Legal Department

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March 8, 2018

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

Re: Case No. 18-0149-EL-BLN
In the Matter of the Letter of Notification Application of AEP Ohio Transmission Company, Inc. for a Certificate of Environmental Compatibility and Public Need for the Newbery Station and Extension Project

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification (LON) for the above-captioned project ("Project") by AEP Ohio Transmission Company, Inc. This filing and notice is in accordance with O.A.C. 4906-6-05

A copy of this filing will also be submitted to the executive director or the executive director's designee. A copy will be provided to the Board Staff, including an electronic copy.

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

Respectfully submitted,

/s/ Christen Blend
Christen Blend (0086881), Counsel of Record
Hector Garcia (0084517)
Counsel for AEP Ohio Transmission Company, Inc.

cc: Jon Pawley, OPSB Staff

LETTER OF NOTIFICATION FOR NEWBERY STATION AND EXTENSION PROJECT

PUCO Case No. 18-0149-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.

March 8, 2018

LETTER OF NOTIFICATION

AEP Ohio Transmission Company, Inc.'s Newbery Station and Extension Project

4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco") is providing this Letter of Notification ("LON") to the Ohio Power Siting Board ("OPSB") in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-05(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 proposes the Newbery Station and Extension Project ("Project"), which is located in Putnam County, Ohio. AEP Ohio Transco is proposing to construct an approximately 0.5-acre substation and an associated 0.6 mile long 138 kV electric transmission line on an approximately 67-acre property owned entirely by a customer.

The Project meets the requirements for a Letter of Notification because it is within the types of projects defined by (3) and (1)(d)(ii) of Appendix A to Ohio Administrative Code Section 4906-1-01, *Application Requirement Matrix for Electric Power Transmission Lines*:

> *3. Constructing a new electric power transmission substation;*
>
> *and*
>
> *1. New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows:*
>
> *(d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:*
>
> *i. The line is completely on property owned by the specific customer or the applicant.*

The Project has been assigned PUCO Case 18-0149-EL-BLN.

B(2) Statement of Need

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

Transmission line facilities in the Leipsic, OH area need to be modified in order to accommodate a new delivery point (Newbery Station) to an existing customer who is expanding its operations with a new

processing facility. The new customer facility will require 55MW of peak power for which the customer has requested a new dedicated station delivery with a similar configuration to its nearby existing delivery point (Yellow Creek Station). AEP Ohio Transco will construct the Newbery Station as well as the new 0.6 miles of double circuit 138kV line extensions that will connect the delivery point to existing AEP Ohio Transco transmission line facilities. All new transmission facilities will be constructed on property provided by the customer with ownership anticipated to be transferred to AEP Ohio Transco. This Project will be included in AEP Ohio Transco's 2018 PJM submittal and 2018 LTFR. AEP Ohio Transco will provide the PJM reference number to OPSB once it has been assigned.

B(3) Project Location
The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

Figure 1 identifies the location of the Project in relation to existing and proposed transmission lines and substations.

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 Project is located on property owned by the customer, which is anticipated to be transferred to AEP Ohio Transco. The Project area and surrounding land uses consist of open field and industrial land. The Project area does not contain any streams or wetlands. The location of the Project minimizes impacts to the community and the environment, while taking into account the engineering and construction needs of the customer. Therefore, no significant alternatives were considered as part of this 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.

AEP Ohio Transco will inform affected property owners and tenants about this Project through several different mediums. Within seven days after 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 of O.A.C. 4906-6-08(A)(1-6). Further, AEP Ohio Transco has mailed (or will mail) a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner AEP Ohio Transco may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of O.A.C. 4906-6-08(B). 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. A paper copy of the LON will be served to the public library in each political subdivision for this Project. AEP Ohio Transco retains right-of-way ("ROW") land agents that discuss Project timelines, construction and restoration activities and convey this information to affected owners and tenants.

B(6) Construction Schedule

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

Construction of the Project is planned to begin in the summer of 2018 with an anticipated in-service date of December 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.

Figures 1 and 2 provide the proposed Project area on maps of 1:24,000-scale. Figure 1 provides the proposed Project area on the United States Geological Survey (USGS) 7.5-minute topographic maps of the Leipsic quadrangle. Figure 2 shows the Project area on recent aerial photography, as provided by Bing Maps. To access the Project location from Columbus, take I-270 North to exit 23, US-23 North. Take US-23 North for approximately 66 miles. US-23 North becomes OH-15. Continue approximately 17 miles on OH-15, then merge onto I-75 North/OH-15 toward Toledo for approximately two miles. Take the OH-15/US-224 exit (exit 159) toward Ottawa/Tiffin, and turn left onto US-224 west/OH-15. Drive approximately five miles on US-224 west/OH-15, then turn right onto OH-186/State Route 186. Continue to follow OH-186 for approximately four miles. OH-186 becomes Park Drive North for 0.33 miles, then Park Drive North becomes State Route 235/OH-235. Continue for approximately two miles on State Route 235/OH-235. Turn left onto County Road 203 and continue for approximately five miles. County Road 203 becomes Hancock County Road 203. Continue for approximately 0.5 mile until Hancock County Road 203 becomes Road Y. Drive approximately one mile on Road Y, then turn left onto Road 2/County Hwy-2 and continue for approximately 0.5 mile. Take the first right onto Road D. After approximately two miles, Road D becomes State Route 65/OH-65. The station entrance is on the left after approximately 0.3 mile past the intersection with Road 5 (ProTech Parkway). The approximate address of the Project is 3875 OH-65, Leipsic, Ohio 45856 at latitude 41.1198 longitude -83.9661.

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.

The Project will be constructed on the customer's property. No additional land rights from other property owners are expected to be necessary to construct and operate the facility. It is anticipated that the customer will transfer the station property and an easement for the transmission line ROW to AEP Ohio Transco.

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.

Station:

Newbery Station will be a 138kV "IN-AND-OUT" configuration with a 2000A rating. This standard will dictate buswork tubing sizes and equipment jumps. There will be no transformers within the Station.

Land/Station Configuration: The Station site will be approximately a 250' x 150' area. The Station will be graded and stoned with limestone. The Station site will have approximately 800' of perimeter fence. There will be (3) gates entrances into the Station. There will be a 250' paved station access drive from the customer's facility off of the main causeway. Two 138kV takeoffs will be located in the Station connecting to the East Leipsic circuit. From the site size, there will be (4) four lighting poles installed around the Station to provide adequate station lighting. The following tests will need to be run to evaluate the new site conditions: site/land survey, soil borings, and soil resistivity test.

Grounding: The Station will be grounded with 4/0 copper grid, which will extend an additional 5 foot outside of the fence perimeter.

Equipment: There will be (2) two 138kV 2000A 40kA Circuit Breakers (one line position and one bus tie) with 3000A disconnect switches on either side of the breakers. There will be (3) 138kV 3-phase CCVT's for line potentials and a set for the bus potentials. There will be (2) 138kV 3000A disconnect switches to disconnect from customer transformers (one for Installed T1 and one for future T2). All equipment will use standard steel and foundations unless site conditions dictate otherwise.

Station Power: There will be a new 138kV/120V 25kVA station service PT off of bus #1.
New AC disconnect switch, fuse cabinet, transfer switch and AC distribution cabinet will be located in the yard. Backup station service will come from the customer 34.5KV emergency service.

Control Building: A single 16-foot by 24-foot DICM will be installed in the yard. All control relaying and communications will reside in the DICM. The Station will include pull boxes, cabinets, and batteries.

Below Grade: The site will require approximately 400' Plastibeton trench to run cables from DICM to station equipment. All equipment cables will be run inside of conduits.

Other structures: There will be (2) two 138kV 45 degree bus supports to complete the in-and-out configuration. Standard 138kV single phase bus supports will be installed. There will be (2) two 3-phase sets of line arresters locations underneath the 138kV. All equipment will use standard steel and foundations unless site conditions dictate otherwise. New SCADA Pole for telecom.

Transmission Line Tap:

The Project involves the installation of 0.6 mile of 138kV double-circuit electric transmission line with single-circuit 69kV transmission underbuild using 10 new steel pole structures. New poles will vary in height from 90 feet to 100 feet above ground. Four of the new structures will consist of 7 individual poles placed on concrete foundations. The remaining structures will consist of single direct embedded poles. In total, 13 poles will be installed. Figures 3A and 3B show the types of steel poles to be installed. Figures 3C and 3D show the typical phase arrangements of the Newbery Extension 138kV Line. The Project has the following characteristics:

Voltage: 138kV

Structure Type: (4) self-supporting 2-pole galvanized steel structures on pier foundations and (6) direct embedded WPE galvanized steel structures

Shield Wire: (2) 7#8 Alumoweld will be used as shield wires above the phase conductors

Conductor: (6) 1033,500 kcmil ACSR 54/7 "Curlew" 138kV conductors

Insulators: Polymer with corona rings for 138kV only, with standard pole and conductor attachments

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.

This section is not applicable. No occupied residences or institutions are located within 100 feet of the Project.

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

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, comprised of applicable tangible and capital costs, is approximately $8,000,000.

B(10) Social and Economic Impacts

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

B(10)(a) Operating Characteristics

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

An aerial photograph of the Project vicinity is provided as Figure 2. The Project site currently consists of open field and is surrounded by industrial land, as observed during February 9, 2018 site reconnaissance. The Project is located in Van Buren Township, Putnam County, Ohio.

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 site consists of an approximately 0.5-acre substation and 0.6 mile long transmission line. No agricultural land is crossed by or immediately adjacent to the Project. The proposed Project is not located within agricultural district land based upon coordination with the Putnam County Auditor.

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological 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 February 2018, AEP Ohio Transco's consultant completed a Phase I Cultural Resource Management Investigation for the Project. No cultural resources were identified during that investigation. No significant resources that are 50 years of age or older were identified within the Project area. The cultural report is presented as Appendix B. No further work is deemed necessary for this Project.

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.

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000004. There are no other known local, state, or federal requirements that must be met prior to commencement of the proposed 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.

AEP Ohio Transco's consultant prepared a Wetland Delineation and Stream Assessment report that included consultation and habitat review for special status species. That report is included as Appendix A. Lists of federal and state species of concern were reviewed to determine the threatened and endangered species currently known to occur in Putnam County. Those lists identified Indiana bat (*Myotis sodalis*; federally and state listed endangered) and northern long-eared bat (*Myotis septentrionalis;* federally and

state listed listed threatened) currently known in Putnam County. The Indiana bat and northern long-eared bat are addressed in detail in Appendix A.

Coordination letters were submitted to the Ohio Department of Natural Resources – Division of Wildlife ("ODNR-DOW"), Ohio National Heritage Program ("ONHP") and U.S. Fish and Wildlife Service ("USFWS") seeking environmental review of the Project for potential impacts to threatened or endangered species. No responses have been received to date. Based on the nature of the substation site and land crossed by the proposed transmission line, no impacts to special status species are anticipated.

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.

No areas of ecological concern were identified within the Project area. AEP Ohio Transco's consultant prepared a Wetland Delineation and Stream Assessment Report, included as Appendix A.

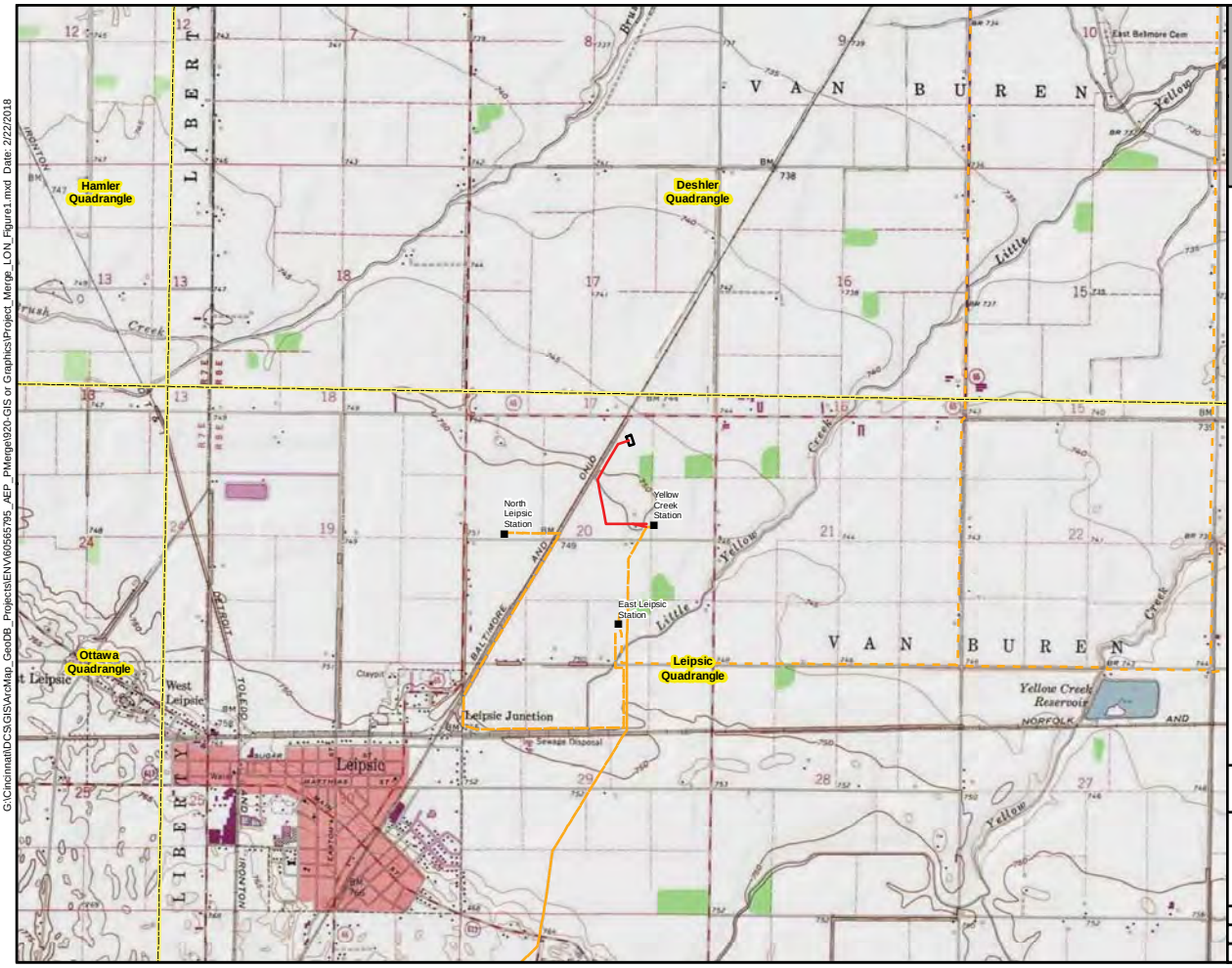
The FEMA Flood Insurance Rate Map ("FIRM") was consulted to identify any floodplains/flood hazard areas that have been mapped in the Project Area (specifically, map numbers 39063C0175E). Based on this mapping, no mapped FEMA floodplains are located in the Project Area.

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.

Figures



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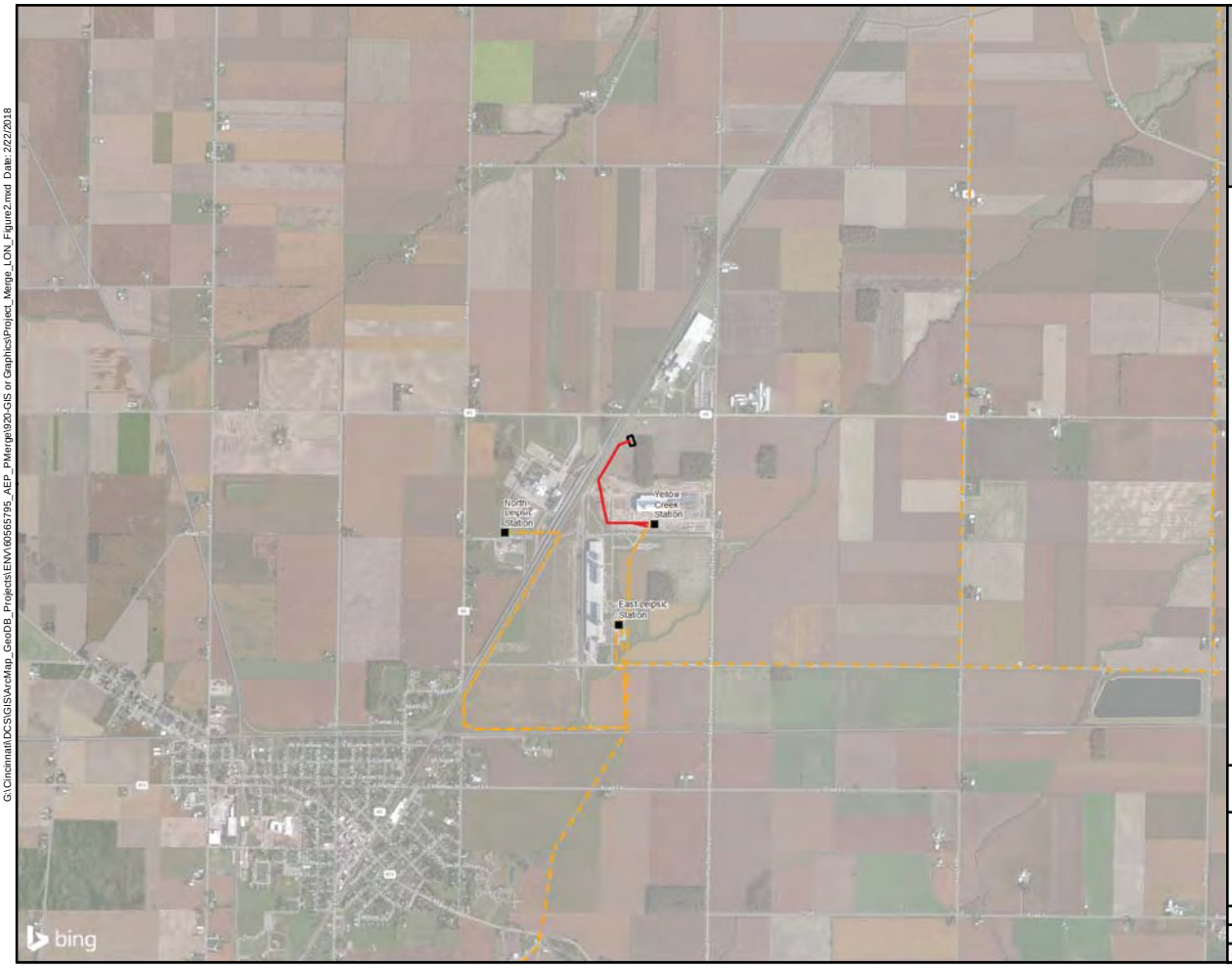

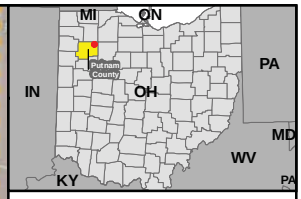

LEGEND:
- Proposed Newbery Station
- Proposed Newbery Transmission Line
- Existing Transmission Line

N

0 2,000 4,000
Feet

Base Map: Bing Maps Hybrid,
(c) 2010 Microsoft Corporation and its data suppliers

AEP OHIO TRANSMISSION COMPANY

NEWBERY STATION AND EXTENSION PROJECT

FIGURE 2
AERIAL PHOTOGRAPH OF
THE PROJECT VICINITY

Date Saved: 2/1/2018	SCALE: 1:24,000
CREATED BY: GEO	CHECKED BY: AG
JOB NO: 60565793	AECOM

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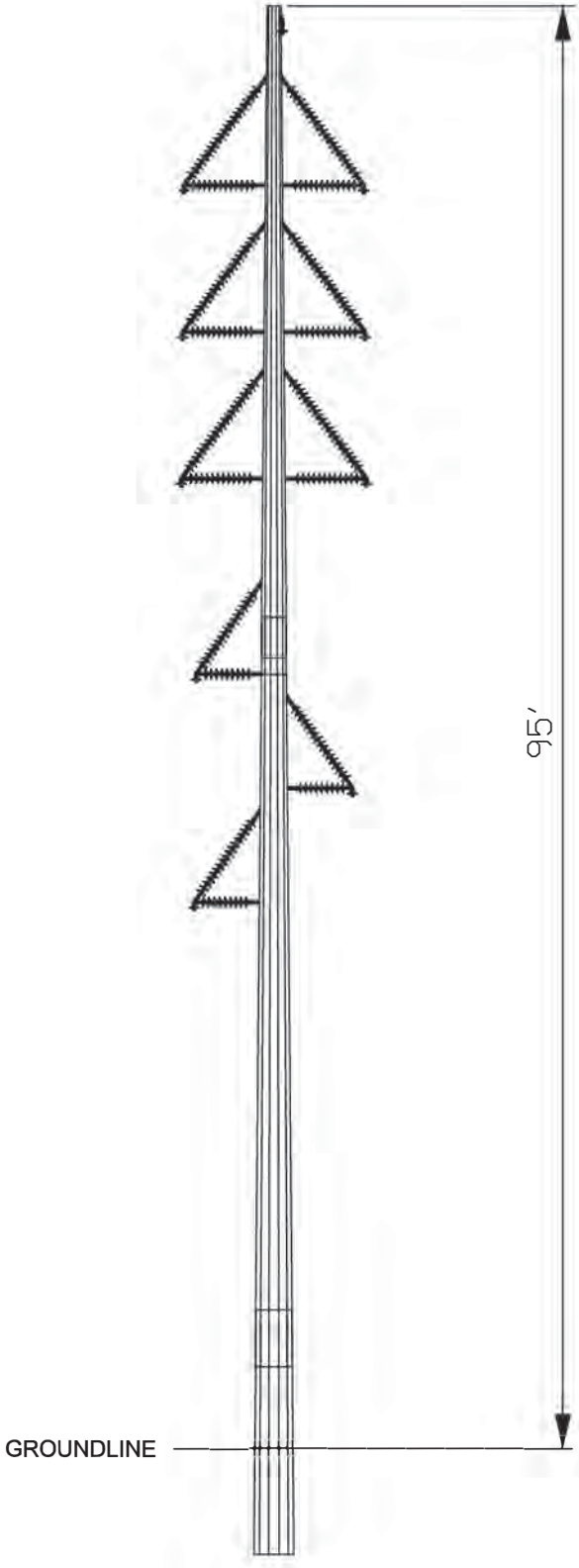

APP'D BY :	DR. BY :	CH. BY :	DATE :

AEP AMERICAN® ELECTRIC POWER

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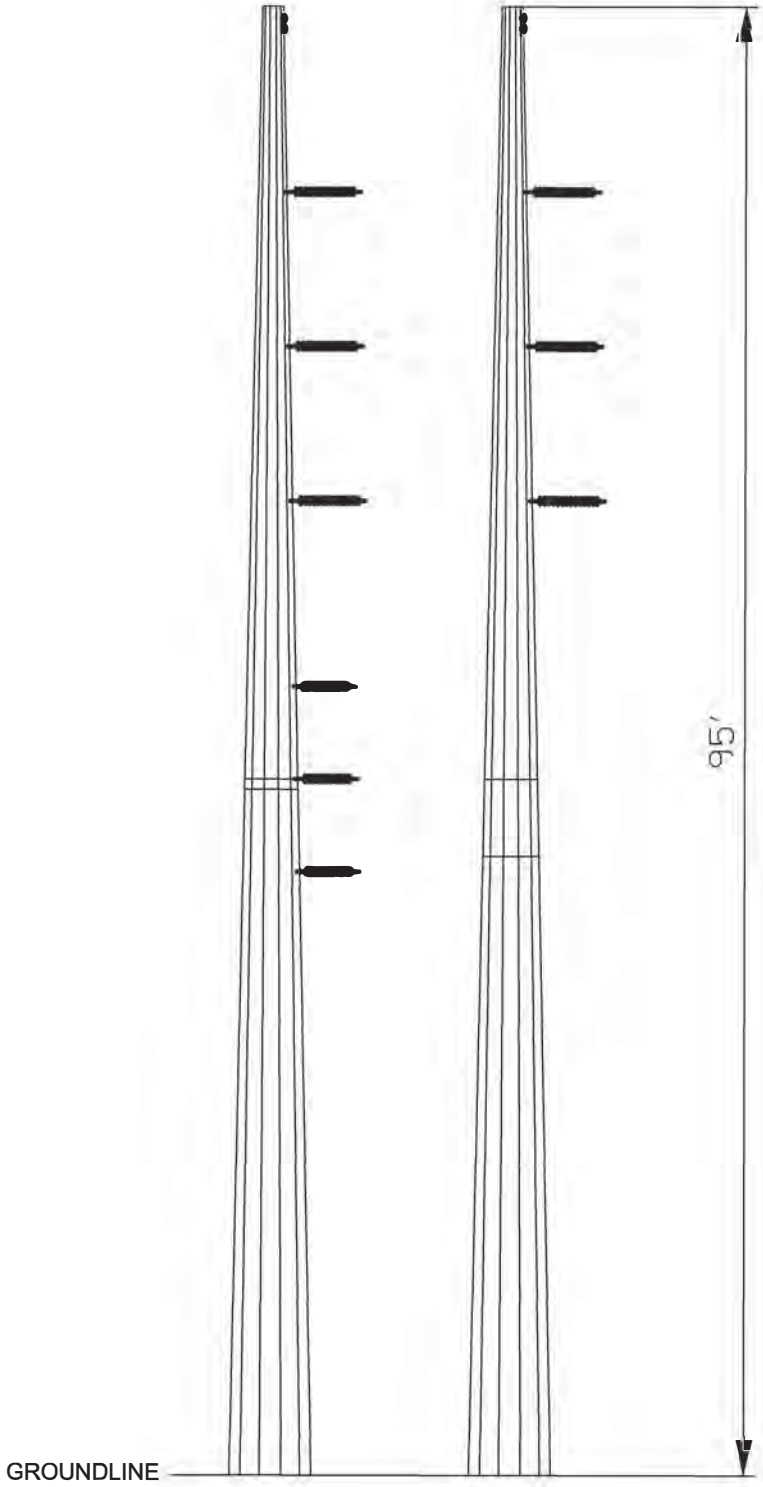
DOUBLE-CIRCUIT BRACED-POST
W/ SINGLE-CIRCUIT UNDERBUILD
NEWBERY EXTENSION 138kV
TANGENT STRUCTURE TYPE

FIGURE: 3A



APP'D BY :	DR. BY :	CH. BY :	DATE :

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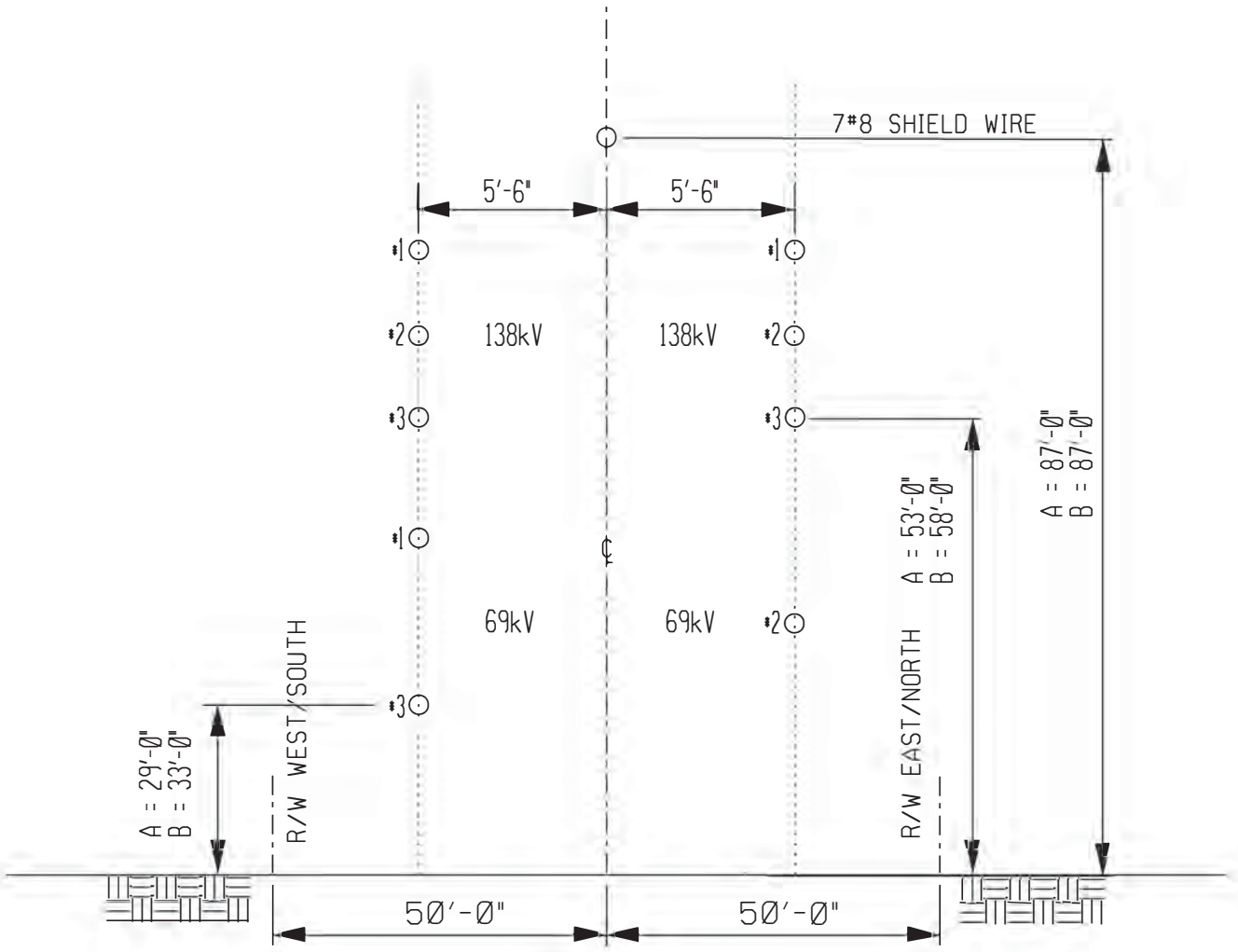
DOUBLE-CIRCUIT SELF-SUPPORTING
W/ SINGLE-CIRCUIT UNDERBUILD
NEWBERY EXTENSION 138kV
DEADEND STRUCTURE TYPE

FIGURE: 3B

NEWBERY EXTENSION
138kV CIRCUIT
(1Ø33 $^{54}/_{7}$ ACSR "CURLEW" CONDUCTOR)



DIMENSION "A" - VERTICAL CONFIGURATION (STEEL POLE) (UNDER EMERGENCY & NORMAL MAX. LINE LOADING).

DIMENSION "B" - VERTICAL CONFIGURATION (STEEL POLE) (UNDER WINTER NORMAL CONDUCTOR RATING).

APP'D BY :	DR. BY :	CH. BY :	DATE :

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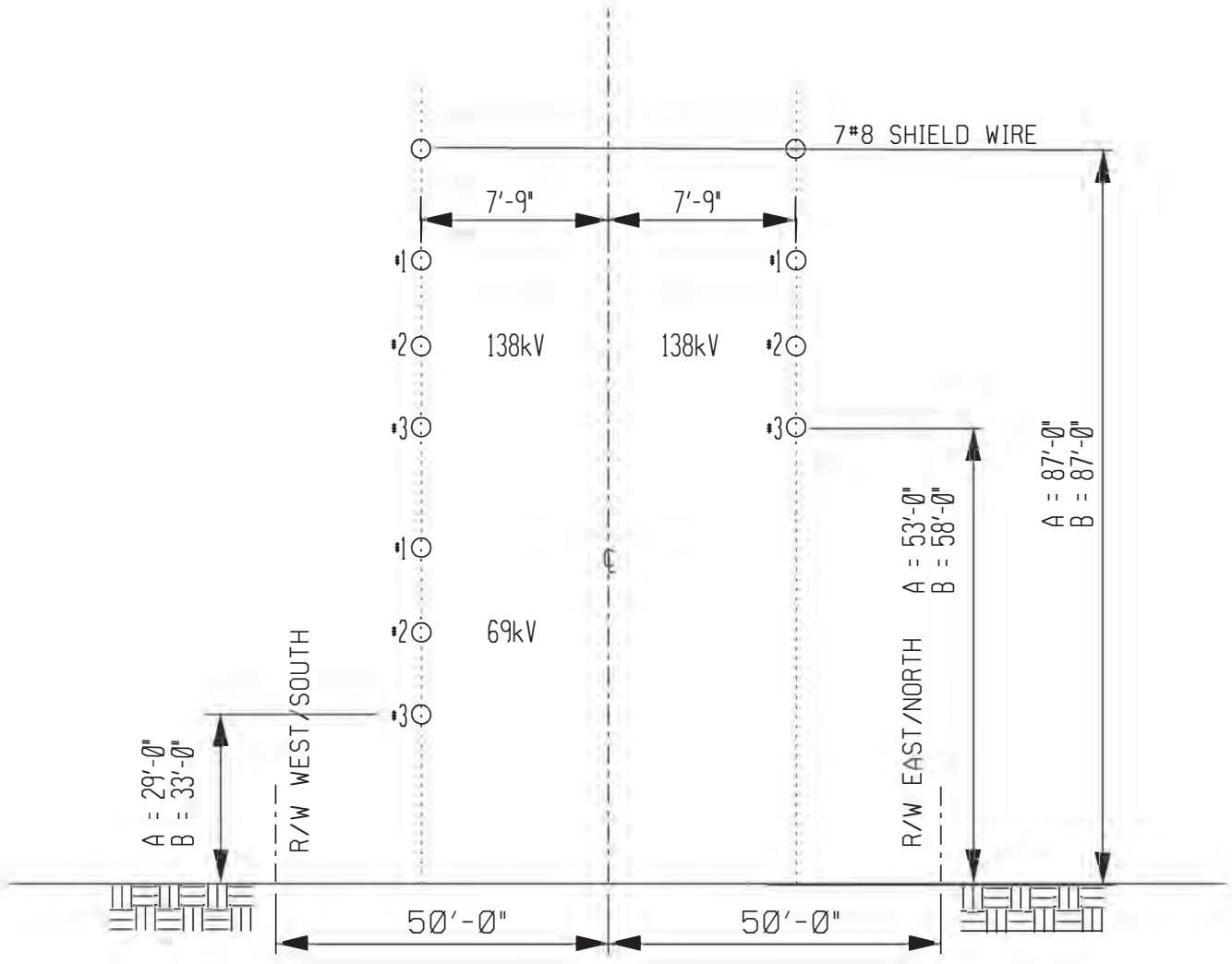
TYPICAL PHASE ARRANGEMENT
BRACED-POST TANGENT
NEWBERY EXTENSION 138kV

FIGURE: 3C

NEWBERY EXTENSION
138kV CIRCUIT
(1Ø33 54/7 ACSR "CURLEW" CONDUCTOR)



DIMENSION "A" - VERTICAL CONFIGURATION (STEEL POLE) (UNDER EMERGENCY & NORMAL MAX. LINE LOADING).

DIMENSION "B" - VERTICAL CONFIGURATION (STEEL POLE) (UNDER WINTER NORMAL CONDUCTOR RATING).

APP'D BY :	DR. BY :	CH. BY :	DATE :

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TYPICAL PHASE ARRANGEMENT
2-POLE SELF-SUPPORTING DEADEND
NEWBERY EXTENSION 138kV

FIGURE: 3D

Appendix A Wetland Delineation and Stream Assessment Report

NEWBERY STATION AND 138-KV TRANSMISSION LINE EXTENSION PROJECT, PUTNAM COUNTY, OHIO

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230

Prepared by:

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60565793

February 2018

TABLE OF CONTENTS

TABLES

Number

FIGURES

Number

LIST OF ACRONYMS and ABBREVIATIONS

AEP Ohio Transco	American Electric Power Ohio Transmission Company
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
GPS	Global Positioning System
IBI	Index of Biotic Integrity
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate wetland
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary high water mark
ONHD	Ohio Natural Heritage Database
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine emergent
PFO	Palustrine forested
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
UPL	Upland
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company's (AEP Ohio Transco) is proposing to construct an approximately 0.5 mile long transmission line and an associated 0.5 acre substation to connect to the Yellow Creek substation in Putnam County, Ohio ("Project"). The proposed Project is illustrated on Figure 1.

The purpose of the field survey was to assess whether wetlands and other "waters of the United States (U.S.)" exist within the Project survey corridor. Secondarily, land uses were recorded in an effort to classify and characterize potential habitat for rare, threatened, and endangered species. This report will be used to assist AEP Ohio Transco's efforts to identify potential waters of the U.S and to avoid or minimize impacts to rare, threatened, and endangered species potentially present within the survey corridor during construction activities.

2.0 METHODOLOGY

In February 2018, AECOM ecologists walked the Project survey corridor to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

2.1 PREFIELD REVIEW

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential streams or wetland areas. National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

2.2 WETLAND DELINEATION

The Project survey corridor was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (1987 Manual) (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (Regional Supplement) (USACE, 2010). The Regional Supplement was released by the USACE in August 2010 to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The 1987 Manual and Regional Supplement define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are located where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for NWI identified wetlands, AECOM utilized the routine delineation method described in the 1987 Manual and Regional Supplement that consisted of a pedestrian site reconnaissance, including identifying the soils identification, a geomorphologic assessment of hydrology, vegetation communities, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.2.1 SOILS

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A Munsell Soil Color Chart (Kollmorgen Corporation, 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.2.2 HYDROLOGY

The 1987 Manual requires that an area be inundated or saturated to the surface for a minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The Regional Supplement states that growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature at 12-in. depth is 41 degree Fahrenheit (^{o}F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The Regional Supplement also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of 10, or 50% probability) date of the last and first 28°F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center reveals for Putnam County that in an average year, this period lasts from April 14 to October 24, or 193 days.

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the 1987 Manual and the Regional Supplement. Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2010).

2.2.3 VEGETATION

Dominant vegetation were visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) assigned to each plant species based on the U.S. Army Corps of Engineers National Wetland Plant List: 2016 wetland ratings (Lichvar et al, 2016). An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area is determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE, 2010).

Vegetation sampling for wetland delineations can be challenging when plants die back due to freezing temperatures or other factors (USACE, 2010). The end of the growing season is indicated when woody deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever occurs latest. The wetland delineation field work within the Project area was conducted after the occurrence of these events and therefore, outside the normal growing season. Conducting a wetland delineation outside the normal growing season can make identifying the wetland/upland boundary more challenging and may require further assessment during the next growing season.

2.2.4 OHIO RAPID ASSESSMENT METHOD v. 5.0

The Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v. 5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between “Categories 1 and 2” from 30 to 34.9 and between “Categories 2 and 3” from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat for wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration, or is of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "…support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "…dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past, but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have “…superior habitat, or superior hydrological or recreational functions.” They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or

which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit "superior" hydrologic functions (e.g. flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.3 STREAM ASSESSMENT

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE, 2005).

Stream assessments were conducted using the methods described in the OEPA's Methods for Assessing Habitat in Flowing Waters: Using OEPA's *Qualitative Habitat Evaluation Index* (Rankin, 2006) and in the OEPA's *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams* (OEPA, 2012).

2.3.1 OEPA QUALITATIVE HABITAT EVALUATION INDEX

The Qualitative Habitat Evaluation Index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile (259ha), if natural pools are greater than 15.75 in (40 cm), or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams. Headwater (H) streams are those with a watershed area less than or equal to 20 square miles. Larger streams (L) are those with a watershed area greater than 20 square miles. The Narrative Rating System includes: Very Poor (<30 H and L), Poor

(30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

2.3.2 OEPA PRIMARY HEADWATER HABITAT EVALUATION INDEX

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The Headwater Habitat Evaluation Index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi^2 (259 ha), ***and*** a maximum depth of water pools equal to or less than 15.75 inches (40 cm)" (OEPA, 2012).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the OEPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PHWH stream class using the HHEI protocol (OEPA, 2012). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

Class 1 PHWH Streams: Class 1 PHWH Streams are those that have "normally dry channels with little or no aquatic life present" (OEPA, 2012). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PHWH Streams: Class 2 PHWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm-water adapted native fauna either present seasonally or on an annual basis" (OEPA, 2012). These species communities are composed of

vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PHWH Streams: Class 3 PHWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PHWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.4 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a rare, threatened, and endangered species review and general field habitat surveys within areas crossed by the Project survey corridor. The first phase of the survey involved a review of online lists of federal and state listed species. In addition to reviewing species lists, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section soliciting comments on the Project. AECOM also submitted a coordination letter to the USFWS soliciting comments on the Project. Agency-identified species and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys in February 2018. Land uses observed by the Project survey corridor were assigned a general classification based upon the principal land characteristics of the location as observed through aerial photography review and observations during the field surveys. General land use types in the vicinity of the proposed Project include: maintained mowed lawn, agricultural fields, commercial facilities and associated parking lots. Maintained lawn and commercial facilities are the dominant land use in the vicinity of the Project.

3.0 RESULTS

No ecological features were observed within the Project survey corridor during the field survey.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

According to the USDA/NRCS Web Soil Survey of Putnam County, Ohio (NRCS 2018), and the NRCS Hydric Soils Lists of Ohio, two soil series are mapped within the Project survey corridor (NRCS, 2018). Of these two soil series, one soil map unit is listed as hydric. Table 1 provides a summary of all soil series and soil map units within the Project survey corridor. Soil map units located within the Project survey corridor are shown on Figures 2A and 2B.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE NEWBERY STATION AND 138 KV TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Hoytville	HcA	Hoytville silty clay loam, 0 to 1 percent slopes	Nearshore zones, wave-worked till plains	Yes	85-98%
Haney	HdA	Haney loam, 0 to 2 percent slopes	Outwash plains, outwash terraces, glacial drainage channels	Not	None
	HdB	Haney loam, 2 to 6 percent slopes	Outwash plains, outwash terraces, glacial drainage channels	Not	None

NOTES:
(1) Data sources include:
USDA, NRCS. 2018 Soil Survey Geographic (SSURGO) Database. Available online at: http://soildatamart.nrcs.usda.gov/
USDA, NRCS. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

3.1.2 National Wetland Inventory Map Review

According to the NWI maps of the Leipsic, Ohio quadrangle, the Project survey corridor does not contain any mapped NWI wetlands.

3.1.3 Delineated Wetlands

No wetlands were identified by AECOM within the Project survey area.

3.2 STREAM CROSSINGS

No stream crossings were identified by AECOM within the Project survey area.

3.3 PONDS

No ponds were identified by AECOM within the Project survey area.

3.4 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys in February 2018. Portions of the Project survey corridor were identified as landscaped areas, and urban areas. A variety of woody and herbaceous lands, as described below in Table 2, are present within the Project survey area. Habitat descriptions, applicable to the Project, and details on the expected impacts of construction are provided below. Vegetated land cover can be seen visually from aerial photography provided on Figures 3A and 3B.

TABLE 2

VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY CORRIDOR

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage within the Project Survey Area
Landscaped Areas	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project survey corridor and adjacent areas are frequently mowed grasses and forbs.	10.45	41%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	15.14	59%
Totals:		**25.59**	**100%**

3.5 RARE, THREATENED AND ENDANGERED SPECIES

Agency Consultation –

AECOM conducted a rare, threatened, and endangered species review for areas crossed by the Project survey area. Table 3 provides a list of these species of concern identified in the Project area during the rare, threatened, and endangered species review.

TABLE 3
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Impact Assessment	Agency Comments
Mammals						
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	No	Limited potentially suitable habitat is present within the Project area (woodlands).	N/A
Northern long-eared bat (*Myotis septentrionalis*)	Threatened	Threatened	Winter hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by northern long-eared bats. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Northern long-eared bats have also been found, albeit rarely, roosting in structures like barns and sheds.	No	Limited potentially suitable habitat is present within the Project area (woodlands).	N/A

TABLE 3
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Impact Assessment	Agency Comments
Birds						
Northern Harrier (*Circus cyaneus)*	Endangered	N/A	This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds nests out of sticks on the ground, often on top of a mound. This species hunts over grasslands	No	No suitable habitat is present within the Project area or adjacent (old field, pasture, emergent wetland habitats).	N/A
Invertebrates						
Clubshell (*Pleurobema clava)*	Endangered	Endangered	This mussel species prefers clean, loose sand and gravel in medium to small rivers.	No	No in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated	N/A
Rabbitsfoot (*Quadrula cylindrica cylindrica)*	Endangered	Threatened	This mussel species prefers small to medium sized rivers.	No		N/A
Rayed bean (*Villosa fabalis)*	Endangered	Endangered	This mussel species prefers gravel or sand substrates and is often found in and around roots of aquatic vegetation in smaller, headwater creeks.	No		N/A
White Cat's Paw (*Epioblasma obliquata perobliqua)*	Endangered	Endangered	This mussel prefers coarse sand or gravel bottoms of small to mid-size freshwater streams and rivers. The mussel prefers shallow water and requires a swift current to avoid being buried in silt.	No		N/A
Fish						
Greater Redhorse (*Moxostoma valenciennesi)*	Threatened	N/A	This fish prefers medium to large rivers in the Lake Erie system of Ohio. The fish is typically found in pools with a clean sand or gravel substrate.	No	No in-water work is planned as part of the Project. No impacts to fish species and their habitat are anticipated	N/A

ODNR Coordination –

Coordination with the ODNR was initiated during the planning stages of the Project to obtain ONHD information regarding species or habitats that may be within or near the project corridor. The ODNR has not yet responded to an e-mailed request for an Environmental Review that includes rare, threatened and endangered species within an extended area around the Project site.

The Project is within the range of the Indiana Bat; a state endangered and federally endangered species. In previous correspondence, the ODNR recommended that if suitable habitat occurs within the Project area, trees be conserved or cut between October 1 and March 31. After reviewing the project, it is anticipated that the Project is not likely to impact any of the mentioned species.

Based on the ODNR State Listed Wildlife Species list there are seven state listed species that include Northern harrier, white cat's paw, clubshell, rabbitsfoot, rayed bean, Indiana bat, and greater redhorse. Impacts to fish or mussel species is not anticipated as there will be no in stream work as part of the project.

USFWS Coordination –

The USFWS did not provide comments on the project with regard to federally listed rare, threatened and endangered species that may occur within the project vicinity.

The USFWS County Distribution of Federally Listed Rare, Endangered, Threatened, and Proposed Species noted that the Project lies within the range of the federally endangered Indiana bat, and the federally threatened northern long-eared bat. USFWS has recommended for previous projects that should the proposed site contain trees ≥3 inches dbh that trees be saved wherever possible. If tree clearing cannot be avoided, USFWS recommends that tree removal occur between October 1 and March 31 to avoid adverse effects to Indiana bats and northern long-eared bats during the summer maternity season. The project may include a small amount of tree clearing which will occur within the recommended time from USFWS and ODNR. Due to the project type, size, and location, it is not anticipated that the project will have adverse effects to any other federally endangered, threatened, proposed, or candidate species.

4.0 SUMMARY

The ecological survey did not identify potentially jurisdictional waters of the United States within the Project survey corridor.

With regard to state and/or federally listed threatened and endangered species that may occur within the Project vicinity, two rare, threatened and endangered species were listed on the USFWS website including the following: Indiana bat, and northern long-eared bat. Seven species were listed on the

ODNR website including the following: Northern harrier, white cat's paw, clubshell, rabbitsfoot, rayed bean, Indiana bat, and greater redhorse. Impacts to fish or mussel species is not anticipated as there will be no in stream work as part of the project.

Based on general observations during the ecology survey, a small portion of the Project survey area contained potential summer habitat for the Indiana bat and the northern long-eared bat. Impacts are not anticipated to the species due to the project type, size, location, and proposed implementation of seasonal tree cutting (during October 1st and March 31st), to avoid impacts to these bat species.

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey corridor provided in Figures 3A and 3B. Areas that fall outside of the Project survey corridor, including any portion of work pads or access roads, were not evaluated in the field and are not included in the reporting of this survey.

The information contained in this wetland delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

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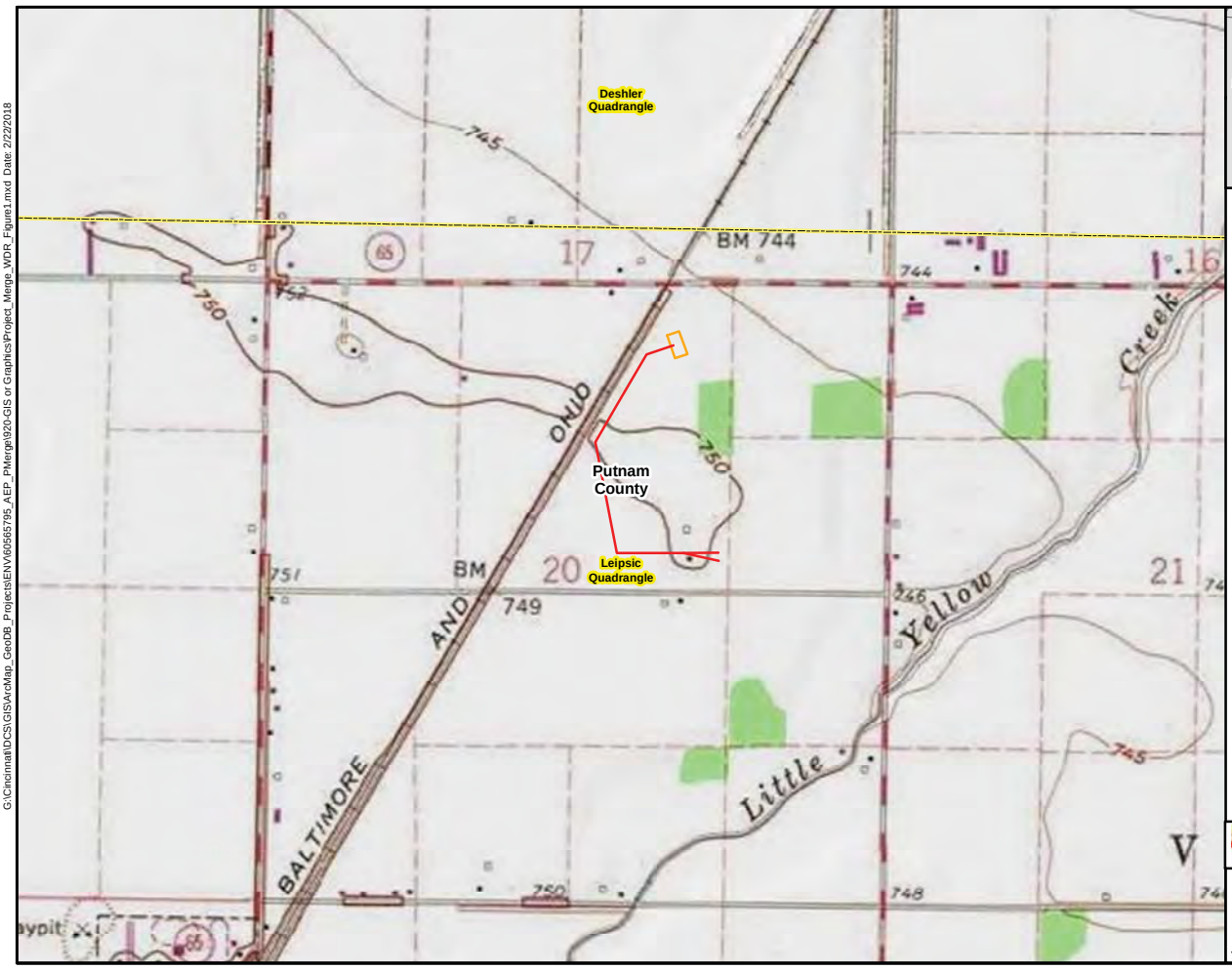

LEGEND:

Proposed Newbery 138kV Transmission Line

Proposed Newbery Station

N

0 800 1,600

Feet

BASE MAP SOURCE:
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OHIO TRANSMISSION COMPANY

Newbery Station and 138 kV Transmission Line Extension Project

FIGURE 1
OVERVIEW MAP

JOB NO. 60565793

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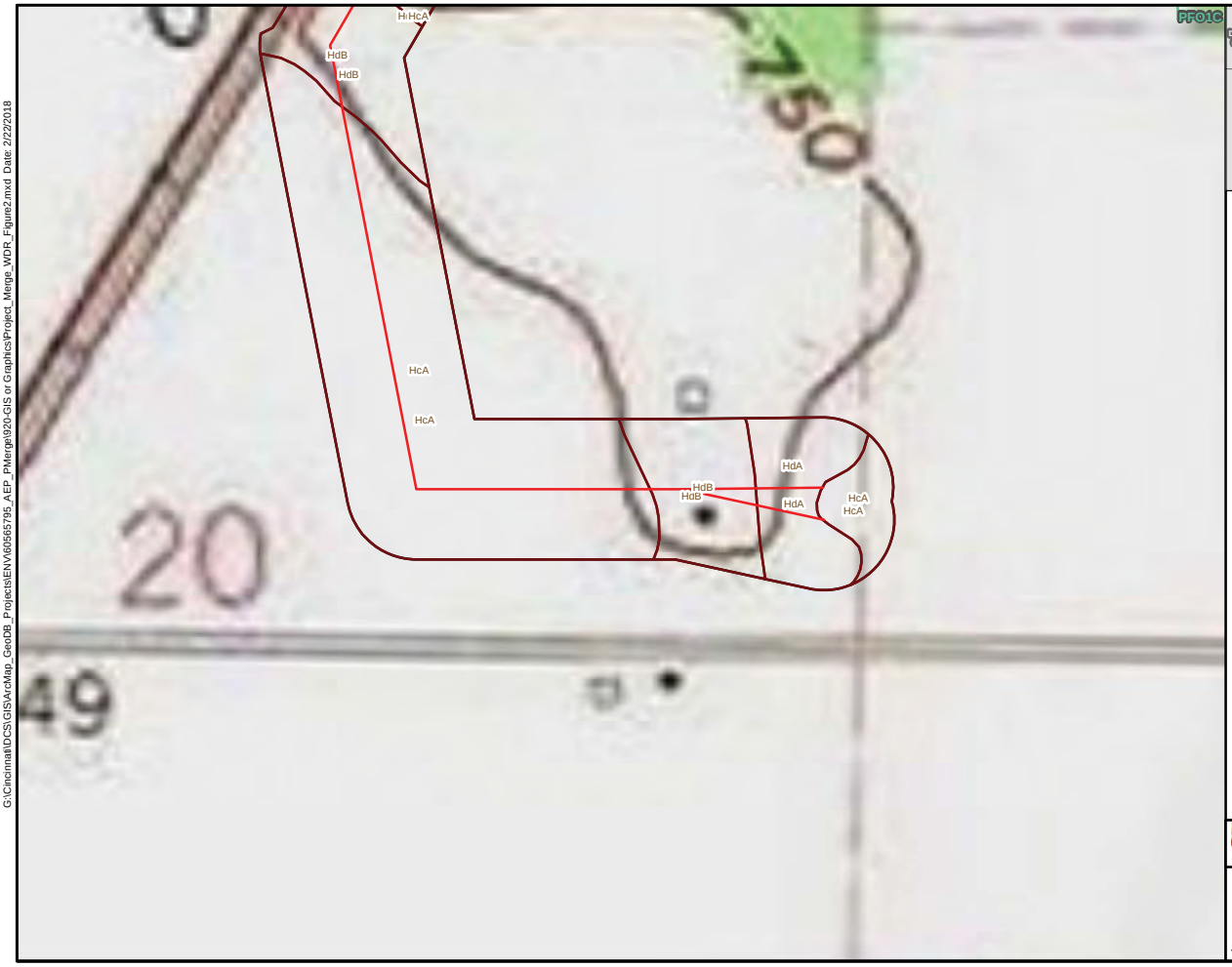

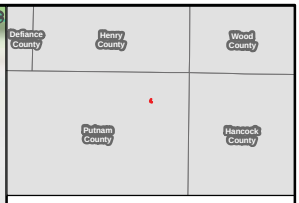

LEGEND:

- Proposed Newbery 138kV Transmission Line
- Proposed Newbery Station
- Survey Corridor
- NWI Wetland
- Soil Map Unit

Soil Map Unit Symbol

- HcA, Hoytville silty clay loam; 0 to 1 percent slopes
- HdA, Haney loam; 0 to 2 percent slopes
- HdB, Haney loam; 2 to 6 percent slopes
- NpA, Nappanee silt loam; 0 to 2 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
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OHIO TRANSMISSION COMPANY

Newbery Station and 138 kV Transmission Line Extension Project

FIGURE 2A
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60565793

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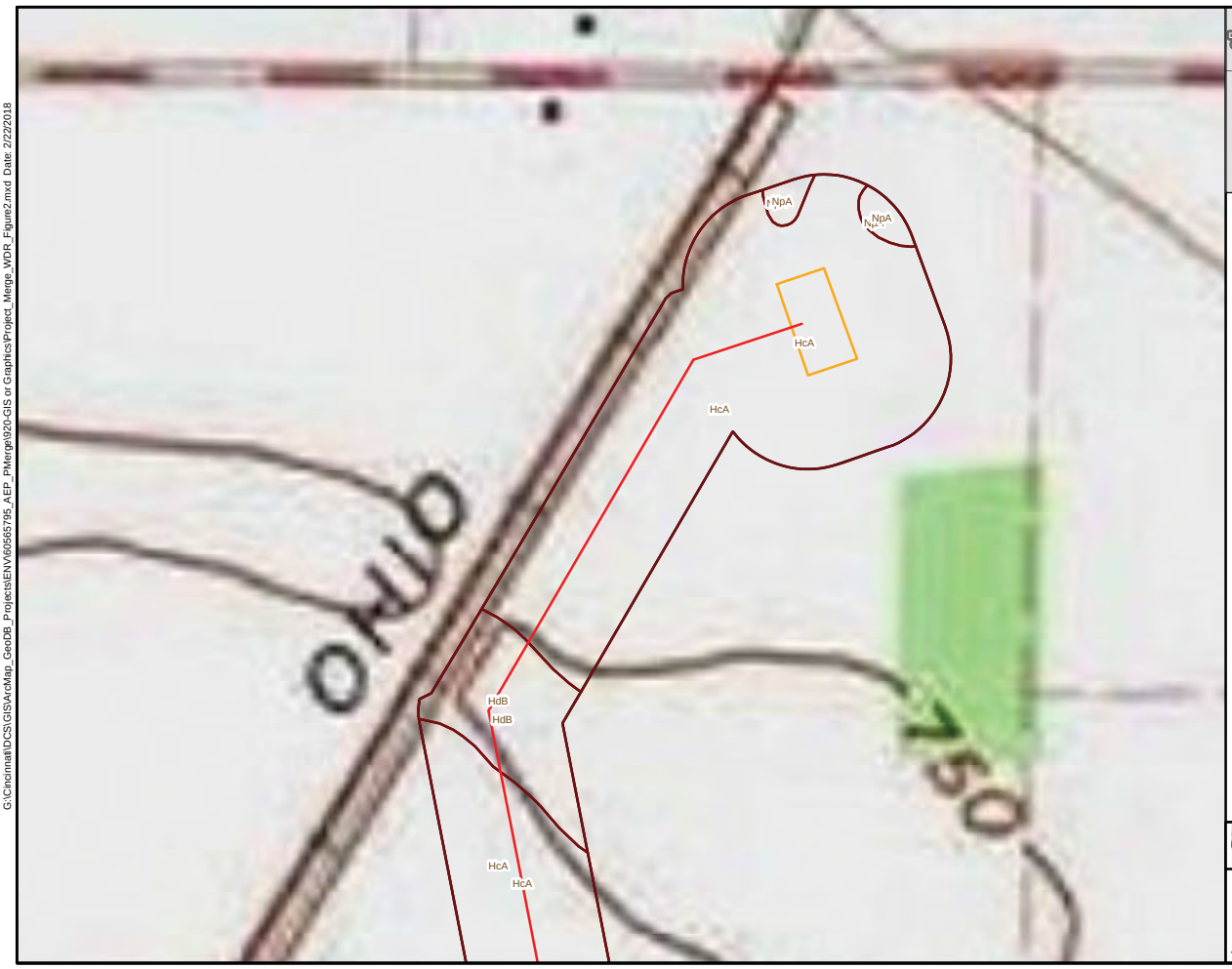

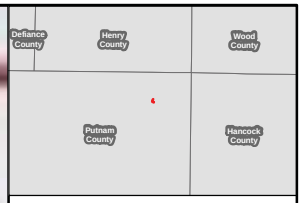

LEGEND:

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- NWI Wetland
- Soil Map Unit

Soil Map Unit Symbol

- HcA, Hoytville silty clay loam; 0 to 1 percent slopes
- HdA, Haney loam; 0 to 2 percent slopes
- HdB, Haney loam; 2 to 6 percent slopes
- NpA, Nappanee silt loam; 0 to 2 percent slopes

N

0 200 400

Feet

BASE MAP SOURCE:
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OHIO TRANSMISSION COMPANY

Newbery Station and 138 kV Transmission Line Extension Project

FIGURE 2B
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60565793

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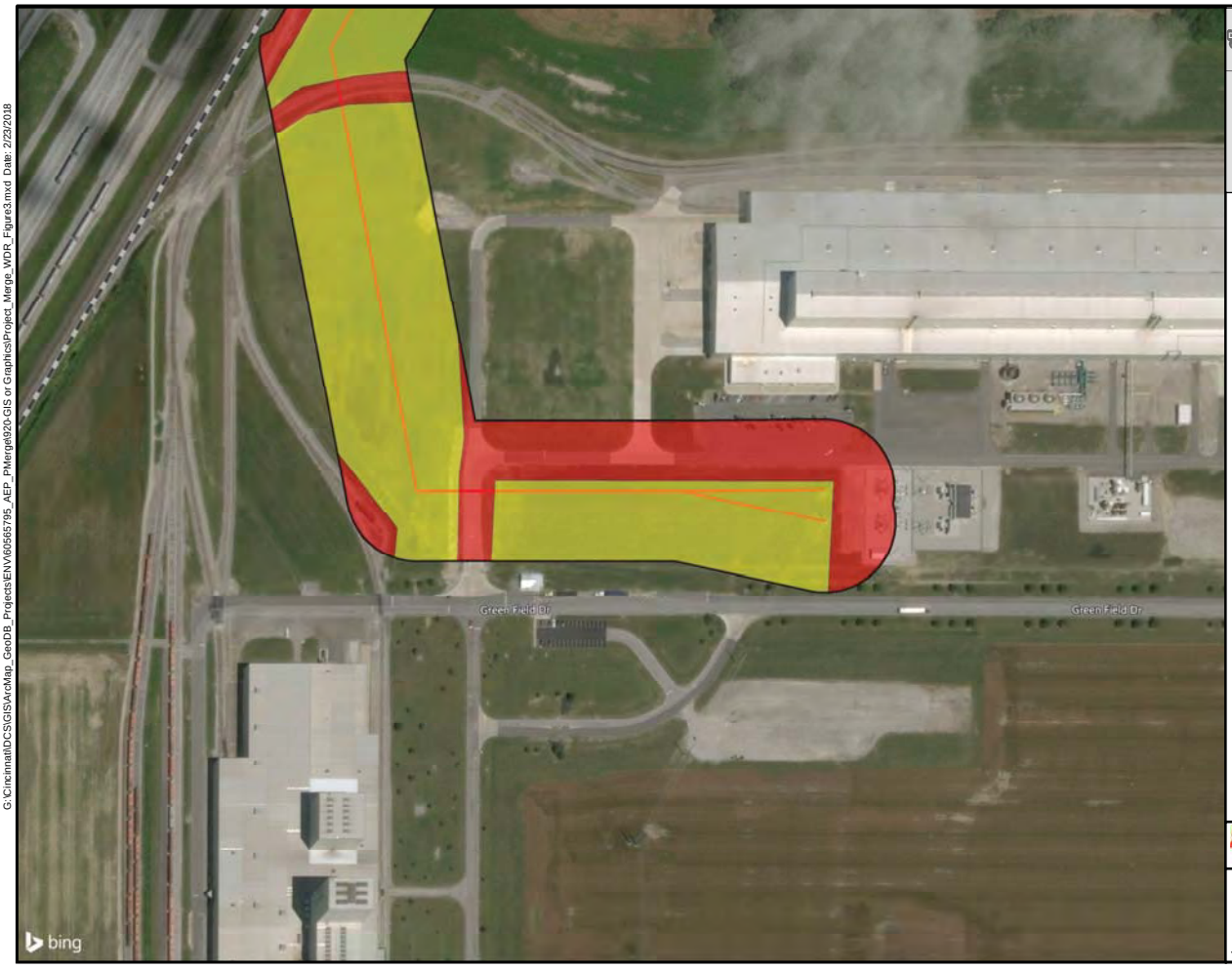

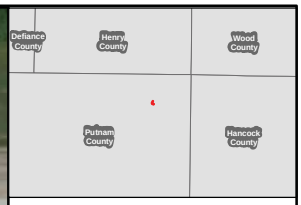

LEGEND:

- Proposed Newbery 138kV Transmission Line
- Proposed Newbery Station
- Survey Corridor
- Landscaped Area
- Urban

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0 200 400

Feet

BASE MAP SOURCE:
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OHIO TRANSMISSION COMPANY

Newbery Station and 138 kV Transmission Line Extension Project

FIGURE 3A
VEGETATIVE COMMUNITIES ASSESSMENT MAP

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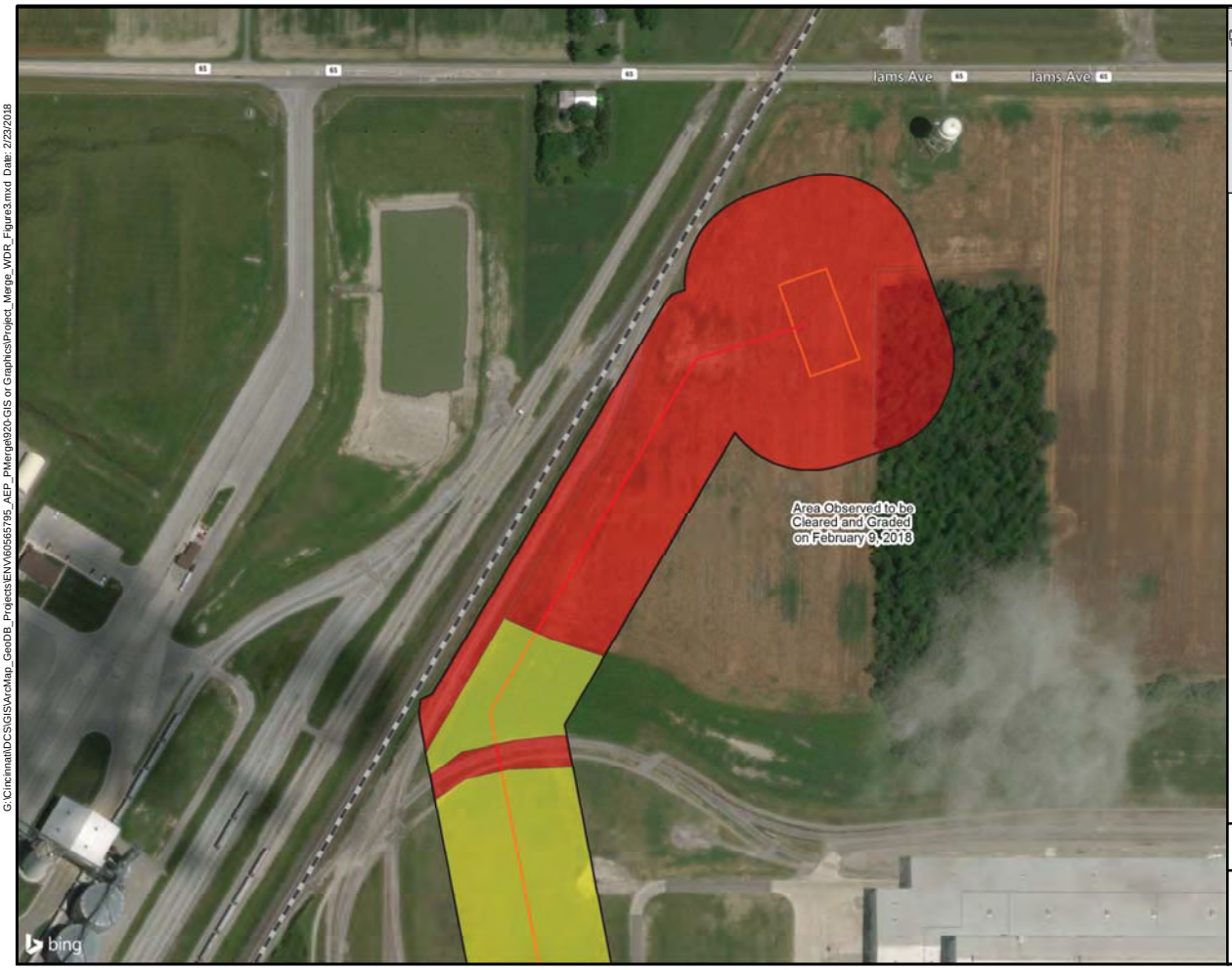

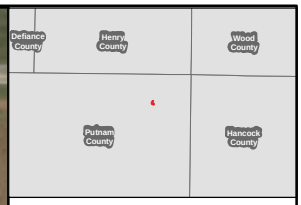

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Feet

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OHIO TRANSMISSION COMPANY

Newbery Station and 138 kV Transmission Line Extension Project

FIGURE 3B
VEGETATIVE COMMUNITIES ASSESSMENT MAP

JOB NO. 60565793

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Appendix B Cultural Report

Phase I Cultural Resource Management Investigations for the 1.6 ha (4 ac) Newbery Station and 1.6 km (1.0 mi) Transmission Line in Van Buren East Township, Putnam County, Ohio

Ryan J. Weller

February 7, 2018

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Phase I Cultural Resource Management Investigations for the 1.6 ha (4 ac) Newbery Station and 1.6 km (1.0 mi) Transmission Line in Van Buren East Township, Putnam County, Ohio

By

Ryan J. Weller

Submitted By:

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Ryan J. Weller, P.I.

February 5, 2018

W-2379

Abstract

In February 2018, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 1.6 ha (4 ac) Newbery Station and 1.6 km (1.0 mi) Transmission Line in Van Buren East Township, Putnam County, Ohio. The work was conducted under contract with American Electric Power (AEP) for submittal to the Ohio Power Siting Board and for review by the Ohio History Connection. These investigations were conducted for a small station area and its associated 138kV transmission line. The project is located in a rural, agricultural landscape that has industrial development in the immediate vicinity. The field investigations involved visual inspection and very limited subsurface testing; the entirety of the area was found to be disturbed. The fieldwork did not result in the identification of any cultural materials, there are no significant architectural resources involved in the project.

The work was conducted in very flat upland, lake plain setting in northwestern Ohio. This is located to the northeast of the Village of Leipsic, but in a setting that is now a mixture of industrial development and farmland. The project area is located just east of a railroad easement and is amidst industrial development. The project plans are to construct the Newbery Station and an associated transmission line to facilitate the industrial client. The transmission line corridor was regarded as being 30.5 mi (100 ft) wide and about 1.6 km (1.0 mi) long. The northern terminus of the project is at the proposed Newbery Station area that is 1.6 ha (4.0 ac) in size.

A literature review conducted prior to the field investigations determined that there are few sites recorded in the vicinity of the project as well as the uplands in these areas. However, there is one site (33PU0049) that is recorded in the vicinity; its documentation and location are problematic as it was not field confirmed. This site was reportedly the location of clay tile manufacturer. There was a survey completed for an industrial park that is to the west of the railroad and project (DeRegnaucourt 2006), and this did not result in the identification of any cultural resources.

These investigations did not result in the identification of any cultural materials. Two architectural properties 50 years of age or older were identified in the survey area, however these resources were not found to be eligible for inclusion in the National Register of Historic Places. No historic architectural properties were identified within the project or study area. Much of the project was found to be disturbed by previous industrial-related activities. The planned activity will not involve or affect any historic properties or landmarks. No further work is deemed necessary for this project.

Table of Contents

List of Tables

List of Figures

Introduction

In February 2018, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 1.6 ha (4 ac) Newbery Station and 1.6 km (1.0 mi) Transmission Line in Van Buren East Township, Putnam County, Ohio (Figures 1-3). The work was conducted under contract with American Electric Power (AEP) for submission to the Ohio Power Siting Board (OPSB) and is subject to review by the Ohio History Connection. These investigations were conducted in a manner subject to the survey and report format established in *Archaeology Guidelines* (Ohio Historic Preservation Office 1994). The work efforts are similar to that which are typically conducted for cultural resources regarding 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 work includes a literature review/background documentation, archaeological field investigations, and visual inspection of the Area of Potential Effects (APE).

Chad Porter completed the literature review in February 2018. The field investigations for this project were conducted on February 2, 2018. Ryan Weller served as the Principal Investigator and the Project Manager. The archaeological field crew included Josh Engle and Chris Goodrich. Jackie Lehmann conducted the architectural investigations for this project.

Project Description

AEP is proposing to construct the Newbery Station along with an associated transmission line. The Newbery Station will be about 1.6 ha (4 ac) in size and is to be located within what is currently an agricultural field. The proposed transmission line is a 138kV type and will be about 1.6 km (1.0 mi) long. The subject area is located amidst industrial development that is to the northeast of the Village of Leipsic. This is just east of the B & O Railroad, south of SR 65, and west of CR 5. AEP requested that the survey corridor involving the transmission line be 60.1 m (200 ft) wide. This project is subject to review and guidelines as set forth by the Ohio Power Siting Board.

Environmental Setting

Climate

Putnam County, like all of Ohio, has a continental climate with hot and humid summers and cold winters. Most of precipitation falls in June, and the smallest amount falls in February. The average annual temperature in the county is 11°C. Precipitation is favorably distributed for the production of crops (United States Department of Agriculture, Soil Conservation Service [USDA, SCS] 1965).

Physiography, Relief, and Drainage

The project area is located in the Huron-Erie Lake Plains Province. The area is more specifically within the Maumee Lake Plain physiographic province. This region is "characterized by flat-lying Ice-age lake basin with beach ridges, bars, dunes, deltas, and clay flats; contained the former Black Swamp with elevations ranging from 700-725 ft" (Brockman 1998). These are areas that typically lack relief and topography as they were once covered by an ancient glacial lake. The terrain is nearly level with occasional elevations relative to beach ridges, fens, and sandy deposits (Forsythe 1959). The project area is drained by unnamed Little Yellow Creek, which flows to the North Branch Portage River before emptying into the Maumee River.

Geology

Brockman (1998) describes this area as a flattened and nearly level setting caused by ice-age lakes and glaciers. The underlying bedrock is from the Silurian era, including dolomite, anhydrite, gypsum, salt, and shale (Brockman 1998).

Soils

The project area is in northeastern Putnam County. The soil series types for this project area indicative of very slight elevations and very flat, poorly drained areas. The majority of the area pertains to the latter. Inspection of aerial mapping suggests that the rises are located in the disturbed part of the project (southern part). The northern areas are in the flat locations where Hoytville soils are prevalent. There are four soil series types included in this area and are all reflective of typical lake plains inter-fluvial conditions, mostly flat with occasional subtle rises as well as till plain conditions (USDA, SCS 2018 (Table 1). None of these soils are indicative of deep, alluvial situations.

Table 1. Soils in the Project.

Putnam County Soils			
Soil Symbol	**Soil Name**	**% Slope**	**Location**
HcA	Hoytville silty clay loam	0-1	Flats and depressions
HdB	Haney loam	2-6	Lake plains, v. slight rises
HdA	Haney Loam	0-2	Lake plains; flats
NpA	Nappanee silt loam	0-2	Lake plains, slight rises

Flora

There was, and continues to be, 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, Illinoisan, 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 following is to provide comparison of the different floral regions of Ohio relative to this project.

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, however many 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, are widely spaced throughout the area. 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).

Northeastern Putnam County, including the project area, are generally within what is considered to be a beech and elm-ash swamp forest area (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 Unglaciated Plateau (Cunningham 1973). Otherwise, Paleoindian sites in the glaciated 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.

In northwest and north-central Ohio, there are not very many mounds or village sites that indicate an Early Woodland occupation. Artifacts from these areas often are reflective of seasonal hunting excursions. Adena-like bifaces and tools are commonly found in river and stream valleys that drain into Lake Erie as well as in the uplands. It is assumed that Early Woodland inhabitants used these areas for little more than a transient hunting-collecting subsistence. One of the best-known Early Woodland sites is the Leimbach site. This site is located where the Huron River empties into Lake Erie (Shane 1975). Early Woodland ceramics and lugged vessels have been recovered from this site. Evidence of Early Woodland activity, such as ceramics, has been encountered infrequently at locations across north-central and northwestern Ohio.

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

Little information is known about the Middle Woodland period of western and northwestern Ohio. This may be due to a poor representation of artifacts from this period or because the area is not directly associated with the Hopewell culture. The loosely

associated patterns of earthworks to habitation sites that have been identified in central and southern Ohio areas are not present in this region. Sites associated with this period have been identified along the south and western shores of Lake Erie, but they are not common (Stothers et al. 1979; Stothers 1986).

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 time period included the bow and arrow and changes in ceramic vessel forms.

Evidence suggests that the Late Woodland occupations in northern Ohio developed from the Western Basin Middle Woodland tradition. The Late Woodland period in northern Ohio is best defined by ceramic traditions. Western Basin Late Woodland sites have been identified in most of the river valleys in northwestern Ohio such as the Maumee, Auglaize, and the Sandusky Rivers. Radiocarbon dating establishes this Late Woodland occupation at the first century B.C. to A.D. 500 (Pratt and Bush 1981: 88). The Western Basin tradition consists of three primary phases, which include the Riviere au Vase, the Younge (Fitting 1965), and the Springwells phase. Influence from the Cole complex may extend into the area from the south, but this remains theoretical and not well researched.

The Late Prehistoric period in northwest and northern Ohio is often associated with an intensification of the use of plant resources, the presence of large villages, and a steady population increase. Permanent villages were associated with a heavy dependence on farming. These villages were often located on the meander belt zones of river valleys (Stothers et al. 1984: 6). Subsistence of these farming communities relied upon maize, beans, and squash as the major cultigens. Villages were often strategically located on bluff tops. There is a change in social structure to a chiefdom-based society. The Late Prehistoric period in northwest Ohio has been segregated into the Sandusky tradition and smaller phases based largely on age and ceramic assemblage traits.

The Sandusky tradition has been broken up into four phases. These phases are identified (in chronological order) as Eiden, Wolf, Fort Meigs, and Indian Hills. These are often associated with a style of ceramic referred to as Mixter Tool Impressed, Mixter Dentate, Mixter Cordmarked, and Parker Festooned. The Eiden and Wolf phases show a dependence upon fishing, and villages are usually associated with large cemeteries (Schneider 2000; Shane 1967).

The Fort Meigs and Indian Hills phases occur late in the Late Prehistoric period. The Fort Meigs phase may be related to the Wolf phase in that the pottery is similar. Fort Meigs phase occupations are identified by specific rim and neck motifs that are applied to their pottery. The Indian Hills phase is associated with shell-tempered pottery. Some villages show evidence of defensive features such as stockade lines, ditches, or earthen walls (Pratt and Bush 1981: 155). There is little evidence to support inter-village relationships, such as trade; this lack may have been due to competition for localized resources.

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, alternatively 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.

Putnam County History

The county was formed on April 1, 1820. However the county was not formally organized until 1834. David Murphy was one of the first settlers in the area who arrived circa 1824. He settled along the Auglaize River in an area referred to as “The Bayou”. The first town in the county was that of Kalida and was platted in 1834. It was the county seat until 1866 when it was moved to Ottawa since it was more centrally located within the county. The comparably late settlement of Putnam County and its neighboring counties was due to its position within the Black Swamp. There were two Native

American villages known in the county including Upper and Lower Tawa Towns (Howe 1888). These were located near Ottawa.

The primary economy of Putnam County is associated with agricultural pursuits. Animal husbandry and crop farming were widely practiced throughout the area (Kinder 1915; Sommers 1934). Many of the early settlers to the area were of Welsh descent and arrived from Cincinnati. The southeastern part of the county got an influx of Swiss Mennonites who arrived from 1830-1870. These immigrated either directly from Switzerland or from Wayne County, Ohio. They built two of the largest churches in the county: Grace Church and St. John Church (Calvin 1981 and 1989). Today, the population is largely dominated by German Catholics. Nearly every community has a Catholic steeple that can be seen for some distance due to the flat nature of the terrain.

In 1845, the Miami & Erie Canal was completed through Monterey Township. This was an important economic boon to the region and the county as it allowed for the local goods to be available in the market economy. However, the canal was short-lived as it gave way to the railroads. The Baltimore & Ohio was the first railroad built in the county around 1856. A few years later the Dayton Michigan Railroad was completed. The Lima-Defiance Traction extended through the communities of Rice, Continental, and Kalida but did not last long due to financial difficulties (Kinder 1915).

Just like the nineteenth century, modern Putnam County remains primarily affiliated with agriculture. There are small communities scattered throughout the area and the larger ones tend to have granaries. Much of the population is rural and occupies isolated farmsteads that dot the landscape.

Van Buren Township History

Van Buren Township was organized on February 18, 1843. The area was previously known as North Blanchard and was part of Blanchard Township. The first permanent Euro-American to settle here was Abraham Baughman in 1835 (Hardesty 1880). At the time of the organization of the township, only nine residents cast votes at the first election. The main town within the township is Leipsic and the only other village is Belmore. Leipsic was platted in 1857 by James E. Creighton under the name Creightontown. In 1859, Joseph Swartz platted Leipsic Station on the east side of the C.H. & D railroad (Seitz and Talbot 1895). These surveys are both included within Leipsic today. In 1859, the first railroad through the township was constructed, then known as the Dayton and Michigan Railroad, later called the Cincinnati, Hamilton, and Dayton (C.H. &D) Railroad. Today, there are three railways through the town of Leipsic. During the late 19th Century, the town of Leipsic was home to industries including tile and brick works, lumber mills, flour mills, machine works, and a creamery.

Research Design

The purpose of this Phase I survey is to locate and identify cultural resources that will be affected by the planned construction activities. This includes archaeological

deposits as well as architectural properties that are older than 50 years regarded as being in the APE. Once these resources are identified, they are evaluated for their eligibility to the NRHP. The literature review aspect of these investigations is to answer or address the following questions:

1) Did the literature review reveal anything that suggests the project area 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?

Archaeological Field Methods

The survey conducted for this project used several methods of sampling/testing to identify and evaluate cultural resources. These included shovel test units and/or shovel probes and visual inspection. Aspects of the project were photographically documented to demonstrate conditions. The following describes the survey methods:

Visual inspection. This method is conducted to document the nature of the project area and its flat conditions, any disturbed settings, and general nature of the area. This method is used to verify the absence or likelihood of any cultural resources within and around the project area to assist in defining the APE.

Shovel probe excavation. The excavation of shovel probes is reserved for locations where severe disturbance is prevalent, but not obvious on the surface. These will be initially excavated in a manner similar to a shovel test unit and to a depth that was usually to the subsoil or about 20 cm below the ground surface. This will be accomplished to better understand the nature of the disturbance and verify that intact deposits were lacking. These are spaced no further than 30 m intervals. If intact soils are identified, the shovel probe will be treated as a shovel test unit.

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

Curation

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

Architectural Field Methods

This survey was conducted following the guidelines established in Archeology and Preservation: Secretary of the Interior's Standards and Guidelines (National Park Service 1983) and Guidelines for Local Surveys: A Basis for Preservation Planning. National Register Bulletin No. 24 (National Park Service 1997). When properties are identified, they are subjected to the guidelines outlined in National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation (National Park Service 1996).

There are four criteria for eligibility to be listed in the National Register of Historic Places (NRHP). Only one of these criteria must be met to be considered eligible for listing; however, oftentimes more than one of the criteria is met. The criteria for significance include:

A. Association with historic events or patterns of events;
B. Association with persons important to our past;
C. Exceptional or important architectural characteristics; and/or
D. Data potential.

Architectural properties typically qualify under Criteria A, B, or C. Criterion D is typically reserved for archaeological sites.

In addition to meeting at least one of the established criteria, the appropriate integrity must also be retained by the resource. There must be integrity of location, design, workmanship, setting, materials, feeling, and association.

Prior to commencing fieldwork, a literature review was conducted to determine if any previously recorded architectural properties, NRHP properties, or Ohio Genealogical Society cemeteries were present within the APE. Historic maps were also reviewed to aid in guiding the fieldwork and detecting the possible presence of properties 50 years of age or older within the APE. Background research was also conducted in order to establish a historic context of the region. The context was compiled by utilizing materials from the Ohio State Historic Preservation Office (SHPO), archival materials at the respective county courthouses, local libraries, and several online resources. The establishment of the historic context helped to guide the interpretation of the field survey results.

The architectural survey included a systematic approach to identifying all properties that have potential significance for inclusion within the NRHP, within the survey area (1,000 feet) of the proposed Project. Some areas may be obscured from having a direct line-of-sight to the proposed project by topography, buildings or structures, and forested areas. The areas that did not have a direct line-of-sight to the project were visually verified in the field and the survey did not include all of these areas. Each property identified within the Study Area that may have a direct line-of-sight of the Project was photographed and annotated on appropriate mapping and included in this report. The approach was to identify those properties with NRHP potential, followed by a more intensive documentation and evaluation of those potentially eligible aboveground resources. The comprehensive survey involved recording of each property with potential historic significance to a baseline level of documentation.

Weller focused on the ground plan, the height, and the roof configuration of each structure, noting all visible materials, appendages, extensions, or other alterations. Housing types and structural details within the report and utilized on OHI forms follow the terminology used by geographers Jakle, Bastian, and Meyer (1988), architectural historians McAlester and McAlester (2013), and Gordon (1992). Weller then

supplemented the field survey data with an examination of available tax records, aerial photographs, and cartographic sources.

A summary and analysis of the field data detailing the overall architectural character of the Study Area is included as a narrative in this report. Weller historians analyzed the data and identified properties that are clearly not eligible for the NRHP due to a lack of significance or loss of integrity, as well as identified potential NRHP properties and advanced them to a greater level of documentation and evaluation.

Each property advanced to detailed study was documented on an OHI form or revised OHI form, if necessary (for those properties that were previously recorded) and submitted to the SHPO through their online I-Form application once all analyses were completed. The OHI forms includes detailed historical and descriptive information as well as appropriate mapping and photographs. OHI were prepared following guidance provided in the SHPO handbook *How to Complete the Ohio Historic Inventory* (Gordon 1992). Copies of the OHI are included in Appendix A. Based on the results of the field survey and archival research, each property was then subjected to the *National Register Criteria for Evaluation* to conclude eligibility for listing in the NRHP. Any property concluded to be eligible to the NRHP was also subjected to application of the *Criteria of Adverse Effects* (36CFR800.5). The descriptions and evaluations are found in later sections of this report.

Definitions

Within this report, an *architectural resource* is defined as aboveground buildings or structures that are 50 years of age or older. A *historic property* is defined as a building, structure, object, or site that is listed in, or considered eligible for listing in, the NRHP. An *effect* is defined as an activity associated with the project that alters a characteristic of a historic property that qualified it for inclusion in the NRHP.

Literature Review

The literature review study area is defined as a 305 m (1,000 ft) area extending from the centerline of the project area (Figures 2-6). In conducting the literature review, the following resources were consulted at the Ohio State Historic Preservation Office (SHPO) and the State Library of Ohio:

1) *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 consensus Determinations of Eligibility (DOE) files;
7) SHPO CRM/contract archaeology files;

8) Putnam County atlases, histories, historic USGS 15'series topographic map(s), and current USGS 7.5' series topographic map(s); and
9) Online and genealogical cemetery resource data.

A review of the *Atlas* (Mills 1914) was conducted and there are no relative resources indicated within the study area.

There are few recorded archaeological sites in the Lake Plains areas of Putnam County. There is one site recorded in the immediate vicinity of the project, 33PU0049 (Figure 2; Appendix A). This is a historic period archaeological site that is associated with the clay tile industry. This was an important industry in the Black Swamp region where drainage was essential to allow farming in many areas. The location of the site is problematic as the site form indicates that it relied on a local informant and the actual location was not field verified. As it is recorded, the site would be to the south and east of the project area and in what is now an open field.

The OHI files indicated that there are no recorded architectural resources indicated within the study area.

A review of the NRHP files and SHPO consensus DOE files was conducted; there are no relative resources within the study area.

A review of the CRM/contract files indicates that there have not been any professional surveys conducted that are directly involved in the project. There was a survey completed for an industrial development tract that is opposite (west) of a railroad track (Figure 2). This survey did not identify any archaeological site (DeRegnaucourt 2006).

Historical atlases/cartographic maps were reviewed for this project. The project area is located in the Northeast Quarter of Section 20, Van Buren Township. The *History of Putnam County, Ohio* (Hardesty & Co. 1880) indicates that the property was owned by M. Fike at the time and his residence would have been to the south of the project area. There are residences near the project area, but none appear to be within it (Figure 4). Inspection of the *USGS 1973 Leipsic, Ohio 7.5 Minute Series (Topographic)* map indicates that there are buildings in the vicinity, but none appear to be involved in the project area (Figure 2). There are no cemeteries indicated within the study area.

Evaluation of Research Questions 1 and 2

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

1) Did the literature review reveal anything that suggests the project area had been previously surveyed?
2) Are cultural resources likely to be identified in the project area?

The literature review for this project indicated that the project had not been the subject of any previous investigations. However, there is a historic period archaeological site recorded in the project's vicinity. This was associated with the tile industry that was prevalent and necessary through much of this region. The location of the site is dubious as it was not field verified, but it is noted as being archaeological by that time. There is a possibility that historic period industrial archaeological remains may be identified. Otherwise, cultural resources are not anticipated from this area. The project is not located in a desirable setting as it is in the Lake Plains interfluvial uplands; a region that is flat and poorly drained. Prehistoric period materials would not be expected from this area.

Archaeological Fieldwork Results

The Phase I field investigations for this project were conducted on February 2nd, 2018 (Figures 5-10). The weather at the time of survey was amiable; it was seasonally balmy with temperatures in the 40s Fahrenheit. The field investigations involved visual inspection and a small amount of subsurface testing. Much of the project area was contained within a setting that has been recently disturbed for the addition or expansion of an existing industrial development. Visual inspection was used throughout these investigations as the proposed area to document conditions. These investigations were conducted for the planned electric line and the Newbery Station. These investigations were conducted in an upland and glaciated/lake plains setting. The terrain in this area is very flat to very gently undulating and consists of mostly agricultural land with industrial developments in the vicinity. The field investigations did not result in the identification of any cultural materials.

Archaeological field investigations for this project were minimal due to the intensity of the construction activity disturbances, both past and present. The southern part of the project area includes the proposed new transmission line, only. This area had been severely disturbed from previous industrial-related construction; this was suspected from inspection of aerial images and confirmed in the field. More recent construction activity in the northern part of the project, including the planned station location and part of the transmission line, found that construction associated with expansion of the existing industrial facilities had extended into this area. The entirety of the footprint of the project area had been fully disturbed. A shovel probe was excavated to demonstrate disturbance and the nature of the soils in this area. This probe demonstrated a brown (10YR4/3) silty loam fill mixed with mottles of dark yellowish brown (10YR4/6) silty loam (Figure 10). This is aberrant to what would be anticipated from this area as the soils are suggested to be much more clayey, as would be expected from the Hoytville series.

Visual inspection and photographic documentation of the conditions within the project's construction area was completed. It was clear that disturbance, both previous and active, had occurred through the project. However, this disturbance was entirely conducted by the abutting industrial complex, which was expanding. The southern part of the area had been previously disturbed, as was expected from inspection of aerial imagery. The northern part of the project was expected to be contained in partially

disturbed conditions from the abutting railroad and the remainder in farm field. However, the expansion of the industrial facility had extended through this area and there were no intact areas to investigate.

There were no archaeological deposits identified in the project. Weller inspected aerial images to see if the location of 33PU0049 could be verified; mostly to make sure of its location relative to the project. This was accomplished and there was no confirmation of a tile manufacturing plant or site at the indicated location or the project area. Such an enterprise would be expected to be readily apparent from aerial inspection.

The project area, the Newbery Station and the associated 138kV transmission line are in an area that has been substantially disturbed. The northern part of the project area was recently disturbed by industrial development; the southern part had been disturbed by similar activity. There were no archaeological resources identified.

Architectural Fieldwork Results

The architectural survey for this project was conducted on February 6th, 2018 (Figures 11-19). The project area consisted of rural agricultural farmland and large, modern, industrial complexes. Two residential properties 50 years of age or older were identified within the study area. The S-1 property consisted of a two-story, cross-gable farmhouse with alterations such as vinyl siding, modern replacement windows, modern roofing materials, and a large single-story addition and the north elevation (Figures 11-13). The S-1 property included several agricultural outbuildings including a granary, hog houses, grain silos, and two barns. A majority of the outbuildings were constructed after 1959, including the silos, barns, and the northernmost outbuilding, with the most recent outbuilding having been constructed in 1996 per the Putnam County Auditor's Office (Figure 18). The loss of the integrity of the S-1 house and overall property did not indicate potential significance for the NRHP.

The S-2 property included a one-and-a-half-story, cross gable house with a large split-level addition at the eat elevation, significantly extending the facade (Figures 14-16). A shed is situated to the southwest of the S-2 house. Aerial photos show that the large split-level addition was added after 1977. The S-2 property did not exhibit potential significance for consideration in the NRHP.

Table 2. Architectural Field Survey Results

Field #	County	Classification	Date	Stylistic Influence	Type	NRHP Status
S-1	Putnam	Building	Ca.1880's	Vernacular	Cross Gable	Not Eligible

S-2	Putnam	Building	Ca.1900	Vernacular	Cross Gable	Not Eligible

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 proposed station and the 138kV transmission line. The transmission line is about 1.6 km (1.0 mi) long and the station area is about 1.6 ha (4 ac) in size. The project area is located in a rural part of Putnam County, but in a particular location that has been the focus of some industrial operations relative to the proximity of a railroad. The planned electric line relocation is part of the addition/expansion of these facilities. The subject area is very flat with industry to the south and west, a railroad to the west, and a woods to the east. Inspection of aerial images indicates that much of the transmission line is contained in what is likely industrialized and graded (i.e., disturbed setting). The station was in an agricultural field, but the expansion of the industrial facilities had extended into this area prior to these investigations.

The literature review indicated that there was a historic period archaeological site (33PU0049) in the vicinity of the project. This site was associated with the tile industry. This site was not identified in the field and its definitive location was never really determined (Appendix A). It cannot be stated for certain that the recent construction activity in this area disturbed or destroyed the site. Still, the project area was found to be severely disturbed from recent and previous construction.

The project involves a transmission line and the construction of a new station, Newbery. There are few buildings older in the study area and much less that are within view of the project. There are two indicated in the northern part of the study area along Iams Avenue. One is shrouded from view from the project by dense trees. The other is a farmstead where the house is a common type and has been greatly modified. These are not regarded as being significant resources. There were no cultural resources identified within the project area. These investigations did not identify any cultural deposits or significant architectural resources and a finding of no historic properties affected is deemed appropriate; no landmarks were identified or exist in the area.

Recommendations

In February 2018, Weller & Associates, Inc. conducted Phase I Cultural Resource Management Investigations for the 1.6 ha (4 ac) Newbery Station and 1.6 km (1.0 mi) Transmission Line in Van Buren East Township, Putnam County, Ohio. The

archaeological fieldwork involved very limited subsurface testing, visual inspection, and photographic documentation. The majority of the project area was found to be severely disturbed by the construction/expansion of an existing industrial facility. The work did not result in the identification of any archaeological deposits and the project will not involve or impact any significant architectural resources. It is considered that this will not affect any historic properties or landmarks. No further cultural resource management work is deemed necessary.

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Figures

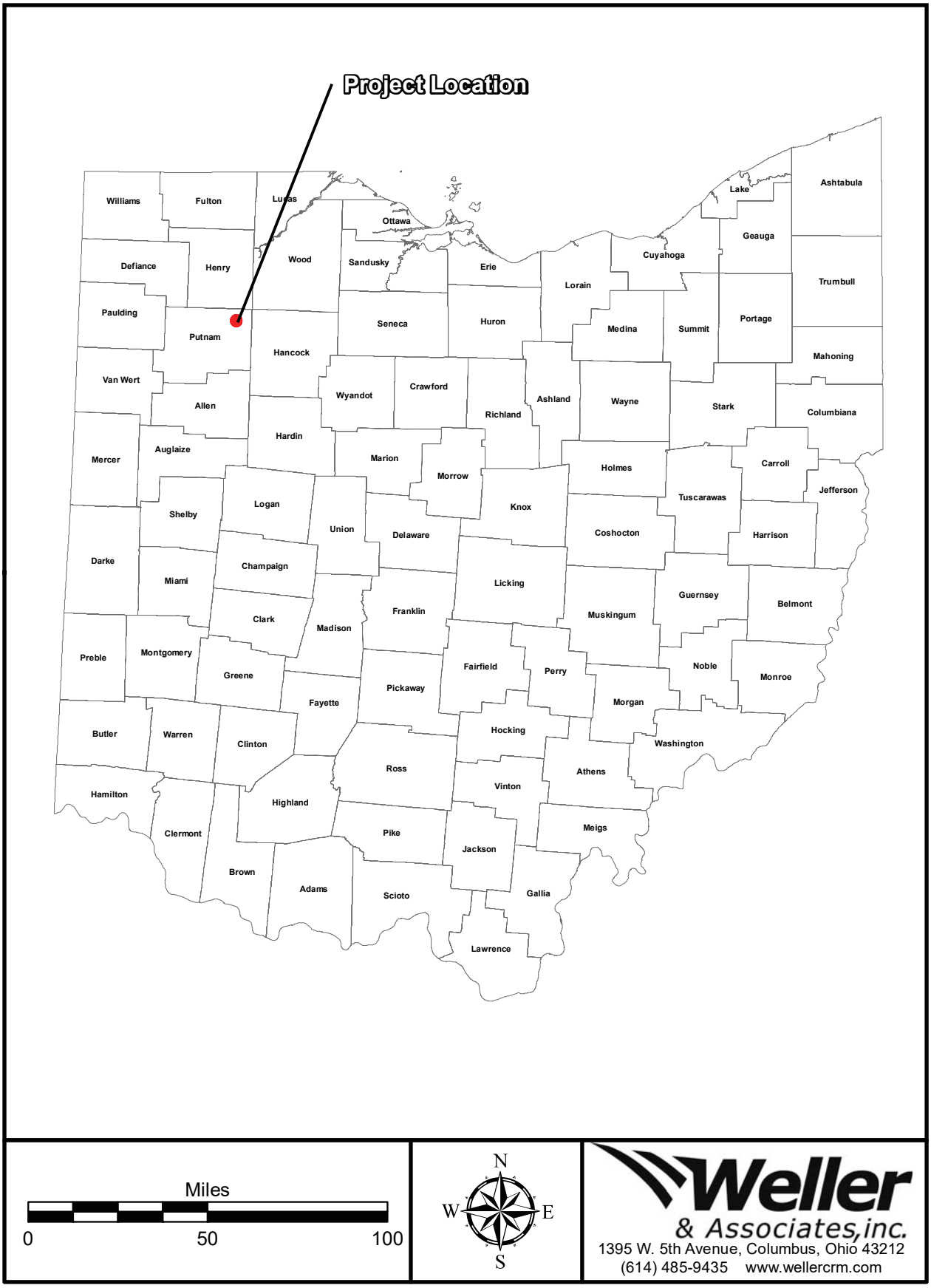


Figure 1. Political map of Ohio showing the approximate location of the project.

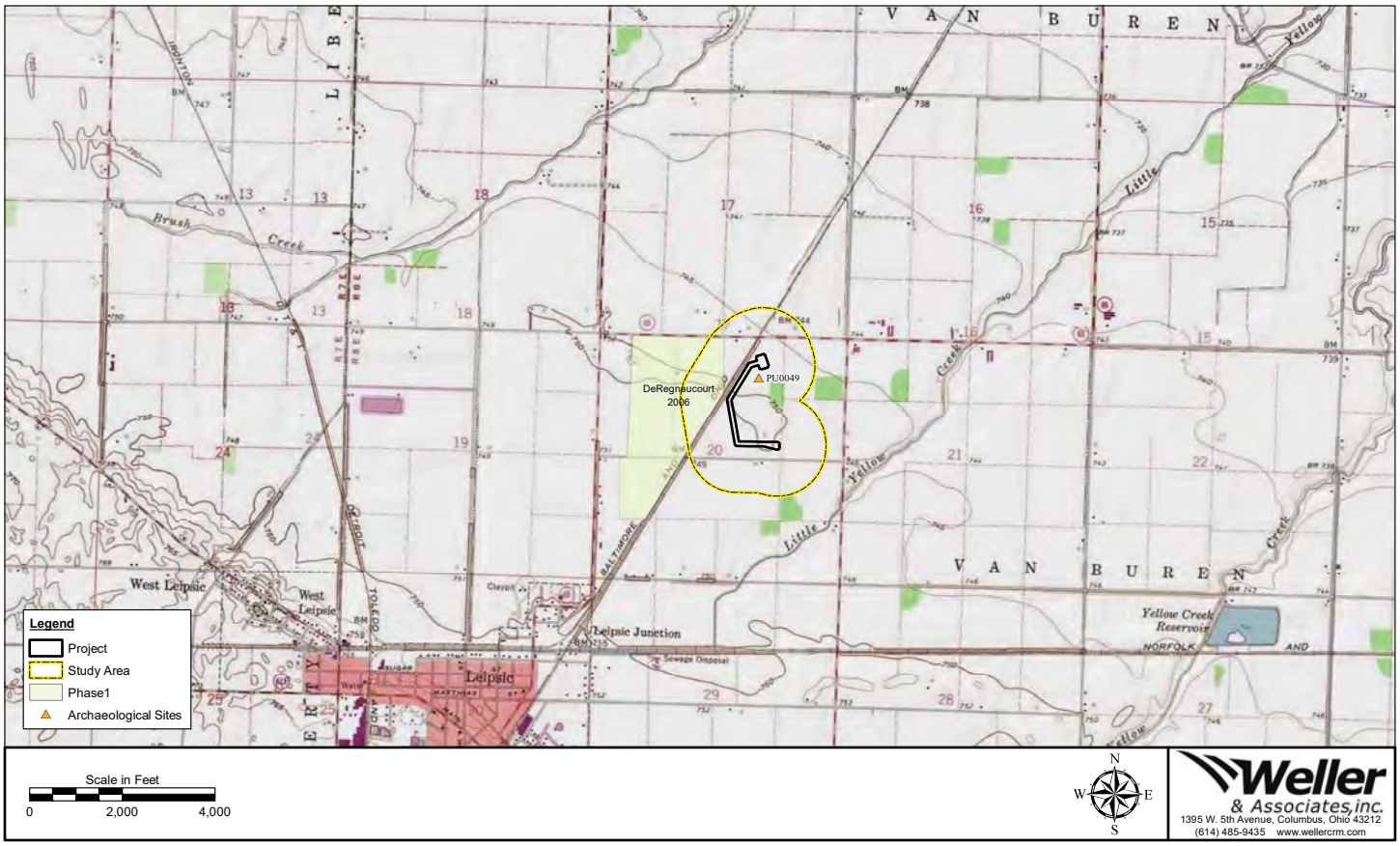


Figure 2. Portion of the USGS *1988 Leipsic, Ohio 7.5 Minute Series (Topographic)* map indicating the location of the project and previously recorded resources in the study area.

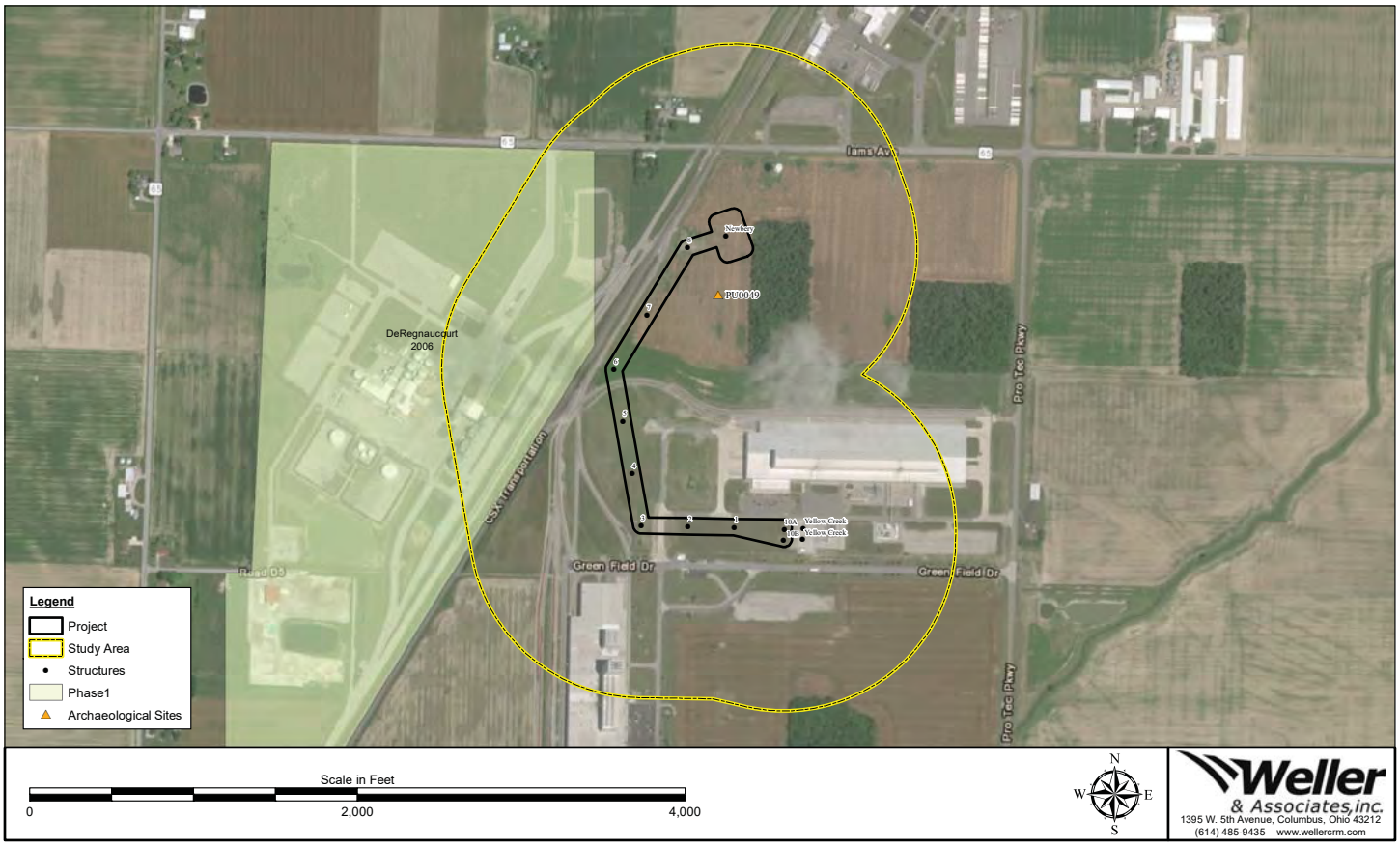


Figure 3. Aerial map indicating the location of the project and previously recorded resources in the study area.

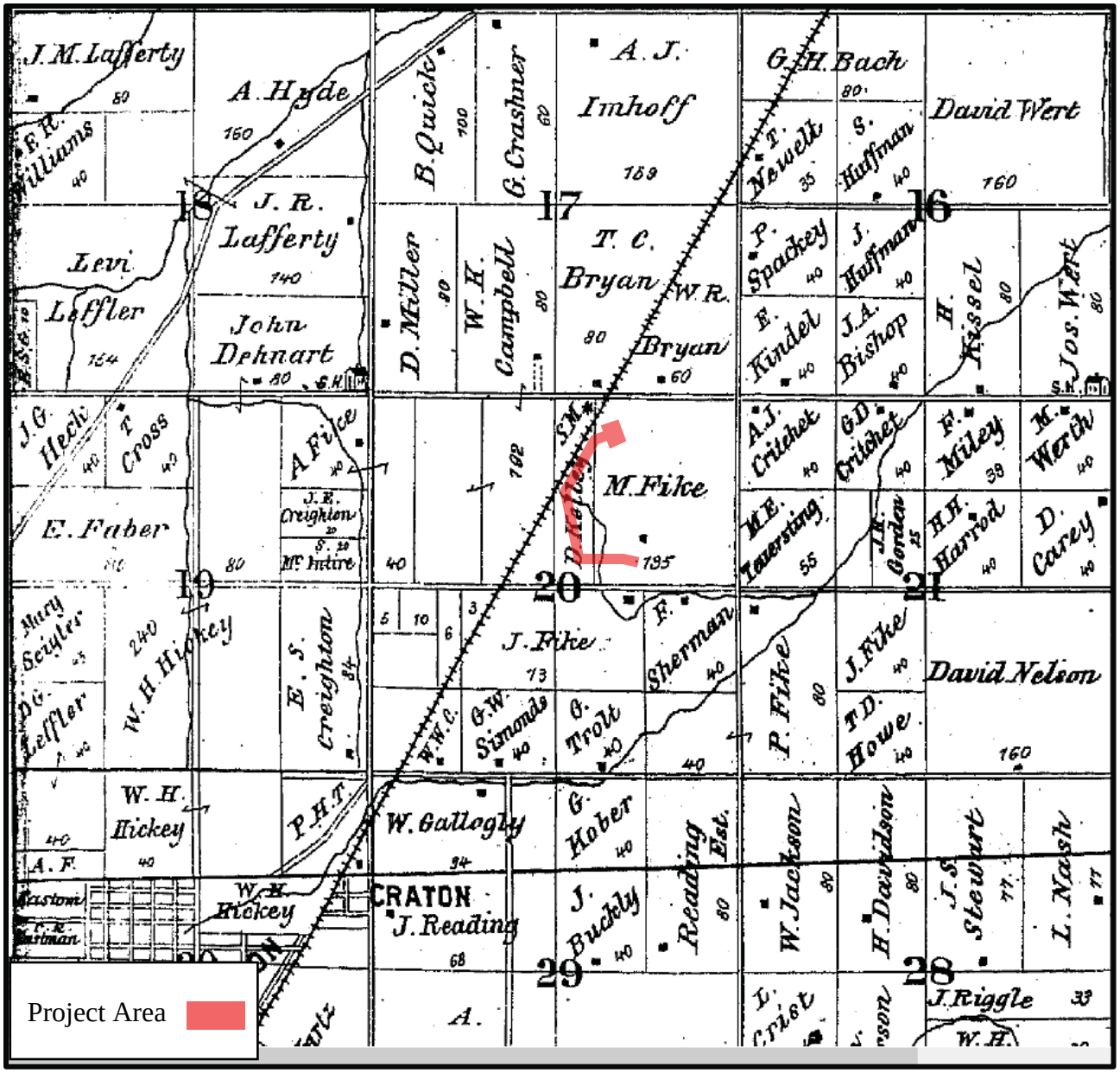


Figure 4. A portion of *History of Putnam County, Ohio* (Hardesty 1880) showing the approximate location of the project area.

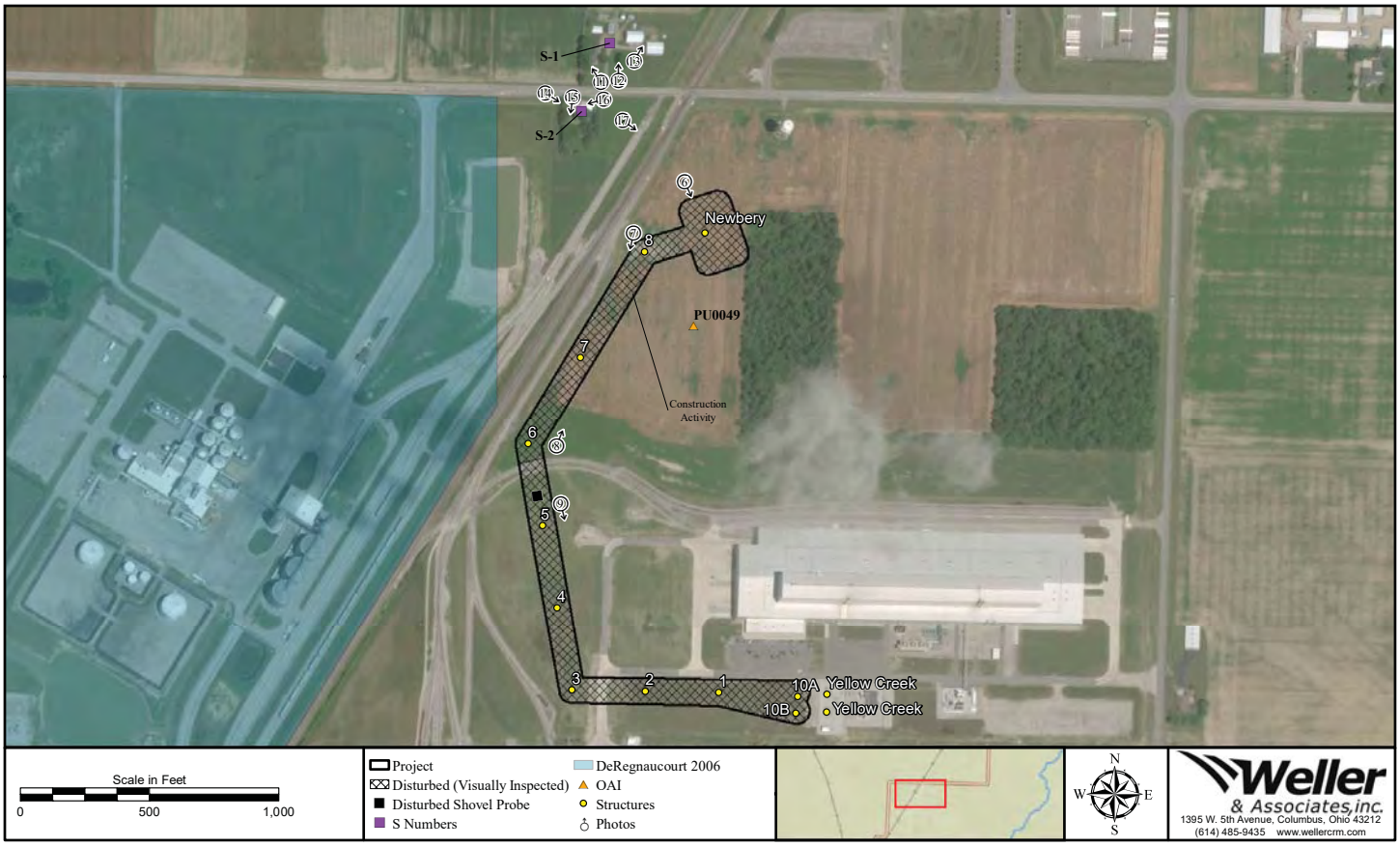


Figure 5. Fieldwork results and photo orientation map.

Figure 6. Construction activity in the northern portion of the project area.

Figure 7. Disturbed conditions alongside the railway on the western portion of the project area.

Figure 8. Conditions typical throughout the northern portion of the project.

Figure 9. Shovel probed manicured lawn surrounding the commercial facility adjacent to the southern portion of the project area.

Figure 10. Disturbed soils encountered within a shovel probe excavated within the project.

Figure 11. S-1 facing northwest from OH-65.

Figure 12. S-1 outbuildings facing north from OH-65.

Figure 13. S-1 outbuildings facing northeast from OH-65 towards industrial complex.

Figure 14. S-2 facing southeast from OH-65.

Figure 15. S-2 shed facing south from OH-65.

Figure 16. S-2 facing southwest from OH-65.

Figure 17. View facing southeast towards project area from OH-65 near S-1 and S-2.

Figure 18. Portion of USGS 1959 aerial image of S-1 and S-2 properties.

Figure 19. Portion of USGS 1973 aerial image of S-1 and S-2 properties.

Appendix A:

Ohio Archaeological Inventory Form for Site PU0049

SHPO Note: Informant reported site lacking specific location. B.E. 10/17/2017.

Ohio Archaeological Council
Ohio Historic Preservation Office
Ohio Historical Center
Columbus, Ohio 43211

OHIO ARCHAEOLOGICAL INVENTORY

1. Site Number: 33PU49
2. County: Putnam
3. Township: Van Buren
4. Site Name: Etter-Terry Tile Mill
5. Other Names For Site:
6. City or Town: Leipsic — Vicinity of ☐
7. Map Reference: USGS Leipsic, OH 7.5" quad
8. Township & Range Number: T.2N. - R.8E.
9. Section Number: 20
10. Latitude: ° ' "
11. Longitude: ° ' "
12. U.T.M. Reference: X approximately

Zone	Easting	Northing
17	251120	4556240

13. Verbal Site Location: Precise location not determined; generally in NW¼ of NE¼ of S.20, Van Buren Twp., Putnam Co., OH.
14. Land Form: Lake Plain
15. Elevation: ca. 765'
16. Soil Type: Hoytville clay?
17. Floral Cover:
18. Condition of Site:
19. Present Use:
20. Type of Site: industrial
21. Drainage System: circa ½ mile NW of Little Yellow Creek
22. Dimensions of Site: undetermined
23. Ownership: Public ☐ Private ☒
24. Form Prepared by: Wes Clarke
A. Tonetti (cons)
25. Organization: ODOT - BES
26. Location of Negatives: none
27. Date of Survey: January 1984
28. Survey Conditions: "windshield recon"
29. Cultural Classification or Time Period: initiated in 1920's ?

30. Artifacts Collected: none

31. References:

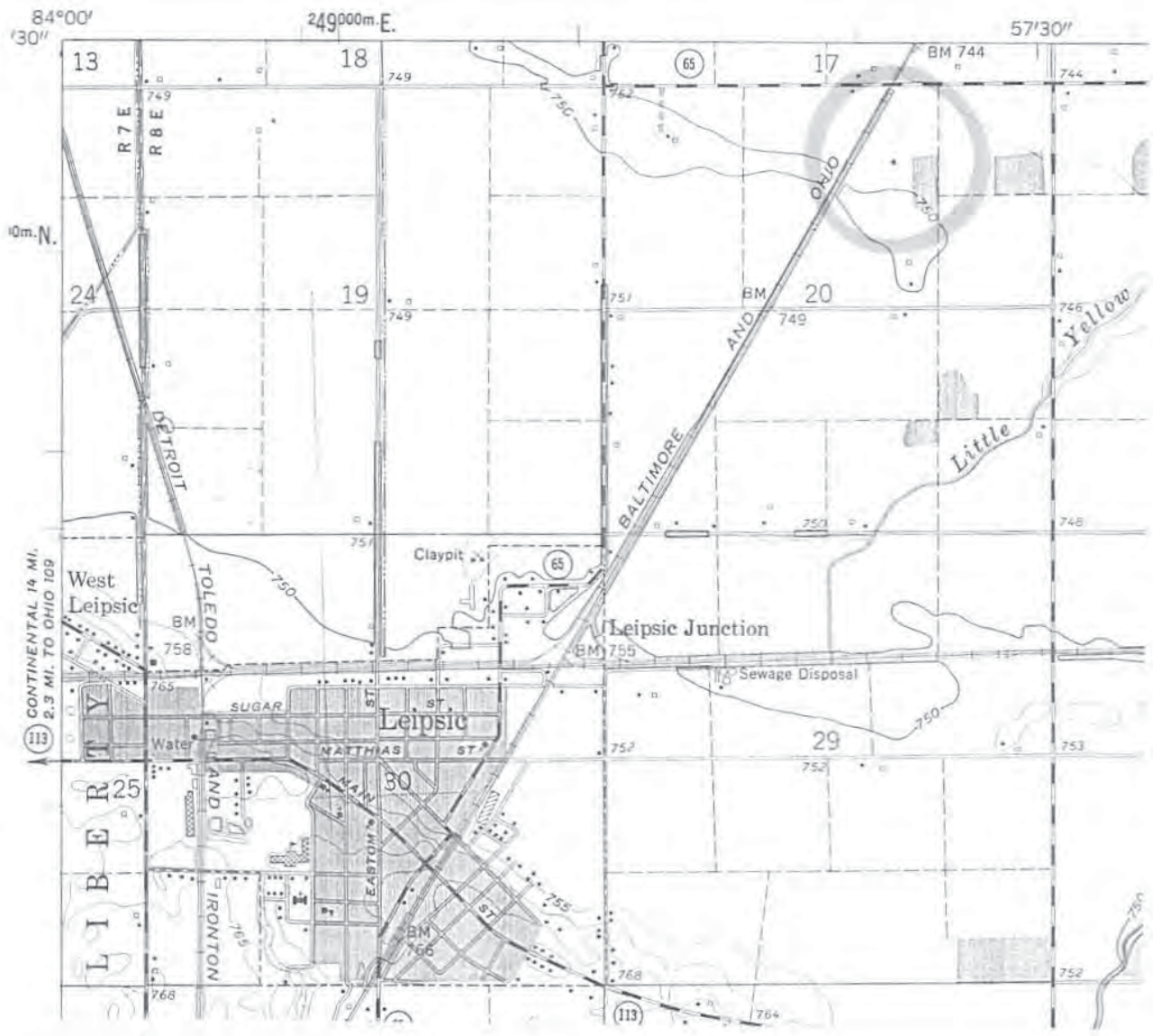
Clarke, Wesley
1984 Phase III Evaluation of the Sayers Tile Mill Site, 33HY208, Damascus Twp., Henry County, Ohio (HEN-110-7.35). Report to OHPO from ODOT.

32. Remarks: The general location of this manufactory was observed from a distance and located on a county road map by a local informant (Peter Wilhelm, R.R. #1, New Bavaria, OH). As a resource it is apparently archaeological in nature. The mapped location of this site should therefore be considered to be very general.

--WSC

33. Use opposite side to copy portion of topographic map with site located, attachment of contact print, sketch of site plan, or continuation of items 1-32.

33PU49
Page 2



Continuation Sheet: Specify Section & Item (use additional Continuation Sheets if necessary)

E1 Adj Open
E10 Change to 227m
E11 Adj Lake Plains
E12 Adj Wisconsin Ground Moraine
E13 Adj Upland Hill Slope
E14 Adj Moraine
E18 Adj Major: Beaver Creek
Minor: Cutoff Ditch
E19 Adj Permanent Stream
E20 Adj 940m
E16 Adj Flat
KDS 3/5/02

NADB # 13095

Summary: Letter of Notification electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.