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September 28, 2018

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

Re: PUCO Case No. 18-1389-EL-BLN
In the Matter of the Letter of Notification for the
Howard-Fostoria and Howard-Bucyrus Center 138kV Transmission
Line Extension Project

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification 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: John Jones, Counsel OPSB Staff
Jon Pawley, OPSB Staff

Letter of Notification for Howard-Fostoria and Howard-Bucyrus Center 138kV Transmission Line Extension Project



An **AEP** Company

BOUNDLESS ENERGY™

PUCO Case No. 18-1389-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.

September 28, 2018

Letter of Notification

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco) Howard-Fostoria and Howard-Bucyrus Center 138kV Transmission Line Extension Project

4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco") provides the following information in accordance with the requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-5(B) General Information

B(1) Project Description

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

AEP Ohio Transco proposes the Howard-Fostoria and Howard-Bucyrus Center 138kV Transmission Line Extension Project ("Project"), which is located in Crawford and Richland Counties, Ohio. The Project involves building 4.5 miles of new 138 kV electric transmission line between the existing Howard Station and a proposed switching station in Richland and Crawford Counties, Ohio to support an interconnection customer facility. The proposed station will be constructed and permitted by the interconnection customer. The new line will exit Howard Station and extend approximately 0.5 miles along a new corridor to existing structure 3 on the Howard-Bucyrus Center 138 kV line. The existing structures on the Howard-Bucyrus Center 138 kV line are designed for multiple circuit use but only have one circuit strung (referred to as "open arm" in this Application). The new line will extend approximately 3.9 miles along the open arm of the existing Howard-Bucyrus Center 138 kV line to a proposed dead-end structure. From the proposed dead-end structure, the line will travel 0.1 miles into the proposed station site. Map 1 shows the project components and location of the Project in relation to the surrounding vicinity.

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

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:*

- ii. *Any portion of the line is on property owned by someone other than the specific customer or applicant.*

The components of this Project each also separately meet the requirements for an LON or a construction notice (CN) as follows: The approximately 0.5-mile line extension qualifies as an LON (see Appendix A, Item (1)(b)); adding a second circuit to approximately 3.9 miles on existing structures designed for multiple circuit use qualifies as an LON (see id., Item (2)); the approximately 0.1-mile tie line qualifies as a CN (see id., Item (1)(a)). Filing the three components as one LON comports with O.A.C. 4906-6-02(C).

The Project has been assigned PUCO Case No. 18-1389-EL-BLN.

B(2) Statement of Need

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

The Project is a portion of the AEP Ohio Transco scope of work associated with PJM Generator Interconnection queue position U4-001. The AEP Ohio Transco scope of work is identified as the Interconnected Transmission Owner Scope of Work documented in Schedule C of the Interconnection Construction Services Agreement (ICSA) posted by PJM at https://www.pjm.com/pub/planning/project-queues/csa/u4_001_csa.pdf. The ICSA is the agreement entered into by the Interconnection Customer, the Interconnected Transmission Owner and the Transmission Provider, relating to the construction of Attachment Facilities, Network Upgrades, and/or Local Upgrades and coordination of the construction and interconnection of an associated (Interconnection) Customer Facility. Please note that these proposed facilities to support Interconnection Customer were not included in AEP Ohio Transco's 2018 LTFR filing due to ongoing uncertainty at the time of that filing regarding the Interconnection Customer's In-Service Date (ISD). Recent communication between PJM, AEP, and the Interconnection Customer suggests an AEP Ohio Transco back-feed ISD in the Fourth Quarter of 2019. AEP Ohio Transco is currently working towards providing back-feed service by 10/31/2019 and will continue to do so unless PJM and/or the Interconnection Customer indicate otherwise. The new facilities will be included in AEP Ohio Transco's 2019 LTFR filing so long as the Interconnection Customer continues to move forward.

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.

Map 1 in Appendix A shows the location of the proposed Project in relation to existing transmission lines and stations. The Project directly impacts the following existing facilities:

- Howard Station.
- Howard-Bucyrus Center 138 kV transmission line.
- Howard-Fostoria 138 kV transmission line.

B(4) Alternatives Considered

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

Approximately 3.9 of 4.5 miles of the Project's proposed route will utilize an open arm of AEP's existing Howard-Bucyrus Center 138 kV transmission line (no new ROW is necessary) and the remaining 0.5-mile portion parallels AEP's existing Howard-Fostoria 138 kV line (an additional 100-foot ROW will be necessary). Utilizing the existing structures and paralleling existing ROW will have significantly fewer environmental impacts than constructing a new 138 kV transmission line on a greenfield ROW. Therefore, developing alternative routes is neither practical nor necessary.

The 0.5-mile new extension exits Howard Station and parallels AEP's existing Howard-Fostoria 138 kV line before crossing it and paralleling the Howard-Bucyrus Center line to its Structure No. 3. The existing open arm corridor begins at Structure No. 3 of the Howard-Bucyrus Center 138 kV transmission line located approximately 0.5 miles northwest of Howard Station and continues west adjacent to the proposed station location (see Maps 1 and 2). The proposed station site is adjacent to the north of the open arm Howard-Bucyrus Center 138 kV transmission line corridor. An extension of the line, which is less than 0.1 miles in length, will be required. The new structure required for this extension will be located within existing ROW of the Howard-Bucyrus Center 138 kV transmission line.

By designing most of the transmission line to occur within or adjacent to existing transmission line ROWs, the proposed Project will minimize or avoid socioeconomic, ecological, visual, and construction impacts.

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 informs affected property owners and tenants about its projects 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 under O.A.C. 4906-6-08(A)(1)-(6). Further, AEP Ohio Transco mailed a letter, via first class mail, to affected landowners, tenants, contiguous owners, and any other landowner AEP Ohio Transco approached for an easement necessary for the construction, operation, or maintenance of the facility. The letter complies with all the requirements of O.A.C. 4906-6-08(B). AEP Ohio Transco also 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 affected by this proposed Project. Lastly, AEP Ohio Transco retains ROW land agents who discuss project timelines, construction, and restoration activities with 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 first quarter of 2019, and the anticipated in-service date will be approximately October 2019.

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.

Map 1 in Appendix A provides the proposed Project area on maps of 1:24,000-scale, and provides the proposed Project centerline on the United States Geological Survey (USGS) 7.5-minute topographic maps of the North Robinson and Crestline, Ohio quadrangles. Maps 2A through 2B in Appendix A show the Project area on recent aerial photography, as provided by Bing Maps. To visit the eastern terminus of the Project at Howard Station from Columbus, Ohio, take I-71 North towards Cleveland for approximately 43 miles. At Junction 151, turn right onto OH-95 towards Fredricktown/Mt. Gilead for approximately 2.5 miles. Turn left onto OH-314/N. Portland Street for approximately 21 miles. Turn left to stay on Oh-314/Shelby Ontario Road for approximately 5 miles, then turn left onto OH-61. After approximately 0.8 mile, cross Hummel Road, and continue on OH-61. The entrance for Howard Station is located approximately 0.2 mile past the intersection with Hummel Road on the right side of OH-61. The approximate address of Howard Station is 4809 OH-61, Shelby, OH 44875, at latitude 40.85087, longitude -82.68109.

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.

New right-of-way will be required across five parcels at the eastern end of the proposed Project near Howard Station. These include:

PARCEL NUMBER	EASEMENT ACQUIRED
044-47-009-13-000	No
044-47-015-13-000	No
044-47-011-05-000	No
044-47-015-13-001	No
044-47-900-04-001	No

Due to the use of an open arm on structures within existing right-of-way for the majority of this Project, no other property easements, options, or land use agreements are anticipated to construct the Project or operate the transmission line within the proposed ROW.

B(9) Technical Features

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

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

The transmission line construction will include the following:

0.5-mile Howard Station to the open arm structures of the Howard-Bucyrus Center 138kV line:

Voltage: 138kV
Conductors: 636 kcmil 26/7 Grosbeak ACSR
Static Wire: 159 kcmil 12/7 Guinea ACSR
Insulators: Polymer
ROW Width: 100 Feet

Structure Types:

- Install one (1) single circuit steel single pole angle deadend structure. 60' height.
- Install one (1) single circuit steel single pole deadend structure. 118' height.
- Install two (2) single circuit steel three pole angle deadend structures. 50' average height.
- Connect to one (1) existing steel lattice dead end angle tower.

3.9-mile stringing on existing towers of the open arm portion of the Howard-Bucyrus Center 138 kV line:

Voltage: 138kV
Conductors: 636 kcmil 26/7 Grosbeak ACSR
Static Wire: 159 kcmil 12/7 Guinea ACSR
Insulators: Ceramic
ROW Width: 100 Feet

Structure Types: Connect to eighteen (18) existing steel lattice suspension towers.

0.1-mile extension from the Howard-Bucyrus Center 138kV line to the proposed station:

Voltage: 138kV
Conductors: 636 kcmil 26/7 Grosbeak ACSR
Static Wire: 7#8 Alumoweld
Insulators: Polymer
ROW Width: 100 Feet

Structure Types: Install one (1) single circuit steel single pole angle deadend structure. 85' height.

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.

No occupied residences or institutions are located within 100 feet of the Project.

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately \$3,000,000 using a Class 5 estimate and will be borne in their entirety by the Interconnection Customer.

B(10) Social and Economic Impacts

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

B(10)(a) Land Use 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.

The Project is located in Vernon Township of Crawford County, Ohio, and Sharon Township of Richland County, Ohio. The Project vicinity is rural in nature and is comprised primarily of agricultural land used for row crops, and lesser amounts of old fields, forested land, landscaped areas and urban areas (See Maps 2A through 2B). The majority of the Project is located within existing ROW for the Howard-Bucyrus Center 138 kV transmission line. Approximately 13 homes were identified within 1,000 feet of the proposed Project, the closest of which is approximately 175 feet away. There are no churches, cemeteries, schools, parks, preserves, or wildlife management areas located within 1,000 feet of the centerline.

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.

Based on field reconnaissance, approximately 95% of the Project crosses agricultural land used primarily for row crops. According to the Crawford County Auditor's office (September 2018), there are no registered agricultural district land parcels located in the Crawford County portion of the Project area. According to the Richland County Auditor's office (September 2018), seven registered agricultural district land parcels are located within the Richland County portion of the Project area.

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.

Cultural resources survey reports for the Project were completed by AEP Ohio Transco's consultant in June 2018. Ohio History Connection (OHC) correspondence letters are included as Appendix B. The letters from OHC refer to the Project as the "Howard-Fostoria 138kV Tap Project" and the "Howard-Bucyrus Center 138kV Electric Line Open Arm Stringing 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 OHCD000005. AEP Ohio Transco will also coordinate storm water permitting needs with local government agencies, as necessary. AEP Ohio Transco will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion control sediment to protect surface water quality during storm events.

Two areas of a 100-year flood zone are mapped at the eastern end of the Project (See Maps 2A through 2D in Appendix C). AEP Ohio Transco will contact the floodplain coordinators in each county to obtain floodplain permits, if necessary.

The Shelby Community Airport is located approximately 0.75-mile north of the Project. AEP Ohio Transco coordinated with the Federal Aviation Administration (FAA) regarding three proposed structures on the 0.5-mile new corridor existing Howard Station. The FAA determined the proposed structures are of no hazard to air navigation. FAA correspondence letters are included as Appendix D.

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.

The United States Fish and Wildlife Service (USFWS) *Federally Listed Species by Ohio counties January 2018* (available at <https://www.fws.gov/midwest/Endangered/lists/pdf/OhioCtyList29Jan2018.pdf>) was reviewed to determine the threatened and endangered species known to occur in the Project counties. This USFWS publication lists the following species as occurring within both Crawford and Richland Counties: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), and eastern massasauga rattlesnake (*Sistrurus catenatus*; federally threatened). On May 22, 2018, coordination letters were sent to USFWS and the Ohio Department of Natural Resources (ODNR) soliciting responses. Responses were received from the USFWS on May 24, 2018 and from the ODNR on July 18, 2018. Both agencies requested tree clearing of suitable roosting habitat trees for Indiana and northern long-eared bats occur only between October 1st and March 31st unless additional summer surveys are conducted. No impacts to other listed species were anticipated by either agency. Additional details regarding species are provided in Appendix C. The letters from USFWS and ODNR refer to the Project as the "Blackfork IPP Project".

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.

An AEP Ohio Transco consultant prepared an Areas of Ecological Concern, Wetland Delineation, and Stream Assessment Report. No permanent impacts to wetlands or streams are anticipated. A copy of the Wetland Delineation and Stream Assessment Report for the Project is included as Appendix C.

Two areas of a 100-year flood zone are mapped at the eastern end of the Project (See Maps 2A through 2D in Appendix C). AEP Ohio Transco will contact the floodplain coordinators in each county to obtain floodplain permits, if necessary.

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.

Appendix A Project Maps





Appendix B OHC Correspondence Letters



In reply, refer to
2018-RIC-42300

July 13, 2018

Mr. Ryan J. Weller
Weller & Associates, Inc.
1395 West Fifth Avenue
Columbus, Ohio 43212

RE: Howard-Fostoria 138kV Tap Project, Sharon Township, Richland County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on June 15, 2018 regarding the proposed Howard-Fostoria 138kV Tap Project, Sharon Township, Richland County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the 1.0 km (0.6 mi) Howard-Fostoria 138kV Tap Project in Sharon Township, Richland County, Ohio* by Weller & Associates, Inc. (2018).

A literature review, visual inspection, surface collection, and shovel probe excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area. No new sites were identified during this survey. Based on the information provided, we agree no additional archaeological survey is needed.

The following comments pertain to the *History/Architecture Investigations for the 1.0 km (0.6 mi) Howard-Fostoria 138kV Tap Project in Sharon Township, Richland County, Ohio* by Weller & Associates, Inc. (2018).

The history/architecture field survey included a systematic approach to identifying all properties fifty years of age or older that may have a potential view of the project. One previously recorded Ohio Historic Inventory (OHI) property was identified within the Area of Potential Effects (RIC0093405). Additionally, three individual resources fifty years of age or older were identified during field investigations. Out of the four total resources identified, one was advanced to detailed study for eligibility and effects assessment: RIC0093305.

Weller previously recommended RIC0093405 as eligible for listing in the National Register of Historic Places (NRHP) under Criterion A. Our office, in previous correspondence, agreed with Weller's recommendation of eligibility.

Based on the information provided, the tap project will likely increase the existing visibility of the transmission line. An increase in visibility of the transmission line from the above-referenced historic property should not diminish the significance and integrity that contribute to this property's NRHP eligibility. Therefore, we agree that the project as proposed will have no adverse effect on historic properties.

RPR Serial No: 1074405, 1074406

Mr. Ryan Weller
Page 2
July 13, 2018

Based on the information provided, our office has determined the project will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrock@ohiohistory.org, or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,



Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1074405, 1074406

OHIO HISTORY CONNECTION

800 E. 17th Ave., Columbus, OH 43211-2474 • 614.297.2300 • ohiohistory.org



In reply, refer to
2018-CRA-42301

July 30, 2018

Mr. Ryan J. Weller
Weller & Associates, Inc.
1395 West Fifth Avenue
Columbus, Ohio 43212

RE: Howard-Bucyrus Center 138kV Electric Line Open Arm Stringing Project, Sharon Township, Richland County and Vernon Township, Crawford County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on June 15, 2018, and the completed Ohio Archaeological Inventory (OAI) forms on July 30, 2018, regarding the proposed Howard-Bucyrus Center 138kV Electric Line Open Arm Stringing Project, Sharon Township, Richland County and Vernon Township, Crawford County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the 6.4 km (4.0 mi) Howard-Bucyrus Center 138kV Electric Line Open Arm Stringing Project in Sharon Township, Richland County and Vernon Township, Crawford County, Ohio* by Weller & Associates, Inc. (2018).

A literature review, visual inspection, surface collection, shovel probe, and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area. Two (2) new Ohio Archaeological Inventory (OAI) sites were identified during survey. OAI#33RI0701 and 33RI0702 are both prehistoric isolated finds. Neither site was recommended eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with your determination and no further archaeological work is necessary.

The following comments pertain to the *History/Architecture Investigations for the 6.4 km (4.0 mi) Howard-Bucyrus Center 138kV Electric Line Open Arm Stringing Project in Sharon Township, Richland County and Vernon Township, Crawford County, Ohio* by Weller & Associates, Inc. (2018).

The history/architecture field survey included a systematic approach to identifying all properties fifty years of age or older that may have a potential view of the project. One previously recorded Ohio Historic Inventory (OHI) property was identified within the Area of Potential Effects (CRA0021510). Additionally, twelve individual resources fifty years of age or older were identified during field investigations. Out of the thirteen total resources identified, one was advanced to detailed study for eligibility and effects assessment: RIC0093405.

Weller recommends RIC0093405 as eligible for listing in the National Register of Historic Places under Criterion A. Our office agrees with Weller's recommendation of eligibility.

Based on the information provided, the transmission line rebuild may be slightly more visible than the existing transmission line. A slight increase in visibility of the transmission line from the above-

RPR Serial No: 1074407-1074408

Mr. Ryan J. Weller
Page 2
July 30, 2018

referenced historic property should not diminish the significance and integrity that contribute to this property's NRHP eligibility. Therefore, we agree that the project as proposed will have no adverse effect on historic properties.

Based on the information provided, our office has determined the project will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorricks@ohiohistory.org, or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,



Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1074407-1074408

OHIO HISTORY CONNECTION

800 E. 17th Ave., Columbus, OH 43211-2474 • 614.297.2300 • ohiohistory.org

Appendix C Ecological Resources Inventory Report

HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138 KV PROPOSED TRANSMISSION LINE EXTENSION PROJECT, CRAWFORD AND RICHLAND COUNTIES, 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 #: 60577755

September 2018

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APPENDICES**Number**

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APPENDIX D	Delineated Features Photographs
APPENDIX E	Correspondence Letters from USFWS and ODNR

LIST OF ACRONYMS and ABBREVIATIONS

AEP Ohio Transco	American Electric Power Ohio Transmission Company
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
GIS	Geographic Information System
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
PSS	Palustrine scrub-shrub
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 approximately 4.5 miles of new 138 kV electric transmission line between the existing Howard Station and the a proposed station to be built by the interconnection customer in Richland and Crawford Counties, Ohio. The new line will exit Howard Station and extend approximately 0.5 mile along a new corridor to the open arm of the Howard-Bucyrus Center 138 kV line. It will extend approximately 3.9 miles before leaving the open arm and continuing approximately 0.1 mile on a new alignment into the proposed station. 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. Secondly, 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

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 as an exercise to identify the occurrence and location of potential wetland areas.

In May 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 Geographic Information System (GIS) software, where the data was then reviewed and edited for accuracy. General land use types in the vicinity of the proposed Project include agricultural fields, wood lots, and old fields, with agricultural fields being the dominant land use in the vicinity of the Project.

2.1 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 Midwest 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 placed where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the 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 vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.1.1 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.

2.1.2 HYDROLOGY

The *1987 Manual* requires that an area be inundated or saturated to the surface for an absolute 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 the 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 (12-in. depth) is 41 degree Fahrenheit (°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 ten, or 50 percent 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 Crawford County, Ohio that in an average year, this period lasts from April 16 to October 28, or 195 days; in Richland County, Ohio this period lasts from April 25 to October 19, or 177 days. In the Project survey corridor, five percent of the growing season equates to approximately nine to ten 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).

2.1.3 VEGETATION

Dominant vegetation was 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) was assigned to each plant species based on the U.S. Army Corps of Engineers *2016 National Wetland Plant List: Midwest Region* (Lichvar, et al., 2016), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, more than 50 percent of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was 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).

2.1.4 WETLAND CLASSIFICATIONS

Wetlands were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al.*, 1979). The identified wetland within the survey corridor was classified as a freshwater, Palustrine system, which includes non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. Two palustrine wetland classes were identified within the Project survey corridor:

- **PEM** – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
- **PSS** – Palustrine scrub/shrub wetlands are characterized by woody vegetation that is less than three inches diameter at breast height (dbh), and greater than 3.28 feet tall (1 meter). The woody angiosperms (i.e., small trees or shrubs) in this broad leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.

2.1.5 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.

2.2 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).

2.2.1 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, if natural pools are greater than 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 (H are those with a watershed area less than or equal to 20 square miles) versus 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).

2.2.2 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 mi² (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).

2.3 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 area. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to threatened and endangered species potentially present in the survey area during construction activities. The first phase of the survey involved a review of online lists of federal and state listed species. In addition to the review of available literature, 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 survey May 29th through May 30th, 2018.

3.0 RESULTS

Within the Project survey corridor, AECOM delineated one wetland and three streams. No ponds were identified within the Project survey corridor. These features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils in the delineated wetland were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Surveys of Crawford and Richland counties, Ohio, and the NRCS Hydric Soils Lists of Ohio, 10 soil series are mapped within the Project survey corridor (NRCS, 2018). Within these 10 soil series, six soil map units are listed as hydric, while 13 other soil map units have hydric components that may comprise between 3 percent and 5 percent of the area mapped within the unit. Table 1 provides a detailed overview 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 through 2J.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138 kV
TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Bennington	BeA (Crawford County)	Bennington silt loam, 0 to 2 percent slopes	Depressions, drainageways	Not Hydric	5% Condit; 3% Pewamo, low carbonate till
	BgB (Crawford County)	Bennington silt loam, 2 to 6 percent slopes	Depressions, drainageways	Not Hydric	3% Condit; 3% Pewamo, low carbonate till
	BnA (Richland County)	Bennington silt loam, 0 to 2 percent slopes	Depressions, drainageways	Not Hydric	5% Condit; 3% Pewamo, low carbonate till
	BnB (Richland County)	Bennington silt loam, 2 to 6 percent slopes	Depressions, drainageways	Not Hydric	3% Condit; 3% Pewamo, low carbonate till
	BnB2	Bennington silt loam, 2 to 6 percent slopes, moderately eroded	Depressions	Not Hydric	5% Condit; 5% Pewamo
Cardington	Crd1B1	Cardington silt loam, 2 to 6 percent slopes	Depressions, drainageways	Not Hydric	4% Condit; 3% Pewamo, low carbonate till
	Crd1B2	Cardington silt loam, 2 to 6 percent slopes, eroded	Depressions, drainageways	Not Hydric	4% Condit; 3% Pewamo, low carbonate till
	Crd1C2	Cardington silt loam, 6 to 12 percent slopes, eroded	End moraines, ground moraines	Not Hydric	4% Condit
Del Rey	DeA	Del Rey silt loam, 0 to 2 percent slopes	Till plains	Not Hydric	None
Fitchville	FcA	Fitchville silt loam, 0 to 2 percent slopes	Terraces, lake plains	Not Hydric	4% Luray; 4% Sebring
	FcB	Fitchville silt loam, 2 to 6 percent slopes	Lake plains, terraces	Not Hydric	4% Luray; 4% Sebring
Lenawee	Le	Lenawee silty clay loam	Glacial lakes (relict)	Hydric	100% Lenawee
Luray	Lu (Crawford County)	Luray silty clay loam	Glacial lakes (relict)	Hydric	100% Luray
	Ly (Richland County)	Luray silty clay loam	Depressions on lake plains, flats on lake plains	Hydric	100% Luray
Pewamo	Pa	Pewamo silt loam	Depressions on till plains	Hydric	95% Pewamo
	Pm	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	Depressions, drainageways	Hydric	85% Pewamo; 9% Condit
Sebring	Se	Sebring silt loam, 0 to 2 percent slopes	Terraces	Hydric	85% Sebring; 7% Luray
Tiro	TmB	Tiro silt loam, 2 to 6 percent slopes	Till plains	Not Hydric	5% Sebring; 5% Luray
	TrA	Tiro silt loam, 0 to 2 percent slopes	Hills	Not Hydric	2% Sebring; 2% Condit; 2% Luray
Udorthents	Uc	Udorthents	N/A	Unranked	None

USDA, NRCS. 2018 Soil Survey Geographic (SSURGO) Database. Available online at: <http://soildatamart.nrcs.usda.gov/>

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138 kV
TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
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USDA, NRCS. 2018. 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 Crestline and Old Robinson, Ohio quadrangles, the Project survey corridor contains three mapped NWI wetlands. The NWI wetlands were identified as two riverine, intermittent, streambed, seasonally flooded wetlands (R4SBC); and one riverine, unknown perennial, unconsolidated bottom, permanently flooded wetland (R5UBH). The location of the NWI mapped wetlands are shown on Figure 2A through Figure 2J.

3.1.3 Delineated Wetlands

During the field survey, AECOM identified a total of one PEM/PSS wetland that measures approximately 0.1 acre within the Project survey corridor. The wetland boundary extends beyond the Project survey corridor, but only what was identified within the Project survey corridor was assessed.

The location and approximate extent of the wetland identified within the Project survey corridor is shown on Figure 3A. Completed USACE and ORAM wetland delineation forms are provided in Appendix A and B, respectively. Representative color photographs taken of the wetland are provided in Appendix D.

TABLE 2
SUMMARY OF DELINEATED WETLANDS WITHIN THE HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138-kV
TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Wetland Name	Latitude	Longitude	Cowardin Wetland Type ^a	ORAM Score	ORAM Category	Length Crossed by Centerline (feet)	Acreage within Project Survey Corridor
Wetland 01	40.853423	-82.685187	PEM/PSS	16.5	Category 1	17	0.1
Total: 1 Wetland						17	0.1

Cowardin Wetland Type^a: PEM = palustrine emergent, PSS = palustrine scrub/shrub

3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project survey corridor, one wetland is classified as Category 1 and had an ORAM score of 16.5. The completed ORAM form is provided in Appendix B.

Category 1 Wetlands

The one Category 1 wetland delineated within the Project survey corridor is classified as a PEM/PSS wetland and has an ORAM score of 16.5. This wetland exhibited very narrow buffers and high (urban or agricultural) intensive surrounding land use, exhibited limited plant community development with a moderate percentage of invasive species, and had habitat and hydrology in the early to late stages of recovering from previous manipulation due to selective cutting, sedimentation, and other disturbances.

Category 2 Wetlands

No Category 2 wetlands were identified within the Project survey corridor.

Category 3 Wetlands

No Category 3 wetlands were identified within the Project survey corridor.

3.2 STREAM CROSSINGS

AECOM identified three streams, totaling 1,608 linear feet, within the Project survey corridor, as listed in Table 3. The streams are comprised of two intermittent streams, and one perennial stream. The locations of the streams identified within the survey corridor are shown on Figures 3A through 3J.

HHEI evaluations were conducted on all three streams in the survey corridor. The evaluations were conducted at or near the proposed transmission line crossing or access road crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

AECOM has preliminarily determined that all assessed streams within the Project survey corridor appear to be jurisdictional (i.e., waters of the U.S.), as they all appear to be tributaries that flow into or combine with other streams (waters of the U.S.).

TABLE 3

STREAMS IDENTIFIED WITHIN THE HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138 kV TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Stream Report Name	Latitude	Longitude	Waterbody	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (in)	Form ^a	Score	Class/ Narrative Rating*	Crossed by Centerline	Length (feet) within Project Survey Corridor
Stream 01	40.851585	-82.682539	Tributary to Blackfork Mohican River	Intermittent	5	6	HHEI	62.0	Modified Class 2	Yes	971
Stream 02	40.855890	-82.705688	Tributary to Blackfork Mohican River	Intermittent	6	5	HHEI	53.0	Modified Class 2	Yes	534
Stream 03	40.855210	-82.747370	Loss Creek	Perennial	6	8	HHEI	60.0	Modified Class 2	Yes	103
Totals: 3 Streams											1,608

Form Used^a: HHEI = Headwater Habitat Evaluation Index

* = Narrative description is based on OEPA's ranking. See Ohio Administrative Code 3745-1-07.

3.2.1 Qualitative Habitat Evaluation Index

No streams were identified using QHEI methodology within the Project survey corridor.

3.2.2 Primary Headwater Habitat Evaluation Index

Three headwater streams, totaling 1,608 linear feet, were identified along the Project survey corridor. All three streams were classified as Modified Class 2 streams. Completed HHEI forms for each stream are provided in Appendix C. Representative color photographs were taken during the field survey and are provided in Appendix D.

Modified Class 2 Headwater Streams – Three Modified Class 2 headwater streams, totaling 1,608 linear feet, with scores ranging between 53 and 62 were identified during the field investigations. Two streams were identified as intermittent and one stream was identified as perennial. The substrate of these streams consisted of silt and gravel with lesser amounts of sand, leaf pack/woody debris, clay/hardpan, and cobble. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the streams receiving a Modified Class 2 designation. The maximum pool depth ranged between 5 and 8 inches, and average bankfull width ranged between 5 and 6 feet.

3.3 PONDS

No ponds were identified within the Project survey corridor.

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 during May 2018. Portions of the Project survey corridor were identified as old field, agricultural land, forested area, residential landscaped areas, stream/wetland areas, and urban areas. A variety of woody and herbaceous lands, as described below in Table 4, are present within the Project survey corridor. 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 4A through 4J.

TABLE 4
VEGETATIVE COMMUNITIES WITHIN THE HOWARD-FOSTORIA AND HOWARD-BUCYRUS CENTER 138-Kv
TRANSMISSION LINE EXTENSION PROJECT SURVEY CORRIDOR

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage within the Project Survey Area
Agricultural Land	Agricultural land consisting of soybean and corn fields was present along the Project survey corridor. The agricultural land contains row crops and is not used for pasture or hay fields.	65.00	94%
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.	0.09	0%
Forest	Forested areas consisting of herbaceous, shrub, and tree coverage were present within the Project survey corridor. Forested areas are in the later successional stages of growth and are dominated primarily by woody vegetation with dbh >3.0 in and taller than 1 meter.	0.67	1%
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.	2.00	3%
Streams/Wetlands	Streams and wetlands were observed both within and beyond the survey corridor for the Project.	0.87	1%
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.	0.50	1%
Totals:		69.15	100%

3.5 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a rare, threatened, and endangered species review for areas crossed by the Project survey corridor. AECOM sent letters to USFWS and ODNR on May 22, 2018. Responses were received from USFWS on May 24, 2018, and ODNR on July 18, 2018 regarding requests for comments on the

Project. Table 5 provides a list of these species identified as possibly occurring near or within the Project area during the rare, threatened, and endangered species review.

TABLE 5
ODNR AND USFWS LISTED SPECIES POTENTIALLY WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Mammals						
Indiana bat (<i>Myotis sodalis</i>)	Endangered	Endangered	<p>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 (<i>Carya</i> spp.), oak (<i>Quercus</i> spp.), ash (<i>Fraxinus</i> spp.), birch (<i>Betula</i> spp.), and elm (<i>Ulmus</i> 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.</p>	Yes	<p>Some potentially suitable habitat is present within the Project area (woodlands).</p>	<p>USFWS and ODNR recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If implementation of this seasonal tree cutting recommendation is not possible, surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer.</p> <p>USFWS also indicated that if any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted.</p>

TABLE 5
ODNR AND USFWS LISTED SPECIES POTENTIALLY WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Northern long-eared bat (<i>Myotis septentrionalis</i>)	Threatened	Threatened	<p>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 (<i>Carya</i> spp.), oak (<i>Quercus</i> spp.), ash (<i>Fraxinus</i> spp.), birch (<i>Betula</i> spp.), and elm (<i>Ulmus</i> 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.</p>	Yes	Some potentially suitable habitat is present within the Project area (woodlands).	USFWS recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If implementation of this seasonal tree cutting recommendation is not possible, surveys may be conducted to document the presence or probable absence of northern long-eared bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. USFWS also indicated that if any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted. ODNR did not comment on this species.
Fish						
Greater redhorse (<i>Moxostoma valenciennesi</i>)	Threatened	Species of Concern	Found in medium to large rivers in the Lake Erie drainage system. Only found in limited portions of the Sandusky, Maumee, and Grand River systems. Greater redhorse are typically found in pools with clean sand or gravel substrate, but are intolerant of pollution and turbid water.	Yes	No in-water work is planned as part of the Project. No impacts to fish species and their habitat are anticipated.	ODNR-DOW recommended no in-water work in perennial streams from April 15 to June 30 to reduce impacts to aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species.
Reptiles						

TABLE 5
ODNR AND USFWS LISTED SPECIES POTENTIALLY WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Blanding's turtle (<i>Emydoidea blandingii</i>)	Threatened	None	This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next.	No	No in-water work is planned as part of the Project. No impacts to this species and their habitat are anticipated.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Spotted turtle (<i>Clemmys guttata</i>)	Threatened	None	This species prefers fens, bogs, and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches.	No	No in-water work is planned as part of the Project. Limited suitable habitat is located within the survey corridor. No impacts to this species and their habitat are anticipated.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Amphibians						
Eastern hellbender (<i>Cryptobranchius alleganiensis alleganiensis</i>)	Endangered	Species of Concern	Found mostly in unglaciated (south and east) Ohio, hellbenders prefer large, swift flowing streams where they hide during the day under large rocks. Typically feeds on crayfish, snails, minnows, insects, and worms.	No	No in-water work is planned as part of the Project. No impacts to this species and their habitat are anticipated.	Since no in-water work is proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.
Blue-spotted salamander (<i>Ambystoma laterale</i>)	Endangered	None	Blue-spotted salamanders are found in moist, deciduous hardwood forests and swampy woodlands. They prefer vernal pools that retain water into mid-summer, to ensure access to a suitable breeding habitat.	No	No large tracts of suitable habitat are located within the project corridor. Dominant landuse is agriculture.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Birds						

TABLE 5
ODNR AND USFWS LISTED SPECIES POTENTIALLY WITHIN THE PROJECT SURVEY CORRIDOR

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Corridor	Impact Assessment	Agency Comments
Upland sandpiper (<i>Bartramia longicauda</i>)	Endangered	None	Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP).	No	No large tracts of suitable habitat are located within the project corridor. Dominant landuse is agriculture.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Northern harrier (<i>Circus cyaneus</i>)	Endangered	None	A common migrant and winter species, harriers occasionally will nest in large marshes and grasslands, in loose colonies. Harriers hunt over grasslands.	No	No large tracts of suitable habitat are located within the project corridor. Dominant landuse is agriculture.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Endangered	Species of Concern	The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands.	No	No large tracts of suitable habitat are located within the project corridor. Dominant landuse is agriculture.	The ODNR indicated that due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.
Invertebrates						
Black sandshell (<i>Ligumia recta</i>)	Threatened	None	The black sandshell is typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more.	No	No in-water work is planned as part of the Project. No impacts to this species and their habitat are anticipated.	The ODNR indicated that this project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. If in-water work is planned, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area.

ODNR Coordination –

Coordination with the ODNR was initiated during the planning stages of the Project to obtain Ohio Natural Heritage Database (ONHD) records located in the vicinity of the Project as well as comments based on an inter-disciplinary review from the ODNR Office of Real Estate Environmental Review Section. In a letter dated July 18, 2018, the ODNR-DOW provided comments on the Project with regard to state and/or federally listed threatened and endangered species that may occur within the Project vicinity (Appendix E). ODNR-DOW recommended that impact to wetlands, streams or other water resources be avoided or minimized and that erosion and sediment controls be utilized. ODNR-DOW stated that the Natural Heritage Database has no records of state endangered or threatened plants or animals at or within a one-mile radius of the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species.

See above in Table 5 for the complete list of species and comments from ODNR.

USFWS Coordination –

In an e-mail dated May 24, 2018, the USFWS provided comments on the Project with regard to federally-listed threatened and endangered species that may occur within the project vicinity. The USFWS indicated that there are no Federal wildlife refuges, wilderness areas, or critical habitat within the vicinity of the Project.

The USFWS noted that the Project lies within the range of the federally endangered Indiana bat (*Myotis sodalis*), and the federally threatened northern long-eared bat (*Myotis septentrionalis*). USFWS recommends that should the proposed site contain trees ≥ 3 inches dbh, that those trees need to be saved wherever possible. If tree clearing cannot be avoided, USFWS recommends that tree removal occur between October 1st and March 31st to avoid adverse effects to Indiana bats and northern long-eared bats during the brood-rearing months. USFWS also indicated that if any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted. Due to the project type, size, and location, the USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.

4.0 SUMMARY

The ecological survey of the Project survey corridor identified a total of one wetland and three streams. The wetland within the Project survey corridor is a PEM/PSS wetland and was identified as a Category 1 wetland. No Category 2 or Category 3 wetlands were identified within the Project survey corridor.

The streams identified within the Project survey corridor include two intermittent streams, and one perennial stream. All three streams were assessed using the HHEI methodology (drainage area less than 1 mi²). No streams were identified using QHEI methodology within the Project survey corridor.

The Project is within the range of five federally listed species: Indiana bat (endangered), northern long-eared bat (threatened), greater redhorse (species of concern), eastern hellbender (species of concern), and the loggerhead shrike (species of concern). Based on general observations during the ecology survey, a small portion of the Project survey corridor contained potential summer habitat for the Indiana bat and the northern long-eared bat. In a letter dated May 24, 2018, USFWS recommended that should the proposed site contain trees ≥ 3 inches dbh, that those trees need to be saved wherever possible. If tree clearing cannot be avoided, USFWS recommends that tree removal occur between October 1st and March 31st to avoid adverse effects to Indiana bats and northern long-eared bats during the brood-rearing months. USFWS also indicated that if any caves or abandoned mines may be disturbed, further coordination is requested to determine if fall or spring portal surveys are warranted. Due to the project type, size, and location, the USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.

In a letter dated July 18, 2018, the ODNR-DOW provided comments on the Project with regard to state and/or federally listed threatened and endangered species that may occur within the Project vicinity. ODNR-DOW recommended that impact to wetlands, streams or other water resources be avoided or minimized and that erosion and sediment controls be utilized. ODNR-DOW stated that the Natural Heritage Database has no records of state endangered or threatened plants or animals at or within a one-mile radius of the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species.

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey boundary provided in Figures 3A-3J: Wetland Delineation and Stream Assessment Map. Areas that fall outside of the Project survey boundary, 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.

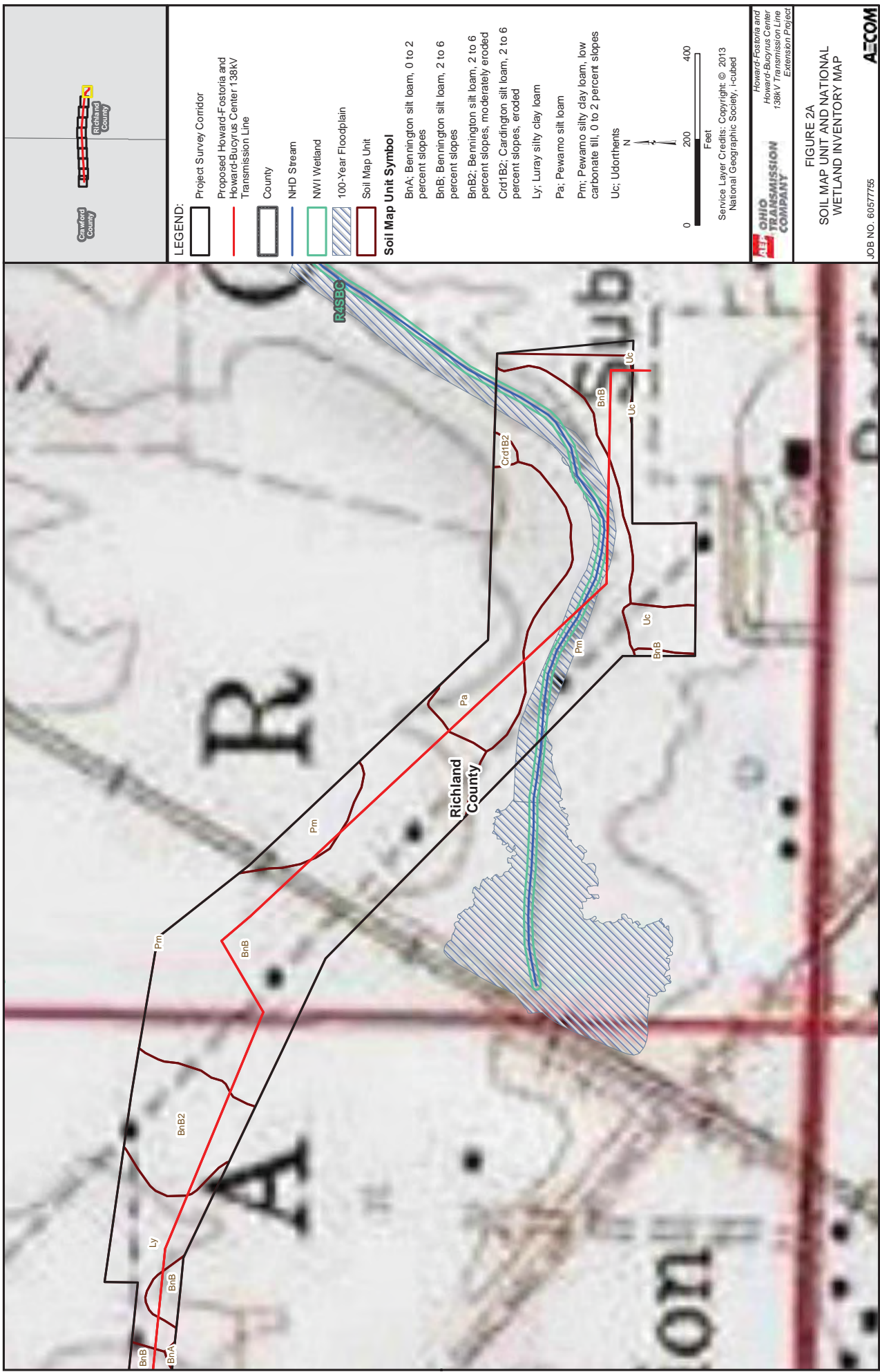
The information contained in this wetland delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications.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

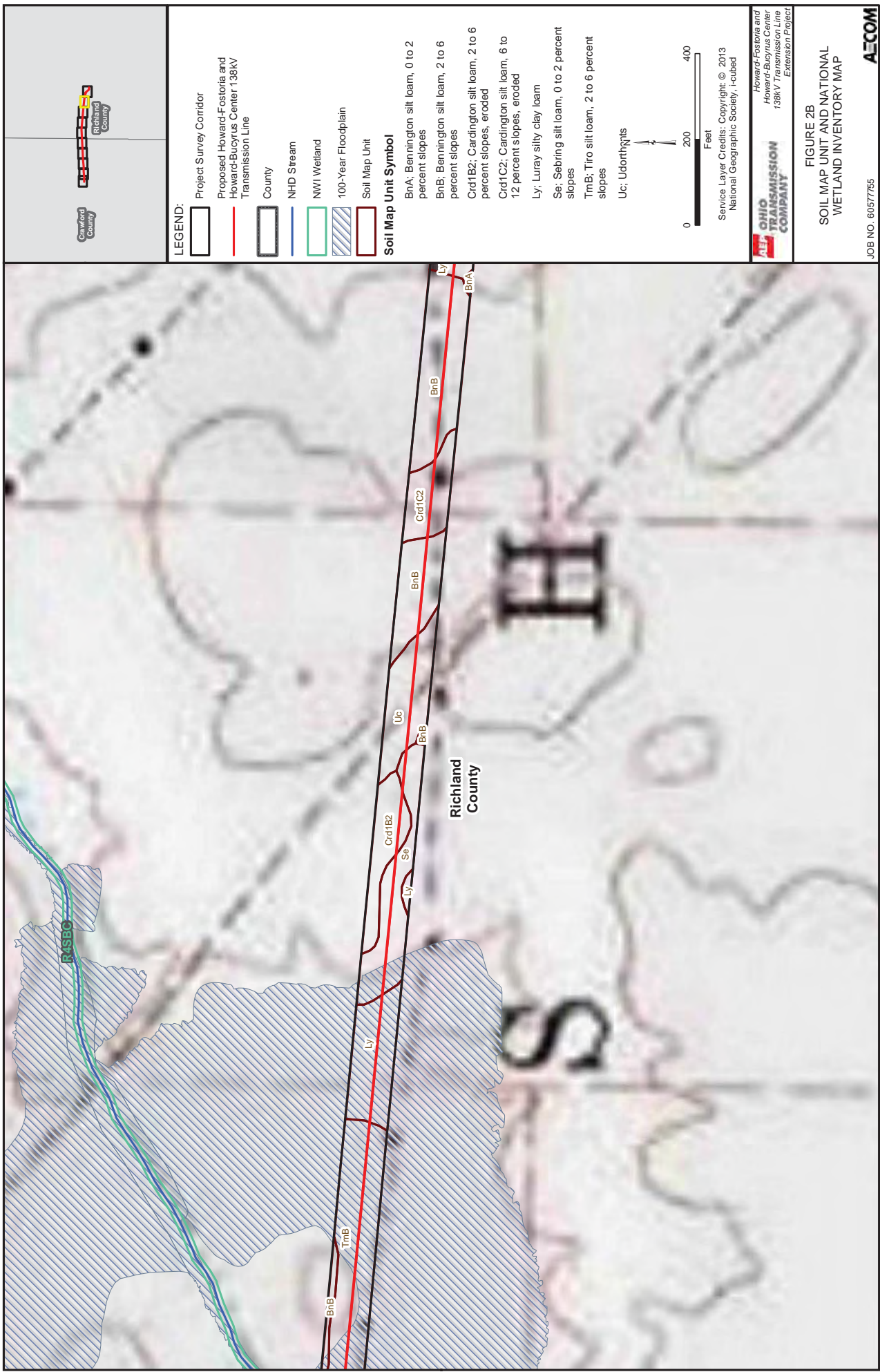
The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable

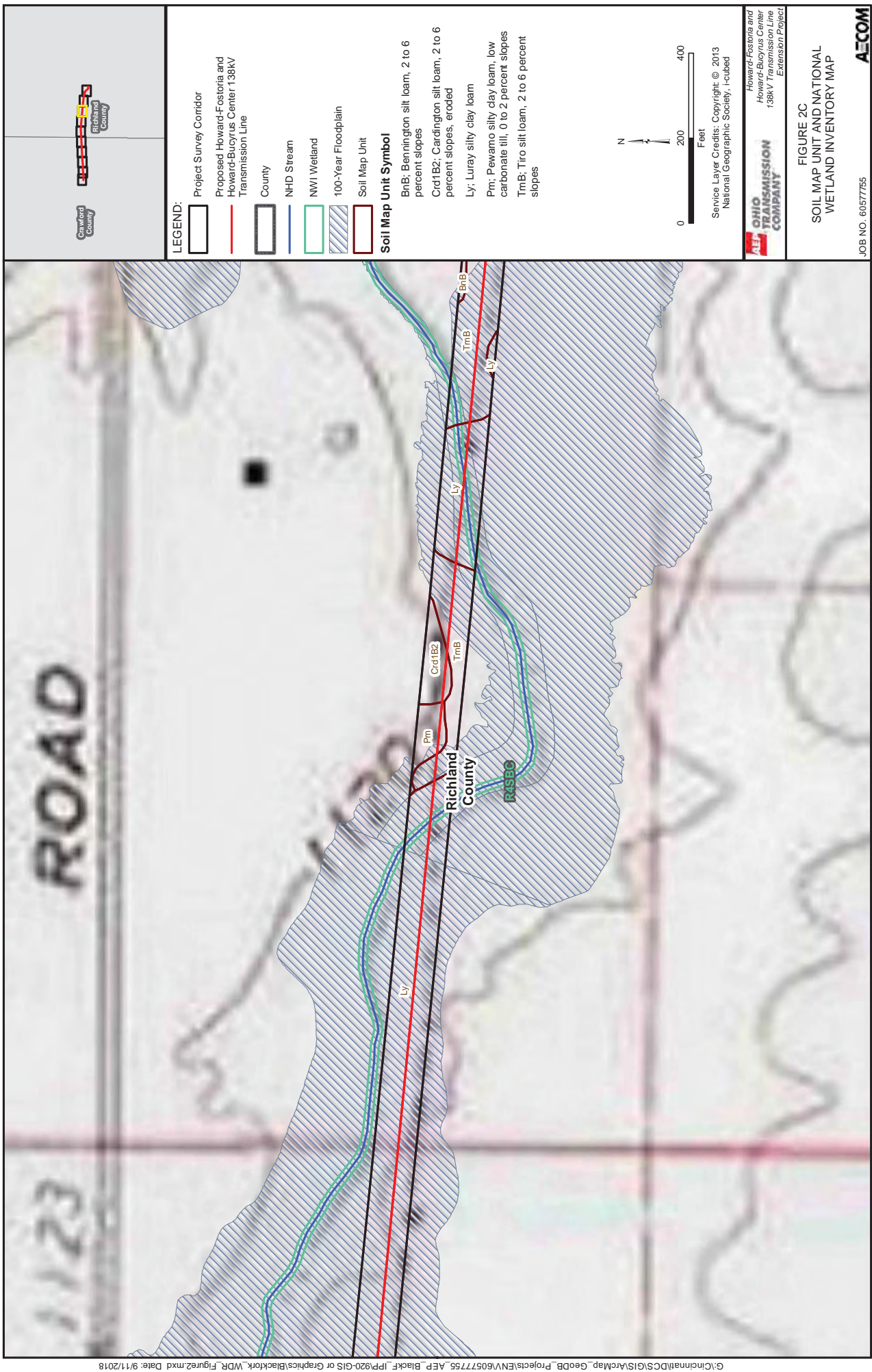
standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

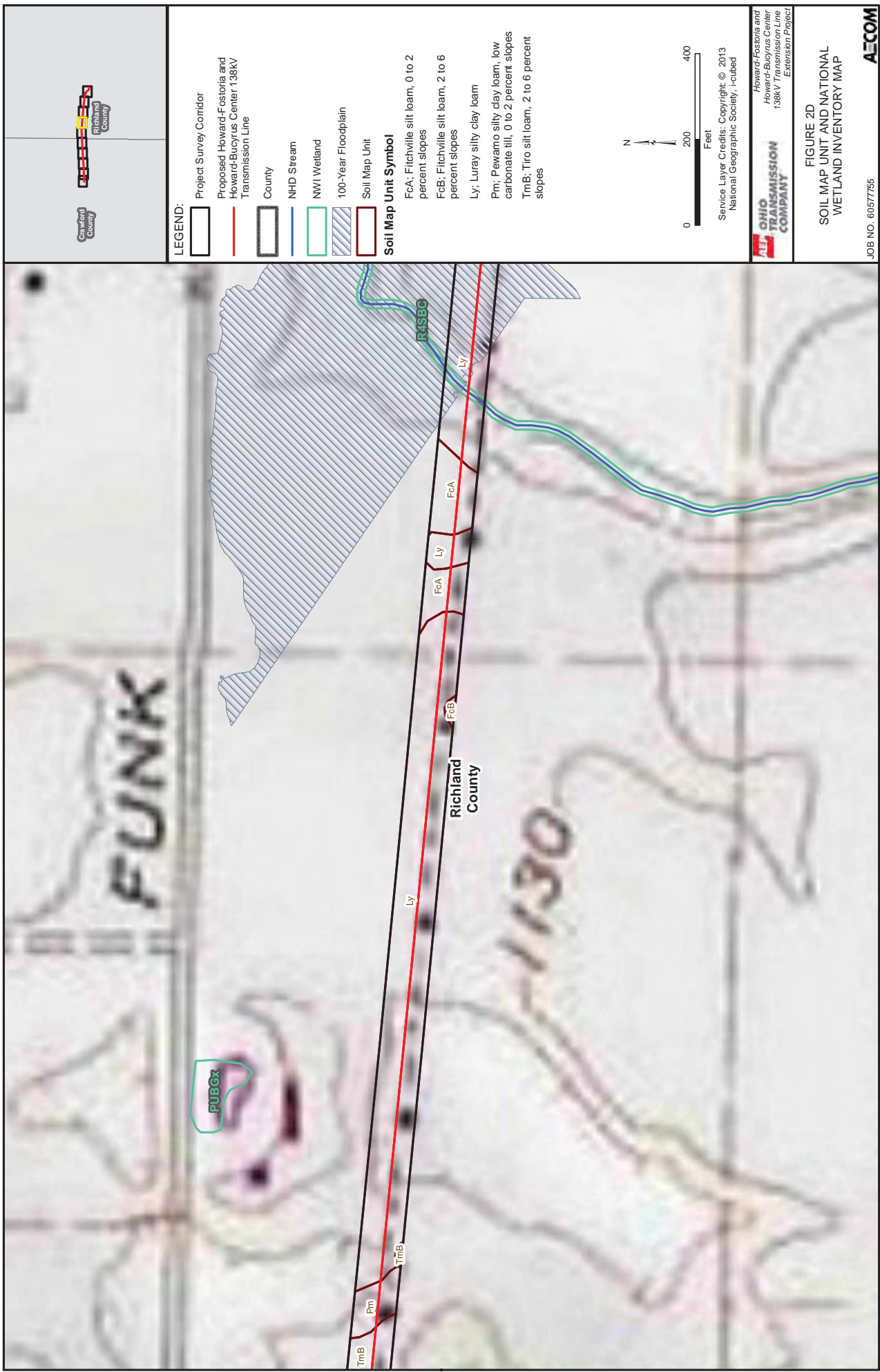
5.0 REFERENCES

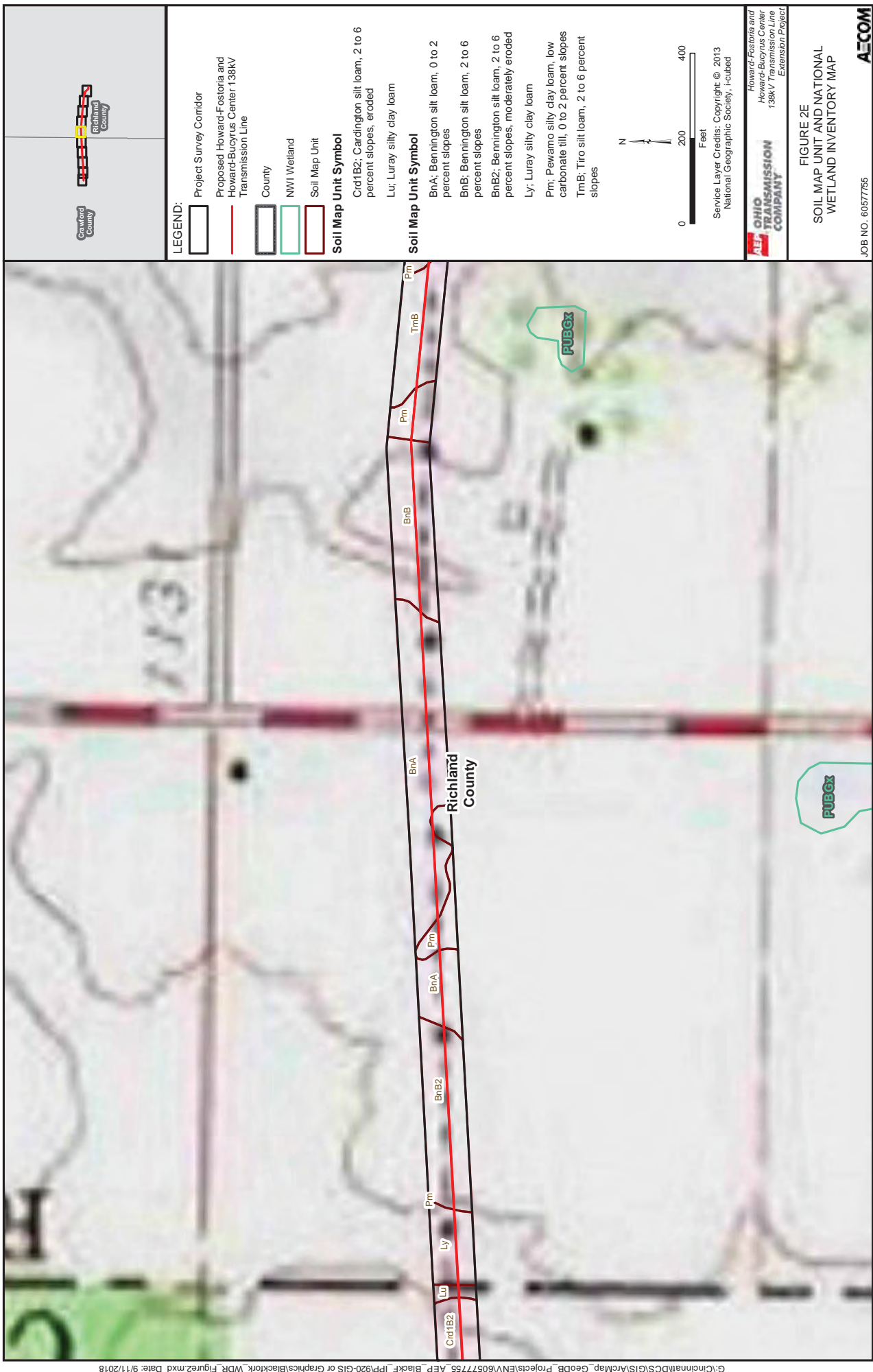
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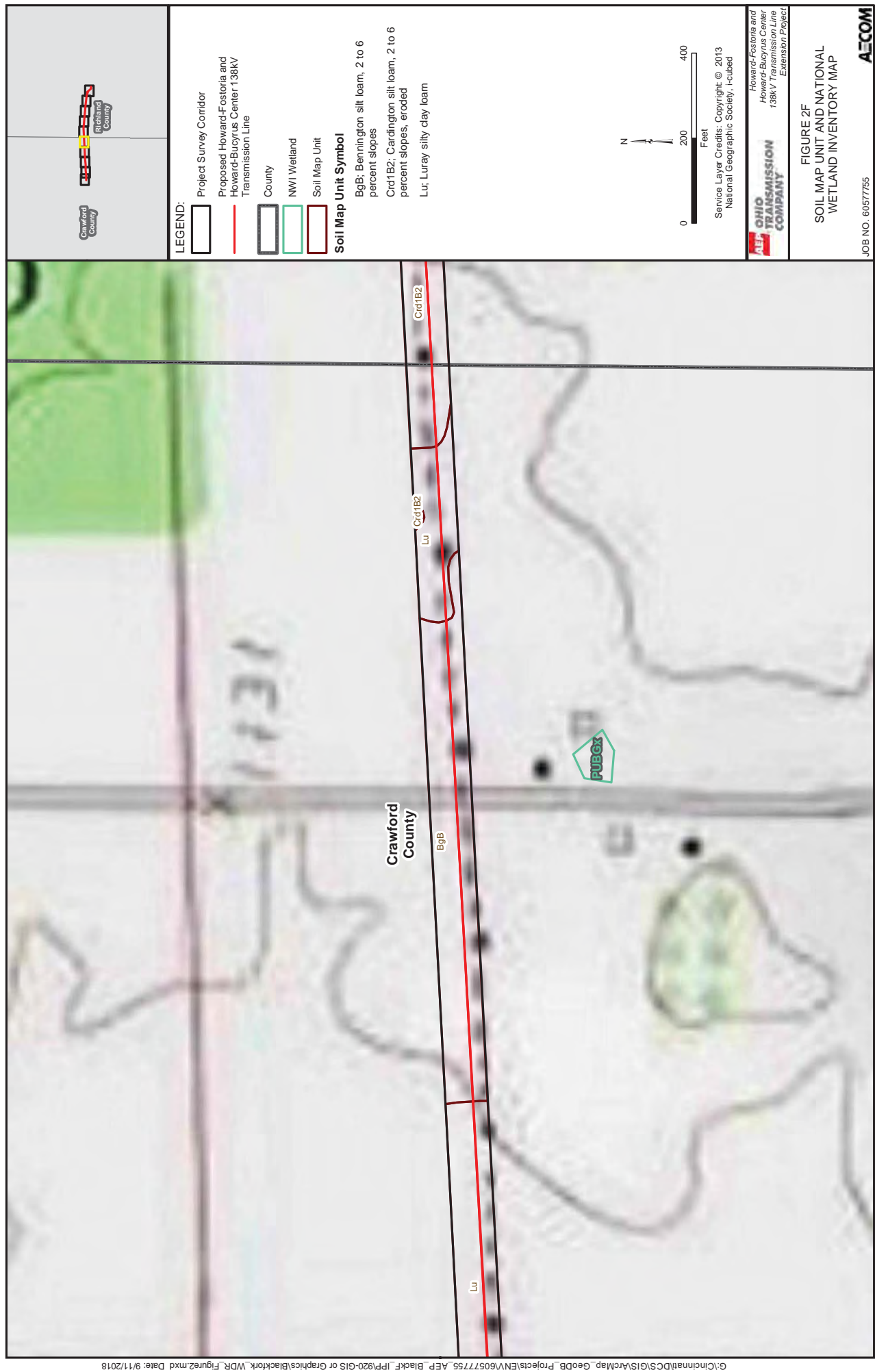


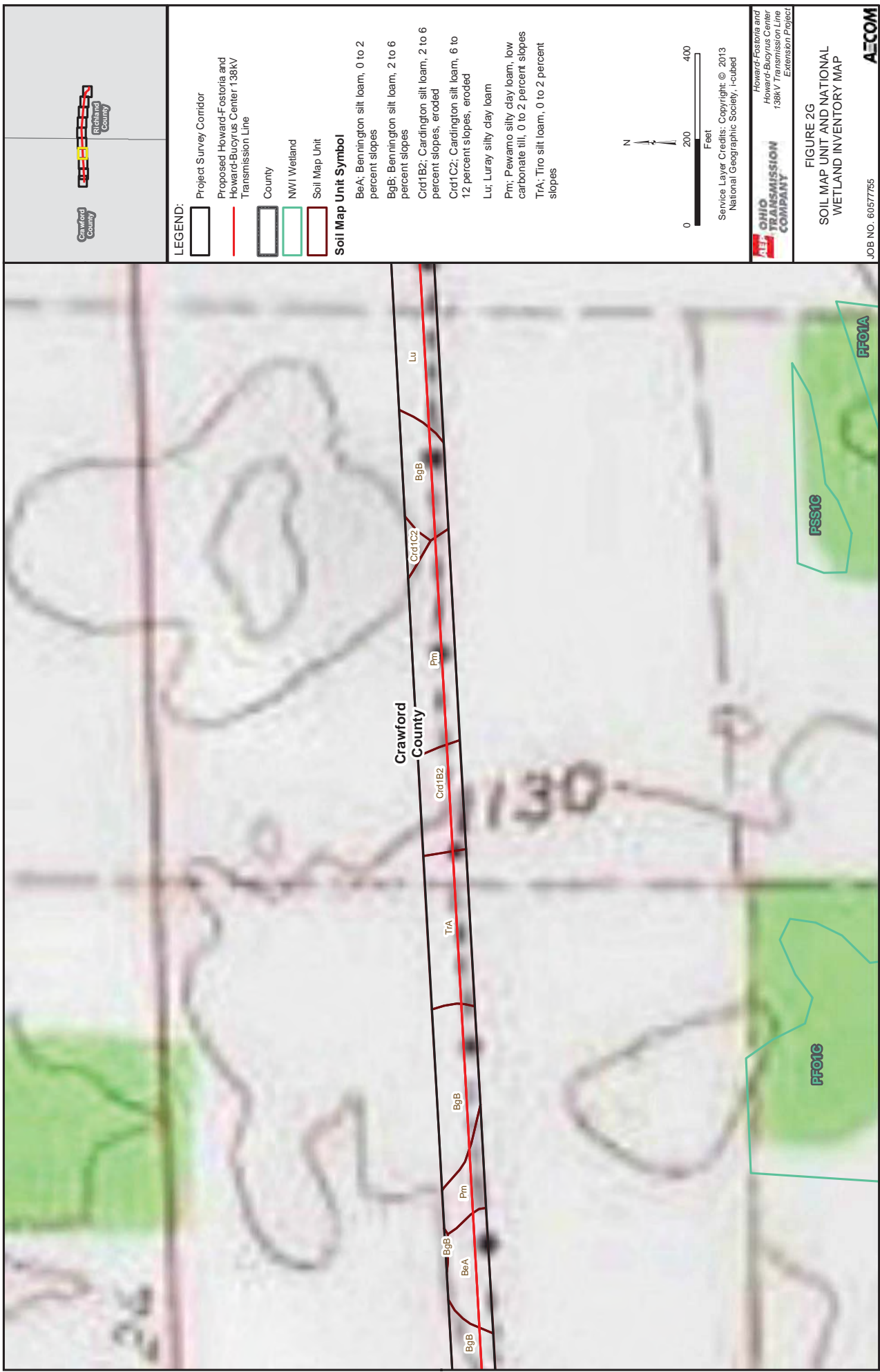










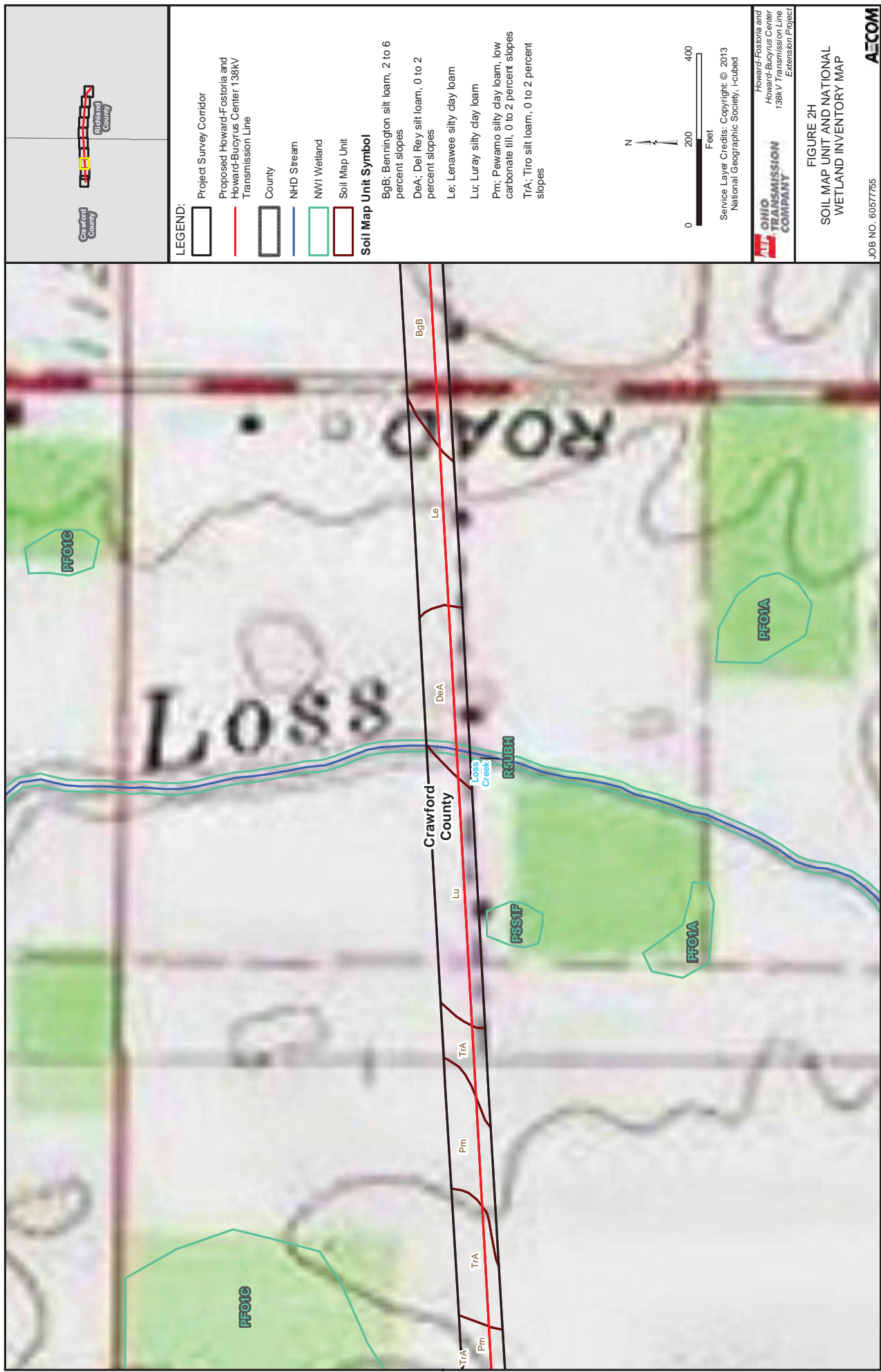


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ALP OHIO TRANSMISSION COMPANY
Howard-Fostoria and Howard-Buyrus Center 138kV Transmission Line Extension Project

FIGURE 2G
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60577755
AECOM



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Howards-Fostoria and
Howard-Buyrus Center
138kV Transmission Line
Extension Project

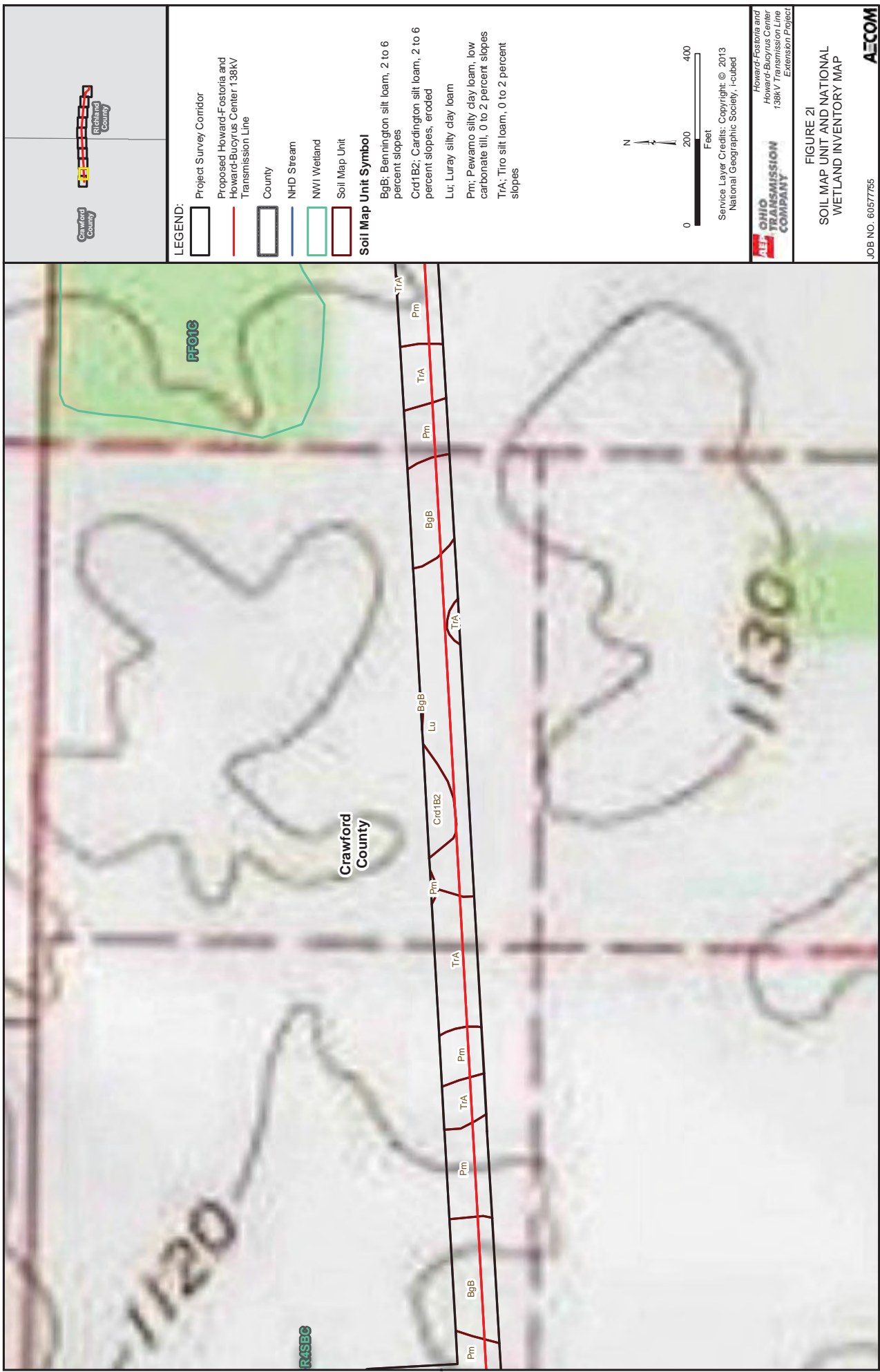
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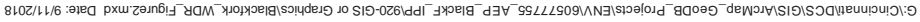
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FIGURE 2H
SOIL MAP UNIT AND NATIONAL
WETLAND INVENTORY MAP

JOB NO. 60577755

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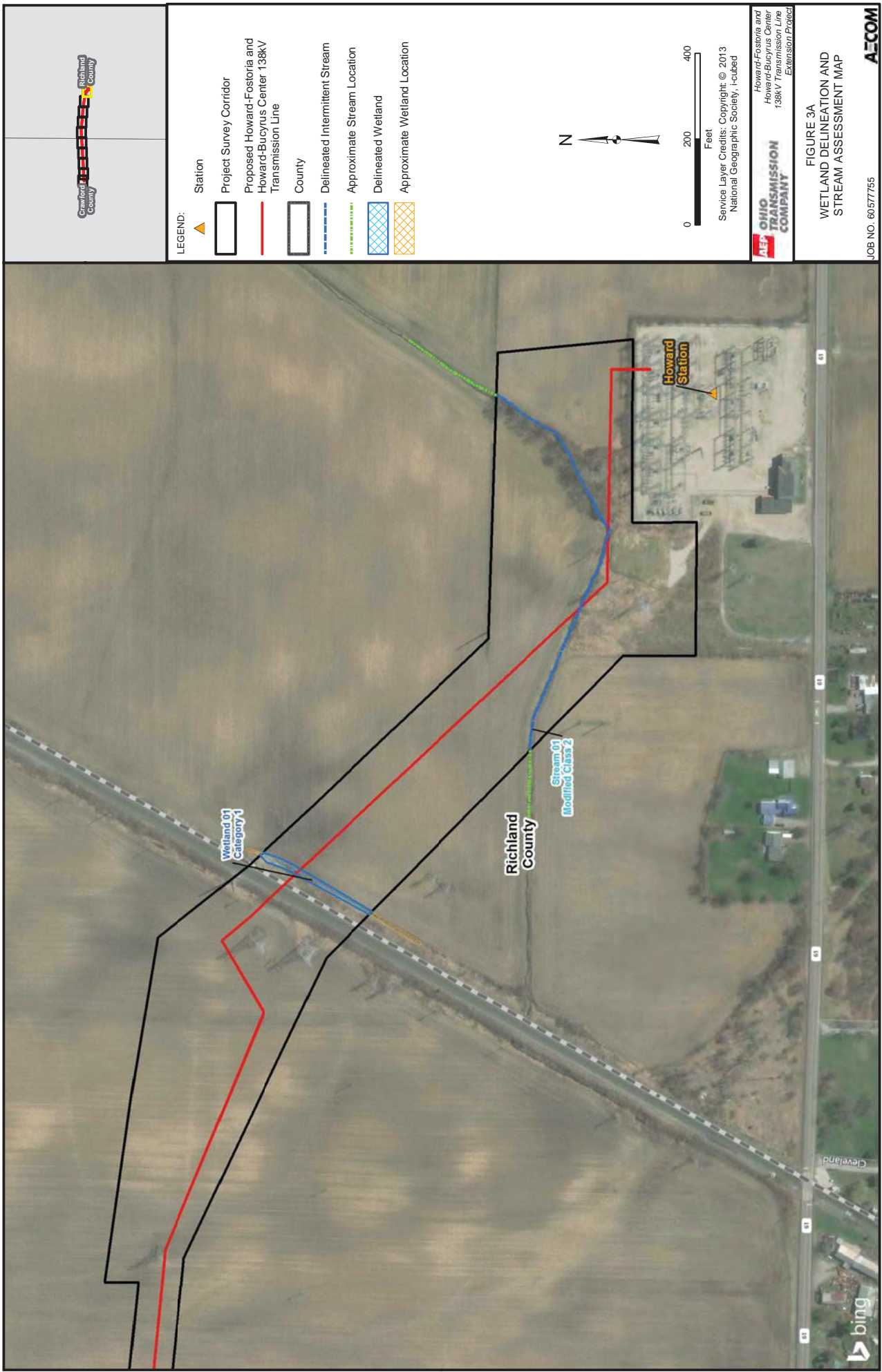
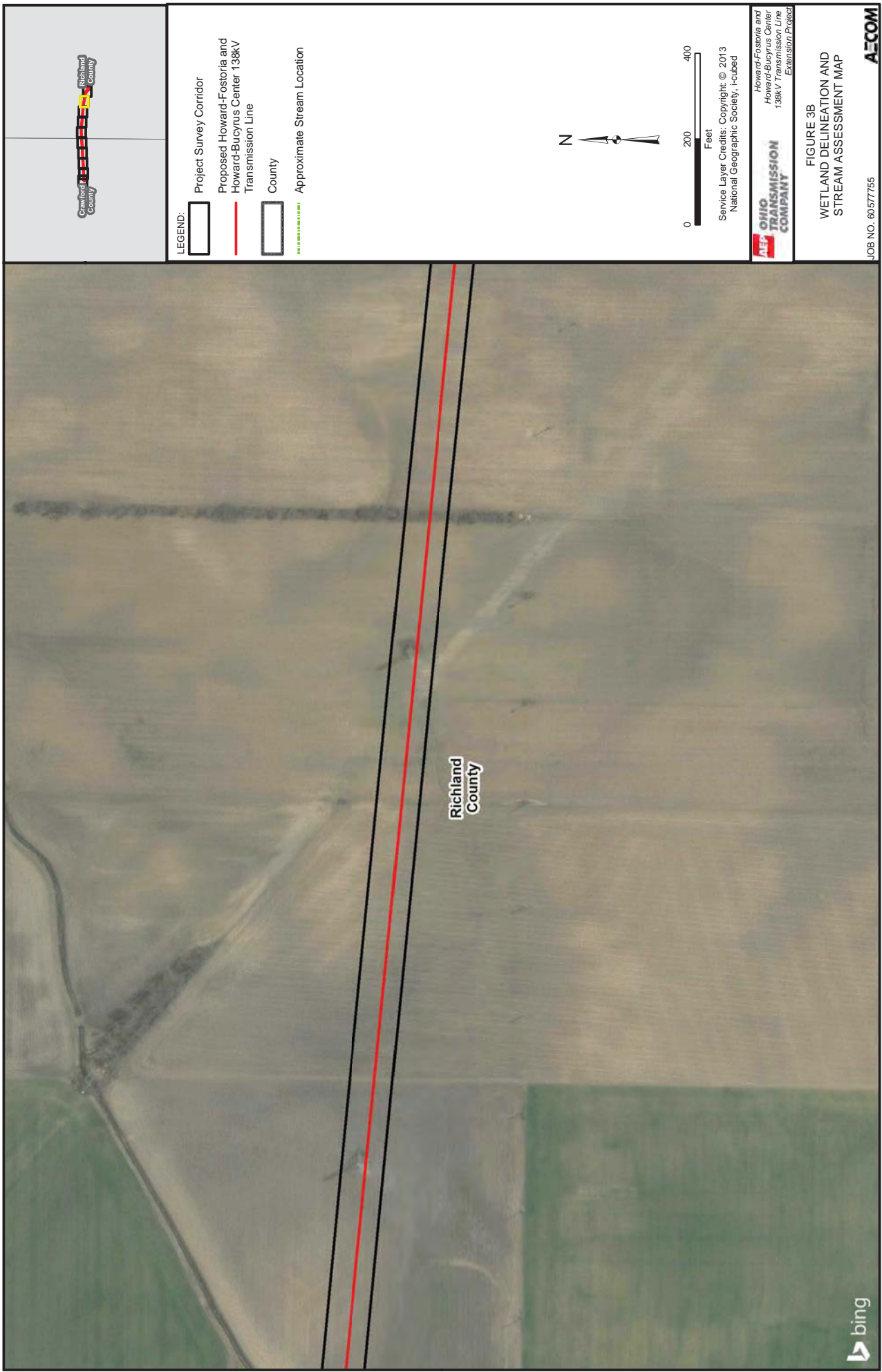


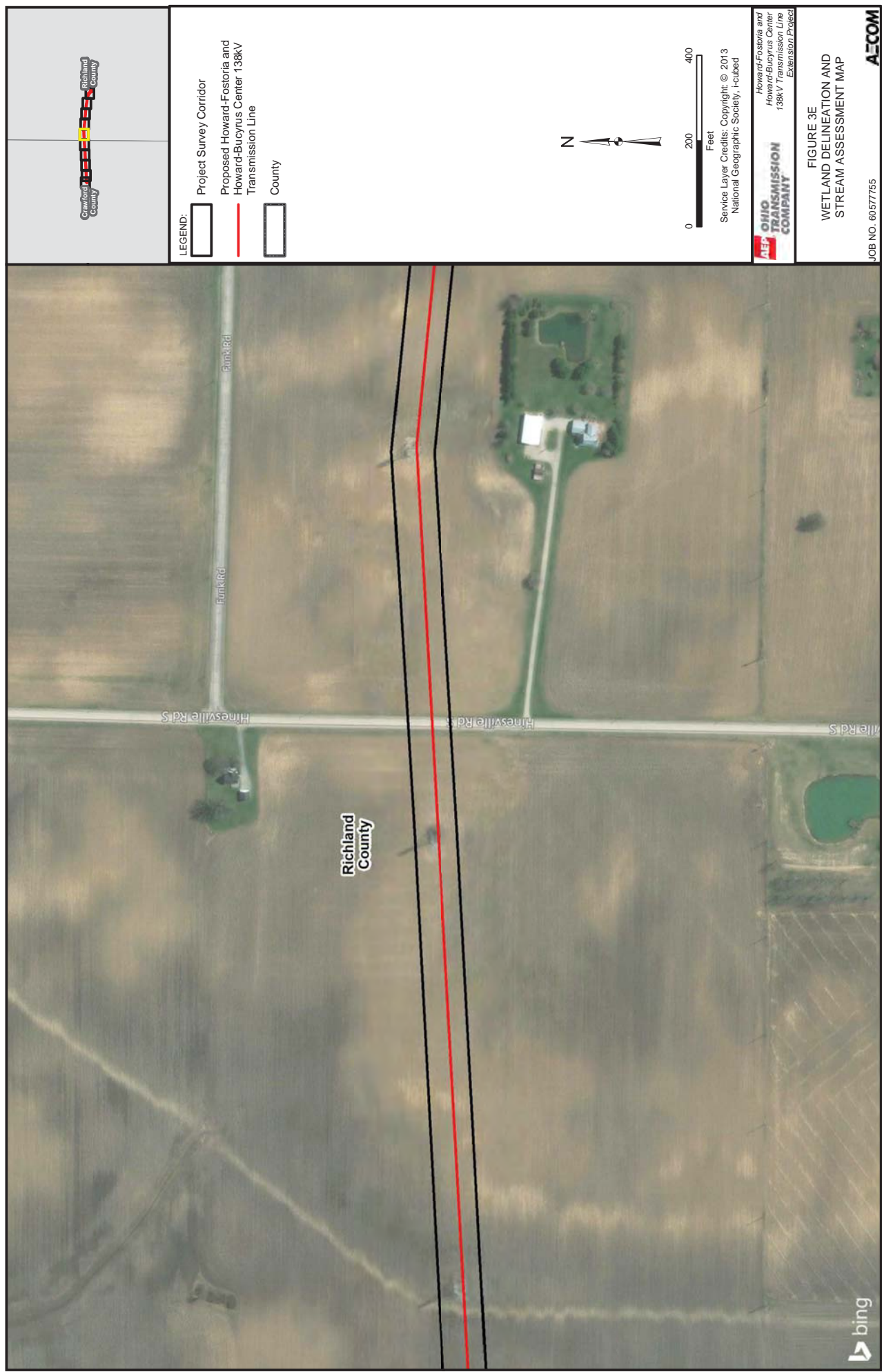
FIGURE 3A
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 60577755

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LEGEND:



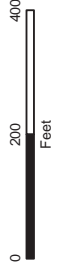
Project Survey Corridor



Proposed Howard-Fostoria and
Howard-Bucyrus Center 138kV
Transmission Line



County



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AEP OHIO TRANSMISSION COMPANY
Howard-Fostoria and
Howard-Bucyrus Center
138kV Transmission Line
Extension Project

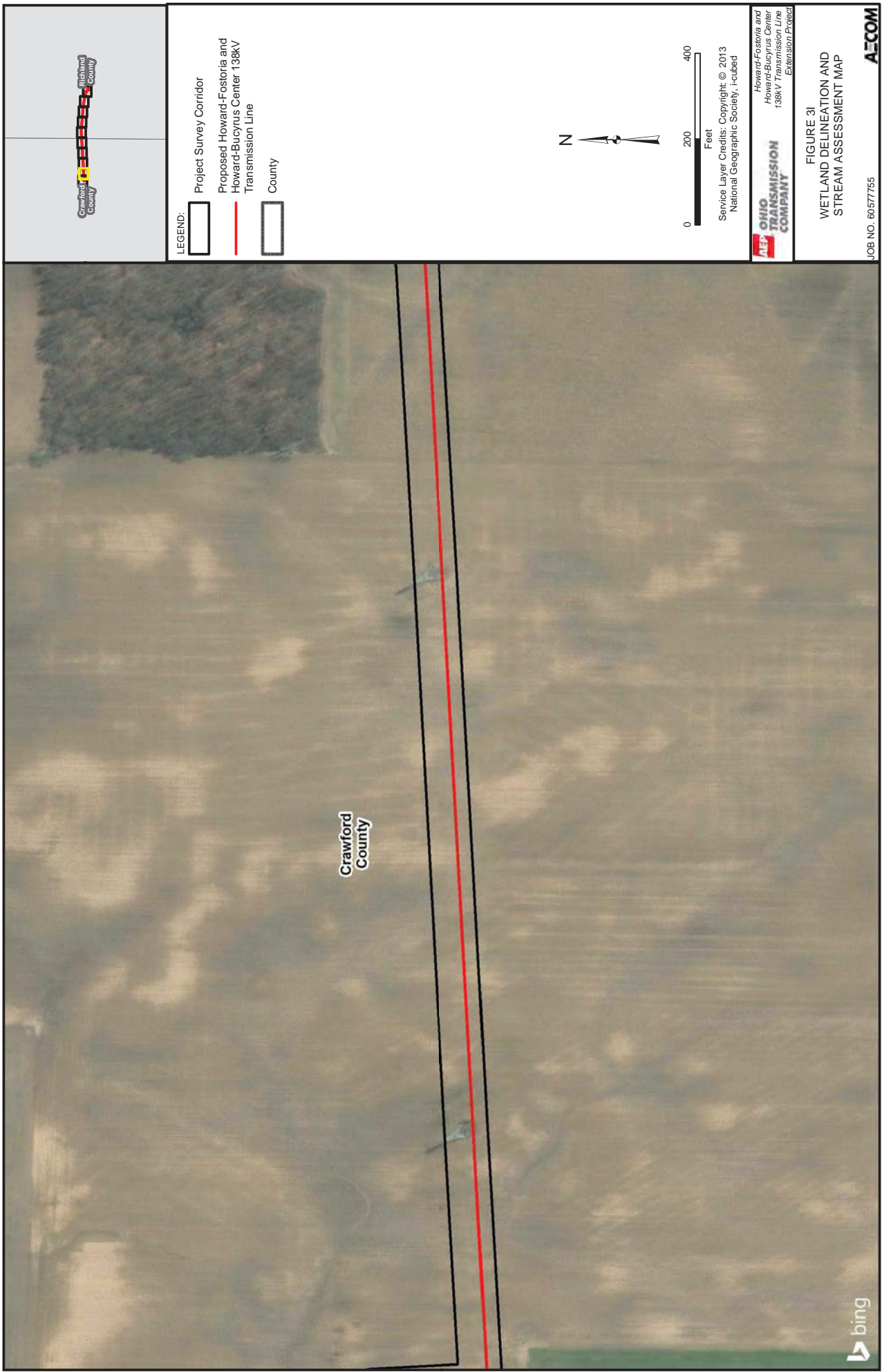
FIGURE 3G

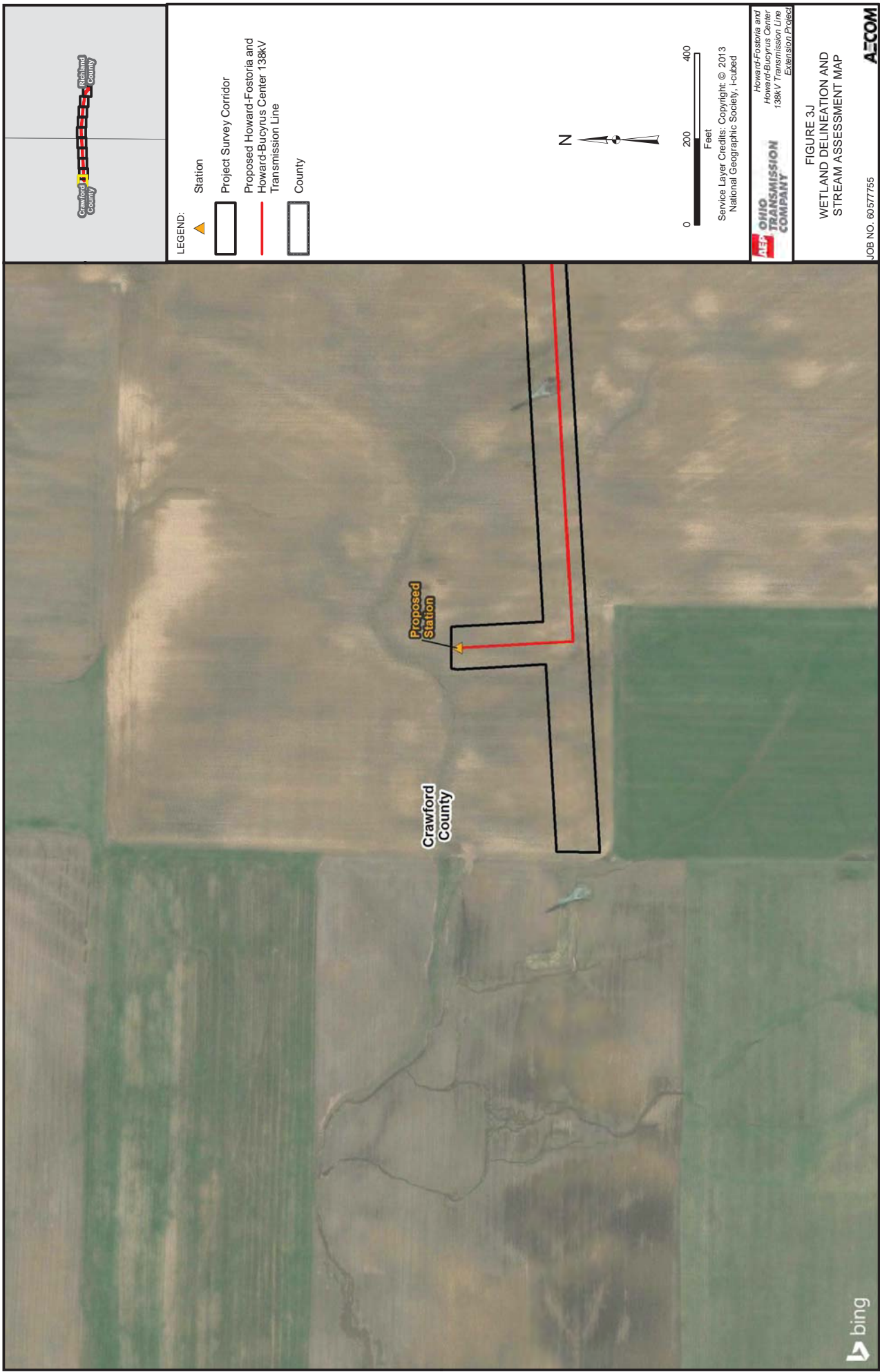
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

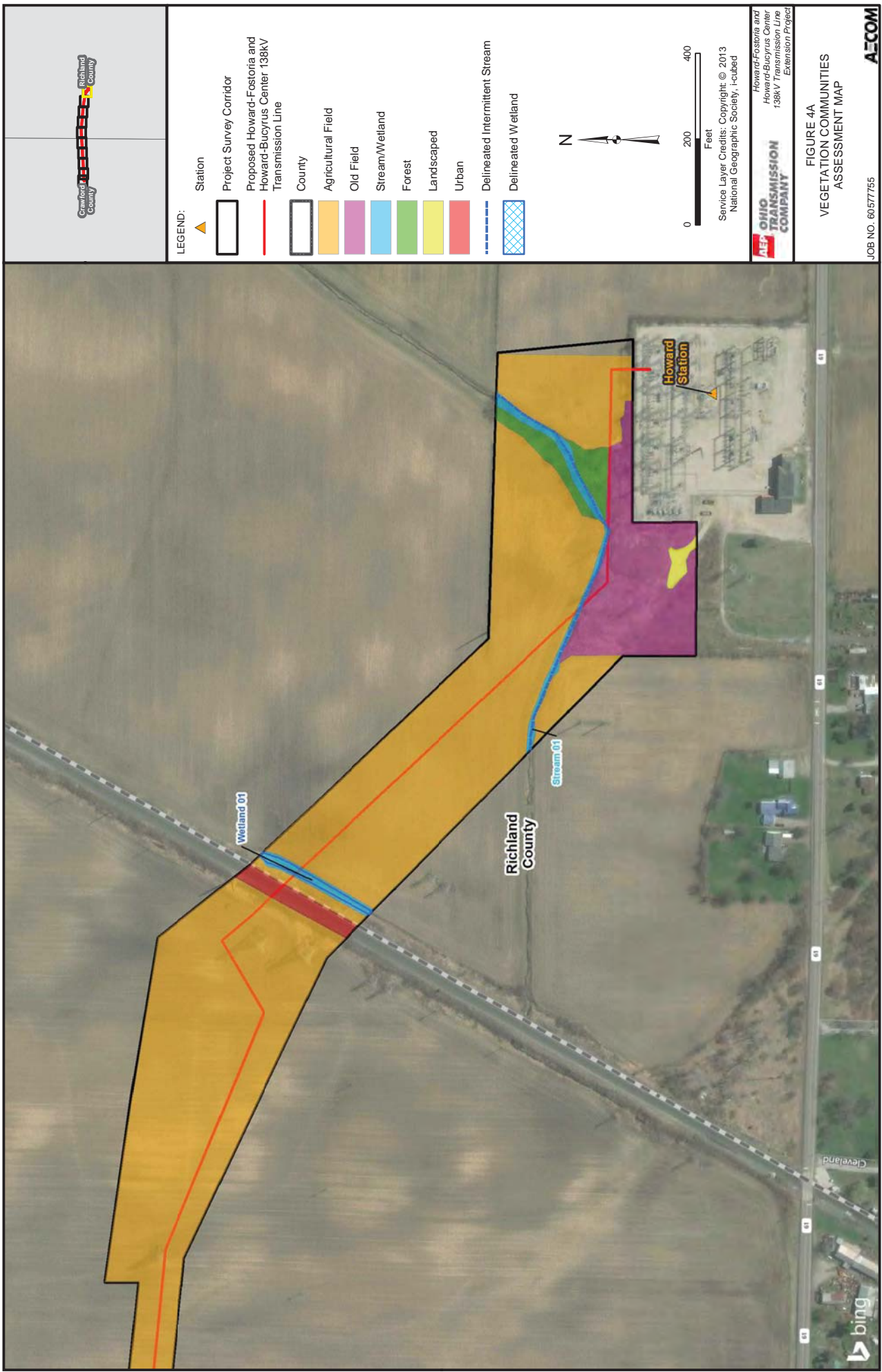
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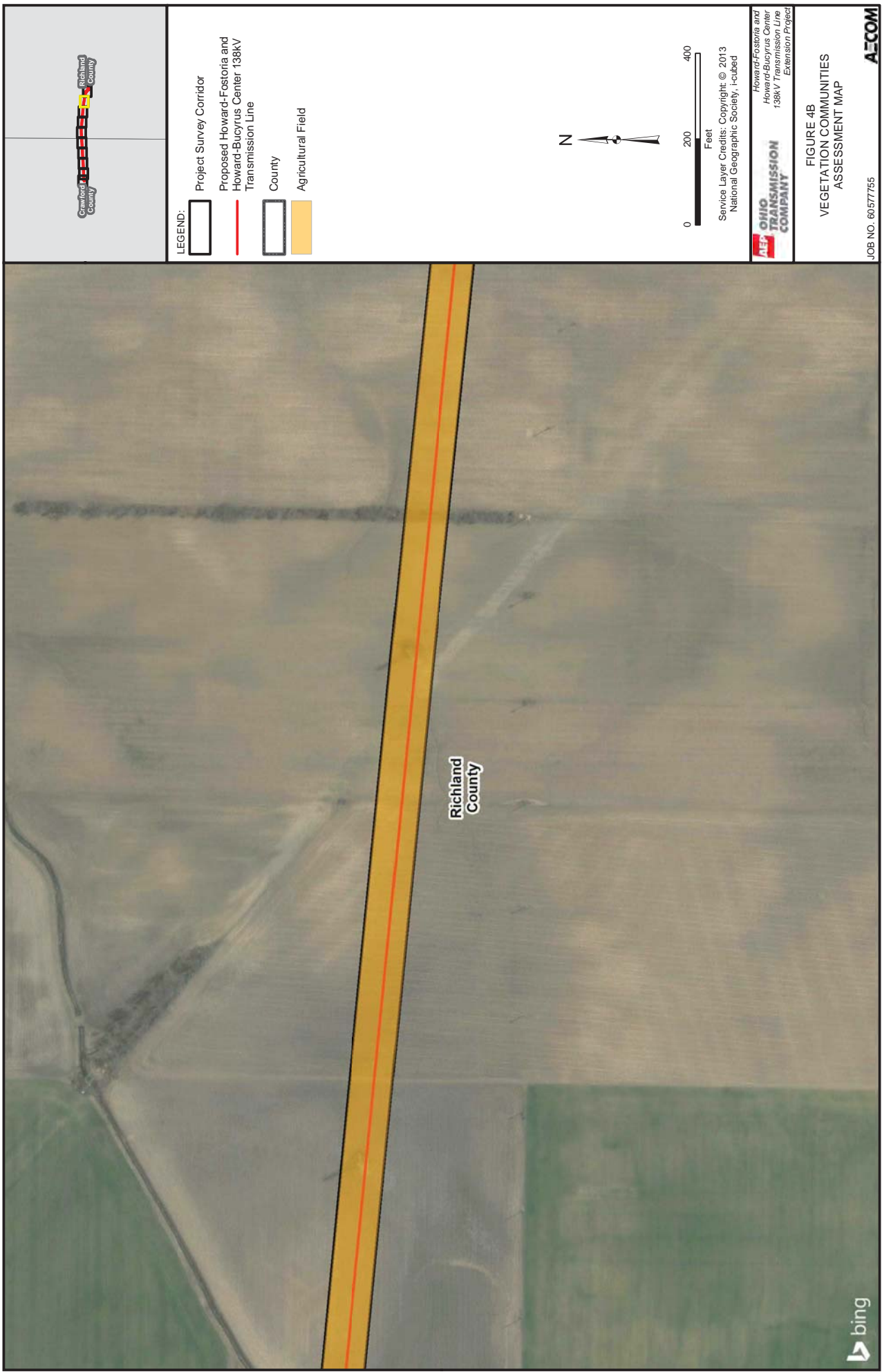
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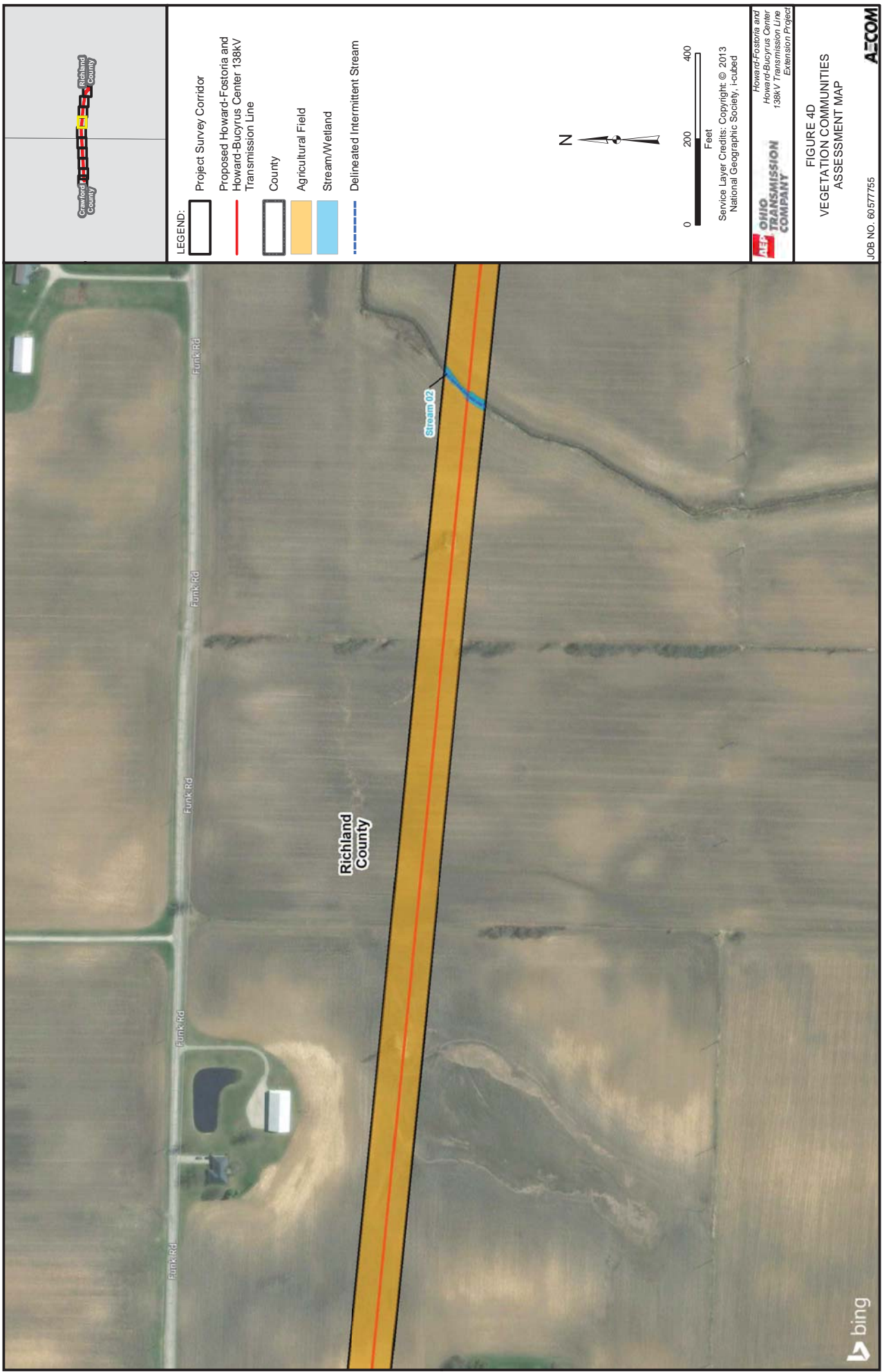


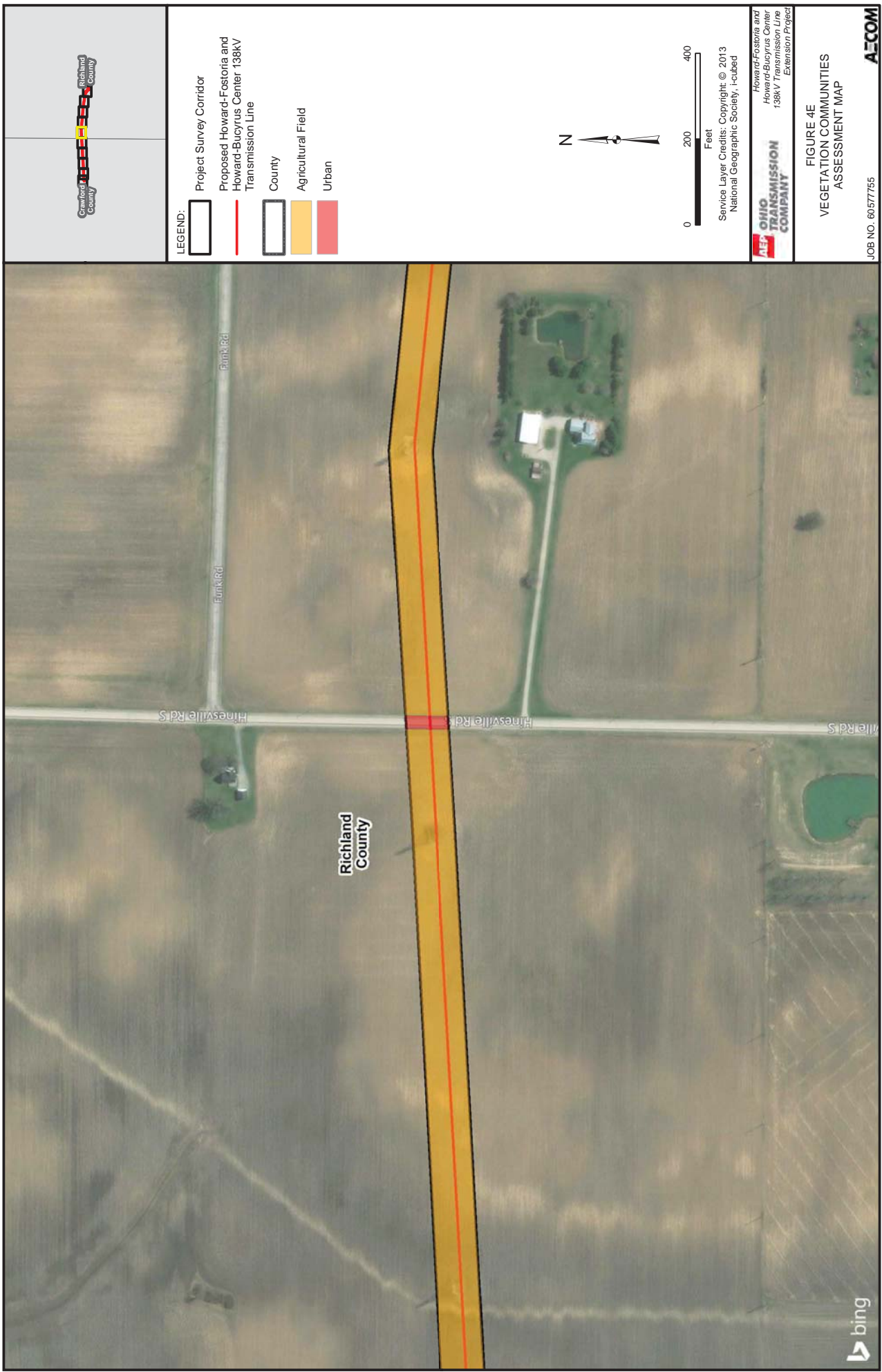


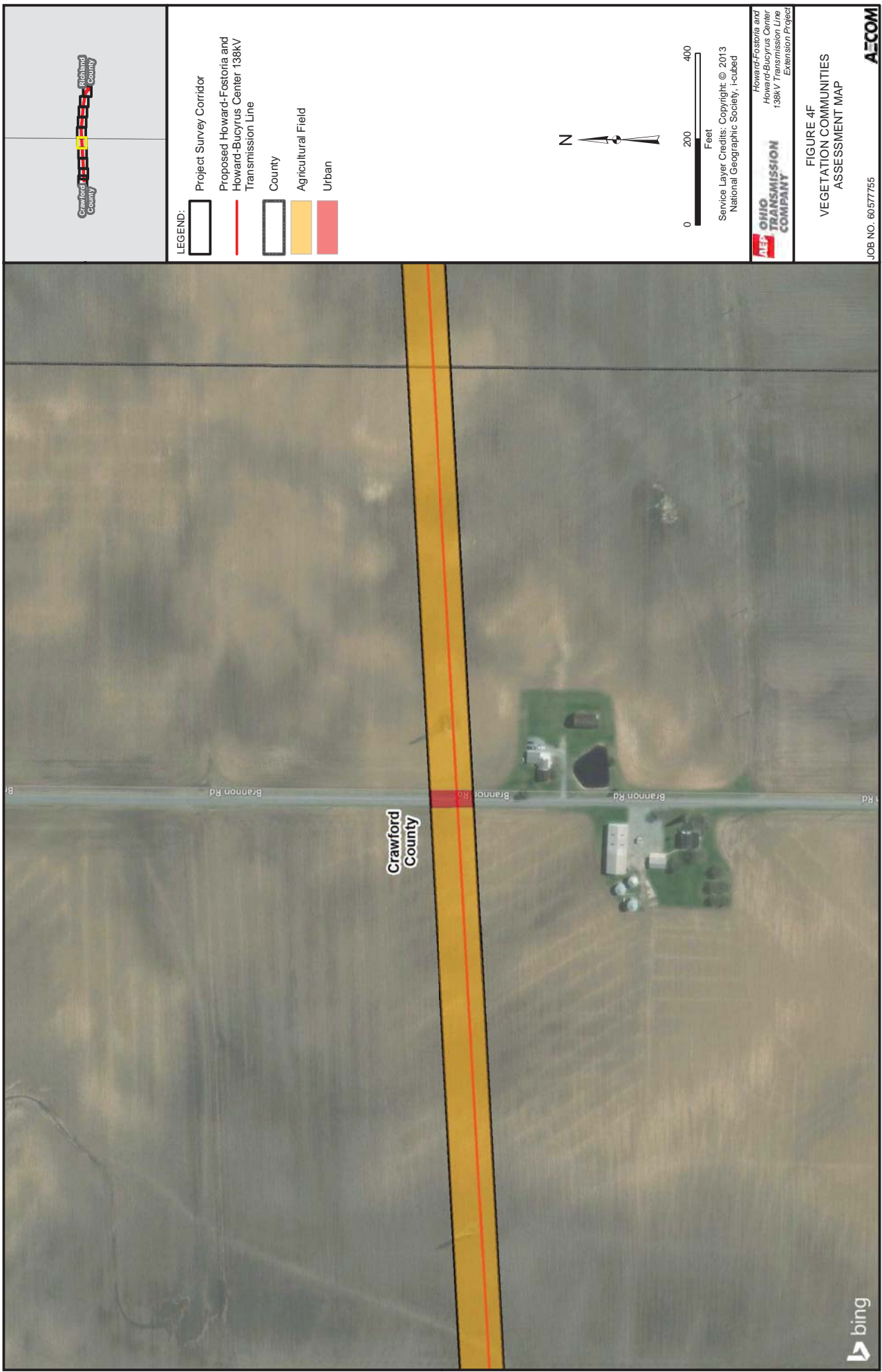




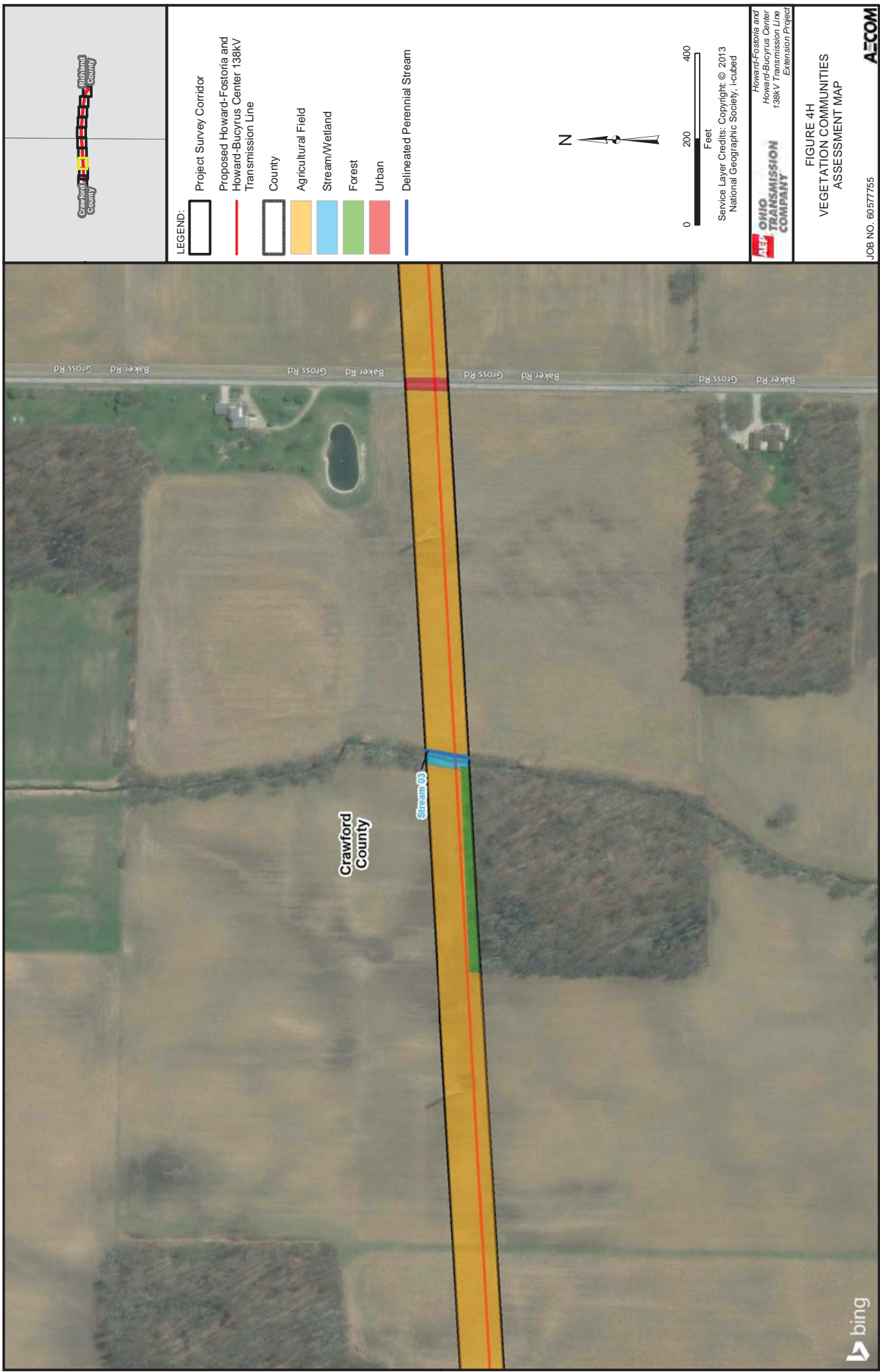


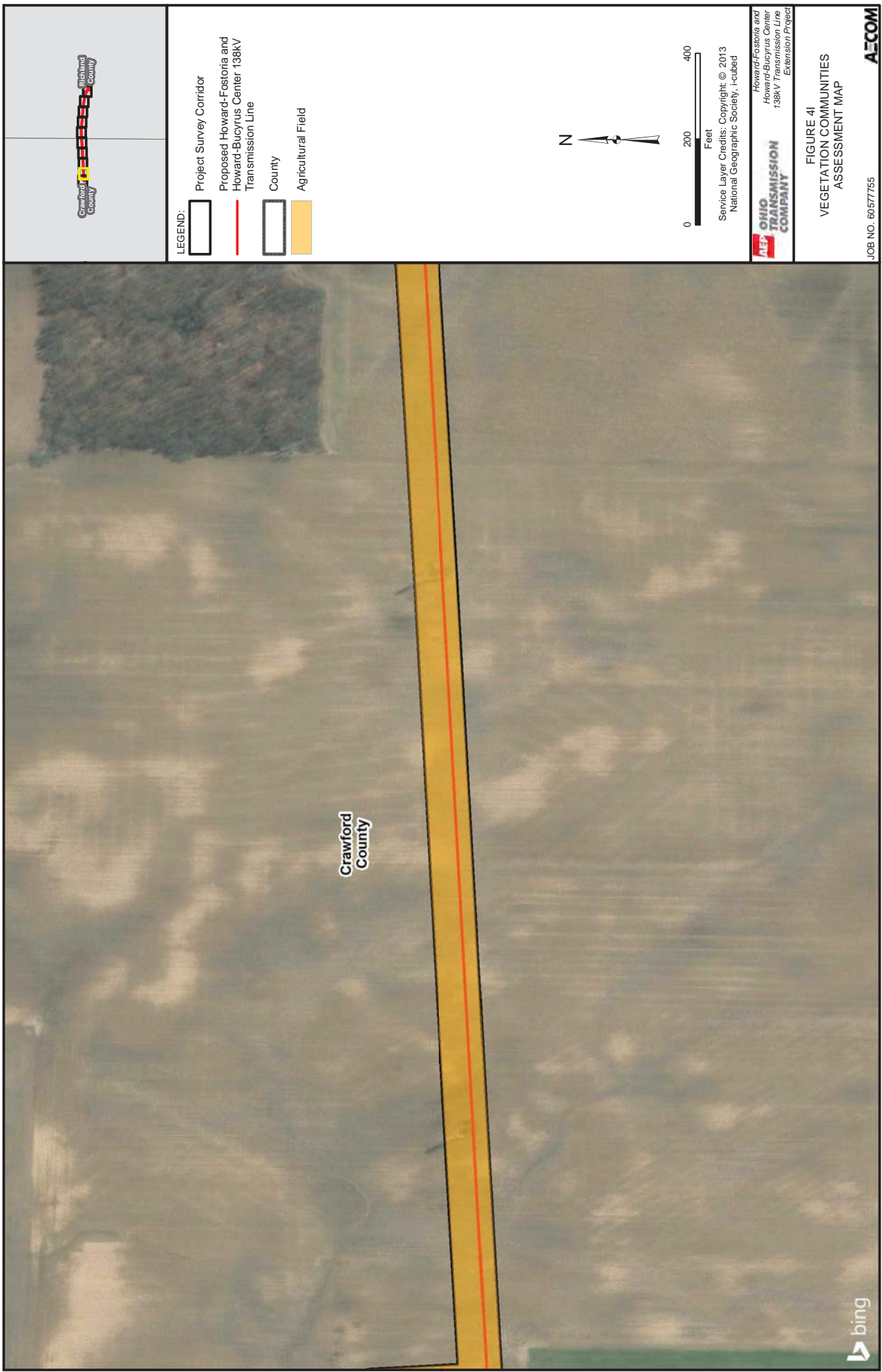


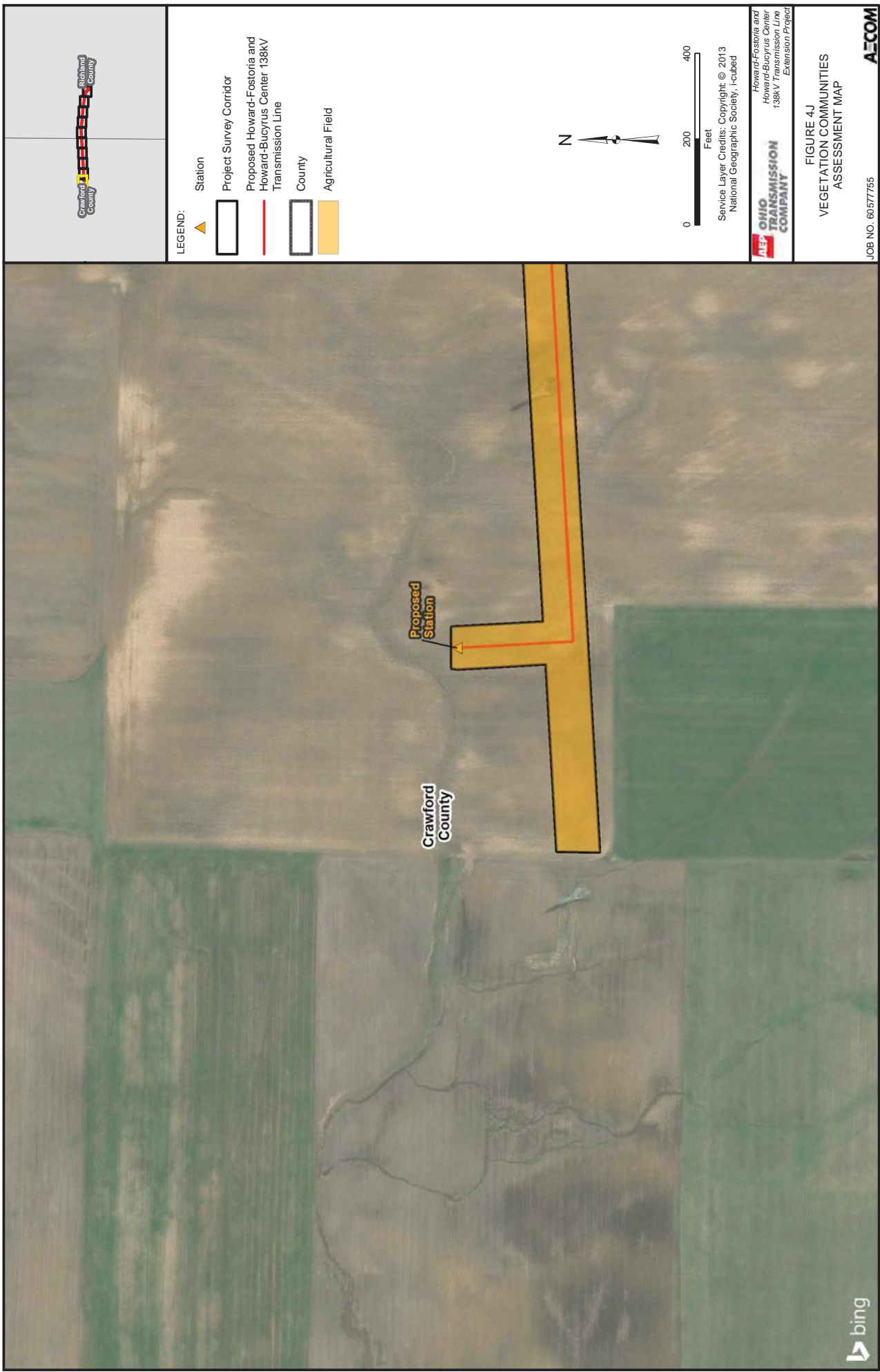












APPENDIX A**U.S. ARMY CORPS OF ENGINEERS WETLAND AND UPLAND FORMS**

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Blackfork IPP 138 kV Transmission Line City/County: Richland County Sampling Date: 29-May-18
 Applicant/Owner: AEP State: OH Sampling Point: **w-jbl-052918-01**
 Investigator(s): JBL,JTT Section, Township, Range: S 19 T 22N R 19W
 Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave
 Slope: 0.0% 0.0 ° Lat.: 40.853423 Long.: -82.685187 Datum: NAD 83
 Soil Map Unit Name: BnB, Pm NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: PEM,PSS railroad ditch	

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
Tree Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix nigra</u>	30	<input checked="" type="checkbox"/> 85.7%	OBL	
2. <u>Cornus amomum</u>	5	<input type="checkbox"/> 14.3%	FACW	
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	35	= Total Cover		
Herb Stratum (Plot size: _____)				
1. <u>Phalaris arundinacea</u>	50	<input checked="" type="checkbox"/> 62.5%	FACW	
2. <u>Typha angustifolia</u>	20	<input checked="" type="checkbox"/> 25.0%	OBL	
3. <u>Carex lacustris</u>	10	<input type="checkbox"/> 12.5%	OBL	
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	80	= Total Cover		
Woody Vine Stratu (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	<u>60</u>	x 1 =	<u>60</u>
FACW species	<u>55</u>	x 2 =	<u>110</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>115</u>	(A)	<u>170</u> (B)

Prevalence Index = B/A = 1.478

Hydrophytic Vegetation Indicators:

☒ **1 - Rapid Test for Hydrophytic Vegetation**

☒ **2 - Dominance Test is > 50%**

☒ **3 - Prevalence Index is ≤ 3.0¹**

☐ **4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)**

☐ **Problematic Hydrophytic Vegetation¹ (Explain)**

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

¹Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: w-ibl-052918-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features					Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-1	10YR	2/1	100					Loam	
1-13	10YR	5/2	85	10YR	4/6	15	C	M	Sandy Clay Loam

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ 5 cm Mucky Peat or Peat (S3)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1)

☐ Loamy Gleyed Matrix (F2)

☒ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☒ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ Coast Prairie Redox (A16)

☐ Dark Surface (S7)

☐ Iron Manganese Masses (F12)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☒

No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☒ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres on Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Gauge or Well Data (D9)

☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Drainage Patterns (B10)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☒ Geomorphic Position (D2)

☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?

Yes ☒

No ☐

Depth (inches): 3

Water Table Present?

Yes ☐

No ☒

Depth (inches):

Saturation Present?
(includes capillary fringe)

Yes ☐

No ☒

Depth (inches):

Wetland Hydrology Present?

Yes ☒

No ☐

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

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Blackfork IPP 138 kV Transmission Line City/County: Richland County Sampling Date: 29-May-18
 Applicant/Owner: AEP State: OH Sampling Point: **upl-jbl-052918-01**
 Investigator(s): JBL,JTT Section, Township, Range: S 19 T 22N R 19W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none
 Slope: 0.0% 0.0 ° Lat.: 40.853423 Long.: -82.685187 Datum: NAD 83
 Soil Map Unit Name: BnB NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

VEGETATION - Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: _____)				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>50</u> x 5 = <u>250</u> Column Totals: <u>100</u> (A) <u>375</u> (B) Prevalence Index = B/A = <u>3.750</u>
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
3. _____	0	<input type="checkbox"/> 0.0%		
4. _____	0	<input type="checkbox"/> 0.0%		
5. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		
<u>Herb Stratum</u> (Plot size: _____)				
1. <u>Phalaris arundinacea</u>	25	<input checked="" type="checkbox"/> 25.0%	FACW	
2. <u>Zea mays</u>	50	<input checked="" type="checkbox"/> 50.0%	UPL	
3. <u>Equisetum arvense</u>	10	<input type="checkbox"/> 10.0%	FAC	
4. <u>Toxicodendron radicans</u>	15	<input type="checkbox"/> 15.0%	FAC	
5. _____	0	<input type="checkbox"/> 0.0%		
6. _____	0	<input type="checkbox"/> 0.0%		
7. _____	0	<input type="checkbox"/> 0.0%		
8. _____	0	<input type="checkbox"/> 0.0%		
9. _____	0	<input type="checkbox"/> 0.0%		
10. _____	0	<input type="checkbox"/> 0.0%		
	100	= Total Cover		
<u>Woody Vine Stratu</u> (Plot size: _____)				
1. _____	0	<input type="checkbox"/> 0.0%		
2. _____	0	<input type="checkbox"/> 0.0%		
	0	= Total Cover		

Hydrophytic Vegetation Indicators:
☐ **1 - Rapid Test for Hydrophytic Vegetation**
☐ **2 - Dominance Test is > 50%**
☐ **3 - Prevalence Index is ≤ 3.0¹**
☐ **4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)**
☐ **Problematic Hydrophytic Vegetation¹ (Explain)**
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: I-ib1-052918-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR	3/1	100				Sandy Loam	

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

² Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)

☐ Histic Epipedon (A2)

☐ Black Histic (A3)

☐ Hydrogen Sulfide (A4)

☐ Stratified Layers (A5)

☐ 2 cm Muck (A10)

☐ Depleted Below Dark Surface (A11)

☐ Thick Dark Surface (A12)

☐ Sandy Muck Mineral (S1)

☐ 5 cm Mucky Peat or Peat (S3)

☐ Sandy Gleyed Matrix (S4)

☐ Sandy Redox (S5)

☐ Stripped Matrix (S6)

☐ Loamy Mucky Mineral (F1)

☐ Loamy Gleyed Matrix (F2)

☐ Depleted Matrix (F3)

☐ Redox Dark Surface (F6)

☐ Depleted Dark Surface (F7)

☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

☐ Coast Prairie Redox (A16)

☐ Dark Surface (S7)

☐ Iron Manganese Masses (F12)

☐ Very Shallow Dark Surface (TF12)

☐ Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present?

Yes ☐

No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ True Aquatic Plants (B14)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres on Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Gauge or Well Data (D9)

☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Drainage Patterns (B10)

☐ Dry Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?

Yes ☐

No ☒

Depth (inches):

Water Table Present?

Yes ☐

No ☒

Depth (inches):

Saturation Present?
(includes capillary fringe)

Yes ☐

No ☒

Depth (inches):

Wetland Hydrology Present?

Yes ☐

No ☒

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

Remarks:

APPENDIX B**OEPA WETLAND ORAM FORM**

I 01

Site: AEP Blackfork IPP Tline Rater(s): J. Lubbers; J. Tucker Date: 5/29/2018

1 1

max 6 pts

subtotal

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

w-jbl-052918-01

0.20 acres

1 2

max 14 pts.

subtotal

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

95 115

max 30 pts.

subtotal

- ☐ High pH groundwater (5)
☒ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)
- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)
- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☒ Recent or no recovery (1)
- ☐ 100 year floodplain (1)
☒ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)
- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)
- ☒ ditch
☒ tile
☐ dike
☐ weir
☐ stormwater input
- ☐ point source (nonstormwater)
☒ filling/grading
☒ road bed/RR track
☐ dredging
☒ Other: cattle

155

max 20 pts.

subtotal

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☒ Recent or no recovery (1)
- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)
- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☒ Recent or no recovery (1)

- Check all disturbances observed
- | | |
|---|---|
| <input type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input checked="" type="checkbox"/> farming |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

155

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

I 01

Site: AEP Blackfork IPP Tline	Rater(s): J. Lubbers; J. Tucker	Date: 5/29/2018
-------------------------------	---------------------------------	-----------------

15 5

w-jbl-052918-01

subtotal this page

0 15 5

max 10 pts.

subtotal

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

1 1 5

max 20pts.

subtotal

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☒ 0 Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other

b I I w

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☒ x Low (1)
☐ None (0)

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
☒ x Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/tussocks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☒ 1 Amphibian breeding pools

1

1 5

100

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

- 0 Absent <0.1ha (0.247 acres)
 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
 3 High 4ha (9.88 acres) or more

- 0 Absent
 1 Present very small amounts or if more common of marginal quality
 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
 3 Present in moderate or greater amounts and of highest quality

APPENDIX C**OEPA HHEI STREAM FORMS**



Primary Headwater Habitat Evaluation Form

62

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

SITE NAME/LOCATION **AEP Blackfork IPP**

hh-jbl-052918-01

SITE NUMBER **01**

RIVER BASIN

DRAINAGE AREA (mi²)LENGTH OF STREAM REACH (ft) **200**LAT. **40.85159**LONG. **-82.68254**

RIVER CODE

RIVER MILE

DATE **05/29/18**SCORER **JBL, JTT**COMMENTS **intermittent**

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

STREAM CHANNEL

☐ NONE / NATURAL CHANNEL☒ RECOVERED☐ RECOVERING☐ RECENT OR NO RECOVERYMODIFICATIONS: **channelized**

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 45%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 10%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 15%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 25%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **15.00%**

(A)

Substrate Percentages Total

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**TOTAL NUMBER OF SUBSTRATE TYPES: **5**

HHEI Metric Points

Substrate Max = 40

17

A + B

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

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

COMMENTS

MAXIMUM POOL DEPTH

(Inches): **6.00**

Pool Depth Max = 30

25

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

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

COMMENTS

AVERAGE BANKFULL WIDTH

(Feet): **5.00**

Bankfull Width Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH

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

COMMENTS

FLOODPLAIN QUALITY

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

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

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

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

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

<input type="checkbox"/> WWH Name:	<input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> CWH Name:	<input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name:	<input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

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

USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Richland** Township / City:

MISCELLANEOUS

Base Flow Conditions? (Y/N): ☒ Y Date of last precipitation: Quantity:
Photograph Information: **3 photos**
Elevated Turbidity? (Y/N): ☒ N Canopy (% open): **30%**
Were samples collected for water chemistry? (Y/N): ☒ N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) ☒ Y If not, please explain:

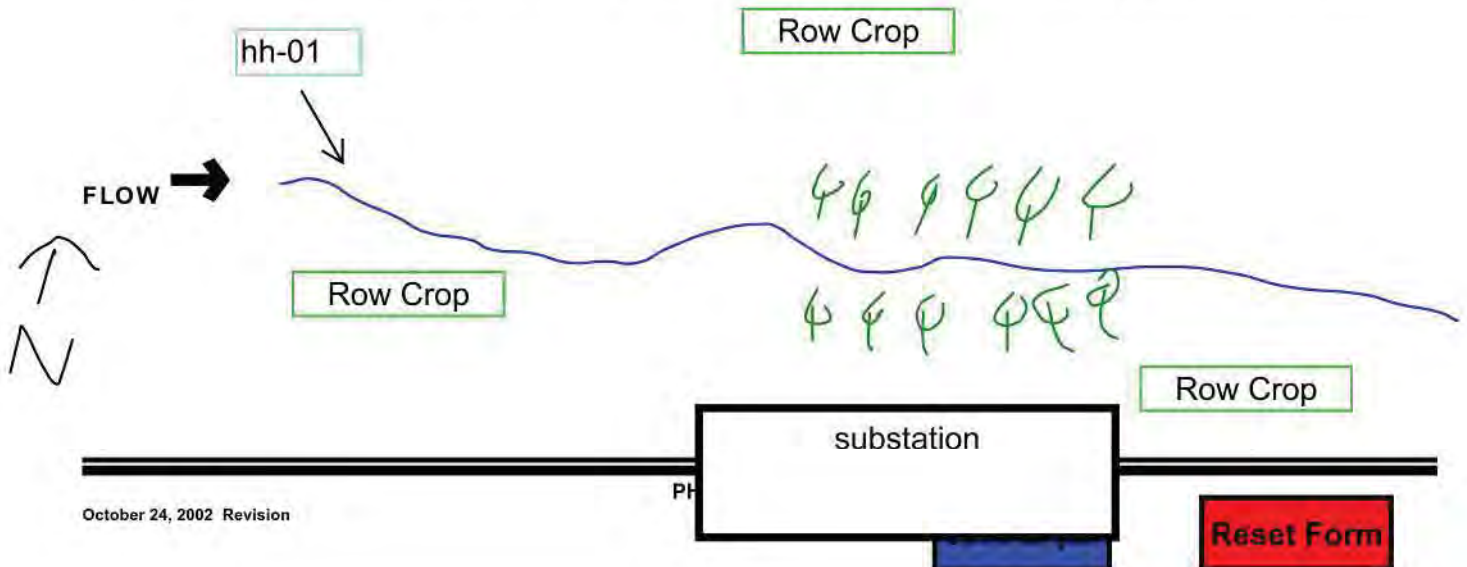
Additional comments/description of pollution impacts:

BIOTIC EVALUATION

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

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

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





Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION **AEP Blackfork IPP**
 hh-jbl-052918-02 SITE NUMBER **02** RIVER BASIN **02** DRAINAGE AREA (mi²) **0.02**
 LENGTH OF STREAM REACH (ft) **200** LAT. **40.85589** LONG. **-82.70569** RIVER CODE **02** RIVER MILE **0.02**
 DATE **05/29/18** SCORER **JTT, JBL** COMMENTS **intermittent**

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

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

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input checked="" type="checkbox"/> SILT [3 pt]	90%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10%
<input type="checkbox"/> BEDROCK [16 pt]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	0%	<input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%** (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6**TOTAL NUMBER OF SUBSTRATE TYPES: **2**HHEI
Metric
PointsSubstrate
Max = 40

8

A + B

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

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

COMMENTS **5.00** MAXIMUM POOL DEPTH (Inches): **5.00**

Pool Depth
Max = 30

25

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

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

COMMENTS **6.00** AVERAGE BANKFULL WIDTH (Feet): **6.00**

Bankfull
Width
Max=30

20

This information must also be completed

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

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/> (Per Bank)	<input type="checkbox"/>	<input type="checkbox"/> (Most Predominant per Bank)
<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	Moderate 5-10m	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture
COMMENTS		<input type="checkbox"/>	Conservation Tillage
		<input type="checkbox"/>	Urban or Industrial
		<input checked="" type="checkbox"/>	Open Pasture, Row Crop
		<input type="checkbox"/>	Mining or Construction

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

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

COMMENTS

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

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

STREAM GRADIENT ESTIMATE

<input checked="" type="checkbox"/> Flat (0.5 ft/100 ft)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (10 ft/100 ft)
--	---	---	---	--

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: Distance from Evaluated Stream
☐ CWH Name: Distance from Evaluated Stream
☐ EWH Name: Distance from Evaluated Stream

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

USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Township / City:

MISCELLANEOUS

Base Flow Conditions? (Y/N): ☒ Y Date of last precipitation: Quantity: 0.00
Photograph Information:
Elevated Turbidity? (Y/N): ☒ N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): ☒ N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) ☒ Y If not, please explain:

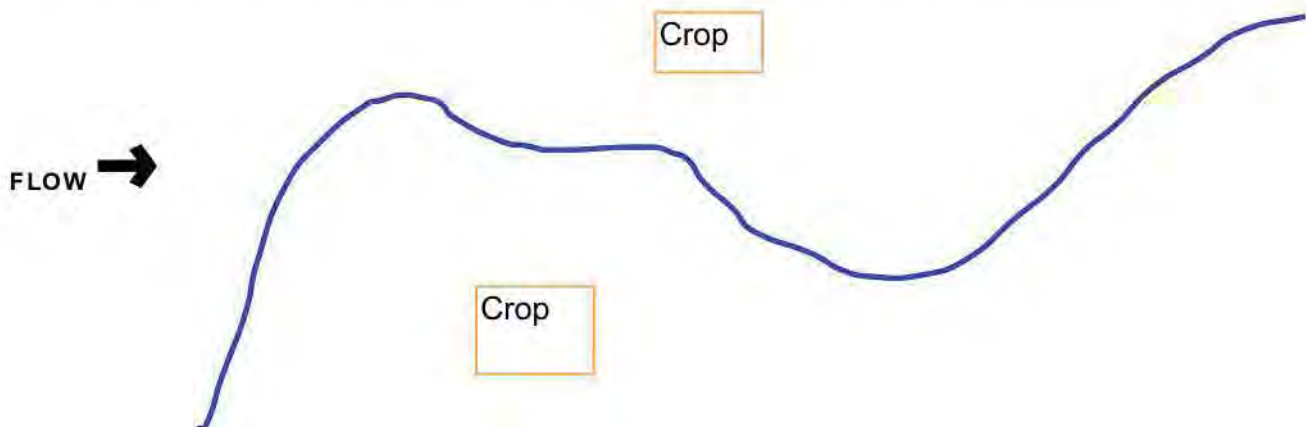
Additional comments/description of pollution impacts:

BIOTIC EVALUATION

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

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

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





Primary Headwater Habitat Evaluation Form

60

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

SITE NAME/LOCATION **AEP Blackfork IPP**

hh-jbl-053018-01

SITE NUMBER **01**

RIVER BASIN

DRAINAGE AREA (mi²)LENGTH OF STREAM REACH (ft) **200**LAT. **40.85521**LONG. **-82.74737**

RIVER CODE

RIVER MILE

DATE **05/30/18**SCORER **JBL, JTT**COMMENTS **perennial**

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

STREAM CHANNEL

☐

NONE / NATURAL CHANNEL

☒

RECOVERED

☐

RECOVERING

☐

RECENT OR NO RECOVERY

MODIFICATIONS:

channelized

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE

☐
☐
☐
☐
☐
☒

BLDR SLABS [16 pts]

BOULDER (>256 mm) [16 pts]

BEDROCK [16 pt]

COBBLE (65-256 mm) [12 pts]

GRAVEL (2-64 mm) [9 pts]

SAND (<2 mm) [6 pts]

PERCENT

 0%
 0%
 0%
 2%
 10%
 25%

TYPE

☒
☐
☐
☐
☐
☐

SILT [3 pt]

LEAF PACK/WOODY DEBRIS [3 pts]

FINE DETRITUS [3 pts]

CLAY or HARDPAN [0 pt]

MUCK [0 pts]

ARTIFICIAL [3 pts]

PERCENT

 55%
 5%
 0%
 3%
 0%
 0%
Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock

2.00%

(A)

Substrate Percentages
Total:

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

9

TOTAL NUMBER OF SUBSTRATE TYPES:

6

HHEI
Metric
PointsSubstrate
Max = 40

15

A + B

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

☐
☐
☒

> 30 centimeters [20 pts]

> 22.5 - 30 cm [30 pts]

> 10 - 22.5 cm [25 pts]

☐
☐
☐

> 5 cm - 10 cm [15 pts]

< 5 cm [5 pts]

NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH

(Inches):

8.00

Pool Depth
Max = 30

25

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

☐
☐
☒

> 4.0 meters (> 13') [30 pts]

> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]

> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]

☐
☐
☐

> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]

≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS

AVERAGE BANKFULL WIDTH

(Feet):

6.00

Bankfull
Width
Max=30

20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN WIDTH

☐ L ☐ R

(Per Bank)

☐

Wide >10m

☐

Moderate 5-10m

☒

Narrow <5m

☐

None

☐

None

COMMENTS

FLOODPLAIN QUALITY

☐ L ☐ R

(Most Predominant per Bank)

☐

Mature Forest, Wetland

☐

Immature Forest, Shrub or Old

☐

Field

☐

Residential, Park, New Field

☐

Fenced Pasture

☐ L ☐ R

Conservation Tillage

☐

Urban or Industrial

☐

Open Pasture, Row Crop

☒

Open Pasture, Row Crop

☐

Mining or Construction

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

Stream Flowing

☐

Subsurface flow with isolated pools (Interstitial)

☐

Moist Channel, isolated pools, no flow (Intermittent)

☐

Dry channel, no water (Ephemeral)

COMMENTS recent rain

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

None

☐

0.5

☐

1.0

☐

1.5

☐

2.0

☐

2.5

☐

3.0

☐

>3

STREAM GRADIENT ESTIMATE

☒

Flat (0.5 ft/100 ft)

☐

Flat to Moderate

☐

Moderate (2 ft/100 ft)

☐

Moderate to Severe

☐

Severe (10 ft/100 ft)

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: Distance from Evaluated Stream
☐ CWH Name: Distance from Evaluated Stream
☐ EWH Name: Distance from Evaluated Stream

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

USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: **Richland** Township / City:

MISCELLANEOUS

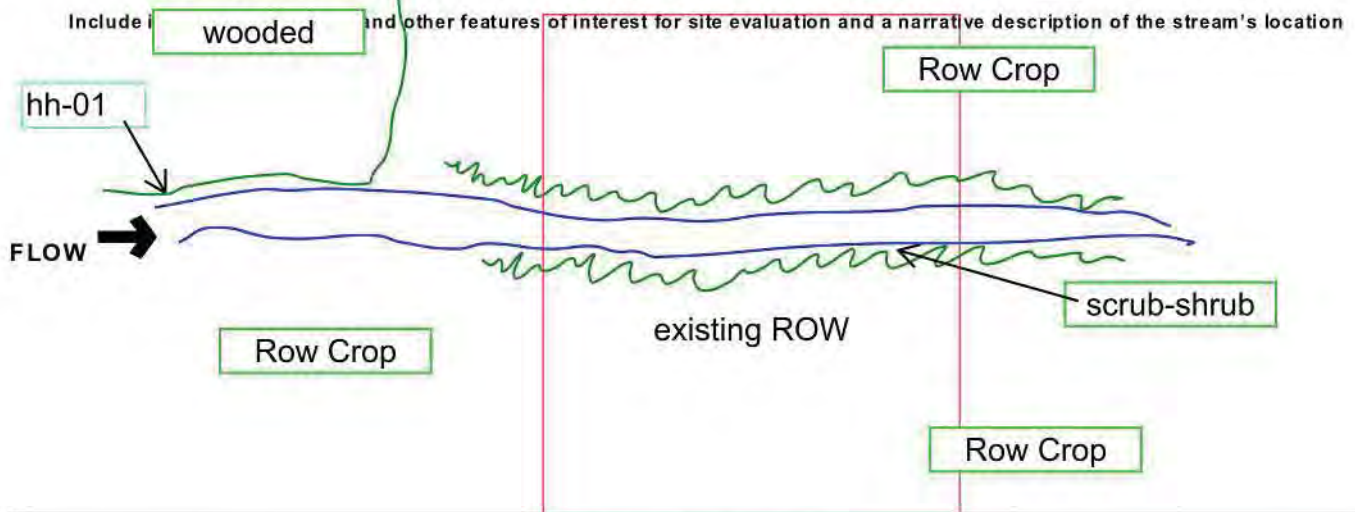
Base Flow Conditions? (Y/N): ☒ Y Date of last precipitation: Quantity:
Photograph Information: **3 photos**
Elevated Turbidity? (Y/N): ☒ N Canopy (% open): **40%**
Were samples collected for water chemistry? (Y/N): ☒ N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) ☒ Y If not, please explain:

Additional comments/description of pollution impacts:

BIOTIC EVALUATION

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

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



APPENDIX D**DELINEATED FEATURES PHOTOGRAPHS**

D1- DELINEATED WETLAND

Client Name:

AEP

Site Location:

Howard-Fostoria and Howard-Bucyrus Center
138 kV Transmission Line Extension Project

Project No.

60577755

Date:

May 29, 2018

Description:

Wetland 01

PEM/PSS
wetland

Category 1



Facing Northeast



Facing Southeast



Facing Northwest





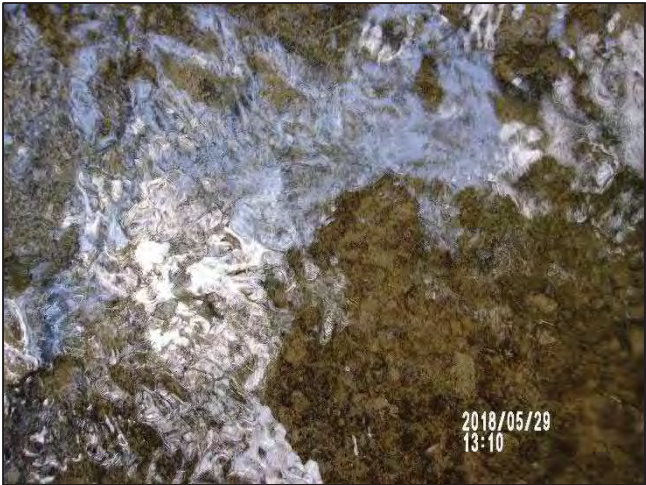
Facing Southwest





Soil Pit

D2 – DELINEATED STREAMS




Client Name: AEP	Site Location: Howard-Fostoria and Howard-Bucyrus Center 138 kV Transmission Line Extension Project	Project No. 60577755
----------------------------	--	--------------------------------

Date: May 29, 2018	 <p>Facing Upstream</p>  <p>Facing Downstream</p>  <p>Substrate</p>
Description: Stream 01 Intermittent Modified Class 2	

Client Name: AEP	Site Location: Howard-Fostoria and Howard-Bucyrus Center 138 kV Transmission Line Extension Project	Project No. 60577755
----------------------------	--	--------------------------------

Date: May 29, 2018	 <p>Facing Upstream</p>  <p>Facing Downstream</p>  <p>Substrate</p>
Description: Stream 02 Intermittent Modified Class 2	

Client Name: AEP	Site Location: Howard-Fostoria and Howard-Bucyrus Center 138 kV Transmission Line Extension Project	Project No. 60577755
----------------------------	--	--------------------------------

Date: May 30, 2018	 <p>2018/05/30 08:48</p>
Description: Stream 03 Perennial Modified Class 2	
	 <p>2018/05/30 08:48</p>
	 <p>2018/05/30 08:49</p>

Facing Upstream

Facing Downstream

Substrate

APPENDIX E**CORRESPONDENCE LETTERS FROM USFWS AND ODNR**



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

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

July 18, 2018

Aaron Geckle
AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Re: 18-663; Blackfork IPP Project

Project: The Project consists of the construction of approximately 5.1 miles of new 138 kV electric transmission line between the existing Howard Station and the proposed Loss Creek Station.

Location: The proposed project is located in Richland and Crawford Counties, Ohio.

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

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

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

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

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

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

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

The project is within the range of the black sandshell (*Ligumia recta*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The project is within the range of the greater redhorse (*Moxostoma valenciennesi*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this or other aquatic species.

The project is within the range of the Blanding's turtle (*Emydoidea blandingii*), a state threatened species. This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the blue-spotted salamander (*Ambystoma laterale*), a state endangered species. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. 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 a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the loggerhead shrike (*Lanius ludovicianus*), a state endangered bird. The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.

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

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

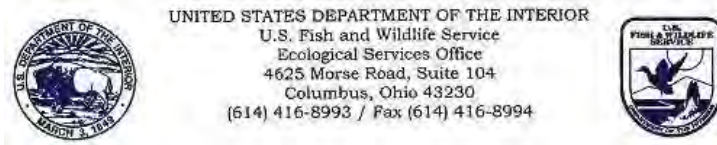
http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

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

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

Bell, Sarah

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, May 24, 2018 10:08 AM
To: Stallone, Charlotte
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: AEP Blackfork IPP Project Richland and Crawford Counties Ohio



TAILS# 03E15000-2018-TA-1334

Dear Ms. Stallone,

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

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

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

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine

if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

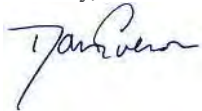
If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend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

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

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

Sincerely,



Dan Everson
Field Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Appendix D FAA Correspondence Letters



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-AGL-16722-OE

Issued Date: 09/06/2018

Dennis Fairley
American Electric Power
700 Morrison Road
Gahanna, OH 43230

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole STR 1B
Location:	Shelby, OH
Latitude:	40-51-04.57N NAD 83
Longitude:	82-40-51.87W
Heights:	1118 feet site elevation (SE) 82 feet above ground level (AGL) 1200 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

☐ At least 10 days prior to start of construction (7460-2, Part 1)
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 03/06/2020 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

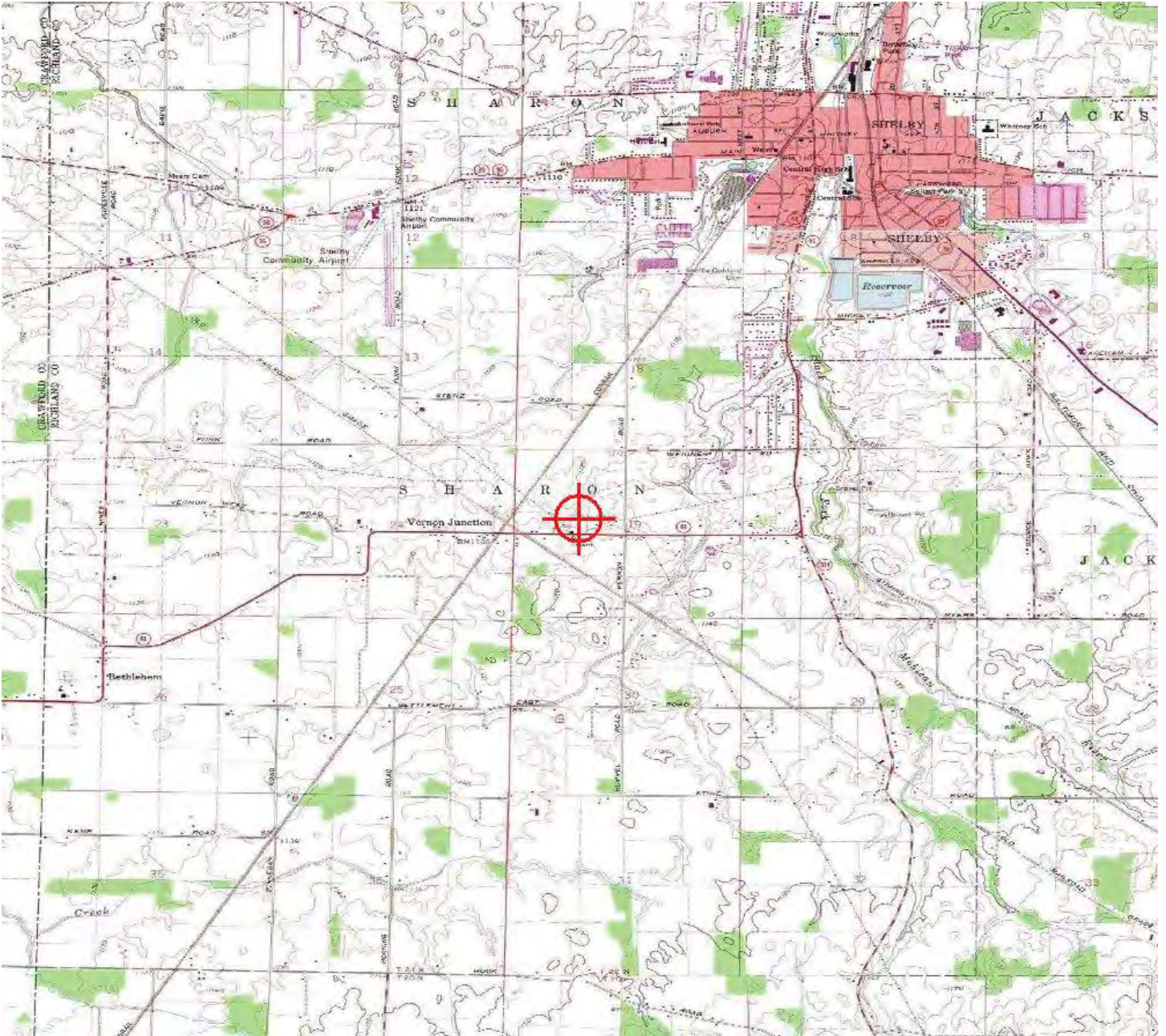
If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-AGL-16722-OE.

Signature Control No: 383811050-384337880

(DNE)

Vivian Vilaro
Specialist

Attachment(s)
Map(s)





Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-AGL-16723-OE

Issued Date: 09/06/2018

Dennis Fairley
American Electric Power
700 Morrison Road
Gahanna, OH 43230

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole STR 2A
Location:	Shelby, OH
Latitude:	40-51-13.74N NAD 83
Longitude:	82-41-07.79W
Heights:	1123 feet site elevation (SE)
	119 feet above ground level (AGL)
	1242 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- ☒ At least 10 days prior to start of construction (7460-2, Part 1)
☒ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 03/06/2020 unless:

- the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
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- the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-AGL-16723-OE.

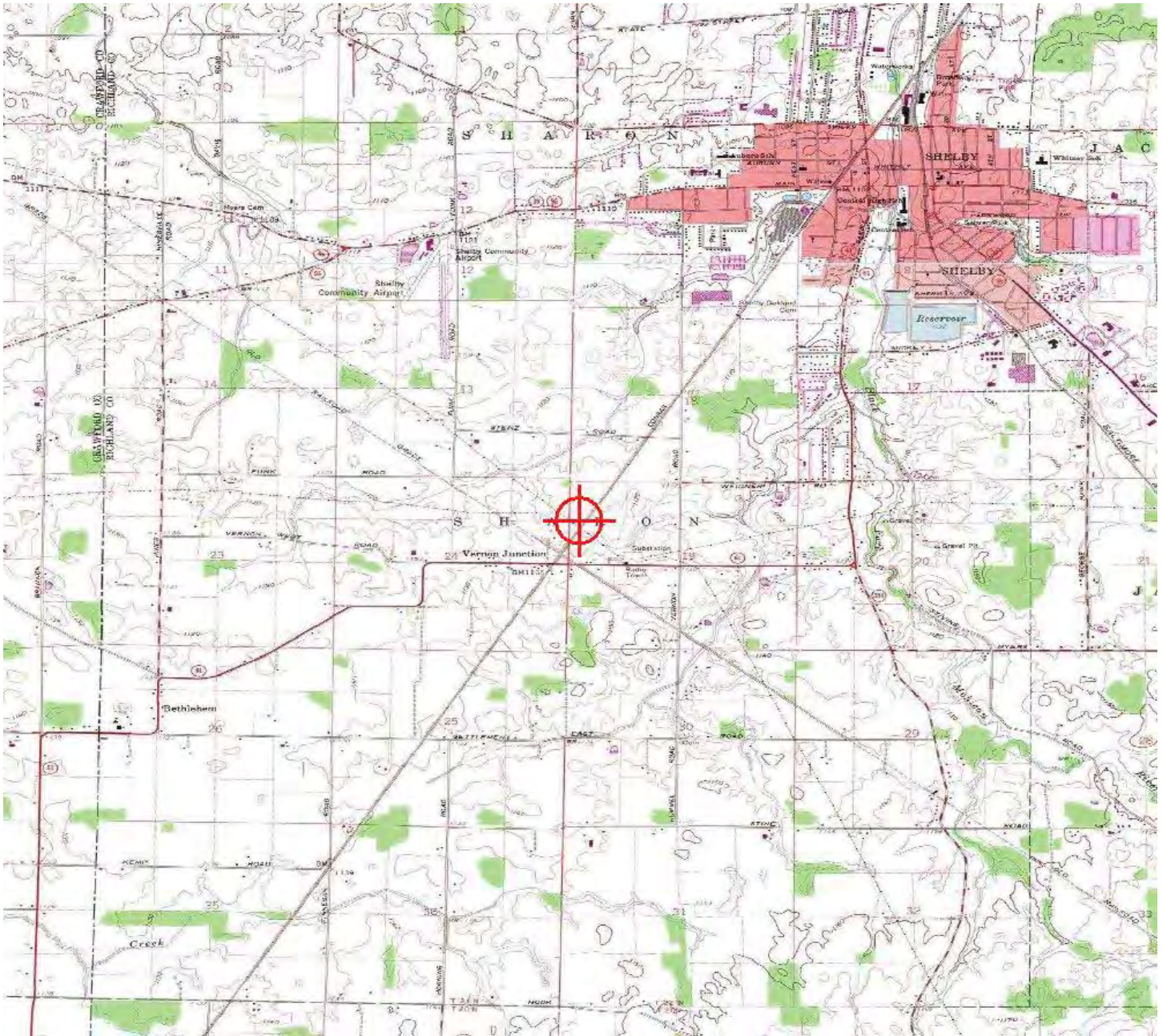
Signature Control No: 383811051-384338059

(DNE)

Vivian Vilaro
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2018-AGL-16723-OE







Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-AGL-16724-OE

Issued Date: 09/06/2018

Dennis Fairley
American Electric Power
700 Morrison Road
Gahanna, OH 43230

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Utility Pole STR 2B
Location:	Shelby, OH
Latitude:	40-51-14.41N NAD 83
Longitude:	82-41-08.54W
Heights:	1123 feet site elevation (SE) 60 feet above ground level (AGL) 1183 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

☐ At least 10 days prior to start of construction (7460-2, Part 1)
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Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

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If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-AGL-16724-OE.

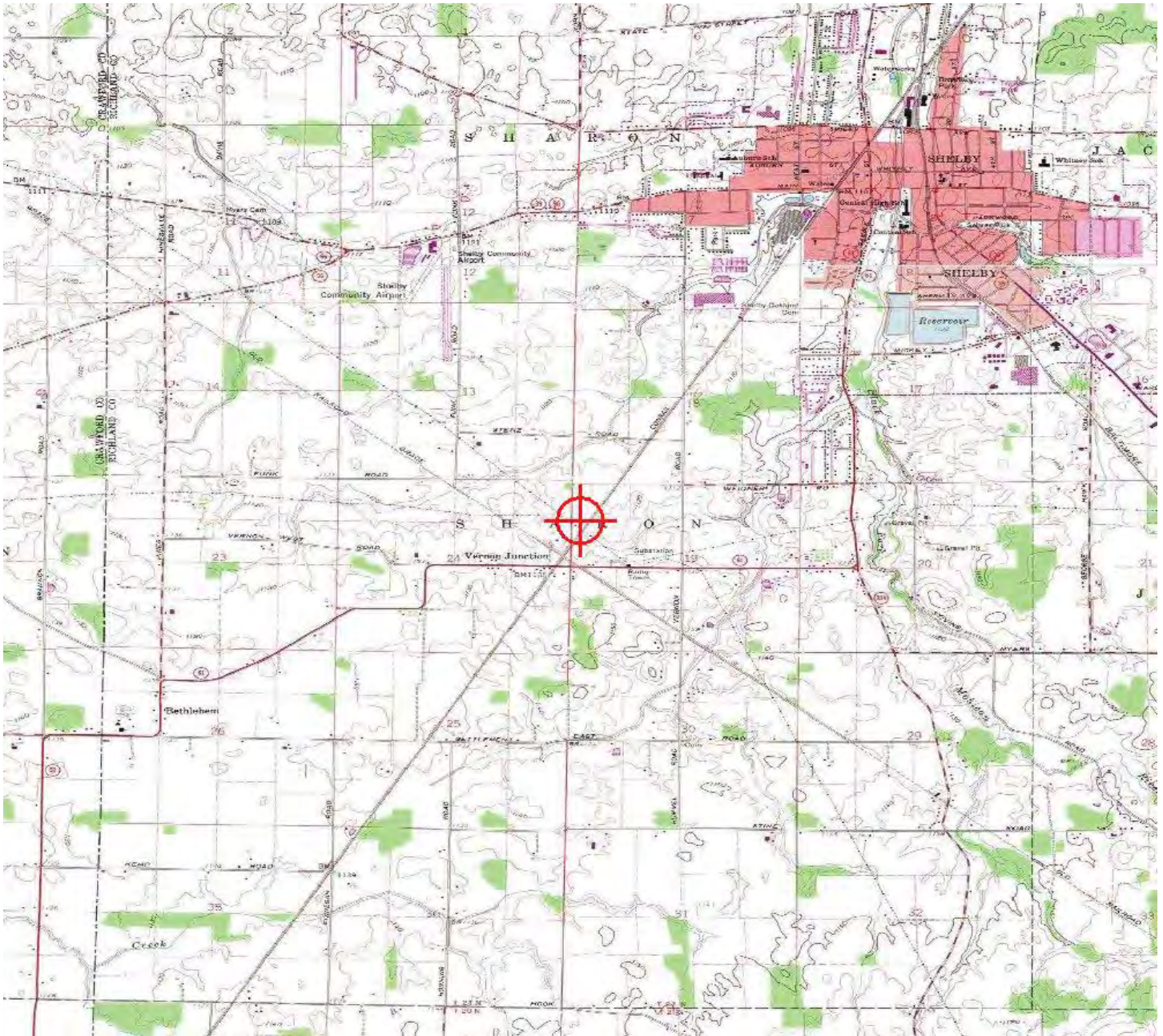
Signature Control No: 383811052-384337879

(DNE)

Vivian Vilaro
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2018-AGL-16724-OE



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/28/2018 1:49:22 PM

in

Case No(s). 18-1389-EL-BLN

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