



Legal Department

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

October 20, 2016

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

Hector Garcia
Senior Counsel –
Regulatory Services
(614) 716-3410 (P)
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**Re: Case No. 16-1770-EL-BLN Request for Expedited Treatment:
In the Matter of the Letter of Notification for the
Poston-Good Hope 138kV Transmission Line Rebuild Project No. 2**

Dear Chairman Haque,

Attached please find a copy of the Letter of Notification (LON) for the above-referenced 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 via electronic message. The Company will also submit a check in the amount of \$2,000 to the Treasurer, State of Ohio, for Fund 5610 for the expedited fees.

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

Respectfully Submitted,

/s/ Hector Garcia

Hector Garcia
Counsel for AEP Ohio Transmission Company, Inc.

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

**LETTER OF
NOTIFICATION
FOR Poston-
Good Hope #2
(Poston-Structure
71) 138 kV
Transmission Line
Rebuild Project**



PUCO Case No. 16-1770-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.

October 20, 2016

LETTER OF NOTIFICATION FOR POSTON-GOOD HOPE #2 (Poston-Structure 71) 138 KV
TRANSMISSION LINE REBUILD PROJECT

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LETTER OF NOTIFICATION

**AEP Ohio Transmission Company, Inc.'s Poston-Good Hope #2 (Poston-Structure 71) 138
kV Transmission Line Rebuild Project**

4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco") is providing the following information to the Ohio Power Siting Board ("OPSB") in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

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

AEP Ohio Transco proposes the Poston-Good Hope #2 (Poston-Structure 71) 138 kV Transmission Line Rebuild Project ("Project"), which is located in Athens and Hocking Counties, Ohio. The Project involves rebuilding approximately 12.9 miles of existing 138 kV transmission line between Poston Station and Structure 71 of the Poston-Harrison 138 kV line, and is identified as part of PJM Reference Number B2256.

The Project consists of rebuilding the existing 138 kV single-circuit transmission line within an existing right-of-way ("ROW") between Poston Station and Structure 71. Figures 1A through 1C show the location of the 12.9-mile long Project in relation to the surrounding vicinity.

The Project meets the requirements for a Letter of Notification because it is within the types of projects defined by Item (2)(b) of 4906-1-01 Appendix A Application Requirement Matrix for Electric Power Transmission Lines. This item states:

2. *Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure, for a distance of:*

(b) More than two miles.

B(2) Statement of Need

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

As part of the 2017 RTEP process, PJM identified several N-1-1 contingency violations requiring upgrades to remediate. These violations include:

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Poston-Good Hope #2 (Poston-Structure 71)
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- Loading above 100% of emergency capability on Delano-Scioto Trail 138 kV branch and Scioto Trail-Scippo 138 kV branch.
- Voltages below 92% at Circleville Station, Delano Station, East Scippo Switch Station, Ross Station, Scioto Trail Station, Scippo Station, Clayburne Switch Station, Biers Run Station, Hopetown Station, and Seaman Station.
- Voltage drops exceeding 8% at Adams Station, Circleville Station, Delano Station, East Scippo Switch Station, Ross Station, Scioto Trail Station, Scippo Station, Clayburne Switch Station, Biers Run Station, and Seaman Station.

To correct these violations, AEP Ohio Transco proposed a new project to upgrade the entire 138 kV transmission line from Harrison Station in southern Columbus to Ross Station in Chillicothe, which includes the Project. PJM confirmed the Project corrects the cited violations, made the Project mandatory, and assigned to AEP Ohio Transco the responsibility to make the required changes.

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.

The location of the Project in relation to existing transmission lines and stations is shown on Figures 1A through 1C. The Project directly impacts the following existing facilities:

- Poston Station, Good Hope Switch, and Harrison Station
- Poston-Harrison 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.

The Project is along an existing transmission line ROW. Since the existing line has been in place for over 60 years, AEP Ohio Transco determined that rebuilding entirely on the existing ROW centerline will have the least impact. At this time, no other alternatives have been considered.

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.

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AEP Ohio Transco informs affected property owners and tenants about the Project through several different mediums. Within seven days of filing this Letter of Notification ("LON"), AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of OAC Section 4906-6-08(A)(1-6). Further, AEP Ohio Transco has mailed (or will mail) a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner AEP Ohio Transco may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). AEP Ohio Transco maintains a website (<http://aeptransmission.com/ohio/>) which provides the public access to an electronic copy of this LON and the public notice for this LON. A paper copy of the LON will be served to the public library in each political subdivision for the Project. AEP Ohio Transco retains ROW land agents that discuss Project timelines, construction and restoration activities and convey this information to affected owners and tenants.

B(6) Construction Schedule

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

Construction of the Project is planned to begin in November 2016 with an anticipated in-service date of December 2018.

B(7) Area Map

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

Figures 1A through 1C and Figures 2A through 2C provide the Project area on maps of 1:24,000-scale. Figures 1A through 1C provide the Project centerline on the United States Geological Survey (USGS) 7.5-minute topographic maps of the Nelsonville, Union Furnace, and New Plymouth quadrangles. Figures 2A through 2C show the Project area on recent aerial photography, as provided by Bing Maps. To access the Project location from the OPSB Office, take East Broad Street approximately 0.1 mile west. Turn left onto U.S. 23 (South 3rd Street). Go approximately 0.6 mile to I-70 East toward Wheeling. After 4.2 miles, take Exit 105A onto U.S. 33. Go approximately 57 miles before taking the ramp right for State Route 691. Turn right onto East Canal Street and then immediately left on State Route 691. Go 4.7 miles and bear left onto Poston Road (County Road 110). After 0.5 mile, Poston Station is on the left just west of the intersection of Industrial Drive and Poston Road. Existing Structure 71 is located approximately 12.7 miles to the northwest, two miles south of the City of Logan at latitude 39.488, longitude -82.376.

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.

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Poston-Good Hope #2 (Poston-Structure 71)
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The Project will be constructed within existing ROW. No new easements, options, and/or other land use agreements are needed to construct the Project.

B(9) Technical Features

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

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

The Project will consist of one (1) –1033.5 kcmil ACSR 54/7 Curlew conductor per phase. One (1) 7#8 Alumoweld overhead ground wire and one (1) 96 fiber OPGW will be used as shield wires above the phase conductors. The insulator assemblies will consist of polymer insulators. The replacement structures will be primarily galvanized steel two-pole structures with horizontal cross arm (H-Frames).

Sketches of the proposed structure types are included as Figures 3.1 through 3.4.

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.

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

Three loading conditions were examined: (1) normal maximum loading, (2) emergency line loading, and (3) winter normal conductor rating. Normal maximum loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future. Loading levels and the calculated electric and magnetic fields are summarized below.

EMF CALCULATIONS	
Condition	Calculation
(1) Normal Maximum Loading	30 + j9 (32 MVA)
(2) Emergency Line Loading	62 + j10 (63 MVA)
(3) Winter Normal Conductor Rating	375 MVA

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

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

Because transmission line construction associated with the Project is proposed within the existing ROW, no alternatives were considered.

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

The estimated capital cost of the project.

The 2016 capital cost estimates for the entire Poston-Good Hope line rebuild, which includes the Project, is \$15,100,000.

B(10) Social and Economic Impacts

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

B(10)(a) Operating Characteristics

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

An AEP Ohio Transco consultant prepared a Socioeconomic, Land Use, and Agricultural District Review Report. This report is included as Appendix A.

B(10)(b) Agricultural Land Information

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

An AEP Ohio Transco consultant prepared a Socioeconomic, Land Use, and Agricultural District Review Report. This report is included as Appendix A.

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.

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An archaeological investigation will be conducted by an AEP Ohio Transco consultant for the Project. A copy of the resulting report will be provided to the OPSB under separate cover.

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.

The Project crosses Wayne National Forest, federal land maintained by the United States Forest Service ("USFS"). In order to cross USFS land, it is necessary to obtain special authorization through submittal of *Standard Form 299: Application for Transportation and Utility Systems and Facilities on Federal Lands*. This authorization will be obtained prior to construction of any portions of the Project located on Wayne National Forest lands.

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

An AEP Ohio Transco consultant prepared a Rare, Threatened and Endangered Species Report. The consultant coordinated with the USFWS and ODNR regarding special status species in the vicinity of the Project. No impacts to threatened or endangered species are expected. A copy of the Threatened and Endangered Species Report for the Project is included as Appendix B.

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.

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

B(10)(g) Unusual Conditions

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

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

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**Appendix A Socioeconomic, Land Use, and Agricultural District
Review Report**

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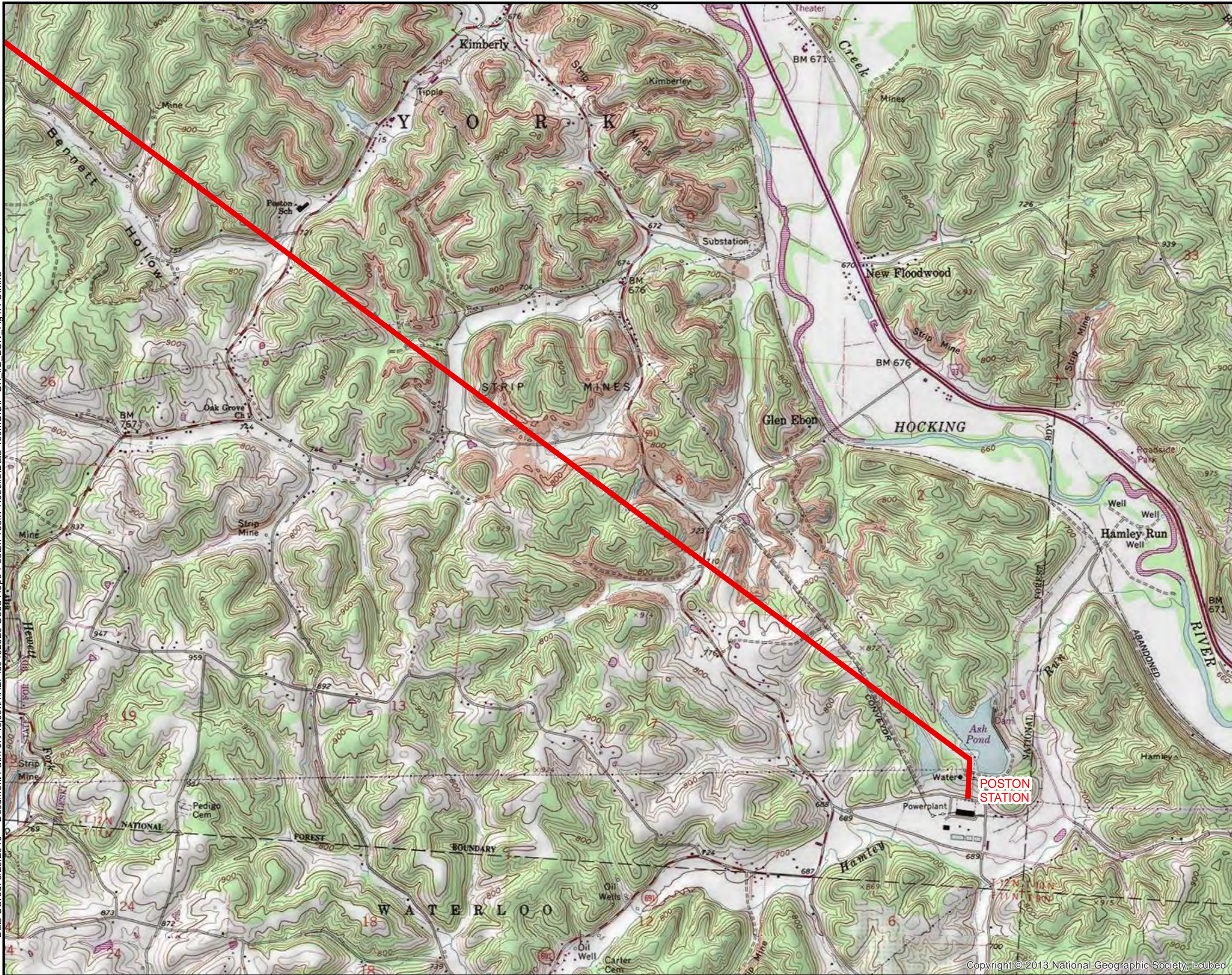
Appendix B Rare, Threatened and Endangered Species Report

LETTER OF NOTIFICATION FOR POSTON-GOOD HOPE #2 (Poston-Structure 71) 138 KV
TRANSMISSION LINE REBUILD PROJECT

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**Appendix C Areas of Ecological Concern, Wetland Delineation,
and Stream Assessment Report**

Date Saved: 8/29/2016 Document Path: J:\Project\AAEP\60482520 Good Hope-Poston 138kv Rebuild\Data-Tech\GIS\IP-GH #2 LON Fig1A-C.mxd



LEGEND:
— Existing Poston-Harrison 138 kV Line
— Poston-Structure 71 138 kV Rebuild



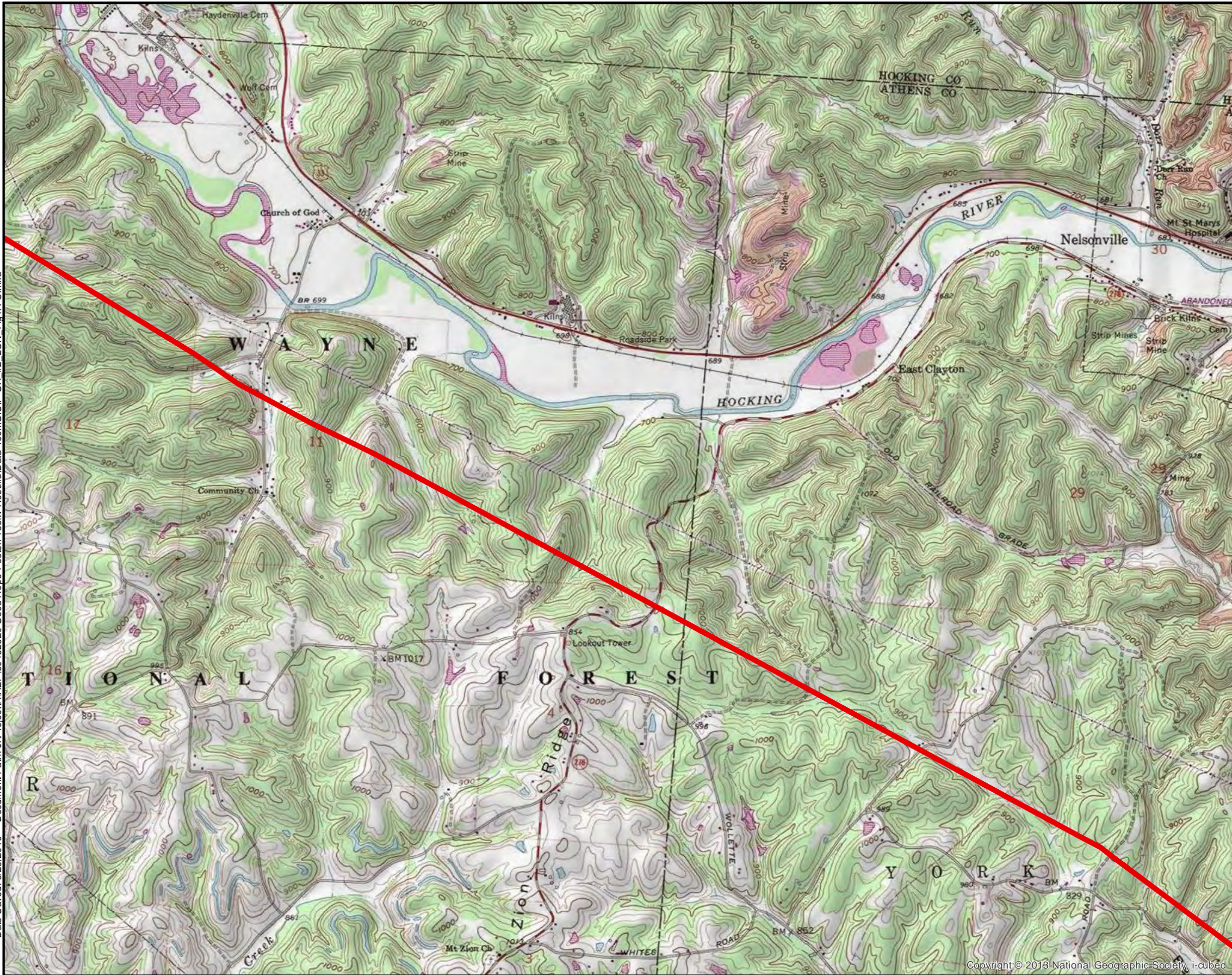
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Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope #2 138 kV Line

FIGURE 1A
PROJECT OVERVIEW

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CREATED BY: SJ	CHECKED BY: AG
JOB NO. 60482520	AECOM

Date Saved: 8/29/2016 Document Path: J:\Project\AAEP\60482520 Good Hope-Poston 138kv Rebuild\Data-Tech\GIS\IP-GH #2 LON Fig1A-C.mxd



LEGEND:
— Existing Poston-Harrison 138 kV Line
— Poston-Structure 71 138 kV Rebuild



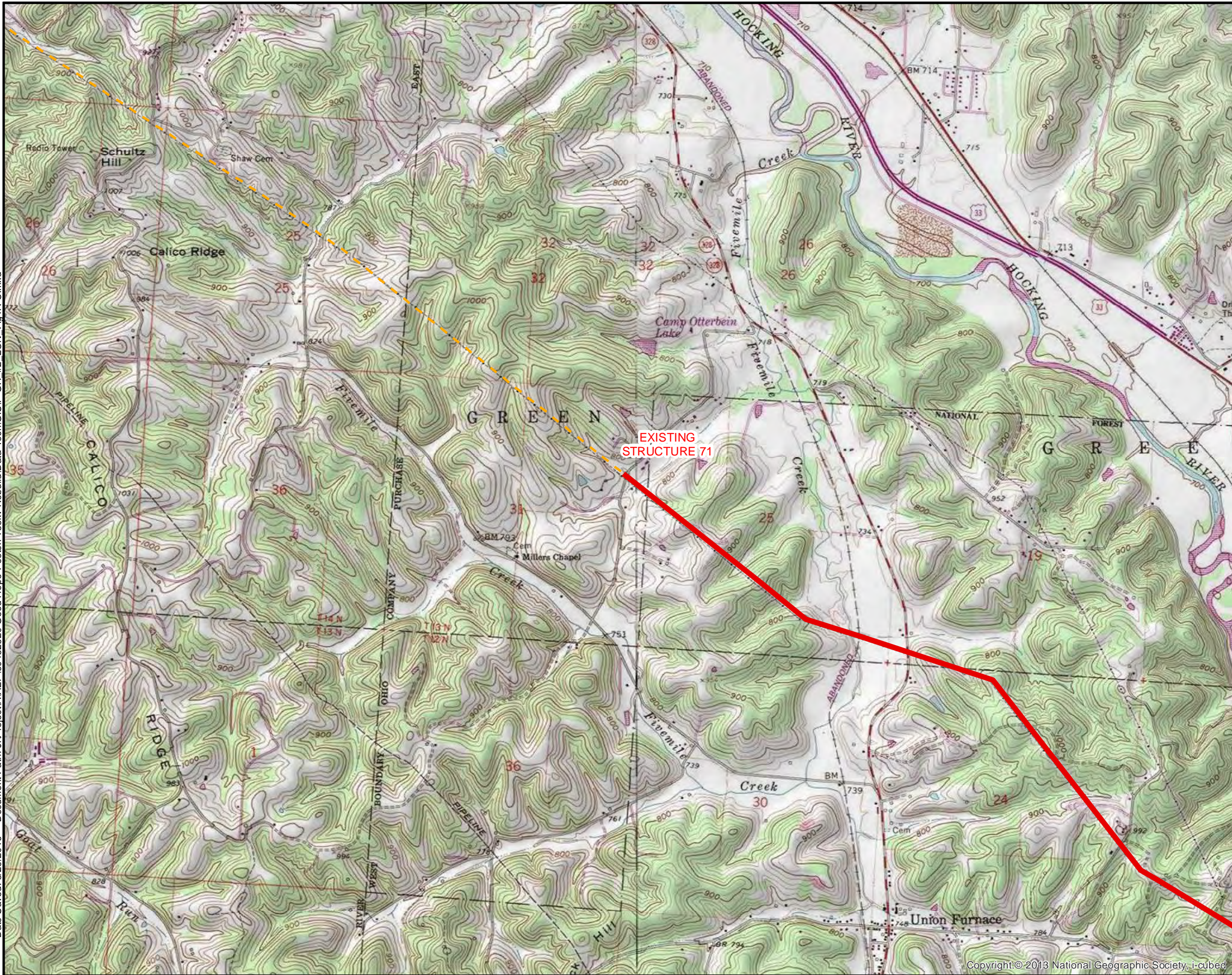
0 2,000 4,000
Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope #2
138 kV Line

FIGURE 1B
PROJECT OVERVIEW

DATE: 8/29/2016	SCALE: 1:24,000
CREATED BY: SJ	CHECKED BY: AG
JOB NO. 60482520	AECOM

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LEGEND:
- - - Existing Poston-Harrison 138 kV Line
- - - Poston-Structure 71 138 kV Rebuild



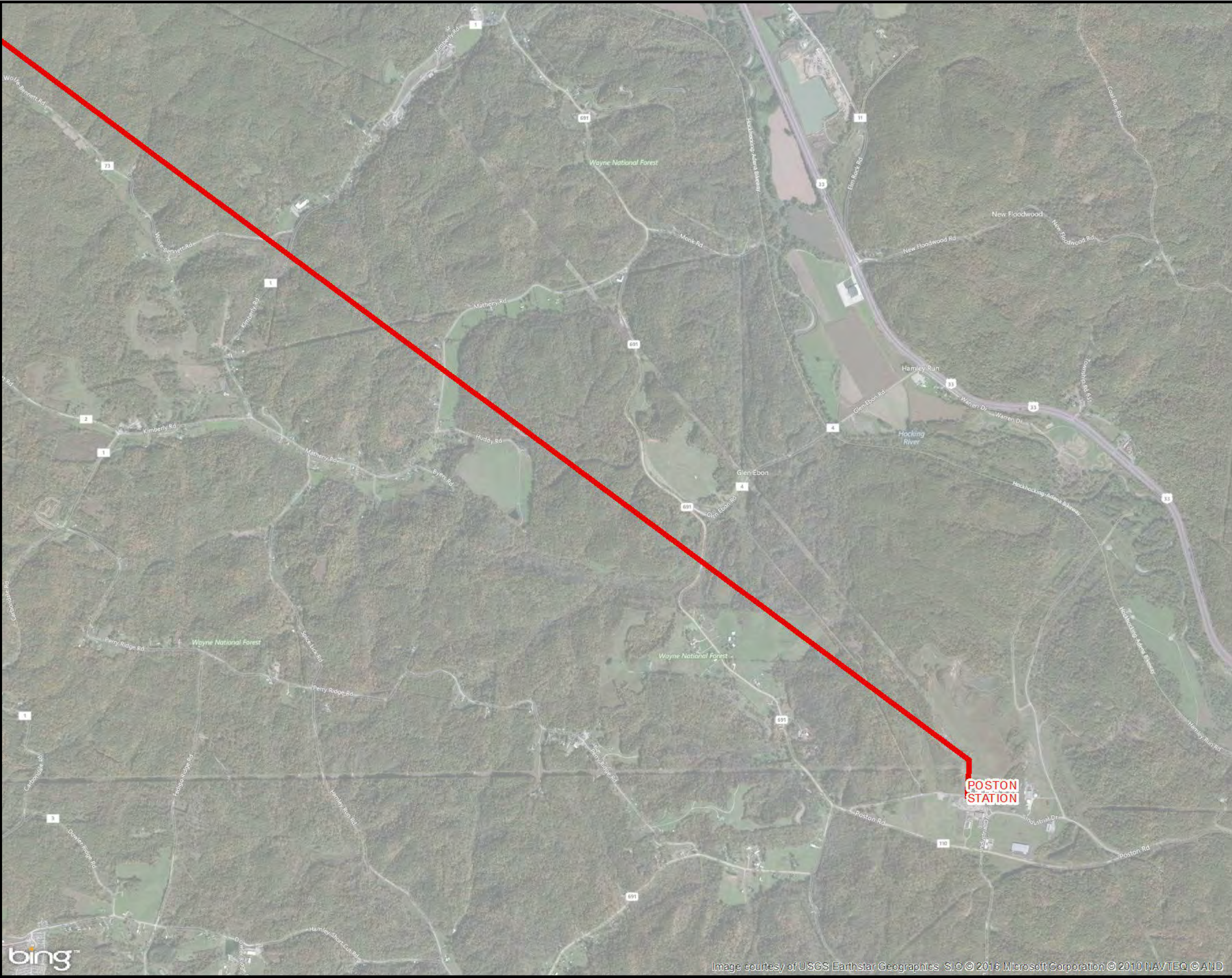
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Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope #2
138 kV Line

FIGURE 1C
PROJECT OVERVIEW

DATE: 8/29/2016	SCALE: 1:24,000
CREATED BY: SJ	CHECKED BY: AG
JOB NO. 60482520	AECOM

Date Saved: 8/29/2016 Document Path: J:\Project\AA\EP\60482520 Good Hope-Poston 138kv Rebuild\Map\GIS\IP-GH #2 LON Fig2A-C.mxd



LEGEND:
Existing Poston-Harrison 138 kV Line
Poston-Structure 71 138 kV Rebuild



0 2,000 4,000
Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope #2 138 kV Line

FIGURE 2A
AERIAL PHOTOGRAPH OF
THE PROJECT VICINITY

DATE: 8/29/2016	SCALE: 1:24,000
CREATED BY: SJ	CHECKED BY: AG
JOB NO. 60482520	AECOM



AEP OHIO TRANSMISSION COMPANY *Poston-Good Hope #2
138 kV Line*

FIGURE 2B
AERIAL PHOTOGRAPH OF
THE PROJECT VICINITY

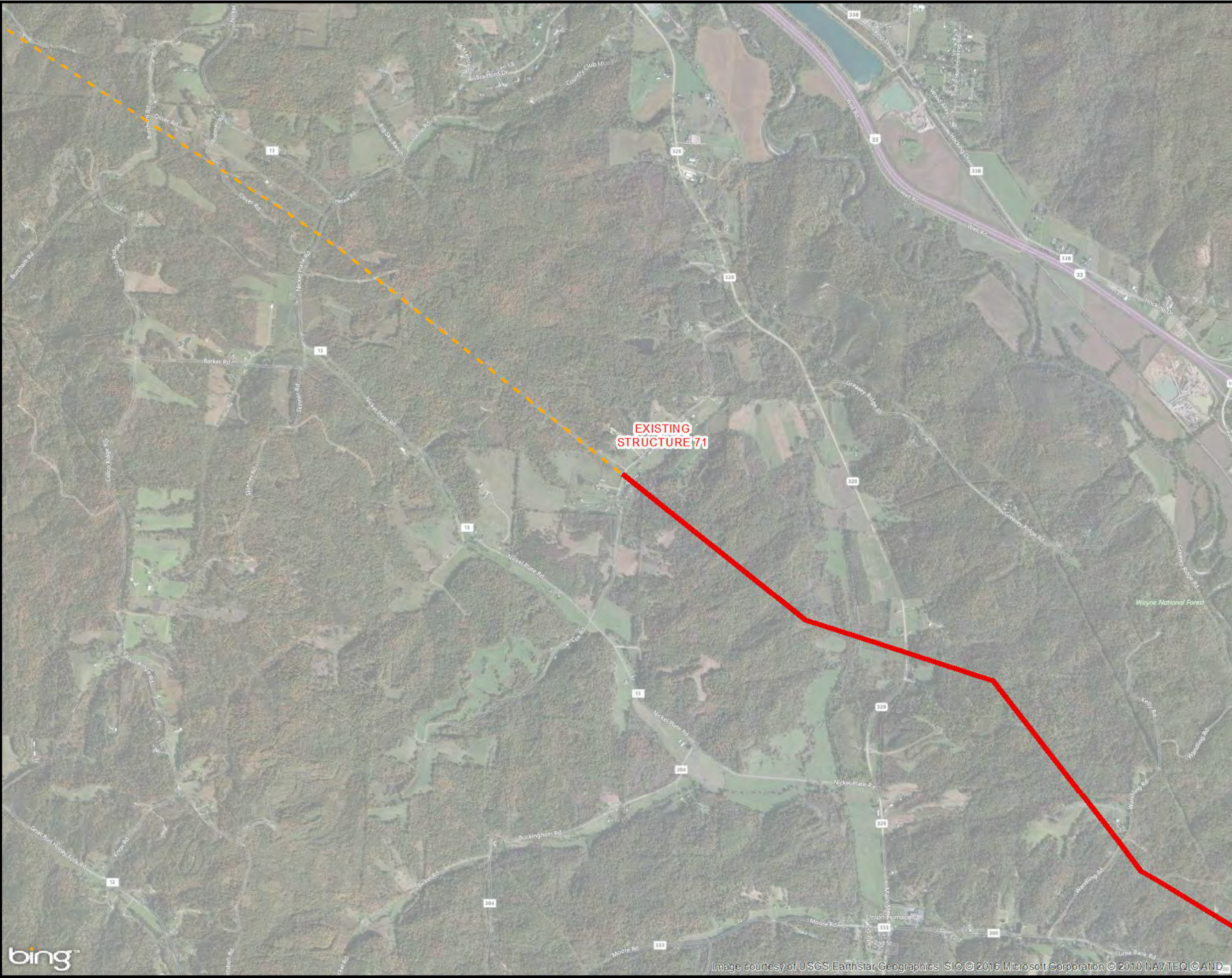
DATE: 8/29/2016

SCALE: 1:24,000

CREATED BY: SJ

CHECKED BY: AG

JOB NO. 60482520



LEGEND:
- - Existing Poston-Harrison 138 kV Line
- Poston-Structure 71 138 kV Rebuild



0 2,000 4,000
Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope #2
138 kV Line

FIGURE 2C
AERIAL PHOTOGRAPH OF
THE PROJECT VICINITY

DATE: 8/29/2016	SCALE: 1:24,000
CREATED BY: SJ	CHECKED BY: AG
JOB NO. 60482520	AECOM

REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	1	74D0-1269	138KV MEDIUM SUSPENSION CROSSARM 32 FT - CONCRETE OR STEEL H-FRAME - GALVANIZED	
2	3	11B6-2722	138KV SUSPENSION INSULATOR, POLYMER, 25K, W/CORONA RING	
3	2	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
4	2	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
5	2	71A0-1359	A325 1IN - HIGH STRENGTH BOLT, CONCRETE, STEEL OR WOOD	

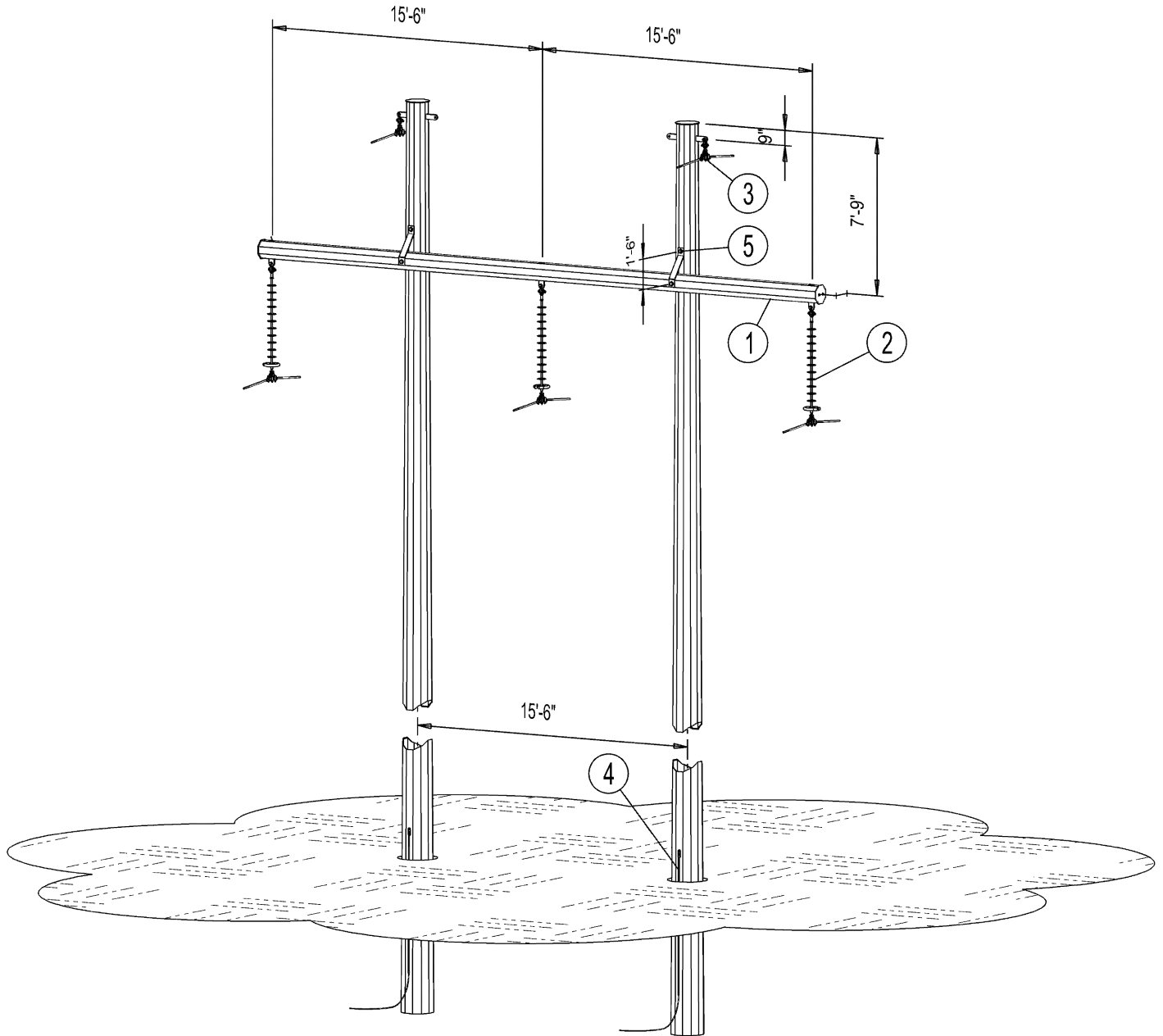



FIGURE 3.1

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REV	DESCRIPTION	BY	DATE			TRANSMISSION LINE STANDARDS POLYMER - 138KV MEDIUM SUSPENSION W/CORONA RING, H-FRAME, GALVANIZED STEEL		
ENGR:	DRAWN: SAS	CHECKED: McP	APPROVED: JCN					
				DRAWING No.		SHEET No.	1	REV. No.
				CS45-2470			0	

REF. DRAWINGS				
ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	1	74E0-1272	ALL HEAVY SUSPENSION CROSSARM 40 FT - CONCRETE OR STEEL H-FRAME - GALVANIZED	
2	3	11B6-2722	138KV SUSPENSION INSULATOR, POLYMER, 25K, W/CORONA RING	
3	2	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
4	2	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
5	2	71A0-1359	A325 1IN - HIGH STRENGTH BOLT, CONCRETE, STEEL OR WOOD	

FIGURE 3.2

FIGURE 3.2

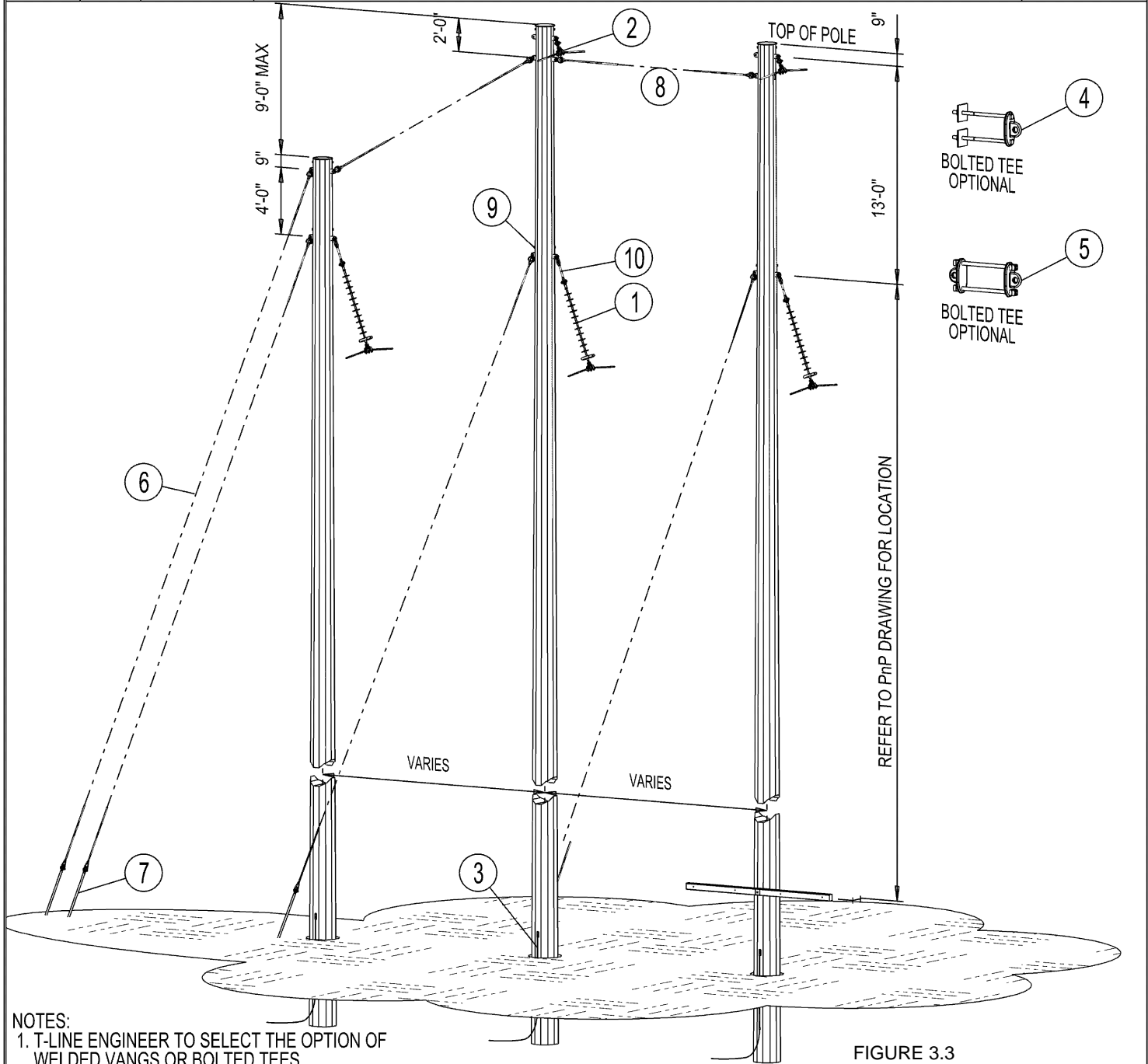
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REV	DESCRIPTION		BY	DATE		TRANSMISSION LINE STANDARDS			
						POLYMER - 138KV HEAVY SUSPENSION W/CORONA RING, H-FRAME, GALVANIZED STEEL			
ENGR:		DRAWN: SAS	CHECKED: McP		APPROVED: JCN	DATE: 10/23/12	DRAWING No. CS45-2472	SHEET No. 1	REV. No. 0


Archive ID: 904-402

REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	3	11B6-2722	138KV SUSPENSION INSULATOR, POLYMER, 25K, W/CORONA RING	
2	2	30T0-1102	OHGW, SUSPENSION, CONCRETE, STEEL OR WOOD POLE	
3	3	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
4	3	71A0-1231	3/4 IN FLAT DEAD-END TEE	
5	5	71A0-1232	3/4 IN FLAT DEAD-END TEEBACK TO BACK	
6	4	42C0-1117	GUY WIRE ASSEMBLY (AW), MEDIUM (25K) CORROSIVE ZONE	
7	4	50A0-1106	SCREW ANCHOR3 HELIX, 20K	
8	2	42C0-1118	SPAN GUY WIRE ASSEMBLY (AW), MEDIUM (25K),CORROSIVE ZONE	
9	6	25S1-2305	GROUNDING ASSEMBLY FOR GUY WIRE ON STEEL POLE	
10	3	70A0-0563	EYE - EYE EXTENSION LINK, 15" LONG, 40K	



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REV	DESCRIPTION		BY	DATE		TRANSMISSION LINE STANDARDS			
						POLYMER - 138KV SINGLE CIRCUIT, MEDIUM RUNNING ANGLE W/CORONA RING, STEEL, 4LB4			
						DRAWING No.	CS37-2463		SHEET No. 1
ENGR:		DRAWN: SAS	CHECKED: McP		APPROVED: JCN	DATE: 10/25/12			

REF. DRAWINGS

ITEM	QTY.	ASSEMBLY	DESCRIPTION	
1	6	14B3-0033	138KV DEAD END INSULATOR, CERAMIC, 36K	
2	4	30D0-1104	OHGW, DEAD-END CONCRETE, STEEL OR WOOD POLE	
3	3	21SE-1456	GROUND ROD FOR DIRECT EMBEDDED STEEL POLE	
4	18	43C0-1124	GUY WIRE ASSEMBLY (AW), HEAVY (58K), CORROSIVE ZONE	
5	18	50C0-1109	MALONE ANCHOR THIMBLE-EYE, 36K	
6	2	43C0-1123	SPAN GUY WIRE ASSEMBLY (AW), HEAVY (58K), CORROSIVE ZONE	

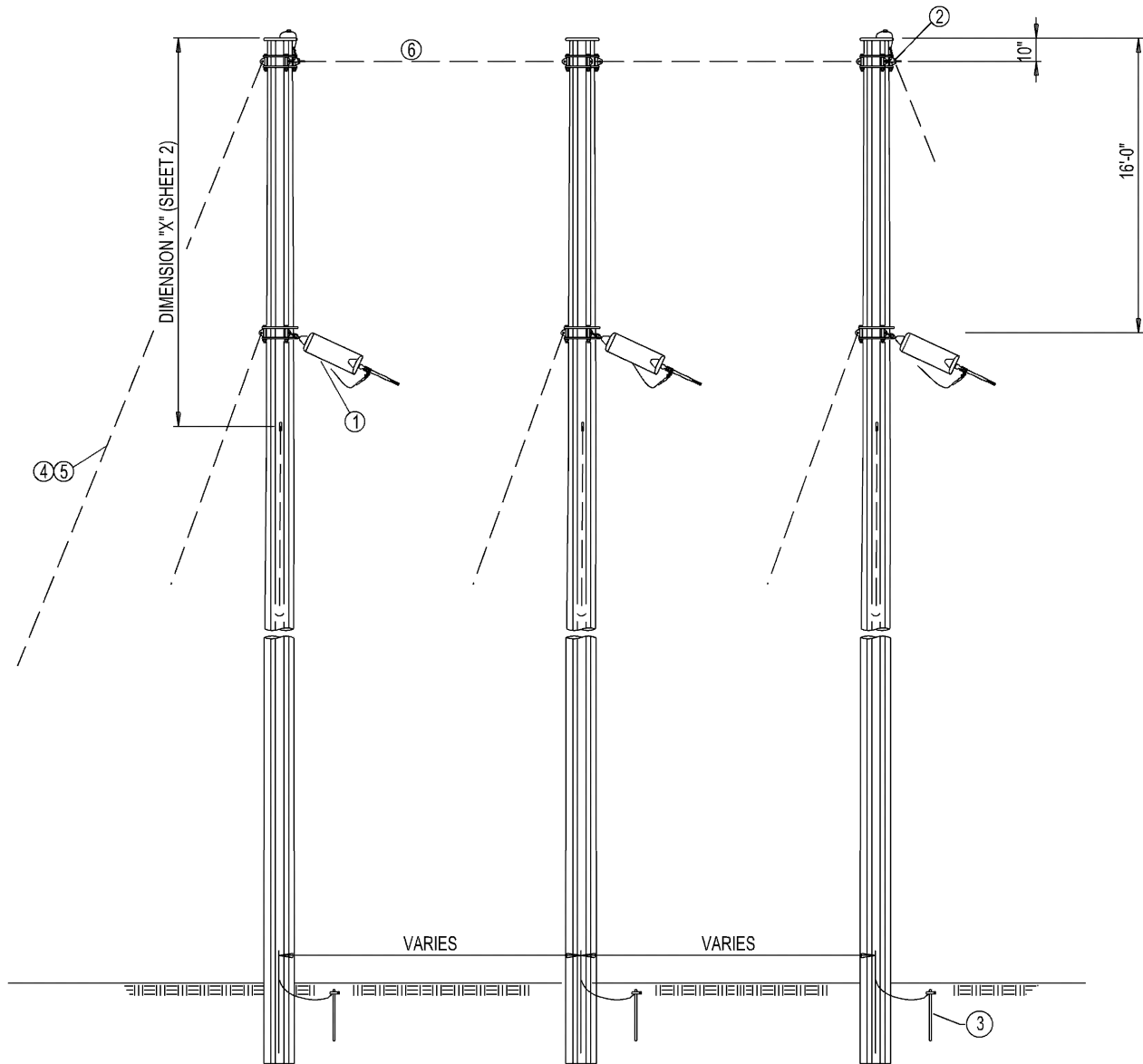


FIGURE 3.4

NOTES:
1. SEE PLAN AND PROFILE DWG. FOR GUYING DETAILS

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STANDARD REFERENCE



**CERAMIC - 138KV HEAVY ANGLE
DEADEND, HORIZONTAL, STEEL, W/
RING PULL-OFF, 18LB18**

REVISED VANG AND RING PULL OFF DETAILS

McP
MJM

07/19/11

TRANSMISSION LINE ENGINEERING

APPROVED BY: JAH DATE: 06/29/07

DRAWN BY: McP SCALE: NONE

DRAWING No.

CS38-1257

SHEET No.

1

REV. No.

4

APPENDIX A

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT

POSTON-GOOD HOPE 138 KV TRANSMISSION LINE REBUILD PROJECT, HOCKING AND ATHENS COUNTIES, OHIO

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW 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 #: 60482520

May 2016

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FIGURES (follow text)

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FIGURES 1A-1E LAND USE MAP

1.0 PROJECT DESCRIPTION

This document presents the socioeconomic, land use, and agricultural district review conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) proposed Poston-Good Hope 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 24.5 miles of the existing Poston-Good Hope 138 kV transmission line in Hocking and Athens Counties, Ohio.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(a) and (b). These rules state:

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

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

AEP Ohio Transco retained AECOM to conduct a desktop review of socioeconomic, land use, and agricultural district land characteristics. A study corridor was established within 1,000 feet of each side of the line to be rebuilt, resulting in a 2,000-foot wide study corridor. In conjunction with ecological field surveys for the Project, AECOM noted land uses crossed by the Project. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize impacts to socioeconomic characteristics and land uses potentially present in the study area during construction activities.

2.0 GENERAL LAND USE DESCRIPTION

Land use within the study area is shown on Figures 1A through 1Y. Current land use characteristics were obtained through review of aerial photography taken in 2013; the United States Geological Survey (USGS) 7.5-minute topographic map of Nelsonville (1983), Union Furnace (1983), New Plymouth (1983), Logan (1983), and Rockbridge (1975), Ohio quadrangles; parcel GIS files of the Project area; and a field reconnaissance conducted in March 2016.

The Project vicinity is a rural area with very little developed land present. The primary land uses within the 2,000-foot wide study corridor include residences, woodlots, and protected land. Transportation and utility corridors are also present.

The 2,000-foot wide study corridor crosses Hocking and Athens Counties. Within Athens County, The Project study corridor crosses through the Wayne National Forest General land use trends in the area

suggest very little conversion of woodlots, farmland, and other open land. Little or minimal growth is expected in the immediate Project vicinity.

3.0 POPULATION DENSITY ESTIMATE

Population density estimates for land within the 2,000-foot wide study corridor were calculated by direct estimation based on study corridor size, number of residences identified in the corridor, and the average number of persons per household within the census tracts of the project study corridor. Approximately 200 homes were identified along the proposed 24.5-mile Poston-Good Hope 138 kV line within the 6,100-acre study corridor. According to the 2010 U.S. Census, the study corridor falls along seven census tracts with a household size range of 2.21 to 2.72 residents per household. Based on the number of homes identified along the study corridor, the total estimated population along the route is approximately 500. This equates to a population density of 0.08 persons per acre.

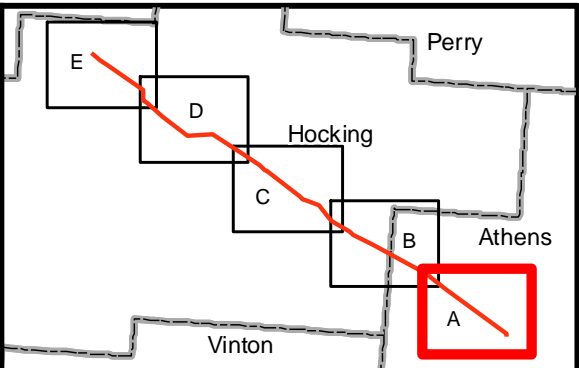
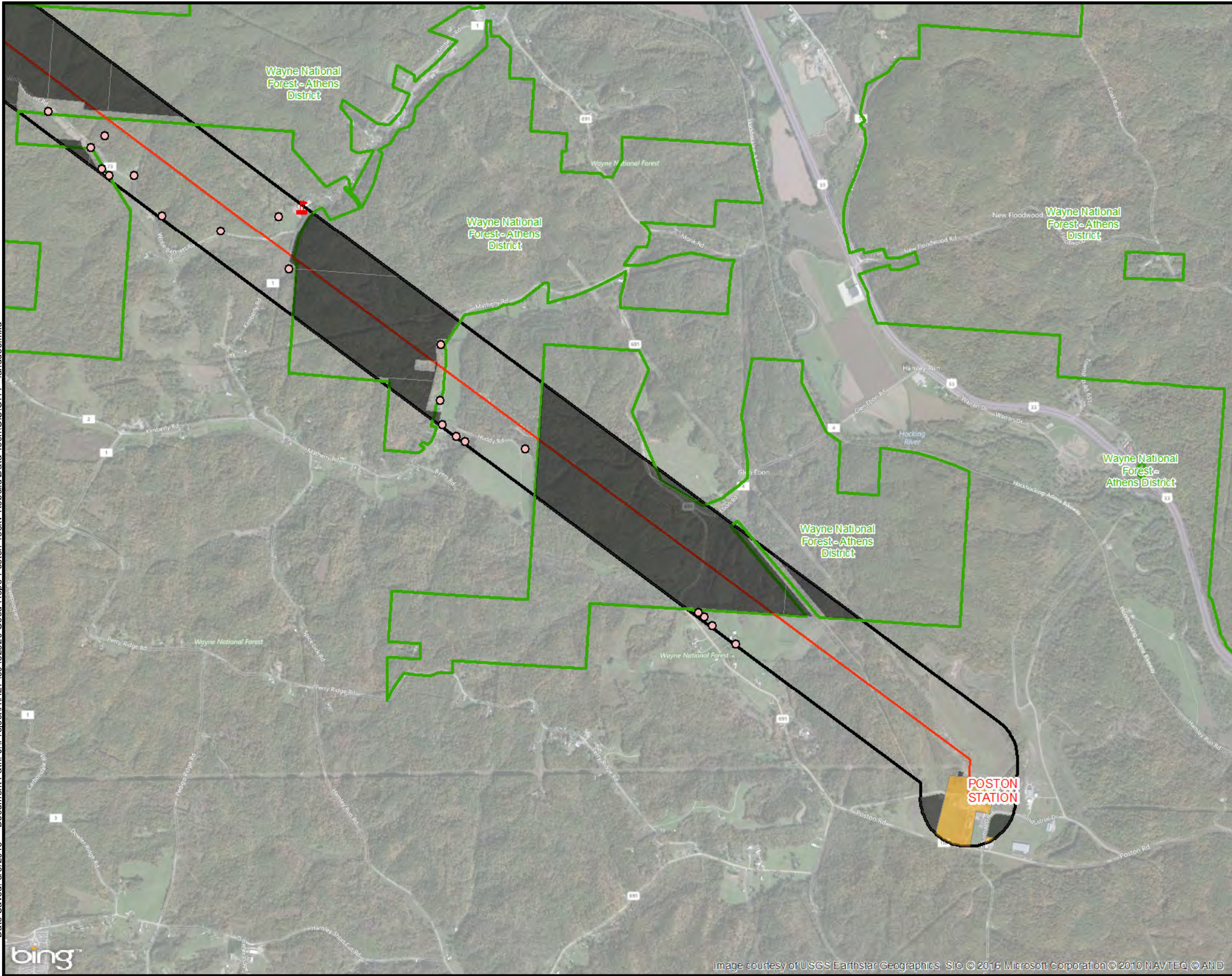
4.0 AGRICULTURAL DISTRICT LAND

The Project vicinity is primarily rural with rolling hills. Topography limits agricultural use. Most agricultural land in the project vicinity is pasture land or hay fields, although some limited row crops were observed. Based on information provided by the Athens and Hocking Counties Auditors' offices, six agricultural district land parcels were identified within 1,000 feet of the Project, as shown on Figures 1A through 1E. All of these parcels are located in Hocking County, with three crossed by the centerline. As a rebuild project within existing right-of-way, impacts to agricultural land uses, including agricultural district land, are expected to be minimal. Access roads necessary to construct the Project may temporarily impact agricultural uses. AEP Ohio Transco will work with property owners to compensate for temporary impacts to agricultural land. No permanent impacts to agricultural land or agricultural district land parcels are anticipated.

5.0 CONCLUSION

The Project is not expected to significantly impact current socioeconomic characteristics, land use, or agricultural district land in the vicinity. The Project is not expected to negatively impact any future land use plans for the area.

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- LEGEND:
- Proposed Rebuild of 138 kV Line
 - 2,000-foot Corridor Study Area
 - Residence
 - School
 - Commercial/Industrial Land Use
 - Government Owned Land



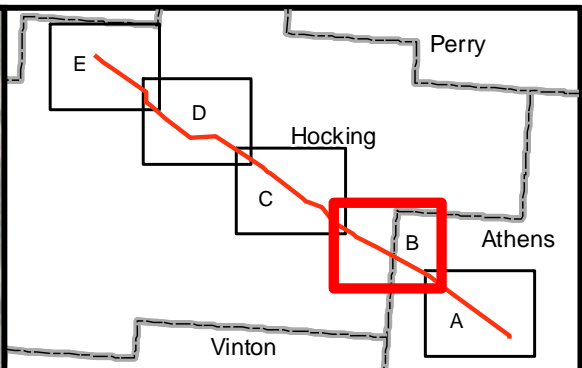
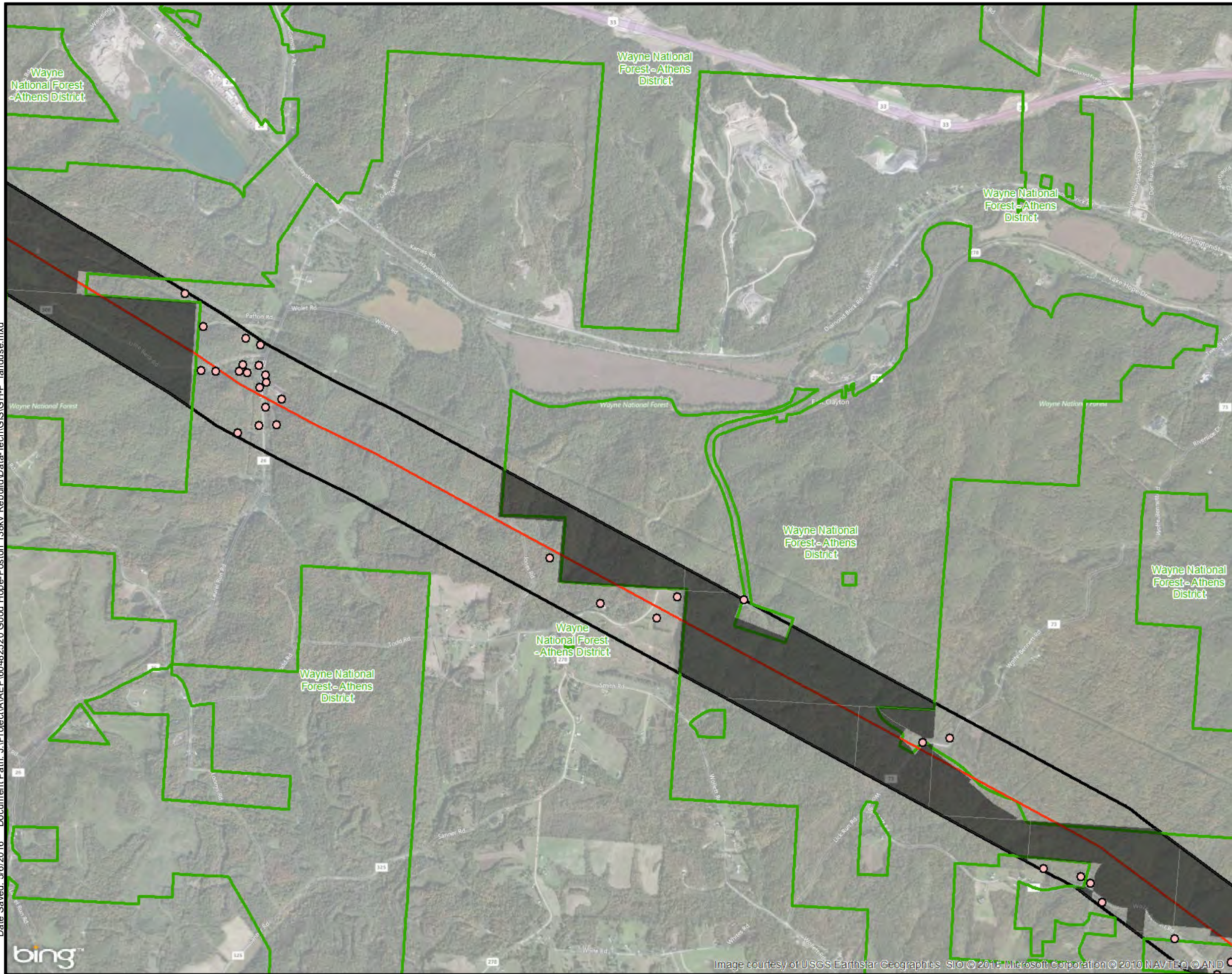
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AEP OHIO TRANSMISSION COMPANY Poston-Good Hope
138 kV Line

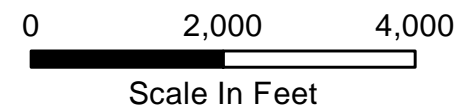
FIGURE 1A
LAND USE MAP

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- LEGEND:
- Proposed Rebuild of 138 kV Line
 - 2,000-foot Corridor Study Area
 - Residence
 - Government Owned Land

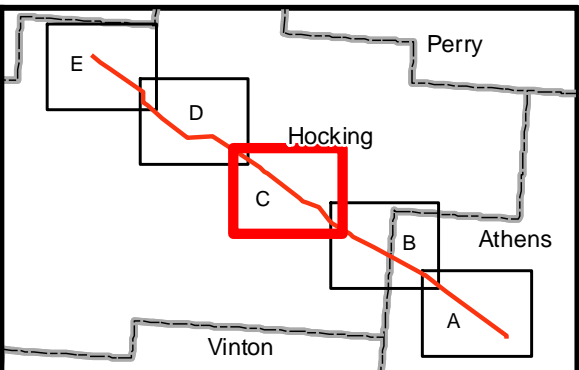
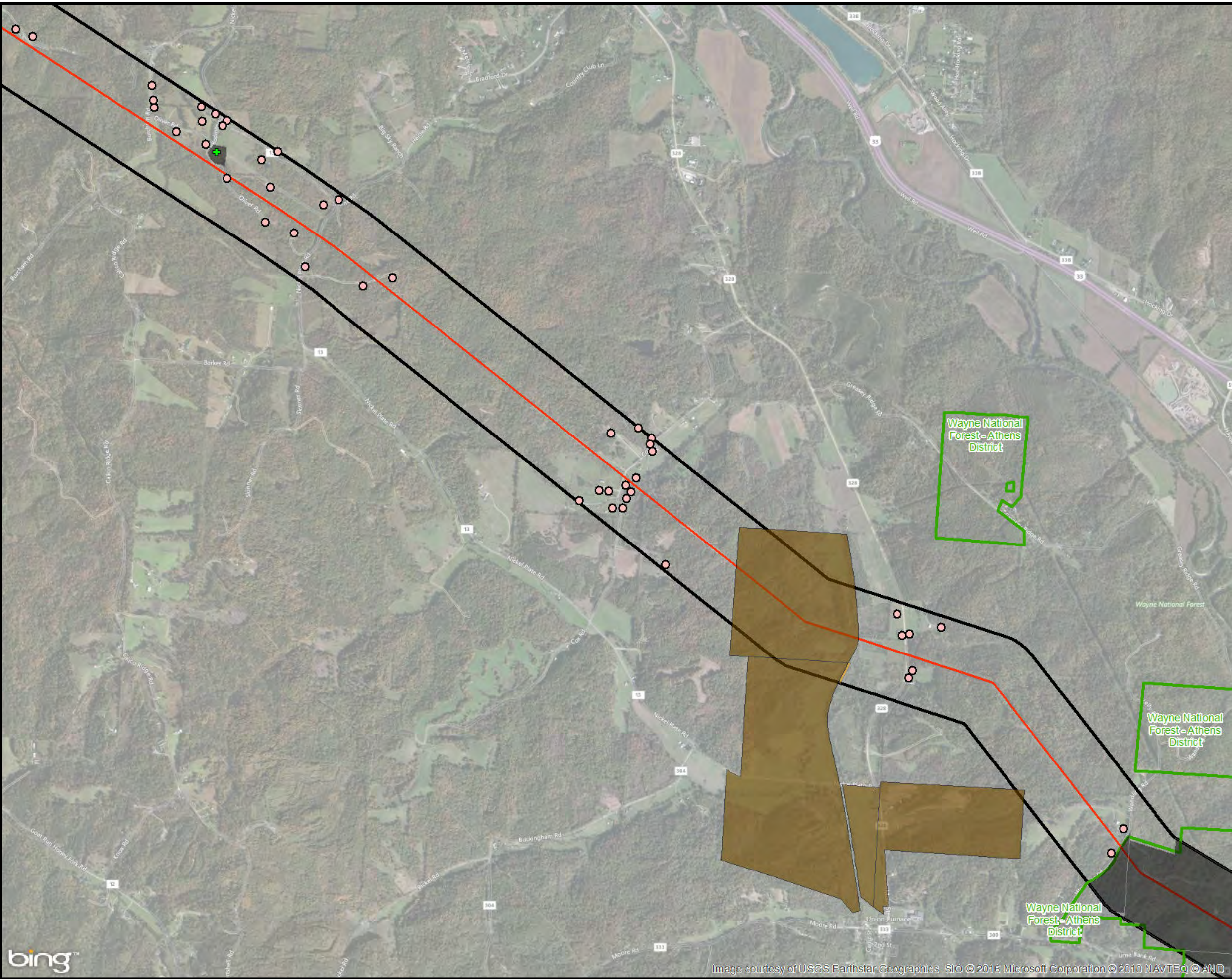


AEP OHIO TRANSMISSION COMPANY Poston-Good Hope
138 kV Line

FIGURE 1B
LAND USE MAP

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- LEGEND:
- Proposed Rebuild of 138 kV Line
 - 2,000-foot Corridor Study Area
 - Residence
 - Cemetery
 - Commercial/Industrial Land Use
 - Government Owned Land
 - Agricultural District Land Parcel

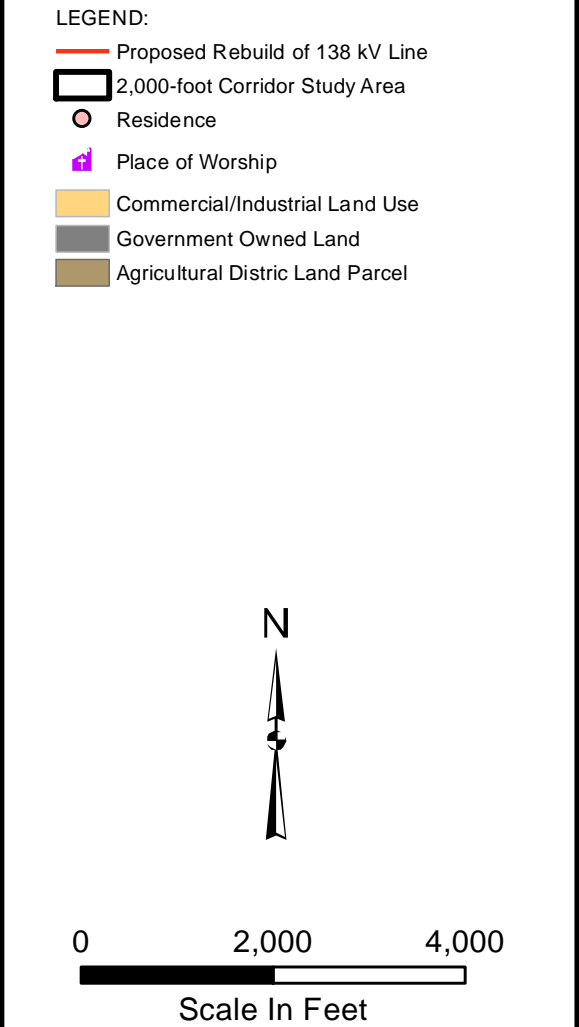
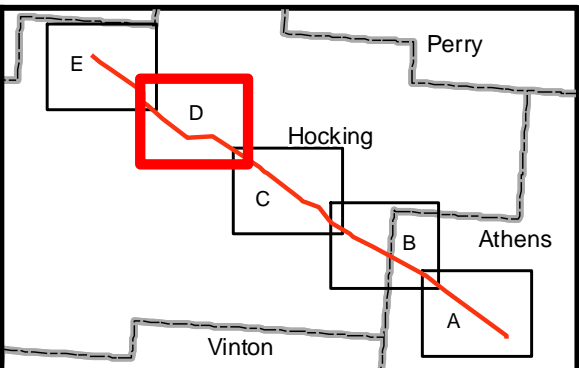
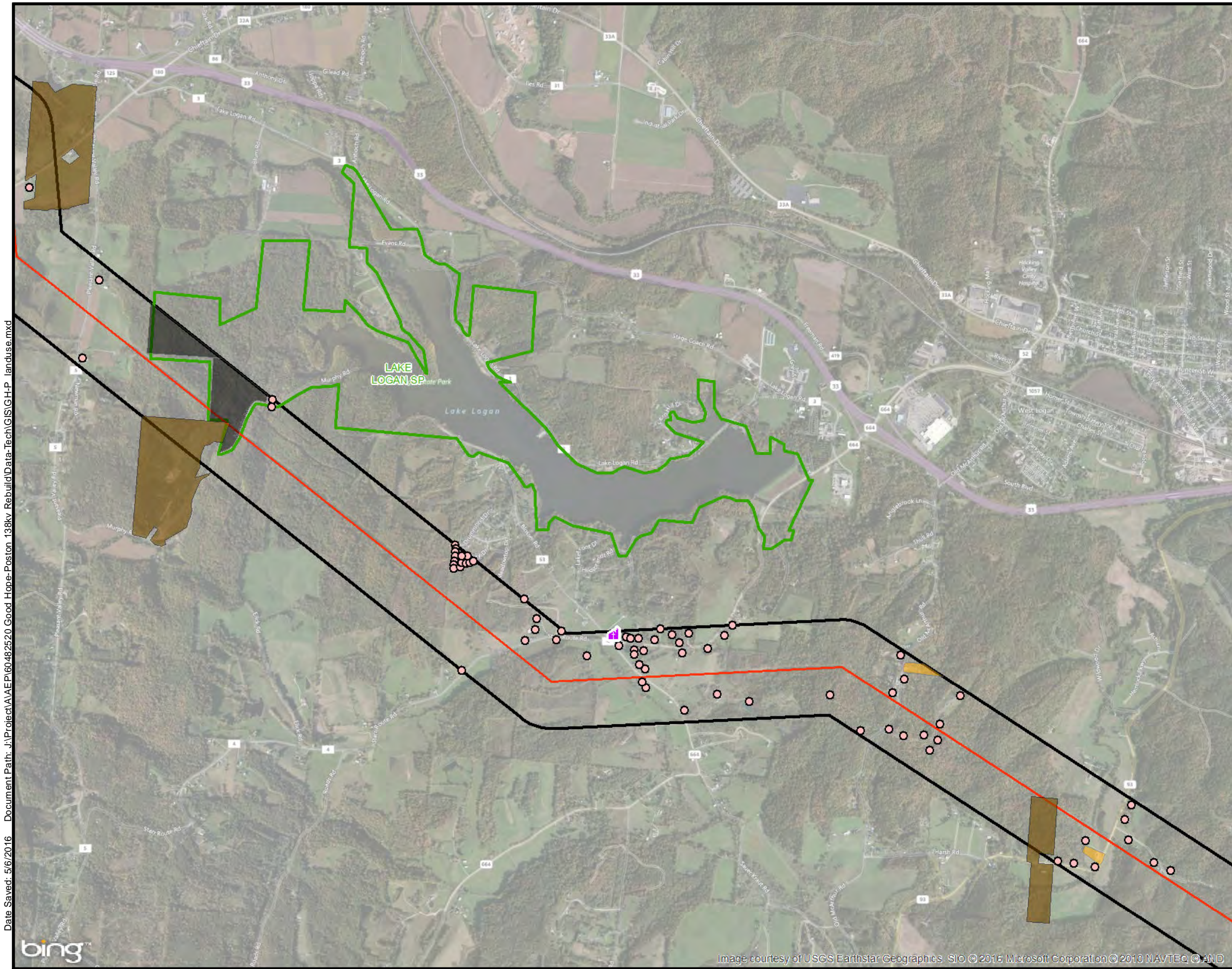


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AEP OHIO TRANSMISSION COMPANY Poston-Good Hope
138 kV Line

FIGURE 1C
LAND USE MAP

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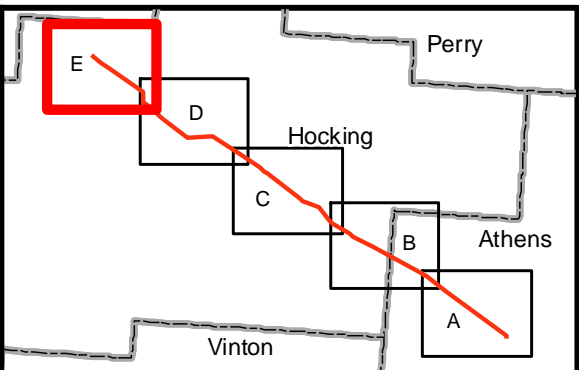
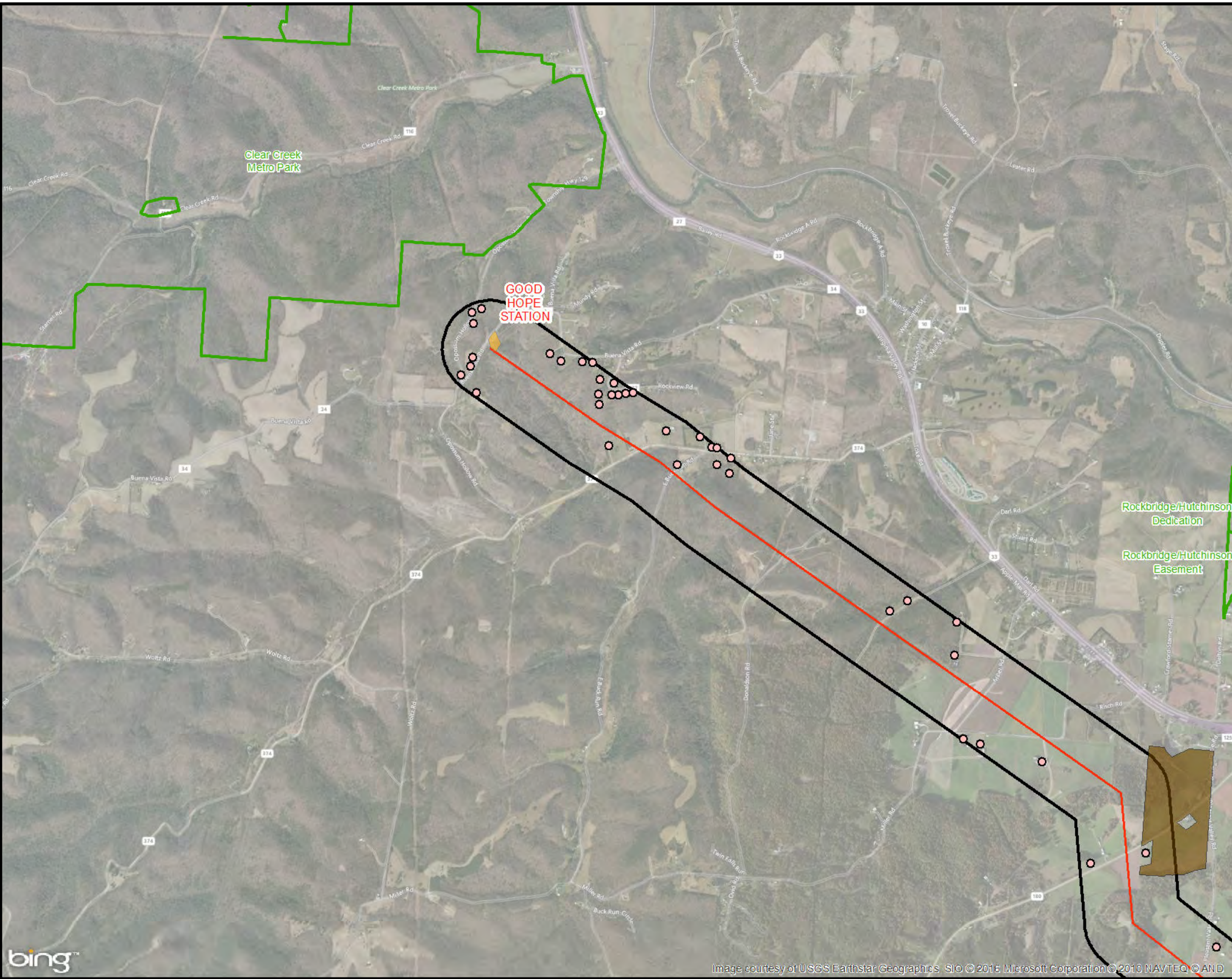


AEP OHIO TRANSMISSION COMPANY Poston-Good Hope
138 kV Line

FIGURE 1D
LAND USE MAP

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- LEGEND:
- Proposed Rebuild of 138 kV Line
 - 2,000-foot Corridor Study Area
 - Residence
 - Commercial/Industrial Land Use
 - Agricultural District Land Parcel



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Scale In Feet

AEP OHIO TRANSMISSION COMPANY Poston-Good Hope
138 kV Line

FIGURE 1E
LAND USE MAP

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POSTON-GOOD HOPE 138 KV TRANSMISSION LINE REBUILD PROJECT, HOCKING AND ATHENS COUNTIES, OHIO

RARE, THREATENED, AND ENDANGERED SPECIES SURVEY REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 43230



Prepared by:

AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60482520

May 2016

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FIGURE 1	PROJECT OVERVIEW
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ATTACHMENT

Number

ATTACHMENT A	AGENCY RESPONSES
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1.0 PROJECT DESCRIPTION

This document presents the results of the rare, threatened, and endangered species assessment conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) Poston-Good Hope 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 24.5 miles of the existing Poston-Good Hope 138 kV transmission line in Hocking and Athens Counties, Ohio, within its existing right-of-way (ROW).

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the federal and state designated species potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(e). This rule states:

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

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

AEP retained AECOM to conduct rare, threatened, and endangered species review and field surveys within areas crossed by the Project ROW. 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.

2.0 METHODS

The first phase of the survey involved a review of online lists of federal and state species of concern. In addition to the review of available literature, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Database (ONHD) for Geographical Information System (GIS) records of species of concern that were reported within close proximity to the Project. AECOM also submitted coordination letters to the U.S. Fish and Wildlife Service (USFWS) and ODNR – Office of Real Estate 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 frequent. AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys in February and March 2016. The 200-foot survey corridor was generally observed to be an existing electric transmission right-of-way.

3.0 AGENCY COORDINATION

3.1 State Species of Concern

In an email dated January 14, 2016, ODNR provided a corresponding response to a request for ONHD GIS records including specific comments regarding the Project. The ONHD review identified two mammal, four fish, eight mussel, two reptile, two amphibian, and one insect species, found within a one-mile radius of the Project. A copy of the letter indicating Ohio Natural Heritage Database records as well as ODNR comments is included in Attachment A.

After receiving the ODNR ONHD response, AECOM sent letter to ODNR-Office of Real Estate on March 21, 2016 soliciting specific comments regarding the Project. ODNR provided a letter responded on April 28, 2016, identifying the Indiana bat (*Myotis sodalis*), black bear (*Ursus americanus*), eight mussel species, four fish species, two reptile species, two amphibian species, and one insect species as state special status species with ranges in the Project area. A copy of the ODNR response is included in Attachment A. Table 1 lists the species identified by ODNR in the April 28, 2016 letter response with ranges in the project area.

**TABLE 1
STATE LISTED SPECIES THAT COULD INHABIT
THE PROJECT AREA**

Common Name	Scientific Name	State Status	General AEP/AECOM Notes
Mammals			
Indiana bat	<i>Myotis sodalis</i>	Endangered	Seasonal clearing restrictions
Black bear	<i>Ursus americanus</i>	Endangered	Not likely to be impacted
Fish			
Channel darter	<i>Percina copelandi</i>	Threatened	In-stream work not proposed at this time
River darter	<i>Percina shumardi</i>	Threatened	In-stream work not proposed at this time
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	Threatened	In-stream work not proposed at this time
Tongue-tied minnow	<i>Exoglossum laurae</i>	Threatened	In-stream work not proposed at this time
Mussels			
Clubshell	<i>Pleurobema clava</i>	Endangered	In-stream work not proposed at this time
Sheepnose	<i>Plethobasus cyphus</i>	Endangered	In-stream work not proposed at this time
Fanshell	<i>Cyprogenia stegaria</i>	Endangered	In-stream work not proposed at this time
Pink mucket	<i>Lamslis orbiculata</i>	Endangered	In-stream work not proposed at this time
Snuffbox	<i>Epioblasma triquetra</i>	Endangered	In-stream work not proposed at this time

**TABLE 1
STATE LISTED SPECIES THAT COULD INHABIT
THE PROJECT AREA**

Common Name	Scientific Name	State Status	General AEP/AECOM Notes
Threehorn wartyback	<i>Obliquaria reflexa</i>	Threatened	In-stream work not proposed at this time
Black sandshell	<i>Ligumia recta</i>	Threatened	In-stream work not proposed at this time
Fawnsfoot	<i>Truncilla donaciformis</i>	Threatened	In-stream work not proposed at this time
Reptiles			
Timber rattlesnake	<i>Crotalus horridus horridus</i>	Endangered	Habitat suitability survey recommended
Kirtland's snake	<i>Clonophis kirtlandii</i>	Threatened	Not likely to be impacted
Amphibians			
Spadefoot toad	<i>Scaphiopus holbrookii</i>	Endangered	Not likely to be impacted
Mud salamander	<i>Pseudotriton montanus</i>	Threatened	Not likely to be impacted
Insects			
American burying beetle	<i>Nicrophorus americanus</i>	Endangered	Not likely to be impacted
Plants			
Great (Rosebay) rhododendron	<i>Rhododendron maximum</i>	Threatened	Small patch observed within ROW

Indiana bat comments: ODNR requested that suitable Indiana bat habitat should be conserved or cut between October 1 and March 31. A net survey must be conducted between June 15 and August 15 prior to cutting, if clearing is necessary during summer months.

Reptile comments: ODNR stated that due to the location, type of habitat present along the Project route, and the type of work proposed, the Project is not likely to impact the Kirkland's snake.

ODNR indicated that the Project is within several townships that have been identified as having the potential for the presence of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. ODNR recommended that a timber rattlesnake habitat suitability survey be conducted by an approved Ohio Division of Wildlife (DOW) herpetologist to determine if suitable habitat is present along the Project route. If potential habitat is found to be present during the survey, ODNR recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed for the Project.

Amphibian comments: ODNR stated that due to the location, type of habitat present along the Project route, and the type of work proposed, the Project is not likely to impact the spadefoot toad and mud salamander.

Mussel comments: ODNR stated that Project must not have an impact on freshwater native mussels at the Project site, both listed and non-listed species. ODNR commented that if the Project would have any in-water work in streams that fall into the categories described in the Ohio Mussel Survey Protocol (2015), further coordination with them will be required and a professional malacologist may need to conduct mussel survey. If no in-water work will occur in perennial streams, then the Project is not likely to impact mussel species.

Fish comments: ODNR stated that they recommend no in-water work in perennial stream occur from April 15th to June 30th to minimize impacts to fish species. However, if no in-water work is proposed in a perennial stream, then the Project is not likely to impact the listed fish species.

Black bear comments: ODNR stated that due to the location, type of habitat present along the Project route, and the type of work proposed, the Project is not likely to impact the black bear.

American burying beetle comments: ODNR stated that due to the location, type of habitat present along the Project route, and the type of work proposed, the Project is not likely to impact the American burying beetle.

3.2 Federal Species of Concern

To address the Project's potential to impact federally protected species, AECOM conducted a web based literature review of the USFWS Ohio County Distribution List of *Federally Listed Species by Ohio Counties, April 2015*, a table that is publicly available on their website, to identify what species potentially occur in Athens and Hocking Counties, Ohio. Table 2 lists the seven species identified during the USFWS literature review.

**TABLE 2
FEDERALLY LISTED SPECIES THAT COULD INHABIT
ATHENS AND HOCKING COUNTIES, OHIO**

Common Name	Scientific Name	Federal Status	General Notes
Mammals			
Indiana bat	<i>Myotis sodalis</i>	Endangered (both counties)	Seasonal clearing restrictions
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened (both counties)	Seasonal clearing restrictions
Mussels			
Fanshell	<i>Cyprogenia stegaria</i>	Endangered (Athens)	In-stream work not proposed at this time.
Pink mucket	<i>Lampsilis orbiculata</i>	Endangered (Athens)	In-stream work not proposed at this time.
Sheepnose	<i>Plethobasus cyphus</i>	Endangered (Athens)	In-stream work not proposed at this time.

**TABLE 2
FEDERALLY LISTED SPECIES THAT COULD INHABIT
ATHENS AND HOCKING COUNTIES, OHIO**

Common Name	Scientific Name	Federal Status	General Notes
Snuffbox	<i>Epioblasma triquetra</i>	Endangered (Athens)	In-stream work not proposed at this time.
Insects			
American burying beetle	<i>Nicrophorus americanus</i>	Endangered (both counties)	Available literature indicates that habitat preference includes grasslands and the open understory of oak history forests. Rebuild project predominantly in existing ROW.
Plants			
Northern monkshood	<i>Aconitum noveboracense</i>	Threatened (Hocking)	Rebuild project predominantly in existing ROW. Temporary impacts to vegetation.
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened (Hocking)	Rebuild project predominantly in existing ROW. Temporary impacts to vegetation.

Federally Listed Species by Ohio Counties, April, 2015.

Accessed May 11, 2016:

<http://www.fws.gov/midwest/Endangered/lists/pdf/OhioSppListNov2015.pdf>

AECOM submitted a coordination letter to USFWS on March 21, 2016, soliciting comments on the Project. In a letter to AECOM dated May 13, 2016, USFWS indicated that the Project was within the ranges of the bald eagle, Indiana bat, northern long-eared bat, fanshell, pink mucket, pearly mussel, sheepsnose, snuffbox, northern monkshood, small whirled pogonia, American burying beetle, and timber rattlesnake. USFWS' comments regarding the identified species are further described below. A copy of the USFWS letter response is included in Attachment A.

Indiana Bat and Northern Long-Eared Bat: The federal government lists the Indiana bat as endangered in Ohio. Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical, because insect prey density is greater over or near open water. The Project corridor is an existing electric transmission line right-of-way and associated preliminary construction access roads.

The federal government lists the northern long-eared bat species as Threatened in Ohio. As with the Indiana bat, winter northern long-eared bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. Northern long-eared bat has also been found, albeit rarely, roosting in structures like barns and sheds.

USFWS stated that the Project is within the vicinity of confirmed records and fall swarming records of Indiana bat and northern long-eared bat. These species would be expected to be present after and prior to summer roosting season. USFWS indicated that since Indiana bat presence in the vicinity has been documented, clearing of trees greater than 3 inches diameter breast height (dbh) during the summer roosting season may result in a direct take of individuals. For a majority of the Project, USFWS recommended implementation of a restricted seasonal tree cutting (only clearing between November 15 and March 15), if necessary due to documented swarming in the fall by Indiana bats. USFWS indicated that the extended seasonal restriction will prevent direct impacts to bats that are swarming in the fall and staging in the spring. For the remainder of the Project area, USFWS recommended that tree removal only occur between October 1st and March 31st. USFWS indicated that following the season tree clearing recommendations should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. USFWS also stated that because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for the species. A map obtained from USFWS depicting the areas of tree clearing restrictions is provided in the agency responses within Attachment B.

Bald eagle: The range of this protected species under the Bald and Golden Eagle Protection Act is listed within the Project area. USFWS indicated that based on Project location and nest records, no significant impacts are likely to this species.

Mussel species: The ranges of these four federally endangered mussel species are listed as within Athens County. These species have been documented in the Ohio River, which is over 20-miles from the Project. Additionally, no in-water work is planned as part of the Project. No impacts to mussel species and their habitat are anticipated.

Plant species: The ranges of these two federally endangered plant species are listed as within Hocking County. USFWS indicated that based on the Project being within an existing, maintained ROW and the specific habitat requirements of these species, no significant impacts are likely to these species.

American burying beetle: The range of this federally endangered insect species is listed within Hocking County. USFWS indicated that based on Project location, no significant impacts are likely to this species.

Timber rattlesnake: The range of this federal species of concern reptile is listed within several counties within the Project area. USFWS provided some information on the species and recommended inquiring with local experts. USFWS indicated that in areas where timber rattlesnakes or their dens are known or likely to exist, clearing, construction, and maintenance activities should be avoided within at least 100 feet from ridges and areas of exposed rock and should be conducted from November 1st to March 1st, when timber rattlesnakes are hibernating.

4.0 FIELD SURVEY RESULTS

During a field survey on March 22, 2016, AECOM biologists identified an area containing a small patch of great rhododendrons (*Rhododendron maximum*) located within the Project survey corridor and existing maintained ROW. The small patch was observed in Athens County near Wolf Bennet Road and in proximity to Wayne Nation Forrest. This species is identified as a state threatened plant; however, did not contain any records in the ONHD in the observed area. This species was identified with records along the Project corridor in the neighboring Hocking County. No additional species of concern or signs of these species, and no unique habitats were observed.

5.0 SUMMARY

AEP retained AECOM to conduct a rare, threatened, and endangered species literature review for areas located within 1,000 feet of the proposed Project, a field survey within the proposed Project 200-foot survey corridor, and conduct coordination with USFWS, ONHD and ODNR. This report will be used to assist AEP's efforts to avoid impacts to rare, threatened, and endangered species potentially present in the ROW during construction activities. The field survey was conducted by AECOM field ecologists during February-March 2016. During a field survey on March 22, 2016, AECOM biologists identified an area containing a small patch of great rhododendrons (*Rhododendron maximum*) located within the Project survey corridor and existing maintained ROW. The small patch was observed in Athens County near Wolf Bennet Road and in proximity to Wayne Nation Forrest. This species is identified as a state threatened plant; however, did not contain any records in the ONHD in the observed area. No additional species of concern or signs of these species, and no unique habitats were observed.

6.0 CONCLUSION

Based upon the nature of the Project, review of available current literature, review of federal and state records of species of concern, and review of agency correspondence, it is not anticipated that federal or state species of concern will be impacted by the Project as currently planned (see below). AEP has worked to develop a construction access plan that contains the least amount of impact to sensitive resources (wetlands, streams, etc.), as well as minimizing impacts to threatened and endangered species habitat that may be present along the alignment.

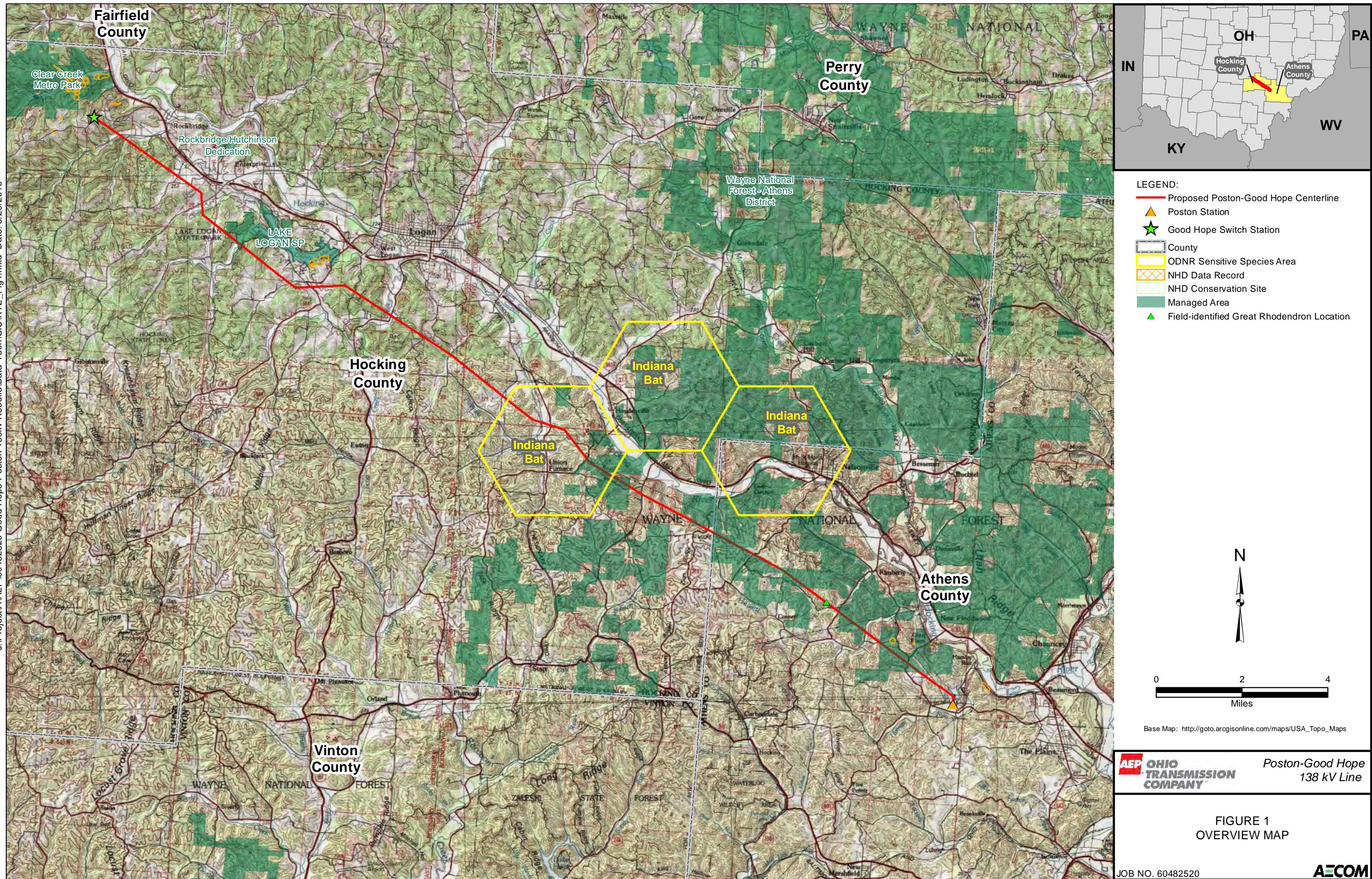
USFWS stated that the Project is within the vicinity of confirmed records and fall swarming records of Indiana bats and northern long-eared bats. For a majority of the Project, USFWS recommended implementation of a restricted seasonal tree cutting (only clearing between November 15 and March 15), if necessary due to documented swarming in the fall by Indiana bats. For the remainder of the Project area, USFWS recommended that tree removal only occur between October 1st and March 31st. USFWS indicated that following the season tree clearing recommendations should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. AEP intends to follow USFWS' recommendation and will only remove trees between the seasonal restricted dates for the corresponding areas.

ODNR indicated that the Project is within several townships that have been identified as having the potential for the presence of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. ODNR recommended that a timber rattlesnake habitat suitability survey be conducted by an approved Ohio DOW herpetologist to determine if suitable habitat is present along the Project route. AEP intends to follow USFWS' recommendation and will contract a timber rattlesnake habitat suitability survey be conducted by an approved herpetologist for the Project. If potential habitat is found to be present during the survey, a presence/absence survey will be conducted, or an avoidance/minimization plan be developed for the Project.

USFWS and ODNR commented that if the Project would have any in-water work in streams that further coordination with them will be required regarding listed mussel and fish species. If no in-water work will occur in streams, then the Project is not likely to impact mussel or fish species. To avoid impacting these federal and state-listed species, no in-stream water work is proposed for the Project. Additionally, AEP will utilize best management practices to avoid any indirect impact to streams through its use of erosion and sediment controls within the SWPPP.

During a field survey on March 22, 2016, AECOM biologists identified an area containing a small patch of great rhododendrons (*Rhododendron maximum*) located within the Project survey corridor and existing maintained ROW. The small patch was observed in Athens County near Wolf Bennet Road and in proximity to Wayne Nation Forrest. This species is identified as a state threatened plant; however, did not contain any records in the ONHD in the observed area. To avoid impacting this state-listed plant species, AEP will utilized best management practices and avoid this area by using construction fencing with inclusion into the SWPPP.

J:\Project\VAEP\60482520 Good Hope-Poston 138kv Rebuild\Data-Tech\GIS\IRTE_Fig1.mxd Date: 5/20/2016



ATTACHMENT A

AGENCY RESPONSES



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

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

January 14, 2016

Beth Wilburn
AECOM
525 Vine St.
Cincinnati, OH 45202

Dear Ms. Wilburn,

Per your request, I have e-mailed you a set of shapefiles with our Natural Heritage Program data for the Good Hope-Poston 138 kV Line Rebuild project, including a one mile radius, in Hocking and Athens Counties, Ohio. This data will not be published or distributed beyond the scope of the project description on the data request form.

Records included in the data layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, FE = federal endangered, FT = federal threatened and A = recently added to inventory, status not yet determined.

In addition to the species given in the data shapefile, there is a record for one or more sensitive species within your project study area. Please be aware that we do not give out specific locations for sensitive species, therefore a generalized location is shown in the sensitive species shapefile.

The managed areas layer includes state, federal and county lands, as well as areas owned by non-profits, museums and other entities. Managed areas are sites under formal protection for their natural resources. Please be aware that this layer may not be complete and we are continually updating it as new information becomes available to us.

The conservation sites layer shows areas deemed by the Natural Heritage Program to be high quality sites not currently under formal protection. They may, for example, harbor one or more rare species, be an outstanding example of a plant community, or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

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

fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

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

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke". The signature is written in a cursive, flowing style.

Debbie Woischke
Ohio Natural Heritage Program



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate

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

April 28, 2016

Beth Wilburn
AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Re: 16-206; Good Hope-Poston 138 kV Transmission Line Rebuild Project

Project: The proposed project involves the rebuilding of approximately 24.5 miles of 138 kV transmission line along existing centerline and within existing right-of-way.

Location: The proposed project is located in Hocking and Athens 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 the following data at or within a one mile radius of the project area:

Purple triple-awned grass (*Aristida purpurascens*), P
Midland sedge (*Carex mesochorea*), T
Rough boneset (*Eupatorium pilosum*), A
One-sided rush (*Juncus secundus*), P
Green adder's-mouth (*Malaxis unifolia*), P
Little gray polypody (*Pleopeltis polypodioides*), P
Great rhododendron (*Rhododendron maximum*), T
Few-flowered nut-rush (*Scleria pauciflora*), P
Lance-leaved violet (*Viola lanceolata*), P
Mixed mesophytic forest plant community
Appalachia oak forest plant community
Beech oak red maple forest plant community
Hemlock hardwood forest plant community
Clubshell (*Pleurobema clava*), E, FE
Eastern box turtle (*Terrapene carolina*), SC
Caddisfly (*Brachycentrus numerosus*), E

Tiger spiketail (*Cordulegaster erronea*), SC
Indiana bat (*Myotis sodalis*), E, FE
Hermit thrush (*Catharus guttatus*), SI
Black vulture (*Coragyps atratus*), SC
Magnolia warbler (*Dendroica magnolia*), SI
Canada warbler (*Wilsonia canadensis*), SI
Breeding amphibian site
Rockbridge State Nature Preserve – ODNR Division of Natural Areas & Preserves
Lake Logan State Park – ODNR Division of Parks & Recreation
Wayne National Forest – US Forest Service
Clear Creek Metro Park – Columbus & Franklin Co. Metro Park District
Hamley Run Floodplain Forest Conservation Site
Bartley's Fen Conservation Site

The review was performed on the project area specified in the request as well as an additional one mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

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

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.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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

The DOW recommends that impacts to 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.

There are current records within five miles of the project route for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. **These records have established presence of the Indiana bat in the area, and therefore additional summer surveys would not constitute presence/absence in the area.** The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm

(*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the club shell (*Pleurobema clava*), a state endangered and federally endangered mussel, the sheepnose (*Plethobasus cyphus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and 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 (2015), 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 (2015) 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 channel darter (*Percina copelandi*), a state threatened fish, the river darter (*Percina shumardi*), a state threatened fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, and the tonguetied minnow (*Exoglossum laurae*), 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 these or other aquatic species.

The project is within several townships that have been identified as having the potential for the presence of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. The DOW recommends that a habitat suitability survey be conducted by a DOW approved herpetologist to determine if suitable habitat is present along the project route. If suitable habitat is found to be present, the DOW

recommends that a presence/absence survey be conducted, or an avoidance/minimization plan be developed by a DOW approved herpetologist.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat along the project route and within the vicinity of the project route, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat along the project route and within the vicinity of the project route, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the mud salamander (*Pseudotriton montanus*), a state threatened species. Due to the location, along the project route and within the vicinity of the project route, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the American burying beetle (*Nicrophorus americanus*) a state and federal endangered beetle. Due to the habitat requirements of this species, the project is not likely to impact this species.

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

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

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



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



May 13, 2016

Ms. Beth Wilburn
AECOM.
525 Vine Street
Suite 1800
Cincinnati, OH 45202

TAILS: 03E15000-2016-TA-0984

Dear Ms. Wilburn:

This is in response to your March 21, 2016 email regarding the proposed Good Hope-Poston 138kV above ground transmission line and additional information provided in a May 5, 2016 email. The 24.5-mile transmission line will be located in Hocking and Athens Counties and will be built within the existing right-of-way (ROW). The project area currently consists of a landscape of forested habitat, rural residential development, agricultural fields, and limited commercial development.

There are no Federal wildlife refuges, wilderness areas, or Critical Habitat within the vicinity of this project. However, the project does cross the Wayne National Forest which is owned and managed by the Forest Service. We recommend that you coordinate activities at these sites with Rachel Orwan at rorwan@fs.fed.us or 740-753-0895.

The Service recommends that impacts to wetlands and streams be avoided and buffers surrounding streams and wetlands be preserved. Streams and wetlands provide valuable habitat for fish and wildlife resources. Buffers of native vegetation surrounding these systems are also important in preserving their wildlife-habitat and water quality-enhancement properties. We recommend that any proposed projects use best construction techniques to minimize erosion. Prevention of non-native, invasive plant establishment is critical in maintaining quality habitats. All disturbed areas should be mulched and re-vegetated with native plants.

MIGRATORY BIRD COMMENTS:

The project lies within the range of the **bald eagle** (*Haliaeetus leucocephalus*), a species protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Due to the location of eagle nests in the area no significant impacts are expected for this species. Relative to this species, this precludes the need for further action on this project as required by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

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 dbh that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The existing ROW has been previously cleared of trees. However some trees will need to be cleared to provide access. In a May 5, 2016 email it was indicated that approximately 8.8 acres of trees will need to be removed. The Service provided a map of areas of the transmission line that overlap with occupied bat habitat via email on April 29, 2016. A revised map separating the area of summer captures as well fall captures was provide through email on May 4, 2016.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. These records include multiple summer and fall swarming records. Therefore, we recommend that trees ≥ 3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to this species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥ 3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present within $\frac{1}{4}$ miles and tree removal is unavoidable, we recommend that removal of any trees ≥ 3 inches dbh only occur between November 15 and March 15 for the length of the transmission line identified as red on the attached map as Indiana bats have been documented swarming in the fall throughout the transmission line corridor. Seasonal clearing between October 1 and March 31 is acceptable for the remainder of the transmission line, identified as orange. Following these seasonal tree clearing recommendations should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for these species.**

This project may require a federal permit if wetlands will be impacted. In addition, it may require permitting from the Ohio Power Siting Board. If there is a federal nexus for the project (federal funding provided, federal permits required to construct, etc.) then no tree clearing on any portion of the parcel should occur 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 to

this office a determination of effects to the Indiana bat and northern long-eared bat for our review and concurrence.

The proposed project lies within the range of the **fanshell** (*Cyprogenia stegaria*), **pink mucket pearly mussel**, (*Lampsilis abrupta*), **sheepnose** (*Plethobasus cyphus*), and **snuffbox** (*Epioblasma triquetra*) mussel species. These species have been documented in the Ohio River, which is over twenty miles from the project. You have indicated that no in-water work is required. This will avoid impacts to these species and their habitat.

The proposed project lies within the range of **northern monkshood** (*Aconitum noveboracense*), a federally listed threatened species. The plant is found on cool, moist, talus slopes or shaded cliff faces in wooded ravines. Due to the project being located within an existing, maintained ROW and the specific habitat requirements of this species, no significant impacts are expected to this species.

The proposed project lies within the range of the **small whorled pogonia** (*Isotria medeoloides*), a federally listed threatened species. This plant occurs both in fairly young forests and in maturing stands of mixed-deciduous or mixed-deciduous/coniferous forests. The majority of small whorled pogonia sites share several common characteristics. These may include sparse to moderate ground cover in the microhabitat (except when among ferns), a relatively open understory canopy, and proximity to old logging roads, streams, or other features that create long-persisting breaks in the forest canopy. Most of the project will be constructed within the existing, maintained ROW with some limited tree clearing. Due to the project being located within an existing, maintained ROW, limited areas of clearing, and project location, no significant impacts are expected to this species.

The project area lies within the range of the **American burying beetle** (*Nicrophorus americanus*) a federally listed endangered species. Due to the project being located within an existing, maintained ROW and minimal ground disturbance that will occur, no significant impacts are expected to this species.

SPECIES OF CONCERN COMMENTS:

The project lies within the range of the **timber rattlesnake** (*Crotalus horridus horridus*), a federal species of concern and Ohio endangered species. Your proactive efforts to conserve this species now may help avoid the need to list the species under the Endangered Species Act in the future. In Ohio, the timber rattlesnake is restricted to the un-glaciated Allegheny Plateau. Winters are spent in dens usually associated with high, dry ridges. In the fall, timber rattlesnakes return to the same den.

It may be helpful to inquire about timber rattlesnake sightings with local resource agency personnel or reliable local residents. Local herpetologists may have knowledge of historical populations as well as precise knowledge of the habits, and especially the specific, local types of habitats that may contain timber rattlesnakes.

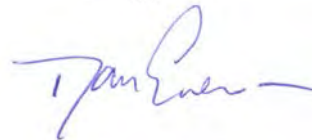
In areas where timber rattlesnakes or their dens are known or likely to exist, clearing, construction, and maintenance activities (mowing, cutting, burning, etc.) should be avoided at

least 100 feet from ridges and areas of exposed rock and should be conducted from November 1 to March 1, when timber rattlesnakes are hibernating.

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 Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U.S. Fish and Wildlife 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 state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have any questions regarding this response or if you need additional information, please contact Jennifer Finfera at Extension 13.

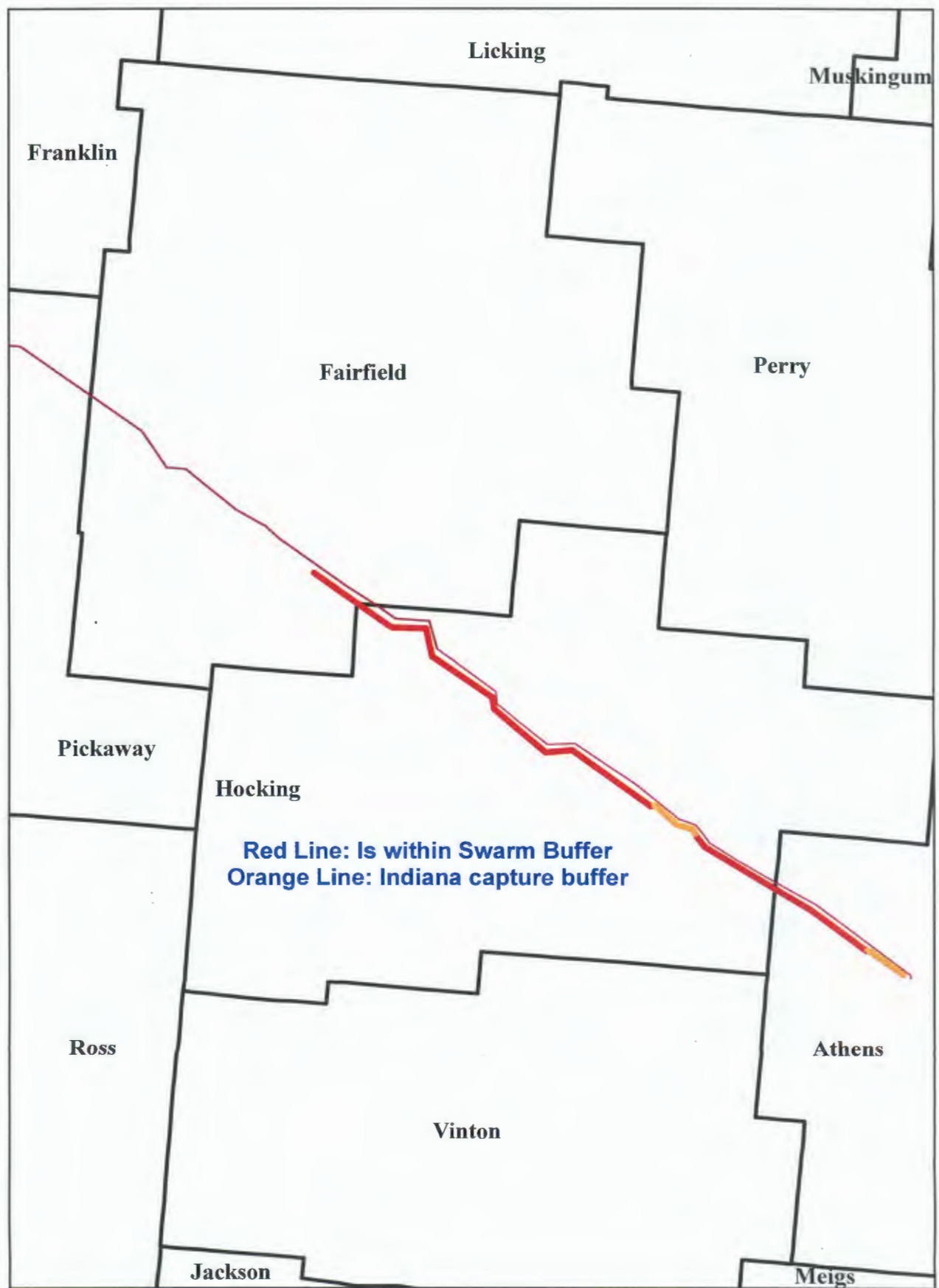
Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson", followed by a horizontal line.

Dan Everson
Field Supervisor

cc: Jennifer Norris, ODNR-DOW
Nathan Reardon, ODNR-DOW
Rachael Orwan, U.S. Forest Service, Wayne National Forest
Lynda Andrews, U.S. Forest Service, Wayne National Forest

Enclosure: Map of transmission line with overlap of known habitat for the Indiana bat





Fairfield

Perry

Hocking

Athens

Vinton

Red identifies where the transmission line
crosses occupied Indiana bat Habitat

GOOD HOPE-POSTON 138 KV TRANSMISSION LINE REBUILD PROJECT, HOCKING AND ATHENS COUNTIES, OHIO

AREAS OF ECOLOGICAL CONCERN, WETLAND DETERMINATION, AND STREAM ASSESSMENT REPORT

Prepared for:

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



Prepared by:

AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60482520

May 2016

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TABLES

(follow text)

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TABLE 1	NATIONAL WETLAND INVENTORY WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR
TABLE 2	SUMMARY OF DELINEATED WETLANDS WITHIN THE PROJECT SURVEY CORRIDOR
TABLE 3	WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR
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TABLE 5	PONDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

FIGURES

(follow tables)

Number

FIGURES 1 to 28	ECOLOGICAL SURVEY RESULTS
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APPENDICES

(follow figures)

Number

ATTACHMENT A	WETLAND FORMS Attachment A.1: U.S. Army Corps of Engineers (USACE) Forms Attachment A.2: Ohio Rapid Assessment Method (ORAM) Forms
ATTACHMENT B	STREAM FORMS
ATTACHMENT C	PHOTOGRAPHS Attachment C.1: Representative Wetland Photographs Attachment C.2: Representative Stream Photographs

1.0 PROJECT DESCRIPTION

This document presents the results of the wetland and stream assessment conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) proposed Good Hope-Poston 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 24.5 miles of the existing Good Hope-Poston 138 kV transmission line in Hocking and Athens Counties, Ohio within the currently existing right-of-way (ROW) corridor.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(f). This rule states:

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

(f) 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.

AEP Ohio Transco retained AECOM to review areas of ecological concern, as defined above, within the proposed Project vicinity and conduct a field survey of waters of the U.S. within the limits of the existing and proposed transmission line right-of-way and associated proposed construction access roads. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to areas of ecological concern present in the survey area during construction.

2.0 METHODS

2.1 Special Status Ecological Areas

AECOM reviewed maps and Geographical Information System (GIS) data in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries in the Project vicinity. GIS data sources included the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Database and federal land and parks layers available from Environmental Systems Research Institute (ESRI). Property ownership within 1,000 feet of the Project was reviewed to identify parcels that may have special status. AECOM also noted land use during the field reconnaissance conducted during February-March 2016.

Floodplains were evaluated based on the Federal Emergency Management Agency's (FEMA) Flood Map Viewer (<https://hazards.fema.gov/wps/portal/mapviewer>).

2.2 Wetland Assessment

The purpose of the field survey was to assess whether wetlands and other “waters of the U.S.” exist within the Project survey corridor. Prior to conducting field 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. NWI wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location.

In February and March 2016, AECOM ecologists walked the Project survey corridor (200-foot wide) to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

The 200-foot wide 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: Eastern Mountains and Piedmont Region (Regional Supplement) (2012). The Regional Supplement was released in January 2012 by the USACE 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.

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). All identified wetlands within the survey corridor were classified as freshwater, Palustrine systems, which include non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. Five Palustrine wetland classes were identified within the Project survey corridor and are as follows:

- **PEM** – 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** – 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. 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.
- **PFO** – Forested wetlands are characterized by woody vegetation that is 19.69 feet or taller. Forested wetlands include an overstory of broad-leaved and needle-leaved deciduous and coniferous trees. An understory of young trees and shrubs and an herbaceous layer may also be present.
- **POW** – Open water wetlands are characterized by plants that grow principally on or below the surface of the water for most of the growing season in most years. These plants are best developed in relatively permanent water or under conditions of repeated flooding.
- **PUB** – Unconsolidated bottom wetlands are characterized by habitats with at least 25% cover of particles smaller than stones and a vegetative cover less than 30%.

Ohio Rapid Assessment Method v. 5.0: The Ohio Environmental Protection Agency's (OEPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 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 (CWA). 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 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).

2.3 Stream and River Crossings

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 Ohio EPA's Methods for Assessing Habitat in Flowing Waters: Using Ohio EPA's *Qualitative Habitat Evaluation Index* (Rankin, 2006) and *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 3* (Davis, 2012).

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 Ohio EPA 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).

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)" (Davic, 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 PWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PWH Streams", 30 to 69.9 are "Class 2 PWH Streams", and 70 to 100 are "Class 3 PWH 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 PWH stream class using the HHEI protocol (Davic, 2012). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

3.0 RESULTS

3.1 Special Status Ecological Areas

AECOM conducted a review of published resources and consulted with agencies to identify national or state forests and parks designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries and floodplains crossed by and in the immediate vicinity of the Project. The following natural areas were identified at or within one mile of the Project:

- Rockbridge State Nature Preserve – ODNR Division of Natural Areas & Preserves
- Lake Logan State Park – ODNR Division of Parks & Recreation
- Wayne National Forest – U.S. Forest Service
- Clear Creek Metro Park – Columbus & Franklin County Metro Park District
- Hamley Run Floodplain Forest Conservation Site
- Bartley's Fen Conservation Site

According to the FEMA National Flood Hazard Layer (NFHL) (GIS shapefile), approximately two percent of the Project is located within Flood Zone A, an area inundated by a percent annual chance of flooding for which no base flood elevations have been determined. The other ninety-eight percent of the Project is located within Flood Zone X, an area with minimal flood hazard. No changes in flood elevations are anticipated as a result of the Project.

3.2 Wetland Assessment

National Wetland Inventory Map Review: According to the NWI map of the Nelsonville, Union Furnace, New Plymouth, Logan, and Rockbridge, Ohio quadrangles, 18 mapped NWI wetlands are located within the Project survey corridor. Eight of these NWI wetlands correspond to wetlands identified during AECOM's field survey. The eight mapped NWI wetlands and the corresponding delineated wetlands are listed in Table 1.

Wetland Delineation: Sixty wetlands, totaling approximately 12.73 acres, were delineated within the survey corridor as shown in Table 3. Some wetland boundaries extend beyond the 200 foot wide survey corridor, but only portions of those wetlands identified within the study corridor were assessed. Additionally, AECOM commonly splits wetlands where there is an obvious break between Cowardin wetland types. This split results in each wetland section being assessed independently; however, AECOM recognizes that split wetland sections are a component of a larger wetland complex.

The 60 wetlands identified within the Project survey corridor are of 13 different wetland habitat types. See Table 2 for a summary of the delineated wetlands within the Project survey corridor.

ORAM scores for 59 of these wetlands ranged from 10 to 55.5. Twenty-four of the assessed wetlands were identified as Category 1 wetlands. Thirty-five wetlands were identified as Category 2 wetlands. One other wetland was identified as a vernal pool. No Category 3 wetlands were identified in the Project survey corridor.

The location and approximate extents of the wetlands, as delineated within the Project survey area are shown on Figures 1 through 28. Representative color photographs taken of the wetlands are provided in Attachment C. Completed USACE and ORAM forms are provided in Attachment A.

3.3 Stream and River Crossings

AECOM identified 218 streams, totaling approximately 53,668 linear feet, within the 200-foot wide Project survey corridor (Table 4). Seventeen perennial streams totaling approximately 7,588 linear feet were found within the survey corridor. Eighty-five intermittent streams totaling approximately 27,001 linear feet; and 116 ephemeral streams totaling approximately 19,079 linear feet were also observed.

Qualitative Habitat Evaluation Index:

Ten streams were assessed using the QHEI methodology for streams with drainage areas greater than one square mile. These perennial streams totaled approximately 5,352 feet within the survey corridor. Four streams received a Fair rating and six streams received a Good rating. QHEI stream forms are provided in Attachment B.

Primary Headwater Habitat Evaluation Index:

Two hundred and eight headwater streams, totaling approximately 48,316 linear feet, were assessed using the HHEI methodology for streams with drainage areas less than one square mile. These streams included 31 Class 1 streams, 95 Modified Class 1 streams, 13 Class 2 streams, and 69 Modified Class 2 streams. No Class 3 streams were identified within the Project survey corridor.

The locations of identified streams within the survey corridor are shown on Figures 1 through 28. Representative color photographs are provided in Attachment C. Completed HHEI forms for each stream are provided in Attachment B.

AECOM has preliminarily determined that all assessed streams within the 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.).

3.4 Ponds

Eight ponds and one vernal pool were identified within the 200-foot wide survey corridor and are summarized in Table 5. All eight ponds appear to be man-made for recreational, wildlife, or livestock use. The location and approximate extent of the ponds identified within the Project survey corridor are shown on Figures 1 through 28.

4.0 SUMMARY

Four federal, state, or locally-operated natural areas; and two conservation sites were identified within a mile of the Project. Ninety-eight percent of the Project is located within FEMA Flood ZONE X and the other two percent within Flood Zone A. No changes in flood elevation are anticipated as a result of the Project.

Sixty wetlands, totaling approximately 12.73 acres, were identified within the Project survey corridor. Thirty-five of these wetlands were classified as Category 2 wetlands and 24 were classified as Category 1 wetlands. One wetland was identified as a vernal pool. Two hundred and eighteen streams were identified within the Project survey corridor, totaling approximately 53,668 linear feet. Seventeen of these streams were classified as perennial, 85 as intermittent, and 116 as ephemeral. Eight ponds were also identified within the Project survey corridor.

5.0 CONCLUSION

This report will be used to assist AEP Ohio Transco's efforts to avoid special status ecological areas, wetlands, and streams to the extent possible during construction of the Project, thereby minimizing impacts to these features identified within the Project area. Due to the planned use of timber matting for access roads and work pads while working in wetlands and streams, no permanent impacts are anticipated. Erosion control methods including silt fencing are expected to be used where appropriate to minimize runoff-related impacts to stream channels and wetlands. As a result, significant impacts to waters of the U.S. are not anticipated.

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 become invalidated, wholly or in part, by changes beyond the control of AECOM.

6.0 REFERENCES

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TABLE 1
NATIONAL WETLAND INVENTORY WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	NWI Wetland Attribute	NWI Wetland Type
Wetland 4	PEM1C	Palustrine emergent, persistent, seasonally flooded
Wetland 5	PEM1/UBF	Palustrine emergent, persistent/Palustrine unconsolidated bottom semipermanently flooded
Wetland 6	PEM1/UBF	Palustrine emergent, persistent/Palustrine unconsolidated bottom semipermanently flooded
Wetland 6b	PEM1/UBF	Palustrine emergent, persistent/Palustrine unconsolidated bottom semipermanently flooded
Wetland 7	PSS1A	Palustrine scrub-shrub, broad-leaved deciduous, temporary flooded
Wetland 9	PEM1C	Palustrine emergent, persistent, seasonally flooded
Wetland 13	PEM1F	Palustrine emergent, persistent, semipermanently flooded
Wetland 37	PFO1/SS1A	Palustrine forested, broad-leaved deciduous/Palustrine scrub-shrub, broad-leaved deciduous, temporary flooded
Total: 8 wetlands		

TABLE 2
SUMMARY OF DELINEATED WETLANDS WITHIN PROJECT SURVEY CORRIDOR

Cowardin Wetland Type ^a	ORAM Category 1	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within ROW	Linear Feet Spanned by Centerline
PEM	21	14	0	35	3.18	750.01
PEM/PSS	1	8	0	9	5.28	1,238.65
PFO/PEM	1	3	0	4	0.66	228.61
PFO	0	3	0	3	0.66	164.73
PUB/PEM	0	3	0	3	0.77	240.09
PEM/PFO	0	2	0	2	0.66	129.10
PSS	2	0	0	2	0.06	83.41
PSS/PEM	0	2	0	2	0.16	172.86
PSS/PFO	0	1	0	1	0.08	29.77
POW/PEM	1	0	0	1	0.01	-
PUB	0	1	0	1	1.14	322.69
PUB/PFO	0	1	0	1	0.06	26.49
VERNAL POOL	-	-	-	1	<0.01	-
Total	26	38	0	64	12.73	3,386.41

Cowardin Wetland Type^a : PEM = palustrine emergent, PSS = palustrine scrub/shrub, PFO = palustrine forested, POW = palustrine open water, PUB = palustrine unconsolidated bottom
Linear Feet Crossed by Centerline (feet)^b

TABLE 3
WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Cowardin Wetland Type	ORAM Score	ORAM Category	Acreage within Survey Corridor
Vernal Pool 1	39.4066061	-82.2158019	Vernal Pool	-	-	< 0.01
Wetland 1	39.3831196	-82.1794128	PEM	10	1	0.05
Wetland 2	39.3849235	-82.1790441	PEM	19	1	0.10
Wetland 3	39.3863994	-82.181714	PEM/PSS	25	1	0.27
Wetland 3b	39.385974	-82.1807924	PEM	25	1	0.13
Wetland 4	39.3868686	-82.1829299	PEM	44	2	< 0.01
Wetland 5	39.39489	-82.1958514	PUB	39	2	1.14
Wetland 6	39.395842	-82.1982298	PUB/PEM	35	2	0.03
Wetland 6b	39.3961385	-82.197842	PUB/PEM	35	2	0.08
Wetland 7	39.3963121	-82.1986328	PEM/PSS	39	2	0.51
Wetland 8	39.3966755	-82.1995352	POW/PEM	19	1	0.01
Wetland 9	39.399853	-82.2046744	PUB/PFO	36.5	2	0.06
Wetland 10	39.4004816	-82.2051669	PEM	23	1	0.01
Wetland 11	39.402725	-82.2096854	PEM/PSS	35.5	2	0.11
Wetland 12	39.4030808	-82.2102502	PSS/PEM	39	2	0.10
Wetland 13	39.403862	-82.2113989	PUB/PEM	38.5	2	0.66
Wetland 14	39.4047071	-82.2131601	PSS	24.5	1	0.04
Wetland 15	39.4054657	-82.214519	PEM/PSS	31.5	2	0.01
Wetland 16	39.406145	-82.215253	PEM	22.5	1	0.08
Wetland 17	39.409724	-82.2216161	PEM	55.5	2	1.24
Wetland 18	39.4109252	-82.2237295	PSS	28	1	0.02
Wetland 19a	39.4147718	-82.2304363	PFO	43.5	2	0.34
Wetland 19b	39.4149107	-82.2307166	PEM/PSS	43.5	2	0.49
Wetland 20	39.4279549	-82.2527851	PEM	31.5	2	0.03
Wetland 21	39.4284981	-82.2539956	PEM	32	2	0.02
Wetland 22	39.4317257	-82.2617767	PEM/PSS	46.5	2	3.20
Wetland 23	39.434566	-82.2685641	PEM	35.5	2	0.02
Wetland 24	39.4351117	-82.2698736	PEM	32	2	< 0.01
Wetland 25	39.4366305	-82.2737788	PEM	37	2	0.03
Wetland 26	39.4369181	-82.2736601	PEM	32	2	0.03
Wetland 27	39.4417746	-82.2857462	PEM	21.5	1	0.05
Wetland 28	39.4435145	-82.2898114	PEM	49	2	0.02
Wetland 29	39.4474837	-82.2995147	PEM	17	1	0.04
Wetland 30	39.4480948	-82.3007848	PEM	17	1	0.01
Wetland 31	39.448311	-82.3013616	PEM	22	1	0.01
Wetland 32	39.4496794	-82.3049049	PFO	40	2	0.05

TABLE 3
WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Cowardin Wetland Type	ORAM Score	ORAM Category	Acreage within Survey Corridor
Wetland 33	39.4503914	-82.305602	PEM	36	2	0.04
Wetland 34	39.4628982	-82.3335393	PEM	26	1	0.02
Wetland 35	39.4761492	-82.3507249	PEM	37.5	2	< 0.01
Wetland 36	39.4778891	-82.3567423	PEM/PFO	35	2	0.49
Wetland 37	39.4787239	-82.3601373	PEM/PFO	40	2	0.17
Wetland 38	39.4867313	-82.3740807	PFO/PEM	28	1	0.01
Wetland 39	39.4886788	-82.3776796	PSS/PEM	36.5	2	0.06
Wetland 40	39.4889719	-82.3781858	PEM	32	2	0.02
Wetland 41	39.4995032	-82.3948318	PEM	29	1	< 0.01
Wetland 41a	39.4994478	-82.3949464	PEM	29	1	< 0.01
Wetland 42	39.5065286	-82.4077693	PFO/PEM	35	2	0.02
Wetland 43	39.5241209	-82.4567375	PEM	23	1	0.27
Wetland 44	39.5238441	-82.460589	PEM/PSS	30	2	0.26
Wetland 45	39.5241941	-82.4616024	PEM	20	1	0.19
Wetland 46	39.5240465	-82.4630113	PEM	29.5	1	0.02
Wetland 47a	39.5253472	-82.4682929	PFO	34.5	2	0.27
Wetland 47b	39.5251846	-82.4678133	PEM	34.5	2	0.16
Wetland 48	39.5251786	-82.4686913	PEM	28.5	1	0.01
Wetland 49	39.5389935	-82.4902718	PSS/PFO	48.5	2	0.08
Wetland 50	39.5392758	-82.4911235	PFO/PEM	51.5	2	0.46
Wetland 51	39.5471315	-82.5039906	PEM	23	1	0.23
Wetland 52	39.5476364	-82.5040709	PEM	18	1	0.01
Wetland 53	39.5599434	-82.5142027	PEM	14	1	0.09
Wetland 54	39.564802	-82.5233684	PEM	35	2	0.05
Wetland 55	39.5664223	-82.526216	PEM/PSS	35.5	2	0.42
Wetland 56	39.567628	-82.5281426	PEM	28	1	0.02
Wetland 57	39.5737754	-82.539216	PFO/PEM	35.5	2	0.17
Wetland 58	39.5738783	-82.5397498	PEM	26.5	1	0.15
Wetland 59	39.5798129	-82.5511624	PEM/PSS	34.5	2	0.02
Total: 60 wetlands						12.73

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 1	39.38599	-82.1812	Ephemeral	22	HHEI	Modified Class 1	1	1	268.72
Stream 2	39.38674	-82.1816	Ephemeral	22	HHEI	Modified Class 1	0.5	1	69.80
Stream 3	39.38682	-82.1823	Ephemeral	23	HHEI	Modified Class 1	0.5	1	503.10
Stream 4	39.38735	-82.1833	Intermittent	39	HHEI	Modified Class 2	3	3	489.78
Stream 5	39.3887	-82.1857	Ephemeral	23	HHEI	Modified Class 1	0.5	1	147.09
Stream 6	39.38974	-82.1875	Ephemeral	18	HHEI	Modified Class 1	0	1	91.98
Stream 7	39.39073	-82.1889	Ephemeral	33	HHEI	Modified Class 2	3	1.5	261.79
Stream 8	39.39185	-82.1908	Ephemeral	23	HHEI	Modified Class 1	1	1.5	207.26
Stream 9	39.39341	-82.1931	Ephemeral	32	HHEI	Modified Class 2	4	1.5	217.42
Stream 10	39.39392	-82.1944	Intermittent	29	HHEI	Modified Class 1	2	2.5	229.06
Stream 11	39.39652	-82.1989	Perennial	60	HHEI	Modified Class 2	15	6	232.18
Stream 12	39.39678	-82.1991	Ephemeral	23	HHEI	Modified Class 1	1	1	146.93
Stream 13	39.39655	-82.1993	Ephemeral	13	HHEI	Modified Class 1	0	1	68.52
Stream 14	39.3968	-82.1997	Intermittent	55	HHEI	Modified Class 2	6	7	444.35
Stream 15	39.39968	-82.2043	Ephemeral	14	HHEI	Modified Class 1	0	1	200.34
Stream 16	39.39979	-82.2042	Ephemeral	18	HHEI	Modified Class 1	0	1	158.52
Stream 17	39.40005	-82.2045	Intermittent	33	HHEI	Modified Class 2	3	3	63.29
Stream 18	39.39989	-82.205	Ephemeral	24	HHEI	Modified Class 1	0.5	1.5	195.16
Stream 19	39.40111	-82.2064	Ephemeral	24	HHEI	Modified Class 1	0.5	1	174.77
Stream 20	39.40122	-82.2066	Ephemeral	18	HHEI	Modified Class 1	0	1	43.04

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 21	39.40129	-82.2066	Ephemeral	18	HHEI	Modified Class 1	0	1	67.24
Stream 22	39.40131	-82.2067	Ephemeral	15	HHEI	Modified Class 1	0	1	93.51
Stream 23	39.40314	-82.21	Intermittent	39	HHEI	Modified Class 2	14	3	471.50
Stream 24	39.40302	-82.2105	Ephemeral	34	HHEI	Modified Class 2	3	1.5	62.51
Stream 25	39.40404	-82.2113	Ephemeral	15	HHEI	Modified Class 1	0	1	36.43
Stream 26	39.40493	-82.2137	Intermittent	29	HHEI	Modified Class 1	4	3	208.20
Stream 27	39.40539	-82.2146	Intermittent	30	HHEI	Modified Class 2	3	1.5	51.92
Stream 28	39.40619	-82.2154	Intermittent	32	HHEI	Modified Class 2	3	2	493.52
Stream 29	39.40694	-82.2168	Perennial	61	QHEI	Good	24	8	284.70
Stream 30	39.4096	-82.2211	Perennial	45	HHEI	Modified Class 2	14	3	387.19
Stream 31	39.41268	-82.2263	Ephemeral	14	HHEI	Modified Class 1	0	1.5	110.44
Stream 32	39.4134	-82.2283	Ephemeral	23	HHEI	Modified Class 1	0	1.5	110.99
Stream 33	39.41357	-82.2283	Ephemeral	23	HHEI	Modified Class 1	1	2.5	370.87
Stream 34	39.41411	-82.2296	Ephemeral	23	HHEI	Modified Class 1	2	1.5	60.18
Stream 35	39.41427	-82.2296	Ephemeral	33	HHEI	Modified Class 2	4	2	247.02
Stream 36	39.41463	-82.2302	Perennial	60	QHEI	Good	20	5	286.13
Stream 37	39.41651	-82.2334	Ephemeral	20	HHEI	Modified Class 1	1	1.5	199.45
Stream 38	39.41726	-82.2346	Ephemeral	19	HHEI	Modified Class 1	0	1.5	222.99
Stream 39	39.41741	-82.2349	Ephemeral	17	HHEI	Class 1	0	2	214.19
Stream 40	39.41787	-82.2359	Intermittent	59	HHEI	Modified Class 2	3	3.5	425.09
Stream 41	39.41828	-82.2362	Ephemeral	19	HHEI	Class 1	1	1.5	96.19
Stream 42	39.41891	-82.2375	Intermittent	64	HHEI	Class 2	3	3.5	202.96
Stream 43	39.42025	-82.24	Ephemeral	24	HHEI	Modified Class 2	2	2.5	406.46

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 44	39.42052	-82.2403	Perennial	60	HHEI	Modified Class 2	10	4	259.17
Stream 45	39.4215	-82.2422	Ephemeral	14	HHEI	Modified Class 1	0	1.5	141.91
Stream 46	39.42232	-82.2429	Ephemeral	13	HHEI	Modified Class 1	0	1	148.07
Stream 47	39.42238	-82.2434	Ephemeral	24	HHEI	Class 1	1	3	216.03
Stream 48	39.42316	-82.2447	Intermittent	35	HHEI	Class 2	3	2	224.70
Stream 49	39.42319	-82.2451	Ephemeral	13	HHEI	Class 1	0	1	185.17
Stream 50	39.42423	-82.2467	Intermittent	35	HHEI	Class 2	4	3	231.51
Stream 51	39.4256	-82.2489	Ephemeral	20	HHEI	Class 1	1	1.5	361.87
Stream 52	39.42579	-82.2495	Perennial	69	HHEI	Modified Class 2	12	6	280.63
Stream 53	39.42701	-82.2514	Intermittent	16	HHEI	Modified Class 1	2	2	205.07
Stream 54	39.42789	-82.2529	Ephemeral	22	HHEI	Class 1	1	2	217.57
Stream 55	39.42837	-82.2541	Ephemeral	27	HHEI	Class 1	1	2	216.46
Stream 56	39.42924	-82.2559	Intermittent	42	HHEI	Class 2	3	4	255.89
Stream 57	39.43112	-82.261	Perennial	53.5	QHEI	Fair	30	5	2742.10
Stream 58	39.43103	-82.2601	Intermittent	28	HHEI	Modified Class 1	2	3	200.77
Stream 59	39.43228	-82.2637	Intermittent	27	HHEI	Class 1	2	2	68.44
Stream 60	39.43286	-82.2641	Intermittent	27	HHEI	Class 1	2	3	73.09
Stream 61	39.43454	-82.2686	Intermittent	36	HHEI	Modified Class 2	3	0.9	260.30
Stream 62	39.43514	-82.2699	Intermittent	20	HHEI	Modified Class 1	1	1	243.91
Stream 63	39.43585	-82.2717	Ephemeral	14	HHEI	Modified Class 1	0	1.25	214.94
Stream 64	39.43648	-82.273	Perennial	61	HHEI	Modified Class 2	15	5.5	575.17
Stream 65	39.43654	-82.2728	Ephemeral	15	HHEI	Modified Class 1	0	0.6	99.63

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 66	39.44226	-82.2873	Ephemeral	16	HHEI	Class 1	0	1	88.07
Stream 67	39.44286	-82.2883	Intermittent	22	HHEI	Modified Class 2	1	1.5	275.75
Stream 68	39.44347	-82.2892	Intermittent	57	HHEI	Modified Class 2	5	4.2	590.93
Stream 69	39.44353	-82.2897	Intermittent	27	HHEI	Class 1	2	2.8	163.02
Stream 70	39.4434	-82.2899	Intermittent	27	HHEI	Class 1	1.5	2	110.43
Stream 71	39.44409	-82.2912	Intermittent	20	HHEI	Class 1	1	1.5	188.82
Stream 72	39.44427	-82.2915	Intermittent	62	HHEI	Modified Class 2	6	4.4	235.81
Stream 73	39.44548	-82.2944	Intermittent	55	HHEI	Modified Class 2	4	1.75	220.77
Stream 74	39.44749	-82.2997	Intermittent	20	HHEI	Modified Class 1	1	1	69.90
Stream 75	39.44772	-82.2998	Intermittent	60	HHEI	Modified Class 2	5	0.9	219.66
Stream 76	39.44784	-82.3	Intermittent	37	HHEI	Modified Class 2	2	0.75	212.26
Stream 77	39.44822	-82.3015	Ephemeral	14	HHEI	Modified Class 1	0	1	103.55
Stream 78	39.44895	-82.303	Intermittent	47	HHEI	Class 2	3	4.25	123.81
Stream 79	39.44907	-82.3029	Intermittent	62	HHEI	Modified Class 2	13	7	337.91
Stream 80	39.44987	-82.3046	Intermittent	43	HHEI	Modified Class 2	2	2.5	208.62
Stream 81	39.45019	-82.3053	Intermittent	25	HHEI	Modified Class 1	1.5	0.5	360.91
Stream 82	39.45128	-82.3087	Ephemeral	14	HHEI	Class 1	0	0.8	363.15
Stream 83	39.45163	-82.3092	Intermittent	64	HHEI	Modified Class 2	11	4.75	230.52
Stream 84	39.45385	-82.3144	Intermittent	26	HHEI	Modified Class 1	2	2.5	140.00
Stream 85	39.45386	-82.3147	Perennial	50.5	QHEI	Fair	17	7.25	253.65
Stream 86	39.45551	-82.3183	Intermittent	58	HHEI	Modified Class 2	13	6.75	221.43
Stream 87	39.45724	-82.3219	Intermittent	57	HHEI	Modified Class 2	6	3	357.41

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 88	39.45769	-82.3231	Ephemeral	18	HHEI	Modified Class 1	0	1	96.58
Stream 89	39.45819	-82.3241	Ephemeral	12	HHEI	Modified Class 1	0	1	99.46
Stream 90	39.45883	-82.3256	Ephemeral	25	HHEI	Class 1	2	2	446.31
Stream 91	39.46086	-82.3288	Intermittent	34	HHEI	Class 2	3	2	751.82
Stream 92	39.46261	-82.3336	Ephemeral	18	HHEI	Modified Class 1	2	2	134.35
Stream 93	39.46288	-82.3336	Intermittent	23	HHEI	Modified Class 1	2	2	235.25
Stream 94	39.46297	-82.3339	Ephemeral	24	HHEI	Modified Class 1	1	1	224.48
Stream 95	39.46355	-82.335	Ephemeral	23	HHEI	Modified Class 1	2	2	254.65
Stream 96	39.46546	-82.3384	Ephemeral	23	HHEI	Modified Class 1	2	1	172.72
Stream 97	39.46664	-82.3398	Ephemeral	23	HHEI	Modified Class 1	1	1	62.24
Stream 98	39.4677	-82.3405	Ephemeral	23	HHEI	Modified Class 1	1	1	205.70
Stream 99	39.46914	-82.3419	Intermittent	49	HHEI	Modified Class 2	16	3	285.39
Stream 100	39.4699	-82.3427	Ephemeral	34	HHEI	Modified Class 2	3	2	287.02
Stream 101	39.47058	-82.3436	Ephemeral	23	HHEI	Modified Class 1	1	1	103.52
Stream 102	39.47196	-82.3449	Ephemeral	23	HHEI	Modified Class 1	1	1	188.55
Stream 103	39.47253	-82.3456	Ephemeral	24	HHEI	Modified Class 1	2	1	100.85
Stream 104	39.47373	-82.3463	Ephemeral	16	HHEI	Modified Class 1	0	1	100.51
Stream 105	39.47627	-82.3507	Ephemeral	25	HHEI	Modified Class 1	2	2	289.95
Stream 106	39.47824	-82.3581	Intermittent	27	HHEI	Modified Class 1	3	2	351.12
Stream 107	39.47834	-82.3588	Intermittent	49	HHEI	Modified Class 2	6	3	314.31
Stream 108	39.47835	-82.3591	Perennial	61	QHEI	Good	24	15	215.88
Stream 109	39.47873	-82.3606	Ephemeral	23	HHEI	Modified Class 1	1	1	84.89

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 110	39.48005	-82.3637	Intermittent	60	HHEI	Modified Class 2	6	4	258.56
Stream 111	39.48221	-82.3673	Intermittent	34	HHEI	Class 2	3	3	298.29
Stream 112	39.48226	-82.3677	Ephemeral	18	HHEI	Class 1	0	1	202.43
Stream 113	39.48606	-82.373	Intermittent	33	HHEI	Class 2	3	1.5	113.68
Stream 114	39.48698	-82.3745	Ephemeral	24	HHEI	Modified Class 1	1	2	118.10
Stream 115	39.48691	-82.3749	Intermittent	44	HHEI	Modified Class 2	6	3	250.74
Stream 116	39.48791	-82.3765	Intermittent	33	HHEI	Modified Class 2	3	2	1292.82
Stream 117	39.48893	-82.3783	Intermittent	33	HHEI	Modified Class 2	3	1.5	158.40
Stream 118	39.49271	-82.3842	Intermittent	35	HHEI	Modified Class 2	3	1.5	234.59
Stream 119	39.49475	-82.3873	Ephemeral	18	HHEI	Modified Class 1	0	1	191.08
Stream 120	39.49481	-82.3875	Intermittent	39	HHEI	Modified Class 2	2	2.5	212.43
Stream 121	39.49507	-82.388	Intermittent	61	HHEI	Modified Class 2	4	4	240.43
Stream 122	39.49674	-82.3906	Intermittent	56	HHEI	Modified Class 2	6	4	272.81
Stream 123	39.49954	-82.3948	Intermittent	34	HHEI	Modified Class 2	3	2	462.43
Stream 124	39.50024	-82.3966	Ephemeral	24	HHEI	Class 1	1	2	120.64
Stream 125	39.50072	-82.3974	Ephemeral	18	HHEI	Class 1	0	1	195.60
Stream 126	39.5015	-82.3984	Intermittent	49	HHEI	Modified Class 2	14	3.5	310.66
Stream 127	39.50199	-82.3991	Ephemeral	18	HHEI	Class 1	0	1	89.21
Stream 128	39.5032	-82.402	Ephemeral	24	HHEI	Class 1	1	1.5	186.43
Stream 129	39.50315	-82.4021	Ephemeral	18	HHEI	Class 1	0	1	150.91
Stream 130	39.50426	-82.4033	Ephemeral	18	HHEI	Class 1	0	1	20.06
Stream 131	39.50407	-82.4036	Ephemeral	24	HHEI	Modified Class 1	2	1	208.76

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 132	39.50437	-82.4043	Ephemeral	24	HHEI	Modified Class 1	2	1	156.25
Stream 133	39.50507	-82.4056	Ephemeral	37	HHEI	Modified Class 2	4	1.5	227.80
Stream 134	39.50626	-82.408	Intermittent	34	HHEI	Modified Class 2	3	2	431.98
Stream 135	39.50671	-82.409	Intermittent	44	HHEI	Modified Class 2	5	2	708.67
Stream 136	39.5075	-82.4098	Ephemeral	23	HHEI	Modified Class 1	2	1	84.59
Stream 137	39.50805	-82.4116	Ephemeral	18	HHEI	Modified Class 1	1	1	175.89
Stream 138	39.50886	-82.4129	Intermittent	50	HHEI	Modified Class 2	4	3.5	293.81
Stream 139	39.50871	-82.413	Ephemeral	23	HHEI	Class 1	2	1	103.89
Stream 140	39.50901	-82.4134	Ephemeral	33	HHEI	Modified Class 2	3	1.5	229.67
Stream 141	39.51051	-82.4161	Ephemeral	23	HHEI	Modified Class 1	1	1	248.36
Stream 142	39.51059	-82.4165	Ephemeral	30	HHEI	Modified Class 2	1	1	163.41
Stream 143	39.51149	-82.4182	Ephemeral	34	HHEI	Modified Class 2	4	1.5	204.10
Stream 144	39.51242	-82.4201	Ephemeral	29	HHEI	Modified Class 1	2	1	202.03
Stream 145	39.51424	-82.423	Intermittent	55	HHEI	Class 2	14	3	201.90
Stream 146	39.51473	-82.4242	Perennial	63	QHEI	Good	>36	22	616.18
Stream 147	39.51533	-82.4256	Ephemeral	23	HHEI	Modified Class 1	2	1.5	487.24
Stream 148	39.51741	-82.4299	Intermittent	40	HHEI	Class 2	3	2	268.23
Stream 149	39.51758	-82.4298	Ephemeral	15	HHEI	Class 1	0	1	75.08
Stream 150	39.51754	-82.4302	Ephemeral	20	HHEI	Class 1	1	1	226.07
Stream 151	39.5192	-82.434	Ephemeral	20	HHEI	Class 1	1	1	98.05
Stream 152	39.51965	-82.4343	Intermittent	60	HHEI	Class 2	5	3.5	218.55
Stream 153	39.51973	-82.4344	Ephemeral	23	HHEI	Class 1	1	1	100.22

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 154	39.51985	-82.4345	Ephemeral	23	HHEI	Class 1	1	1	94.46
Stream 155	39.52137	-82.4379	Intermittent	37	HHEI	Modified Class 2	3	1	128.13
Stream 156	39.52153	-82.438	Intermittent	41	HHEI	Modified Class 2	3	1.5	286.59
Stream 157	39.52158	-82.4379	Ephemeral	19	HHEI	Modified Class 1	0	1	92.59
Stream 158	39.52187	-82.4384	Ephemeral	30	HHEI	Class 2	1	1.5	104.02
Stream 159	39.52195	-82.4385	Ephemeral	24	HHEI	Class 1	1	1.5	106.62
Stream 160	39.52321	-82.4418	Ephemeral	35	HHEI	Modified Class 2	1	2	128.35
Stream 161	39.52354	-82.442	Intermittent	35	HHEI	Modified Class 2	4	1.5	421.32
Stream 162	39.52389	-82.4427	Ephemeral	23	HHEI	Class 1	2	1	226.15
Stream 163	39.52416	-82.4429	Ephemeral	23	HHEI	Modified Class 1	0.5	1	71.67
Stream 164	39.52422	-82.4428	Ephemeral	24	HHEI	Modified Class 1	0.5	1	85.14
Stream 165	39.5243	-82.4474	Intermittent	50	HHEI	Modified Class 2	5	2.5	1522.05
Stream 166	39.52432	-82.4459	Ephemeral	23	HHEI	Class 1	0.5	1	25.05
Stream 167	39.52458	-82.4474	Intermittent	45	HHEI	Modified Class 2	6	1.5	267.32
Stream 168	39.52464	-82.4485	Intermittent	34	HHEI	Class 2	3	2	78.34
Stream 169	39.52433	-82.4512	Ephemeral	24	HHEI	Modified Class 1	1.5	1.5	214.70
Stream 170	39.52426	-82.4531	Intermittent	44	HHEI	Modified Class 2	8	2	225.79
Stream 171	39.52407	-82.4601	Perennial	48	HHEI	Modified Class 2	16	4.5	262.70
Stream 172	39.52411	-82.4608	Intermittent	22	HHEI	Modified Class 1	2	1.5	182.71
Stream 173	39.52396	-82.4628	Ephemeral	28	HHEI	Modified Class 1	1	1	169.45
Stream 174	39.52386	-82.4636	Ephemeral	32	HHEI	Modified Class 2	3	1	485.85
Stream 175	39.52433	-82.4663	Ephemeral	22	HHEI	Modified Class 1	0.5	1	44.30

TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 176	39.52492	-82.4679	Intermittent	59	HHEI	Modified Class 2	14	6	363.90
Stream 177	39.52693	-82.4712	Ephemeral	19	HHEI	Modified Class 1	0.5	1	152.15
Stream 178	39.52722	-82.4719	Ephemeral	19	HHEI	Modified Class 1	0.5	1	69.95
Stream 179	39.53138	-82.4784	Intermittent	34	HHEI	Modified Class 2	4	2	842.01
Stream 180	39.53103	-82.4781	Ephemeral	17	HHEI	Modified Class 1	0	1	97.93
Stream 181	39.53205	-82.4793	Intermittent	59	HHEI	Modified Class 2	5	4	245.12
Stream 182	39.53305	-82.4805	Ephemeral	17	HHEI	Modified Class 1	0	1.5	56.25
Stream 183	39.53416	-82.4826	Intermittent	50	HHEI	Modified Class 2	4	4	248.73
Stream 184	39.5343	-82.4825	Ephemeral	23	HHEI	Modified Class 1	0.5	1.5	108.19
Stream 185	39.53682	-82.4868	Ephemeral	18	HHEI	Modified Class 1	0	1	192.13
Stream 186	39.53689	-82.4872	Ephemeral	23	HHEI	Modified Class 1	1	1	180.60
Stream 187	39.53702	-82.4875	Intermittent	59	HHEI	Modified Class 2	6	4	371.50
Stream 188	39.53692	-82.4877	Ephemeral	14	HHEI	Modified Class 1	0	1	54.93
Stream 189	39.53842	-82.4896	Perennial	46	QHEI	Fair	>36	20	226.58
Stream 190	39.5417	-82.4952	Ephemeral	13	HHEI	Modified Class 1	0	1	145.80
Stream 191	39.54299	-82.4972	Intermittent	19	HHEI	Modified Class 1	1	1	262.47
Stream 192	39.54723	-82.5039	Intermittent	25	HHEI	Modified Class 1	2	1.5	220.89
Stream 193	39.54981	-82.5059	Ephemeral	19	HHEI	Modified Class 1	1	1	231.35
Stream 194	39.55018	-82.5062	Perennial	59.5	QHEI	Good	18	12	202.48
Stream 196	39.56022	-82.5148	Intermittent	25	HHEI	Modified Class 1	2	2.5	204.68
Stream 197	39.56217	-82.5183	Intermittent	46	HHEI	Modified Class 2	6	3	238.04
Stream 198	39.56391	-82.5219	Intermittent	20	HHEI	Modified Class 1	1	1.5	323.55
Stream 199	39.56401	-82.522	Ephemeral	13	HHEI	Modified Class 1	0	1	91.99

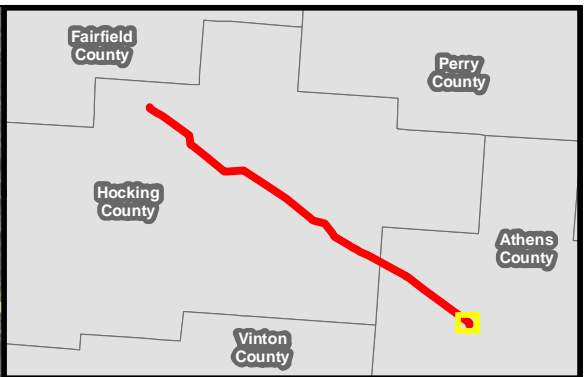
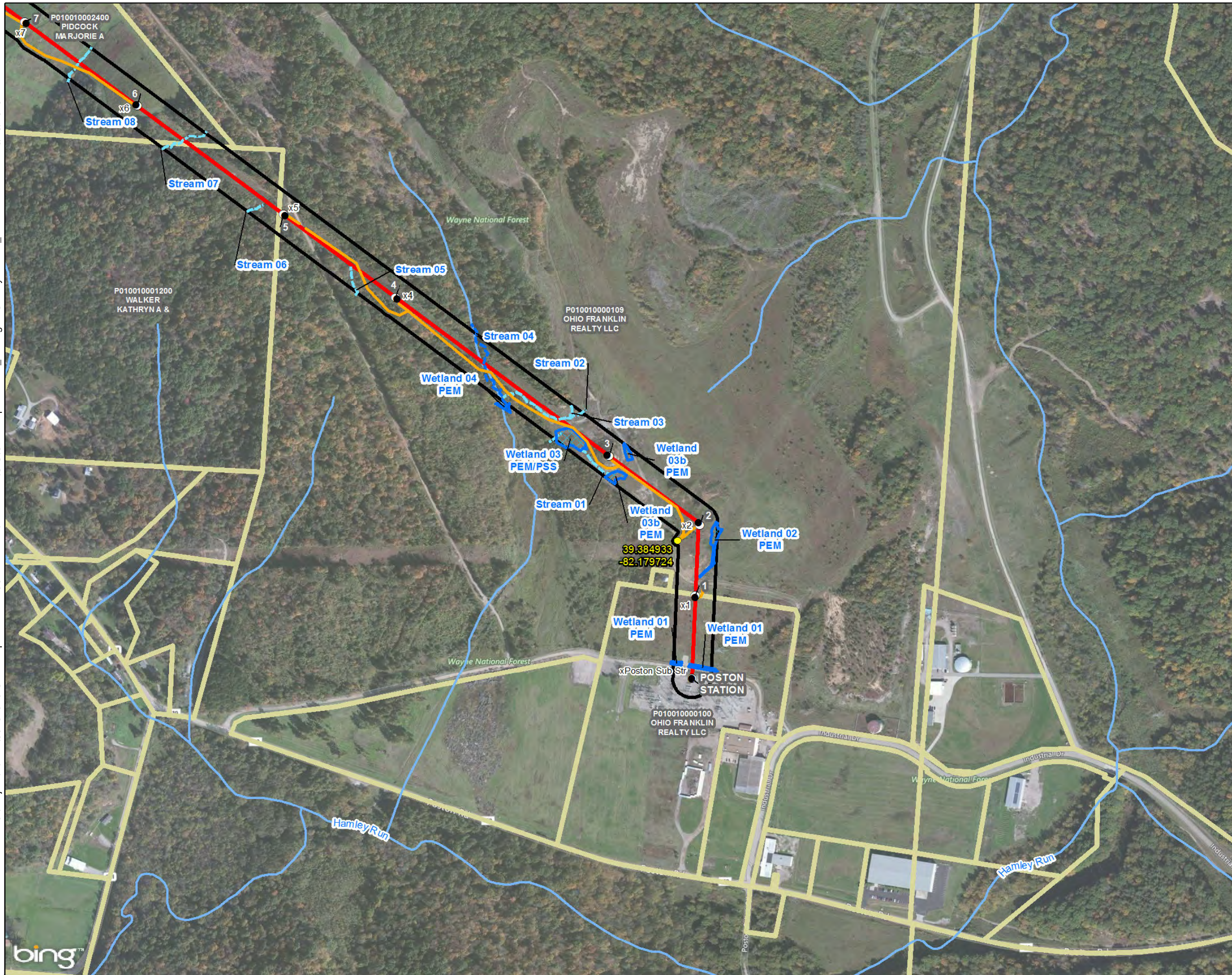
TABLE 4
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Score	Form	Stream Class	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 200	39.56485	-82.5232	Intermittent	40	HHEI	Modified Class 2	2	2.5	381.78
Stream 201	39.56541	-82.5241	Ephemeral	19	HHEI	Modified Class 1	1	1.5	178.93
Stream 202	39.56554	-82.5245	Perennial	50	HHEI	Modified Class 2	7	3	239.37
Stream 203	39.56768	-82.5282	Intermittent	40	HHEI	Modified Class 2	4	2.5	1805.36
Stream 204	39.56623	-82.5262	Ephemeral	18	HHEI	Modified Class 1	2	2.5	109.12
Stream 205	39.56732	-82.5273	Ephemeral	19	HHEI	Modified Class 1	0.5	1	97.53
Stream 206	39.56762	-82.5278	Ephemeral	19	HHEI	Modified Class 1	1	1.5	46.24
Stream 207	39.56776	-82.5281	Ephemeral	14	HHEI	Modified Class 1	0	1	67.57
Stream 208	39.5683	-82.5293	Ephemeral	27	HHEI	Modified Class 1	1.5	1	149.31
Stream 209	39.56973	-82.5323	Ephemeral	20	HHEI	Modified Class 1	0.5	1.5	267.41
Stream 210	39.57068	-82.534	Ephemeral	28	HHEI	Modified Class 1	3	2	238.77
Stream 211	39.57358	-82.5387	Perennial	56.5	QHEI	Good	24	10	283.17
Stream 213	39.57556	-82.5423	Perennial	51	QHEI	Fair	24	10	241.07
Stream 214	39.57616	-82.5437	Intermittent	19	HHEI	Modified Class 1	1	2	287.86
Stream 215	39.57824	-82.5482	Intermittent	19	HHEI	Modified Class 1	1.5	2.5	65.50
Stream 216	39.57847	-82.5482	Intermittent	20	HHEI	Modified Class 1	1.5	2	216.79
Stream 217	39.57871	-82.5482	Ephemeral	19	HHEI	Modified Class 1	1	1.5	134.94
Stream 218	39.5799	-82.5509	Intermittent	48	HHEI	Modified Class 2	8	3	300.52
Stream 219	39.57991	-82.5513	Intermittent	37	HHEI	Modified Class 2	3	2	232.12
Stream 220	39.58028	-82.551	Ephemeral	18	HHEI	Modified Class 1	0.5	2.5	32.86
Total: 218 Streams									53,668.82

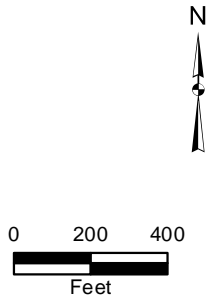
TABLE 5
PONDS IDENTIFIED WITHIN THE PROJECT SURVEY
CORRIDOR

Report Name	Latitude	Longitude	Acreage within Survey Corridor
Pond 1	39.41159	-82.22466	0.30
Pond 2	39.45056	-82.30575	0.01
Pond 3	39.48625	-82.37362	0.66
Pond 4	39.48900	-82.37796	0.08
Pond 5	39.52118	-82.43775	0.07
Pond 6	39.55298	-82.50639	0.18
Pond 7	39.57600	-82.54273	0.03
Pond 8	39.57637	-82.54437	0.03
Vernal Pool	39.406609	-82.215802	<0.01
Total: 8 Ponds, 1 Vernal Pool			1.36

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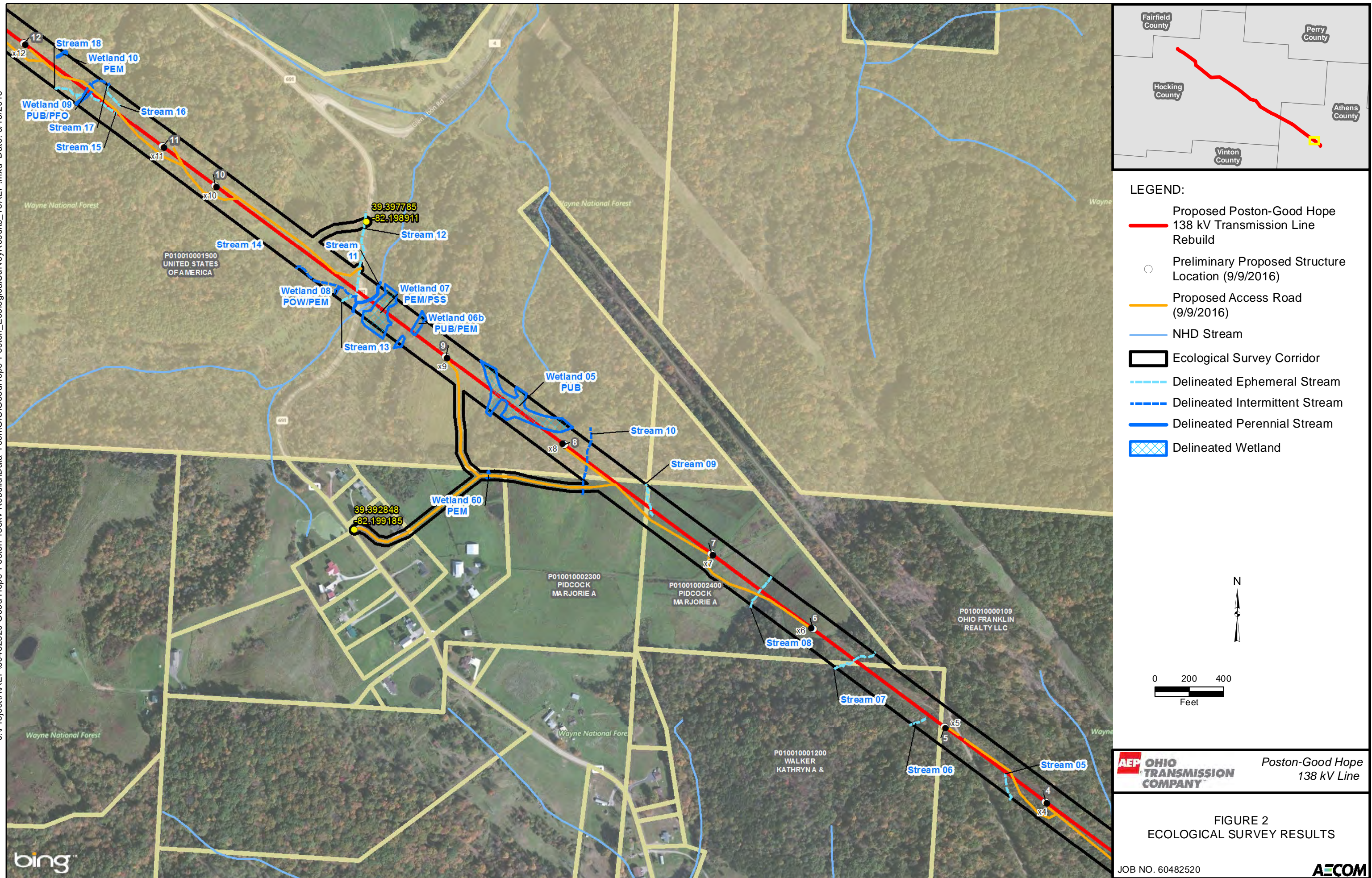
- LEGEND:
- Proposed Poston-Good Hope 138 kV Transmission Line Rebuild
 - Preliminary Proposed Structure Location (9/9/2016)
 - Proposed Access Road (9/9/2016)
 - NHD Stream
 - Ecological Survey Corridor
 - Delineated Ephemeral Stream
 - Delineated Intermittent Stream
 - Delineated Wetland



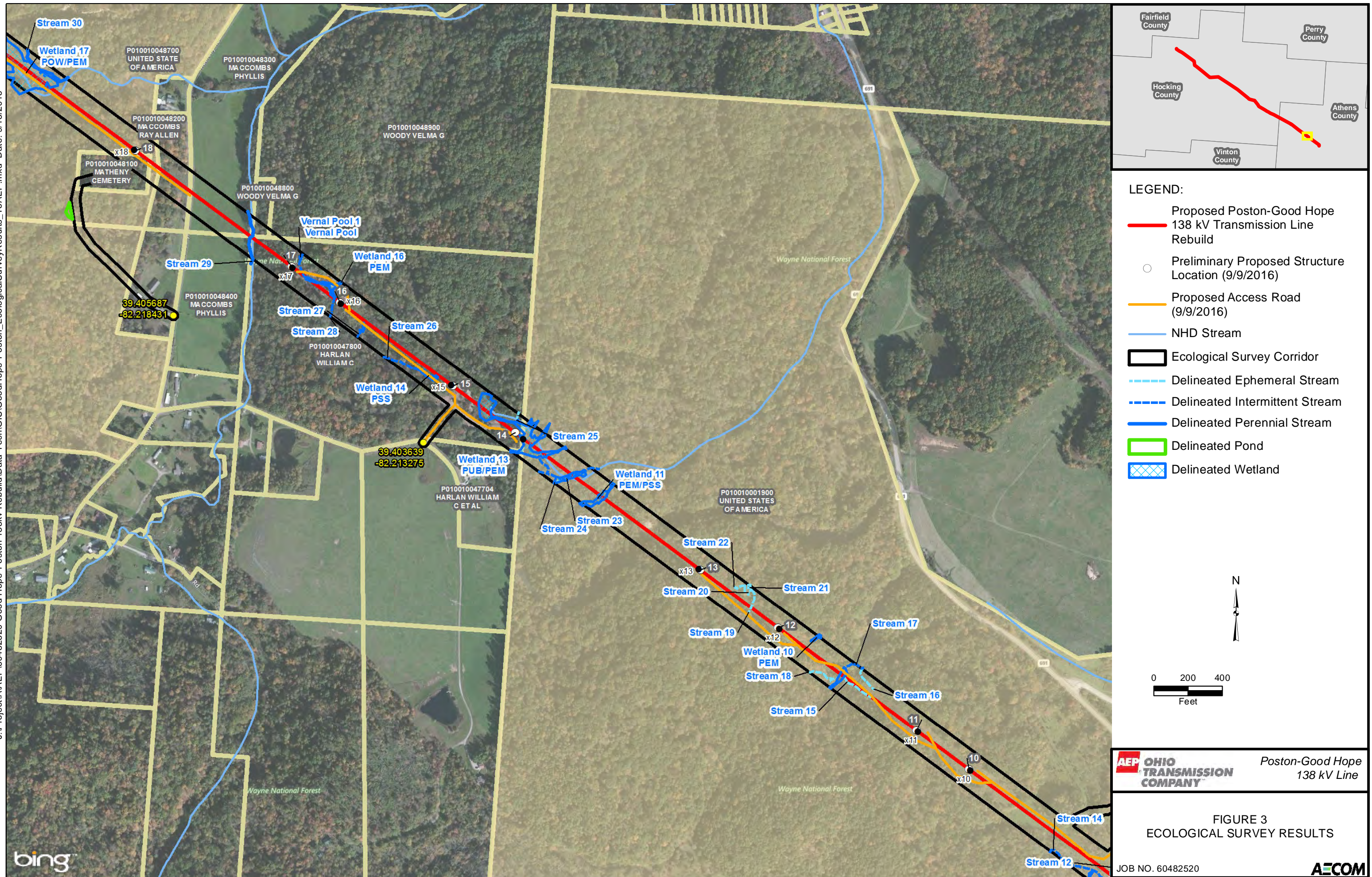
AEP OHIO TRANSMISSION COMPANY Poston-Good Hope 138 kV Line

FIGURE 1
ECOLOGICAL SURVEY RESULTS

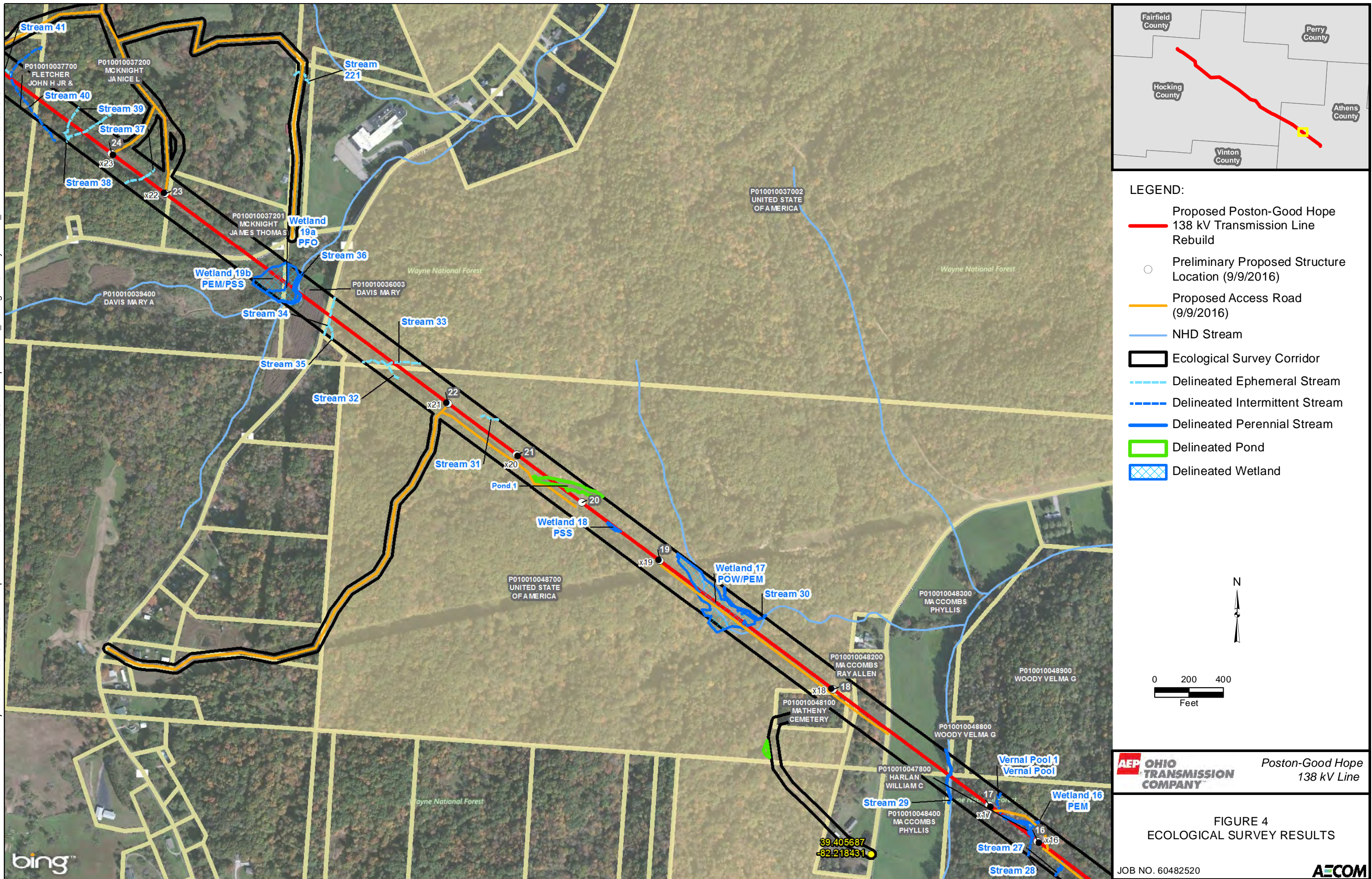
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in

Case No(s). 16-1770-EL-BLN

Summary: Letter of Notification (1) electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company