access road on property owned by Athens County Port Authority. No other property acquisition or easements are required to construct and operate Lemaster Station.

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 Lemaster Station will be constructed on a 22.3 acre property currently owned by the Athens County Port Authority. AEP Ohio Transco intends to purchase 5.0 acres of

LETTER OF NOTIFICATION FOR LEMASTER 138 KV STATION PROJECT

property for this Project. The equipment and facilities described below will be installed within the fenced area of the proposed Lemaster Station facility. The preliminary station layout will be filed under separate cover.

Breakers

There will be ten 138 kV breakers and two 138 kV “cap-switchers” installed at the substation. These breakers will be SF₆ (sulfur hexafluoride) gas insulated, dead tank breakers.

Switchgear

The station is designed as a 138 kV breaker-and-a-half design, with an initial installation of four strings.

Bus Arrangement and Structures

The Project will be initially installed as follows: There will be a 138 kV four-string breaker-and-a-half layout with six 138 kV line terminations (expandable to seven). Two 138 kV capacitor banks will attach to the two 138 kV buses, via a cap-switcher and disconnect switches. Equipment support steel structures will be designed using structural tubing, folded plate tapered tubular, and/or wide flange structures. There will be six bay 138 kV A-Frame dead-end expandable to seven. All yard structures will be ASTM A36, ASTM A500, or ASTM A572 steel hot-dip galvanized for corrosion protection. The high bus throughout the yard will be approximately thirty-four feet in height.

Transformers

There will be one 138 kV to 12 kV transformer installed at the station.

Control Buildings

A single story, prefabricated control building, approximately 26 feet by 60 feet in dimension, will be installed.

Other Major Equipment

Other equipment will include two 138 kV capacitor banks (28.8 MVAR each), surge arresters, Capacitor Voltage Transformers (“CVTs”), line traps, station service equipment, and disconnect switches.

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

This section is not applicable. The proposed Project is an electric transmission substation and there are no occupied residences or institutions located within 100 feet of the Project.

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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.

This section is not applicable. The proposed Project is an electric transmission substation and there are no occupied residences or institutions located within 100 feet of the Project.

B(9)(b)(ii)(c) Project Costs

The estimated capital cost of the project.

The 2017 estimated capital cost of the proposed Project is \$13,028,669

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 Project is located within York Township, Athens County, Ohio. Figure 1.3 in Appendix A shows U.S. Department of Agriculture land use categories for the Project Area. According to this map, land uses in the Project Area consist of pasture/hay field, grassland, barren land, and deciduous forest. However, field observations by AEP Ohio Transco's consultant indicate the Project Area is primarily comprised of "old field" habitat, which can be characterized as non-forested grassland that is occasionally disturbed (mowed, grazed, or cleared) and contains a variety of young shrubs, vines, and tree saplings. No streams or wetlands are located in the Project Area.

There are currently no active residences, cemeteries, churches, schools, or other community facilities located within 1,000 feet of the proposed Lemaster Station location (as shown on Figures 1.2 and 1.3 in Appendix A). The nearest residences are located approximately 1,500 feet to the west of the proposed substation location along State Route 691 (see Figure 1.3). A water filtration plant is located approximately 0.5 miles to the northeast of the Project (approximately 1,000 feet northeast of the existing Poston Station).

No wildlife management areas or nature preserve lands are located within 1,000 feet of the Project. However, the Wayne National Forest, the Hamley Run Floodplain Forest Conservation Site, a Breeding Amphibian Site, a Floodplain Forest Plant Community, and a Mixed Mesophytic Forest Plant Community were reported by the Ohio Department of Natural Resources ("ODNR") Ohio Natural Heritage Program ("ONHP") as occurring within one mile of the Project Area (see Appendix C). The proposed Project will not impact any of these resources.

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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 Project is not located within registered agricultural district lands, based on December 9, 2016 coordination with the Athens County Auditor's Office. Additionally, the Project Area does not contain any active agricultural row crop land (see Figure 1.3 in Appendix A and Figure 3 in Appendix C).

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 October 2016, AEP Ohio Transco's consultant completed Phase I cultural resource investigations for the Project (see Appendix B). The field investigations were conducted on the entire Project Area (the 22.3 acre Athens County Port Authority property).

The literature review conducted for the Project Area identified no previously recorded archaeological sites within a one-mile radius of the Project Area, and one previously recorded architectural site - the EM Poston Generating Station (ATH0063302; ca 1949), which is located adjacent to the Project area. This site is not regarded as being a significant cultural resource.

The archaeological field reconnaissance determined that the majority of the Project Area has been severely altered and disturbed. However, testing in the western part of the cultural resources study area west of the proposed Lemaster Station site identified a historic period site (33AT1057). This site may have significant deposits, as several intact subsurface deposits were identified during shovel testing. It is recommended that this site be avoided, otherwise a Phase II archaeological assessment is considered appropriate. Provided 33AT1057 is avoided, no further work is considered to be necessary for this Project. For more information, see the Phase I Cultural Resources Management Investigations report included in Appendix B.

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.

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A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000004, and AEP Ohio Transco will implement and maintain best management practices, as outlined in the project-specific Storm Water Pollution Prevention Plan (“SWPPP”), to minimize erosion and control sediment to protect surface water quality during storm events. The Project will not impact any streams or wetlands, and no tree clearing will be required in any forested wetlands (see Appendix C). In addition, the Project will not require a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers or Pre-Construction Notification to the U.S. Army Corps of Engineers.

The Project is not located within a Federal Emergency Management Agency (“FEMA”) 100-year floodplain area. Therefore, no floodplain permitting is required for the Project. There are no other known local, state or federal requirements that must be met prior to commencement of the Project.

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 Athens County. This USFWS publication listed the following threatened or endangered species as occurring in Athens County: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), fanshell (*Cyprogenia stegaria*; federally endangered), sheepsnose (*Plethobasus cyphus*; federally endangered), pink mucket pearly mussel (*Lampsilis orbiculata*; federally endangered), snuffbox (*Epioblasma triquetra*; federally endangered), and American burying beetle (*Nicrophorus americanus*; federally endangered). As part of the ecological study completed for the Project, a coordination letter was submitted to the USFWS Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. The November 28, 2016 response letter from USFWS (see Appendix C) indicated that the proposed Project is within the range of the Indiana bat and northern long-eared bat in Ohio, and within the vicinity of one or more confirmed records of Indiana bats, but if tree clearing occurs between October 1 and March 31, they do not anticipate the Project having any adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species. The proposed Project is not expected to require any tree clearing. The USFWS letter did not include any comments specific to the other federally listed species.

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Several state-listed threatened species, endangered species, and species of concern are listed by the Ohio Department of Natural Resources (<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/statelisted%20species/athens.pdf>) as occurring, or potentially occurring in Athens County. These state-listed species are addressed in detail in the Ecological Resources Inventory Report included in Appendix C.

Coordination letters were submitted via email to the Ohio Department of Natural Resources (“ODNR”) Division of Wildlife (“DOW”) Ohio Natural Heritage Program (“ONHP”) and the ODNR Office of Real Estate in November 2016, seeking an environmental review of the proposed Project for potential impacts on state-listed and federally-listed threatened or endangered species. Correspondence from ODNR’s DOW/ONHP was received on November 17, 2016 (see Appendix C). To date, no response from ODNR Office of Real Estate has been received.

According to the DOW/ONHP, three species are known to occur within a one-mile radius of the Project Area, including rough boneset (*Eupatorium pilosum*; status not yet determined), a caddisfly (*Brachycentrus numerosus*; state endangered), and eastern box turtle (*Terrapene carolina*; state species of concern). None of these known locations is within or in the immediate vicinity of the Project Area and no impacts to these species are anticipated (see Appendix C for further information). Potentially suitable habitat for two other state-listed species, black bear (*Ursus americanus*; state endangered) and timber rattlesnake (*Crotalus horridus horridus*; state endangered) were observed in the Project Area. However, neither of species is known to occur within a mile of the Project Area, and no impacts to these species are anticipated (see Appendix C for further information).

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.

The ODNR DOW/ONHP response indicated that they are unaware of any unique geological features or scenic rivers within a mile of the Project Area, but did state that the Wayne National Forest, the Hamley Run Floodplain Forest Conservation Site, a Breeding Amphibian Site, a Floodplain Forest Plant Community, and a Mixed Mesophytic Forest Plant Community exist within a one-mile radius of the Project. However, none of these known locations occur within or immediately adjacent to the Project Area and no impacts are anticipated (see Appendix C). Correspondence received from the USFWS (see Appendix C) indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat in the Project vicinity.

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The FEMA Flood Insurance Rate Map was consulted to identify any floodplains/flood hazard areas that have been mapped in the Project Area (specifically, map number 39009C0095C). Based on this map, no mapped FEMA floodplains are located in the Project Area. Therefore, no floodplain permits will be required for this Project.

A review of the National Wetlands Inventory (“NWI”) database indicated that one NWI-mapped wetland was identified within the Project Area. Wetland and stream delineation field surveys were completed within the Project Area by AEP Ohio Transco’s consultant in November 2016. The results of the wetland and stream delineations are presented in the Ecological Resources Inventory Report included in Appendix C. No wetlands or streams were identified in the Project Area. The area identified by the NWI as a wetland within the Project Area was found to lack the necessary criteria to be considered a wetland. Therefore, no impacts are anticipated during Project construction activities.

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.

To the best of AEP Ohio Transco’s knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

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Appendix A Project Maps
December 21, 2016

Appendix A Project Maps

Figures 1.1, 1.2, 1.3, and 1.4



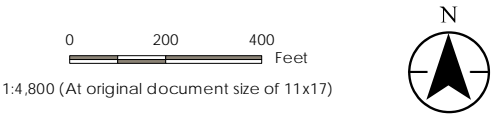
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Title
Project Layout Map

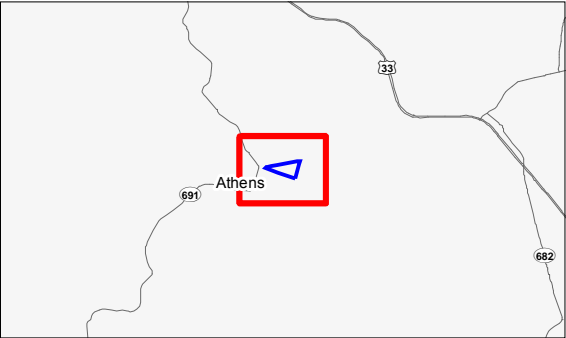
Client/Project
AEP Ohio Transmission Company, Inc.
Lemaster Station Project

Project Location
Athens County, Ohio

193704783
Prepared by HDB on 2016-11-29
Technical Review by JDP on 2016-11-30
Independent Review by DJG on 2016-12-06



- Legend
- Proposed Lemaster Substation
 - Project Area
 - Existing Transmission Line



- Notes
- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 - Data Sources Include: Stantec, AEP, NADS
 - Orthophotography: ESRI World Imagery



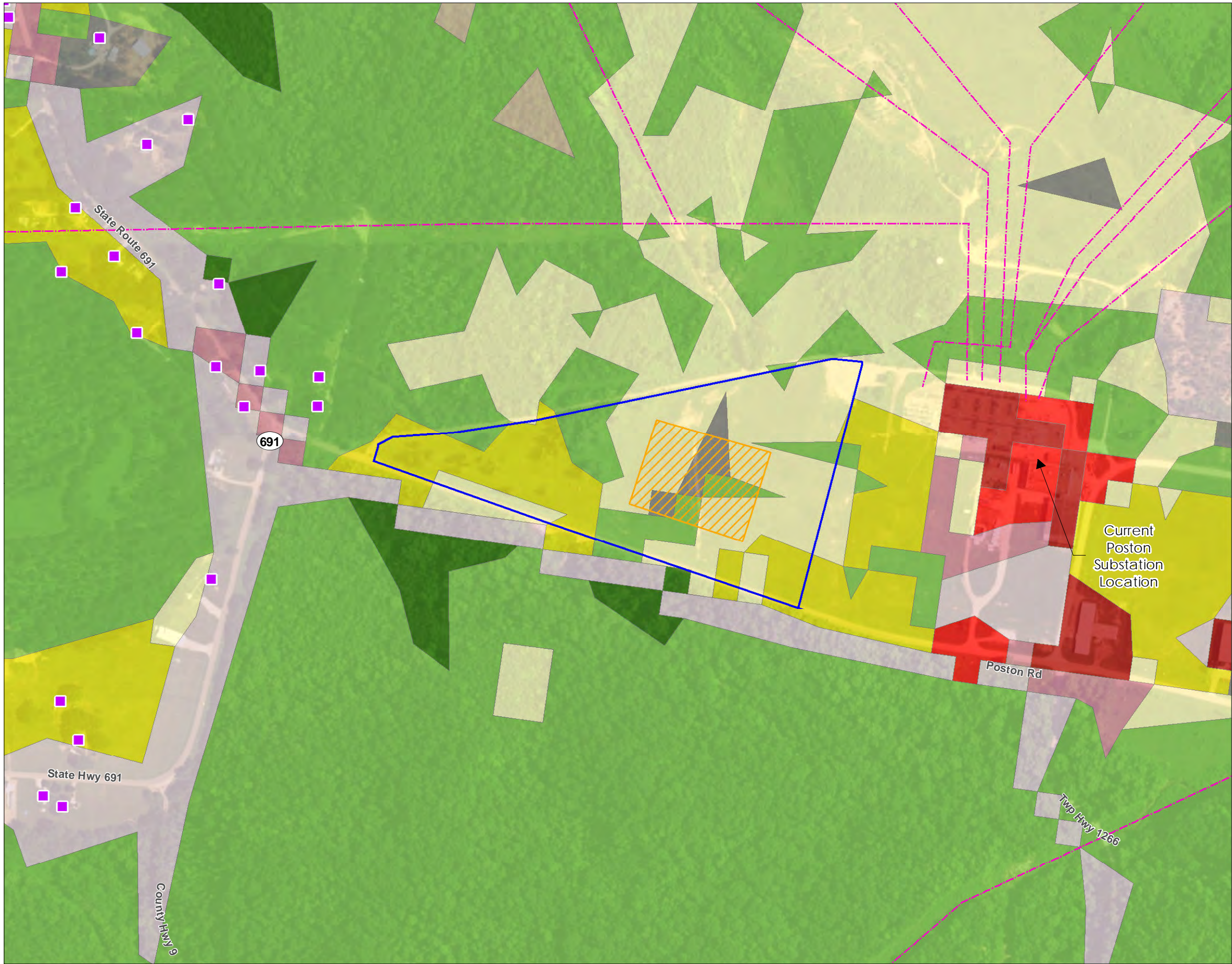


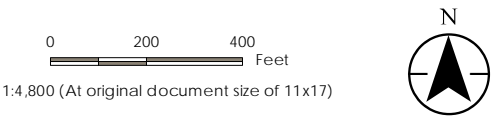
Figure No.
1.3

Title
Land Use Map

Client/Project
AEP Ohio Transmission Company, Inc.
Lemaster Station Project

Project Location
Athens County, Ohio

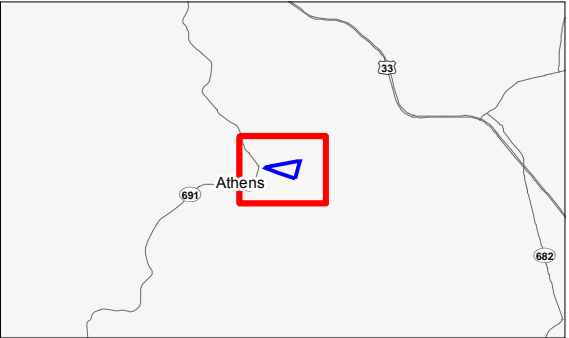
193704783
Prepared by HDB on 2016-11-29
Technical Review by JDP on 2016-11-30
Independent Review by DJG on 2016-12-05



Legend

Proposed Lemaster Substation	National Land Cover Database
Project Area	Developed, Open Space
Residence	Developed, Low Intensity
Existing Transmission Line	Developed, Medium Intensity
School*	Developed, High Intensity
Cemetery*	Barren Land
	Deciduous Forest
	Evergreen Forest
	Shrub/ Scrub
	Grassland/ Herbaceous
	Pasture/ Hay

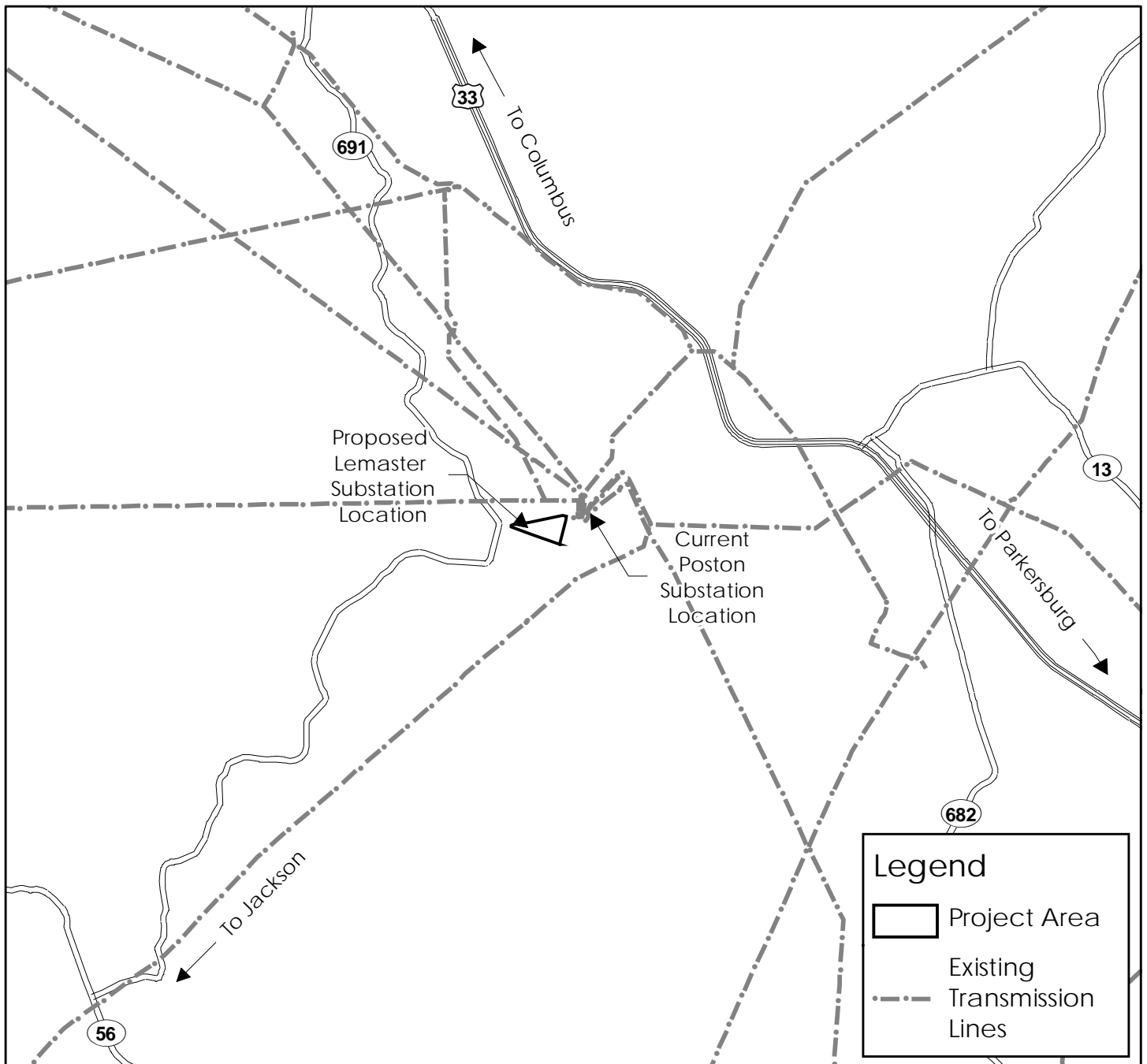
*No feature within map extents.



- Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 2. Data Sources Include: Stantec, AEP, NLCD, NADS
 3. Orthophotography: ESRI World Imagery



Figure 1.4 - Concept Map



LETTER OF NOTIFICATION FOR LEMASTER 138 KV STATION PROJECT

Appendix B Phase I Cultural Resource Investigations Report
December 21, 2016

Appendix B Phase I Cultural Resource Investigations Report



**Phase I Cultural Resource Management Investigations for the
Approximately 8.9 ha (22 ac) Lemaster 138kV Station Project in York
Township, Athens County, Ohio**

Ryan J. Weller

October 28, 2016

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**Phase I Cultural Resource Management Investigations for the
Approximately 8.9 ha (22 ac) Lemaster 138kV Station Project in York
Township, Athens County, Ohio**

By

Ryan J. Weller

Submitted By:

**Ryan J. Weller, P.I.
Weller & Associates, Inc.
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Website: www.wellercrm.com**

Prepared for:

**American Electric Power
700 Morrison Road
Gahanna, OH 43230**

Lead Agency:

Ohio Power Siting Board

A handwritten signature in black ink, appearing to read "Ryan J. Weller", is positioned above a horizontal line.

Ryan J. Weller, MA, P.I.

October 28, 2016

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W-2043

Abstract

In October of 2016, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the Approximately 8.9 ha (22 ac) Lemaster 138kV Station Project in York Township, Athens County, Ohio. The lead agency for this project is the Ohio Power Siting Board and the work was conducted on behalf of American Electric Power. The field investigations were considerate of the footprint of the planned construction activity. No buildings or structures older than 50 years are being taken or directly impacted. The field investigations involved subsurface testing and visual inspection. This work verified that the entire project area has been severely disturbed. One archaeological site, 33AT1057, was identified during these investigations.

The project plans are to construct the Lemaster Station, a new electric substation that will eventually replace the outdated Poston Station. The project area is small and rectangular and will be to the immediate west of the existing Poston compound/facility. This is within the Hamley Run Valley, which is comparably broader than the nearby upland drainages. This area is entrenched with treed unglaciated landscape shrouding the area. The parcel to be surveyed is bordered by Poston Road to the south, Industrial Drive to the east, and an existing service road on AEP property to the north and west.

The literature review that was conducted for this project identified one previous survey and one architectural site in the study area; neither are directly involved in the project area. The survey was for a water line that extended through the southern part of the project area (Leary and Bergman 2005); they did not identify any cultural resources in this area during their investigations. The EM Poston Generating Station (ATH0063302; ca 1949) is located to the east of the project area. This was not regarded as being a significant cultural resource.

The planned work will not directly involve any buildings or structures. The archaeological field reconnaissance determined that the majority of the project area has been severely altered and disturbed. However, testing in the western part identified historic period site 33AT1057. This site may have significant sealed deposits, a feature was identified during shovel testing. It is recommended that this site be avoided, otherwise a Phase II archaeological assessment is considered appropriated. Provided 33AT1057 is avoided, no further work is considered to be necessary for this project.

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Introduction

In October of 2016, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the approximately 8.9 ha (22 ac) Lemaster 138kV Station Project in York Township, Athens County, Ohio (Figures 1-3). The work was conducted under contract with American Electric Power (AEP). The lead agency for this project is the Ohio Power Siting Board (OPSB). The work efforts were designed to evaluate pertinent cultural resources in a manner that is reflective of 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]). 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 State Historic Preservation Office [SHPO] 1994).

The project will include the construction of a new substation in York Township, Athens County, Ohio. The triangular-shaped parcel to be surveyed is framed by Poston Road to the south, Industrial Drive to the east, and an existing service road on AEP property to the north and west. The total size of the parcel is approximately 42.5 acres; however, the planned station and survey area are limited to just a 1.57 ha (3.89 ac) area. The existing Poston Station and related components occupy approximately 10.75 acres that are in the vicinity. Subsurface testing will be required for the entire survey and some of the area was anticipated to be disturbed by previous construction activities on the parcel. Since this is new construction an architectural survey of the immediate area around the proposed substation was accomplished.

Chad Porter conducted the literature review on October 12, 2016. Ryan Weller served as the Principal Investigator and Senior Project Manager. Joshua Engle served as the Project Manager. The field crew included Joshua Engle, Matt Sanders, Brittany Vance, Craig Schaefer, Ryan Weller, and Alex Thomas. Ryan completed the textual portion of this document, Alex and Chad completed the figures.

Environmental Setting

Climate

Athens County, like all of Ohio, has a continental climate, with hot and humid summers and cold winters. About 102.4 cm (40.3 in) of precipitation falls annually with the majority, about 59 percent, falling between the months of April and September. February is the driest month, while July tends to be the wettest month for the Athens and Hocking County area [United States Department of Agriculture, Soil Conservation Service (USDA, SCS) 1985, 1989].

Physiography, Relief, and Drainage

This part of Athens County is located within the Muskingum-Pittsburgh Plateau physiographic region of Ohio (Brockman 1998). This region has moderately high relief, dissected plateaus, coal-bearing rocks, and valleys having been affected by Teays-age

deposits (Brockman 1998). The relief within the project area is nearly level as it is within an upland stream valley. Most of Athens County is drained by the Hocking River and its tributaries. The project area is drained by Hamley Run, which is a tributary of the Hocking River.

Geology

The project area is situated in the Muskingum-Pittsburgh Plateau having an underlying geology that is of the Pennsylvanian era. The Pennsylvanian-age siltstones, shales, sandstone and economically important coals and claystones underlie the project area; Wisconsin-age sand, gravel, and lacustrine silt” (Brockman 1998). The valley area that includes the project was formed from pre-Illinoian lacustrine deposits (Pavey et al. 1999).

Soils

The project area is small and within the Hamley Run stream valley. The project area is within the Chagrin-Nolin soil association; this is characteristic of upland stream valleys and can have deep, alluvial situations. The entire project area is indicated as having one soil type, Fitchville silt loam. This soil type has a slope percentage of 0-3 percent and is formed on terraces.

Flora

Prehistorically, as well as historically, there has been 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 forests 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 is located in central Athens County. The valleys in this area are consistent with Beech forestation (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, gravers, 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 Chessier) [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.

Athens County History

Athens County along with its neighboring counties was originally part of the Ohio Company's land purchase. This group bought a large tract of the Ohio Territory from the Congress in 1787. The new Federal Government had just recently claimed Ohio from the British, French and Native Americans who had lightly inhabited it and the new American government needed its people to populate the territory so that its claims would stand (Beatty and Stone 1984; Daniel 1997; Howe 1888; Walker 1869).

Athens County's first permanent settlers came in 1797 to what would later become the town of Athens (Daniel 1997). These early immigrants were from New England and settled here for the express purpose of populating the land in order to realize a college in this new western frontier of the Ohio Territory (Beatty and Stone 1984). In 1799, Rufus Putnam and others laid out a town at a place called Middletown where people had been living a short time. The name changed to Athens after the ancient Greek center of learning because there was to be a college built within its limits; and in 1805 when Athens County became organized, it too adopted this name (Martzolff 1916). Nelsonville was platted in 1818. Athens was intended to have a university, and in 1804 Ohio University was established. Ohio University was the earliest college in Ohio and the first west of the Appalachians (Beatty and Stone 1984; Inter-state Publishing Co. 1883).

Early settlers relied heavily on agriculture for subsistence and found the Hocking River valley to be quite suitable to their needs. The first products of course were the staple grains. This fed not only the farmer but also his sheep, cattle, hogs and horses. The importance of dairy products, particularly butter and cheese, rose by the 1850s (Martzolff 1916). And with the Hocking River to transport goods to the Ohio River and beyond trade of agricultural stuffs became an asset to the local economy. Much of the early development of Athens and Nelsonville, both located on the Hocking River, is related to agriculture and agricultural trade. The completion of the Hocking Canal in 1840 increased this trend. While agriculture was still very important, it began to bow in importance to Athens County's mineral resources in the 1830s and 1840s (Howe 1888; Inter-state Publishing Co. 1883; Walker 1869). However, agriculture remains a significant source of income today and the county's mineral resources are on the decline (Beatty and Stone 1984).

The very first Europeans in the area were the French fur traders. Many of the American settlers also traded skins to supplement their agricultural incomes. In 1815, Lewis Columbia ran the first tannery (Beatty and Stone 1984). Grist and sawmills appeared across the county during the 1800s and 1810s. In 1832, salt mining became important along the Hocking and its tributaries. Salt mining grew in importance up until 1873 when it rapidly declined and eventually disappeared in the 1880s (Beatty and Stone 1984).

By the second half of the nineteenth century, coal mining became the principal industrial pursuit in Athens County. Coal was initially mined in the 1830s to help in the salt making process. However, Hocking Canal allowed easier transportation to the larger national markets, which led to a dramatic increase in mining during the 1840s. Nelsonville became the center for coal mining in the county. As it had with the canal, the coal industry, as well as the coal towns of Nelsonville and Athens grew considerably with the progress of railroad transportation. The Marietta and Cincinnati Railroad came first in 1851 and ran through Athens. The Columbus and Hocking Valley Railroad, built in 1869, connected Nelsonville and Athens to Columbus. The railroad would replace the canal as the primary form of goods transportation, and by 1873, the canal was closed due to flood damage (Beatty and Stone 1984; Martzolff 1916; Walker 1869).

Coal production reached its peak in 1920. However, coal mining declined through the 1930s and strip mining has taken the place of the old deep mines. This was the mining method of choice until the 1960s. Strip mining continues today, but is much less frequent (Beatty and Stone 1984).

Coal was not the only businesses to develop in the county. In 1866, Athens possessed the typical industries and mercantile interests and, of course, the university (Walker 1869). Brick making and ceramic production was considerable between 1870 and 1920. People in the county have drilled for oil and gas as well (Beatty and Stone 1984; Daniel 1997). During the 1950s increased road construction, particularly the creation of SR 33 and US 50 have made the automobile the dominant form of transportation and increased the ability to move goods to and from the county quickly.

Presently retail, light business, and manufacturing are significant sources of income for the county (Beatty and Stone 1984).

York Township History

York Township was created in 1818 from Dover Township. Prior to 1811 the area had been included in Ames Township. The principle towns are Nelsonville and Buchtel. The township is drained by the Hocking River and is comprised of generally rough terrain.

Nelsonville is one of the larger communities of the area and was laid-out in 1818. It was named after Daniel Nelson, the owner of the land upon which the town was located. The first Euro-American settlers had arrived at the location in 1814 and a mill was constructed in 1815. The first bridge to span the Hocking River was built at Nelsonville in 1827 and a library was built the same year as well. The town was incorporated in 1838. The Hocking Canal reached Nelsonville in 1842 (Martzolff 1916; Walker 1869). Buchtel was laid-out in 1876 and named after John R. Buchtel who built an iron furnace there.

Coal and iron resources have been a major industry throughout the early years of the township. During the Civil War, Confederate cavalry leader, General John Morgan passed through Nelsonville and Buchtel in 1863. In Nelsonville, he burned canal boats and the bridge spanning the Hocking River. He camped his men in a field where Buchtel now lies (Martzolff 1916). Hocking College, founded in 1968 as Tri-County Technical Institute, is located in Nelsonville (Ohio History Central 2006).

Research Design

The purpose of a Phase I survey is to locate and identify cultural resources that will be affected within the proposed construction limits of this project. 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 corridors had been previously surveyed and what is the relationship of previously recorded properties to the project area?
- 2) Are cultural resources likely to be identified in the project area?

These questions are addressed in a section following the literature review.

Archaeological Field Methods

Three methods of sampling and testing were intended to identify and evaluate cultural resources. These included shovel test unit excavation, shovel probes, and visual inspection.

Shovel test unit excavation. Shovel test units were excavated in all the locations that were not severely disturbed, sloped, or lacked sufficient visibility for surface collection. These units were spaced at about 15 m intervals (50') and generally positioned on the centerline. Units are manually excavated until they extend 10 cm into the subsoil. Individual shovel test units were documented regarding their depth, content, and color (Munsell). Wherever sites were encountered, Munsell color readings were taken per shovel test unit. All of the undisturbed soil matrices from shovel test units were screened through .6 cm hardware mesh. Additional or radial shovel test units will be excavated in areas where cultural remains are identified. These will be placed at 7.5 m intervals and within the project corridor.

Shovel Probe. This method was used to delineate areas of disturbance. A shovel test probe measured 30 cm square and was excavated in areas where surface visibility is lacking, but disturbance is not evident on the surface. If natural soils are identified, the probe is expanded and sampled like a shovel test unit.

Visual Inspection. Severely disturbed locations such as mined landscape and those that were steeply sloped were inspected for cultural remains, rock shelters, utilized chert outcrops, mine adits, etc.

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

Historic Period Artifact Analysis

The artifacts recovered during these investigations will be inventoried and analyzed. The inventory will be specific to type and age if the artifact is temporally diagnostic. The functional inventory of the site will be similar to that of South (1977) where artifacts are segregated into categories such as kitchen, arms, architecture, and etcetera. South's (1977) theoretical approach also emphasizes the development and interpretation of artifact patterns found at sites. This method can be used to understand depositional patterning on the intra- and inter-site level. Ball (1984) modified this approach, making it applicable for use in the Ohio Valley.

Artifacts recovered from the subsurface testing will be inventoried and the results analyzed to identify differential patterning of functionally specific artifact groups within areas of high and low artifact density. The specific historic period temporal affiliation of the artifacts will be determined by relative dating. The identification of historic artifacts for purposes of determining age is guided by ceramic/artifact analyses or source books by Carskadden et al. (1985); Cushion (1980); Dalrymple (1989); Deiss (1981); Esary (1982); Ewins (1997); Greer (1981); Hughes and Lester (1981); Hume (1991); Lang (1995); Majewski and O'Brien (1987); Mansberger (1981); Manson and Snyder (1997); McConnell (1992); McCorvie (1987); Miller (1987); Newman (1970); Ramsay (1976); Sonderman (1979); Spargo (1926); Sprague (2002); Sunbury (1979); Sussman (1977); Visser (1997); and Zimler (1987).

Curation

There were no cultural materials 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 considered to be a 305 m (1,000 ft) area from the project, per OPSB guidelines. In conducting the literature review, the following resources were consulted at SHPO and the State Library of Ohio:

- 1) *An Archeological Atlas of Ohio* (Mills 1914);
- 2) SHPO 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) SHPO CRM/contract archaeology files; and
- 7) SHPO consensus determination of eligibility files; and
- 8) Athens County atlases, histories, historic USGS 15' series topographic map(s), and current USGS 7.5' series topographic map(s);
- 9) Online Genealogical and Cemetery Resources.

Mills Atlas

A review of the Atlas (Mills 1914) was conducted. There were no resources situated within, or adjacent to, the Study Area or Project area.

OAI files

The SHPO topographic maps were inspected and there are no archaeological sites within the study area.

OHI Files

The OHI files did not indicate any previously recorded OHIs within the project area. There is only one resource located within the study area, the EM Poston Generating Station (Figures 2-3, Table 1). This resource will not be directly affected by the proposed construction/development.

Table 1. Ohio Historic Inventory resources identified in the study area.							
OHI #	Present Name	Other Name	Address	ArchStyle1	HistUse1	Date	In National Forest
ATH0063302	EM Poston Generating Station		RFD2	Vernacular	Energy Facility	1949	N

National Register of Historic Places/Determination of Eligibility Files

A review of the NRHP files and determinations of eligibility (DOE) files did not indicate any resources within the project area. There are no NRHP sites or DOE resources identified in the study area.

SHPO CRM/contract archaeology files

A review of this resource file indicated that there were two surveys conducted that involves the study area. Otto (1976) conducted investigations for the Poston-Kirk electric line. This is to the north of the project area. Another survey was conducted for a waterline corridor (Leary and Bergman 2005) that includes the southern part of the project area (Figure 2). There were no pertinent cultural resources identified during this survey relative to the project area.

Atlas & Cartographic Maps

The historic atlases were reviewed in order to see if past buildings/structures were located in or immediately adjacent to the project area and who might have owned these. The *Atlas of Athens County, Ohio* (Lake 1875) indicates the project area was on the George Putnam property and there appears to be a residence/building on his property that is near the western part of the project area, but on the opposite side of the road. The USGS 1985 *Nelsonville, Ohio 7.5 Minute Series (Topographic)* map indicates that the project area was in an open, undeveloped area that is to the west of a power plant (Figure 2). The USGS 1903 *Athens, Ohio 15 Minute Series (Topographic)* map indicates that the project area was in an open, undeveloped area with no structures within the project (Figure 4).

A review of the online OGS/cemetery resources was conducted to determine if there were any cemeteries located near the project. There are no cemeteries identified in the study area.

Evaluation of Research Questions 1 and 2

Based on the results of the literature review, the first two research questions can be addressed.

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

The project area is a small, rectangular area that is within a stream (Hamley Run) valley. This area is near an existing electric substation. The soils survey suggests the area is on a terrace; however, previous knowledge and inspection in this area by the author was conducted and it is likely that this area has been substantially disturbed. If

there are any intact soils identified, they will be in the western part of the area; cultural materials are not expected.

Archaeological Survey Results

The field investigations for this project were conducted in October 14th and 27th, 2016 (Figures 5-15). The field reconnaissance work was conducted with good weather conditions and temperatures ranging from 50-65 degrees Fahrenheit. At the time of survey, the project conditions involved a thick, grass cover that was mowed using a field chopper (Figures 5-10). Large linear ruts cut through the area likely caused from the area being mowed when it was wet. Visual inspection noted drainage grates in the taller weeds near the project; it was evident that this area was not well drained. The entire project area was found to be severely disturbed. There was one site, 33AT1057, identified during these investigations.

Testing in the western part of the project area encountered soil deposition that varied greatly. It was evident that the soils had been at least partially manipulated by filling and grading activity. The soils in the western part of the project area were mostly indicative of low-lying conditions as testing encountered dark grayish brown (10YR4/2) silt loam topsoil over dark yellowish brown (10YR4/6) silty clay loam subsoil. There are sporadic, older pine trees in this area, which are absent from the eastern part of the project. The ground surface is undulating and testing did not identify any consistency with regards to the topsoil depth, texture, hue or positioning. It was evident that areas along the service road (northern edge) had been graded and truncated during its construction; this used to be the old public road that has since been shifted to the south (i.e., Poston Station Road). Testing typically avoided areas nearer Poston Station Road as it was visually apparent that it was disturbed and it had been the focus of a previous investigation (Leary and Bergman 2005). However, Weller did identify site 33AT1057 just north of this previously investigated corridor and below about 15 cm of fill. Historic period cultural materials were identified from two shovel test units that were 7.5 m apart. Other shovel test units in the vicinity evidenced severe disturbance. The testing in the western part of the project identified soils that are indicative of low-lying conditions that are imperfectly drained and may have been prone to standing water. In some instances, there was a complete lack of topsoil.

Testing in the eastern and majority of the project area identified severe disturbances. There were 142 shovel probes and 68 shovel test units excavated throughout the project area (Figure 5). The testing identified soils that were regarded as being the byproduct of intensive grading/leveling activities. The soils can best be described as being associated with urban-land types where there is an intact subsoil, but the topsoil has been highly manipulated and disturbed. The underlying subsoil is very clayey with whitish peds and reddish-yellow (7.5YR6/8) mottling throughout (Figure 11). This subsoil can occasionally be encountered as fist-sized peds within the topsoil. Also within the topsoil is varying amounts of coal and cinder. This likely became part of the fill from coal mining activity in the general vicinity; there are indications that a mining conveyor system ended in this vicinity (Figure 2). The topsoil is dark grayish brown (10YR4/2) silt loam and it was highly mottled with subsoil, cinder, and occasionally debris. The depth of the disturbed topsoil varied from 15-23 cm below ground surface. It

was apparent that the area had been leveled in the past. There were no intact topsoil deposits identified during the subsurface testing.

Archaeological Site Description

These investigations identified one historic period site, 33AT1057. This site was identified in the western part of the project area. The following is a description of this site.

33AT1057

This is a historic period component that was identified during subsurface testing is a fallow area (Figure 5 and 12-15). The materials were identified from two shovel test units, one of which contained evidence of an intact feature deposit. The site is located on the north side of Poston Station Road and is south of what is now a service road that leads to Poston Station. This is in the southern part of Section 1, York Township. This is a low-lying area that is just beyond the road right-of-way. Intensified shovel testing in the vicinity encountered no additional cultural materials and/or severely disturbed conditions. The project area is drained by Hamley Run, a tributary of the Hocking River. The site size is regarded as being 8 sq m, which is a reflection of the distance between the two shovel test units.

In 1875, this area was owned by George Putnam. There are several residences indicated on his property, but none of which are indicated where the materials associated with this site were identified. None of the maps that were inspected dating from 1875 indicate a building/residence at this location.

There were 21 historic period artifacts identified from this site (Table 2). The artifacts are mostly associated with kitchen-related materials that are indicative of middle to late nineteenth century manufacture (Miller 1984; Majewski & O'Brien 1987; Ramsey 1976) (Figure 14). There were no artifacts identified that were manufactured in the twentieth century.

Table 2. Artifact inventory for site 33AT1057.							
Bag	Provenience	Attribute 1	Attribute 2	Quantity	Group	Class	
1	TU 200E, 25N	Blue transfer print	Ceramic	4	Kitchen	Serving	
		Blue edge whiteware	Ceramic	2	Kitchen	Serving	
		Plain whiteware	Ceramic	7	Kitchen	Serving	
		Rockingham Yellowware	Ceramic	1	Kitchen	Serving	
		Stoneware	Ceramic	1	Kitchen	Storage	
		Clear bottle glass	Glass	1	Kitchen	Storage	
		Iron	corroded	1	Misc	Misc	
2	TU 225E, 25N	Brown transfer print	Ceramic	1	Kitchen	Serving	
		Brown bottle Glass	Glass	1	Kitchen	Storage	
		Clear bottle glass	Glass	1	Kitchen	Storage	
		Shoe part	Brass	1	Clothing	Personal	

The artifacts were identified from two shovel test units and both had a layer of sterile fill over the topsoil that was 15 and 23 cm thick. There was a feature partially identified in TU 250E, 25N (Figures 12-13). This is a partially truncated feature that has a somewhat circular plan view; however, the entirety of the feature was not exposed. Most of the cultural material from this shovel test unit was derived from this feature. The feature has an internal matrix that is comprised of dark grayish brown (10YR4/2) silt loam. There are small fragments of charcoal/cinder and ash within it. The function and relationship of this feature to any buildings could not be determined.

This site was evaluated for its eligibility for the NRHP. This site may possess the necessary integrity (Little et al. 2000:39-43; U.S. Department of the Interior, National Park Service [USDI, NPS] 1997:44-45) and the ability to yield further and important information regarding the history of the area to be regarded as significant. Testing identified nineteenth century materials that were contained within and just above a small, undefined feature/sealed context. This site may be significant and qualify for inclusion into the NRHP, and further work is deemed necessary to determine its significance if it cannot be avoided.

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 project area is located in a rural, upland landscape and within a stream valley. The visual APE for the project, is limited as the construction will be within an entrenched valley. The nearest construction, and only resource identified in the study area, is the Poston Generating Station (ATH0063302). The project plans are to construct the Lemaster Station, a replacement for the soon-to-be defunct Poston Generating Station. This is a facility that will operate within a smaller area than its current operating compound.

These investigations identified one archaeological site, 33AT1057. There were subsurface, intact deposits identified in association with this historic period site. Further work is recommended to determine the site's significance; however, it is located near the western end of the surveyed area and is likely avoidable. Provided this site is avoided, the construction of this electric station facility will not involve or affect any historic properties (archaeological or architectural); there are none that have been definitively located within the study area.

Recommendations

In October of 2016, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the Approximately 8.9 ha (22 ac) Lemaster 138kV Station Project in York Township, Athens County, Ohio. The project consists of the

construction of a new electric station. The field investigations involved subsurface testing and visual inspection. The eastern and majority of the project area was found to be definitively and severely disturbed by mining-related activity; shovel probes in this area only encountered channery-like fill. Testing in the western part of the project identified partially disturbed areas and site 33AT1057. This is a historic period site that dates from the middle to late nineteenth century and the testing identified buried, intact deposits. Phase II archaeological assessment is necessary for this site if it cannot be avoided. It is Weller's understanding that the electric station will be in the eastern part of the project area and distanced from this site. Provided 33AT1057 is effectively avoided, it is Weller's opinion that no additional cultural resource management work is necessary.

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Figures

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

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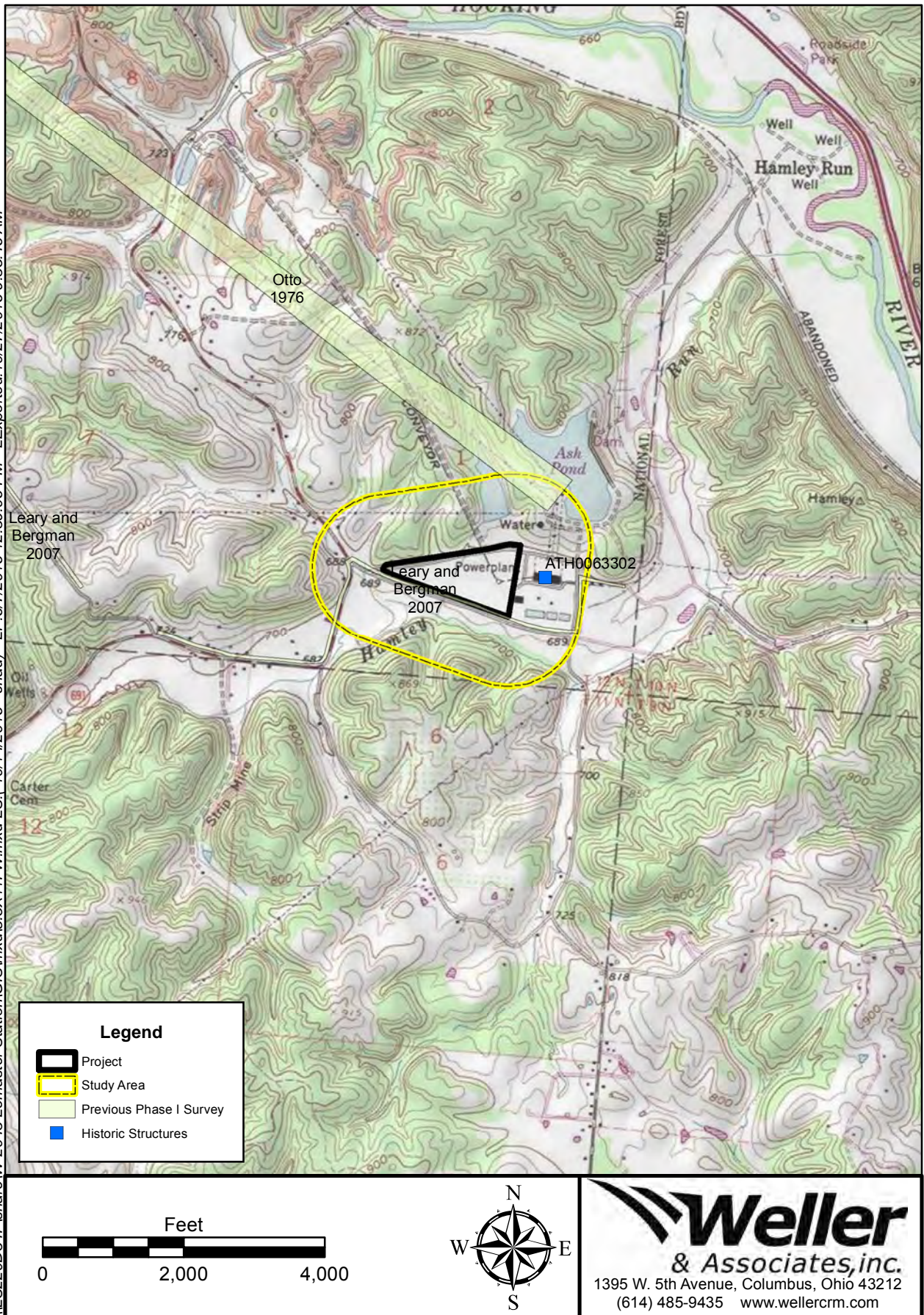


Figure 2. Portion of the USGS 1985 Nelsonville, Ohio 7.5 Minute Series (Topographic) map indicating the location of the project and previously recorded resources in the study area.

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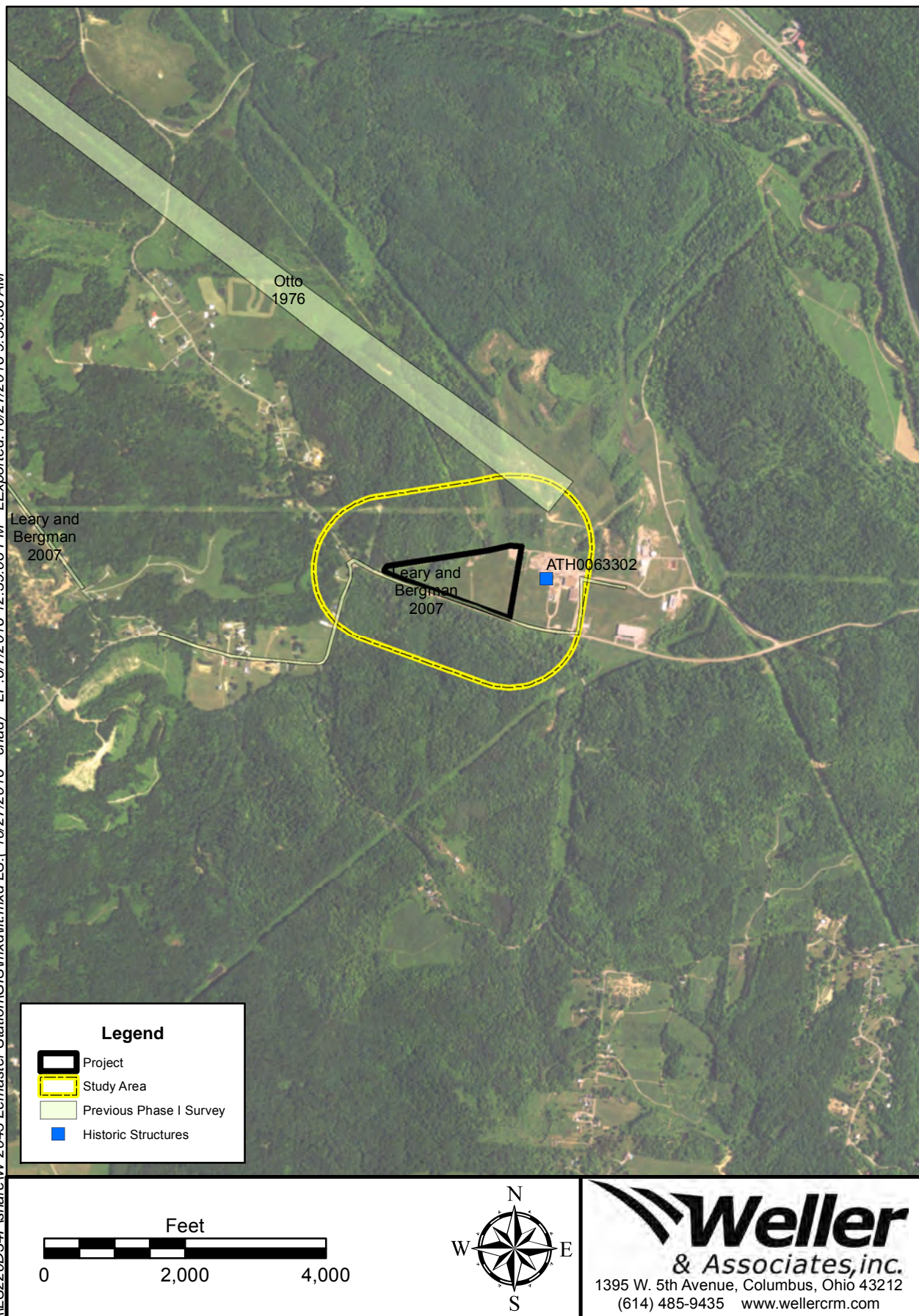


Figure 3. Aerial map indicating the location of the project and previously recorded resources in the study area.

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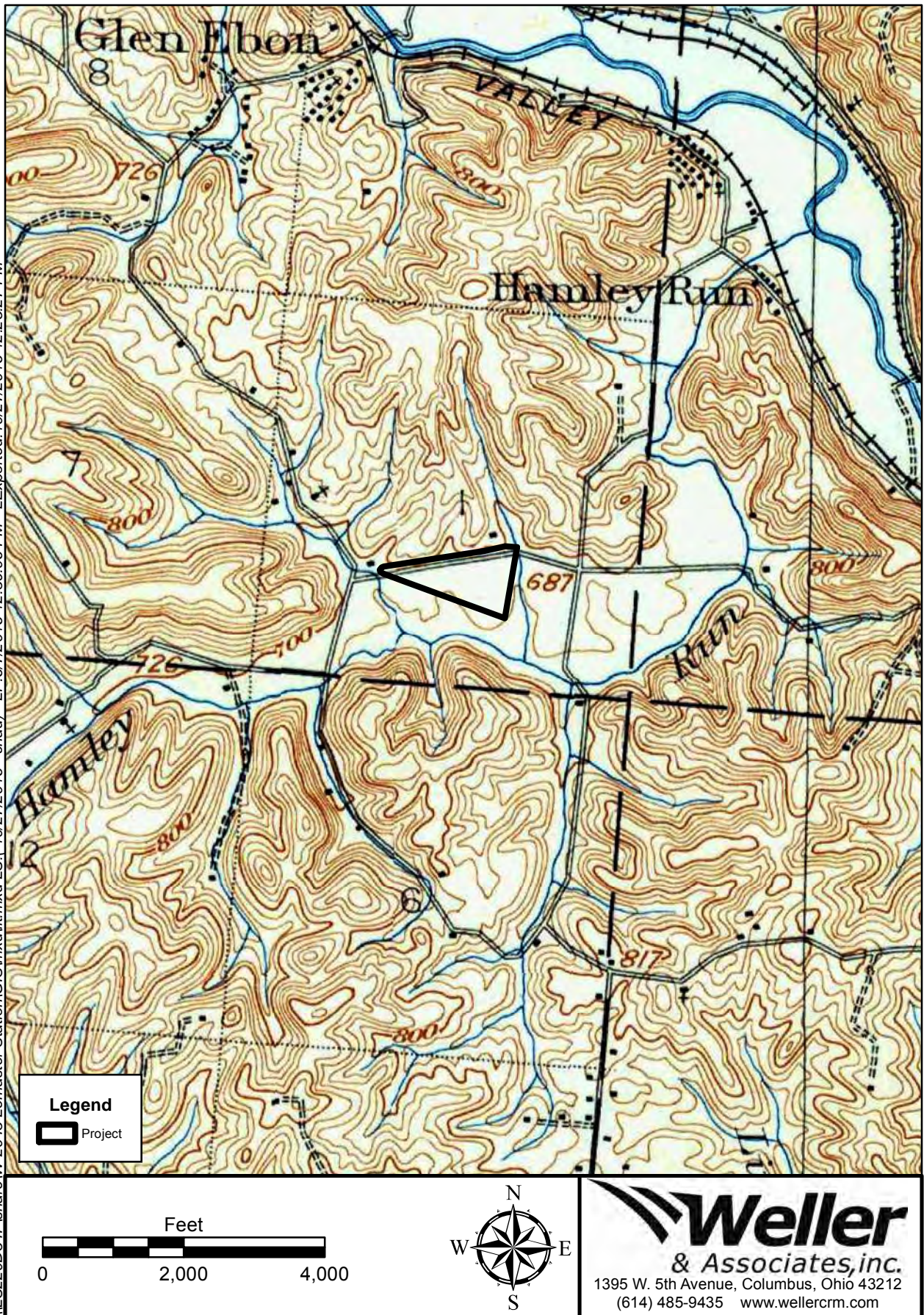


Figure 4. Portion of the USGS 1903 Athens, Ohio 15 Minute Series (Topographic) map indicating the approximate location of the project.

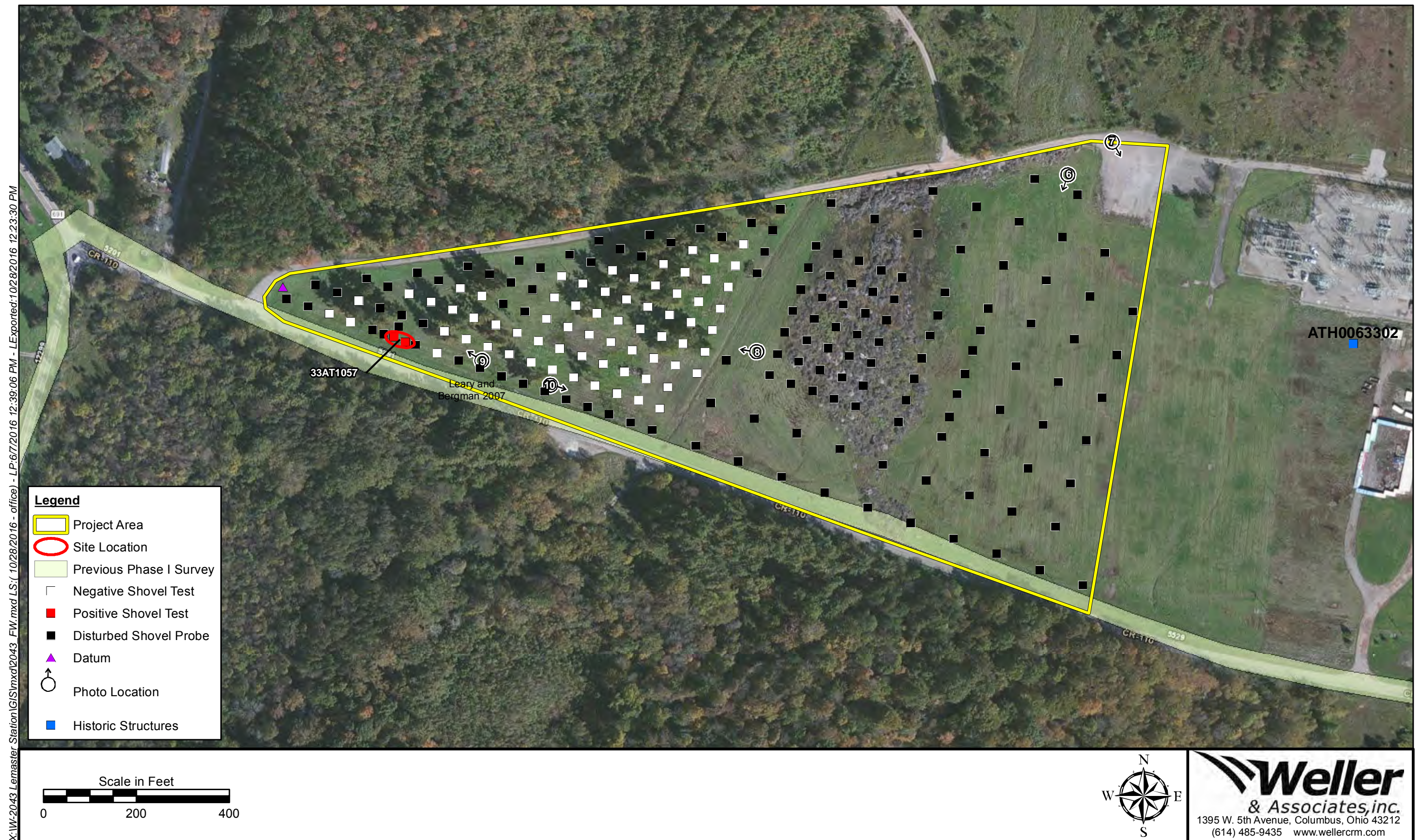


Figure 5. Fieldwork results and photo orientation map.



Figure 6. View of the disturbed shovel probed eastern portion of the project.



Figure 7. Conditions within the northeastern portion of the project.



Figure 8. Conditions within the central portion of the project.



Figure 9. Conditions within the western portion of the project.

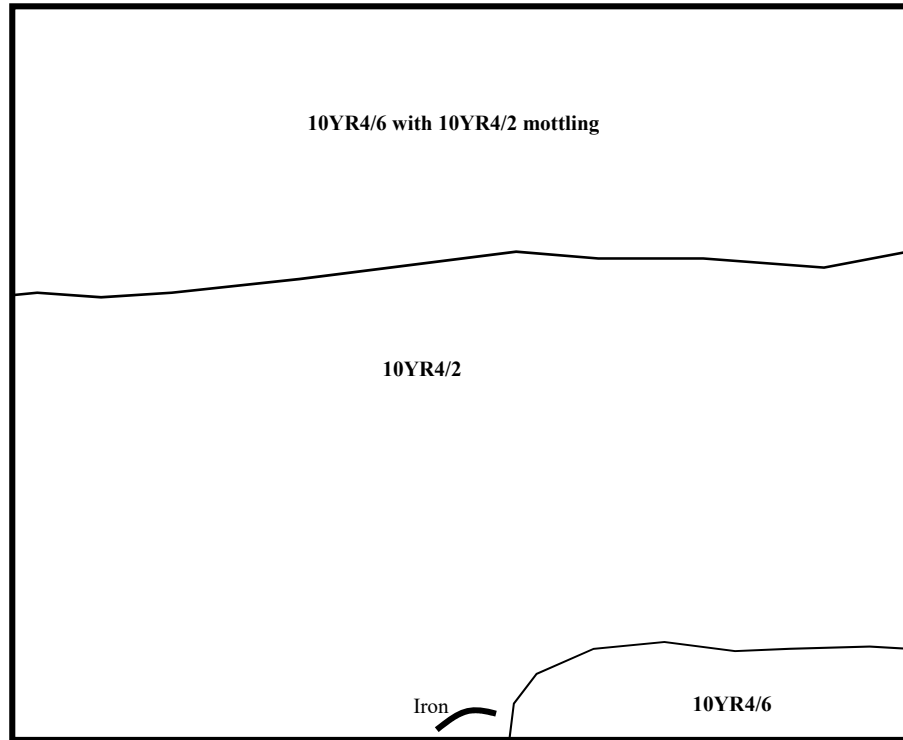


Figure 10. View of the conditions within the southern portion of the project.



Figure 11. A disturbed shovel probe from the project.

Profile



N
↓

Scale
10cm

Planview

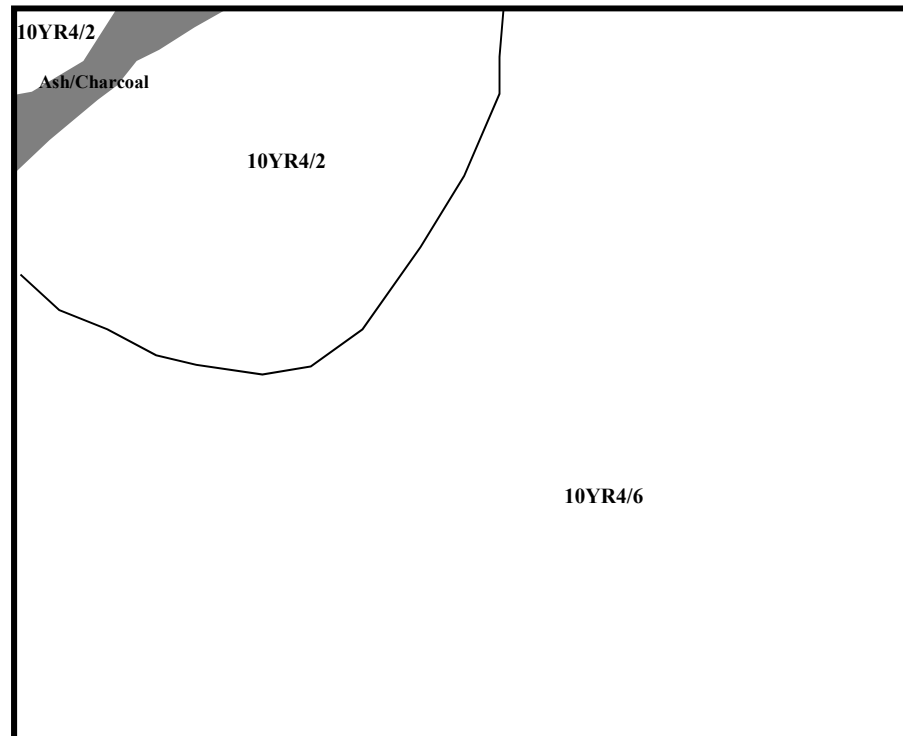


Figure 12. Profile and planview schematics of shovel test unit 25N,250E.



Figure 13. View of shovel test unit 25N,250E.



Scale
0 12.7mm 25.4mm
0 1/2" 1"

Figure 14. Some of the artifacts from Site AT1057.

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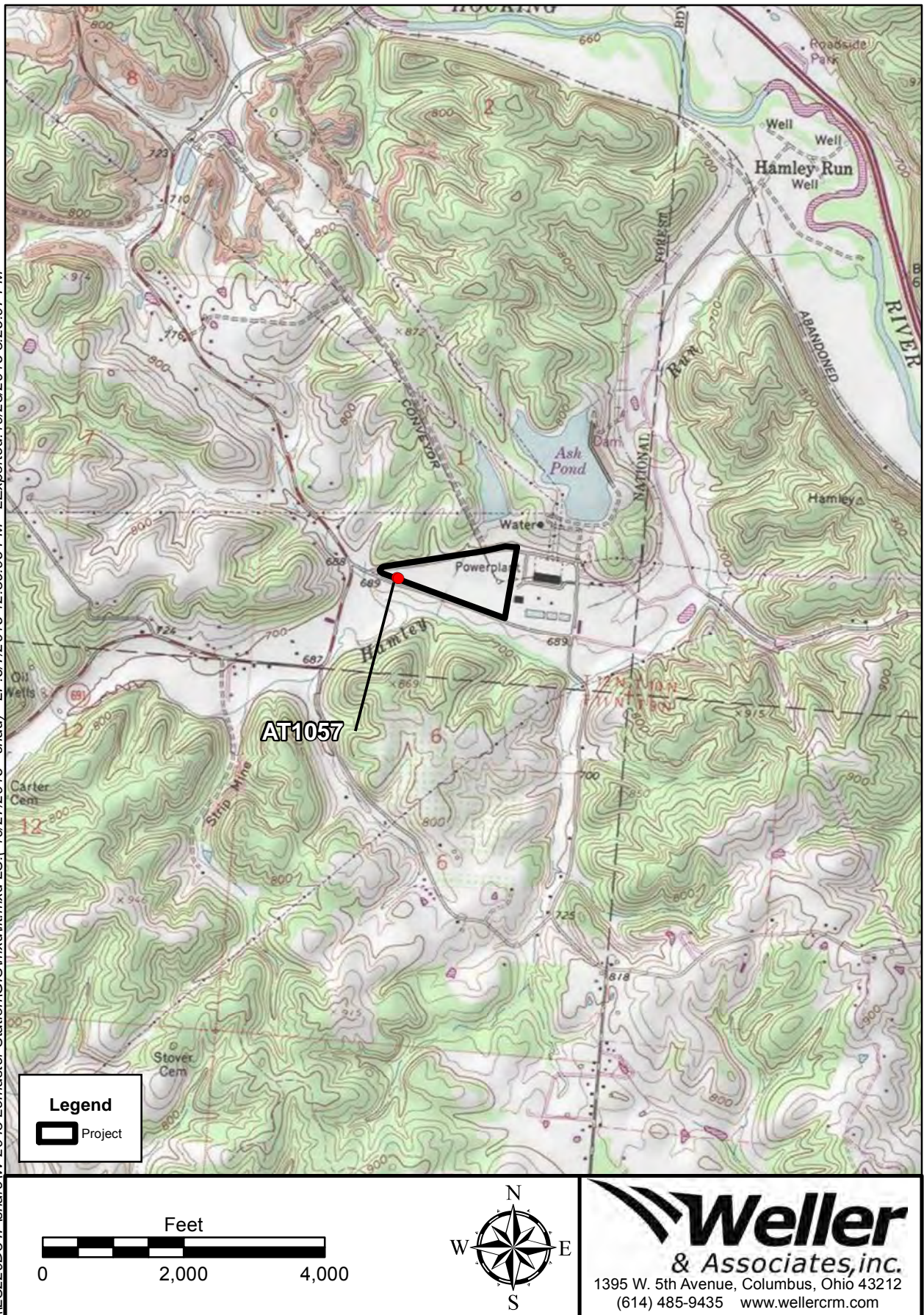


Figure 15. Portion of the USGS 1985 Nelsonville, Ohio 7.5 Minute Series (Topographic) map indicating the location of Site AT1057.

LETTER OF NOTIFICATION FOR LEMASTER 138 KV STATION PROJECT

Appendix C Ecological Resources Inventory Report
December 21, 2016

Appendix C Ecological Resources Inventory Report

**Lemaster Station Project,
Athens County, Ohio**

**Ecological Resources Inventory
Report**



Prepared for:

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December 14, 2016

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1.0 Introduction

American Electric Power (AEP Ohio Transmission Company, Inc.) is proposing the construction of a new electric transmission substation (Lemaster Station) in Athens County, Ohio (Figure 1, Appendix A). The Project area was surveyed for wetlands, waterbodies, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services, Inc. (Stantec) biologists on November 7 and 8, 2016. The approximate locations of features located up to approximately 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project area. These features are shown on the Figure 2 maps in Appendix A as “approximate” wetlands, streams, and upland drainage features.

2.0 Methods

2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE’s Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency’s (OEPA) Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI). The centerline of each waterway was identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Additionally, the locations of upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

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2.3 RARE SPECIES

Prior to conducting the field surveys, Stantec contacted the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by these species.

3.0 Results

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on November 7 and 8, 2016, for wetlands, waterbodies, and threatened and endangered species or their habitats. Figure 2 (Appendix A) shows the wetlands and waterbodies identified by Stantec within the Project area, as well as the locations of upland drainage features identified within the Project area. Figure 3 (Appendix A) shows the habitats and locations of any identified rare, threatened, or endangered species habitat observed within the Project area during the rare, threatened, and endangered species habitat assessment surveys. Representative photographs of the wetlands, streams, upland drainage features, and other habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 2 and 3, Appendix A). Completed wetland determination, ORAM, QHEI, and HHEI data forms are included in Appendix D.

Table 1. Vegetation Communities and Land Cover Found within the Lemaster Station Project Area, Athens County, Ohio

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Old Field	Extreme Disturbance/ Ruderal Community (dominated by opportunistic invaders or native highly tolerant taxa)	No	22
Industrial	Extreme Disturbance (existing roads and gravel parking lots)	No	0.5
Total			22.5

3.2 WETLANDS

No wetlands were identified within the Project area. However, one wetland determination sample point was taken within an NWI mapped palustrine scrub-shrub/emergent wetland (PSS/PEM) area (see Figure 2). The area did not meet the criteria to be a wetland.

3.3 STREAMS

No streams were identified within the Project area.

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3.4 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 2. Summary of Potential Ohio State-Listed Species within the Lemaster Station Project Area, Athens County, Ohio

Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Insects								
Regal Fritillary	<i>Speyeria idalia</i>	E	Yes	No	Occurs in tall grass prairie remnants (Butterflies and Moths of North America 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Grizzled Skipper	<i>Pyrgus centaureae wyandot</i>	E	Yes	No	This species is associated with openings in mature oak forests that support stands of Canada cinquefoil. Most of these areas are highly disturbed, and are characterized by fair amounts of exposed soil and rock (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
American Burying Beetle	<i>Nicrophorus americanus</i>	E	Yes	No	Current information suggests this species is a habitat generalist, or one that lives in many types of habitat, but with a slight preference for grasslands and the open understory of oak-hickory forests (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Caddisfly	<i>Brachycentrus numerosus</i>	E	Yes	Yes	Habitat preference has not been assessed at this time (NatureServe 2016), though caddisflies normally occur in streams, rivers, and ponds.	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Marsh Fern Moth	<i>Fagitana littera</i>	T	Yes	No	This species typically occurs in unforested wetlands such as bogs, shrub swamps, and marshes. This species also occurs along wet powerlines and wet open pinelands (New York Natural Heritage Program 2015).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Fishes								
Channel Darter	<i>Etheostoma tippecanoe</i>	T	Yes	No	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
River Darter	<i>Percina shumardi</i>	T	Yes	No	Large rivers and lower portions of tributaries; deep chutes and riffles where current is swift and substrates are coarse gravel or rock (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Amphibians								
Midland Mud Salamander	<i>Pseudotriton montanus diastictus</i>	T	Yes	No	Muddy springs, slow floodplain streams, and swamps along slow streams; backwater ponds and marshes created by beaver activity (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	E	Yes	No	Eastern spadefoots occur in areas of sandy, gravelly, or soft, light soils in wooded or unwooded terrain. On land, they range up to at least several hundred meters from breeding sites. When inactive, they remain burrowed in the ground. Eggs and larvae develop in temporary pools formed by heavy rains. Breeding sites include temporary pools and areas flooded by heavy rains (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Eastern Hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	E	Yes	No	Rocky, clear creeks and rivers, usually where there are large shelter rocks. The species prefers cool waters with temperatures usually lower than 20 degrees Celsius. High amounts of instream cover are needed for shelter/reproduction, including large flat rocks or submerged logs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Mussels								
Clubshell	<i>Pleurobema clava</i>	E	Yes	No	The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra and Goforth (2001) found the clubshell in gravel/sand substrate, in runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	No	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Fanshell	<i>Cyprogenia stegaria</i>	E	Yes	No	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (Natureserve 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Pink Mucket	<i>Lampsilis orbiculata</i>	E	Yes	No	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Sheepnose	<i>Plethobasus cyphus</i>	E	Yes	No	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large-river species. It may be associated with riffles and gravel/cobble substrates but usually has been reported from deep water with slight to swift currents and mud, sand, or gravel bottoms. It also appears capable of surviving in reservoirs. Specimens in larger rivers may occur in deep runs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Black Sandshell	<i>Ligumia recta</i>	T	Yes	No	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Threehorn Wartyback	<i>Obliquaria reflexa</i>	T	Yes	No	This species is typical of the large rivers where there is moderately strong current and a stable substrate composed of gravel, sand, and mud (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Fawnsfoot	<i>Truncilla donaciformis</i>	T	Yes	No	This species occurs in both large and medium-sized rivers at normal depths varying from less than three feet up to 15 to 18 feet in big rivers such as the Tennessee. Substrates of either sand or mud are suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Mammals								
Indiana Bat	<i>Myotis sodalis</i>	E	Yes	No	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If any tree clearing is determined to be necessary for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	Response pending from ODNR
Allegheny Woodrat	<i>Neotoma magister</i>	E	Yes	No	Typical habitat is rocky cliffs and slopes (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Black Bear	<i>Ursus americanus</i>	E	Yes	No	Black bears inhabit forests and nearby openings, including forested wetlands. When inactive, they occupy dens under fallen trees, ground-level or above-ground tree cavities or hollow logs, underground cave-like sites, or the ground surface in dense cover (NatureServe 2016)	Yes	Habitat was observed within the Project area, but due to the mobility of this species no impacts are anticipated.	Response pending from ODNR
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	SOC	Yes	No	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If any tree clearing is determined to be necessary for this project, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	Response pending from ODNR
Reptiles								

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Common Name	Scientific Name	State Listing ¹	Known to Occur in Athens County? ²	Known Within One Mile of Project Area? ³	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Timber Rattlesnake	<i>Crotalus horridus horridus</i>	E	Yes	No	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2016).	Yes	Potential habitat (open areas adjacent to hilly forested areas) was observed within the Project area, but typical habitat was not observed and due to the mobility of this species, no impacts are anticipated.	Response pending from ODNR
Spotted Turtle	<i>Clemmys guttata</i>	T	Yes	No	Spotted turtles inhabit mostly unpolluted, shallow bodies of water with a soft bottom and aquatic vegetation, such as small marshes, marshy pastures, bogs, fens, woodland streams, swamps, small ponds, vernal pools, and lake margins: in some areas they occur in brackish tidal streams (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
Eastern Box Turtle	<i>Terrapene carolina</i>	SOC	Yes	Yes	This species prefers forests, fields, and scrub shrub habitats. Eastern box turtles use lose soil, debris, and leaf litter for cover. Areas with loose, loamy soils are preferred for egg laying sites (NatureServe 2016).	Yes	This species typically prefers moist forest and scrub shrub habitat as opposed to the open, old field habitat observed in the Project area. Due to this and the mobility of this species, no impacts are anticipated.	Response pending from ODNR
Plants								
Rough Boneset	<i>Eupatorium pilosum</i>	Status Not Detrmined	Yes	Yes	This species prefers wet meadows and open, swampy woods dominated by native species (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	Response pending from ODNR
¹ E=Endangered; T=Threatened; SOC=Species of Concern ² According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR 2016a). ³ According to Ohio Natural Heritage Program (Appendix B).								

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Table 3. Summary of Potential Federally-Listed Species within the Lemaster Station Project Area, Athens County, Ohio

Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Athens County? ²	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Mammals							
Indiana bat	<i>Myotis sodalis</i>	E	Yes	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If any tree clearing is determined to be necessary, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	If trees must be cut, the USFWS recommends cutting occur between October 1 and March 31. If no hibernacula will be affected, following this seasonal tree clearing recommendation should ensure that any effects to this species are insignificant.
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	T	Yes	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	No	No hibernacula or suitable roost trees were observed within the Project area. If any tree clearing is determined to be necessary, AEP anticipates clearing the trees between October 1 and March 31. Therefore, no adverse effects are anticipated.	If trees must be cut, the USFWS recommends cutting occur between October 1 and March 31. If no hibernacula will be affected, following this seasonal tree clearing recommendation should ensure that any effects to this species are insignificant.
Birds							
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SOC	Yes	Breeding habitat most commonly includes areas close to (within 4 km) coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, or seabirds. This species typically nests in large trees or on cliffs (NatureServe 2016).	No	No nests or suitable nesting habitat was observed in the Project area. Therefore, no impacts are anticipated.	No Comment
Mussels							
Snuffbox	<i>Epioblasma triquetra</i>	E	Yes	Occurs in medium-sized streams to large rivers generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No Comment
Fanshell	<i>Cyprogenia stegaria</i>	E	Yes	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No Comment
Pink Mucket	<i>Lampsilis orbiculata</i>	E	Yes	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No Comment

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Common Name	Scientific Name	Federal Listing ¹	Known to Occur in Athens County? ²	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Sheepnose	<i>Plethobasus cyphus</i>	E	Yes	Although it does inhabit medium-sized rivers, this mussel generally has been considered a large-river species. It may be associated with riffles and gravel/cobble substrates but usually has been reported from deep water with slight to swift currents and mud, sand, or gravel bottoms. It also appears capable of surviving in reservoirs. Specimens in larger rivers may occur in deep runs (NatureServe 2016).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No Comment
Insects							
American Burying Beetle	<i>Nicrophorus americanus</i>	E	Yes	Current information suggests this species is a habitat generalist, or one that lives in many types of habitat, but with a slight preference for grasslands and the open understory of oak-hickory forests (ODNR 2016b).	No	No habitat was observed within the Project area. Therefore, no impacts are anticipated.	No Comment
Reptiles							
Timber Rattlesnake	<i>Crotalus horridus horridus</i>	SOC	Yes	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between a ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2016).	Yes	Potential habitat (open areas adjacent to hilly forested areas) was observed within the Project area, but typical habitat was not observed and due to the mobility of this species, no impacts are anticipated.	No Comment
¹ E=Endangered; T=Threatened; SOC=Species of Concern ² According to USFWS (2015a).							

4.0 Conclusions and Recommendations

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project area on November 7 and 8, 2016. During the field surveys no streams or wetlands were identified within the Project area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time of the fieldwork. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

Three state-listed species are known to occur within a one-mile radius of the Project area according to correspondence received from the ODNR Natural Heritage Program (NHP), including rough boneset, a caddisfly, and eastern box turtle (Appendix B). None of these known locations are within or in the immediate vicinity of the Project area. Some habitat for eastern box turtle does occur in the Project area, though this species typically prefers moist forest and scrub shrub habitats. No box turtles were observed in the Project area and due to the mobility of this species and habitat observed in the Project area (open, non-forested), the proposed Project is not expected to impact this species. No habitat for rough boneset or caddisfly occurs in the Project area and no impacts to these species are anticipated. Habitat for two other state-listed species, black bear, and timber rattlesnake, were also observed in the Project area. However, neither of species is known to occur within a mile of the Project area, and due to their mobility, no impacts to these species are anticipated.

The ODNR NHP also responded that they are unaware of any unique geological features or scenic rivers within a mile of the Project area, but did state that the Wayne National Forest, the Hamley Run Floodplain Forest Conservation Site, a Breeding Amphibian Site, a Floodplain Forest Plant Community, and a Mixed Mesophytic Forest Plant Community exist within a mile of the Project area (Appendix B). However, none of these known locations occur within or immediately adjacent to the Project area and no impacts are anticipated.

A technical assistance letter was submitted to the USFWS for this Project. The USFWS response letter (Appendix B) indicates that the proposed Project is located in the vicinity of one or more confirmed records of the Indiana bat. Therefore, the USFWS recommends saving trees ≥ 3 inches in diameter at breast height (dbh). The USFWS also recommends that if no caves or abandoned mines are present and tree removal is unavoidable, then clearing of trees ≥ 3 inches diameter at breast height (dbh) between October 1 and March 31 is recommended to avoid impacts to Indiana bats and northern long-eared bats. The USFWS also indicated that due to the project type, size, and location, they do not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species. No caves, abandoned mines or suitable roost trees were observed in the Project area, and the proposed Project is not expected to require tree clearing. If any tree clearing is determined to be necessary, AEP anticipates

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clearing the trees will occur between October 1 and March 31. Therefore, no adverse effects to the Indiana bat or northern long-eared bat are anticipated.

The USFWS also stated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat in the Project area, but recommended that impacts to wetlands and other water resources be avoided or minimized to the maximum extent possible, and that best management practices be utilized to minimize erosion and sedimentation and prevention of non-native, invasive plant establishment.

A request for environmental review was also submitted to the ODNR Office of Real Estate. Their response is pending.

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Appendix A Figures

A.1 FIGURE 1 – PROJECT LOCATION MAP

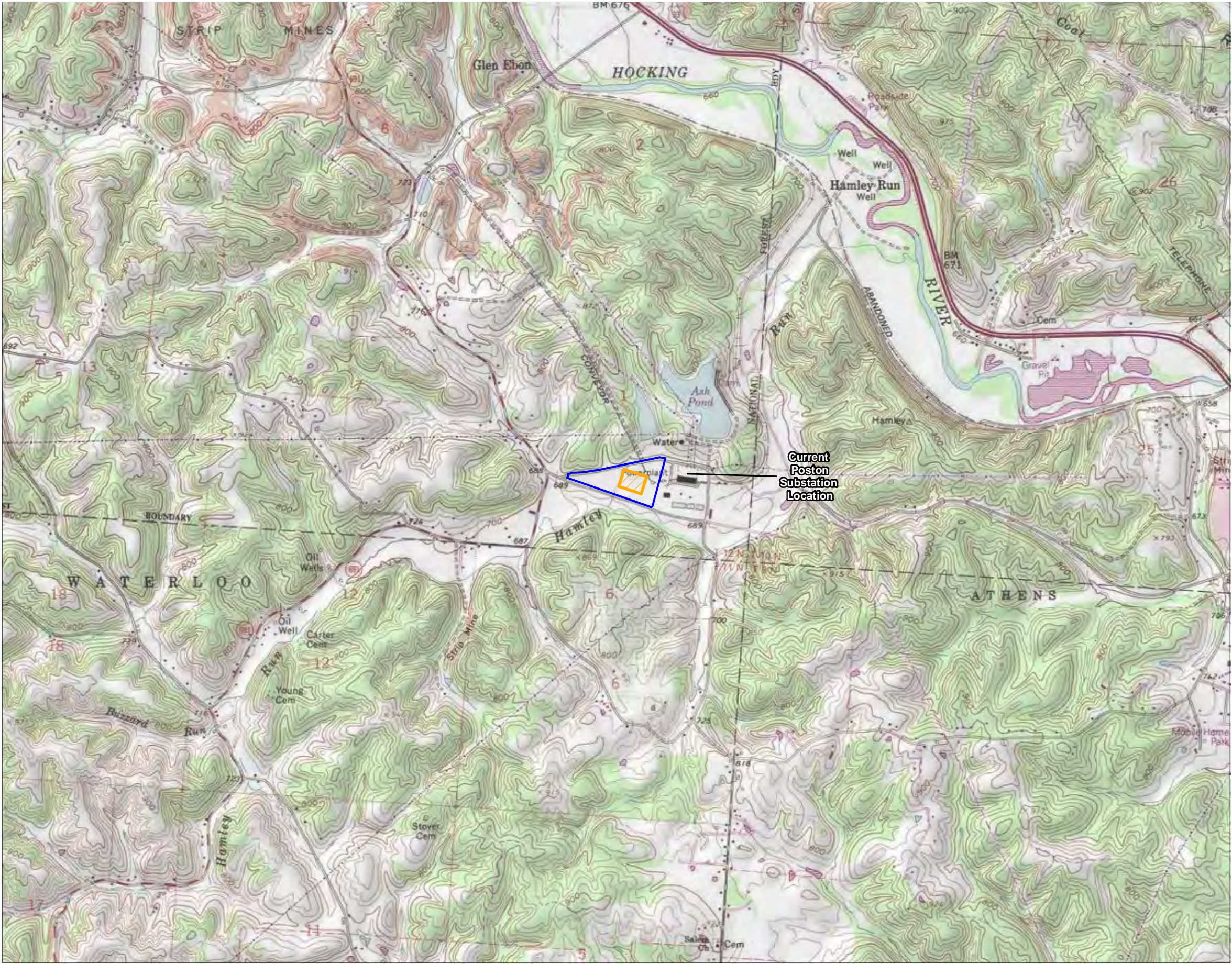


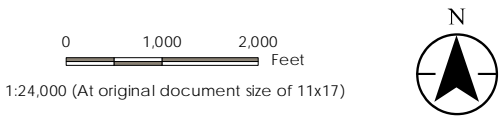
Figure No.
1

Title
Project Location Map

Client/Project
AEP Ohio Transmission Company, Inc.
Lemaster Station Project

Project Location
Athens County, Ohio

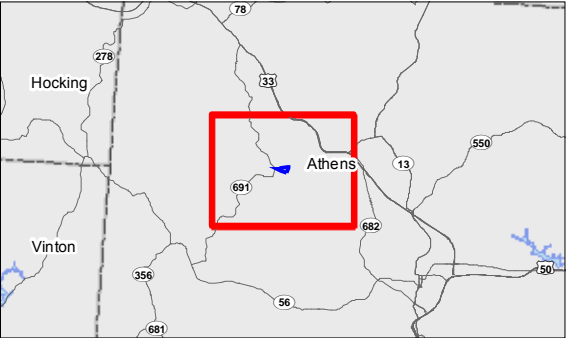
193704783
Prepared by ANP on 2016-12-01
Technical Review by AK on 2016-12-01
Independent Review by DJG on 2016-12-06



Legend

Project Area

Proposed Lemaster Substation



- Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet

2. Data Sources Include: Stantec, AEP, NADS

3. Background: USGS 7.5' Topographic Quadrangles - Nelsonville (OH, 1983) and The Plains (OH, 1975)



LEMASTER STATION PROJECT,
ATHENS COUNTY, OHIO

A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP

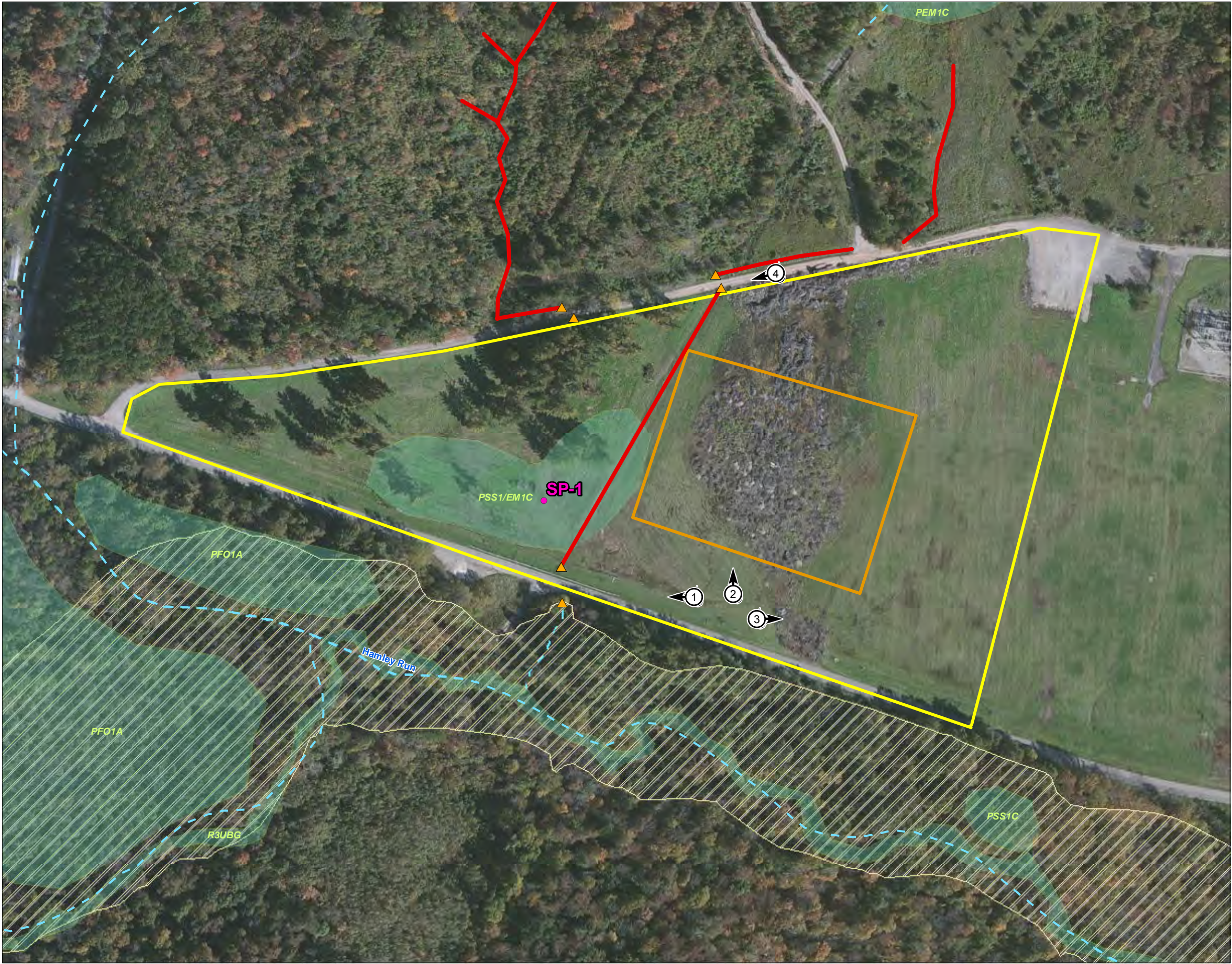


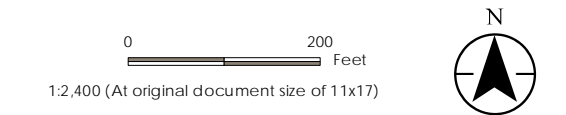
Figure No.
2

Title
Wetland and Waterbody
Delineation Map

Client/Project
AEP Ohio Transmission Company, Inc.
Lemaster Station Project

Project Location
Athens County, OH

193704783
Prepared by ANP on 2016-12-01
Technical Review by AK on 2016-12-01
Independent Review by DJG on 2016-12-06



- Legend
- Photo Location
 - Culverts
 - Wetland Determination Sampling Point
 - Upland Drainage Feature
 - Approximate Stream
 - Project Area
 - Proposed Lemaster Substation
 - National Wetlands Inventory Feature
 - FEMA Flood Zones
 - 100-year Flood Zone
 - 100-year Floodway



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources Include: Stantec, AEP, NADS, FEMA, USGS, USFWS
- Orthophotography: 2015 NAIP



LEMASTER STATION PROJECT,
ATHENS COUNTY, OHIO

A.3 FIGURE 3 – HABITAT ASSESSMENT MAP

V:\1917\Active\19704783\03_data\03s_cad\03s\mxd\Lemaster Station_Figure3.mxd Revised: 2016-12-12 By: abocler



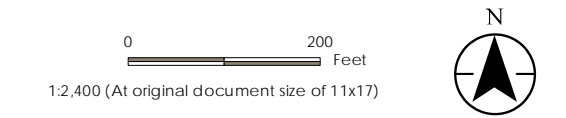
Figure No.
3

Title
Habitat Assessment Map

Client/Project
AEP Ohio Transmission Company, Inc.
Lemaster Station Project

Project Location
Athens County, OH

193704783
Prepared by ANP on 2016-12-01
Technical Review by AK on 2016-12-01
Independent Review by DJG on 2016-12-06



- Legend
- Photo Location
 - Culverts
 - Upland Drainage Feature
 - Approximate Stream
 - Proposed Lemaster Substation
 - Project Area
 - Habitat Type
 - Industrial
 - Old Field



- Notes
- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 - Data Sources Include: Stantec, AEP, NADS, FEMA, USGS, USFWS
 - Orthophotography: 2015 NAIP



Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Appendix B Agency Correspondence



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

November 17, 2016

Dan Godec
Stantec Consulting Services, Inc.
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Godec,

I have reviewed the Natural Heritage Database for the Lemaster Station project area, including a one mile radius, in York, Dover and Waterloo Townships, Athens County, Ohio. The numbers/letters on the list below correspond to the areas marked on the accompanying map. Common name, scientific name and status are given for each species.

- A. Wayne National Forest – US Forest Service
- B. Hamley Run Floodplain Forest Conservation Site
- 1. *Eupatorium pilosum* – Rough Boneset, recently added to inventory, status not determined
- 2. Breeding Amphibian Site
- 3. *Brachycentrus numerosus* – caddisfly, endangered
- 4. Floodplain Forest Plant Community
- 5. *Terrapene carolina* – Eastern Box Turtle, species of concern
- 6. Mixed Mesophytic Forest Plant Community

A Conservation Site is an area deemed by the Natural Heritage Program to be a high quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

We are unaware of any geologic features, scenic rivers, state wildlife areas, nature preserves, parks or forests or national wildlife refuges or parks within a one mile radius of the project area.

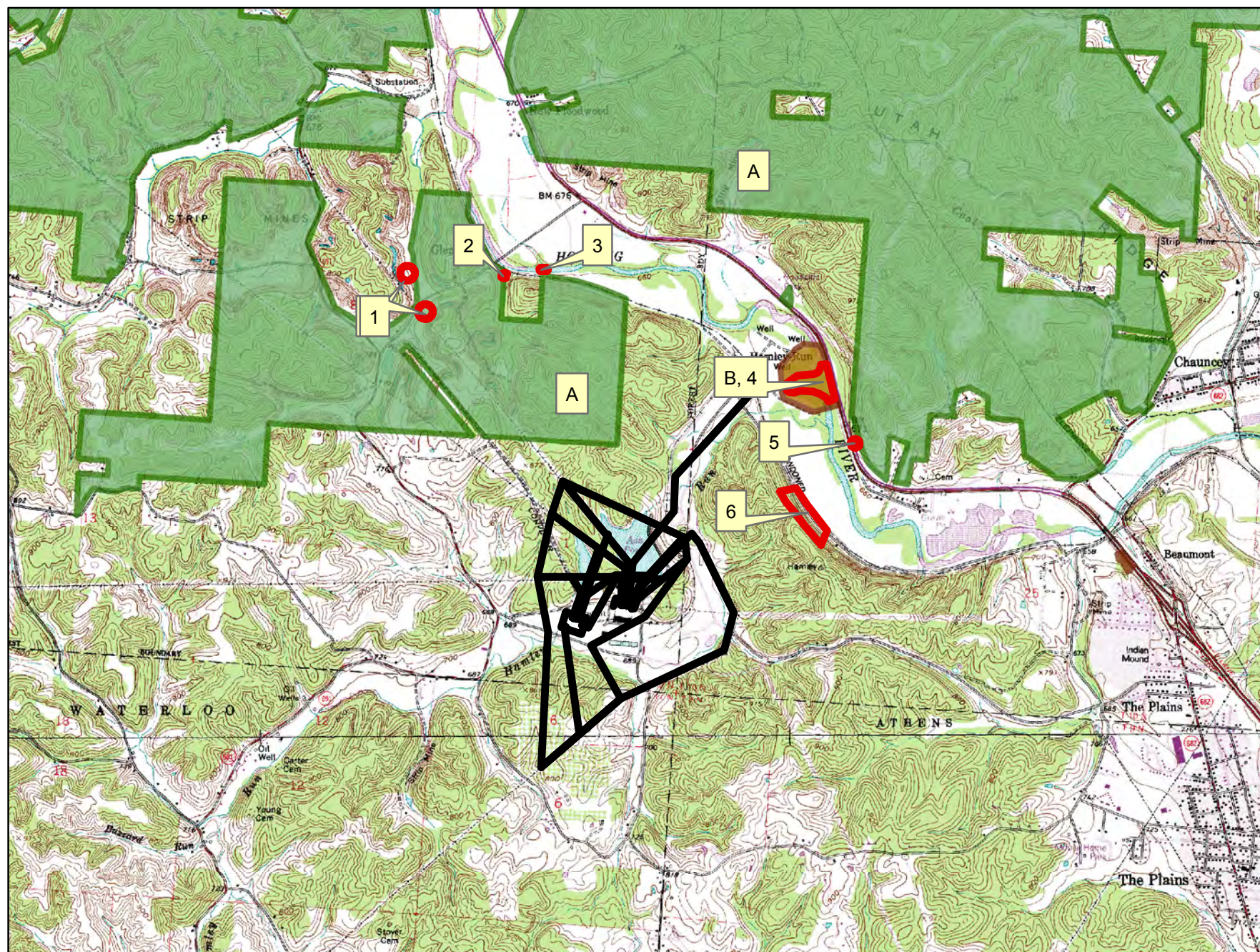
Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review 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,

Debbie Woischke
Ohio Natural Heritage Program

Lemaster Station Project



Godec, Daniel

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Monday, November 28, 2016 11:29 AM
To: Godec, Daniel
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Lemaster Electric Transmission Substation Project, Athens Co.



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: 03E15000-2017-TA-0252

Dear Mr. Godec,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥ 3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing

relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥ 3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.**


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 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.

Due to the project type, size, and location, we do not anticipate adverse effects to any other 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 Service should be initiated to assess any potential impacts.

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 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,



Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Appendix C Representative Photographs

AEP Ohio Transmission Company, Inc.
Lemaster Station Project
Athens County, Ohio



Photograph 1. View of old field habitat and wetland determination sample point SP-1 within the Project area. Photograph taken facing west.



Photograph 2. View of old field habitat within the Project area. Photograph taken facing north.

AEP Ohio Transmission Company, Inc.
Lemaster Station Project
Athens County, Ohio



Photograph 3. View of old field habitat within the Project area and current Lemaster substation adjacent to the Project area. Photograph taken facing west/northwest.



Photograph 4. Representative view of upland drainage feature and industrial habitat within the Project area. Photograph taken facing southwest.

Appendix D Data Forms

D.1 WETLAND DETERMINATION DATA FORMS

Project/Site: Lemaster Station Project		Stantec Project #: 193704783	Date: 11/07/16
Applicant: American Electric Power		Investigator #1: Aaron Kwolek	County: Athens
Investigator #2: Jody Nicolson		State: Ohio	Wetland ID: NA
Soil Unit: FcA - Fitchville silt loam, 0-3% slopes	NW1/WW1 Classification: PFO		Sample Point: SP-1
Landform: Dip	Local Relief: Concave	Community ID: UPL	Section: 1
Slope (%): 0%	Latitude: 39.38179	Longitude: -82.184290	Datum: NAD83
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			Township: 12N
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> or Hydrology <input type="checkbox"/> significantly disturbed?		Are normal circumstances present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> or Hydrology <input type="checkbox"/> naturally problematic?		Range: 15W Dir: --	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Is This Sampling Point Within A Wetland? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present): ☐

<u>Primary:</u> <input type="checkbox"/> A1 - Surface Water <input type="checkbox"/> A2 - High Water Table <input type="checkbox"/> A3 - Saturation <input type="checkbox"/> B1 - Water Marks <input type="checkbox"/> B2 - Sediment Deposits <input type="checkbox"/> B3 - Drift Deposits <input type="checkbox"/> B4 - Algal Mat or Crust <input type="checkbox"/> B5 - Iron Deposits <input type="checkbox"/> B7 - Inundation Visible on Aerial Imagery	<input type="checkbox"/> B9 - Water-Stained Leaves <input type="checkbox"/> B13 - Aquatic Fauna <input type="checkbox"/> B14 - True Aquatic Plants <input type="checkbox"/> C1 - Hydrogen Sulfide Odor <input type="checkbox"/> C3 - Oxidized Rhizospheres on Living Roots <input type="checkbox"/> C4 - Presence of Reduced Iron <input type="checkbox"/> C6 - Recent Iron Reduction in Tilled Soils <input type="checkbox"/> C7 - Thin Muck Surface <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary:</u> <input type="checkbox"/> B6 - Surface Soil Cracks <input type="checkbox"/> B8 - Sparsely Vegetated Concave Surface <input type="checkbox"/> B10 - Drainage Patterns <input type="checkbox"/> B16 - Moss Trim Lines <input type="checkbox"/> C2 - Dry Season Water Table <input type="checkbox"/> C8 - Crayfish Burrows <input type="checkbox"/> C9 - Saturation Visible on Aerial Imagery <input type="checkbox"/> D1 - Stunted or Stressed Plants <input type="checkbox"/> D2 - Geomorphic Position <input type="checkbox"/> D3 - Shallow Aquitard <input type="checkbox"/> D4 - Microtopographic Relief <input type="checkbox"/> D5 - FAC-Neutral Test
---	---	--

Field Observations: Surface Water Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.) Water Table Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.) Saturation Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Depth: (in.)	Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
---	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **FcA - Fitchville silt loam, 0-3% slopes** Series Drainage Class: **somewhat poorly drained**

Taxonomy (Subgroup):

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Mottles					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	16	--	10YR	4/4	100	--	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present): <input type="checkbox"/>		Indicators for Problematic Soils ¹
<input type="checkbox"/> 1 - Histosol <input type="checkbox"/> 2 - Histic Epipedon <input type="checkbox"/> 3 - Black Histic <input type="checkbox"/> 4 - Hydrogen Sulfide <input type="checkbox"/> 5 - Stratified Layers <input type="checkbox"/> 10 - 2 cm Muck (LRR N) <input type="checkbox"/> 11 - Depleted Below Dark Surface <input type="checkbox"/> 12 - Thick Dark Surface <input type="checkbox"/> 1 - Sandy Muck Mineral (LRR N, MLRA 147, 148) <input type="checkbox"/> 4 - Sandy Gleyed Matrix	<input type="checkbox"/> S5 - Sandy Redox <input type="checkbox"/> S6 - Stripped Matrix <input type="checkbox"/> S7 - Dark Surface <input type="checkbox"/> S8 - Polyvalue Below Dark Surface (MLRA 147, 148) <input type="checkbox"/> S9 - Thin Dark Surface (MLRA 147, 148) <input type="checkbox"/> F2 - Loamy Gleyed Matrix <input type="checkbox"/> F3 - Depleted Matrix <input type="checkbox"/> F6 - Redox Dark Surface <input type="checkbox"/> F7 - Depleted Dark Surface <input type="checkbox"/> F8 - Redox Depressions	<input type="checkbox"/> F12 - Iron-Manganese Masses (LRR N, <input type="checkbox"/> A10 - 2cm Muck (MLRA 147) <input type="checkbox"/> F13 - Umbric Surface (MLRA 122, 136) <input type="checkbox"/> A16 - Coast Prairie Redox (MLRA 147, 148) <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA <input type="checkbox"/> F19 - Piedmont Floodplain Soils (MLRA 136, 147) <input type="checkbox"/> F21 - Red Parent Material (MLRA 127, 147) <input type="checkbox"/> TF12 - Very Shallow Dark Surface <input type="checkbox"/> Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	---

Remarks: **Fill material**

Project/Site: **Lemaster Station Project** Wetland ID: **NA** Sample Point **SP-1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	Carex frankii	5	N	OBL
2.	Schedonorus arundinaceus	30	N	FACU
3.	Trifolium pratense	10	N	FACU
4.	Trifolium repens	10	Y	FACU
5.	Taraxacum officinale	5	N	FACU
6.	Juncus effusus	10	Y	FACW
7.	Elymus canadensis	30	Y	FACU
8.	Plantago major	5	N	FACU
9.	Carex vulpinoidea	5	N	OBL
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		110		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index Worksheet

Total % Cover of:	Multiply by:
OBL spp. <u>10</u>	x 1 = <u>10</u>
FACW spp. <u>10</u>	x 2 = <u>20</u>
FAC spp. <u>0</u>	x 3 = <u>0</u>
FACU spp. <u>90</u>	x 4 = <u>360</u>
UPL spp. <u>0</u>	x 5 = <u>0</u>
Total <u>110</u> (A)	<u>390</u> (B)
Prevalence Index = B/A = <u>3.545</u>	

Hydrophytic Vegetation Indicators:

- Yes ☐ No ☐ Rapid Test for Hydrophytic Vegetation
 Yes ☐ No ☐ Dominance Test is > 50%
 Yes ☐ No ☐ Prevalence Index is ≤ 3.0 *
 Yes ☐ No ☐ Morphological Adaptations (Explain) *
 Yes ☐ No ☐ Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

12/21/2016 10:57:53 AM

in

Case No(s). 16-2314-EL-BLN

Summary: Notification -Letter of Notification for the Lemaster 138 kV Station Project
electronically filed by Mrs. Erin C Miller on behalf of AEP Ohio Transmission Company